



**SOLID WASTE MANAGEMENT
Annual Operations and Monitoring Report
Golden Refuse Disposal Site MR-17006
2020**



**Prepared by:
Ben Van Nostrand, B.Sc., P.Ag.
Team Leader, Environmental Health Services**

**Columbia Shuswap Regional District
Operations Management**

Columbia Shuswap Regional District
555 Harbourfront Drive NE, PO Box 978
SALMON ARM BC V1E 4P1
T: 250.832.8194 | TF: 1.888.248.2771 | F: 250.832.1083
www.csr.d.bc.ca

Executive Summary

The Golden Refuse Disposal Site (Site) is located at 350 Golden-Donald Upper Road, Golden, BC approximately 2 km northeast from the core of Golden. The legal description of the property is Subdivision 12 of Section 18, Township 27, Range 21, West of the 5th Meridian, Kootenay District. The Site is approximately 1.2 km north of the Kicking Horse River, the nearest major surface water body.

The Site has been in operation since the early 1970's as a natural attenuation landfill. In the late 1970's the permit was transferred from the Town of Golden to the Columbia Shuswap Regional District (CSRD). The property is leased to the CSRD by the Crown and covers an area of approximately 17 ha. The waste footprint currently covers an area approximately 4.4 ha. The Site was operated by Pet Eagle Holdings Ltd. under contract with the CSRD.

The Site provides solid waste disposal and residual processing services to residents, businesses, and institutions located within the municipality of Golden and the CSRD's Electoral Area A. A CSRD transfer station in Parson and a transfer station located in Field (owned and operated by Parks Canada) deliver solid wastes to the site in 50 yd containers on a regular frequency. The site is operated under an approved Design and Operations Plan (D&O Plan), in accordance with Operational Certificate 17006, issued by the Ministry of Environment on May 5, 2003 and amended on August 29, 2012.

Environmental Monitoring at the site includes groundwater sampling, analysis and reporting. All environmental monitoring and reporting is performed by contracted professionals. Data collected from the groundwater monitoring program is compared to the historical records to determine whether the site has adversely affected groundwater quality and, if so, to what extent. The qualified professional's report is included as an appendix in this report.

In 2020, the CSRD's 2019 Design, Operating, and Closure Plan (DOCP) update was approved, with conditions, by the Ministry of Environment on May 4, 2020. In 2020 the CSRD continued to implement the updated DOCP and address the conditions of approval.

This annual report includes airspace mapping, financial reporting, capacity tables and detailed diversion quantities and has been prepared to comply with Section 5.1 Annual Report of Operation Certificate No. 17006. This report will be made available to the public via the CSRD's webpage upon submission to the Ministry of Environment.

Wastes Received, Recycled and Landfilled

In 2020, approximately 6,933 tonnes of refuse and recoverable wastes were managed at the Site, representing a 206% decrease over 2019. The quantity of municipal solid waste landfilled at the Site in 2020 was 5,462 tonnes, which represents a 147% decrease over 2019. Using the most recent census date (2016) the per capita disposal rate for 2020 was .51 tonnes/person/year, based on a population of 6,856 for the service area. In 2018 and 2019, large scale clean-up projects associated with rail derailments resulted in a significant increase in materials needed to be managed and landfilled compared to previous years, however in 2020 no such projects were carried out in the Golden/Area A region. It appears from the tonnage reports for 2020 that waste landfilled at the site was more inline with historical averages of approximately 5,500 tonnes per year.

In terms of tonnes diverted from landfilling there were 1,531 tonnes of wastes were diverted to marshaling areas for recovery. This represents a significant reduction from 2018 and 2019 due in large part to the lack of clean soil being managed and diverted from the landfill.

Existing diversion programs include; hazardous waste, mattresses, asphalt shingles, concrete, propane cylinders, clean soil, wood waste, yard and garden waste, metal and reusable items. The following graph below identifies tonnes of waste managed (red) and tonnes of waste landfilled (green) between 2015 and 2020:



Proposed Changes and Updates to the Design and Operation Plan (DCOP) and the Environmental Monitoring Program (EMP)

In 2020 the Golden landfill's Design and Operation Plan and the Environmental Monitoring Program updates were approved by the Ministry of Environment (MoE) on May 4, 2020 with conditions. Conditions from the MoE and actions taken to address are as follows:

- 1) The Columbia Shuswap Regional District (CSRD) must provide an Implementation Schedule prepared by a Qualified Professional (QP) to the director for the design and implementation of the surface water management works identified in the Plan, Section 5.2 – Surface Water Management. The Implementation Schedule must be provided to the director at or before 90 days of the commencement of the works or at the latest on December 31, 2020, whichever comes first. The CSRD must then carry out the Implementation Schedule for the surface water management works and report on implementation progress in the Annual Report required under Section 5.1 of the OC. Surface water diversion works along the south boundary of the landfill, including areas where historic landfilled waste is located, must be designed by a QP. Design of final cover must meet all final cover design objectives defined in Section 5.8 of the Landfill Criteria.

- CSRD Actions to address:

- The CSRD submitted the action plan to the MoE and has budgeted funds to implement a Surface Water Management works in 2021.
- 2) Litter fencing must be set up around the active face when waste is being deposited such that the spread of litter is minimized. Daily cover must be adequate to prevent wildlife from accessing waste near the active face, after the landfill operating hours. Intermediate cover, of at least 300 mm thickness, which may include the 150 mm required daily cover thickness, should be installed in areas not actively being filled to discourage wildlife from accessing the waste.

Should litter be spread beyond the active face, litter collection must be conducted within the landfill site boundary at least quarterly. Should litter spread beyond the landfill site boundary, litter collection must be conducted in manner and at a frequency acceptable to neighbouring property owner(s), as required under Section 3.8 of the OC. Records of litter collection efforts including photographs, must be kept on site for the past 2 years of operation. A summary of the collection efforts must also be included every year in the Annual Report required in Section 5.1 of the OC.

In addition to the above, the CSRD must immediately notify the director or designate by email at EnvironmentalCompliance@gov.bc.ca and within 30 days of such non-compliance, submit to the director a written report that is satisfactory to the director and includes, but is not necessarily limited to, the following:

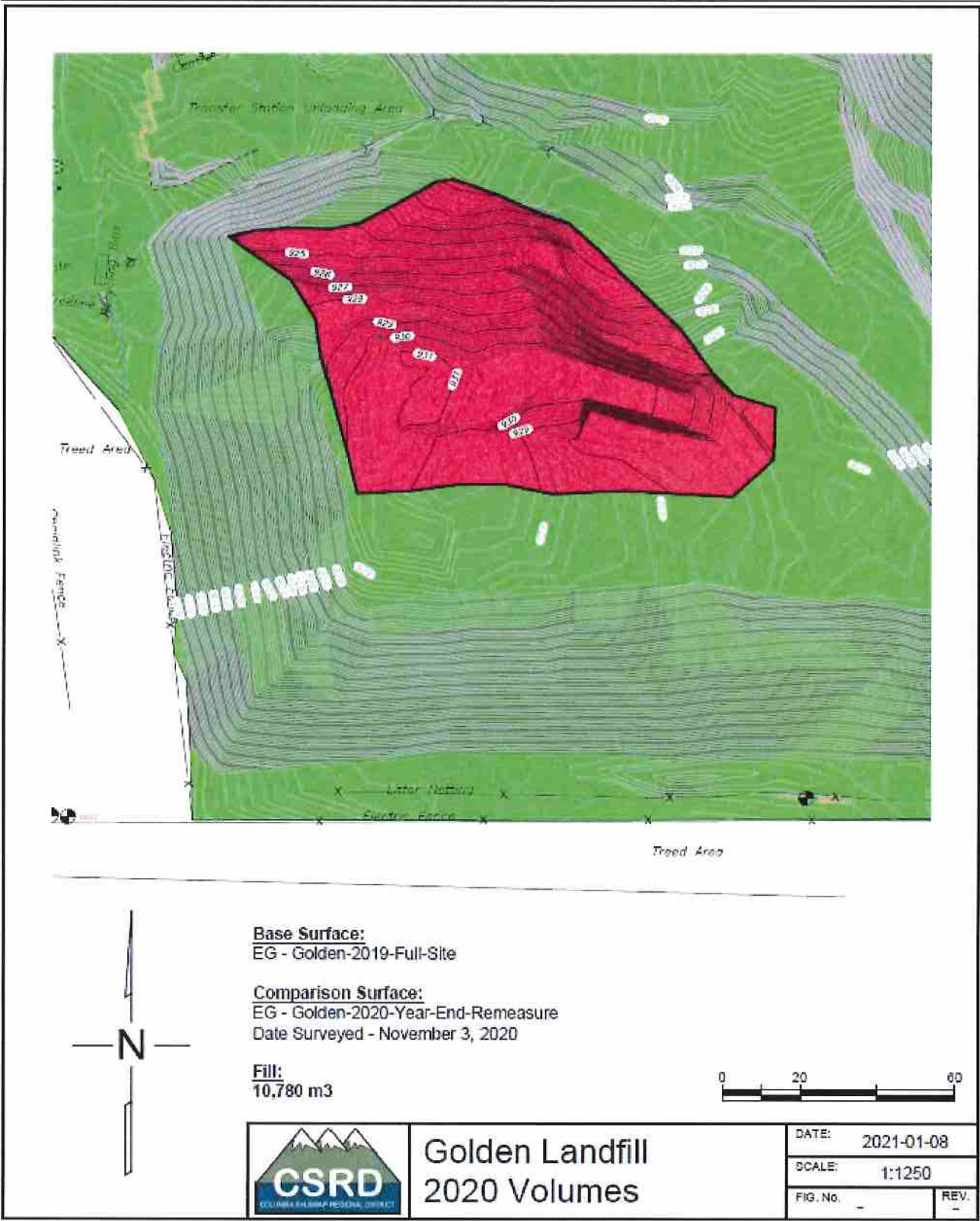
- (i) all relevant observations, complaints, test results (when and if applicable) obtained by the OC holder related to the non-compliance,
 - (ii) an explanation of the most probable cause(s) of the non-compliance, and
 - (iii) a description of remedial action planned and/or taken by the OC holder to prevent similar non-compliance(s) in the future.
- CSRD Actions to address:
- The CSRD continues to implement best management practices for litter control including; expanding litter fencing, increasing litter picking within the site and increased daily cover activities. Plans for 2021 include hiring extra staffing at the site to address site management issues including litter pick up, wildlife management and assessing mixed load tipping fees.
- 3) The OC holder must cause a QP to conduct and certify an assessment of the issue of wildlife habituation within the landfill site boundary and litter dispersion at this landfill by March 31, 2021. The OC holder must carry out mitigating measures to address wildlife habituation and litter dispersion, assess their effectiveness and report on findings and ongoing recommendations, as applicable, every year in the Annual Report required in Section 5.1 of the OC.
- CSRD Actions to address:
- The CSRD commissioned a QP to develop the "Golden Landfill – Managing Wildlife Access and Litter Dispersion" plan for the facility and has budgeted funds to implement the plan in 2021.

All reports, plan updates and reviews have been submitted to the Ministry of Environment for approval and have been posted separately on the CSRD's website (www.csr.bc.ca).

Current Topographic Map

The CSRD conducts a survey of the airspace consumed on an annual basis. The survey information is used to determine the amount of airspace consumed over a given year, project the amount of airspace available for future landfilling and estimate timelines for preparing closure plans. According to the results of the 2020 survey, the Site consumed 10,780 m³ of airspace, which represents an 38% decrease over 2019. This significant decrease is associated with the lack of large-scale clean-up projects in 2020.

The following details the 2020 filling of the Site:



Updated Capacity and Phase Estimates

The following table was provided by Golder Associates, through their 2019 DOCP review work, to estimate landfill capacity:

Table 2: Projected Filling Sequence from 2019 to Closure

Phase	Projected Completion Year	Approximate Available Airspace (m ³)	Approximate Available Capacity (tonnes)	Progressive Closure Area (m ²)	Closure Cost (2019\$)
1	2027	103,000	52,900	17,600	\$1,280,800
2	2039	147,000	75,700	8,000	\$582,200
3	2045	85,000	43,600	4,500	\$327,500
4	2067	300,000	154,000	6,300	\$458,500
5	2080	200,000	102,000	36,600	\$2,663,500

The CSRSD continues to operate the landfill in accordance with the 2019 DOCP, approved by the Ministry on May 19, 2020.

Financial Statement Closure Fund Value

The CSRSD manages municipal landfills in each of its four-member municipalities of the CSRSD. Landfill DOCP's are developed with recommendations to develop and close/cap landfills in a phased approach and to fund closure for each of those phases. As such the CSRSD does not budget for the complete closure of all landfill phases, rather, reserves are funded to ensure money is available to close phases of the landfills as they are completed.

The CSRSD's 2020 Financial Statement includes the information related to the closure and post closure liability of the Site:

COLUMBIA SHUSWAP REGIONAL DISTRICT**Notes to Consolidated Financial Statements**

December 31, 2020

5. Solid Waste Landfill Closure and Post-Closure Liability

The Environmental Management Act of B.C. and the Ministry of Environment of B.C. set out the landfill criteria to properly close and maintain all active and inactive landfill sites. Under the guidelines, there is a requirement for closure and post-closure care of solid waste landfill sites. Provisions are therefore made over the estimated remaining life of the Regional District landfill sites based on scalehouse records and through tipping fees.

The main components of the landfill closure plans are: final capping using an engineered cap design and the implementation of a drainage and gas management plan. The post-closure care requirements may involve: cap maintenance; groundwater monitoring; gas management system operation and maintenance; inspections; leachate treatment and monitoring; and annual reports. Post-closure care activities begin once the entire landfill site no longer accepts waste and continues on for a period of one hundred years. As the date of the site closure is unknown, management estimates the liability to begin after the closure of the current active phase, assuming another phase will not be opened. In the event another phase is opened, the start date for the liability will be adjusted to begin upon closure of the newly opened phase.

The total liability recorded for the estimated landfill closure and post-closure costs of \$34,000,000 (2019 - \$33,000,000) is \$9,411,300 (2019 - \$8,281,000). The estimated liability for the costs is based on the cumulative capacity used to date multiplied by the estimated total expenditures, expressed as discounted present values, assuming 1.57% (2019 - 1.57%) inflation and 3.57% (2019 - 3.64%) weighted-average cost of capital discount rate. The amount remaining to be recognized in future years is \$25,000,000 (2019 - \$25,000,000). The annual provision is reported as an Operating Fund expense and the accumulated provision is reported as a liability on the Consolidated Statement of Financial Position. Reserve funds totalling \$1,109,659 (2019 - \$1,766,196) have been established to provide for this liability in the Landfill Closure Special Reserve Fund.

Future events may result in significant changes to the estimated remaining useful life, estimated total expenses, total or used capacity and the estimated liability. These would be recognized prospectively as a change in estimate when applicable.

The table indicates the remaining landfill life in years and remaining capacity in cubic meters.

	Estimated Remaining Life (Years)	Total estimated Closure & post-closure care	Cumulative Capacity Used (m ³)	Total Estimated Capacity (m ³)	Used (%)	Remaining Capacity on December 31, 2020
Salmon Arm	75	\$ 11,694,000	649,978	3,764,191	17.267	\$ 3,114,213
Golden	61	11,202,000	639,096	1,448,416	44.124	809,320
Revelstoke	19	7,643,000	104,727	364,028	28.769	259,301
Sicamous	14	\$ 3,415,000	\$ 35,752	\$ 163,443	\$ 21.874	\$ 127,691

2020 Operational Review and 2021 Planning

The Site continues to be developed in phases, and landfilling is occurring in phase 1 as per the Design and Operation Plan (DOCP). In 2020, the CSRD received approval of the 2019 DOCP and advanced plans to comply with the approval conditions outlined by the MoE as noted in aforementioned sections. The CSRD continued to work towards reducing offsite litter issues by paying the contractor for additional staffing hours dedicated

to daily litter pick-ups. In addition, planning for wildlife management and surface water diversion works have been completed and budgets have been approved for implantation in 2021.

The Site was inspected four times in 2020 by CSRD staff and the Site contractor was directed to make a number of improvements to ensure the Site was being managed in accordance with the design and operation plan and the operational certificate. The contractor was instructed to apply more cover to waste cells as they progress to limit exposed refuse. The contractor was also instructed to ensure site perimeter litter picking was done on a regular basis and litter netting and fencing was in place and maintained. Sloping and drainage management and improvements are ongoing activities at the Site.

Plans for 2021

The CSRD intended to host an open house with MoE representatives in 2020 in order for residents of the Town of Golden to receive information regarding the updated Design, Operation and Closure Plan. The MoE indicated its willingness to participate in the open house to respond to questions regarding the approval process. Due to the Covid-19 global pandemic, this event has been postponed.

The CSRD expects in 2021 to receive from the MoE and updated Operational Certificate. The CSRD has been working with the MoE throughout 2020 to refine and finalize the updated Operational Certificate, and the Notice of Intent to issue was published in local newspapers in early 2021.

Based on the recommendations in the 2018 Western Water Ltd. Golden Landfill Hydrogeological Characterization Report, the CSRD has budgeted funds to review the data collected since the implementation of the recommendations outlined in the Report. It is expected that the results of this review will be submitted to the MoE for approval and agreed to direction for future monitoring of the Golden landfill.

Lastly, as detailed in the aforementioned DOCP/EMP update section, the CSRD has budgeted to implement the conditions of approval for the 2019 DOCP five-year update.

Wildlife

The Site continues to be an attractant to wildlife, given the nature of the material being managed at the site. The CSRD's contractor does attempt to prevent wildlife from accessing garbage at the site by using alternative daily cover (metal plates) and soil cover. The CSRD has installed thirty-foot-tall netting along the southern portion of the landfill to reduce offsite litter and to deter deer from entering the site. The CSRD continues to monitor and maintain electric fencing around the perimeter of the site in order to deter bears from accessing the site. In 2020 there were no recorded observations of medium or large carnivores at the site.

Solid Waste Stream Reduction

The CSRD has a number of programs which are aimed at reducing the regional solid waste stream being landfilled. The main objective of the Regional Solid Waste Management Plan is to work towards Zero Waste and to make efforts to turn waste into resources. The CSRD has introduced a number of programs to meet this objective over the years, including diverting materials from the landfill such as wood waste, yard and garden waste, metal, appliances, propane cylinders, concrete, mattresses, and asphalt shingles.

The CSRD supports provincial Extended Producer recycling programs at the site such as; printed paper and packaging, batteries, thermostats, refrigeration units, and appliances. In the fall of 2018, the CSRD constructed a hazardous waste storage facility to accept and store used oil, paints, and general household hazardous waste.

The following table provides an annual summary of materials received and separated for recycling or reused on the site for operational purposes:

Golden Landfill - Resource Recovery					
Recoverable Resource	2016	2017	2018	2019	2020
Wood Waste - Received (MT)	292	399	835	466	566
Wood Waste - Processed (m ³)	2949	6262	8907	4710	6938
Yard & Garden Waste - Received (MT)	349	725	N/T	N/T	N/T
Yard & Garden Waste - Processed (m ³)	1155	incl. WW	incl. WW	incl. WW	incl. WW
Metal Waste - Received (MT)	127	187	N/T	N/T	N/T
Metal waste - Salvaged (MT)	171	126	385	252	389
Gypsum Drywall - Received (MT)	56	57	25	Refuse	Refuse
Gypsum Drywall - Salvaged (MT)	75	130	Refuse	Refuse	Refuse
Asphalt Shingles - Received (MT)	146	121	85	152	147
Asphalt Shingles - Salvaged (MT)	105	308	83	124	212
Concrete/Brick/Porcelain - Received (MT)	318	394	577	615	249
ODS Units - Received	172	181	300	195	279
ODS Units - Processed	165	216	271	398	447
Propane Tanks - Salvaged	281	202	-	-	-
1 lb				1500	731
5-100lb				625	297
Auto Batteries - Salvaged	159	135	211	0	36
Mattresses - Received	501	585	654	794	776
Mattresses - Salvaged	524	371	124	1582	938
Contaminated Soil Received (MT)	1914	906	13126	1002	0
Clean Soil Received (MT)	1317	790	784	4231	474
Wood Waste Chipped Received (MT)	3	0	1	5	0
Land Clearing Waste (MT)	0	1	2	5	1
CESA** (MT)	-	-	-	2.4	3.8
Recycle BC	-	-	-	113	154

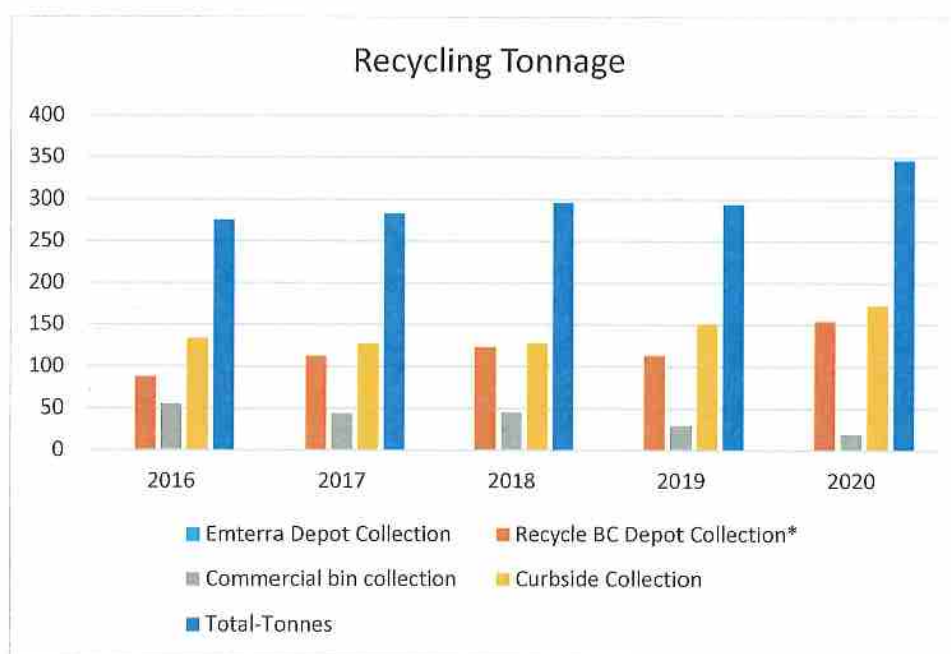
MT - Metric Tonne	
m ³ - Cubic Metre	
**CESA Canadian Electrical Stewardship Association	

Recycling - Commercial and Residential Programs

In January of 2015, the residential recycling collection changed to the MMBC (now Recycle BC) Packaging and Printed Paper collection Extended Producer Responsibility (EPR) program. Prior to the MMBC program the depot recycling program was not fully monitored which contributed to illegal dumping and inflated tonnage results.

The CSRD maintains a recycling program for commercial users, which is tracked separately. The CSRD collects fibre and containers as part of the commercial recycling program. In addition, the CSRD has been working with stewardship agencies to provide collection of used oil, antifreeze, paint, hazardous waste, smoke alarms, thermostats, cooling appliances, electronic appliances and household batteries.

The following table is an overview of tonnage collected in Golden since 2016:



Recycling – Household Hazardous Waste

The CSRD continues to operate a permanent used oil and hazardous waste drop off facility at the Golden landfill. The depot is open on Saturdays and accepts residential materials at no charge. The following table summarizes quantities collected in 2020:

<u>HHW Depot Golden</u>	<u>2020</u>
Paint related material	180 litres
Flammable liquids	0
Toxic liquids	3 drums

HHW Depot Golden	2020
Flammable adhesives	0
Non-regulated liquids	2 drums
Non-regulated solids	1,000 kg
Mercury debris	0
Fire extinguishers	20
Used Oil	1,935 litres
Antifreeze	0

*Drum = 205L / Container = 20L

Environmental Monitoring Program

Environmental Monitoring in 2020 included groundwater sampling, analysis and reporting and data collected from the groundwater monitoring program has been compared to the historical record to determine whether the site has affected groundwater quality and, if so, to what extent. The 2020 Environmental Monitoring Report includes a summary of results collected from the newly installed monitoring wells at the Site. The qualified professional's report is included in this report as Appendix A.

The Site contains two soil gas monitoring probes situated around the landfill property. Gas probe 6 is located on the west side of the property and gas probe 7 is located in the south west corner of the property.

Each monitoring probe has two nested gas sampling probes for shallow and deep sampling indicated by an S or D in the tag. Each probe has three metres of screened pipe and nested probes are isolated by a one metre bentonite plug. Shallow probes are screened from approximately one to four metres depth and deep probes are screened approximately five to eight metres depth. The CSRD began monitoring these gas probes in 2013.

Sampling is done annually by CSRD staff using a Landtec GEM2000 portable gas analyzer. Each gas probe is purged for 10 minutes before the sample is taken. No evidence of landfill gas (methane and/or hydrogen sulphide gas) was present in either gas probe during 2020 sampling events. There are plans in 2020 to increase the gas monitoring network.

All structures on site are elevated on skids or are well vented to prevent the accumulation of migrating landfill gas. The scale house has a methane/carbon monoxide alarm. No landfill gas has been identified in any on-site buildings.

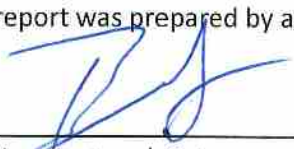
Operator Training

The current landfill contractor, who is responsible for the landfill operators and operations/maintenance of the Site, completed the Ministry of Environment's approved Landfill Operation Basics, facilitated by the Solid Waste Association of North America (SWANA). The SWANA course was delivered to landfill operators, inspectors, government staff and contractors in Kelowna and Williams Lake in the fall of 2019.

In addition, CSRD staff conducted a review of the CSRD's Operations and Maintenance Manual with the site contractor in 2020.

Qualified Professionals


This report was prepared by and is certified by a qualified professional.



Ben Van Nostrand, P.Ag
Team Leader, Environmental Health Services



Reviewed by:



Darcy Mooney, P.Ag
Manager of Operations, Operations Management

APPENDIX A

2020 Environmental Monitoring Report – Golden Refuse Disposal Facility (MR-17006)

2020 ENVIRONMENTAL MONITORING REPORT

GOLDEN REFUSE DISPOSAL FACILITY (OC -17006)

350 GOLDEN-DONALD UPPER ROAD, GOLDEN, BC



Prepared By:
Ecoscape Environmental Consultants Ltd.

Prepared For:
Columbia Shuswap Regional District
April 15, 2021

2020 ENVIRONMENTAL MONITORING REPORT

GOLDEN REFUSE DISPOSAL FACILITY (OC -17006)
350 GOLDEN-DONALD UPPER ROAD, GOLDEN, BC

Prepared For:

Ben Van Nostrand, P.Ag., ASCT.
Team Leader, Environmental Health Services
Columbia Shuswap Regional District
555 Harbourfront Drive NE
P.O. Box 978
Salmon Arm, BC
V1E 4P1

Prepared By:

Ecoscape Environmental Consultants Ltd.
#102 – 450 Neave Court
Kelowna, B.C.
V1W 3A1

April 2021

Project No. 19-2850



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APPENDIX

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Version Control and Revision History				
Version	Date	Prepared By	Reviewed By	Notes/Revisions
Version A	March 19, 2021	LMM	MPS, LR	Draft for Internal Review
Version 0	April 14, 2021	LMM, MPS, LR	BVN	Draft for Client Review
Version 1	April 15, 2021	LMM, MPS	LR	Final Report

ACRONYMS AND ABBREVIATIONS

BCAWQG	BC Approved Water Quality Guidelines
BC GWPR	BC Groundwater Protection Regulation
BCWWQG	BC Working Water Quality Guidelines
CALA	Canadian Association for Laboratory Accreditation
CARO	Caro Analytical Services, Kelowna, BC
CaCO ₃	Calcium Carbonate
CCME	Canadian Council of Ministers of the Environment
CFU	Colony Forming Unit
CSR	BC Contaminated Sites Regulation
CSR AW CSR	Freshwater Aquatic Water numerical standard
CSR DW CSR	Drinking Water numerical standard
CSR IW	CSR Irrigation Water numerical standard
CSRD	Columbia Shuswap Regional District
DO	Dissolved Oxygen
DOC	Dissolved Organic Carbon
DW	Drinking Water numerical standard
EC	Electrical Conductivity
EMA	Environmental Management Act
EMP	Environmental Management Plan
ENV	BC Ministry of Environment and Climate Change Strategy
GCDWQ AO	Guideline for Canadian Drinking Water Quality Aesthetic Objective
GCDWQ MAC	Guideline for Canadian Drinking Water Quality Maximum Acceptable Concentration
GSC	Geological Survey of Canada
IDF	Interior Douglas Fir
LEL	Lower Explosive Limit
LWMP	Liquid Waste Management Plan
m asl	Meters Above Sea Level
m bgs	Meters Below Ground Surface
m btoc	Meters Below Top of Casing
mg/L	Milligrams per Litre
MPN	Most Probable Number
N	Nitrogen
OC	Operational Certificate
ORP	Oxidation-reduction Potential
QA/QC	Quality Assurance/Quality Control
PAH	Polycyclic Aromatic Hydrocarbon
RDF	Refuse Disposal Facility
RPD	Relative Percent Difference
SD	Standard Deviation
SHA	Sperling Hansen Associates
STN ID	Climate Station ID
TDS	Total Dissolved Solids
TOC	Total Organic Carbon
UEL	Upper Explosive Limit
US GPM	US Gallons Per Minute
VOC	Volatile Organic Compound
WRA	Water Resource Atlas
WTN	Well Tag Number
WWAL	Western Water Associates Ltd.

1.0 INTRODUCTION

The Columbia Shuswap Regional District (CSRD) retained Ecoscape Environmental Consultants Ltd. (Ecoscape) to carry out environmental monitoring and sampling at the Golden Refuse Disposal Facility (RDF) (the Site) and to prepare this annual monitoring report per the Site's Ministry of Environment and Climate Change Strategy (ENV) Operational Certificate (OC-17006) monitoring requirements.

This report presents a summary and analysis of groundwater monitoring data collected by Ecoscape from January 1 to December 31, 2020, and includes a discussion of the applicable regulatory context, field procedures, quality assurance/quality control measures, and recommendations for future Site monitoring. This report has been prepared for inclusion in the annual report that is submitted by the CSRD to ENV for the Site.

1.1 Background

The Golden RDF currently provides solid waste disposal services to businesses, institutions, and residents within the municipality of Golden and CSRD Electoral Area A.

The Site has operated as a natural attenuation landfill since the early 1970s. The operating permit was transferred to the CSRD in the late 1970s, and the Site now operates under Operational Certificate (OC) 17006, issued by ENV on May 5, 2003, and most recently amended on October 31, 2019. A copy of the OC is provided in Appendix A.

Previous annual environmental monitoring reports were completed by Western Water Associates Limited (WWAL), from 2014 through 2018, Summit Environmental Consultants Inc. (now Associated Environmental) from 2009 through 2013, and Sperling Hansen Associates (SHA) in 2008.

2.0 OBJECTIVE AND WORK SCOPE

The objective of this work program was to satisfy annual monitoring reporting requirements stipulated in OC 17006 by providing an evaluation of spatial and temporal trends in groundwater quality and identifying locations where water quality exceeds applicable guidelines and standards.

Key water quality questions answered in this report are:

- Does groundwater quality meet applicable guidelines and standards at and beyond the Site boundary?

- Does groundwater quality at and near the Site vary spatially between sample locations and temporally between seasons and years as a result of ongoing landfilling at the Site, and if so, describe the variances?
- If spatial and temporal trends in groundwater chemistry exists, do these trends suggest adverse effects, and is this linked to historical permitted landfill operations?

In meeting these objectives and answering these questions, Ecoscape undertook the following tasks:

- Collected representative groundwater samples from select monitoring locations on and near the Site (Figure 2) on a quarterly annual basis, as summarized in Section 4.4;
- Submitted samples to Caro Analytical Services (CARO), which is accredited by the Canadian Association for Laboratory Accreditation (CALA) for analyses;
- Entered water quality data into a database (tabulated) and compared to applicable federal and provincial guidelines and standards to determine if exceedances were observed;
- Analyzed temporal and spatial groundwater quality trends to evaluate the potential for landfill leachate impacts on water quality; and
- Prepared this annual environmental monitoring report.

3.0 SITE DESCRIPTION

The Site is located approximately 2 km northeast and upslope of Golden's city centre (Figure 1). A Site description is provided in Table 1.

Table 1: Site Description	
Topic	Details
Civic Address	350 Golden-Donald Upper Road, Golden, BC
Legal Description	Subdivision 12 of Section 18, Township 27, Range 21, West of the 5 th Meridian, Kootenay District
Registered Site Owner	The Province of British Columbia
Latitude and Longitude (of Site centre)	51° 18' 31.0" N and 116° 57' 15.1" W
Approximate Site Area	17 hectares
Current Land Use	Natural Attenuation Landfill
Site Elevation	Approximately 925 m above sea level

The Site is mainly surrounded by undeveloped, forested land to the north, west and south with several rural residences to the east on Hietala Road. The nearest privately-owned residence is within 100 m of the landfill boundary to the east at a higher elevation of 964 m

above sea level (m asl). The nearest residence downslope of the landfill is situated approximately 220 m southwest, at an elevation of 915 m asl.

3.1 Climate and Biogeoclimatic Zones

The Site is located within the Engelmann Spruce – Subalpine Fir dry cool woodland (ESSFdkw) forest subzone, where winters are typically long and cold and the summers cool and short (temperatures are above 10°C for only 0 to 2 months of the year) (Meidinger and Pojar, 1991).

Climate normal data from Environment Canada was used to complete this assessment. Based on data collected from the Golden Airport station (STN ID 1173210) between 1981 and 2010 the average annual total precipitation (rain and snow) was 466.8 mm with an average rainfall of 325.2 mm, suggested the Site climate was relatively dry. The highest precipitation typically occurred between June and August (as rain), and again in November – January (as snow). The daily average temperatures for January and July were -7.9 °C and 17.3 °C, respectively.

3.2 Topography, Drainage and Nearby Watercourses

The portion of the Site east of the active landfill area slopes southeast from a topographic high of approximately 955 m asl, and levels out at approximately 925 m above sea level (m asl) for the remainder of the Site. The nearby surrounding area generally slopes southwest, and surface drainage at and near the Site is expected to mimic topography with flow towards the southwest. During freshet and heavy precipitation events, a gulley near the northeast boundary diverts surface runoff away from the landfill area, and no known surface water drainages lead away from the Site.

An unnamed provincially mapped watercourse traverses the Site from the northeast to the southwest; however, this watercourse is ephemeral, and only contains water during freshet and following heavy precipitation events (WWAL, 2019b). A drainage ditch has been constructed along the southern Site boundary at the toe of the active landfill face to collect and direct this watercourse to high permeability soils at the southwest Site corner, allowing discharge water to seep into the ground (WWAL, 2019b).

An unnamed provincially mapped watercourse occurs approximately 180 m south of the site. This watercourse flows southwest and discharges to a catch basin near Station Avenue, approximately 850 m southwest of the Site.

Hospital Creek is situated approximately 1.2 km north to northwest of the Site and flows southwest towards the Columbia River. The Kicking Horse River is approximately 1.3 km south to southwest and downslope of the Site, at an elevation of approximately 800 m asl, and flows northwest into the Columbia River. The Columbia River flows northwest, and at its nearest point is approximately 3 km from the Site.

Nearby watercourse locations with respect to the Site are shown on Figure 1.

3.3 Regional and Local Geology and Hydrogeology

According to Geological Survey of Canada (GSC) mapping, bedrock beneath the Site comprises metamorphosed limestone, limestone conglomerates and slate of the McKay Group, formed during the Cambrian to Ordovician periods (GSC, 1980). Bedrock is visible in outcrops near the northeast Site corner, and was encountered at the following depths:

- MW09-6D (western Site boundary) – 34 m below ground surface (m bgs)
- MW10-08 (northwest of Site) – 15 m bgs
- MW18-10 (southern Site boundary) – 24 m bgs
- MW18-11 (southwest Site corner) – 116 m bgs

Based on this, the underlying bedrock surface steeply dips towards the southwest Site corner. Monitoring well locations are shown on Figure 2.

The Golden area is underlain by thick continuous glacial till blanket (GSC, 2014). Previous subsurface investigations at the Site (Kala 1995; SHA 2008; Summit 2010b and 2011; and WWAL 2019a) identified dense gravelly sand and silty ablation till along the sloped area to the east, with clean bedded sand and gravel alluvial deposits in the south central and western portions of the Site, and within the trench at the southwest Site corner. Overburden becomes increasingly thick towards the southwest, where the bedrock surface is over 115 m bgs. Exposed sediments along the west side of Golden-Donald Road (immediately west of the Site) comprise dense, well-sorted sand and gravel with traces of silt and clay, and intermittent bedding.

Overburden permeability at the Site ranges from low to moderate. Low permeability silt-dominated deposits near the eastern side of the landfill limit surface water infiltration and groundwater recharge while silty sand and gravel located in the south-central section of the landfill is generally moderately permeable (SHA 2008).

The BC ENV's Water Resources Atlas (WRA) indicated the Site was not underlain by a mapped aquifer. Sand and gravel Aquifer 456 IIB was mapped approximately 50 m southwest of the Site, extending along the east side of the Columbia River and generally spanning the Town of Golden (Figure 1). The aquifer was mapped as unconfined to semi-confined, and was classified as highly productive, moderately vulnerable to contamination from surface sources and under moderate demand from local groundwater users when mapped. Based on available well records, the geometric mean static water level was 4.8 m bgs at the time of drilling.

The aquifer is likely recharged via mountain block recharge from surrounding upland areas, in which groundwater infiltrates bedrock, migrates downward, and then flows laterally through bedrock fractures into the overburden deposits occurring along the Columbia River valley; however, some flows may also occur above and along the overburden-bedrock interface. Based on the above, regional groundwater flow direction is expected to be laterally from the valley walls towards the valley centre, and then parallel to the Kicking Horse and Columbia Rivers, towards the west and northwest. Localized groundwater flow gradients contrary to that described above may be induced by well pumping and variability in the permeability and orientation of sand and gravel deposits and bedrock fractures.

WWAL completed a hydrogeological characterization study at the Site in 2018 to provide a better understanding of Site and nearby surrounding area geology, hydrogeology, and hydrology (WWAL 2019a). Their findings are summarized below.

An unmapped bedrock aquifer is present near and below the Site, based on the presence of groundwater in the existing monitoring wells and nearby domestic supply wells. Available well logs suggest overburden is generally unsaturated at, and near, the Site and that no sand and gravel aquifers underlay the Site; however, some localized pockets of perched groundwater may occur in overburden such as that observed in MW09-6. Potentiometric surface contours generated from static water level and well elevation data from four bedrock monitoring wells (MW09-6D, MW10-8, MW18-10 and MW18-11) suggest groundwater flows from the uplands towards the southwest and Kicking Horse River. WWAL inferred that groundwater recharge is controlled by precipitation which migrates downward into bedrock fractures.

Ecoscape performed single well response tests on select monitoring wells in May 2020 to better understand hydraulic conductivity in the unmapped sand and gravel and bedrock aquifers that underlie the Site. These tests are discussed in detail in Section 6.3.

4.0 ENVIRONMENTAL MONITORING PROGRAM

4.1 Historical Groundwater Monitoring and Sampling

Kala drilled and installed four (4) monitoring wells (MW95-01 through MW95-04) in 1995 to depths ranging from 18.3 to 30.5 m bgs. No groundwater was encountered during drilling, and these wells have since been decommissioned.

Three (3) on-site monitoring wells were installed in 2009 by Summit: MW09-6S (shallow), MW09-6D (deep), and MW09-7 to replace decommissioned wells MW95-4 and MW95-3, respectively. MW09-7 has remained dry since installation and has thus never been sampled. Nested wells MW09-6S and MW09-6D are situated near the western Site boundary north of the site access. MW09-6S and MW09-6D repeatedly showed similar water chemistry, and MW09-6D sampling was discontinued in 2011 due to redundancy. It was sampled again in 2018 and 2020.

Monitoring well MW10-8 was installed by WWAL in 2010, approximately 150 m northwest and cross-gradient of the Site to evaluate potential offsite leachate migration. MW10-8 was not sampled in 2016 or 2017 but has been sampled consistently since.

Two (2) additional on-site wells were drilled by WWAL in 2018; MW18-10 and MW18-11. MW18-10 was installed on the southern Site boundary to replace MW95-02 (TH-2), which has been dry since it was installed in 1995. MW18-11 was installed immediately southwest of the Site to provide additional monitoring coverage along the Site boundary.

Domestic well DMW-1b, situated east of the Site, was introduced to the monitoring network in 2011 to replace upgradient monitoring location DMW-1, which was precluded from the monitoring network because filtration systems were installed prior to all the water outlets. DMW-4, situated east of the Site, was introduced to the monitoring network in 2013, and along with DMW-1b, provides background water quality data for the Site. Domestic well DMW-5 (approximately 740 m north of the Site) was introduced to the monitoring program in 2018; however, the well owners opted not to include their well in the 2019 program and subsequent years.

Town Wells #4 and #6 are two (2) of Golden's five (5) municipal water supply wells and are situated approximately 1.5 km and 2 km north west of the Site. Town Well #6 was sampled in spring 2018, but was not sampled in summer or fall 2018 at which time work was completed in attempt to increase the well's yield. It has been sampled twice since spring 2019, however turbidity levels have remained elevated in the well. As such, the town removed the well's pump in the fall of 2019 and deemed the Town Well #6 inoperable.

Well logs for current and past monitoring wells are provided in Appendix B.

4.2 Changes to the 2020 Monitoring Program

As per recommendations in the EMP produced by Golder (Appendix F), a winter sampling event was added to the program in 2020 for a total of four (4) monitoring events. Samples were analyzed for Volatile Organic Compounds (VOC) for all four sampling events.

The Columbia Diesel well (WTN 116561) was added to the program as DMW20-01. Details for this well are included in Table 2, water quality results are in Appendix C, and a well log from WRA is attached in Appendix B.

Ecoscape personnel surveyed on-site monitoring well elevations using RTK equipment to a ± 0.01 m vertical accuracy in June 2020 to facilitate groundwater elevation and flow direction measurements. These groundwater contours are plotted on Figure 3. Additionally, Ecoscape staff installed data loggers in monitoring wells during the winter 2020 sampling event. Loggers were set to record hourly water levels, and personnel will retrieve a first data download during the 2021 sampling events.

In addition to the typical analytical suite, samples collected during the spring 2020 event were analyzed for Light and Heavy Extractable Petroleum Hydrocarbons (LEPH and HEPH) and Polycyclic Aromatic Hydrocarbons (PAH). Additionally, an isotope analysis was conducted on samples submitted in summer 2020; results are presented and discussed in Section 7.0, along with a Piper diagram to enrich the groundwater chemistry analysis and discussion. The isotope analysis included oxygen-18, chlorine-37, deuterium, and tritium.

Landfill gas monitoring infrastructure was augmented with two (2) newly installed nested gas probes at the eastern Site boundary GP20-01S, -02D, GP20-02S, and -02D on July 21-22, 2020. These were monitored during the summer and fall 2020 events. Ecoscape personnel also monitored existing gas probes GP-6S, -6D, GP-7S, and -7D in spring, summer, and fall of 2020. This year's results are presented in Table 5 in Section 6.6. The CSRD conducted their own landfill gas monitoring at the four (4) existing gas probes from 2013 to spring 2020; results are included in Appendix E.

4.3 Field Observations

Monitoring well conditions and accessibility of sample locations were documented during each sampling event. Ecoscape also observed vegetation near each sampling location for signs of abnormal stress (e.g., discolouration or mortality) or abundance potentially linked to landfill leachate, and for signs of liquid flowing from or along the site surface, which could indicate leachate breakout.

4.4 Current Groundwater Monitoring Program

The current monitoring network consists of four (4) groundwater monitoring wells, three (3) domestic supply wells and two (2) Town of Golden supply wells, as follows:

- Monitoring wells MW09-6S, -6D, MW10-8, MW18-10 and MW18-11
- Domestic supply wells DMW-1b, DMW-4, and DMW20-01; and
- Town Well #4 and Town Well #6.

Although not part of the monitoring program, Ecoscape collected and analyzed water quality results from the Town of Golden's supply well MW15-01. This well serves as a sentry well for the Town of Golden Town Well #4, and the Town of Golden has permitted the use of its water quality data.

Table 2 below summarizes the monitoring network, and monitoring locations are shown on Figure 2.

Ecoscape noticed a discrepancy in sampling locations DMW-1b and DMW-4. Namely, these sampling locations were (likely by accident) swapped on site figures in annual monitoring

reports completed by prior consultants from 2015 to 2016. We believe that the map locations for DMW-1b and DMW-4 were accurate in figures up to 2015, and directly swapped for each other thereafter. Ecoscape continues to use this convention, and it should be noted that Figures 2 and 3 in this assessment shows these monitoring locations as they match to laboratory certificates, water quality data presented in Appendix C, and time-series plots for data collected in 2020.

A name swap in samples submitted to the lab is believed to have occurred during the summer 2017 sampling event, and from 2019 onwards. In Section 6.5 *Water Quality Trend Analysis*, where select parameters are discussed, water quality results reported for DMW-1b are actually representative of water quality at DMW-4 for these sampling events and are discussed accordingly. Likewise, water quality results reported for DMW-4 are actually representative of water quality at DMW-1b for these sampling events and are discussed accordingly. Moving forward, sampling at these locations will be conducted according to their original and actual locations as presented on maps in reports prior to 2016.

This discrepancy does not impact Table 2: *Summary of Golden RDF Monitoring Network* below, Table 4: *Summary of 2020 Water Quality Exceedances*, or well logs in Appendix B. As in, Table 2, Table 4, and Appendix B contain the appropriate information for wells DMW-1b and DMW-4.

Water at the DMW-4 residence was shut-off during the Fall sampling event, and as such a sample was not collected at that time. Town Well #6 was only sampled during the summer and fall 2020 sampling events.

Ongoing BC *Contaminated Sites Regulation* (CSR) Schedule 2 activities, including but not limited to welding and machine shops (C.6), appliance, equipment or engine repair (E.1), road salt storage (Activity E.7), petroleum product storage in above ground or underground tanks (Activity F.7), automotive, truck or other motor vehicle repair, salvage or wrecking (Activity G.2), and wood, pulp and paper products and related industries and activities (Activity I), likely occur near and in some cases upgradient of the Town of Golden supply wells and the Columbia Diesel well (DMW20-01). These potentially contaminating activities should be considered when evaluating groundwater chemistry in Town Well #4, Town Well #6 and DMW20-01.

Table 2: Summary of Golden RDF Monitoring Network

Monitoring ID	Location	Rationale	Well Depth (m btoc)	Top of Casing elevation (m asl) ¹	Ground Surface Elevation (m asl) ¹	Lithology
Landfill Monitoring Wells						
MW09-6S / -6D	West Site boundary, downgradient of the landfill.	Monitor potential offsite migration of leachate to the west	35.3	917.06 / 917.00	916.23	Gravel
MW10-08	300 m northwest and cross- to upgradient of the landfill	Monitor potential offsite migration of leachate to the northwest	26.3	919.60	919.70 (flush mount)	Bedrock
MW18-10	South Site boundary, cross- to downgradient of the landfill	Monitor potential offsite migration of leachate to the south	35.6	914.84	914.08	Bedrock
MW18-11	20 m southwest and downgradient of the Site	Monitor potential offsite migration of leachate to the southwest	146.3	908.53	907.73	Bedrock
Private Domestic Wells						
DMW-1b	Located approximately 200 m east and upgradient of the Site	Monitor background water quality	60	n/a	965 ²	Bedrock
DMW-4	130 m east and upgradient of the Site.	Monitor background water quality	120	n/a	970 ²	Presumably bedrock
DMW20-01	1.2 km west and downgradient of the Site	Monitor general downgradient impacts	26	n/a	790 ²	overburden
Town of Golden Supply Wells						
Town Well #4	1.5 km northwest and downgradient of the Site	Monitor general downgradient impacts	Unknown	n/a	800 ²	Unknown – presumably overburden
Town Well #6	2 km northwest and downgradient of the Site	Monitor general downgradient impacts	Unknown	n/a	Unknown	Unknown – presumably overburden

Notes:

1 = Elevations of ground surface and top of monitoring well casings were surveyed by Ecoscape in 2020 with a vertical accuracy of ± 0.01 m.

2 = Approximate ground surface elevations from Google Earth

4.5 Groundwater Sampling Methodology

Ecoscape personnel collected groundwater samples in general accordance with BC ENV's *British Columbia Field Sampling Manual* (2013) and BC ENV *Technical Guidance on Contaminated Sites 8* (ENV 2017), and the sampling program meets the intent of the OC.

Ecoscape completed the following procedures during each groundwater sampling event:

- Measured static water level off a permanent marking on the top of each well riser using a decontaminated electric water level meter;
- Purged monitoring wells using a submersible well pump or Waterra™ Hydrolift II pump connected to dedicated high-density polyethylene (HDPE) Waterra™ tubing outfitted with an inertia foot valve until temperature, pH, dissolved oxygen (DO), oxidation-reduction potential (ORP), and electrical conductivity readings were stabilized (+/-10%)
 - Typically purged three (3) to five (5) well volumes from each well, unless the well was purged dry. Wells purged dry were left to recover to half its pre-purging level prior to sampling;
- Purged domestic wells using a hydrogen peroxide rinsed hose to direct purge water away from the water outlet/sampling port;
- Noted visual and olfactory groundwater observations, including sheen, colour, turbidity and odour;
- Collected groundwater samples directly into clean, new laboratory-supplied containers, and field filtered (0.45 µm) and preserved them as required for each analytical parameter; and
- Stored sample bottles in ice-chilled coolers for transport to CARO for chemical analysis.

Ecoscape personnel followed proper chain-of-custody procedures during sample transport, and ensured regular communication was maintained between Ecoscape and CARO.

4.6 Current Landfill Gas Monitoring Program

The CSRD conducted landfill gas monitoring at gas probes GP-6S, -6D, GP-7S, and -7D once annually from 2013 to 2020. Historical data is included in Appendix E. Ecoscape expanded the gas monitoring program with the installation of two (2) nested gas probes at the eastern Site boundary GP20-01S, -02D, GP20-02S, and -02D on July 21-22, 2020. These newly installed probes were monitored in the summer and fall of 2020. Ecoscape personnel also monitored existing gas probes GP-6S, -6D, GP-7S, and -7D in spring, summer, and fall of 2020. Results are presented in Section 6.6 *Landfill Gas Monitoring Results*, and probe logs are included in Appendix B. Future landfill gas monitoring will continue to be conducted tri-annually at all gas probes.

To protect personnel on Site, the CSRD Operations Manager Mr. Isaac Walker has confirmed that methane and carbon monoxide detectors (equipped with an alarm) were installed inside the scale house of each CSRD landfill. Plans are also underway to install extra vents in the re-use centers at each landfill as an added safety measure. These safety measures will help to monitor and ensure that combustible gas concentrations will not exceed 20% of the Lower Explosive Limit (LEL) of methane (1% by volume) as recommended by the BC ENV *Landfill Criteria for Municipal Solid Waste, 2nd Edition* (June 2016), and section 5.31 in WorkSafe BC's *OHS Regulation Part 5: Chemical Agents and Biological Agents* (WorkSafe BC 2021).

Per *Section 2.8 Landfill Gas Management* in the OC, if landfill methane concentrations exceed the LEL criteria of 5% by volume at the Site boundary, a qualified professional should be retained to evaluate the exceedance and provide recommendations regarding appropriate next steps and mitigation strategies. These could include verification monitoring or the installation of passive or active gas controls.

4.7 Gas Monitoring Methodology

Ecoscape personnel conducted gas monitoring on a tri-annual basis using a portable Landtec GEM 5000 Plus Landfill Gas Monitor (GEM 5000), which was calibrated by Pine Environmental before each monitoring event. The instrument measured five (5) landfill gases of interest by percent (%) volume: methane (CH₄), carbon dioxide (CO₂), oxygen (O₂), hydrogen sulfide (H₂S), and carbon monoxide (CO).

When not being sampled, gas probes are equipped with a switch lock on the sampling port to remove influence from atmospheric air and to ensure there is no gas loss from the probe. Prior to sampling, the GEM 5000 gas monitor was turned on and run for about five minutes to pull in ambient air and stabilize the instrument. The GEM 5000 was then attached to the sampling port and used to purge at least one (1) probe volume of stagnant air from the probe. This process generally took about four (4) minutes. The probe was then allowed to equilibrate for two minutes before gas concentration readings were recorded.

5.0

REGULATORY FRAMEWORK

The Site currently operates under OC MR-17006 issued by ENV under the provisions of the *Environmental Management Act* (EMA; SBC 2003, Chapter 53 assented October 23, 2003, current to March 17, 2021).

The CSR is the primary regulatory document that describes the EMA's requirements for contaminated sites management in BC. The CSR first came into effect in 1997 and was amended most recently in January 2019 (includes amendments up to B.C. Reg. 13/2019, January 24, 2019). Schedule 3.2 of the CSR provides numerical standards for various

contaminant concentrations in water for the following uses: aquatic life (AW), irrigation (IW), livestock watering (LW), and drinking water (DW).

BC ENV also recognizes that background groundwater concentrations of some inorganic parameters exceed the above-listed numerical standards in some regions throughout BC. As such, the BC ENV established *Protocol 9 – Establishing Local Background Concentrations in Groundwater* (2021b), which lists regional background groundwater concentrations for select inorganic substances for three regions in British Columbia. Concentrations of a water quality parameter in a groundwater sample that exceeds applicable numerical water quality standards but is below a background concentration at the site is not considered contaminated under the CSR. BC ENV-established background concentrations cannot be applied to the Site, as it falls outside of the geographic boundaries of regions included in Protocol 9; however, the province-wide background cobalt concentration of 0.02 mg/L has been applied to this assessment.

The Federal-Provincial-Territorial Committee on Drinking Water (CDW) has established *Guidelines for Canadian Drinking Water Quality* (GCDWQ), most recently updated in 2019 (Health Canada 2019), to protect drinking water quality.

Given the above, the following standards and guidelines are applied to address Section 4 of the OC in order to protect current and potential future nearby domestic water supply sources:

- *Guidelines for Canadian Drinking Water Quality* Maximum Acceptable Concentration (health-based guideline) (GCDWQ MAC) and Aesthetic Objective (based on aesthetic considerations) (GCDWQ AO); and
- BC *CSR Drinking Water* (CSR DW) numerical standards.

Contrary to previous annual monitoring reports, Ecoscape only applied the *Guidelines for Canadian Drinking Water Quality* (GCDWQ) MAC and AO to domestic wells in this assessment, as the GCDWQ do not apply to groundwater samples collected from monitoring wells.

5.1 OC Requirements

Per Section 4 of the OC, the ENV *Landfill Criteria for Municipal Solid Waste, 2nd Edition* (June 2016) also provides guidance for Site monitoring and water quality data interpretation. A *Design, Operations, and Closure Plan Update* (DOCP) was developed following this guidance by Golder Associates Ltd. in 2019 (Golder 2019a), which includes groundwater monitoring requirements for the Site. Golder also prepared the *Golden Landfill Environmental Monitoring Plan* (EMP) for the Site (Golder 2019b) (Appendix G), which is further discussed in Section 9.0. Although not yet approved by ENV at this time, the monitoring requirements in the 2019 DOCP EMP documents will be

followed as they reflect the most current environmental standards. Golder recommended that the EMP be reviewed and updated every five (5) years, as applicable. The CSRD currently has an environmental monitoring program in place at the Golden Landfill that is updated annually and as required. The CSRD continues to meet the monitoring requirements of the OC, the DOCP and EMP, and has engaged Ecoscape to execute the monitoring program recommended in the 2018 Environmental Monitoring Report (WWAL, 2019) and prepare this annual monitoring report. Monitoring in 2021 will be completed following the recommendations in Golder's EMP (2019) and those provided in this report.

6.0

MONITORING PROGRAM RESULTS

The 2020 Site observations, water level measurements, groundwater quality exceedances, water quality trends, and landfill gas monitoring results are discussed in this section. The 2020 water quality results are summarized in Appendix C, and historical water quality and landfill gas data are provided in Appendix D and E, respectively. Laboratory certificates of analysis are attached in Appendix F.

6.1

Site Observations

Monitoring well locations were readily accessible and in good condition in 2020. All wells exhibited reasonably good recharge rates and provided sufficient water to sample.

In May 2019, Mr. Glen Furey of Kicking Horse Water Services installed a permanent pump in the newly drilled MW18-11 to facilitate sampling. According to Mr. Furey MW18-11 was not properly developed after it was drilled and installed in 2018, and the December 2018 sample was collected from a slurry of drill cuttings. The purpose of well development was to purge the well of residual fines and materials left in the well following drilling, and to restore natural groundwater flow and chemistry in and around the well. Based on this, the 2018 sample collected from MW18-11 was likely not representative of actual groundwater conditions near the well.

Ecoscape endeavoured to develop the MW18-11 during the 2019 sampling events; however, the well routinely ran dry after approximately one (1) well volume of water was purged. Water samples were collected after the well recovered to half a well volume, and we expect any residual fines and drilling-related materials to be removed from the well with continued purging during future sampling events.

Ecoscape staff did not observe signs of stressed vegetation, leachate breakout or ponding water at or near any of the monitoring locations during the 2020 sampling events. Additionally, Ecoscape did not observe wildlife (including medium and large carnivores) at the Site in 2020.

6.2 Water Levels and Groundwater Flow Direction

Ecoscape recorded static water levels within each monitoring well on March 24, May 20, August 24 and November 3, and summarized the results in Appendix C. Historical water levels measured between 2009 and 2019 are provided in Appendix D.

Ecoscape installed electronic data loggers in the near-Site monitoring wells on March 24 to help better understand groundwater fluctuations at the Site. Data from these loggers will be downloaded during the winter 2021 sampling event, and will be discussed in the 2021 Updated Hydrogeological Characterization Report.

In 2020 measured water levels remained consistent with previous years, with minimal (<0.2 m) seasonal fluctuations observed at MW09-6S, MW09-6D, MW10-08 and MW18-10. Water levels at MW18-11 rose by 0.84 m between March and May, and then fluctuated by <0.1 m for the remainder of 2020 (Figure 4).

Ecoscape surveyed monitoring well elevations to a ± 0.01 m vertical accuracy in June 2020 to facilitate groundwater elevation and flow direction measurements at the Site. Groundwater level contours and inferred groundwater flow direction for May 2020 are shown on Figure 3. Groundwater elevations are highest at upgradient well MW10-08, and, following topography, decrease towards the southwest with lower groundwater elevations at MW09-6D, -6S, and MW18-10, followed by the lowest groundwater elevations observed at MW18-11 situated at the southwest corner of the landfill. Groundwater levels in MW18-11 are similar to those measured in the valley-bottom sand and gravel aquifer. Based on this, groundwater flow through the unmapped bedrock aquifer below the Site is towards the southwest and Kicking Horse River, with an estimated hydraulic gradient of 0.5 m/m near the landfill.

Elevations of the piezometric surface were consistently higher at MW09-6S compared to MW09-6D for all sampling events in 2020 with the exception of March. Groundwater elevations in this nested well typically differed by 0.01 to 0.1 m, indicating a slight downward hydraulic gradient between the sand and gravel water-bearing unit and unmapped bedrock aquifer at this location.

6.3 Single Well Response Tests

On May 19, 2020, Ecoscape performed single-well response tests (i.e., slug tests) at monitoring wells MW09-6S, -6D, MW10-08 and MW18-11 to obtain horizontal saturated hydraulic conductivity values (K), which are a measurement of the ability for water to flow through sediments or bedrock fractures.

Rising and/or falling head tests were conducted by inserting and/or removing a solid PVC slug of known volume into the monitoring wells and monitoring recovery response. MW18-11, which is outfitted with a built-in pump, was tested by drawing down the water to the

pump intake and measuring the recovery. Manual water level measurements were collected during each test using an electric water tape, and electronic data loggers were installed in each well to record water levels at a 1 second interval. The level logger malfunctioned during the test completed at MW09-6D; however, manual measurements provide a reasonable estimate of the well's response during the slug test.

Water level response data was analyzed using the Hvorslev (1951) method and estimated K values are summarized in Table 3 below.

Table 3: Estimated K Values Based on Single Well Hydraulic Conductivity Testing			
Monitoring Well	Aquifer Material	Geometric Mean K (m/sec)	Geometric Mean K (m/day)
MW09-6S	Sand and Gravel	3.98×10^{-5}	0.057
MW09-6D	Bedrock	2.58×10^{-8}	3.71×10^{-5}
MW10-08	Bedrock	9.21×10^{-8}	1.33×10^{-4}
MW18-11	Bedrock	5.85×10^{-7}	8.42×10^{-4}

As expected, the estimated K-value for the sand and gravel unit at MW09-6S was several orders of magnitude higher than those measured in the bedrock aquifer and estimates of K in bedrock were similar between the three (3) remaining wells. Importantly, estimated K-values were consistent with the typical K-values for sand and gravel and bedrock (Freeze and Cherry, 1979).

The single well response test results are summarized and plotted in Appendix H.

6.4 2020 Analytical Results Relative to Applicable Standards and Guidelines

Ecoscape collected groundwater samples on March 24, May 20, August 24 and November 3, 2020.

During each sampling event, personnel collected samples from wells with sufficient groundwater for sampling and submitted them to Caro in Kelowna, BC for chemical analysis of the following parameters:

- Total Alkalinity (total as CaCO₃);
- Anions (chloride, fluoride and sulfate);
- Electrical conductivity and pH;
- Dissolved Metals;
- Total Hardness (as CaCO₃);

- Nutrients (Nitrate (as N), Nitrite (as N), and Ammonia (as N));
- Total Dissolved Solids (TDS);
- Turbidity;
- Volatile Organic Compounds (VOCs);
- Light and Heavy Extractable Petroleum Hydrocarbons (LEPH and HEPH) (May only); and
- Polycyclic Aromatic Hydrocarbons (PAH) (May only).

In addition, Ecoscape recorded pH, temperature, DO, ORP and specific conductance in the field.

2020 groundwater chemistry results are provided in detail in Appendix C following the text, with exceedances from the quarterly sampling events summarized in Table 4 below.

Table 4: Summary of 2020 Water Quality Exceedances		
Monitoring Location	Guideline or Standard	Exceeding Parameter
DMW-4	CSR DW	Lithium (dissolved), Strontium (dissolved)
	GCDWQ AO	Total dissolved solids
DMW-1b	CSR DW	Arsenic (dissolved) Lithium (dissolved)
	GCDWQ AO	Iron (dissolved), Total dissolved solids
	GCDWQ MAC	Arsenic (dissolved)
MW09-6S /-6D	CSR DW	Lithium (dissolved), Sodium(dissolved), Chloride, Nitrate (as N), Sulfate
MW10-8	CSR DW	Lithium (dissolved), Sodium(dissolved), Chloride, Tungsten (dissolved),
MW18-10	CSR DW	Lithium(dissolved), Sodium(dissolved), Chloride, Nitrate (as N)
MW18-11	CSR DW	Lithium (dissolved), Arsenic (dissolved)
Town Well #4	GCDWQ AO	Total dissolved solids

All other parameters analyzed by the laboratory were found at concentrations less than applicable guidelines and standards for the Site.

Dissolved lithium concentrations exceeded the BC CSR DW standard of 0.008 mg/L in samples from nearly all monitoring locations in 2020. However, ENV protocol 9 stipulates a background concentration of 0.096 mg/L in the Thompson-Okanagan region. While the Site is not within this mapped region, on-site lithium concentrations are below this value and are likely naturally elevated in the area given nearly monitoring network-wide exceedances of the CSR DW standard.

Background Water Quality

Background groundwater quality at the Site is represented by samples collected from domestic wells DMW-1b and DMW-4.

Consistent with previous years, dissolved arsenic exceeded the GCDWQ MAC guideline and CSR DW standard of 0.01 mg/L in all 2020 samples collected from DMW-1b, with concentrations of 0.047 mg/L (March), 0.0533 mg/L (May), and 0.0525 mg/L (August). Dissolved arsenic concentrations are orders of magnitude lower at remaining monitoring locations (with the exception of concentrations of approximately 0.02 mg/L in MW18-11 samples), with many concentrations at or below the laboratory detection limit.

Dissolved strontium concentrations in samples from DMW-4 once again exceeded the CSR DW standard of 2.5 mg/L, ranging from 3.96 mg/L (May) to 5.33 mg/L (August) in 2020. Dissolved strontium has historically exceeded water quality criteria at this location.

Dissolved lithium exceeded the CSR DW standard of 0.008 mg/L in all 2020 samples collected from both DMW-1b and DMW-4, with maximum concentrations of 0.0254 mg/L and 0.0532 mg/L in May 2020, respectively. Given nearly monitoring network-wide exceedances, and a BC ENV background concentration of 0.096 mg/L in other regions of the province, it is likely that dissolved lithium is naturally elevated in the area.

Dissolved iron (Figure 8) was detected above GCDWQ AO guideline of 0.3 mg/L in all 2020 samples from DMW-1b, most recently measured at 0.776 mg/L (August 2020), which may be attributable to erosion and weathering of soil and minerals near the well.

Finally, total dissolved solids exceeded the GCDWQ AO concentration of 500 mg/L in all 2020 samples from domestic wells DMW-1b and DMW-4. Samples from DMW-4 had TDS concentrations ranging from 727 mg/L (May) to 804 mg/L (August), while samples from DMW-1b had TDS concentrations ranging from 712 mg/L (May) to 739 mg/L (August).

Based on the above, elevated arsenic, iron, lithium and strontium concentrations likely occur naturally in groundwater at and near the Site, and are not necessarily attributable to ongoing landfilling activities.

Onsite and Near Site Monitoring Wells

Monitoring wells MW09-6S, -6D, MW18-10 and MW18-11 are situated on or immediately adjacent to the Site, cross- to downgradient of the landfill, and are thus used to monitor potential offsite migration of leachate-impacted groundwater.

Similar to 2019, the following parameters exceeded applicable standards on and immediately adjacent to the Site in 2020: chloride (Figure 5) dissolved sodium (Figure 5), sulfate (Figure 6), nitrate (Figure 7), and dissolved lithium. Additionally, dissolved arsenic

exceeded in samples from MW18-11 in 2020. As discussed above dissolved lithium and arsenic may be naturally occurring in the area, based on measured background groundwater chemistry.

Downgradient wells MW09-6S and -6D continued to exhibit the greatest number of exceedances compared to remaining monitoring locations, suggesting ongoing leachate impacts at the western Site boundary. Chloride, nitrate, sulfate, dissolved lithium, and dissolved sodium concentrations exceeded provincial standards in 2020, with sulfate in samples from MW09-6S and -6D being the highest observed concentrations on and near the Site. Nitrate in samples from MW09-6S and -6D were also the highest observed on Site, until November 2020 when nitrate in the sample from MW18-10 rose to 67.9 mg/L (from 24.4 mg/L in August 2020), above the MW09-6S and -6D sample concentrations of 34.2 mg/L and 34.6 mg/L, respectively. MW09-6D (bedrock) was screened 30 m deeper than -6S (overburden-bedrock interface), which infers leachate may have migrated 30+ m into bedrock at this location.

Groundwater samples from cross- to downgradient monitoring well MW18-10 exceeded applicable standards for chloride, nitrate, dissolved lithium and dissolved sodium concentrations, while dissolved lithium and dissolved arsenic concentrations exceeded in samples from downgradient monitoring well MW18-11.

Offsite Monitoring Wells

Monitoring well MW10-08, DMW20-01, and Town Wells #4 and #6 are situated well beyond the Site boundary.

Groundwater samples from cross- to upgradient monitoring well MW10-08 exceeded applicable standards for chloride (Figure 5), dissolved lithium, dissolved sodium (Figure 5), and dissolved tungsten during three or more sampling events, with chloride and sodium concentrations being the highest measured concentrations at any well in 2020. Dissolved tungsten concentrations have only been elevated in samples from MW10-08 since 2018, and samples from remaining monitoring locations have never shown a dissolved tungsten concentration above water quality criteria. Dissolved tungsten concentrations appear to have decreased in samples from MW10-08, exceeding the CSR standard of 0.003 mg/L in fall 2018 with a concentration of 0.006 mg/L, and decreasing to 0.0052 mg/L in August 2020, and below the standard in November 2020 at 0.0018 mg/L.

Samples from Town Well #4 were found to exceed the GCDWQ AO total dissolved solids (TDS) guideline of 500 mg/L during all four sampling events in 2020. Concentrations ranged from a high of 607 mg/L in March 2020, reducing to near guideline at 559 mg/L in November 2020. Ecoscape understands that there may have been pump work done on this well in 2020, which could have temporarily increased TDS concentrations via disturbance. With further pumping of this well it is expected that the TDS concentrations will likely decrease.

Domestic monitoring well DMW20-01, added to the monitoring program in 2020 to monitor general downgradient impacts, had no exceedances of applicable guidelines and standards in its 2020 samples.

Concentrations of remaining analyzed parameters were less than applicable guidelines and standards in groundwater collected from Town Wells #4 and #6 in 2020.

6.5 Water Quality Trend Analysis from 2002 to 2020

Analyses and discussion of spatial and temporal trends in landfill leachate indicator parameter concentrations at and near the Site are discussed in this section.

Landfill leachate indicator parameters are those which are typically present at concentrations above natural, background concentrations in leachate-impacted groundwater. The chemical composition of landfill leachate can vary, and largely depends on waste composition, climatic conditions, and the age and degradation rate of the solid waste (Bulc 2006); however, indicator parameters generally include, but are not limited to, alkalinity, chloride, electrical conductivity, sulfate, sodium, ammonia, iron, manganese, and heavy metals cadmium, chromium, copper, nickel and zinc (Christensen et al. 2001). Furthermore, calcium and hardness are often elevated at the leading edge of a leachate-impacted groundwater plume, a phenomenon sometimes referred to as a hardness halo (Griffen et al. 1976), as a result of ion exchange between calcium and/or magnesium ions bound to sediments and various cations present in the leachate.

Ecoscape plotted time-series graphs of select leachate indicator parameters, displaying changes in concentration over time between 2002 and 2020. These are shown in Figures 5 through 8 as follows:

- Chloride and Dissolved Sodium (Figure 5);
- Electrical Conductivity and Sulfate (Figure 6);
- Nitrate (Figure 7); and
- Dissolved Iron and Dissolved Manganese (Figure 8).

Groundwater quality data from 2002 to 2020 are summarized in Appendix D.

Like previous years, leachate parameter concentrations, including chloride, nitrate, ammonia, sodium, sulfate, hardness, alkalinity, select dissolved metals, including boron, calcium, magnesium, potassium, and sulfur and electrical conductivity are generally highest in samples from MW09-6S and -6D compared to remaining monitoring locations; however, most of these parameters appear to be stable or decreasing with time. Some indicator parameters were also elevated in samples from MW18-10, MW18-11 and MW10-08, but to a lesser degree than MW09-6S, and -6D, with the exception of sodium and chloride being highest in samples from MW10-08.

Remaining monitoring locations exhibit similar groundwater chemistry to that observed at background monitoring locations DMW-1b and DMW-4.

Individual discussions for select parameters follow.

6.5.1 Chloride

Chloride concentrations are typically elevated in leachate due to degradation of food waste and paper products; however, chloride also naturally occurs in groundwater, and may come from external sources such as road salt. Because chloride is conservative (non-reactive) in the environment, it is often found at the leading edge of a landfill leachate plume and is thus useful in evaluating the plume's extent.

Like previous years, chloride concentrations remained above the CSR DW standard of 250 mg/L in samples collected from MW09-6S, -6D, MW10-08, and MW18-10. Concentrations at remaining monitoring locations were below applicable standards in 2020.

Concentrations continued to be highest in samples from cross- to upgradient well MW10-08, decreasing from 629 mg/L in March 2020 to 558 mg/L in November 2020 (Figure 5). MW10-08 was not sampled between 2015 and 2017; prior to then concentrations nearly doubled from just over 500 mg/L in 2010 to almost 1,000 mg/L in 2012, and then decreased to 666 mg/L by May 2015.

Chloride concentrations in samples from MW09-6S and -6D also continued to be elevated above background, but have shown a steady decrease since 2012. Highest concentrations at this location were observed in February 2010 at around 715 mg/L. March 2020 concentrations in MW09-6S and -6D samples were slightly higher at 380 mg/L and 399 mg/L, respectively, compared to November 2020 concentrations at 366 mg/L and 371 mg/L, respectively.

MW18-10 was drilled in June 2018. Since installment chloride concentrations in samples from MW18-10 appeared to have increased somewhat from a minimum of 299 mg/L (May 2019) to a maximum of 376 mg/L (November 2020). MW18-11 was also drilled in 2018, and chloride concentrations in samples from the well increased from 23.2 mg/L in December 2018 to 113 mg/L in March 2020. Chloride concentrations then decreased to 60.6 mg/L in May 2020 and increased again to 84.1 mg/L in the November 2020 sample.

Background chloride concentrations measured in samples from DMW-1b and DMW-4 have been historically stable with concentrations generally less than 50 mg/L. Concentrations were lower in samples from DMW4 than DMW-1b, with recent concentrations of 8.98 mg/L (November 2020) and 42.2 mg/L (August 2020), respectively. Concentrations in samples from Town Well #4 were above background in 2020, ranging from 99 mg/L (March) to 92.5 mg/L (November) while concentrations in Town Well #6 samples were near or below

background at 60.2 mg/L (November) and concentrations in samples from newly added domestic monitoring well DMW20-01 were also below background at 38.8 mg/L (August 2020).

No observable seasonal trends are noted in chloride concentrations, with annual maximum concentrations varying between spring, summer and fall from year to year.

6.5.2 Sodium

Sodium is often the dominant cation in leachate; however, various geochemical processes, including dissolution, precipitation, and cation exchange may affect concentrations during groundwater transport.

Sodium concentrations continued to exceed the CSR DW standard of 200 mg/L in samples from MW09-6S, -6D and MW10-08, while concentrations in MW18-10 samples exceeded for the first time in October 2019 and again in November 2020. MW18-11 exceeded once in the December 2018 sample. Remaining monitoring locations were below applicable standards in 2020.

Like chloride, sodium concentrations were highest in samples from MW09-6S, -6D and MW10-08. Sodium concentrations in samples from these locations followed a similar trend in the past and increased from approximately 300 mg/L in 2011 to about 450 mg/L sometime between 2012 (MW10-08) and 2013 (MW09-6S). Concentrations dropped to 297 mg/L in the October 2018 sample from MW09-6S and 370 mg/L in the December 2018 sample from MW10-08. Since then, concentrations have stabilized around 300 mg/L (with the exception of a temporary increase to 431 mg/L in the MW10-08 October 2019 sample). Sodium concentrations in samples from MW10-08, MW09-6S, and -6D, were 334 mg/L, 286 mg/L, and 286 mg/L in November 2020, respectively (Figure 5).

Sodium concentrations were also elevated in samples from monitoring wells MW18-10 and MW18-11. Concentrations in MW18-10 samples increased from 168 mg/L in June 2018 to 206 mg/L in October 2019, decreased to 127 mg/L in May 2020 and increased once again to 239 mg/L in November 2020. Conversely, concentrations in MW18-11 samples decreased from 270 mg/L in December 2018 to 81.1 mg/L in May 2019, and have since increased to 113 mg/L in November 2020.

Concentrations in samples from remaining monitoring locations continued to remain low and stable, generally below 50 mg/L.

No observable seasonal trends were noted in sodium, annual maximum values varied between spring, summer and fall from year to year.

6.5.3 Electrical Conductance

There are no applicable guidelines or standards for electrical conductance (typically called conductivity); however, electrical conductivity is useful in monitoring landfill leachate impacts because it is a measure of the total dissolved minerals within groundwater.

Similar to sodium and chloride, electrical conductivity remained highest in samples from MW09-6S and -6D followed by MW10-08 and MW18-10 (Figure 6). Conductivity in MW09-6S samples has historically fluctuated between 4,000 and 5,200 $\mu\text{S}/\text{cm}$, and had a decreasing trend from November 2013 to October 2019, reaching a historical low of 3,920 $\mu\text{S}/\text{cm}$. Concentrations have since stabilized and were most recently measured at 3,970 $\mu\text{S}/\text{cm}$ in November 2020. Concentrations in 2020 samples from MW10-08 ranged from 2,590 $\mu\text{S}/\text{cm}$ (May) to 2,880 $\mu\text{S}/\text{cm}$ (November), and were consistent with historical values, which varied between approximately 2,500 and 3,500 $\mu\text{S}/\text{cm}$ since 2010.

Electrical conductivity was also elevated above background levels in MW18-10 samples, with values slightly increasing from 2,390 $\mu\text{S}/\text{cm}$ in June 2018 to 2,650 $\mu\text{S}/\text{cm}$ in October 2019, followed by somewhat variable concentrations in 2020 with a low of 2,420 $\mu\text{S}/\text{cm}$ (May) and high of 3,240 $\mu\text{S}/\text{cm}$ (November).

Background electrical conductivity is quite high at the Site compared to other CSRD landfill sites, likely due to dissolution of bedrock minerals during groundwater transport. Values have been stable at DMW-1b and DMW-4, ranging from 1,060 to 1,230 $\mu\text{S}/\text{cm}$ at both locations in 2020. Values at remaining monitoring locations are near or below background.

No observable seasonal trends were noted in electrical conductivity, with annual maximum values varying between spring, summer and fall from year to year.

6.5.4 Sulfate

Sulfate is often generated in landfill leachate during the decomposition of organic matter and soluble waste.

Sulfate concentrations were below the CSR DW standard of 500 mg/L at all monitoring locations in 2020 except MW09-6S and -6D samples which have exceeded the standard since start of monitoring at this location in 2009 (Figure 6).

Sulfate concentrations in groundwater continued to be highest at MW09-6S and -6D ranging from 611 mg/L (May) to 690 mg/L (March) in 2020. Concentrations in MW09-6S samples have been historically variable since it was first sampled in 2009, remaining between 600 mg/L and 1,000 mg/L and showing no seasonal trends.

Concentrations at background wells DMW-1b and DMW-4 were the next highest at the Site, but still below guidelines. Sulfate in samples from DMW-1b have remained relatively stable around 125 mg/L, with 2020 concentrations of 110 mg/L (March), 127 mg/L (May), and 128 mg/L (August). Concentrations at DMW-4 were somewhat higher and more

variable, and fluctuated around 250 mg/L, 2020 concentrations ranged from 213 mg/L (May) to 251 mg/L (August).

Sulfate concentrations at remaining monitoring locations continued to be well below background (i.e., less than half). No observable seasonal trends were noted in sulfate, with annual maximum values varying between spring, summer and fall from year to year.

6.5.5 Nitrogen Compounds

Garden and food waste, and biosolids generally contribute to organic nitrogen within the landfill mass. Over time, waste decomposition can deplete oxygen, resulting in anaerobic conditions favourable for ammonification, during which nitrogen is converted to ammonia by heterotrophic bacteria. When ammonia in groundwater encounters appropriate aerobic conditions, ammonium is oxidized by microorganisms to nitrate (i.e., nitrification), with nitrite as an intermediary product.

Nitrate concentrations continued to exceed the CSR DW standard of 10 mg/L in samples from MW09-6S, -6D and MW18-10, while concentrations at remaining monitoring locations remained below 2 mg/L.

Concentrations in MW09-6S and -6D samples have historically trended downwards from about 70 mg/L in 2010 to about 30 mg/L in 2018. Since then, concentrations have been somewhat variable. Highs of 45 mg/L and 43.4 mg/L were observed in May 2020 samples at MW09-6S and -6D, respectively, with lows of 32.7 mg/L and 30.6 mg/L observed in March 2020, respectively.

Nitrate in samples collected from MW18-10 have also been elevated, with an initial concentration of 12.9 mg/L in June 2018, marginally exceeding the standard of 10 mg/L. Concentrations have since been variable, with 2020 concentrations decreasing from 40 mg/L (March) to 21.3 mg/L (May), followed by a Site -wide maximum concentration of 67.9 mg/L (November).

Background nitrate concentrations measured in groundwater at DMW-1b and DMW-4 have remained below 1 mg/L, ranging from <0.10 mg/L in DMW-1b samples (all three sampling events in 2020) to 0.666 mg/L in the May 2020 sample from DMW-4. Concentrations in DMW-1b samples were generally <0.10 mg/L with the exception of a few increases in 2014 and 2018, but no higher than 0.4 mg/L. While concentrations in DMW-4 samples have been variable, but consistently less than 1 mg/L.

Nitrate concentrations at Town Wells #4 and #6 remained slightly above background. Concentrations appeared to gradually increase at both wells from 2012 to 2019, but were slightly lower in 2020 samples at 1.5 mg/L (May) and 1.03 mg/L (November) at Town Wells #4 and #6, respectively.

Ammonia concentrations were slightly elevated in samples from MW09-6S, -6D and MW18-10 compared to other monitoring wells, with maximum concentrations of 1.9 mg/L and 2.6 mg/L in November 2020 samples from MW09-6D and MW18-10, respectively.

6.5.6 Iron and Manganese

Decomposition of organic matter in leachate can deplete oxygen, creating reducing conditions (and generating organic acids). Under reducing conditions, iron and manganese oxides (both naturally occurring and anthropogenically produced) are generally reduced to more soluble forms, mobilizing dissolved iron and manganese in groundwater.

Dissolved iron exceeded the GCDWQ AO guideline of 0.3 mg/L in all 2020 samples from background monitoring well DMW-1b, with a maximum concentration of 0.776 mg/L in August. Concentrations at remaining monitoring locations were below applicable guidelines and standards in 2020.

Concentrations in samples from background monitoring well DMW-4 were typically at or near laboratory detection limits (<0.010 mg/L), with a location maximum of 0.122 mg/L (May 2019), and 2020 concentrations below laboratory detection limits for all sampling events except for a concentration of 0.014 mg/L in August 2020.

Dissolved iron concentrations have been variable in MW18-11 samples since 2019, with 2020 concentrations ranging from 0.052 mg/L (March) to 2.28 mg/L (May). Similar to 2019, concentrations then decreased to 0.64 mg/L (November).

Consistent with most previous sampling events, iron concentrations at remaining monitoring locations were near or below background concentrations in 2020. Concentrations have intermittently spiked in the past at MW09-6S, MW10-08 and Town Well #4; however, given the typically low concentrations in samples from the leachate-impacted monitoring wells MW09-6S and MW09-6D, iron concentrations are likely naturally elevated at DMW-1b and MW18-11.

There were no dissolved manganese exceedances in 2020. Manganese concentrations were consistently elevated above background concentrations in samples from downgradient monitoring wells MW09-6S, -6D, MW18-10 and MW18-11 since start of monitoring. This phenomenon is consistent with manganese being mobilized due to anaerobic and reducing conditions in leachate impacted groundwater below and near the landfill, with concentrations being lower in more oxidizing conditions upgradient, cross-gradient and further downgradient of the Site.

Manganese concentrations have been consistently highest in samples from MW18-10 since it was first sampled in June 2018 and ranged from 0.126 mg/L (September 2018) and 0.231 mg/L (May 2019), with a most recent concentration of 0.198 mg/L (November 2020).

Manganese concentrations in samples from MW18-11 appeared to have trended downwards from 0.294 mg/L (December 2018) to 0.0286 mg/L (November 2020).

Manganese concentrations in samples from Town Well #6 were consistently below background until 2020, when an increase occurred to 0.043 mg/L (November 2020). Concentrations in MW09-6S samples were first measured at 0.518 mg/L in 2009 followed by a decrease to 0.0882 mg/L in 2012 (Figure 8), and have fluctuated around 0.1 mg/L since then, with a most recent concentration of 0.0968 mg/L (November 2020).

Manganese concentrations at remaining monitoring locations have remained stable and near or below measured background concentrations.

6.5.7 Petroleum Hydrocarbons and Volatile Organic Compounds

Samples collected during winter, spring, summer, and fall of 2020 were analyzed for volatile organic compounds (VOCs) and Light and Heavy Extractable Petroleum Hydrocarbons (LEPH and HEPH). Samples were also analyzed for Polycyclic Aromatic Hydrocarbons (PAHs) at all monitoring locations in May 2020 except for at Town Well #6.

L/HEPH and PAHs were below the laboratory detection limits at all locations except for HEPH, which marginally exceeded detection limits at MW18-11 (313 ug/L vs 250 ug/L laboratory detection limit). There are no BC CSR DW standards for HEPH.

All VOCs concentrations were less than the reported detection limit at all sampling locations in 2020 except for Toluene during the winter sampling event at MW18-11. Toluene previously exceeded the CSR DW standard of 60 µg/L in MW18-11 samples with a concentration of 150 µg/L in May 2019 and decreased by an order of magnitude to 12.8 µg/L in October 2019. Toluene concentration was at 8.8 µg/L in March 2020 and below detection limits for the remainder of 2020.

Toluene historically marginally exceeded the 60 µg/L CSR DW standard in the September 2018 sample from cross- to upgradient well MW10-08 with a concentration of 60.2 µg/L. Toluene concentrations have also been detected in MW09-6S samples (6.6 µg/L in April 2017) and in MW18-10 samples (10.8 µg/L to 16.2 µg/L in 2018); these concentrations were below the CSR DW standard. Persistently elevated toluene concentrations have not been observed at any monitoring location.

We understand that Section 3.4 of the OC was recently amended (October 2019) by ENV such that the Golden RDF can no longer accept hydrocarbon-impacted soil (concentrations of substances less than “hazardous waste” but exceeding the CSR Industrial (IL) numerical standards). Although not explicitly stated in the OC amendment, we understand this decision was largely based on elevated toluene concentrations in groundwater at downgradient monitoring well MW18-11.

Toluene is added to gasoline along with benzene and xylene and is often present in hydrocarbon-impacted soil. Considering the Site's high-volume and ongoing acceptance of hydrocarbon-impacted soil, we would expect persistently elevated toluene concentrations in groundwater if this were a concern, particularly at leachate impacted monitoring wells MW09-6S and -6D. However, toluene concentrations have varied both spatially and temporally, with no obvious long-term trends. Furthermore, we would expect to see detectable concentrations of L/HEPH, PAHs, benzene, ethylbenzene and xylenes (i.e., remaining BTEX parameters typically included in gasoline mixtures) in downgradient monitoring wells. However, these parameters have not been detected in downgradient groundwater to date. Toluene and HEPH may have been introduced to MW18-11 during drilling activities in 2018.

6.5.8 Remaining Leachate Indicator Parameters

Similar to the above-discussed leachate indicator parameters, alkalinity, hardness, and some dissolved metals, including boron, calcium, potassium and sulfur were elevated in samples from MW09-6S and -6D and to a lesser degree MW18-10 compared to the other monitoring locations and were likely associated with leachate impacts; however, these parameters remain below applicable standards for the Site.

6.6 Landfill Gas Monitoring Results

Landfill gas is generated by the biodegradation of organic material in landfills, and typically comprises equal parts of methane (CH_4) and carbon dioxide (CO_2). Other gases are also generated within a landfill mass including oxygen (O_2) and nitrogen (N_2), and trace volumes of other gases such as hydrogen sulfide (H_2S) and carbon monoxide (CO). Landfill gas constituent concentrations are contingent on volume and composition of waste material, decomposition rates of waste material, and the degree of atmospheric exchange occurring within the landfill cell.

Methane (CH_4) is the most critical landfill gas constituent, as it becomes explosive at concentrations between approximately 5 and 15 % by volume in air (CRA 2010). The lower end of this range (5 %) is commonly referred to as the lower explosive limit (LEL), while the upper end is referred to as the upper explosive limit (UEL).

Carbon dioxide (CO_2) is denser than air and may displace oxygen from subsurface structures such as wells and manholes, potentially resulting in asphyxiation for personnel entering a subsurface structure without properly monitoring conditions beforehand.

Hydrogen sulfide (H_2S) becomes highly toxic at concentrations above 50 ppm, but is generally smelled at 0.05 ppm and presents a conspicuous rotten egg-like odour by 3 ppm. As such, H_2S is generally identified by on-site personnel prior to reaching highly toxic levels. Nonetheless, monitoring H_2S is important because concentrations above 10 ppm can cause headaches and nausea.

Carbon monoxide (CO) is an odourless gas that mixes freely with air and is typically produced by the incomplete combustion of fossil fuels (Technical Safety BC, 2020). It has an LEL of 12.5 % (at which point it requires a temperature of 609 °C to ignite) and UEL of 74 %.

The CSRD operations team conducted landfill gas monitoring once annually since 2013; results are presented in Appendix E. Ecoscape commenced tri-annual landfill gas monitoring in 2020; results are presented in Table 5 below. Gas probes GP20-01 through GP20-02 were installed in July 2020, and hence were only sampled for the summer and fall events.

Table 5: 2020 Gas Monitoring Results						
		Methane (% CH ₄)	Carbon dioxide (% CO ₂)	Oxygen (% O ₂)	Hydrogen sulfide (% H ₂ S)	Carbon monoxide (% CO)
GP-6S	19-May-20	0	3.1	16.9	0	0
	24-Aug-20	0.1	2.4	18.2	0	0
	3-Nov-20	0.1	2	19.2	0	0
GP-6D	19-May-20	0.1	6.1	12.8	0	1
	24-Aug-20	0.1	1.5	19.5	0	1
	3-Nov-20	0	2.4	18.8	0	0
GP-7S	19-May-20	0.1	1.4	11.7	0	0
	24-Aug-20	0	0.1	20	0	1
	2-Nov-20	0	0.9	16.7	0	0
GP-7D	19-May-20	0.1	1.6	13	0	0
	24-Aug-20	0	0.1	20	0	1
	2-Nov-20	0	1.7	16.4	0	0
GP20-01S	24-Aug-20	0	0.1	20.3	0	0
	3-Nov-20	0	2.4	18.6	0	0
GP20-01D	24-Aug-20	0	0.1	20.2	0	0
	3-Nov-20	0	1.9	18.9	0	0
GP20-02S	24-Aug-20	0	0.1	20.4	0	0
	3-Nov-20	0	1.5	20.1	0	0
GP20-02D	24-Aug-20	0	0.2	20.5	0	0
	3-Nov-20	0	1.8	17.9	0	0

No concerning results were found in historical data, with a maximum methane (CH₄) concentration of 0.2%, well below the LEL of 5%. Carbon dioxide (CO₂) was consistently between 0.5 and 6%, and oxygen (O₂) between 11 and 20% in probes GP6D, -6S, GP7D, and -7S.

Similarly, there were no concerning results in the 2020 data. Gas probes GP-6S, -6D, GP-7S, and -7D had maximum methane and carbon monoxide readings of 0.1% and 1%, respectively. These were well below the LELs of 5% and 12.5%, respectively. Remaining gas probes GP20-01S, -1D, GP20-02S, and -02D had readings of 0% methane and 0% carbon monoxide for all 2020 events. All gas probes showed readings of 0% hydrogen sulfide for all 2020 events.

7.0 PIPER DIAGRAM

A Piper diagram is a useful tool for characterizing groundwater chemistry and serves as a visual aid in differentiating between distinct water chemistry signatures and how these compare across monitoring locations. A Piper diagram shows relative percent of anions and cations in two ternary plots, which are then projected onto a central diamond plot. The major ions include Na^+ , Ca^+ , Mg^+ , K^+ , HCO_3^- , CO_3^{2-} , SO_4^- and Cl^- , which typically account for the vast majority of the total dissolved solids present in natural groundwater. This central diamond plot is where monitoring locations can be visually grouped into distinct hydrogeochemical categories commonly referred to as facies. We produced a Piper plot using the average results from the 2020 sampling data and present it in Figure 9.

Potable water sources including Town Wells #4 and #6, and domestic wells DMW-1b, DMW-4, and DMW20-01 plotted close to one another in the magnesium bicarbonate type. Monitoring wells MW18-10 and MW18-11 (at southern boundary of the Site) also plotted as magnesium bicarbonate type, however slightly further from the potable water sources. Downgradient well MW18-10 was almost on the border of the mixed type which included monitoring wells MW09-6S and -6D known to be impacted by leachate, indicating it was potentially impacted by landfill activity. MW18-11 was more offset from this mixed type zone, suggesting it may have had little to no impact from landfill leachate. The isotope analysis discussed in Section 8 provided additional detail regarding groundwater chemistry at MW18-11. Upgradient well MW10-08 plotted on the border of the mixed type and sodium chloride type. Chloride and sodium were consistently elevated at this location since 2009, and since it was somewhat further on the piper diagram from impacted wells MW09-6S and -6D (which plotted right on top of each other), we suspect the source of ions was different from the leachate chemistry signature (likely road salt).

8.0 ISOTOPE ANALYSES

Ecoscape submitted samples for an isotope analysis suite in August 2020 on Oxygen-18 (^{18}O), Chlorine-37 (^{37}Cl), deuterium (^2H), and tritium (^3H). ^{18}O and ^2H are indicators of groundwater origin, ^3H is a leachate indicator parameter, and ^{37}Cl is useful in elucidating chloride sources. This concept is discussed in more detail below.

When expressed as ratios between two isotopes of a given element, the delta symbol is used. For example, $\delta^{18}\text{O}$ is calculated based on the ratio between the more common

Oxygen-16 isotope and less common Oxygen-18 isotope. $\delta^{18}\text{O}$ and $\delta^2\text{H}$ are useful in differentiating between different water source-types: as these elements pass through the hydrologic cycle, they undergo unique fractionation through hydrologic processes such as precipitation and evaporation, wherein the characteristics of the environment for each process (such as moisture content, vapour pressure, humidity, temperature, and altitude) influence the fractionation process. In shallow groundwater regimes, $\delta^{18}\text{O}$ and $\delta^2\text{H}$ serve as tracers because their concentrations are determined by their unique fractionation developed during precipitation and by the amount of evaporation that occurs before the water penetrates the subsurface (Freeze & Cherry. 1979). Thus, different isotopic ratios are found in different water sources, making $\delta^{18}\text{O}$ and $\delta^2\text{H}$ useful tracers to determine source waters (University of Arizona, SAHRA).

Hydrogen has two stable isotopes, ^1H and ^2H (deuterium), and one radioactive isotope, ^3H (tritium). Large concentrations of tritium were created in the 1950's and 1960's due to atmospheric testing of nuclear weapons, which resulted in tritium entering groundwater systems via recharge due to the infiltration of precipitation. Thus, groundwater with concentrations of tritium higher than 5 to 10 tritium units, is modern (or bomb tritium) water (Freeze and Cherry 1979). Thus, tritium concentrations can be used to roughly age groundwater as pre- or post-1954.

Tritium concentrations are also often elevated in municipal solid waste leachate, largely owing to gaseous tritium lighting devices used in some emergency exit signs, compasses, watches, and even novelty items, such as 'glow stick' key chains (Mutch and Mahoney, 2008). Tritium is useful for studying leachate impacts as it is not significantly affected by reactions in the environment other than radioactive decay (Freeze & Cherry 1979).

Samples for the isotope analysis were taken August 24 and 25, 2020 and results are presented in Table 6 below. DUP A is a duplicate of the sample from MW09-6S. RPD values are less than 1% for each analyte except for chlorine-37, for which the duplicate value (-0.20) is significantly different than the original (0.34). A description of RPDs and how they are calculated is included in Section 9.0 Quality Assurance/Quality Control.

Table 6: Isotope Analysis Results					
Analyte	Oxygen-18 $\delta^{18}\text{O}$	Chlorine-37 $\delta^{37}\text{Cl}$	Deuterium $\delta^2\text{H}$	Tritium $\delta^3\text{H}$	Tritium $\delta^3\text{H}$
Units	per mil ¹		per mil	TU ²	pCi/L
DMW-1b	-19.88	0.31	-154.7	3.2	10.31
DMW-4	-20.15	0.11	-156.6	1.4	4.51
DMW20-01	-19.85	-0.16	-150.4	4.2	13.53
Town Well #4	-19.92	0.45	-152.5	1.9	6.12
Town Well #6	-19.77	0.22	-152.0	4.8	15.46
MW10-08	-19.23	0.43	-148.6	3.4	10.95
MW09-6D	-18.94	0.02	-150.1	157.6	507.63
MW09-6S	-19.04	0.34	-150.1	31.7	102.11
DUP A	-18.95	-0.20	-150.4	31.7	102.11
MW18-10	-19.22	0.02	-148.3	70.6	227.40
MW18-11	-20.72	0.20	-160.9	15.8	50.89

Notes:

1 = per mil is ‰, or per thousand

2 = Tritium Units. 1 TU = 1 molecule of ^3H per 10^{18} molecules of ^1H

The oxygen-18 and deuterium results across all sampling locations indicated that all monitored locations were recharged by the same groundwater system, validating the conceptual understanding that the unmapped bedrock aquifer below the Site discharges to the valley-bottom sand and gravel Aquifer 456 IIB

Potable water supply wells including the three (3) domestic wells and two (2) town wells all had low tritium concentrations, ranging from 1 to 5 TU. These tritium results were consistent with the measured low concentrations of leachate-indicator parameters at these wells, and indicated that they are not impacted by landfill activity.

The highest concentrations of tritium were found at MW09-6D at 157.6 TU, thought to be the most leachate-impacted monitoring well along with MW09-06S. For the most part, groundwater chemistry at MW09-6S has been nearly identical to that measured in MW09-6D; however, tritium at MW09-6S was notably lower (31.7 TU). As discussed, MW09-6D was screened approximately 30 m below MW09-6S. As such, the elevated tritium in MW09-6D may have resulted from older groundwater that has not migrated through the flow system as quickly as the shallower groundwater, or deeper groundwater more impacted by leachate. The tritium concentrations also infer the leachate plume has migrated vertically downwards and has exited the landfill, consistent with the steep downward hydraulic gradient measured between the nested wells.

MW18-10 had a relatively high tritium concentration of 70.6 TU, which was congruent with its position on the Piper plot (Figure 9) as on the border of the mixed type (where leachate-impacted wells were found) and magnesium bicarbonate (potable water sources) facies. MW18-10 was likely somewhat impacted by landfill leachate, though not as much as

MW09-6D. This was consistent with most other leachate-associated parameters, as highlighted in Figures 5 through 8. Tritium at MW18-11 was slightly elevated (15.8 TU) above background, suggesting it could be mildly impacted by landfill leachate, but not as much as MW09-6D and MW18-10.

Importantly, tritium concentrations were relatively low at MW10-08, which supported the notion that elevated chloride, sodium and electrical conductivity values at this well are not attributable to fracture-controlled leachate migration, but rather road salting.

No obvious spatial trends in chlorine-37 results were observed. For example, similar concentrations were observed at background well DMW-1b (0.31) and downgradient well MW09-06S (0.34).

While the Piper diagram provides us with a visual of groundwater chemistry signatures based on chemistry alone, the isotope analysis provides more insight into the source of groundwater recharge age and degree of leachate-related contamination at monitored locations.

9.0 QUALITY ASSURANCE/QUALITY CONTROL

Ecoscape implemented a standardized Quality Assurance/Quality Control (QA/QC) program during this assessment to ensure representative samples were collected and that representative analytical data were reported by the laboratory. Ecoscape performed the following procedures as part of the QA/QC program:

- Recorded field notes during all stages of the investigation, together with a photographic record;
- Donned clean, new nitrile gloves at each sampling location;
- Collected samples using dedicated plastic bailers or tubing to preclude cross-contamination;
- Cleaned non-dedicated sampling equipment (e.g., electric water level) by washing with an Alconox™ (or equivalent)/potable water mixture before initial use and between uses to minimize the potential for cross-contamination; and
- Submitted one (1) field duplicate for laboratory analysis during each sampling event.

The duplicate sample analysis ensures laboratory quality control as well as reproducibility of field sampling procedures. Duplicates and their associated sample location are summarized in Table 7.

Table 7: Field Duplicate Samples

Date	Sample ID	Duplicate ID
May 2020	MW09-6S	DUP A
August 2020	MW09-6S	DUP A
November 2020	MW09-6S	DUP A
March 2020	MW09-6S	DUP A

The reproducibility of field sampling techniques is quantified by a parameter referred to as the relative percent difference (RPD). RPD is calculated using the following formula:

$$RPD = \frac{S - D}{0.5(S + D)} \times 100\%$$

Where: RPD= relative percent difference

S = sample value

D = duplicate value

RPD values greater than 25% generally suggest further review is required. However, analytical error generally increases near the method reporting limit (MRL); therefore, the RPD calculation should not be applied unless the concentration of both samples is greater than 5 times the reported detection limit.

RPD values were less than 25% or were not calculable (due to concentrations less than 5 times the detection limit), except for Turbidity in May 2020, which had an RPD of 26%; however, given that only one RPD value was greater than 25%, this RPD is likely an anomaly suggesting that the sample and duplicate results are reproducible and reliable.

As a conservative measure, the highest concentration of a given parameter in field duplicate sample set is used for comparison against the applicable standard or guideline.

Samples submitted to CARO are subject to five laboratory QA/QC procedures (i.e., method blanks, laboratory control samples, lab duplicates, surrogate recoveries, and reference materials), which are documented in the laboratory certificates of analysis provided in Appendix F.

10.0 DISCUSSION

We understand that ENV raised concerns in November 2019 regarding the location, depth, and groundwater chemistry measured in monitoring wells MW18-10 and MW18-11, fearing that these wells may not provide a definitive understanding of the magnitude and potential risk that landfill leachate might pose to nearby aquifers.

In their 2018 *Hydrogeological Assessment Report* (WWAL 2019b), WWAL recommended that two years of water level and aquifer geochemical data be collected from these wells to better understand potential offsite migration of leachate from the Site. Two years' worth of data has now been collected from these wells, so the CSRD has retained Ecoscape to complete an updated hydrogeological characterization of the Site and review groundwater and leachate characterization data collected since 2018. This assessment will be completed by the summer of 2021.

If, based on this review, the additional data suggests offsite leachate impacts, one or more monitoring wells may be installed to assess the leachate plume extent. The decision to install additional offsite monitoring wells will be based on an approved Water Quality Improvement Plan, signed off by the BC ENV. Should additional groundwater samples collected from additional monitoring wells identify a potential threat to downgradient receptors as a result of landfilling activities, mitigative measures will be determined by the BC ENV based on consultation with the CSRD and its Qualified Environmental Professional consultants. Potential mitigative measures may include a Human Health and Ecological Risk Assessment to assess potential impacts, design and implementation of landfill engineering control systems, or other measures recommended by the BC ENV.

11.0 SUMMARY AND CONCLUSIONS

In accordance with the OC requirements, Ecoscape conducted groundwater sampling events in the winter, spring, summer, and fall of 2020. The samples were analyzed for analytical parameters intended to illustrate potential groundwater effects from landfilling activities. Based on the sampling and analytical program findings, the following conclusions are made:

- Concentrations of leachate indicator parameters, including but not limited to nitrate, sulfate, chloride, sodium, conductivity, alkalinity, hardness, and dissolved boron are elevated in samples from MW09-6D and -6S and to a lesser degree MW18-10 compared to other monitoring locations, suggesting leachate-impacted groundwater at and beyond the west and south Site boundaries. Samples from these three (3) monitoring wells also had elevated concentrations of tritium, which is an isotope indicative of landfill leachate impacts.
- Nitrate concentrations at MW09-6S steadily trended downward from 2013 to 2019, with 2020 concentrations of 43.4 mg/L (May) and 34.2 mg/L (November) slightly elevated from 2019, approximately half of those recorded in 2009 (> 60 mg/L). Chloride and sodium concentrations have also decreased over the last 6 to 8 years at MW09-6S, suggesting some natural attenuation has occurred.
- Chloride, sodium, tungsten and conductivity concentrations/values were also elevated in cross- to upgradient well MW10-08 samples; however, unlike samples from leachate impacted monitoring wells MW09-6S and -6D, concentrations of

nitrate, sulfate and other leachate indicator parameters were at or near background at MW10-08. Furthermore, the tungsten exceedance was unique to MW10-08, and was not detected at leachate impacted monitoring wells. This, combined with low tritium values at MW10-08 (comparable to those at domestic monitoring wells and town wells in the program) indicate that leachate impacts are unlikely at MW10-08. Given the well's adjacency to a roadway, elevated chloride, sodium and conductivity may be due to road salting.

- Similar ^{18}O and deuterium isotope results across all sampling locations indicated that all monitored locations were recharged by the same groundwater system. This validated the conceptual understanding that the unmapped bedrock aquifer below the Site discharges to the valley-bottom sand and gravel Aquifer 456 IIB.
- Except for tritium, leachate indicator parameter concentrations were at or near background at monitoring well MW18-11. Tritium concentrations were slightly elevated above background, which means leachate impacts at this well cannot be ruled out.
- Fluoride, arsenic, iron, lithium and strontium concentrations are likely naturally elevated at and near the Site based on groundwater data collected from background wells DMW-1b and DMW-4.

12.0 RECOMMENDATIONS

Based on the annual monitoring program results and conclusions, the following recommendations are provided:

- Groundwater quality samples should continue to be collected from locations sampled in 2020 to better understand temporal water quality trends. If leachate indicator parameters persist at monitoring wells MW09-6S, -6D and MW18-10, an additional downgradient bedrock monitoring well may be necessary to help delineate the extent of the leachate plume. The drilling location previously recommended by WWAL (2019) at Pine Road and Golden Donald Upper Road would meet this objective, if permission is granted.
- Exploring and delineating the extent of impacted groundwater contained in overburden (i.e., at MW09-6S) may also be necessary if saturated overburden is identified in future drilling efforts; however, available hydrostratigraphic data suggests groundwater primarily flows through bedrock at and near the Site, with a localized overburden water-bearing unit perched above bedrock along the western Site boundary (i.e., near MW09-6S).

- Any recommendations for future monitoring well installations, including target stratigraphic units and location, will be established based on consultation with ENV.
- Isotope analyses conducted in 2020 helped better understand leachate impacts in groundwater near the Site. Tritium should be analyzed during the spring sampling event in 2021 to help substantiate the inferences made from this year's isotope results.

13.0 LIMITATIONS

This report has been prepared by Ecoscape Environmental Consultants Ltd. (Ecoscape) for Columbia Shuswap Regional District (CSRD) and is intended for the sole and exclusive use of the CSRD. With the exception of the CSRD, copying or distribution of this report or use of or reliance on the information contained herein, in whole or in part, is not permitted without the express written permission of Ecoscape.

Nothing in this report is intended to constitute or provide a legal opinion. Revisions to the regulatory standards referred to in this report may be expected over time. As a result, modifications to the findings, conclusions and recommendations in this report may be necessary.

This report has been prepared for specific application to the Site and Site conditions present at the time work was completed. The conclusions and recommendations provided herein are based solely upon our professional judgment and the availability of information pertaining to environmental conditions and historic and present land use at the site with time available to consider data. Ecoscape has relied fully upon information provided or collected by other parties, and does not warranty data collected from third party sources used in this report.

This report has been prepared with the understanding that all available information on the past, present, and proposed conditions of the Site have been disclosed. If additional information becomes available that is inconsistent with the information provided herein Ecoscape should be contacted to reassess the conclusions provided in this report.

14.0 CLOSURE

We trust that this report satisfies your present requirements. Should you have any questions or comments, please contact the undersigned at your convenience.

Respectfully Submitted
Ecoscape Environmental Consultants Ltd.,

Written By:

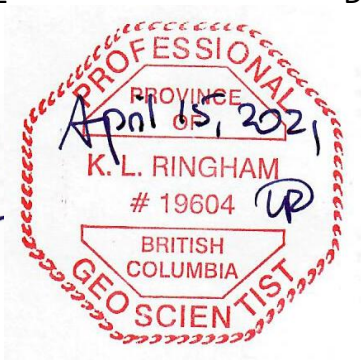
Reviewed By:



Laura Maclaren, B.Sc., GIT
Environmental Scientist
Direct Line: 778-721-5442

Mike Schutten, M.A.Sc.
Environmental Scientist
Direct Line: 778-940-1964

Reviewed By:



Lee Ringham, M.Sc., P.Geo
Principal, Senior Hydrogeologist
Chinook Arch Geoscience Inc.
Direct Line: (403) 860-2925

Attachments: Figures
Appendices

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FIGURES



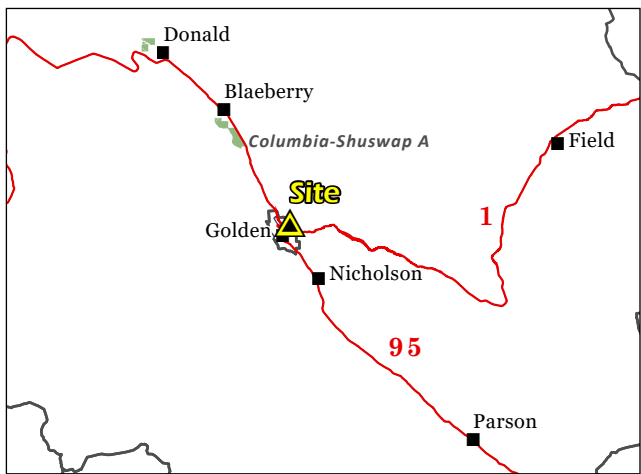
FIGURE 1
Site Location

Project:	Annual Monitoring Report
Location:	CSRD
Project No.:	19-2850
Prepared for:	CSRD
Prepared by:	Ecoscape Environmental Consultants Ltd. Mike Schutten, M.A.Sc
Coordinate System:	NAD83-UTM Zone 11
Imagery:	ESRI World Imagery
Map Date:	May 13, 2021

LEGEND

- ENV-Mapped Aquifer
- Approximate RDF Boundary

Regional Location of Site



DISCLAIMER
The data displayed is for conceptual purposes only and should not be interpreted as a legal survey or for legal purposes. If discrepancies are found between the data portrayed in this report and that of a legal survey, the legal survey will supersede any data presented herein.



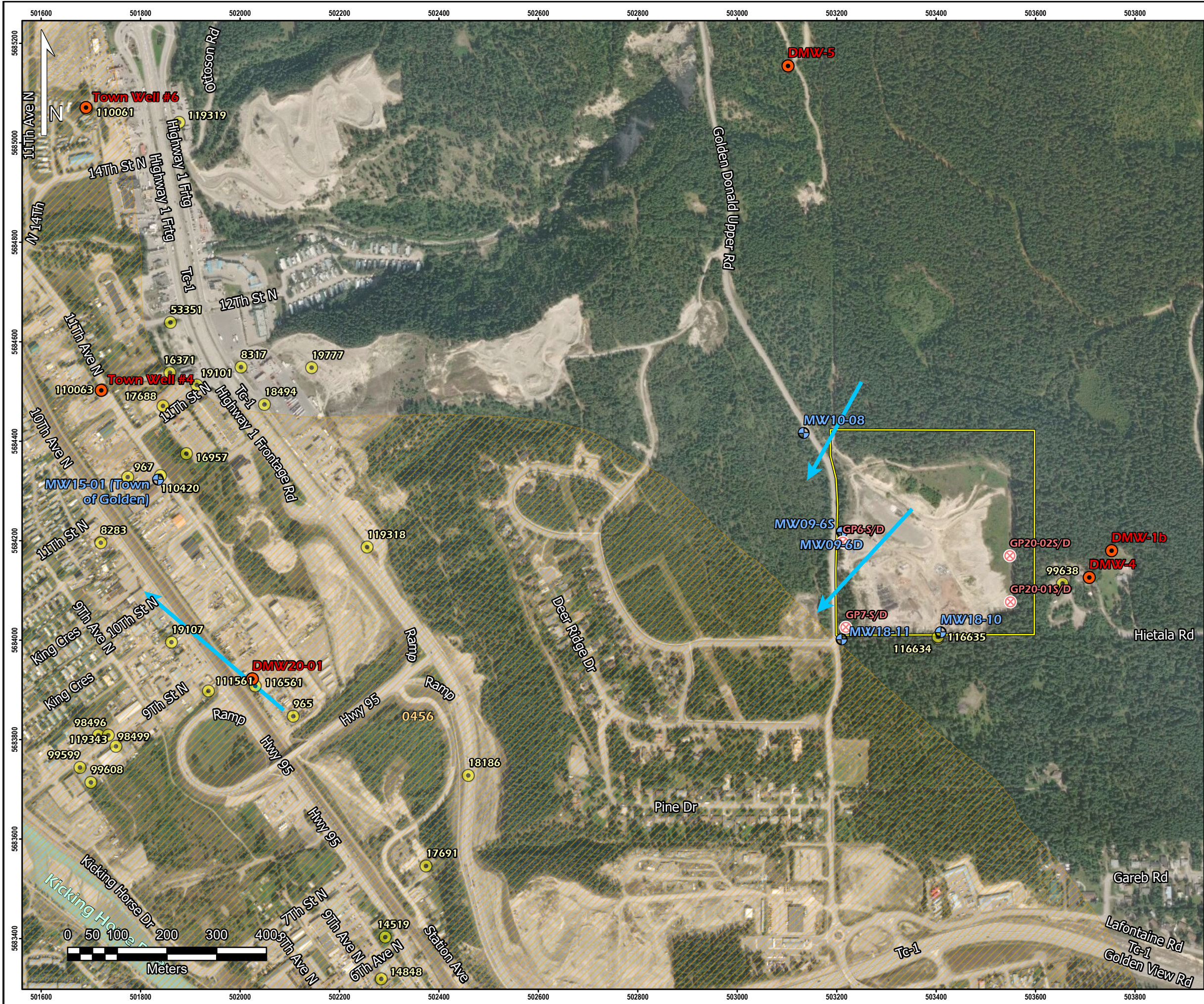


FIGURE 2
Site Plan and Sample Locations

Project:	Annual Monitoring Report
Location:	CSRD
Project No.:	19-2850
Prepared for:	CSRD
Prepared by:	Ecoscape Environmental Consultants Ltd. Mike Schutten, M.A.Sc
Coordinate System:	NAD83-UTM Zone 11
Imagery:	ESRI World Imagery
Map Date:	March 5, 2021

- LEGEND**
- Gas Probe
 - Monitoring Well
 - Domestic Well
 - BC Well Database (WTN)
 - Inferred GW Flow Direction
 - Approximate RDF Boundary
 - ENV Mapped Aquifer

DISCLAIMER
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FIGURE 3
Inferred Groundwater Flow Direction

Project: Annual Monitoring Report
Location: CSRD
Project No.: 19-2850
Prepared for: CSRD
Prepared by: Ecoscape Environmental Consultants Ltd.
Mike Schutten, M.A.Sc
Coordinate System: NAD83-UTM Zone 11
Imagery: ESRI World Imagery
Map Date: March 5, 2021

- LEGEND**
- Inferred GW Flow Direction
 - Gas Probe
 - Monitoring Well (May 2020 GW Elev. [masl])
 - Domestic Well
 - BC Well Database (WTN)
 - Groundwater Contours (May 2020)
 - Approximate RDF Boundary
 - ENV Mapped Aquifer

DISCLAIMER
The data displayed is for conceptual purposes only and should not be interpreted as a legal survey or for legal purposes. If discrepancies are found between the data portrayed in this report and that of a legal survey, the legal survey will supersede any data presented herein.



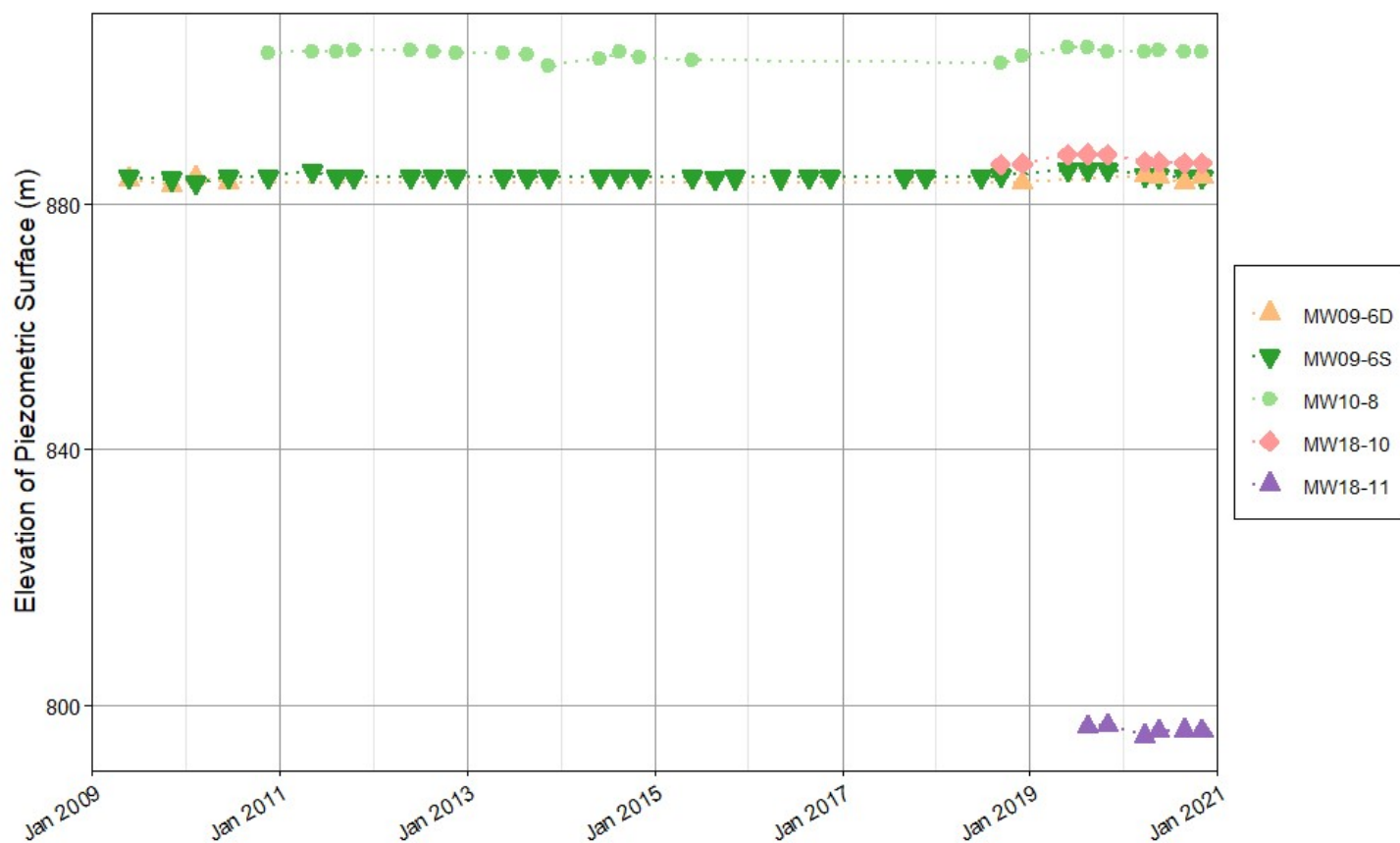


Figure 4: Groundwater Elevation Time Series Plot

Project: 2020 Environmental Monitoring Report

Client: Columbia Shuswap Regional District

Location: Golden RDF

File No: 19-2850

Date: March 5, 2021

Dwn by: LMM

Ckd by: MPS

Scale: N/A



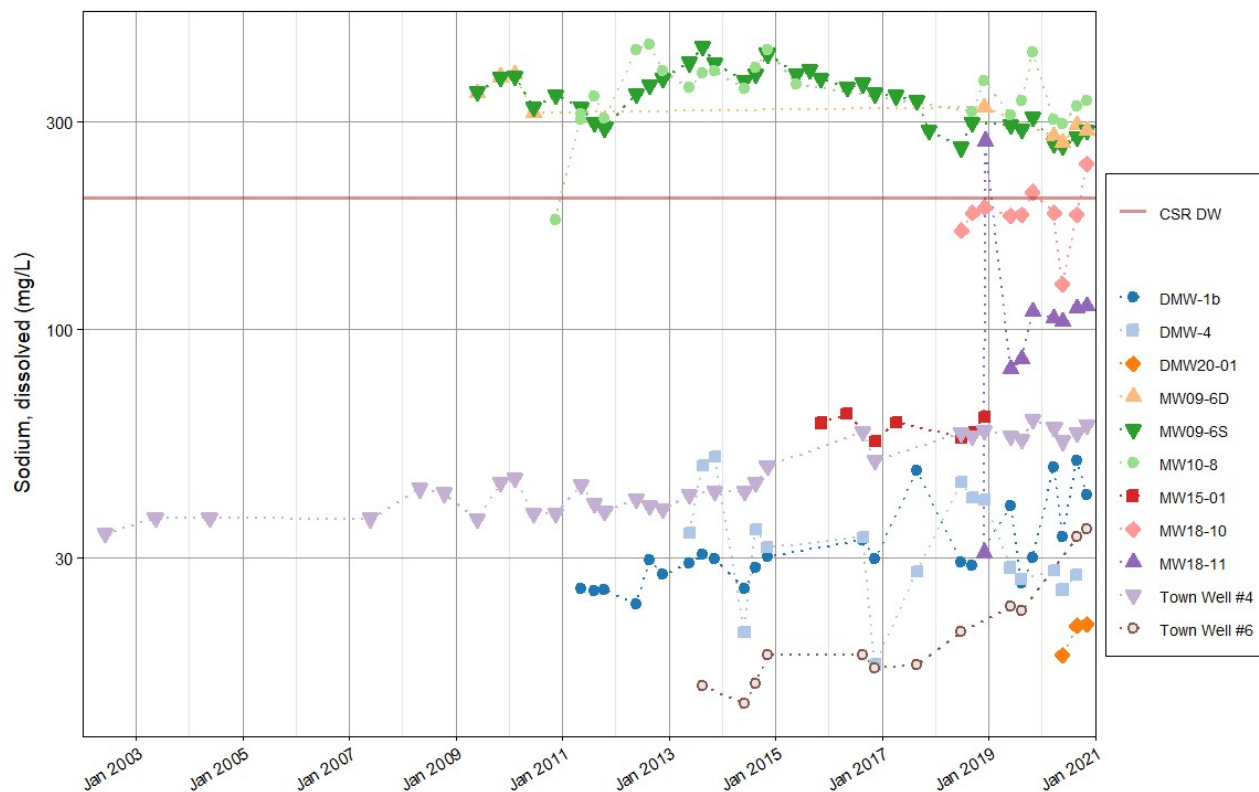
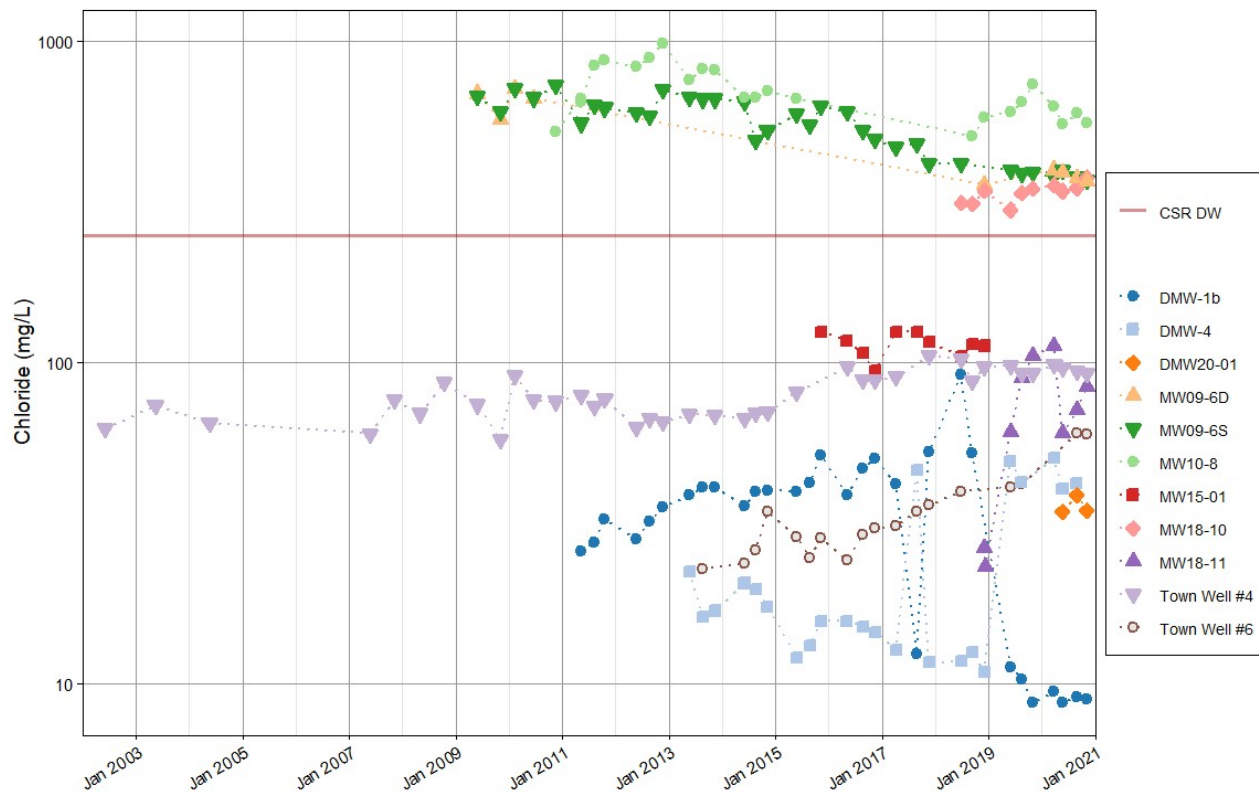


Figure 5: Chloride and Dissolved Sodium in Groundwater Time Series Plot



Project: 2020 Environmental Monitoring Report

Client: Columbia Shuswap Regional District

Location: Golden RDF

File No: 19-2850

Date: March 5, 2021

Dwn by: LMM

Ckd by: MPS

Scale: N/A

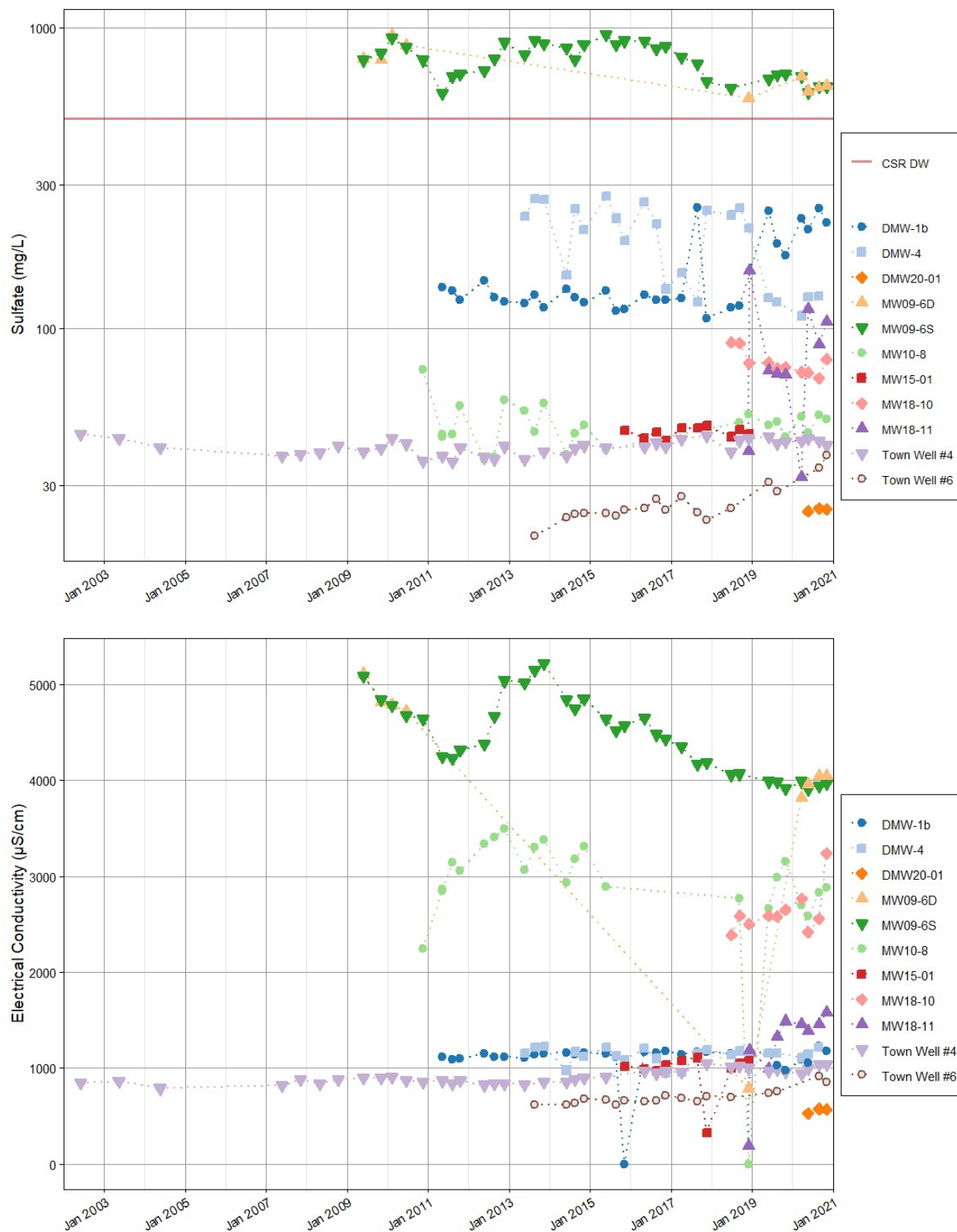


Figure 6: Sulfate and Electrical Conductivity in Groundwater Time Series Plot

Project: 2020 Environmental Monitoring Report

Client: Columbia Shuswap Regional District

Location: Golden RDF

File No: 19-2850

Date: March 5, 2021

Dwn by: LMM

Ckd by: MPS

Scale: N/A



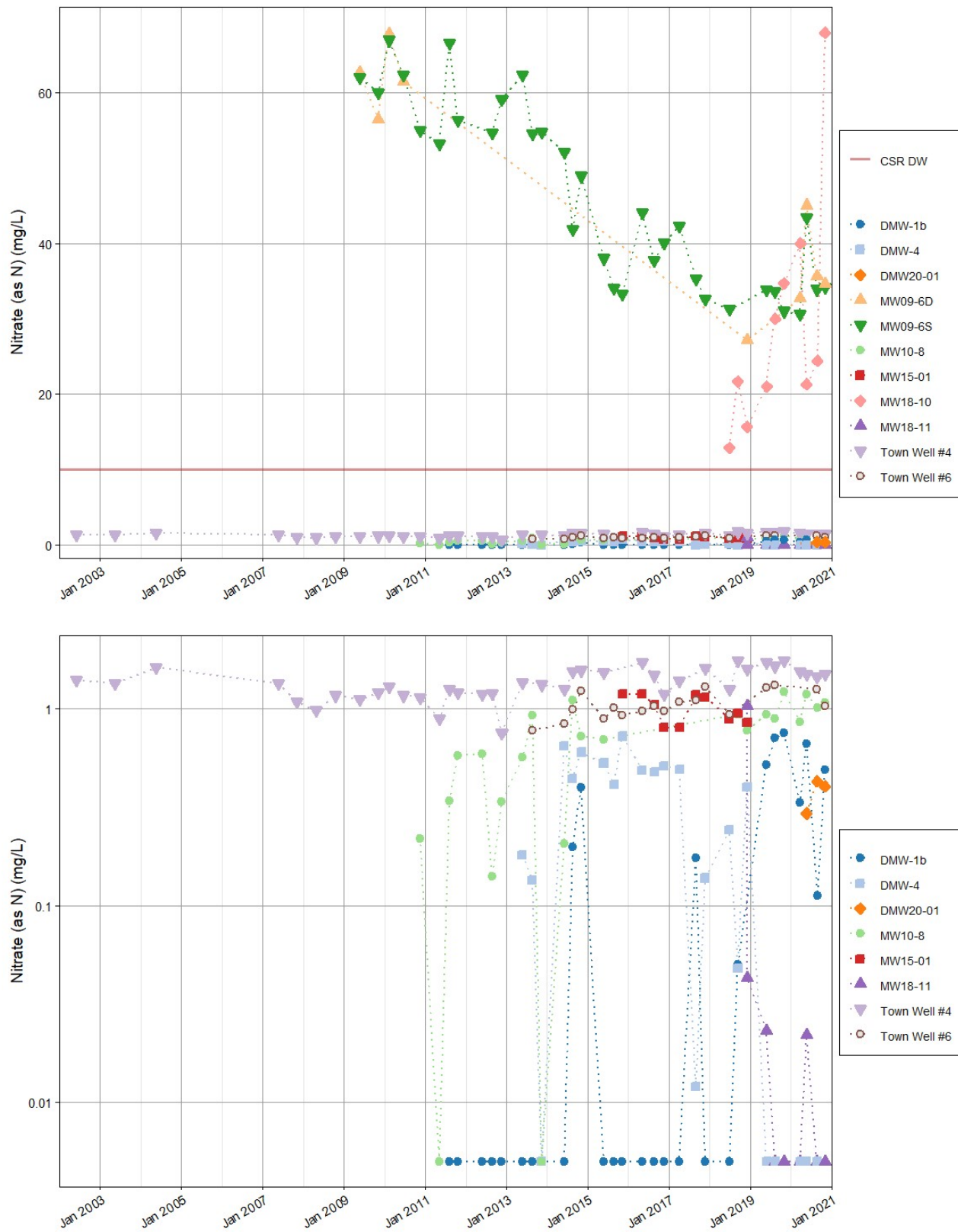


Figure 7: Nitrate in Groundwater Time Series Plot

Project: 2020 Environmental Monitoring Report

Client: Columbia Shuswap Regional District

Location: Golden RDF

File No: 19-2850

Date: March 5, 2021

Dwn by: LMM

Ckd by: MPS

Scale: N/A



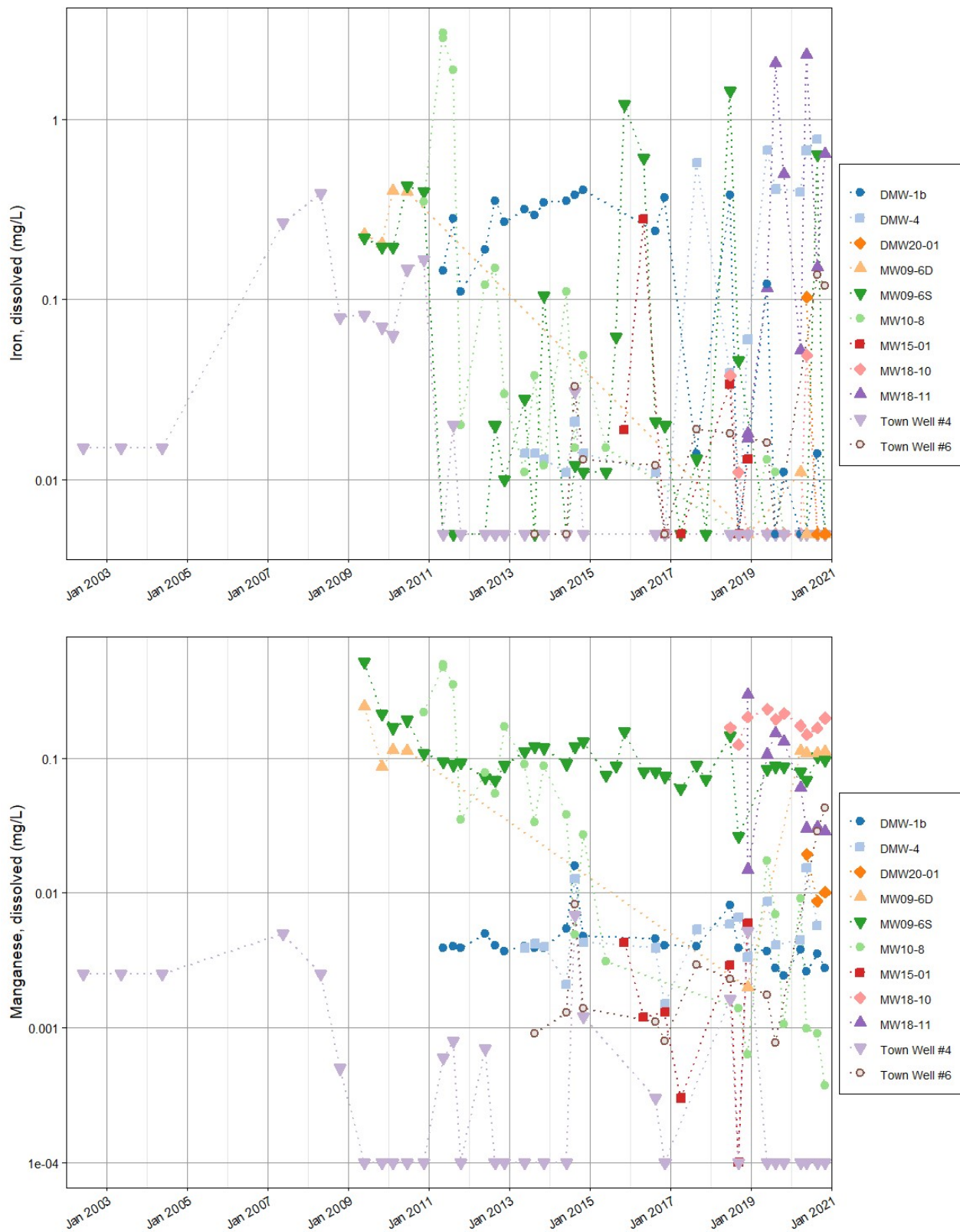


Figure 8: Dissolved Iron and Dissolved Manganese in Groundwater Time Series Plot

Project: 2020 Environmental Monitoring Report

Client: Columbia Shuswap Regional District

Location: Golden RDF

File No: 19-2850

Date: March 5, 2021

Dwn by: LMM

Ckd by: MPS

Scale: N/A



EXPLANATION

- DMW-1b
- DMW-4
- DMW20-01
- MW09-6D
- ▲ MW09-6S
- △ MW10-8
- ▼ MW18-10
- ▽ MW18-11
- Town Well #4
- Town Well #6

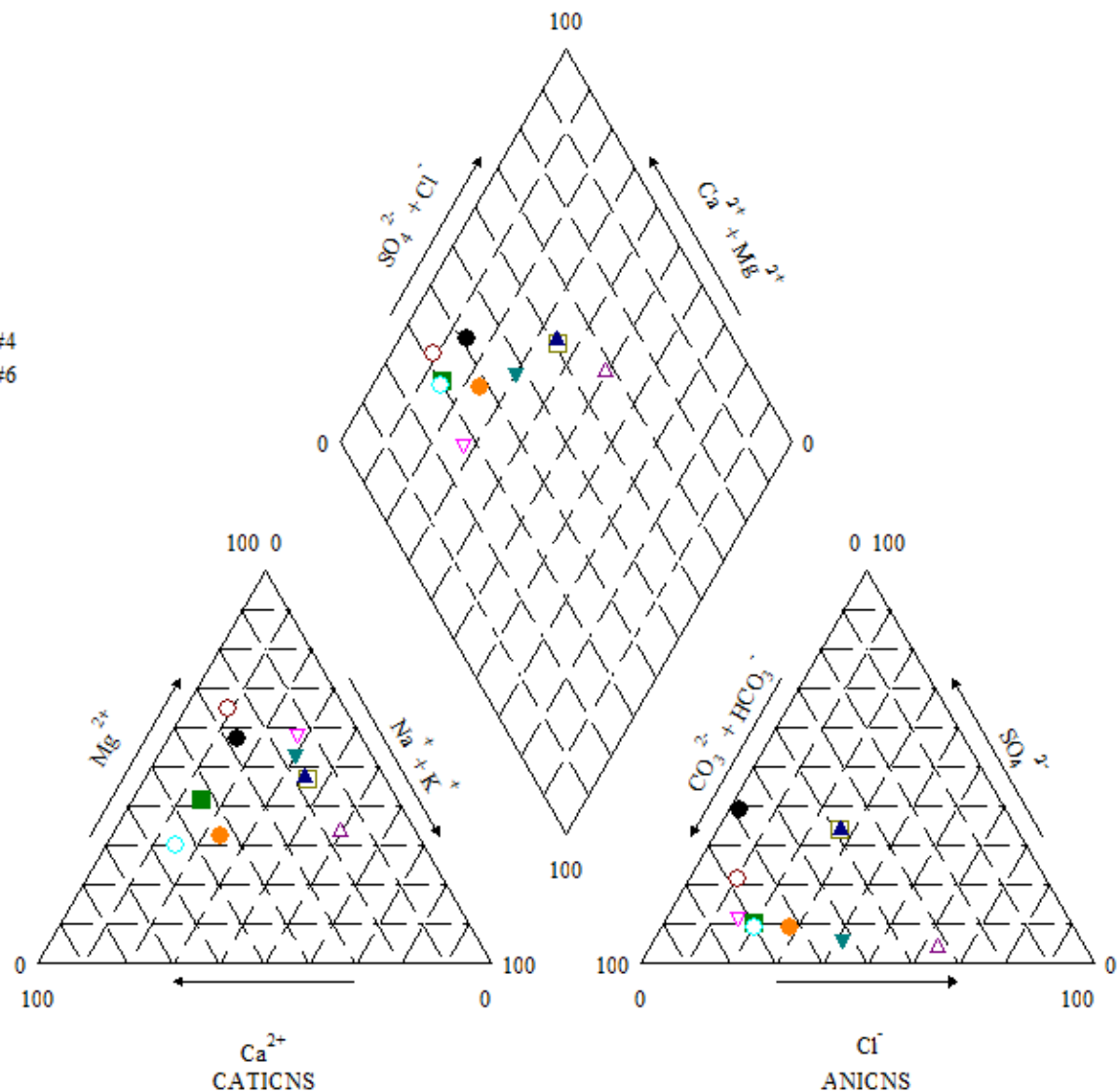


Figure 9: Piper Diagram

Project: 2020 Environmental Monitoring Report

Client: Columbia Shuswap Regional District

Location: Golden RDF

Date: March 8, 2021

Dwn by: LMM

Ckd by: MPS

File No: 19-2850

Scale: N/A



APPENDIX A OPERATIONAL CERTIFICATE

October 31, 2019

Tracking Number: n/a
Authorization Number: 17006

Columbia Shuswap Regional District
Box 978
555 Harbourfront Drive NE
Salmon Arm, BC V1E 4P1

Dear Operational Certificate Holder,

Operational Certificate 17006 Amendment, Section 3.4 Contaminated Soils, under the
Environmental Management Act

Further to the discussion with the Columbia Shuswap Regional District (CSRD) Team Leader, Environmental Health Services, Ben Van Nostrand, and considering technical information available to me including recent compliance inspections conducted at the site, and pursuant to Section 16 of the *Environmental Management Act*, effective November 18, 2019, operational certificate 17006, dated August 29, 2012, is hereby amended as follows:

Subsection 3.4 – Contaminated Soil is amended from:

Soil that contains contaminants in concentrations less than "hazardous waste" as defined by the Hazardous Waste Regulation may be disposed of at the landfill site. Disposal includes monofilling, co-disposal with other wastes, use as a refuse cell berm material and use as a refuse cell cover material. Disposal does not include use as final cover material.

to:

Soil in which the concentrations of all substances are less than the lowest applicable industrial land use standard specified for those substances in

- (i) the generic numerical soil standards,
- (ii) the matrix numerical soil standards, or
- (iii) a director's interim standard for soil, referred to in section 41(1)(a) of the Contaminated Sites Regulation, B.C. Reg. 375/96

may be disposed of at the landfill site. Disposal includes monofilling, co-disposal with other wastes, use as a refuse cell berm material and use as a refuse cell cover material. Disposal does not include use as final cover material.

This amendment acknowledges that the CSRD is currently preparing a Design, Operational and Closure Plan update for review and approval by the ministry. It also acknowledges that the ministry is currently reviewing the 2018 Hydrogeology Characterization Report, dated April 2019, prepared by Western Water Associates Ltd. for the CSRD and that preliminary review information suggests that the receipt of

contaminated soils at the landfill, as previously authorized under Section 3.4 of the operational certificate, needs to be carefully re-evaluated to ensure the ongoing protection of human health and the environment.

All other terms and conditions of the operational certificate remain in full force and effect.

Please note that although a revised operational certificate document has not been produced at this time a copy of this letter is being placed on the operational certificate file, as an addendum to the operational certificate, to formally reflect the amendments.

This operational certificate does not authorize entry upon, crossing over, or use for any purpose of private or Crown lands or works, unless and except as authorized by the owner of such lands or works. The responsibility for obtaining such authority rests with the operational certificate holder. This operational certificate is issued pursuant to the provisions of the *Environmental Management Act* to ensure compliance with Section 120(3) of that statute, which makes it an offence to discharge waste, from a prescribed industry or activity, without proper authorization. It is also the responsibility of the operational certificate holder to ensure that all activities conducted under this authorization are carried out with regard to the rights of third parties, and comply with other applicable legislation that may be in force.

This decision may be appealed to the Environmental Appeal Board in accordance with Part 8 of the *Environmental Management Act*. An appeal must be delivered within 30 days from the date that notice of this decision is given. For further information, please contact the Environmental Appeal Board at (250) 387-3464.

Administration of this operational certificate will be carried out by staff from the Environmental Protection Division's Regional Operations Branch. Documents pertinent to the operational certificate are to be submitted by email or electronic transfer to the Director, in accordance with the ministry Data & Report Submissions website at: <http://www2.gov.bc.ca/gov/content/environment/waste-management/waste-discharge-authorization/data-and-report-submissions>, or as further instructed. If you have any questions or concerns, please contact Authorizations - South at Authorizations.South@gov.bc.ca.

Yours truly,

Luc Lachance, P.Eng
for Director, *Environmental Management Act*

ENCL: Operational Certificate 17006, dated August 29, 2012



August 29, 2012

Tracking Number: 243578
Authorization Number: 17006

REGISTERED MAIL

**Columbia Shuswap Regional District
Box 978
781 Marine Park Drive NE
Salmon Arm, BC V1E 4P1**

Dear Operational Certificate Holder:

Enclosed is Amended Operational Certificate 17006 issued under the provisions of the *Environmental Management Act*. Your attention is respectfully directed to the terms and conditions outlined in the operational certificate. An annual fee will be determined according to the Permit Fees Regulation.

This operational certificate does not authorize entry upon, crossing over, or use for any purpose of private or Crown lands or works, unless and except as authorized by the owner of such lands or works. The responsibility for obtaining such authority rests with the operational certificate holder. It is also the responsibility of the operational certificate holder to ensure that all activities conducted under this authorization are carried out with regard to the rights of third parties, and comply with other applicable legislation that may be in force.

This decision may be appealed to the Environmental Appeal Board in accordance with Part 8 of the *Environmental Management Act*. An appeal must be delivered within 30 days from the date that notice of this decision is given. For further information, please contact the Environmental Appeal Board at (250) 387-3464.

...2

Administration of this operational certificate will be carried out by staff from the Southern Interior Region - Kootenay. Plans, data and reports pertinent to the operational certificate are to be submitted to the Regional Manager, Environmental Protection, at Ministry of Environment, Regional Operations, Southern Interior Region - Kootenay, 401 - 333 Victoria St., Nelson, BC V1L 4K3.

Yours truly,

A handwritten signature in dark ink, appearing to read 'Chris Stroich', with a stylized, flowing script.

Chris Stroich, M.Sc., P.Ag.
for Director, *Environmental Management Act*
Southern Interior Region - Kootenay

Enclosure

cc: Environment Canada



**MINISTRY OF
ENVIRONMENT
OPERATIONAL CERTIFICATE**

17006

Under the Provisions of the Environmental Management Act
Columbia Shuswap Regional District

**Box 978
781 Marine Park Drive NE
Salmon Arm, BC V1E 4P1**

is authorized to manage waste and recyclable material from the Columbia Shuswap Regional District and environs at the Columbia Shuswap Regional District in Golden landfill located near Golden, British Columbia, subject to the conditions listed below. Contravention of any of these conditions is a violation of the *Environmental Management Act* and may result in prosecution.

This Operational Certificate supersedes all previous versions of the Operational Certificate MR-17006 issued under the authority of the *Environmental Management Act*.

1. AUTHORIZED DISCHARGE

This section applies to the discharge of refuse from municipal, commercial and light industrial sources to a sanitary landfill known as the GOLDEN LANDFILL. The site reference number for this discharge is E246600.

- 1.1 The authorized works are a sanitary landfill and related appurtenances approximately located as shown on the attached location map.

Date issued: May 5, 2003
Date amended: August 29, 2012
(most recent)

Chris Stroich, M.Sc., P.Ag.
for Director, *Environmental Management Act*
Southern Interior Region - Kootenay

- 1.2 The maximum quantity of waste discharges must not exceed the design capacity of the landfill as specified in the approved Design and Operations Plan. The final footprint and profile of the discharged waste must be within that specified in the Design and Operations Plan, and approximately as shown on the attached location map.
- 1.3 The authorized discharge is municipal solid waste as defined in the *Environmental Management Act* and other waste as may be authorized by the Director.
- 1.4 The legal description of the location of the authorized landfill facility is Subdivision 12 of Section 18, Township 27, Range 21, West of the 5th Meridian, Kootenay District.
- 1.5 The site is located approximately 2 kilometres travelling northeast on Highway 1 as shown on the location map.

2. **DESIGN AND PERFORMANCE REQUIREMENTS**

2.1 **Design and Operating Plan**

The Operational Certificate holder must prepare and maintain a current Design and Operations Plan prepared by a qualified professional. The Plan must be reviewed and updated as needed at least once every five years. The next update must be undertaken and completed in 2013. The Plan must address, but not be limited to, each of the subsections in the Landfill Criteria for Municipal Solid Waste including performance, siting, design, operational, closure and post-closure criteria. The facilities must be developed, operated and closed in accordance with the Plan. Should there be any inconsistency between this Operational Certificate and the Plan, this Operational Certificate must take precedence.

Written authorization from the Director must be obtained prior to implementing any changes to the approved plans. Based on any information obtained in connection with this facility, the Director may require revision of, or addition to, the design, operating and closure plans.

Date issued: May 5, 2003
Date amended: August 29, 2012
(most recent)



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Southern Interior Region - Kootenay

2.2 **Qualified Professionals**

All facilities and information, including works, plans, assessments, monitoring, investigations, surveys, programs and reports, must be certified by Qualified Professionals.

2.3 **Maintenance of Works and Emergency Procedures**

The authorized works must be inspected regularly and maintained in good working order. In the event of an emergency or condition beyond the control of the Columbia Shuswap Regional District including, but not limited to, unauthorized fires arising from spontaneous combustion or other causes, or detection of surfacing leachate on the property, the Columbia Shuswap Regional District must take appropriate remedial action and notify the Regional Office. The Director may reduce or suspend operations to protect the environment until the authorized works has been restored, and/or corrective steps taken to prevent unauthorized discharges.

2.4 **Additional Facilities or Works**

The Director may require investigations, surveys, and the construction of additional facilities or works. The Director may also amend any information requirements of this Operational Certificate including plans, programs, monitoring, assessments and reports.

2.5 **Public Health, Safety and Nuisance**

The landfill must be operated in a manner such that it will not create a public nuisance or become a significant threat to public health or safety with respect to landfill gas, unauthorized access, roads, traffic, airport activity, noise, dust, litter, vectors, or wildlife attraction.

2.6 **Ground and Surface Water Quality Impairment**

The landfill must be operated in a manner such that ground or surface water quality does not decrease beyond that specified by the British Columbia Water Quality Guidelines, or other appropriate criteria as may be specified by the Director, at or beyond the landfill property boundary.

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for Director, *Environmental Management Act*
Southern Interior Region - Kootenay

The certificate holder must take all reasonable measures to ensure that BCWQG are met at or beyond the property boundary. These measures include but are not limited to:

- a) Prohibiting the discharge of municipal solid waste into water.
- b) Ensuring that no new waste is landfilled within 1.2 m of the highest groundwater level.
- c) Ensuring that adequate surface water and groundwater diversion works are constructed and maintained to minimize surface water run-off and groundwater seepage from entering the landfill.
- d) Ensuring that the management systems for surface water that has not come in contact with waste are hydraulically separate from those for managing impacted surface water.
- e) Ensuring that the landfill is operated in a manner that prevents the exceedance in surface water and groundwater of anticipated leachate indicators or parameters distinctive of leachate or those specified by the Director at the landfill boundary.
- f) Ensuring that the indicators in e) above, at specified groundwater monitoring wells within the property boundary are in accordance with those predicted by design and that suitable measures are taken to address the cause of any exceedances above the trigger levels identified in the most current Design and Operations Plan.
- g) Ensuring that the landfill is operated in accordance with a Design & Operations Plan which specifies measures to prevent decreases in groundwater and surface water quality at and beyond the property boundary.

If exceedances to the specified water quality criteria occur as a result of landfill operations, the Director may require that leachate management control measures or works be undertaken. Terms of reference for any leachate management study and/or design work must be submitted to the Director for review prior to conducting the work.

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for Director, *Environmental Management Act*
Southern Interior Region - Kootenay

2.7 **Landfill Gas Management**

The Landfill must not cause combustible gas concentrations to exceed the lower explosive limit in soils at the property boundary or 25% of the lower explosive limit at or in on-site or off-site structures.

The Operational Certificate holder must ensure that the facility is in compliance with the requirements of the Landfill Gas Management Regulation under the *Greenhouse Gas Reduction (Emissions Standards) Statutes Amendment Act*, 2008 on or before applicable dates specified in the regulation. The requirements of the regulation and its guideline documents must be incorporated by the Operational Certificate holder into the Design and Operation Plan revisions as they come into effect and as applicable.

2.8 **Buffer Zone**

No material must be landfilled within 50 metres of the property boundary.

3. **OPERATIONAL REQUIREMENTS**

3.1 **Waste Compaction and Coverage**

The Operational Certificate holder must ensure that waste deposition and compaction meets or exceeds the requirements of the BC Landfill Criteria or its most current version for daily, intermediate and final cover. Control must be exercised to ensure keeping freshly deposited refuse in a well defined and small / manageable working face.

3.2 **Prohibited Wastes**

The disposal of the following types of wastes is strictly prohibited:

- (a) Hazardous Wastes other than those specifically approved for disposal to authorized landfills in the Hazardous Waste Regulation under the *Environmental Management Act*.
- (b) Biomedical wastes as defined in the Guidelines for the Management of Biomedical Wastes in Canada (Canadian Council of Ministers of the Environment, February 1992),

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for Director, *Environmental Management Act*
Southern Interior Region - Kootenay

- (c) Bulk liquids and semi-solid wastes, which contain free liquids, as determined by US EPA Method 90954 Paint Filter Liquids Test, Test Methods for Evaluating Solid Wastes-Physical/Chemical Methods (EPA Publication No. Sw-846),
- (d) Release of ozone depleting substances from the storage, handling and disposal of used appliances, equipment, or any material containing ozone depleting substances is prohibited in accordance with the requirements of the Ozone Depleting Substances Regulation. Onsite removal or evacuation of Ozone Depleting Substances (ODS) from appliances and the subsequent storage of appliances on site is permitted subject to both activities being in compliance with the Ozone Depleting Substances Regulation.

3.3 **Waste Asbestos**

Waste asbestos is authorized for disposal subject to compliance with the requirements of section 40 of the Hazardous Waste Regulation and the following conditions:

- (a) The asbestos waste may not be mixed with any other hazardous waste.
- (b) The Regional District must approve the disposal before disposal takes place.
- (c) All other applicable requirements of the Hazardous Waste Regulation, including but not limited to manifesting and waste record keeping, must also be complied with.

3.4 **Contaminated Soil**

Soil that contains contaminants in concentrations less than "hazardous waste" as defined by the Hazardous Waste Regulation may be disposed of at the landfill site. Disposal includes monofilling, co-disposal with other wastes, use as a refuse cell berm material and use as a refuse cell cover material. Disposal does not include use as final cover material.

3.5 **Wildlife and Vector Control**

Vectors (carriers capable of transmitting a pathogen from one organism to another including, but not limited to flies and other insects, rodents, and birds) must be controlled by the application of cover material at the required frequency or by such additional methods as specified by the Director. Wildlife control fencing must be maintained around the perimeter of the landfill site and must be

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for Director, *Environmental Management Act*
Southern Interior Region - Kootenay

electrified for at least the active bear season of each year.

This landfill must be operated so as to minimize the attraction of wildlife such as bears and birds by applying cover at required frequencies and instituting a good housekeeping program.

3.6 **Site Access and Supervision**

A landfill operator that has received BC Qualified Landfill Operator training, is familiar with the requirements of the Operational Certificate and the specifications of the Design and Operations Plan, must be present at all times during operating hours.

Locking gates must be maintained at all access routes to the landfill site. Gates, perimeter fencing and/or barriers must be installed where necessary to prevent unauthorized access to the site by vehicles. Gates must be locked during non-operating hours.

3.7 **Dust Control**

Dust created within the landfill property must be controlled, using methods and materials acceptable to the Director, such that it does not cause a public nuisance.

3.8 **Litter Control**

The best practical means must be used to prevent the scatter of litter. Any litter scattered into the neighbouring property, along access roads, in drainage ditches, along litter-control fences, into surrounding trees or elsewhere on the landfill site must be cleaned up. The frequency of clean up and other additional requirements for refuse scatter control must be determined by the Director.

3.9 **Waste Reduction and Alternate Disposal**

The Provincial Government has developed policies to promote the reduction, reuse and recycling of wastes. The Operational Certificate holder is encouraged to segregate for recycling and reuse, where possible, materials destined for disposal at this site.

Public scavenging must not be permitted at the landfill. The controlled salvaging of waste by the landfill operator or persons authorized by the

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for Director, *Environmental Management Act*
Southern Interior Region - Kootenay

Operational Certificate holder is encouraged if areas or facilities for separation and storage of recyclable or reusable materials are provided.

In certain landfill environments, some construction and demolition debris or other wastes may create specific air and water quality concerns. If problems arise at this site that are attributable to specific wastes, the Director may require that alternate disposal/storage procedures be implemented.

3.10 **Operations and Maintenance Manual**

The Operational Certificate holder must prepare an Operations and Maintenance Manual to be reviewed and updated as necessary on at least an annual basis.

4. **MONITORING AND REPORTING REQUIREMENTS**

4.1 **Landfill Monitoring**

A monitoring program must be developed by a Qualified Professional and identify potential environmental impacts of the authorized facility and must address but not be limited to the Landfill Criteria for Municipal Solid Waste and Guidelines for Environmental Monitoring. The monitoring program must be updated every five years and submitted to the satisfaction of the Director. The next monitoring plan update is required to be undertaken and completed in 2013. Monitoring must be conducted in accordance with the monitoring program.

The program must be designed to assess and identify:

- The design performance of the landfill as per the Design & Operations Plan including but not limited to compliance with water quality performance standards at the landfill boundary.
- Landfill leachate as a contaminant source.
- Residential well water quality.
- Surface water quality.

The monitoring program must address, but not be limited to relevant sections of the Landfill Criteria for Municipal Solid Waste and the Guidelines for Environmental Monitoring at Municipal Solid Waste Landfills. The Environmental Monitoring Program must take into consideration results from previous monitoring programs and any other investigations conducted at the site to ensure that early detection of potential impacts is possible.

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for Director, *Environmental Management Act*
Southern Interior Region - Kootenay

4.2 **Sampling Techniques**

Sampling must be carried out in accordance with the procedures described in the most recent edition of the "British Columbia Field Sampling Manual for Continuous Monitoring Plus the Collection of Air, Air-Emission, Water, Wastewater, Soil, Sediment, and Biological Samples", or by suitable alternative procedures as authorized by the Director. A copy of the above manual may be purchased from the Queen's Printer Publications Centre, P.O. Box 9452, Stn. Prov. Gov't., Victoria, British Columbia, V8W 9V7 (1-800-663-6105 or (250) 387-6409).

4.3 **Analysis**

Analyses must be carried out in accordance with procedures described in the most recent edition of the "British Columbia Environmental Laboratory Manual for the Analysis of Water, Wastewater, Sediment and Biological Materials", or by suitable alternative procedures as authorized by the Director. A copy of the above manual may be purchased from the Queen's Printer Publication Centre.

4.4 **Quality Assurance**

The Operational Certificate holder must produce, within 60 days on the request of the Regional Manager Environmental Protection, 'Field and Laboratory Quality Protocols and Quality Assurance Criteria' acceptable to the Director. The 'Laboratory Quality Protocols' must include the procedures used to assess precision, accuracy and blank quality, including frequency of application of those procedures, the procedures for sampling, handling (e.g. preservation, hold times) and corrective measures to be initiated when deficiencies are indicated. The 'Quality Assurance Criteria' must include the acceptance criteria for accuracy (based on recoveries for reference samples/spikes), for precision (based on deviation in field and lab duplicates) and method blanks (designed to indicate false positives).

5. **LANDFILL REPORTING**

5.1 **Annual Report**

The Operation Certificate Holder must submit an Annual Report to the Director on or before April 30th each year for the previous calendar year. The report must contain at least the following information:

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Southern Interior Region - Kootenay

- (a) an executive summary;
- (b) the type and tonnage of waste received, recycled, stored on-site and discharged / landfilled for the year;
- (c) Any proposed changes to the Design and Operations Plan and the environmental monitoring program (EMP), with rationale for the changes; a description of unanticipated occurrences and any changes to the closure or post-closure plans and funds;
- (d) A review of the preceding year of operation or an operations update which summarizes landfill development work completed in the subject reporting year and work planned for the subsequent year. A summary of any new information or changes to the facilities and plans, assessments, surveys, programs and reports;
- (e) Occurrences or observations of wildlife (medium and large carnivores) at the facility;
- (f) A statement regarding the facility's progress in reducing the regional solid waste stream being landfilled and the objectives of the Regional Solid Waste Management Plan;
- (g) An outline of the current Environmental Monitoring Program and a compendium of all environmental monitoring data in accordance with requirements specified in the most recent version of Guidelines for Environmental Monitoring at Municipal Solid Waste Landfills and Landfill Criteria for Municipal Solid Waste. The annual report must document any effect of the discharge on the quality of the receiving environment using appropriate statistical and graphical analysis. Trend analyses, as well as an evaluation of the impacts of the discharges on the receiving environment must be included;
- (h) A list of training programs completed for landfill operators during the previous year; and
- (i) Any additional information requested by the Director.

All reports must be submitted, suitably formatted and tabulated in both print and electronic format (portable document format).

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for Director, *Environmental Management Act*
Southern Interior Region - Kootenay

5.2 Five Year Report

The Operation Certificate Holder must submit a Five Year Report to the Director on or before April 30th on the five year anniversary of the last submission. The next report is due by the end of 2013. The report must contain at least the following information:

- (a) An executive summary;
- (b) An updated Design and Operations Plan;
- (c) A detailed hydrogeological assessment;
- (d) The type and tonnage of waste received, recycled, stored on-site and discharged / landfilled for the year;
- (e) A current topographic map detailing airspace consumption, on-site borrow pit changes and future developments;
- (f) Volume and density analysis or an in-place material summary, updated estimates for the remaining capacity, site life, revised closure date for the current phase or sequence and revised closure date for the current landfill footprint;
- (g) An outline of the current Environmental Monitoring Program and a compendium of all environmental monitoring data in accordance with requirements specified in the most recent version of Guidelines for Environmental Monitoring at Municipal Solid Waste Landfills and Landfill Criteria for Municipal Solid Waste. The annual report must document any effect of the discharge on the quality of the receiving environment using appropriate statistical and graphical analysis. Trend analyses, as well as an evaluation of the impacts of the discharges on the receiving environment must be included;
- (h) An update on the financial assurance mechanism including a statement of the current dollar value of the Closure Fund and the amount earmarked for the Landfill site; and
- (i) Any additional information requested by the Director.

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(most recent)



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for Director, *Environmental Management Act*
Southern Interior Region - Kootenay

6. **LANDFILL CLOSURE PLAN**

6.1 **Closure Plan and Post Closure**

The Operational Certificate holder must perform closure and post-closure care in accordance with all applicable requirements of the BC Landfill Criteria for Municipal Solid Waste. This Operational Certificate is issued on the condition that a Closure Plan and Final Cover Design that meets or exceeds the requirements of the criteria will be submitted to the Director during the operating life of the landfill. The Closure Plan must be reviewed every five years throughout the operating life of the landfill.

A certification by a Qualified Professional attesting that all closure works have been completed in accordance with the Closure Plan and Final Cover Design is to be submitted to the Director no later than 60 days after the implementation of the Final Cover Design.

The Operational Certificate Holder must submit a Post Closure or Aftercare Plan to the Ministry at least two years prior to the anticipated closure date of the landfill.

6.2 **Closure Fund**

The Operational Certificate holder must provide for the funding of progressive closure operations, final closure and operations beyond closure by maintaining a closure fund. The value of the closure fund must meet or exceed the estimated closure and post-closure costs as established in the approved Design and Operations Plan and updated in the annual report, plus a reasonable contingency for any remediation which may be required. Reported costs must be adjusted for inflation annually. Alternately, a closure and post-closure financial security acceptable to the Director may be built over time.

The Operational Certificate holder must determine and ensure that the closure fund is adequate by preparing annually a financial statement of the fund which must be made available to the Director upon request. The financial statement must report the accrued capital, interest and additions to the fund for the previous year and review the sufficiency of the fund and the rate of accrual in consideration of the projected costs of closure and post-closure obligations.

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(most recent)



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for Director, *Environmental Management Act*
Southern Interior Region - Kootenay

6.3 Site Decommissioning

In accordance with Section 40 of the *Environmental Management Act* and Part 2 of the Contaminated Sites Regulation, the Operational Certificate holder must submit a site profile to the manager at least ten days prior to decommissioning the facilities authorized in Section 1.

6.4 Declaration of Landfill

Landfills sited on titled land must register a covenant that the property was used for the purpose of waste disposal as a charge against the title to the property as provided for under Section 215.1 of the *Land Title Act*. Landfills located on crown land are to have a “notation on file” registered that the property was used for the purpose of waste disposal.

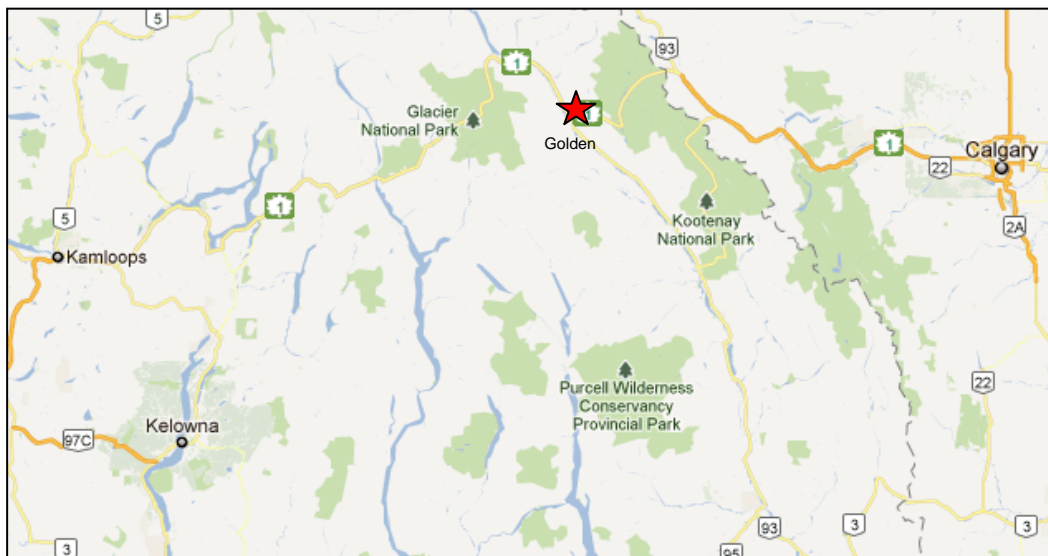
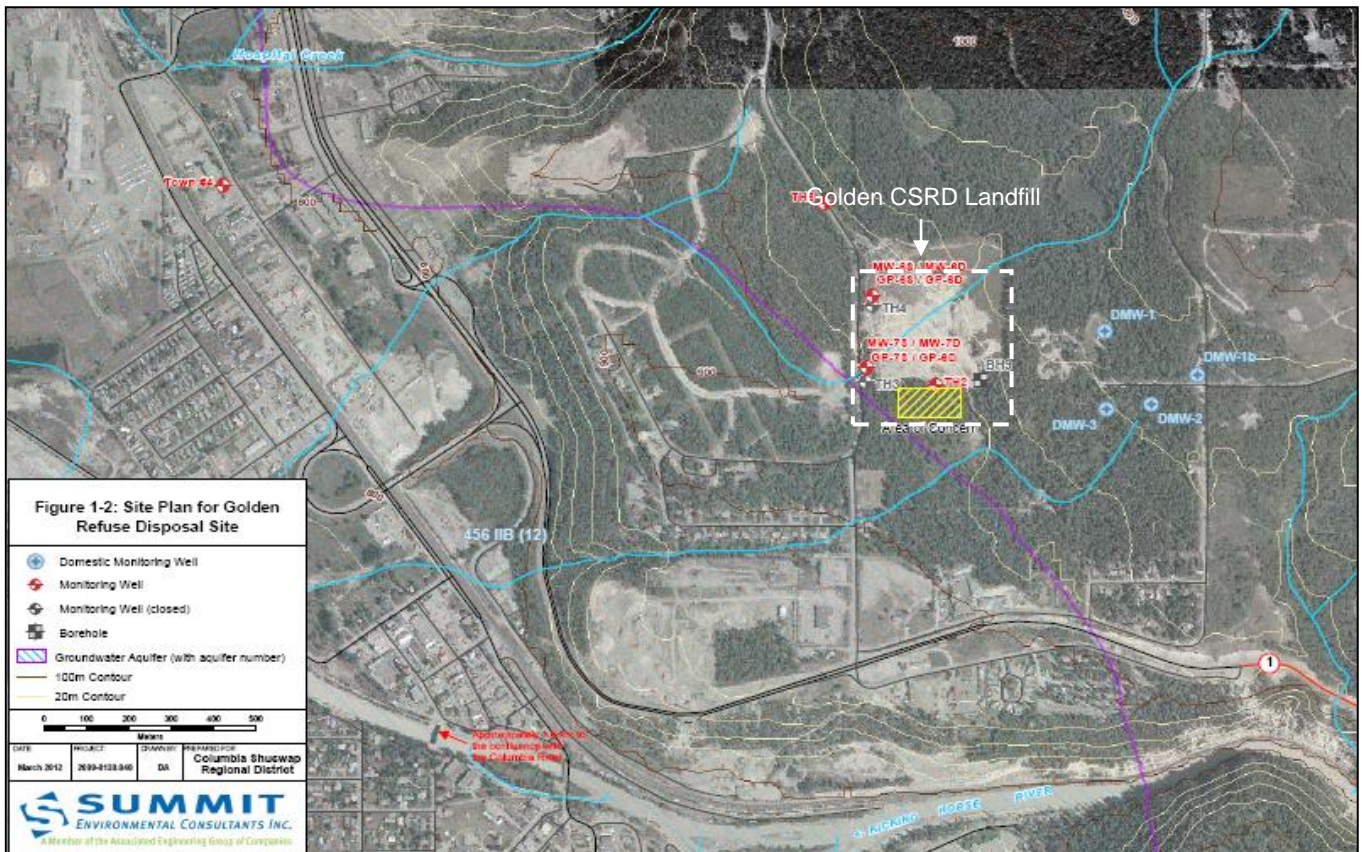
The Operational Certificate holder must, upon closure of the landfill, register a charge against the property title, or provide other legal notification acceptable to the Director that the property described in Section 1 was used for the purpose of waste disposal. The Director must be notified of the charge or legal notification.

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for Director, *Environmental Management Act*
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Location Map



















Date issued: May 5, 2003
Date amended: August 29, 2012
(most recent)

Chris Stroich, M.Sc., P.Ag.
for Director, *Environmental Management Act*
Southern Interior Region - Kootenay

APPENDIX B WELL LOGS

MODIFIED UNIFIED CLASSIFICATION SYSTEM FOR SOILS

MAJOR DIVISION		GROUP SYMBOL	GRAPH SYMBOL	COLOR CODE	TYPICAL DESCRIPTION	LABORATORY CLASSIFICATION CRITERIA			
COARSE-GRAINED SOILS (MORE THAN HALF BY WEIGHT LARGER THAN 200 SIEVE)	GRAVELS MORE THAN HALF COARSE GRAINS LARGER THAN NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)	GW		RED	WELL GRADED GRAVELS, LITTLE OR NO FINES	$C_u = \frac{D_{60}}{D_{10}} > 4$ $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}} = 1 \text{ to } 3$		
		POORLY GRADED GRAVELS, AND GRAVEL-SAND MIXTURES, LITTLE OR NO FINES	GP		RED		NOT MEETING ABOVE REQUIREMENTS		
		DIRTY GRAVELS (WITH SOME FINES)	GM		YELLOW	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES	CONTENT OF FINES EXCEEDS 12% ATTERBERG LIMITS BELOW "A" LINE OR P.I. LESS THAN 4 ATTERBERG LIMITS ABOVE "A" LINE P.I. MORE THAN 7		
			GC		YELLOW	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES			
	SANDS MORE THAN HALF FINE GRAINS SMALLER THAN NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)	SW		RED	WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES	$C_u = \frac{D_{60}}{D_{10}} > 6$ $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}} = 1 \text{ to } 3$		
		POORLY GRADED SANDS, LITTLE OR NO FINES	SP		RED		NOT MEETING ABOVE REQUIREMENTS		
		DIRTY SANDS (WITH SOME FINES)	SM		YELLOW	SILTY SANDS, SAND-SILT MIXTURES	CONTENT OF FINES EXCEEDS 12% ATTERBERG LIMITS BELOW "A" LINE P.I. LESS THAN 4 ATTERBERG LIMITS ABOVE "A" LINE P.I. MORE THAN 7		
			SC		YELLOW	CLAYEY SANDS, SAND-CLAY MIXTURES			
		FINE-GRAINED SOILS (MORE THAN HALF BY WEIGHT PASSES 200 SIEVE)	SILTS BELOW "A" LINE NEGLIGIBLE ORGANIC CONTENT	$W_L < 50\%$	ML		GREEN	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY SANDS OF SLIGHT PLASTICITY	CLASSIFICATION IS BASED UPON PLASTICITY CHART (See below)
				$W_L > 50\%$	MH		BLUE	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS, FINE SANDY OR SILTY SOILS	
CLAYS ABOVE "A" LINE NEGLIGIBLE ORGANIC CONTENT	$W_L < 30\%$		CL		GREEN	INORGANIC CLAYS OF LOW PLASTICITY, GRAVELLY, SANDY, OR SILTY CLAYS, LEAN CLAYS			
	$30\% < W_L < 50\%$		CI		GREEN-BLUE	INORGANIC CLAYS OF MEDIUM PLASTICITY, SILTY CLAYS			
	$W_L > 50\%$		CH		BLUE	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS			
ORGANIC SILTS & CLAYS BELOW "A" LINE ON CHART	$W_L < 50\%$		OL		GREEN	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY	WHENEVER THE NATURE OF THE FINE CONTENT HAS NOT BEEN DETERMINED, IT IS DESIGNATED BY THE LETTER "F". E.G. SF IS A MIXTURE OF SAND WITH SILT OR CLAY		
	$W_L > 50\%$		OH		BLUE	ORGANIC CLAYS OF HIGH PLASTICITY			
HIGHLY ORGANIC SOILS			PI		ORANGE	PEAT AND OTHER HIGHLY ORGANIC SOILS	STRONG COLOR OR ODOR, AND OFTEN FIBROUS TEXTURE		

SPECIAL SYMBOLS



BEDROCK
(Undifferentiated)



VOLCANIC ASH

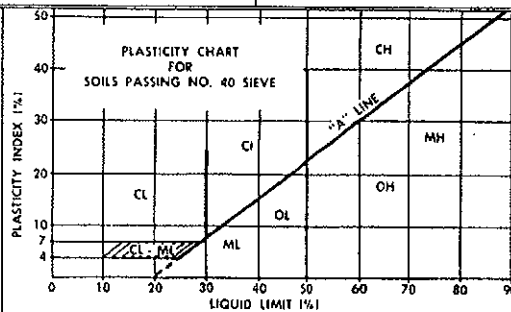
SOIL COMPONENTS

FRACTION	U.S. STANDARD SIEVE SIZE	DEFINING RANGES OF PERCENTAGE BY WEIGHT OF MINOR COMPONENTS	
	PASSING	RETAINED	PERCENT
GRAVEL			
	coarse	76 mm	19 mm
SAND			
	coarse	4.75 mm	2.00 mm
SILT (non plastic) or CLAY (plastic)			
	fine	75 µm	

OVERSIZE MATERIAL

Rounded or subrounded
COBBLES 76 mm to 203 mm
BOULDERS > 203 mm

Not rounded
ROCK FRAGMENTS > 76 mm
ROCKS > 0.76 cubic metre in volume



- ALL SIEVE SIZES MENTIONED ON THIS CHART ARE U.S. STANDARD, A.S.T.M. E.11.
- BOUNDARY CLASSIFICATIONS POSSESSING CHARACTERISTICS OF TWO GROUPS ARE GIVEN COMBINED GROUP SYMBOLS, E.G. GW-GC IS A WELL GRADED GRAVEL SAND MIXTURE WITH CLAY BINDER BETWEEN 5% AND 12%.

Kala Groundwater Consulting Ltd.
Vernon Kamloops

Testhole Log - TH95-01	
Depth (m)	Soil Description
0-5.8	Silt-and fine sand, little gravel fine to coarse, iso. cobbles, non-plastic, dense, yellow/brown, moist.
5.8-6.71	Silt-and sand fine to medium, some gravel fine to coarse, non-plastic, hard, grey, moist.
6.71-8.54	Silt-and fine sand, trace coarse sand, trace gravel, fine to coarse, iso. cobbles, non-plastic, grey/brown, hard, moist.
8.54-11.3	Silt-and fine sand, trace gravel, fine to coarse, non-plastic, iso. cobbles, grey, hard, moist.
11.3-14.9	Silt-some fine sand, trace gravel, fine to coarse, occ. cobbles, non-plastic, red/brown, hard, damp.
14.9-18.9	Clay-and silt, trace fine sand, trace fine gravel, iso. cobbles, low to none plastic, grey, hard, moist.
End of TH95-01 at 18.9m - No groundwater seepage - Monitoring Well installed	

Testhole Log - TH95-02	
Depth (m)	Soil Description
0-9.76	Sand-fine and silt, some gravel fine to coarse, occ. cobbles, dense, light brown, damp. Upper 0.3m fill
9.76-12.8	Sand-fine and silt, some gravel fine to coarse, iso. cobbles, dense, red/brown, moist.
12.8-15.5	Sand-fine, some silt, some gravel fine to coarse, occ. cobbles, dense, red/brown, moist.
15.5-16.5	Silt-some fine sand, trace gravel, fine to coarse, non-plastic, iso. grey/brown, cobbles, stiff, moist.
16.5-20.1	Silt-little fine sand, trace clay, trace gravel, fine to coarse, occ. cobbles, non-plastic, red/brown, hard, damp.
20.1-22.9	Silt - some sand, fine to coarse, trace gravel fine to coarse, iso. cobbles, grey, very hard, non-plastic.
End of TH95-02 at 22.9m - No groundwater seepage - Monitoring Well installed	

Testhole Log - TH95-03	
Depth (m)	Soil Description
0-8.54	Silt-some fine sand, some gravel, fine to coarse, iso. cobbles, non-plastic, red/brown, dense, damp
8.54-11.3	Silt-and fine sand, trace gravel, fine to coarse, non-plastic, iso. cobbles, grey, hard, moist
11.3-15.5	Silt-some fine sand, trace gravel, fine to coarse, non-plastic, grey/brown, hard, moist
15.5-18.3	Sand-fine and silt, some gravel fine to coarse, occ. cobbles, dense, light brown, damp.
End of TH95-03 at 18.3m - No groundwater seepage - Monitoring Well installed	

Testhole Log - TH95-04	
Depth (m)	Soil Description
0-3.35	Silt-and fine sand, trace gravel fine to coarse, occ. cobbles, non-plastic, dense, yellow/brown, damp.
3.35-5.49	Gravel-fine to coarse, and silt, trace sand fine to coarse, occ. cobbles, light brown, moist.
5.49-11.0	Silt-and fine sand, trace coarse sand, trace gravel, fine to coarse, iso. cobbles, non-plastic, grey/brown, hard, moist.
11.0-12.8	Sand-fine to medium, and gravel, fine to coarse, iso. cobbles, trace silt, dense, red/brown, moist.
12.8-17.7	Sand- fine to medium, and silt, little gravel fine to coarse, iso. cobbles, brown, hard, moist.
17.7-30.48	Sand - fine and silt, trace gravel, fine to coarse, brown, hard, moist.
End of TH95-04 at 26.2m - No groundwater seepage - Monitoring Well installed	

Testhole Log - TH95-05	
Depth (m)	Soil Description
0-1.3	Silt-and fine sand, little gravel fine to coarse, iso. cobbles, non-plastic, dense, yellow/brown, moist.
1.3-3.1	Waste-municipal debris, paper, tin plastics, mixed with soil, damp.
3.1-3.4	Sand-fine to medium, some silt, little gravel, fine to coarse, compact, brown, moist.
3.4-5.1	Waste-municipal debris, paper, tin plastics, mixed with soil, damp.
5.1-5.4	Sand-fine to medium, some silt, little gravel, fine to coarse, compact, brown, moist.
5.4-6.2	Waste-municipal debris, paper, tin plastics, mixed with soil, damp.
6.2-7.1	Sand-fine to medium, some silt, little gravel, fine to coarse, compact, brown, moist.
End of TH5 at 7.1m no groundwater-temporary installation	

CLIENT: RCP	PROJECT: Hydrogeological	TESTHOLE: BH95-02
LOCATION: Golden Landfill	Assessment - Golden BC	PROJECT NO: KE95-057
DRILL RIG: Becker Hammer	SURF ELV: 914.0m ASL	CO-ORDINATES:

DEPTH (m) ELV. (m)	INDEX:	Plot	SOIL DESCRIPTION	Lab Test	SAMPLES	COMPLETION DETAILS
Grass	0 20 40 60 80 100 120 140					
2.0 912	0-9.76		Sand-fine and silt, some gravel fine to coarse, occ. cobbles, dense, light brown, damp. <i>Upper 0.3m fill</i>		AR1 1.5	Stickup 1.2m 50mm dia. Solid pipe
4.0 910					AR2 3.0	Bentonite Grout
6.0 908					AR3 4.5	Top 6.0m
8.0 906					AR4 6.0 D1 6.5/6.95	50
10.0 904	9.76-12.8		Sand-fine and silt, some gravel fine to coarse, iso. cobbles, dense, grey, moist.		AR5 7.5	Sand
12.0 902					AR6 10.0	
14.0 900	12.8-15.5		Sand-fine, some silt, some gravel fine to coarse, occ. cobbles, dense, red/brown, moist.		AR7 11.5	
16.0 898	15.5-16.5		Silt-some fine sand, trace gravel, fine to coarse, non-plastic, iso. grey/brown, cobbles, stiff, moist.		AR8 13.0 D2 13.5/13.9 AR9 14.0	50 0.010" slotted pipe
18.0 896	16.5-20.1		Silt-little fine sand, trace clay, trace gravel, fine to coarse, occ. cobbles, non-plastic, red/brown, hard, damp		AR10 15.0	
20.0 894					AR11 16.5 AR12 18.0	
22.0 892	20.1-22.9		Silt - some sand, fine to coarse, trace gravel fine to coarse, iso. cobbles, grey, very hard, non-plastic, moist. <i>End of TH95-01 at 18.9m - No groundwater seepage Well installed</i>		D3 20/20.45	80 Well base 22.9m
Prepared by: Paul Blackett			Reviewed by:		Figure:	
Groundwater Depth: no groundwater			Borehole Depth: 22.9m below surface		Date: 10/9/95	

CLIENT: RCP	PROJECT: Hydrogeological	TESTHOLE: BH95-03
LOCATION: Golden Landfill	Assessment - Golden BC	PROJECT NO: KE95-057
DRILL RIG: Becker Hammer	SURF ELV: 908.5m ASL	CO-ORDINATES:

DEPTH (m) ELV. (m)	INDEX: METHANE %	Plot	SOIL DESCRIPTION	Lab Test	SAMPLES	COMPLETION DETAILS
0	5	10	15	20		
Gravel					Depth (m)	N
	0-8.54		Silt-some fine sand, some gravel, fine to coarse, iso. cobbles, non-plastic, red/brown, dense, damp		AR1 1.5	Stickup 1.2m
2.0 906.5						50mm dia. Solid pipe
4.0 904.5					AR2 3.0 D1 3.5/3.95	Bentonite Grout
6.0 902.5					AR3 4.5	
8.0 900.2					AR4 6.0 D2 6.5/6.95	Top 6.0m
10.0 898.2	8.54-11.3		Silt-and fine sand, trace gravel, fine to coarse, non-plastic, iso. cobbles, grey, hard, moist.		AR5 7.5	
12.0 896.2	11.3-15.5		Silt-some fine sand, trace gravel, fine to coarse, non-plastic, grey/brown, hard, moist		AR6 10.0	Sand
14.0 894.2					AR7 11.5	
16.0 892.2	15.5-18.3		Sand-fine and silt, some gravel fine to coarse, occ. cobbles, dense, light brown, damp.		AR8 13.0 D3 13.5/13.9 AR9 14.0	0.010" slotted pipe
18.0 890.2					AR10 15.0 D4 16/16.45	
20.0 888.2					AR11 16.5	
22.0					AR12 18.0	18.3m
			End of TH95-01 at 18.3m - No groundwater seepage Monitoring Well installed			
Prepared by: Paul Blackett			Reviewed by:		Figure: 3	
Groundwater Depth: no groundwater			Borehole Depth: 18.3m below surface		Date: 10/9/95	



















TESTHOLE LOG

CLIENT: RCP	PROJECT: Hydrogeological	TESTHOLE: BH95-04
LOCATION: Golden Landfill	Assessment - Golden BC	PROJECT NO: KE95-057
DRILL RIG: Becker Hammer	SURF ELV: 916.9m ASL	CO-ORDINATES:

DEPTH (m) ELV. (m)		INDEX: METHANE %		Plot	SOIL DESCRIPTION	Lab Test	SAMPLES	COMPLETION DETAILS
Grass		0 5 10 15 20					Depth (m) N	Stickup 1.2m
		0-3.35			Silt-and fine sand, trace gravel fine to coarse, occ. cobbles, non-plastic, dense, yellow/brown, damp.		AR1 1.5	50mm dia. Solid pipe
2.0	914.9						AR2 3.0 D1 3.5/3.95	Bentonite Grout & backfill
4.0	912.9	3.35-5.49			Gravel-fine to coarse, and silt, trace sand fine to coarse, occ. cobbles, light brown, moist.		AR3 4.5	
6.0	910.9	5.49-11.0			Silt-and fine sand, trace coarse sand, trace gravel, fine to coarse, iso. cobbles, non-plastic, grey/brown, hard, moist.		AR4 6.0 D2 6.5/6.95	
8.0	908.9						AR5 7.5	
10.0	906.9						AR6 10.0 D3 10/10.45	Sand
12.0	904.9	11.0-12.8			Sand-fine to medium, and gravel, fine to coarse, iso. cobbles, trace silt, dense, red/brown, moist.		AR7 11.5	
14.0	902.9	12.8-17.7			Sand- fine to medium, and silt, little gravel fine to coarse, iso. cobbles, brown, hard, moist.		AR8 13.0 D2 13.5/13.9 AR9 14.0	0.010" slotted pipe
16.0	900.2						AR10 15.0 D4 15/15.45	
18.0	898.2	17.7-30.48			Sand - fine and silt, trace gravel, fine to coarse, brown, hard, moist.		AR11 16.5 AR12 18.0 AR13 22.0 AR14 25.0 AR15 27.5 AR16 30.0	Top 20.0m Bot 30.5m
20.0	896.2							
30.0	894.2				End of TH95-01 at 30.48m - No groundwater seepage Monitoring Well installed			
Prepared by: Paul Blackett				Reviewed by:		Figure:		
Groundwater Depth: no groundwater				Borehole Depth: 30.5m below surface		Date: 10/9/95		





Symbol Legend

Common Symbols

	Sand		Silty Sand		Sandy Silt		Clayey Sand
	Sand and Gravel		Gravel		Silt		Clayey Silt
	Clay		Silty Clay		Sandy Silty Clay		Silty Sand and Gravel
	Silty Gravel		Silty Clay and Gravel		Topsoil		Peat
	Limestone		Shale				

Well Symbols







Pipe and Screen

	None		Pipe		Double Walled Pipe		Sealed Pipe
	Fine Screen		Coarse Screen		Slotted Screen		Slotted Screen

Top Fittings

	None		Cap		Flush-mounted Cap		Above-ground Cap
	Connector		Reducer		Pipe Break		Packer

Bottom Fittings

	None		Cap		Cone		Screw-on Cap
	Connector		Enlarger		Pipe Break		Packer

Packing and Backfill

	None		Bentonite		Clay		Silt
	Cement		Sand		Sand and Gravel		Gravel

Project No: 7130-010.01

Test Hole / Borehole I.D.: TH3

Client: CSRD

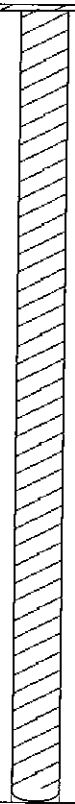
Well I.D.: TH-3 (well closure)

Location: Golden, BC

Location on site: on Golden-Donald Upper Rd

Logged by/ Checked by: BRM/ MG

Northing/ Easting/ Elevation: 0

SUBSURFACE PROFILE			SAMPLE			Well Details	Well Completion Details / Remarks
Depth	Symbol	Description	Type	I.D.	Flag for analysis		
0		Ground Surface					
10						<p>TH-3 was replaced by MW-7. TH-3 was decommissioned according to the Groundwater Protection Regulation.</p> <p>The surface casing was removed, the 2" piezometer was cut approximately 4" below ground surface and bentonite chips were poured into the casing. Bentonite was poured around the outer annulus of the piezometer to bring the hole to ground surface.</p>	
20							
30							
40							
50							
60							
70		End of Borehole					



Contractor: JR Drilling

Date: April 20, 2009

Operator(s): Jerry

Time:

Drill Method:

Temperature: 10 degC

Ground conditions: bare

Sheet: 1 of 1

Project No: 7130-010.01

Client: CSRD

Location: Golden, BC

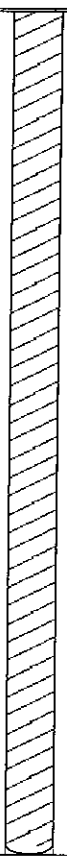
Logged by/ Checked by: BRM/ MG

Test Hole / Borehole I.D.: TH4

Well I.D.: TH-4 (well closure)

Location on site: near weight scale

Northing/ Easting/ Elevation: 0

SUBSURFACE PROFILE			SAMPLE			Well Details	Well Completion Details / Remarks
Depth	Symbol	Description	Type	I.D.	Flag for analysis		
0 ft m 0		Ground Surface					
10						<p>TH-4 was replaced by MW-6S. TH-4 was decommissioned according to the Groundwater Protection Regulation.</p> <p>The surface casing was removed, the 2" piezometer was cut approximately 4" below ground surface and bentonite chips were poured into the casing. Bentonite was poured around the outer annulus of the piezometer to bring the hole to ground surface.</p>	
20							
30							
40							
50							
60							
70							
80							
90							
100							
110		End of Borehole					



Contractor: JR Drilling

Operator(s): Jerry

Drill Method:

Ground conditions: bare

Date: April 20, 2009

Time:

Temperature: 10 degC

Sheet: 1 of 1

Project No: 7130-010.01

Client: CSRD

Location: Golden, BC

Logged by/ Checked by: BRM/ MG

Test Hole / Borehole I.D.: TH-6 (6")

Well I.D.: MW-6S, MW-6D, GP-6S, GP-6D

Location on site: near weight scale (replaces TH4)

Northing/ Easting/ Elevation: 0

SUBSURFACE PROFILE			SAMPLE			Well Details	Well Completion Details / Remarks
Depth	Symbol	Description	Type	I.D.	Flag for analysis		
0 m		Ground Surface					
10		Light brown, GRAVEL, w. sand, loose, dry				Configuration: <ul style="list-style-type: none"> Two groundwater monitoring wells (each 2" diameter) Two gas monitoring probes (each 1" diameter) Schedule 40 PVC Gas piezos. are threaded 20/40 sand pack around each monitoring well Screen Assembly: <ul style="list-style-type: none"> No. 10 slot PVC MW6D <ul style="list-style-type: none"> -Screened in bedrock -Screened btw 59.76 m (196 ft) and 65.85 (216 ft) bgs MW6S <ul style="list-style-type: none"> -Screened in surficial deposits (overburden) -Screened btw 31.40 m (103 ft) and 34.45 m (113 ft) bgs GP6D <ul style="list-style-type: none"> -Screened btw 12.20 m (40 ft) and 16.77 m (55 ft) bgs GP6S <ul style="list-style-type: none"> -Screened btw 7.93 m (26 ft) and 9.45 m (31 ft) bgs 	
30		Light brown, SILT w/ sand, trace gravel, loose, dry					
40		Grey, GRAVEL w/ sand and silt, loose, dry					
50		Grey, GRAVEL w/ sand and silt, loose, dry					
60		Note: larger gravel than above					
70		Light brown, (f.) SAND w/ silt and trace gravel, dense, moist					
80		Grey, (m.) SAND, w/ silt and gravel, dense, moist					
90		Grey, cemented GRAVEL, dense, dry					
100		Yellow, SILT w/ some angular gravel and m.-c. sand, dense, moist					
110		Black, Limestone bedrock					
120							
130							
140							
150							
160							
170							
180							
190							
200							
210							
220		End of Borehole				Casing height =	



Contractor: JR Drilling Central Ltd.

Operator(s): Jerry Oppen

Drill Method: Dual Air Rotary

Ground conditions: bare

Date: April 20, 2009

Time:

Temperature: 10 degC

Sheet: 1 of 1

Project No: 7130-010.01

Client: CSRD

Location: Golden, BC

Logged by/ Checked by: BRM/ MG

Test Hole / Borehole I.D.: TH-7 (6")

Well I.D.: MW-7, GP-7S, GP-7D (replaces TH3)

Location on site: Golden-Donald Upper Rd.

Northing/ Easting/ Elevation: 0

SUBSURFACE PROFILE			SAMPLE			Well Details	Well Completion Details / Remarks
Depth	Symbol	Description	Type	I.D.	Flag for analysis		
0		Ground Surface					
10		Yellow/ brown, SILT, loose, damp				<u>Configuration:</u> <ul style="list-style-type: none"> One groundwater monitoring well (2" diameter) Two gas monitoring probes (each 1" diameter) Schedule 40 PVC Gas probes are threaded 20/40 sand pack around each monitoring well <u>Screen Assembly:</u> <ul style="list-style-type: none"> No. 10 slot PVC MW-7 <ul style="list-style-type: none"> -Screened in the surficial deposits (overburden) -Screened btw 25.6 m (84 ft) and 31.7 m (104 ft) bgs GP-7D <ul style="list-style-type: none"> -Screened btw 13.72 m (45 ft) and 15.24 m (50 ft) bgs GP-7S <ul style="list-style-type: none"> -Screened btw 4.5 m (15 ft) and 6.10 m (20 ft) bgs <u>Casing Height:</u> <ul style="list-style-type: none"> 1.2 m (3.9 ft) 	
20		Grey, SILT and clay, dense, moist					
30		Grey, SILT, dense, moist					
40							
50		Light brown, SILT w/ (f.) sand and gravel, loose, moist, fining upwards					
60		Grey, cemented GRAVEL w/ sand and silt, dense, damp					
70		Grey, SILT trace sand, dense, moist					
80		Grey, GRAVEL w/ (m.) sand and silt, dense, moist					
90		Grey, (f.-m.) SAND w/ silt, dense, moist, coarsening upward					
100							
110		Grey, cemented GRAVEL, dense, dry					
120		Grey, (f.) angular GRAVEL w/ sand and silt, dense, dry,					
130							
140		End of Borehole					



Contractor: JR Drilling Central Ltd.

Operator(s): Jerry Oppen

Drill Method: Dual Air Rotary

Ground conditions: bare

Date: April 23, 2009

Time:

Temperature: 7 deg C

Sheet: 1 of 1

Project No: 2010-8835.010.006

Well I.D.: TH-8

Client: CSRD

First Water: n/a

Ground Elevation: Approx. 915 m asl

Location: Golden Landfill

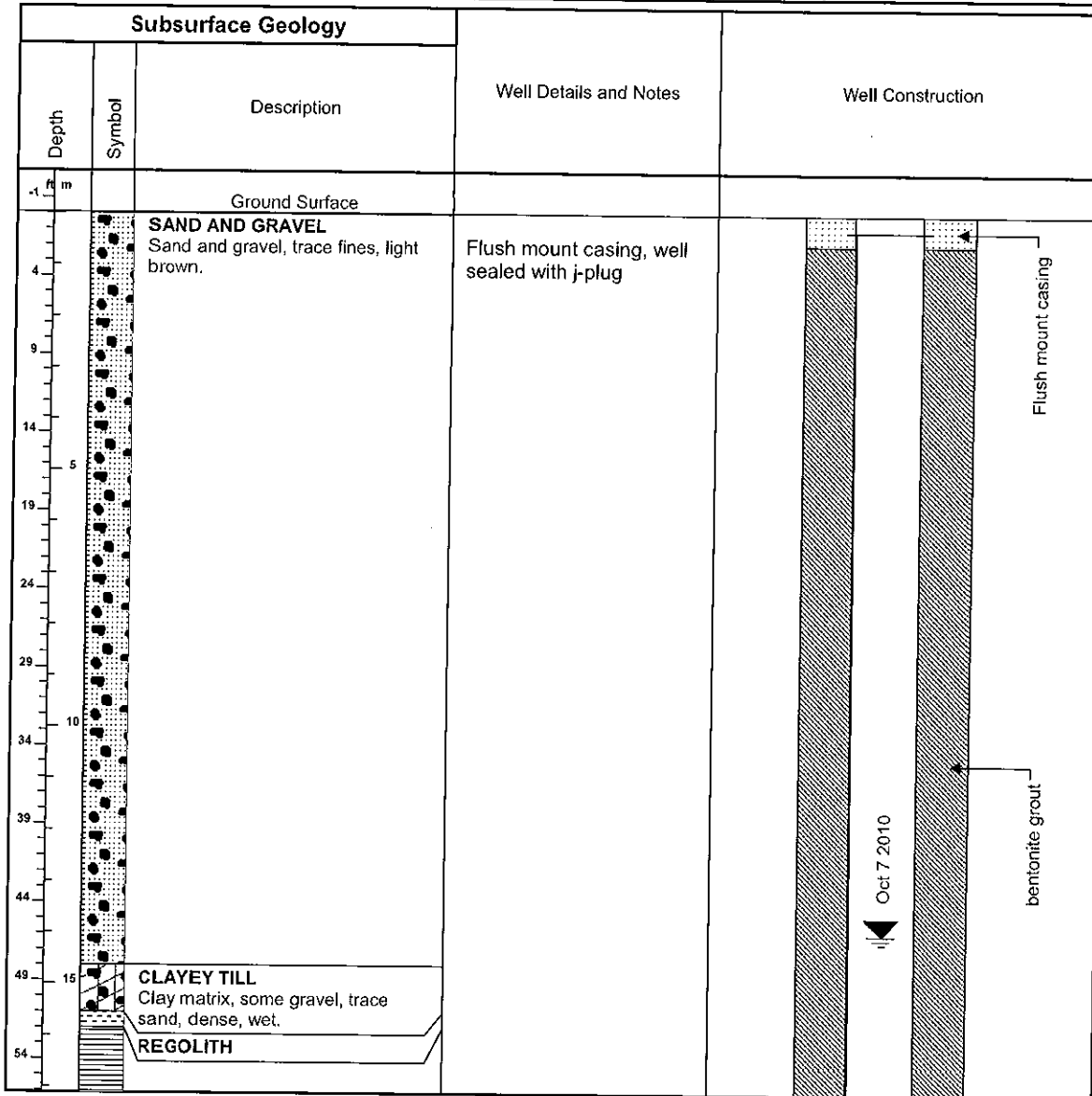
Stabilized Water Level: 14 m btoe

Top of Casing Elevation: flush mount

Location on site: 150 m NW of landfill on Golden Donald Upper Road

Reviewed by: Tilman Roschinski

Logged by: Bryer Marwell



Project No: 2010-8835.010.006

Well I.D.: TH-8

Client: CSRD

First Water: n/a

Ground Elevation: Approx. 915 m asl

Location: Golden Landfill

Stabilized Water Level: 14 m btoc

Top of Casing Elevation: flush mount

Location on site: 150 m NW of landfill on Golden Donald Upper Road

Reviewed by: Tilman Roschinski

Logged by: Bryer Manwell

Subsurface Geology			Well Details and Notes	Well Construction
Depth	Symbol	Description		
60		SLATE BEDROCK Slaty bedrock, in places phyllitic, grey, fractured, some fractures filled with clay.	1 m bentonite seal	
65		QUARTZ BEDROCK Quartz, likely a large vein. Fluid mixing with sedimentary deposits on either end.		
70		SLATE BEDROCK Slaty bedrock, as above.	Screen depth: 67-87 ft (20.4 - 26.5 m)	Bentonite seal
75		QUARTZ BEDROCK Quartz, as above.	Screen details: -10 slot PVC, 2 inch diameter -10/20 sand pack	
80		SLATE BEDROCK Slaty bedrock, as above		10/20 sand
85				
90		End of Borehole		
95				
100				
105				
110				

Contractor: Target Drilling Inc.

Operator(s):

Drill Method: Coring

Date: Oct 5-7 2010

Boring Diameter/ Depth: 6 in / 27.3 m

Sheet: 2 of 2

Project No: 2010-8835.010.006

Well I.D.: BH9

Client: CSRD

First Water: n/a

Ground Elevation: Approx. 928 m asl

Location: Golden Landfill

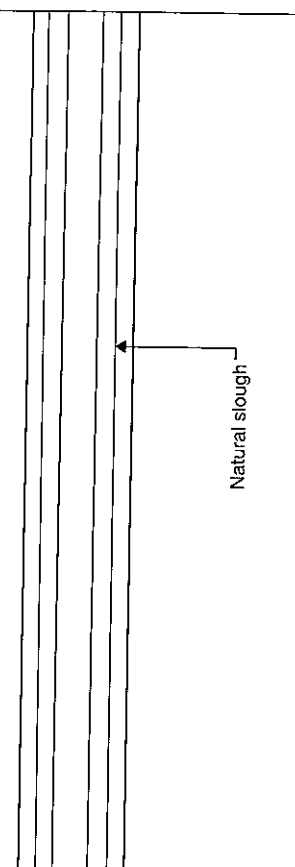
Stabilized Water Level: n/a

Top of Casing Elevation: 0

Location on site: 5 m SE of landfill

Reviewed by: Tilman Roschinski

Logged by: Bryer Manwell

Subsurface Geology			Well Details and Notes	Well Construction
Depth	Symbol	Description		
0 m		Ground Surface	No well installed.	
5		SILT Silt, occasional cobbles, dry to moist, yellowish-grey.		
10				
15				
20				
25				
30				
35				
40				
45				
50				
55		End of Borehole		

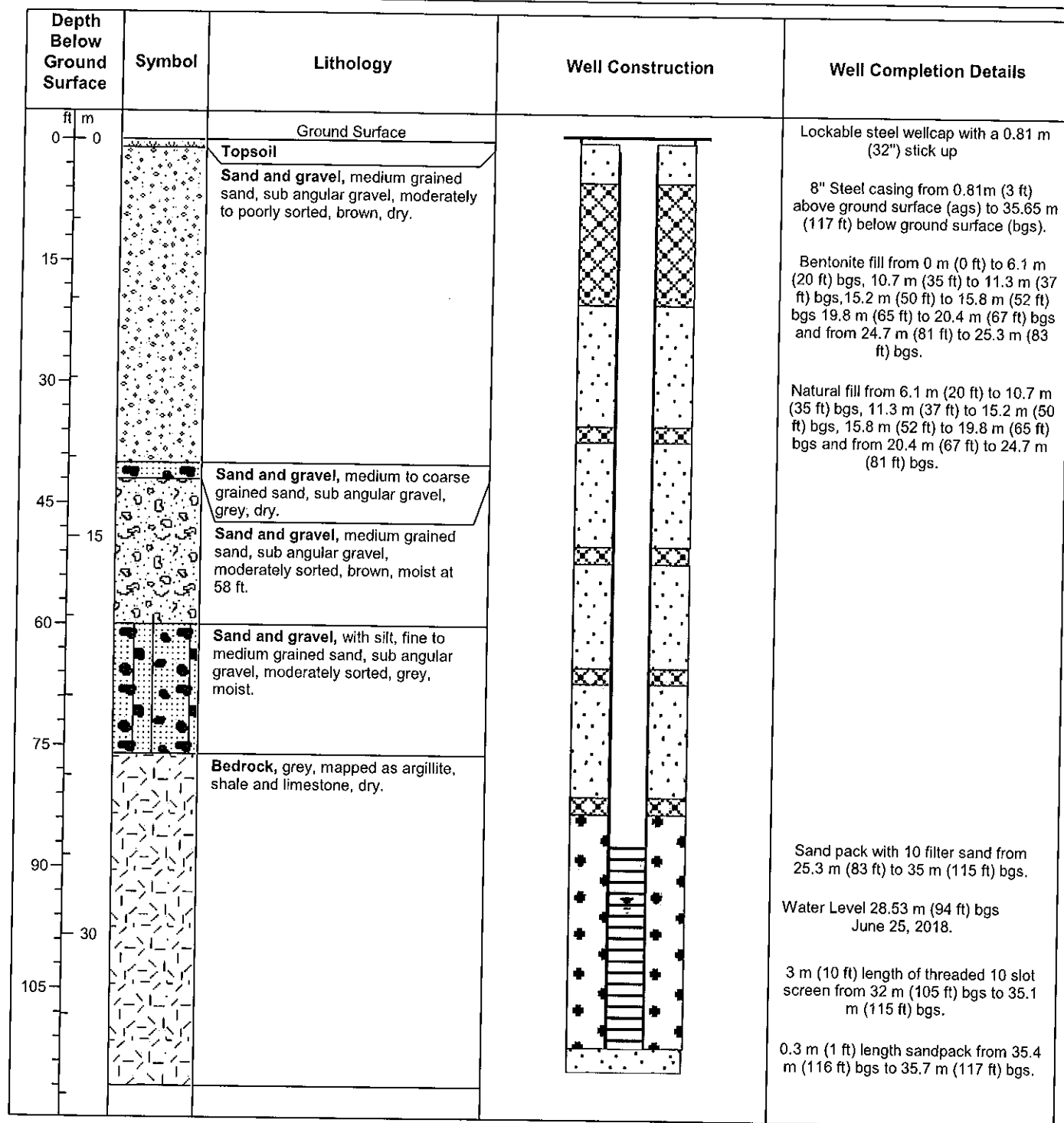
Monitoring Well ID: MW18-10

Project Number: 14-024-21

Client: CSRD

Project: Golden RDF Additional Drilling

Location: Golden, BC



Coordinates: 503411.92 m E 5684049.84 m N 11 U

Static Water Level: 28.53 m June 26, 2018

Ground Elevation: 919 m above sea level (asl)

Total Borehole Depth: 35.65 m (117 ft) bgs

Drawn By: RA

Checked By: BRM

Drilling Contractor: JR Drilling

Drilling Method: Dual Air Rotary

Date of Completion: June 25, 2018

Logged By: RA

Sheet: 1 of 1

Monitoring Well ID: MW18-11

Project Number: 14-024-21

Client: CSRD

Project: Golden RDF

Location: Golden, BC



Depth Below Ground Surface	Symbol	Lithology	Well Construction	Well Completion Details
ft m				
0 0		Ground Surface		Lockable steel wellcap with 1.1 m (35") stick up
15		Silt, with trace gravel, loose, brown, dry.		
30		Silt, loose, grey, dry.		4.6 m (15 ft) length bentonite surface seal from 0 m (0 ft) bgs to 4.6 m (15 ft) below ground surface (bgs)
45 15		Silt with gravel, coarsening downwards, loose, brown, dry.		
60		Gravel, with trace sand and silt, fine grained sand, sub angular to sub rounded gravel, angular silt, loose, brown, moist at 44.2 m (145 ft) bgs.		6" Steel casing from 1.1 m (3.5 ft) above ground surface (ags) to 115.8 m (380 ft) bgs
75				
90				
105 30				
120				5" Steel casing from 0 m (0 ft) bgs to 125 m (410 ft) bgs
135				
150 45				
165				
180				
195 60				
210				
225		Silt, loose, brown, dry.		
240		Gravel, with trace silt, sub angular to rounded silt, loose, brown, dry.		
75		Gravel, with trace sand, fine grained sand, loose, brown, dry.		

Coordinates: 503205.13 m E 5684006.34 m N 11 U
Static Water Level: 114 m (374 ft) December 6, 2018
Ground Elevation: 915 m above sea level (masl)
Total Borehole Depth: 115.8 m (380 ft)
Drawn By: RA

Checked By: BRM

Drilling Contractor: JR Drilling Kamloops
Drilling Method: Dual Air Rotary
Date of Completion: December 3 - 6, 2018

Logged By: RA/BRM

Sheet: 1 of 2

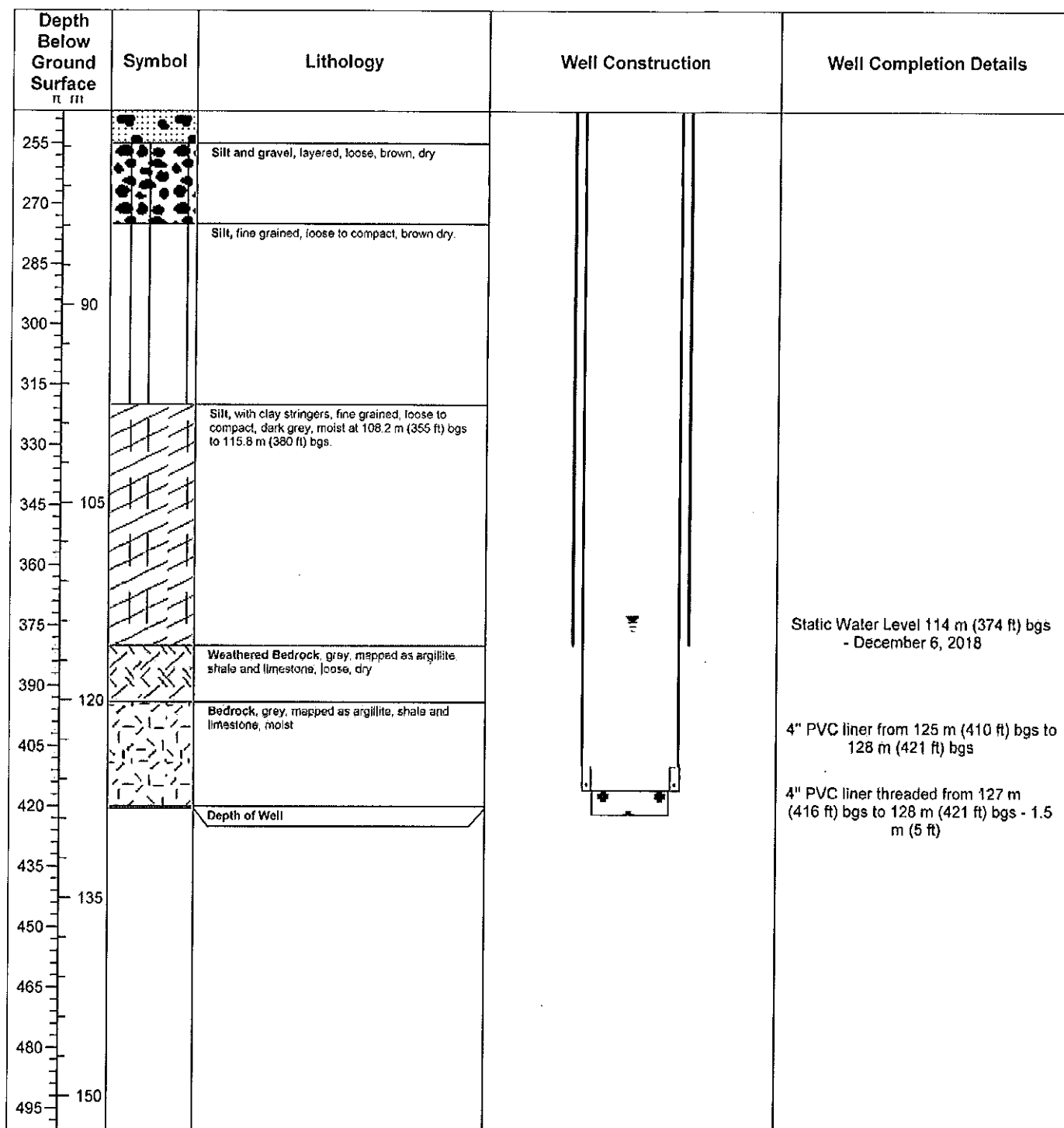
Monitoring Well ID: MW18-11

Project Number: 14-024-21

Client: CSRD

Project: Golden RDF

Location: Golden, BC



Coordinates: 503205.13 m E 5684006.34 m N 11 U

Static Water Level: 114 m (374 ft) December 6, 2018

Ground Elevation: 915 m above sea level (masl)

Total Borehole Depth: 115.8 m (380 ft)

Drawn By: RA

Checked By: BRM

Drilling Contractor: JR Drilling Kamloops

Drilling Method: Dual Air Rotary

Date of Completion: December 3 - 6, 2018

Logged By: RA/BRM

Sheet: 2 of 2



Report 1 - Detailed Well Record

Well Tag Number: 99638	Construction Date: 2000-10-25 00:00:00.0		
Owner: KATS CONTRACTING	Driller: Owen's Drilling Ltd.		
Address: 532 HIETALA ROAD	Well Identification Plate Number:		
Area: GOLDEN	Plate Attached By:		
WELL LOCATION:	Where Plate Attached:		
KOOTENAY Land District	PRODUCTION DATA AT TIME OF DRILLING:		
District Lot: Plan: Lot:	Well Yield: 6 (Driller's Estimate) U.S. Gallons per Minute		
Township: 27 Section: 18 Range: 21	Development Method: Air lifting		
Indian Reserve: Meridian: W5M Block: A	Pump Test Info Flag: N		
Quarter:	Artesian Flow:		
Island:	Artesian Pressure (ft):		
BCGS Number (NAD 27): 082N036121 Well:	Static Level: 50 feet		
Class of Well: Water supply	WATER QUALITY:		
Subclass of Well: Domestic	Character:		
Orientation of Well: Vertical	Colour:		
Status of Well: New	Odour:		
Well Use: Private Domestic	Well Disinfected: N		
Observation Well Number:	EMS ID:		
Observation Well Status:	Water Chemistry Info Flag: N		
Construction Method:	Field Chemistry Info Flag:		
Diameter: inches	Site Info (SEAM):		
Casing drive shoe: Y N	Water Utility:		
Well Depth: 276 feet	Water Supply System Name:		
Elevation: feet (ASL)	Water Supply System Well Name:		
Final Casing Stick Up: 6 inches	SURFACE SEAL:		
Well Cap Type: PLASTIC CAP	Flag: N		
Bedrock Depth: 18 feet	Material:		
Lithology Info Flag: N	Method:		
File Info Flag: N	Depth (ft):		
Sieve Info Flag: N	Thickness (in):		
Screen Info Flag: N	Liner from To: feet		
Site Info Details:	WELL CLOSURE INFORMATION:		
Other Info Flag:	Reason For Closure:		
Other Info Details:	Method of Closure:		
	Closure Sealant Material:		
	Closure Backfill Material:		
	Details of Closure:		

Screen from	to feet	Type	Slot Size
Casing from	to feet	Diameter	Material
0	36	6	Steel
36	276	5.88	Open hole
			Drive Shoe
			Y
			N

GENERAL REMARKS:

260' OF PVC LINER. BOTTOM 40' PERFORATED. SHOE: 1X6" CARBIDE BOTTON. RECOMMENDED PUMP TYPE: SUB

LITHOLOGY INFORMATION:

From	To	Material	Yield
0	18 Ft.	CLAY, GRAVEL, COBBLES	
18	36 Ft.	BEDROCK, BROKEN	
36	150 Ft.	2 Gallons per Minute (U.S./Imperial)	bedrock
150	257 Ft.	2 Gallons per Minute (U.S./Imperial)	bedrock
256	276 Ft.	1 Gallons per Minute (U.S./Imperial)	bedrock

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white: Customer copy
canary: Driller copy
pink: Ministry copy

Sheet _____ of _____



Landfill Gas Probe GP20-01D

PROJECT NUMBER 19-2850.03	DRILLING DATE July 21, 2020	FIELD SCREENING METHOD
PROJECT NAME Golden CSRD Landfill	CONTRACTOR On The Mark Locates Ltd.	LOGGED BY KT
CLIENT CSRD	EQUIPMENT MODEL Truck Mounted Auger Rig	CHECKED BY LMM
ADDRESS 350 Golden Donald Upper Road, Golden, BC	BORING METHOD ODEX	

COMMENTS

Depth (m)	USCS Classification	Soil Description	Graphic Log	Sample ID	Sample Type	PID (ppmv)	Analysed	% Recovery	Water Level	Well Diagram
1	SC/GC	Brown, w>PL, CLAYEY GRAVEL, some to sandy, inferred cobbles and boulders, cohesive, hard. (TILL-LIKE)		SA1	SS		N			
2				SA2	SS		N			
3				SA3	SS		N			
4	CL	Light brown, w<PL, SILTY CLAY, some gravel and sand, cohesive, very hard.		SA4	SS		N			
5										
6		WEATHERED BEDROCK.								
7										
8										
9										
10										
11		BEDROCK.								
12										
13		End of Soil Vapour Probe.								



Landfill Gas Probe GP20-01S

PROJECT NUMBER 19-2850.03	DRILLING DATE July 22, 2020	FIELD SCREENING METHOD
PROJECT NAME Golden CSRD Landfill	CONTRACTOR On The Mark Locates Ltd.	LOGGED BY KT
CLIENT CSRD	EQUIPMENT MODEL Truck Mounted Auger Rig	CHECKED BY LMM
ADDRESS 350 Golden Donald Upper Road, Golden, BC	BORING METHOD ODEX	

COMMENTS

Depth (m)	USCS Classification	Soil Description	Graphic Log	Sample ID	Sample Type	PID (ppmv)	Analysed	% Recovery	Water Level	Well Diagram
0.5	SC/GC	Brown, w>PL, CLAYEY GRAVEL, some to sandy, inferred cobbles and boulders, cohesive, hard. (TILL-LIKE)								
1										
1.5										
2										
2.5	CL	Light Brown, w<PL, SILTY CLAY, some gravel and sand, cohesive, very hard.								
3										
3.5										
4										
4.5	WEATHERED BEDROCK.									
5										
5.5										
6										
6.5	End of Soil Vapour Probe.									
7										
7.5										
8										
8.5										



Landfill Gas Probe GP20-02D

PROJECT NUMBER 19-2850.03	DRILLING DATE July 22, 2020	FIELD SCREENING METHOD
PROJECT NAME Golden CSRD Landfill	CONTRACTOR On The Mark Locates Ltd.	LOGGED BY KT
CLIENT CSRD	EQUIPMENT MODEL Truck Mounted Auger Rig	CHECKED BY LMM
ADDRESS 350 Golden Donald Upper Road, Golden, BC	BORING METHOD ODEX	

COMMENTS

Depth (m)	USCS Classification	Soil Description	Graphic Log	Sample ID	Sample Type	PID (ppmv)	Analysed	% Recovery	Water Level	Well Diagram
0.5	OL GC	Dark brown, W<PL, ORGANIC CLAYEY SILT, rootlets.		SA1	SS		N			Stick Up
1		Brown, w<PL, CLAYEY GRAVEL, some sand, inferred cobbles and boulders, cohesive, hard.								
1.5		grading to		SA2	SS		N			
2		Brown, w~PL, gravelly SILTY CLAY, some sand, inferred cobbles and boulders, cohesive.								
2.5										
3				SA3	SS		N			
3.5										
4		WEATHERED BEDROCK.								
4.5										
5										
5.5										
6										
6.5										
7										
7.5										
8										25mm Slotted PVC Pipe and Filter Sand
8.5										
9										
9.5										
10		BEDROCK.								Cuttings
10.5										
		End of Soil Vapour Probe.								



Landfill Gas Probe GP20-02S

PROJECT NUMBER 19-2850.03	DRILLING DATE July 22, 2020	FIELD SCREENING METHOD
PROJECT NAME Golden CSRD Landfill	CONTRACTOR On The Mark Locates Ltd.	LOGGED BY KT
CLIENT CSRD	EQUIPMENT MODEL Truck Mounted Auger Rig	CHECKED BY LMM
ADDRESS 350 Golden Donald Upper Road, Golden, BC	BORING METHOD ODEX	

COMMENTS

Depth (m)	USCS Classification	Soil Description	Graphic Log	Sample ID	Sample Type	PID (ppmv)	Analysed	% Recovery	Water Level	Well Diagram
0.5	OL GC	Dark brown, W<PL, ORGANIC CLAYEY SILT, rootlets. Brown, w<PL, CLAYEY GRAVEL, some sand, inferred cobbles and boulders, cohesive, hard.								
1		grading to Brown, w~PL, gravelly SILTY CLAY, some sand, inferred cobbles and boulders, cohesive.								
4		WEATHERED BEDROCK.								
7		End of Soil Vapour Probe.								

APPENDIX C 2020 GROUNDWATER LEVELS AND WATER QUALITY DATA

Sampling Location					DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-4	DMW-4	DMW-4	DMW20-01	DMW20-01	DMW20-01	DUP A	DUP A	DUP A	DUP A	MW09-6D	MW09-6D	MW09-6D	MW09-6D	MW09-6S	MW09-6S	MW09-6S	MW09-6S						
Date Sampled					2020-03-24	2020-05-20	2020-08-25	2020-11-03	2020-03-24	2020-05-20	2020-08-25	2020-05-20	2020-08-24	2020-11-03	2020-03-24	2020-05-20	2020-08-24	2020-11-03	2020-03-24	2020-05-20	2020-08-24	2020-11-03	2020-03-24	2020-05-20	2020-08-24	2020-11-03						
Lab Sample ID					0032091-06	0051806-07	0082459-07	20K0317-07	0032091-07	0051806-08	0082459-08	0051806-06	0082459-11	20K0317-10	0032091-09	0051806-10	0082459-10	20K0317-09	0032091-08	0051806-09	0082459-09	20K0317-08	0032091-01	0051806-01	0082459-01	20K0317-01						
Sample Type																																
Analyte	Unit	GCDWQ MAC	GCDWQ AO	CSR DW																												
Field Parameters																																
Depth to Water	m				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33.71	33.765	34.788	33.862	32.495	32.531	32.535	32.584					
Dissolved Oxygen	mg/L				1.86	2	3.29	3.57	3.7	5.15	2.83	10.06	8.87	9.45	-	-	-	-	-	1.84	3.92	3.6	3.21	1.45	2.26	2.07	3.68					
Electrical Conductivity	µS/cm				881	1104	1331	1120	880	1194	1374	538	548	553	-	-	-	-	-	3000	3960	3911	3871	2955	3944	3864	3837					
Elevation of Piezometric Surface	m				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	884.565	884.51	883.487	884.413	884.562	884.526	884.522	884.473					
Oxidation reduction potential	mV				42.3	110.6	127.1	234	28.9	17.4	101	225.7	177.6	259.3	-	-	-	-	-	104.9	198.2	149.8	291.7	99	216.9	94	247.7					
pH	pH Units				7.58	7.04	7.48	7.02	7.07	7.13	7.36	7.51	7.82	7.6	-	-	-	-	-	6.93	6.76	6.81	6.72	6.93	6.68	6.76	6.79					
Temperature	°C				4.9	9	8.7	6.9	7.8	10.8	10.5	9.8	15.4	8.2	-	-	-	-	-	9.9	10.9	11	10.3	11.5	12.1	12.1	11.7					
Anions																																
Chloride	mg/L		250	250	9.49	8.79	9.13	8.98	50.5	40.5	42.2	34.4	38.8	34.7	378	399	377	365	399	392	377	366	380	398	379	371						
Fluoride	mg/L	1.5		1.5	0.72	0.76	0.91	0.47	1.25	1.47	1.35	0.16	0.12	<0.1	0.18	0.15	<0.1	<0.1	0.18	0.15	<0.1	<0.1	0.17	0.16	<0.1	<0.1						
Nitrate (as N)	mg/L	10		10	0.334	0.666	0.112	0.489	<0.01	<0.01	<0.01	0.294	0.429	0.403	30.6	39.7	35	34.3	32.7	45	35.6	34.6	30.6	43.4	33.9	34.2						
Nitrite (as N)	mg/L	1		1	<0.01	<0.01	<0.01	<0.01	<0.01	0.039	<0.01	0.05	<0.01	<0.01	<0.01	0.381	<0.01	<0.01	<0.01	0.012	0.455	<0.01	<0.01	<0.01	0.48	<0.01	<0.01					
Sulfate	mg/L		500	500	232	213	251	224	110	127	128	24.6	25.1	25	690	624	633	643	690	615	634	642	688	611	637	636						
Dissolved Metals																																
Aluminum, dissolved	mg/L			9.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.481	<0.005						
Antimony, dissolved	mg/L	0.006		0.006	<0.0002	<0.0002	<0.0002	0.00025	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.00036	0.00029	0.00034	0.00029	<0.0002	<0.0002	0.00021	0.00023						
Arsenic, dissolved	mg/L	0.01		0.01	0.00121	0.00104	0.00129	0.00117	0.047	0.0533	0.0525	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.00073	<0.0005	0.00051	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.00073	<0.0005						
Barium, dissolved	mg/L	2		1	0.0155	0.0173	0.0158	0.0159	0.0219	0.0245	0.024	0.11	0.11	0.119	0.0458	0.0535	0.0617	0.0466	0.0503	0.0532	0.049	0.0457	0.0456	0.0551	0.0618	0.0509						
Beryllium, dissolved	mg/L			0.008	<0.0001	<0.0001	<0.0001	0.00022	0.00013	0.00012	0.00012	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001						
Bismuth, dissolved	mg/L				<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001						
Boron, dissolved	mg/L	5		5	0.394	0.289	0.448	0.352	0.185	0.19	0.145	0.0617	0.0505	0.0534	1.81	1.92	1.97	1.75	1.63	1.73	1.97	1.75	1.55	1.76	1.87	1.74						
Cadmium, dissolved	mg/L	0.005		0.005	0.00001	<0.00001	0.000016	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.000012	0.000038	0.000012	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001						
Calcium, dissolved	mg/L				73.5	74.6	69.2	81.3	70.7	72.7	66.7	48.5	48.3	55.7	158	158	164	171	155	158	154	170	153	161	159	167						
Chromium, dissolved	mg/L	0.05			<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.00094	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.00091	<0.0005						
Cobalt, dissolved	mg/L			0.02*	0.00069	0.00093	0.00068	0.00076	<0.0001	0.00029	<0.0001	<0.0001	0.00011	0.00015	0.00157	0.0016	0.0019	0.00165	0.0018	0.00179	0.00189	0.00178	0.00154	0.00157	0.00178	0.0017						
Copper, dissolved	mg/L	2	1	1.5	0.00384	0.0212	0.00484	0.0109	<0.0004	<0.0004	<0.0004	<0.0004	0.00189	0.00052	0.00243	0.00242	0.00272	0.00225	0.00261	0.00298	0.0024	0.0022	0.0022	0.00247	0.00279	0.00262						
Iron, dissolved	mg/L		0.3	6.5	<0.01	<0.01	0.014	<0.01	0.394	0.669	0.776	0.103	<0.01	<0.01	<0.01	<0.01	0.767	<0.01	0.011	<0.01	<0.01	<0.01	<0.01	<0.01	0.636	<0.01						
Lead, dissolved	mg/L	0.005		0.01	<0.0002	0.00023	0.00047	0.00021	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.00086	0.00024	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.00087	<0.0002						
Lithium, dissolved	mg/L			0.008	0.0532	0.0397	0.0529	0.045	0.0254	0.0248	0.0245	0.00137	0.00123	0.0017	0.04	0.0426	0.0415	0.0401	0.04	0.												

Sampling Location					DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-4	DMW-4	DMW-4	DMW20-01	DMW20-01	DMW20-01	DUP A	DUP A	DUP A	DUP A	MW09-6D	MW09-6D	MW09-6D	MW09-6D	MW09-6S	MW09-6S	MW09-6S	MW09-6S		
Date Sampled					2020-03-24	2020-05-20	2020-08-25	2020-11-03	2020-03-24	2020-05-20	2020-08-25	2020-05-20	2020-08-24	2020-11-03	2020-03-24	2020-05-20	2020-08-24	2020-11-03	2020-03-24	2020-05-20	2020-08-24	2020-11-03	2020-03-24	2020-05-20	2020-08-24	2020-11-03		
Lab Sample ID					0032091-06	0051806-07	0082459-07	20K0317-07	0032091-07	0051806-08	0082459-08	0051806-06	0082459-11	20K0317-10	0032091-09	0051806-10	0082459-10	20K0317-09	0032091-08	0051806-09	0082459-09	20K0317-08	0032091-01	0051806-01	0082459-01	20K0317-01		
Sample Type																												
Analyte	Unit	GCDWQ MAC	GCDWQ AO	CSR DW																								
Anthracene	µg/L			1000	-	<0.01	-	-	-	<0.01	-	<0.01	-	-	-	<0.01	-	-	-	<0.01	-	-	-	<0.01	-	-		
Benz(a)anthracene	µg/L			0.07	-	<0.01	-	-	-	<0.01	-	<0.01	-	-	-	<0.01	-	-	-	<0.01	-	-	-	<0.01	-	-		
Benzo(a)pyrene	µg/L	0.04		0.01	-	<0.01	-	-	-	<0.01	-	<0.01	-	-	-	<0.01	-	-	-	<0.01	-	-	-	<0.01	-	-		
Benzo(b+j)fluoranthene	µg/L			0.07	-	<0.05	-	-	-	<0.05	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-		
Benzo(g,h,i)perylene	µg/L				-	<0.05	-	-	-	<0.05	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-		
Benzo(k)fluoranthene	µg/L				-	<0.05	-	-	-	<0.05	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-		
Chrysene	µg/L			7	-	<0.05	-	-	-	<0.05	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-		
Dibenz(a,h)anthracene	µg/L			0.01	-	<0.01	-	-	-	<0.01	-	<0.01	-	-	-	<0.01	-	-	-	<0.01	-	-	-	<0.01	-	-		
Fluoranthene	µg/L			150	-	<0.03	-	-	-	<0.03	-	<0.03	-	-	-	<0.03	-	-	-	<0.03	-	-	-	<0.03	-	-		
Fluorene	µg/L			150	-	<0.05	-	-	-	<0.05	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-		
Indeno(1,2,3-cd)pyrene	µg/L				-	<0.05	-	-	-	<0.05	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-		
Naphthalene	µg/L			80	-	<0.2	-	-	-	<0.2	-	<0.2	-	-	-	<0.2	-	-	-	<0.2	-	-	-	<0.2	-	-		
Phenanthrene	µg/L				-	<0.1	-	-	-	<0.1	-	<0.1	-	-	-	<0.1	-	-	-	<0.1	-	-	-	<0.1	-	-		
Pyrene	µg/L			100	-	<0.02	-	-	-	<0.02	-	<0.02	-	-	-	<0.02	-	-	-	<0.02	-	-	-	<0.02	-	-		
Quinoline	µg/L			0.05	-	<0.05	-	-	-	<0.05	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-		
BCMOE Aggregate Hydrocarbons																												
EPHw10-19	µg/L			5000	-	<250	-	-	-	<250	-	<250	-	-	-	<250	-	-	-	<250	-	-	-	<250	-	-		
EPHw19-32	µg/L				-	<250	-	-	-	<250	-	<250	-	-	-	<250	-	-	-	<250	-	-	-	<250	-	-		
HEPHw	µg/L				-	<250	-	-	-	<250	-	<250	-	-	-	<250	-	-	-	<250	-	-	-	<250	-	-		
LEPHw	µg/L			15000	-	<250	-	-	-	<250	-	<250	-	-	-	<250	-	-	-	<250	-	-	-	<250	-	-		
VHw (6-10)	µg/L				-	<100	<100	-	-	<100	<100	<100	<100	-	-	<100	<100	-	-	<100	<100	-	-	<100	<100	-		
VPHw	µg/L				-	<100	<100	-	-	<100	<100	<100	<100	-	-	<100	<100	-	-	<100	<100	-	-	<100	<100	-		

Sampling Location					MW10-8	MW10-8	MW10-8	MW10-8	MW18-10	MW18-10	MW18-10	MW18-10	MW18-11	MW18-11	MW18-11	MW18-11	MW18-11	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #6	Town Well #6
Date Sampled					2020-03-24	2020-05-20	2020-08-25	2020-11-03	2020-03-25	2020-05-20	2020-08-25	2020-11-03	2020-03-24	2020-05-20	2020-08-24	2020-11-03	2020-03-25	2020-05-20	2020-08-24	2020-11-03	2020-08-24	2020-11-03	
Lab Sample ID					0032091-02	0051806-02	0082459-02	20K0317-02	0032091-03	0051806-03	0082459-03	20K0317-03	0032091-04	0051806-04	0082459-04	20K0317-04	0032091-05	0051806-05	0082459-05	20K0317-05	0082459-06	20K0317-06	
Sample Type																							
Analyte	Unit	GCDWQ MAC	GCDWQ AO	CSR DW																			
Alkalinity, Bicarbonate (as CaCO3)	mg/L				530	511	501	518	806	729	713	856	716	648	648	671	374	365	356	358	358	363	
Alkalinity, Carbonate (as CaCO3)	mg/L				<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Alkalinity, Hydroxide (as CaCO3)	mg/L				<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Alkalinity, Phenolphthalein (as CaCO3)	mg/L				<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Alkalinity, Total (as CaCO3)	mg/L				530	511	501	518	806	729	713	856	716	648	648	671	374	365	356	358	358	363	
Ammonia, Total (as N)	mg/L				0.099	<0.05	<0.05	0.056	1.44	1.68	1.73	2.6	0.191	0.257	0.447	0.361	<0.02	<0.05	<0.05	<0.05	<0.05	0.117	
Bicarbonate (HCO3)	mg/L				646	623	611	632	983	889	870	1040	874	791	790	819	456	446	434	437	437	443	
Carbonate (CO3)	mg/L				<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	
Electrical Conductivity	µS/cm				2700	2590	2830	2880	2770	2420	2560	3240	1460	1390	1460	1580	945	997	1040	1040	917	857	
Hardness, Total (as CaCO3)	mg/L				634	669	701	766	1050	796	1070	1150	680	589	624	684	414	396	395	441	392	437	
Hydroxide (OH)	mg/L				<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	
pH	pH Units				7.95	7.98	8.05	8.09	7.81	7.9	7.97	7.89	8.25	7.93	8.13	8.06	7.98	7.93	7.98	8.04	7.94	7.93	
Total dissolved solids	mg/L		500		1550	1290	1560	1460	1550	1310	1390	1820	850	849	849	899	607	562	579	559	520	507	
Turbidity	NTU				41.5	3.48	83.7	230	65.8	73.2	114	172	52.4	112	45.1	37	0.12	<0.1	<0.1	0.23	23.6	171	
Volatile Organic Compounds (VOC)																							
1,1-Dichloroethane	µg/L			30	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,1-Dichloroethylene	µg/L	14		14	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,1,1-Trichloroethane	µg/L			8000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,1,2-Trichloroethane	µg/L			3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,1,2,2-Tetrachloroethane	µg/L			0.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
1,2-Dibromoethane	µg/L			0.5	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	
1,2-Dichlorobenzene	µg/L	200	3	200	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
1,2-Dichloroethane	µg/L	5		5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,2-Dichloropropane	µg/L			4.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,3-Dichlorobenzene	µg/L				<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,3-Dichloropropene (cis + trans)	µg/L			1.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,4-Dichlorobenzene	µg/L	5	1	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Benzene	µg/L	5		5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Bromodichloromethane	µg/L			100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Bromoform	µg/L			100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Carbon tetrachloride	µg/L	2		2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Chlorobenzene	µg/L			80	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Chloroethane	µg/L				<2	<2	<2	<2	<2	<2	<2	<2	<2	<6	<2	<2	<2	<2	<2	<2	<2	<2	
Chloroform	µg/L	100		100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
cis-1,2-Dichloroethylene	µg/L			8	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Dibromochloromethane	µg/L			100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Dibromomethane	µg/L				<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Dichloromethane	µg/L	50		50	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	
Ethylbenzene	µg/L	140	1.6	140	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Methyl tert-butyl ether	µg/L		15	95	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Styrene	µg/L			800	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Tetrachloroethylene	µg/L	10		30	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Toluene	µg/L	60	24	60	&																		

Sampling Location				MW10-8	MW10-8	MW10-8	MW10-8	MW18-10	MW18-10	MW18-10	MW18-10	MW18-10	MW18-11	MW18-11	MW18-11	MW18-11	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #6	Town Well #6	
Date Sampled				2020-03-24	2020-05-20	2020-08-25	2020-11-03	2020-03-25	2020-05-20	2020-08-25	2020-11-03	2020-03-24	2020-05-20	2020-08-24	2020-11-03	2020-03-25	2020-05-20	2020-08-24	2020-11-03	2020-08-24	2020-11-03	2020-08-24	2020-11-03
Lab Sample ID				0032091-02	0051806-02	0082459-02	20K0317-02	0032091-03	0051806-03	0082459-03	20K0317-03	0032091-04	0051806-04	0082459-04	20K0317-04	0032091-05	0051806-05	0082459-05	20K0317-05	0082459-06	20K0317-06		
Sample Type																							
Analyte	Unit	GCDWQ MAC	GCDWQ AO	CSR DW																			
Anthracene	µg/L			1000	-	<0.01	-	-	-	<0.01	-	-	-	<0.01	-	-	-	<0.01	-	-	-	-	
Benz(a)anthracene	µg/L			0.07	-	<0.01	-	-	-	<0.01	-	-	-	<0.01	-	-	-	<0.01	-	-	-	-	
Benzo(a)pyrene	µg/L	0.04		0.01	-	<0.01	-	-	-	<0.01	-	-	-	<0.01	-	-	-	<0.01	-	-	-	-	
Benzo(b+j)fluoranthene	µg/L			0.07	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	-	
Benzo(g,h,i)perylene	µg/L				-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	-	
Benzo(k)fluoranthene	µg/L				-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	-	
Chrysene	µg/L			7	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	-	
Dibenz(a,h)anthracene	µg/L			0.01	-	<0.01	-	-	-	<0.01	-	-	-	<0.01	-	-	-	<0.01	-	-	-	-	
Fluoranthene	µg/L			150	-	<0.03	-	-	-	<0.03	-	-	-	<0.03	-	-	-	<0.03	-	-	-	-	
Fluorene	µg/L			150	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	-	
Indeno(1,2,3-cd)pyrene	µg/L				-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	-	
Naphthalene	µg/L			80	-	<0.2	-	-	-	<0.2	-	-	-	<0.2	-	-	-	<0.2	-	-	-	-	
Phenanthrene	µg/L				-	<0.1	-	-	-	<0.1	-	-	-	<0.1	-	-	-	<0.1	-	-	-	-	
Pyrene	µg/L			100	-	<0.02	-	-	-	<0.02	-	-	-	<0.02	-	-	-	<0.02	-	-	-	-	
Quinoline	µg/L			0.05	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	-	
BCMOE Aggregate Hydrocarbons																							
EPHw10-19	µg/L			5000	-	<250	-	-	-	<250	-	-	-	<250	-	-	-	<250	-	-	-	-	
EPHw19-32	µg/L				-	<250	-	-	-	<250	-	-	-	313	-	-	-	<250	-	-	-	-	
HEPHw	µg/L				-	<250	-	-	-	<250	-	-	-	313	-	-	-	<250	-	-	-	-	
LEPHw	µg/L			15000	-	<250	-	-	-	<250	-	-	-	<250	-	-	-	<250	-	-	-	-	
VHw (6-10)	µg/L				-	<100	<100	-	-	<100	<100	-	-	<100	<100	-	-	<100	<100	-	<100	-	
VPHw	µg/L				-	<100	<100	-	-	<100	<100	-	-	<100	<100	-	-	<100	<100	-	<100	-	



- Notes:**
- < Less than reported detection limit
 - > Greater than reported upper detection limit
 - Not Sampled
 - No Guideline or Standard
 - * Province-wide Interim Background Concentration per ENV Protocol 9
 - GCDWQ AO Guidelines for Canadian Drinking Water Quality - Aesthetic Objectives
 - GCDWQ MAC Guidelines for Canadian Drinking Water Quality - Maximum Acceptable Concentrations
 - CSR DW BC Contaminated Sites Regulation, Schedule 3.2 Generic Numerical Water Standards for Drinking Water
 - 20

 Highlighted Value Exceeds GCDWQ MAC
 - 20

 Highlighted Value Exceeds GCDWQ AO
 - 20

 Red text Value Exceeds CSR DW

APPENDIX D HISTORICAL WATER QUALITY DATA

Sampling Location		DMW-1	DMW-1	DMW-1	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	
Date Sampled	2010-02-09	2010-06-15	2010-11-16	2011-05-09	2011-08-10	2011-10-18	2012-05-24	2012-08-22	2012-11-20	2013-05-21	2013-08-20	2013-11-12	2014-06-02	2014-08-18	2014-11-04	2015-05-25	2015-08-25	2015-11-09	2016-05-03	2016-08-22	2016-11-14	2017-04-05	2017-08-29	
Lab Sample ID	K0B0397-04	K0F0788-01	K0K0729-04	K1E0403-05	K1H0536-03	K1J0685-03	2051369-01	2081484-03	2111131-03	3051354-03	3081378-03	3110772-03	4060249-03	4081094-03	4110161-03	5051773-04	5081710-02	5110693-01	6050336-02	6081698-02	6111141-04	7040434-07	7090074-04	
Sample Type							Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	
Analyte	Unit																							
Field Parameters																								
Depth to Water	m	-	-	-	-	-	9.89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Dissolved Oxygen	mg/L	-	-	-	-	-	-	-	-	-	-	-	0.29	0.59	1.98	1.21	2.34	0.34	0.01	4.73	-	-	2.53	
Electrical Conductivity	µS/cm	1120	1220	1150	1220	1000	1150	1170	1140	1070	870	750	1040	1075	1030	1118	1021	1142	1155	1134	1201	1127	1113	1128
Elevation of Piezometric Surface	m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Oxidation reduction potential	mV	-	61	-18	-199	40	162	99	44	-12	124	8	19	-41	-86	-65	-28	-26	53	-35	97	29	83	17
pH	pH Units	7.31	7.28	7.3	7.4	7.31	7.23	7.15	7.54	7.4	7.36	7.22	7.16	7.3	7.3	7	7.5	7.2	6.3	7.3	7.3	7.4	7.7	7.4
Temperature	°C	6.5	9.9	6.2	8.8	9.5	6.1	8.2	10	8	8.7	7.7	8	7.8	9.1	8.2	9.8	8.5	8	8.1	7.9	9.1	6.8	9.6
Anions																								
Bromide	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chloride	mg/L	26.8	23.3	30.1	26	27.7	32.7	28.4	32.2	35.7	38.9	40.9	41.1	35.8	39.7	40.1	39.7	42.4	51.7	38.7	47.1	50.4	42.1	12.4
Fluoride	mg/L	-	-	-	-	-	-	1.1	0.81	1.05	1.23	1.31	1.02	1.13	0.84	1.15	1.25	1.28	1.31	1.28	1.28	1.25	1.25	0.73
Nitrate (as N)	mg/L	<0.01	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.199	0.397	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.175
Nitrite (as N)	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.012	<0.010	<0.010	<0.010	<0.010
Sulfate	mg/L	208	213	91.7	137	133	124	144	127	123	121	129	117	135	127	122	133	114	116	129	124	124	126	252
Metals																								
Aluminum, dissolved	mg/L	<0.005	0.007	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.006	0.005	<0.005	-	-	-	-	<0.005	<0.005	-	<0.0050
Aluminum, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.005	<0.005	<0.05	<0.005	-	-	0.005	-
Antimony, dissolved	mg/L	0.0002	0.0002	<0.0001	0.0002	0.0002	<0.0020	0.0001	0.0002	0.0004	0.0004	0.0004	0.0005	0.0003	0.0003	0.0002	-	-	-	-	<0.0001	<0.0001	-	<0.00020
Antimony, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0001	<0.0001	<0.001	<0.0001	-	-	0.0003	-
Arsenic, dissolved	mg/L	0.0043	0.007	0.0389	0.026	0.0362	0.0285	0.0196	0.0419	0.0392	0.0388	0.0397	0.0382	0.0351	0.0378	0.0436	-	-	-	-	0.0421	0.0407	-	0.00124
Arsenic, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0236	0.0489	0.042	0.0375	-	-	0.0326	-
Barium, dissolved	mg/L	0.0236	0.023	0.0269	0.0242	0.022	0.021	0.024	0.023	0.022	0.023	0.023	0.023	0.024	0.024	0.026	-	-	-	-	0.025	0.024	-	0.0149
Barium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.022	0.026	<0.05	0.024	-	-	0.025	-
Beryllium, dissolved	mg/L	<0.0001	<0.0001	0.0001	0.0001	<0.0001	0.0001	0.0001	<0.0001	0.0001	0.0001	<0.0001	0.0001	0.0002	0.0001	0.0001	-	-	-	-	<0.0001	<0.0001	-	<0.00010
Beryllium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0001	0.0001	<0.001	0.0001	-	-	<0.0001	-
Bismuth, dissolved	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0002	<0.0001	<0.0001	<0.0001	-	-	-	-	<0.0001	<0.0001	-	<0.00010
Bismuth, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0001	<0.0001	<0.001	<0.0001	-	-	<0.0001	-
Boron, dissolved	mg/L	0.171	0.233	0.174	0.143	0.135	0.104	0.138	0.137	0.133	0.145	0.166	0.158	0.153	0.138	0.134	-	-	-	-	0.191	0.172	-	0.386
Boron, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.146	0.139	0.14	0.146	-	-	0.137	-
Cadmium, dissolved	mg/L	0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.00003	<0.00001	<0.00001	0.00001	<0.00001	<0.00001	<0.00001	0.00001	0.00001	-	-	-	-	0.00003	0.00001	-	<0.000010
Cadmium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00001	<0.00001	<0.0001	<0.00001	-	-	<0.00001	-
Calcium, dissolved	mg/L	73.9	70.9	73.5	71.9	63.2	65.9	61.2	63.9	64	68.7	71.8	73.4	74	73.1	70.5	-	-	-	-	74.5	70.8	-	75.4
Calcium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	74.3	75.8	75.1	79.2	-	-	77.3	-
Chromium, dissolved	mg/L	0.0146	0.0014	0.0009	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	-	-	-	-	<0.0005	<0.0005	-	<0.00050
Chromium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	<0.0005	<0.005	<0.0005	-	-	<0.0005	-
Cobalt, dissolved	mg/L	0.00063	0.00075	0.00012	0.00011	0.00009	<0.00005	0.00017	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00013	0.00012	0.00008	-	-	-	-	0.00007	<0.00005	-	

Sampling Location Date Sampled Lab Sample ID Sample Type		DMW-1	DMW-1	DMW-1	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b
		2010-02-09	2010-06-15	2010-11-16	2011-05-09	2011-08-10	2011-10-18	2012-05-24	2012-08-22	2012-11-20	2013-05-21	2013-08-20	2013-11-12	2014-06-02	2014-08-18	2014-11-04	2015-05-25	2015-08-25	2015-11-09	2016-05-03	2016-08-22	2016-11-14	2017-04-05	2017-08-29
		K0B0397-04	K0F0788-01	K0K0729-04	K1E0403-05	K1H0536-03	K1J0685-03	2051369-01	2081484-03	2111131-03	3051354-03	3081378-03	3110772-03	4060249-03	4081094-03	4110161-03	5051773-04	5081710-02	5110693-01	6050336-02	6081698-02	6111141-04	7040434-07	7090074-04
								Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Analyte	Unit																							
Molybdenum, dissolved	mg/L	0.0011	0.0008	0.0004	0.0003	0.0004	0.0017	0.0006	0.0004	0.0004	0.0004	0.0002	0.0004	0.0003	0.0004	0.0004	-	-	-	-	0.0004	0.0004	-	0.00058
Molybdenum, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0004	0.0004	<0.001	0.0003	-	-	0.0003	-
Nickel, dissolved	mg/L	0.0034	0.0046	0.0036	0.0011	0.0014	0.0011	<0.0002	0.0014	0.0012	0.0014	0.0015	0.0016	0.0012	0.0021	0.0016	-	-	-	-	0.0017	0.0022	-	0.00115
Nickel, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0006	0.0026	<0.002	0.0016	-	-	0.002	-
Phosphorus, dissolved	mg/L	<0.020	<0.020	<0.020	<0.020	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	-	-	-	-	<0.02	0.24	-	<0.050
Phosphorus, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.020	0.08	<0.2	<0.02	-	-	<0.05	-
Potassium, dissolved	mg/L	6.64	9.66	4.75	4.72	4.85	4.24	5.17	5.08	4.72	5.11	5.31	4.86	4.76	5.06	4.94	-	-	-	-	5.62	5.2	-	8.08
Potassium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.93	5.94	5.1	5.1	-	-	4.73	-
Selenium, dissolved	mg/L	0.0005	<0.0003	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	-	-	-	-	<0.0005	<0.0005	-	<0.00050
Selenium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	<0.0005	<0.005	<0.0005	-	-	<0.0005	-
Silicon, dissolved	mg/L	10.4	6.09	4.55	7.93	8	7.3	7.6	7.9	8	7.9	8	7.4	7.4	8	8.4	-	-	-	-	8	8.3	-	6.4
Silicon, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.9	9	8	8.3	-	-	7.5	-
Silver, dissolved	mg/L	<0.00005	<0.00005	<0.00005	0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	-	-	-	-	<0.00005	<0.00005	-	<0.000050
Silver, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00005	0.00163	<0.0005	<0.00005	-	-	<0.00005	-
Sodium, dissolved	mg/L	25.8	23.7	26.6	25.4	25.1	25.3	23.5	29.6	27.4	29.1	30.4	29.7	25.4	28.4	30.1	-	-	-	-	32.8	29.8	-	47.5
Sodium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26.9	33.2	29.7	28.7	-	-	26.3	-
Strontium, dissolved	mg/L	3.07	3.89	1.88	1.8	1.69	1.62	1.69	1.72	1.67	1.76	1.74	1.7	1.81	1.76	1.71	-	-	-	-	1.96	1.79	-	4.33
Strontium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.68	1.99	1.74	1.82	-	-	1.78	-
Sulfur, dissolved	mg/L	-	-	-	-	-	-	55	50	46	46	45	37	52	46	47	-	-	-	-	52	44	-	80.3
Sulfur, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46	51	37	45	-	-	43	-
Tellurium, dissolved	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	-	-	-	<0.0002	<0.0002	-	<0.00050
Tellurium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	<0.0002	<0.002	<0.0002	-	-	<0.0002	-
Thallium, dissolved	mg/L	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	0.00004	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	-	-	-	-	<0.00002	<0.00002	-	<0.000020
Thallium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00002	<0.00002	<0.0002	<0.00002	-	-	<0.00002	-
Thorium, dissolved	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-	-	-	<0.0001	<0.0001	-	<0.00010
Thorium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0001	<0.0001	<0.001	<0.0001	-	-	<0.0001	-
Tin, dissolved	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	0.0003	-	-	-	-	0.0002	<0.0002	-	<0.00020
Tin, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0004	<0.0002	<0.002	<0.0002	-	-	<0.0002	-
Titanium, dissolved	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-	-	<0.005	<0.005	-	<0.0050
Titanium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.05	<0.005	-	-	<0.005	-
Tungsten, dissolved	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tungsten, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uranium, dissolved	mg/L	0.00173	0.00165	0.00008	0.00013	0.00011	0.00009	0.00014	0.00007	0.00009	0.00009	0.00007	0.00008	0.00014	0.00014	0.00009	-	-	-	-	0.00005	0.00007	-	0.00103
Uranium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00011	0.00007	<0.0002	0.00013	-	-	0.0002	-
Vanadium, dissolved	mg/L	0.0055	0.0028	<0.0010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	-	-	<0.001	<0.001	-	<0.0010
Vanadium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.001	<0.01	<0.001	-	-	<0.001	-
Zinc, dissolved	mg/L	0.0096	0.0193	0.0097	0.0321																			

Sampling Location		DMW-1	DMW-1	DMW-1	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b
Date Sampled	Lab Sample ID	2010-02-09	2010-06-15	2010-11-16	2011-05-09	2011-08-10	2011-10-18	2012-05-24	2012-08-22	2012-11-20	2013-05-21	2013-08-20	2013-11-12	2014-06-02	2014-08-18	2014-11-04	2015-05-25	2015-08-25	2015-11-09	2016-05-03	2016-08-22	2016-11-14	2017-04-05	2017-08-29
Sample Type		K0B0397-04	K0F0788-01	K0K0729-04	K1E0403-05	K1H0536-03	K1J0685-03	2051369-01	2081484-03	2111131-03	3051354-03	3081378-03	3110772-03	4060249-03	4081094-03	4110161-03	5051773-04	5081710-02	5110693-01	6050336-02	6081698-02	6111141-04	7040434-07	7090074-04
								Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Analyte	Unit																							
Hardness, Total (as CaCO3)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	649	678	645	-	-	-	-	-
Hydroxide (OH)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	<0.3	<0.3	<0.340	<0.340
Nitrate + Nitrite (as N)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen, Total Kjeldahl	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH	pH Units	7.73	7.89	7.69	7.84	7.79	7.79	7.86	7.85	7.09	7.78	7.86	7.86	7.89	7.66	7.81	7.74	7.7	7.63	7.6	7.73	7.89	7.67	7.92
pH	pH units	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, Total (as P)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, Total Dissolved	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total organic carbon	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity	NTU	0.8	0.5	3.6	2	3.4	1.8	1.6	3	3.4	3	3.4	3.2	4.3	3.7	4.3	1.5	3	4.5	4.8	1.68	1.49	2.4	0.63
Microbiological Parameters																								
Coliforms, Fecal	CFU/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coliforms, Fecal	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coliforms, Fecal (MPN)	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coliforms, Total	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coliforms, Total (MPN)	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E. coli (MPN)	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E. coli, Total	CFU/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Volatile Organic Compounds (VOC)																								
1,1-Dichloroethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethylene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethylene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1-Trichloroethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1-Trichloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2-Trichloroethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2-Trichloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromoethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-
1,2-Dibromoethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromoethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-
1,2-Dichloropropane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dichloropropene (cis + trans)	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		

Sampling Location Date Sampled Lab Sample ID Sample Type		DMW-1	DMW-1	DMW-1	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b
		2010-02-09	2010-06-15	2010-11-16	2011-05-09	2011-08-10	2011-10-18	2012-05-24	2012-08-22	2012-11-20	2013-05-21	2013-08-20	2013-11-12	2014-06-02	2014-08-18	2014-11-04	2015-05-25	2015-08-25	2015-11-09	2016-05-03	2016-08-22	2016-11-14	2017-04-05	2017-08-29
		K0B0397-04	K0F0788-01	K0K0729-04	K1E0403-05	K1H0536-03	K1J0685-03	2051369-01	2081484-03	2111131-03	3051354-03	3081378-03	3110772-03	4060249-03	4081094-03	4110161-03	5051773-04	5081710-02	5110693-01	6050336-02	6081698-02	6111141-04	7040434-07	7090074-04
								Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Analyte	Unit																							
Bromoform	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon tetrachloride	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	-
Carbon tetrachloride	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon tetrachloride	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	-
Chloroethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-
Chloroform	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethylene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethylene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-
Dibromochloromethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromomethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-
Dibromomethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromomethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0030	-
Dichloromethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichloromethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-
Ethylbenzene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl tert-butyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-
Methyl tert-butyl ether	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl tert-butyl ether	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-
Styrene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethylene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethylene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-
Toluene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethylene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethylene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethylene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethylene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-
Trichlorofluoromethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-
Vinyl chloride	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xylenes (total)	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xylenes (total)	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BCMOE Aggregate Hydrocarbons																								
VPHw	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Sampling Location		DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4				
Date Sampled	Lab Sample ID	2017-11-20	2018-06-26	2018-09-11	2019-05-29	2019-08-13	2019-10-29	2013-05-21	2013-08-20	2013-11-12	2014-06-02	2014-08-18	2014-11-04	2015-05-25	2015-08-25	2015-11-09	2016-05-03	2016-08-22	2016-11-14	2017-04-05	2017-08-29	2017-11-20	2018-06-26	2018-09-11			
Sample Type		7111886-05	8062674-02	8090975-04	9052874-07	9081278-07	N000444-06	3051354-05	3081378-04	3110772-04	4060249-04	4081094-04	4110161-04	5051773-03	5081710-03	5110693-02	6050336-03	6081698-03	6111141-05	7040434-06	7090074-03	7111886-06	8062674-03	8090975-05			
		Normal	Normal	Normal				Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal			
Analyte		Unit																									
Field Parameters																											
Depth to Water	m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Dissolved Oxygen	mg/L	4.67	-	0.32	3.45	2.75	2.49	-	-	-	2.33	0.3	3.22	2.98	2.04	0.4	0	9.12	4.63	-	0.54	4.21	-	4.34			
Electrical Conductivity	µS/cm	1137	1033	1189	1056	987	1006	900	1130	1100	914	1062	953	922	1043	1109	1271	1139	790	927	1159	1187	1214	1232			
Elevation of Piezometric Surface	m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Oxidation reduction potential	mV	-	-161	-182	-33.7	-16	161.7	235	68	204	78	77	-8	69	-5	37	80	206	152	235	-47	-	96	72			
pH	pH Units	7.3	7.34	7.28	7.3	7.26	7.47	7.25	7.16	7.11	7.3	7.1	7.1	7.5	7.3	6.3	7.1	7.3	7.3	7.6	7.4	7.2	7.42	7.23			
Temperature	°C	7.9	8	7.8	8.8	11	6.4	8.7	7.8	7.2	7.9	8.6	8.2	9	8.2	8	8.5	8.2	7.7	7.8	9.5	8	7.9	7.9			
Anions																											
Bromide	mg/L	<0.10	<0.10	<0.10	-	-	-	-	-	-	-	-	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10			
Chloride	mg/L	52.8	92.2	52.3	11.3	10.4	8.8	22.4	16.2	16.9	20.6	19.7	17.4	12.1	13.2	15.7	15.7	15.1	14.5	12.8	46.5	11.7	11.8	12.6			
Fluoride	mg/L	1.3	1.35	1.38	0.83	0.47	0.63	0.48	0.61	0.52	0.28	0.32	0.42	0.89	0.74	0.48	0.69	0.49	0.42	0.34	1.45	0.79	0.71	0.72			
Nitrate (as N)	mg/L	<0.010	<0.010	<0.100	0.522	0.712	0.756	0.181	0.135	<0.010	0.647	0.443	0.602	0.53	0.414	0.725	0.488	0.479	0.511	0.494	0.012	0.138	0.243	0.048			
Nitrite (as N)	mg/L	<0.010	<0.010	<0.100	<0.01	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.336			
Sulfate	mg/L	108	117	119	246	191	175	236	270	268	150	250	213	275	232	196	263	223	135	153	122	246	238	252			
Metals																											
Aluminum, dissolved	mg/L	-	0.0202	<0.0050	0.0141	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-	-	<0.005	<0.005	-	<0.0050	-	0.0128	<0.0050			
Aluminum, total	mg/L	<0.0050	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.05	<0.005	-	-	<0.005	-	<0.0050	-	-			
Antimony, dissolved	mg/L	-	<0.00020	<0.00020	<0.0002	<0.0002	<0.0002	0.0004	0.0005	0.0005	0.0004	0.0004	0.0003	-	-	-	-	<0.0001	0.0002	-	<0.00020	-	<0.00020	<0.00020			
Antimony, total	mg/L	<0.00020	-	-	-	-	-	-	-	-	-	-	-	0.0002	0.0003	<0.001	0.0002	-	-	0.0001	-	<0.00020	-	-			
Arsenic, dissolved	mg/L	-	0.0434	0.0411	0.00107	0.0011	0.00082	0.0013	0.0013	0.0014	0.0012	0.0014	0.0013	-	-	-	-	0.001	0.0009	-	0.0421	-	0.00124	0.00137			
Arsenic, total	mg/L	0.0476	-	-	-	-	-	-	-	-	-	-	-	0.0014	0.0018	<0.005	<0.0005	-	-	0.001	-	0.00149	-	-			
Barium, dissolved	mg/L	-	0.0225	0.0222	0.0167	0.014	0.0152	0.015	0.014	0.015	0.015	0.017	0.017	-	-	-	-	0.017	0.015	-	0.0223	-	0.0159	0.0155			
Barium, total	mg/L	0.0246	-	-	-	-	-	-	-	-	-	-	-	0.017	0.016	<0.05	0.019	-	-	0.016	-	0.0165	-	-			
Beryllium, dissolved	mg/L	-	0.00011	<0.00010	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-	-	-	<0.0001	<0.0001	-	0.00011	-	<0.00010	<0.00010			
Beryllium, total	mg/L	0.00011	-	-	-	-	-	-	-	-	-	-	-	<0.0001	<0.0001	<0.001	<0.0001	-	-	<0.0001	-	<0.00010	-	-			
Bismuth, dissolved	mg/L	-	<0.00010	<0.00010	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-	-	-	<0.0001	<0.0001	-	<0.00010	-	<0.00010	<0.00010			
Bismuth, total	mg/L	<0.00010	-	-	-	-	-	-	-	-	-	-	-	<0.0001	<0.0001	<0.001	<0.0001	-	-	<0.0001	-	<0.00010	-	-			
Boron, dissolved	mg/L	-	0.156	0.134	0.321	0.204	0.275	0.263	0.415	0.465	0.07	0.286	0.218	-	-	-	-	0.267	0.092	-	0.148	-	0.355	0.336			
Boron, total	mg/L	0.101	-	-	-	-	-	-	-	-	-	-	-	0.659	0.392	0.2	0.444	-	-	0.106	-	0.386	-	-			
Cadmium, dissolved	mg/L	-	<0.000010	<0.000010	0.000011	<0.00001	0.000011	0.00002	0.00003	<0.00001	0.00002	0.00001	0.00002	-	-	-	-	0.00003	0.00001	-	<0.000010	-	0.000014	0.000015			
Cadmium, total	mg/L	<0.000010	-	-	-	-	-	-	-	-	-	-	-	0.00001	<0.00001	<0.0001	<0.00001	-	-	<0.00001	-	<0.000010	-	-			
Calcium, dissolved	mg/L	-	71.2	70.8	75.7	74.4	69.6	78.2	80.7	82.5	75.1	86.4	79.9	-	-	-	-	77.8	68.9	-	70.7	-	74.9	78.6			
Calcium, total	mg/L	65.9	-	-	-	-	-	-	-	-	-	-	-	79	81.9	81.6	97	-	-	73.2	-	76.1	-	-			
Chromium, dissolved	mg/L	-	<0.00050	<0.00050	0.00108	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	-	-	-	-	<0.0005	<0.0005	-	<0.00050	-	<0.00050	<0.00050			
Chromium, total	mg/L	<0.00050	-	-	-	-	-	-	-	-	-	-	-	<0.0005	<0.0005	<0.005	<0.0005	-	-	<0.0005	-	<0.00050	-	-			
Cobalt, dissolved	mg/L	-	0.00011	<0.00010	0.00108																						

Sampling Location		DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4			
Date Sampled	Lab Sample ID	2017-11-20	2018-06-26	2018-09-11	2019-05-29	2019-08-13	2019-10-29	2013-05-21	2013-08-20	2013-11-12	2014-06-02	2014-08-18	2014-11-04	2015-05-25	2015-08-25	2015-11-09	2016-05-03	2016-08-22	2016-11-14	2017-04-05	2017-08-29	2017-11-20	2018-06-26	2018-09-11			
Sample Type		7111886-05	8062674-02	8090975-04	9052874-07	9081278-07	N000444-06	3051354-05	3081378-04	3110772-04	4060249-04	4081094-04	4110161-04	5051773-03	5081710-03	5110693-02	6050336-03	6081698-03	6111141-05	7040434-06	7090074-03	7111886-06	8062674-03	8090975-05			
		Normal	Normal	Normal				Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal			
Analyte	Unit																										
Molybdenum, dissolved	mg/L	-	0.00027	0.00036	0.00082	0.00105	0.00097	0.0008	0.0004	0.0006	0.0014	0.0008	0.001	-	-	-	-	0.001	0.0012	-	0.00031	-	0.00062	0.00079			
Molybdenum, total	mg/L	0.00035	-	-	-	-	-	-	-	-	-	-	-	0.0006	0.0007	0.001	0.0009	-	-	0.0014	-	0.00049	-	-			
Nickel, dissolved	mg/L	-	0.00199	0.00201	0.00205	0.00146	0.00148	0.0018	0.0015	0.0012	0.0027	0.0026	0.0019	-	-	-	-	0.0014	0.0017	-	0.00179	-	0.00127	0.00132			
Nickel, total	mg/L	0.00204	-	-	-	-	-	-	-	-	-	-	-	<0.0002	0.0025	<0.002	0.0018	-	-	0.0017	-	0.00105	-	-			
Phosphorus, dissolved	mg/L	-	<0.050	<0.050	<0.05	<0.05	<0.05	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	-	-	-	-	<0.02	<0.02	-	<0.050	-	<0.050	<0.050			
Phosphorus, total	mg/L	<0.050	-	-	-	-	-	-	-	-	-	-	-	<0.020	<0.02	<0.2	<0.02	-	-	<0.05	-	<0.050	-	-			
Potassium, dissolved	mg/L	-	5.15	4.79	7.19	5.75	5.72	7.63	9.49	9.36	3.66	7.73	6.8	-	-	-	-	7.23	4.01	-	4.69	-	8.51	8.04			
Potassium, total	mg/L	4.63	-	-	-	-	-	-	-	-	-	-	-	11.7	9.42	6.2	9.74	-	-	4.15	-	8.59	-	-			
Selenium, dissolved	mg/L	-	<0.00050	<0.00050	<0.0005	0.00056	<0.0005	<0.0005	<0.0005	<0.0005	0.0008	0.0007	0.0007	-	-	-	-	0.0005	0.0007	-	<0.00050	-	<0.00050	<0.00050			
Selenium, total	mg/L	<0.00050	-	-	-	-	-	-	-	-	-	-	-	<0.0005	<0.0005	<0.005	<0.0005	-	-	0.0006	-	<0.00050	-	-			
Silicon, dissolved	mg/L	-	7.7	7.6	6.3	7.2	7.9	7.2	7	6.6	7.4	7.3	7.9	-	-	-	-	6.8	7.6	-	7.2	-	6.8	6.5			
Silicon, total	mg/L	7.6	-	-	-	-	-	-	-	-	-	-	-	7	7.2	7	8.1	-	-	7.3	-	6.4	-	-			
Silver, dissolved	mg/L	-	<0.000050	<0.000050	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	-	-	-	-	<0.00005	<0.00005	-	<0.000050	-	<0.000050	<0.000050			
Silver, total	mg/L	<0.000050	-	-	-	-	-	-	-	-	-	-	-	0.00005	0.00129	<0.0005	<0.00005	-	-	<0.00005	-	<0.000050	-	-			
Sodium, dissolved	mg/L	-	29.2	28.8	39.4	26.2	29.9	34.2	48.8	51	20.2	34.8	31.6	-	-	-	-	33.4	17	-	27.9	-	44.6	41.2			
Sodium, total	mg/L	26.9	-	-	-	-	-	-	-	-	-	-	-	70.3	46.9	27.2	50	-	-	21.1	-	46.4	-	-			
Strontium, dissolved	mg/L	-	1.66	1.76	4.26	3.49	3.11	4.26	5.03	5.11	2.07	4.53	3.8	-	-	-	-	4.11	2.09	-	1.59	-	4.49	4.8			
Strontium, total	mg/L	1.85	-	-	-	-	-	-	-	-	-	-	-	6.04	5.09	3.55	5.47	-	-	2.3	-	5.49	-	-			
Sulfur, dissolved	mg/L	-	44.1	41.4	82.7	70.7	71.2	80	95	88	58	87	80	-	-	-	-	83	48	-	43	-	85.5	86.6			
Sulfur, total	mg/L	42.6	-	-	-	-	-	-	-	-	-	-	-	98	87	67	98	-	-	46	-	88.3	-	-			
Tellurium, dissolved	mg/L	-	<0.00050	<0.00050	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	-	-	-	<0.0002	<0.0002	-	<0.00050	-	<0.00050	<0.00050			
Tellurium, total	mg/L	<0.00050	-	-	-	-	-	-	-	-	-	-	-	<0.0002	<0.0002	<0.002	<0.0002	-	-	<0.0002	-	<0.00050	-	-			
Thallium, dissolved	mg/L	-	<0.000020	<0.000020	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	-	-	-	-	<0.00002	<0.00002	-	<0.000020	-	<0.000020	<0.000020			
Thallium, total	mg/L	<0.000020	-	-	-	-	-	-	-	-	-	-	-	<0.00002	<0.00002	<0.0002	<0.00002	-	-	<0.00002	-	<0.000020	-	-			
Thorium, dissolved	mg/L	-	<0.00010	<0.00010	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-	-	-	<0.0001	<0.0001	-	<0.00010	-	<0.00010	<0.00010			
Thorium, total	mg/L	<0.00010	-	-	-	-	-	-	-	-	-	-	-	<0.0001	<0.0001	<0.001	<0.0001	-	-	<0.0001	-	<0.00010	-	-			
Tin, dissolved	mg/L	-	<0.00020	<0.00020	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	-	-	-	<0.0002	<0.0002	-	<0.00020	-	<0.00020	<0.00020			
Tin, total	mg/L	<0.00020	-	-	-	-	-	-	-	-	-	-	-	0.0003	<0.0002	<0.002	<0.0002	-	-	<0.0002	-	<0.00020	-	-			
Titanium, dissolved	mg/L	-	<0.0050	<0.0050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-	-	<0.005	<0.005	-	<0.0050	-	<0.0050	<0.0050			
Titanium, total	mg/L	<0.0050	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.05	<0.005	-	-	<0.005	-	<0.0050	-	-			
Tungsten, dissolved	mg/L	-	<0.0010	<0.0010	<0.001	<0.001	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	<0.0010			
Tungsten, total	mg/L	<0.0010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-			
Uranium, dissolved	mg/L	-	0.00011	0.000071	0.00141	0.00178	0.00155	0.00155	0.00115	0.001	0.00262	0.00152	0.00175	-	-	-	-	0.00158	0.002								

Sampling Location		DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4		
Date Sampled	Lab Sample ID	2017-11-20	2018-06-26	2018-09-11	2019-05-29	2019-08-13	2019-10-29	2013-05-21	2013-08-20	2013-11-12	2014-06-02	2014-08-18	2014-11-04	2015-05-25	2015-08-25	2015-11-09	2016-05-03	2016-08-22	2016-11-14	2017-04-05	2017-08-29	2017-11-20	2018-06-26	2018-09-11		
Sample Type		7111886-05	8062674-02	8090975-04	9052874-07	9081278-07	N000444-06	3051354-05	3081378-04	3110772-04	4060249-04	4081094-04	4110161-04	5051773-03	5081710-03	5110693-02	6050336-03	6081698-03	6111141-05	7040434-06	7090074-03	7111886-06	8062674-03	8090975-05		
		Normal	Normal	Normal				Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal		
Analyte	Unit																									
Hardness, Total (as CaCO3)	mg/L	582	-	-	571	546	549	-	-	-	-	-	-	-	619	611	587	-	-	-	-	-	565	-	-	
Hydroxide (OH)	mg/L	<0.340	<0.340	<0.340	<0.34	<0.34	<0.34	-	-	-	-	-	-	-	-	-	<1	<0.3	<0.3	<0.340	<0.340	<0.340	<0.340	<0.340		
Nitrate + Nitrite (as N)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Nitrogen, Total Kjeldahl	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
pH	pH Units	7.86	7.8	7.79	7.96	7.9	8.04	7.76	7.84	7.77	7.9	7.64	7.81	7.79	7.74	7.72	7.66	7.72	7.87	7.76	7.87	7.95	7.89	7.8		
pH	pH units	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Phosphorus, Total (as P)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Phosphorus, Total Dissolved	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Total organic carbon	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Turbidity	NTU	5.34	4.61	-	0.27	0.27	0.18	0.2	0.2	0.3	5.5	0.2	0.2	0.5	0.2	0.2	0.2	0.3	0.24	0.25	7.35	0.37	0.32	-		
Microbiological Parameters																										
Coliforms, Fecal	CFU/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Coliforms, Fecal	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Coliforms, Fecal (MPN)	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Coliforms, Total	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Coliforms, Total (MPN)	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
E. coli (MPN)	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
E. coli, Total	CFU/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Volatile Organic Compounds (VOC)																										
1,1-Dichloroethane	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,1-Dichloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,1-Dichloroethylene	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,1-Dichloroethylene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,1,1-Trichloroethane	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,1,1-Trichloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,1,2-Trichloroethane	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,1,2-Trichloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,1,2,2-Tetrachloroethane	µg/L	-	-	-	<0.5	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,1,2,2-Tetrachloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,2-Dibromoethane	mg/L	-	-	<0.0003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	<0.0003		
1,2-Dibromoethane	µg/L	-	-	-	<0.3	-	<0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,2-Dibromoethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,2-Dichlorobenzene	µg/L	-	-	-	<0.5	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,2-Dichlorobenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,2-Dichloroethane	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,2-Dichloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,2-Dichloropropane	mg/L	-	-	<0.0010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	<0.0010		
1,2-Dichloropropane	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,2-Dichloropropane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,3-Dichlorobenzene	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,3-Dichlorobenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,3-Dichloropropene (cis + trans)	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,3-Dichloropropene (cis + trans)	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,4-Dichlorobenzene	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,4-Dichlorobenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Benzene	mg/L	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	-	-	-	<0.0005		
Benzene	µg/L	-	-	-	<0.5	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Benzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Bromodichloromethane	mg/L	-	-	<0.0010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	<0.0010		
Bromodichloromethane	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Bromodichloromethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Bromoform	mg/L	-	-	<0.0010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	-	<0.0010		

Sampling Location		DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-1b	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4	DMW-4
Date Sampled	Lab Sample ID	2017-11-20	2018-06-26	2018-09-11	2019-05-29	2019-08-13	2019-10-29	2013-05-21	2013-08-20	2013-11-12	2014-06-02	2014-08-18	2014-11-04	2015-05-25	2015-08-25	2015-11-09	2016-05-03	2016-08-22	2016-11-14	2017-04-05	2017-08-29	2017-11-20	2018-06-26	2018-09-11
Sample Type		7111886-05	8062674-02	8090975-04	9052874-07	9081278-07	N000444-06	3051354-05	3081378-04	3110772-04	4060249-04	4081094-04	4110161-04	5051773-03	5081710-03	5110693-02	6050336-03	6081698-03	6111141-05	7040434-06	7090074-03	7111886-06	8062674-03	8090975-05
		Normal	Normal	Normal				Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Analyte	Unit																							
Bromoform	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon tetrachloride	mg/L	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	-	-	-	<0.0005
Carbon tetrachloride	µg/L	-	-	-	<0.5	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon tetrachloride	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	mg/L	-	-	<0.0020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	-	-	-	<0.0020
Chloroethane	µg/L	-	-	-	<2	-	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	mg/L	-	-	<0.0010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	<0.0010
Chloroform	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethylene	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethylene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	mg/L	-	-	<0.0010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	<0.0010
Dibromochloromethane	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromomethane	mg/L	-	-	<0.0010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	<0.0010
Dibromomethane	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromomethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichloromethane	mg/L	-	-	<0.0030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0030	-	-	-	<0.0030
Dichloromethane	µg/L	-	-	-	<3	-	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichloromethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	mg/L	-	-	<0.0010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	<0.0010
Ethylbenzene	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl tert-butyl ether	mg/L	-	-	<0.0010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	<0.0010
Methyl tert-butyl ether	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl tert-butyl ether	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	mg/L	-	-	<0.0010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	<0.0010
Styrene	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethylene	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethylene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	mg/L	-	-	<0.0010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	<0.0010
Toluene	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethylene	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethylene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethylene	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethylene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane	mg/L	-	-	<0.0010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	<0.0010
Trichlorofluoromethane	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	mg/L	-	-	<0.0010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	<0.0010
Vinyl chloride	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xylenes (total)	µg/L	-	-	-	<2	-	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xylenes (total)	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BCMOC Aggregate Hydrocarbons																								
VPHw	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Sampling Location		DMW-4	DMW-4	DMW-4	DMW-5	DMW-568	DMW-571	DMW-606	DUP	DUP A	DUP A	Hospital Creek	Kicking Horse	MW09-6D	MW09-6D	MW09-6D	MW09-6D	MW09-6D	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	
Date Sampled	Lab Sample ID	2018-12-03	2019-05-29	2019-08-13	2018-06-25	2018-06-27	2018-06-27	2018-06-27	2019-10-29	2019-05-29	2019-08-13	2018-12-04	2018-06-27	2009-05-25	2009-11-04	2010-02-09	2010-06-15	2018-12-03	2009-05-25	2009-11-04	2010-02-09	2010-06-15	2010-11-16	2011-05-09	
Sample Type		8120636-04	9052874-08	9081278-08	8062668-01	8062808-02	8062808-03	8062808-01	N000444-07	9052874-09	9081278-09	8120636-06	8062805-03	K9E0816-03	K9K0184-01	K0B0397-02	K0F0788-04	8120636-01	K9E0816-02	K9K0184-02	K0B0397-01	K0F0788-03	K0K0729-01	K1E0403-03	
		Normal			Normal	Normal	Normal	Normal				Normal	Normal					Normal							
Analyte		Unit																							
Field Parameters																									
Depth to Water	m	-	-	-	-	-	-	-	-	-	-	-	-	32.972	34	32.69	33.55	33.47	32.619	33	33.49	32.68	32.7	31.618	
Dissolved Oxygen	mg/L	3.79	2.39	3.68	-	-	-	-	-	-	-	13.48	-	0.83	1.92	-	-	4.05	2.21	1.07	-	-	-	-	
Electrical Conductivity	µS/cm	1000	1092	1129	1051	-	-	1895	-	-	-	360	220	6700	4700	4400	4300	3780	4600	4700	4400	4430	6600	4200	
Elevation of Piezometric Surface	m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Oxidation reduction potential	mV	152	-70.4	-12.3	220	-	-	-113	-	-	-	-	138	-	-	-	73	110	-	-	-	73	173	175	
pH	pH Units	7.18	7.27	7.18	7.38	-	-	7.31	-	-	-	7.49	8.48	6.78	6.86	6.76	7.01	6.81	6.87	6.84	6.79	6.86	6.91	6.75	
Temperature	°C	7.1	12	11.2	13.5	-	-	10.7	-	-	-	0.1	10.1	10.8	9.4	9.4	11.3	8.9	12.5	10.5	10.9	11.6	10	12.2	
Anions																									
Bromide	mg/L	<0.10	-	-	-	-	-	-	-	-	-	<0.10	-	-	-	-	-	1.88	-	-	-	-	-	-	
Chloride	mg/L	10.9	49.5	42.4	1.75	51.1	20	32.7	391	397	395	0.97	4.04	688	574	715	665	358	674	604	713	667	732	556	
Fluoride	mg/L	0.62	1.64	1.22	2.45	0.51	0.81	6.83	0.11	0.15	0.19	<0.10	-	-	-	-	-	0.25	-	-	-	-	-	-	
Nitrate (as N)	mg/L	0.402	<0.01	<0.01	0.109	0.673	<0.010	<0.010	32.1	36.9	33.1	0.052	0.096	62.6	56.4	67.7	61.4	27.2	62	60	66.9	62.3	55	53.2	
Nitrite (as N)	mg/L	0.035	<0.01	<0.01	<0.010	<0.010	<0.010	0.011	<0.01	<0.01	0.161	<0.010	-	<0.01	<0.01	<0.01	0.03	<0.010	<0.01	<0.01	0.02	0.03	<0.01	<0.01	
Sulfate	mg/L	215	126	122	72.9	98.2	120	123	702	721	704	28.9	-	788	783	945	873	582	781	824	925	861	781	606	
Metals																									
Aluminum, dissolved	mg/L	<0.0050	<0.005	<0.005	-	-	-	-	<0.005	<0.005	<0.005	<0.0050	-	0.006	<0.005	0.23	<0.005	0.0101	0.012	<0.005	0.009	0.006	<0.005	<0.005	
Aluminum, total	mg/L	<0.0050	-	-	<0.0050	0.0079	<0.0050	0.0173	-	-	-	0.0088	-	-	-	-	-	-	-	-	-	-	-	-	
Antimony, dissolved	mg/L	<0.00020	<0.0002	<0.0002	-	-	-	-	<0.0002	0.00044	<0.0002	<0.00020	-	0.0003	0.0003	0.0005	0.0005	0.00191	0.0006	0.0002	0.0006	0.0004	0.001	0.0006	
Antimony, total	mg/L	<0.00020	-	-	0.0006	0.00021	<0.00020	<0.00020	-	-	-	<0.00020	-	-	-	-	-	-	-	-	-	-	-	-	
Arsenic, dissolved	mg/L	0.00146	0.0633	0.0414	-	-	-	-	<0.0005	<0.0005	<0.0005	<0.00050	-	0.0104	0.0029	0.003	0.0048	0.00063	0.0033	0.0028	0.0021	0.0044	0.0057	<0.0005	
Arsenic, total	mg/L	0.00161	-	-	0.0674	<0.00050	<0.00050	0.00239	-	-	-	<0.00050	-	-	-	-	-	-	-	-	-	-	-	-	
Barium, dissolved	mg/L	0.0224	0.0242	0.0229	-	-	-	-	0.047	0.0512	0.0491	0.0555	-	0.101	0.0566	0.0822	0.062	0.0465	0.087	0.0566	0.0831	0.0676	0.074	0.0595	
Barium, total	mg/L	0.0154	-	-	<0.0050	0.0953	0.0833	0.0253	-	-	-	0.0589	-	-	-	-	-	-	-	-	-	-	-	-	
Beryllium, dissolved	mg/L	<0.00010	0.00011	0.00011	-	-	-	-	<0.0001	<0.0001	<0.0001	<0.00010	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Beryllium, total	mg/L	<0.00010	-	-	-	-	-	-	-	-	-	<0.00010	-	-	-	-	-	-	-	-	-	-	-	-	
Bismuth, dissolved	mg/L	<0.00010	<0.0001	<0.0001	-	-	-	-	<0.0001	<0.0001	<0.0001	<0.00010	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Bismuth, total	mg/L	<0.00010	-	-	-	-	-	-	-	-	-	<0.00010	-	-	-	-	-	-	-	-	-	-	-	-	
Boron, dissolved	mg/L	0.33	0.13	0.136	-	-	-	-	2.18	1.84	1.86	0.0091	-	1.12	1.05	1.28	1.08	1.95	1.09	0.921	1.24	1.14	1.48	1.31	
Boron, total	mg/L	0.335	-	-	0.173	0.213	0.0545	0.961	-	-	-	0.0093	-	-	-	-	-	-	-	-	-	-	-	-	
Cadmium, dissolved	mg/L	<0.000010	<0.00001	<0.00001	-	-	-	-	<0.00001	<0.00001	<0.00001	<0.000010	-	0.00006	0.00001	0.00002	0.00002	<0.000010	0.00005	0.00003	0.00004	0.00002	0.00002	0.00018	
Cadmium, total	mg/L	0.00001	-	-	<0.000010	<0.000010	<0.000010	0.000121	-	-	-	<0.000010	-	-	-	-	-	-	-	-	-	-	-	-	
Calcium, dissolved	mg/L	67.9	70.7	71.2	-	-	-	-	158	170	164	53.2	-	235	197	217	186	164	220	192	215	191	212	194	
Calcium, total	mg/L	68.6	-	-	0.27	91.9	95.6	34.4	-	-	-	52.4	-	-	-	-	-	-	-	-	-	-	-	-	
Chromium, dissolved	mg/L	<0.00050	0.00088	<0.0005	-	-	-	-	<0.0005	0.00105	<0.0005	<0.00050	-	0.006	0.0065	0.0342	0.0109	<0.00050	0.004	0.0082	0.0341	0.0117	0.0019	<0.0005	
Chromium, total	mg/L	<0.00050	-																						

Sampling Location		DMW-4	DMW-4	DMW-4	DMW-5	DMW-568	DMW-571	DMW-606	DUP	DUP A	DUP A	Hospital Creek	Kicking Horse	MW09-6D	MW09-6D	MW09-6D	MW09-6D	MW09-6D	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S
Date Sampled		2018-12-03	2019-05-29	2019-08-13	2018-06-25	2018-06-27	2018-06-27	2018-06-27	2019-10-29	2019-05-29	2019-08-13	2018-12-04	2018-06-27	2009-05-25	2009-11-04	2010-02-09	2010-06-15	2018-12-03	2009-05-25	2009-11-04	2010-02-09	2010-06-15	2010-11-16	2011-05-09
Lab Sample ID		8120636-04	9052874-08	9081278-08	8062668-01	8062808-02	8062808-03	8062808-01	N000444-07	9052874-09	9081278-09	8120636-06	8062805-03	K9E0816-03	K9K0184-01	K0B0397-02	K0F0788-04	8120636-01	K9E0816-02	K9K0184-02	K0B0397-01	K0F0788-03	K0K0729-01	K1E0403-03
Sample Type		Normal			Normal	Normal	Normal	Normal				Normal	Normal					Normal						
Analyte	Unit																							
Molybdenum, dissolved	mg/L	0.00077	0.00037	0.00034	-	-	-	-	0.0003	0.00031	0.00032	0.00036	-	0.0006	0.0003	0.0003	0.0003	0.00047	0.0023	0.0009	0.0004	0.0006	0.0005	0.0003
Molybdenum, total	mg/L	0.0008	-	-	0.0009	0.00083	0.00107	0.00022	-	-	-	0.0004	-	-	-	-	-	-	-	-	-	-	-	-
Nickel, dissolved	mg/L	0.00116	0.0022	0.00217	-	-	-	-	0.0116	0.0114	0.0123	<0.00040	-	0.0163	0.0085	0.0112	0.0132	0.012	0.0148	0.0094	0.0115	0.0137	0.0154	0.007
Nickel, total	mg/L	0.00118	-	-	0.00076	0.0032	0.00347	0.00109	-	-	-	<0.00040	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, dissolved	mg/L	<0.050	<0.05	<0.05	-	-	-	-	<0.05	<0.05	<0.05	<0.050	-	0.039	<0.020	0.03	<0.020	<0.050	0.043	0.02	0.031	0.024	<0.020	<0.020
Phosphorus, total	mg/L	<0.050	-	-	-	-	-	-	-	-	-	<0.050	-	-	-	-	-	-	-	-	-	-	-	-
Potassium, dissolved	mg/L	7.11	4.62	4.68	-	-	-	-	173	171	176	0.47	-	131	149	153	147	186	109	133	153	146	157	167
Potassium, total	mg/L	7.38	-	-	1.07	8.26	10.6	14.5	-	-	-	0.45	-	-	-	-	-	-	-	-	-	-	-	-
Selenium, dissolved	mg/L	<0.00050	<0.0005	<0.0005	-	-	-	-	<0.0005	<0.0005	<0.0005	<0.00050	-	<0.0003	<0.0003	<0.0003	0.0018	<0.00050	<0.0003	<0.0003	<0.0003	0.0006	0.0018	0.0006
Selenium, total	mg/L	<0.00050	-	-	<0.00050	<0.00050	<0.00050	<0.00050	-	-	-	<0.00050	-	-	-	-	-	-	-	-	-	-	-	-
Silicon, dissolved	mg/L	7	7.3	7.7	-	-	-	-	13.7	11.3	12.3	3.3	-	10	10.1	22.4	8.42	12.8	9.21	9.1	17.6	10.8	8.95	12.4
Silicon, total	mg/L	7.2	-	-	-	-	-	-	-	-	-	3.3	-	-	-	-	-	-	-	-	-	-	-	-
Silver, dissolved	mg/L	<0.000050	<0.00005	<0.00005	-	-	-	-	<0.00005	<0.00005	<0.00005	<0.000050	-	<0.00005	<0.00005	<0.00005	<0.00005	<0.000050	0.00005	<0.00005	<0.00005	0.00006	0.00014	<0.00005
Silver, total	mg/L	<0.000050	-	-	-	-	-	-	-	-	-	<0.000050	-	-	-	-	-	-	-	-	-	-	-	-
Sodium, dissolved	mg/L	40.7	28.4	26.7	-	-	-	-	317	294	294	1.89	-	348	379	384	314	323	351	378	380	323	344	322
Sodium, total	mg/L	41.5	-	-	282	46.6	22.3	484	-	-	-	1.86	-	-	-	-	-	-	-	-	-	-	-	-
Strontium, dissolved	mg/L	4.1	1.73	1.76	-	-	-	-	1.56	1.69	1.66	0.174	-	2.53	2.21	2.04	2.04	1.75	2.42	2.09	2.07	2.12	2.25	1.95
Strontium, total	mg/L	4.14	-	-	0.0123	1.19	1.29	1.65	-	-	-	0.173	-	-	-	-	-	-	-	-	-	-	-	-
Sulfur, dissolved	mg/L	78.8	43.4	45.4	-	-	-	-	285	259	274	10.8	-	-	-	-	-	292	-	-	-	-	-	-
Sulfur, total	mg/L	81	-	-	-	-	-	-	-	-	-	10.1	-	-	-	-	-	-	-	-	-	-	-	-
Tellurium, dissolved	mg/L	<0.00050	<0.0005	<0.0005	-	-	-	-	<0.0005	<0.0005	<0.0005	<0.00050	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.00050	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Tellurium, total	mg/L	<0.00050	-	-	-	-	-	-	-	-	-	<0.00050	-	-	-	-	-	-	-	-	-	-	-	-
Thallium, dissolved	mg/L	<0.000020	<0.00002	<0.00002	-	-	-	-	0.00006	0.000056	0.000061	<0.000020	-	0.00009	0.00006	0.00006	0.00007	0.000048	0.00008	0.00006	0.00007	0.00007	0.00007	0.00006
Thallium, total	mg/L	<0.000020	-	-	-	-	-	-	-	-	-	<0.000020	-	-	-	-	-	-	-	-	-	-	-	-
Thorium, dissolved	mg/L	<0.00010	<0.0001	<0.0001	-	-	-	-	<0.0001	<0.0001	<0.0001	<0.00010	-	-	<0.0001	<0.0001	<0.0001	<0.00010	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Thorium, total	mg/L	<0.00010	-	-	-	-	-	-	-	-	-	<0.00010	-	-	-	-	-	-	-	-	-	-	-	-
Tin, dissolved	mg/L	<0.00020	<0.0002	<0.0002	-	-	-	-	<0.0002	0.00025	<0.0002	<0.00020	-	0.0002	0.0002	0.0002	0.0002	0.00151	0.0003	<0.0002	<0.0002	<0.0002	0.0002	<0.0002
Tin, total	mg/L	<0.00020	-	-	-	-	-	-	-	-	-	<0.00020	-	-	-	-	-	-	-	-	-	-	-	-
Titanium, dissolved	mg/L	<0.0050	<0.005	<0.005	-	-	-	-	<0.005	<0.005	<0.005	<0.0050	-	<0.005	0.006	0.017	0.008	<0.0050	<0.005	0.005	0.005	0.008	0.014	<0.005
Titanium, total	mg/L	<0.0050	-	-	-	-	-	-	-	-	-	<0.0050	-	-	-	-	-	-	-	-	-	-	-	-
Tungsten, dissolved	mg/L	<0.0010	<0.001	<0.001	-	-	-	-	<0.001	<0.001	<0.001	<0.0010	-	-	-	-	-	<0.0010	-	-	-	-	-	-
Tungsten, total	mg/L	<0.0010	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	-	-	-	-	-	-	-	-	-
Uranium, dissolved	mg/L	0.00134	0.000111	0.00014	-	-	-	-	0.00747	0.00771	0.00761	0.000797	-	0.00761	0.00751	0.00639	0.00741	0.00793	0.00886	0.00757	0.007	0.00757	0.0079	0.00607
Uranium, total	mg/L	0.00131	-	-	0.00141	0.00174	0.00277	0.000176	-	-	-	0.000856	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium, dissolved	mg/L	<0.0010	<0.001	<0.001	-	-	-	-	<0.001	<0.001	<0.001	<0.0010	-	0.0019	0.002	0.016	0.0062	<0.0010	0.0014	0.0026	0.0134	0.009	<0.0010	<0.001
Vanadium, total	mg/L	<0.0010	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	-	-	-	-	-	-	-	-	-
Zinc, dissolved	mg/L	0.0189	0.0101	0.0045	-	-	-	-	<0.004	0.0047	<0.004	<0.0040	-	0.0063	0.0036	0.0086	0.0047	0.0057	0.0063	0.0029	0.0103	0.005	0.0044	0.004
Zinc, total	mg/L	0.0192	-	-	0.0153	0.0447	0.0671	1.27	-	-	-	0.0065	-	-	-	-	-	-	-	-	-	-	-	-
Zirconium, dissolved	mg/L	0.00053	0.00153	0.00162	-	-	-	-	0.00017	0.00015	0.00014	<0.00010	-	0.0008	0.0002	0.0004	0.0002	0.00021	0.001	0.0005	0.0003	0.0003	0.0002	0.0002
Zirconium, total	mg/L	0.00049	-	-	-	-	-	-	-	-	-	<0.00010	-	-	-	-	-	-	-	-	-	-	-	-
General Parameters																								
Alkalinity, Bicarbonate (as CaCO3)	mg/L	411	504	516	477	504	546	932	938	970	917	189	-	-	-	-	-	939	-	-	-	-	-	-
Alkalinity, Carbonate (as CaCO3)	mg/L	<1.0	<1	<1	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1.0	-	-	-	-	-	<1.0	-	-	-	-	-	-
Alkalinity, Hydroxide (as CaCO3)	mg/L	<1.0	<1	<1	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1.0	-	-	-	-	-	<1.0	-	-	-	-	-	-
Alkalinity, Phenolphthalein (as CaCO3)	mg/L	<1.0	<1	<1	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1.0	-	-	-	-	-	<1.0	-	-	-	-	-	-
Alkalinity, Total (as CaCO3)	mg/L	411	504	516	477	504	546	932	938	970	917	189	-	1380	762	768	787	939	1590	780	794	778	757	801
Ammonia, Total (as N)	mg/L	0.416	0.285	0.288	-	-	-	-	1	1.06	1.3	<0.020	-	0.29	0.08	0.3	0.09	0.79	0.54	0.26	0.44	0.26	0.13	0.2
Bicarbonate (HCO3)	mg/L	502	615	630	582	615	667	1140	1140	1180	1120	230	-	-	-	-	-	1150	-	-	-	-	-	-
Carbonate (CO3)	mg/L	<0.600	<0.6	<0.6	<0.600	<0.600	<0.600	<0.600	<0.6	<0.6	<0.6	<0.600	-	-	-	-	-	<0.600	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Electrical Conductivity	µS/cm	1100	1160	1160	1020	1200	1190	2010	3860	4130	3970	382	-	5110	4820	4790	4720	789	5090	4840	4780	4680	4640	4250
Electrical Conductivity	uS/cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Sampling Location		DMW-4	DMW-4	DMW-4	DMW-5	DMW-568	DMW-571	DMW-606	DUP	DUP A	DUP A	Hospital Creek	Kicking Horse	MW09-6D	MW09-6D	MW09-6D	MW09-6D	MW09-6D	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S
Date Sampled		2018-12-03	2019-05-29	2019-08-13	2018-06-25	2018-06-27	2018-06-27	2018-06-27	2019-10-29	2019-05-29	2019-08-13	2018-12-04	2018-06-27	2009-05-25	2009-11-04	2010-02-09	2010-06-15	2018-12-03	2009-05-25	2009-11-04	2010-02-09	2010-06-15	2010-11-16	2011-05-09
Lab Sample ID		8120636-04	9052874-08	9081278-08	8062668-01	8062808-02	8062808-03	8062808-01	N000444-07	9052874-09	9081278-09	8120636-06	8062805-03	K9E0816-03	K9K0184-01	K0B0397-02	K0F0788-04	8120636-01	K9E0816-02	K9K0184-02	K0B0397-01	K0F0788-03	K0K0729-01	K1E0403-03
Sample Type		Normal			Normal	Normal	Normal	Normal				Normal	Normal					Normal						
Analyte	Unit																							
Hardness, Total (as CaCO3)	mg/L	-	612	619	9.13	671	726	167	1610	1560	1530	-	-	-	-	-	-	-	-	-	-	-	-	-
Hydroxide (OH)	mg/L	<0.340	<0.34	<0.34	<0.340	<0.340	<0.340	<0.340	<0.34	<0.34	<0.34	<0.340	-	-	-	-	-	<0.340	-	-	-	-	-	-
Nitrate + Nitrite (as N)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen, Total Kjeldahl	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH	pH Units	7.83	7.99	7.96	7.88	7.89	7.97	8.02	7.73	7.61	7.66	8.21	-	7.4	7.28	7.32	7.55	7.32	7.4	7.29	7.49	7.57	7.35	7.5
pH	pH units	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, Total (as P)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, Total Dissolved	mg/L	<0.0020	-	-	-	-	-	-	-	-	-	<0.0020	-	-	-	-	-	0.163	-	-	-	-	-	-
Total organic carbon	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity	NTU	0.58	6.97	3.56	0.11	2.38	1.96	42.6	114	222	235	0.83	-	-	9.1	1600	3500	176	2400	2900	830	1500	730	188
Microbiological Parameters																								
Coliforms, Fecal	CFU/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coliforms, Fecal	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coliforms, Fecal (MPN)	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coliforms, Total	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coliforms, Total (MPN)	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E. coli (MPN)	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E. coli, Total	CFU/100 mL	-	-	-	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Volatile Organic Compounds (VOC)																								
1,1-Dichloroethane	µg/L	-	<1	-	-	-	-	-	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethylene	µg/L	-	<1	-	-	-	-	-	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethylene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1-Trichloroethane	µg/L	-	<1	-	-	-	-	-	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1-Trichloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2-Trichloroethane	µg/L	-	<1	-	-	-	-	-	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2-Trichloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	-	-	-	-	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromoethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromoethane	µg/L	-	<0.3	-	-	-	-	-	<0.3	<0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromoethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	µg/L	-	<0.5	-	-	-	-	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethane	µg/L	-	<1	-	-	-	-	-	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane	µg/L	-	<1	-	-	-	-	-	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene	µg/L	-	<1	-	-	-	-	-	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dichloropropene (cis + trans)	µg/L	-	<1	-	-	-	-	-	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dichloropropene (cis + trans)	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	µg/L	-	<1	-	-	-	-	-	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	µg/L	-	<0.5	-	-	-	-	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	µg/L	-	<1	-	-	-	-	-	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Sampling Location Date Sampled Lab Sample ID Sample Type		DMW-4	DMW-4	DMW-4	DMW-5	DMW-568	DMW-571	DMW-606	DUP	DUP A	DUP A	Hospital Creek	Kicking Horse	MW09-6D	MW09-6D	MW09-6D	MW09-6D	MW09-6D	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S
		2018-12-03	2019-05-29	2019-08-13	2018-06-25	2018-06-27	2018-06-27	2018-06-27	2019-10-29	2019-05-29	2019-08-13	2018-12-04	2018-06-27	2009-05-25	2009-11-04	2010-02-09	2010-06-15	2018-12-03	2009-05-25	2009-11-04	2010-02-09	2010-06-15	2010-11-16	2011-05-09
		8120636-04	9052874-08	9081278-08	8062668-01	8062808-02	8062808-03	8062808-01	N000444-07	9052874-09	9081278-09	8120636-06	8062805-03	K9E0816-03	K9K0184-01	K0B0397-02	K0F0788-04	8120636-01	K9E0816-02	K9K0184-02	K0B0397-01	K0F0788-03	K0K0729-01	K1E0403-03
		Normal			Normal	Normal	Normal	Normal				Normal	Normal					Normal						
Analyte	Unit																							
Bromoform	µg/L	-	<1	-	-	-	-	-	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon tetrachloride	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon tetrachloride	µg/L	-	<0.5	-	-	-	-	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon tetrachloride	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	µg/L	-	<1	-	-	-	-	-	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	µg/L	-	<2	-	-	-	-	-	<2	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	µg/L	-	<1	-	-	-	-	-	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethylene	µg/L	-	<1	-	-	-	-	-	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethylene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	µg/L	-	<1	-	-	-	-	-	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromomethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromomethane	µg/L	-	<1	-	-	-	-	-	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromomethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichloromethane	µg/L	-	<3	-	-	-	-	-	<3	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichloromethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	µg/L	-	<1	-	-	-	-	-	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl tert-butyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl tert-butyl ether	µg/L	-	<1	-	-	-	-	-	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl tert-butyl ether	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	µg/L	-	<1	-	-	-	-	-	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethylene	µg/L	-	<1	-	-	-	-	-	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethylene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	µg/L	-	<1	-	-	-	-	-	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethylene	µg/L	-	<1	-	-	-	-	-	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethylene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethylene	µg/L	-	<1	-	-	-	-	-	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethylene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane	µg/L	-	<1	-	-	-	-	-	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	µg/L	-	<1	-	-	-	-	-	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xylenes (total)	µg/L	-	<2	-	-	-	-	-	<2	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xylenes (total)	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BCMOE Aggregate Hydrocarbons																								
VPHw	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Sampling Location		MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	
Date Sampled	Lab Sample ID	2011-08-10	2011-10-18	2012-05-24	2012-08-22	2012-11-20	2013-05-21	2013-08-20	2013-11-12	2014-06-02	2014-08-18	2014-11-04	2015-05-25	2015-08-25	2015-11-09	2016-05-03	2016-08-22	2016-11-14	2017-04-05	2017-08-29	2017-11-20	2018-06-26	2018-09-10	2019-05-29
Sample Type		K1H0536-02	K1J0685-01	2051369-03	2081484-01	2111131-01	3051354-01	3081378-01	3110772-01	4060249-06	4081094-06	4110161-06	5051773-06	5081710-04	5110693-03	6050336-01	6081698-01	6111141-03	7040434-03	7090074-01	7111886-01	8062674-01	8090975-01	9052874-01
		Normal		Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	
Analyte	Unit																							
Field Parameters																								
Depth to Water	m	32.625	32.625	32.59	32.605	32.624	32.629	32.64	32.651	32.6	32.61	32.6	32.67	32.78	32.74	32.76	32.59	32.57	-	32.56	32.68	32.73	32.47	32.588
Dissolved Oxygen	mg/L	-	-	-	-	-	-	-	-	0.28	1.56	1.07	1.36	1.74	0.95	0.46	0.43	1.98	-	1.17	0.6	-	3.51	2.06
Electrical Conductivity	µS/cm	3600	4000	4100	4600	480	3300	4900	3700	4240	4030	4610	4710	4550	4530	4700	4520	2270	4150	4120	3630	4260	4160	3759
Elevation of Piezometric Surface	m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	885.687
Oxidation reduction potential	mV	67	167	135	210	164	231	228	-24	96	116	44	-7	-55	45	151	182	186	217	158	-	168	168	-4.3
pH	pH Units	6.87	6.73	6.86	6.97	6.9	6.87	6.63	6.64	4.8	7.3	6.7	6.5	6.7	6	6.7	6.7	7	7.3	7	7	7.03	7.02	6.89
Temperature	°C	12.4	11.1	11.2	12.5	12.2	12.4	12.1	12.2	13	13	12.3	14.1	12.8	12.5	12.5	13.5	12.2	11.8	12.6	12	13.1	11.6	11.7
Anions																								
Bromide	mg/L	-	-	-	-	-	-	-	-	-	-	-	0.47	1.09	1.48	0.13	2.81	1.14	0.88	2.16	2.84	0.38	<10.0	-
Chloride	mg/L	632	621	599	587	709	669	662	662	650	491	529	594	549	627	605	529	497	470	480	417	416	-	398
Fluoride	mg/L	-	-	0.11	0.31	0.14	0.12	0.14	<0.10	<0.10	0.11	0.25	0.14	0.1	0.23	0.17	0.16	0.33	0.14	<0.10	0.51	0.27	0.28	0.15
Nitrate (as N)	mg/L	66.5	56.3	-	54.6	59.1	62.3	54.5	54.7	52.1	41.8	48.9	38	34.1	33.3	44.1	37.7	40.1	42.3	35.3	32.6	31.3	-	33.8
Nitrite (as N)	mg/L	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.016	5.7	<0.010	<0.010	<0.010	<0.010	
Sulfate	mg/L	688	701	719	787	893	814	910	884	858	784	879	950	878	905	903	851	867	799	757	663	628	-	677
Metals																								
Aluminum, dissolved	mg/L	<0.005	<0.005	0.005	<0.005	<0.005	0.006	<0.005	<0.005	<0.005	<0.005	0.005	<0.005	0.024	0.859	<0.005	<0.005	0.007	0.006	0.0067	<0.0050	0.927	0.0081	<0.005
Aluminum, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Antimony, dissolved	mg/L	0.0004	<0.0020	0.0002	0.0009	0.0009	0.0009	0.0011	0.001	0.0003	0.0005	0.0003	0.0005	0.0005	0.0004	0.0006	<0.0001	0.0002	0.0001	<0.00020	<0.00020	0.00116	0.00076	0.00042
Antimony, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic, dissolved	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.001	0.0034	<0.0005	<0.0005	0.0007	0.00055	<0.00050	0.00117	0.00067	<0.0005
Arsenic, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium, dissolved	mg/L	0.059	0.051	0.062	0.066	0.067	0.067	0.065	0.061	0.059	0.054	0.058	0.062	0.062	0.071	0.055	0.058	0.057	0.057	0.051	0.05	0.0748	0.0491	0.0515
Barium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium, dissolved	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0006	<0.0001	<0.0001	0.003	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.0001
Beryllium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bismuth, dissolved	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.0001
Bismuth, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Boron, dissolved	mg/L	1.18	1.26	1.23	1.29	1.43	1.47	1.53	1.64	1.67	1.6	1.61	2.04	1.9	1.77	2.12	2.08	1.76	2.03	1.86	1.57	1.7	1.6	1.8
Boron, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium, dissolved	mg/L	0.00001	0.00002	<0.00001	<0.00001	0.00002	0.00002	0.00003	0.00001	<0.00001	<0.00001	0.00001	0.00002	<0.00001	0.00003	<0.00001	0.00002	0.00003	<0.00001	<0.000010	<0.000010	0.000036	<0.000010	<0.00001
Cadmium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Calcium, dissolved	mg/L	177	177	180	182	193	218	235	231	218	217	209	199	197	208	202	179	168	163	180	167	186	148	170
Calcium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium, dissolved	mg/L	<0.0005	<0.0005	<0.0005	0.0016	0.0006	0.0009	<0.0005	0.0066	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0017	0.0057	0.0008	<0.0005	0.0006	0.00063	<0.00050	0.00169	<0.00050	0.00093
Chromium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt, dissolved	mg/L	0.00116	0.00093	0.00136	0.00114	0.00108	0.00148	0.00128	0.00127	0.001	0.00118	0.00133	0.00141	0.00149	0.00204	0.0.								

Sampling Location		MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	
Date Sampled	Lab Sample ID	2011-08-10	2011-10-18	2012-05-24	2012-08-22	2012-11-20	2013-05-21	2013-08-20	2013-11-12	2014-06-02	2014-08-18	2014-11-04	2015-05-25	2015-08-25	2015-11-09	2016-05-03	2016-08-22	2016-11-14	2017-04-05	2017-08-29	2017-11-20	2018-06-26	2018-09-10	2019-05-29
Sample Type		K1H0536-02	K1J0685-01	2051369-03	2081484-01	2111131-01	3051354-01	3081378-01	3110772-01	4060249-06	4081094-06	4110161-06	5051773-06	5081710-04	5110693-03	6050336-01	6081698-01	6111141-03	7040434-03	7090074-01	7111886-01	8062674-01	8090975-01	9052874-01
		Normal		Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	
Analyte	Unit																							
Molybdenum, dissolved	mg/L	0.0003	0.0036	0.0003	0.0018	0.0005	0.0006	0.0003	0.0007	0.0003	0.0003	0.0003	0.0004	0.0004	0.0037	0.0003	0.0003	0.0012	0.0003	0.00031	0.00032	0.00027	0.00033	0.00036
Molybdenum, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel, dissolved	mg/L	0.0067	0.0067	0.0073	0.008	0.008	0.0155	0.0097	0.0176	0.0078	0.0097	0.0103	0.0093	0.0109	0.0119	0.0139	0.0114	0.0116	0.011	0.0113	0.0116	0.0122	0.0123	0.0116
Nickel, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, dissolved	mg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.050	<0.050	0.053	<0.050	<0.05
Phosphorus, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Potassium, dissolved	mg/L	160	148	170	161	178	202	228	210	222	232	246	215	217	199	209	213	211	209	200	184	189	180	172
Potassium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Selenium, dissolved	mg/L	0.0006	<0.0005	0.0007	<0.0005	<0.0005	<0.0005	0.0008	<0.0005	<0.0005	0.0006	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.0005
Selenium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Silicon, dissolved	mg/L	11.5	10.2	12.2	11.4	11.9	11.9	12.5	11.1	12	12.3	13.7	12.7	12.7	12.9	13.3	11.2	12.1	12.6	11.6	11.2	13.8	11.3	11.3
Silicon, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Silver, dissolved	mg/L	0.00012	0.00009	<0.00005	<0.00005	0.00011	0.0001	<0.00005	0.00008	<0.00005	<0.00005	<0.00005	0.00007	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.000050	<0.000050	<0.000050	<0.000050	<0.00005
Silver, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium, dissolved	mg/L	298	290	346	362	375	409	444	407	372	385	428	385	394	375	359	366	347	343	334	285	261	297	294
Sodium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium, dissolved	mg/L	1.88	1.74	1.91	2	2.11	2.18	2.28	2.1	2.15	2.06	2.04	1.92	2.05	1.9	1.95	1.84	1.76	1.74	1.62	1.73	1.65	1.65	1.7
Strontium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulfur, dissolved	mg/L	-	-	266	298	339	359	405	366	337	340	398	343	362	342	281	336	312	284	268	273	266	257	263
Sulfur, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tellurium, dissolved	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.00050	<0.00050	<0.00050	<0.00050	<0.0005
Tellurium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thallium, dissolved	mg/L	0.00005	0.00006	0.00005	0.00005	0.00022	0.00005	0.00009	0.00007	0.00005	0.00007	0.00007	0.00007	0.00006	0.00007	0.00006	0.00006	0.00006	0.00006	<0.000020	0.000058	0.00006	0.000057	0.000061
Thallium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thorium, dissolved	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0006	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	0.00067	<0.00010	<0.0001
Thorium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tin, dissolved	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	0.0013	<0.0002	0.0003	0.0003	<0.0002	0.00026	0.00023	0.00031	<0.00020	0.00028
Tin, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium, dissolved	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.038	0.014	<0.005	<0.005	<0.005	<0.0050	<0.0050	0.0525	<0.0050	<0.005
Titanium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tungsten, dissolved	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	<0.0010	<0.0010	<0.001
Tungsten, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uranium, dissolved	mg/L	0.00602	0.00607	0.0058	0.00698	0.00686	0.00779	0.00823	0.00765	0.00721	0.00777	0.00802	0.00729	0.00779	0.00804	0.00863	0.00753	0.00717	0.00734	0.00769	0.00796	0.00707	0.00763	0.00748
Uranium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium, dissolved	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.002	<0.001	<0.001	<0.001	<0.0010	<0.0010	0.0013	<0.0010	<0.001
Vanadium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-											

Sampling Location		MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	
Date Sampled	Lab Sample ID	2011-08-10	2011-10-18	2012-05-24	2012-08-22	2012-11-20	2013-05-21	2013-08-20	2013-11-12	2014-06-02	2014-08-18	2014-11-04	2015-05-25	2015-08-25	2015-11-09	2016-05-03	2016-08-22	2016-11-14	2017-04-05	2017-08-29	2017-11-20	2018-06-26	2018-09-10	2019-05-29
Sample Type		K1H0536-02	K1J0685-01	2051369-03	2081484-01	2111131-01	3051354-01	3081378-01	3110772-01	4060249-06	4081094-06	4110161-06	5051773-06	5081710-04	5110693-03	6050336-01	6081698-01	6111141-03	7040434-03	7090074-01	7111886-01	8062674-01	8090975-01	9052874-01
		Normal		Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	
Analyte	Unit																							
Hardness, Total (as CaCO3)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1560
Hydroxide (OH)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	<0.3	<0.3	<0.340	<0.340	<0.340	<0.340	<0.340	<0.34
Nitrate + Nitrite (as N)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen, Total Kjeldahl	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH	pH Units	7.39	7.35	7.45	7.35	6.96	7.4	7.46	7.36	7.65	7.39	7.49	7.37	7.34	7.3	7.55	7.42	7.68	7.42	7.6	7.51	7.39	7.45	7.61
pH	pH units	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, Total (as P)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, Total Dissolved	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total organic carbon	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity	NTU	79	155	437	267	32.2	448	163	84.6	3.7	47.2	196	6.9	1.6	205	1.6	1.89	220	1.03	46.9	387	2210	-	203
Microbiological Parameters																								
Coliforms, Fecal	CFU/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coliforms, Fecal	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coliforms, Fecal (MPN)	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coliforms, Total	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coliforms, Total (MPN)	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E. coli (MPN)	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E. coli, Total	CFU/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Volatile Organic Compounds (VOC)																								
1,1-Dichloroethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
1,1-Dichloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethylene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
1,1-Dichloroethylene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1-Trichloroethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
1,1,1-Trichloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2-Trichloroethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
1,1,2-Trichloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5
1,1,2,2-Tetrachloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromoethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	<0.0003	-	-
1,2-Dibromoethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.3
1,2-Dibromoethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5
1,2-Dichlorobenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
1,2-Dichloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	<0.0010	-	-
1,2-Dichloropropane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
1,2-Dichloropropane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
1,3-Dichlorobenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dichloropropene (cis + trans)	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
1,3-Dichloropropene (cis + trans)	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
1,4-Dichlorobenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	-	-	-	<0.0005	-	-
Benzene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5
Benzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	<0.0010	-	-
Bromodichloromethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
Bromodichloromethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	<0.0010	-	-

Sampling Location		MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S	MW09-6S
Date Sampled	Lab Sample ID	2011-08-10	2011-10-18	2012-05-24	2012-08-22	2012-11-20	2013-05-21	2013-08-20	2013-11-12	2014-06-02	2014-08-18	2014-11-04	2015-05-25	2015-08-25	2015-11-09	2016-05-03	2016-08-22	2016-11-14	2017-04-05	2017-08-29	2017-11-20	2018-06-26	2018-09-10	2019-05-29
Sample Type		K1H0536-02	K1J0685-01	2051369-03	2081484-01	2111131-01	3051354-01	3081378-01	3110772-01	4060249-06	4081094-06	4110161-06	5051773-06	5081710-04	5110693-03	6050336-01	6081698-01	6111141-03	7040434-03	7090074-01	7111886-01	8062674-01	8090975-01	9052874-01
		Normal		Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Analyte	Unit																							
Bromoform	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
Bromoform	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon tetrachloride	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	-	-	-	<0.0005	-
Carbon tetrachloride	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5
Carbon tetrachloride	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
Chlorobenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	-	-	-	<0.0020	-
Chloroethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<2
Chloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	<0.0010	-
Chloroform	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
Chloroform	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethylene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
cis-1,2-Dichloroethylene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	<0.0010	-
Dibromochloromethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
Dibromochloromethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromomethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	<0.0010	-
Dibromomethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
Dibromomethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0030	-	-	-	<0.0030	-
Dichloromethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<3
Dichloromethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	<0.0010	-
Ethylbenzene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
Ethylbenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl tert-butyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	<0.0010	-
Methyl tert-butyl ether	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
Methyl tert-butyl ether	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	<0.0010	-
Styrene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
Styrene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethylene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
Tetrachloroethylene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0066	-	-	-	<0.0010	-
Toluene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
Toluene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethylene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
trans-1,2-Dichloroethylene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethylene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
Trichloroethylene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	<0.0010	-
Trichlorofluoromethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
Trichlorofluoromethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	<0.0010	-
Vinyl chloride	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
Vinyl chloride	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xylenes (total)	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<2
Xylenes (total)	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BCMOE Aggregate Hydrocarbons																								
VPHw	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Sampling Location		MW09-6S	MW09-6S	MW10-8	MW10-8	MW10-8	MW10-8	MW10-8	MW10-8	MW10-8	MW10-8	MW10-8	MW10-8	MW10-8	MW10-8	MW10-8	MW10-8	MW10-8	MW10-8	MW10-8	MW10-8	MW10-8	MW10-8	MW15-01
Date Sampled	Lab Sample ID	2019-08-13	2019-10-29	2010-11-16	2011-05-09	2011-05-09	2011-08-10	2011-10-18	2012-05-24	2012-08-22	2012-11-20	2013-05-21	2013-08-20	2013-11-12	2014-06-02	2014-08-18	2014-11-04	2015-05-25	2018-09-11	2018-12-03	2019-05-29	2019-08-13	2019-10-29	2015-11-09
Sample Type		9081278-01	N000444-01	K0K0729-02	K1E0403-01	K1E0403-04	K1H0536-01	K1J0685-02	2051369-04	2081484-02	2111131-02	3051354-02	3081378-05	3110772-05	4060249-05	4081094-05	4110161-05	5051773-05	8090975-03	8120636-03	9052874-02	9081278-02	N000444-02	5110701-01
									Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal				Normal
Analyte	Unit																							
Molybdenum, dissolved	mg/L	0.00033	0.00029	0.0149	0.0046	-	0.0019	0.0046	0.0009	0.0024	0.0011	0.0007	0.0004	0.0007	0.0006	0.0004	0.0007	0.0006	0.00072	0.00061	0.00053	0.00056	0.00035	0.0003
Molybdenum, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0008
Nickel, dissolved	mg/L	0.012	0.0115	0.0175	0.0277	-	0.0093	0.0099	0.006	0.0087	0.0077	0.0053	0.0048	0.006	0.0045	0.0032	0.0039	0.0007	0.00298	0.00318	0.00309	0.00287	0.00098	0.0006
Nickel, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0003
Phosphorus, dissolved	mg/L	<0.05	<0.05	<0.020	<0.020	-	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.050	<0.050	<0.05	<0.05	<0.05	<0.02
Phosphorus, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.02
Potassium, dissolved	mg/L	173	168	8.58	6.79	-	6.33	6.51	7.89	7.23	6.55	6.53	6.9	6.64	6.05	6.82	6.66	6.34	5.61	5.93	5.65	5.87	6.26	2.42
Potassium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.67
Selenium, dissolved	mg/L	<0.0005	<0.0005	0.0005	0.0007	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	<0.0005	<0.0005	<0.00050	<0.00050	<0.0005	<0.0005	<0.0005	<0.0005
Selenium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0005
Silicon, dissolved	mg/L	12	13.2	4.21	10.1	-	9	8.1	10.3	9.6	9.7	9.4	9.6	9.1	9.2	9.9	10.4	10.4	8.8	9.8	8.6	9.2	10.6	4.8
Silicon, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.3
Silver, dissolved	mg/L	<0.00005	<0.00005	<0.00005	0.00007	-	0.00016	0.00006	<0.00005	<0.00005	0.00008	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.000050	<0.000050	<0.00005	<0.00005	<0.00005	<0.00005
Silver, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00005
Sodium, dissolved	mg/L	288	306	178	312	-	341	305	436	450	390	359	386	392	356	399	436	365	316	370	310	334	431	61
Sodium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72.3
Strontium, dissolved	mg/L	1.7	1.54	1.03	1.66	-	1.6	1.49	1.53	1.6	1.64	1.52	1.61	1.64	1.43	1.52	1.56	1.35	1.3	1.44	1.29	1.45	1.31	0.542
Strontium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.634
Sulfur, dissolved	mg/L	271	277	-	-	-	-	-	19	17	23	21	20	18	18	17	20	16	17.2	20.2	17.1	19.1	17.5	17
Sulfur, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21
Tellurium, dissolved	mg/L	<0.0005	<0.0005	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.00050	<0.00050	<0.0005	<0.0005	<0.0005	<0.0002
Tellurium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0002
Thallium, dissolved	mg/L	0.000062	0.000061	<0.00002	<0.00002	-	<0.00002	0.00011	<0.00002	<0.00002	0.00003	0.00007	<0.00002	0.00008	<0.00002	0.00004	<0.00002	0.00002	0.000074	0.000062	<0.00002	0.000032	<0.00002	<0.00002
Thallium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00002
Thorium, dissolved	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	-	<0.0001	0.0003	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.0001	<0.0001	<0.0001	<0.0001
Thorium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0001
Tin, dissolved	mg/L	<0.0002	<0.0002	0.001	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.00020	<0.00020	<0.0002	<0.0002	0.00029	<0.0002
Tin, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0004
Titanium, dissolved	mg/L	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0050	<0.0050	<0.005	<0.005	<0.005	<0.005
Titanium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.005
Tungsten, dissolved	mg/L	<0.001	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.006	0.0064	0.0043	0.0035	0.0012	-
Tungsten, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uranium, dissolved	mg/L	0.00775	0.00734	0.00216	-	0.00166	0.00196	0.00205	0.00173	0.00206	0.00206	0.00213	0.00218	0.00223	0.00205	0.0021	0.00227	0.00193	0.00231	0.00238	0.0023	0.00226	0.00218	0.00104
Uranium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0012
Vanadium, dissolved	mg/L	<0.001	<0.001	<0.0010	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.001	<0.001	<0.001	<0.001
Vanadium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-									

Sampling Location		MW09-6S	MW09-6S	MW10-8	MW10-8	MW10-8	MW10-8	MW10-8	MW10-8	MW10-8	MW10-8	MW10-8	MW10-8	MW10-8	MW10-8	MW10-8	MW10-8	MW10-8	MW10-8	MW10-8	MW10-8	MW10-8	MW15-01	
Date Sampled	2019-08-13	2019-10-29	2010-11-16	2011-05-09	2011-05-09	2011-08-10	2011-10-18	2012-05-24	2012-08-22	2012-11-20	2013-05-21	2013-08-20	2013-11-12	2014-06-02	2014-08-18	2014-11-04	2015-05-25	2018-09-11	2018-12-03	2019-05-29	2019-08-13	2019-10-29	2015-11-09	
Lab Sample ID	9081278-01	N000444-01	K0K0729-02	K1E0403-01	K1E0403-04	K1H0536-01	K1J0685-02	2051369-04	2081484-02	2111131-02	3051354-02	3081378-05	3110772-05	4060249-05	4081094-05	4110161-05	5051773-05	8090975-03	8120636-03	9052874-02	9081278-02	N000444-02	5110701-01	
Sample Type								Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal			Normal	
Analyte	Unit																							
Hardness, Total (as CaCO3)	mg/L	1510	1590	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	712	767	772	532	
Hydroxide (OH)	mg/L	<0.34	<0.34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.340	<0.340	<0.34	<0.34	<0.34	-	
Nitrate + Nitrite (as N)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Nitrogen, Total Kjeldahl	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
pH	pH Units	7.61	7.61	7.97	-	7.95	7.76	7.78	7.85	7.74	6.95	7.78	7.86	7.86	7.94	7.74	7.82	7.81	7.83	7.81	8.04	7.91	8.04	7.65
pH	pH units	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Phosphorus, Total (as P)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.017	
Phosphorus, Total Dissolved	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	-	-	-	-	
Total organic carbon	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	
Turbidity	NTU	248	77.2	87	641	-	-	71.1	-	2350	1910	620	664	1220	292	186	1180	122	-	3750	294	3080	671	37.8
Microbiological Parameters																								
Coliforms, Fecal	CFU/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Coliforms, Fecal	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Coliforms, Fecal (MPN)	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<3.0	
Coliforms, Total	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Coliforms, Total (MPN)	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
E. coli (MPN)	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<3.0	
E. coli, Total	CFU/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Volatile Organic Compounds (VOC)																								
1,1-Dichloroethane	µg/L	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	<1	-	
1,1-Dichloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1,1-Dichloroethylene	µg/L	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	<1	-	
1,1-Dichloroethylene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1,1,1-Trichloroethane	µg/L	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	<1	-	
1,1,1-Trichloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1,1,2-Trichloroethane	µg/L	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	<1	-	
1,1,2-Trichloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1,1,2,2-Tetrachloroethane	µg/L	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	
1,1,2,2-Tetrachloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1,2-Dibromoethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0003	-	-	-	-	-	
1,2-Dibromoethane	µg/L	-	<0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.3	-	<0.3	-	
1,2-Dibromoethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1,2-Dichlorobenzene	µg/L	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	
1,2-Dichlorobenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1,2-Dichloroethane	µg/L	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	<1	-	
1,2-Dichloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1,2-Dichloropropane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	-	-	
1,2-Dichloropropane	µg/L	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	<1	-	
1,2-Dichloropropane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1,3-Dichlorobenzene	µg/L	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	<1	-	
1,3-Dichlorobenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1,3-Dichloropropene (cis + trans)	µg/L	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	<1	-	
1,3-Dichloropropene (cis + trans)	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1,4-Dichlorobenzene	µg/L	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	<1	-	
1,4-Dichlorobenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Benzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	-	-	-	-	<0.0005	
Benzene	µg/L	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	
Benzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Bromodichloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	-	-	
Bromodichloromethane	µg/L	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	<1	-	
Bromodichloromethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Bromoform	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	-	-	

Sampling Location		MW15-01	MW15-01	MW15-01	MW15-01	MW15-01	MW15-01	MW15-01	MW15-01	MW15-01	MW15-01	MW15-01	MW15-01	MW18-10	MW18-10	MW18-10	MW18-10	MW18-10	MW18-10	MW18-11	MW18-11	MW18-11	MW18-11	MW18-11	
Date Sampled	Lab Sample ID	2016-05-02	2016-08-22	2016-11-14	2017-04-05	2017-08-29	2017-11-20	2018-06-26	2018-09-11	2018-12-04	2019-05-29	2019-08-13	2019-10-29	2018-06-27	2018-09-10	2018-12-03	2019-05-29	2019-08-13	2019-10-29	2018-12-04	2018-12-06	2019-05-29	2019-08-13	2019-10-29	
Sample Type		6050110-01	6081657-01	6111045-01	7040391-01	7082760-01	7112039-01	8062805-01	8090971-01	8120631-01	9052867-01	9081228-01	N000451-01	8062805-02	8090975-02	8120636-02	9052874-03	9081278-03	N000444-03	8120636-08	8120644-01	9052874-04	9081278-04	N000444-04	
			Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Supplementary	Supplementary	Supplementary	Normal	Normal	Normal				Normal	Normal				
Analyte	Unit																								
Field Parameters																									
Depth to Water	m	-	11.475	-	10.955	10.425	11.24	9.54	10.81	11.29	-	-	-	-	28.31	28.24	28.085	28.075	28.11	-	-	-	112.994	112.901	
Dissolved Oxygen	mg/L	0.3	0.62	0.35	-	0.89	1.28	-	1.84	1.02	-	-	-	-	2.91	1.08	3.9	5	4.4	-	-	5.36	1.59	1.42	
Electrical Conductivity	µS/cm	1062	1033	1031	1047	1122	1107	1050	1111	973	-	-	-	2480	2730	2380	2380	2462	2497	558	1036	1054	1172	1468	
Elevation of Piezometric Surface	m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	888.228	888.238	888.203	-	-	-	796.94	797.033	
Oxidation reduction potential	mV	-6	177	162	229	101	-	198	41	30	-	-	-	222	126	128	-4.5	3.6	148.5	-	-	18.2	-128.1	-196.2	
pH	pH Units	7.1	7.1	7.3	7.6	7.2	7.1	7.39	7.73	7.08	-	-	-	7.62	7.35	6.92	7.3	7.15	7.32	8.3	-	7.74	7.52	7.93	
Temperature	°C	9.2	9.8	8.8	8.7	9.5	8.7	9.3	9.2	8.8	-	-	-	13.8	13.9	12.4	14.6	13.3	11.1	9.8	-	9.4	10.5	9.1	
Anions																									
Bromide	mg/L	<0.10	<0.10	<0.10	<0.10	0.12	0.11	<0.10	<0.10	<0.10	<0.10	0.15	<0.10	<0.10	<1.00	0.64	-	-	-	<0.10	<1.00	-	-	-	
Chloride	mg/L	117	107	94.5	125	125	116	105	114	113	113	113	116	314	313	343	299	337	348	26.6	23.2	60.9	89.7	105	
Fluoride	mg/L	<0.10	<0.10	<0.10	0.16	0.14	<0.10	<0.10	0.12	<0.10	<0.10	<0.10	<0.10	0.32	0.29	0.2	0.14	0.13	<0.1	0.9	1.42	0.31	0.65	0.94	
Nitrate (as N)	mg/L	1.19	1.05	0.803	0.807	1.18	1.15	0.892	0.954	0.855	0.92	1.03	0.906	12.9	21.7	15.7	21	30	34.7	1.03	0.043	0.023	<0.01	<0.01	
Nitrite (as N)	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.134	0.02	<0.01	0.131	<0.01	0.068	0.275	<0.01	<0.01	<0.01	
Sulfate	mg/L	43.2	45.1	42.3	46.5	46.6	47.3	43.5	46	44.6	43.5	43.5	44.2	89.5	89	76.5	76.9	73.5	74.2	39	156	72.3	70.7	70.2	
Metals																									
Aluminum, dissolved	mg/L	<0.005	-	0.007	<0.005	-	-	0.0154	<0.0050	0.0081	<0.0050	<0.0050	<0.0050	0.0126	0.0124	<0.0050	<0.005	<0.005	<0.005	0.0134	0.032	0.006	<0.005	<0.005	
Aluminum, total	mg/L	0.069	-	0.122	0.047	-	-	-	0.0181	0.0297	2.53	7.7	0.759	-	-	-	-	-	-	-	-	-	-	-	
Antimony, dissolved	mg/L	0.0004	-	0.0001	<0.0001	-	-	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.0007	0.00072	0.00036	0.0003	<0.0002	0.00026	0.00072	0.00576	0.0057	0.00348	0.00284	
Antimony, total	mg/L	0.0004	-	0.0001	<0.0001	-	-	-	<0.00020	<0.00020	<0.00020	0.00032	<0.00020	-	-	-	-	-	-	-	-	-	-	-	
Arsenic, dissolved	mg/L	<0.0005	-	<0.0005	<0.0005	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00269	0.00212	0.00161	0.00164	0.00133	0.00143	<0.00050	0.0352	0.00373	0.00511	0.0045	
Arsenic, total	mg/L	<0.0005	-	<0.0005	<0.0005	-	-	-	<0.00050	<0.00050	0.00184	0.00569	0.0007	-	-	-	-	-	-	-	-	-	-	-	
Barium, dissolved	mg/L	0.156	-	0.157	0.165	-	-	0.152	0.159	0.161	0.162	0.166	0.172	0.14	0.167	0.227	0.303	0.316	0.296	0.0369	0.018	0.0424	0.0271	0.0202	
Barium, total	mg/L	0.165	-	0.171	0.178	-	-	-	0.169	0.165	0.219	0.285	0.191	-	-	-	-	-	-	-	-	-	-	-	
Beryllium, dissolved	mg/L	<0.0001	-	<0.0001	<0.0001	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.0001	<0.0001	<0.0001	
Beryllium, total	mg/L	<0.0001	-	0.0002	<0.0001	-	-	-	<0.00010	<0.00010	0.00017	0.00044	<0.00010	-	-	-	-	-	-	-	-	-	-	-	
Bismuth, dissolved	mg/L	<0.0001	-	<0.0001	<0.0001	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.0001	<0.0001	<0.0001	
Bismuth, total	mg/L	<0.0001	-	<0.0001	<0.0001	-	-	-	<0.00010	<0.00010	<0.00010	0.00012	<0.00010	-	-	-	-	-	-	-	-	-	-	-	
Boron, dissolved	mg/L	0.033	-	0.031	0.036	-	-	0.0432	0.0222	0.0291	0.0264	0.026	0.0236	0.187	0.465	0.452	0.418	0.408	0.61	0.0339	0.418	0.153	0.17	0.301	
Boron, total	mg/L	0.034	-	0.033	0.04	-	-	-	0.0322	0.023	0.0306	0.0286	0.0251	-	-	-	-	-	-	-	-	-	-	-	
Cadmium, dissolved	mg/L	<0.00001	-	0.00001	<0.00001	-	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000032	0.00001	0.000045	0.000036	0.000032	0.000039	0.000015	0.000016	<0.00001	<0.00001	<0.00001	
Cadmium, total	mg/L	<0.00001	-	<0.00001	<0.00001	-	-	-	<0.000010	<0.000010	0.000029	0.000055	<0.000010	-	-	-	-	-	-	-	-	-	-	-	
Calcium, dissolved	mg/L	88.1	-	86.4	92	-	-	91.9	78.3	88	94.1	90.8	93.6	136	97.8	86.3	94.5	92.5	92.9	14.9	23.7	46.1	43.2	48.7	
Calcium, total	mg/L	89.6	-	92.2	102	-	-	-	91.8	89.2	119	193	104	-	-	-	-								

Sampling Location		MW15-01	MW15-01	MW15-01	MW15-01	MW15-01	MW15-01	MW15-01	MW15-01	MW15-01	MW15-01	MW15-01	MW15-01	MW18-10	MW18-10	MW18-10	MW18-10	MW18-10	MW18-10	MW18-11	MW18-11	MW18-11	MW18-11	MW18-11	
Date Sampled	Lab Sample ID	2016-05-02	2016-08-22	2016-11-14	2017-04-05	2017-08-29	2017-11-20	2018-06-26	2018-09-11	2018-12-04	2019-05-29	2019-08-13	2019-10-29	2018-06-27	2018-09-10	2018-12-03	2019-05-29	2019-08-13	2019-10-29	2018-12-04	2018-12-06	2019-05-29	2019-08-13	2019-10-29	
Sample Type		6050110-01	6081657-01	6111045-01	7040391-01	7082760-01	7112039-01	8062805-01	8090971-01	8120631-01	9052867-01	9081228-01	N000451-01	8062805-02	8090975-02	8120636-02	9052874-03	9081278-03	N000444-03	8120636-08	8120644-01	9052874-04	9081278-04	N000444-04	
			Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Supplementary	Supplementary	Supplementary	Normal	Normal	Normal				Normal	Normal				
Analyte	Unit																								
Molybdenum, dissolved	mg/L	0.0003	-	0.0003	0.0002	-	-	0.00032	0.00023	0.00024	0.00023	0.00022	0.00022	0.00287	0.00257	0.0019	0.00152	0.00141	0.00127	0.0062	0.0364	0.00762	0.00344	0.00324	
Molybdenum, total	mg/L	0.0003	-	0.0004	0.0002	-	-	-	0.00022	0.00023	0.00049	0.00123	0.00029	-	-	-	-	-	-	-	-	-	-	-	
Nickel, dissolved	mg/L	0.0017	-	0.0005	0.0003	-	-	<0.00040	<0.00040	0.00054	<0.00040	<0.00040	<0.00040	0.0355	0.0388	0.0438	0.0442	0.0447	0.0409	0.00553	0.00589	0.0301	0.0111	0.01	
Nickel, total	mg/L	0.0024	-	0.0005	0.0004	-	-	-	<0.00040	<0.00040	0.00548	0.018	0.00202	-	-	-	-	-	-	-	-	-	-	-	
Phosphorus, dissolved	mg/L	<0.02	-	<0.02	<0.05	-	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.05	<0.05	<0.05	<0.050	<0.050	<0.05	<0.05	<0.05	
Phosphorus, total	mg/L	<0.02	-	0.04	<0.05	-	-	-	<0.050	<0.050	0.182	0.417	<0.050	-	-	-	-	-	-	-	-	-	-	-	
Potassium, dissolved	mg/L	2.33	-	2.35	2.32	-	-	2.21	2.1	2.14	2.14	2.18	2.31	13.7	20	19.9	20.3	24.4	25.7	5.73	38.1	5.39	4.78	4.51	
Potassium, total	mg/L	2.23	-	2.31	2.31	-	-	-	2.11	2.15	2.57	3.22	2.41	-	-	-	-	-	-	-	-	-	-	-	
Selenium, dissolved	mg/L	<0.0005	-	<0.0005	<0.0005	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00109	<0.00050	<0.00050	<0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.0005	<0.0005	<0.0005	
Selenium, total	mg/L	<0.0005	-	<0.0005	<0.0005	-	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-	-	-	-	-	-	-	-	-	-	-	
Silicon, dissolved	mg/L	5.3	-	4	4.9	-	-	4.5	4.6	5	4.4	4.7	5	8.5	10.2	10.9	9.5	9.9	11.1	1.1	4.3	2.4	3.1	4.8	
Silicon, total	mg/L	5.4	-	5.2	5	-	-	-	4.9	5.1	9.4	14.5	6.3	-	-	-	-	-	-	-	-	-	-	-	
Silver, dissolved	mg/L	<0.00005	-	<0.00005	<0.00005	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.00005	<0.00005	<0.00005	<0.000050	<0.000050	<0.00005	<0.00005	<0.00005	
Silver, total	mg/L	<0.00005	-	<0.00005	<0.00005	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	-	-	-	-	-	-	-	-	-	-	-	
Sodium, dissolved	mg/L	64	-	55.4	61.1	-	-	56.5	58	63	60.2	58.8	67.6	168	185	190	182	183	206	30.7	270	81.1	85.3	110	
Sodium, total	mg/L	58.8	-	57.5	66	-	-	-	58.1	64.7	59.4	60	61.9	-	-	-	-	-	-	-	-	-	-	-	
Strontium, dissolved	mg/L	0.592	-	0.548	0.561	-	-	0.532	0.555	0.562	0.563	0.579	0.617	0.842	1.18	1.43	1.44	1.46	1.34	0.0865	0.246	0.632	0.622	0.691	
Strontium, total	mg/L	0.609	-	0.571	0.597	-	-	-	0.583	0.57	0.665	0.774	0.605	-	-	-	-	-	-	-	-	-	-	-	
Sulfur, dissolved	mg/L	17	-	14	14	-	-	16.4	15.6	16.6	16.6	15.8	16.5	37.5	31.3	30.9	29	28.2	29	16.1	62.1	27.5	25.2	28.8	
Sulfur, total	mg/L	16	-	14	14	-	-	-	16	15.7	16.4	15.1	14.5	-	-	-	-	-	-	-	-	-	-	-	
Tellurium, dissolved	mg/L	<0.0002	-	<0.0002	<0.0002	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.0005	<0.0005	<0.0005	
Tellurium, total	mg/L	<0.0002	-	<0.0002	<0.0002	-	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-	-	-	-	-	-	-	-	-	-	-	
Thallium, dissolved	mg/L	<0.00002	-	<0.00002	<0.00002	-	-	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.000088	0.000085	0.000071	0.000099	0.000091	0.000099	<0.000020	0.000141	<0.00002	<0.00002	<0.00002	
Thallium, total	mg/L	<0.00002	-	<0.00002	<0.00002	-	-	-	<0.000020	<0.000020	0.000043	0.00007	<0.000020	-	-	-	-	-	-	-	-	-	-	-	
Thorium, dissolved	mg/L	<0.0001	-	<0.0001	<0.0001	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.0001	<0.0001	<0.0001	
Thorium, total	mg/L	<0.0001	-	<0.0001	<0.0001	-	-	-	<0.00010	<0.00010	0.00111	0.00404	0.00031	-	-	-	-	-	-	-	-	-	-	-	
Tin, dissolved	mg/L	<0.0002	-	<0.0002	<0.0002	-	-	<0.00020	<0.00020	0.00033	<0.00020	<0.00020	<0.00020	0.00077	<0.00020	<0.00020	<0.0002	<0.0002	0.00023	<0.00020	0.00064	0.00022	<0.0002	<0.0002	
Tin, total	mg/L	<0.0002	-	<0.0002	0.0004	-	-	-	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	-	-	-	-	-	-	-	-	-	-	-	
Titanium, dissolved	mg/L	<0.005	-	<0.005	<0.005	-	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.005	<0.005	<0.005	<0.0050	<0.0050	<0.005	<0.005	<0.005	
Titanium, total	mg/L	<0.005	-	<0.005	<0.005	-	-	-	<0.0.																

Sampling Location		MW15-01	MW15-01	MW15-01	MW15-01	MW15-01	MW15-01	MW15-01	MW15-01	MW15-01	MW15-01	MW15-01	MW15-01	MW18-10	MW18-10	MW18-10	MW18-10	MW18-10	MW18-10	MW18-10	MW18-11	MW18-11	MW18-11	MW18-11	MW18-11
Date Sampled	Lab Sample ID	2016-05-02	2016-08-22	2016-11-14	2017-04-05	2017-08-29	2017-11-20	2018-06-26	2018-09-11	2018-12-04	2019-05-29	2019-08-13	2019-10-29	2018-06-27	2018-09-10	2018-12-03	2019-05-29	2019-08-13	2019-10-29	2018-12-04	2018-12-06	2019-05-29	2019-08-13	2019-10-29	
Sample Type		6050110-01	6081657-01	6111045-01	7040391-01	7082760-01	7112039-01	8062805-01	8090971-01	8120631-01	9052867-01	9081228-01	N000451-01	8062805-02	8090975-02	8120636-02	9052874-03	9081278-03	N000444-03	8120636-08	8120644-01	9052874-04	9081278-04	N000444-04	
			Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Supplementar	Supplementar	Supplementar	Normal	Normal	Normal				Normal	Normal				
Analyte	Unit																								
Hardness, Total (as CaCO3)	mg/L	-	-	-	-	-	-	-	-	-	427	416	447	-	-	-	1030	1020	1070	-	-	477	542	726	
Hydroxide (OH)	mg/L	<1	<0.3	<0.3	<0.340	<0.340	<0.340	<0.340	<0.340	<0.340	<0.340	<0.340	<0.340	<0.340	<0.340	<0.340	<0.34	<0.34	<0.34	<0.340	<0.340	<0.34	<0.34	<0.34	
Nitrate + Nitrite (as N)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Nitrogen, Total Kjeldahl	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
pH	pH Units	7.86	-	-	-	-	-	7.74	7.88	7.74	-	-	-	7.81	7.7	7.62	8.11	7.88	8	8.07	7.93	8.18	8.1	8.2	
pH	pH units	-	-	-	-	-	-	-	-	-	7.93	7.88	7.93	-	-	-	-	-	-	-	-	-	-	-	
Phosphorus, Total (as P)	mg/L	0.007	-	-	-	-	-	-	-	-	0.282	0.381	0.075	-	-	-	-	-	-	-	-	-	-	-	
Phosphorus, Total Dissolved	mg/L	-	-	-	-	-	-	-	-	-	<0.0020	<0.0020	0.005	-	-	0.013	-	-	-	0.0053	0.0103	-	-	-	
Total organic carbon	mg/L	<0.5	0.7	0.8	1	0.83	<0.50	0.71	<0.50	<0.50	0.7	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	
Turbidity	NTU	2.5	12.1	7.28	1.6	1.3	2.48	1.41	-	3.69	153	81.8	60.5	267	-	661		3590		-	-	35.8	202	95.6	
Microbiological Parameters																									
Coliforms, Fecal	CFU/100 mL	-	-	-	<1	<1	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Coliforms, Fecal	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	
Coliforms, Fecal (MPN)	MPN/100 mL	<3.0	<3.0	<3.0	-	-	-	<3.0	-	-	<1.1	<1.1	-	-	-	-	-	-	-	-	-	-	-	-	
Coliforms, Total	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	
Coliforms, Total (MPN)	MPN/100 mL	-	-	-	-	-	-	-	-	-	<1.1	<1.1	-	-	-	-	-	-	-	-	-	-	-	-	
E. coli (MPN)	MPN/100 mL	<3.0	<3.0	<3.0	-	-	-	<3.0	-	-	<1.1	<1.1	-	-	-	-	-	-	-	-	-	-	-	-	
E. coli, Total	CFU/100 mL	-	-	-	<1	<1	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Volatile Organic Compounds (VOC)																									
1,1-Dichloroethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	<1	-	-	<1	-	<1	
1,1-Dichloroethane	ug/L	-	-	-	-	-	-	-	-	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	
1,1-Dichloroethylene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	<1	-	-	<1	-	<1	
1,1-Dichloroethylene	ug/L	-	-	-	-	-	-	-	-	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	
1,1,1-Trichloroethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	<1	-	-	<1	-	<1	
1,1,1-Trichloroethane	ug/L	-	-	-	-	-	-	-	-	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	
1,1,2-Trichloroethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	<1	-	-	<1	-	<1	
1,1,2-Trichloroethane	ug/L	-	-	-	-	-	-	-	-	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	
1,1,2,2-Tetrachloroethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	<0.5	-	<0.5	
1,1,2,2-Tetrachloroethane	ug/L	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	
1,2-Dibromoethane	mg/L	<0.0003	-	-	<0.0002	-	-	-	<0.0003	-	-	-	-	-	<0.0003	<0.0003	-	-	-	-	-	-	-	-	
1,2-Dibromoethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.3	-	<0.3	-	-	<0.3	-	<0.3	
1,2-Dibromoethane	ug/L	-	-	-	-	-	-	-	-	-	<0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	
1,2-Dichlorobenzene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	<0.5	-	<0.5	
1,2-Dichlorobenzene	ug/L	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	
1,2-Dichloroethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	<1	-	-	<1	-	<1	
1,2-Dichloroethane	ug/L	-	-	-	-	-	-	-	-	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	
1,2-Dichloropropane	mg/L	<0.0010	-	-	<0.0010	-	-	-	<0.0010	-	-	-	-	-	<0.0010	<0.0010	-	-	-	-	-	-	-	-	
1,2-Dichloropropane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	<1	-	-	<1	-	<1	
1,2-Dichloropropane	ug/L	-	-	-	-	-	-	-	-	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	
1,3-Dichlorobenzene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	<1	-	-	<1	-	<1	
1,3-Dichlorobenzene	ug/L	-	-	-	-	-	-	-	-	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	
1,3-Dichloropropene (cis + trans)	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	<1	-	-	<1	-	<1	
1,3-Dichloropropene (cis + trans)	ug/L	-	-	-	-	-	-	-	-	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	
1,4-Dichlorobenzene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	<1	-	-	<1	-	<1	
1,4-Dichlorobenzene	ug/L	-	-	-	-	-	-	-	-	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	
Benzene	mg/L	<0.0005	-	<0.0005	<0.0005	-	-	-	<0.0005	-	-	-	-	-	<0.0005	<0.0005	-	-	-	-	-	-	-	-	
Benzene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	<0.5	-	<0.5	
Benzene	ug/L	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	
Bromodichloromethane	mg/L	<0.0010	-	-	<0.0010	-	-	-	<0.0010	-	-	-	-	-	<0.0010	<0.0010	-	-	-	-	-	-	-	-	
Bromodichloromethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	<1	-	-	<1	-	<1	
Bromodichloromethane	ug/L	-	-	-	-	-	-	-	-	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	
Bromoform	mg/L	<0.0010	-	-	<0.0010	-	-	-	<0.0010	-	-	-	-	-	<0.0010	<0.0010	-	-	-	-	-	-	-	-	

Sampling Location Date Sampled Lab Sample ID Sample Type		MW15-01	MW15-01	MW15-01	MW15-01	MW15-01	MW15-01	MW15-01	MW15-01	MW15-01	MW15-01	MW15-01	MW15-01	MW18-10	MW18-10	MW18-10	MW18-10	MW18-10	MW18-10	MW18-10	MW18-11	MW18-11	MW18-11	MW18-11	MW18-11
		2016-05-02	2016-08-22	2016-11-14	2017-04-05	2017-08-29	2017-11-20	2018-06-26	2018-09-11	2018-12-04	2019-05-29	2019-08-13	2019-10-29	2018-06-27	2018-09-10	2018-12-03	2019-05-29	2019-08-13	2019-10-29	2018-12-04	2018-12-06	2019-05-29	2019-08-13	2019-10-29	
		6050110-01	6081657-01	6111045-01	7040391-01	7082760-01	7112039-01	8062805-01	8090971-01	8120631-01	9052867-01	9081228-01	N000451-01	8062805-02	8090975-02	8120636-02	9052874-03	9081278-03	N000444-03	8120636-08	8120644-01	9052874-04	9081278-04	N000444-04	
			Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Supplementar	Supplementar	Supplementar	Normal	Normal	Normal				Normal	Normal		
Analyte	Unit																								
Bromoform	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	<1	-	-	<1	-	<1	
Bromoform	ug/L	-	-	-	-	-	-	-	-	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	
Carbon tetrachloride	mg/L	<0.0010	-	-	<0.0005	-	-	-	<0.0005	-	-	-	-	-	<0.0005	<0.0005	-	-	-	-	-	-	-	-	
Carbon tetrachloride	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	<0.5	-	<0.5	
Carbon tetrachloride	ug/L	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	
Chlorobenzene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	<1	-	-	<1	-	<1	
Chlorobenzene	ug/L	-	-	-	-	-	-	-	-	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	
Chloroethane	mg/L	<0.0020	-	-	<0.0020	-	-	-	<0.0020	-	-	-	-	-	<0.0020	<0.0020	-	-	-	-	-	-	-	-	
Chloroethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<2	-	<2	-	-	<2	-	<2	
Chloroethane	ug/L	-	-	-	-	-	-	-	-	-	<2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	
Chloroform	mg/L	<0.0010	-	-	<0.0010	-	-	-	<0.0010	-	-	-	-	-	<0.0010	<0.0010	-	-	-	-	-	-	-	-	
Chloroform	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	<1	-	-	<1	-	<1	
Chloroform	ug/L	-	-	-	-	-	-	-	-	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	
cis-1,2-Dichloroethylene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	<1	-	-	<1	-	<1	
cis-1,2-Dichloroethylene	ug/L	-	-	-	-	-	-	-	-	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	
Dibromochloromethane	mg/L	<0.0010	-	-	<0.0010	-	-	-	<0.0010	-	-	-	-	-	<0.0010	<0.0010	-	-	-	-	-	-	-	-	
Dibromochloromethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	<1	-	-	<1	-	<1	
Dibromochloromethane	ug/L	-	-	-	-	-	-	-	-	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	
Dibromomethane	mg/L	<0.0010	-	-	<0.0010	-	-	-	<0.0010	-	-	-	-	-	<0.0010	<0.0010	-	-	-	-	-	-	-	-	
Dibromomethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	<1	-	-	<1	-	<1	
Dibromomethane	ug/L	-	-	-	-	-	-	-	-	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	
Dichloromethane	mg/L	<0.0030	-	-	<0.0030	-	-	-	<0.0030	-	-	-	-	-	<0.0030	<0.0030	-	-	-	-	-	-	-	-	
Dichloromethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<3	-	<3	-	-	<3	-	<3	
Dichloromethane	ug/L	-	-	-	-	-	-	-	-	-	<3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ethylbenzene	mg/L	<0.0010	-	<0.0010	<0.0010	-	-	-	<0.0010	-	-	-	-	-	<0.0010	<0.0010	-	-	-	-	-	-	-	-	
Ethylbenzene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	<1	-	-	<1	-	<1	
Ethylbenzene	ug/L	-	-	-	-	-	-	-	-	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	
Methyl tert-butyl ether	mg/L	<0.0010	-	<0.0010	<0.0010	-	-	-	<0.0010	-	-	-	-	-	<0.0010	<0.0010	-	-	-	-	-	-	-	-	
Methyl tert-butyl ether	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	<1	-	-	<1	-	<1	
Methyl tert-butyl ether	ug/L	-	-	-	-	-	-	-	-	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	
Styrene	mg/L	<0.0010	-	<0.0010	<0.0010	-	-	-	<0.0010	-	-	-	-	-	<0.0010	<0.0010	-	-	-	-	-	-	-	-	
Styrene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	<1	-	-	<1	-	<1	
Styrene	ug/L	-	-	-	-	-	-	-	-	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	
Tetrachloroethylene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	<1	-	-	<1	-	<1	
Tetrachloroethylene	ug/L	-	-	-	-	-	-	-	-	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	
Toluene	mg/L	<0.0010	-	0.0076	<0.0010	-	-	-	0.0023	-	-	-	-	-	0.0108	0.0162	-	-	-	-	-	-	-	-	
Toluene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	<1	-	-	150	-	12.8	
Toluene	ug/L	-	-	-	-	-	-	-	-	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	
trans-1,2-Dichloroethylene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	<1	-	-	<1	-	<1	
trans-1,2-Dichloroethylene	ug/L	-	-	-	-	-	-	-	-	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	
Trichloroethylene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	<1	-	-	<1	-	<1	
Trichloroethylene	ug/L	-	-	-	-	-	-	-	-	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	
Trichlorofluoromethane	mg/L	<0.0010	-	-	<0.0010	-	-	-	<0.0010	-	-	-	-	-	<0.0010	<0.0010	-	-	-	-	-	-	-	-	
Trichlorofluoromethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	<1	-	-	<1	-	<1	
Trichlorofluoromethane	ug/L	-	-	-	-	-	-	-	-	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	
Vinyl chloride	mg/L	<0.0020	-	-	<0.0010	-	-	-	<0.0010	-	-	-	-	-	<0.0010	<0.0010	-	-	-	-	-	-	-	-	
Vinyl chloride	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	<1	-	-	<1	-	<1	
Vinyl chloride	ug/L	-	-	-	-	-	-	-	-	-	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	
Xylenes (total)	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<2	-	<2	-	-	<2	-	<2	
Xylenes (total)	ug/L	-	-	-	-	-	-	-	-	-	<2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	
BCMOE Aggregate Hydrocarbons																									
VPHw	mg/L	<0.100	-	<0.100	<0.100	-	-	-	<0.100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Sampling Location Date Sampled Lab Sample ID Sample Type		MW95-02	MW95-02	MW95-02	MW95-02	MW95-02	MW95-02	MW95-02	MW95-02	MW95-02	MW95-02	MW95-02	MW95-02	MW95-02	MW95-04	Runoff 1	Runoff 2	Runoff 3	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4
		2002-06-03	2002-08-26	2002-11-06	2003-03-07	2003-05-12	2003-11-03	2004-05-17	2004-11-08	2005-04-25	2005-11-02	2006-04-17	2006-11-05	2007-05-22 K705752-01	2004-05-17	2017-04-05 7040434-01 Normal	2017-04-05 7040434-02 Normal	2017-03-30 7040370-01	2002-06-03	2003-05-12	2004-05-17	2007-05-22 K705752-02	2007-11-05 K7K0165-01	2008-04-28 K8E0035-01
Analyte	Unit																							
Field Parameters																								
Depth to Water	m	9999	9999	9999	9999	21.25	21.25	21.3	21.82	21.28	9999	21.18	9999	21.27	26.6	-	-	-	8	-	-	-	-	-
Dissolved Oxygen	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Electrical Conductivity	µS/cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2370	13170	-	-	-	-	-	-	-
Elevation of Piezometric Surface	m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oxidation reduction potential	mV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-2	-112	-	-	-	-	-	-	-
pH	pH Units	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.4	7.6	-	-	-	-	-	-	-
Temperature	°C	-	-	-	-	11	11	13	11	12	-	10.3	-	10	13	4.2	4.3	-	-	10	12	7.5	5	-
Anions																								
Bromide	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.82	<10.0	<0.10	-	-	-	-	-	-
Chloride	mg/L	-	-	-	-	57.5	63.8	72.5	75	128	-	159	-	90.5	298	708	1230	5.45	62.5	73.8	65	60.2	76.7	69.4
Fluoride	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1.00	<1.00	0.47	-	-	-	-	-	-
Nitrate (as N)	mg/L	-	-	-	-	27.8	16.3	34.5	32.5	65	-	77	-	12.5	55.5	2.78	<0.100	0.214	1.4	1.35	1.63	1.35	1.09	0.982
Nitrite (as N)	mg/L	-	-	-	-	<0.01	0.16	<0.01	0.04	<0.01	-	<0.01	-	1.44	0.01	<0.100	<0.100	0.021	<0.01	<0.01	<0.01	<0.010	<0.010	<0.010
Sulfate	mg/L	-	-	-	-	51	78	71	79	104	-	150	-	254	640	153	32.7	13	44.5	43	40	37.5	38	38.6
Metals																								
Aluminum, dissolved	mg/L	-	-	-	-	<0.2	<0.2	<0.2	-	<0.4	-	<0.02	-	<0.050	<0.2	-	-	-	<0.2	<0.2	<0.2	<0.050	-	<0.050
Aluminum, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.10	-	-	2.17	41.1	-	-	-	<0.10	-	-
Antimony, dissolved	mg/L	-	-	-	-	<0.2	<0.2	<0.2	-	<0.4	-	<0.02	-	<0.0050	<0.2	-	-	-	<0.2	<0.2	<0.2	<0.0050	-	<0.0030
Antimony, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.006	-	-	0.0063	0.0008	-	-	-	<0.006	-	-
Arsenic, dissolved	mg/L	-	-	-	-	<0.2	<0.2	<0.2	-	<0.4	-	<0.02	-	<0.0050	<0.2	-	-	-	<0.2	<0.2	<0.2	<0.0050	-	<0.0050
Arsenic, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.010	-	-	0.0524	0.0123	-	-	-	<0.010	-	-
Barium, dissolved	mg/L	-	-	-	-	0.2	0.19	0.19	-	0.21	-	0.15	-	0.124	0.12	-	-	-	0.2	0.2	0.21	0.191	-	0.191
Barium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	0.114	-	-	0.259	0.421	-	-	-	0.19	-	-
Beryllium, dissolved	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	-	-	-	-	<0.0010	-	<0.0020
Beryllium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	-	-	0.0001	0.0014	-	-	-	<0.005	-	-
Bismuth, dissolved	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	-	-	-	-	<0.0010	-	<0.0005
Bismuth, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	<0.0001	0.0003	-	-	-	<0.001	-	-
Boron, dissolved	mg/L	-	-	-	-	0.6	0.58	0.59	-	0.6	-	0.6	-	0.632	0.65	-	-	-	<0.1	<0.1	<0.1	<0.020	-	<0.020
Boron, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	0.608	-	-	4.9	0.164	-	-	-	<0.020	-	-
Cadmium, dissolved	mg/L	-	-	-	-	<0.01	<0.01	<0.01	-	<0.02	-	<0.01	-	<0.00010	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.00010	-	<0.00010
Cadmium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	-	-	0.00048	0.00011	-	-	-	<0.00010	-	-
Calcium, dissolved	mg/L	-	-	-	-	174	177	175	-	210	-	210	-	215	165	-	-	-	90	104	88	84.6	88.4	91.2
Calcium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	206	-	-	382	174	-	-	-	85.1	-	-
Chromium, dissolved	mg/L	-	-	-	-	<0.01	<0.01	-	-	<0.02	-	<0.01	-	0.0054	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.0050	-	0.006
Chromium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.010	-	-	0.126	0.053	-	-	-	<0.010	-	-
Cobalt, dissolved	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	0.0037	-	-	-	-	-	-	-	<0.0010	-	<0.0005
Cobalt, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	0.0034	-	-	0.0371	0.0191	-	-	-	<0.0010	-	-
Copper, dissolved	mg/L	-	-	-	-	<0.01	<0.01	-	-	<0.02	-	<0.01	-	0.0057	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.0050	-	<0.0030
Copper, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.010	-	-	0.0227	0.033	-	-	-	<0.010	-	-
Iron, dissolved	mg/L	-	-	-	-	<0.03	<0.03	<0.03	-	<0.06	-	<0.06	-	0.655	<0.03	-	-	-	<0.03	<0.03	<0.03	0.267	-	0.386
Iron, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	0.7	-	-	46	39.2	-	-	-	<0.30	-	-
Lead, dissolved	mg/L	-	-	-	-	<0.05	<0.05	<0.05	-	<0.1	-	<0.05	-	<0.0020	<0.05	-	-	-	<0.01	<0.05	<0.05	<0.0020	-	<0.0010
Lead, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	-	-	0.0119	0.0296	-	-	-	<0.0020	-	-
Lithium, dissolved	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	0.0185	-	-	-	-	-	-	-	0.0018	-	0.002
Lithium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	0.0179	-	-	0.238	0.0402	-	-	-	<0.0050	-	-
Magnesium, dissolved	mg/L	-	-	-	-	99.4	103	91.3	-	120	-	97	-	103	233	-	-	-	37	43.7	38.1	38.4	41.1	40.2
Magnesium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	97.2	-	-	276	40.6	-	-	-	37.9	-	-
Manganese, dissolved	mg/L	-	-	-	-	0.009	0.083	0.02	-	0.04	-	0.007	-	0.107	0.009	-	-	-	<0.005	<0.005	<0.005	<0.0100	-	<0.0050
Manganese, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	0.107	-	-	1.41	0.71	-	-	-	<0.010	-	-
Mercury, dissolved	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	-	-	-	-	-	-	-	<0.00050	-	<0.00030
Mercury, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	-	-	0.00004	0.0001	-	-	-	<0.00050	-	-

Sampling Location		MW95-02	MW95-02	MW95-02	MW95-02	MW95-02	MW95-02	MW95-02	MW95-02	MW95-02	MW95-02	MW95-02	MW95-02	MW95-02	MW95-04	Runoff 1	Runoff 2	Runoff 3	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4
Date Sampled	Lab Sample ID	2002-06-03	2002-08-26	2002-11-06	2003-03-07	2003-05-12	2003-11-03	2004-05-17	2004-11-08	2005-04-25	2005-11-02	2006-04-17	2006-11-05	2007-05-22	2004-05-17	2017-04-05	2017-04-05	2017-03-30	2002-06-03	2003-05-12	2004-05-17	2007-05-22	2007-11-05	2008-04-28
Sample Type														K705752-01		7040434-01	7040434-02	7040370-01				K705752-02	K7K0165-01	K8E0035-01
Analyte	Unit																							
Molybdenum, dissolved	mg/L	-	-	-	-	<0.03	<0.03	<0.03	-	<0.06	-	<0.03	-	<0.0020	<0.03	-	-	-	<0.03	<0.03	<0.03	<0.0020	-	<0.0010
Molybdenum, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.0050	-	-	0.0061	0.0025	-	-	-	<0.0050	-	-
Nickel, dissolved	mg/L	-	-	-	-	<0.05	<0.05	<0.05	-	<0.1	-	<0.05	-	0.037	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.010	-	<0.005
Nickel, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.020	-	-	0.19	0.04	-	-	-	<0.020	-	-
Phosphorus, dissolved	mg/L	-	-	-	-	<0.3	<0.3	<0.3	-	<0.6	-	<0.3	-	<0.500	<0.3	-	-	-	<0.3	<0.3	<0.3	<0.500	-	<0.200
Phosphorus, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.50	-	-	13.1	0.61	-	-	-	<0.50	-	-
Potassium, dissolved	mg/L	-	-	-	-	54	53	50	-	50	-	57	-	59.5	52	-	-	-	<2	<2	<2	1.66	-	2.17
Potassium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	56.4	-	-	852	16.6	-	-	-	1.53	-	-
Selenium, dissolved	mg/L	-	-	-	-	<0.2	<0.2	<0.2	-	<0.4	-	<0.2	-	<0.0100	<0.2	-	-	-	<0.2	<0.2	<0.2	<0.0100	-	<0.0050
Selenium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.010	-	-	0.0007	<0.0005	-	-	-	<0.010	-	-
Silicon, dissolved	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	9.58	-	-	-	-	-	-	-	3.88	-	5.01
Silicon, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	7.5	-	-	29.8	73.8	-	-	-	2.6	-	-
Silver, dissolved	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.0004	-	-	-	-	-	-	-	<0.0004	-	<0.00040
Silver, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	-	-	0.00015	<0.00005	-	-	-	<0.00050	-	-
Sodium, dissolved	mg/L	-	-	-	-	68	73.8	74	-	120	-	130	-	107	234	-	-	-	34	37	37	36.8	-	43.1
Sodium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	98	-	-	1460	8.12	-	-	-	34.8	-	-
Strontium, dissolved	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	1.12	-	-	-	-	-	-	-	0.414	-	0.434
Strontium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	1.1	-	-	2.4	0.579	-	-	-	0.405	-	-
Sulfur, dissolved	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulfur, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31	4	-	-	-	-	-	-
Tellurium, dissolved	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.0050	-	-	-	-	-	-	-	<0.0050	-	<0.0030
Tellurium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	-	-	<0.0002	<0.0002	-	-	-	<0.005	-	-
Thallium, dissolved	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	-	-	-	-	<0.0010	-	<0.0005
Thallium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	<0.00002	0.00032	-	-	-	<0.0010	-	-
Thorium, dissolved	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.0050	-	-	-	-	-	-	-	<0.0050	-	<0.0030
Thorium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	-	-	0.0004	0.0099	-	-	-	<0.005	-	-
Tin, dissolved	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	-	-	-	-	-	-	-	<0.0020	-	<0.0020
Tin, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	0.0093	0.0013	-	-	-	<0.001	-	-
Titanium, dissolved	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.0200	-	-	-	-	-	-	-	<0.0200	-	<0.100
Titanium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.050	-	-	0.069	1.4	-	-	-	<0.050	-	-
Tungsten, dissolved	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tungsten, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uranium, dissolved	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	0.0025	-	-	-	-	-	-	-	0.0011	-	0.0012
Uranium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	0.0028	-	-	0.00069	0.00239	-	-	-	0.0012	-	-
Vanadium, dissolved	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.0050	-	-	-	-	-	-	-	<0.0050	-	<0.010
Vanadium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.010	-	-	0.011	0.042	-	-	-	<0.010	-	-
Zinc, dissolved	mg/L	-	-	-	-	0.017	0.0197	0.02	-	0.01	-	0.028	-	<0.040	0.02	-	-	-	0.01	0.021	0.039	<0.040	-	<0.030
Zinc, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.050	-	-	0.576	0.094	-	-	-	<0.050	-	-
Zirconium, dissolved	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.010	-	-	-	-	-	-	-	<0.010	-	<0.005
Zirconium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.010	-	-	0.0071	0.028	-	-	-	<0.010	-	-
General Parameters																								
Alkalinity, Bicarbonate (as CaCO3)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3050	9700	6010	-	-	-	-	-	-
Alkalinity, Carbonate (as CaCO3)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1.0	<1.0	<1	-	-	-	-	-	-
Alkalinity, Hydroxide (as CaCO3)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1.0	<1.0	<1	-	-	-	-	-	-
Alkalinity, Phenolphthalein (as CaCO3)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1.0	<1.0	<1	-	-	-	-	-	-
Alkalinity, Total (as CaCO3)	mg/L	-	-	-	-	2800	5600	1720	7040	4100	-	3500	-	3000	900	3050	9700	6010	287	290	324	310	340	333
Ammonia, Total (as N)	mg/L	-	-	-	-	-	-	-	0.19	0.04	-	0.08	-	0.31	-	-	928	0.792	-	-	-	<0.02	<0.02	0.04
Bicarbonate (HCO3)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3720	11800	7330	-	-	-	-	-	-
Carbonate (CO3)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.600	<0.600	<0.600	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	-	-	-	-	69	202	108	184	136	-	129	-	39	89	-	-	-	<5	5	10	<5	<5	-
Electrical Conductivity	µS/cm	-	-	-	-	1660	1620	1600	1900	2000	-	2200	-	1910	2810	8440	13800	324	845	866	791	822	881	842
Electrical Conductivity	uS/cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Sampling Location Date Sampled Lab Sample ID Sample Type		MW95-02	MW95-02	MW95-02	MW95-02	MW95-02	MW95-02	MW95-02	MW95-02	MW95-02	MW95-02	MW95-02	MW95-02	MW95-02	MW95-04	Runoff 1	Runoff 2	Runoff 3	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4
		2002-06-03	2002-08-26	2002-11-06	2003-03-07	2003-05-12	2003-11-03	2004-05-17	2004-11-08	2005-04-25	2005-11-02	2006-04-17	2006-11-05	2007-05-22 K705752-01	2004-05-17	2017-04-05 7040434-01 Normal	2017-04-05 7040434-02 Normal	2017-03-30 7040370-01	2002-06-03	2003-05-12	2004-05-17	2007-05-22 K705752-02	2007-11-05 K7K0165-01	2008-04-28 K8E0035-01
Analyte	Unit																							
Hardness, Total (as CaCO3)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hydroxide (OH)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.340	<0.340	<0.340	-	-	-	-	-	-
Nitrate + Nitrite (as N)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	14	-	-	-	-	-	-	-	1.35	1.09	-
Nitrogen, Total Kjeldahl	mg/L	-	-	-	-	2.92	13	3.7	4.7	5.12	-	5.1	-	7.12	0.84	-	-	-	0.05	<0.05	0.08	0.1	0.06	-
pH	pH Units	-	-	-	-	7.1	6.8	6.9	7.1	7.2	-	7	-	6.8	7	-	7.7	7.85	7.1	7.2	7.3	7.1	7.4	7.4
pH	pH units	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, Total (as P)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, Total Dissolved	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total organic carbon	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity	NTU	-	-	-	-	-	-	-	-	-	-	-	-	-	680	-	212	-	0.4	2.5	0.6	-	-	0.2
Microbiological Parameters																								
Coliforms, Fecal	CFU/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coliforms, Fecal	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coliforms, Fecal (MPN)	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coliforms, Total	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coliforms, Total (MPN)	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E. coli (MPN)	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E. coli, Total	CFU/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Volatile Organic Compounds (VOC)																								
1,1-Dichloroethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethylene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethylene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1-Trichloroethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1-Trichloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2-Trichloroethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2-Trichloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromoethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	<0.0002	-	-	-	-	-	-
1,2-Dibromoethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromoethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	<0.0010	-	-	-	-	-	-
1,2-Dichloropropane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dichloropropene (cis + trans)	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dichloropropene (cis + trans)	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0011	<0.0005	-	-	-	-	-	-
Benzene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	<0.0010	-	-	-	-	-	-
Bromodichloromethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	<0.0010	-	-	-	-	-	-

Sampling Location Date Sampled Lab Sample ID Sample Type		MW95-02	MW95-02	MW95-02	MW95-02	MW95-02	MW95-02	MW95-02	MW95-02	MW95-02	MW95-02	MW95-02	MW95-02	MW95-02	MW95-04	Runoff 1	Runoff 2	Runoff 3	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4
		2002-06-03	2002-08-26	2002-11-06	2003-03-07	2003-05-12	2003-11-03	2004-05-17	2004-11-08	2005-04-25	2005-11-02	2006-04-17	2006-11-05	2007-05-22 K705752-01	2004-05-17	2017-04-05 7040434-01 Normal	2017-04-05 7040434-02 Normal	2017-03-30 7040370-01	2002-06-03	2003-05-12	2004-05-17	2007-05-22 K705752-02	2007-11-05 K7K0165-01	2008-04-28 K8E0035-01
Analyte	Unit																							
Bromoform	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon tetrachloride	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	<0.0005	-	-	-	-	-	-
Carbon tetrachloride	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon tetrachloride	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	<0.0020	-	-	-	-	-	-
Chloroethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	<0.0010	-	-	-	-	-	-
Chloroform	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethylene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethylene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	<0.0010	-	-	-	-	-	-
Dibromochloromethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromomethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	<0.0010	-	-	-	-	-	-
Dibromomethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromomethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0030	<0.0030	-	-	-	-	-	-
Dichloromethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichloromethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0028	<0.0010	-	-	-	-	-	-
Ethylbenzene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl tert-butyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	<0.0010	-	-	-	-	-	-
Methyl tert-butyl ether	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl tert-butyl ether	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	<0.0010	-	-	-	-	-	-
Styrene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethylene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethylene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.104	<0.0010	-	-	-	-	-	-
Toluene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethylene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethylene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethylene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethylene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	<0.0010	-	-	-	-	-	-
Trichlorofluoromethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	<0.0010	-	-	-	-	-	-
Vinyl chloride	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xylenes (total)	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xylenes (total)	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BCMOE Aggregate Hydrocarbons																								
VPHw	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Sampling Location		Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	
Date Sampled		2008-10-14	2009-05-25	2009-11-04	2010-02-09	2010-06-15	2010-11-16	2011-05-09	2011-08-10	2011-10-18	2012-05-24	2012-08-22	2012-11-20	2013-05-21	2013-11-12	2014-06-02	2014-08-18	2014-11-04	2015-05-25	2016-05-03	2016-08-22	2016-11-14	2017-04-05	2017-11-20	
Lab Sample ID		K8J0452-01	K9E0816-01	K9K0184-03	K0B0397-03	K0F0788-02	K0K0729-03	K1E0403-02	K1H0536-04	K1J0685-04	2051369-02	2081484-04	2111131-04	3051354-04	3110772-02	4060249-02	4081094-01	4110161-01	5051773-02	6050336-05	6081698-04	6111141-02	7040434-04	7111886-03	
Sample Type											Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	
Analyte		Unit																							
Field Parameters																									
Depth to Water	m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Dissolved Oxygen	mg/L	-	2.01	3.7	-	-	-	-	-	-	-	-	-	-	-	4.5	3.93	4.38	4.85	4.24	4.67	-	-	-	
Electrical Conductivity	µS/cm	-	900	890	870	970	890	-	690	930	740	860	800	640	710	799	805	756	813	1013	986	932	63	1050	
Elevation of Piezometric Surface	m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Oxidation reduction potential	mV	-	-	-	-	49	159	-	62	119	111	221	188	258	74	165	201	47	68	156	240	293	261	-	
pH	pH Units	-	6.85	7.48	7.2	7.41	7.49	-	7.35	7.39	7.43	7.59	7.6	7.36	7.2	7.5	7.5	7.2	7.2	7.4	7.3	7.5	7.5	7.2	
Temperature	°C	-	8.4	8.4	7.4	12.2	8.2	-	9.4	7.6	8.2	8.8	8.1	8.4	8.1	7.9	8.5	8.4	12.9	8.31	8.6	8.3	8	8.2	
Anions																									
Bromide	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
Chloride	mg/L	86.9	74	57.6	91.1	76.7	75.7	79.2	72.9	77.2	63	67.2	65.6	69.1	68.5	67	69.7	70.2	81.2	97.3	88.5	88.6	90.4	105	
Fluoride	mg/L	-	-	-	-	-	-	-	-	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
Nitrate (as N)	mg/L	1.17	1.12	1.21	1.3	1.17	1.14	0.895	1.26	1.21	1.19	1.2	0.755	1.36	1.33	1.26	1.55	1.57	1.53	1.72	1.48	1.19	1.39	1.61	
Nitrite (as N)	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Sulfate	mg/L	40.6	38.8	39.8	42.9	41.2	36.1	37.6	35.8	40	37.2	36.6	40.4	36.6	38.8	37.6	39.7	40.7	40	40.3	41.5	40.2	42.8	43.8	
Metals																									
Aluminum, dissolved	mg/L	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.014	<0.005	<0.005	<0.005	<0.005	0.021	<0.005	-	-	<0.005	<0.005	-	-	
Aluminum, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	-	-	<0.005	<0.0050	
Antimony, dissolved	mg/L	<0.0006	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0004	0.0001	<0.0020	<0.0001	0.0007	0.0003	0.0003	0.0007	0.0004	0.0005	0.0002	-	-	<0.0001	<0.0001	-	-	
Antimony, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0001	<0.0001	-	-	<0.0001	<0.00020	
Arsenic, dissolved	mg/L	<0.0010	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	-	-	<0.0005	<0.0005	-	-	
Arsenic, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	<0.0005	-	-	<0.0005	<0.00050	
Barium, dissolved	mg/L	0.211	0.227	0.173	0.244	0.216	0.217	0.189	0.195	0.184	0.189	0.193	0.191	0.195	0.2	0.192	0.195	0.21	-	-	0.247	0.219	-	-	
Barium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.193	0.227	-	-	0.214	0.228	
Beryllium, dissolved	mg/L	<0.0004	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-	<0.0001	<0.0001	-	-	
Beryllium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0001	<0.0001	-	-	<0.0001	<0.00010	
Bismuth, dissolved	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-	<0.0001	<0.0001	-	-	
Bismuth, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0001	<0.0001	-	-	<0.0001	<0.00010	
Boron, dissolved	mg/L	0.013	0.015	0.02	0.02	0.015	0.042	0.016	0.018	0.017	0.018	0.012	0.018	0.018	0.032	0.021	0.024	0.014	-	-	0.031	0.014	-	-	
Boron, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.015	0.021	-	-	0.025	0.014	
Cadmium, dissolved	mg/L	<0.00002	0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.00005	0.00009	<0.00001	0.00001	<0.00001	<0.00001	0.00001	<0.00001	<0.00001	0.00003	0.00002	-	-	0.00002	<0.00001	-	-	
Cadmium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00001	<0.00001	-	-	<0.00001	<0.000010	
Calcium, dissolved	mg/L	87	83.8	80	87.4	79.1	81.3	90	83.8	84.7	74.7	80.7	82	82.5	88.6	90.2	92.1	88.7	-	-	100	86.1	-	-	
Calcium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	91.7	99.5	-	-	93.7	91.1	
Chromium, dissolved	mg/L	0.006	0.0033	0.0028	0.0116	0.0022	0.0007	<0.0005	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	-	-	<0.0005	<0.0005	-	-	
Chromium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	<0.0005	-	-	0.0005	0.00052	
Cobalt, dissolved	mg/L	<0.0001	0.00009	0.00006	0.00007	0.0001	0.00013	<0.00005	0.00018	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00007	0.00006	-	-	0.00006	<0.00005	-	-	
Cobalt, total	mg/L	-	-	-	-	-	-	-	-	-															

Sampling Location		Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4
Date Sampled	2008-10-14	2009-05-25	2009-11-04	2010-02-09	2010-06-15	2010-11-16	2011-05-09	2011-08-10	2011-10-18	2012-05-24	2012-08-22	2012-11-20	2013-05-21	2013-11-12	2014-06-02	2014-08-18	2014-11-04	2015-05-25	2016-05-03	2016-08-22	2016-11-14	2017-04-05	2017-11-20	
Lab Sample ID	K8J0452-01	K9E0816-01	K9K0184-03	K0B0397-03	K0F0788-02	K0K0729-03	K1E0403-02	K1H0536-04	K1J0685-04	2051369-02	2081484-04	2111131-04	3051354-04	3110772-02	4060249-02	4081094-01	4110161-01	5051773-02	6050336-05	6081698-04	6111141-02	7040434-04	7111886-03	
Sample Type										Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	
Analyte	Unit																							
Molybdenum, dissolved	mg/L	0.0002	0.0002	0.0002	0.0002	0.0002	0.0003	0.0002	0.0003	0.0012	0.0003	0.0005	0.0003	0.0002	0.0003	0.0003	0.0002	-	-	0.0002	0.0002	-	-	
Molybdenum, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0003	0.0003	-	-	0.0002	0.00019	
Nickel, dissolved	mg/L	0.001	0.0014	0.001	0.0012	0.0016	0.0037	0.0002	0.0011	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	0.0002	<0.0002	0.0015	0.0004	-	-	<0.0002	<0.0002	-	-
Nickel, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	0.0002	-	-	<0.0002	<0.00040	
Phosphorus, dissolved	mg/L	<0.040	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.11	<0.02	-	-	<0.02	<0.02	-	-
Phosphorus, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.020	<0.02	-	-	<0.05	<0.050	
Potassium, dissolved	mg/L	1.82	2.08	1.48	1.93	2.33	1.95	1.74	1.75	1.5	2.04	1.62	1.61	1.69	1.67	1.7	1.84	1.9	-	-	2.2	1.93	-	-
Potassium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.86	2.05	-	-	1.85	1.89	
Selenium, dissolved	mg/L	<0.0010	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	-	-	<0.0005	<0.0005	-	-	
Selenium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	<0.0005	-	-	<0.0005	<0.00050	
Silicon, dissolved	mg/L	5.35	4.1	3.53	7.83	4	2.33	4.89	4.8	4.4	4.8	4.6	4.9	4.6	4.2	4.5	4.6	4.9	-	-	4.5	4.9	-	-
Silicon, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.8	5.3	-	-	4.7	4.4	
Silver, dissolved	mg/L	<0.00008	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00007	<0.00005	<0.00005	<0.00005	0.00006	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	-	-	<0.00005	<0.00005	-	-
Silver, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00005	<0.00005	-	-	<0.00005	<0.000050	
Sodium, dissolved	mg/L	42.1	36.7	44.4	45.6	37.8	37.8	44	39.9	38.2	40.8	39.4	38.7	41.7	42.4	42.5	44.5	48.5	-	-	58.2	50	-	-
Sodium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46.9	56.5	-	-	52.7	52.1	
Strontium, dissolved	mg/L	0.442	0.481	0.409	0.409	0.451	0.628	0.423	0.436	0.37	0.441	0.405	0.399	0.432	0.4	0.421	0.457	0.438	-	-	0.527	0.462	-	-
Strontium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.425	0.49	-	-	0.446	0.486	
Sulfur, dissolved	mg/L	-	-	-	-	-	-	-	-	-	16	17	15	13	9	16	12	13	-	-	18	15	-	-
Sulfur, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	16	-	-	12	14	
Tellurium, dissolved	mg/L	<0.0006	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	-	<0.0002	<0.0002	-	-
Tellurium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	<0.0002	-	-	<0.0002	<0.00050	
Thallium, dissolved	mg/L	<0.0001	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	-	-	<0.00002	<0.00002	-	-
Thallium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00002	<0.00002	-	-	<0.00002	<0.000020	
Thorium, dissolved	mg/L	<0.0006	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-	<0.0001	<0.0001	-	-
Thorium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0001	<0.0001	-	-	<0.0001	<0.00010	
Tin, dissolved	mg/L	<0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	-	<0.0002	<0.0002	-	-
Tin, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	<0.0002	-	-	<0.0002	<0.00020	
Titanium, dissolved	mg/L	<0.020	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	<0.005	<0.005	-	-
Titanium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	-	-	<0.005	<0.0050	
Tungsten, dissolved	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Tungsten, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	
Uranium, dissolved	mg/L	0.0014	0.00124	0.00114	0.00102	0.00115	0.00127	0.00113	0.00107	0.00104	0.00103	0.00109	0.00103	0.00112	0.00105	0.00114	0.00143	0.00123	-	-	0.0013	0.00115	-	-
Uranium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00115	0.00134	-	-	0.00124	0.00127	
Vanadium, dissolved	mg/L	<0.002	<0.0010	<0.0010	0.0046	0.0018	<0.0010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	<0.001	<0.001	-	-
Vanadium, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.001	-	-	<0.001	<0.0010	
Zinc, dissolved	mg/L	0.008	0.0088	0.0021	0.0051	0.0058	0.0032	<0.0040	0.016															

Sampling Location		Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4		
Date Sampled	Lab Sample ID	2008-10-14	2009-05-25	2009-11-04	2010-02-09	2010-06-15	2010-11-16	2011-05-09	2011-08-10	2011-10-18	2012-05-24	2012-08-22	2012-11-20	2013-05-21	2013-11-12	2014-06-02	2014-08-18	2014-11-04	2015-05-25	2016-05-03	2016-08-22	2016-11-14	2017-04-05	2017-11-20		
Sample Type		K8J0452-01	K9E0816-01	K9K0184-03	K0B0397-03	K0F0788-02	K0K0729-03	K1E0403-02	K1H0536-04	K1J0685-04	2051369-02	2081484-04	2111131-04	3051354-04	3110772-02	4060249-02	4081094-01	4110161-01	5051773-02	6050336-05	6081698-04	6111141-02	7040434-04	7111886-03		
											Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal		
Analyte	Unit																									
Hardness, Total (as CaCO3)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	393	-	-	-	-	389		
Hydroxide (OH)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	<0.3	<0.3	<0.340	<0.340		
Nitrate + Nitrite (as N)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Nitrogen, Total Kjeldahl	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
pH	pH Units	6.9	7.7	7.76	7.81	7.93	7.79	7.85	7.81	7.82	7.87	7.8	6.94	7.86	7.82	7.92	7.65	7.85	7.83	7.53	7.77	7.97	7.85	7.91		
pH	pH units	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Phosphorus, Total (as P)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Phosphorus, Total Dissolved	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Total organic carbon	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Turbidity	NTU	0.1	<0.1	0.3	0.2	<0.1	0.1	<0.1	0.11	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	0.26		
Microbiological Parameters																										
Coliforms, Fecal	CFU/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Coliforms, Fecal	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Coliforms, Fecal (MPN)	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Coliforms, Total	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Coliforms, Total (MPN)	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
E. coli (MPN)	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
E. coli, Total	CFU/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Volatile Organic Compounds (VOC)																										
1,1-Dichloroethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,1-Dichloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,1-Dichloroethylene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,1-Dichloroethylene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,1,1-Trichloroethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,1,1-Trichloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,1,2-Trichloroethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,1,2-Trichloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,1,2,2-Tetrachloroethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,1,2,2-Tetrachloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,2-Dibromoethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-		
1,2-Dibromoethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,2-Dibromoethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,2-Dichlorobenzene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,2-Dichlorobenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,2-Dichloroethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,2-Dichloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,2-Dichloropropane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-		
1,2-Dichloropropane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,2-Dichloropropane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,3-Dichlorobenzene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,3-Dichlorobenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,3-Dichloropropene (cis + trans)	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,3-Dichloropropene (cis + trans)	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,4-Dichlorobenzene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1,4-Dichlorobenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Benzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	-		
Benzene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Benzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Bromodichloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-		
Bromodichloromethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Bromodichloromethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Bromoform	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-		

Sampling Location		Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4
Date Sampled	2008-10-14	2009-05-25	2009-11-04	2010-02-09	2010-06-15	2010-11-16	2011-05-09	2011-08-10	2011-10-18	2012-05-24	2012-08-22	2012-11-20	2013-05-21	2013-11-12	2014-06-02	2014-08-18	2014-11-04	2015-05-25	2016-05-03	2016-08-22	2016-11-14	2017-04-05	2017-11-20	
Lab Sample ID	K8J0452-01	K9E0816-01	K9K0184-03	K0B0397-03	K0F0788-02	K0K0729-03	K1E0403-02	K1H0536-04	K1J0685-04	2051369-02	2081484-04	2111131-04	3051354-04	3110772-02	4060249-02	4081094-01	4110161-01	5051773-02	6050336-05	6081698-04	6111141-02	7040434-04	7111886-03	
Sample Type										Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	
Analyte	Unit																							
Bromoform	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Bromoform	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Carbon tetrachloride	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	-	
Carbon tetrachloride	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Carbon tetrachloride	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Chlorobenzene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Chlorobenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Chloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	-	
Chloroethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Chloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Chloroform	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	
Chloroform	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Chloroform	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
cis-1,2-Dichloroethylene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
cis-1,2-Dichloroethylene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Dibromochloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	
Dibromochloromethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Dibromochloromethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Dibromomethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	
Dibromomethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Dibromomethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Dichloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0030	-	
Dichloromethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Dichloromethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	
Ethylbenzene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ethylbenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Methyl tert-butyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	
Methyl tert-butyl ether	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Methyl tert-butyl ether	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Styrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	
Styrene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Styrene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Tetrachloroethylene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Tetrachloroethylene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Toluene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	
Toluene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Toluene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
trans-1,2-Dichloroethylene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
trans-1,2-Dichloroethylene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Trichloroethylene	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Trichloroethylene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Trichlorofluoromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	
Trichlorofluoromethane	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Trichlorofluoromethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Vinyl chloride	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	
Vinyl chloride	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Vinyl chloride	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Xylenes (total)	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Xylenes (total)	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
BCMOE Aggregate Hydrocarbons																								
VPHw	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Sampling Location			Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Well ID 22653
Date Sampled	2018-06-26	2018-09-11	2018-12-03	2019-05-29	2019-08-13	2019-10-29	2013-08-20	2014-06-02	2014-08-18	2014-11-04	2015-05-25	2015-08-25	2015-11-09	2016-05-03	2016-08-22	2016-11-14	2017-04-05	2017-08-29	2017-11-20	2018-06-26	2019-05-29	2019-08-13	2018-12-04	
Lab Sample ID	8062674-04	8090975-06	8120636-05	9052874-05	9081278-05	N000444-05	3081378-02	4060249-01	4081094-02	4110161-02	5051773-01	5081710-01	5110693-04	6050336-04	6081698-05	6111141-01	7040434-05	7090074-02	7111886-02	8062674-05	9052874-06	9081278-06	8120636-07	
Sample Type	Normal	Normal	Normal				Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal			Normal	
Analyte	Unit																							
Field Parameters																								
Depth to Water	m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.82
Dissolved Oxygen	mg/L	-	5.59	5.67	4.89	6.47	5.47	-	8.14	7.68	7.38	6.4	7.04	6.51	5.61	6.13	5.71	-	9.27	9.21	-	10.26	8.83	2.87
Electrical Conductivity	µS/cm	1055	1043	904	923	932	834	650	577	577	677	587	401	670	693	695	723	635	680	726	727	634	713	352
Elevation of Piezometric Surface	m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oxidation reduction potential	mV	218	123	102	-14.1	185.9	100.6	246	183	172	66	211	46	74	122	234	163	265	31	-	204	-20	150.6	-
pH	pH Units	7.46	7.52	7.26	7.34	7.28	7.42	7.15	7.3	7.9	7.4	7.4	7.4	6.6	7.3	7.2	7.3	7.3	-	7.5	7.45	7.58	7.38	8.65
Temperature	°C	8.3	8.4	8.3	9.7	9.3	7.4	7.9	7.7	8.1	8.1	7.8	10.2	8.2	8.2	8.4	8	7.9	9.5	7.9	8.1	9.9	9.3	7.8
Anions																								
Bromide	mg/L	<0.10	<0.10	<0.10	-	-	-	-	-	-	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	-	<0.10
Chloride	mg/L	103	87.4	97	97.9	92.7	92.8	22.9	23.7	26.2	34.5	28.7	24.8	28.6	24.4	29.2	30.5	31	34.4	36.2	39.7	41	42.1	29.4
Fluoride	mg/L	0.15	<0.10	<0.10	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.11	0.18	<0.10	<0.1	<0.1	0.13
Nitrate (as N)	mg/L	1.26	1.76	1.6	1.72	1.65	1.76	0.781	0.839	0.993	1.23	0.89	1.01	0.925	0.978	1.03	0.976	1.09	1.11	1.3	0.933	1.28	1.32	<0.010
Nitrite (as N)	mg/L	<0.010	<0.010	<0.010	<0.01	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.01	<0.01	<0.010
Sulfate	mg/L	38.8	42.3	42.9	43.5	41.4	41.8	20.4	23.5	24.1	24.3	24.3	23.8	24.8	25.2	27.1	24.9	27.6	24.4	23	25.2	30.8	28.6	23.5
Metals																								
Aluminum, dissolved	mg/L	0.0057	<0.0050	<0.0050	<0.005	<0.005	<0.005	<0.005	<0.005	0.011	<0.005	-	-	-	-	<0.005	<0.005	-	<0.0050	-	0.0069	<0.005	<0.005	0.0068
Aluminum, total	mg/L	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.05	<0.005	-	-	<0.005	-	<0.0050	-	-	-	-
Antimony, dissolved	mg/L	<0.00020	<0.00020	<0.00020	<0.0002	<0.0002	<0.0002	0.0005	0.0005	0.0003	0.0002	-	-	-	-	<0.0001	<0.0001	-	<0.00020	-	<0.00020	<0.0002	<0.0002	<0.00020
Antimony, total	mg/L	-	-	-	-	-	-	-	-	-	-	0.0001	<0.0001	<0.001	<0.0001	-	-	<0.0001	-	<0.00020	-	-	-	-
Arsenic, dissolved	mg/L	<0.00050	<0.00050	<0.00050	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	-	-	-	-	<0.0005	<0.0005	-	<0.00050	-	<0.00050	<0.0005	<0.0005	<0.00050
Arsenic, total	mg/L	-	-	-	-	-	-	-	-	-	-	<0.0005	<0.0005	<0.005	<0.0005	-	-	<0.0005	-	<0.00050	-	-	-	-
Barium, dissolved	mg/L	0.196	0.219	0.214	0.217	0.218	0.205	0.133	0.126	0.136	0.146	-	-	-	-	0.169	0.155	-	0.133	-	0.133	0.165	0.161	0.0224
Barium, total	mg/L	-	-	-	-	-	-	-	-	-	-	0.142	0.146	0.14	0.162	-	-	0.15	-	0.146	-	-	-	-
Beryllium, dissolved	mg/L	<0.00010	<0.00010	<0.00010	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-	-	-	<0.0001	<0.0001	-	<0.00010	-	<0.00010	<0.0001	<0.0001	<0.00010
Beryllium, total	mg/L	-	-	-	-	-	-	-	-	-	-	<0.0001	<0.0001	<0.001	<0.0001	-	-	<0.0001	-	<0.00010	-	-	-	-
Bismuth, dissolved	mg/L	<0.00010	<0.00010	<0.00010	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-	-	-	<0.0001	<0.0001	-	<0.00010	-	<0.00010	<0.0001	<0.0001	<0.00010
Bismuth, total	mg/L	-	-	-	-	-	-	-	-	-	-	<0.0001	<0.0001	<0.001	<0.0001	-	-	<0.0001	-	<0.00010	-	-	-	-
Boron, dissolved	mg/L	0.0335	0.0357	0.0293	0.0221	0.0225	0.0665	0.05	0.015	0.012	0.006	-	-	-	-	0.014	0.007	-	0.143	-	0.017	0.0099	0.0106	0.0156
Boron, total	mg/L	-	-	-	-	-	-	-	-	-	-	0.006	0.007	<0.04	0.012	-	-	0.016	-	0.0068	-	-	-	-
Cadmium, dissolved	mg/L	<0.000010	<0.000010	<0.000010	<0.00001	<0.00001	<0.00001	0.00002	<0.00001	0.00002	<0.00001	-	-	-	-	0.00002	<0.00001	-	<0.000010	-	<0.000010	<0.00001	<0.00001	<0.000010
Cadmium, total	mg/L	-	-	-	-	-	-	-	-	-	-	<0.00001	<0.00001	<0.0001	<0.00001	-	-	<0.00001	-	<0.000010	-	-	-	-
Calcium, dissolved	mg/L	93.1	90.1	86.2	93.4	93.5	89.6	81.5	82.8	82.7	84.3	-	-	-	-	96.8	85.7	-	84.4	-	85.5	99.2	93.4	20.4
Calcium, total	mg/L	-	-	-	-	-	-	-	-	-	-	90.4	87.9	87	105	-	-	89.6	-	83.6	-	-	-	-
Chromium, dissolved	mg/L	<0.00050	<0.00050	<0.00050	0.00085	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	-	-	-	-	<0.0005	<0.0005	-	<0.00050	-	<0.00050	0.0009	<0.0005	<0.00050
Chromium, total	mg/L	-	-	-	-	-	-	-	-	-	-	<0.0005	<0.0005	<0.005	<0.0005	-	-	0.0						

Sampling Location		Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Well ID 22653
Date Sampled	2018-06-26	2018-09-11	2018-12-03	2019-05-29	2019-08-13	2019-10-29	2013-08-20	2014-06-02	2014-08-18	2014-11-04	2015-05-25	2015-08-25	2015-11-09	2016-05-03	2016-08-22	2016-11-14	2017-04-05	2017-08-29	2017-11-20	2018-06-26	2019-05-29	2019-08-13	2018-12-04	
Lab Sample ID	8062674-04	8090975-06	8120636-05	9052874-05	9081278-05	N000444-05	3081378-02	4060249-01	4081094-02	4110161-02	5051773-01	5081710-01	5110693-04	6050336-04	6081698-05	6111141-01	7040434-05	7090074-02	7111886-02	8062674-05	9052874-06	9081278-06	8120636-07	
Sample Type	Normal	Normal	Normal				Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal			Normal	
Analyte	Unit																							
Molybdenum, dissolved	mg/L	0.00018	0.00021	0.00023	0.00021	0.0002	0.00018	0.0003	0.0004	0.0004	0.0004	-	-	-	-	0.0003	0.0002	-	0.0003	-	0.00044	0.00036	0.00031	0.00025
Molybdenum, total	mg/L	-	-	-	-	-	-	-	-	-	-	0.0005	0.0003	<0.001	0.0003	-	-	0.0003	-	0.00026	-	-	-	-
Nickel, dissolved	mg/L	<0.00040	<0.00040	<0.00040	<0.0004	<0.0004	<0.0004	0.0003	<0.0002	0.0012	0.0004	-	-	-	-	0.0002	0.0003	-	<0.00040	-	<0.00040	<0.0004	<0.0004	<0.00040
Nickel, total	mg/L	-	-	-	-	-	-	-	-	-	-	<0.0002	0.0006	<0.002	0.0002	-	-	0.0002	-	<0.00040	-	-	-	-
Phosphorus, dissolved	mg/L	<0.050	<0.050	<0.050	<0.05	<0.05	<0.05	<0.02	<0.02	0.07	<0.02	-	-	-	-	<0.02	<0.02	-	<0.050	-	<0.050	<0.05	<0.05	<0.050
Phosphorus, total	mg/L	-	-	-	-	-	-	-	-	-	-	<0.020	0.03	<0.2	<0.02	-	-	<0.05	-	<0.050	-	-	-	-
Potassium, dissolved	mg/L	1.95	1.77	2.12	1.78	1.86	1.65	1	0.89	0.95	0.94	-	-	-	-	1.1	0.99	-	0.89	-	1.01	1.02	1	0.95
Potassium, total	mg/L	-	-	-	-	-	-	-	-	-	-	1.03	0.99	0.8	1.06	-	-	0.93	-	0.91	-	-	-	-
Selenium, dissolved	mg/L	<0.00050	<0.00050	<0.00050	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	-	-	-	-	<0.0005	<0.0005	-	<0.00050	-	<0.00050	<0.0005	<0.0005	<0.00050
Selenium, total	mg/L	-	-	-	-	-	-	-	-	-	-	<0.0005	<0.0005	<0.005	<0.0005	-	-	<0.0005	-	<0.00050	-	-	-	-
Silicon, dissolved	mg/L	4.9	4.6	4.9	4.4	5	5.6	4.1	4	4.4	4.5	-	-	-	-	4.2	4.5	-	4	-	4.3	4.4	4.5	<1.0
Silicon, total	mg/L	-	-	-	-	-	-	-	-	-	-	4.7	4.3	<5	5.2	-	-	4.3	-	3.7	-	-	-	-
Silver, dissolved	mg/L	<0.000050	<0.000050	<0.000050	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	-	-	-	-	<0.00005	<0.00005	-	<0.000050	-	<0.000050	<0.00005	<0.00005	<0.000050
Silver, total	mg/L	-	-	-	-	-	-	-	-	-	-	<0.00005	0.00154	<0.0005	<0.00005	-	-	<0.00005	-	<0.000050	-	-	-	-
Sodium, dissolved	mg/L	57.8	56.9	58.5	56.9	55.9	62	15.2	13.9	15.4	17.9	-	-	-	-	17.9	16.7	-	17	-	20.3	23.1	22.6	14.7
Sodium, total	mg/L	-	-	-	-	-	-	-	-	-	-	18.9	15.1	15.9	17.9	-	-	17.1	-	15.7	-	-	-	-
Strontium, dissolved	mg/L	0.492	0.46	0.471	0.459	0.479	0.439	0.282	0.269	0.301	0.29	-	-	-	-	0.344	0.312	-	0.258	-	0.281	0.328	0.331	0.115
Strontium, total	mg/L	-	-	-	-	-	-	-	-	-	-	0.296	0.298	0.27	0.325	-	-	0.294	-	0.285	-	-	-	-
Sulfur, dissolved	mg/L	16.1	14.3	15	15.7	15.7	16.1	8	10	8	7	-	-	-	-	13	9	-	7.8	-	9.8	12	10.7	7.1
Sulfur, total	mg/L	-	-	-	-	-	-	-	-	-	-	9	8	<10	11	-	-	6	-	7.9	-	-	-	-
Tellurium, dissolved	mg/L	<0.00050	<0.00050	<0.00050	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	-	-	-	-	<0.0002	<0.0002	-	<0.00050	-	<0.00050	<0.0005	<0.0005	<0.00050
Tellurium, total	mg/L	-	-	-	-	-	-	-	-	-	-	<0.0002	<0.0002	<0.002	<0.0002	-	-	<0.0002	-	<0.00050	-	-	-	-
Thallium, dissolved	mg/L	<0.000020	<0.000020	<0.000020	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	-	-	-	-	<0.00002	<0.00002	-	<0.000020	-	<0.000020	<0.00002	<0.00002	<0.000020
Thallium, total	mg/L	-	-	-	-	-	-	-	-	-	-	<0.00002	<0.00002	<0.0002	<0.00002	-	-	<0.00002	-	<0.000020	-	-	-	-
Thorium, dissolved	mg/L	<0.00010	<0.00010	<0.00010	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-	-	-	<0.0001	<0.0001	-	<0.00010	-	<0.00010	<0.0001	<0.0001	<0.00010
Thorium, total	mg/L	-	-	-	-	-	-	-	-	-	-	<0.0001	<0.0001	<0.001	<0.0001	-	-	<0.0001	-	<0.00010	-	-	-	-
Tin, dissolved	mg/L	<0.00020	<0.00020	0.00022	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	-	-	-	<0.0002	<0.0002	-	<0.00020	-	<0.00020	<0.0002	<0.0002	0.00077
Tin, total	mg/L	-	-	-	-	-	-	-	-	-	-	<0.0002	<0.0002	<0.002	<0.0002	-	-	<0.0002	-	<0.00020	-	-	-	-
Titanium, dissolved	mg/L	<0.0050	<0.0050	<0.0050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-	-	<0.005	<0.005	-	<0.0050	-	<0.0050	<0.005	<0.005	<0.0050
Titanium, total	mg/L	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.05	<0.005	-	-	<0.005	-	<0.0050	-	-	-	-
Tungsten, dissolved	mg/L	<0.0010	<0.0010	<0.0010	<0.001	<0.001	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	<0.001	<0.001	<0.0010
Tungsten, total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	-
Uranium, dissolved	mg/L	0.00117	0.00132	0.00133	0.00128	0.00128	0.00124	0.00105	0.00103	0.00114	0.00114</													

Sampling Location		Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Well ID 22653
Date Sampled	2018-06-26	2018-09-11	2018-12-03	2019-05-29	2019-08-13	2019-10-29		2013-08-20	2014-06-02	2014-08-18	2014-11-04	2015-05-25	2015-08-25	2015-11-09	2016-05-03	2016-08-22	2016-11-14	2017-04-05	2017-08-29	2017-11-20	2018-06-26	2019-05-29	2019-08-13	2018-12-04
Lab Sample ID	8062674-04	8090975-06	8120636-05	9052874-05	9081278-05	N000444-05		3081378-02	4060249-01	4081094-02	4110161-02	5051773-01	5081710-01	5110693-04	6050336-04	6081698-05	6111141-01	7040434-05	7090074-02	7111886-02	8062674-05	9052874-06	9081278-06	8120636-07
Sample Type	Normal	Normal	Normal					Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal			Normal
Analyte	Unit																							
Hardness, Total (as CaCO3)	mg/L	-	-	-	406	403	407	-	-	-	-	346	332	328	-	-	-	-	-	308	-	378	354	-
Hydroxide (OH)	mg/L	<0.340	<0.340	<0.340	<0.34	<0.34	<0.34	-	-	-	-	-	-	-	<1	<0.3	<0.3	<0.340	<0.340	<0.340	<0.340	<0.34	<0.34	<0.340
Nitrate + Nitrite (as N)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen, Total Kjeldahl	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH	pH Units	7.88	7.83	7.92	7.99	7.92	8.16	7.94	7.87	7.7	7.86	7.81	7.79	7.72	7.74	7.76	7.89	7.89	8.03	8	7.93	8.02	7.95	8
pH	pH units	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, Total (as P)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, Total Dissolved	mg/L	-	-	<0.0020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020
Total organic carbon	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity	NTU	<0.10	-	<0.10	0.19	<0.1	0.1	0.6	<0.1	<0.1	0.1	<0.1	0.2	0.1	<0.1	0.11	0.13	0.16	0.12	0.1	<0.10	3.63	23.7	142
Microbiological Parameters																								
Coliforms, Fecal	CFU/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coliforms, Fecal	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coliforms, Fecal (MPN)	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coliforms, Total	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coliforms, Total (MPN)	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E. coli (MPN)	MPN/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E. coli, Total	CFU/100 mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Volatile Organic Compounds (VOC)																								
1,1-Dichloroethane	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
1,1-Dichloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethylene	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
1,1-Dichloroethylene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1-Trichloroethane	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
1,1,1-Trichloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2-Trichloroethane	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
1,1,2-Trichloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/L	-	-	-	<0.5	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-
1,1,2,2-Tetrachloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromoethane	mg/L	-	<0.0003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-
1,2-Dibromoethane	µg/L	-	-	-	<0.3	-	<0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.3	-	-
1,2-Dibromoethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	µg/L	-	-	-	<0.5	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-
1,2-Dichlorobenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethane	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
1,2-Dichloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane	mg/L	-	<0.0010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	-	-	-
1,2-Dichloropropane	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
1,2-Dichloropropane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
1,3-Dichlorobenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dichloropropene (cis + trans)	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
1,3-Dichloropropene (cis + trans)	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
1,4-Dichlorobenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	mg/L	-	<0.0005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	-	-	-	-	-	-
Benzene	µg/L	-	-	-	<0.5	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-
Benzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	mg/L	-	<0.0010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	-	-	-
Bromodichloromethane	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-
Bromodichloromethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform	mg/L	-	<0.0010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	-	-	-

Sampling Location		Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #4	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Town Well #6	Well ID 22653
Date Sampled	2018-06-26	2018-09-11	2018-12-03	2019-05-29	2019-08-13	2019-10-29	2013-08-20	2014-06-02	2014-08-18	2014-11-04	2015-05-25	2015-08-25	2015-11-09	2016-05-03	2016-08-22	2016-11-14	2017-04-05	2017-08-29	2017-11-20	2018-06-26	2019-05-29	2019-08-13	2018-12-04	
Lab Sample ID	8062674-04	8090975-06	8120636-05	9052874-05	9081278-05	N000444-05	3081378-02	4060249-01	4081094-02	4110161-02	5051773-01	5081710-01	5110693-04	6050336-04	6081698-05	6111141-01	7040434-05	7090074-02	7111886-02	8062674-05	9052874-06	9081278-06	8120636-07	
Sample Type	Normal	Normal	Normal				Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal			Normal	
Analyte	Unit																							
Bromoform	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-	
Bromoform	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Carbon tetrachloride	mg/L	-	<0.0005	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	-	-	-	-	-	-	
Carbon tetrachloride	µg/L	-	-	-	<0.5	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	
Carbon tetrachloride	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Chlorobenzene	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-	
Chlorobenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Chloroethane	mg/L	-	<0.0020	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	-	-	-	-	-	-	
Chloroethane	µg/L	-	-	-	<2	-	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	<2	-	-	
Chloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Chloroform	mg/L	-	<0.0010	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	-	-	-	
Chloroform	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-	
Chloroform	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
cis-1,2-Dichloroethylene	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-	
cis-1,2-Dichloroethylene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Dibromochloromethane	mg/L	-	<0.0010	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	-	-	-	
Dibromochloromethane	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-	
Dibromochloromethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Dibromomethane	mg/L	-	<0.0010	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	-	-	-	
Dibromomethane	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-	
Dibromomethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Dichloromethane	mg/L	-	<0.0030	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0030	-	-	-	-	-	-	
Dichloromethane	µg/L	-	-	-	<3	-	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	<3	-	-	
Dichloromethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ethylbenzene	mg/L	-	<0.0010	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	-	-	-	
Ethylbenzene	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-	
Ethylbenzene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Methyl tert-butyl ether	mg/L	-	<0.0010	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	-	-	-	
Methyl tert-butyl ether	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-	
Methyl tert-butyl ether	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Styrene	mg/L	-	<0.0010	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	-	-	-	
Styrene	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-	
Styrene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Tetrachloroethylene	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-	
Tetrachloroethylene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Toluene	mg/L	-	<0.0010	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	-	-	-	
Toluene	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-	
Toluene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
trans-1,2-Dichloroethylene	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-	
trans-1,2-Dichloroethylene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Trichloroethylene	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-	
Trichloroethylene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Trichlorofluoromethane	mg/L	-	<0.0010	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	-	-	-	
Trichlorofluoromethane	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-	
Trichlorofluoromethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Vinyl chloride	mg/L	-	<0.0010	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	-	-	-	-	-	-	
Vinyl chloride	µg/L	-	-	-	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-	
Vinyl chloride	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Xylenes (total)	µg/L	-	-	-	<2	-	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	<2	-	-	
Xylenes (total)	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
BCMOE Aggregate Hydrocarbons																								
VPHw	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

APPENDIX E HISTORICAL GAS MONITORING DATA

Gas Probe	Date	% CH4	% CO2	% O2	% Balance
GP6D	9-Aug-2013	0.2	2.2	18	79.6
	15-Apr-2014	0	4.1	13.6	82.3
	17-Jun-2015	0.1	4.3	15.9	79.7
	24-Nov-2016	0.1	3.3	17.3	79.3
	7-Dec-2017	0	2.8	17	78.7
	15-Nov-2018	0	3.2	17.1	78.2
	13-Nov-2019	0	4.5	13.6	81.9
	10-Mar-2020	0	4.7	13.6	81.7
GP6S	9-Aug-2013	0.2	2.6	17.7	79.5
	15-Apr-2014	0	5.1	12.4	82.5
	17-Jun-2015	0.1	5.3	14.8	79.8
	24-Nov-2016	0.1	4	17.2	78.7
	7-Dec-2017	0	4.2	17.4	78.3
	15-Nov-2018	0	3.1	15.5	81.4
	13-Nov-2019	0	4	14.8	81.2
	10-Mar-2020	0	4.4	13.1	82.5
GP7D	9-Aug-2013	0.2	0.3	19.3	80.2
	15-Apr-2014	0	1.7	12.4	85.9
	17-Jun-2015	0.1	1.3	16.1	82.5
	24-Nov-2016	0.1	1.7	12.7	85.5
	7-Dec-2017	0	1.2	13.1	85.4
	15-Nov-2018	0	1.5	13.4	86.0
	13-Nov-2019	0	0.7	16.4	82.9
	10-Mar-2020	0	0.9	16.2	82.9
GP7S	9-Aug-2013	0.2	1.1	11.9	86.8
	15-Apr-2014	0	1.4	11.4	87.2
	17-Jun-2015	0.1	1.3	11.4	87.2
	24-Nov-2016	0.1	1.4	11.8	86.7
	7-Dec-2017	0	1.7	11.2	86.4
	15-Nov-2018	0	1.9	11.1	86.3
	13-Nov-2019	0	0.7	15.1	84.2
	10-Mar-2020	0	0.8	15.4	83.8



APPENDIX F LABORATORY CERTIFICATES OF ANALYSIS

CERTIFICATE OF ANALYSIS

REPORTED TO Ecoscape Environmental Ltd.
#102 - 450 Neave Court
Kelowna, BC V1V 2M2

ATTENTION Kelsey Tanaka

PO NUMBER 19-2850

PROJECT 19-2850 - Golden

PROJECT INFO Golden

WORK ORDER 20K0317

RECEIVED / TEMP 2020-11-03 15:04 / 3°C

REPORTED 2020-11-10 16:16

COC NUMBER No Number

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 acrump@caro.ca

Authorized By:

Alana Crump
Team Lead, Client Service



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#110 4011 Viking Way Richmond, BC V6V 2K9 | #102 3677 Highway 97N Kelowna, BC V1X 5C3 | 17225 109 Avenue Edmonton, AB T5S 1H7

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 20K0317
2020-11-10 16:16

Analyte	Result	RL	Units	Analyzed	Qualifier
MW09-06S (20K0317-01) Matrix: Water Sampled: 2020-11-03					
Anions					
Bromide	1.86	0.10	mg/L	2020-11-04	
Chloride	371	0.10	mg/L	2020-11-04	
Fluoride	< 0.10	0.10	mg/L	2020-11-04	
Nitrate (as N)	34.2	0.010	mg/L	2020-11-04	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-11-04	
Sulfate	636	1.0	mg/L	2020-11-04	
Calculated Parameters					
Hardness, Total (as CaCO3)	1520	0.500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	0.0404	0.00010	mg/L	2020-11-10	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-11-10	
Antimony, dissolved	0.00023	0.00020	mg/L	2020-11-10	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-11-10	
Barium, dissolved	0.0509	0.0050	mg/L	2020-11-10	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-11-10	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-11-10	
Boron, dissolved	1.74	0.0500	mg/L	2020-11-10	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-11-10	
Calcium, dissolved	167	0.20	mg/L	2020-11-10	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-11-10	
Cobalt, dissolved	0.00170	0.00010	mg/L	2020-11-10	
Copper, dissolved	0.00262	0.00040	mg/L	2020-11-10	
Iron, dissolved	< 0.010	0.010	mg/L	2020-11-10	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-11-10	
Magnesium, dissolved	268	0.010	mg/L	2020-11-10	
Manganese, dissolved	0.0968	0.00020	mg/L	2020-11-10	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-11-06	
Molybdenum, dissolved	0.00034	0.00010	mg/L	2020-11-10	
Nickel, dissolved	0.0125	0.00040	mg/L	2020-11-10	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-11-10	
Potassium, dissolved	168	0.10	mg/L	2020-11-10	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-11-10	
Silicon, dissolved	11.8	1.0	mg/L	2020-11-10	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-11-10	
Sodium, dissolved	286	0.10	mg/L	2020-11-10	
Strontium, dissolved	1.59	0.0010	mg/L	2020-11-10	
Sulfur, dissolved	234	3.0	mg/L	2020-11-10	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-11-10	
Thallium, dissolved	0.000054	0.000020	mg/L	2020-11-10	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-11-10	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-11-10	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-11-10	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 20K0317
2020-11-10 16:16

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW09-06S (20K0317-01) | Matrix: Water | Sampled: 2020-11-03, Continued

Dissolved Metals, Continued

Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-11-10	
Uranium, dissolved	0.00755	0.000020	mg/L	2020-11-10	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-11-10	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-11-10	
Zirconium, dissolved	0.00016	0.00010	mg/L	2020-11-10	

General Parameters

Alkalinity, Total (as CaCO ₃)	942	1.0	mg/L	2020-11-05	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-11-05	
Alkalinity, Bicarbonate (as CaCO ₃)	942	1.0	mg/L	2020-11-05	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-11-05	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-11-05	
Bicarbonate (HCO ₃)	1150	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	1.61	0.050	mg/L	2020-11-04	
BOD, 5-day	< 5.8	2.0	mg/L	2020-11-09	
Chemical Oxygen Demand	46	20	mg/L	2020-11-04	
Conductivity (EC)	3970	2.0	µS/cm	2020-11-05	
pH	7.89	0.10	pH units	2020-11-05	HT2
Solids, Total Dissolved	2550	15	mg/L	2020-11-06	
Solids, Total Suspended	315	2.0	mg/L	2020-11-05	
Turbidity	170	0.10	NTU	2020-11-04	

Volatile Organic Compounds (VOC)

Benzene	< 0.5	0.5	µg/L	2020-11-07	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-11-07	
Bromoform	< 1.0	1.0	µg/L	2020-11-07	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-11-07	
Chlorobenzene	< 1.0	1.0	µg/L	2020-11-07	
Chloroethane	< 2.0	2.0	µg/L	2020-11-07	
Chloroform	< 1.0	1.0	µg/L	2020-11-07	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-11-07	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-11-07	
Dibromomethane	< 1.0	1.0	µg/L	2020-11-07	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-11-07	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-11-07	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-11-07	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-11-07	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-11-07	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
Dichloromethane	< 3.0	3.0	µg/L	2020-11-07	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 20K0317
2020-11-10 16:16

Analyte	Result	RL	Units	Analyzed	Qualifier
MW09-06S (20K0317-01) Matrix: Water Sampled: 2020-11-03, Continued					
<i>Volatile Organic Compounds (VOC), Continued</i>					
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-11-07	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-11-07	
Ethylbenzene	< 1.0	1.0	µg/L	2020-11-07	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-11-07	
Styrene	< 1.0	1.0	µg/L	2020-11-07	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-11-07	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-11-07	
Toluene	< 1.0	1.0	µg/L	2020-11-07	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-11-07	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-11-07	
Trichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-11-07	
Vinyl chloride	< 1.0	1.0	µg/L	2020-11-07	
Xylenes (total)	< 2.0	2.0	µg/L	2020-11-07	
Surrogate: Toluene-d8	64	70-130	%	2020-11-07	S02
Surrogate: 4-Bromofluorobenzene	71	70-130	%	2020-11-07	
Surrogate: 1,4-Dichlorobenzene-d4	77	70-130	%	2020-11-07	

MW10-08 (20K0317-02) | Matrix: Water | Sampled: 2020-11-03

Anions

Bromide	< 0.10	0.10	mg/L	2020-11-04	
Chloride	558	0.10	mg/L	2020-11-04	
Fluoride	< 0.10	0.10	mg/L	2020-11-04	
Nitrate (as N)	1.08	0.010	mg/L	2020-11-04	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-11-04	
Sulfate	49.7	1.0	mg/L	2020-11-04	

Calculated Parameters

Hardness, Total (as CaCO3)	766	0.500	mg/L	N/A	
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Dissolved Metals

Lithium, dissolved	0.0202	0.00010	mg/L	2020-11-10	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-11-10	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-11-10	
Arsenic, dissolved	0.00432	0.00050	mg/L	2020-11-10	
Barium, dissolved	0.200	0.0050	mg/L	2020-11-10	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-11-10	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-11-10	
Boron, dissolved	< 0.0500	0.0500	mg/L	2020-11-10	
Cadmium, dissolved	0.000012	0.000010	mg/L	2020-11-10	
Calcium, dissolved	102	0.20	mg/L	2020-11-10	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-11-10	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 20K0317
2020-11-10 16:16

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW10-08 (20K0317-02) | Matrix: Water | Sampled: 2020-11-03, Continued

Dissolved Metals, Continued

Cobalt, dissolved	< 0.00010	0.00010	mg/L	2020-11-10	
Copper, dissolved	0.00125	0.00040	mg/L	2020-11-10	
Iron, dissolved	< 0.010	0.010	mg/L	2020-11-10	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-11-10	
Magnesium, dissolved	124	0.010	mg/L	2020-11-10	
Manganese, dissolved	0.00037	0.00020	mg/L	2020-11-10	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-11-06	
Molybdenum, dissolved	0.00043	0.00010	mg/L	2020-11-10	
Nickel, dissolved	0.00136	0.00040	mg/L	2020-11-10	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-11-10	
Potassium, dissolved	6.26	0.10	mg/L	2020-11-10	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-11-10	
Silicon, dissolved	9.1	1.0	mg/L	2020-11-10	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-11-10	
Sodium, dissolved	334	0.10	mg/L	2020-11-10	
Strontium, dissolved	1.33	0.0010	mg/L	2020-11-10	
Sulfur, dissolved	18.4	3.0	mg/L	2020-11-10	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-11-10	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-11-10	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-11-10	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-11-10	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-11-10	
Tungsten, dissolved	0.0018	0.0010	mg/L	2020-11-10	
Uranium, dissolved	0.00231	0.000020	mg/L	2020-11-10	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-11-10	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-11-10	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-11-10	

General Parameters

Alkalinity, Total (as CaCO3)	518	1.0	mg/L	2020-11-05	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2020-11-05	
Alkalinity, Bicarbonate (as CaCO3)	518	1.0	mg/L	2020-11-05	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2020-11-05	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2020-11-05	
Bicarbonate (HCO3)	632	1.22	mg/L	N/A	
Carbonate (CO3)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	0.056	0.050	mg/L	2020-11-04	
BOD, 5-day	< 5.8	2.0	mg/L	2020-11-09	
Chemical Oxygen Demand	< 20	20	mg/L	2020-11-04	
Conductivity (EC)	2880	2.0	µS/cm	2020-11-05	
pH	8.09	0.10	pH units	2020-11-05	HT2
Solids, Total Dissolved	1460	15	mg/L	2020-11-06	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 20K0317
2020-11-10 16:16

Analyte	Result	RL	Units	Analyzed	Qualifier
MW10-08 (20K0317-02) Matrix: Water Sampled: 2020-11-03, Continued					
<i>General Parameters, Continued</i>					
Solids, Total Suspended	185	2.0	mg/L	2020-11-05	
Turbidity	230	0.10	NTU	2020-11-04	
<i>Volatile Organic Compounds (VOC)</i>					
Benzene	< 0.5	0.5	µg/L	2020-11-07	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-11-07	
Bromoform	< 1.0	1.0	µg/L	2020-11-07	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-11-07	
Chlorobenzene	< 1.0	1.0	µg/L	2020-11-07	
Chloroethane	< 2.0	2.0	µg/L	2020-11-07	
Chloroform	< 1.0	1.0	µg/L	2020-11-07	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-11-07	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-11-07	
Dibromomethane	< 1.0	1.0	µg/L	2020-11-07	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-11-07	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-11-07	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-11-07	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-11-07	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-11-07	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
Dichloromethane	< 3.0	3.0	µg/L	2020-11-07	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-11-07	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-11-07	
Ethylbenzene	< 1.0	1.0	µg/L	2020-11-07	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-11-07	
Styrene	< 1.0	1.0	µg/L	2020-11-07	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-11-07	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-11-07	
Toluene	< 1.0	1.0	µg/L	2020-11-07	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-11-07	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-11-07	
Trichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-11-07	
Vinyl chloride	< 1.0	1.0	µg/L	2020-11-07	
Xylenes (total)	< 2.0	2.0	µg/L	2020-11-07	
Surrogate: Toluene-d8	65	70-130	%	2020-11-07	S02
Surrogate: 4-Bromofluorobenzene	74	70-130	%	2020-11-07	
Surrogate: 1,4-Dichlorobenzene-d4	83	70-130	%	2020-11-07	

MW18-10 (20K0317-03) | Matrix: Water | Sampled: 2020-11-03

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 20K0317
2020-11-10 16:16

Analyte	Result	RL	Units	Analyzed	Qualifier
MW18-10 (20K0317-03) Matrix: Water Sampled: 2020-11-03, Continued					
Anions					
Bromide	0.62	0.10	mg/L	2020-11-04	
Chloride	376	0.10	mg/L	2020-11-04	
Fluoride	< 0.10	0.10	mg/L	2020-11-04	
Nitrate (as N)	67.9	0.010	mg/L	2020-11-04	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-11-04	
Sulfate	78.9	1.0	mg/L	2020-11-04	
Calculated Parameters					
Hardness, Total (as CaCO3)	1150	0.500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	0.0249	0.00010	mg/L	2020-11-10	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-11-10	
Antimony, dissolved	0.00020	0.00020	mg/L	2020-11-10	
Arsenic, dissolved	0.00140	0.00050	mg/L	2020-11-10	
Barium, dissolved	0.353	0.0050	mg/L	2020-11-10	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-11-10	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-11-10	
Boron, dissolved	0.708	0.0500	mg/L	2020-11-10	
Cadmium, dissolved	0.000039	0.000010	mg/L	2020-11-10	
Calcium, dissolved	122	0.20	mg/L	2020-11-10	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-11-10	
Cobalt, dissolved	0.00500	0.00010	mg/L	2020-11-10	
Copper, dissolved	0.00923	0.00040	mg/L	2020-11-10	
Iron, dissolved	< 0.010	0.010	mg/L	2020-11-10	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-11-10	
Magnesium, dissolved	204	0.010	mg/L	2020-11-10	
Manganese, dissolved	0.198	0.00020	mg/L	2020-11-10	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-11-06	
Molybdenum, dissolved	0.00109	0.00010	mg/L	2020-11-10	
Nickel, dissolved	0.0447	0.00040	mg/L	2020-11-10	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-11-10	
Potassium, dissolved	45.4	0.10	mg/L	2020-11-10	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-11-10	
Silicon, dissolved	10.5	1.0	mg/L	2020-11-10	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-11-10	
Sodium, dissolved	239	0.10	mg/L	2020-11-10	
Strontium, dissolved	1.57	0.0010	mg/L	2020-11-10	
Sulfur, dissolved	29.1	3.0	mg/L	2020-11-10	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-11-10	
Thallium, dissolved	0.000127	0.000020	mg/L	2020-11-10	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-11-10	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-11-10	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-11-10	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 20K0317
2020-11-10 16:16

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW18-10 (20K0317-03) | Matrix: Water | Sampled: 2020-11-03, Continued

Dissolved Metals, Continued

Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-11-10	
Uranium, dissolved	0.00440	0.000020	mg/L	2020-11-10	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-11-10	
Zinc, dissolved	0.0087	0.0040	mg/L	2020-11-10	
Zirconium, dissolved	0.00026	0.00010	mg/L	2020-11-10	

General Parameters

Alkalinity, Total (as CaCO ₃)	856	1.0	mg/L	2020-11-05	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-11-05	
Alkalinity, Bicarbonate (as CaCO ₃)	856	1.0	mg/L	2020-11-05	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-11-05	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-11-05	
Bicarbonate (HCO ₃)	1040	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	2.60	0.050	mg/L	2020-11-04	
BOD, 5-day	< 5.8	2.0	mg/L	2020-11-09	
Chemical Oxygen Demand	54	20	mg/L	2020-11-04	
Conductivity (EC)	3240	2.0	µS/cm	2020-11-05	
pH	7.89	0.10	pH units	2020-11-05	HT2
Solids, Total Dissolved	1820	15	mg/L	2020-11-06	
Solids, Total Suspended	194	2.0	mg/L	2020-11-05	
Turbidity	172	0.10	NTU	2020-11-04	

Volatile Organic Compounds (VOC)

Benzene	< 0.5	0.5	µg/L	2020-11-07	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-11-07	
Bromoform	< 1.0	1.0	µg/L	2020-11-07	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-11-07	
Chlorobenzene	< 1.0	1.0	µg/L	2020-11-07	
Chloroethane	< 2.0	2.0	µg/L	2020-11-07	
Chloroform	< 1.0	1.0	µg/L	2020-11-07	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-11-07	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-11-07	
Dibromomethane	< 1.0	1.0	µg/L	2020-11-07	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-11-07	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-11-07	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-11-07	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-11-07	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-11-07	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
Dichloromethane	< 3.0	3.0	µg/L	2020-11-07	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 20K0317
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Analyte	Result	RL	Units	Analyzed	Qualifier
MW18-10 (20K0317-03) Matrix: Water Sampled: 2020-11-03, Continued					
<i>Volatile Organic Compounds (VOC), Continued</i>					
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-11-07	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-11-07	
Ethylbenzene	< 1.0	1.0	µg/L	2020-11-07	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-11-07	
Styrene	< 1.0	1.0	µg/L	2020-11-07	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-11-07	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-11-07	
Toluene	< 1.0	1.0	µg/L	2020-11-07	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-11-07	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-11-07	
Trichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-11-07	
Vinyl chloride	< 1.0	1.0	µg/L	2020-11-07	
Xylenes (total)	< 2.0	2.0	µg/L	2020-11-07	
Surrogate: Toluene-d8	65	70-130	%	2020-11-07	S02
Surrogate: 4-Bromofluorobenzene	77	70-130	%	2020-11-07	
Surrogate: 1,4-Dichlorobenzene-d4	89	70-130	%	2020-11-07	

MW18-11 (20K0317-04) | Matrix: Water | Sampled: 2020-11-03

Anions

Bromide	0.20	0.10	mg/L	2020-11-04	
Chloride	84.1	0.10	mg/L	2020-11-04	
Fluoride	0.49	0.10	mg/L	2020-11-04	
Nitrate (as N)	< 0.010	0.010	mg/L	2020-11-04	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-11-04	
Sulfate	105	1.0	mg/L	2020-11-04	

Calculated Parameters

Hardness, Total (as CaCO3)	684	0.500	mg/L	N/A	
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Dissolved Metals

Lithium, dissolved	0.0245	0.00010	mg/L	2020-11-10	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-11-10	
Antimony, dissolved	0.00048	0.00020	mg/L	2020-11-10	
Arsenic, dissolved	0.0208	0.00050	mg/L	2020-11-10	
Barium, dissolved	0.0266	0.0050	mg/L	2020-11-10	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-11-10	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-11-10	
Boron, dissolved	0.261	0.0500	mg/L	2020-11-10	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-11-10	
Calcium, dissolved	59.3	0.20	mg/L	2020-11-10	
Chromium, dissolved	0.00059	0.00050	mg/L	2020-11-10	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 20K0317
2020-11-10 16:16

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW18-11 (20K0317-04) | Matrix: Water | Sampled: 2020-11-03, Continued

Dissolved Metals, Continued

Cobalt, dissolved	0.00015	0.00010	mg/L	2020-11-10	
Copper, dissolved	< 0.00040	0.00040	mg/L	2020-11-10	
Iron, dissolved	0.640	0.010	mg/L	2020-11-10	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-11-10	
Magnesium, dissolved	130	0.010	mg/L	2020-11-10	
Manganese, dissolved	0.0286	0.00020	mg/L	2020-11-10	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-11-06	
Molybdenum, dissolved	0.00098	0.00010	mg/L	2020-11-10	
Nickel, dissolved	0.00745	0.00040	mg/L	2020-11-10	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-11-10	
Potassium, dissolved	6.82	0.10	mg/L	2020-11-10	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-11-10	
Silicon, dissolved	3.8	1.0	mg/L	2020-11-10	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-11-10	
Sodium, dissolved	113	0.10	mg/L	2020-11-10	
Strontium, dissolved	0.856	0.0010	mg/L	2020-11-10	
Sulfur, dissolved	37.2	3.0	mg/L	2020-11-10	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-11-10	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-11-10	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-11-10	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-11-10	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-11-10	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-11-10	
Uranium, dissolved	0.000068	0.000020	mg/L	2020-11-10	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-11-10	
Zinc, dissolved	0.0150	0.0040	mg/L	2020-11-10	
Zirconium, dissolved	0.00018	0.00010	mg/L	2020-11-10	

General Parameters

Alkalinity, Total (as CaCO3)	671	1.0	mg/L	2020-11-05	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2020-11-05	
Alkalinity, Bicarbonate (as CaCO3)	671	1.0	mg/L	2020-11-05	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2020-11-05	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2020-11-05	
Bicarbonate (HCO3)	819	1.22	mg/L	N/A	
Carbonate (CO3)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	0.361	0.050	mg/L	2020-11-04	
BOD, 5-day	< 5.8	2.0	mg/L	2020-11-09	
Chemical Oxygen Demand	< 20	20	mg/L	2020-11-04	
Conductivity (EC)	1580	2.0	µS/cm	2020-11-05	
pH	8.06	0.10	pH units	2020-11-05	HT2
Solids, Total Dissolved	899	15	mg/L	2020-11-06	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
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WORK ORDER REPORTED 20K0317
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Analyte	Result	RL	Units	Analyzed	Qualifier
MW18-11 (20K0317-04) Matrix: Water Sampled: 2020-11-03, Continued					
<i>General Parameters, Continued</i>					
Solids, Total Suspended	27.7	2.0	mg/L	2020-11-05	
Turbidity	37.0	0.10	NTU	2020-11-04	
<i>Volatile Organic Compounds (VOC)</i>					
Benzene	< 0.5	0.5	µg/L	2020-11-07	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-11-07	
Bromoform	< 1.0	1.0	µg/L	2020-11-07	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-11-07	
Chlorobenzene	< 1.0	1.0	µg/L	2020-11-07	
Chloroethane	< 2.0	2.0	µg/L	2020-11-07	
Chloroform	< 1.0	1.0	µg/L	2020-11-07	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-11-07	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-11-07	
Dibromomethane	< 1.0	1.0	µg/L	2020-11-07	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-11-07	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-11-07	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-11-07	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-11-07	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-11-07	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
Dichloromethane	< 3.0	3.0	µg/L	2020-11-07	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-11-07	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-11-07	
Ethylbenzene	< 1.0	1.0	µg/L	2020-11-07	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-11-07	
Styrene	< 1.0	1.0	µg/L	2020-11-07	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-11-07	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-11-07	
Toluene	< 1.0	1.0	µg/L	2020-11-07	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-11-07	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-11-07	
Trichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-11-07	
Vinyl chloride	< 1.0	1.0	µg/L	2020-11-07	
Xylenes (total)	< 2.0	2.0	µg/L	2020-11-07	
Surrogate: Toluene-d8	69	70-130	%	2020-11-07	S02
Surrogate: 4-Bromofluorobenzene	77	70-130	%	2020-11-07	
Surrogate: 1,4-Dichlorobenzene-d4	89	70-130	%	2020-11-07	

Town Well #4 (20K0317-05) | Matrix: Water | Sampled: 2020-11-03

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

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Analyte	Result	RL	Units	Analyzed	Qualifier
Town Well #4 (20K0317-05) Matrix: Water Sampled: 2020-11-03, Continued					
Anions					
Bromide	< 0.10	0.10	mg/L	2020-11-04	
Chloride	92.5	0.10	mg/L	2020-11-04	
Fluoride	< 0.10	0.10	mg/L	2020-11-04	
Nitrate (as N)	1.50	0.010	mg/L	2020-11-04	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-11-04	
Sulfate	40.7	1.0	mg/L	2020-11-04	
Calculated Parameters					
Hardness, Total (as CaCO3)	441	0.500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	0.00241	0.00010	mg/L	2020-11-10	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-11-10	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-11-10	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-11-10	
Barium, dissolved	0.224	0.0050	mg/L	2020-11-10	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-11-10	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-11-10	
Boron, dissolved	< 0.0500	0.0500	mg/L	2020-11-10	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-11-10	
Calcium, dissolved	104	0.20	mg/L	2020-11-10	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-11-10	
Cobalt, dissolved	< 0.00010	0.00010	mg/L	2020-11-10	
Copper, dissolved	0.00301	0.00040	mg/L	2020-11-10	
Iron, dissolved	< 0.010	0.010	mg/L	2020-11-10	
Lead, dissolved	0.00021	0.00020	mg/L	2020-11-10	
Magnesium, dissolved	44.0	0.010	mg/L	2020-11-10	
Manganese, dissolved	< 0.00020	0.00020	mg/L	2020-11-10	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-11-06	
Molybdenum, dissolved	0.00021	0.00010	mg/L	2020-11-10	
Nickel, dissolved	< 0.00040	0.00040	mg/L	2020-11-10	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-11-10	
Potassium, dissolved	2.14	0.10	mg/L	2020-11-10	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-11-10	
Silicon, dissolved	5.2	1.0	mg/L	2020-11-10	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-11-10	
Sodium, dissolved	60.4	0.10	mg/L	2020-11-10	
Strontium, dissolved	0.487	0.0010	mg/L	2020-11-10	
Sulfur, dissolved	15.3	3.0	mg/L	2020-11-10	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-11-10	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-11-10	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-11-10	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-11-10	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-11-10	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 20K0317
2020-11-10 16:16

Analyte	Result	RL	Units	Analyzed	Qualifier
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Town Well #4 (20K0317-05) | Matrix: Water | Sampled: 2020-11-03, Continued

Dissolved Metals, Continued

Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-11-10	
Uranium, dissolved	0.00133	0.000020	mg/L	2020-11-10	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-11-10	
Zinc, dissolved	0.0053	0.0040	mg/L	2020-11-10	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-11-10	

General Parameters

Alkalinity, Total (as CaCO ₃)	358	1.0	mg/L	2020-11-05	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-11-05	
Alkalinity, Bicarbonate (as CaCO ₃)	358	1.0	mg/L	2020-11-05	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-11-05	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-11-05	
Bicarbonate (HCO ₃)	437	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	< 0.050	0.050	mg/L	2020-11-04	
BOD, 5-day	< 5.8	2.0	mg/L	2020-11-09	
Chemical Oxygen Demand	< 20	20	mg/L	2020-11-04	
Conductivity (EC)	1040	2.0	µS/cm	2020-11-05	
pH	8.04	0.10	pH units	2020-11-05	HT2
Solids, Total Dissolved	559	15	mg/L	2020-11-06	
Solids, Total Suspended	< 2.0	2.0	mg/L	2020-11-05	
Turbidity	0.23	0.10	NTU	2020-11-04	

Volatile Organic Compounds (VOC)

Benzene	< 0.5	0.5	µg/L	2020-11-07	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-11-07	
Bromoform	< 1.0	1.0	µg/L	2020-11-07	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-11-07	
Chlorobenzene	< 1.0	1.0	µg/L	2020-11-07	
Chloroethane	< 2.0	2.0	µg/L	2020-11-07	
Chloroform	< 1.0	1.0	µg/L	2020-11-07	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-11-07	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-11-07	
Dibromomethane	< 1.0	1.0	µg/L	2020-11-07	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-11-07	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-11-07	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-11-07	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-11-07	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-11-07	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
Dichloromethane	< 3.0	3.0	µg/L	2020-11-07	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
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WORK ORDER REPORTED 20K0317
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Analyte	Result	RL	Units	Analyzed	Qualifier
Town Well #4 (20K0317-05) Matrix: Water Sampled: 2020-11-03, Continued					
<i>Volatile Organic Compounds (VOC), Continued</i>					
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-11-07	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-11-07	
Ethylbenzene	< 1.0	1.0	µg/L	2020-11-07	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-11-07	
Styrene	< 1.0	1.0	µg/L	2020-11-07	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-11-07	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-11-07	
Toluene	< 1.0	1.0	µg/L	2020-11-07	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-11-07	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-11-07	
Trichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-11-07	
Vinyl chloride	< 1.0	1.0	µg/L	2020-11-07	
Xylenes (total)	< 2.0	2.0	µg/L	2020-11-07	
Surrogate: Toluene-d8	65	70-130	%	2020-11-07	S02
Surrogate: 4-Bromofluorobenzene	74	70-130	%	2020-11-07	
Surrogate: 1,4-Dichlorobenzene-d4	83	70-130	%	2020-11-07	

Town Well #6 (20K0317-06) | Matrix: Water | Sampled: 2020-11-03

Anions

Bromide	< 0.10	0.10	mg/L	2020-11-04	
Chloride	60.2	0.10	mg/L	2020-11-04	
Fluoride	< 0.10	0.10	mg/L	2020-11-04	
Nitrate (as N)	1.03	0.010	mg/L	2020-11-04	
Nitrite (as N)	0.012	0.010	mg/L	2020-11-04	
Sulfate	37.9	1.0	mg/L	2020-11-04	

Calculated Parameters

Hardness, Total (as CaCO3)	437	0.500	mg/L	N/A	
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Dissolved Metals

Lithium, dissolved	0.00191	0.00010	mg/L	2020-11-10	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-11-10	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-11-10	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-11-10	
Barium, dissolved	0.196	0.0050	mg/L	2020-11-10	
Beryllium, dissolved	0.00031	0.00010	mg/L	2020-11-10	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-11-10	
Boron, dissolved	< 0.0500	0.0500	mg/L	2020-11-10	
Cadmium, dissolved	0.000011	0.000010	mg/L	2020-11-10	
Calcium, dissolved	116	0.20	mg/L	2020-11-10	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-11-10	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 20K0317
2020-11-10 16:16

Analyte	Result	RL	Units	Analyzed	Qualifier
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Town Well #6 (20K0317-06) | Matrix: Water | Sampled: 2020-11-03, Continued

Dissolved Metals, Continued

Cobalt, dissolved	0.00028	0.00010	mg/L	2020-11-10	
Copper, dissolved	0.0141	0.00040	mg/L	2020-11-10	
Iron, dissolved	0.119	0.010	mg/L	2020-11-10	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-11-10	
Magnesium, dissolved	36.0	0.010	mg/L	2020-11-10	
Manganese, dissolved	0.0430	0.00020	mg/L	2020-11-10	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-11-06	
Molybdenum, dissolved	0.00116	0.00010	mg/L	2020-11-10	
Nickel, dissolved	0.00154	0.00040	mg/L	2020-11-10	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-11-10	
Potassium, dissolved	1.34	0.10	mg/L	2020-11-10	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-11-10	
Silicon, dissolved	5.1	1.0	mg/L	2020-11-10	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-11-10	
Sodium, dissolved	34.8	0.10	mg/L	2020-11-10	
Strontium, dissolved	0.383	0.0010	mg/L	2020-11-10	
Sulfur, dissolved	14.5	3.0	mg/L	2020-11-10	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-11-10	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-11-10	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-11-10	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-11-10	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-11-10	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-11-10	
Uranium, dissolved	0.00155	0.000020	mg/L	2020-11-10	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-11-10	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-11-10	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-11-10	

General Parameters

Alkalinity, Total (as CaCO ₃)	363	1.0	mg/L	2020-11-05	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-11-05	
Alkalinity, Bicarbonate (as CaCO ₃)	363	1.0	mg/L	2020-11-05	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-11-05	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-11-05	
Bicarbonate (HCO ₃)	443	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	0.117	0.050	mg/L	2020-11-04	
BOD, 5-day	< 5.8	2.0	mg/L	2020-11-09	
Chemical Oxygen Demand	< 20	20	mg/L	2020-11-04	
Conductivity (EC)	857	2.0	µS/cm	2020-11-05	
pH	7.93	0.10	pH units	2020-11-05	HT2
Solids, Total Dissolved	507	15	mg/L	2020-11-06	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
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Analyte	Result	RL	Units	Analyzed	Qualifier
Town Well #6 (20K0317-06) Matrix: Water Sampled: 2020-11-03, Continued					
<i>General Parameters, Continued</i>					
Solids, Total Suspended	221	2.0	mg/L	2020-11-05	
Turbidity	171	0.10	NTU	2020-11-04	
<i>Volatile Organic Compounds (VOC)</i>					
Benzene	< 0.5	0.5	µg/L	2020-11-07	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-11-07	
Bromoform	< 1.0	1.0	µg/L	2020-11-07	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-11-07	
Chlorobenzene	< 1.0	1.0	µg/L	2020-11-07	
Chloroethane	< 2.0	2.0	µg/L	2020-11-07	
Chloroform	< 1.0	1.0	µg/L	2020-11-07	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-11-07	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-11-07	
Dibromomethane	< 1.0	1.0	µg/L	2020-11-07	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-11-07	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-11-07	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-11-07	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-11-07	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-11-07	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
Dichloromethane	< 3.0	3.0	µg/L	2020-11-07	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-11-07	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-11-07	
Ethylbenzene	< 1.0	1.0	µg/L	2020-11-07	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-11-07	
Styrene	< 1.0	1.0	µg/L	2020-11-07	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-11-07	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-11-07	
Toluene	< 1.0	1.0	µg/L	2020-11-07	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-11-07	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-11-07	
Trichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-11-07	
Vinyl chloride	< 1.0	1.0	µg/L	2020-11-07	
Xylenes (total)	< 2.0	2.0	µg/L	2020-11-07	
Surrogate: Toluene-d8	69	70-130	%	2020-11-07	S02
Surrogate: 4-Bromofluorobenzene	77	70-130	%	2020-11-07	
Surrogate: 1,4-Dichlorobenzene-d4	89	70-130	%	2020-11-07	

DWM-1b (20K0317-07) | Matrix: Water | Sampled: 2020-11-03

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
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WORK ORDER REPORTED 20K0317
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Analyte	Result	RL	Units	Analyzed	Qualifier
DWM-1b (20K0317-07) Matrix: Water Sampled: 2020-11-03, Continued					
Anions					
Bromide	< 0.10	0.10	mg/L	2020-11-04	
Chloride	8.98	0.10	mg/L	2020-11-04	
Fluoride	0.47	0.10	mg/L	2020-11-04	
Nitrate (as N)	0.489	0.010	mg/L	2020-11-04	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-11-04	
Sulfate	224	1.0	mg/L	2020-11-04	
Calculated Parameters					
Hardness, Total (as CaCO3)	598	0.500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	0.0450	0.00010	mg/L	2020-11-10	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-11-10	
Antimony, dissolved	0.00025	0.00020	mg/L	2020-11-10	
Arsenic, dissolved	0.00117	0.00050	mg/L	2020-11-10	
Barium, dissolved	0.0159	0.0050	mg/L	2020-11-10	
Beryllium, dissolved	0.00022	0.00010	mg/L	2020-11-10	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-11-10	
Boron, dissolved	0.352	0.0500	mg/L	2020-11-10	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-11-10	
Calcium, dissolved	81.3	0.20	mg/L	2020-11-10	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-11-10	
Cobalt, dissolved	0.00076	0.00010	mg/L	2020-11-10	
Copper, dissolved	0.0109	0.00040	mg/L	2020-11-10	
Iron, dissolved	< 0.010	0.010	mg/L	2020-11-10	
Lead, dissolved	0.00021	0.00020	mg/L	2020-11-10	
Magnesium, dissolved	95.8	0.010	mg/L	2020-11-10	
Manganese, dissolved	0.00276	0.00020	mg/L	2020-11-10	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-11-06	
Molybdenum, dissolved	0.00073	0.00010	mg/L	2020-11-10	
Nickel, dissolved	0.00154	0.00040	mg/L	2020-11-10	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-11-10	
Potassium, dissolved	8.64	0.10	mg/L	2020-11-10	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-11-10	
Silicon, dissolved	6.5	1.0	mg/L	2020-11-10	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-11-10	
Sodium, dissolved	41.8	0.10	mg/L	2020-11-10	
Strontium, dissolved	4.76	0.0010	mg/L	2020-11-10	
Sulfur, dissolved	82.7	3.0	mg/L	2020-11-10	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-11-10	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-11-10	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-11-10	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-11-10	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-11-10	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
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Analyte	Result	RL	Units	Analyzed	Qualifier
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DWM-1b (20K0317-07) | Matrix: Water | Sampled: 2020-11-03, Continued

Dissolved Metals, Continued

Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-11-10	
Uranium, dissolved	0.00146	0.000020	mg/L	2020-11-10	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-11-10	
Zinc, dissolved	0.0245	0.0040	mg/L	2020-11-10	
Zirconium, dissolved	0.00052	0.00010	mg/L	2020-11-10	

General Parameters

Alkalinity, Total (as CaCO ₃)	429	1.0	mg/L	2020-11-05	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-11-05	
Alkalinity, Bicarbonate (as CaCO ₃)	429	1.0	mg/L	2020-11-05	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-11-05	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-11-05	
Bicarbonate (HCO ₃)	523	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	0.481	0.050	mg/L	2020-11-04	
BOD, 5-day	< 5.8	2.0	mg/L	2020-11-09	
Chemical Oxygen Demand	< 20	20	mg/L	2020-11-04	
Conductivity (EC)	1180	2.0	µS/cm	2020-11-05	
pH	8.08	0.10	pH units	2020-11-05	HT2
Solids, Total Dissolved	758	15	mg/L	2020-11-06	
Solids, Total Suspended	< 2.0	2.0	mg/L	2020-11-05	
Turbidity	0.31	0.10	NTU	2020-11-04	

Volatile Organic Compounds (VOC)

Benzene	< 0.5	0.5	µg/L	2020-11-07	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-11-07	
Bromoform	< 1.0	1.0	µg/L	2020-11-07	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-11-07	
Chlorobenzene	< 1.0	1.0	µg/L	2020-11-07	
Chloroethane	< 2.0	2.0	µg/L	2020-11-07	
Chloroform	< 1.0	1.0	µg/L	2020-11-07	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-11-07	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-11-07	
Dibromomethane	< 1.0	1.0	µg/L	2020-11-07	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-11-07	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-11-07	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-11-07	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-11-07	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-11-07	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
Dichloromethane	< 3.0	3.0	µg/L	2020-11-07	

TEST RESULTS

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Analyte	Result	RL	Units	Analyzed	Qualifier
DWM-1b (20K0317-07) Matrix: Water Sampled: 2020-11-03, Continued					
<i>Volatile Organic Compounds (VOC), Continued</i>					
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-11-07	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-11-07	
Ethylbenzene	< 1.0	1.0	µg/L	2020-11-07	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-11-07	
Styrene	< 1.0	1.0	µg/L	2020-11-07	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-11-07	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-11-07	
Toluene	< 1.0	1.0	µg/L	2020-11-07	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-11-07	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-11-07	
Trichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-11-07	
Vinyl chloride	< 1.0	1.0	µg/L	2020-11-07	
Xylenes (total)	< 2.0	2.0	µg/L	2020-11-07	
Surrogate: Toluene-d8	67	70-130	%	2020-11-07	S02
Surrogate: 4-Bromofluorobenzene	73	70-130	%	2020-11-07	
Surrogate: 1,4-Dichlorobenzene-d4	83	70-130	%	2020-11-07	

MW09-06D (20K0317-08) | Matrix: Water | Sampled: 2020-11-03

Anions

Bromide	1.84	0.10	mg/L	2020-11-04	
Chloride	366	0.10	mg/L	2020-11-04	
Fluoride	< 0.10	0.10	mg/L	2020-11-04	
Nitrate (as N)	34.6	0.010	mg/L	2020-11-04	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-11-04	
Sulfate	642	1.0	mg/L	2020-11-04	

Calculated Parameters

Hardness, Total (as CaCO3)	1510	0.500	mg/L	N/A	
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Dissolved Metals

Lithium, dissolved	0.0404	0.00010	mg/L	2020-11-10	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-11-10	
Antimony, dissolved	0.00029	0.00020	mg/L	2020-11-10	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-11-10	
Barium, dissolved	0.0457	0.0050	mg/L	2020-11-10	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-11-10	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-11-10	
Boron, dissolved	1.75	0.0500	mg/L	2020-11-10	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-11-10	
Calcium, dissolved	170	0.20	mg/L	2020-11-10	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-11-10	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 20K0317
2020-11-10 16:16

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW09-06D (20K0317-08) | Matrix: Water | Sampled: 2020-11-03, Continued

Dissolved Metals, Continued

Cobalt, dissolved	0.00178	0.00010	mg/L	2020-11-10	
Copper, dissolved	0.00220	0.00040	mg/L	2020-11-10	
Iron, dissolved	< 0.010	0.010	mg/L	2020-11-10	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-11-10	
Magnesium, dissolved	263	0.010	mg/L	2020-11-10	
Manganese, dissolved	0.111	0.00020	mg/L	2020-11-10	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-11-06	
Molybdenum, dissolved	0.00030	0.00010	mg/L	2020-11-10	
Nickel, dissolved	0.0129	0.00040	mg/L	2020-11-10	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-11-10	
Potassium, dissolved	168	0.10	mg/L	2020-11-10	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-11-10	
Silicon, dissolved	11.6	1.0	mg/L	2020-11-10	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-11-10	
Sodium, dissolved	286	0.10	mg/L	2020-11-10	
Strontium, dissolved	1.57	0.0010	mg/L	2020-11-10	
Sulfur, dissolved	227	3.0	mg/L	2020-11-10	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-11-10	
Thallium, dissolved	0.000055	0.000020	mg/L	2020-11-10	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-11-10	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-11-10	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-11-10	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-11-10	
Uranium, dissolved	0.00759	0.000020	mg/L	2020-11-10	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-11-10	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-11-10	
Zirconium, dissolved	0.00017	0.00010	mg/L	2020-11-10	

General Parameters

Alkalinity, Total (as CaCO3)	946	1.0	mg/L	2020-11-05	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2020-11-05	
Alkalinity, Bicarbonate (as CaCO3)	946	1.0	mg/L	2020-11-05	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2020-11-05	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2020-11-05	
Bicarbonate (HCO3)	1150	1.22	mg/L	N/A	
Carbonate (CO3)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	1.90	0.050	mg/L	2020-11-04	
BOD, 5-day	< 5.8	2.0	mg/L	2020-11-09	
Chemical Oxygen Demand	49	20	mg/L	2020-11-04	
Conductivity (EC)	4050	2.0	µS/cm	2020-11-05	
pH	7.89	0.10	pH units	2020-11-05	HT2
Solids, Total Dissolved	2460	15	mg/L	2020-11-06	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
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Analyte	Result	RL	Units	Analyzed	Qualifier
MW09-06D (20K0317-08) Matrix: Water Sampled: 2020-11-03, Continued					
<i>General Parameters, Continued</i>					
Solids, Total Suspended	16.8	2.0	mg/L	2020-11-05	
Turbidity	13.2	0.10	NTU	2020-11-04	
<i>Volatile Organic Compounds (VOC)</i>					
Benzene	< 0.5	0.5	µg/L	2020-11-07	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-11-07	
Bromoform	< 1.0	1.0	µg/L	2020-11-07	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-11-07	
Chlorobenzene	< 1.0	1.0	µg/L	2020-11-07	
Chloroethane	< 2.0	2.0	µg/L	2020-11-07	
Chloroform	< 1.0	1.0	µg/L	2020-11-07	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-11-07	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-11-07	
Dibromomethane	< 1.0	1.0	µg/L	2020-11-07	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-11-07	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-11-07	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-11-07	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-11-07	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-11-07	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
Dichloromethane	< 3.0	3.0	µg/L	2020-11-07	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-11-07	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-11-07	
Ethylbenzene	< 1.0	1.0	µg/L	2020-11-07	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-11-07	
Styrene	< 1.0	1.0	µg/L	2020-11-07	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-11-07	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-11-07	
Toluene	< 1.0	1.0	µg/L	2020-11-07	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-11-07	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-11-07	
Trichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-11-07	
Vinyl chloride	< 1.0	1.0	µg/L	2020-11-07	
Xylenes (total)	< 2.0	2.0	µg/L	2020-11-07	
Surrogate: Toluene-d8	68	70-130	%	2020-11-07	S02
Surrogate: 4-Bromofluorobenzene	75	70-130	%	2020-11-07	
Surrogate: 1,4-Dichlorobenzene-d4	87	70-130	%	2020-11-07	

DUP A (20K0317-09) | Matrix: Water | Sampled: 2020-11-03

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 20K0317
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Analyte	Result	RL	Units	Analyzed	Qualifier
DUP A (20K0317-09) Matrix: Water Sampled: 2020-11-03, Continued					
Anions					
Bromide	1.81	0.10	mg/L	2020-11-04	
Chloride	365	0.10	mg/L	2020-11-04	
Fluoride	< 0.10	0.10	mg/L	2020-11-04	
Nitrate (as N)	34.3	0.010	mg/L	2020-11-04	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-11-04	
Sulfate	643	1.0	mg/L	2020-11-04	
Calculated Parameters					
Hardness, Total (as CaCO3)	1540	0.500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	0.0401	0.00010	mg/L	2020-11-10	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-11-10	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-11-10	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-11-10	
Barium, dissolved	0.0466	0.0050	mg/L	2020-11-10	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-11-10	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-11-10	
Boron, dissolved	1.75	0.0500	mg/L	2020-11-10	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-11-10	
Calcium, dissolved	171	0.20	mg/L	2020-11-10	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-11-10	
Cobalt, dissolved	0.00165	0.00010	mg/L	2020-11-10	
Copper, dissolved	0.00225	0.00040	mg/L	2020-11-10	
Iron, dissolved	< 0.010	0.010	mg/L	2020-11-10	
Lead, dissolved	0.00024	0.00020	mg/L	2020-11-10	
Magnesium, dissolved	269	0.010	mg/L	2020-11-10	
Manganese, dissolved	0.0961	0.00020	mg/L	2020-11-10	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-11-06	
Molybdenum, dissolved	0.00032	0.00010	mg/L	2020-11-10	
Nickel, dissolved	0.0125	0.00040	mg/L	2020-11-10	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-11-10	
Potassium, dissolved	169	0.10	mg/L	2020-11-10	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-11-10	
Silicon, dissolved	11.6	1.0	mg/L	2020-11-10	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-11-10	
Sodium, dissolved	287	0.10	mg/L	2020-11-10	
Strontium, dissolved	1.57	0.0010	mg/L	2020-11-10	
Sulfur, dissolved	234	3.0	mg/L	2020-11-10	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-11-10	
Thallium, dissolved	0.000049	0.000020	mg/L	2020-11-10	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-11-10	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-11-10	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-11-10	

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Analyte	Result	RL	Units	Analyzed	Qualifier
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DUP A (20K0317-09) | Matrix: Water | Sampled: 2020-11-03, Continued

Dissolved Metals, Continued

Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-11-10	
Uranium, dissolved	0.00757	0.000020	mg/L	2020-11-10	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-11-10	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-11-10	
Zirconium, dissolved	0.00015	0.00010	mg/L	2020-11-10	

General Parameters

Alkalinity, Total (as CaCO ₃)	954	1.0	mg/L	2020-11-05	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-11-05	
Alkalinity, Bicarbonate (as CaCO ₃)	954	1.0	mg/L	2020-11-05	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-11-05	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-11-05	
Bicarbonate (HCO ₃)	1160	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	1.64	0.050	mg/L	2020-11-04	
BOD, 5-day	< 5.8	2.0	mg/L	2020-11-09	
Chemical Oxygen Demand	44	20	mg/L	2020-11-04	
Conductivity (EC)	4000	2.0	µS/cm	2020-11-05	
pH	7.81	0.10	pH units	2020-11-05	HT2
Solids, Total Dissolved	2520	15	mg/L	2020-11-06	
Solids, Total Suspended	312	2.0	mg/L	2020-11-05	
Turbidity	184	0.10	NTU	2020-11-04	

Volatile Organic Compounds (VOC)

Benzene	< 0.5	0.5	µg/L	2020-11-07	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-11-07	
Bromoform	< 1.0	1.0	µg/L	2020-11-07	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-11-07	
Chlorobenzene	< 1.0	1.0	µg/L	2020-11-07	
Chloroethane	< 2.0	2.0	µg/L	2020-11-07	
Chloroform	< 1.0	1.0	µg/L	2020-11-07	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-11-07	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-11-07	
Dibromomethane	< 1.0	1.0	µg/L	2020-11-07	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-11-07	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-11-07	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-11-07	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-11-07	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-11-07	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
Dichloromethane	< 3.0	3.0	µg/L	2020-11-07	

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Analyte	Result	RL	Units	Analyzed	Qualifier
DUP A (20K0317-09) Matrix: Water Sampled: 2020-11-03, Continued					
<i>Volatile Organic Compounds (VOC), Continued</i>					
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-11-07	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-11-07	
Ethylbenzene	< 1.0	1.0	µg/L	2020-11-07	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-11-07	
Styrene	< 1.0	1.0	µg/L	2020-11-07	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-11-07	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-11-07	
Toluene	< 1.0	1.0	µg/L	2020-11-07	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-11-07	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-11-07	
Trichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-11-07	
Vinyl chloride	< 1.0	1.0	µg/L	2020-11-07	
Xylenes (total)	< 2.0	2.0	µg/L	2020-11-07	
Surrogate: Toluene-d8	66	70-130	%	2020-11-07	S02
Surrogate: 4-Bromofluorobenzene	74	70-130	%	2020-11-07	
Surrogate: 1,4-Dichlorobenzene-d4	85	70-130	%	2020-11-07	

DMW20-01 (20K0317-10) | Matrix: Water | Sampled: 2020-11-03

Anions

Bromide	< 0.10	0.10	mg/L	2020-11-04	
Chloride	34.7	0.10	mg/L	2020-11-04	
Fluoride	< 0.10	0.10	mg/L	2020-11-04	
Nitrate (as N)	0.403	0.010	mg/L	2020-11-04	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-11-04	
Sulfate	25.0	1.0	mg/L	2020-11-04	

Calculated Parameters

Hardness, Total (as CaCO3)	264	0.500	mg/L	N/A	
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Dissolved Metals

Lithium, dissolved	0.00170	0.00010	mg/L	2020-11-10	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-11-10	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-11-10	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-11-10	
Barium, dissolved	0.119	0.0050	mg/L	2020-11-10	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-11-10	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-11-10	
Boron, dissolved	0.0534	0.0500	mg/L	2020-11-10	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-11-10	
Calcium, dissolved	55.7	0.20	mg/L	2020-11-10	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-11-10	

TEST RESULTS

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Analyte	Result	RL	Units	Analyzed	Qualifier
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DMW20-01 (20K0317-10) | Matrix: Water | Sampled: 2020-11-03, Continued

Dissolved Metals, Continued

Cobalt, dissolved	0.00015	0.00010	mg/L	2020-11-10	
Copper, dissolved	0.00052	0.00040	mg/L	2020-11-10	
Iron, dissolved	< 0.010	0.010	mg/L	2020-11-10	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-11-10	
Magnesium, dissolved	30.3	0.010	mg/L	2020-11-10	
Manganese, dissolved	0.0101	0.00020	mg/L	2020-11-10	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-11-06	
Molybdenum, dissolved	0.00075	0.00010	mg/L	2020-11-10	
Nickel, dissolved	< 0.00040	0.00040	mg/L	2020-11-10	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-11-10	
Potassium, dissolved	1.23	0.10	mg/L	2020-11-10	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-11-10	
Silicon, dissolved	3.5	1.0	mg/L	2020-11-10	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-11-10	
Sodium, dissolved	21.1	0.10	mg/L	2020-11-10	
Strontium, dissolved	0.342	0.0010	mg/L	2020-11-10	
Sulfur, dissolved	8.6	3.0	mg/L	2020-11-10	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-11-10	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-11-10	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-11-10	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-11-10	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-11-10	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-11-10	
Uranium, dissolved	0.000721	0.000020	mg/L	2020-11-10	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-11-10	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-11-10	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-11-10	

General Parameters

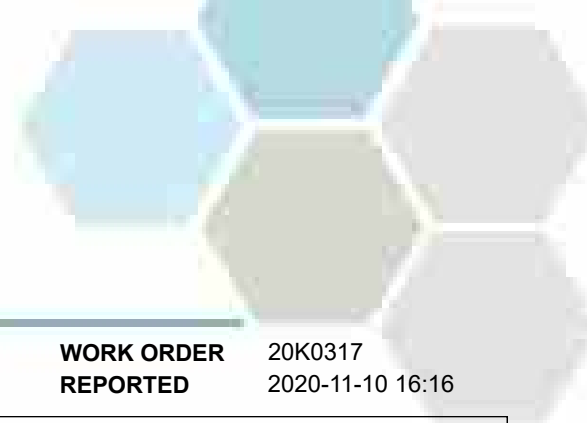
Alkalinity, Total (as CaCO3)	195	1.0	mg/L	2020-11-05	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2020-11-05	
Alkalinity, Bicarbonate (as CaCO3)	195	1.0	mg/L	2020-11-05	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2020-11-05	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2020-11-05	
Bicarbonate (HCO3)	238	1.22	mg/L	N/A	
Carbonate (CO3)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	< 0.050	0.050	mg/L	2020-11-05	
BOD, 5-day	< 5.8	2.0	mg/L	2020-11-09	
Chemical Oxygen Demand	< 20	20	mg/L	2020-11-04	
Conductivity (EC)	568	2.0	µS/cm	2020-11-05	
pH	8.23	0.10	pH units	2020-11-05	HT2
Solids, Total Dissolved	302	15	mg/L	2020-11-06	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
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Analyte	Result	RL	Units	Analyzed	Qualifier
DMW20-01 (20K0317-10) Matrix: Water Sampled: 2020-11-03, Continued					
<i>General Parameters, Continued</i>					
Solids, Total Suspended	< 2.0	2.0	mg/L	2020-11-05	
Turbidity	1.75	0.10	NTU	2020-11-04	
<i>Volatile Organic Compounds (VOC)</i>					
Benzene	< 0.5	0.5	µg/L	2020-11-07	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-11-07	
Bromoform	< 1.0	1.0	µg/L	2020-11-07	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-11-07	
Chlorobenzene	< 1.0	1.0	µg/L	2020-11-07	
Chloroethane	< 2.0	2.0	µg/L	2020-11-07	
Chloroform	< 1.0	1.0	µg/L	2020-11-07	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-11-07	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-11-07	
Dibromomethane	< 1.0	1.0	µg/L	2020-11-07	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-11-07	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-11-07	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-11-07	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-11-07	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-11-07	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
Dichloromethane	< 3.0	3.0	µg/L	2020-11-07	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-11-07	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-11-07	
Ethylbenzene	< 1.0	1.0	µg/L	2020-11-07	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-11-07	
Styrene	< 1.0	1.0	µg/L	2020-11-07	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-11-07	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-11-07	
Toluene	< 1.0	1.0	µg/L	2020-11-07	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-11-07	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-11-07	
Trichloroethylene	< 1.0	1.0	µg/L	2020-11-07	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-11-07	
Vinyl chloride	< 1.0	1.0	µg/L	2020-11-07	
Xylenes (total)	< 2.0	2.0	µg/L	2020-11-07	
Surrogate: Toluene-d8	69	70-130	%	2020-11-07	S02
Surrogate: 4-Bromofluorobenzene	77	70-130	%	2020-11-07	
Surrogate: 1,4-Dichlorobenzene-d4	88	70-130	%	2020-11-07	



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Sample Qualifiers:

HT2 The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is recommended.
 S02 Surrogate recovery outside of control limits. Data accepted based on acceptable recovery of other surrogates.

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

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Analysis Description	Method Ref.	Technique	Accredited	Location
Alkalinity in Water	SM 2320 B* (2017)	Titration with H ₂ SO ₄	✓	Kelowna
Ammonia, Total in Water	SM 4500-NH ₃ G* (2017)	Automated Colorimetry (Phenate)	✓	Kelowna
Anions in Water	SM 4110 B (2017)	Ion Chromatography	✓	Kelowna
Biochemical Oxygen Demand in Water	SM 5210 B (2017)	Dissolved Oxygen Meter	✓	Kelowna
Chemical Oxygen Demand in Water	SM 5220 D* (2017)	Closed Reflux, Colorimetry	✓	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 Spectrometry (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*	BrCl ₂ Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	✓	Richmond
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
Solids, Total Suspended in Water	SM 2540 D* (2017)	Gravimetry (Dried at 103-105C)	✓	Kelowna
Turbidity in Water	SM 2130 B (2017)	Nephelometry	✓	Kelowna
Volatile Organic Compounds in Water	EPA 5030B / EPA 8260D	Purge&Trap / GC-MSD (SIM)	✓	Richmond

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
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
pH units	pH < 7 = acidic, pH > 7 = basic
µg/L	Micrograms per litre
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 Ecoscape Environmental Ltd.
PROJECT 19-2850 - Golden

WORK ORDER 20K0317
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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.

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 Ecoscape Environmental Ltd.
PROJECT 19-2850 - Golden

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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 B0K0236									
Blank (B0K0236-BLK1)			Prepared: 2020-11-04, Analyzed: 2020-11-04						
Bromide	< 0.10	0.10 mg/L							
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 (B0K0236-BLK2)			Prepared: 2020-11-04, Analyzed: 2020-11-04						
Bromide	< 0.10	0.10 mg/L							
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 (B0K0236-BS1)			Prepared: 2020-11-04, Analyzed: 2020-11-04						
Bromide	4.05	0.10 mg/L	4.00		101	85-115			
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)	4.01	0.010 mg/L	4.00		100	90-110			
Nitrite (as N)	2.00	0.010 mg/L	2.00		100	85-115			
Sulfate	16.1	1.0 mg/L	16.0		101	90-110			
LCS (B0K0236-BS2)			Prepared: 2020-11-04, Analyzed: 2020-11-04						
Bromide	4.05	0.10 mg/L	4.00		101	85-115			
Chloride	16.1	0.10 mg/L	16.0		100	90-110			
Fluoride	4.02	0.10 mg/L	4.00		100	88-108			
Nitrate (as N)	3.72	0.010 mg/L	4.00		93	90-110			
Nitrite (as N)	2.08	0.010 mg/L	2.00		104	85-115			
Sulfate	16.2	1.0 mg/L	16.0		101	90-110			

Dissolved Metals, Batch B0K0612

Blank (B0K0612-BLK1) Prepared: 2020-11-06, Analyzed: 2020-11-06

Mercury, dissolved	< 0.000010	0.000010 mg/L
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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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Dissolved Metals, Batch B0K0612, Continued

Blank (B0K0612-BLK2)			Prepared: 2020-11-06, Analyzed: 2020-11-06						
Mercury, dissolved	< 0.000010	0.000010 mg/L							
Matrix Spike (B0K0612-MS2)			Source: 20K0317-02		Prepared: 2020-11-06, Analyzed: 2020-11-06				
Mercury, dissolved	0.000193	0.000010 mg/L	0.000250	< 0.000010	76	70-130			
Reference (B0K0612-SRM1)			Prepared: 2020-11-06, Analyzed: 2020-11-06						
Mercury, dissolved	0.00575	0.000010 mg/L	0.00581		99	70-130			
Reference (B0K0612-SRM2)			Prepared: 2020-11-06, Analyzed: 2020-11-06						
Mercury, dissolved	0.00547	0.000010 mg/L	0.00581		94	70-130			

Dissolved Metals, Batch B0K0791

Blank (B0K0791-BLK1)			Prepared: 2020-11-10, Analyzed: 2020-11-10						
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 (B0K0791-BS1)			Prepared: 2020-11-10, Analyzed: 2020-11-10						
Lithium, dissolved	0.0191	0.00010 mg/L	0.0200		96	80-120			
Aluminum, dissolved	0.0234	0.0050 mg/L	0.0199		118	80-120			
Antimony, dissolved	0.0199	0.00020 mg/L	0.0200		100	80-120			

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Dissolved Metals, Batch B0K0791, Continued									
LCS (B0K0791-BS1), Continued					Prepared: 2020-11-10, Analyzed: 2020-11-10				
Arsenic, dissolved	0.0206	0.00050 mg/L	0.0200		103	80-120			
Barium, dissolved	0.0225	0.0050 mg/L	0.0198		114	80-120			
Beryllium, dissolved	0.0197	0.00010 mg/L	0.0198		99	80-120			
Bismuth, dissolved	0.0217	0.00010 mg/L	0.0200		109	80-120			
Boron, dissolved	< 0.0500	0.0500 mg/L	0.0200		115	80-120			
Cadmium, dissolved	0.0204	0.000010 mg/L	0.0199		103	80-120			
Calcium, dissolved	2.28	0.20 mg/L	2.02		113	80-120			
Chromium, dissolved	0.0197	0.00050 mg/L	0.0198		99	80-120			
Cobalt, dissolved	0.0194	0.00010 mg/L	0.0199		98	80-120			
Copper, dissolved	0.0204	0.00040 mg/L	0.0200		102	80-120			
Iron, dissolved	1.98	0.010 mg/L	2.02		98	80-120			
Lead, dissolved	0.0224	0.00020 mg/L	0.0199		113	80-120			
Magnesium, dissolved	2.14	0.010 mg/L	2.02		106	80-120			
Manganese, dissolved	0.0188	0.00020 mg/L	0.0199		94	80-120			
Molybdenum, dissolved	0.0194	0.00010 mg/L	0.0200		97	80-120			
Nickel, dissolved	0.0197	0.00040 mg/L	0.0200		99	80-120			
Phosphorus, dissolved	2.02	0.050 mg/L	2.00		101	80-120			
Potassium, dissolved	2.07	0.10 mg/L	2.02		102	80-120			
Selenium, dissolved	0.0224	0.00050 mg/L	0.0200		112	80-120			
Silicon, dissolved	2.0	1.0 mg/L	2.00		101	80-120			
Silver, dissolved	0.0189	0.000050 mg/L	0.0200		95	80-120			
Sodium, dissolved	1.96	0.10 mg/L	2.02		97	80-120			
Strontium, dissolved	0.0196	0.0010 mg/L	0.0200		98	80-120			
Sulfur, dissolved	4.3	3.0 mg/L	5.00		85	80-120			
Tellurium, dissolved	0.0216	0.00050 mg/L	0.0200		108	80-120			
Thallium, dissolved	0.0198	0.000020 mg/L	0.0199		99	80-120			
Thorium, dissolved	0.0193	0.00010 mg/L	0.0200		97	80-120			
Tin, dissolved	0.0200	0.00020 mg/L	0.0200		100	80-120			
Titanium, dissolved	0.0198	0.0050 mg/L	0.0200		99	80-120			
Tungsten, dissolved	0.0221	0.0010 mg/L	0.0200		110	80-120			
Uranium, dissolved	0.0202	0.000020 mg/L	0.0200		101	80-120			
Vanadium, dissolved	0.0192	0.0010 mg/L	0.0200		96	80-120			
Zinc, dissolved	0.0219	0.0040 mg/L	0.0200		109	80-120			
Zirconium, dissolved	0.0194	0.00010 mg/L	0.0200		97	80-120			

Reference (B0K0791-SRM1)					Prepared: 2020-11-10, Analyzed: 2020-11-10				
Lithium, dissolved	0.102	0.00010 mg/L	0.100		102	70-130			
Aluminum, dissolved	0.241	0.0050 mg/L	0.235		103	70-130			
Antimony, dissolved	0.0496	0.00020 mg/L	0.0431		115	70-130			
Arsenic, dissolved	0.490	0.00050 mg/L	0.423		116	70-130			
Barium, dissolved	3.18	0.0050 mg/L	3.30		96	70-130			
Beryllium, dissolved	0.223	0.00010 mg/L	0.209		107	70-130			
Boron, dissolved	1.67	0.0500 mg/L	1.65		101	70-130			
Cadmium, dissolved	0.239	0.000010 mg/L	0.221		108	70-130			
Calcium, dissolved	8.16	0.20 mg/L	7.72		106	70-130			
Chromium, dissolved	0.447	0.00050 mg/L	0.434		103	70-130			
Cobalt, dissolved	0.131	0.00010 mg/L	0.124		105	70-130			
Copper, dissolved	0.868	0.00040 mg/L	0.815		106	70-130			
Iron, dissolved	1.36	0.010 mg/L	1.27		107	70-130			
Lead, dissolved	0.128	0.00020 mg/L	0.110		117	70-130			
Magnesium, dissolved	7.61	0.010 mg/L	6.59		116	70-130			
Manganese, dissolved	0.330	0.00020 mg/L	0.342		96	70-130			
Molybdenum, dissolved	0.429	0.00010 mg/L	0.404		106	70-130			
Nickel, dissolved	0.886	0.00040 mg/L	0.835		106	70-130			
Phosphorus, dissolved	0.500	0.050 mg/L	0.499		100	70-130			
Potassium, dissolved	3.42	0.10 mg/L	2.88		119	70-130			

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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Dissolved Metals, Batch B0K0791, Continued

Reference (B0K0791-SRM1), Continued			Prepared: 2020-11-10, Analyzed: 2020-11-10						
Selenium, dissolved	0.0395	0.00050 mg/L	0.0324		122	70-130			
Sodium, dissolved	19.2	0.10 mg/L	18.0		107	70-130			
Strontium, dissolved	0.944	0.0010 mg/L	0.935		101	70-130			
Thallium, dissolved	0.0403	0.000020 mg/L	0.0385		105	70-130			
Uranium, dissolved	0.258	0.000020 mg/L	0.258		100	70-130			
Vanadium, dissolved	0.878	0.0010 mg/L	0.873		101	70-130			
Zinc, dissolved	0.963	0.0040 mg/L	0.848		114	70-130			

General Parameters, Batch B0K0154

Blank (B0K0154-BLK1)			Prepared: 2020-11-04, Analyzed: 2020-11-04						
Ammonia, Total (as N)	< 0.050	0.050 mg/L							
Blank (B0K0154-BLK2)			Prepared: 2020-11-04, Analyzed: 2020-11-04						
Ammonia, Total (as N)	< 0.050	0.050 mg/L							
Blank (B0K0154-BLK3)			Prepared: 2020-11-04, Analyzed: 2020-11-04						
Ammonia, Total (as N)	< 0.050	0.050 mg/L							
LCS (B0K0154-BS1)			Prepared: 2020-11-04, Analyzed: 2020-11-04						
Ammonia, Total (as N)	1.04	0.050 mg/L	1.00		104	90-115			
LCS (B0K0154-BS2)			Prepared: 2020-11-04, Analyzed: 2020-11-04						
Ammonia, Total (as N)	1.04	0.050 mg/L	1.00		104	90-115			
LCS (B0K0154-BS3)			Prepared: 2020-11-04, Analyzed: 2020-11-04						
Ammonia, Total (as N)	1.04	0.050 mg/L	1.00		104	90-115			
Duplicate (B0K0154-DUP3)			Source: 20K0317-10		Prepared: 2020-11-05, Analyzed: 2020-11-05				
Ammonia, Total (as N)	< 0.050	0.050 mg/L		< 0.050				15	
Matrix Spike (B0K0154-MS3)			Source: 20K0317-10		Prepared: 2020-11-05, Analyzed: 2020-11-05				
Ammonia, Total (as N)	0.274	0.050 mg/L	0.250	< 0.050	105	75-125			

General Parameters, Batch B0K0327

Blank (B0K0327-BLK1)			Prepared: 2020-11-04, Analyzed: 2020-11-09						
BOD, 5-day	< 2.0	2.0 mg/L							
LCS (B0K0327-BS1)			Prepared: 2020-11-04, Analyzed: 2020-11-09						
BOD, 5-day	189	2.0 mg/L	180		105	85-115			

General Parameters, Batch B0K0351

Blank (B0K0351-BLK1)			Prepared: 2020-11-04, Analyzed: 2020-11-04						
Chemical Oxygen Demand	< 20	20 mg/L							
LCS (B0K0351-BS1)			Prepared: 2020-11-04, Analyzed: 2020-11-04						
Chemical Oxygen Demand	494	20 mg/L	500		99	89-115			

General Parameters, Batch B0K0361

Blank (B0K0361-BLK1)			Prepared: 2020-11-04, Analyzed: 2020-11-04						
Turbidity	< 0.10	0.10 NTU							

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
General Parameters, Batch B0K0361, Continued									
Blank (B0K0361-BLK2)				Prepared: 2020-11-04, Analyzed: 2020-11-04					
Turbidity	< 0.10	0.10 NTU							
LCS (B0K0361-BS1)				Prepared: 2020-11-04, Analyzed: 2020-11-04					
Turbidity	36.9	0.10 NTU	40.0		92	90-110			
LCS (B0K0361-BS2)				Prepared: 2020-11-04, Analyzed: 2020-11-04					
Turbidity	38.3	0.10 NTU	40.0		96	90-110			
General Parameters, Batch B0K0388									
Blank (B0K0388-BLK1)				Prepared: 2020-11-05, Analyzed: 2020-11-05					
Solids, Total Suspended	< 2.0	2.0 mg/L							
Blank (B0K0388-BLK2)				Prepared: 2020-11-05, Analyzed: 2020-11-05					
Solids, Total Suspended	< 2.0	2.0 mg/L							
LCS (B0K0388-BS1)				Prepared: 2020-11-05, Analyzed: 2020-11-05					
Solids, Total Suspended	98.0	10.0 mg/L	100		98	85-115			
LCS (B0K0388-BS2)				Prepared: 2020-11-05, Analyzed: 2020-11-05					
Solids, Total Suspended	102	10.0 mg/L	100		102	85-115			
Duplicate (B0K0388-DUP2)				Source: 20K0317-01		Prepared: 2020-11-05, Analyzed: 2020-11-05			
Solids, Total Suspended	331	2.0 mg/L		315			5	20	
General Parameters, Batch B0K0501									
Blank (B0K0501-BLK1)				Prepared: 2020-11-05, Analyzed: 2020-11-05					
Alkalinity, Total (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Bicarbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0 mg/L							
Conductivity (EC)	< 2.0	2.0 µS/cm							
Blank (B0K0501-BLK2)				Prepared: 2020-11-05, Analyzed: 2020-11-05					
Alkalinity, Total (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Bicarbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0 mg/L							
Conductivity (EC)	< 2.0	2.0 µS/cm							
Blank (B0K0501-BLK3)				Prepared: 2020-11-05, Analyzed: 2020-11-05					
Alkalinity, Total (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Bicarbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0 mg/L							
Conductivity (EC)	< 2.0	2.0 µS/cm							
LCS (B0K0501-BS1)				Prepared: 2020-11-05, Analyzed: 2020-11-05					
Alkalinity, Total (as CaCO ₃)	103	1.0 mg/L	100		103	80-120			
LCS (B0K0501-BS2)				Prepared: 2020-11-05, Analyzed: 2020-11-05					
Alkalinity, Total (as CaCO ₃)	103	1.0 mg/L	100		103	80-120			

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
General Parameters, Batch B0K0501, Continued									
LCS (B0K0501-BS3)				Prepared: 2020-11-05, Analyzed: 2020-11-05					
Alkalinity, Total (as CaCO ₃)	103	1.0 mg/L	100		103	80-120			
LCS (B0K0501-BS4)				Prepared: 2020-11-05, Analyzed: 2020-11-05					
Conductivity (EC)	1440	2.0 µS/cm	1410		102	95-104			
LCS (B0K0501-BS5)				Prepared: 2020-11-05, Analyzed: 2020-11-05					
Conductivity (EC)	1460	2.0 µS/cm	1410		104	95-104			
LCS (B0K0501-BS6)				Prepared: 2020-11-05, Analyzed: 2020-11-05					
Conductivity (EC)	1420	2.0 µS/cm	1410		101	95-104			
Reference (B0K0501-SRM1)				Prepared: 2020-11-05, Analyzed: 2020-11-05					
pH	6.97	0.10 pH units	7.01		99	98-102			
Reference (B0K0501-SRM2)				Prepared: 2020-11-05, Analyzed: 2020-11-05					
pH	6.97	0.10 pH units	7.01		99	98-102			
Reference (B0K0501-SRM3)				Prepared: 2020-11-05, Analyzed: 2020-11-05					
pH	6.98	0.10 pH units	7.01		100	98-102			

General Parameters, Batch B0K0541

Blank (B0K0541-BLK1)				Prepared: 2020-11-06, Analyzed: 2020-11-06					
Solids, Total Dissolved	< 15	15 mg/L							
LCS (B0K0541-BS1)				Prepared: 2020-11-06, Analyzed: 2020-11-06					
Solids, Total Dissolved	222	15 mg/L	240		92	85-115			
Duplicate (B0K0541-DUP1)				Source: 20K0317-01		Prepared: 2020-11-06, Analyzed: 2020-11-06			
Solids, Total Dissolved	2500	15 mg/L	2550				2	15	

Volatile Organic Compounds (VOC), Batch B0K0600

Blank (B0K0600-BLK1)				Prepared: 2020-11-07, Analyzed: 2020-11-07					
Benzene	< 0.5	0.5 µg/L							
Bromodichloromethane	< 1.0	1.0 µg/L							
Bromoform	< 1.0	1.0 µg/L							
Carbon tetrachloride	< 0.5	0.5 µg/L							
Chlorobenzene	< 1.0	1.0 µg/L							
Chloroethane	< 2.0	2.0 µg/L							
Chloroform	< 1.0	1.0 µg/L							
Dibromochloromethane	< 1.0	1.0 µg/L							
1,2-Dibromoethane	< 0.3	0.3 µg/L							
Dibromomethane	< 1.0	1.0 µg/L							
1,2-Dichlorobenzene	< 0.5	0.5 µg/L							
1,3-Dichlorobenzene	< 1.0	1.0 µg/L							
1,4-Dichlorobenzene	< 1.0	1.0 µg/L							
1,1-Dichloroethane	< 1.0	1.0 µg/L							
1,2-Dichloroethane	< 1.0	1.0 µg/L							
1,1-Dichloroethylene	< 1.0	1.0 µg/L							
cis-1,2-Dichloroethylene	< 1.0	1.0 µg/L							
trans-1,2-Dichloroethylene	< 1.0	1.0 µg/L							
Dichloromethane	< 3.0	3.0 µg/L							
1,2-Dichloropropane	< 1.0	1.0 µg/L							
1,3-Dichloropropene (cis + trans)	< 1.0	1.0 µg/L							
Ethylbenzene	< 1.0	1.0 µg/L							

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 20K0317
2020-11-10 16:16

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Volatile Organic Compounds (VOC), Batch B0K0600, Continued									
Blank (B0K0600-BLK1), Continued					Prepared: 2020-11-07, Analyzed: 2020-11-07				
Methyl tert-butyl ether	< 1.0	1.0 µg/L							
Styrene	< 1.0	1.0 µg/L							
1,1,2,2-Tetrachloroethane	< 0.5	0.5 µg/L							
Tetrachloroethylene	< 1.0	1.0 µg/L							
Toluene	< 1.0	1.0 µg/L							
1,1,1-Trichloroethane	< 1.0	1.0 µg/L							
1,1,2-Trichloroethane	< 1.0	1.0 µg/L							
Trichloroethylene	< 1.0	1.0 µg/L							
Trichlorofluoromethane	< 1.0	1.0 µg/L							
Vinyl chloride	< 1.0	1.0 µg/L							
Xylenes (total)	< 2.0	2.0 µg/L							
Surrogate: Toluene-d8	18.3	µg/L	26.5		69	70-130			S02
Surrogate: 4-Bromofluorobenzene	20.5	µg/L	24.9		82	70-130			
Surrogate: 1,4-Dichlorobenzene-d4	24.5	µg/L	25.5		96	70-130			
LCS (B0K0600-BS1)					Prepared: 2020-11-06, Analyzed: 2020-11-06				
Benzene	20.0	0.5 µg/L	20.0		100	70-130			
Bromodichloromethane	18.5	1.0 µg/L	20.0		92	70-130			
Bromoform	21.2	1.0 µg/L	20.1		105	70-130			
Carbon tetrachloride	19.0	0.5 µg/L	20.2		94	70-130			
Chlorobenzene	20.0	1.0 µg/L	20.1		100	70-130			
Chloroethane	28.0	2.0 µg/L	20.0		140	60-140			
Chloroform	21.2	1.0 µg/L	20.1		106	70-130			
Dibromochloromethane	17.3	1.0 µg/L	20.2		86	70-130			
1,2-Dibromoethane	17.0	0.3 µg/L	20.0		85	70-130			
Dibromomethane	19.0	1.0 µg/L	20.0		95	70-130			
1,2-Dichlorobenzene	22.2	0.5 µg/L	20.1		111	70-130			
1,3-Dichlorobenzene	21.4	1.0 µg/L	20.1		106	70-130			
1,4-Dichlorobenzene	21.2	1.0 µg/L	20.1		106	70-130			
1,1-Dichloroethane	20.9	1.0 µg/L	20.1		104	70-130			
1,2-Dichloroethane	19.5	1.0 µg/L	20.1		97	70-130			
1,1-Dichloroethylene	22.8	1.0 µg/L	20.1		114	70-130			
cis-1,2-Dichloroethylene	18.6	1.0 µg/L	20.0		93	70-130			
trans-1,2-Dichloroethylene	18.8	1.0 µg/L	20.0		94	70-130			
Dichloromethane	21.8	3.0 µg/L	20.1		109	70-130			
1,2-Dichloropropane	18.8	1.0 µg/L	20.1		94	70-130			
1,3-Dichloropropene (cis + trans)	25.9	1.0 µg/L	40.0		65	70-130			SPK1
Ethylbenzene	18.5	1.0 µg/L	20.0		92	70-130			
Methyl tert-butyl ether	18.6	1.0 µg/L	20.0		93	70-130			
Styrene	20.8	1.0 µg/L	20.0		104	70-130			
1,1,2,2-Tetrachloroethane	22.7	0.5 µg/L	20.1		113	70-130			
Tetrachloroethylene	20.5	1.0 µg/L	20.1		102	70-130			
Toluene	21.0	1.0 µg/L	20.0		105	70-130			
1,1,1-Trichloroethane	18.6	1.0 µg/L	20.0		93	70-130			
1,1,2-Trichloroethane	18.3	1.0 µg/L	20.1		91	70-130			
Trichloroethylene	19.3	1.0 µg/L	20.1		96	70-130			
Trichlorofluoromethane	27.6	1.0 µg/L	20.0		138	60-140			
Vinyl chloride	34.4	1.0 µg/L	20.0		172	60-140			SPK1
Xylenes (total)	63.0	2.0 µg/L	60.0		105	70-130			
Surrogate: Toluene-d8	18.9	µg/L	26.5		71	70-130			
Surrogate: 4-Bromofluorobenzene	26.1	µg/L	24.9		105	70-130			
Surrogate: 1,4-Dichlorobenzene-d4	30.9	µg/L	25.5		121	70-130			
Duplicate (B0K0600-DUP1)					Source: 20K0317-04 Prepared: 2020-11-07, Analyzed: 2020-11-07				
Benzene	< 0.5	0.5 µg/L		< 0.5				22	
Bromodichloromethane	< 1.0	1.0 µg/L		< 1.0				23	

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 20K0317
2020-11-10 16:16

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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Volatile Organic Compounds (VOC), Batch B0K0600, Continued

Duplicate (B0K0600-DUP1), Continued		Source: 20K0317-04		Prepared: 2020-11-07, Analyzed: 2020-11-07					
Bromoform	< 1.0	1.0 µg/L		< 1.0				23	
Carbon tetrachloride	< 0.5	0.5 µg/L		< 0.5				30	
Chlorobenzene	< 1.0	1.0 µg/L		< 1.0				26	
Chloroethane	< 2.0	2.0 µg/L		< 2.0				50	
Chloroform	< 1.0	1.0 µg/L		< 1.0				22	
Dibromochloromethane	< 1.0	1.0 µg/L		< 1.0				28	
1,2-Dibromoethane	< 0.3	0.3 µg/L		< 0.3				30	
Dibromomethane	< 1.0	1.0 µg/L		< 1.0				30	
1,2-Dichlorobenzene	< 0.5	0.5 µg/L		< 0.5				27	
1,3-Dichlorobenzene	< 1.0	1.0 µg/L		< 1.0				30	
1,4-Dichlorobenzene	< 1.0	1.0 µg/L		< 1.0				30	
1,1-Dichloroethane	< 1.0	1.0 µg/L		< 1.0				24	
1,2-Dichloroethane	< 1.0	1.0 µg/L		< 1.0				24	
1,1-Dichloroethylene	< 1.0	1.0 µg/L		< 1.0				30	
cis-1,2-Dichloroethylene	< 1.0	1.0 µg/L		< 1.0				22	
trans-1,2-Dichloroethylene	< 1.0	1.0 µg/L		< 1.0				27	
Dichloromethane	< 3.0	3.0 µg/L		< 3.0				27	
1,2-Dichloropropane	< 1.0	1.0 µg/L		< 1.0				28	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0 µg/L		< 1.0				30	
Ethylbenzene	< 1.0	1.0 µg/L		< 1.0				30	
Methyl tert-butyl ether	< 1.0	1.0 µg/L		< 1.0				20	
Styrene	< 1.0	1.0 µg/L		< 1.0				30	
1,1,2,2-Tetrachloroethane	< 0.5	0.5 µg/L		< 0.5				30	
Tetrachloroethylene	< 1.0	1.0 µg/L		< 1.0				30	
Toluene	< 1.0	1.0 µg/L		< 1.0				24	
1,1,1-Trichloroethane	< 1.0	1.0 µg/L		< 1.0				30	
1,1,2-Trichloroethane	< 1.0	1.0 µg/L		< 1.0				30	
Trichloroethylene	< 1.0	1.0 µg/L		< 1.0				27	
Trichlorofluoromethane	< 1.0	1.0 µg/L		< 1.0				50	
Vinyl chloride	< 1.0	1.0 µg/L		< 1.0				40	
Xylenes (total)	< 2.0	2.0 µg/L		< 2.0				29	
Surrogate: Toluene-d8	16.6	µg/L	26.5		63	70-130			S02
Surrogate: 4-Bromofluorobenzene	19.5	µg/L	24.9		78	70-130			
Surrogate: 1,4-Dichlorobenzene-d4	22.1	µg/L	25.5		87	70-130			

Matrix Spike (B0K0600-MS1)		Source: 20K0317-04		Prepared: 2020-11-06, Analyzed: 2020-11-06					
Benzene	19.7	0.5 µg/L	20.0	< 0.5	98	70-130			
Bromodichloromethane	18.5	1.0 µg/L	20.0	< 1.0	92	70-130			
Bromoform	19.4	1.0 µg/L	20.1	< 1.0	97	70-130			
Carbon tetrachloride	16.8	0.5 µg/L	20.2	< 0.5	83	70-130			
Chlorobenzene	19.5	1.0 µg/L	20.1	< 1.0	97	70-130			
Chloroethane	26.7	2.0 µg/L	20.0	< 2.0	133	60-140			
Chloroform	20.1	1.0 µg/L	20.1	< 1.0	100	70-130			
Dibromochloromethane	17.0	1.0 µg/L	20.2	< 1.0	84	70-130			
1,2-Dibromoethane	17.5	0.3 µg/L	20.0	< 0.3	88	70-130			
Dibromomethane	18.8	1.0 µg/L	20.0	< 1.0	94	70-130			
1,2-Dichlorobenzene	21.5	0.5 µg/L	20.1	< 0.5	107	70-130			
1,3-Dichlorobenzene	21.7	1.0 µg/L	20.1	< 1.0	108	70-130			
1,4-Dichlorobenzene	22.4	1.0 µg/L	20.1	< 1.0	111	70-130			
1,1-Dichloroethane	20.9	1.0 µg/L	20.1	< 1.0	104	70-130			
1,2-Dichloroethane	19.6	1.0 µg/L	20.1	< 1.0	98	70-130			
1,1-Dichloroethylene	21.3	1.0 µg/L	20.1	< 1.0	106	70-130			
cis-1,2-Dichloroethylene	19.3	1.0 µg/L	20.0	< 1.0	96	70-130			
trans-1,2-Dichloroethylene	20.4	1.0 µg/L	20.0	< 1.0	102	70-130			
Dichloromethane	21.4	3.0 µg/L	20.1	< 3.0	106	70-130			
1,2-Dichloropropane	19.2	1.0 µg/L	20.1	< 1.0	96	70-130			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 20K0317
2020-11-10 16:16

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Volatile Organic Compounds (VOC), Batch B0K0600, Continued									
Matrix Spike (B0K0600-MS1), Continued		Source: 20K0317-04		Prepared: 2020-11-06, Analyzed: 2020-11-06					
1,3-Dichloropropene (cis + trans)	33.4	1.0 µg/L	40.0	< 1.0	83	70-130			
Ethylbenzene	16.2	1.0 µg/L	20.0	< 1.0	81	70-130			
Methyl tert-butyl ether	17.3	1.0 µg/L	20.0	< 1.0	87	70-130			
Styrene	18.4	1.0 µg/L	20.0	< 1.0	92	70-130			
1,1,2,2-Tetrachloroethane	25.0	0.5 µg/L	20.1	< 0.5	125	70-130			
Tetrachloroethylene	14.0	1.0 µg/L	20.1	< 1.0	70	70-130			
Toluene	19.6	1.0 µg/L	20.0	< 1.0	96	70-130			
1,1,1-Trichloroethane	17.1	1.0 µg/L	20.0	< 1.0	86	70-130			
1,1,2-Trichloroethane	18.1	1.0 µg/L	20.1	< 1.0	90	70-130			
Trichloroethylene	18.2	1.0 µg/L	20.1	< 1.0	91	70-130			
Trichlorofluoromethane	23.0	1.0 µg/L	20.0	< 1.0	115	60-140			
Vinyl chloride	32.5	1.0 µg/L	20.0	< 1.0	162	60-140			SPK1
Xylenes (total)	57.1	2.0 µg/L	60.0	< 2.0	95	70-130			
Surrogate: Toluene-d8	18.1	µg/L	26.5		68	70-130			S02
Surrogate: 4-Bromofluorobenzene	29.0	µg/L	24.9		116	70-130			
Surrogate: 1,4-Dichlorobenzene-d4	36.4	µg/L	25.5		143	70-130			S02

Volatile Organic Compounds (VOC), Batch B0K0601

Blank (B0K0601-BLK1)		Prepared: 2020-11-07, Analyzed: 2020-11-07							
Benzene	< 0.5	0.5 µg/L							
Bromodichloromethane	< 1.0	1.0 µg/L							
Bromoform	< 1.0	1.0 µg/L							
Carbon tetrachloride	< 0.5	0.5 µg/L							
Chlorobenzene	< 1.0	1.0 µg/L							
Chloroethane	< 2.0	2.0 µg/L							
Chloroform	< 1.0	1.0 µg/L							
Dibromochloromethane	< 1.0	1.0 µg/L							
1,2-Dibromoethane	< 0.3	0.3 µg/L							
Dibromomethane	< 1.0	1.0 µg/L							
1,2-Dichlorobenzene	< 0.5	0.5 µg/L							
1,3-Dichlorobenzene	< 1.0	1.0 µg/L							
1,4-Dichlorobenzene	< 1.0	1.0 µg/L							
1,1-Dichloroethane	< 1.0	1.0 µg/L							
1,2-Dichloroethane	< 1.0	1.0 µg/L							
1,1-Dichloroethylene	< 1.0	1.0 µg/L							
cis-1,2-Dichloroethylene	< 1.0	1.0 µg/L							
trans-1,2-Dichloroethylene	< 1.0	1.0 µg/L							
Dichloromethane	< 3.0	3.0 µg/L							
1,2-Dichloropropane	< 1.0	1.0 µg/L							
1,3-Dichloropropene (cis + trans)	< 1.0	1.0 µg/L							
Ethylbenzene	< 1.0	1.0 µg/L							
Methyl tert-butyl ether	< 1.0	1.0 µg/L							
Styrene	< 1.0	1.0 µg/L							
1,1,2,2-Tetrachloroethane	< 0.5	0.5 µg/L							
Tetrachloroethylene	< 1.0	1.0 µg/L							
Toluene	< 1.0	1.0 µg/L							
1,1,1-Trichloroethane	< 1.0	1.0 µg/L							
1,1,2-Trichloroethane	< 1.0	1.0 µg/L							
Trichloroethylene	< 1.0	1.0 µg/L							
Trichlorofluoromethane	< 1.0	1.0 µg/L							
Vinyl chloride	< 1.0	1.0 µg/L							
Xylenes (total)	< 2.0	2.0 µg/L							
Surrogate: Toluene-d8	16.8	µg/L	26.5		63	70-130			S02
Surrogate: 4-Bromofluorobenzene	19.2	µg/L	24.9		77	70-130			
Surrogate: 1,4-Dichlorobenzene-d4	22.5	µg/L	25.5		88	70-130			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 20K0317
2020-11-10 16:16

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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Volatile Organic Compounds (VOC), Batch B0K0601, Continued

LCS (B0K0601-BS1)				Prepared: 2020-11-07, Analyzed: 2020-11-07					
Benzene	19.8	0.5 µg/L	20.0		99	70-130			
Bromodichloromethane	19.5	1.0 µg/L	20.0		98	70-130			
Bromoform	17.8	1.0 µg/L	20.1		89	70-130			
Carbon tetrachloride	15.7	0.5 µg/L	20.2		78	70-130			
Chlorobenzene	20.1	1.0 µg/L	20.1		100	70-130			
Chloroethane	26.7	2.0 µg/L	20.0		134	60-140			
Chloroform	20.6	1.0 µg/L	20.1		102	70-130			
Dibromochloromethane	18.2	1.0 µg/L	20.2		90	70-130			
1,2-Dibromoethane	18.0	0.3 µg/L	20.0		90	70-130			
Dibromomethane	19.6	1.0 µg/L	20.0		98	70-130			
1,2-Dichlorobenzene	17.9	0.5 µg/L	20.1		89	70-130			
1,3-Dichlorobenzene	17.3	1.0 µg/L	20.1		86	70-130			
1,4-Dichlorobenzene	18.0	1.0 µg/L	20.1		90	70-130			
1,1-Dichloroethane	21.2	1.0 µg/L	20.1		105	70-130			
1,2-Dichloroethane	20.4	1.0 µg/L	20.1		101	70-130			
1,1-Dichloroethylene	20.3	1.0 µg/L	20.1		101	70-130			
cis-1,2-Dichloroethylene	19.8	1.0 µg/L	20.0		99	70-130			
trans-1,2-Dichloroethylene	20.1	1.0 µg/L	20.0		100	70-130			
Dichloromethane	22.8	3.0 µg/L	20.1		114	70-130			
1,2-Dichloropropane	20.0	1.0 µg/L	20.1		100	70-130			
1,3-Dichloropropane (cis + trans)	34.1	1.0 µg/L	40.0		85	70-130			
Ethylbenzene	17.2	1.0 µg/L	20.0		86	70-130			
Methyl tert-butyl ether	20.1	1.0 µg/L	20.0		100	70-130			
Styrene	17.7	1.0 µg/L	20.0		89	70-130			
1,1,2,2-Tetrachloroethane	19.8	0.5 µg/L	20.1		99	70-130			
Tetrachloroethylene	16.3	1.0 µg/L	20.1		81	70-130			
Toluene	19.4	1.0 µg/L	20.0		97	70-130			
1,1,1-Trichloroethane	16.2	1.0 µg/L	20.0		81	70-130			
1,1,2-Trichloroethane	19.1	1.0 µg/L	20.1		95	70-130			
Trichloroethylene	18.5	1.0 µg/L	20.1		92	70-130			
Trichlorofluoromethane	21.0	1.0 µg/L	20.0		105	60-140			
Vinyl chloride	30.8	1.0 µg/L	20.0		154	60-140			SPK
Xylenes (total)	49.7	2.0 µg/L	60.0		83	70-130			
Surrogate: Toluene-d8	17.8	µg/L	26.5		67	70-130			S02
Surrogate: 4-Bromofluorobenzene	24.6	µg/L	24.9		99	70-130			
Surrogate: 1,4-Dichlorobenzene-d4	29.0	µg/L	25.5		114	70-130			

Duplicate (B0K0601-DUP1)				Source: 20K0317-03 Prepared: 2020-11-07, Analyzed: 2020-11-07					
Benzene	< 0.5	0.5 µg/L		< 0.5				22	
Bromodichloromethane	< 1.0	1.0 µg/L		< 1.0				23	
Bromoform	< 1.0	1.0 µg/L		< 1.0				23	
Carbon tetrachloride	< 0.5	0.5 µg/L		< 0.5				30	
Chlorobenzene	< 1.0	1.0 µg/L		< 1.0				26	
Chloroethane	< 2.0	2.0 µg/L		< 2.0				50	
Chloroform	< 1.0	1.0 µg/L		< 1.0				22	
Dibromochloromethane	< 1.0	1.0 µg/L		< 1.0				28	
1,2-Dibromoethane	< 0.3	0.3 µg/L		< 0.3				30	
Dibromomethane	< 1.0	1.0 µg/L		< 1.0				30	
1,2-Dichlorobenzene	< 0.5	0.5 µg/L		< 0.5				27	
1,3-Dichlorobenzene	< 1.0	1.0 µg/L		< 1.0				30	
1,4-Dichlorobenzene	< 1.0	1.0 µg/L		< 1.0				30	
1,1-Dichloroethane	< 1.0	1.0 µg/L		< 1.0				24	
1,2-Dichloroethane	< 1.0	1.0 µg/L		< 1.0				24	
1,1-Dichloroethylene	< 1.0	1.0 µg/L		< 1.0				30	
cis-1,2-Dichloroethylene	< 1.0	1.0 µg/L		< 1.0				22	
trans-1,2-Dichloroethylene	< 1.0	1.0 µg/L		< 1.0				27	

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 20K0317
2020-11-10 16:16

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Volatile Organic Compounds (VOC), Batch B0K0601, Continued									
Duplicate (B0K0601-DUP1), Continued		Source: 20K0317-03		Prepared: 2020-11-07, Analyzed: 2020-11-07					
Dichloromethane	< 3.0	3.0 µg/L		< 3.0				27	
1,2-Dichloropropane	< 1.0	1.0 µg/L		< 1.0				28	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0 µg/L		< 1.0				30	
Ethylbenzene	< 1.0	1.0 µg/L		< 1.0				30	
Methyl tert-butyl ether	< 1.0	1.0 µg/L		< 1.0				20	
Styrene	< 1.0	1.0 µg/L		< 1.0				30	
1,1,2,2-Tetrachloroethane	< 0.5	0.5 µg/L		< 0.5				30	
Tetrachloroethylene	< 1.0	1.0 µg/L		< 1.0				30	
Toluene	< 1.0	1.0 µg/L		< 1.0				24	
1,1,1-Trichloroethane	< 1.0	1.0 µg/L		< 1.0				30	
1,1,2-Trichloroethane	< 1.0	1.0 µg/L		< 1.0				30	
Trichloroethylene	< 1.0	1.0 µg/L		< 1.0				27	
Trichlorofluoromethane	< 1.0	1.0 µg/L		< 1.0				50	
Vinyl chloride	< 1.0	1.0 µg/L		< 1.0				40	
Xylenes (total)	< 2.0	2.0 µg/L		< 2.0				29	
Surrogate: Toluene-d8	17.4	µg/L	26.5		66	70-130			S02
Surrogate: 4-Bromofluorobenzene	19.1	µg/L	24.9		77	70-130			
Surrogate: 1,4-Dichlorobenzene-d4	23.1	µg/L	25.5		91	70-130			
Matrix Spike (B0K0601-MS1)		Source: 20K0317-03		Prepared: 2020-11-06, Analyzed: 2020-11-06					
Benzene	19.9	0.5 µg/L	20.0	< 0.5	99	70-130			
Bromodichloromethane	18.8	1.0 µg/L	20.0	< 1.0	94	70-130			
Bromoform	20.1	1.0 µg/L	20.1	< 1.0	100	70-130			
Carbon tetrachloride	16.8	0.5 µg/L	20.2	< 0.5	83	70-130			
Chlorobenzene	19.4	1.0 µg/L	20.1	< 1.0	97	70-130			
Chloroethane	26.6	2.0 µg/L	20.0	< 2.0	132	60-140			
Chloroform	20.5	1.0 µg/L	20.1	< 1.0	101	70-130			
Dibromochloromethane	17.4	1.0 µg/L	20.2	< 1.0	86	70-130			
1,2-Dibromoethane	18.1	0.3 µg/L	20.0	< 0.3	90	70-130			
Dibromomethane	19.6	1.0 µg/L	20.0	< 1.0	98	70-130			
1,2-Dichlorobenzene	21.7	0.5 µg/L	20.1	< 0.5	108	70-130			
1,3-Dichlorobenzene	22.0	1.0 µg/L	20.1	< 1.0	109	70-130			
1,4-Dichlorobenzene	22.4	1.0 µg/L	20.1	< 1.0	111	70-130			
1,1-Dichloroethane	21.8	1.0 µg/L	20.1	< 1.0	105	70-130			
1,2-Dichloroethane	20.3	1.0 µg/L	20.1	< 1.0	101	70-130			
1,1-Dichloroethylene	21.4	1.0 µg/L	20.1	< 1.0	106	70-130			
cis-1,2-Dichloroethylene	19.5	1.0 µg/L	20.0	< 1.0	98	70-130			
trans-1,2-Dichloroethylene	20.5	1.0 µg/L	20.0	< 1.0	103	70-130			
Dichloromethane	22.2	3.0 µg/L	20.1	< 3.0	110	70-130			
1,2-Dichloropropane	19.5	1.0 µg/L	20.1	< 1.0	97	70-130			
1,3-Dichloropropene (cis + trans)	34.8	1.0 µg/L	40.0	< 1.0	87	70-130			
Ethylbenzene	15.6	1.0 µg/L	20.0	< 1.0	78	70-130			
Methyl tert-butyl ether	18.2	1.0 µg/L	20.0	< 1.0	90	70-130			
Styrene	18.7	1.0 µg/L	20.0	< 1.0	93	70-130			
1,1,2,2-Tetrachloroethane	26.2	0.5 µg/L	20.1	< 0.5	130	70-130			
Tetrachloroethylene	13.9	1.0 µg/L	20.1	< 1.0	69	70-130			SPK
Toluene	18.9	1.0 µg/L	20.0	< 1.0	93	70-130			
1,1,1-Trichloroethane	17.2	1.0 µg/L	20.0	< 1.0	85	70-130			
1,1,2-Trichloroethane	18.6	1.0 µg/L	20.1	< 1.0	92	70-130			
Trichloroethylene	18.2	1.0 µg/L	20.1	< 1.0	90	70-130			
Trichlorofluoromethane	23.4	1.0 µg/L	20.0	< 1.0	117	60-140			
Vinyl chloride	32.4	1.0 µg/L	20.0	< 1.0	162	60-140			SPK
Xylenes (total)	55.2	2.0 µg/L	60.0	< 2.0	92	70-130			
Surrogate: Toluene-d8	17.8	µg/L	26.5		67	70-130			S02
Surrogate: 4-Bromofluorobenzene	28.6	µg/L	24.9		115	70-130			
Surrogate: 1,4-Dichlorobenzene-d4	36.9	µg/L	25.5		145	70-130			S02

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO Ecoscape Environmental Ltd.
PROJECT 19-2850 - Golden

WORK ORDER 20K0317
REPORTED 2020-11-10 16:16

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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QC Qualifiers:

S02 Surrogate recovery outside of control limits. Data accepted based on acceptable recovery of other surrogates.
 SPK The recovery of this analyte was outside of established control limits.
 SPK1 The recovery of this analyte was outside of established control limits. The data was accepted based on performance of other batch QC.



10/23/20

CARD#

1-BMB-311-BS46

DATE TIME IN LAB

MSF 1-10

25000 Highway 107, Beltsville, MD 20740
 4401-0077 Highway 107, Beltsville, MD 20740
 7720 138 Avenue SW, Edmonton, AB T6E 0A2

Customer Service
 Calling Please Refer to Manual

REPORTED TO: CONTACT: Ecocycle Environmental	INVESTIGATED: CONTACT: Ecocycle E-Waste World
ADDRESS: 50, VIV 2ND	ADDRESS:
CONTACT: Mary White	CONTACT: Mary White
PHONE: 202 337 7337	PHONE:
UNIFORM: NO ANAL X ONE OTHER	UNIFORM: NO ANAL X ONE OTHER
OTHER: NO ANAL X ONE OTHER	OTHER: NO ANAL X ONE OTHER
OTHER: NO ANAL X ONE OTHER	OTHER: NO ANAL X ONE OTHER
OTHER: NO ANAL X ONE OTHER	OTHER: NO ANAL X ONE OTHER
OTHER: NO ANAL X ONE OTHER	OTHER: NO ANAL X ONE OTHER

CHAIN OF CUSTODY RECORD

FORWARD TO:	DATE:	TIME:	INITIALS:
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FORWARD TO:	DATE:	TIME:	INITIALS:
FORWARD TO:	DATE:	TIME:	INITIALS:
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FORWARD TO:	DATE:	TIME:	INITIALS:
FORWARD TO:	DATE:	TIME:	INITIALS:

SAMPLE ID	DATE	TIME	INITIALS	COMMENTS	ANALYSIS REQUESTED	
					ANALYSIS REQUESTED	ANALYSIS REQUESTED
NOV 2 1500	NOV 2 1500	NOV 2 1500	NOV 2 1500	NOV 2 1500	NOV 2 1500	NOV 2 1500
NOV 2 1445	NOV 2 1445	NOV 2 1445	NOV 2 1445	NOV 2 1445	NOV 2 1445	NOV 2 1445
NOV 3 950	NOV 3 950	NOV 3 950	NOV 3 950	NOV 3 950	NOV 3 950	NOV 3 950
NOV 2 750	NOV 2 750	NOV 2 750	NOV 2 750	NOV 2 750	NOV 2 750	NOV 2 750
NOV 2 1215	NOV 2 1215	NOV 2 1215	NOV 2 1215	NOV 2 1215	NOV 2 1215	NOV 2 1215
NOV 2 1145	NOV 2 1145	NOV 2 1145	NOV 2 1145	NOV 2 1145	NOV 2 1145	NOV 2 1145
NOV 2 1045	NOV 2 1045	NOV 2 1045	NOV 2 1045	NOV 2 1045	NOV 2 1045	NOV 2 1045
NOV 3 735	NOV 3 735	NOV 3 735	NOV 3 735	NOV 3 735	NOV 3 735	NOV 3 735
NOV 2 1500	NOV 2 1500	NOV 2 1500	NOV 2 1500	NOV 2 1500	NOV 2 1500	NOV 2 1500
NOV 2 1240	NOV 2 1240	NOV 2 1240	NOV 2 1240	NOV 2 1240	NOV 2 1240	NOV 2 1240

ANALYSIS INSTRUCTIONS	ANALYSIS INSTRUCTIONS
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SAMPLE ID	DATE	TIME	INITIALS	COMMENTS	ANALYSIS REQUESTED	
					ANALYSIS REQUESTED	ANALYSIS REQUESTED
NOV 2 1500	NOV 2 1500	NOV 2 1500	NOV 2 1500	NOV 2 1500	NOV 2 1500	NOV 2 1500
NOV 2 1445	NOV 2 1445	NOV 2 1445	NOV 2 1445	NOV 2 1445	NOV 2 1445	NOV 2 1445
NOV 3 950	NOV 3 950	NOV 3 950	NOV 3 950	NOV 3 950	NOV 3 950	NOV 3 950
NOV 2 750	NOV 2 750	NOV 2 750	NOV 2 750	NOV 2 750	NOV 2 750	NOV 2 750
NOV 2 1215	NOV 2 1215	NOV 2 1215	NOV 2 1215	NOV 2 1215	NOV 2 1215	NOV 2 1215
NOV 2 1145	NOV 2 1145	NOV 2 1145	NOV 2 1145	NOV 2 1145	NOV 2 1145	NOV 2 1145
NOV 2 1045	NOV 2 1045	NOV 2 1045	NOV 2 1045	NOV 2 1045	NOV 2 1045	NOV 2 1045
NOV 3 735	NOV 3 735	NOV 3 735	NOV 3 735	NOV 3 735	NOV 3 735	NOV 3 735
NOV 2 1500	NOV 2 1500	NOV 2 1500	NOV 2 1500	NOV 2 1500	NOV 2 1500	NOV 2 1500
NOV 2 1240	NOV 2 1240	NOV 2 1240	NOV 2 1240	NOV 2 1240	NOV 2 1240	NOV 2 1240

ANALYSIS INSTRUCTIONS	ANALYSIS INSTRUCTIONS
ANALYSIS INSTRUCTIONS	ANALYSIS INSTRUCTIONS
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ANALYSIS INSTRUCTIONS	ANALYSIS INSTRUCTIONS

CERTIFICATE OF ANALYSIS

REPORTED TO Ecoscape Environmental Ltd.
#102 - 450 Neave Court
Kelowna, BC V1V 2M2

ATTENTION Kelsey Tanaka

PO NUMBER 19-2850

PROJECT 19-2850 - Golden

PROJECT INFO Golden

WORK ORDER 0032091

RECEIVED / TEMP 2020-03-25 14:52 / 3°C

REPORTED 2020-04-01 13:28

COC NUMBER No Number

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 acrump@caro.ca

Authorized By:

Alana Crump
Team Lead, Client Service



1-888-311-8846 | www.caro.ca

#110 4011 Viking Way Richmond, BC V6V 2K9 | #102 3677 Highway 97N Kelowna, BC V1X 5C3 | 17225 109 Avenue Edmonton, AB T5S 1H7

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0032091
2020-04-01 13:28

Analyte	Result	RL	Units	Analyzed	Qualifier
MW09-06S (0032091-01) Matrix: Water Sampled: 2020-03-24 18:55					
Anions					
Bromide	< 0.10	0.10	mg/L	2020-03-26	
Chloride	380	0.10	mg/L	2020-03-26	
Fluoride	0.17	0.10	mg/L	2020-03-26	
Nitrate (as N)	30.6	0.010	mg/L	2020-03-26	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-03-26	
Sulfate	688	1.0	mg/L	2020-03-26	
Calculated Parameters					
Hardness, Total (as CaCO3)	1430	0.500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	0.0401	0.00010	mg/L	2020-03-27	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-03-27	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-03-27	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-03-27	
Barium, dissolved	0.0456	0.0050	mg/L	2020-03-27	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-03-27	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-03-27	
Boron, dissolved	1.55	0.0050	mg/L	2020-03-27	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-03-27	
Calcium, dissolved	153	0.20	mg/L	2020-03-27	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-03-27	
Cobalt, dissolved	0.00154	0.00010	mg/L	2020-03-27	
Copper, dissolved	0.00220	0.00040	mg/L	2020-03-27	
Iron, dissolved	< 0.010	0.010	mg/L	2020-03-27	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-03-27	
Magnesium, dissolved	255	0.010	mg/L	2020-03-27	
Manganese, dissolved	0.0789	0.00020	mg/L	2020-03-27	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-03-31	
Molybdenum, dissolved	0.00032	0.00010	mg/L	2020-03-27	
Nickel, dissolved	0.0111	0.00040	mg/L	2020-03-27	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-03-27	
Potassium, dissolved	159	0.10	mg/L	2020-03-27	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-03-27	
Silicon, dissolved	12.0	1.0	mg/L	2020-03-27	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-03-27	
Sodium, dissolved	266	0.10	mg/L	2020-03-27	
Strontium, dissolved	1.52	0.0010	mg/L	2020-03-27	
Sulfur, dissolved	246	3.0	mg/L	2020-03-27	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-03-27	
Thallium, dissolved	0.000055	0.000020	mg/L	2020-03-27	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-03-27	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-03-27	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0032091
2020-04-01 13:28

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW09-06S (0032091-01) | Matrix: Water | Sampled: 2020-03-24 18:55, Continued

Dissolved Metals, Continued

Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-03-27	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-03-27	
Uranium, dissolved	0.00725	0.000020	mg/L	2020-03-27	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-03-27	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-03-27	
Zirconium, dissolved	0.00015	0.00010	mg/L	2020-03-27	

General Parameters

Alkalinity, Total (as CaCO ₃)	975	1.0	mg/L	2020-03-27	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-03-27	
Alkalinity, Bicarbonate (as CaCO ₃)	975	1.0	mg/L	2020-03-27	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-03-27	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-03-27	
Bicarbonate (HCO ₃)	1190	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	1.32	0.050	mg/L	2020-03-26	
BOD, 5-day	< 5.1	2.0	mg/L	2020-03-31	
Chemical Oxygen Demand	29	20	mg/L	2020-03-26	
Conductivity (EC)	3990	2.0	µS/cm	2020-03-27	
pH	7.69	0.10	pH units	2020-03-27	HT2
Solids, Total Dissolved	2630	15	mg/L	2020-03-30	
Solids, Total Suspended	171	2.0	mg/L	2020-03-27	
Turbidity	37.9	0.10	NTU	2020-03-27	

Volatile Organic Compounds (VOC)

Benzene	< 0.5	0.5	µg/L	2020-03-28	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-03-28	
Bromoform	< 1.0	1.0	µg/L	2020-03-28	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-03-28	
Chlorobenzene	< 1.0	1.0	µg/L	2020-03-28	
Chloroethane	< 2.0	2.0	µg/L	2020-03-28	
Chloroform	< 1.0	1.0	µg/L	2020-03-28	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-03-28	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-03-28	
Dibromomethane	< 1.0	1.0	µg/L	2020-03-28	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-03-28	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-03-28	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-03-28	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-03-28	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-03-28	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-03-28	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-03-28	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0032091
2020-04-01 13:28

Analyte	Result	RL	Units	Analyzed	Qualifier
MW09-06S (0032091-01) Matrix: Water Sampled: 2020-03-24 18:55, Continued					
<i>Volatile Organic Compounds (VOC), Continued</i>					
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-03-28	
Dichloromethane	< 3.0	3.0	µg/L	2020-03-28	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-03-28	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-03-28	
Ethylbenzene	< 1.0	1.0	µg/L	2020-03-28	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-03-28	
Styrene	< 1.0	1.0	µg/L	2020-03-28	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-03-28	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-03-28	
Toluene	< 1.0	1.0	µg/L	2020-03-28	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-03-28	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-03-28	
Trichloroethylene	< 1.0	1.0	µg/L	2020-03-28	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-03-28	
Vinyl chloride	< 1.0	1.0	µg/L	2020-03-28	
Xylenes (total)	< 2.0	2.0	µg/L	2020-03-28	
Surrogate: Toluene-d8	103	70-130	%	2020-03-28	
Surrogate: 4-Bromofluorobenzene	103	70-130	%	2020-03-28	
Surrogate: 1,4-Dichlorobenzene-d4	92	70-130	%	2020-03-28	

MW10-08 (0032091-02) | Matrix: Water | Sampled: 2020-03-24 15:20

Anions

Bromide	< 0.10	0.10	mg/L	2020-03-26	
Chloride	629	0.10	mg/L	2020-03-26	
Fluoride	0.18	0.10	mg/L	2020-03-26	
Nitrate (as N)	0.858	0.010	mg/L	2020-03-26	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-03-26	
Sulfate	50.8	1.0	mg/L	2020-03-26	

Calculated Parameters

Hardness, Total (as CaCO3)	634	0.500	mg/L	N/A	
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Dissolved Metals

Lithium, dissolved	0.0185	0.00010	mg/L	2020-03-27	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-03-27	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-03-27	
Arsenic, dissolved	0.00383	0.00050	mg/L	2020-03-27	
Barium, dissolved	0.178	0.0050	mg/L	2020-03-27	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-03-27	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-03-27	
Boron, dissolved	0.228	0.0050	mg/L	2020-03-27	
Cadmium, dissolved	0.000011	0.000010	mg/L	2020-03-27	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0032091
2020-04-01 13:28

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW10-08 (0032091-02) | Matrix: Water | Sampled: 2020-03-24 15:20, Continued

Dissolved Metals, Continued

Calcium, dissolved	84.0	0.20	mg/L	2020-03-27	
Chromium, dissolved	0.00059	0.00050	mg/L	2020-03-27	
Cobalt, dissolved	0.00030	0.00010	mg/L	2020-03-27	
Copper, dissolved	0.00164	0.00040	mg/L	2020-03-27	
Iron, dissolved	< 0.010	0.010	mg/L	2020-03-27	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-03-27	
Magnesium, dissolved	103	0.010	mg/L	2020-03-27	
Manganese, dissolved	0.00914	0.00020	mg/L	2020-03-27	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-03-31	
Molybdenum, dissolved	0.00131	0.00010	mg/L	2020-03-27	
Nickel, dissolved	0.00105	0.00040	mg/L	2020-03-27	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-03-27	
Potassium, dissolved	5.83	0.10	mg/L	2020-03-27	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-03-27	
Silicon, dissolved	8.9	1.0	mg/L	2020-03-27	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-03-27	
Sodium, dissolved	303	0.10	mg/L	2020-03-27	
Strontium, dissolved	1.18	0.0010	mg/L	2020-03-27	
Sulfur, dissolved	18.8	3.0	mg/L	2020-03-27	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-03-27	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-03-27	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-03-27	
Tin, dissolved	0.00030	0.00020	mg/L	2020-03-27	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-03-27	
Tungsten, dissolved	0.0119	0.0010	mg/L	2020-03-27	
Uranium, dissolved	0.00192	0.000020	mg/L	2020-03-27	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-03-27	
Zinc, dissolved	0.0055	0.0040	mg/L	2020-03-27	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-03-27	

General Parameters

Alkalinity, Total (as CaCO ₃)	530	1.0	mg/L	2020-03-27	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-03-27	
Alkalinity, Bicarbonate (as CaCO ₃)	530	1.0	mg/L	2020-03-27	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-03-27	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-03-27	
Bicarbonate (HCO ₃)	646	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	0.099	0.050	mg/L	2020-03-26	
BOD, 5-day	15.4	2.0	mg/L	2020-03-31	BOD4
Chemical Oxygen Demand	33	20	mg/L	2020-03-26	
Conductivity (EC)	2700	2.0	µS/cm	2020-03-27	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0032091
2020-04-01 13:28

Analyte	Result	RL	Units	Analyzed	Qualifier
MW10-08 (0032091-02) Matrix: Water Sampled: 2020-03-24 15:20, Continued					
<i>General Parameters, Continued</i>					
pH	7.95	0.10	pH units	2020-03-27	HT2
Solids, Total Dissolved	1550	15	mg/L	2020-03-30	
Solids, Total Suspended	87.2	2.0	mg/L	2020-03-27	
Turbidity	41.5	0.10	NTU	2020-03-27	
<i>Volatile Organic Compounds (VOC)</i>					
Benzene	< 0.5	0.5	µg/L	2020-03-28	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-03-28	
Bromoform	< 1.0	1.0	µg/L	2020-03-28	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-03-28	
Chlorobenzene	< 1.0	1.0	µg/L	2020-03-28	
Chloroethane	< 2.0	2.0	µg/L	2020-03-28	
Chloroform	< 1.0	1.0	µg/L	2020-03-28	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-03-28	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-03-28	
Dibromomethane	< 1.0	1.0	µg/L	2020-03-28	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-03-28	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-03-28	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-03-28	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-03-28	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-03-28	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-03-28	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-03-28	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-03-28	
Dichloromethane	< 3.0	3.0	µg/L	2020-03-28	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-03-28	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-03-28	
Ethylbenzene	< 1.0	1.0	µg/L	2020-03-28	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-03-28	
Styrene	< 1.0	1.0	µg/L	2020-03-28	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-03-28	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-03-28	
Toluene	< 1.0	1.0	µg/L	2020-03-28	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-03-28	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-03-28	
Trichloroethylene	< 1.0	1.0	µg/L	2020-03-28	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-03-28	
Vinyl chloride	< 1.0	1.0	µg/L	2020-03-28	
Xylenes (total)	< 2.0	2.0	µg/L	2020-03-28	
Surrogate: Toluene-d8	103	70-130	%	2020-03-28	
Surrogate: 4-Bromofluorobenzene	101	70-130	%	2020-03-28	
Surrogate: 1,4-Dichlorobenzene-d4	90	70-130	%	2020-03-28	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0032091
2020-04-01 13:28

Analyte	Result	RL	Units	Analyzed	Qualifier
MW18-10 (0032091-03) Matrix: Water Sampled: 2020-03-25 09:30					
Anions					
Bromide	< 0.10	0.10	mg/L	2020-03-26	
Chloride	356	0.10	mg/L	2020-03-26	
Fluoride	< 0.10	0.10	mg/L	2020-03-26	
Nitrate (as N)	40.0	0.010	mg/L	2020-03-26	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-03-26	
Sulfate	71.4	1.0	mg/L	2020-03-26	
Calculated Parameters					
Hardness, Total (as CaCO ₃)	1050	0.500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	0.0224	0.00010	mg/L	2020-03-27	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-03-27	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-03-27	
Arsenic, dissolved	0.00104	0.00050	mg/L	2020-03-27	
Barium, dissolved	0.303	0.0050	mg/L	2020-03-27	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-03-27	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-03-27	
Boron, dissolved	0.430	0.0050	mg/L	2020-03-27	
Cadmium, dissolved	0.000028	0.000010	mg/L	2020-03-27	
Calcium, dissolved	99.0	0.20	mg/L	2020-03-27	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-03-27	
Cobalt, dissolved	0.00473	0.00010	mg/L	2020-03-27	
Copper, dissolved	0.00155	0.00040	mg/L	2020-03-27	
Iron, dissolved	< 0.010	0.010	mg/L	2020-03-27	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-03-27	
Magnesium, dissolved	195	0.010	mg/L	2020-03-27	
Manganese, dissolved	0.174	0.00020	mg/L	2020-03-27	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-03-31	
Molybdenum, dissolved	0.00108	0.00010	mg/L	2020-03-27	
Nickel, dissolved	0.0401	0.00040	mg/L	2020-03-27	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-03-27	
Potassium, dissolved	28.9	0.10	mg/L	2020-03-27	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-03-27	
Silicon, dissolved	10.4	1.0	mg/L	2020-03-27	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-03-27	
Sodium, dissolved	185	0.10	mg/L	2020-03-27	
Strontium, dissolved	1.42	0.0010	mg/L	2020-03-27	
Sulfur, dissolved	29.8	3.0	mg/L	2020-03-27	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-03-27	
Thallium, dissolved	0.000099	0.000020	mg/L	2020-03-27	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-03-27	
Tin, dissolved	0.00030	0.00020	mg/L	2020-03-27	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0032091
2020-04-01 13:28

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW18-10 (0032091-03) | Matrix: Water | Sampled: 2020-03-25 09:30, Continued

Dissolved Metals, Continued

Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-03-27	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-03-27	
Uranium, dissolved	0.00399	0.000020	mg/L	2020-03-27	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-03-27	
Zinc, dissolved	0.0103	0.0040	mg/L	2020-03-27	
Zirconium, dissolved	0.00025	0.00010	mg/L	2020-03-27	

General Parameters

Alkalinity, Total (as CaCO ₃)	806	1.0	mg/L	2020-03-27	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-03-27	
Alkalinity, Bicarbonate (as CaCO ₃)	806	1.0	mg/L	2020-03-27	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-03-27	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-03-27	
Bicarbonate (HCO ₃)	983	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	1.44	0.050	mg/L	2020-03-26	
BOD, 5-day	< 4.9	2.0	mg/L	2020-04-01	
Chemical Oxygen Demand	42	20	mg/L	2020-03-26	
Conductivity (EC)	2770	2.0	µS/cm	2020-03-27	
pH	7.81	0.10	pH units	2020-03-27	HT2
Solids, Total Dissolved	1550	15	mg/L	2020-03-30	
Solids, Total Suspended	75.2	2.0	mg/L	2020-03-27	
Turbidity	65.8	0.10	NTU	2020-03-27	

Volatile Organic Compounds (VOC)

Benzene	< 0.5	0.5	µg/L	2020-03-28	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-03-28	
Bromoform	< 1.0	1.0	µg/L	2020-03-28	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-03-28	
Chlorobenzene	< 1.0	1.0	µg/L	2020-03-28	
Chloroethane	< 2.0	2.0	µg/L	2020-03-28	
Chloroform	< 1.0	1.0	µg/L	2020-03-28	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-03-28	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-03-28	
Dibromomethane	< 1.0	1.0	µg/L	2020-03-28	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-03-28	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-03-28	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-03-28	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-03-28	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-03-28	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-03-28	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-03-28	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0032091
2020-04-01 13:28

Analyte	Result	RL	Units	Analyzed	Qualifier
MW18-10 (0032091-03) Matrix: Water Sampled: 2020-03-25 09:30, Continued					
<i>Volatile Organic Compounds (VOC), Continued</i>					
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-03-28	
Dichloromethane	< 3.0	3.0	µg/L	2020-03-28	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-03-28	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-03-28	
Ethylbenzene	< 1.0	1.0	µg/L	2020-03-28	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-03-28	
Styrene	< 1.0	1.0	µg/L	2020-03-28	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-03-28	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-03-28	
Toluene	< 1.0	1.0	µg/L	2020-03-28	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-03-28	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-03-28	
Trichloroethylene	< 1.0	1.0	µg/L	2020-03-28	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-03-28	
Vinyl chloride	< 1.0	1.0	µg/L	2020-03-28	
Xylenes (total)	< 2.0	2.0	µg/L	2020-03-28	
Surrogate: Toluene-d8	103	70-130	%	2020-03-28	
Surrogate: 4-Bromofluorobenzene	101	70-130	%	2020-03-28	
Surrogate: 1,4-Dichlorobenzene-d4	90	70-130	%	2020-03-28	

MW18-11 (0032091-04) | Matrix: Water | Sampled: 2020-03-24 13:55

Anions

Bromide	< 0.10	0.10	mg/L	2020-03-26	
Chloride	113	0.10	mg/L	2020-03-26	
Fluoride	0.77	0.10	mg/L	2020-03-26	
Nitrate (as N)	< 0.010	0.010	mg/L	2020-03-26	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-03-26	
Sulfate	32.0	1.0	mg/L	2020-03-26	

Calculated Parameters

Hardness, Total (as CaCO3)	680	0.500	mg/L	N/A	
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Dissolved Metals

Lithium, dissolved	0.0271	0.00010	mg/L	2020-03-27	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-03-27	
Antimony, dissolved	0.00218	0.00020	mg/L	2020-03-27	
Arsenic, dissolved	0.00599	0.00050	mg/L	2020-03-27	
Barium, dissolved	0.0154	0.0050	mg/L	2020-03-27	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-03-27	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-03-27	
Boron, dissolved	0.284	0.0050	mg/L	2020-03-27	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-03-27	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0032091
2020-04-01 13:28

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW18-11 (0032091-04) | Matrix: Water | Sampled: 2020-03-24 13:55, Continued

Dissolved Metals, Continued

Calcium, dissolved	36.1	0.20	mg/L	2020-03-27	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-03-27	
Cobalt, dissolved	0.00016	0.00010	mg/L	2020-03-27	
Copper, dissolved	< 0.00040	0.00040	mg/L	2020-03-27	
Iron, dissolved	0.052	0.010	mg/L	2020-03-27	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-03-27	
Magnesium, dissolved	143	0.010	mg/L	2020-03-27	
Manganese, dissolved	0.0605	0.00020	mg/L	2020-03-27	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-03-31	
Molybdenum, dissolved	0.00193	0.00010	mg/L	2020-03-27	
Nickel, dissolved	0.0103	0.00040	mg/L	2020-03-27	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-03-27	
Potassium, dissolved	4.81	0.10	mg/L	2020-03-27	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-03-27	
Silicon, dissolved	4.3	1.0	mg/L	2020-03-27	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-03-27	
Sodium, dissolved	106	0.10	mg/L	2020-03-27	
Strontium, dissolved	0.481	0.0010	mg/L	2020-03-27	
Sulfur, dissolved	20.0	3.0	mg/L	2020-03-27	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-03-27	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-03-27	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-03-27	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-03-27	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-03-27	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-03-27	
Uranium, dissolved	0.000068	0.000020	mg/L	2020-03-27	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-03-27	
Zinc, dissolved	0.0069	0.0040	mg/L	2020-03-27	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-03-27	

General Parameters

Alkalinity, Total (as CaCO ₃)	716	1.0	mg/L	2020-03-27	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-03-27	
Alkalinity, Bicarbonate (as CaCO ₃)	716	1.0	mg/L	2020-03-27	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-03-27	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-03-27	
Bicarbonate (HCO ₃)	874	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	0.191	0.050	mg/L	2020-03-26	
BOD, 5-day	< 5.1	2.0	mg/L	2020-03-31	
Chemical Oxygen Demand	< 20	20	mg/L	2020-03-26	
Conductivity (EC)	1460	2.0	µS/cm	2020-03-27	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0032091
2020-04-01 13:28

Analyte	Result	RL	Units	Analyzed	Qualifier
MW18-11 (0032091-04) Matrix: Water Sampled: 2020-03-24 13:55, Continued					
<i>General Parameters, Continued</i>					
pH	8.25	0.10	pH units	2020-03-27	HT2
Solids, Total Dissolved	850	15	mg/L	2020-03-30	
Solids, Total Suspended	28.4	2.0	mg/L	2020-03-27	
Turbidity	52.4	0.10	NTU	2020-03-27	
<i>Volatile Organic Compounds (VOC)</i>					
Benzene	< 0.5	0.5	µg/L	2020-03-28	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-03-28	
Bromoform	< 1.0	1.0	µg/L	2020-03-28	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-03-28	
Chlorobenzene	< 1.0	1.0	µg/L	2020-03-28	
Chloroethane	< 2.0	2.0	µg/L	2020-03-28	
Chloroform	< 1.0	1.0	µg/L	2020-03-28	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-03-28	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-03-28	
Dibromomethane	< 1.0	1.0	µg/L	2020-03-28	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-03-28	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-03-28	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-03-28	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-03-28	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-03-28	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-03-28	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-03-28	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-03-28	
Dichloromethane	< 3.0	3.0	µg/L	2020-03-28	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-03-28	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-03-28	
Ethylbenzene	< 1.0	1.0	µg/L	2020-03-28	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-03-28	
Styrene	< 1.0	1.0	µg/L	2020-03-28	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-03-28	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-03-28	
Toluene	8.8	1.0	µg/L	2020-03-28	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-03-28	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-03-28	
Trichloroethylene	< 1.0	1.0	µg/L	2020-03-28	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-03-28	
Vinyl chloride	< 1.0	1.0	µg/L	2020-03-28	
Xylenes (total)	< 2.0	2.0	µg/L	2020-03-28	
Surrogate: Toluene-d8	104	70-130	%	2020-03-28	
Surrogate: 4-Bromofluorobenzene	101	70-130	%	2020-03-28	
Surrogate: 1,4-Dichlorobenzene-d4	91	70-130	%	2020-03-28	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0032091
2020-04-01 13:28

Analyte	Result	RL	Units	Analyzed	Qualifier
Town Well #4 (0032091-05) Matrix: Water Sampled: 2020-03-25 06:55					
Anions					
Bromide	< 0.10	0.10	mg/L	2020-03-26	
Chloride	99.0	0.10	mg/L	2020-03-26	
Fluoride	< 0.10	0.10	mg/L	2020-03-26	
Nitrate (as N)	1.55	0.010	mg/L	2020-03-26	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-03-26	
Sulfate	42.1	1.0	mg/L	2020-03-26	
Calculated Parameters					
Hardness, Total (as CaCO3)	414	0.500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	0.00242	0.00010	mg/L	2020-03-27	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-03-27	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-03-27	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-03-27	
Barium, dissolved	0.216	0.0050	mg/L	2020-03-27	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-03-27	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-03-27	
Boron, dissolved	0.0912	0.0050	mg/L	2020-03-27	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-03-27	
Calcium, dissolved	93.9	0.20	mg/L	2020-03-27	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-03-27	
Cobalt, dissolved	< 0.00010	0.00010	mg/L	2020-03-27	
Copper, dissolved	0.00216	0.00040	mg/L	2020-03-27	
Iron, dissolved	< 0.010	0.010	mg/L	2020-03-27	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-03-27	
Magnesium, dissolved	43.6	0.010	mg/L	2020-03-27	
Manganese, dissolved	< 0.00020	0.00020	mg/L	2020-03-27	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-03-31	
Molybdenum, dissolved	0.00018	0.00010	mg/L	2020-03-27	
Nickel, dissolved	< 0.00040	0.00040	mg/L	2020-03-27	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-03-27	
Potassium, dissolved	1.97	0.10	mg/L	2020-03-27	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-03-27	
Silicon, dissolved	5.4	1.0	mg/L	2020-03-27	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-03-27	
Sodium, dissolved	59.4	0.10	mg/L	2020-03-27	
Strontium, dissolved	0.481	0.0010	mg/L	2020-03-27	
Sulfur, dissolved	17.0	3.0	mg/L	2020-03-27	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-03-27	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-03-27	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-03-27	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-03-27	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0032091
2020-04-01 13:28

Analyte	Result	RL	Units	Analyzed	Qualifier
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Town Well #4 (0032091-05) | Matrix: Water | Sampled: 2020-03-25 06:55, Continued

Dissolved Metals, Continued

Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-03-27	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-03-27	
Uranium, dissolved	0.00128	0.000020	mg/L	2020-03-27	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-03-27	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-03-27	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-03-27	

General Parameters

Alkalinity, Total (as CaCO ₃)	374	1.0	mg/L	2020-03-28	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-03-28	
Alkalinity, Bicarbonate (as CaCO ₃)	374	1.0	mg/L	2020-03-28	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-03-28	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-03-28	
Bicarbonate (HCO ₃)	456	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	< 0.020	0.050	mg/L	2020-03-26	
BOD, 5-day	< 4.9	2.0	mg/L	2020-04-01	
Chemical Oxygen Demand	< 20	20	mg/L	2020-03-26	
Conductivity (EC)	945	2.0	µS/cm	2020-03-30	
pH	7.98	0.10	pH units	2020-03-28	HT2
Solids, Total Dissolved	607	15	mg/L	2020-03-30	
Solids, Total Suspended	< 2.0	2.0	mg/L	2020-03-27	
Turbidity	0.12	0.10	NTU	2020-03-27	

Volatile Organic Compounds (VOC)

Benzene	< 0.5	0.5	µg/L	2020-03-29	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-03-29	
Bromoform	< 1.0	1.0	µg/L	2020-03-29	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-03-29	
Chlorobenzene	< 1.0	1.0	µg/L	2020-03-29	
Chloroethane	< 2.0	2.0	µg/L	2020-03-29	
Chloroform	< 1.0	1.0	µg/L	2020-03-29	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-03-29	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-03-29	
Dibromomethane	< 1.0	1.0	µg/L	2020-03-29	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-03-29	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-03-29	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-03-29	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-03-29	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-03-29	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-03-29	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-03-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0032091
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Analyte	Result	RL	Units	Analyzed	Qualifier
Town Well #4 (0032091-05) Matrix: Water Sampled: 2020-03-25 06:55, Continued					
<i>Volatile Organic Compounds (VOC), Continued</i>					
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-03-29	
Dichloromethane	< 3.0	3.0	µg/L	2020-03-29	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-03-29	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-03-29	
Ethylbenzene	< 1.0	1.0	µg/L	2020-03-29	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-03-29	
Styrene	< 1.0	1.0	µg/L	2020-03-29	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-03-29	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-03-29	
Toluene	< 1.0	1.0	µg/L	2020-03-29	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-03-29	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-03-29	
Trichloroethylene	< 1.0	1.0	µg/L	2020-03-29	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-03-29	
Vinyl chloride	< 1.0	1.0	µg/L	2020-03-29	
Xylenes (total)	< 2.0	2.0	µg/L	2020-03-29	
Surrogate: Toluene-d8	103	70-130	%	2020-03-29	
Surrogate: 4-Bromofluorobenzene	101	70-130	%	2020-03-29	
Surrogate: 1,4-Dichlorobenzene-d4	89	70-130	%	2020-03-29	

DMW-1b (0032091-06) | Matrix: Water | Sampled: 2020-03-24 14:55

Anions

Bromide	< 0.10	0.10	mg/L	2020-03-26	
Chloride	9.49	0.10	mg/L	2020-03-26	
Fluoride	0.72	0.10	mg/L	2020-03-26	
Nitrate (as N)	0.334	0.010	mg/L	2020-03-26	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-03-26	
Sulfate	232	1.0	mg/L	2020-03-26	

Calculated Parameters

Hardness, Total (as CaCO3)	560	0.500	mg/L	N/A	
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Dissolved Metals

Lithium, dissolved	0.0532	0.00010	mg/L	2020-03-27	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-03-27	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-03-27	
Arsenic, dissolved	0.00121	0.00050	mg/L	2020-03-27	
Barium, dissolved	0.0155	0.0050	mg/L	2020-03-27	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-03-27	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-03-27	
Boron, dissolved	0.394	0.0050	mg/L	2020-03-27	
Cadmium, dissolved	0.000010	0.000010	mg/L	2020-03-27	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0032091
2020-04-01 13:28

Analyte	Result	RL	Units	Analyzed	Qualifier
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DMW-1b (0032091-06) | Matrix: Water | Sampled: 2020-03-24 14:55, Continued

Dissolved Metals, Continued

Calcium, dissolved	73.5	0.20	mg/L	2020-03-27	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-03-27	
Cobalt, dissolved	0.00069	0.00010	mg/L	2020-03-27	
Copper, dissolved	0.00384	0.00040	mg/L	2020-03-27	
Iron, dissolved	< 0.010	0.010	mg/L	2020-03-27	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-03-27	
Magnesium, dissolved	91.2	0.010	mg/L	2020-03-27	
Manganese, dissolved	0.00377	0.00020	mg/L	2020-03-27	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-03-31	
Molybdenum, dissolved	0.00058	0.00010	mg/L	2020-03-27	
Nickel, dissolved	0.00169	0.00040	mg/L	2020-03-27	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-03-27	
Potassium, dissolved	8.87	0.10	mg/L	2020-03-27	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-03-27	
Silicon, dissolved	7.2	1.0	mg/L	2020-03-27	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-03-27	
Sodium, dissolved	48.3	0.10	mg/L	2020-03-27	
Strontium, dissolved	4.95	0.0010	mg/L	2020-03-27	
Sulfur, dissolved	85.7	3.0	mg/L	2020-03-27	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-03-27	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-03-27	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-03-27	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-03-27	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-03-27	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-03-27	
Uranium, dissolved	0.000917	0.000020	mg/L	2020-03-27	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-03-27	
Zinc, dissolved	0.0282	0.0040	mg/L	2020-03-27	
Zirconium, dissolved	0.00057	0.00010	mg/L	2020-03-27	

General Parameters

Alkalinity, Total (as CaCO ₃)	443	1.0	mg/L	2020-03-28	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-03-28	
Alkalinity, Bicarbonate (as CaCO ₃)	443	1.0	mg/L	2020-03-28	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-03-28	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-03-28	
Bicarbonate (HCO ₃)	540	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	0.721	0.050	mg/L	2020-03-26	
BOD, 5-day	< 5.1	2.0	mg/L	2020-03-31	
Chemical Oxygen Demand	< 20	20	mg/L	2020-03-26	
Conductivity (EC)	1090	2.0	µS/cm	2020-03-30	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0032091
2020-04-01 13:28

Analyte	Result	RL	Units	Analyzed	Qualifier
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DMW-1b (0032091-06) | Matrix: Water | Sampled: 2020-03-24 14:55, Continued

General Parameters, Continued

pH	7.90	0.10	pH units	2020-03-28	HT2
Solids, Total Dissolved	784	15	mg/L	2020-03-30	
Solids, Total Suspended	< 2.0	2.0	mg/L	2020-03-27	
Turbidity	0.12	0.10	NTU	2020-03-27	

Volatile Organic Compounds (VOC)

Benzene	< 0.5	0.5	µg/L	2020-03-29	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-03-29	
Bromoform	< 1.0	1.0	µg/L	2020-03-29	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-03-29	
Chlorobenzene	< 1.0	1.0	µg/L	2020-03-29	
Chloroethane	< 2.0	2.0	µg/L	2020-03-29	
Chloroform	< 1.0	1.0	µg/L	2020-03-29	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-03-29	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-03-29	
Dibromomethane	< 1.0	1.0	µg/L	2020-03-29	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-03-29	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-03-29	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-03-29	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-03-29	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-03-29	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-03-29	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-03-29	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-03-29	
Dichloromethane	< 3.0	3.0	µg/L	2020-03-29	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-03-29	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-03-29	
Ethylbenzene	< 1.0	1.0	µg/L	2020-03-29	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-03-29	
Styrene	< 1.0	1.0	µg/L	2020-03-29	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-03-29	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-03-29	
Toluene	< 1.0	1.0	µg/L	2020-03-29	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-03-29	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-03-29	
Trichloroethylene	< 1.0	1.0	µg/L	2020-03-29	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-03-29	
Vinyl chloride	< 1.0	1.0	µg/L	2020-03-29	
Xylenes (total)	< 2.0	2.0	µg/L	2020-03-29	
Surrogate: Toluene-d8	100	70-130	%	2020-03-29	
Surrogate: 4-Bromofluorobenzene	95	70-130	%	2020-03-29	
Surrogate: 1,4-Dichlorobenzene-d4	83	70-130	%	2020-03-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0032091
2020-04-01 13:28

Analyte	Result	RL	Units	Analyzed	Qualifier
DMW-4 (0032091-07) Matrix: Water Sampled: 2020-03-24 14:36					
Anions					
Bromide	< 0.10	0.10	mg/L	2020-03-26	
Chloride	50.5	0.10	mg/L	2020-03-26	
Fluoride	1.25	0.10	mg/L	2020-03-26	
Nitrate (as N)	< 0.010	0.010	mg/L	2020-03-26	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-03-26	
Sulfate	110	1.0	mg/L	2020-03-26	
Calculated Parameters					
Hardness, Total (as CaCO3)	596	0.500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	0.0254	0.00010	mg/L	2020-03-27	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-03-27	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-03-27	
Arsenic, dissolved	0.0470	0.00050	mg/L	2020-03-27	
Barium, dissolved	0.0219	0.0050	mg/L	2020-03-27	
Beryllium, dissolved	0.00013	0.00010	mg/L	2020-03-27	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-03-27	
Boron, dissolved	0.185	0.0050	mg/L	2020-03-27	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-03-27	
Calcium, dissolved	70.7	0.20	mg/L	2020-03-27	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-03-27	
Cobalt, dissolved	< 0.00010	0.00010	mg/L	2020-03-27	
Copper, dissolved	< 0.00040	0.00040	mg/L	2020-03-27	
Iron, dissolved	0.394	0.010	mg/L	2020-03-27	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-03-27	
Magnesium, dissolved	102	0.010	mg/L	2020-03-27	
Manganese, dissolved	0.00448	0.00020	mg/L	2020-03-27	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-03-31	
Molybdenum, dissolved	0.00035	0.00010	mg/L	2020-03-27	
Nickel, dissolved	0.00197	0.00040	mg/L	2020-03-27	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-03-27	
Potassium, dissolved	4.79	0.10	mg/L	2020-03-27	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-03-27	
Silicon, dissolved	8.2	1.0	mg/L	2020-03-27	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-03-27	
Sodium, dissolved	28.0	0.10	mg/L	2020-03-27	
Strontium, dissolved	1.73	0.0010	mg/L	2020-03-27	
Sulfur, dissolved	43.0	3.0	mg/L	2020-03-27	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-03-27	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-03-27	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-03-27	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-03-27	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0032091
2020-04-01 13:28

Analyte	Result	RL	Units	Analyzed	Qualifier
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DMW-4 (0032091-07) | Matrix: Water | Sampled: 2020-03-24 14:36, Continued

Dissolved Metals, Continued

Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-03-27	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-03-27	
Uranium, dissolved	0.000086	0.000020	mg/L	2020-03-27	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-03-27	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-03-27	
Zirconium, dissolved	0.00173	0.00010	mg/L	2020-03-27	

General Parameters

Alkalinity, Total (as CaCO ₃)	500	1.0	mg/L	2020-03-28	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-03-28	
Alkalinity, Bicarbonate (as CaCO ₃)	500	1.0	mg/L	2020-03-28	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-03-28	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-03-28	
Bicarbonate (HCO ₃)	610	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	0.215	0.050	mg/L	2020-03-26	
BOD, 5-day	< 5.1	2.0	mg/L	2020-03-31	
Chemical Oxygen Demand	< 20	20	mg/L	2020-03-26	
Conductivity (EC)	1110	2.0	µS/cm	2020-03-30	
pH	7.90	0.10	pH units	2020-03-28	HT2
Solids, Total Dissolved	726	15	mg/L	2020-03-30	
Solids, Total Suspended	< 2.0	2.0	mg/L	2020-03-27	
Turbidity	4.84	0.10	NTU	2020-03-27	

Volatile Organic Compounds (VOC)

Benzene	< 0.5	0.5	µg/L	2020-03-29	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-03-29	
Bromoform	< 1.0	1.0	µg/L	2020-03-29	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-03-29	
Chlorobenzene	< 1.0	1.0	µg/L	2020-03-29	
Chloroethane	< 2.0	2.0	µg/L	2020-03-29	
Chloroform	< 1.0	1.0	µg/L	2020-03-29	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-03-29	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-03-29	
Dibromomethane	< 1.0	1.0	µg/L	2020-03-29	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-03-29	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-03-29	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-03-29	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-03-29	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-03-29	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-03-29	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-03-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0032091
2020-04-01 13:28

Analyte	Result	RL	Units	Analyzed	Qualifier
DMW-4 (0032091-07) Matrix: Water Sampled: 2020-03-24 14:36, Continued					
<i>Volatile Organic Compounds (VOC), Continued</i>					
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-03-29	
Dichloromethane	< 3.0	3.0	µg/L	2020-03-29	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-03-29	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-03-29	
Ethylbenzene	< 1.0	1.0	µg/L	2020-03-29	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-03-29	
Styrene	< 1.0	1.0	µg/L	2020-03-29	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-03-29	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-03-29	
Toluene	< 1.0	1.0	µg/L	2020-03-29	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-03-29	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-03-29	
Trichloroethylene	< 1.0	1.0	µg/L	2020-03-29	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-03-29	
Vinyl chloride	< 1.0	1.0	µg/L	2020-03-29	
Xylenes (total)	< 2.0	2.0	µg/L	2020-03-29	
Surrogate: Toluene-d8	104	70-130	%	2020-03-29	
Surrogate: 4-Bromofluorobenzene	99	70-130	%	2020-03-29	
Surrogate: 1,4-Dichlorobenzene-d4	89	70-130	%	2020-03-29	

MW09-06D (0032091-08) | Matrix: Water | Sampled: 2020-03-24 17:40

Anions

Bromide	< 0.10	0.10	mg/L	2020-03-26	
Chloride	399	0.10	mg/L	2020-03-26	
Fluoride	0.18	0.10	mg/L	2020-03-26	
Nitrate (as N)	32.7	0.010	mg/L	2020-03-26	
Nitrite (as N)	0.012	0.010	mg/L	2020-03-26	
Sulfate	690	1.0	mg/L	2020-03-26	

Calculated Parameters

Hardness, Total (as CaCO3)	1450	0.500	mg/L	N/A	
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Dissolved Metals

Lithium, dissolved	0.0400	0.00010	mg/L	2020-03-27	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-03-27	
Antimony, dissolved	0.00036	0.00020	mg/L	2020-03-27	
Arsenic, dissolved	0.00051	0.00050	mg/L	2020-03-27	
Barium, dissolved	0.0503	0.0050	mg/L	2020-03-27	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-03-27	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-03-27	
Boron, dissolved	1.63	0.0050	mg/L	2020-03-27	
Cadmium, dissolved	0.000012	0.000010	mg/L	2020-03-27	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0032091
2020-04-01 13:28

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW09-06D (0032091-08) | Matrix: Water | Sampled: 2020-03-24 17:40, Continued

Dissolved Metals, Continued

Calcium, dissolved	155	0.20	mg/L	2020-03-27	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-03-27	
Cobalt, dissolved	0.00180	0.00010	mg/L	2020-03-27	
Copper, dissolved	0.00261	0.00040	mg/L	2020-03-27	
Iron, dissolved	0.011	0.010	mg/L	2020-03-27	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-03-27	
Magnesium, dissolved	257	0.010	mg/L	2020-03-27	
Manganese, dissolved	0.113	0.00020	mg/L	2020-03-27	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-03-31	
Molybdenum, dissolved	0.00034	0.00010	mg/L	2020-03-27	
Nickel, dissolved	0.0121	0.00040	mg/L	2020-03-27	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-03-27	
Potassium, dissolved	166	0.10	mg/L	2020-03-27	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-03-27	
Silicon, dissolved	12.2	1.0	mg/L	2020-03-27	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-03-27	
Sodium, dissolved	278	0.10	mg/L	2020-03-27	
Strontium, dissolved	1.54	0.0010	mg/L	2020-03-27	
Sulfur, dissolved	252	3.0	mg/L	2020-03-27	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-03-27	
Thallium, dissolved	0.000055	0.000020	mg/L	2020-03-27	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-03-27	
Tin, dissolved	0.00063	0.00020	mg/L	2020-03-27	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-03-27	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-03-27	
Uranium, dissolved	0.00728	0.000020	mg/L	2020-03-27	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-03-27	
Zinc, dissolved	0.0062	0.0040	mg/L	2020-03-27	
Zirconium, dissolved	0.00019	0.00010	mg/L	2020-03-27	

General Parameters

Alkalinity, Total (as CaCO ₃)	958	1.0	mg/L	2020-03-28	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-03-28	
Alkalinity, Bicarbonate (as CaCO ₃)	958	1.0	mg/L	2020-03-28	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-03-28	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-03-28	
Bicarbonate (HCO ₃)	1170	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	1.24	0.050	mg/L	2020-03-26	
BOD, 5-day	5.9	2.0	mg/L	2020-03-31	
Chemical Oxygen Demand	98	20	mg/L	2020-03-26	
Conductivity (EC)	3820	2.0	µS/cm	2020-03-30	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0032091
2020-04-01 13:28

Analyte	Result	RL	Units	Analyzed	Qualifier
MW09-06D (0032091-08) Matrix: Water Sampled: 2020-03-24 17:40, Continued					
<i>General Parameters, Continued</i>					
pH	7.65	0.10	pH units	2020-03-28	HT2
Solids, Total Dissolved	2730	15	mg/L	2020-03-30	
Solids, Total Suspended	20.0	2.0	mg/L	2020-03-27	
Turbidity	25.2	0.10	NTU	2020-03-27	
<i>Volatile Organic Compounds (VOC)</i>					
Benzene	< 0.5	0.5	µg/L	2020-03-29	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-03-29	
Bromoform	< 1.0	1.0	µg/L	2020-03-29	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-03-29	
Chlorobenzene	< 1.0	1.0	µg/L	2020-03-29	
Chloroethane	< 2.0	2.0	µg/L	2020-03-29	
Chloroform	< 1.0	1.0	µg/L	2020-03-29	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-03-29	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-03-29	
Dibromomethane	< 1.0	1.0	µg/L	2020-03-29	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-03-29	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-03-29	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-03-29	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-03-29	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-03-29	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-03-29	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-03-29	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-03-29	
Dichloromethane	< 3.0	3.0	µg/L	2020-03-29	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-03-29	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-03-29	
Ethylbenzene	< 1.0	1.0	µg/L	2020-03-29	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-03-29	
Styrene	< 1.0	1.0	µg/L	2020-03-29	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-03-29	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-03-29	
Toluene	< 1.0	1.0	µg/L	2020-03-29	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-03-29	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-03-29	
Trichloroethylene	< 1.0	1.0	µg/L	2020-03-29	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-03-29	
Vinyl chloride	< 1.0	1.0	µg/L	2020-03-29	
Xylenes (total)	< 2.0	2.0	µg/L	2020-03-29	
Surrogate: Toluene-d8	102	70-130	%	2020-03-29	
Surrogate: 4-Bromofluorobenzene	101	70-130	%	2020-03-29	
Surrogate: 1,4-Dichlorobenzene-d4	89	70-130	%	2020-03-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0032091
2020-04-01 13:28

Analyte	Result	RL	Units	Analyzed	Qualifier
Dup A (0032091-09) Matrix: Water Sampled: 2020-03-24 18:55					
Anions					
Bromide	< 0.10	0.10	mg/L	2020-03-26	
Chloride	378	0.10	mg/L	2020-03-26	
Fluoride	0.18	0.10	mg/L	2020-03-26	
Nitrate (as N)	30.6	0.010	mg/L	2020-03-26	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-03-26	
Sulfate	690	1.0	mg/L	2020-03-26	
Calculated Parameters					
Hardness, Total (as CaCO3)	1460	0.500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	0.0400	0.00010	mg/L	2020-03-27	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-03-27	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-03-27	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-03-27	
Barium, dissolved	0.0458	0.0050	mg/L	2020-03-27	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-03-27	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-03-27	
Boron, dissolved	1.81	0.0050	mg/L	2020-03-27	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-03-27	
Calcium, dissolved	158	0.20	mg/L	2020-03-27	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-03-27	
Cobalt, dissolved	0.00157	0.00010	mg/L	2020-03-27	
Copper, dissolved	0.00243	0.00040	mg/L	2020-03-27	
Iron, dissolved	< 0.010	0.010	mg/L	2020-03-27	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-03-27	
Magnesium, dissolved	258	0.010	mg/L	2020-03-27	
Manganese, dissolved	0.0789	0.00020	mg/L	2020-03-27	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-03-31	
Molybdenum, dissolved	0.00036	0.00010	mg/L	2020-03-27	
Nickel, dissolved	0.0117	0.00040	mg/L	2020-03-27	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-03-27	
Potassium, dissolved	162	0.10	mg/L	2020-03-27	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-03-27	
Silicon, dissolved	12.5	1.0	mg/L	2020-03-27	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-03-27	
Sodium, dissolved	271	0.10	mg/L	2020-03-27	
Strontium, dissolved	1.58	0.0010	mg/L	2020-03-27	
Sulfur, dissolved	253	3.0	mg/L	2020-03-27	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-03-27	
Thallium, dissolved	0.000055	0.000020	mg/L	2020-03-27	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-03-27	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-03-27	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0032091
2020-04-01 13:28

Analyte	Result	RL	Units	Analyzed	Qualifier
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Dup A (0032091-09) | Matrix: Water | Sampled: 2020-03-24 18:55, Continued

Dissolved Metals, Continued

Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-03-27	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-03-27	
Uranium, dissolved	0.00721	0.000020	mg/L	2020-03-27	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-03-27	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-03-27	
Zirconium, dissolved	0.00016	0.00010	mg/L	2020-03-27	

General Parameters

Alkalinity, Total (as CaCO ₃)	965	1.0	mg/L	2020-03-28	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-03-28	
Alkalinity, Bicarbonate (as CaCO ₃)	965	1.0	mg/L	2020-03-28	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-03-28	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-03-28	
Bicarbonate (HCO ₃)	1180	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	1.10	0.050	mg/L	2020-03-26	
BOD, 5-day	< 5.1	2.0	mg/L	2020-03-31	
Chemical Oxygen Demand	25	20	mg/L	2020-03-26	
Conductivity (EC)	3850	2.0	µS/cm	2020-03-30	
pH	7.63	0.10	pH units	2020-03-28	HT2
Solids, Total Dissolved	2660	15	mg/L	2020-03-30	
Solids, Total Suspended	198	2.0	mg/L	2020-03-27	
Turbidity	35.7	0.10	NTU	2020-03-27	

Volatile Organic Compounds (VOC)

Benzene	< 0.5	0.5	µg/L	2020-03-29	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-03-29	
Bromoform	< 1.0	1.0	µg/L	2020-03-29	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-03-29	
Chlorobenzene	< 1.0	1.0	µg/L	2020-03-29	
Chloroethane	< 2.0	2.0	µg/L	2020-03-29	
Chloroform	< 1.0	1.0	µg/L	2020-03-29	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-03-29	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-03-29	
Dibromomethane	< 1.0	1.0	µg/L	2020-03-29	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-03-29	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-03-29	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-03-29	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-03-29	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-03-29	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-03-29	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-03-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0032091
2020-04-01 13:28

Analyte	Result	RL	Units	Analyzed	Qualifier
Dup A (0032091-09) Matrix: Water Sampled: 2020-03-24 18:55, Continued					
<i>Volatile Organic Compounds (VOC), Continued</i>					
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-03-29	
Dichloromethane	< 3.0	3.0	µg/L	2020-03-29	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-03-29	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-03-29	
Ethylbenzene	< 1.0	1.0	µg/L	2020-03-29	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-03-29	
Styrene	< 1.0	1.0	µg/L	2020-03-29	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-03-29	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-03-29	
Toluene	< 1.0	1.0	µg/L	2020-03-29	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-03-29	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-03-29	
Trichloroethylene	< 1.0	1.0	µg/L	2020-03-29	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-03-29	
Vinyl chloride	< 1.0	1.0	µg/L	2020-03-29	
Xylenes (total)	< 2.0	2.0	µg/L	2020-03-29	
Surrogate: Toluene-d8	102	70-130	%	2020-03-29	
Surrogate: 4-Bromofluorobenzene	98	70-130	%	2020-03-29	
Surrogate: 1,4-Dichlorobenzene-d4	87	70-130	%	2020-03-29	

Sample Qualifiers:

BOD4 The BOD result shows evidence of Toxicity.

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

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0032091
2020-04-01 13:28

Analysis Description	Method Ref.	Technique	Location
Alkalinity in Water	SM 2320 B* (2017)	Titration with H ₂ SO ₄	Kelowna
Ammonia, Total in Water	SM 4500-NH ₃ G* (2017)	Automated Colorimetry (Phenate)	Kelowna
Anions in Water	SM 4110 B (2017)	Ion Chromatography	Kelowna
Biochemical Oxygen Demand in Water	SM 5210 B (2017)	Dissolved Oxygen Meter	Kelowna
Chemical Oxygen Demand in Water	SM 5220 D* (2017)	Closed Reflux, Colorimetry	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 Spectrometry (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*	BrCl ₂ Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	Richmond
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
Solids, Total Suspended in Water	SM 2540 D* (2017)	Gravimetry (Dried at 103-105C)	Kelowna
Turbidity in Water	SM 2130 B (2017)	Nephelometry	Kelowna
Volatile Organic Compounds in Water	EPA 5030B / EPA 8260D	Purge&Trap / GC-MSD (SIM)	Richmond

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
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
pH units	pH < 7 = acidic, pH > 7 = basic
µg/L	Micrograms per litre
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

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: acrump@caro.ca

APPENDIX 2: QUALITY CONTROL RESULTS

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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 B0C2187									
Blank (B0C2187-BLK1)			Prepared: 2020-03-26, Analyzed: 2020-03-26						
Bromide	< 0.10	0.10 mg/L							
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 (B0C2187-BLK2)			Prepared: 2020-03-26, Analyzed: 2020-03-26						
Bromide	< 0.10	0.10 mg/L							
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 (B0C2187-BLK3)			Prepared: 2020-03-26, Analyzed: 2020-03-26						
Bromide	< 0.10	0.10 mg/L							
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 (B0C2187-BS1)			Prepared: 2020-03-26, Analyzed: 2020-03-26						
Bromide	4.07	0.10 mg/L	4.00		102	85-115			
Chloride	16.1	0.10 mg/L	16.0		100	90-110			
Fluoride	4.06	0.10 mg/L	4.00		102	88-108			
Nitrate (as N)	4.06	0.010 mg/L	4.00		102	90-110			
Nitrite (as N)	2.09	0.010 mg/L	2.00		105	85-115			
Sulfate	15.8	1.0 mg/L	16.0		99	90-110			
LCS (B0C2187-BS2)			Prepared: 2020-03-26, Analyzed: 2020-03-26						
Bromide	4.03	0.10 mg/L	4.00		101	85-115			
Chloride	16.0	0.10 mg/L	16.0		100	90-110			
Fluoride	4.08	0.10 mg/L	4.00		102	88-108			
Nitrate (as N)	4.03	0.010 mg/L	4.00		101	90-110			

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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Anions, Batch B0C2187, Continued

LCS (B0C2187-BS2), Continued

Prepared: 2020-03-26, Analyzed: 2020-03-26

Nitrite (as N)	2.07	0.010 mg/L	2.00		104	85-115			
Sulfate	15.8	1.0 mg/L	16.0		99	90-110			

LCS (B0C2187-BS3)

Prepared: 2020-03-26, Analyzed: 2020-03-26

Bromide	4.09	0.10 mg/L	4.00		102	85-115			
Chloride	16.0	0.10 mg/L	16.0		100	90-110			
Fluoride	4.07	0.10 mg/L	4.00		102	88-108			
Nitrate (as N)	4.05	0.010 mg/L	4.00		101	90-110			
Nitrite (as N)	2.07	0.010 mg/L	2.00		103	85-115			
Sulfate	15.8	1.0 mg/L	16.0		99	90-110			

Dissolved Metals, Batch B0C2355

Blank (B0C2355-BLK1)

Prepared: 2020-03-27, Analyzed: 2020-03-27

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							
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 (B0C2355-BS1)

Prepared: 2020-03-27, Analyzed: 2020-03-27

Lithium, dissolved	0.0206	0.00010 mg/L	0.0200		103	80-120			
Aluminum, dissolved	0.0216	0.0050 mg/L	0.0199		108	80-120			

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Dissolved Metals, Batch B0C2355, Continued									
LCS (B0C2355-BS1), Continued					Prepared: 2020-03-27, Analyzed: 2020-03-27				
Antimony, dissolved	0.0193	0.00020 mg/L	0.0200		97	80-120			
Arsenic, dissolved	0.0203	0.00050 mg/L	0.0200		102	80-120			
Barium, dissolved	0.0193	0.0050 mg/L	0.0198		97	80-120			
Beryllium, dissolved	0.0210	0.00010 mg/L	0.0198		106	80-120			
Bismuth, dissolved	0.0208	0.00010 mg/L	0.0200		104	80-120			
Boron, dissolved	0.0163	0.0050 mg/L	0.0200		82	80-120			
Cadmium, dissolved	0.0192	0.000010 mg/L	0.0199		96	80-120			
Calcium, dissolved	2.11	0.20 mg/L	2.02		104	80-120			
Chromium, dissolved	0.0202	0.00050 mg/L	0.0198		102	80-120			
Cobalt, dissolved	0.0201	0.00010 mg/L	0.0199		101	80-120			
Copper, dissolved	0.0208	0.00040 mg/L	0.0200		104	80-120			
Iron, dissolved	1.96	0.010 mg/L	2.02		97	80-120			
Lead, dissolved	0.0202	0.00020 mg/L	0.0199		101	80-120			
Magnesium, dissolved	1.93	0.010 mg/L	2.02		96	80-120			
Manganese, dissolved	0.0194	0.00020 mg/L	0.0199		97	80-120			
Molybdenum, dissolved	0.0199	0.00010 mg/L	0.0200		99	80-120			
Nickel, dissolved	0.0200	0.00040 mg/L	0.0200		100	80-120			
Phosphorus, dissolved	2.00	0.050 mg/L	2.00		100	80-120			
Potassium, dissolved	1.94	0.10 mg/L	2.02		96	80-120			
Selenium, dissolved	0.0201	0.00050 mg/L	0.0200		101	80-120			
Silicon, dissolved	2.2	1.0 mg/L	2.00		112	80-120			
Silver, dissolved	0.0190	0.000050 mg/L	0.0200		95	80-120			
Sodium, dissolved	2.00	0.10 mg/L	2.02		99	80-120			
Strontium, dissolved	0.0198	0.0010 mg/L	0.0200		99	80-120			
Sulfur, dissolved	5.7	3.0 mg/L	5.00		114	80-120			
Tellurium, dissolved	0.0190	0.00050 mg/L	0.0200		95	80-120			
Thallium, dissolved	0.0207	0.000020 mg/L	0.0199		104	80-120			
Thorium, dissolved	0.0198	0.00010 mg/L	0.0200		99	80-120			
Tin, dissolved	0.0200	0.00020 mg/L	0.0200		100	80-120			
Titanium, dissolved	0.0215	0.0050 mg/L	0.0200		107	80-120			
Tungsten, dissolved	0.0200	0.0010 mg/L	0.0200		100	80-120			
Uranium, dissolved	0.0202	0.000020 mg/L	0.0200		101	80-120			
Vanadium, dissolved	0.0200	0.0010 mg/L	0.0200		100	80-120			
Zinc, dissolved	0.0214	0.0040 mg/L	0.0200		107	80-120			
Zirconium, dissolved	0.0197	0.00010 mg/L	0.0200		99	80-120			
Reference (B0C2355-SRM1)					Prepared: 2020-03-27, Analyzed: 2020-03-27				
Lithium, dissolved	0.102	0.00010 mg/L	0.100		102	77-127			
Aluminum, dissolved	0.210	0.0050 mg/L	0.235		90	79-114			
Antimony, dissolved	0.0441	0.00020 mg/L	0.0431		102	89-123			
Arsenic, dissolved	0.440	0.00050 mg/L	0.423		104	87-113			
Barium, dissolved	2.89	0.0050 mg/L	3.30		88	85-114			
Beryllium, dissolved	0.221	0.00010 mg/L	0.209		106	79-122			
Boron, dissolved	1.35	0.0050 mg/L	1.65		82	79-117			
Cadmium, dissolved	0.209	0.000010 mg/L	0.221		95	89-112			
Calcium, dissolved	7.80	0.20 mg/L	7.72		101	85-120			
Chromium, dissolved	0.432	0.00050 mg/L	0.434		100	87-113			
Cobalt, dissolved	0.125	0.00010 mg/L	0.124		100	90-117			
Copper, dissolved	0.825	0.00040 mg/L	0.815		101	90-115			
Iron, dissolved	1.25	0.010 mg/L	1.27		99	86-112			
Lead, dissolved	0.108	0.00020 mg/L	0.110		98	90-113			
Magnesium, dissolved	6.35	0.010 mg/L	6.59		96	84-116			
Manganese, dissolved	0.323	0.00020 mg/L	0.342		94	85-113			
Molybdenum, dissolved	0.417	0.00010 mg/L	0.404		103	87-112			
Nickel, dissolved	0.833	0.00040 mg/L	0.835		100	90-114			
Phosphorus, dissolved	0.488	0.050 mg/L	0.499		98	74-119			

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Dissolved Metals, Batch B0C2355, Continued									
Reference (B0C2355-SRM1), Continued				Prepared: 2020-03-27, Analyzed: 2020-03-27					
Potassium, dissolved	2.84	0.10 mg/L	2.88		98	78-119			
Selenium, dissolved	0.0337	0.00050 mg/L	0.0324		104	89-123			
Sodium, dissolved	17.0	0.10 mg/L	18.0		94	81-117			
Strontium, dissolved	0.896	0.0010 mg/L	0.935		96	82-111			
Thallium, dissolved	0.0392	0.000020 mg/L	0.0385		102	90-113			
Uranium, dissolved	0.245	0.000020 mg/L	0.258		95	87-113			
Vanadium, dissolved	0.856	0.0010 mg/L	0.873		98	85-110			
Zinc, dissolved	0.887	0.0040 mg/L	0.848		105	88-114			

Dissolved Metals, Batch B0C2465

Blank (B0C2465-BLK1)				Prepared: 2020-03-30, Analyzed: 2020-03-31					
Mercury, dissolved	< 0.000010	0.000010 mg/L							
Reference (B0C2465-SRM1)				Prepared: 2020-03-30, Analyzed: 2020-03-31					
Mercury, dissolved	0.00507	0.000010 mg/L	0.00489		104	80-120			

General Parameters, Batch B0C2196

Blank (B0C2196-BLK1)				Prepared: 2020-03-26, Analyzed: 2020-03-26					
Ammonia, Total (as N)	< 0.020	0.020 mg/L							
Blank (B0C2196-BLK2)				Prepared: 2020-03-26, Analyzed: 2020-03-26					
Ammonia, Total (as N)	< 0.020	0.020 mg/L							
Blank (B0C2196-BLK3)				Prepared: 2020-03-26, Analyzed: 2020-03-26					
Ammonia, Total (as N)	< 0.020	0.020 mg/L							
LCS (B0C2196-BS1)				Prepared: 2020-03-26, Analyzed: 2020-03-26					
Ammonia, Total (as N)	0.942	0.020 mg/L	1.00		94	90-115			
LCS (B0C2196-BS2)				Prepared: 2020-03-26, Analyzed: 2020-03-26					
Ammonia, Total (as N)	0.979	0.020 mg/L	1.00		98	90-115			
LCS (B0C2196-BS3)				Prepared: 2020-03-26, Analyzed: 2020-03-26					
Ammonia, Total (as N)	0.972	0.020 mg/L	1.00		97	90-115			

General Parameters, Batch B0C2209

Blank (B0C2209-BLK1)				Prepared: 2020-03-26, Analyzed: 2020-03-26					
Chemical Oxygen Demand	< 20	20 mg/L							
LCS (B0C2209-BS1)				Prepared: 2020-03-26, Analyzed: 2020-03-26					
Chemical Oxygen Demand	506	20 mg/L	500		101	89-115			

General Parameters, Batch B0C2231

Blank (B0C2231-BLK1)				Prepared: 2020-03-26, Analyzed: 2020-03-31					
BOD, 5-day	< 2.0	2.0 mg/L							
LCS (B0C2231-BS1)				Prepared: 2020-03-26, Analyzed: 2020-03-31					
BOD, 5-day	189	2.0 mg/L	180		105	85-115			

General Parameters, Batch B0C2299

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
General Parameters, Batch B0C2299, Continued									
Blank (B0C2299-BLK1)				Prepared: 2020-03-27, Analyzed: 2020-03-27					
Solids, Total Suspended	< 2.0	2.0 mg/L							
Blank (B0C2299-BLK2)				Prepared: 2020-03-27, Analyzed: 2020-03-27					
Solids, Total Suspended	< 2.0	2.0 mg/L							
LCS (B0C2299-BS1)				Prepared: 2020-03-27, Analyzed: 2020-03-27					
Solids, Total Suspended	92.0	10.0 mg/L	100		92	85-115			
LCS (B0C2299-BS2)				Prepared: 2020-03-27, Analyzed: 2020-03-27					
Solids, Total Suspended	94.0	10.0 mg/L	100		94	85-115			
Duplicate (B0C2299-DUP2)				Source: 0032091-04		Prepared: 2020-03-27, Analyzed: 2020-03-27			
Solids, Total Suspended	30.4	2.0 mg/L		28.4			7	20	
General Parameters, Batch B0C2300									
Blank (B0C2300-BLK1)				Prepared: 2020-03-27, Analyzed: 2020-03-27					
Alkalinity, Total (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Bicarbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0 mg/L							
Conductivity (EC)	< 2.0	2.0 µS/cm							
Blank (B0C2300-BLK2)				Prepared: 2020-03-27, Analyzed: 2020-03-27					
Alkalinity, Total (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Bicarbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0 mg/L							
Conductivity (EC)	< 2.0	2.0 µS/cm							
LCS (B0C2300-BS1)				Prepared: 2020-03-27, Analyzed: 2020-03-27					
Alkalinity, Total (as CaCO ₃)	106	1.0 mg/L	100		106	80-120			
LCS (B0C2300-BS2)				Prepared: 2020-03-27, Analyzed: 2020-03-27					
Alkalinity, Total (as CaCO ₃)	104	1.0 mg/L	100		104	80-120			
LCS (B0C2300-BS3)				Prepared: 2020-03-27, Analyzed: 2020-03-27					
Conductivity (EC)	1400	2.0 µS/cm	1410		100	95-104			
LCS (B0C2300-BS4)				Prepared: 2020-03-27, Analyzed: 2020-03-27					
Conductivity (EC)	1400	2.0 µS/cm	1410		99	95-104			
Duplicate (B0C2300-DUP2)				Source: 0032091-01		Prepared: 2020-03-27, Analyzed: 2020-03-27			
Alkalinity, Total (as CaCO ₃)	975	1.0 mg/L		975			< 1	10	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0 mg/L		< 1.0				10	
Alkalinity, Bicarbonate (as CaCO ₃)	975	1.0 mg/L		975			< 1	10	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0 mg/L		< 1.0				10	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0 mg/L		< 1.0				10	
Conductivity (EC)	3890	2.0 µS/cm		3990			3	5	
pH	7.70	0.10 pH units		7.69			< 1	4	
Reference (B0C2300-SRM1)				Prepared: 2020-03-27, Analyzed: 2020-03-27					
pH	6.97	0.10 pH units	7.01		99	98-102			

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
General Parameters, Batch B0C2300, Continued									
Reference (B0C2300-SRM2)				Prepared: 2020-03-27, Analyzed: 2020-03-27					
pH	6.96	0.10 pH units	7.01		99	98-102			
General Parameters, Batch B0C2310									
Blank (B0C2310-BLK1)				Prepared: 2020-03-27, Analyzed: 2020-04-01					
BOD, 5-day	< 2.0	2.0 mg/L							
LCS (B0C2310-BS1)				Prepared: 2020-03-27, Analyzed: 2020-04-01					
BOD, 5-day	191	40.6 mg/L	180		106	85-115			
General Parameters, Batch B0C2348									
Blank (B0C2348-BLK1)				Prepared: 2020-03-27, Analyzed: 2020-03-27					
Turbidity	< 0.10	0.10 NTU							
Blank (B0C2348-BLK2)				Prepared: 2020-03-27, Analyzed: 2020-03-27					
Turbidity	< 0.10	0.10 NTU							
LCS (B0C2348-BS1)				Prepared: 2020-03-27, Analyzed: 2020-03-27					
Turbidity	37.8	0.10 NTU	40.0		94	90-110			
LCS (B0C2348-BS2)				Prepared: 2020-03-27, Analyzed: 2020-03-27					
Turbidity	39.6	0.10 NTU	40.0		99	90-110			
Duplicate (B0C2348-DUP1)				Source: 0032091-02	Prepared: 2020-03-27, Analyzed: 2020-03-27				
Turbidity	43.5	0.10 NTU	41.5				5	15	
Duplicate (B0C2348-DUP2)				Source: 0032091-04	Prepared: 2020-03-27, Analyzed: 2020-03-27				
Turbidity	52.9	0.10 NTU	52.4				< 1	15	
General Parameters, Batch B0C2378									
Blank (B0C2378-BLK1)				Prepared: 2020-03-28, Analyzed: 2020-03-28					
Alkalinity, Total (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Bicarbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0 mg/L							
Conductivity (EC)	< 2.0	2.0 µS/cm							
Blank (B0C2378-BLK2)				Prepared: 2020-03-28, Analyzed: 2020-03-28					
Alkalinity, Total (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Bicarbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0 mg/L							
Conductivity (EC)	< 2.0	2.0 µS/cm							
Blank (B0C2378-BLK3)				Prepared: 2020-03-28, Analyzed: 2020-03-28					
Alkalinity, Total (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Bicarbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0 mg/L							
Conductivity (EC)	< 2.0	2.0 µS/cm							

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0032091
2020-04-01 13:28

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
General Parameters, Batch B0C2378, Continued									
LCS (B0C2378-BS1)				Prepared: 2020-03-28, Analyzed: 2020-03-28					
Alkalinity, Total (as CaCO ₃)	103	1.0 mg/L	100		103	80-120			
LCS (B0C2378-BS2)				Prepared: 2020-03-28, Analyzed: 2020-03-28					
Alkalinity, Total (as CaCO ₃)	103	1.0 mg/L	100		103	80-120			
LCS (B0C2378-BS3)				Prepared: 2020-03-28, Analyzed: 2020-03-28					
Alkalinity, Total (as CaCO ₃)	103	1.0 mg/L	100		103	80-120			
LCS (B0C2378-BS4)				Prepared: 2020-03-30, Analyzed: 2020-03-30					
Conductivity (EC)	1380	2.0 µS/cm	1410		98	95-104			
LCS (B0C2378-BS5)				Prepared: 2020-03-30, Analyzed: 2020-03-30					
Conductivity (EC)	1410	2.0 µS/cm	1410		100	95-104			
LCS (B0C2378-BS6)				Prepared: 2020-03-30, Analyzed: 2020-03-30					
Conductivity (EC)	1420	2.0 µS/cm	1410		101	95-104			
Reference (B0C2378-SRM1)				Prepared: 2020-03-28, Analyzed: 2020-03-28					
pH	6.96	0.10 pH units	7.01		99	98-102			
Reference (B0C2378-SRM2)				Prepared: 2020-03-28, Analyzed: 2020-03-28					
pH	6.96	0.10 pH units	7.01		99	98-102			
Reference (B0C2378-SRM3)				Prepared: 2020-03-28, Analyzed: 2020-03-28					
pH	6.95	0.10 pH units	7.01		99	98-102			

General Parameters, Batch B0C2435

Blank (B0C2435-BLK1)				Prepared: 2020-03-30, Analyzed: 2020-03-30					
Solids, Total Dissolved	< 15	15 mg/L							
LCS (B0C2435-BS1)				Prepared: 2020-03-30, Analyzed: 2020-03-30					
Solids, Total Dissolved	238	15 mg/L	240		99	85-115			
Duplicate (B0C2435-DUP1)				Source: 0032091-03		Prepared: 2020-03-30, Analyzed: 2020-03-30			
Solids, Total Dissolved	1530	15 mg/L		1550			1	15	

Volatile Organic Compounds (VOC), Batch B0C2401

Blank (B0C2401-BLK1)				Prepared: 2020-04-01, Analyzed: 2020-04-01					
Benzene	< 0.5	0.5 µg/L							
Bromodichloromethane	< 1.0	1.0 µg/L							
Bromoform	< 1.0	1.0 µg/L							
Carbon tetrachloride	< 0.5	0.5 µg/L							
Chlorobenzene	< 1.0	1.0 µg/L							
Chloroethane	< 2.0	2.0 µg/L							
Chloroform	< 1.0	1.0 µg/L							
Dibromochloromethane	< 1.0	1.0 µg/L							
1,2-Dibromoethane	< 0.3	0.3 µg/L							
Dibromomethane	< 1.0	1.0 µg/L							
1,2-Dichlorobenzene	< 0.5	0.5 µg/L							
1,3-Dichlorobenzene	< 1.0	1.0 µg/L							
1,4-Dichlorobenzene	< 1.0	1.0 µg/L							
1,1-Dichloroethane	< 1.0	1.0 µg/L							
1,2-Dichloroethane	< 1.0	1.0 µg/L							
1,1-Dichloroethylene	< 1.0	1.0 µg/L							

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0032091
2020-04-01 13:28

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Volatile Organic Compounds (VOC), Batch B0C2401, Continued									
Blank (B0C2401-BLK1), Continued					Prepared: 2020-04-01, Analyzed: 2020-04-01				
cis-1,2-Dichloroethylene	< 1.0	1.0 µg/L							
trans-1,2-Dichloroethylene	< 1.0	1.0 µg/L							
Dichloromethane	< 3.0	3.0 µg/L							
1,2-Dichloropropane	< 1.0	1.0 µg/L							
1,3-Dichloropropane (cis + trans)	< 1.0	1.0 µg/L							
Ethylbenzene	< 1.0	1.0 µg/L							
Methyl tert-butyl ether	< 1.0	1.0 µg/L							
Styrene	< 1.0	1.0 µg/L							
1,1,2,2-Tetrachloroethane	< 0.5	0.5 µg/L							
Tetrachloroethylene	< 1.0	1.0 µg/L							
Toluene	< 1.0	1.0 µg/L							
1,1,1-Trichloroethane	< 1.0	1.0 µg/L							
1,1,2-Trichloroethane	< 1.0	1.0 µg/L							
Trichloroethylene	< 1.0	1.0 µg/L							
Trichlorofluoromethane	< 1.0	1.0 µg/L							
Vinyl chloride	< 1.0	1.0 µg/L							
Xylenes (total)	< 2.0	2.0 µg/L							
Surrogate: Toluene-d8	25.9	µg/L	26.5		98	70-130			
Surrogate: 4-Bromofluorobenzene	24.6	µg/L	24.9		99	70-130			
Surrogate: 1,4-Dichlorobenzene-d4	20.8	µg/L	25.5		82	70-130			
LCS (B0C2401-BS1)					Prepared: 2020-03-29, Analyzed: 2020-03-29				
Benzene	18.8	0.5 µg/L	20.0		94	70-130			
Bromodichloromethane	19.6	1.0 µg/L	20.0		98	70-130			
Bromoform	19.2	1.0 µg/L	20.1		96	70-130			
Carbon tetrachloride	19.5	0.5 µg/L	20.2		96	70-130			
Chlorobenzene	20.6	1.0 µg/L	20.1		103	70-130			
Chloroethane	17.9	2.0 µg/L	20.0		90	60-140			
Chloroform	19.9	1.0 µg/L	20.1		99	70-130			
Dibromochloromethane	19.3	1.0 µg/L	20.2		95	70-130			
1,2-Dibromoethane	19.4	0.3 µg/L	20.0		97	70-130			
Dibromomethane	19.0	1.0 µg/L	20.0		95	70-130			
1,2-Dichlorobenzene	21.6	0.5 µg/L	20.1		107	70-130			
1,3-Dichlorobenzene	23.0	1.0 µg/L	20.1		114	70-130			
1,4-Dichlorobenzene	24.9	1.0 µg/L	20.1		124	70-130			
1,1-Dichloroethane	19.0	1.0 µg/L	20.1		94	70-130			
1,2-Dichloroethane	19.8	1.0 µg/L	20.0		99	70-130			
1,1-Dichloroethylene	17.5	1.0 µg/L	20.0		88	70-130			
cis-1,2-Dichloroethylene	19.4	1.0 µg/L	20.0		97	70-130			
trans-1,2-Dichloroethylene	18.9	1.0 µg/L	20.0		95	70-130			
Dichloromethane	19.1	3.0 µg/L	20.1		95	70-130			
1,2-Dichloropropane	19.2	1.0 µg/L	20.1		95	70-130			
1,3-Dichloropropane (cis + trans)	37.5	1.0 µg/L	40.0		94	70-130			
Ethylbenzene	18.8	1.0 µg/L	20.0		94	70-130			
Methyl tert-butyl ether	19.2	1.0 µg/L	20.0		96	70-130			
Styrene	18.1	1.0 µg/L	20.0		90	70-130			
1,1,2,2-Tetrachloroethane	20.1	0.5 µg/L	20.1		100	70-130			
Tetrachloroethylene	20.2	1.0 µg/L	20.1		101	70-130			
Toluene	22.1	1.0 µg/L	20.0		111	70-130			
1,1,1-Trichloroethane	18.0	1.0 µg/L	20.0		90	70-130			
1,1,2-Trichloroethane	19.8	1.0 µg/L	20.1		98	70-130			
Trichloroethylene	20.9	1.0 µg/L	20.1		104	70-130			
Trichlorofluoromethane	19.7	1.0 µg/L	20.0		98	60-140			
Vinyl chloride	18.7	1.0 µg/L	20.0		94	60-140			
Xylenes (total)	58.3	2.0 µg/L	60.0		97	70-130			
Surrogate: Toluene-d8	28.2	µg/L	26.5		106	70-130			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO Ecoscape Environmental Ltd.
PROJECT 19-2850 - Golden

WORK ORDER 0032091
REPORTED 2020-04-01 13:28

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
<i>Volatile Organic Compounds (VOC), Batch B0C2401, Continued</i>									
LCS (B0C2401-BS1), Continued				Prepared: 2020-03-29, Analyzed: 2020-03-29					
Surrogate: 4-Bromofluorobenzene	32.8	µg/L	24.9		132	70-130			S02
Surrogate: 1,4-Dichlorobenzene-d4	33.0	µg/L	25.5		129	70-130			

QC Qualifiers:

S02 Surrogate recovery outside of control limits. Data accepted based on acceptable recovery of other surrogates.



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 1-800-677-4466 or 410-528-7171
 7/12/97 10:59am 200, 2000000, 00 TSS 001

CHAIN OF CUSTODY RECORD (cc)

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PAYEE TO: *****
 COMPANY: Leetecpe and Animal
 ADDRESS: *****

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TF-IDF:

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WSP Unit 8

CLIENT SAMPLE ID:	DATE	TIME	TEMP	WIND	WAVE	SEA	SWELL	WIND	WAVE	SEA	SWELL	WIND	WAVE	SEA	SWELL
1000-100	10/10/20	15:00	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
1000-100	10/10/20	15:20	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2
1000-100	10/10/20	15:40	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4
1000-100	10/10/20	16:00	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
1000-100	10/10/20	16:20	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2
1000-100	10/10/20	16:40	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4
1000-100	10/10/20	17:00	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0
1000-100	10/10/20	17:20	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2
1000-100	10/10/20	17:40	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4
1000-100	10/10/20	18:00	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
1000-100	10/10/20	18:20	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2
1000-100	10/10/20	18:40	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4
1000-100	10/10/20	19:00	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0
1000-100	10/10/20	19:20	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2
1000-100	10/10/20	19:40	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.4
1000-100	10/10/20	20:00	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
1000-100	10/10/20	20:20	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2
1000-100	10/10/20	20:40	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4
1000-100	10/10/20	21:00	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
1000-100	10/10/20	21:20	21.2	21.2	21.2	21.2	21.2	21.2	21.2	21.2	21.2	21.2	21.2	21.2	21.2
1000-100	10/10/20	21:40	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
1000-100	10/10/20	22:00	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
1000-100	10/10/20	22:20	22.2	22.2	22.2	22.2									

ANALYSES REQUESTED:

[illegible]

COMP. PROTECTION: 120V 60Hz 10A 1000W
 120V 60Hz 10A 1000W
 120V 60Hz 10A 1000W
 120V 60Hz 10A 1000W

SUBJECT MATTER

0000000000	1	0000000000
0000000000	1	0000000000
0000000000	1	0000000000
0000000000	1	0000000000

[illegible]

Page 35 of 35

CERTIFICATE OF ANALYSIS

REPORTED TO Ecoscape Environmental Ltd.
#102 - 450 Neave Court
Kelowna, BC V1V 2M2

ATTENTION Kelsey Tanaka

PO NUMBER 19-2850

PROJECT 19-2850 - Golden

PROJECT INFO Golden

WORK ORDER 0051806

RECEIVED / TEMP 2020-05-21 13:45 / 2°C

REPORTED 2020-05-28 17:38

COC NUMBER No Number

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

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 acrump@caro.ca

Authorized By:

Alana Crump
Team Lead, Client Service



1-888-311-8846 | www.caro.ca

#110 4011 Viking Way Richmond, BC V6V 2K9 | #102 3677 Highway 97N Kelowna, BC V1X 5C3 | 17225 109 Avenue Edmonton, AB T5S 1H7

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0051806
2020-05-28 17:38

Analyte	Result	RL	Units	Analyzed	Qualifier
MW09-06S (0051806-01) Matrix: Water Sampled: 2020-05-20 12:25					
Anions					
Bromide	0.34	0.10	mg/L	2020-05-24	
Chloride	398	0.10	mg/L	2020-05-24	
Fluoride	0.16	0.10	mg/L	2020-05-24	
Nitrate (as N)	43.4	0.010	mg/L	2020-05-24	HT1
Nitrite (as N)	0.480	0.010	mg/L	2020-05-24	HT1
Sulfate	611	1.0	mg/L	2020-05-24	
BCMOE Aggregate Hydrocarbons					
VHw (6-10)	< 100	100	µg/L	2020-05-27	
VPHw	< 100	100	µg/L	N/A	
EPHw10-19	< 250	250	µg/L	2020-05-25	
EPHw19-32	< 250	250	µg/L	2020-05-25	
LEPHw	< 250	250	µg/L	N/A	
HEPHw	< 250	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	83	60-126	%	2020-05-25	
Calculated Parameters					
Hardness, Total (as CaCO3)	1450	0.500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	0.0449	0.00010	mg/L	2020-05-24	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-05-24	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-05-24	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-05-24	
Barium, dissolved	0.0551	0.0050	mg/L	2020-05-24	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-05-24	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-05-24	
Boron, dissolved	1.76	0.0050	mg/L	2020-05-24	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-05-24	
Calcium, dissolved	161	0.20	mg/L	2020-05-24	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-05-24	
Cobalt, dissolved	0.00157	0.00010	mg/L	2020-05-24	
Copper, dissolved	0.00247	0.00040	mg/L	2020-05-24	
Iron, dissolved	< 0.010	0.010	mg/L	2020-05-24	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-05-24	
Magnesium, dissolved	254	0.010	mg/L	2020-05-24	
Manganese, dissolved	0.0685	0.00020	mg/L	2020-05-24	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-05-26	
Molybdenum, dissolved	0.00033	0.00010	mg/L	2020-05-24	
Nickel, dissolved	0.0114	0.00040	mg/L	2020-05-24	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-05-24	
Potassium, dissolved	175	0.10	mg/L	2020-05-24	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-05-24	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0051806
2020-05-28 17:38

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW09-06S (0051806-01) | Matrix: Water | Sampled: 2020-05-20 12:25, Continued

Dissolved Metals, Continued

Silicon, dissolved	13.8	1.0	mg/L	2020-05-24	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-05-24	
Sodium, dissolved	263	0.10	mg/L	2020-05-24	
Strontium, dissolved	1.69	0.0010	mg/L	2020-05-24	
Sulfur, dissolved	231	3.0	mg/L	2020-05-24	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-05-24	
Thallium, dissolved	0.000037	0.000020	mg/L	2020-05-24	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-05-24	
Tin, dissolved	0.00021	0.00020	mg/L	2020-05-24	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-05-24	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-05-24	
Uranium, dissolved	0.00737	0.000020	mg/L	2020-05-24	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-05-24	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-05-24	
Zirconium, dissolved	0.00016	0.00010	mg/L	2020-05-24	

General Parameters

Alkalinity, Total (as CaCO ₃)	944	1.0	mg/L	2020-05-26	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-05-26	
Alkalinity, Bicarbonate (as CaCO ₃)	944	1.0	mg/L	2020-05-26	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-05-26	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-05-26	
Bicarbonate (HCO ₃)	1150	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	1.53	0.050	mg/L	2020-05-25	
BOD, 5-day	< 6.1	2.0	mg/L	2020-05-27	
Chemical Oxygen Demand	41	20	mg/L	2020-05-22	
Conductivity (EC)	3910	2.0	µS/cm	2020-05-26	
pH	7.73	0.10	pH units	2020-05-26	HT2
Solids, Total Dissolved	2590	15	mg/L	2020-05-26	
Solids, Total Suspended	42.0	2.0	mg/L	2020-05-27	
Turbidity	19.0	0.10	NTU	2020-05-22	

Polycyclic Aromatic Hydrocarbons (PAH)

Acenaphthene	< 0.050	0.050	µg/L	2020-05-26	
Acenaphthylene	< 0.200	0.200	µg/L	2020-05-26	
Acridine	< 0.050	0.050	µg/L	2020-05-26	
Anthracene	< 0.010	0.010	µg/L	2020-05-26	
Benz(a)anthracene	< 0.010	0.010	µg/L	2020-05-26	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2020-05-26	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2020-05-26	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2020-05-26	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0051806
2020-05-28 17:38

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW09-06S (0051806-01) | Matrix: Water | Sampled: 2020-05-20 12:25, Continued

Polycyclic Aromatic Hydrocarbons (PAH), Continued

Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2020-05-26	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2020-05-26	
Chrysene	< 0.050	0.050	µg/L	2020-05-26	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2020-05-26	
Fluoranthene	< 0.030	0.030	µg/L	2020-05-26	
Fluorene	< 0.050	0.050	µg/L	2020-05-26	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2020-05-26	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2020-05-26	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2020-05-26	
Naphthalene	< 0.200	0.200	µg/L	2020-05-26	
Phenanthrene	< 0.100	0.100	µg/L	2020-05-26	
Pyrene	< 0.020	0.020	µg/L	2020-05-26	
Quinoline	< 0.050	0.050	µg/L	2020-05-26	
Surrogate: Acridine-d9	60	50-140	%	2020-05-26	
Surrogate: Naphthalene-d8	108	50-140	%	2020-05-26	
Surrogate: Perylene-d12	95	50-140	%	2020-05-26	

Volatile Organic Compounds (VOC)

Benzene	< 0.5	0.5	µg/L	2020-05-27	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-05-27	
Bromoform	< 1.0	1.0	µg/L	2020-05-27	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-05-27	
Chlorobenzene	< 1.0	1.0	µg/L	2020-05-27	
Chloroethane	< 2.0	2.0	µg/L	2020-05-27	
Chloroform	< 1.0	1.0	µg/L	2020-05-27	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-05-27	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-05-27	
Dibromomethane	< 1.0	1.0	µg/L	2020-05-27	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-05-27	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-05-27	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-05-27	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-05-27	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-05-27	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-05-27	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-05-27	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-05-27	
Dichloromethane	< 3.0	3.0	µg/L	2020-05-27	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-05-27	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-05-27	
Ethylbenzene	< 1.0	1.0	µg/L	2020-05-27	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-05-27	
Styrene	< 1.0	1.0	µg/L	2020-05-27	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-05-27	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0051806
2020-05-28 17:38

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW09-06S (0051806-01) | Matrix: Water | Sampled: 2020-05-20 12:25, Continued

Volatile Organic Compounds (VOC), Continued

Tetrachloroethylene	< 1.0	1.0	µg/L	2020-05-27	
Toluene	< 1.0	1.0	µg/L	2020-05-27	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-05-27	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-05-27	
Trichloroethylene	< 1.0	1.0	µg/L	2020-05-27	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-05-27	
Vinyl chloride	< 1.0	1.0	µg/L	2020-05-27	
Xylenes (total)	< 2.0	2.0	µg/L	2020-05-27	
Surrogate: Toluene-d8	100	70-130	%	2020-05-27	
Surrogate: 4-Bromofluorobenzene	94	70-130	%	2020-05-27	
Surrogate: 1,4-Dichlorobenzene-d4	93	70-130	%	2020-05-27	

MW10-08 (0051806-02) | Matrix: Water | Sampled: 2020-05-20 17:50

Anions

Bromide	< 0.10	0.10	mg/L	2020-05-24	
Chloride	555	0.10	mg/L	2020-05-24	
Fluoride	0.27	0.10	mg/L	2020-05-24	
Nitrate (as N)	1.19	0.010	mg/L	2020-05-24	HT1
Nitrite (as N)	0.478	0.010	mg/L	2020-05-24	HT1
Sulfate	44.9	1.0	mg/L	2020-05-24	

BCMOE Aggregate Hydrocarbons

VHw (6-10)	< 100	100	µg/L	2020-05-27	
VPHw	< 100	100	µg/L	N/A	
EPHw10-19	< 250	250	µg/L	2020-05-26	S09
EPHw19-32	< 250	250	µg/L	2020-05-26	S09
LEPHw	< 250	250	µg/L	N/A	
HEPHw	< 250	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	58	60-126	%	2020-05-26	S09

Calculated Parameters

Hardness, Total (as CaCO3)	669	0.500	mg/L	N/A	
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Dissolved Metals

Lithium, dissolved	0.0199	0.00010	mg/L	2020-05-24	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-05-24	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-05-24	
Arsenic, dissolved	0.00439	0.00050	mg/L	2020-05-24	
Barium, dissolved	0.200	0.0050	mg/L	2020-05-24	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-05-24	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-05-24	
Boron, dissolved	0.256	0.0050	mg/L	2020-05-24	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0051806
2020-05-28 17:38

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW10-08 (0051806-02) | Matrix: Water | Sampled: 2020-05-20 17:50, Continued

Dissolved Metals, Continued

Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-05-24	
Calcium, dissolved	94.2	0.20	mg/L	2020-05-24	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-05-24	
Cobalt, dissolved	< 0.00010	0.00010	mg/L	2020-05-24	
Copper, dissolved	0.00126	0.00040	mg/L	2020-05-24	
Iron, dissolved	< 0.010	0.010	mg/L	2020-05-24	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-05-24	
Magnesium, dissolved	105	0.010	mg/L	2020-05-24	
Manganese, dissolved	0.00098	0.00020	mg/L	2020-05-24	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-05-26	
Molybdenum, dissolved	0.00069	0.00010	mg/L	2020-05-24	
Nickel, dissolved	0.00089	0.00040	mg/L	2020-05-24	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-05-24	
Potassium, dissolved	5.77	0.10	mg/L	2020-05-24	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-05-24	
Silicon, dissolved	10.8	1.0	mg/L	2020-05-24	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-05-24	
Sodium, dissolved	296	0.10	mg/L	2020-05-24	
Strontium, dissolved	1.23	0.0010	mg/L	2020-05-24	
Sulfur, dissolved	15.3	3.0	mg/L	2020-05-24	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-05-24	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-05-24	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-05-24	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-05-24	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-05-24	
Tungsten, dissolved	0.0047	0.0010	mg/L	2020-05-24	
Uranium, dissolved	0.00229	0.000020	mg/L	2020-05-24	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-05-24	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-05-24	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-05-24	

General Parameters

Alkalinity, Total (as CaCO ₃)	511	1.0	mg/L	2020-05-26	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-05-26	
Alkalinity, Bicarbonate (as CaCO ₃)	511	1.0	mg/L	2020-05-26	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-05-26	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-05-26	
Bicarbonate (HCO ₃)	623	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	< 0.050	0.050	mg/L	2020-05-25	
BOD, 5-day	< 6.1	2.0	mg/L	2020-05-27	
Chemical Oxygen Demand	24	20	mg/L	2020-05-22	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0051806
2020-05-28 17:38

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW10-08 (0051806-02) | Matrix: Water | Sampled: 2020-05-20 17:50, Continued

General Parameters, Continued

Conductivity (EC)	2590	2.0	µS/cm	2020-05-26	
pH	7.98	0.10	pH units	2020-05-26	HT2
Solids, Total Dissolved	1290	15	mg/L	2020-05-26	
Solids, Total Suspended	6.4	2.0	mg/L	2020-05-27	
Turbidity	3.48	0.10	NTU	2020-05-22	

Polycyclic Aromatic Hydrocarbons (PAH)

Acenaphthene	< 0.050	0.050	µg/L	2020-05-27	
Acenaphthylene	< 0.200	0.200	µg/L	2020-05-27	
Acridine	< 0.050	0.050	µg/L	2020-05-27	
Anthracene	< 0.010	0.010	µg/L	2020-05-27	
Benz(a)anthracene	< 0.010	0.010	µg/L	2020-05-27	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2020-05-27	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2020-05-27	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2020-05-27	
Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2020-05-27	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2020-05-27	
Chrysene	< 0.050	0.050	µg/L	2020-05-27	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2020-05-27	
Fluoranthene	< 0.030	0.030	µg/L	2020-05-27	
Fluorene	< 0.050	0.050	µg/L	2020-05-27	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2020-05-27	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2020-05-27	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2020-05-27	
Naphthalene	< 0.200	0.200	µg/L	2020-05-27	
Phenanthrene	< 0.100	0.100	µg/L	2020-05-27	
Pyrene	< 0.020	0.020	µg/L	2020-05-27	
Quinoline	< 0.050	0.050	µg/L	2020-05-27	
Surrogate: Acridine-d9	58	50-140	%	2020-05-27	
Surrogate: Naphthalene-d8	105	50-140	%	2020-05-27	
Surrogate: Perylene-d12	81	50-140	%	2020-05-27	

Volatile Organic Compounds (VOC)

Benzene	< 0.5	0.5	µg/L	2020-05-27	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-05-27	
Bromoform	< 1.0	1.0	µg/L	2020-05-27	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-05-27	
Chlorobenzene	< 1.0	1.0	µg/L	2020-05-27	
Chloroethane	< 2.0	2.0	µg/L	2020-05-27	
Chloroform	< 1.0	1.0	µg/L	2020-05-27	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-05-27	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-05-27	
Dibromomethane	< 1.0	1.0	µg/L	2020-05-27	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0051806
2020-05-28 17:38

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW10-08 (0051806-02) | Matrix: Water | Sampled: 2020-05-20 17:50, Continued

Volatile Organic Compounds (VOC), Continued

1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-05-27	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-05-27	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-05-27	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-05-27	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-05-27	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-05-27	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-05-27	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-05-27	
Dichloromethane	< 3.0	3.0	µg/L	2020-05-27	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-05-27	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-05-27	
Ethylbenzene	< 1.0	1.0	µg/L	2020-05-27	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-05-27	
Styrene	< 1.0	1.0	µg/L	2020-05-27	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-05-27	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-05-27	
Toluene	< 1.0	1.0	µg/L	2020-05-27	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-05-27	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-05-27	
Trichloroethylene	< 1.0	1.0	µg/L	2020-05-27	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-05-27	
Vinyl chloride	< 1.0	1.0	µg/L	2020-05-27	
Xylenes (total)	< 2.0	2.0	µg/L	2020-05-27	
Surrogate: Toluene-d8	97	70-130	%	2020-05-27	
Surrogate: 4-Bromofluorobenzene	92	70-130	%	2020-05-27	
Surrogate: 1,4-Dichlorobenzene-d4	90	70-130	%	2020-05-27	

MW18-10 (0051806-03) | Matrix: Water | Sampled: 2020-05-20 15:45

Anions

Bromide	0.15	0.10	mg/L	2020-05-24	
Chloride	342	0.10	mg/L	2020-05-24	
Fluoride	0.31	0.10	mg/L	2020-05-24	
Nitrate (as N)	21.3	0.010	mg/L	2020-05-24	HT1
Nitrite (as N)	0.388	0.010	mg/L	2020-05-24	HT1
Sulfate	71.1	1.0	mg/L	2020-05-24	

BCMOE Aggregate Hydrocarbons

VHw (6-10)	< 100	100	µg/L	2020-05-27	
VPHw	< 100	100	µg/L	N/A	
EPHw10-19	< 250	250	µg/L	2020-05-25	
EPHw19-32	< 250	250	µg/L	2020-05-25	
LEPHw	< 250	250	µg/L	N/A	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0051806
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Analyte	Result	RL	Units	Analyzed	Qualifier
MW18-10 (0051806-03) Matrix: Water Sampled: 2020-05-20 15:45, Continued					
BCMOE Aggregate Hydrocarbons, Continued					
HEPHw	< 250	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	85	60-126	%	2020-05-25	
Calculated Parameters					
Hardness, Total (as CaCO ₃)	796	0.500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	0.0150	0.00010	mg/L	2020-05-27	
Aluminum, dissolved	0.0102	0.0050	mg/L	2020-05-27	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-05-27	
Arsenic, dissolved	0.00107	0.00050	mg/L	2020-05-27	
Barium, dissolved	0.277	0.0050	mg/L	2020-05-27	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-05-27	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-05-27	
Boron, dissolved	0.223	0.0050	mg/L	2020-05-27	
Cadmium, dissolved	0.000020	0.000010	mg/L	2020-05-27	
Calcium, dissolved	72.7	0.20	mg/L	2020-05-27	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-05-27	
Cobalt, dissolved	0.00468	0.00010	mg/L	2020-05-27	
Copper, dissolved	0.00110	0.00040	mg/L	2020-05-27	
Iron, dissolved	0.049	0.010	mg/L	2020-05-27	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-05-27	
Magnesium, dissolved	149	0.010	mg/L	2020-05-27	
Manganese, dissolved	0.149	0.00020	mg/L	2020-05-27	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-05-26	
Molybdenum, dissolved	0.00076	0.00010	mg/L	2020-05-27	
Nickel, dissolved	0.0338	0.00040	mg/L	2020-05-27	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-05-27	
Potassium, dissolved	16.4	0.10	mg/L	2020-05-27	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-05-27	
Silicon, dissolved	7.3	1.0	mg/L	2020-05-27	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-05-27	
Sodium, dissolved	127	0.10	mg/L	2020-05-27	
Strontium, dissolved	1.15	0.0010	mg/L	2020-05-27	
Sulfur, dissolved	20.4	3.0	mg/L	2020-05-27	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-05-27	
Thallium, dissolved	0.000075	0.000020	mg/L	2020-05-27	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-05-27	
Tin, dissolved	0.00025	0.00020	mg/L	2020-05-27	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-05-27	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-05-27	
Uranium, dissolved	0.00324	0.000020	mg/L	2020-05-27	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-05-27	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

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Analyte	Result	RL	Units	Analyzed	Qualifier
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MW18-10 (0051806-03) | Matrix: Water | Sampled: 2020-05-20 15:45, Continued

Dissolved Metals, Continued

Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-05-27	
Zirconium, dissolved	0.00013	0.00010	mg/L	2020-05-27	

General Parameters

Alkalinity, Total (as CaCO ₃)	729	1.0	mg/L	2020-05-26	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-05-26	
Alkalinity, Bicarbonate (as CaCO ₃)	729	1.0	mg/L	2020-05-26	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-05-26	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-05-26	
Bicarbonate (HCO ₃)	889	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	1.68	0.050	mg/L	2020-05-25	
BOD, 5-day	< 6.1	2.0	mg/L	2020-05-27	
Chemical Oxygen Demand	41	20	mg/L	2020-05-22	
Conductivity (EC)	2420	2.0	µS/cm	2020-05-26	
pH	7.90	0.10	pH units	2020-05-26	HT2
Solids, Total Dissolved	1310	15	mg/L	2020-05-26	
Solids, Total Suspended	61.3	2.0	mg/L	2020-05-27	
Turbidity	73.2	0.10	NTU	2020-05-22	

Polycyclic Aromatic Hydrocarbons (PAH)

Acenaphthene	< 0.050	0.050	µg/L	2020-05-26	
Acenaphthylene	< 0.200	0.200	µg/L	2020-05-26	
Acridine	< 0.050	0.050	µg/L	2020-05-26	
Anthracene	< 0.010	0.010	µg/L	2020-05-26	
Benz(a)anthracene	< 0.010	0.010	µg/L	2020-05-26	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2020-05-26	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2020-05-26	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2020-05-26	
Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2020-05-26	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2020-05-26	
Chrysene	< 0.050	0.050	µg/L	2020-05-26	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2020-05-26	
Fluoranthene	< 0.030	0.030	µg/L	2020-05-26	
Fluorene	< 0.050	0.050	µg/L	2020-05-26	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2020-05-26	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2020-05-26	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2020-05-26	
Naphthalene	< 0.200	0.200	µg/L	2020-05-26	
Phenanthrene	< 0.100	0.100	µg/L	2020-05-26	
Pyrene	< 0.020	0.020	µg/L	2020-05-26	
Quinoline	< 0.050	0.050	µg/L	2020-05-26	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

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2020-05-28 17:38

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW18-10 (0051806-03) | Matrix: Water | Sampled: 2020-05-20 15:45, Continued

Polycyclic Aromatic Hydrocarbons (PAH), Continued

Surrogate: Acridine-d9	73	50-140	%	2020-05-26	
Surrogate: Naphthalene-d8	106	50-140	%	2020-05-26	
Surrogate: Perylene-d12	94	50-140	%	2020-05-26	

Volatile Organic Compounds (VOC)

Benzene	< 0.5	0.5	µg/L	2020-05-27	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-05-27	
Bromoform	< 1.0	1.0	µg/L	2020-05-27	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-05-27	
Chlorobenzene	< 1.0	1.0	µg/L	2020-05-27	
Chloroethane	< 2.0	2.0	µg/L	2020-05-27	
Chloroform	< 1.0	1.0	µg/L	2020-05-27	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-05-27	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-05-27	
Dibromomethane	< 1.0	1.0	µg/L	2020-05-27	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-05-27	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-05-27	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-05-27	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-05-27	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-05-27	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-05-27	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-05-27	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-05-27	
Dichloromethane	< 3.0	3.0	µg/L	2020-05-27	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-05-27	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-05-27	
Ethylbenzene	< 1.0	1.0	µg/L	2020-05-27	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-05-27	
Styrene	< 1.0	1.0	µg/L	2020-05-27	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-05-27	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-05-27	
Toluene	< 1.0	1.0	µg/L	2020-05-27	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-05-27	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-05-27	
Trichloroethylene	< 1.0	1.0	µg/L	2020-05-27	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-05-27	
Vinyl chloride	< 1.0	1.0	µg/L	2020-05-27	
Xylenes (total)	< 2.0	2.0	µg/L	2020-05-27	
Surrogate: Toluene-d8	100	70-130	%	2020-05-27	
Surrogate: 4-Bromofluorobenzene	95	70-130	%	2020-05-27	
Surrogate: 1,4-Dichlorobenzene-d4	93	70-130	%	2020-05-27	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0051806
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Analyte	Result	RL	Units	Analyzed	Qualifier
MW18-11 (0051806-04) Matrix: Water Sampled: 2020-05-20 13:50					
Anions					
Bromide	< 0.10	0.10	mg/L	2020-05-24	
Chloride	60.6	0.10	mg/L	2020-05-24	
Fluoride	0.96	0.10	mg/L	2020-05-24	
Nitrate (as N)	0.022	0.010	mg/L	2020-05-24	HT1
Nitrite (as N)	0.061	0.010	mg/L	2020-05-24	HT1
Sulfate	116	1.0	mg/L	2020-05-24	
BCMOE Aggregate Hydrocarbons					
VHw (6-10)	< 100	100	µg/L	2020-05-27	
VPHw	< 100	100	µg/L	N/A	
EPHw10-19	< 250	250	µg/L	2020-05-26	
EPHw19-32	313	250	µg/L	2020-05-26	
LEPHw	< 250	250	µg/L	N/A	
HEPHw	313	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	62	60-126	%	2020-05-26	
Calculated Parameters					
Hardness, Total (as CaCO3)	589	0.500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	0.0229	0.00010	mg/L	2020-05-24	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-05-24	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-05-24	
Arsenic, dissolved	0.0358	0.00050	mg/L	2020-05-24	
Barium, dissolved	0.0338	0.0050	mg/L	2020-05-24	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-05-24	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-05-24	
Boron, dissolved	0.325	0.0050	mg/L	2020-05-24	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-05-24	
Calcium, dissolved	59.2	0.20	mg/L	2020-05-24	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-05-24	
Cobalt, dissolved	0.00048	0.00010	mg/L	2020-05-24	
Copper, dissolved	< 0.00040	0.00040	mg/L	2020-05-24	
Iron, dissolved	2.28	0.010	mg/L	2020-05-24	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-05-24	
Magnesium, dissolved	107	0.010	mg/L	2020-05-24	
Manganese, dissolved	0.0301	0.00020	mg/L	2020-05-24	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-05-26	
Molybdenum, dissolved	0.00061	0.00010	mg/L	2020-05-24	
Nickel, dissolved	0.00474	0.00040	mg/L	2020-05-24	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-05-24	
Potassium, dissolved	7.86	0.10	mg/L	2020-05-24	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-05-24	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

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Analyte	Result	RL	Units	Analyzed	Qualifier
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MW18-11 (0051806-04) | Matrix: Water | Sampled: 2020-05-20 13:50, Continued

Dissolved Metals, Continued

Silicon, dissolved	4.7	1.0	mg/L	2020-05-24	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-05-24	
Sodium, dissolved	104	0.10	mg/L	2020-05-24	
Strontium, dissolved	1.02	0.0010	mg/L	2020-05-24	
Sulfur, dissolved	41.5	3.0	mg/L	2020-05-24	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-05-24	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-05-24	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-05-24	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-05-24	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-05-24	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-05-24	
Uranium, dissolved	0.000084	0.000020	mg/L	2020-05-24	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-05-24	
Zinc, dissolved	0.0132	0.0040	mg/L	2020-05-24	
Zirconium, dissolved	0.00014	0.00010	mg/L	2020-05-24	

General Parameters

Alkalinity, Total (as CaCO ₃)	648	1.0	mg/L	2020-05-26	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-05-26	
Alkalinity, Bicarbonate (as CaCO ₃)	648	1.0	mg/L	2020-05-26	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-05-26	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-05-26	
Bicarbonate (HCO ₃)	791	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	0.257	0.050	mg/L	2020-05-25	
BOD, 5-day	< 6.1	2.0	mg/L	2020-05-27	
Chemical Oxygen Demand	34	20	mg/L	2020-05-22	
Conductivity (EC)	1390	2.0	µS/cm	2020-05-26	
pH	7.93	0.10	pH units	2020-05-26	HT2
Solids, Total Dissolved	849	15	mg/L	2020-05-26	
Solids, Total Suspended	119	2.0	mg/L	2020-05-27	
Turbidity	112	0.10	NTU	2020-05-22	

Polycyclic Aromatic Hydrocarbons (PAH)

Acenaphthene	< 0.050	0.050	µg/L	2020-05-27	
Acenaphthylene	< 0.200	0.200	µg/L	2020-05-27	
Acridine	< 0.050	0.050	µg/L	2020-05-27	
Anthracene	< 0.010	0.010	µg/L	2020-05-27	
Benz(a)anthracene	< 0.010	0.010	µg/L	2020-05-27	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2020-05-27	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2020-05-27	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2020-05-27	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0051806
2020-05-28 17:38

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW18-11 (0051806-04) | Matrix: Water | Sampled: 2020-05-20 13:50, Continued

Polycyclic Aromatic Hydrocarbons (PAH), Continued

Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2020-05-27	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2020-05-27	
Chrysene	< 0.050	0.050	µg/L	2020-05-27	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2020-05-27	
Fluoranthene	< 0.030	0.030	µg/L	2020-05-27	
Fluorene	< 0.050	0.050	µg/L	2020-05-27	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2020-05-27	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2020-05-27	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2020-05-27	
Naphthalene	< 0.200	0.200	µg/L	2020-05-27	
Phenanthrene	< 0.100	0.100	µg/L	2020-05-27	
Pyrene	< 0.020	0.020	µg/L	2020-05-27	
Quinoline	< 0.050	0.050	µg/L	2020-05-27	
Surrogate: Acridine-d9	101	50-140	%	2020-05-27	
Surrogate: Naphthalene-d8	102	50-140	%	2020-05-27	
Surrogate: Perylene-d12	93	50-140	%	2020-05-27	

Volatile Organic Compounds (VOC)

Benzene	< 0.5	0.5	µg/L	2020-05-27	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-05-27	
Bromoform	< 1.0	1.0	µg/L	2020-05-27	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-05-27	
Chlorobenzene	< 1.0	1.0	µg/L	2020-05-27	
Chloroethane	< 6.0	2.0	µg/L	2020-05-27	RA1
Chloroform	< 1.0	1.0	µg/L	2020-05-27	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-05-27	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-05-27	
Dibromomethane	< 1.0	1.0	µg/L	2020-05-27	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-05-27	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-05-27	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-05-27	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-05-27	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-05-27	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-05-27	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-05-27	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-05-27	
Dichloromethane	< 3.0	3.0	µg/L	2020-05-27	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-05-27	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-05-27	
Ethylbenzene	< 1.0	1.0	µg/L	2020-05-27	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-05-27	
Styrene	< 1.0	1.0	µg/L	2020-05-27	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-05-27	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0051806
2020-05-28 17:38

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW18-11 (0051806-04) | Matrix: Water | Sampled: 2020-05-20 13:50, Continued

Volatile Organic Compounds (VOC), Continued

Tetrachloroethylene	< 1.0	1.0	µg/L	2020-05-27	
Toluene	< 1.0	1.0	µg/L	2020-05-27	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-05-27	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-05-27	
Trichloroethylene	< 1.0	1.0	µg/L	2020-05-27	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-05-27	
Vinyl chloride	< 1.0	1.0	µg/L	2020-05-27	
Xylenes (total)	< 2.0	2.0	µg/L	2020-05-27	
Surrogate: Toluene-d8	98	70-130	%	2020-05-27	
Surrogate: 4-Bromofluorobenzene	92	70-130	%	2020-05-27	
Surrogate: 1,4-Dichlorobenzene-d4	90	70-130	%	2020-05-27	

Town Well #4 (0051806-05) | Matrix: Water | Sampled: 2020-05-20 06:45

Anions

Bromide	< 0.10	0.10	mg/L	2020-05-24	
Chloride	96.5	0.10	mg/L	2020-05-24	
Fluoride	< 0.10	0.10	mg/L	2020-05-24	
Nitrate (as N)	1.50	0.010	mg/L	2020-05-24	HT1
Nitrite (as N)	0.122	0.010	mg/L	2020-05-24	HT1
Sulfate	43.0	1.0	mg/L	2020-05-24	

BCMOE Aggregate Hydrocarbons

VHw (6-10)	< 100	100	µg/L	2020-05-27	
VPHw	< 100	100	µg/L	N/A	
EPHw10-19	< 250	250	µg/L	2020-05-26	
EPHw19-32	< 250	250	µg/L	2020-05-26	
LEPHw	< 250	250	µg/L	N/A	
HEPHw	< 250	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	73	60-126	%	2020-05-26	

Calculated Parameters

Hardness, Total (as CaCO3)	396	0.500	mg/L	N/A	
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Dissolved Metals

Lithium, dissolved	0.00193	0.00010	mg/L	2020-05-24	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-05-24	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-05-24	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-05-24	
Barium, dissolved	0.218	0.0050	mg/L	2020-05-24	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-05-24	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-05-24	
Boron, dissolved	0.104	0.0050	mg/L	2020-05-24	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0051806
2020-05-28 17:38

Analyte	Result	RL	Units	Analyzed	Qualifier
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Town Well #4 (0051806-05) | Matrix: Water | Sampled: 2020-05-20 06:45, Continued

Dissolved Metals, Continued

Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-05-24	
Calcium, dissolved	92.2	0.20	mg/L	2020-05-24	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-05-24	
Cobalt, dissolved	< 0.00010	0.00010	mg/L	2020-05-24	
Copper, dissolved	0.0127	0.00040	mg/L	2020-05-24	
Iron, dissolved	< 0.010	0.010	mg/L	2020-05-24	
Lead, dissolved	0.00123	0.00020	mg/L	2020-05-24	
Magnesium, dissolved	40.2	0.010	mg/L	2020-05-24	
Manganese, dissolved	< 0.00020	0.00020	mg/L	2020-05-24	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-05-26	
Molybdenum, dissolved	0.00018	0.00010	mg/L	2020-05-24	
Nickel, dissolved	< 0.00040	0.00040	mg/L	2020-05-24	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-05-24	
Potassium, dissolved	1.87	0.10	mg/L	2020-05-24	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-05-24	
Silicon, dissolved	5.6	1.0	mg/L	2020-05-24	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-05-24	
Sodium, dissolved	55.4	0.10	mg/L	2020-05-24	
Strontium, dissolved	0.465	0.0010	mg/L	2020-05-24	
Sulfur, dissolved	13.6	3.0	mg/L	2020-05-24	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-05-24	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-05-24	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-05-24	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-05-24	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-05-24	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-05-24	
Uranium, dissolved	0.00128	0.000020	mg/L	2020-05-24	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-05-24	
Zinc, dissolved	0.0359	0.0040	mg/L	2020-05-24	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-05-24	

General Parameters

Alkalinity, Total (as CaCO ₃)	365	1.0	mg/L	2020-05-26	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-05-26	
Alkalinity, Bicarbonate (as CaCO ₃)	365	1.0	mg/L	2020-05-26	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-05-26	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-05-26	
Bicarbonate (HCO ₃)	446	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	< 0.050	0.050	mg/L	2020-05-25	
BOD, 5-day	< 6.1	2.0	mg/L	2020-05-27	
Chemical Oxygen Demand	< 20	20	mg/L	2020-05-22	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0051806
2020-05-28 17:38

Analyte	Result	RL	Units	Analyzed	Qualifier
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Town Well #4 (0051806-05) | Matrix: Water | Sampled: 2020-05-20 06:45, Continued

General Parameters, Continued

Conductivity (EC)	997	2.0	µS/cm	2020-05-26	
pH	7.93	0.10	pH units	2020-05-26	HT2
Solids, Total Dissolved	562	15	mg/L	2020-05-26	
Solids, Total Suspended	< 2.0	2.0	mg/L	2020-05-27	
Turbidity	< 0.10	0.10	NTU	2020-05-22	

Polycyclic Aromatic Hydrocarbons (PAH)

Acenaphthene	< 0.050	0.050	µg/L	2020-05-27	
Acenaphthylene	< 0.200	0.200	µg/L	2020-05-27	
Acridine	< 0.050	0.050	µg/L	2020-05-27	
Anthracene	< 0.010	0.010	µg/L	2020-05-27	
Benz(a)anthracene	< 0.010	0.010	µg/L	2020-05-27	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2020-05-27	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2020-05-27	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2020-05-27	
Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2020-05-27	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2020-05-27	
Chrysene	< 0.050	0.050	µg/L	2020-05-27	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2020-05-27	
Fluoranthene	< 0.030	0.030	µg/L	2020-05-27	
Fluorene	< 0.050	0.050	µg/L	2020-05-27	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2020-05-27	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2020-05-27	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2020-05-27	
Naphthalene	< 0.200	0.200	µg/L	2020-05-27	
Phenanthrene	< 0.100	0.100	µg/L	2020-05-27	
Pyrene	< 0.020	0.020	µg/L	2020-05-27	
Quinoline	< 0.050	0.050	µg/L	2020-05-27	
Surrogate: Acridine-d9	58	50-140	%	2020-05-27	
Surrogate: Naphthalene-d8	94	50-140	%	2020-05-27	
Surrogate: Perylene-d12	69	50-140	%	2020-05-27	

Volatile Organic Compounds (VOC)

Benzene	< 0.5	0.5	µg/L	2020-05-27	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-05-27	
Bromoform	< 1.0	1.0	µg/L	2020-05-27	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-05-27	
Chlorobenzene	< 1.0	1.0	µg/L	2020-05-27	
Chloroethane	< 2.0	2.0	µg/L	2020-05-27	
Chloroform	< 1.0	1.0	µg/L	2020-05-27	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-05-27	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-05-27	
Dibromomethane	< 1.0	1.0	µg/L	2020-05-27	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0051806
2020-05-28 17:38

Analyte	Result	RL	Units	Analyzed	Qualifier
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Town Well #4 (0051806-05) | Matrix: Water | Sampled: 2020-05-20 06:45, Continued

Volatile Organic Compounds (VOC), Continued

1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-05-27	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-05-27	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-05-27	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-05-27	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-05-27	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-05-27	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-05-27	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-05-27	
Dichloromethane	< 3.0	3.0	µg/L	2020-05-27	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-05-27	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-05-27	
Ethylbenzene	< 1.0	1.0	µg/L	2020-05-27	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-05-27	
Styrene	< 1.0	1.0	µg/L	2020-05-27	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-05-27	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-05-27	
Toluene	< 1.0	1.0	µg/L	2020-05-27	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-05-27	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-05-27	
Trichloroethylene	< 1.0	1.0	µg/L	2020-05-27	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-05-27	
Vinyl chloride	< 1.0	1.0	µg/L	2020-05-27	
Xylenes (total)	< 2.0	2.0	µg/L	2020-05-27	
Surrogate: Toluene-d8	98	70-130	%	2020-05-27	
Surrogate: 4-Bromofluorobenzene	94	70-130	%	2020-05-27	
Surrogate: 1,4-Dichlorobenzene-d4	91	70-130	%	2020-05-27	

DMW20-01 (0051806-06) | Matrix: Water | Sampled: 2020-05-20 07:35

Anions

Bromide	< 0.10	0.10	mg/L	2020-05-24	
Chloride	34.4	0.10	mg/L	2020-05-24	
Fluoride	0.16	0.10	mg/L	2020-05-24	
Nitrate (as N)	0.294	0.010	mg/L	2020-05-24	HT1
Nitrite (as N)	0.050	0.010	mg/L	2020-05-24	HT1
Sulfate	24.6	1.0	mg/L	2020-05-24	

BCMOE Aggregate Hydrocarbons

VHw (6-10)	< 100	100	µg/L	2020-05-28	
VPHw	< 100	100	µg/L	N/A	
EPHw10-19	< 250	250	µg/L	2020-05-25	
EPHw19-32	< 250	250	µg/L	2020-05-25	
LEPHw	< 250	250	µg/L	N/A	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0051806
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Analyte	Result	RL	Units	Analyzed	Qualifier
DMW20-01 (0051806-06) Matrix: Water Sampled: 2020-05-20 07:35, Continued					
BCMOE Aggregate Hydrocarbons, Continued					
HEPHw	< 250	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	81	60-126	%	2020-05-25	
Calculated Parameters					
Hardness, Total (as CaCO3)	237	0.500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	0.00137	0.00010	mg/L	2020-05-24	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-05-24	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-05-24	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-05-24	
Barium, dissolved	0.110	0.0050	mg/L	2020-05-24	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-05-24	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-05-24	
Boron, dissolved	0.0617	0.0050	mg/L	2020-05-24	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-05-24	
Calcium, dissolved	48.5	0.20	mg/L	2020-05-24	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-05-24	
Cobalt, dissolved	< 0.00010	0.00010	mg/L	2020-05-24	
Copper, dissolved	< 0.00040	0.00040	mg/L	2020-05-24	
Iron, dissolved	0.103	0.010	mg/L	2020-05-24	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-05-24	
Magnesium, dissolved	28.1	0.010	mg/L	2020-05-24	
Manganese, dissolved	0.0194	0.00020	mg/L	2020-05-24	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-05-26	
Molybdenum, dissolved	0.00073	0.00010	mg/L	2020-05-24	
Nickel, dissolved	< 0.00040	0.00040	mg/L	2020-05-24	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-05-24	
Potassium, dissolved	1.01	0.10	mg/L	2020-05-24	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-05-24	
Silicon, dissolved	4.0	1.0	mg/L	2020-05-24	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-05-24	
Sodium, dissolved	17.9	0.10	mg/L	2020-05-24	
Strontium, dissolved	0.329	0.0010	mg/L	2020-05-24	
Sulfur, dissolved	8.1	3.0	mg/L	2020-05-24	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-05-24	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-05-24	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-05-24	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-05-24	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-05-24	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-05-24	
Uranium, dissolved	0.000648	0.000020	mg/L	2020-05-24	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-05-24	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0051806
2020-05-28 17:38

Analyte	Result	RL	Units	Analyzed	Qualifier
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DMW20-01 (0051806-06) | Matrix: Water | Sampled: 2020-05-20 07:35, Continued

Dissolved Metals, Continued

Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-05-24	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-05-24	

General Parameters

Alkalinity, Total (as CaCO ₃)	233	1.0	mg/L	2020-05-26	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-05-26	
Alkalinity, Bicarbonate (as CaCO ₃)	233	1.0	mg/L	2020-05-26	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-05-26	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-05-26	
Bicarbonate (HCO ₃)	284	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	< 0.050	0.050	mg/L	2020-05-25	
BOD, 5-day	< 6.1	2.0	mg/L	2020-05-27	
Chemical Oxygen Demand	< 20	20	mg/L	2020-05-22	
Conductivity (EC)	530	2.0	µS/cm	2020-05-26	
pH	8.14	0.10	pH units	2020-05-26	HT2
Solids, Total Dissolved	293	15	mg/L	2020-05-26	
Solids, Total Suspended	2.0	2.0	mg/L	2020-05-27	
Turbidity	5.04	0.10	NTU	2020-05-22	

Polycyclic Aromatic Hydrocarbons (PAH)

Acenaphthene	< 0.050	0.050	µg/L	2020-05-26	
Acenaphthylene	< 0.200	0.200	µg/L	2020-05-26	
Acridine	< 0.050	0.050	µg/L	2020-05-26	
Anthracene	< 0.010	0.010	µg/L	2020-05-26	
Benz(a)anthracene	< 0.010	0.010	µg/L	2020-05-26	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2020-05-26	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2020-05-26	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2020-05-26	
Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2020-05-26	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2020-05-26	
Chrysene	< 0.050	0.050	µg/L	2020-05-26	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2020-05-26	
Fluoranthene	< 0.030	0.030	µg/L	2020-05-26	
Fluorene	< 0.050	0.050	µg/L	2020-05-26	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2020-05-26	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2020-05-26	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2020-05-26	
Naphthalene	< 0.200	0.200	µg/L	2020-05-26	
Phenanthrene	< 0.100	0.100	µg/L	2020-05-26	
Pyrene	< 0.020	0.020	µg/L	2020-05-26	
Quinoline	< 0.050	0.050	µg/L	2020-05-26	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0051806
2020-05-28 17:38

Analyte	Result	RL	Units	Analyzed	Qualifier
DMW20-01 (0051806-06) Matrix: Water Sampled: 2020-05-20 07:35, Continued					
Polycyclic Aromatic Hydrocarbons (PAH), Continued					
Surrogate: Acridine-d9	70	50-140	%	2020-05-26	
Surrogate: Naphthalene-d8	108	50-140	%	2020-05-26	
Surrogate: Perylene-d12	90	50-140	%	2020-05-26	
Volatile Organic Compounds (VOC)					
Benzene	< 0.5	0.5	µg/L	2020-05-28	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-05-28	
Bromoform	< 1.0	1.0	µg/L	2020-05-28	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-05-28	
Chlorobenzene	< 1.0	1.0	µg/L	2020-05-28	
Chloroethane	< 2.0	2.0	µg/L	2020-05-28	
Chloroform	< 1.0	1.0	µg/L	2020-05-28	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-05-28	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-05-28	
Dibromomethane	< 1.0	1.0	µg/L	2020-05-28	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-05-28	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-05-28	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-05-28	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-05-28	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-05-28	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-05-28	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-05-28	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-05-28	
Dichloromethane	< 3.0	3.0	µg/L	2020-05-28	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-05-28	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-05-28	
Ethylbenzene	< 1.0	1.0	µg/L	2020-05-28	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-05-28	
Styrene	< 1.0	1.0	µg/L	2020-05-28	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-05-28	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-05-28	
Toluene	< 1.0	1.0	µg/L	2020-05-28	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-05-28	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-05-28	
Trichloroethylene	< 1.0	1.0	µg/L	2020-05-28	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-05-28	
Vinyl chloride	< 1.0	1.0	µg/L	2020-05-28	
Xylenes (total)	< 2.0	2.0	µg/L	2020-05-28	
Surrogate: Toluene-d8	96	70-130	%	2020-05-28	
Surrogate: 4-Bromofluorobenzene	92	70-130	%	2020-05-28	
Surrogate: 1,4-Dichlorobenzene-d4	89	70-130	%	2020-05-28	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0051806
2020-05-28 17:38

Analyte	Result	RL	Units	Analyzed	Qualifier
DMW-1b (0051806-07) Matrix: Water Sampled: 2020-05-20 15:25					
Anions					
Bromide	< 0.10	0.10	mg/L	2020-05-24	
Chloride	8.79	0.10	mg/L	2020-05-24	
Fluoride	0.76	0.10	mg/L	2020-05-24	
Nitrate (as N)	0.666	0.010	mg/L	2020-05-24	HT1
Nitrite (as N)	< 0.010	0.010	mg/L	2020-05-24	HT1
Sulfate	213	1.0	mg/L	2020-05-24	
BCMOE Aggregate Hydrocarbons					
VHw (6-10)	< 100	100	µg/L	2020-05-28	
VPHw	< 100	100	µg/L	N/A	
EPHw10-19	< 250	250	µg/L	2020-05-26	S09
EPHw19-32	< 250	250	µg/L	2020-05-26	S09
LEPHw	< 250	250	µg/L	N/A	
HEPHw	< 250	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	56	60-126	%	2020-05-26	S09
Calculated Parameters					
Hardness, Total (as CaCO3)	549	0.500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	0.0397	0.00010	mg/L	2020-05-24	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-05-24	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-05-24	
Arsenic, dissolved	0.00104	0.00050	mg/L	2020-05-24	
Barium, dissolved	0.0173	0.0050	mg/L	2020-05-24	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-05-24	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-05-24	
Boron, dissolved	0.289	0.0050	mg/L	2020-05-24	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-05-24	
Calcium, dissolved	74.6	0.20	mg/L	2020-05-24	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-05-24	
Cobalt, dissolved	0.00093	0.00010	mg/L	2020-05-24	
Copper, dissolved	0.0212	0.00040	mg/L	2020-05-24	
Iron, dissolved	< 0.010	0.010	mg/L	2020-05-24	
Lead, dissolved	0.00023	0.00020	mg/L	2020-05-24	
Magnesium, dissolved	88.0	0.010	mg/L	2020-05-24	
Manganese, dissolved	0.00261	0.00020	mg/L	2020-05-24	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-05-26	
Molybdenum, dissolved	0.00087	0.00010	mg/L	2020-05-24	
Nickel, dissolved	0.00140	0.00040	mg/L	2020-05-24	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-05-24	
Potassium, dissolved	6.87	0.10	mg/L	2020-05-24	
Selenium, dissolved	0.00058	0.00050	mg/L	2020-05-24	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0051806
2020-05-28 17:38

Analyte	Result	RL	Units	Analyzed	Qualifier
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DMW-1b (0051806-07) | Matrix: Water | Sampled: 2020-05-20 15:25, Continued

Dissolved Metals, Continued

Silicon, dissolved	7.9	1.0	mg/L	2020-05-24	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-05-24	
Sodium, dissolved	33.5	0.10	mg/L	2020-05-24	
Strontium, dissolved	3.96	0.0010	mg/L	2020-05-24	
Sulfur, dissolved	76.8	3.0	mg/L	2020-05-24	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-05-24	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-05-24	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-05-24	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-05-24	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-05-24	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-05-24	
Uranium, dissolved	0.00155	0.000020	mg/L	2020-05-24	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-05-24	
Zinc, dissolved	0.0262	0.0040	mg/L	2020-05-24	
Zirconium, dissolved	0.00047	0.00010	mg/L	2020-05-24	

General Parameters

Alkalinity, Total (as CaCO ₃)	431	1.0	mg/L	2020-05-26	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-05-26	
Alkalinity, Bicarbonate (as CaCO ₃)	431	1.0	mg/L	2020-05-26	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-05-26	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-05-26	
Bicarbonate (HCO ₃)	525	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	0.161	0.050	mg/L	2020-05-25	
BOD, 5-day	< 6.1	2.0	mg/L	2020-05-27	
Chemical Oxygen Demand	< 20	20	mg/L	2020-05-22	
Conductivity (EC)	1060	2.0	µS/cm	2020-05-26	
pH	8.03	0.10	pH units	2020-05-26	HT2
Solids, Total Dissolved	727	15	mg/L	2020-05-26	
Solids, Total Suspended	< 2.0	2.0	mg/L	2020-05-27	
Turbidity	0.14	0.10	NTU	2020-05-22	

Polycyclic Aromatic Hydrocarbons (PAH)

Acenaphthene	< 0.050	0.050	µg/L	2020-05-27	
Acenaphthylene	< 0.200	0.200	µg/L	2020-05-27	
Acridine	< 0.050	0.050	µg/L	2020-05-27	
Anthracene	< 0.010	0.010	µg/L	2020-05-27	
Benz(a)anthracene	< 0.010	0.010	µg/L	2020-05-27	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2020-05-27	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2020-05-27	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2020-05-27	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

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Analyte	Result	RL	Units	Analyzed	Qualifier
DMW-1b (0051806-07) Matrix: Water Sampled: 2020-05-20 15:25, Continued					
<i>Polycyclic Aromatic Hydrocarbons (PAH), Continued</i>					
Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2020-05-27	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2020-05-27	
Chrysene	< 0.050	0.050	µg/L	2020-05-27	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2020-05-27	
Fluoranthene	< 0.030	0.030	µg/L	2020-05-27	
Fluorene	< 0.050	0.050	µg/L	2020-05-27	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2020-05-27	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2020-05-27	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2020-05-27	
Naphthalene	< 0.200	0.200	µg/L	2020-05-27	
Phenanthrene	< 0.100	0.100	µg/L	2020-05-27	
Pyrene	< 0.020	0.020	µg/L	2020-05-27	
Quinoline	< 0.050	0.050	µg/L	2020-05-27	
Surrogate: Acridine-d9	67	50-140	%	2020-05-27	
Surrogate: Naphthalene-d8	85	50-140	%	2020-05-27	
Surrogate: Perylene-d12	60	50-140	%	2020-05-27	
<i>Volatile Organic Compounds (VOC)</i>					
Benzene	< 0.5	0.5	µg/L	2020-05-28	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-05-28	
Bromoform	< 1.0	1.0	µg/L	2020-05-28	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-05-28	
Chlorobenzene	< 1.0	1.0	µg/L	2020-05-28	
Chloroethane	< 2.0	2.0	µg/L	2020-05-28	
Chloroform	< 1.0	1.0	µg/L	2020-05-28	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-05-28	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-05-28	
Dibromomethane	< 1.0	1.0	µg/L	2020-05-28	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-05-28	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-05-28	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-05-28	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-05-28	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-05-28	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-05-28	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-05-28	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-05-28	
Dichloromethane	< 3.0	3.0	µg/L	2020-05-28	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-05-28	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-05-28	
Ethylbenzene	< 1.0	1.0	µg/L	2020-05-28	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-05-28	
Styrene	< 1.0	1.0	µg/L	2020-05-28	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-05-28	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0051806
2020-05-28 17:38

Analyte	Result	RL	Units	Analyzed	Qualifier
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DMW-1b (0051806-07) | Matrix: Water | Sampled: 2020-05-20 15:25, Continued

Volatile Organic Compounds (VOC), Continued

Tetrachloroethylene	< 1.0	1.0	µg/L	2020-05-28	
Toluene	< 1.0	1.0	µg/L	2020-05-28	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-05-28	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-05-28	
Trichloroethylene	< 1.0	1.0	µg/L	2020-05-28	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-05-28	
Vinyl chloride	< 1.0	1.0	µg/L	2020-05-28	
Xylenes (total)	< 2.0	2.0	µg/L	2020-05-28	
Surrogate: Toluene-d8	96	70-130	%	2020-05-28	
Surrogate: 4-Bromofluorobenzene	91	70-130	%	2020-05-28	
Surrogate: 1,4-Dichlorobenzene-d4	89	70-130	%	2020-05-28	

DMW-4 (0051806-08) | Matrix: Water | Sampled: 2020-05-20 15:10

Anions

Bromide	< 0.10	0.10	mg/L	2020-05-24	
Chloride	40.5	0.10	mg/L	2020-05-24	
Fluoride	1.47	0.10	mg/L	2020-05-24	
Nitrate (as N)	< 0.010	0.010	mg/L	2020-05-24	HT1
Nitrite (as N)	0.039	0.010	mg/L	2020-05-24	HT1
Sulfate	127	1.0	mg/L	2020-05-24	

BCMOE Aggregate Hydrocarbons

VHw (6-10)	< 100	100	µg/L	2020-05-28	
VPHw	< 100	100	µg/L	N/A	
EPHw10-19	< 250	250	µg/L	2020-05-27	S09
EPHw19-32	< 250	250	µg/L	2020-05-27	S09
LEPHw	< 250	250	µg/L	N/A	
HEPHw	< 250	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	56	60-126	%	2020-05-27	S09

Calculated Parameters

Hardness, Total (as CaCO3)	630	0.500	mg/L	N/A	
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Dissolved Metals

Lithium, dissolved	0.0248	0.00010	mg/L	2020-05-24	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-05-24	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-05-24	
Arsenic, dissolved	0.0533	0.00050	mg/L	2020-05-24	
Barium, dissolved	0.0245	0.0050	mg/L	2020-05-24	
Beryllium, dissolved	0.00012	0.00010	mg/L	2020-05-24	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-05-24	
Boron, dissolved	0.190	0.0050	mg/L	2020-05-24	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0051806
2020-05-28 17:38

Analyte	Result	RL	Units	Analyzed	Qualifier
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DMW-4 (0051806-08) | Matrix: Water | Sampled: 2020-05-20 15:10, Continued

Dissolved Metals, Continued

Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-05-24	
Calcium, dissolved	72.7	0.20	mg/L	2020-05-24	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-05-24	
Cobalt, dissolved	0.00029	0.00010	mg/L	2020-05-24	
Copper, dissolved	< 0.00040	0.00040	mg/L	2020-05-24	
Iron, dissolved	0.669	0.010	mg/L	2020-05-24	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-05-24	
Magnesium, dissolved	109	0.010	mg/L	2020-05-24	
Manganese, dissolved	0.0153	0.00020	mg/L	2020-05-24	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-05-26	
Molybdenum, dissolved	0.00027	0.00010	mg/L	2020-05-24	
Nickel, dissolved	0.00182	0.00040	mg/L	2020-05-24	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-05-24	
Potassium, dissolved	4.82	0.10	mg/L	2020-05-24	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-05-24	
Silicon, dissolved	8.8	1.0	mg/L	2020-05-24	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-05-24	
Sodium, dissolved	25.3	0.10	mg/L	2020-05-24	
Strontium, dissolved	1.75	0.0010	mg/L	2020-05-24	
Sulfur, dissolved	48.1	3.0	mg/L	2020-05-24	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-05-24	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-05-24	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-05-24	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-05-24	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-05-24	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-05-24	
Uranium, dissolved	0.000161	0.000020	mg/L	2020-05-24	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-05-24	
Zinc, dissolved	0.0065	0.0040	mg/L	2020-05-24	
Zirconium, dissolved	0.00155	0.00010	mg/L	2020-05-24	

General Parameters

Alkalinity, Total (as CaCO ₃)	516	1.0	mg/L	2020-05-26	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-05-26	
Alkalinity, Bicarbonate (as CaCO ₃)	516	1.0	mg/L	2020-05-26	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-05-26	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-05-26	
Bicarbonate (HCO ₃)	629	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	0.206	0.050	mg/L	2020-05-25	
BOD, 5-day	< 6.1	2.0	mg/L	2020-05-27	
Chemical Oxygen Demand	< 20	20	mg/L	2020-05-22	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0051806
2020-05-28 17:38

Analyte	Result	RL	Units	Analyzed	Qualifier
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DMW-4 (0051806-08) | Matrix: Water | Sampled: 2020-05-20 15:10, Continued

General Parameters, Continued

Conductivity (EC)	1150	2.0	µS/cm	2020-05-26	
pH	8.02	0.10	pH units	2020-05-26	HT2
Solids, Total Dissolved	712	15	mg/L	2020-05-26	
Solids, Total Suspended	2.0	2.0	mg/L	2020-05-27	
Turbidity	4.90	0.10	NTU	2020-05-22	

Polycyclic Aromatic Hydrocarbons (PAH)

Acenaphthene	< 0.050	0.050	µg/L	2020-05-27	
Acenaphthylene	< 0.200	0.200	µg/L	2020-05-27	
Acridine	< 0.050	0.050	µg/L	2020-05-27	
Anthracene	< 0.010	0.010	µg/L	2020-05-27	
Benz(a)anthracene	< 0.010	0.010	µg/L	2020-05-27	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2020-05-27	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2020-05-27	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2020-05-27	
Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2020-05-27	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2020-05-27	
Chrysene	< 0.050	0.050	µg/L	2020-05-27	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2020-05-27	
Fluoranthene	< 0.030	0.030	µg/L	2020-05-27	
Fluorene	< 0.050	0.050	µg/L	2020-05-27	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2020-05-27	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2020-05-27	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2020-05-27	
Naphthalene	< 0.200	0.200	µg/L	2020-05-27	
Phenanthrene	< 0.100	0.100	µg/L	2020-05-27	
Pyrene	< 0.020	0.020	µg/L	2020-05-27	
Quinoline	< 0.050	0.050	µg/L	2020-05-27	
Surrogate: Acridine-d9	63	50-140	%	2020-05-27	
Surrogate: Naphthalene-d8	91	50-140	%	2020-05-27	
Surrogate: Perylene-d12	63	50-140	%	2020-05-27	

Volatile Organic Compounds (VOC)

Benzene	< 0.5	0.5	µg/L	2020-05-28	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-05-28	
Bromoform	< 1.0	1.0	µg/L	2020-05-28	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-05-28	
Chlorobenzene	< 1.0	1.0	µg/L	2020-05-28	
Chloroethane	< 2.0	2.0	µg/L	2020-05-28	
Chloroform	< 1.0	1.0	µg/L	2020-05-28	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-05-28	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-05-28	
Dibromomethane	< 1.0	1.0	µg/L	2020-05-28	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0051806
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Analyte	Result	RL	Units	Analyzed	Qualifier
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DMW-4 (0051806-08) | Matrix: Water | Sampled: 2020-05-20 15:10, Continued

Volatile Organic Compounds (VOC), Continued

1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-05-28	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-05-28	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-05-28	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-05-28	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-05-28	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-05-28	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-05-28	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-05-28	
Dichloromethane	< 3.0	3.0	µg/L	2020-05-28	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-05-28	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-05-28	
Ethylbenzene	< 1.0	1.0	µg/L	2020-05-28	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-05-28	
Styrene	< 1.0	1.0	µg/L	2020-05-28	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-05-28	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-05-28	
Toluene	< 1.0	1.0	µg/L	2020-05-28	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-05-28	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-05-28	
Trichloroethylene	< 1.0	1.0	µg/L	2020-05-28	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-05-28	
Vinyl chloride	< 1.0	1.0	µg/L	2020-05-28	
Xylenes (total)	< 2.0	2.0	µg/L	2020-05-28	
Surrogate: Toluene-d8	93	70-130	%	2020-05-28	
Surrogate: 4-Bromofluorobenzene	89	70-130	%	2020-05-28	
Surrogate: 1,4-Dichlorobenzene-d4	88	70-130	%	2020-05-28	

MW09-06D (0051806-09) | Matrix: Water | Sampled: 2020-05-20 17:30

Anions

Bromide	0.36	0.10	mg/L	2020-05-24	
Chloride	392	0.10	mg/L	2020-05-24	
Fluoride	0.15	0.10	mg/L	2020-05-24	
Nitrate (as N)	45.0	0.010	mg/L	2020-05-24	HT1
Nitrite (as N)	0.455	0.010	mg/L	2020-05-24	HT1
Sulfate	615	1.0	mg/L	2020-05-24	

BCMOE Aggregate Hydrocarbons

VHw (6-10)	< 100	100	µg/L	2020-05-28	
VPHw	< 100	100	µg/L	N/A	
EPHw10-19	< 250	250	µg/L	2020-05-25	
EPHw19-32	< 250	250	µg/L	2020-05-25	
LEPHw	< 250	250	µg/L	N/A	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0051806
2020-05-28 17:38

Analyte	Result	RL	Units	Analyzed	Qualifier
MW09-06D (0051806-09) Matrix: Water Sampled: 2020-05-20 17:30, Continued					
BCMOE Aggregate Hydrocarbons, Continued					
HEPHw	< 250	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	86	60-126	%	2020-05-25	
Calculated Parameters					
Hardness, Total (as CaCO ₃)	1420	0.500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	0.0428	0.00010	mg/L	2020-05-24	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-05-24	
Antimony, dissolved	0.00029	0.00020	mg/L	2020-05-24	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-05-24	
Barium, dissolved	0.0532	0.0050	mg/L	2020-05-24	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-05-24	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-05-24	
Boron, dissolved	1.73	0.0050	mg/L	2020-05-24	
Cadmium, dissolved	0.000038	0.000010	mg/L	2020-05-24	
Calcium, dissolved	158	0.20	mg/L	2020-05-24	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-05-24	
Cobalt, dissolved	0.00179	0.00010	mg/L	2020-05-24	
Copper, dissolved	0.00298	0.00040	mg/L	2020-05-24	
Iron, dissolved	< 0.010	0.010	mg/L	2020-05-24	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-05-24	
Magnesium, dissolved	249	0.010	mg/L	2020-05-24	
Manganese, dissolved	0.108	0.00020	mg/L	2020-05-24	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-05-26	
Molybdenum, dissolved	0.00036	0.00010	mg/L	2020-05-24	
Nickel, dissolved	0.0121	0.00040	mg/L	2020-05-24	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-05-24	
Potassium, dissolved	173	0.10	mg/L	2020-05-24	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-05-24	
Silicon, dissolved	13.5	1.0	mg/L	2020-05-24	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-05-24	
Sodium, dissolved	268	0.10	mg/L	2020-05-24	
Strontium, dissolved	1.60	0.0010	mg/L	2020-05-24	
Sulfur, dissolved	224	3.0	mg/L	2020-05-24	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-05-24	
Thallium, dissolved	0.000041	0.000020	mg/L	2020-05-24	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-05-24	
Tin, dissolved	0.00039	0.00020	mg/L	2020-05-24	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-05-24	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-05-24	
Uranium, dissolved	0.00718	0.000020	mg/L	2020-05-24	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-05-24	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

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2020-05-28 17:38

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW09-06D (0051806-09) | Matrix: Water | Sampled: 2020-05-20 17:30, Continued

Dissolved Metals, Continued

Zinc, dissolved	0.0089	0.0040	mg/L	2020-05-24	
Zirconium, dissolved	0.00018	0.00010	mg/L	2020-05-24	

General Parameters

Alkalinity, Total (as CaCO ₃)	934	1.0	mg/L	2020-05-26	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-05-26	
Alkalinity, Bicarbonate (as CaCO ₃)	934	1.0	mg/L	2020-05-26	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-05-26	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-05-26	
Bicarbonate (HCO ₃)	1140	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	1.53	0.050	mg/L	2020-05-25	
BOD, 5-day	< 6.1	2.0	mg/L	2020-05-27	
Chemical Oxygen Demand	96	20	mg/L	2020-05-22	
Conductivity (EC)	3960	2.0	µS/cm	2020-05-26	
pH	7.71	0.10	pH units	2020-05-26	HT2
Solids, Total Dissolved	2500	15	mg/L	2020-05-26	
Solids, Total Suspended	78.2	2.0	mg/L	2020-05-27	
Turbidity	46.5	0.10	NTU	2020-05-22	

Polycyclic Aromatic Hydrocarbons (PAH)

Acenaphthene	< 0.050	0.050	µg/L	2020-05-26	
Acenaphthylene	< 0.200	0.200	µg/L	2020-05-26	
Acridine	< 0.050	0.050	µg/L	2020-05-26	
Anthracene	< 0.010	0.010	µg/L	2020-05-26	
Benz(a)anthracene	< 0.010	0.010	µg/L	2020-05-26	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2020-05-26	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2020-05-26	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2020-05-26	
Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2020-05-26	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2020-05-26	
Chrysene	< 0.050	0.050	µg/L	2020-05-26	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2020-05-26	
Fluoranthene	< 0.030	0.030	µg/L	2020-05-26	
Fluorene	< 0.050	0.050	µg/L	2020-05-26	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2020-05-26	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2020-05-26	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2020-05-26	
Naphthalene	< 0.200	0.200	µg/L	2020-05-26	
Phenanthrene	< 0.100	0.100	µg/L	2020-05-26	
Pyrene	< 0.020	0.020	µg/L	2020-05-26	
Quinoline	< 0.050	0.050	µg/L	2020-05-26	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
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Analyte	Result	RL	Units	Analyzed	Qualifier
MW09-06D (0051806-09) Matrix: Water Sampled: 2020-05-20 17:30, Continued					
<i>Polycyclic Aromatic Hydrocarbons (PAH), Continued</i>					
Surrogate: Acridine-d9	80	50-140	%	2020-05-26	
Surrogate: Naphthalene-d8	97	50-140	%	2020-05-26	
Surrogate: Perylene-d12	94	50-140	%	2020-05-26	
<i>Volatile Organic Compounds (VOC)</i>					
Benzene	< 0.5	0.5	µg/L	2020-05-28	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-05-28	
Bromoform	< 1.0	1.0	µg/L	2020-05-28	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-05-28	
Chlorobenzene	< 1.0	1.0	µg/L	2020-05-28	
Chloroethane	< 2.0	2.0	µg/L	2020-05-28	
Chloroform	< 1.0	1.0	µg/L	2020-05-28	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-05-28	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-05-28	
Dibromomethane	< 1.0	1.0	µg/L	2020-05-28	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-05-28	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-05-28	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-05-28	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-05-28	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-05-28	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-05-28	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-05-28	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-05-28	
Dichloromethane	< 3.0	3.0	µg/L	2020-05-28	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-05-28	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-05-28	
Ethylbenzene	< 1.0	1.0	µg/L	2020-05-28	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-05-28	
Styrene	< 1.0	1.0	µg/L	2020-05-28	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-05-28	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-05-28	
Toluene	< 1.0	1.0	µg/L	2020-05-28	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-05-28	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-05-28	
Trichloroethylene	< 1.0	1.0	µg/L	2020-05-28	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-05-28	
Vinyl chloride	< 1.0	1.0	µg/L	2020-05-28	
Xylenes (total)	< 2.0	2.0	µg/L	2020-05-28	
Surrogate: Toluene-d8	99	70-130	%	2020-05-28	
Surrogate: 4-Bromofluorobenzene	93	70-130	%	2020-05-28	
Surrogate: 1,4-Dichlorobenzene-d4	90	70-130	%	2020-05-28	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0051806
2020-05-28 17:38

Analyte	Result	RL	Units	Analyzed	Qualifier
DUP A (0051806-10) Matrix: Water Sampled: 2020-05-20 12:25					
Anions					
Bromide	0.35	0.10	mg/L	2020-05-24	
Chloride	399	0.10	mg/L	2020-05-24	
Fluoride	0.15	0.10	mg/L	2020-05-24	
Nitrate (as N)	39.7	0.010	mg/L	2020-05-24	HT1
Nitrite (as N)	0.381	0.010	mg/L	2020-05-24	HT1
Sulfate	624	1.0	mg/L	2020-05-24	
BCMOE Aggregate Hydrocarbons					
VHw (6-10)	< 100	100	µg/L	2020-05-28	
VPHw	< 100	100	µg/L	N/A	
EPHw10-19	< 250	250	µg/L	2020-05-25	
EPHw19-32	< 250	250	µg/L	2020-05-25	
LEPHw	< 250	250	µg/L	N/A	
HEPHw	< 250	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	85	60-126	%	2020-05-25	
Calculated Parameters					
Hardness, Total (as CaCO3)	1450	0.500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	0.0426	0.00010	mg/L	2020-05-24	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-05-24	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-05-24	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-05-24	
Barium, dissolved	0.0535	0.0050	mg/L	2020-05-24	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-05-24	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-05-24	
Boron, dissolved	1.92	0.0050	mg/L	2020-05-24	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-05-24	
Calcium, dissolved	158	0.20	mg/L	2020-05-24	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-05-24	
Cobalt, dissolved	0.00160	0.00010	mg/L	2020-05-24	
Copper, dissolved	0.00242	0.00040	mg/L	2020-05-24	
Iron, dissolved	< 0.010	0.010	mg/L	2020-05-24	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-05-24	
Magnesium, dissolved	256	0.010	mg/L	2020-05-24	
Manganese, dissolved	0.0693	0.00020	mg/L	2020-05-24	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-05-26	
Molybdenum, dissolved	0.00028	0.00010	mg/L	2020-05-24	
Nickel, dissolved	0.0114	0.00040	mg/L	2020-05-24	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-05-24	
Potassium, dissolved	177	0.10	mg/L	2020-05-24	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-05-24	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0051806
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Analyte	Result	RL	Units	Analyzed	Qualifier
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DUP A (0051806-10) | Matrix: Water | Sampled: 2020-05-20 12:25, Continued

Dissolved Metals, Continued

Silicon, dissolved	14.1	1.0	mg/L	2020-05-24	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-05-24	
Sodium, dissolved	265	0.10	mg/L	2020-05-24	
Strontium, dissolved	1.67	0.0010	mg/L	2020-05-24	
Sulfur, dissolved	234	3.0	mg/L	2020-05-24	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-05-24	
Thallium, dissolved	0.000035	0.000020	mg/L	2020-05-24	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-05-24	
Tin, dissolved	0.00021	0.00020	mg/L	2020-05-24	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-05-24	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-05-24	
Uranium, dissolved	0.00691	0.000020	mg/L	2020-05-24	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-05-24	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-05-24	
Zirconium, dissolved	0.00014	0.00010	mg/L	2020-05-24	

General Parameters

Alkalinity, Total (as CaCO ₃)	952	1.0	mg/L	2020-05-26	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-05-26	
Alkalinity, Bicarbonate (as CaCO ₃)	952	1.0	mg/L	2020-05-26	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-05-26	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-05-26	
Bicarbonate (HCO ₃)	1160	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	1.44	0.050	mg/L	2020-05-25	
BOD, 5-day	< 6.1	2.0	mg/L	2020-05-27	
Chemical Oxygen Demand	41	20	mg/L	2020-05-22	
Conductivity (EC)	3940	2.0	µS/cm	2020-05-26	
pH	7.80	0.10	pH units	2020-05-26	HT2
Solids, Total Dissolved	2550	15	mg/L	2020-05-26	
Solids, Total Suspended	43.8	2.0	mg/L	2020-05-27	
Turbidity	24.8	0.10	NTU	2020-05-22	

Polycyclic Aromatic Hydrocarbons (PAH)

Acenaphthene	< 0.050	0.050	µg/L	2020-05-26	
Acenaphthylene	< 0.200	0.200	µg/L	2020-05-26	
Acridine	< 0.050	0.050	µg/L	2020-05-26	
Anthracene	< 0.010	0.010	µg/L	2020-05-26	
Benz(a)anthracene	< 0.010	0.010	µg/L	2020-05-26	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2020-05-26	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2020-05-26	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2020-05-26	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0051806
2020-05-28 17:38

Analyte	Result	RL	Units	Analyzed	Qualifier
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DUP A (0051806-10) | Matrix: Water | Sampled: 2020-05-20 12:25, Continued

Polycyclic Aromatic Hydrocarbons (PAH), Continued

Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2020-05-26	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2020-05-26	
Chrysene	< 0.050	0.050	µg/L	2020-05-26	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2020-05-26	
Fluoranthene	< 0.030	0.030	µg/L	2020-05-26	
Fluorene	< 0.050	0.050	µg/L	2020-05-26	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2020-05-26	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2020-05-26	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2020-05-26	
Naphthalene	< 0.200	0.200	µg/L	2020-05-26	
Phenanthrene	< 0.100	0.100	µg/L	2020-05-26	
Pyrene	< 0.020	0.020	µg/L	2020-05-26	
Quinoline	< 0.050	0.050	µg/L	2020-05-26	
Surrogate: Acridine-d9	76	50-140	%	2020-05-26	
Surrogate: Naphthalene-d8	103	50-140	%	2020-05-26	
Surrogate: Perylene-d12	94	50-140	%	2020-05-26	

Volatile Organic Compounds (VOC)

Benzene	< 0.5	0.5	µg/L	2020-05-28	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-05-28	
Bromoform	< 1.0	1.0	µg/L	2020-05-28	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-05-28	
Chlorobenzene	< 1.0	1.0	µg/L	2020-05-28	
Chloroethane	< 2.0	2.0	µg/L	2020-05-28	
Chloroform	< 1.0	1.0	µg/L	2020-05-28	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-05-28	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-05-28	
Dibromomethane	< 1.0	1.0	µg/L	2020-05-28	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-05-28	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-05-28	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-05-28	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-05-28	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-05-28	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-05-28	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-05-28	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-05-28	
Dichloromethane	< 3.0	3.0	µg/L	2020-05-28	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-05-28	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-05-28	
Ethylbenzene	< 1.0	1.0	µg/L	2020-05-28	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-05-28	
Styrene	< 1.0	1.0	µg/L	2020-05-28	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-05-28	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0051806
2020-05-28 17:38

Analyte	Result	RL	Units	Analyzed	Qualifier
DUP A (0051806-10) Matrix: Water Sampled: 2020-05-20 12:25, Continued					
<i>Volatile Organic Compounds (VOC), Continued</i>					
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-05-28	
Toluene	< 1.0	1.0	µg/L	2020-05-28	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-05-28	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-05-28	
Trichloroethylene	< 1.0	1.0	µg/L	2020-05-28	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-05-28	
Vinyl chloride	< 1.0	1.0	µg/L	2020-05-28	
Xylenes (total)	< 2.0	2.0	µg/L	2020-05-28	
Surrogate: Toluene-d8	98	70-130	%	2020-05-28	
Surrogate: 4-Bromofluorobenzene	93	70-130	%	2020-05-28	
Surrogate: 1,4-Dichlorobenzene-d4	90	70-130	%	2020-05-28	

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.

RA1 The Reporting Limit has been raised due to matrix interference.

S09 The surrogate recovery for this sample is outside of established control limits .

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0051806
2020-05-28 17:38

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
Biochemical Oxygen Demand in Water	SM 5210 B (2017)	Dissolved Oxygen Meter	Kelowna
Chemical Oxygen Demand in Water	SM 5220 D* (2017)	Closed Reflux, Colorimetry	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
EPH in Water	EPA 3511* / BCMOE EPHw	Hexane MicroExtraction (Base/Neutral) / Gas Chromatography (GC-FID)	Richmond
Hardness in Water	SM 2340 B (2017)	Calculation: 2.497 [diss Ca] + 4.118 [diss Mg]	N/A
HEPHw in Water	BCMOE LEPH/HEPH	Calculation	N/A
LEPHw in Water	BCMOE LEPH/HEPH	Calculation	N/A
Mercury, dissolved in Water	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	Richmond
pH in Water	SM 4500-H+ B (2017)	Electrometry	Kelowna
Polycyclic Aromatic Hydrocarbons in Water	EPA 3511* / EPA 8270D	Hexane MicroExtraction (Base/Neutral) / GC-MSD (SIM)	Richmond
Solids, Total Dissolved in Water	SM 2540 C* (2017)	Gravimetry (Dried at 103-105C)	Kelowna
Solids, Total Suspended in Water	SM 2540 D* (2017)	Gravimetry (Dried at 103-105C)	Kelowna
Turbidity in Water	SM 2130 B (2017)	Nephelometry	Kelowna
VH in Water	EPA 5030B / BCMOE VHw	Purge&Trap / Gas Chromatography (GC-FID)	Richmond
Volatile Organic Compounds in Water	EPA 5030B / EPA 8260D	Purge&Trap / GC-MSD (SIM)	Richmond
VPW in Water	BCMOE VPH	Calculation: VH - (Benzene + Toluene + Ethylbenzene + Xylenes + Styrene)	N/A

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
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
pH units	pH < 7 = acidic, pH > 7 = basic
µg/L	Micrograms per litre
µS/cm	Microsiemens per centimetre
BCMOE	British Columbia Environmental Laboratory Manual, British Columbia Ministry of Environment
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 Ecoscape Environmental Ltd.
PROJECT 19-2850 - Golden

WORK ORDER 0051806
REPORTED 2020-05-28 17:38

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: acrump@caro.ca

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO Ecoscape Environmental Ltd.
PROJECT 19-2850 - Golden

WORK ORDER 0051806
REPORTED 2020-05-28 17:38

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

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Anions, Batch B0E1698									
Blank (B0E1698-BLK1)			Prepared: 2020-05-22, Analyzed: 2020-05-23						
Bromide	< 0.10	0.10 mg/L							
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 (B0E1698-BLK2)			Prepared: 2020-05-22, Analyzed: 2020-05-23						
Bromide	< 0.10	0.10 mg/L							
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 (B0E1698-BLK3)			Prepared: 2020-05-22, Analyzed: 2020-05-23						
Bromide	< 0.10	0.10 mg/L							
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 (B0E1698-BS1)			Prepared: 2020-05-22, Analyzed: 2020-05-23						
Bromide	3.96	0.10 mg/L	4.00		99	85-115			
Chloride	16.0	0.10 mg/L	16.0		100	90-110			
Fluoride	4.07	0.10 mg/L	4.00		102	88-108			
Nitrate (as N)	3.96	0.010 mg/L	4.00		99	90-110			
Nitrite (as N)	2.04	0.010 mg/L	2.00		102	85-115			
Sulfate	16.1	1.0 mg/L	16.0		100	90-110			
LCS (B0E1698-BS2)			Prepared: 2020-05-22, Analyzed: 2020-05-23						
Bromide	3.91	0.10 mg/L	4.00		98	85-115			
Chloride	16.2	0.10 mg/L	16.0		101	90-110			
Fluoride	4.00	0.10 mg/L	4.00		100	88-108			
Nitrate (as N)	3.81	0.010 mg/L	4.00		95	90-110			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Anions, Batch B0E1698, Continued									
LCS (B0E1698-BS2), Continued				Prepared: 2020-05-22, Analyzed: 2020-05-23					
Nitrite (as N)	2.04	0.010 mg/L	2.00		102	85-115			
Sulfate	15.9	1.0 mg/L	16.0		100	90-110			
LCS (B0E1698-BS3)				Prepared: 2020-05-22, Analyzed: 2020-05-23					
Bromide	3.95	0.10 mg/L	4.00		99	85-115			
Chloride	15.9	0.10 mg/L	16.0		99	90-110			
Fluoride	4.04	0.10 mg/L	4.00		101	88-108			
Nitrate (as N)	3.94	0.010 mg/L	4.00		98	90-110			
Nitrite (as N)	2.10	0.010 mg/L	2.00		105	85-115			
Sulfate	16.1	1.0 mg/L	16.0		100	90-110			
BCMOE Aggregate Hydrocarbons, Batch B0E1825									
Blank (B0E1825-BLK1)				Prepared: 2020-05-25, Analyzed: 2020-05-25					
EPHw10-19	< 250	250 µg/L							
EPHw19-32	< 250	250 µg/L							
Surrogate: 2-Methylnonane (EPH/F2-4)	358	µg/L	444		81	60-126			
LCS (B0E1825-BS2)				Prepared: 2020-05-25, Analyzed: 2020-05-25					
EPHw10-19	12900	250 µg/L	15500		83	70-117			
EPHw19-32	18400	250 µg/L	22200		83	70-113			
Surrogate: 2-Methylnonane (EPH/F2-4)	369	µg/L	444		83	60-126			
LCS Dup (B0E1825-BS2)				Prepared: 2020-05-25, Analyzed: 2020-05-25					
EPHw10-19	14100	250 µg/L	15500		91	70-117	9	20	
EPHw19-32	20300	250 µg/L	22200		91	70-113	10	20	
Surrogate: 2-Methylnonane (EPH/F2-4)	391	µg/L	444		88	60-126			
BCMOE Aggregate Hydrocarbons, Batch B0E1949									
Blank (B0E1949-BLK1)				Prepared: 2020-05-26, Analyzed: 2020-05-26					
EPHw10-19	< 250	250 µg/L							
EPHw19-32	< 250	250 µg/L							
Surrogate: 2-Methylnonane (EPH/F2-4)	304	µg/L	471		64	60-126			
LCS (B0E1949-BS2)				Prepared: 2020-05-26, Analyzed: 2020-05-26					
EPHw10-19	15100	250 µg/L	15800		96	70-117			
EPHw19-32	21100	250 µg/L	22600		93	70-113			
Surrogate: 2-Methylnonane (EPH/F2-4)	425	µg/L	453		94	60-126			
LCS Dup (B0E1949-BS2)				Prepared: 2020-05-26, Analyzed: 2020-05-26					
EPHw10-19	14300	250 µg/L	16300		88	70-117	5	20	
EPHw19-32	20600	250 µg/L	23400		88	70-113	2	20	
Surrogate: 2-Methylnonane (EPH/F2-4)	329	µg/L	467		70	60-126			
BCMOE Aggregate Hydrocarbons, Batch B0E2045									
Blank (B0E2045-BLK1)				Prepared: 2020-05-27, Analyzed: 2020-05-27					
VHw (6-10)	< 100	100 µg/L							
LCS (B0E2045-BS2)				Prepared: 2020-05-27, Analyzed: 2020-05-27					
VHw (6-10)	3220	100 µg/L	3280		98	70-130			
Duplicate (B0E2045-DUP1)				Source: 0051806-10 Prepared: 2020-05-28, Analyzed: 2020-05-28					
VHw (6-10)	< 100	100 µg/L	< 100					19	

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0051806
2020-05-28 17:38

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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Dissolved Metals, Batch B0E1807

Blank (B0E1807-BLK1)

Prepared: 2020-05-24, Analyzed: 2020-05-24

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							
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 (B0E1807-BS1)

Prepared: 2020-05-24, Analyzed: 2020-05-24

Lithium, dissolved	0.0215	0.00010 mg/L	0.0200	107	80-120
Aluminum, dissolved	0.0221	0.0050 mg/L	0.0199	111	80-120
Antimony, dissolved	0.0193	0.00020 mg/L	0.0200	96	80-120
Arsenic, dissolved	0.0203	0.00050 mg/L	0.0200	102	80-120
Barium, dissolved	0.0202	0.0050 mg/L	0.0198	102	80-120
Beryllium, dissolved	0.0209	0.00010 mg/L	0.0198	106	80-120
Bismuth, dissolved	0.0211	0.00010 mg/L	0.0200	105	80-120
Boron, dissolved	0.0169	0.0050 mg/L	0.0200	85	80-120
Cadmium, dissolved	0.0203	0.000010 mg/L	0.0199	102	80-120
Calcium, dissolved	2.18	0.20 mg/L	2.02	108	80-120
Chromium, dissolved	0.0197	0.00050 mg/L	0.0198	99	80-120
Cobalt, dissolved	0.0199	0.00010 mg/L	0.0199	100	80-120
Copper, dissolved	0.0205	0.00040 mg/L	0.0200	103	80-120
Iron, dissolved	1.95	0.010 mg/L	2.02	97	80-120
Lead, dissolved	0.0204	0.00020 mg/L	0.0199	102	80-120
Magnesium, dissolved	1.95	0.010 mg/L	2.02	97	80-120

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0051806
2020-05-28 17:38

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Dissolved Metals, Batch B0E1807, Continued									
LCS (B0E1807-BS1), Continued					Prepared: 2020-05-24, Analyzed: 2020-05-24				
Manganese, dissolved	0.0198	0.00020 mg/L	0.0199		100	80-120			
Molybdenum, dissolved	0.0194	0.00010 mg/L	0.0200		97	80-120			
Nickel, dissolved	0.0201	0.00040 mg/L	0.0200		101	80-120			
Phosphorus, dissolved	1.94	0.050 mg/L	2.00		97	80-120			
Potassium, dissolved	1.94	0.10 mg/L	2.02		96	80-120			
Selenium, dissolved	0.0204	0.00050 mg/L	0.0200		102	80-120			
Silicon, dissolved	2.3	1.0 mg/L	2.00		114	80-120			
Silver, dissolved	0.0199	0.000050 mg/L	0.0200		99	80-120			
Sodium, dissolved	1.97	0.10 mg/L	2.02		97	80-120			
Strontium, dissolved	0.0198	0.0010 mg/L	0.0200		99	80-120			
Sulfur, dissolved	4.5	3.0 mg/L	5.00		90	80-120			
Tellurium, dissolved	0.0197	0.00050 mg/L	0.0200		99	80-120			
Thallium, dissolved	0.0206	0.000020 mg/L	0.0199		103	80-120			
Thorium, dissolved	0.0199	0.00010 mg/L	0.0200		99	80-120			
Tin, dissolved	0.0196	0.00020 mg/L	0.0200		98	80-120			
Titanium, dissolved	0.0196	0.00050 mg/L	0.0200		98	80-120			
Tungsten, dissolved	0.0199	0.0010 mg/L	0.0200		100	80-120			
Uranium, dissolved	0.0206	0.000020 mg/L	0.0200		103	80-120			
Vanadium, dissolved	0.0196	0.0010 mg/L	0.0200		98	80-120			
Zinc, dissolved	0.0205	0.0040 mg/L	0.0200		102	80-120			
Zirconium, dissolved	0.0193	0.00010 mg/L	0.0200		96	80-120			

Reference (B0E1807-SRM1)					Prepared: 2020-05-24, Analyzed: 2020-05-24				
Lithium, dissolved	0.113	0.00010 mg/L	0.100		113	77-127			
Aluminum, dissolved	0.242	0.0050 mg/L	0.235		103	79-114			
Antimony, dissolved	0.0458	0.00020 mg/L	0.0431		106	89-123			
Arsenic, dissolved	0.452	0.00050 mg/L	0.423		107	87-113			
Barium, dissolved	3.32	0.0050 mg/L	3.30		101	85-114			
Beryllium, dissolved	0.226	0.00010 mg/L	0.209		108	79-122			
Boron, dissolved	1.47	0.0050 mg/L	1.65		89	79-117			
Cadmium, dissolved	0.227	0.000010 mg/L	0.221		103	89-112			
Calcium, dissolved	7.74	0.20 mg/L	7.72		100	85-120			
Chromium, dissolved	0.436	0.00050 mg/L	0.434		100	87-113			
Cobalt, dissolved	0.127	0.00010 mg/L	0.124		102	90-117			
Copper, dissolved	0.845	0.00040 mg/L	0.815		104	90-115			
Iron, dissolved	1.26	0.010 mg/L	1.27		99	86-112			
Lead, dissolved	0.115	0.00020 mg/L	0.110		105	90-113			
Magnesium, dissolved	6.56	0.010 mg/L	6.59		99	84-116			
Manganese, dissolved	0.339	0.00020 mg/L	0.342		99	85-113			
Molybdenum, dissolved	0.412	0.00010 mg/L	0.404		102	87-112			
Nickel, dissolved	0.851	0.00040 mg/L	0.835		102	90-114			
Phosphorus, dissolved	0.527	0.050 mg/L	0.499		106	74-119			
Potassium, dissolved	2.91	0.10 mg/L	2.88		101	78-119			
Selenium, dissolved	0.0351	0.00050 mg/L	0.0324		108	89-123			
Sodium, dissolved	17.5	0.10 mg/L	18.0		97	81-117			
Strontium, dissolved	0.926	0.0010 mg/L	0.935		99	82-111			
Thallium, dissolved	0.0400	0.000020 mg/L	0.0385		104	90-113			
Uranium, dissolved	0.256	0.000020 mg/L	0.258		99	87-113			
Vanadium, dissolved	0.857	0.0010 mg/L	0.873		98	85-110			
Zinc, dissolved	0.907	0.0040 mg/L	0.848		107	88-114			

Dissolved Metals, Batch B0E1881

Blank (B0E1881-BLK1)					Prepared: 2020-05-25, Analyzed: 2020-05-26				
Mercury, dissolved	< 0.000010	0.000010 mg/L							

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0051806
2020-05-28 17:38

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Dissolved Metals, Batch B0E1881, Continued									
Blank (B0E1881-BLK2)				Prepared: 2020-05-25, Analyzed: 2020-05-26					
Mercury, dissolved	< 0.000010	0.000010 mg/L							
Reference (B0E1881-SRM1)				Prepared: 2020-05-25, Analyzed: 2020-05-26					
Mercury, dissolved	0.00541	0.000010 mg/L	0.00489		111	80-120			
Reference (B0E1881-SRM2)				Prepared: 2020-05-25, Analyzed: 2020-05-26					
Mercury, dissolved	0.00432	0.000010 mg/L	0.00489		88	80-120			

Dissolved Metals, Batch B0E1903

Blank (B0E1903-BLK1)				Prepared: 2020-05-27, Analyzed: 2020-05-27					
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							
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 (B0E1903-BS1)				Prepared: 2020-05-27, Analyzed: 2020-05-27					
Lithium, dissolved	0.0166	0.00010 mg/L	0.0200		83	80-120			
Aluminum, dissolved	0.0206	0.0050 mg/L	0.0199		103	80-120			
Antimony, dissolved	0.0195	0.00020 mg/L	0.0200		98	80-120			
Arsenic, dissolved	0.0187	0.00050 mg/L	0.0200		94	80-120			
Barium, dissolved	0.0209	0.0050 mg/L	0.0198		105	80-120			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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Dissolved Metals, Batch B0E1903, Continued

LCS (B0E1903-BS1), Continued

Prepared: 2020-05-27, Analyzed: 2020-05-27

Beryllium, dissolved	0.0170	0.00010 mg/L	0.0198		86	80-120			
Bismuth, dissolved	0.0216	0.00010 mg/L	0.0200		108	80-120			
Boron, dissolved	0.0174	0.0050 mg/L	0.0200		87	80-120			
Cadmium, dissolved	0.0202	0.000010 mg/L	0.0199		102	80-120			
Calcium, dissolved	1.90	0.20 mg/L	2.02		94	80-120			
Chromium, dissolved	0.0176	0.00050 mg/L	0.0198		89	80-120			
Cobalt, dissolved	0.0183	0.00010 mg/L	0.0199		92	80-120			
Copper, dissolved	0.0192	0.00040 mg/L	0.0200		96	80-120			
Iron, dissolved	1.81	0.010 mg/L	2.02		89	80-120			
Lead, dissolved	0.0209	0.00020 mg/L	0.0199		105	80-120			
Magnesium, dissolved	1.92	0.010 mg/L	2.02		95	80-120			
Manganese, dissolved	0.0205	0.00020 mg/L	0.0199		103	80-120			
Molybdenum, dissolved	0.0191	0.00010 mg/L	0.0200		96	80-120			
Nickel, dissolved	0.0181	0.00040 mg/L	0.0200		91	80-120			
Phosphorus, dissolved	1.87	0.050 mg/L	2.00		93	80-120			
Potassium, dissolved	1.85	0.10 mg/L	2.02		91	80-120			
Selenium, dissolved	0.0199	0.00050 mg/L	0.0200		100	80-120			
Silicon, dissolved	1.7	1.0 mg/L	2.00		84	80-120			
Silver, dissolved	0.0202	0.000050 mg/L	0.0200		101	80-120			
Sodium, dissolved	1.76	0.10 mg/L	2.02		87	80-120			
Strontium, dissolved	0.0190	0.0010 mg/L	0.0200		95	80-120			
Sulfur, dissolved	4.8	3.0 mg/L	5.00		95	80-120			
Tellurium, dissolved	0.0210	0.00050 mg/L	0.0200		105	80-120			
Thallium, dissolved	0.0193	0.000020 mg/L	0.0199		97	80-120			
Thorium, dissolved	0.0205	0.00010 mg/L	0.0200		102	80-120			
Tin, dissolved	0.0203	0.00020 mg/L	0.0200		102	80-120			
Titanium, dissolved	0.0169	0.0050 mg/L	0.0200		84	80-120			
Tungsten, dissolved	0.0196	0.0010 mg/L	0.0200		98	80-120			
Uranium, dissolved	0.0212	0.000020 mg/L	0.0200		106	80-120			
Vanadium, dissolved	0.0174	0.0010 mg/L	0.0200		87	80-120			
Zinc, dissolved	0.0201	0.0040 mg/L	0.0200		100	80-120			
Zirconium, dissolved	0.0190	0.00010 mg/L	0.0200		95	80-120			

Reference (B0E1903-SRM1)

Prepared: 2020-05-27, Analyzed: 2020-05-27

Lithium, dissolved	0.00883	0.00010 mg/L	0.0100		88	77-127			
Aluminum, dissolved	0.0236	0.0050 mg/L	0.0235		101	79-114			
Antimony, dissolved	0.00488	0.00020 mg/L	0.00431		113	89-123			
Arsenic, dissolved	0.0433	0.00050 mg/L	0.0423		102	87-113			
Barium, dissolved	0.357	0.0050 mg/L	0.330		108	85-114			
Beryllium, dissolved	0.0194	0.00010 mg/L	0.0209		93	79-122			
Boron, dissolved	0.147	0.0050 mg/L	0.165		89	79-117			
Cadmium, dissolved	0.0237	0.000010 mg/L	0.0221		107	89-112			
Calcium, dissolved	0.81	0.20 mg/L	0.772		104	85-120			
Chromium, dissolved	0.0402	0.00050 mg/L	0.0434		93	87-113			
Cobalt, dissolved	0.0122	0.00010 mg/L	0.0124		98	90-117			
Copper, dissolved	0.0829	0.00040 mg/L	0.0815		102	90-115			
Iron, dissolved	0.121	0.010 mg/L	0.127		95	86-112			
Lead, dissolved	0.0123	0.00020 mg/L	0.0110		112	90-113			
Magnesium, dissolved	0.661	0.010 mg/L	0.659		100	84-116			
Manganese, dissolved	0.0356	0.00020 mg/L	0.0342		104	85-113			
Molybdenum, dissolved	0.0429	0.00010 mg/L	0.0404		106	87-112			
Nickel, dissolved	0.0802	0.00040 mg/L	0.0835		96	90-114			
Phosphorus, dissolved	< 0.050	0.050 mg/L	0.0499		98	74-119			
Potassium, dissolved	0.26	0.10 mg/L	0.288		90	78-119			
Selenium, dissolved	0.00365	0.00050 mg/L	0.00324		113	89-123			
Sodium, dissolved	1.61	0.10 mg/L	1.80		89	81-117			

APPENDIX 2: QUALITY CONTROL RESULTS

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Dissolved Metals, Batch B0E1903, Continued									
Reference (B0E1903-SRM1), Continued				Prepared: 2020-05-27, Analyzed: 2020-05-27					
Strontium, dissolved	0.0919	0.0010 mg/L	0.0935		98	82-111			
Thallium, dissolved	0.00397	0.000020 mg/L	0.00385		103	90-113			
Uranium, dissolved	0.0287	0.000020 mg/L	0.0258		111	87-113			
Vanadium, dissolved	0.0784	0.0010 mg/L	0.0873		90	85-110			
Zinc, dissolved	0.0860	0.0040 mg/L	0.0848		101	88-114			
General Parameters, Batch B0E1637									
Blank (B0E1637-BLK1)				Prepared: 2020-05-22, Analyzed: 2020-05-27					
BOD, 5-day	< 2.0	2.0 mg/L							
LCS (B0E1637-BS1)				Prepared: 2020-05-22, Analyzed: 2020-05-27					
BOD, 5-day	165	50.7 mg/L	180		92	85-115			
General Parameters, Batch B0E1651									
Blank (B0E1651-BLK1)				Prepared: 2020-05-22, Analyzed: 2020-05-22					
Turbidity	< 0.10	0.10 NTU							
Blank (B0E1651-BLK2)				Prepared: 2020-05-22, Analyzed: 2020-05-22					
Turbidity	< 0.10	0.10 NTU							
Blank (B0E1651-BLK3)				Prepared: 2020-05-22, Analyzed: 2020-05-22					
Turbidity	< 0.10	0.10 NTU							
LCS (B0E1651-BS1)				Prepared: 2020-05-22, Analyzed: 2020-05-22					
Turbidity	39.0	0.10 NTU	40.0		98	90-110			
LCS (B0E1651-BS2)				Prepared: 2020-05-22, Analyzed: 2020-05-22					
Turbidity	39.2	0.10 NTU	40.0		98	90-110			
LCS (B0E1651-BS3)				Prepared: 2020-05-22, Analyzed: 2020-05-22					
Turbidity	39.1	0.10 NTU	40.0		98	90-110			
Duplicate (B0E1651-DUP2)				Source: 0051806-06		Prepared: 2020-05-22, Analyzed: 2020-05-22			
Turbidity	5.06	0.10 NTU	5.04				< 1	15	
General Parameters, Batch B0E1660									
Blank (B0E1660-BLK1)				Prepared: 2020-05-22, Analyzed: 2020-05-22					
Chemical Oxygen Demand	< 20	20 mg/L							
LCS (B0E1660-BS1)				Prepared: 2020-05-22, Analyzed: 2020-05-22					
Chemical Oxygen Demand	510	20 mg/L	500		102	89-115			
General Parameters, Batch B0E1816									
Blank (B0E1816-BLK1)				Prepared: 2020-05-25, Analyzed: 2020-05-25					
Ammonia, Total (as N)	< 0.050	0.050 mg/L							
Blank (B0E1816-BLK2)				Prepared: 2020-05-25, Analyzed: 2020-05-25					
Ammonia, Total (as N)	< 0.050	0.050 mg/L							
Blank (B0E1816-BLK3)				Prepared: 2020-05-25, Analyzed: 2020-05-25					
Ammonia, Total (as N)	< 0.050	0.050 mg/L							

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
General Parameters, Batch B0E1816, Continued									
Blank (B0E1816-BLK4)			Prepared: 2020-05-25, Analyzed: 2020-05-25						
Ammonia, Total (as N)	< 0.050	0.050 mg/L							
LCS (B0E1816-BS1)			Prepared: 2020-05-25, Analyzed: 2020-05-25						
Ammonia, Total (as N)	0.932	0.050 mg/L	1.00		93	90-115			
LCS (B0E1816-BS2)			Prepared: 2020-05-25, Analyzed: 2020-05-25						
Ammonia, Total (as N)	0.916	0.050 mg/L	1.00		92	90-115			
LCS (B0E1816-BS3)			Prepared: 2020-05-25, Analyzed: 2020-05-25						
Ammonia, Total (as N)	0.928	0.050 mg/L	1.00		93	90-115			
LCS (B0E1816-BS4)			Prepared: 2020-05-25, Analyzed: 2020-05-25						
Ammonia, Total (as N)	0.908	0.050 mg/L	1.00		91	90-115			
Duplicate (B0E1816-DUP3)			Source: 0051806-08		Prepared: 2020-05-25, Analyzed: 2020-05-25				
Ammonia, Total (as N)	0.218	0.050 mg/L		0.206				15	
Matrix Spike (B0E1816-MS3)			Source: 0051806-08		Prepared: 2020-05-25, Analyzed: 2020-05-25				
Ammonia, Total (as N)	0.439	0.050 mg/L	0.250	0.206	93	75-125			
General Parameters, Batch B0E1909									
Blank (B0E1909-BLK1)			Prepared: 2020-05-26, Analyzed: 2020-05-26						
Solids, Total Dissolved	< 15	15 mg/L							
LCS (B0E1909-BS1)			Prepared: 2020-05-26, Analyzed: 2020-05-26						
Solids, Total Dissolved	227	15 mg/L	240		95	85-115			
Duplicate (B0E1909-DUP1)			Source: 0051806-02		Prepared: 2020-05-26, Analyzed: 2020-05-26				
Solids, Total Dissolved	1230	15 mg/L		1290			5	15	
General Parameters, Batch B0E1910									
Blank (B0E1910-BLK1)			Prepared: 2020-05-27, Analyzed: 2020-05-27						
Solids, Total Suspended	< 2.0	2.0 mg/L							
Blank (B0E1910-BLK2)			Prepared: 2020-05-27, Analyzed: 2020-05-27						
Solids, Total Suspended	< 2.0	2.0 mg/L							
LCS (B0E1910-BS1)			Prepared: 2020-05-27, Analyzed: 2020-05-27						
Solids, Total Suspended	94.0	10.0 mg/L	100		94	85-115			
LCS (B0E1910-BS2)			Prepared: 2020-05-27, Analyzed: 2020-05-27						
Solids, Total Suspended	99.0	10.0 mg/L	100		99	85-115			
General Parameters, Batch B0E1970									
Blank (B0E1970-BLK1)			Prepared: 2020-05-26, Analyzed: 2020-05-26						
Alkalinity, Total (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Bicarbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0 mg/L							
Conductivity (EC)	< 2.0	2.0 µS/cm							

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
General Parameters, Batch B0E1970, Continued									
Blank (B0E1970-BLK2)				Prepared: 2020-05-26, Analyzed: 2020-05-26					
Alkalinity, Total (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Bicarbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0 mg/L							
Conductivity (EC)	< 2.0	2.0 µS/cm							
Blank (B0E1970-BLK3)				Prepared: 2020-05-26, Analyzed: 2020-05-26					
Alkalinity, Total (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Bicarbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0 mg/L							
Conductivity (EC)	< 2.0	2.0 µS/cm							
LCS (B0E1970-BS1)				Prepared: 2020-05-26, Analyzed: 2020-05-26					
Alkalinity, Total (as CaCO ₃)	107	1.0 mg/L	100		107	80-120			
LCS (B0E1970-BS2)				Prepared: 2020-05-26, Analyzed: 2020-05-26					
Alkalinity, Total (as CaCO ₃)	110	1.0 mg/L	100		110	80-120			
LCS (B0E1970-BS3)				Prepared: 2020-05-26, Analyzed: 2020-05-26					
Alkalinity, Total (as CaCO ₃)	108	1.0 mg/L	100		108	80-120			
LCS (B0E1970-BS4)				Prepared: 2020-05-26, Analyzed: 2020-05-26					
Conductivity (EC)	1390	2.0 µS/cm	1410		99	95-104			
LCS (B0E1970-BS5)				Prepared: 2020-05-26, Analyzed: 2020-05-26					
Conductivity (EC)	1380	2.0 µS/cm	1410		98	95-104			
LCS (B0E1970-BS6)				Prepared: 2020-05-26, Analyzed: 2020-05-26					
Conductivity (EC)	1410	2.0 µS/cm	1410		100	95-104			
Duplicate (B0E1970-DUP2)				Source: 0051806-02		Prepared: 2020-05-26, Analyzed: 2020-05-26			
Alkalinity, Total (as CaCO ₃)	513	1.0 mg/L		511		< 1	10		
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0 mg/L		< 1.0			10		
Alkalinity, Bicarbonate (as CaCO ₃)	513	1.0 mg/L		511		< 1	10		
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0 mg/L		< 1.0			10		
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0 mg/L		< 1.0			10		
Conductivity (EC)	2580	2.0 µS/cm		2590		< 1	5		
pH	7.97	0.10 pH units		7.98		< 1	4		
Reference (B0E1970-SRM1)				Prepared: 2020-05-26, Analyzed: 2020-05-26					
pH	7.01	0.10 pH units	7.01		100	98-102			
Reference (B0E1970-SRM2)				Prepared: 2020-05-26, Analyzed: 2020-05-26					
pH	7.03	0.10 pH units	7.01		100	98-102			
Reference (B0E1970-SRM3)				Prepared: 2020-05-26, Analyzed: 2020-05-26					
pH	7.03	0.10 pH units	7.01		100	98-102			

Polycyclic Aromatic Hydrocarbons (PAH), Batch B0E1825

Blank (B0E1825-BLK1)				Prepared: 2020-05-25, Analyzed: 2020-05-25					
Acenaphthene	< 0.050	0.050 µg/L							
Acenaphthylene	< 0.200	0.200 µg/L							

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Polycyclic Aromatic Hydrocarbons (PAH), Batch B0E1825, Continued									
Blank (B0E1825-BLK1), Continued					Prepared: 2020-05-25, Analyzed: 2020-05-25				
Acridine	< 0.050	0.050 µg/L							
Anthracene	< 0.010	0.010 µg/L							
Benz(a)anthracene	< 0.010	0.010 µg/L							
Benzo(a)pyrene	< 0.010	0.010 µg/L							
Benzo(b+j)fluoranthene	< 0.050	0.050 µg/L							
Benzo(g,h,i)perylene	< 0.050	0.050 µg/L							
Benzo(k)fluoranthene	< 0.050	0.050 µg/L							
2-Chloronaphthalene	< 0.100	0.100 µg/L							
Chrysene	< 0.050	0.050 µg/L							
Dibenz(a,h)anthracene	< 0.010	0.010 µg/L							
Fluoranthene	< 0.030	0.030 µg/L							
Fluorene	< 0.050	0.050 µg/L							
Indeno(1,2,3-cd)pyrene	< 0.050	0.050 µg/L							
1-Methylnaphthalene	< 0.100	0.100 µg/L							
2-Methylnaphthalene	< 0.100	0.100 µg/L							
Naphthalene	< 0.200	0.200 µg/L							
Phenanthrene	< 0.100	0.100 µg/L							
Pyrene	< 0.020	0.020 µg/L							
Quinoline	< 0.050	0.050 µg/L							
Surrogate: Acridine-d9	1.94	µg/L	4.47		43	50-140			S02
Surrogate: Naphthalene-d8	4.94	µg/L	4.47		111	50-140			
Surrogate: Perylene-d12	4.27	µg/L	4.47		96	50-140			
LCS (B0E1825-BS1)					Prepared: 2020-05-25, Analyzed: 2020-05-25				
Acenaphthene	4.77	0.050 µg/L	4.44		107	55-137			
Acenaphthylene	4.92	0.200 µg/L	4.44		111	53-140			
Acridine	3.79	0.050 µg/L	4.42		86	50-120			
Anthracene	4.27	0.010 µg/L	4.44		96	64-130			
Benz(a)anthracene	3.97	0.010 µg/L	4.44		89	57-140			
Benzo(a)pyrene	4.41	0.010 µg/L	4.44		99	63-133			
Benzo(b+j)fluoranthene	9.04	0.050 µg/L	8.89		102	60-129			
Benzo(g,h,i)perylene	4.70	0.050 µg/L	4.44		106	52-139			
Benzo(k)fluoranthene	4.37	0.050 µg/L	4.44		98	50-138			
2-Chloronaphthalene	4.86	0.100 µg/L	4.49		108	50-139			
Chrysene	4.07	0.050 µg/L	4.44		92	59-140			
Dibenz(a,h)anthracene	4.52	0.010 µg/L	4.44		102	53-136			
Fluoranthene	4.49	0.030 µg/L	4.44		101	67-135			
Fluorene	4.44	0.050 µg/L	4.44		100	57-134			
Indeno(1,2,3-cd)pyrene	4.61	0.050 µg/L	4.44		104	52-129			
1-Methylnaphthalene	5.17	0.100 µg/L	4.44		116	50-140			
2-Methylnaphthalene	4.84	0.100 µg/L	4.44		109	50-140			
Naphthalene	5.89	0.200 µg/L	4.44		133	50-140			
Phenanthrene	4.56	0.100 µg/L	4.44		103	61-134			
Pyrene	4.45	0.020 µg/L	4.44		100	66-131			
Quinoline	5.46	0.050 µg/L	4.80		114	50-140			
Surrogate: Acridine-d9	3.51	µg/L	4.47		79	50-140			
Surrogate: Naphthalene-d8	6.17	µg/L	4.47		138	50-140			
Surrogate: Perylene-d12	4.11	µg/L	4.47		92	50-140			
LCS Dup (B0E1825-BSD1)					Prepared: 2020-05-25, Analyzed: 2020-05-25				
Acenaphthene	5.14	0.050 µg/L	4.44		116	55-137	7	18	
Acenaphthylene	5.31	0.200 µg/L	4.44		119	53-140	8	20	
Acridine	4.19	0.050 µg/L	4.42		95	50-120	10	30	
Anthracene	4.64	0.010 µg/L	4.44		104	64-130	8	15	
Benz(a)anthracene	4.30	0.010 µg/L	4.44		97	57-140	8	25	
Benzo(a)pyrene	4.71	0.010 µg/L	4.44		106	63-133	7	18	

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO Ecoscape Environmental Ltd.
PROJECT 19-2850 - Golden

WORK ORDER 0051806
REPORTED 2020-05-28 17:38

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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Polycyclic Aromatic Hydrocarbons (PAH), Batch B0E1825, Continued

LCS Dup (B0E1825-BS1), Continued

Prepared: 2020-05-25, Analyzed: 2020-05-25

Benzo(b+j)fluoranthene	9.49	0.050 µg/L	8.89		107	60-129	5	17	
Benzo(g,h,i)perylene	4.90	0.050 µg/L	4.44		110	52-139	4	22	
Benzo(k)fluoranthene	4.48	0.050 µg/L	4.44		101	50-138	2	26	
2-Chloronaphthalene	5.18	0.100 µg/L	4.49		115	50-139	6	23	
Chrysene	4.37	0.050 µg/L	4.44		98	59-140	7	23	
Dibenz(a,h)anthracene	4.71	0.010 µg/L	4.44		106	53-136	4	21	
Fluoranthene	4.57	0.030 µg/L	4.44		103	67-135	2	18	
Fluorene	4.84	0.050 µg/L	4.44		109	57-134	9	18	
Indeno(1,2,3-cd)pyrene	4.87	0.050 µg/L	4.44		110	52-129	5	21	
1-Methylnaphthalene	5.25	0.100 µg/L	4.44		118	50-140	1	20	
2-Methylnaphthalene	4.93	0.100 µg/L	4.44		111	50-140	2	21	
Naphthalene	5.84	0.200 µg/L	4.44		131	50-140	< 1	22	
Phenanthrene	4.88	0.100 µg/L	4.44		110	61-134	7	17	
Pyrene	4.53	0.020 µg/L	4.44		102	66-131	2	19	
Quinoline	5.54	0.050 µg/L	4.80		115	50-140	2	14	
Surrogate: Acridine-d9	3.83	µg/L	4.47		86	50-140			
Surrogate: Naphthalene-d8	5.67	µg/L	4.47		127	50-140			
Surrogate: Perylene-d12	4.42	µg/L	4.47		99	50-140			

Polycyclic Aromatic Hydrocarbons (PAH), Batch B0E1949

Blank (B0E1949-BLK1)

Prepared: 2020-05-26, Analyzed: 2020-05-27

Acenaphthene	< 0.050	0.050 µg/L							
Acenaphthylene	< 0.200	0.200 µg/L							
Acridine	< 0.050	0.050 µg/L							
Anthracene	< 0.010	0.010 µg/L							
Benz(a)anthracene	< 0.010	0.010 µg/L							
Benzo(a)pyrene	< 0.010	0.010 µg/L							
Benzo(b+j)fluoranthene	< 0.050	0.050 µg/L							
Benzo(g,h,i)perylene	< 0.050	0.050 µg/L							
Benzo(k)fluoranthene	< 0.050	0.050 µg/L							
2-Chloronaphthalene	< 0.100	0.100 µg/L							
Chrysene	< 0.050	0.050 µg/L							
Dibenz(a,h)anthracene	< 0.010	0.010 µg/L							
Fluoranthene	< 0.030	0.030 µg/L							
Fluorene	< 0.050	0.050 µg/L							
Indeno(1,2,3-cd)pyrene	< 0.050	0.050 µg/L							
1-Methylnaphthalene	< 0.100	0.100 µg/L							
2-Methylnaphthalene	< 0.100	0.100 µg/L							
Naphthalene	< 0.200	0.200 µg/L							
Phenanthrene	< 0.100	0.100 µg/L							
Pyrene	< 0.020	0.020 µg/L							
Quinoline	< 0.050	0.050 µg/L							
Surrogate: Acridine-d9	2.80	µg/L	4.73		59	50-140			
Surrogate: Naphthalene-d8	3.86	µg/L	4.73		82	50-140			
Surrogate: Perylene-d12	3.88	µg/L	4.73		82	50-140			

LCS (B0E1949-BS1)

Prepared: 2020-05-26, Analyzed: 2020-05-26

Acenaphthene	3.95	0.050 µg/L	4.56		87	55-137			
Acenaphthylene	3.83	0.200 µg/L	4.56		84	53-140			
Acridine	2.73	0.050 µg/L	4.54		60	50-120			
Anthracene	3.77	0.010 µg/L	4.56		83	64-130			
Benz(a)anthracene	3.61	0.010 µg/L	4.56		79	57-140			
Benzo(a)pyrene	4.08	0.010 µg/L	4.56		89	63-133			
Benzo(b+j)fluoranthene	8.53	0.050 µg/L	9.12		94	60-129			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO Ecoscape Environmental Ltd.
PROJECT 19-2850 - Golden

WORK ORDER 0051806
REPORTED 2020-05-28 17:38

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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Polycyclic Aromatic Hydrocarbons (PAH), Batch B0E1949, Continued

LCS (B0E1949-BS1), Continued

Prepared: 2020-05-26, Analyzed: 2020-05-26

Benzo(g,h,i)perylene	4.10	0.050 µg/L	4.56		90	52-139			
Benzo(k)fluoranthene	3.91	0.050 µg/L	4.56		86	50-138			
2-Chloronaphthalene	3.70	0.100 µg/L	4.60		80	50-139			
Chrysene	3.79	0.050 µg/L	4.56		83	59-140			
Dibenz(a,h)anthracene	3.90	0.010 µg/L	4.56		86	53-136			
Fluoranthene	3.97	0.030 µg/L	4.56		87	67-135			
Fluorene	3.75	0.050 µg/L	4.56		82	57-134			
Indeno(1,2,3-cd)pyrene	4.05	0.050 µg/L	4.56		89	52-129			
1-Methylnaphthalene	3.94	0.100 µg/L	4.56		86	50-140			
2-Methylnaphthalene	3.91	0.100 µg/L	4.56		86	50-140			
Naphthalene	4.12	0.200 µg/L	4.56		90	50-140			
Phenanthrene	4.02	0.100 µg/L	4.56		88	61-134			
Pyrene	3.97	0.020 µg/L	4.56		87	66-131			
Quinoline	5.40	0.050 µg/L	4.92		110	50-140			
Surrogate: Acridine-d9	2.99	µg/L	4.58		65	50-140			
Surrogate: Naphthalene-d8	4.19	µg/L	4.58		91	50-140			
Surrogate: Perylene-d12	3.89	µg/L	4.58		85	50-140			

LCS Dup (B0E1949-BSD1)

Prepared: 2020-05-26, Analyzed: 2020-05-27

Acenaphthene	4.29	0.050 µg/L	4.59		94	55-137	8	18	
Acenaphthylene	4.32	0.200 µg/L	4.59		94	53-140	12	20	
Acridine	2.66	0.050 µg/L	4.56		58	50-120	3	30	
Anthracene	4.01	0.010 µg/L	4.59		88	64-130	6	15	
Benz(a)anthracene	4.00	0.010 µg/L	4.59		87	57-140	10	25	
Benzo(a)pyrene	4.33	0.010 µg/L	4.59		94	63-133	6	18	
Benzo(b+j)fluoranthene	9.01	0.050 µg/L	9.17		98	60-129	5	17	
Benzo(g,h,i)perylene	4.51	0.050 µg/L	4.59		98	52-139	10	22	
Benzo(k)fluoranthene	4.72	0.050 µg/L	4.59		103	50-138	19	26	
2-Chloronaphthalene	4.01	0.100 µg/L	4.63		87	50-139	8	23	
Chrysene	4.13	0.050 µg/L	4.59		90	59-140	8	23	
Dibenz(a,h)anthracene	4.19	0.010 µg/L	4.59		91	53-136	7	21	
Fluoranthene	4.17	0.030 µg/L	4.59		91	67-135	5	18	
Fluorene	4.13	0.050 µg/L	4.59		90	57-134	10	18	
Indeno(1,2,3-cd)pyrene	4.47	0.050 µg/L	4.59		97	52-129	10	21	
1-Methylnaphthalene	4.25	0.100 µg/L	4.59		93	50-140	8	20	
2-Methylnaphthalene	4.22	0.100 µg/L	4.59		92	50-140	7	21	
Naphthalene	4.66	0.200 µg/L	4.59		102	50-140	12	22	
Phenanthrene	4.32	0.100 µg/L	4.59		94	61-134	7	17	
Pyrene	4.15	0.020 µg/L	4.59		91	66-131	4	19	
Quinoline	5.84	0.050 µg/L	4.95		118	50-140	8	14	
Surrogate: Acridine-d9	2.46	µg/L	4.61		53	50-140			
Surrogate: Naphthalene-d8	4.44	µg/L	4.61		96	50-140			
Surrogate: Perylene-d12	4.03	µg/L	4.61		87	50-140			

Volatile Organic Compounds (VOC), Batch B0E2045

Blank (B0E2045-BLK1)

Prepared: 2020-05-27, Analyzed: 2020-05-27

Benzene	< 0.5	0.5 µg/L							
Bromodichloromethane	< 1.0	1.0 µg/L							
Bromoform	< 1.0	1.0 µg/L							
Carbon tetrachloride	< 0.5	0.5 µg/L							
Chlorobenzene	< 1.0	1.0 µg/L							
Chloroethane	< 2.0	2.0 µg/L							
Chloroform	< 1.0	1.0 µg/L							
Dibromochloromethane	< 1.0	1.0 µg/L							

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0051806
2020-05-28 17:38

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Volatile Organic Compounds (VOC), Batch B0E2045, Continued									
Blank (B0E2045-BLK1), Continued					Prepared: 2020-05-27, Analyzed: 2020-05-27				
1,2-Dibromoethane	< 0.3	0.3 µg/L							
Dibromomethane	< 1.0	1.0 µg/L							
1,2-Dichlorobenzene	< 0.5	0.5 µg/L							
1,3-Dichlorobenzene	< 1.0	1.0 µg/L							
1,4-Dichlorobenzene	< 1.0	1.0 µg/L							
1,1-Dichloroethane	< 1.0	1.0 µg/L							
1,2-Dichloroethane	< 1.0	1.0 µg/L							
1,1-Dichloroethylene	< 1.0	1.0 µg/L							
cis-1,2-Dichloroethylene	< 1.0	1.0 µg/L							
trans-1,2-Dichloroethylene	< 1.0	1.0 µg/L							
Dichloromethane	< 3.0	3.0 µg/L							
1,2-Dichloropropane	< 1.0	1.0 µg/L							
1,3-Dichloropropene (cis + trans)	< 1.0	1.0 µg/L							
Ethylbenzene	< 1.0	1.0 µg/L							
Methyl tert-butyl ether	< 1.0	1.0 µg/L							
Styrene	< 1.0	1.0 µg/L							
1,1,2,2-Tetrachloroethane	< 0.5	0.5 µg/L							
Tetrachloroethylene	< 1.0	1.0 µg/L							
Toluene	< 1.0	1.0 µg/L							
1,1,1-Trichloroethane	< 1.0	1.0 µg/L							
1,1,2-Trichloroethane	< 1.0	1.0 µg/L							
Trichloroethylene	< 1.0	1.0 µg/L							
Trichlorofluoromethane	< 1.0	1.0 µg/L							
Vinyl chloride	< 1.0	1.0 µg/L							
Xylenes (total)	< 2.0	2.0 µg/L							
Surrogate: Toluene-d8	25.1	µg/L	26.5		95	70-130			
Surrogate: 4-Bromofluorobenzene	22.6	µg/L	24.9		91	70-130			
Surrogate: 1,4-Dichlorobenzene-d4	22.8	µg/L	25.5		90	70-130			
LCS (B0E2045-BS1)					Prepared: 2020-05-27, Analyzed: 2020-05-27				
Benzene	21.4	0.5 µg/L	20.0		107	70-130			
Bromodichloromethane	19.4	1.0 µg/L	20.0		97	70-130			
Bromoform	19.0	1.0 µg/L	20.1		94	70-130			
Carbon tetrachloride	21.0	0.5 µg/L	20.2		104	70-130			
Chlorobenzene	20.9	1.0 µg/L	20.1		104	70-130			
Chloroethane	39.2	2.0 µg/L	20.0		196	60-140			SPK
Chloroform	20.5	1.0 µg/L	20.1		102	70-130			
Dibromochloromethane	19.4	1.0 µg/L	20.2		96	70-130			
1,2-Dibromoethane	19.8	0.3 µg/L	20.0		99	70-130			
Dibromomethane	19.5	1.0 µg/L	20.0		98	70-130			
1,2-Dichlorobenzene	20.4	0.5 µg/L	20.1		102	70-130			
1,3-Dichlorobenzene	20.8	1.0 µg/L	20.1		103	70-130			
1,4-Dichlorobenzene	20.6	1.0 µg/L	20.1		102	70-130			
1,1-Dichloroethane	19.7	1.0 µg/L	20.1		98	70-130			
1,2-Dichloroethane	19.5	1.0 µg/L	20.0		98	70-130			
1,1-Dichloroethylene	20.0	1.0 µg/L	20.0		100	70-130			
cis-1,2-Dichloroethylene	20.2	1.0 µg/L	20.0		101	70-130			
trans-1,2-Dichloroethylene	19.5	1.0 µg/L	20.0		97	70-130			
Dichloromethane	19.6	3.0 µg/L	20.1		98	70-130			
1,2-Dichloropropane	20.4	1.0 µg/L	20.1		101	70-130			
1,3-Dichloropropene (cis + trans)	39.4	1.0 µg/L	40.0		99	70-130			
Ethylbenzene	21.1	1.0 µg/L	20.0		105	70-130			
Methyl tert-butyl ether	18.5	1.0 µg/L	20.0		93	70-130			
Styrene	21.0	1.0 µg/L	20.0		105	70-130			
1,1,2,2-Tetrachloroethane	19.4	0.5 µg/L	20.1		96	70-130			
Tetrachloroethylene	21.9	1.0 µg/L	20.1		109	70-130			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO Ecoscape Environmental Ltd.
PROJECT 19-2850 - Golden

WORK ORDER 0051806
REPORTED 2020-05-28 17:38

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Volatile Organic Compounds (VOC), Batch B0E2045, Continued									
LCS (B0E2045-BS1), Continued					Prepared: 2020-05-27, Analyzed: 2020-05-27				
Toluene	21.8	1.0 µg/L	20.0		109	70-130			
1,1,1-Trichloroethane	20.1	1.0 µg/L	20.0		101	70-130			
1,1,2-Trichloroethane	19.8	1.0 µg/L	20.1		98	70-130			
Trichloroethylene	21.3	1.0 µg/L	20.1		106	70-130			
Trichlorofluoromethane	21.9	1.0 µg/L	20.0		109	60-140			
Vinyl chloride	22.7	1.0 µg/L	20.0		113	60-140			
Xylenes (total)	64.9	2.0 µg/L	60.0		108	70-130			
Surrogate: Toluene-d8	26.5	µg/L	26.5		100	70-130			
Surrogate: 4-Bromofluorobenzene	23.1	µg/L	24.9		93	70-130			
Surrogate: 1,4-Dichlorobenzene-d4	22.6	µg/L	25.5		89	70-130			
Duplicate (B0E2045-DUP1)					Source: 0051806-10 Prepared: 2020-05-28, Analyzed: 2020-05-28				
Benzene	< 0.5	0.5 µg/L		< 0.5				22	
Bromodichloromethane	< 1.0	1.0 µg/L		< 1.0				23	
Bromoform	< 1.0	1.0 µg/L		< 1.0				23	
Carbon tetrachloride	< 0.5	0.5 µg/L		< 0.5				30	
Chlorobenzene	< 1.0	1.0 µg/L		< 1.0				26	
Chloroethane	< 2.0	2.0 µg/L		< 2.0				50	
Chloroform	< 1.0	1.0 µg/L		< 1.0				22	
Dibromochloromethane	< 1.0	1.0 µg/L		< 1.0				28	
1,2-Dibromoethane	< 0.3	0.3 µg/L		< 0.3				30	
Dibromomethane	< 1.0	1.0 µg/L		< 1.0				30	
1,2-Dichlorobenzene	< 0.5	0.5 µg/L		< 0.5				27	
1,3-Dichlorobenzene	< 1.0	1.0 µg/L		< 1.0				30	
1,4-Dichlorobenzene	< 1.0	1.0 µg/L		< 1.0				30	
1,1-Dichloroethane	< 1.0	1.0 µg/L		< 1.0				24	
1,2-Dichloroethane	< 1.0	1.0 µg/L		< 1.0				24	
1,1-Dichloroethylene	< 1.0	1.0 µg/L		< 1.0				30	
cis-1,2-Dichloroethylene	< 1.0	1.0 µg/L		< 1.0				22	
trans-1,2-Dichloroethylene	< 1.0	1.0 µg/L		< 1.0				27	
Dichloromethane	< 3.0	3.0 µg/L		< 3.0				27	
1,2-Dichloropropane	< 1.0	1.0 µg/L		< 1.0				28	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0 µg/L		< 1.0				30	
Ethylbenzene	< 1.0	1.0 µg/L		< 1.0				30	
Methyl tert-butyl ether	< 1.0	1.0 µg/L		< 1.0				20	
Styrene	< 1.0	1.0 µg/L		< 1.0				30	
1,1,2,2-Tetrachloroethane	< 0.5	0.5 µg/L		< 0.5				30	
Tetrachloroethylene	< 1.0	1.0 µg/L		< 1.0				30	
Toluene	< 1.0	1.0 µg/L		< 1.0				24	
1,1,1-Trichloroethane	< 1.0	1.0 µg/L		< 1.0				30	
1,1,2-Trichloroethane	< 1.0	1.0 µg/L		< 1.0				30	
Trichloroethylene	< 1.0	1.0 µg/L		< 1.0				27	
Trichlorofluoromethane	< 1.0	1.0 µg/L		< 1.0				50	
Vinyl chloride	< 1.0	1.0 µg/L		< 1.0				40	
Xylenes (total)	< 2.0	2.0 µg/L		< 2.0				29	
Surrogate: Toluene-d8	25.7	µg/L	26.5		97	70-130			
Surrogate: 4-Bromofluorobenzene	22.9	µg/L	24.9		92	70-130			
Surrogate: 1,4-Dichlorobenzene-d4	22.3	µg/L	25.5		87	70-130			
Matrix Spike (B0E2045-MS1)					Source: 0051806-10 Prepared: 2020-05-27, Analyzed: 2020-05-27				
Benzene	21.9	0.5 µg/L	20.0	< 0.5	110	70-130			
Bromodichloromethane	20.0	1.0 µg/L	20.0	< 1.0	100	70-130			
Bromoform	19.6	1.0 µg/L	20.1	< 1.0	97	70-130			
Carbon tetrachloride	21.0	0.5 µg/L	20.2	< 0.5	104	70-130			
Chlorobenzene	21.1	1.0 µg/L	20.1	< 1.0	105	70-130			
Chloroethane	32.2	2.0 µg/L	20.0	< 2.0	161	60-140			SPK

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0051806
2020-05-28 17:38

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Volatile Organic Compounds (VOC), Batch B0E2045, Continued									
Matrix Spike (B0E2045-MS1), Continued		Source: 0051806-10		Prepared: 2020-05-27, Analyzed: 2020-05-27					
Chloroform	21.0	1.0 µg/L	20.1	< 1.0	105	70-130			
Dibromochloromethane	20.1	1.0 µg/L	20.2	< 1.0	100	70-130			
1,2-Dibromoethane	20.8	0.3 µg/L	20.0	< 0.3	104	70-130			
Dibromomethane	20.4	1.0 µg/L	20.0	< 1.0	102	70-130			
1,2-Dichlorobenzene	21.9	0.5 µg/L	20.1	< 0.5	109	70-130			
1,3-Dichlorobenzene	21.5	1.0 µg/L	20.1	< 1.0	107	70-130			
1,4-Dichlorobenzene	21.6	1.0 µg/L	20.1	< 1.0	107	70-130			
1,1-Dichloroethane	20.2	1.0 µg/L	20.1	< 1.0	101	70-130			
1,2-Dichloroethane	20.4	1.0 µg/L	20.0	< 1.0	102	70-130			
1,1-Dichloroethylene	20.4	1.0 µg/L	20.0	< 1.0	102	70-130			
cis-1,2-Dichloroethylene	20.7	1.0 µg/L	20.0	< 1.0	103	70-130			
trans-1,2-Dichloroethylene	19.8	1.0 µg/L	20.0	< 1.0	99	70-130			
Dichloromethane	19.8	3.0 µg/L	20.1	< 3.0	98	70-130			
1,2-Dichloropropane	21.1	1.0 µg/L	20.1	< 1.0	105	70-130			
1,3-Dichloropropane (cis + trans)	40.8	1.0 µg/L	40.0	< 1.0	102	70-130			
Ethylbenzene	21.1	1.0 µg/L	20.0	< 1.0	106	70-130			
Methyl tert-butyl ether	20.5	1.0 µg/L	20.0	< 1.0	102	70-130			
Styrene	20.9	1.0 µg/L	20.0	< 1.0	104	70-130			
1,1,2,2-Tetrachloroethane	21.1	0.5 µg/L	20.1	< 0.5	105	70-130			
Tetrachloroethylene	21.6	1.0 µg/L	20.1	< 1.0	105	70-130			
Toluene	22.2	1.0 µg/L	20.0	< 1.0	111	70-130			
1,1,1-Trichloroethane	20.4	1.0 µg/L	20.0	< 1.0	102	70-130			
1,1,2-Trichloroethane	20.9	1.0 µg/L	20.1	< 1.0	104	70-130			
Trichloroethylene	21.7	1.0 µg/L	20.1	< 1.0	108	70-130			
Trichlorofluoromethane	22.1	1.0 µg/L	20.0	< 1.0	110	60-140			
Vinyl chloride	22.7	1.0 µg/L	20.0	< 1.0	113	60-140			
Xylenes (total)	66.0	2.0 µg/L	60.0	< 2.0	110	70-130			
Surrogate: Toluene-d8	26.6	µg/L	26.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	23.1	µg/L	24.9		93	70-130			
Surrogate: 1,4-Dichlorobenzene-d4	23.3	µg/L	25.5		91	70-130			

QC Qualifiers:

S02 Surrogate recovery outside of control limits. Data accepted based on acceptable recovery of other surrogates.

SPK The recovery of this analyte was outside of established control limits.



1-888-277-8945

8110-2011 Ashland Ave. Richmond, VA 23220
804-253-7777 Highway 17M Hialeah, FL 33122
813-230-0000 Avenue 660 Birmingham, AL 35211

1887-1888

1994-95

[illegible][illegible]

ANALYSIS REQUESTED

[illegible]

WARNING INSTRUCTIONS Load in Manual	SAFETY INSTRUCTIONS 1. Always use proper lifting technique. 2. Do not overload the lift. 3. Do not use the lift as a crane.	GENERAL INSTRUCTIONS 1. Always use proper lifting technique. 2. Do not overload the lift. 3. Do not use the lift as a crane.	EXAMPLE RECEIPT INFORMATION RECEIVED BY: [Signature] DATE: 12/18/18 TIME: 10:00 AM LOCATION: [Blank] COMMENTS: [Blank]
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CERTIFICATE OF ANALYSIS

REPORTED TO Ecoscape Environmental Ltd.
#102 - 450 Neave Court
Kelowna, BC V1V 2M2

ATTENTION Kelsey Tanaka

PO NUMBER 19-2850

PROJECT 19-2850 - Golden

PROJECT INFO Golden

WORK ORDER 0082459

RECEIVED / TEMP 2020-08-25 15:15 / 7°C

REPORTED 2020-09-01 13:36

COC NUMBER No Number

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 acrump@caro.ca

Authorized By:

DRAFT REPORT
DATA SUBJECT TO CHANGE

1-888-311-8846 | www.caro.ca

#110 4011 Viking Way Richmond, BC V6V 2K9 | #102 3677 Highway 97N Kelowna, BC V1X 5C3 | 17225 109 Avenue Edmonton, AB T5S 1H7

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-09-01 13:36

Analyte	Result	RL	Units	Analyzed	Qualifier
MW09-06S (0082459-01) Matrix: Water Sampled: 2020-08-24 16:30					
Anions					
Bromide	1.10	0.10	mg/L	2020-08-26	
Chloride	379	0.10	mg/L	2020-08-26	
Fluoride	< 0.10	0.10	mg/L	2020-08-26	
Nitrate (as N)	33.9	0.010	mg/L	2020-08-26	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-08-26	
Sulfate	637	1.0	mg/L	2020-08-26	
BCMOE Aggregate Hydrocarbons					
VHw (6-10)	< 100	100	µg/L	2020-08-29	
VPHw	< 100	100	µg/L	N/A	
Calculated Parameters					
Hardness, Total (as CaCO ₃)	1500	0.500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	0.0405	0.00010	mg/L	2020-08-29	
Aluminum, dissolved	0.481	0.0050	mg/L	2020-08-29	
Antimony, dissolved	0.00021	0.00020	mg/L	2020-08-29	
Arsenic, dissolved	0.00073	0.00050	mg/L	2020-08-29	
Barium, dissolved	0.0618	0.0050	mg/L	2020-08-29	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Boron, dissolved	1.87	0.0500	mg/L	2020-08-29	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-08-29	
Calcium, dissolved	159	0.20	mg/L	2020-08-29	
Chromium, dissolved	0.00091	0.00050	mg/L	2020-08-29	
Cobalt, dissolved	0.00178	0.00010	mg/L	2020-08-29	
Copper, dissolved	0.00279	0.00040	mg/L	2020-08-29	
Iron, dissolved	0.636	0.010	mg/L	2020-08-29	
Lead, dissolved	0.00087	0.00020	mg/L	2020-08-29	
Magnesium, dissolved	268	0.010	mg/L	2020-08-29	
Manganese, dissolved	0.103	0.00020	mg/L	2020-08-29	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-08-30	
Molybdenum, dissolved	0.00018	0.00010	mg/L	2020-08-29	
Nickel, dissolved	0.0125	0.00040	mg/L	2020-08-29	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-08-29	
Potassium, dissolved	161	0.10	mg/L	2020-08-29	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Silicon, dissolved	12.5	1.0	mg/L	2020-08-29	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-08-29	
Sodium, dissolved	275	0.10	mg/L	2020-08-29	
Strontium, dissolved	1.67	0.0010	mg/L	2020-08-29	
Sulfur, dissolved	248	3.0	mg/L	2020-08-29	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-09-01 13:36

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW09-06S (0082459-01) | Matrix: Water | Sampled: 2020-08-24 16:30, Continued

Dissolved Metals, Continued

Thallium, dissolved	0.000057	0.000020	mg/L	2020-08-29	
Thorium, dissolved	0.00032	0.00010	mg/L	2020-08-29	
Tin, dissolved	0.00023	0.00020	mg/L	2020-08-29	
Titanium, dissolved	0.0318	0.0050	mg/L	2020-08-29	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Uranium, dissolved	0.00687	0.000020	mg/L	2020-08-29	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-08-29	
Zirconium, dissolved	0.00051	0.00010	mg/L	2020-08-29	

General Parameters

Alkalinity, Total (as CaCO ₃)	949	1.0	mg/L	2020-08-26	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Bicarbonate (as CaCO ₃)	949	1.0	mg/L	2020-08-26	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Bicarbonate (HCO ₃)	1160	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	1.71	0.050	mg/L	2020-08-27	
BOD, 5-day	< 6.1	2.0	mg/L	2020-08-31	
Chemical Oxygen Demand	36	20	mg/L	2020-08-31	
Conductivity (EC)	3940	2.0	µS/cm	2020-08-26	
pH	7.71	0.10	pH units	2020-08-26	HT2
Solids, Total Dissolved	2730	15	mg/L	2020-08-27	
Solids, Total Suspended	122	2.0	mg/L	2020-08-28	
Turbidity	60.4	0.10	NTU	2020-08-26	

Volatile Organic Compounds (VOC)

Benzene	< 0.5	0.5	µg/L	2020-08-29	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-08-29	
Bromoform	< 1.0	1.0	µg/L	2020-08-29	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-08-29	
Chlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
Chloroethane	< 2.0	2.0	µg/L	2020-08-29	
Chloroform	< 1.0	1.0	µg/L	2020-08-29	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-08-29	
Dibromomethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-08-29	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-09-01 13:36

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW09-06S (0082459-01) | Matrix: Water | Sampled: 2020-08-24 16:30, Continued

Volatile Organic Compounds (VOC), Continued

1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Dichloromethane	< 3.0	3.0	µg/L	2020-08-29	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-08-29	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-08-29	
Ethylbenzene	< 1.0	1.0	µg/L	2020-08-29	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-08-29	
Styrene	< 1.0	1.0	µg/L	2020-08-29	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-08-29	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Toluene	< 1.0	1.0	µg/L	2020-08-29	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
Trichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-08-29	
Vinyl chloride	< 1.0	1.0	µg/L	2020-08-29	
Xylenes (total)	< 2.0	2.0	µg/L	2020-08-29	
Surrogate: Toluene-d8	96	70-130	%	2020-08-29	
Surrogate: 4-Bromofluorobenzene	103	70-130	%	2020-08-29	
Surrogate: 1,4-Dichlorobenzene-d4	104	70-130	%	2020-08-29	

MW10-08 (0082459-02) | Matrix: Water | Sampled: 2020-08-25 08:00

Anions

Bromide	< 0.10	0.10	mg/L	2020-08-26	
Chloride	597	0.10	mg/L	2020-08-26	
Fluoride	0.20	0.10	mg/L	2020-08-26	
Nitrate (as N)	1.01	0.010	mg/L	2020-08-26	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-08-26	
Sulfate	51.4	1.0	mg/L	2020-08-26	

BCMOE Aggregate Hydrocarbons

VHw (6-10)	< 100	100	µg/L	2020-08-29	
VPHw	< 100	100	µg/L	N/A	

Calculated Parameters

Hardness, Total (as CaCO3)	701	0.500	mg/L	N/A	
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Dissolved Metals

Lithium, dissolved	0.0193	0.00010	mg/L	2020-08-29	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-08-29	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Arsenic, dissolved	0.00518	0.00050	mg/L	2020-08-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-09-01 13:36

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW10-08 (0082459-02) | Matrix: Water | Sampled: 2020-08-25 08:00, Continued

Dissolved Metals, Continued

Barium, dissolved	0.196	0.0050	mg/L	2020-08-29	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Boron, dissolved	< 0.0500	0.0500	mg/L	2020-08-29	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-08-29	
Calcium, dissolved	86.2	0.20	mg/L	2020-08-29	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Cobalt, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Copper, dissolved	0.00119	0.00040	mg/L	2020-08-29	
Iron, dissolved	< 0.010	0.010	mg/L	2020-08-29	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Magnesium, dissolved	118	0.010	mg/L	2020-08-29	
Manganese, dissolved	0.00090	0.00020	mg/L	2020-08-29	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-08-30	
Molybdenum, dissolved	0.00063	0.00010	mg/L	2020-08-29	
Nickel, dissolved	0.00095	0.00040	mg/L	2020-08-29	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-08-29	
Potassium, dissolved	5.67	0.10	mg/L	2020-08-29	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Silicon, dissolved	9.1	1.0	mg/L	2020-08-29	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-08-29	
Sodium, dissolved	324	0.10	mg/L	2020-08-29	
Strontium, dissolved	1.32	0.0010	mg/L	2020-08-29	
Sulfur, dissolved	21.3	3.0	mg/L	2020-08-29	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-08-29	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Tin, dissolved	0.00021	0.00020	mg/L	2020-08-29	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-08-29	
Tungsten, dissolved	0.0052	0.0010	mg/L	2020-08-29	
Uranium, dissolved	0.00206	0.000020	mg/L	2020-08-29	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-08-29	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	

General Parameters

Alkalinity, Total (as CaCO ₃)	501	1.0	mg/L	2020-08-26	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Bicarbonate (as CaCO ₃)	501	1.0	mg/L	2020-08-26	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Bicarbonate (HCO ₃)	611	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-09-01 13:36

Analyte	Result	RL	Units	Analyzed	Qualifier
MW10-08 (0082459-02) Matrix: Water Sampled: 2020-08-25 08:00, Continued					
General Parameters, Continued					
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	< 0.050	0.050	mg/L	2020-08-27	
BOD, 5-day	< 6.1	2.0	mg/L	2020-08-31	
Chemical Oxygen Demand	27	20	mg/L	2020-08-31	
Conductivity (EC)	2830	2.0	µS/cm	2020-08-26	
pH	8.05	0.10	pH units	2020-08-26	HT2
Solids, Total Dissolved	1560	15	mg/L	2020-08-27	
Solids, Total Suspended	122	2.0	mg/L	2020-08-28	
Turbidity	83.7	0.10	NTU	2020-08-26	
Volatile Organic Compounds (VOC)					
Benzene	< 0.5	0.5	µg/L	2020-08-29	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-08-29	
Bromoform	< 1.0	1.0	µg/L	2020-08-29	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-08-29	
Chlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
Chloroethane	< 2.0	2.0	µg/L	2020-08-29	
Chloroform	< 1.0	1.0	µg/L	2020-08-29	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-08-29	
Dibromomethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-08-29	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Dichloromethane	< 3.0	3.0	µg/L	2020-08-29	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-08-29	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-08-29	
Ethylbenzene	< 1.0	1.0	µg/L	2020-08-29	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-08-29	
Styrene	< 1.0	1.0	µg/L	2020-08-29	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-08-29	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Toluene	< 1.0	1.0	µg/L	2020-08-29	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
Trichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-08-29	
Vinyl chloride	< 1.0	1.0	µg/L	2020-08-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-09-01 13:36

Analyte	Result	RL	Units	Analyzed	Qualifier
MW10-08 (0082459-02) Matrix: Water Sampled: 2020-08-25 08:00, Continued					
Volatile Organic Compounds (VOC), Continued					
Xylenes (total)	< 2.0	2.0	µg/L	2020-08-29	
Surrogate: Toluene-d8	89	70-130	%	2020-08-29	
Surrogate: 4-Bromofluorobenzene	96	70-130	%	2020-08-29	
Surrogate: 1,4-Dichlorobenzene-d4	97	70-130	%	2020-08-29	
MW18-10 (0082459-03) Matrix: Water Sampled: 2020-08-25 08:00					
Anions					
Bromide	0.34	0.10	mg/L	2020-08-26	
Chloride	350	0.10	mg/L	2020-08-26	
Fluoride	0.14	0.10	mg/L	2020-08-26	
Nitrate (as N)	24.4	0.010	mg/L	2020-08-26	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-08-26	
Sulfate	68.2	1.0	mg/L	2020-08-26	
BCMOE Aggregate Hydrocarbons					
VHw (6-10)	< 100	100	µg/L	2020-08-29	
VPHw	< 100	100	µg/L	N/A	
Calculated Parameters					
Hardness, Total (as CaCO3)	1070	0.500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	0.0210	0.00010	mg/L	2020-08-29	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-08-29	
Antimony, dissolved	0.00021	0.00020	mg/L	2020-08-29	
Arsenic, dissolved	0.00133	0.00050	mg/L	2020-08-29	
Barium, dissolved	0.311	0.0050	mg/L	2020-08-29	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Boron, dissolved	0.401	0.0500	mg/L	2020-08-29	
Cadmium, dissolved	0.000023	0.000010	mg/L	2020-08-29	
Calcium, dissolved	94.7	0.20	mg/L	2020-08-29	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Cobalt, dissolved	0.00523	0.00010	mg/L	2020-08-29	
Copper, dissolved	0.00121	0.00040	mg/L	2020-08-29	
Iron, dissolved	< 0.010	0.010	mg/L	2020-08-29	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Magnesium, dissolved	202	0.010	mg/L	2020-08-29	
Manganese, dissolved	0.167	0.00020	mg/L	2020-08-29	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-08-30	
Molybdenum, dissolved	0.00111	0.00010	mg/L	2020-08-29	
Nickel, dissolved	0.0434	0.00040	mg/L	2020-08-29	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-08-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-09-01 13:36

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW18-10 (0082459-03) | Matrix: Water | Sampled: 2020-08-25 08:00, Continued

Dissolved Metals, Continued

Potassium, dissolved	27.7	0.10	mg/L	2020-08-29	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Silicon, dissolved	9.7	1.0	mg/L	2020-08-29	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-08-29	
Sodium, dissolved	183	0.10	mg/L	2020-08-29	
Strontium, dissolved	1.56	0.0010	mg/L	2020-08-29	
Sulfur, dissolved	30.7	3.0	mg/L	2020-08-29	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Thallium, dissolved	0.000103	0.000020	mg/L	2020-08-29	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Tin, dissolved	0.00040	0.00020	mg/L	2020-08-29	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-08-29	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Uranium, dissolved	0.00367	0.000020	mg/L	2020-08-29	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-08-29	
Zirconium, dissolved	0.00022	0.00010	mg/L	2020-08-29	

General Parameters

Alkalinity, Total (as CaCO ₃)	713	1.0	mg/L	2020-08-26	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Bicarbonate (as CaCO ₃)	713	1.0	mg/L	2020-08-26	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Bicarbonate (HCO ₃)	870	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	1.73	0.050	mg/L	2020-08-27	
BOD, 5-day	< 6.1	2.0	mg/L	2020-08-31	
Chemical Oxygen Demand	46	20	mg/L	2020-08-31	
Conductivity (EC)	2560	2.0	µS/cm	2020-08-26	
pH	7.97	0.10	pH units	2020-08-26	HT2
Solids, Total Dissolved	1390	15	mg/L	2020-08-27	
Solids, Total Suspended	110	2.0	mg/L	2020-08-28	
Turbidity	114	0.10	NTU	2020-08-26	

Volatile Organic Compounds (VOC)

Benzene	< 0.5	0.5	µg/L	2020-08-29	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-08-29	
Bromoform	< 1.0	1.0	µg/L	2020-08-29	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-08-29	
Chlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
Chloroethane	< 2.0	2.0	µg/L	2020-08-29	
Chloroform	< 1.0	1.0	µg/L	2020-08-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-09-01 13:36

Analyte	Result	RL	Units	Analyzed	Qualifier
MW18-10 (0082459-03) Matrix: Water Sampled: 2020-08-25 08:00, Continued					
<i>Volatile Organic Compounds (VOC), Continued</i>					
Dibromochloromethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-08-29	
Dibromomethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-08-29	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Dichloromethane	< 3.0	3.0	µg/L	2020-08-29	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-08-29	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-08-29	
Ethylbenzene	< 1.0	1.0	µg/L	2020-08-29	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-08-29	
Styrene	< 1.0	1.0	µg/L	2020-08-29	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-08-29	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Toluene	< 1.0	1.0	µg/L	2020-08-29	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
Trichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-08-29	
Vinyl chloride	< 1.0	1.0	µg/L	2020-08-29	
Xylenes (total)	< 2.0	2.0	µg/L	2020-08-29	
Surrogate: Toluene-d8	87	70-130	%	2020-08-29	
Surrogate: 4-Bromofluorobenzene	93	70-130	%	2020-08-29	
Surrogate: 1,4-Dichlorobenzene-d4	94	70-130	%	2020-08-29	

MW18-11 (0082459-04) | Matrix: Water | Sampled: 2020-08-24 15:10

Anions

Bromide	< 0.10	0.10	mg/L	2020-08-26	
Chloride	71.4	0.10	mg/L	2020-08-26	
Fluoride	0.74	0.10	mg/L	2020-08-26	
Nitrate (as N)	< 0.010	0.010	mg/L	2020-08-26	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-08-26	
Sulfate	88.3	1.0	mg/L	2020-08-26	

BCMOE Aggregate Hydrocarbons

VHw (6-10)	< 100	100	µg/L	2020-08-29	
VPHw	< 100	100	µg/L	N/A	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-09-01 13:36

Analyte	Result	RL	Units	Analyzed	Qualifier
MW18-11 (0082459-04) Matrix: Water Sampled: 2020-08-24 15:10, Continued					
Calculated Parameters					
Hardness, Total (as CaCO ₃)	624	0.500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	0.0234	0.00010	mg/L	2020-08-29	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-08-29	
Antimony, dissolved	0.00139	0.00020	mg/L	2020-08-29	
Arsenic, dissolved	0.0110	0.00050	mg/L	2020-08-29	
Barium, dissolved	0.0082	0.0050	mg/L	2020-08-29	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Boron, dissolved	0.262	0.0500	mg/L	2020-08-29	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-08-29	
Calcium, dissolved	40.3	0.20	mg/L	2020-08-29	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Cobalt, dissolved	0.00026	0.00010	mg/L	2020-08-29	
Copper, dissolved	< 0.00040	0.00040	mg/L	2020-08-29	
Iron, dissolved	0.151	0.010	mg/L	2020-08-29	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Magnesium, dissolved	127	0.010	mg/L	2020-08-29	
Manganese, dissolved	0.0309	0.00020	mg/L	2020-08-29	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-08-30	
Molybdenum, dissolved	0.00212	0.00010	mg/L	2020-08-29	
Nickel, dissolved	0.00680	0.00040	mg/L	2020-08-29	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-08-29	
Potassium, dissolved	6.46	0.10	mg/L	2020-08-29	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Silicon, dissolved	3.2	1.0	mg/L	2020-08-29	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-08-29	
Sodium, dissolved	112	0.10	mg/L	2020-08-29	
Strontium, dissolved	0.644	0.0010	mg/L	2020-08-29	
Sulfur, dissolved	36.2	3.0	mg/L	2020-08-29	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-08-29	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-08-29	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Uranium, dissolved	0.000055	0.000020	mg/L	2020-08-29	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Zinc, dissolved	0.0064	0.0040	mg/L	2020-08-29	
Zirconium, dissolved	0.00011	0.00010	mg/L	2020-08-29	

General Parameters

Alkalinity, Total (as CaCO₃) 648 1.0 mg/L 2020-08-26

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-09-01 13:36

Analyte	Result	RL	Units	Analyzed	Qualifier
MW18-11 (0082459-04) Matrix: Water Sampled: 2020-08-24 15:10, Continued					
General Parameters, Continued					
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Bicarbonate (as CaCO ₃)	648	1.0	mg/L	2020-08-26	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Bicarbonate (HCO ₃)	790	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	0.447	0.050	mg/L	2020-08-27	
BOD, 5-day	< 6.1	2.0	mg/L	2020-08-31	
Chemical Oxygen Demand	20	20	mg/L	2020-08-31	
Conductivity (EC)	1460	2.0	µS/cm	2020-08-26	
pH	8.13	0.10	pH units	2020-08-26	HT2
Solids, Total Dissolved	849	15	mg/L	2020-08-27	
Solids, Total Suspended	32.0	2.0	mg/L	2020-08-28	
Turbidity	45.1	0.10	NTU	2020-08-26	
Volatile Organic Compounds (VOC)					
Benzene	< 0.5	0.5	µg/L	2020-08-29	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-08-29	
Bromoform	< 1.0	1.0	µg/L	2020-08-29	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-08-29	
Chlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
Chloroethane	< 2.0	2.0	µg/L	2020-08-29	
Chloroform	< 1.0	1.0	µg/L	2020-08-29	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-08-29	
Dibromomethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-08-29	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Dichloromethane	< 3.0	3.0	µg/L	2020-08-29	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-08-29	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-08-29	
Ethylbenzene	< 1.0	1.0	µg/L	2020-08-29	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-08-29	
Styrene	< 1.0	1.0	µg/L	2020-08-29	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-08-29	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-08-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-09-01 13:36

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW18-11 (0082459-04) | Matrix: Water | Sampled: 2020-08-24 15:10, Continued

Volatile Organic Compounds (VOC), Continued

Toluene	< 1.0	1.0	µg/L	2020-08-29	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
Trichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-08-29	
Vinyl chloride	< 1.0	1.0	µg/L	2020-08-29	
Xylenes (total)	< 2.0	2.0	µg/L	2020-08-29	
Surrogate: Toluene-d8	86	70-130	%	2020-08-29	
Surrogate: 4-Bromofluorobenzene	93	70-130	%	2020-08-29	
Surrogate: 1,4-Dichlorobenzene-d4	94	70-130	%	2020-08-29	

Town Well #4 (0082459-05) | Matrix: Water | Sampled: 2020-08-24 11:30

Anions

Bromide	< 0.10	0.10	mg/L	2020-08-26	
Chloride	94.0	0.10	mg/L	2020-08-26	
Fluoride	0.11	0.10	mg/L	2020-08-26	
Nitrate (as N)	1.46	0.010	mg/L	2020-08-26	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-08-26	
Sulfate	42.1	1.0	mg/L	2020-08-26	

BCMOE Aggregate Hydrocarbons

VHw (6-10)	< 100	100	µg/L	2020-08-29	
VPHw	< 100	100	µg/L	N/A	

Calculated Parameters

Hardness, Total (as CaCO3)	395	0.500	mg/L	N/A	
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Dissolved Metals

Lithium, dissolved	0.00171	0.00010	mg/L	2020-08-29	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-08-29	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Barium, dissolved	0.217	0.0050	mg/L	2020-08-29	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Boron, dissolved	< 0.0500	0.0500	mg/L	2020-08-29	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-08-29	
Calcium, dissolved	87.4	0.20	mg/L	2020-08-29	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Cobalt, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Copper, dissolved	0.00191	0.00040	mg/L	2020-08-29	
Iron, dissolved	< 0.010	0.010	mg/L	2020-08-29	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-09-01 13:36

Analyte	Result	RL	Units	Analyzed	Qualifier
Town Well #4 (0082459-05) Matrix: Water Sampled: 2020-08-24 11:30, Continued					
Dissolved Metals, Continued					
Magnesium, dissolved	42.8	0.010	mg/L	2020-08-29	
Manganese, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-08-30	
Molybdenum, dissolved	0.00018	0.00010	mg/L	2020-08-29	
Nickel, dissolved	< 0.00040	0.00040	mg/L	2020-08-29	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-08-29	
Potassium, dissolved	1.82	0.10	mg/L	2020-08-29	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Silicon, dissolved	4.5	1.0	mg/L	2020-08-29	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-08-29	
Sodium, dissolved	57.8	0.10	mg/L	2020-08-29	
Strontium, dissolved	0.473	0.0010	mg/L	2020-08-29	
Sulfur, dissolved	15.9	3.0	mg/L	2020-08-29	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-08-29	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-08-29	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Uranium, dissolved	0.00121	0.000020	mg/L	2020-08-29	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Zinc, dissolved	0.0044	0.0040	mg/L	2020-08-29	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
General Parameters					
Alkalinity, Total (as CaCO ₃)	356	1.0	mg/L	2020-08-26	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Bicarbonate (as CaCO ₃)	356	1.0	mg/L	2020-08-26	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Bicarbonate (HCO ₃)	434	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	< 0.050	0.050	mg/L	2020-08-27	
BOD, 5-day	< 6.1	2.0	mg/L	2020-08-31	
Chemical Oxygen Demand	< 20	20	mg/L	2020-08-31	
Conductivity (EC)	1040	2.0	µS/cm	2020-08-26	
pH	7.98	0.10	pH units	2020-08-26	HT2
Solids, Total Dissolved	579	15	mg/L	2020-08-27	
Solids, Total Suspended	< 2.0	2.0	mg/L	2020-08-28	
Turbidity	< 0.10	0.10	NTU	2020-08-26	
Volatile Organic Compounds (VOC)					
Benzene	< 0.5	0.5	µg/L	2020-08-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-09-01 13:36

Analyte	Result	RL	Units	Analyzed	Qualifier
Town Well #4 (0082459-05) Matrix: Water Sampled: 2020-08-24 11:30, Continued					
<i>Volatile Organic Compounds (VOC), Continued</i>					
Bromodichloromethane	< 1.0	1.0	µg/L	2020-08-29	
Bromoform	< 1.0	1.0	µg/L	2020-08-29	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-08-29	
Chlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
Chloroethane	< 2.0	2.0	µg/L	2020-08-29	
Chloroform	< 1.0	1.0	µg/L	2020-08-29	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-08-29	
Dibromomethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-08-29	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Dichloromethane	< 3.0	3.0	µg/L	2020-08-29	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-08-29	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-08-29	
Ethylbenzene	< 1.0	1.0	µg/L	2020-08-29	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-08-29	
Styrene	< 1.0	1.0	µg/L	2020-08-29	
1,1,1,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-08-29	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Toluene	< 1.0	1.0	µg/L	2020-08-29	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
Trichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-08-29	
Vinyl chloride	< 1.0	1.0	µg/L	2020-08-29	
Xylenes (total)	< 2.0	2.0	µg/L	2020-08-29	
Surrogate: Toluene-d8	88	70-130	%	2020-08-29	
Surrogate: 4-Bromofluorobenzene	93	70-130	%	2020-08-29	
Surrogate: 1,4-Dichlorobenzene-d4	94	70-130	%	2020-08-29	

Town Well #6 (0082459-06) | Matrix: Water | Sampled: 2020-08-24 11:20

Anions

Bromide	< 0.10	0.10	mg/L	2020-08-26	
Chloride	60.4	0.10	mg/L	2020-08-26	
Fluoride	< 0.10	0.10	mg/L	2020-08-26	
Nitrate (as N)	1.26	0.010	mg/L	2020-08-26	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
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Analyte	Result	RL	Units	Analyzed	Qualifier
Town Well #6 (0082459-06) Matrix: Water Sampled: 2020-08-24 11:20, Continued					
<i>Anions, Continued</i>					
Nitrite (as N)	< 0.010	0.010	mg/L	2020-08-26	
Sulfate	34.2	1.0	mg/L	2020-08-26	
<i>BCMOE Aggregate Hydrocarbons</i>					
VHw (6-10)	< 100	100	µg/L	2020-08-29	
VPHw	< 100	100	µg/L	N/A	
<i>Calculated Parameters</i>					
Hardness, Total (as CaCO ₃)	392	0.500	mg/L	N/A	
<i>Dissolved Metals</i>					
Lithium, dissolved	0.00133	0.00010	mg/L	2020-08-29	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-08-29	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Barium, dissolved	0.191	0.0050	mg/L	2020-08-29	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Boron, dissolved	< 0.0500	0.0500	mg/L	2020-08-29	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-08-29	
Calcium, dissolved	98.4	0.20	mg/L	2020-08-29	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Cobalt, dissolved	0.00021	0.00010	mg/L	2020-08-29	
Copper, dissolved	< 0.00040	0.00040	mg/L	2020-08-29	
Iron, dissolved	0.137	0.010	mg/L	2020-08-29	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Magnesium, dissolved	35.5	0.010	mg/L	2020-08-29	
Manganese, dissolved	0.0287	0.00020	mg/L	2020-08-29	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-08-30	
Molybdenum, dissolved	0.00102	0.00010	mg/L	2020-08-29	
Nickel, dissolved	0.00080	0.00040	mg/L	2020-08-29	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-08-29	
Potassium, dissolved	1.18	0.10	mg/L	2020-08-29	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Silicon, dissolved	4.6	1.0	mg/L	2020-08-29	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-08-29	
Sodium, dissolved	33.5	0.10	mg/L	2020-08-29	
Strontium, dissolved	0.368	0.0010	mg/L	2020-08-29	
Sulfur, dissolved	12.3	3.0	mg/L	2020-08-29	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-08-29	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-08-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
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Analyte	Result	RL	Units	Analyzed	Qualifier
Town Well #6 (0082459-06) Matrix: Water Sampled: 2020-08-24 11:20, Continued					
Dissolved Metals, Continued					
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Uranium, dissolved	0.00141	0.000020	mg/L	2020-08-29	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-08-29	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
General Parameters					
Alkalinity, Total (as CaCO ₃)	358	1.0	mg/L	2020-08-26	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Bicarbonate (as CaCO ₃)	358	1.0	mg/L	2020-08-26	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Bicarbonate (HCO ₃)	437	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	< 0.050	0.050	mg/L	2020-08-27	
BOD, 5-day	< 6.1	2.0	mg/L	2020-08-31	
Chemical Oxygen Demand	< 20	20	mg/L	2020-08-31	
Conductivity (EC)	917	2.0	µS/cm	2020-08-26	
pH	7.94	0.10	pH units	2020-08-26	HT2
Solids, Total Dissolved	520	15	mg/L	2020-08-27	
Solids, Total Suspended	35.2	2.0	mg/L	2020-08-28	
Turbidity	23.6	0.10	NTU	2020-08-26	
Volatile Organic Compounds (VOC)					
Benzene	< 0.5	0.5	µg/L	2020-08-29	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-08-29	
Bromoform	< 1.0	1.0	µg/L	2020-08-29	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-08-29	
Chlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
Chloroethane	< 2.0	2.0	µg/L	2020-08-29	
Chloroform	< 1.0	1.0	µg/L	2020-08-29	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-08-29	
Dibromomethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-08-29	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Dichloromethane	< 3.0	3.0	µg/L	2020-08-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
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Analyte	Result	RL	Units	Analyzed	Qualifier
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Town Well #6 (0082459-06) | Matrix: Water | Sampled: 2020-08-24 11:20, Continued

Volatile Organic Compounds (VOC), Continued

1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-08-29	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-08-29	
Ethylbenzene	< 1.0	1.0	µg/L	2020-08-29	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-08-29	
Styrene	< 1.0	1.0	µg/L	2020-08-29	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-08-29	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Toluene	< 1.0	1.0	µg/L	2020-08-29	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
Trichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-08-29	
Vinyl chloride	< 1.0	1.0	µg/L	2020-08-29	
Xylenes (total)	< 2.0	2.0	µg/L	2020-08-29	
Surrogate: Toluene-d8	97	70-130	%	2020-08-29	
Surrogate: 4-Bromofluorobenzene	103	70-130	%	2020-08-29	
Surrogate: 1,4-Dichlorobenzene-d4	104	70-130	%	2020-08-29	

DMW-1b (0082459-07) | Matrix: Water | Sampled: 2020-08-25 08:30

Anions

Bromide	< 0.10	0.10	mg/L	2020-08-26	
Chloride	9.13	0.10	mg/L	2020-08-26	
Fluoride	0.91	0.10	mg/L	2020-08-26	
Nitrate (as N)	0.112	0.010	mg/L	2020-08-26	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-08-26	
Sulfate	251	1.0	mg/L	2020-08-26	

BCMOE Aggregate Hydrocarbons

VHw (6-10)	< 100	100	µg/L	2020-08-29	
VPW	< 100	100	µg/L	N/A	

Calculated Parameters

Hardness, Total (as CaCO3)	586	0.500	mg/L	N/A	
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Dissolved Metals

Lithium, dissolved	0.0529	0.00010	mg/L	2020-08-29	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-08-29	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Arsenic, dissolved	0.00129	0.00050	mg/L	2020-08-29	
Barium, dissolved	0.0158	0.0050	mg/L	2020-08-29	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Boron, dissolved	0.448	0.0500	mg/L	2020-08-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
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Analyte	Result	RL	Units	Analyzed	Qualifier
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DMW-1b (0082459-07) | Matrix: Water | Sampled: 2020-08-25 08:30, Continued

Dissolved Metals, Continued

Cadmium, dissolved	0.000016	0.000010	mg/L	2020-08-29	
Calcium, dissolved	69.2	0.20	mg/L	2020-08-29	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Cobalt, dissolved	0.00068	0.00010	mg/L	2020-08-29	
Copper, dissolved	0.00484	0.00040	mg/L	2020-08-29	
Iron, dissolved	0.014	0.010	mg/L	2020-08-29	
Lead, dissolved	0.00047	0.00020	mg/L	2020-08-29	
Magnesium, dissolved	100	0.010	mg/L	2020-08-29	
Manganese, dissolved	0.00352	0.00020	mg/L	2020-08-29	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-08-30	
Molybdenum, dissolved	0.00053	0.00010	mg/L	2020-08-29	
Nickel, dissolved	0.00124	0.00040	mg/L	2020-08-29	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-08-29	
Potassium, dissolved	8.94	0.10	mg/L	2020-08-29	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Silicon, dissolved	6.5	1.0	mg/L	2020-08-29	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-08-29	
Sodium, dissolved	50.1	0.10	mg/L	2020-08-29	
Strontium, dissolved	5.33	0.0010	mg/L	2020-08-29	
Sulfur, dissolved	93.6	3.0	mg/L	2020-08-29	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-08-29	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-08-29	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Uranium, dissolved	0.000947	0.000020	mg/L	2020-08-29	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Zinc, dissolved	0.0410	0.0040	mg/L	2020-08-29	
Zirconium, dissolved	0.00064	0.00010	mg/L	2020-08-29	

General Parameters

Alkalinity, Total (as CaCO ₃)	449	1.0	mg/L	2020-08-26	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Bicarbonate (as CaCO ₃)	449	1.0	mg/L	2020-08-26	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Bicarbonate (HCO ₃)	548	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	0.861	0.050	mg/L	2020-08-27	
BOD, 5-day	< 6.1	2.0	mg/L	2020-08-31	
Chemical Oxygen Demand	< 20	20	mg/L	2020-08-31	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

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Analyte	Result	RL	Units	Analyzed	Qualifier
DMW-1b (0082459-07) Matrix: Water Sampled: 2020-08-25 08:30, Continued					
General Parameters, Continued					
Conductivity (EC)	1230	2.0	µS/cm	2020-08-26	
pH	7.95	0.10	pH units	2020-08-26	HT2
Solids, Total Dissolved	804	15	mg/L	2020-08-27	
Solids, Total Suspended	< 2.0	2.0	mg/L	2020-08-28	
Turbidity	0.16	0.10	NTU	2020-08-26	
Volatile Organic Compounds (VOC)					
Benzene	< 0.5	0.5	µg/L	2020-08-29	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-08-29	
Bromoform	< 1.0	1.0	µg/L	2020-08-29	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-08-29	
Chlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
Chloroethane	< 2.0	2.0	µg/L	2020-08-29	
Chloroform	< 1.0	1.0	µg/L	2020-08-29	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-08-29	
Dibromomethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-08-29	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Dichloromethane	< 3.0	3.0	µg/L	2020-08-29	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-08-29	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-08-29	
Ethylbenzene	< 1.0	1.0	µg/L	2020-08-29	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-08-29	
Styrene	< 1.0	1.0	µg/L	2020-08-29	
1,1,1,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-08-29	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Toluene	< 1.0	1.0	µg/L	2020-08-29	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
Trichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-08-29	
Vinyl chloride	< 1.0	1.0	µg/L	2020-08-29	
Xylenes (total)	< 2.0	2.0	µg/L	2020-08-29	
Surrogate: Toluene-d8	95	70-130	%	2020-08-29	
Surrogate: 4-Bromofluorobenzene	101	70-130	%	2020-08-29	
Surrogate: 1,4-Dichlorobenzene-d4	103	70-130	%	2020-08-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
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Analyte	Result	RL	Units	Analyzed	Qualifier
DMW-4 (0082459-08) Matrix: Water Sampled: 2020-08-25 08:47					
Anions					
Bromide	< 0.10	0.10	mg/L	2020-08-26	
Chloride	42.2	0.10	mg/L	2020-08-26	
Fluoride	1.35	0.10	mg/L	2020-08-26	
Nitrate (as N)	< 0.010	0.010	mg/L	2020-08-26	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-08-26	
Sulfate	128	1.0	mg/L	2020-08-26	
BCMOE Aggregate Hydrocarbons					
VHw (6-10)	< 100	100	µg/L	2020-08-29	
VPHw	< 100	100	µg/L	N/A	
Calculated Parameters					
Hardness, Total (as CaCO3)	634	0.500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	0.0245	0.00010	mg/L	2020-08-29	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-08-29	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Arsenic, dissolved	0.0525	0.00050	mg/L	2020-08-29	
Barium, dissolved	0.0240	0.0050	mg/L	2020-08-29	
Beryllium, dissolved	0.00012	0.00010	mg/L	2020-08-29	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Boron, dissolved	0.145	0.0500	mg/L	2020-08-29	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-08-29	
Calcium, dissolved	66.7	0.20	mg/L	2020-08-29	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Cobalt, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Copper, dissolved	< 0.00040	0.00040	mg/L	2020-08-29	
Iron, dissolved	0.776	0.010	mg/L	2020-08-29	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Magnesium, dissolved	114	0.010	mg/L	2020-08-29	
Manganese, dissolved	0.00574	0.00020	mg/L	2020-08-29	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-08-30	
Molybdenum, dissolved	0.00025	0.00010	mg/L	2020-08-29	
Nickel, dissolved	0.00181	0.00040	mg/L	2020-08-29	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-08-29	
Potassium, dissolved	4.71	0.10	mg/L	2020-08-29	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Silicon, dissolved	7.5	1.0	mg/L	2020-08-29	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-08-29	
Sodium, dissolved	27.4	0.10	mg/L	2020-08-29	
Strontium, dissolved	1.82	0.0010	mg/L	2020-08-29	
Sulfur, dissolved	51.3	3.0	mg/L	2020-08-29	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
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2020-09-01 13:36

Analyte	Result	RL	Units	Analyzed	Qualifier
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DMW-4 (0082459-08) | Matrix: Water | Sampled: 2020-08-25 08:47, Continued

Dissolved Metals, Continued

Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-08-29	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-08-29	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Uranium, dissolved	0.000101	0.000020	mg/L	2020-08-29	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-08-29	
Zirconium, dissolved	0.00143	0.00010	mg/L	2020-08-29	

General Parameters

Alkalinity, Total (as CaCO ₃)	465	1.0	mg/L	2020-08-26	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Bicarbonate (as CaCO ₃)	465	1.0	mg/L	2020-08-26	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Bicarbonate (HCO ₃)	567	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	0.223	0.050	mg/L	2020-08-27	
BOD, 5-day	< 6.1	2.0	mg/L	2020-08-31	
Chemical Oxygen Demand	< 20	20	mg/L	2020-08-31	
Conductivity (EC)	1220	2.0	µS/cm	2020-08-26	
pH	7.98	0.10	pH units	2020-08-26	HT2
Solids, Total Dissolved	739	15	mg/L	2020-08-27	
Solids, Total Suspended	2.4	2.0	mg/L	2020-08-28	
Turbidity	8.59	0.10	NTU	2020-08-26	

Volatile Organic Compounds (VOC)

Benzene	< 0.5	0.5	µg/L	2020-08-29	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-08-29	
Bromoform	< 1.0	1.0	µg/L	2020-08-29	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-08-29	
Chlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
Chloroethane	< 2.0	2.0	µg/L	2020-08-29	
Chloroform	< 1.0	1.0	µg/L	2020-08-29	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-08-29	
Dibromomethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-08-29	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
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Analyte	Result	RL	Units	Analyzed	Qualifier
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DMW-4 (0082459-08) | Matrix: Water | Sampled: 2020-08-25 08:47, Continued

Volatile Organic Compounds (VOC), Continued

1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Dichloromethane	< 3.0	3.0	µg/L	2020-08-29	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-08-29	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-08-29	
Ethylbenzene	< 1.0	1.0	µg/L	2020-08-29	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-08-29	
Styrene	< 1.0	1.0	µg/L	2020-08-29	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-08-29	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Toluene	< 1.0	1.0	µg/L	2020-08-29	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
Trichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-08-29	
Vinyl chloride	< 1.0	1.0	µg/L	2020-08-29	
Xylenes (total)	< 2.0	2.0	µg/L	2020-08-29	
Surrogate: Toluene-d8	88	70-130	%	2020-08-29	
Surrogate: 4-Bromofluorobenzene	94	70-130	%	2020-08-29	
Surrogate: 1,4-Dichlorobenzene-d4	94	70-130	%	2020-08-29	

MW09-06D (0082459-09) | Matrix: Water | Sampled: 2020-08-24 18:05

Anions

Bromide	1.15	0.10	mg/L	2020-08-26	
Chloride	377	0.10	mg/L	2020-08-26	
Fluoride	< 0.10	0.10	mg/L	2020-08-26	
Nitrate (as N)	35.6	0.010	mg/L	2020-08-26	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-08-26	
Sulfate	634	1.0	mg/L	2020-08-26	

BCMOE Aggregate Hydrocarbons

VHw (6-10)	< 100	100	µg/L	2020-08-29	
VPHw	< 100	100	µg/L	N/A	

Calculated Parameters

Hardness, Total (as CaCO3)	1500	0.500	mg/L	N/A	
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Dissolved Metals

Lithium, dissolved	0.0416	0.00010	mg/L	2020-08-29	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-08-29	
Antimony, dissolved	0.00034	0.00020	mg/L	2020-08-29	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
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Analyte	Result	RL	Units	Analyzed	Qualifier
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MW09-06D (0082459-09) | Matrix: Water | Sampled: 2020-08-24 18:05, Continued

Dissolved Metals, Continued

Barium, dissolved	0.0490	0.0050	mg/L	2020-08-29	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Boron, dissolved	1.97	0.0500	mg/L	2020-08-29	
Cadmium, dissolved	0.000012	0.000010	mg/L	2020-08-29	
Calcium, dissolved	154	0.20	mg/L	2020-08-29	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Cobalt, dissolved	0.00189	0.00010	mg/L	2020-08-29	
Copper, dissolved	0.00240	0.00040	mg/L	2020-08-29	
Iron, dissolved	< 0.010	0.010	mg/L	2020-08-29	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Magnesium, dissolved	271	0.010	mg/L	2020-08-29	
Manganese, dissolved	0.109	0.00020	mg/L	2020-08-29	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-08-30	
Molybdenum, dissolved	0.00032	0.00010	mg/L	2020-08-29	
Nickel, dissolved	0.0131	0.00040	mg/L	2020-08-29	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-08-29	
Potassium, dissolved	169	0.10	mg/L	2020-08-29	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Silicon, dissolved	12.0	1.0	mg/L	2020-08-29	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-08-29	
Sodium, dissolved	294	0.10	mg/L	2020-08-29	
Strontium, dissolved	1.68	0.0010	mg/L	2020-08-29	
Sulfur, dissolved	253	3.0	mg/L	2020-08-29	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Thallium, dissolved	0.000063	0.000020	mg/L	2020-08-29	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Tin, dissolved	0.00095	0.00020	mg/L	2020-08-29	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-08-29	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Uranium, dissolved	0.00723	0.000020	mg/L	2020-08-29	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Zinc, dissolved	0.0049	0.0040	mg/L	2020-08-29	
Zirconium, dissolved	0.00021	0.00010	mg/L	2020-08-29	

General Parameters

Alkalinity, Total (as CaCO ₃)	947	1.0	mg/L	2020-08-26	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Bicarbonate (as CaCO ₃)	947	1.0	mg/L	2020-08-26	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Bicarbonate (HCO ₃)	1160	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
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Analyte	Result	RL	Units	Analyzed	Qualifier
MW09-06D (0082459-09) Matrix: Water Sampled: 2020-08-24 18:05, Continued					
General Parameters, Continued					
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	1.85	0.050	mg/L	2020-08-27	
BOD, 5-day	< 6.1	2.0	mg/L	2020-08-31	
Chemical Oxygen Demand	42	20	mg/L	2020-08-31	
Conductivity (EC)	4050	2.0	µS/cm	2020-08-26	
pH	7.77	0.10	pH units	2020-08-26	HT2
Solids, Total Dissolved	2720	15	mg/L	2020-08-27	
Solids, Total Suspended	14.0	2.0	mg/L	2020-08-28	
Turbidity	5.82	0.10	NTU	2020-08-26	
Volatile Organic Compounds (VOC)					
Benzene	< 0.5	0.5	µg/L	2020-08-29	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-08-29	
Bromoform	< 1.0	1.0	µg/L	2020-08-29	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-08-29	
Chlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
Chloroethane	< 2.0	2.0	µg/L	2020-08-29	
Chloroform	< 1.0	1.0	µg/L	2020-08-29	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-08-29	
Dibromomethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-08-29	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Dichloromethane	< 3.0	3.0	µg/L	2020-08-29	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-08-29	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-08-29	
Ethylbenzene	< 1.0	1.0	µg/L	2020-08-29	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-08-29	
Styrene	< 1.0	1.0	µg/L	2020-08-29	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-08-29	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Toluene	< 1.0	1.0	µg/L	2020-08-29	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
Trichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-08-29	
Vinyl chloride	< 1.0	1.0	µg/L	2020-08-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
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Analyte	Result	RL	Units	Analyzed	Qualifier
MW09-06D (0082459-09) Matrix: Water Sampled: 2020-08-24 18:05, Continued					
Volatile Organic Compounds (VOC), Continued					
Xylenes (total)	< 2.0	2.0	µg/L	2020-08-29	
Surrogate: Toluene-d8	88	70-130	%	2020-08-29	
Surrogate: 4-Bromofluorobenzene	93	70-130	%	2020-08-29	
Surrogate: 1,4-Dichlorobenzene-d4	94	70-130	%	2020-08-29	
DUP A (0082459-10) Matrix: Water Sampled: 2020-08-24 16:30					
Anions					
Bromide	1.14	0.10	mg/L	2020-08-26	
Chloride	377	0.10	mg/L	2020-08-26	
Fluoride	< 0.10	0.10	mg/L	2020-08-26	
Nitrate (as N)	35.0	0.010	mg/L	2020-08-26	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-08-26	
Sulfate	633	1.0	mg/L	2020-08-26	
BCMOE Aggregate Hydrocarbons					
VHw (6-10)	< 100	100	µg/L	2020-08-29	
VPHw	< 100	100	µg/L	N/A	
Calculated Parameters					
Hardness, Total (as CaCO3)	1540	0.500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	0.0415	0.00010	mg/L	2020-08-29	
Aluminum, dissolved	0.500	0.0050	mg/L	2020-08-29	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Arsenic, dissolved	0.00073	0.00050	mg/L	2020-08-29	
Barium, dissolved	0.0617	0.0050	mg/L	2020-08-29	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Boron, dissolved	1.97	0.0500	mg/L	2020-08-29	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-08-29	
Calcium, dissolved	164	0.20	mg/L	2020-08-29	
Chromium, dissolved	0.00094	0.00050	mg/L	2020-08-29	
Cobalt, dissolved	0.00190	0.00010	mg/L	2020-08-29	
Copper, dissolved	0.00272	0.00040	mg/L	2020-08-29	
Iron, dissolved	0.767	0.010	mg/L	2020-08-29	
Lead, dissolved	0.00086	0.00020	mg/L	2020-08-29	
Magnesium, dissolved	274	0.010	mg/L	2020-08-29	
Manganese, dissolved	0.110	0.00020	mg/L	2020-08-29	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-08-30	
Molybdenum, dissolved	0.00023	0.00010	mg/L	2020-08-29	
Nickel, dissolved	0.0129	0.00040	mg/L	2020-08-29	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-08-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

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Analyte	Result	RL	Units	Analyzed	Qualifier
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DUP A (0082459-10) | Matrix: Water | Sampled: 2020-08-24 16:30, Continued

Dissolved Metals, Continued

Potassium, dissolved	165	0.10	mg/L	2020-08-29	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Silicon, dissolved	13.2	1.0	mg/L	2020-08-29	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-08-29	
Sodium, dissolved	282	0.10	mg/L	2020-08-29	
Strontium, dissolved	1.73	0.0010	mg/L	2020-08-29	
Sulfur, dissolved	256	3.0	mg/L	2020-08-29	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Thallium, dissolved	0.000060	0.000020	mg/L	2020-08-29	
Thorium, dissolved	0.00035	0.00010	mg/L	2020-08-29	
Tin, dissolved	0.00021	0.00020	mg/L	2020-08-29	
Titanium, dissolved	0.0304	0.0050	mg/L	2020-08-29	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Uranium, dissolved	0.00698	0.000020	mg/L	2020-08-29	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-08-29	
Zirconium, dissolved	0.00052	0.00010	mg/L	2020-08-29	

General Parameters

Alkalinity, Total (as CaCO3)	948	1.0	mg/L	2020-08-26	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Bicarbonate (as CaCO3)	948	1.0	mg/L	2020-08-26	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2020-08-26	
Bicarbonate (HCO3)	1160	1.22	mg/L	N/A	
Carbonate (CO3)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	1.77	0.050	mg/L	2020-08-27	
BOD, 5-day	< 6.1	2.0	mg/L	2020-08-31	
Chemical Oxygen Demand	47	20	mg/L	2020-08-31	
Conductivity (EC)	4010	2.0	µS/cm	2020-08-26	
pH	7.79	0.10	pH units	2020-08-26	HT2
Solids, Total Dissolved	2630	15	mg/L	2020-08-27	
Solids, Total Suspended	101	2.0	mg/L	2020-08-28	
Turbidity	51.3	0.10	NTU	2020-08-26	

Volatile Organic Compounds (VOC)

Benzene	< 0.5	0.5	µg/L	2020-08-29	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-08-29	
Bromoform	< 1.0	1.0	µg/L	2020-08-29	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-08-29	
Chlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
Chloroethane	< 2.0	2.0	µg/L	2020-08-29	
Chloroform	< 1.0	1.0	µg/L	2020-08-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
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Analyte	Result	RL	Units	Analyzed	Qualifier
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DUP A (0082459-10) | Matrix: Water | Sampled: 2020-08-24 16:30, Continued

Volatile Organic Compounds (VOC), Continued

Dibromochloromethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-08-29	
Dibromomethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-08-29	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Dichloromethane	< 3.0	3.0	µg/L	2020-08-29	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-08-29	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-08-29	
Ethylbenzene	< 1.0	1.0	µg/L	2020-08-29	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-08-29	
Styrene	< 1.0	1.0	µg/L	2020-08-29	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-08-29	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Toluene	< 1.0	1.0	µg/L	2020-08-29	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
Trichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-08-29	
Vinyl chloride	< 1.0	1.0	µg/L	2020-08-29	
Xylenes (total)	< 2.0	2.0	µg/L	2020-08-29	
Surrogate: Toluene-d8	88	70-130	%	2020-08-29	
Surrogate: 4-Bromofluorobenzene	94	70-130	%	2020-08-29	
Surrogate: 1,4-Dichlorobenzene-d4	95	70-130	%	2020-08-29	

DMW20-01 (0082459-11) | Matrix: Water | Sampled: 2020-08-24 11:55

Anions

Bromide	< 0.10	0.10	mg/L	2020-08-26	
Chloride	38.8	0.10	mg/L	2020-08-26	
Fluoride	0.12	0.10	mg/L	2020-08-26	
Nitrate (as N)	0.429	0.010	mg/L	2020-08-26	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-08-26	
Sulfate	25.1	1.0	mg/L	2020-08-26	

BCMOE Aggregate Hydrocarbons

VHw (6-10)	< 100	100	µg/L	2020-08-29	
VPHw	< 100	100	µg/L	N/A	

TEST RESULTS

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Analyte	Result	RL	Units	Analyzed	Qualifier
DMW20-01 (0082459-11) Matrix: Water Sampled: 2020-08-24 11:55, Continued					
Calculated Parameters					
Hardness, Total (as CaCO ₃)	246	0.500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	0.00123	0.00010	mg/L	2020-08-29	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-08-29	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Barium, dissolved	0.110	0.0050	mg/L	2020-08-29	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Boron, dissolved	0.0505	0.0500	mg/L	2020-08-29	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-08-29	
Calcium, dissolved	48.3	0.20	mg/L	2020-08-29	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Cobalt, dissolved	0.00011	0.00010	mg/L	2020-08-29	
Copper, dissolved	0.00189	0.00040	mg/L	2020-08-29	
Iron, dissolved	< 0.010	0.010	mg/L	2020-08-29	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Magnesium, dissolved	30.3	0.010	mg/L	2020-08-29	
Manganese, dissolved	0.00870	0.00020	mg/L	2020-08-29	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-08-30	
Molybdenum, dissolved	0.00077	0.00010	mg/L	2020-08-29	
Nickel, dissolved	0.00052	0.00040	mg/L	2020-08-29	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-08-29	
Potassium, dissolved	1.09	0.10	mg/L	2020-08-29	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Silicon, dissolved	3.1	1.0	mg/L	2020-08-29	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-08-29	
Sodium, dissolved	20.9	0.10	mg/L	2020-08-29	
Strontium, dissolved	0.343	0.0010	mg/L	2020-08-29	
Sulfur, dissolved	10.5	3.0	mg/L	2020-08-29	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-08-29	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-08-29	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Uranium, dissolved	0.000669	0.000020	mg/L	2020-08-29	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Zinc, dissolved	0.0102	0.0040	mg/L	2020-08-29	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	

General Parameters

Alkalinity, Total (as CaCO₃) 220 1.0 mg/L 2020-08-26

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Analyte	Result	RL	Units	Analyzed	Qualifier
DMW20-01 (0082459-11) Matrix: Water Sampled: 2020-08-24 11:55, Continued					
General Parameters, Continued					
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Bicarbonate (as CaCO ₃)	220	1.0	mg/L	2020-08-26	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Bicarbonate (HCO ₃)	269	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	< 0.050	0.050	mg/L	2020-08-27	
BOD, 5-day	< 6.1	2.0	mg/L	2020-08-31	
Chemical Oxygen Demand	< 20	20	mg/L	2020-08-31	
Conductivity (EC)	576	2.0	µS/cm	2020-08-26	
pH	8.22	0.10	pH units	2020-08-26	HT2
Solids, Total Dissolved	308	15	mg/L	2020-08-27	
Solids, Total Suspended	< 2.0	2.0	mg/L	2020-08-28	
Turbidity	0.74	0.10	NTU	2020-08-26	
Volatile Organic Compounds (VOC)					
Benzene	< 0.5	0.5	µg/L	2020-08-29	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-08-29	
Bromoform	< 1.0	1.0	µg/L	2020-08-29	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-08-29	
Chlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
Chloroethane	< 2.0	2.0	µg/L	2020-08-29	
Chloroform	< 1.0	1.0	µg/L	2020-08-29	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-08-29	
Dibromomethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-08-29	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Dichloromethane	< 3.0	3.0	µg/L	2020-08-29	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-08-29	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-08-29	
Ethylbenzene	< 1.0	1.0	µg/L	2020-08-29	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-08-29	
Styrene	< 1.0	1.0	µg/L	2020-08-29	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-08-29	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-08-29	

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Analyte	Result	RL	Units	Analyzed	Qualifier
DMW20-01 (0082459-11) Matrix: Water Sampled: 2020-08-24 11:55, Continued					
<i>Volatile Organic Compounds (VOC), Continued</i>					
Toluene	< 1.0	1.0	µg/L	2020-08-29	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
Trichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-08-29	
Vinyl chloride	< 1.0	1.0	µg/L	2020-08-29	
Xylenes (total)	< 2.0	2.0	µg/L	2020-08-29	
Surrogate: Toluene-d8	86	70-130	%	2020-08-29	
Surrogate: 4-Bromofluorobenzene	92	70-130	%	2020-08-29	
Surrogate: 1,4-Dichlorobenzene-d4	93	70-130	%	2020-08-29	

Sample Qualifiers:

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

APPENDIX 1: SUPPORTING INFORMATION

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Analysis Description	Method Ref.	Technique	Accredited	Location
Alkalinity in Water	SM 2320 B* (2017)	Titration with H ₂ SO ₄	✓	Kelowna
Ammonia, Total in Water	SM 4500-NH ₃ G* (2017)	Automated Colorimetry (Phenate)	✓	Kelowna
Anions in Water	SM 4110 B (2017)	Ion Chromatography	✓	Kelowna
Biochemical Oxygen Demand in Water	SM 5210 B (2017)	Dissolved Oxygen Meter	✓	Kelowna
Chemical Oxygen Demand in Water	SM 5220 D* (2017)	Closed Reflux, Colorimetry	✓	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 Spectrometry (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*	BrCl ₂ Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	✓	Richmond
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
Solids, Total Suspended in Water	SM 2540 D* (2017)	Gravimetry (Dried at 103-105C)	✓	Kelowna
Turbidity in Water	SM 2130 B (2017)	Nephelometry	✓	Kelowna
VH in Water	EPA 5030B / BCMOE VHW	Purge&Trap / Gas Chromatography (GC-FID)	✓	Richmond
Volatile Organic Compounds in Water	EPA 5030B / EPA 8260D	Purge&Trap / GC-MSD (SIM)	✓	Richmond
VPHw in Water	BCMOE VPH	Calculation: VH - (Benzene + Toluene + Ethylbenzene + Xylenes + Styrene)		N/A

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
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
pH units	pH < 7 = acidic, pH > 7 = basic
µg/L	Micrograms per litre
µS/cm	Microsiemens per centimetre
BCMOE	British Columbia Environmental Laboratory Manual, British Columbia Ministry of Environment
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

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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.

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.

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APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO Ecoscape Environmental Ltd.
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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 B0H2225									
Blank (B0H2225-BLK1)				Prepared: 2020-08-26, Analyzed: 2020-08-26					
Bromide	< 0.10	0.10 mg/L							
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 (B0H2225-BS1)				Prepared: 2020-08-26, Analyzed: 2020-08-26					
Bromide	4.01	0.10 mg/L	4.00		100	85-115			
Chloride	16.0	0.10 mg/L	16.0		100	90-110			
Fluoride	4.00	0.10 mg/L	4.00		100	88-108			
Nitrate (as N)	4.02	0.010 mg/L	4.00		101	90-110			
Nitrite (as N)	2.03	0.010 mg/L	2.00		101	85-115			
Sulfate	16.0	1.0 mg/L	16.0		100	90-110			
Duplicate (B0H2225-DUP1)				Source: 0082459-11	Prepared: 2020-08-26, Analyzed: 2020-08-26				
Bromide	< 0.10	0.10 mg/L		< 0.10					10
Chloride	38.8	0.10 mg/L		38.8			< 1		10
Fluoride	0.12	0.10 mg/L		0.12					10
Nitrate (as N)	0.430	0.010 mg/L		0.429			< 1		10
Nitrite (as N)	< 0.010	0.010 mg/L		< 0.010					15
Sulfate	25.1	1.0 mg/L		25.1			< 1		10
Matrix Spike (B0H2225-MS1)				Source: 0082459-11	Prepared: 2020-08-26, Analyzed: 2020-08-26				
Bromide	4.02	0.10 mg/L	4.00	< 0.10	100	80-120			
Chloride	55.3	0.10 mg/L	16.0	38.8	103	75-125			
Fluoride	4.01	0.10 mg/L	4.00	0.12	97	75-125			
Nitrate (as N)	4.20	0.010 mg/L	4.00	0.429	94	75-125			
Nitrite (as N)	1.98	0.010 mg/L	2.00	< 0.010	99	80-120			
Sulfate	41.1	1.0 mg/L	16.0	25.1	100	75-125			

BCMOE Aggregate Hydrocarbons, Batch B0H2533

Blank (B0H2533-BLK1) Prepared: 2020-08-31, Analyzed: 2020-08-31

VHw (6-10)	< 100	100 µg/L
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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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BCMOE Aggregate Hydrocarbons, Batch B0H2533, Continued

LCS (B0H2533-BS2)

Prepared: 2020-08-29, Analyzed: 2020-08-29

VHw (6-10)	2390	100 µg/L	2690	89	70-130				
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Dissolved Metals, Batch B0H2471

Blank (B0H2471-BLK1)

Prepared: 2020-08-29, Analyzed: 2020-08-29

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 (B0H2471-BS1)

Prepared: 2020-08-29, Analyzed: 2020-08-29

Lithium, dissolved	0.0191	0.00010 mg/L	0.0200	96	80-120				
Aluminum, dissolved	0.0216	0.0050 mg/L	0.0199	109	80-120				
Antimony, dissolved	0.0181	0.00020 mg/L	0.0200	90	80-120				
Arsenic, dissolved	0.0190	0.00050 mg/L	0.0200	95	80-120				
Barium, dissolved	0.0189	0.0050 mg/L	0.0198	96	80-120				
Beryllium, dissolved	0.0204	0.00010 mg/L	0.0198	103	80-120				
Bismuth, dissolved	0.0205	0.00010 mg/L	0.0200	102	80-120				
Boron, dissolved	< 0.0500	0.0500 mg/L	0.0200	101	80-120				
Cadmium, dissolved	0.0192	0.000010 mg/L	0.0199	97	80-120				
Calcium, dissolved	1.98	0.20 mg/L	2.02	98	80-120				
Chromium, dissolved	0.0188	0.00050 mg/L	0.0198	95	80-120				
Cobalt, dissolved	0.0193	0.00010 mg/L	0.0199	97	80-120				

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Dissolved Metals, Batch B0H2471, Continued									
LCS (B0H2471-BS1), Continued				Prepared: 2020-08-29, Analyzed: 2020-08-29					
Copper, dissolved	0.0194	0.00040 mg/L	0.0200		97	80-120			
Iron, dissolved	1.95	0.010 mg/L	2.02		96	80-120			
Lead, dissolved	0.0197	0.00020 mg/L	0.0199		99	80-120			
Magnesium, dissolved	2.00	0.010 mg/L	2.02		99	80-120			
Manganese, dissolved	0.0190	0.00020 mg/L	0.0199		95	80-120			
Molybdenum, dissolved	0.0190	0.00010 mg/L	0.0200		95	80-120			
Nickel, dissolved	0.0199	0.00040 mg/L	0.0200		99	80-120			
Phosphorus, dissolved	2.01	0.050 mg/L	2.00		101	80-120			
Potassium, dissolved	1.92	0.10 mg/L	2.02		95	80-120			
Selenium, dissolved	0.0190	0.00050 mg/L	0.0200		95	80-120			
Silicon, dissolved	1.7	1.0 mg/L	2.00		87	80-120			
Silver, dissolved	0.0192	0.000050 mg/L	0.0200		96	80-120			
Sodium, dissolved	1.90	0.10 mg/L	2.02		94	80-120			
Strontium, dissolved	0.0189	0.0010 mg/L	0.0200		95	80-120			
Sulfur, dissolved	4.8	3.0 mg/L	5.00		96	80-120			
Tellurium, dissolved	0.0199	0.00050 mg/L	0.0200		99	80-120			
Thallium, dissolved	0.0199	0.000020 mg/L	0.0199		100	80-120			
Thorium, dissolved	0.0196	0.00010 mg/L	0.0200		98	80-120			
Tin, dissolved	0.0197	0.00020 mg/L	0.0200		98	80-120			
Titanium, dissolved	0.0198	0.0050 mg/L	0.0200		99	80-120			
Tungsten, dissolved	0.0202	0.0010 mg/L	0.0200		101	80-120			
Uranium, dissolved	0.0201	0.000020 mg/L	0.0200		101	80-120			
Vanadium, dissolved	0.0204	0.0010 mg/L	0.0200		102	80-120			
Zinc, dissolved	0.0199	0.0040 mg/L	0.0200		99	80-120			
Zirconium, dissolved	0.0192	0.00010 mg/L	0.0200		96	80-120			
Duplicate (B0H2471-DUP1)				Source: 0082459-02		Prepared: 2020-08-29, Analyzed: 2020-08-29			
Lithium, dissolved	0.0199	0.00010 mg/L		0.0193			3	20	
Aluminum, dissolved	< 0.0050	0.0050 mg/L		< 0.0050				20	
Antimony, dissolved	< 0.00020	0.00020 mg/L		< 0.00020				20	
Arsenic, dissolved	0.00506	0.00050 mg/L		0.00518			2	20	
Barium, dissolved	0.196	0.0050 mg/L		0.196			< 1	20	
Beryllium, dissolved	< 0.00010	0.00010 mg/L		< 0.00010				20	
Bismuth, dissolved	< 0.00010	0.00010 mg/L		< 0.00010				20	
Boron, dissolved	< 0.0500	0.0500 mg/L		< 0.0500				20	
Cadmium, dissolved	< 0.000010	0.000010 mg/L		0.000010				20	
Calcium, dissolved	89.1	0.20 mg/L		86.2			3	20	
Chromium, dissolved	0.00050	0.00050 mg/L		< 0.00050				20	
Cobalt, dissolved	< 0.00010	0.00010 mg/L		< 0.00010				20	
Copper, dissolved	0.00119	0.00040 mg/L		0.00119				20	
Iron, dissolved	< 0.010	0.010 mg/L		< 0.010				20	
Lead, dissolved	< 0.00020	0.00020 mg/L		< 0.00020				20	
Magnesium, dissolved	117	0.010 mg/L		118			< 1	20	
Manganese, dissolved	0.00091	0.00020 mg/L		0.00090				20	
Molybdenum, dissolved	0.00064	0.00010 mg/L		0.00063			2	20	
Nickel, dissolved	0.00096	0.00040 mg/L		0.00095				20	
Phosphorus, dissolved	< 0.050	0.050 mg/L		< 0.050				20	
Potassium, dissolved	5.65	0.10 mg/L		5.67			< 1	20	
Selenium, dissolved	< 0.00050	0.00050 mg/L		< 0.00050				20	
Silicon, dissolved	9.1	1.0 mg/L		9.1			< 1	20	
Silver, dissolved	< 0.000050	0.000050 mg/L		< 0.000050				20	
Sodium, dissolved	323	0.10 mg/L		324			< 1	20	
Strontium, dissolved	1.34	0.0010 mg/L		1.32			1	20	
Sulfur, dissolved	19.7	3.0 mg/L		21.3			8	20	
Tellurium, dissolved	< 0.00050	0.00050 mg/L		< 0.00050				20	
Thallium, dissolved	< 0.000020	0.000020 mg/L		< 0.000020				20	

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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Dissolved Metals, Batch B0H2471, Continued

Duplicate (B0H2471-DUP1), Continued		Source: 0082459-02		Prepared: 2020-08-29, Analyzed: 2020-08-29					
Thorium, dissolved	< 0.00010	0.00010 mg/L		< 0.00010				20	
Tin, dissolved	0.00022	0.00020 mg/L		0.00021				20	
Titanium, dissolved	< 0.0050	0.0050 mg/L		< 0.0050				20	
Tungsten, dissolved	0.0052	0.0010 mg/L		0.0052			< 1	20	
Uranium, dissolved	0.00216	0.000020 mg/L		0.00206			5	20	
Vanadium, dissolved	< 0.0010	0.0010 mg/L		< 0.0010				20	
Zinc, dissolved	< 0.0040	0.0040 mg/L		< 0.0040				20	
Zirconium, dissolved	< 0.00010	0.00010 mg/L		< 0.00010				20	

Reference (B0H2471-SRM1)		Prepared: 2020-08-29, Analyzed: 2020-08-29							
Lithium, dissolved	0.105	0.00010 mg/L	0.100		105	70-130			
Aluminum, dissolved	0.240	0.0050 mg/L	0.235		102	70-130			
Antimony, dissolved	0.0477	0.00020 mg/L	0.0431		111	70-130			
Arsenic, dissolved	0.456	0.00050 mg/L	0.423		108	70-130			
Barium, dissolved	3.37	0.0050 mg/L	3.30		102	70-130			
Beryllium, dissolved	0.232	0.00010 mg/L	0.209		111	70-130			
Boron, dissolved	1.83	0.0500 mg/L	1.65		111	70-130			
Cadmium, dissolved	0.233	0.000010 mg/L	0.221		106	70-130			
Calcium, dissolved	7.10	0.20 mg/L	7.72		92	70-130			
Chromium, dissolved	0.444	0.00050 mg/L	0.434		102	70-130			
Cobalt, dissolved	0.132	0.00010 mg/L	0.124		106	70-130			
Copper, dissolved	0.881	0.00040 mg/L	0.815		108	70-130			
Iron, dissolved	1.33	0.010 mg/L	1.27		105	70-130			
Lead, dissolved	0.116	0.00020 mg/L	0.110		106	70-130			
Magnesium, dissolved	6.88	0.010 mg/L	6.59		104	70-130			
Manganese, dissolved	0.344	0.00020 mg/L	0.342		100	70-130			
Molybdenum, dissolved	0.424	0.00010 mg/L	0.404		105	70-130			
Nickel, dissolved	0.903	0.00040 mg/L	0.835		108	70-130			
Phosphorus, dissolved	0.505	0.050 mg/L	0.499		101	70-130			
Potassium, dissolved	2.94	0.10 mg/L	2.88		102	70-130			
Selenium, dissolved	0.0352	0.00050 mg/L	0.0324		109	70-130			
Sodium, dissolved	18.7	0.10 mg/L	18.0		104	70-130			
Strontium, dissolved	0.943	0.0010 mg/L	0.935		101	70-130			
Thallium, dissolved	0.0414	0.000020 mg/L	0.0385		107	70-130			
Uranium, dissolved	0.256	0.000020 mg/L	0.258		99	70-130			
Vanadium, dissolved	0.893	0.0010 mg/L	0.873		102	70-130			
Zinc, dissolved	0.912	0.0040 mg/L	0.848		108	70-130			

Dissolved Metals, Batch B0H2636

Blank (B0H2636-BLK1)		Prepared: 2020-08-30, Analyzed: 2020-08-30							
Mercury, dissolved	< 0.000010	0.000010 mg/L							
Blank (B0H2636-BLK2)		Prepared: 2020-08-30, Analyzed: 2020-08-30							
Mercury, dissolved	< 0.000010	0.000010 mg/L							
Duplicate (B0H2636-DUP2)		Source: 0082459-05		Prepared: 2020-08-30, Analyzed: 2020-08-30					
Mercury, dissolved	< 0.000010	0.000010 mg/L		< 0.000010				20	
Matrix Spike (B0H2636-MS2)		Source: 0082459-11		Prepared: 2020-08-30, Analyzed: 2020-08-31					
Mercury, dissolved	0.000260	0.000010 mg/L	0.000250	< 0.000010	104	70-130			
Reference (B0H2636-SRM1)		Prepared: 2020-08-30, Analyzed: 2020-08-30							
Mercury, dissolved	0.00575	0.000010 mg/L	0.00581		99	70-130			
Reference (B0H2636-SRM2)		Prepared: 2020-08-30, Analyzed: 2020-08-30							
Mercury, dissolved	0.00547	0.000010 mg/L	0.00581		94	70-130			

APPENDIX 2: QUALITY CONTROL RESULTS

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WORK ORDER REPORTED 0082459
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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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Dissolved Metals, Batch B0H2636, Continued

General Parameters, Batch B0H2187

Blank (B0H2187-BLK1)			Prepared: 2020-08-26, Analyzed: 2020-08-26						
Alkalinity, Total (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Bicarbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0 mg/L							
Conductivity (EC)	< 2.0	2.0 µS/cm							
Blank (B0H2187-BLK2)			Prepared: 2020-08-26, Analyzed: 2020-08-26						
Alkalinity, Total (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Bicarbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0 mg/L							
Conductivity (EC)	< 2.0	2.0 µS/cm							
Blank (B0H2187-BLK3)			Prepared: 2020-08-26, Analyzed: 2020-08-26						
Alkalinity, Total (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Bicarbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0 mg/L							
Conductivity (EC)	< 2.0	2.0 µS/cm							
LCS (B0H2187-BS1)			Prepared: 2020-08-26, Analyzed: 2020-08-26						
Alkalinity, Total (as CaCO ₃)	106	1.0 mg/L	100		106	80-120			
LCS (B0H2187-BS2)			Prepared: 2020-08-26, Analyzed: 2020-08-26						
Alkalinity, Total (as CaCO ₃)	103	1.0 mg/L	100		103	80-120			
LCS (B0H2187-BS3)			Prepared: 2020-08-26, Analyzed: 2020-08-26						
Alkalinity, Total (as CaCO ₃)	108	1.0 mg/L	100		108	80-120			
LCS (B0H2187-BS4)			Prepared: 2020-08-26, Analyzed: 2020-08-26						
Conductivity (EC)	1460	2.0 µS/cm	1410		104	95-104			
LCS (B0H2187-BS5)			Prepared: 2020-08-26, Analyzed: 2020-08-26						
Conductivity (EC)	1440	2.0 µS/cm	1410		102	95-104			
LCS (B0H2187-BS6)			Prepared: 2020-08-26, Analyzed: 2020-08-26						
Conductivity (EC)	1470	2.0 µS/cm	1410		104	95-104			
Reference (B0H2187-SRM1)			Prepared: 2020-08-26, Analyzed: 2020-08-26						
pH	7.00	0.10 pH units	7.01		100	98-102			
Reference (B0H2187-SRM2)			Prepared: 2020-08-26, Analyzed: 2020-08-26						
pH	6.99	0.10 pH units	7.01		100	98-102			
Reference (B0H2187-SRM3)			Prepared: 2020-08-26, Analyzed: 2020-08-26						
pH	7.00	0.10 pH units	7.01		100	98-102			

General Parameters, Batch B0H2194

Blank (B0H2194-BLK1)			Prepared: 2020-08-26, Analyzed: 2020-08-26						
Turbidity	< 0.10	0.10 NTU							

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
General Parameters, Batch B0H2194, Continued									
Blank (B0H2194-BLK2)				Prepared: 2020-08-26, Analyzed: 2020-08-26					
Turbidity	< 0.10	0.10 NTU							
LCS (B0H2194-BS1)				Prepared: 2020-08-26, Analyzed: 2020-08-26					
Turbidity	38.8	0.10 NTU	40.0		97	90-110			
LCS (B0H2194-BS2)				Prepared: 2020-08-26, Analyzed: 2020-08-26					
Turbidity	40.1	0.10 NTU	40.0		100	90-110			
Duplicate (B0H2194-DUP2)				Source: 0082459-04		Prepared: 2020-08-26, Analyzed: 2020-08-26			
Turbidity	45.1	0.10 NTU		45.1			< 1	15	
General Parameters, Batch B0H2256									
Blank (B0H2256-BLK1)				Prepared: 2020-08-26, Analyzed: 2020-08-31					
BOD, 5-day	< 2.0	2.0 mg/L							
LCS (B0H2256-BS1)				Prepared: 2020-08-26, Analyzed: 2020-08-31					
BOD, 5-day	186	2.0 mg/L	180		103	85-115			
General Parameters, Batch B0H2312									
Blank (B0H2312-BLK1)				Prepared: 2020-08-28, Analyzed: 2020-08-28					
Solids, Total Suspended	< 2.0	2.0 mg/L							
Blank (B0H2312-BLK2)				Prepared: 2020-08-28, Analyzed: 2020-08-28					
Solids, Total Suspended	< 2.0	2.0 mg/L							
LCS (B0H2312-BS1)				Prepared: 2020-08-28, Analyzed: 2020-08-28					
Solids, Total Suspended	87.0	10.0 mg/L	100		87	85-115			
LCS (B0H2312-BS2)				Prepared: 2020-08-28, Analyzed: 2020-08-28					
Solids, Total Suspended	98.0	10.0 mg/L	100		98	85-115			
General Parameters, Batch B0H2315									
Blank (B0H2315-BLK1)				Prepared: 2020-08-27, Analyzed: 2020-08-27					
Solids, Total Dissolved	< 15	15 mg/L							
Duplicate (B0H2315-DUP1)				Source: 0082459-09		Prepared: 2020-08-27, Analyzed: 2020-08-27			
Solids, Total Dissolved	2700	15 mg/L		2720			< 1	15	
Reference (B0H2315-SRM1)				Prepared: 2020-08-27, Analyzed: 2020-08-27					
Solids, Total Dissolved	245	15 mg/L	240		102	0-200			
General Parameters, Batch B0H2339									
Blank (B0H2339-BLK1)				Prepared: 2020-08-27, Analyzed: 2020-08-27					
Ammonia, Total (as N)	< 0.050	0.050 mg/L							
Blank (B0H2339-BLK2)				Prepared: 2020-08-27, Analyzed: 2020-08-27					
Ammonia, Total (as N)	< 0.050	0.050 mg/L							
Blank (B0H2339-BLK3)				Prepared: 2020-08-27, Analyzed: 2020-08-27					
Ammonia, Total (as N)	< 0.050	0.050 mg/L							

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
General Parameters, Batch B0H2339, Continued									
LCS (B0H2339-BS1)				Prepared: 2020-08-27, Analyzed: 2020-08-27					
Ammonia, Total (as N)	0.987	0.050 mg/L	1.00		99	90-115			
LCS (B0H2339-BS2)				Prepared: 2020-08-27, Analyzed: 2020-08-27					
Ammonia, Total (as N)	0.978	0.050 mg/L	1.00		98	90-115			
LCS (B0H2339-BS3)				Prepared: 2020-08-27, Analyzed: 2020-08-27					
Ammonia, Total (as N)	0.991	0.050 mg/L	1.00		99	90-115			
Duplicate (B0H2339-DUP1)				Source: 0082459-04		Prepared: 2020-08-27, Analyzed: 2020-08-27			
Ammonia, Total (as N)	0.415	0.050 mg/L		0.447			7	15	
Matrix Spike (B0H2339-MS1)				Source: 0082459-04		Prepared: 2020-08-27, Analyzed: 2020-08-27			
Ammonia, Total (as N)	0.668	0.050 mg/L	0.250	0.447	88	75-125			
General Parameters, Batch B0H2680									
Blank (B0H2680-BLK1)				Prepared: 2020-08-31, Analyzed: 2020-08-31					
Chemical Oxygen Demand	< 20	20 mg/L							
LCS (B0H2680-BS1)				Prepared: 2020-08-31, Analyzed: 2020-08-31					
Chemical Oxygen Demand	501	20 mg/L	500		100	89-115			
Volatile Organic Compounds (VOC), Batch B0H2533									
Blank (B0H2533-BLK1)				Prepared: 2020-08-31, Analyzed: 2020-08-31					
Benzene	< 0.5	0.5 µg/L							
Bromodichloromethane	< 1.0	1.0 µg/L							
Bromoform	< 1.0	1.0 µg/L							
Carbon tetrachloride	< 0.5	0.5 µg/L							
Chlorobenzene	< 1.0	1.0 µg/L							
Chloroethane	< 2.0	2.0 µg/L							
Chloroform	< 1.0	1.0 µg/L							
Dibromochloromethane	< 1.0	1.0 µg/L							
1,2-Dibromoethane	< 0.3	0.3 µg/L							
Dibromomethane	< 1.0	1.0 µg/L							
1,2-Dichlorobenzene	< 0.5	0.5 µg/L							
1,3-Dichlorobenzene	< 1.0	1.0 µg/L							
1,4-Dichlorobenzene	< 1.0	1.0 µg/L							
1,1-Dichloroethane	< 1.0	1.0 µg/L							
1,2-Dichloroethane	< 1.0	1.0 µg/L							
1,1-Dichloroethylene	< 1.0	1.0 µg/L							
cis-1,2-Dichloroethylene	< 1.0	1.0 µg/L							
trans-1,2-Dichloroethylene	< 1.0	1.0 µg/L							
Dichloromethane	< 3.0	3.0 µg/L							
1,2-Dichloropropane	< 1.0	1.0 µg/L							
1,3-Dichloropropene (cis + trans)	< 1.0	1.0 µg/L							
Ethylbenzene	< 1.0	1.0 µg/L							
Methyl tert-butyl ether	< 1.0	1.0 µg/L							
Styrene	< 1.0	1.0 µg/L							
1,1,2,2-Tetrachloroethane	< 0.5	0.5 µg/L							
Tetrachloroethylene	< 1.0	1.0 µg/L							
Toluene	< 1.0	1.0 µg/L							
1,1,1-Trichloroethane	< 1.0	1.0 µg/L							
1,1,2-Trichloroethane	< 1.0	1.0 µg/L							
Trichloroethylene	< 1.0	1.0 µg/L							
Trichlorofluoromethane	< 1.0	1.0 µg/L							

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Volatile Organic Compounds (VOC), Batch B0H2533, Continued									
Blank (B0H2533-BLK1), Continued					Prepared: 2020-08-31, Analyzed: 2020-08-31				
Vinyl chloride	< 1.0	1.0 µg/L							
Xylenes (total)	< 2.0	2.0 µg/L							
Surrogate: Toluene-d8	24.5	µg/L	26.5		92	70-130			
Surrogate: 4-Bromofluorobenzene	25.2	µg/L	24.9		101	70-130			
Surrogate: 1,4-Dichlorobenzene-d4	26.5	µg/L	25.5		104	70-130			
LCS (B0H2533-BS1)					Prepared: 2020-08-31, Analyzed: 2020-08-31				
Benzene	16.2	0.5 µg/L	20.0		81	70-130			
Bromodichloromethane	14.2	1.0 µg/L	20.0		71	70-130			
Bromoform	15.0	1.0 µg/L	20.1		75	70-130			
Carbon tetrachloride	13.8	0.5 µg/L	20.2		68	70-130			SPK1
Chlorobenzene	17.0	1.0 µg/L	20.1		85	70-130			
Chloroethane	11.1	2.0 µg/L	20.0		56	60-140			SPK
Chloroform	15.0	1.0 µg/L	20.1		74	70-130			
Dibromochloromethane	13.9	1.0 µg/L	20.2		69	70-130			SPK1
1,2-Dibromoethane	14.6	0.3 µg/L	20.0		73	70-130			
Dibromomethane	13.7	1.0 µg/L	20.0		68	70-130			SPK1
1,2-Dichlorobenzene	17.3	0.5 µg/L	20.1		86	70-130			
1,3-Dichlorobenzene	17.0	1.0 µg/L	20.1		85	70-130			
1,4-Dichlorobenzene	15.4	1.0 µg/L	20.1		77	70-130			
1,1-Dichloroethane	14.5	1.0 µg/L	20.1		72	70-130			
1,2-Dichloroethane	14.6	1.0 µg/L	20.1		73	70-130			
1,1-Dichloroethylene	14.3	1.0 µg/L	20.1		71	70-130			
cis-1,2-Dichloroethylene	14.6	1.0 µg/L	20.0		73	70-130			
trans-1,2-Dichloroethylene	13.7	1.0 µg/L	20.0		68	70-130			SPK1
Dichloromethane	15.1	3.0 µg/L	20.1		75	70-130			
1,2-Dichloropropane	15.3	1.0 µg/L	20.1		76	70-130			
1,3-Dichloropropene (cis + trans)	28.0	1.0 µg/L	40.0		70	70-130			
Ethylbenzene	18.3	1.0 µg/L	20.0		92	70-130			
Methyl tert-butyl ether	16.9	1.0 µg/L	20.0		85	70-130			
Styrene	18.0	1.0 µg/L	20.0		90	70-130			
1,1,2,2-Tetrachloroethane	18.1	0.5 µg/L	20.1		90	70-130			
Tetrachloroethylene	14.8	1.0 µg/L	20.1		74	70-130			
Toluene	15.8	1.0 µg/L	20.0		79	70-130			
1,1,1-Trichloroethane	13.6	1.0 µg/L	20.0		68	70-130			SPK1
1,1,2-Trichloroethane	14.8	1.0 µg/L	20.1		74	70-130			
Trichloroethylene	14.7	1.0 µg/L	20.1		73	70-130			
Trichlorofluoromethane	15.2	1.0 µg/L	20.0		76	60-140			
Vinyl chloride	16.9	1.0 µg/L	20.0		85	60-140			
Xylenes (total)	53.8	2.0 µg/L	60.0		90	70-130			
Surrogate: Toluene-d8	25.6	µg/L	26.5		97	70-130			
Surrogate: 4-Bromofluorobenzene	25.7	µg/L	24.9		103	70-130			
Surrogate: 1,4-Dichlorobenzene-d4	27.0	µg/L	25.5		106	70-130			

QC Qualifiers:

S02 Surrogate recovery outside of control limits. Data accepted based on acceptable recovery of other surrogates.
 SPK The recovery of this analyte was outside of established control limits.
 SPK1 The recovery of this analyte was outside of established control limits. The data was accepted based on performance of other batch QC.

CERTIFICATE OF ANALYSIS

REPORTED TO Ecoscape Environmental Ltd.
#102 - 450 Neave Court
Kelowna, BC V1V 2M2

ATTENTION Kelsey Tanaka

PO NUMBER 19-2850

PROJECT 19-2850 - Golden

PROJECT INFO Golden

WORK ORDER 0082459

RECEIVED / TEMP 2020-08-25 15:15 / 7°C

REPORTED 2020-10-21 11:00

COC NUMBER No Number

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 acrump@caro.ca

Authorized By:

Alana Crump
Team Lead, Client Service



1-888-311-8846 | www.caro.ca

#110 4011 Viking Way Richmond, BC V6V 2K9 | #102 3677 Highway 97N Kelowna, BC V1X 5C3 | 17225 109 Avenue Edmonton, AB T5S 1H7

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-10-21 11:00

Analyte	Result	RL	Units	Analyzed	Qualifier
MW09-06S (0082459-01) Matrix: Water Sampled: 2020-08-24 16:30					
Anions					
Bromide	1.10	0.10	mg/L	2020-08-26	
Chloride	379	0.10	mg/L	2020-08-26	
Fluoride	< 0.10	0.10	mg/L	2020-08-26	
Nitrate (as N)	33.9	0.010	mg/L	2020-08-26	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-08-26	
Sulfate	637	1.0	mg/L	2020-08-26	
Calculated Parameters					
Hardness, Total (as CaCO3)	1500	0.500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	0.0405	0.00010	mg/L	2020-08-29	
Aluminum, dissolved	0.481	0.0050	mg/L	2020-08-29	
Antimony, dissolved	0.00021	0.00020	mg/L	2020-08-29	
Arsenic, dissolved	0.00073	0.00050	mg/L	2020-08-29	
Barium, dissolved	0.0618	0.0050	mg/L	2020-08-29	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Boron, dissolved	1.87	0.0500	mg/L	2020-08-29	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-08-29	
Calcium, dissolved	159	0.20	mg/L	2020-08-29	
Chromium, dissolved	0.00091	0.00050	mg/L	2020-08-29	
Cobalt, dissolved	0.00178	0.00010	mg/L	2020-08-29	
Copper, dissolved	0.00279	0.00040	mg/L	2020-08-29	
Iron, dissolved	0.636	0.010	mg/L	2020-08-29	
Lead, dissolved	0.00087	0.00020	mg/L	2020-08-29	
Magnesium, dissolved	268	0.010	mg/L	2020-08-29	
Manganese, dissolved	0.103	0.00020	mg/L	2020-08-29	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-08-30	
Molybdenum, dissolved	0.00018	0.00010	mg/L	2020-08-29	
Nickel, dissolved	0.0125	0.00040	mg/L	2020-08-29	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-08-29	
Potassium, dissolved	161	0.10	mg/L	2020-08-29	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Silicon, dissolved	12.5	1.0	mg/L	2020-08-29	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-08-29	
Sodium, dissolved	275	0.10	mg/L	2020-08-29	
Strontium, dissolved	1.67	0.0010	mg/L	2020-08-29	
Sulfur, dissolved	248	3.0	mg/L	2020-08-29	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Thallium, dissolved	0.000057	0.000020	mg/L	2020-08-29	
Thorium, dissolved	0.00032	0.00010	mg/L	2020-08-29	
Tin, dissolved	0.00023	0.00020	mg/L	2020-08-29	
Titanium, dissolved	0.0318	0.0050	mg/L	2020-08-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-10-21 11:00

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW09-06S (0082459-01) | Matrix: Water | Sampled: 2020-08-24 16:30, Continued

Dissolved Metals, Continued

Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Uranium, dissolved	0.00687	0.000020	mg/L	2020-08-29	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-08-29	
Zirconium, dissolved	0.00051	0.00010	mg/L	2020-08-29	

General Parameters

Alkalinity, Total (as CaCO ₃)	949	1.0	mg/L	2020-08-26	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Bicarbonate (as CaCO ₃)	949	1.0	mg/L	2020-08-26	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Bicarbonate (HCO ₃)	1160	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	1.71	0.050	mg/L	2020-08-27	
BOD, 5-day	< 6.1	2.0	mg/L	2020-08-31	
Chemical Oxygen Demand	36	20	mg/L	2020-08-31	
Conductivity (EC)	3940	2.0	µS/cm	2020-08-26	
pH	7.71	0.10	pH units	2020-08-26	HT2
Solids, Total Dissolved	2730	15	mg/L	2020-08-27	
Solids, Total Suspended	122	2.0	mg/L	2020-08-28	
Turbidity	60.4	0.10	NTU	2020-08-26	

Miscellaneous Subcontracted Parameters

Refer to Appendix	Refer to Appendix for Full Report	-		2020-10-19	
delta-18-O	-19.04		per mil	2020-10-19	
delta-2-H	-150.1		per mil	2020-10-19	

Volatile Organic Compounds (VOC)

Benzene	< 0.5	0.5	µg/L	2020-08-29	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-08-29	
Bromoform	< 1.0	1.0	µg/L	2020-08-29	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-08-29	
Chlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
Chloroethane	< 2.0	2.0	µg/L	2020-08-29	
Chloroform	< 1.0	1.0	µg/L	2020-08-29	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-08-29	
Dibromomethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-08-29	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-10-21 11:00

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW09-06S (0082459-01) | Matrix: Water | Sampled: 2020-08-24 16:30, Continued

Volatile Organic Compounds (VOC), Continued

1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Dichloromethane	< 3.0	3.0	µg/L	2020-08-29	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-08-29	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-08-29	
Ethylbenzene	< 1.0	1.0	µg/L	2020-08-29	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-08-29	
Styrene	< 1.0	1.0	µg/L	2020-08-29	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-08-29	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Toluene	< 1.0	1.0	µg/L	2020-08-29	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
Trichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-08-29	
Vinyl chloride	< 1.0	1.0	µg/L	2020-08-29	
Xylenes (total)	< 2.0	2.0	µg/L	2020-08-29	
Surrogate: Toluene-d8	96	70-130	%	2020-08-29	
Surrogate: 4-Bromofluorobenzene	103	70-130	%	2020-08-29	
Surrogate: 1,4-Dichlorobenzene-d4	104	70-130	%	2020-08-29	

MW10-08 (0082459-02) | Matrix: Water | Sampled: 2020-08-25 08:00

Anions

Bromide	< 0.10	0.10	mg/L	2020-08-26	
Chloride	597	0.10	mg/L	2020-08-26	
Fluoride	0.20	0.10	mg/L	2020-08-26	
Nitrate (as N)	1.01	0.010	mg/L	2020-08-26	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-08-26	
Sulfate	51.4	1.0	mg/L	2020-08-26	

Calculated Parameters

Hardness, Total (as CaCO3)	701	0.500	mg/L	N/A	
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Dissolved Metals

Lithium, dissolved	0.0193	0.00010	mg/L	2020-08-29	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-08-29	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Arsenic, dissolved	0.00518	0.00050	mg/L	2020-08-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-10-21 11:00

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW10-08 (0082459-02) | Matrix: Water | Sampled: 2020-08-25 08:00, Continued

Dissolved Metals, Continued

Barium, dissolved	0.196	0.0050	mg/L	2020-08-29	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Boron, dissolved	< 0.0500	0.0500	mg/L	2020-08-29	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-08-29	
Calcium, dissolved	86.2	0.20	mg/L	2020-08-29	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Cobalt, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Copper, dissolved	0.00119	0.00040	mg/L	2020-08-29	
Iron, dissolved	< 0.010	0.010	mg/L	2020-08-29	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Magnesium, dissolved	118	0.010	mg/L	2020-08-29	
Manganese, dissolved	0.00090	0.00020	mg/L	2020-08-29	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-08-30	
Molybdenum, dissolved	0.00063	0.00010	mg/L	2020-08-29	
Nickel, dissolved	0.00095	0.00040	mg/L	2020-08-29	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-08-29	
Potassium, dissolved	5.67	0.10	mg/L	2020-08-29	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Silicon, dissolved	9.1	1.0	mg/L	2020-08-29	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-08-29	
Sodium, dissolved	324	0.10	mg/L	2020-08-29	
Strontium, dissolved	1.32	0.0010	mg/L	2020-08-29	
Sulfur, dissolved	21.3	3.0	mg/L	2020-08-29	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-08-29	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Tin, dissolved	0.00021	0.00020	mg/L	2020-08-29	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-08-29	
Tungsten, dissolved	0.0052	0.0010	mg/L	2020-08-29	
Uranium, dissolved	0.00206	0.000020	mg/L	2020-08-29	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-08-29	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	

General Parameters

Alkalinity, Total (as CaCO ₃)	501	1.0	mg/L	2020-08-26	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Bicarbonate (as CaCO ₃)	501	1.0	mg/L	2020-08-26	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Bicarbonate (HCO ₃)	611	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-10-21 11:00

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW10-08 (0082459-02) | Matrix: Water | Sampled: 2020-08-25 08:00, Continued

General Parameters, Continued

Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	< 0.050	0.050	mg/L	2020-08-27	
BOD, 5-day	< 6.1	2.0	mg/L	2020-08-31	
Chemical Oxygen Demand	27	20	mg/L	2020-08-31	
Conductivity (EC)	2830	2.0	µS/cm	2020-08-26	
pH	8.05	0.10	pH units	2020-08-26	HT2
Solids, Total Dissolved	1560	15	mg/L	2020-08-27	
Solids, Total Suspended	122	2.0	mg/L	2020-08-28	
Turbidity	83.7	0.10	NTU	2020-08-26	

Miscellaneous Subcontracted Parameters

Refer to Appendix	Refer to Appendix for Full Report	-		2020-10-19	
delta-18-O	-19.23		per mil	2020-10-19	
delta-2-H	-148.6		per mil	2020-10-19	

Volatile Organic Compounds (VOC)

Benzene	< 0.5	0.5	µg/L	2020-08-29	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-08-29	
Bromoform	< 1.0	1.0	µg/L	2020-08-29	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-08-29	
Chlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
Chloroethane	< 2.0	2.0	µg/L	2020-08-29	
Chloroform	< 1.0	1.0	µg/L	2020-08-29	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-08-29	
Dibromomethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-08-29	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Dichloromethane	< 3.0	3.0	µg/L	2020-08-29	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-08-29	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-08-29	
Ethylbenzene	< 1.0	1.0	µg/L	2020-08-29	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-08-29	
Styrene	< 1.0	1.0	µg/L	2020-08-29	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-08-29	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-08-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-10-21 11:00

Analyte	Result	RL	Units	Analyzed	Qualifier
MW10-08 (0082459-02) Matrix: Water Sampled: 2020-08-25 08:00, Continued					
<i>Volatile Organic Compounds (VOC), Continued</i>					
Toluene	< 1.0	1.0	µg/L	2020-08-29	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
Trichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-08-29	
Vinyl chloride	< 1.0	1.0	µg/L	2020-08-29	
Xylenes (total)	< 2.0	2.0	µg/L	2020-08-29	
Surrogate: Toluene-d8	89	70-130	%	2020-08-29	
Surrogate: 4-Bromofluorobenzene	96	70-130	%	2020-08-29	
Surrogate: 1,4-Dichlorobenzene-d4	97	70-130	%	2020-08-29	

MW18-10 (0082459-03) | Matrix: Water | Sampled: 2020-08-25 08:00

Anions

Bromide	0.34	0.10	mg/L	2020-08-26	
Chloride	350	0.10	mg/L	2020-08-26	
Fluoride	0.14	0.10	mg/L	2020-08-26	
Nitrate (as N)	24.4	0.010	mg/L	2020-08-26	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-08-26	
Sulfate	68.2	1.0	mg/L	2020-08-26	

Calculated Parameters

Hardness, Total (as CaCO3)	1070	0.500	mg/L	N/A	
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Dissolved Metals

Lithium, dissolved	0.0210	0.00010	mg/L	2020-08-29	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-08-29	
Antimony, dissolved	0.00021	0.00020	mg/L	2020-08-29	
Arsenic, dissolved	0.00133	0.00050	mg/L	2020-08-29	
Barium, dissolved	0.311	0.0050	mg/L	2020-08-29	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Boron, dissolved	0.401	0.0500	mg/L	2020-08-29	
Cadmium, dissolved	0.000023	0.000010	mg/L	2020-08-29	
Calcium, dissolved	94.7	0.20	mg/L	2020-08-29	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Cobalt, dissolved	0.00523	0.00010	mg/L	2020-08-29	
Copper, dissolved	0.00121	0.00040	mg/L	2020-08-29	
Iron, dissolved	< 0.010	0.010	mg/L	2020-08-29	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Magnesium, dissolved	202	0.010	mg/L	2020-08-29	
Manganese, dissolved	0.167	0.00020	mg/L	2020-08-29	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-08-30	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-10-21 11:00

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW18-10 (0082459-03) | Matrix: Water | Sampled: 2020-08-25 08:00, Continued

Dissolved Metals, Continued

Molybdenum, dissolved	0.00111	0.00010	mg/L	2020-08-29	
Nickel, dissolved	0.0434	0.00040	mg/L	2020-08-29	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-08-29	
Potassium, dissolved	27.7	0.10	mg/L	2020-08-29	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Silicon, dissolved	9.7	1.0	mg/L	2020-08-29	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-08-29	
Sodium, dissolved	183	0.10	mg/L	2020-08-29	
Strontium, dissolved	1.56	0.0010	mg/L	2020-08-29	
Sulfur, dissolved	30.7	3.0	mg/L	2020-08-29	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Thallium, dissolved	0.000103	0.000020	mg/L	2020-08-29	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Tin, dissolved	0.00040	0.00020	mg/L	2020-08-29	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-08-29	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Uranium, dissolved	0.00367	0.000020	mg/L	2020-08-29	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-08-29	
Zirconium, dissolved	0.00022	0.00010	mg/L	2020-08-29	

General Parameters

Alkalinity, Total (as CaCO ₃)	713	1.0	mg/L	2020-08-26	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Bicarbonate (as CaCO ₃)	713	1.0	mg/L	2020-08-26	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Bicarbonate (HCO ₃)	870	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	1.73	0.050	mg/L	2020-08-27	
BOD, 5-day	< 6.1	2.0	mg/L	2020-08-31	
Chemical Oxygen Demand	46	20	mg/L	2020-08-31	
Conductivity (EC)	2560	2.0	µS/cm	2020-08-26	
pH	7.97	0.10	pH units	2020-08-26	HT2
Solids, Total Dissolved	1390	15	mg/L	2020-08-27	
Solids, Total Suspended	110	2.0	mg/L	2020-08-28	
Turbidity	114	0.10	NTU	2020-08-26	

Miscellaneous Subcontracted Parameters

Refer to Appendix	Refer to Appendix for Full Report	-		2020-10-19	
delta-18-O	-19.22		per mil	2020-10-19	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-10-21 11:00

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW18-10 (0082459-03) | Matrix: Water | Sampled: 2020-08-25 08:00, Continued

Miscellaneous Subcontracted Parameters, Continued

delta-2-H	-148.3		per mil	2020-10-19	
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Volatile Organic Compounds (VOC)

Benzene	< 0.5	0.5	µg/L	2020-08-29	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-08-29	
Bromoform	< 1.0	1.0	µg/L	2020-08-29	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-08-29	
Chlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
Chloroethane	< 2.0	2.0	µg/L	2020-08-29	
Chloroform	< 1.0	1.0	µg/L	2020-08-29	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-08-29	
Dibromomethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-08-29	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Dichloromethane	< 3.0	3.0	µg/L	2020-08-29	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-08-29	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-08-29	
Ethylbenzene	< 1.0	1.0	µg/L	2020-08-29	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-08-29	
Styrene	< 1.0	1.0	µg/L	2020-08-29	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-08-29	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Toluene	< 1.0	1.0	µg/L	2020-08-29	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
Trichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-08-29	
Vinyl chloride	< 1.0	1.0	µg/L	2020-08-29	
Xylenes (total)	< 2.0	2.0	µg/L	2020-08-29	
Surrogate: Toluene-d8	87	70-130	%	2020-08-29	
Surrogate: 4-Bromofluorobenzene	93	70-130	%	2020-08-29	
Surrogate: 1,4-Dichlorobenzene-d4	94	70-130	%	2020-08-29	

MW18-11 (0082459-04) | Matrix: Water | Sampled: 2020-08-24 15:10

Anions

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-10-21 11:00

Analyte	Result	RL	Units	Analyzed	Qualifier
MW18-11 (0082459-04) Matrix: Water Sampled: 2020-08-24 15:10, Continued					
Anions, Continued					
Bromide	< 0.10	0.10	mg/L	2020-08-26	
Chloride	71.4	0.10	mg/L	2020-08-26	
Fluoride	0.74	0.10	mg/L	2020-08-26	
Nitrate (as N)	< 0.010	0.010	mg/L	2020-08-26	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-08-26	
Sulfate	88.3	1.0	mg/L	2020-08-26	
Calculated Parameters					
Hardness, Total (as CaCO ₃)	624	0.500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	0.0234	0.00010	mg/L	2020-08-29	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-08-29	
Antimony, dissolved	0.00139	0.00020	mg/L	2020-08-29	
Arsenic, dissolved	0.0110	0.00050	mg/L	2020-08-29	
Barium, dissolved	0.0082	0.0050	mg/L	2020-08-29	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Boron, dissolved	0.262	0.0500	mg/L	2020-08-29	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-08-29	
Calcium, dissolved	40.3	0.20	mg/L	2020-08-29	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Cobalt, dissolved	0.00026	0.00010	mg/L	2020-08-29	
Copper, dissolved	< 0.00040	0.00040	mg/L	2020-08-29	
Iron, dissolved	0.151	0.010	mg/L	2020-08-29	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Magnesium, dissolved	127	0.010	mg/L	2020-08-29	
Manganese, dissolved	0.0309	0.00020	mg/L	2020-08-29	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-08-30	
Molybdenum, dissolved	0.00212	0.00010	mg/L	2020-08-29	
Nickel, dissolved	0.00680	0.00040	mg/L	2020-08-29	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-08-29	
Potassium, dissolved	6.46	0.10	mg/L	2020-08-29	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Silicon, dissolved	3.2	1.0	mg/L	2020-08-29	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-08-29	
Sodium, dissolved	112	0.10	mg/L	2020-08-29	
Strontium, dissolved	0.644	0.0010	mg/L	2020-08-29	
Sulfur, dissolved	36.2	3.0	mg/L	2020-08-29	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-08-29	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-08-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-10-21 11:00

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW18-11 (0082459-04) | Matrix: Water | Sampled: 2020-08-24 15:10, Continued

Dissolved Metals, Continued

Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Uranium, dissolved	0.000055	0.000020	mg/L	2020-08-29	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Zinc, dissolved	0.0064	0.0040	mg/L	2020-08-29	
Zirconium, dissolved	0.00011	0.00010	mg/L	2020-08-29	

General Parameters

Alkalinity, Total (as CaCO ₃)	648	1.0	mg/L	2020-08-26	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Bicarbonate (as CaCO ₃)	648	1.0	mg/L	2020-08-26	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Bicarbonate (HCO ₃)	790	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	0.447	0.050	mg/L	2020-08-27	
BOD, 5-day	< 6.1	2.0	mg/L	2020-08-31	
Chemical Oxygen Demand	20	20	mg/L	2020-08-31	
Conductivity (EC)	1460	2.0	µS/cm	2020-08-26	
pH	8.13	0.10	pH units	2020-08-26	HT2
Solids, Total Dissolved	849	15	mg/L	2020-08-27	
Solids, Total Suspended	32.0	2.0	mg/L	2020-08-28	
Turbidity	45.1	0.10	NTU	2020-08-26	

Miscellaneous Subcontracted Parameters

Refer to Appendix	Refer to Appendix for Full Report	-		2020-10-19	
delta-18-O	-20.72		per mil	2020-10-19	
delta-2-H	-160.9		per mil	2020-10-19	

Volatile Organic Compounds (VOC)

Benzene	< 0.5	0.5	µg/L	2020-08-29	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-08-29	
Bromoform	< 1.0	1.0	µg/L	2020-08-29	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-08-29	
Chlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
Chloroethane	< 2.0	2.0	µg/L	2020-08-29	
Chloroform	< 1.0	1.0	µg/L	2020-08-29	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-08-29	
Dibromomethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-08-29	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-10-21 11:00

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW18-11 (0082459-04) | Matrix: Water | Sampled: 2020-08-24 15:10, Continued

Volatile Organic Compounds (VOC), Continued

1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Dichloromethane	< 3.0	3.0	µg/L	2020-08-29	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-08-29	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-08-29	
Ethylbenzene	< 1.0	1.0	µg/L	2020-08-29	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-08-29	
Styrene	< 1.0	1.0	µg/L	2020-08-29	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-08-29	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Toluene	< 1.0	1.0	µg/L	2020-08-29	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
Trichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-08-29	
Vinyl chloride	< 1.0	1.0	µg/L	2020-08-29	
Xylenes (total)	< 2.0	2.0	µg/L	2020-08-29	
Surrogate: Toluene-d8	86	70-130	%	2020-08-29	
Surrogate: 4-Bromofluorobenzene	93	70-130	%	2020-08-29	
Surrogate: 1,4-Dichlorobenzene-d4	94	70-130	%	2020-08-29	

Town Well #4 (0082459-05) | Matrix: Water | Sampled: 2020-08-24 11:30

Anions

Bromide	< 0.10	0.10	mg/L	2020-08-26	
Chloride	94.0	0.10	mg/L	2020-08-26	
Fluoride	0.11	0.10	mg/L	2020-08-26	
Nitrate (as N)	1.46	0.010	mg/L	2020-08-26	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-08-26	
Sulfate	42.1	1.0	mg/L	2020-08-26	

Calculated Parameters

Hardness, Total (as CaCO3)	395	0.500	mg/L	N/A	
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Dissolved Metals

Lithium, dissolved	0.00171	0.00010	mg/L	2020-08-29	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-08-29	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-10-21 11:00

Analyte	Result	RL	Units	Analyzed	Qualifier
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Town Well #4 (0082459-05) | Matrix: Water | Sampled: 2020-08-24 11:30, Continued

Dissolved Metals, Continued

Barium, dissolved	0.217	0.0050	mg/L	2020-08-29	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Boron, dissolved	< 0.0500	0.0500	mg/L	2020-08-29	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-08-29	
Calcium, dissolved	87.4	0.20	mg/L	2020-08-29	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Cobalt, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Copper, dissolved	0.00191	0.00040	mg/L	2020-08-29	
Iron, dissolved	< 0.010	0.010	mg/L	2020-08-29	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Magnesium, dissolved	42.8	0.010	mg/L	2020-08-29	
Manganese, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-08-30	
Molybdenum, dissolved	0.00018	0.00010	mg/L	2020-08-29	
Nickel, dissolved	< 0.00040	0.00040	mg/L	2020-08-29	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-08-29	
Potassium, dissolved	1.82	0.10	mg/L	2020-08-29	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Silicon, dissolved	4.5	1.0	mg/L	2020-08-29	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-08-29	
Sodium, dissolved	57.8	0.10	mg/L	2020-08-29	
Strontium, dissolved	0.473	0.0010	mg/L	2020-08-29	
Sulfur, dissolved	15.9	3.0	mg/L	2020-08-29	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-08-29	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-08-29	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Uranium, dissolved	0.00121	0.000020	mg/L	2020-08-29	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Zinc, dissolved	0.0044	0.0040	mg/L	2020-08-29	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	

General Parameters

Alkalinity, Total (as CaCO ₃)	356	1.0	mg/L	2020-08-26	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Bicarbonate (as CaCO ₃)	356	1.0	mg/L	2020-08-26	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Bicarbonate (HCO ₃)	434	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-10-21 11:00

Analyte	Result	RL	Units	Analyzed	Qualifier
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Town Well #4 (0082459-05) | Matrix: Water | Sampled: 2020-08-24 11:30, Continued

General Parameters, Continued

Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	< 0.050	0.050	mg/L	2020-08-27	
BOD, 5-day	< 6.1	2.0	mg/L	2020-08-31	
Chemical Oxygen Demand	< 20	20	mg/L	2020-08-31	
Conductivity (EC)	1040	2.0	µS/cm	2020-08-26	
pH	7.98	0.10	pH units	2020-08-26	HT2
Solids, Total Dissolved	579	15	mg/L	2020-08-27	
Solids, Total Suspended	< 2.0	2.0	mg/L	2020-08-28	
Turbidity	< 0.10	0.10	NTU	2020-08-26	

Miscellaneous Subcontracted Parameters

Refer to Appendix	Refer to Appendix for Full Report	-		2020-10-19	
delta-18-O	-19.92		per mil	2020-10-19	
delta-2-H	-152.5		per mil	2020-10-19	

Volatile Organic Compounds (VOC)

Benzene	< 0.5	0.5	µg/L	2020-08-29	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-08-29	
Bromoform	< 1.0	1.0	µg/L	2020-08-29	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-08-29	
Chlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
Chloroethane	< 2.0	2.0	µg/L	2020-08-29	
Chloroform	< 1.0	1.0	µg/L	2020-08-29	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-08-29	
Dibromomethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-08-29	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Dichloromethane	< 3.0	3.0	µg/L	2020-08-29	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-08-29	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-08-29	
Ethylbenzene	< 1.0	1.0	µg/L	2020-08-29	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-08-29	
Styrene	< 1.0	1.0	µg/L	2020-08-29	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-08-29	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-08-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-10-21 11:00

Analyte	Result	RL	Units	Analyzed	Qualifier
Town Well #4 (0082459-05) Matrix: Water Sampled: 2020-08-24 11:30, Continued					
<i>Volatile Organic Compounds (VOC), Continued</i>					
Toluene	< 1.0	1.0	µg/L	2020-08-29	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
Trichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-08-29	
Vinyl chloride	< 1.0	1.0	µg/L	2020-08-29	
Xylenes (total)	< 2.0	2.0	µg/L	2020-08-29	
Surrogate: Toluene-d8	88	70-130	%	2020-08-29	
Surrogate: 4-Bromofluorobenzene	93	70-130	%	2020-08-29	
Surrogate: 1,4-Dichlorobenzene-d4	94	70-130	%	2020-08-29	

Town Well #6 (0082459-06) | Matrix: Water | Sampled: 2020-08-24 11:20

Anions

Bromide	< 0.10	0.10	mg/L	2020-08-26	
Chloride	60.4	0.10	mg/L	2020-08-26	
Fluoride	< 0.10	0.10	mg/L	2020-08-26	
Nitrate (as N)	1.26	0.010	mg/L	2020-08-26	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-08-26	
Sulfate	34.2	1.0	mg/L	2020-08-26	

Calculated Parameters

Hardness, Total (as CaCO3)	392	0.500	mg/L	N/A	
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Dissolved Metals

Lithium, dissolved	0.00133	0.00010	mg/L	2020-08-29	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-08-29	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Barium, dissolved	0.191	0.0050	mg/L	2020-08-29	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Boron, dissolved	< 0.0500	0.0500	mg/L	2020-08-29	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-08-29	
Calcium, dissolved	98.4	0.20	mg/L	2020-08-29	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Cobalt, dissolved	0.00021	0.00010	mg/L	2020-08-29	
Copper, dissolved	< 0.00040	0.00040	mg/L	2020-08-29	
Iron, dissolved	0.137	0.010	mg/L	2020-08-29	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Magnesium, dissolved	35.5	0.010	mg/L	2020-08-29	
Manganese, dissolved	0.0287	0.00020	mg/L	2020-08-29	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-08-30	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-10-21 11:00

Analyte	Result	RL	Units	Analyzed	Qualifier
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Town Well #6 (0082459-06) | Matrix: Water | Sampled: 2020-08-24 11:20, Continued

Dissolved Metals, Continued

Molybdenum, dissolved	0.00102	0.00010	mg/L	2020-08-29	
Nickel, dissolved	0.00080	0.00040	mg/L	2020-08-29	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-08-29	
Potassium, dissolved	1.18	0.10	mg/L	2020-08-29	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Silicon, dissolved	4.6	1.0	mg/L	2020-08-29	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-08-29	
Sodium, dissolved	33.5	0.10	mg/L	2020-08-29	
Strontium, dissolved	0.368	0.0010	mg/L	2020-08-29	
Sulfur, dissolved	12.3	3.0	mg/L	2020-08-29	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-08-29	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-08-29	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Uranium, dissolved	0.00141	0.000020	mg/L	2020-08-29	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-08-29	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	

General Parameters

Alkalinity, Total (as CaCO ₃)	358	1.0	mg/L	2020-08-26	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Bicarbonate (as CaCO ₃)	358	1.0	mg/L	2020-08-26	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Bicarbonate (HCO ₃)	437	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	< 0.050	0.050	mg/L	2020-08-27	
BOD, 5-day	< 6.1	2.0	mg/L	2020-08-31	
Chemical Oxygen Demand	< 20	20	mg/L	2020-08-31	
Conductivity (EC)	917	2.0	µS/cm	2020-08-26	
pH	7.94	0.10	pH units	2020-08-26	HT2
Solids, Total Dissolved	520	15	mg/L	2020-08-27	
Solids, Total Suspended	35.2	2.0	mg/L	2020-08-28	
Turbidity	23.6	0.10	NTU	2020-08-26	

Miscellaneous Subcontracted Parameters

Refer to Appendix	Refer to Appendix for Full Report	-		2020-10-19	
delta-18-O	-19.77		per mil	2020-10-19	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-10-21 11:00

Analyte	Result	RL	Units	Analyzed	Qualifier
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Town Well #6 (0082459-06) | Matrix: Water | Sampled: 2020-08-24 11:20, Continued

Miscellaneous Subcontracted Parameters, Continued

delta-2-H	-152		per mil	2020-10-19	
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Volatile Organic Compounds (VOC)

Benzene	< 0.5	0.5	µg/L	2020-08-29	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-08-29	
Bromoform	< 1.0	1.0	µg/L	2020-08-29	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-08-29	
Chlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
Chloroethane	< 2.0	2.0	µg/L	2020-08-29	
Chloroform	< 1.0	1.0	µg/L	2020-08-29	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-08-29	
Dibromomethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-08-29	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Dichloromethane	< 3.0	3.0	µg/L	2020-08-29	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-08-29	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-08-29	
Ethylbenzene	< 1.0	1.0	µg/L	2020-08-29	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-08-29	
Styrene	< 1.0	1.0	µg/L	2020-08-29	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-08-29	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Toluene	< 1.0	1.0	µg/L	2020-08-29	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
Trichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-08-29	
Vinyl chloride	< 1.0	1.0	µg/L	2020-08-29	
Xylenes (total)	< 2.0	2.0	µg/L	2020-08-29	
Surrogate: Toluene-d8	97	70-130	%	2020-08-29	
Surrogate: 4-Bromofluorobenzene	103	70-130	%	2020-08-29	
Surrogate: 1,4-Dichlorobenzene-d4	104	70-130	%	2020-08-29	

DMW-1b (0082459-07) | Matrix: Water | Sampled: 2020-08-25 08:30

Anions

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-10-21 11:00

Analyte	Result	RL	Units	Analyzed	Qualifier
DMW-1b (0082459-07) Matrix: Water Sampled: 2020-08-25 08:30, Continued					
Anions, Continued					
Bromide	< 0.10	0.10	mg/L	2020-08-26	
Chloride	9.13	0.10	mg/L	2020-08-26	
Fluoride	0.91	0.10	mg/L	2020-08-26	
Nitrate (as N)	0.112	0.010	mg/L	2020-08-26	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-08-26	
Sulfate	251	1.0	mg/L	2020-08-26	
Calculated Parameters					
Hardness, Total (as CaCO3)	586	0.500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	0.0529	0.00010	mg/L	2020-08-29	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-08-29	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Arsenic, dissolved	0.00129	0.00050	mg/L	2020-08-29	
Barium, dissolved	0.0158	0.0050	mg/L	2020-08-29	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Boron, dissolved	0.448	0.0500	mg/L	2020-08-29	
Cadmium, dissolved	0.000016	0.000010	mg/L	2020-08-29	
Calcium, dissolved	69.2	0.20	mg/L	2020-08-29	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Cobalt, dissolved	0.00068	0.00010	mg/L	2020-08-29	
Copper, dissolved	0.00484	0.00040	mg/L	2020-08-29	
Iron, dissolved	0.014	0.010	mg/L	2020-08-29	
Lead, dissolved	0.00047	0.00020	mg/L	2020-08-29	
Magnesium, dissolved	100	0.010	mg/L	2020-08-29	
Manganese, dissolved	0.00352	0.00020	mg/L	2020-08-29	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-08-30	
Molybdenum, dissolved	0.00053	0.00010	mg/L	2020-08-29	
Nickel, dissolved	0.00124	0.00040	mg/L	2020-08-29	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-08-29	
Potassium, dissolved	8.94	0.10	mg/L	2020-08-29	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Silicon, dissolved	6.5	1.0	mg/L	2020-08-29	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-08-29	
Sodium, dissolved	50.1	0.10	mg/L	2020-08-29	
Strontium, dissolved	5.33	0.0010	mg/L	2020-08-29	
Sulfur, dissolved	93.6	3.0	mg/L	2020-08-29	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-08-29	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-08-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-10-21 11:00

Analyte	Result	RL	Units	Analyzed	Qualifier
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DMW-1b (0082459-07) | Matrix: Water | Sampled: 2020-08-25 08:30, Continued

Dissolved Metals, Continued

Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Uranium, dissolved	0.000947	0.000020	mg/L	2020-08-29	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Zinc, dissolved	0.0410	0.0040	mg/L	2020-08-29	
Zirconium, dissolved	0.00064	0.00010	mg/L	2020-08-29	

General Parameters

Alkalinity, Total (as CaCO ₃)	449	1.0	mg/L	2020-08-26	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Bicarbonate (as CaCO ₃)	449	1.0	mg/L	2020-08-26	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Bicarbonate (HCO ₃)	548	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	0.861	0.050	mg/L	2020-08-27	
BOD, 5-day	< 6.1	2.0	mg/L	2020-08-31	
Chemical Oxygen Demand	< 20	20	mg/L	2020-08-31	
Conductivity (EC)	1230	2.0	µS/cm	2020-08-26	
pH	7.95	0.10	pH units	2020-08-26	HT2
Solids, Total Dissolved	804	15	mg/L	2020-08-27	
Solids, Total Suspended	< 2.0	2.0	mg/L	2020-08-28	
Turbidity	0.16	0.10	NTU	2020-08-26	

Miscellaneous Subcontracted Parameters

Refer to Appendix	Refer to Appendix for Full Report	-		2020-10-19	
delta-18-O	-19.88		per mil	2020-10-19	
delta-2-H	-154.7		per mil	2020-10-19	

Volatile Organic Compounds (VOC)

Benzene	< 0.5	0.5	µg/L	2020-08-29	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-08-29	
Bromoform	< 1.0	1.0	µg/L	2020-08-29	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-08-29	
Chlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
Chloroethane	< 2.0	2.0	µg/L	2020-08-29	
Chloroform	< 1.0	1.0	µg/L	2020-08-29	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-08-29	
Dibromomethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-08-29	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
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Analyte	Result	RL	Units	Analyzed	Qualifier
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DMW-1b (0082459-07) | Matrix: Water | Sampled: 2020-08-25 08:30, Continued

Volatile Organic Compounds (VOC), Continued

1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Dichloromethane	< 3.0	3.0	µg/L	2020-08-29	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-08-29	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-08-29	
Ethylbenzene	< 1.0	1.0	µg/L	2020-08-29	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-08-29	
Styrene	< 1.0	1.0	µg/L	2020-08-29	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-08-29	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Toluene	< 1.0	1.0	µg/L	2020-08-29	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
Trichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-08-29	
Vinyl chloride	< 1.0	1.0	µg/L	2020-08-29	
Xylenes (total)	< 2.0	2.0	µg/L	2020-08-29	
Surrogate: Toluene-d8	95	70-130	%	2020-08-29	
Surrogate: 4-Bromofluorobenzene	101	70-130	%	2020-08-29	
Surrogate: 1,4-Dichlorobenzene-d4	103	70-130	%	2020-08-29	

DMW-4 (0082459-08) | Matrix: Water | Sampled: 2020-08-25 08:47

Anions

Bromide	< 0.10	0.10	mg/L	2020-08-26	
Chloride	42.2	0.10	mg/L	2020-08-26	
Fluoride	1.35	0.10	mg/L	2020-08-26	
Nitrate (as N)	< 0.010	0.010	mg/L	2020-08-26	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-08-26	
Sulfate	128	1.0	mg/L	2020-08-26	

Calculated Parameters

Hardness, Total (as CaCO3)	634	0.500	mg/L	N/A	
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Dissolved Metals

Lithium, dissolved	0.0245	0.00010	mg/L	2020-08-29	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-08-29	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Arsenic, dissolved	0.0525	0.00050	mg/L	2020-08-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-10-21 11:00

Analyte	Result	RL	Units	Analyzed	Qualifier
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DMW-4 (0082459-08) | Matrix: Water | Sampled: 2020-08-25 08:47, Continued

Dissolved Metals, Continued

Barium, dissolved	0.0240	0.0050	mg/L	2020-08-29	
Beryllium, dissolved	0.00012	0.00010	mg/L	2020-08-29	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Boron, dissolved	0.145	0.0500	mg/L	2020-08-29	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-08-29	
Calcium, dissolved	66.7	0.20	mg/L	2020-08-29	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Cobalt, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Copper, dissolved	< 0.00040	0.00040	mg/L	2020-08-29	
Iron, dissolved	0.776	0.010	mg/L	2020-08-29	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Magnesium, dissolved	114	0.010	mg/L	2020-08-29	
Manganese, dissolved	0.00574	0.00020	mg/L	2020-08-29	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-08-30	
Molybdenum, dissolved	0.00025	0.00010	mg/L	2020-08-29	
Nickel, dissolved	0.00181	0.00040	mg/L	2020-08-29	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-08-29	
Potassium, dissolved	4.71	0.10	mg/L	2020-08-29	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Silicon, dissolved	7.5	1.0	mg/L	2020-08-29	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-08-29	
Sodium, dissolved	27.4	0.10	mg/L	2020-08-29	
Strontium, dissolved	1.82	0.0010	mg/L	2020-08-29	
Sulfur, dissolved	51.3	3.0	mg/L	2020-08-29	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-08-29	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-08-29	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Uranium, dissolved	0.000101	0.000020	mg/L	2020-08-29	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-08-29	
Zirconium, dissolved	0.00143	0.00010	mg/L	2020-08-29	

General Parameters

Alkalinity, Total (as CaCO ₃)	465	1.0	mg/L	2020-08-26	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Bicarbonate (as CaCO ₃)	465	1.0	mg/L	2020-08-26	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Bicarbonate (HCO ₃)	567	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-10-21 11:00

Analyte	Result	RL	Units	Analyzed	Qualifier
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DMW-4 (0082459-08) | Matrix: Water | Sampled: 2020-08-25 08:47, Continued

General Parameters, Continued

Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	0.223	0.050	mg/L	2020-08-27	
BOD, 5-day	< 6.1	2.0	mg/L	2020-08-31	
Chemical Oxygen Demand	< 20	20	mg/L	2020-08-31	
Conductivity (EC)	1220	2.0	µS/cm	2020-08-26	
pH	7.98	0.10	pH units	2020-08-26	HT2
Solids, Total Dissolved	739	15	mg/L	2020-08-27	
Solids, Total Suspended	2.4	2.0	mg/L	2020-08-28	
Turbidity	8.59	0.10	NTU	2020-08-26	

Miscellaneous Subcontracted Parameters

Refer to Appendix	Refer to Appendix for Full Report	-		2020-10-19	
delta-18-O	-20.15		per mil	2020-10-19	
delta-2-H	-156.6		per mil	2020-10-19	

Volatile Organic Compounds (VOC)

Benzene	< 0.5	0.5	µg/L	2020-08-29	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-08-29	
Bromoform	< 1.0	1.0	µg/L	2020-08-29	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-08-29	
Chlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
Chloroethane	< 2.0	2.0	µg/L	2020-08-29	
Chloroform	< 1.0	1.0	µg/L	2020-08-29	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-08-29	
Dibromomethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-08-29	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Dichloromethane	< 3.0	3.0	µg/L	2020-08-29	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-08-29	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-08-29	
Ethylbenzene	< 1.0	1.0	µg/L	2020-08-29	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-08-29	
Styrene	< 1.0	1.0	µg/L	2020-08-29	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-08-29	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-08-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-10-21 11:00

Analyte	Result	RL	Units	Analyzed	Qualifier
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DMW-4 (0082459-08) | Matrix: Water | Sampled: 2020-08-25 08:47, Continued

Volatile Organic Compounds (VOC), Continued

Toluene	< 1.0	1.0	µg/L	2020-08-29	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
Trichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-08-29	
Vinyl chloride	< 1.0	1.0	µg/L	2020-08-29	
Xylenes (total)	< 2.0	2.0	µg/L	2020-08-29	
Surrogate: Toluene-d8	88	70-130	%	2020-08-29	
Surrogate: 4-Bromofluorobenzene	94	70-130	%	2020-08-29	
Surrogate: 1,4-Dichlorobenzene-d4	94	70-130	%	2020-08-29	

MW09-06D (0082459-09) | Matrix: Water | Sampled: 2020-08-24 18:05

Anions

Bromide	1.15	0.10	mg/L	2020-08-26	
Chloride	377	0.10	mg/L	2020-08-26	
Fluoride	< 0.10	0.10	mg/L	2020-08-26	
Nitrate (as N)	35.6	0.010	mg/L	2020-08-26	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-08-26	
Sulfate	634	1.0	mg/L	2020-08-26	

Calculated Parameters

Hardness, Total (as CaCO3)	1500	0.500	mg/L	N/A	
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Dissolved Metals

Lithium, dissolved	0.0416	0.00010	mg/L	2020-08-29	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-08-29	
Antimony, dissolved	0.00034	0.00020	mg/L	2020-08-29	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Barium, dissolved	0.0490	0.0050	mg/L	2020-08-29	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Boron, dissolved	1.97	0.0500	mg/L	2020-08-29	
Cadmium, dissolved	0.000012	0.000010	mg/L	2020-08-29	
Calcium, dissolved	154	0.20	mg/L	2020-08-29	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Cobalt, dissolved	0.00189	0.00010	mg/L	2020-08-29	
Copper, dissolved	0.00240	0.00040	mg/L	2020-08-29	
Iron, dissolved	< 0.010	0.010	mg/L	2020-08-29	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Magnesium, dissolved	271	0.010	mg/L	2020-08-29	
Manganese, dissolved	0.109	0.00020	mg/L	2020-08-29	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-08-30	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-10-21 11:00

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW09-06D (0082459-09) | Matrix: Water | Sampled: 2020-08-24 18:05, Continued

Dissolved Metals, Continued

Molybdenum, dissolved	0.00032	0.00010	mg/L	2020-08-29	
Nickel, dissolved	0.0131	0.00040	mg/L	2020-08-29	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-08-29	
Potassium, dissolved	169	0.10	mg/L	2020-08-29	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Silicon, dissolved	12.0	1.0	mg/L	2020-08-29	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-08-29	
Sodium, dissolved	294	0.10	mg/L	2020-08-29	
Strontium, dissolved	1.68	0.0010	mg/L	2020-08-29	
Sulfur, dissolved	253	3.0	mg/L	2020-08-29	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Thallium, dissolved	0.000063	0.000020	mg/L	2020-08-29	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Tin, dissolved	0.00095	0.00020	mg/L	2020-08-29	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-08-29	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Uranium, dissolved	0.00723	0.000020	mg/L	2020-08-29	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Zinc, dissolved	0.0049	0.0040	mg/L	2020-08-29	
Zirconium, dissolved	0.00021	0.00010	mg/L	2020-08-29	

General Parameters

Alkalinity, Total (as CaCO ₃)	947	1.0	mg/L	2020-08-26	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Bicarbonate (as CaCO ₃)	947	1.0	mg/L	2020-08-26	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Bicarbonate (HCO ₃)	1160	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	1.85	0.050	mg/L	2020-08-27	
BOD, 5-day	< 6.1	2.0	mg/L	2020-08-31	
Chemical Oxygen Demand	42	20	mg/L	2020-08-31	
Conductivity (EC)	4050	2.0	µS/cm	2020-08-26	
pH	7.77	0.10	pH units	2020-08-26	HT2
Solids, Total Dissolved	2720	15	mg/L	2020-08-27	
Solids, Total Suspended	14.0	2.0	mg/L	2020-08-28	
Turbidity	5.82	0.10	NTU	2020-08-26	

Miscellaneous Subcontracted Parameters

Refer to Appendix	Refer to Appendix for Full Report	-		2020-10-19	
delta-18-O	-18.94		per mil	2020-10-19	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-10-21 11:00

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW09-06D (0082459-09) | Matrix: Water | Sampled: 2020-08-24 18:05, Continued

Miscellaneous Subcontracted Parameters, Continued

delta-2-H	-150.1		per mil	2020-10-19	
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Volatile Organic Compounds (VOC)

Benzene	< 0.5	0.5	µg/L	2020-08-29	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-08-29	
Bromoform	< 1.0	1.0	µg/L	2020-08-29	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-08-29	
Chlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
Chloroethane	< 2.0	2.0	µg/L	2020-08-29	
Chloroform	< 1.0	1.0	µg/L	2020-08-29	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-08-29	
Dibromomethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-08-29	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Dichloromethane	< 3.0	3.0	µg/L	2020-08-29	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-08-29	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-08-29	
Ethylbenzene	< 1.0	1.0	µg/L	2020-08-29	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-08-29	
Styrene	< 1.0	1.0	µg/L	2020-08-29	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-08-29	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Toluene	< 1.0	1.0	µg/L	2020-08-29	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
Trichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-08-29	
Vinyl chloride	< 1.0	1.0	µg/L	2020-08-29	
Xylenes (total)	< 2.0	2.0	µg/L	2020-08-29	
Surrogate: Toluene-d8	88	70-130	%	2020-08-29	
Surrogate: 4-Bromofluorobenzene	93	70-130	%	2020-08-29	
Surrogate: 1,4-Dichlorobenzene-d4	94	70-130	%	2020-08-29	

DUP A (0082459-10) | Matrix: Water | Sampled: 2020-08-24 16:30

Anions

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-10-21 11:00

Analyte	Result	RL	Units	Analyzed	Qualifier
DUP A (0082459-10) Matrix: Water Sampled: 2020-08-24 16:30, Continued					
Anions, Continued					
Bromide	1.14	0.10	mg/L	2020-08-26	
Chloride	377	0.10	mg/L	2020-08-26	
Fluoride	< 0.10	0.10	mg/L	2020-08-26	
Nitrate (as N)	35.0	0.010	mg/L	2020-08-26	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-08-26	
Sulfate	633	1.0	mg/L	2020-08-26	
Calculated Parameters					
Hardness, Total (as CaCO ₃)	1540	0.500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	0.0415	0.00010	mg/L	2020-08-29	
Aluminum, dissolved	0.500	0.0050	mg/L	2020-08-29	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Arsenic, dissolved	0.00073	0.00050	mg/L	2020-08-29	
Barium, dissolved	0.0617	0.0050	mg/L	2020-08-29	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Boron, dissolved	1.97	0.0500	mg/L	2020-08-29	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-08-29	
Calcium, dissolved	164	0.20	mg/L	2020-08-29	
Chromium, dissolved	0.00094	0.00050	mg/L	2020-08-29	
Cobalt, dissolved	0.00190	0.00010	mg/L	2020-08-29	
Copper, dissolved	0.00272	0.00040	mg/L	2020-08-29	
Iron, dissolved	0.767	0.010	mg/L	2020-08-29	
Lead, dissolved	0.00086	0.00020	mg/L	2020-08-29	
Magnesium, dissolved	274	0.010	mg/L	2020-08-29	
Manganese, dissolved	0.110	0.00020	mg/L	2020-08-29	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-08-30	
Molybdenum, dissolved	0.00023	0.00010	mg/L	2020-08-29	
Nickel, dissolved	0.0129	0.00040	mg/L	2020-08-29	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-08-29	
Potassium, dissolved	165	0.10	mg/L	2020-08-29	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Silicon, dissolved	13.2	1.0	mg/L	2020-08-29	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-08-29	
Sodium, dissolved	282	0.10	mg/L	2020-08-29	
Strontium, dissolved	1.73	0.0010	mg/L	2020-08-29	
Sulfur, dissolved	256	3.0	mg/L	2020-08-29	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Thallium, dissolved	0.000060	0.000020	mg/L	2020-08-29	
Thorium, dissolved	0.00035	0.00010	mg/L	2020-08-29	
Tin, dissolved	0.00021	0.00020	mg/L	2020-08-29	
Titanium, dissolved	0.0304	0.0050	mg/L	2020-08-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-10-21 11:00

Analyte	Result	RL	Units	Analyzed	Qualifier
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DUP A (0082459-10) | Matrix: Water | Sampled: 2020-08-24 16:30, Continued

Dissolved Metals, Continued

Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Uranium, dissolved	0.00698	0.000020	mg/L	2020-08-29	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-08-29	
Zirconium, dissolved	0.00052	0.00010	mg/L	2020-08-29	

General Parameters

Alkalinity, Total (as CaCO ₃)	948	1.0	mg/L	2020-08-26	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Bicarbonate (as CaCO ₃)	948	1.0	mg/L	2020-08-26	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Bicarbonate (HCO ₃)	1160	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	
Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	1.77	0.050	mg/L	2020-08-27	
BOD, 5-day	< 6.1	2.0	mg/L	2020-08-31	
Chemical Oxygen Demand	47	20	mg/L	2020-08-31	
Conductivity (EC)	4010	2.0	µS/cm	2020-08-26	
pH	7.79	0.10	pH units	2020-08-26	HT2
Solids, Total Dissolved	2630	15	mg/L	2020-08-27	
Solids, Total Suspended	101	2.0	mg/L	2020-08-28	
Turbidity	51.3	0.10	NTU	2020-08-26	

Miscellaneous Subcontracted Parameters

Refer to Appendix	Refer to Appendix for Full Report	-		2020-10-19	
delta-18-O	-18.95		per mil	2020-10-19	
delta-2-H	-150.4		per mil	2020-10-19	

Volatile Organic Compounds (VOC)

Benzene	< 0.5	0.5	µg/L	2020-08-29	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-08-29	
Bromoform	< 1.0	1.0	µg/L	2020-08-29	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-08-29	
Chlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
Chloroethane	< 2.0	2.0	µg/L	2020-08-29	
Chloroform	< 1.0	1.0	µg/L	2020-08-29	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-08-29	
Dibromomethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-08-29	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-10-21 11:00

Analyte	Result	RL	Units	Analyzed	Qualifier
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DUP A (0082459-10) | Matrix: Water | Sampled: 2020-08-24 16:30, Continued

Volatile Organic Compounds (VOC), Continued

1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Dichloromethane	< 3.0	3.0	µg/L	2020-08-29	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-08-29	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-08-29	
Ethylbenzene	< 1.0	1.0	µg/L	2020-08-29	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-08-29	
Styrene	< 1.0	1.0	µg/L	2020-08-29	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-08-29	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Toluene	< 1.0	1.0	µg/L	2020-08-29	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
Trichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-08-29	
Vinyl chloride	< 1.0	1.0	µg/L	2020-08-29	
Xylenes (total)	< 2.0	2.0	µg/L	2020-08-29	
Surrogate: Toluene-d8	88	70-130	%	2020-08-29	
Surrogate: 4-Bromofluorobenzene	94	70-130	%	2020-08-29	
Surrogate: 1,4-Dichlorobenzene-d4	95	70-130	%	2020-08-29	

DMW20-01 (0082459-11) | Matrix: Water | Sampled: 2020-08-24 11:55

Anions

Bromide	< 0.10	0.10	mg/L	2020-08-26	
Chloride	38.8	0.10	mg/L	2020-08-26	
Fluoride	0.12	0.10	mg/L	2020-08-26	
Nitrate (as N)	0.429	0.010	mg/L	2020-08-26	
Nitrite (as N)	< 0.010	0.010	mg/L	2020-08-26	
Sulfate	25.1	1.0	mg/L	2020-08-26	

Calculated Parameters

Hardness, Total (as CaCO3)	246	0.500	mg/L	N/A	
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Dissolved Metals

Lithium, dissolved	0.00123	0.00010	mg/L	2020-08-29	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-08-29	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-10-21 11:00

Analyte	Result	RL	Units	Analyzed	Qualifier
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DMW20-01 (0082459-11) | Matrix: Water | Sampled: 2020-08-24 11:55, Continued

Dissolved Metals, Continued

Barium, dissolved	0.110	0.0050	mg/L	2020-08-29	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Boron, dissolved	0.0505	0.0500	mg/L	2020-08-29	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-08-29	
Calcium, dissolved	48.3	0.20	mg/L	2020-08-29	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Cobalt, dissolved	0.00011	0.00010	mg/L	2020-08-29	
Copper, dissolved	0.00189	0.00040	mg/L	2020-08-29	
Iron, dissolved	< 0.010	0.010	mg/L	2020-08-29	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Magnesium, dissolved	30.3	0.010	mg/L	2020-08-29	
Manganese, dissolved	0.00870	0.00020	mg/L	2020-08-29	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-08-30	
Molybdenum, dissolved	0.00077	0.00010	mg/L	2020-08-29	
Nickel, dissolved	0.00052	0.00040	mg/L	2020-08-29	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-08-29	
Potassium, dissolved	1.09	0.10	mg/L	2020-08-29	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Silicon, dissolved	3.1	1.0	mg/L	2020-08-29	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-08-29	
Sodium, dissolved	20.9	0.10	mg/L	2020-08-29	
Strontium, dissolved	0.343	0.0010	mg/L	2020-08-29	
Sulfur, dissolved	10.5	3.0	mg/L	2020-08-29	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-08-29	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-08-29	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-08-29	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-08-29	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Uranium, dissolved	0.000669	0.000020	mg/L	2020-08-29	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-08-29	
Zinc, dissolved	0.0102	0.0040	mg/L	2020-08-29	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-08-29	

General Parameters

Alkalinity, Total (as CaCO ₃)	220	1.0	mg/L	2020-08-26	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Bicarbonate (as CaCO ₃)	220	1.0	mg/L	2020-08-26	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2020-08-26	
Bicarbonate (HCO ₃)	269	1.22	mg/L	N/A	
Carbonate (CO ₃)	< 0.600	0.600	mg/L	N/A	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
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Analyte	Result	RL	Units	Analyzed	Qualifier
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DMW20-01 (0082459-11) | Matrix: Water | Sampled: 2020-08-24 11:55, Continued

General Parameters, Continued

Hydroxide (OH)	< 0.340	0.340	mg/L	N/A	
Ammonia, Total (as N)	< 0.050	0.050	mg/L	2020-08-27	
BOD, 5-day	< 6.1	2.0	mg/L	2020-08-31	
Chemical Oxygen Demand	< 20	20	mg/L	2020-08-31	
Conductivity (EC)	576	2.0	µS/cm	2020-08-26	
pH	8.22	0.10	pH units	2020-08-26	HT2
Solids, Total Dissolved	308	15	mg/L	2020-08-27	
Solids, Total Suspended	< 2.0	2.0	mg/L	2020-08-28	
Turbidity	0.74	0.10	NTU	2020-08-26	

Miscellaneous Subcontracted Parameters

Refer to Appendix	Refer to Appendix for Full Report	-		2020-10-19	
delta-18-O	-19.85		per mil	2020-10-19	
delta-2-H	-150.4		per mil	2020-10-19	

Volatile Organic Compounds (VOC)

Benzene	< 0.5	0.5	µg/L	2020-08-29	
Bromodichloromethane	< 1.0	1.0	µg/L	2020-08-29	
Bromoform	< 1.0	1.0	µg/L	2020-08-29	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-08-29	
Chlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
Chloroethane	< 2.0	2.0	µg/L	2020-08-29	
Chloroform	< 1.0	1.0	µg/L	2020-08-29	
Dibromochloromethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-08-29	
Dibromomethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-08-29	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Dichloromethane	< 3.0	3.0	µg/L	2020-08-29	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-08-29	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-08-29	
Ethylbenzene	< 1.0	1.0	µg/L	2020-08-29	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-08-29	
Styrene	< 1.0	1.0	µg/L	2020-08-29	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-08-29	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-08-29	

TEST RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
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Analyte	Result	RL	Units	Analyzed	Qualifier
DMW20-01 (0082459-11) Matrix: Water Sampled: 2020-08-24 11:55, Continued					
<i>Volatile Organic Compounds (VOC), Continued</i>					
Toluene	< 1.0	1.0	µg/L	2020-08-29	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-08-29	
Trichloroethylene	< 1.0	1.0	µg/L	2020-08-29	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-08-29	
Vinyl chloride	< 1.0	1.0	µg/L	2020-08-29	
Xylenes (total)	< 2.0	2.0	µg/L	2020-08-29	
Surrogate: Toluene-d8	86	70-130	%	2020-08-29	
Surrogate: 4-Bromofluorobenzene	92	70-130	%	2020-08-29	
Surrogate: 1,4-Dichlorobenzene-d4	93	70-130	%	2020-08-29	

Sample Qualifiers:

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

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO PROJECT Ecoscape Environmental Ltd.
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Analysis Description	Method Ref.	Technique	Accredited	Location
2H and 18O Isotope Ratios in Water	Stable Isotopes	CRDS		Sublet
Alkalinity in Water	SM 2320 B* (2017)	Titration with H ₂ SO ₄	✓	Kelowna
Ammonia, Total in Water	SM 4500-NH ₃ G* (2017)	Automated Colorimetry (Phenate)	✓	Kelowna
Anions in Water	SM 4110 B (2017)	Ion Chromatography	✓	Kelowna
Biochemical Oxygen Demand in Water	SM 5210 B (2017)	Dissolved Oxygen Meter	✓	Kelowna
Chemical Oxygen Demand in Water	SM 5220 D* (2017)	Closed Reflux, Colorimetry	✓	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*	BrCl ₂ Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	✓	Richmond
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
Solids, Total Suspended in Water	SM 2540 D* (2017)	Gravimetry (Dried at 103-105C)	✓	Kelowna
Turbidity in Water	SM 2130 B (2017)	Nephelometry	✓	Kelowna
Volatile Organic Compounds in Water	EPA 5030B / EPA 8260D	Purge&Trap / GC-MSD (SIM)	✓	Richmond
VPW in Water	BCMOE VPH	Calculation: VH - (Benzene + Toluene + Ethylbenzene + Xylenes + Styrene)		N/A

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
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
per mil	Parts per thousand
pH units	pH < 7 = acidic, pH > 7 = basic
µg/L	Micrograms per litre
µS/cm	Microsiemens per centimetre
BCMOE	British Columbia Environmental Laboratory Manual, British Columbia Ministry of Environment
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 Ecoscape Environmental Ltd.
PROJECT 19-2850 - Golden

WORK ORDER 0082459
REPORTED 2020-10-21 11:00

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.

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 Ecoscape Environmental Ltd.
PROJECT 19-2850 - Golden

WORK ORDER 0082459
REPORTED 2020-10-21 11:00

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
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Anions, Batch B0H2225

Blank (B0H2225-BLK1)			Prepared: 2020-08-26, Analyzed: 2020-08-26						
Bromide	< 0.10	0.10 mg/L							
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 (B0H2225-BS1)			Prepared: 2020-08-26, Analyzed: 2020-08-26						
Bromide	4.01	0.10 mg/L	4.00		100	85-115			
Chloride	16.0	0.10 mg/L	16.0		100	90-110			
Fluoride	4.00	0.10 mg/L	4.00		100	88-108			
Nitrate (as N)	4.02	0.010 mg/L	4.00		101	90-110			
Nitrite (as N)	2.03	0.010 mg/L	2.00		101	85-115			
Sulfate	16.0	1.0 mg/L	16.0		100	90-110			
Duplicate (B0H2225-DUP1)			Source: 0082459-11		Prepared: 2020-08-26, Analyzed: 2020-08-26				
Bromide	< 0.10	0.10 mg/L		< 0.10					10
Chloride	38.8	0.10 mg/L		38.8			< 1		10
Fluoride	0.12	0.10 mg/L		0.12					10
Nitrate (as N)	0.430	0.010 mg/L		0.429			< 1		10
Nitrite (as N)	< 0.010	0.010 mg/L		< 0.010					15
Sulfate	25.1	1.0 mg/L		25.1			< 1		10
Matrix Spike (B0H2225-MS1)			Source: 0082459-11		Prepared: 2020-08-26, Analyzed: 2020-08-26				
Bromide	4.02	0.10 mg/L	4.00	< 0.10	100	80-120			
Chloride	55.3	0.10 mg/L	16.0	38.8	103	75-125			
Fluoride	4.01	0.10 mg/L	4.00	0.12	97	75-125			
Nitrate (as N)	4.20	0.010 mg/L	4.00	0.429	94	75-125			
Nitrite (as N)	1.98	0.010 mg/L	2.00	< 0.010	99	80-120			
Sulfate	41.1	1.0 mg/L	16.0	25.1	100	75-125			

BCMOE Aggregate Hydrocarbons, Batch B0H2533

Blank (B0H2533-BLK1)			Prepared: 2020-08-31, Analyzed: 2020-08-31						
VHw (6-10)	< 100	100 µg/L							

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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BCMOE Aggregate Hydrocarbons, Batch B0H2533, Continued

LCS (B0H2533-BS2)

Prepared: 2020-08-29, Analyzed: 2020-08-29

VHw (6-10)	2390	100 µg/L	2690	89	70-130				
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Dissolved Metals, Batch B0H2471

Blank (B0H2471-BLK1)

Prepared: 2020-08-29, Analyzed: 2020-08-29

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 (B0H2471-BS1)

Prepared: 2020-08-29, Analyzed: 2020-08-29

Lithium, dissolved	0.0191	0.00010 mg/L	0.0200	96	80-120				
Aluminum, dissolved	0.0216	0.0050 mg/L	0.0199	109	80-120				
Antimony, dissolved	0.0181	0.00020 mg/L	0.0200	90	80-120				
Arsenic, dissolved	0.0190	0.00050 mg/L	0.0200	95	80-120				
Barium, dissolved	0.0189	0.0050 mg/L	0.0198	96	80-120				
Beryllium, dissolved	0.0204	0.00010 mg/L	0.0198	103	80-120				
Bismuth, dissolved	0.0205	0.00010 mg/L	0.0200	102	80-120				
Boron, dissolved	< 0.0500	0.0500 mg/L	0.0200	101	80-120				
Cadmium, dissolved	0.0192	0.000010 mg/L	0.0199	97	80-120				
Calcium, dissolved	1.98	0.20 mg/L	2.02	98	80-120				
Chromium, dissolved	0.0188	0.00050 mg/L	0.0198	95	80-120				
Cobalt, dissolved	0.0193	0.00010 mg/L	0.0199	97	80-120				

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
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WORK ORDER REPORTED 0082459
2020-10-21 11:00

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Dissolved Metals, Batch B0H2471, Continued									
LCS (B0H2471-BS1), Continued				Prepared: 2020-08-29, Analyzed: 2020-08-29					
Copper, dissolved	0.0194	0.00040 mg/L	0.0200		97	80-120			
Iron, dissolved	1.95	0.010 mg/L	2.02		96	80-120			
Lead, dissolved	0.0197	0.00020 mg/L	0.0199		99	80-120			
Magnesium, dissolved	2.00	0.010 mg/L	2.02		99	80-120			
Manganese, dissolved	0.0190	0.00020 mg/L	0.0199		95	80-120			
Molybdenum, dissolved	0.0190	0.00010 mg/L	0.0200		95	80-120			
Nickel, dissolved	0.0199	0.00040 mg/L	0.0200		99	80-120			
Phosphorus, dissolved	2.01	0.050 mg/L	2.00		101	80-120			
Potassium, dissolved	1.92	0.10 mg/L	2.02		95	80-120			
Selenium, dissolved	0.0190	0.00050 mg/L	0.0200		95	80-120			
Silicon, dissolved	1.7	1.0 mg/L	2.00		87	80-120			
Silver, dissolved	0.0192	0.000050 mg/L	0.0200		96	80-120			
Sodium, dissolved	1.90	0.10 mg/L	2.02		94	80-120			
Strontium, dissolved	0.0189	0.0010 mg/L	0.0200		95	80-120			
Sulfur, dissolved	4.8	3.0 mg/L	5.00		96	80-120			
Tellurium, dissolved	0.0199	0.00050 mg/L	0.0200		99	80-120			
Thallium, dissolved	0.0199	0.000020 mg/L	0.0199		100	80-120			
Thorium, dissolved	0.0196	0.00010 mg/L	0.0200		98	80-120			
Tin, dissolved	0.0197	0.00020 mg/L	0.0200		98	80-120			
Titanium, dissolved	0.0198	0.0050 mg/L	0.0200		99	80-120			
Tungsten, dissolved	0.0202	0.0010 mg/L	0.0200		101	80-120			
Uranium, dissolved	0.0201	0.000020 mg/L	0.0200		101	80-120			
Vanadium, dissolved	0.0204	0.0010 mg/L	0.0200		102	80-120			
Zinc, dissolved	0.0199	0.0040 mg/L	0.0200		99	80-120			
Zirconium, dissolved	0.0192	0.00010 mg/L	0.0200		96	80-120			
Duplicate (B0H2471-DUP1)				Source: 0082459-02 Prepared: 2020-08-29, Analyzed: 2020-08-29					
Lithium, dissolved	0.0199	0.00010 mg/L		0.0193			3	20	
Aluminum, dissolved	< 0.0050	0.0050 mg/L		< 0.0050				20	
Antimony, dissolved	< 0.00020	0.00020 mg/L		< 0.00020				20	
Arsenic, dissolved	0.00506	0.00050 mg/L		0.00518			2	20	
Barium, dissolved	0.196	0.0050 mg/L		0.196			< 1	20	
Beryllium, dissolved	< 0.00010	0.00010 mg/L		< 0.00010				20	
Bismuth, dissolved	< 0.00010	0.00010 mg/L		< 0.00010				20	
Boron, dissolved	< 0.0500	0.0500 mg/L		< 0.0500				20	
Cadmium, dissolved	< 0.000010	0.000010 mg/L		0.000010				20	
Calcium, dissolved	89.1	0.20 mg/L		86.2			3	20	
Chromium, dissolved	0.00050	0.00050 mg/L		< 0.00050				20	
Cobalt, dissolved	< 0.00010	0.00010 mg/L		< 0.00010				20	
Copper, dissolved	0.00119	0.00040 mg/L		0.00119				20	
Iron, dissolved	< 0.010	0.010 mg/L		< 0.010				20	
Lead, dissolved	< 0.00020	0.00020 mg/L		< 0.00020				20	
Magnesium, dissolved	117	0.010 mg/L		118			< 1	20	
Manganese, dissolved	0.00091	0.00020 mg/L		0.00090				20	
Molybdenum, dissolved	0.00064	0.00010 mg/L		0.00063			2	20	
Nickel, dissolved	0.00096	0.00040 mg/L		0.00095				20	
Phosphorus, dissolved	< 0.050	0.050 mg/L		< 0.050				20	
Potassium, dissolved	5.65	0.10 mg/L		5.67			< 1	20	
Selenium, dissolved	< 0.00050	0.00050 mg/L		< 0.00050				20	
Silicon, dissolved	9.1	1.0 mg/L		9.1			< 1	20	
Silver, dissolved	< 0.000050	0.000050 mg/L		< 0.000050				20	
Sodium, dissolved	323	0.10 mg/L		324			< 1	20	
Strontium, dissolved	1.34	0.0010 mg/L		1.32			1	20	
Sulfur, dissolved	19.7	3.0 mg/L		21.3			8	20	
Tellurium, dissolved	< 0.00050	0.00050 mg/L		< 0.00050				20	
Thallium, dissolved	< 0.000020	0.000020 mg/L		< 0.000020				20	

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Ecoscape Environmental Ltd.
19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-10-21 11:00

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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Dissolved Metals, Batch B0H2471, Continued

Duplicate (B0H2471-DUP1), Continued		Source: 0082459-02		Prepared: 2020-08-29, Analyzed: 2020-08-29					
Thorium, dissolved	< 0.00010	0.00010 mg/L		< 0.00010				20	
Tin, dissolved	0.00022	0.00020 mg/L		0.00021				20	
Titanium, dissolved	< 0.0050	0.0050 mg/L		< 0.0050				20	
Tungsten, dissolved	0.0052	0.0010 mg/L		0.0052			< 1	20	
Uranium, dissolved	0.00216	0.000020 mg/L		0.00206			5	20	
Vanadium, dissolved	< 0.0010	0.0010 mg/L		< 0.0010				20	
Zinc, dissolved	< 0.0040	0.0040 mg/L		< 0.0040				20	
Zirconium, dissolved	< 0.00010	0.00010 mg/L		< 0.00010				20	

Reference (B0H2471-SRM1)		Prepared: 2020-08-29, Analyzed: 2020-08-29							
Lithium, dissolved	0.105	0.00010 mg/L	0.100		105	70-130			
Aluminum, dissolved	0.240	0.0050 mg/L	0.235		102	70-130			
Antimony, dissolved	0.0477	0.00020 mg/L	0.0431		111	70-130			
Arsenic, dissolved	0.456	0.00050 mg/L	0.423		108	70-130			
Barium, dissolved	3.37	0.0050 mg/L	3.30		102	70-130			
Beryllium, dissolved	0.232	0.00010 mg/L	0.209		111	70-130			
Boron, dissolved	1.83	0.0500 mg/L	1.65		111	70-130			
Cadmium, dissolved	0.233	0.000010 mg/L	0.221		106	70-130			
Calcium, dissolved	7.10	0.20 mg/L	7.72		92	70-130			
Chromium, dissolved	0.444	0.00050 mg/L	0.434		102	70-130			
Cobalt, dissolved	0.132	0.00010 mg/L	0.124		106	70-130			
Copper, dissolved	0.881	0.00040 mg/L	0.815		108	70-130			
Iron, dissolved	1.33	0.010 mg/L	1.27		105	70-130			
Lead, dissolved	0.116	0.00020 mg/L	0.110		106	70-130			
Magnesium, dissolved	6.88	0.010 mg/L	6.59		104	70-130			
Manganese, dissolved	0.344	0.00020 mg/L	0.342		100	70-130			
Molybdenum, dissolved	0.424	0.00010 mg/L	0.404		105	70-130			
Nickel, dissolved	0.903	0.00040 mg/L	0.835		108	70-130			
Phosphorus, dissolved	0.505	0.050 mg/L	0.499		101	70-130			
Potassium, dissolved	2.94	0.10 mg/L	2.88		102	70-130			
Selenium, dissolved	0.0352	0.00050 mg/L	0.0324		109	70-130			
Sodium, dissolved	18.7	0.10 mg/L	18.0		104	70-130			
Strontium, dissolved	0.943	0.0010 mg/L	0.935		101	70-130			
Thallium, dissolved	0.0414	0.000020 mg/L	0.0385		107	70-130			
Uranium, dissolved	0.256	0.000020 mg/L	0.258		99	70-130			
Vanadium, dissolved	0.893	0.0010 mg/L	0.873		102	70-130			
Zinc, dissolved	0.912	0.0040 mg/L	0.848		108	70-130			

Dissolved Metals, Batch B0H2636

Blank (B0H2636-BLK1)		Prepared: 2020-08-30, Analyzed: 2020-08-30							
Mercury, dissolved	< 0.000010	0.000010 mg/L							
Blank (B0H2636-BLK2)		Prepared: 2020-08-30, Analyzed: 2020-08-30							
Mercury, dissolved	< 0.000010	0.000010 mg/L							
Duplicate (B0H2636-DUP2)		Source: 0082459-05		Prepared: 2020-08-30, Analyzed: 2020-08-30					
Mercury, dissolved	< 0.000010	0.000010 mg/L		< 0.000010				20	
Matrix Spike (B0H2636-MS2)		Source: 0082459-11		Prepared: 2020-08-30, Analyzed: 2020-08-31					
Mercury, dissolved	0.000260	0.000010 mg/L	0.000250	< 0.000010	104	70-130			
Reference (B0H2636-SRM1)		Prepared: 2020-08-30, Analyzed: 2020-08-30							
Mercury, dissolved	0.00575	0.000010 mg/L	0.00581		99	70-130			
Reference (B0H2636-SRM2)		Prepared: 2020-08-30, Analyzed: 2020-08-30							
Mercury, dissolved	0.00547	0.000010 mg/L	0.00581		94	70-130			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO Ecoscape Environmental Ltd.
PROJECT 19-2850 - Golden

WORK ORDER 0082459
REPORTED 2020-10-21 11:00

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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Dissolved Metals, Batch B0H2636, Continued

General Parameters, Batch B0H2187

Blank (B0H2187-BLK1)			Prepared: 2020-08-26, Analyzed: 2020-08-26						
Alkalinity, Total (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Bicarbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0 mg/L							
Conductivity (EC)	< 2.0	2.0 µS/cm							
Blank (B0H2187-BLK2)			Prepared: 2020-08-26, Analyzed: 2020-08-26						
Alkalinity, Total (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Bicarbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0 mg/L							
Conductivity (EC)	< 2.0	2.0 µS/cm							
Blank (B0H2187-BLK3)			Prepared: 2020-08-26, Analyzed: 2020-08-26						
Alkalinity, Total (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Bicarbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0 mg/L							
Conductivity (EC)	< 2.0	2.0 µS/cm							
LCS (B0H2187-BS1)			Prepared: 2020-08-26, Analyzed: 2020-08-26						
Alkalinity, Total (as CaCO ₃)	106	1.0 mg/L	100		106	80-120			
LCS (B0H2187-BS2)			Prepared: 2020-08-26, Analyzed: 2020-08-26						
Alkalinity, Total (as CaCO ₃)	103	1.0 mg/L	100		103	80-120			
LCS (B0H2187-BS3)			Prepared: 2020-08-26, Analyzed: 2020-08-26						
Alkalinity, Total (as CaCO ₃)	108	1.0 mg/L	100		108	80-120			
LCS (B0H2187-BS4)			Prepared: 2020-08-26, Analyzed: 2020-08-26						
Conductivity (EC)	1460	2.0 µS/cm	1410		104	95-104			
LCS (B0H2187-BS5)			Prepared: 2020-08-26, Analyzed: 2020-08-26						
Conductivity (EC)	1440	2.0 µS/cm	1410		102	95-104			
LCS (B0H2187-BS6)			Prepared: 2020-08-26, Analyzed: 2020-08-26						
Conductivity (EC)	1470	2.0 µS/cm	1410		104	95-104			
Reference (B0H2187-SRM1)			Prepared: 2020-08-26, Analyzed: 2020-08-26						
pH	7.00	0.10 pH units	7.01		100	98-102			
Reference (B0H2187-SRM2)			Prepared: 2020-08-26, Analyzed: 2020-08-26						
pH	6.99	0.10 pH units	7.01		100	98-102			
Reference (B0H2187-SRM3)			Prepared: 2020-08-26, Analyzed: 2020-08-26						
pH	7.00	0.10 pH units	7.01		100	98-102			

General Parameters, Batch B0H2194

Blank (B0H2194-BLK1)			Prepared: 2020-08-26, Analyzed: 2020-08-26						
Turbidity	< 0.10	0.10 NTU							

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19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-10-21 11:00

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
General Parameters, Batch B0H2194, Continued									
Blank (B0H2194-BLK2)				Prepared: 2020-08-26, Analyzed: 2020-08-26					
Turbidity	< 0.10	0.10 NTU							
LCS (B0H2194-BS1)				Prepared: 2020-08-26, Analyzed: 2020-08-26					
Turbidity	38.8	0.10 NTU	40.0		97	90-110			
LCS (B0H2194-BS2)				Prepared: 2020-08-26, Analyzed: 2020-08-26					
Turbidity	40.1	0.10 NTU	40.0		100	90-110			
Duplicate (B0H2194-DUP2)				Source: 0082459-04		Prepared: 2020-08-26, Analyzed: 2020-08-26			
Turbidity	45.1	0.10 NTU		45.1			< 1	15	
General Parameters, Batch B0H2256									
Blank (B0H2256-BLK1)				Prepared: 2020-08-26, Analyzed: 2020-08-31					
BOD, 5-day	< 2.0	2.0 mg/L							
LCS (B0H2256-BS1)				Prepared: 2020-08-26, Analyzed: 2020-08-31					
BOD, 5-day	186	2.0 mg/L	180		103	85-115			
General Parameters, Batch B0H2312									
Blank (B0H2312-BLK1)				Prepared: 2020-08-28, Analyzed: 2020-08-28					
Solids, Total Suspended	< 2.0	2.0 mg/L							
Blank (B0H2312-BLK2)				Prepared: 2020-08-28, Analyzed: 2020-08-28					
Solids, Total Suspended	< 2.0	2.0 mg/L							
LCS (B0H2312-BS1)				Prepared: 2020-08-28, Analyzed: 2020-08-28					
Solids, Total Suspended	87.0	10.0 mg/L	100		87	85-115			
LCS (B0H2312-BS2)				Prepared: 2020-08-28, Analyzed: 2020-08-28					
Solids, Total Suspended	98.0	10.0 mg/L	100		98	85-115			
General Parameters, Batch B0H2315									
Blank (B0H2315-BLK1)				Prepared: 2020-08-27, Analyzed: 2020-08-27					
Solids, Total Dissolved	< 15	15 mg/L							
Duplicate (B0H2315-DUP1)				Source: 0082459-09		Prepared: 2020-08-27, Analyzed: 2020-08-27			
Solids, Total Dissolved	2700	15 mg/L		2720			< 1	15	
Reference (B0H2315-SRM1)				Prepared: 2020-08-27, Analyzed: 2020-08-27					
Solids, Total Dissolved	245	15 mg/L	240		102	0-200			
General Parameters, Batch B0H2339									
Blank (B0H2339-BLK1)				Prepared: 2020-08-27, Analyzed: 2020-08-27					
Ammonia, Total (as N)	< 0.050	0.050 mg/L							
Blank (B0H2339-BLK2)				Prepared: 2020-08-27, Analyzed: 2020-08-27					
Ammonia, Total (as N)	< 0.050	0.050 mg/L							
Blank (B0H2339-BLK3)				Prepared: 2020-08-27, Analyzed: 2020-08-27					
Ammonia, Total (as N)	< 0.050	0.050 mg/L							

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19-2850 - Golden

WORK ORDER REPORTED 0082459
2020-10-21 11:00

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
General Parameters, Batch B0H2339, Continued									
LCS (B0H2339-BS1)			Prepared: 2020-08-27, Analyzed: 2020-08-27						
Ammonia, Total (as N)	0.987	0.050 mg/L	1.00		99	90-115			
LCS (B0H2339-BS2)			Prepared: 2020-08-27, Analyzed: 2020-08-27						
Ammonia, Total (as N)	0.978	0.050 mg/L	1.00		98	90-115			
LCS (B0H2339-BS3)			Prepared: 2020-08-27, Analyzed: 2020-08-27						
Ammonia, Total (as N)	0.991	0.050 mg/L	1.00		99	90-115			
Duplicate (B0H2339-DUP1)			Source: 0082459-04		Prepared: 2020-08-27, Analyzed: 2020-08-27				
Ammonia, Total (as N)	0.415	0.050 mg/L		0.447			7	15	
Matrix Spike (B0H2339-MS1)			Source: 0082459-04		Prepared: 2020-08-27, Analyzed: 2020-08-27				
Ammonia, Total (as N)	0.668	0.050 mg/L	0.250	0.447	88	75-125			
General Parameters, Batch B0H2680									
Blank (B0H2680-BLK1)			Prepared: 2020-08-31, Analyzed: 2020-08-31						
Chemical Oxygen Demand	< 20	20 mg/L							
LCS (B0H2680-BS1)			Prepared: 2020-08-31, Analyzed: 2020-08-31						
Chemical Oxygen Demand	501	20 mg/L	500		100	89-115			
Volatile Organic Compounds (VOC), Batch B0H2533									
Blank (B0H2533-BLK1)			Prepared: 2020-08-31, Analyzed: 2020-08-31						
Benzene	< 0.5	0.5 µg/L							
Bromodichloromethane	< 1.0	1.0 µg/L							
Bromoform	< 1.0	1.0 µg/L							
Carbon tetrachloride	< 0.5	0.5 µg/L							
Chlorobenzene	< 1.0	1.0 µg/L							
Chloroethane	< 2.0	2.0 µg/L							
Chloroform	< 1.0	1.0 µg/L							
Dibromochloromethane	< 1.0	1.0 µg/L							
1,2-Dibromoethane	< 0.3	0.3 µg/L							
Dibromomethane	< 1.0	1.0 µg/L							
1,2-Dichlorobenzene	< 0.5	0.5 µg/L							
1,3-Dichlorobenzene	< 1.0	1.0 µg/L							
1,4-Dichlorobenzene	< 1.0	1.0 µg/L							
1,1-Dichloroethane	< 1.0	1.0 µg/L							
1,2-Dichloroethane	< 1.0	1.0 µg/L							
1,1-Dichloroethylene	< 1.0	1.0 µg/L							
cis-1,2-Dichloroethylene	< 1.0	1.0 µg/L							
trans-1,2-Dichloroethylene	< 1.0	1.0 µg/L							
Dichloromethane	< 3.0	3.0 µg/L							
1,2-Dichloropropane	< 1.0	1.0 µg/L							
1,3-Dichloropropene (cis + trans)	< 1.0	1.0 µg/L							
Ethylbenzene	< 1.0	1.0 µg/L							
Methyl tert-butyl ether	< 1.0	1.0 µg/L							
Styrene	< 1.0	1.0 µg/L							
1,1,2,2-Tetrachloroethane	< 0.5	0.5 µg/L							
Tetrachloroethylene	< 1.0	1.0 µg/L							
Toluene	< 1.0	1.0 µg/L							
1,1,1-Trichloroethane	< 1.0	1.0 µg/L							
1,1,2-Trichloroethane	< 1.0	1.0 µg/L							
Trichloroethylene	< 1.0	1.0 µg/L							
Trichlorofluoromethane	< 1.0	1.0 µg/L							

APPENDIX 2: QUALITY CONTROL RESULTS

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PROJECT 19-2850 - Golden

WORK ORDER 0082459
REPORTED 2020-10-21 11:00

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Volatile Organic Compounds (VOC), Batch B0H2533, Continued									
Blank (B0H2533-BLK1), Continued					Prepared: 2020-08-31, Analyzed: 2020-08-31				
Vinyl chloride	< 1.0	1.0 µg/L							
Xylenes (total)	< 2.0	2.0 µg/L							
Surrogate: Toluene-d8	24.5	µg/L	26.5		92	70-130			
Surrogate: 4-Bromofluorobenzene	25.2	µg/L	24.9		101	70-130			
Surrogate: 1,4-Dichlorobenzene-d4	26.5	µg/L	25.5		104	70-130			
LCS (B0H2533-BS1)					Prepared: 2020-08-31, Analyzed: 2020-08-31				
Benzene	16.2	0.5 µg/L	20.0		81	70-130			
Bromodichloromethane	14.2	1.0 µg/L	20.0		71	70-130			
Bromoform	15.0	1.0 µg/L	20.1		75	70-130			
Carbon tetrachloride	13.8	0.5 µg/L	20.2		68	70-130			SPK1
Chlorobenzene	17.0	1.0 µg/L	20.1		85	70-130			
Chloroethane	11.1	2.0 µg/L	20.0		56	60-140			SPK
Chloroform	15.0	1.0 µg/L	20.1		74	70-130			
Dibromochloromethane	13.9	1.0 µg/L	20.2		69	70-130			SPK1
1,2-Dibromoethane	14.6	0.3 µg/L	20.0		73	70-130			
Dibromomethane	13.7	1.0 µg/L	20.0		68	70-130			SPK1
1,2-Dichlorobenzene	17.3	0.5 µg/L	20.1		86	70-130			
1,3-Dichlorobenzene	17.0	1.0 µg/L	20.1		85	70-130			
1,4-Dichlorobenzene	15.4	1.0 µg/L	20.1		77	70-130			
1,1-Dichloroethane	14.5	1.0 µg/L	20.1		72	70-130			
1,2-Dichloroethane	14.6	1.0 µg/L	20.1		73	70-130			
1,1-Dichloroethylene	14.3	1.0 µg/L	20.1		71	70-130			
cis-1,2-Dichloroethylene	14.6	1.0 µg/L	20.0		73	70-130			
trans-1,2-Dichloroethylene	13.7	1.0 µg/L	20.0		68	70-130			SPK1
Dichloromethane	15.1	3.0 µg/L	20.1		75	70-130			
1,2-Dichloropropane	15.3	1.0 µg/L	20.1		76	70-130			
1,3-Dichloropropene (cis + trans)	28.0	1.0 µg/L	40.0		70	70-130			
Ethylbenzene	18.3	1.0 µg/L	20.0		92	70-130			
Methyl tert-butyl ether	16.9	1.0 µg/L	20.0		85	70-130			
Styrene	18.0	1.0 µg/L	20.0		90	70-130			
1,1,2,2-Tetrachloroethane	18.1	0.5 µg/L	20.1		90	70-130			
Tetrachloroethylene	14.8	1.0 µg/L	20.1		74	70-130			
Toluene	15.8	1.0 µg/L	20.0		79	70-130			
1,1,1-Trichloroethane	13.6	1.0 µg/L	20.0		68	70-130			SPK1
1,1,2-Trichloroethane	14.8	1.0 µg/L	20.1		74	70-130			
Trichloroethylene	14.7	1.0 µg/L	20.1		73	70-130			
Trichlorofluoromethane	15.2	1.0 µg/L	20.0		76	60-140			
Vinyl chloride	16.9	1.0 µg/L	20.0		85	60-140			
Xylenes (total)	53.8	2.0 µg/L	60.0		90	70-130			
Surrogate: Toluene-d8	25.6	µg/L	26.5		97	70-130			
Surrogate: 4-Bromofluorobenzene	25.7	µg/L	24.9		103	70-130			
Surrogate: 1,4-Dichlorobenzene-d4	27.0	µg/L	25.5		106	70-130			

QC Qualifiers:

S02 Surrogate recovery outside of control limits. Data accepted based on acceptable recovery of other surrogates.
 SPK The recovery of this analyte was outside of established control limits.
 SPK1 The recovery of this analyte was outside of established control limits. The data was accepted based on performance of other batch QC.



Isotope Analyses for: Caro Analytical Services

IT² FILE # 200122

2020-10-19

Approved by:

Orfan Shouakar-Stash, PhD
Director

Isotope Tracer Technologies Inc.

695 Rupert St. Unit B, Waterloo, ON, N2V 1Z5

Tel: 519-886-5555 | Fax: 519-886-5575

Email: orfan@it2isotopes.com

Website: www.it2isotopes.com



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

File Number: 200122
WO Number: 0082459

#	Sample ID	Sample #	$\delta^{18}\text{O}$	Aver	Stdv	$\delta^2\text{H}$	Aver	Stdv
			H_2O	VSMOW		H_2O	VSMOW	
1	0082459-01	62800	X	-19.04	0.05	X	-150.1	0.3
2	0082459-02	62801	X	-19.23	0.04	X	-148.6	0.1
3	0082459-03	62802	X	-19.22	0.03	X	-148.3	0.3
4	0082459-04	62803	X	-20.72	0.03	X	-160.9	0.1
5	0082459-05	62804	X	-19.92	0.04	X	-152.5	0.2
6	0082459-06	62805	X	-19.77	0.03	X	-152.0	0.3
7	0082459-07	62806	X	-19.88	0.03	X	-154.7	0.2
8	0082459-08	62807	X	-20.15	0.03	X	-156.6	0.2
9	0082459-09	62808	X	-18.94	0.03	X	-150.1	0.3
10	0082459-10	62809	X	-18.95	0.03	X	-150.4	0.2
11	0082459-11	62810	X	-19.85	0.02	X	-150.4	0.2

^{18}O & ^2H (CRDS)

Instrument Used: Cavity Ring Down Spectroscopy (CRDS)
 CRDS (Model L2130-i) (Picarro, California, USA).

Standard Used:

IT2-2B / IT2-11B / IT2-12C Calibrated with IAEA Standards (V-SMOW, SLAP, and GISP)

Typical Standard deviation:

($^{18}\text{O} \pm 0.1\text{‰}$) ($^2\text{H} \pm 1\text{‰}$)

Approved by:

Orfan Shouakar-Stash, PhD

Director

Isotope Tracer Technologies Inc.

695 Rupert St. Unit B, Waterloo, ON, N2V 1Z5

Tel: 519-886-5555 | Fax: 519-886-5575

Email: orfan@it2isotopes.com

Website: www.it2isotopes.com



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

File Number: 200122
WO Number: 0082459

#	Sample ID	Sample #	E ³ H	Result	± 1σ
1	0082459-01	62800	X	31.7	2.2
2	0082459-02	62801	X	3.4	0.6
3	0082459-03	62802	X	70.6	4.7
4	0082459-04	62803	X	15.8	1.2
5	0082459-05	62804	X	1.9	0.6
6	0082459-06	62805	X	4.8	0.7
7	0082459-07	62806	X	3.2	0.6
8	0082459-08	62807	X	1.4	0.6
9	0082459-09	62808	X	157.6	11.2
10	0082459-10	62809	X	31.7	2.2
11	0082459-11	62810	X	4.2	0.6

E³H ANALYSES

Tritium is reported in Tritium Units.

1TU = 3.221 Picocuries/L per IAEA, 2000 Report.

1TU = 0.11919 Becquerels/L per IAEA, 2000 Report.

Approved by:

Orfan Shouakar-Stash, PhD

Director

Isotope Tracer Technologies Inc.

695 Rupert St. Unit B, Waterloo, ON, N2V 1Z5

Tel: 519-886-5555 | Fax: 519-886-5575

Email: orfan@it2isotopes.com

Website: www.it2isotopes.com



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

File Number: 200122
WO Number: 0082459

#	Sample ID	Sample #	$\delta^{37}\text{Cl}$	Result	Stdv
SMOC					
1	0082459-01	62800	X	0.34	0.10
2	0082459-02	62801	X	0.43	0.05
3	0082459-03	62802	X	0.02	0.14
4	0082459-04	62803	X	0.20	0.05
5	0082459-05	62804	X	0.45	0.14
6	0082459-06	62805	X	0.22	0.13
7	0082459-07	62806	X	0.31	0.11
8	0082459-08	62807	X	0.11	0.10
9	0082459-09	62808	X	0.02	0.13
10	0082459-10	62809	X	-0.20	0.08
11	0082459-11	62810	X	-0.16	0.05

^{37}Cl ANALYSES

Instrument Used:

Isotope Ratio Mass Spectrometry (IRMS) - MAT 253, Thermo Scientific, Germany
 Coupled with an Agilent 6890 Gas Chromatograph (GC)

Standard Used:

SMOC

Typical Standard deviation:

$\pm 0.15\%$

Approved by:

Orfan Shouakar-Stash, PhD

Director

Isotope Tracer Technologies Inc.

695 Rupert St. Unit B, Waterloo, ON, N2V 1Z5

Tel: 519-886-5555 | Fax: 519-886-5575

Email: orfan@it2isotopes.com

Website: www.it2isotopes.com

SUBCONTRACT REQUEST (WO# 0082459)

RECEIVING LABORATORY:
 Isotope Tracer Technologies Inc. (IT2)
 Unit B - 695 Rupert Street
 Waterloo, ON N2V 1Z5
 Phone: (519) 886-5555

REGULAR TAT

SENDING LABORATORY:
 CARO Analytical Services
 #102 3677 Highway 97N
 Kelowna, BC V1X 5C3
 Phone: (250) 765-9646
 Contact: sublet@caro.ca

Analysis / Method	Expires	Comments
-------------------	---------	----------

CARO Sample ID: 0082459-01 | Matrix: Water | Sampled: 2020-08-24 16:30

Containers Submitted:
 G = C13_500 mL Plastic (General) H = C17_500 mL Plastic (General) I = C19_40 mL Vial (General CG)
 J = C19_40 mL Vial (General CG)

2H and 18O Isotope Ratios [Stable Isotopes] 2021-08-24
 Miscellaneous Subcontracted Analysis [N/A] 2020-09-21

CARO Sample ID: 0082459-02 | Matrix: Water | Sampled: 2020-08-25 08:00

2H and 18O Isotope Ratios [Stable Isotopes] 2021-08-25
 Miscellaneous Subcontracted Analysis [N/A] 2020-09-22

CARO Sample ID: 0082459-03 | Matrix: Water | Sampled: 2020-08-25 08:00

Containers Submitted:
 G = C13_500 mL Plastic (General) H = C17_500 mL Plastic (General) I = C19_40 mL Vial (General CG)
 J = C19_40 mL Vial (General CG)

2H and 18O Isotope Ratios [Stable Isotopes] 2021-08-25
 Miscellaneous Subcontracted Analysis [N/A] 2020-09-22

CARO Sample ID: 0082459-04 | Matrix: Water | Sampled: 2020-08-24 15:10

Containers Submitted:
 G = C13_500 mL Plastic (General) H = C17_500 mL Plastic (General) I = C19_40 mL Vial (General CG)
 J = C19_40 mL Vial (General CG)

2H and 18O Isotope Ratios [Stable Isotopes] 2021-08-24
 Miscellaneous Subcontracted Analysis [N/A] 2020-09-21

CARO Sample ID: 0082459-05 | Matrix: Water | Sampled: 2020-08-24 11:30

Containers Submitted:
 G = C13_500 mL Plastic (General) H = C17_500 mL Plastic (General) I = C19_40 mL Vial (General CG)
 J = C19_40 mL Vial (General CG)

2H and 18O Isotope Ratios [Stable Isotopes] 2021-08-24
 Miscellaneous Subcontracted Analysis [N/A] 2020-09-21

SUBCONTRACT REQUEST (WO# 0082459)

Analysis / Method	Expires	Comments
-------------------	---------	----------

CARO Sample ID: 0082459-06 | Matrix: Water | Sampled: 2020-08-24 11:20

Containers) Submitted: G = C13_500 mL Plastic (General) J = C19_40 mL Vial (General CG)
H = C23_125 mL Plastic (Sulfide) I = C19_40 mL Vial (General CG)

2H and 18O Isotope Ratios [Stable Isotopes] 2021-08-24
Miscellaneous Subcontracted Analysis [N/A] 2020-09-21

CARO Sample ID: 0082459-07 | Matrix: Water | Sampled: 2020-08-25 08:30

Containers) Submitted: G = C13_500 mL Plastic (General) J = C19_40 mL Vial (General CG)
H = C13_500 mL Plastic (General) I = C19_40 mL Vial (General CG)

2H and 18O Isotope Ratios [Stable Isotopes] 2021-08-25
Miscellaneous Subcontracted Analysis [N/A] 2020-09-22

CARO Sample ID: 0082459-08 | Matrix: Water | Sampled: 2020-08-25 08:47

Containers) Submitted: G = C13_500 mL Plastic (General) J = C19_40 mL Vial (General CG)
H = C13_500 mL Plastic (General) I = C19_40 mL Vial (General CG)

2H and 18O Isotope Ratios [Stable Isotopes] 2021-08-25
Miscellaneous Subcontracted Analysis [N/A] 2020-09-22

CARO Sample ID: 0082459-09 | Matrix: Water | Sampled: 2020-08-24 18:05

Containers) Submitted: G = C13_500 mL Plastic (General) J = C19_40 mL Vial (General CG)
H = C13_500 mL Plastic (General) I = C19_40 mL Vial (General CG)

2H and 18O Isotope Ratios [Stable Isotopes] 2021-08-24
Miscellaneous Subcontracted Analysis [N/A] 2020-09-21

CARO Sample ID: 0082459-10 | Matrix: Water | Sampled: 2020-08-24 16:30

Containers) Submitted: G = C13_500 mL Plastic (General) J = C19_40 mL Vial (General CG)
H = C13_500 mL Plastic (General) I = C19_40 mL Vial (General CG)

2H and 18O Isotope Ratios [Stable Isotopes] 2021-08-24
Miscellaneous Subcontracted Analysis [N/A] 2020-09-21



SUBCONTRACT REQUEST (WO # 0082459)



Analysis / Method	Expires	Comments
-------------------	---------	----------

CARO Sample ID: 0082459-11 | Matrix: Water | Sampled: 2020-08-24 11:55

Container(s) Submitted:

G = C13_500 mL Plastic (General) H = C13_500 mL Plastic (General) I = C19_40 mL Vial (General CG) J = C19_40 mL Vial (General CG)

2H and 18O Isotope Ratios [Stable Isotopes] 2021-08-24
Miscellaneous Subcontracted Analysis [N/A] 2020-09-21

Released By

Date

[Signature]
8/25/20

Received By

Date

SALARY AND BENEFIT CONTRIBUTION			
EMPLOYEE	2000	2001	2002
EMPLOYEE	2000	2001	2002
EMPLOYEE	2000	2001	2002
EMPLOYEE	2000	2001	2002



CARO, Inc. 1-888-311-8846

211-401 Mount View Highway, St. Paul, MN 55116
 4800 Highway 100, Suite 100, St. Paul, MN 55116
 (612) 480-1000 FAX: (612) 480-1001

CHAIN OF CUSTODY RECORD

FORM 100-1 (Rev. 1-98)

Page 1 of 1

REPORT TO: CANDLER-Loopco Environmental ADDRESS: 162-430 Maple Dr. Robson, MN 55122	INVOICE NO. CANDLER-Loopco Environmental NO. 0116
CONTACT: Candier Mike TELEPHONE: 612-381-0007	CONTACT: BARRY ELLIOTT TELEPHONE:
DATE: 08-08-00 ANALYST: J. J. ELLIOTT DATE: 08-08-00 ANALYST: J. J. ELLIOTT	DATE: 08-08-00 ANALYST: J. J. ELLIOTT
ANALYST: J. J. ELLIOTT DATE: 08-08-00 ANALYST: J. J. ELLIOTT	DATE: 08-08-00 ANALYST: J. J. ELLIOTT

ANALYST: J. J. ELLIOTT DATE: 08-08-00 ANALYST: J. J. ELLIOTT	ANALYST: J. J. ELLIOTT DATE: 08-08-00 ANALYST: J. J. ELLIOTT
ANALYST: J. J. ELLIOTT DATE: 08-08-00 ANALYST: J. J. ELLIOTT	ANALYST: J. J. ELLIOTT DATE: 08-08-00 ANALYST: J. J. ELLIOTT

For more information, please contact the nearest CARO office or call 1-888-311-8846

CLIENT SAMPLE ID	DATE	TIME	SAMPLE NO.		ANALYST	ANALYSES REQUESTED												TOTAL	REMARKS
			100	101		102	103	104	105	106	107	108	109	110	111	112	113		
100-101	24 AUG	15:30			X														
100-102	25 AUG	8:30			X														
100-103	24 AUG	14:00			X														
100-104	↓	15:30			X														
100-105	↓	15:30			X														
100-106	24 AUG	15:30			X														
100-107	25 AUG	8:30			X														
100-108	25 AUG	8:47			X														
100-109	24 AUG	18:00			X														
100-110	↓	18:30			X														
100-111	24 AUG	11:50			X														

ANALYST: J. J. ELLIOTT DATE: 08-08-00 ANALYST: J. J. ELLIOTT	ANALYST: J. J. ELLIOTT DATE: 08-08-00 ANALYST: J. J. ELLIOTT	ANALYST: J. J. ELLIOTT DATE: 08-08-00 ANALYST: J. J. ELLIOTT	ANALYST: J. J. ELLIOTT DATE: 08-08-00 ANALYST: J. J. ELLIOTT
--	--	--	--

APPENDIX G GOLDER 2019 ENVIRONMENTAL MONITORING PLAN



REPORT

Golden Landfill Environmental Monitoring Plan

Golden, BC

Submitted to:

Columbia Shuswap Regional District

PO Box 978

555 Harbourfront Drive NE

Salmon Arm, BC

V1E 4P1

Submitted by:

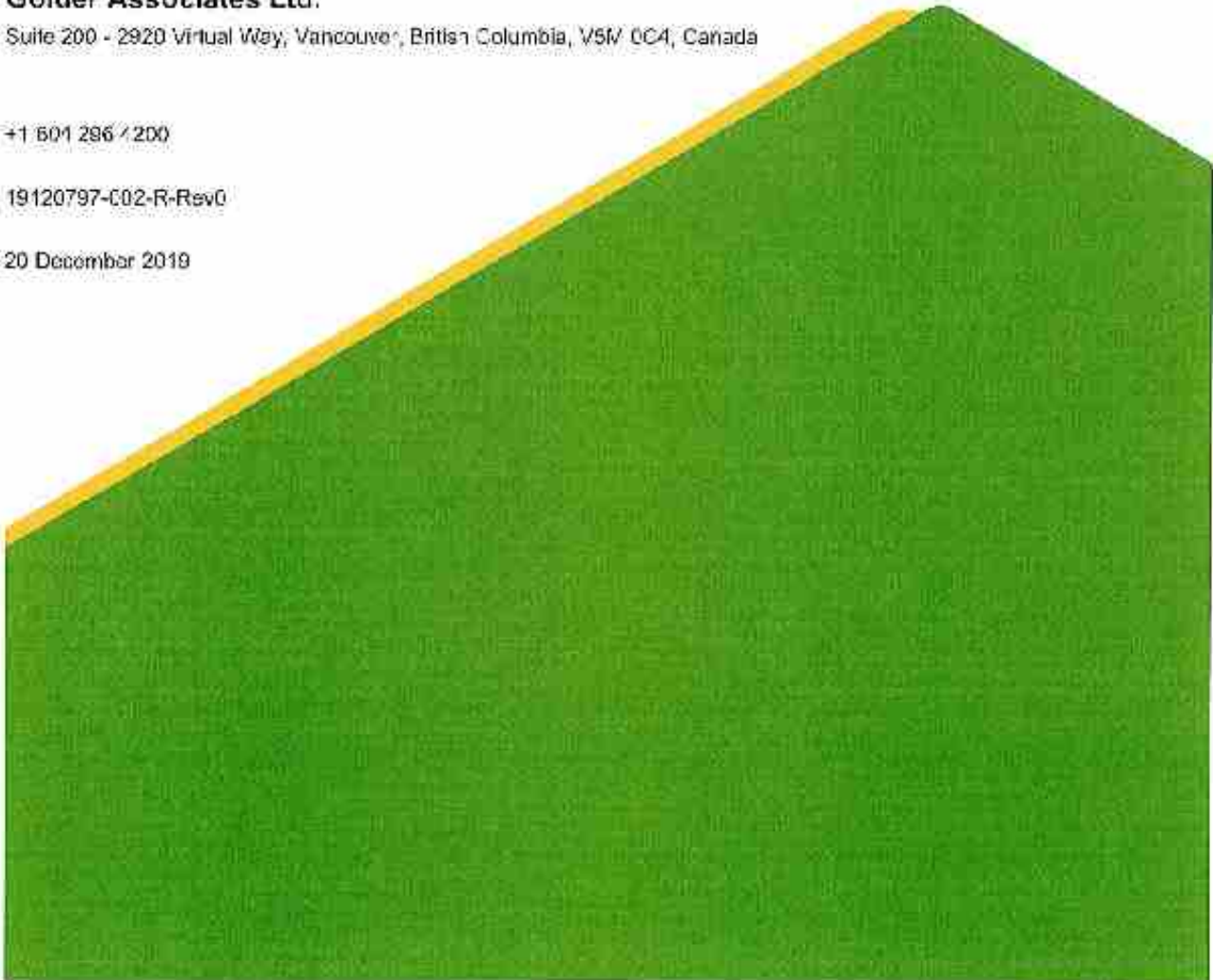
Golder Associates Ltd.

Suite 200 - 2920 Virtual Way, Vancouver, British Columbia, V5W 0C4, Canada

+1 604 296 1200

19120797-002-R-Rev0

20 December 2019



Distribution List

1 electronic copy: Columbia Shuswap Regional District

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Figure 1: Key Plan

Figure 2: Monitoring Location Plan

1.0 INTRODUCTION

1.1 Background

On behalf of the Columbia Shuswap Regional District (CSRD), Golder Associates Ltd. (Golder) is pleased to provide this Environmental Monitoring Plan (EMP) for the Golden Landfill (Landfill or Site), located at 350 Golden Donald Upper Road in Golden, BC approximately 2 km northwest of the town centre (Figure 1). The Site is authorized under Ministry of Environment and Climate Change Strategy Operational Certificate (OC) 17006 that was last updated 29 August 2012. This Plan is based on a review of the following documents for the Site provided by CSRD:

- Operational Certificate 17006
- most recently completed Design and Operating Plan (Golder 2013) and in-progress Design, Operations and Closure Plan (DOCP) update (Golder 2019)
- annual environmental monitoring reports (Summit 2011 and 2012)
- hydrogeological characterization report (WWAL 2018)
- most recent landfill annual report (CSRD 2018)
- BC Ministry of Environment and Climate Action Strategy (BC ENV) Environmental Impact Assessment Review (BC ENV 2018a)

1.2 Objective

This EMP has been prepared to fulfill the requirements of OC 17006 Section 4 whereby a monitoring program must be developed by Qualified Professional and submitted to the satisfaction of the Director, *Environmental Management Act*. To meet these requirements, the EMP has been designed to assess compliance of the Landfill performance with respect to groundwater quality at the landfill boundary, residential well water quality and surface water quality, and to characterize the Landfill leachate.

1.3 Regulatory Context

1.3.1 General

A description of the requirements for design and operations of the Site landfill are detailed in the DOCP (Golder 2019). The following regulatory and guidance documents were consulted in the development of this EMP:

- Operational Certificate 17006 amended August 29, 2012
- BC *Environmental Management Act* (EMA [SBC 2003]), including the *Landfill Gas Management Regulation* BC Reg 391/2008 O.C. 903/2008 brought into force on 1 January 2009.
- *Landfill Criteria for Municipal Solid Waste* (Landfill Criteria; BC ENV 2016)
- *Guidelines for Environmental Monitoring at Municipal Solid Waste Landfills* (BC ENV 2019)
- *British Columbia Field Sampling Manual* (BC ENV 2103a)
- *British Columbia Environmental Laboratory Manual* (BC ENV 2013b)

The Landfill Criteria guidance document (BC ENV 2016) specifies that current and planned future uses of groundwater and surface water shall be identified within 1 km of the landfill footprint and after considering these uses, a Qualified Professional must recommend the appropriate water quality criteria, compliance locations, and provide related rationale and justification. As a minimum, the criteria must be satisfied at and beyond the landfill site boundary, or 150 m from the landfill footprint, whichever is closer. The water quality criteria and compliance monitoring locations are subject to approval of the Director, who may set more stringent requirements.

1.3.2 Water Quality Standards and Guidelines

The following provincial water quality standards and guidelines apply within BC:

- BC Contaminated Sites Regulation (CSR; BC Reg. 375/96 O.C. 1480/96, including amendments up to B.C. Reg. 116/2018, 24 January 2019 EMA [SBC 2003]; Schedule 3.2 Generic Numerical Water Standards.
 - One or more of Aquatic Life (AW), Irrigation (IW), Livestock (LW), or Drinking Water (DW) standards may be applicable at a site, depending on the water use determination.
 - Aquatic Life standards are typically 10 times greater than the respective BC WQGs based on the assumption that 10-fold dilutions will occur before discharge.
- BC Water Quality Guidelines (BC WQGs) for the protection of aquatic life, which apply to receiving surface waters and comprise working and approved guidelines (BC ENV 2017a; BC ENV 2018b).
 - Approved Water Quality Guidelines, which are considered safe concentrations of substances for particular water uses and have been developed to provide policy direction for decision makers within the ENV, including for the purpose of assessing allowable limits in waste discharge authorizations.
 - Working Water Quality Guidelines, which have been adopted for substances that do not have formally approved water quality guidelines. They provide benchmarks for parameters that have not been fully assessed by BC ENV; however, as they may be based on historical information or different derivation protocols from different agencies, they should be used with caution.

In addition, the Guidelines for Canadian Drinking Water Quality established by Health Canada apply to groundwater derived from water supply wells.

1.3.3 Selection of Applicable Water Quality Standards and Guidelines

The qualified professional responsible for implementing the environmental monitoring plan and interpreting the results should select appropriate guidelines for comparison of environmental monitoring program sample results that consider the current and future land use, background conditions, and provincial regulatory guidance. In addition to the regulations and standards listed above, the following guidance documents are considered applicable with respect to groundwater monitoring:

- *Technical Guidance on Contaminated Sites 3: Environmental Quality Standards* (BC ENV 2017b)
- *Technical Guidance on Contaminated Sites 15: Concentration Limits for the Protection of Aquatic Receiving Environments* (BC ENV 2017c)
- *Protocol 21 for Contaminated Sites Water Use Determination* (BC ENV 2017d)

Based on the regulations, standards and guidance documents above, the following water quality standards are considered applicable to the assessment of groundwater conditions:

- for the Site monitoring wells, CSR drinking water (DW) standards to protect drinking water in the area are applicable because groundwater is extracted for drinking water use in the area and based on *Protocol 21* (BC ENV 2017d)
- for the monitored off-Site water supply wells, CSR drinking water (DW) standards and Canadian Drinking Water Guidelines are applicable

CSR aquatic life (AW) standards are not considered applicable since the only mapped surface water bodies within 500 m of the Site are ephemeral streams. CSR standards for irrigation and livestock are not considered applicable because groundwater in the vicinity of the Landfill is not known to be used for irrigation or livestock watering.

In addition to water quality standards, the groundwater sampling results should be evaluated in the context of background groundwater chemistry.

Descriptions of the sampling locations and frequencies are presented in Section 2.0 and descriptions of regulatory limits, triggers and remedial actions are presented in Section 4.0 of this report.

1.3.4 Landfill Gas

The Landfill Criteria (BC ENV 2016) requires that:

- Soil gas concentrations at the landfill Site boundary must not exceed the lower explosive limit of methane (5 percent by volume) at any time and combustible gas concentrations measured in on-site buildings must not exceed 20 percent of the lower explosive limit of methane (1 percent by volume) at any time.
- Landfill gas must be managed in accordance with all migration and health and safety requirements, for example, WorkSafe BC.
- Landfill gas management should meet the requirements of the Landfill Gas Management Regulation. In addition to the reporting requirements of this regulation, landfills determined to be generating more than 1,000 tonnes of methane per year are required to prepare a LFG management plan and implement a LFG management system. Methane generation at the Golden Landfill is currently less than 1,000 tonnes per year and is estimated to remain below this threshold for the remaining lifespan of the facility.

It is noted that OC 17006 states that the Landfill must not cause combustible gas concentrations to exceed the lower explosive limit in soils at the property boundary or 25 percent of the lower explosive limit in on-site structures. However, it is recommended that the 20 percent LEL guideline presented in the Landfill Criteria be adopted for on-site structures since it provides a safer trigger limit.

1.4 Site Setting

Detailed descriptions of the Landfill site setting are provided in the Design and Operating Plan (Golder 2013) and hydrogeological characterization report (WWAL 2019a). A summary of the site setting and identified environmental receptors is provided below.

1.4.1 Topography, Drainage and Land Use

The Landfill property occupies a plan area of approximately 16 hectares. The Landfill generally slopes down to the southwest from elevation 955 m (above sea level) at its northeast corner, to elevations of about 925 to 930 m along the northwest-southeast diagonal of the Site (Golder 2013). The topography is flatter from the northwest-southeast diagonal to the southwest corner of the Landfill. The slopes at the southwest corner of the Site are about 120 m higher than the Kicking Horse River. Currently, other than roads along its east, north and west perimeter, the Landfill is surrounded by natural terrain vegetated with trees. Based on the 2011 Town of Golden Zoning (bylaw 1294), planned future land use for land to south and west of the Landfill boundaries is residential; parks and trails; and, community education and culture.

As documented in the DOCP (Golder 2013), surface water will be directed around the Landfill footprint, including intermittent flows which enter from a ravine at the northeast corner. The ravine is normally dry but flows in extremely wet weather or periods of high runoff. Ponds will be established on-site outside of the landfill footprint to detain surface water and allow it to infiltrate into the subsurface. Any overflow from these ponds will enter the drainage system adjacent to Golden Donald Upper Road which flows to the south and then west for about 2.5 km and discharges to the Kicking Horse River. Another unnamed surface watercourse exists approximately 180 m south of the Site. This watercourse flows to the southwest for about 1.1 km and discharges to a catch-basin near Station Avenue.

Hospital Creek collects drainage from the sub-watershed area northwest of the Landfill. It is located approximately 800 m from the Landfill and flows in a southwesterly direction until discharging to the Kicking Horse River.

1.4.2 Geology

The Landfill is underlain with ablation till to the east and ice-contact materials to the west, both of which primarily comprise silt, sand and gravel (Golder 2013). Surficial deposits vary across the Site, with the surficial sediments on the east side of the Site being siltier and comprising dense, gravelly sand and silty till-like material (Golder 2013). These deposits are estimated to have low hydraulic conductivity. Clean, bedded sand and gravel alluvial deposits are present on the south side of the Landfill and have been characterized as moderately permeable (Golder 2013).

Unconsolidated material is thicker in the southwest area of the Site and thinner toward the north and bedrock outcrops at the eastern edge of the Site (WWAL 2019a). Geological Survey of Canada mapping classifies bedrock beneath the Site as McKay Group limestone, limestone conglomerate, shale and associated meta-sedimentary rocks.

1.4.3 Hydrogeology

Conceptual Model of Regional Hydrogeology

Golder developed a regional conceptual hydrogeological model for the Town of Golden (including the area of the Landfill) as part of groundwater protection planning work (Golder 2006). Based on this model, regional groundwater flows occur in the surficial deposits (i.e., sand and gravel), and in the bedrock strata below. The upland areas are typically groundwater recharge areas, and the Columbia River valley represents a regional discharge area. Groundwater infiltrating the bedrock in the upland areas migrates downward, and then laterally into the surficial deposits that occur in the river valley, via fractures in the bedrock. Groundwater flow in the main sand and gravel aquifer that occupies the river valley is relatively slow and generally from southeast to northwest, along the Columbia River valley; however, lateral inflow also occurs (Golder 2006).

The ENV Water Resources Atlas (Province of BC 2019) has mapped one unconfined sand and gravel aquifer (No. 456) in Golden at the confluence of the Kicking Horse River and the Columbia River. Previous work by Golder indicates that there are three generally laterally continuous, sand and gravel deposits that make up the regional aquifer system (Golder 2006). The deeper water-producing strata are interlayered with finer-grained strata that act as aquitards. Most of the groundwater supply wells in the area that are completed in unconsolidated material are installed beneath confining layers and are protected from potential impacts to groundwater quality from surface activities. Based on previous publicly available groundwater protection work completed for the Town of Golden, the Landfill lies to the north, outside of the extent of Aquifer No. 456 and outside of the time-of-travel capture zones and buffer zones for municipal wells No. 4 and No. 6 (Golder 2006).

Hydrogeological Characterization of Site

A detailed description of the Site hydrogeology is provided in the recently completed hydrogeological characterization report by others (WWAL 2019a). Below is a summary of the information from the report that is relevant to the development of this environmental monitoring plan.

The ENV Water Resources Atlas (Province of BC 2019) does not report an aquifer beneath the Landfill. Based on well records for drilling completed at the Site, the unconsolidated deposits are thicker in the southwest area of the Landfill (15 m at MW18-11) and thinner toward the north, with bedrock outcropping at the eastern edge of the Site. Drilling records indicate that the unconsolidated materials in the area of the Landfill are largely unsaturated; however, there are areas where saturated conditions within the overburden sediments were encountered e.g., MW09-06 (WWAL 2019a). The saturation level of shallow unconfined sediments in the area of the Landfill will be strongly controlled by groundwater recharge from precipitation and surface water loss to ground. WWAL inferred that the majority of recharge to groundwater from precipitation infiltrating the Landfill will migrate downward to the bedrock surface.

Groundwater flow in bedrock aquifers can be complex and less predictable than flow in unconsolidated materials since fracture orientation and density are important factors. With the available information it is difficult to assess the groundwater flow paths and travel times for transport of leachate constituents from the Landfill. Based on data from four monitoring wells installed in the bedrock, groundwater flow at the site is from northeast to southwest (WWAL 2019a). The steeply dipping bedrock surface at the southern boundary makes it difficult to estimate the groundwater flow direction and gradient immediately downgradient of the Landfill, and it is uncertain how and where potential leachate-affected groundwater migrates through the bedrock aquifer and discharges to Aquifer No. 456 (WWAL 2019a).

1.5 Potential Environmental Receptors

Based on the Site setting and land use, the following potential environmental receptors were considered in the development of the Environmental Monitoring Plan:

- Groundwater used for drinking water downgradient of Site
- Aquatic receiving environments downstream of the Site
 - Kicking Horse River
 - Hospital Creek
- Soil quality on adjacent lands where daylighting of leachate seepage from the Site may occur
- Air quality within on-Site structures and crawl spaces

Based on the surface water regime described in Section 2.2, the aquatic receiving environment is not considered to be subject to a Landfill influence and therefore surface water monitoring has not been included in the Environmental Monitoring Plan. Based on the soil sampling conducted by others that is described in Section 1.6, Bulle. 7, the soil quality on adjacent lands is not characterized by constituents associated with a Landfill influence and therefore the Environmental Monitoring Plan does not include monitoring of soil chemistry. The Monitoring Plan includes provisions for groundwater monitoring to assess the potential influence of the Landfill on downgradient groundwater resources (Section 2.1) and for Landfill gas monitoring (Section 2.3).

1.6 Potential Impacts

The hydrogeological characterization and analysis of environmental monitoring data for the Landfill have been completed by others. Based on the hydrogeological characterization (WWAL 2019a) and most recent environmental monitoring annual report (WWAL 2019b) contained within the 2018 Annual Operations and Monitoring Report (CSRD 2019):

- Western Water Associates Ltd. estimated the potential mass loading of chloride from the Landfill to Aquifer 456 of on the order of 324 mg/day which was estimated to represent less than 1% of the annual chloride contained in the aquifer. As a result, they infer that the Landfill is not contributing to measurable water quality degradation within Aquifer No. 456 (WWAL 2019a).
- Exceedances of drinking water guidelines/standards for arsenic, lithium, strontium, fluoride, iron, manganese, and cobalt observed at the historically-monitored wells, the two new monitoring wells installed at the Landfill in 2018, and the five additional domestic wells sampled in 2018 are interpreted by WWAL to be naturally-occurring within the bedrock (WWAL 2019a).
- Domestic wells DWM-1b and DWM-1, which are located upgradient of the Landfill, are not interpreted to be impacted by the Landfill (WWAL 2019a).
- There is the potential that groundwater beneath a portion of the neighboring property exceeds the groundwater quality standards based on chloride and nitrate exceeding applicable drinking water guidelines/standards at MW18-10, which is located at the south boundary of the Site and installed in bedrock to a depth of 36.4 m below grade (WWAL 2019a).

- Groundwater quality at MW09-6S, located near the western boundary and installed in overburden to a depth of 34.5 m below grade, shows evidence of groundwater quality impact from Landfill leachate. Concentrations of chloride and nitrate appear to have decreased since 2009 (WWAL 2019b).
- Based on one sample collected since it was drilled, groundwater quality at MW18-11, which was installed in bedrock to a depth of 146.3 m below grade, does not appear to be impacted by Landfill leachate (WWAL 2019b).
- Based on soil sampling conducted at the neighboring property to the south of the Site in 2018, no impact on soils related to metals and chloride from off-site surface water runoff were detected (WWAL 2019b).
- During spring freshet and high precipitation periods, surface water may flow onto, through and off the Landfill site, and there is evidence that this flow has at times been impacted by the Landfill (BC ENV 2018a).

In Golder's opinion, the assessment of potential impacts from the Landfill must be carried out in the context of local hydrogeological conditions, which are highly complex. Only isolated portions of the unconsolidated material in the vicinity of the Landfill are saturated. The occurrence of groundwater in the underlying bedrock, through which most local groundwater flow occurs, is variable, ranging from approximately 30 m below ground surface beneath the Landfill to 150 m below ground surface downgradient and southwest of the Landfill. This variability complicates the interpretation of the groundwater flow pattern downgradient of the Landfill. The lithologies of the underlying sedimentary bedrock material vary from limestone to argillite to slate. These differing lithologies influence the groundwater geochemistry in the monitoring wells and can result in naturally occurring exceedances of some metals and possibly dissolved anions. The occurrence of elevated chloride in groundwater that is not hydraulically downgradient of the Landfill suggests that the elevated chloride concentrations in groundwater at some locations is not related to the Landfill but rather to alternative sources, such as road salt. Finally, the decline in concentrations of chloride and nitrate in downgradient monitoring wells MW09-06S and MW09-03D raises the possibility that the elevated concentrations of these constituents at those locations could have been the result of water introduced during the drilling process, rather than the Landfill.

2.0 ENVIRONMENTAL MONITORING PROGRAM

The following sections describe the environmental monitoring program currently recommended for the Landfill. Monitoring locations are shown in Figure 2. The monitoring program should be updated when new information becomes available, and at a minimum every five-years as required by OC 17006.

2.1 Groundwater

Groundwater monitoring has been carried out at the Landfill by Sperling Hansen Associates prior to 2008, by Summit Environmental Consultants (now Associated Engineering) from 2008-2013, and Western Water Associates Ltd. since 2014. From 2010-2018 the groundwater monitoring program was carried out three times per year. The following subsections describe the groundwater monitoring program implemented in 2018 and any recommended modifications.

2.1.1 Groundwater Well Network

The monitoring wells in which groundwater levels and groundwater samples are collected are located either along or outside the Landfill perimeter. Their locations are shown in Figure 2. A summary of the Site monitoring wells and other historically monitored wells, and their respective installation details is provided in Table 1.

Table 1: Details of Groundwater Monitoring Wells at the Golden Landfill and other Wells Historically Monitored

Well ID	Screened Unit	Lithology	Location Relative to Landfill	Approximate Ground Surface Elevation (masl)	Total Depth (mbtcc)
MW05-2 (TH2) – Decommissioned	Overburden		Down-gradient	915	22.5
MW09-C6S (MW-6S)	Overburden	Gravel	Within Landfill footprint	920	34.5
MW05-06D (MW-6D)	Bedrock	Limestone	Within Landfill footprint	920	65.9
MW09-07 (TH-7) Status Unknown	Overburden	Gravel, sand	Down-gradient	Unknown	31.7
MW10-08 (TH-8)	Bedrock	Slate and "quartz bedrock"	Up-gradient	921	26.2
MW18-10	Bedrock	"Mapped as argillite, shale, limestone"	Within Landfill footprint	920	33.4
MW18-11	Bedrock	"Mapped as argillite, shale, limestone"	Down-gradient	915	146.3
Town Well #4	Unknown (assumed to be overburden)		Side-gradient	790	Unknown
Town Well #6	Unknown (assumed to be overburden)	Sand and gravel	Side-gradient	Unknown	Unknown
DMW-1a	Bedrock		Up-gradient	975	60
DMW-4	Unknown (assumed to be bedrock based on depth)		Up-gradient	Unknown	120

Notes:

Data is from WWAL 2019b

masl=metres above sea level, mbtcc = metres below top of casing, mags = meters below ground surface

2.1.2 Groundwater Sampling and Groundwater Level Monitoring

Groundwater monitoring was carried out twice per year before 2010, and three times per year after 2010.

Sampling in 2018 was carried out in June, September and December, with groundwater samples collected from four monitoring wells (MW09-6S, MW10-08, MW10-10 and MW18-11); two domestic wells (DMW-1b and DMW-4) considered to represent background conditions; and, two municipal supply wells (Town Well #4 and Town Well #6). Groundwater monitoring wells MW95-2 (TH2) and MW09-07 (TH7) have been historically dry, and samples were not obtained from either well in 2018. MW95-2 was decommissioned by a qualified well driller in June 2018. Water quality monitoring of MW09-6D was stopped in 2011 because it was considered redundant to MW09-6S (WWAL 2019b).

The hydrogeological review presents a figure showing the inferred groundwater flow direction in the bedrock (WWAL 2019a); however, the 2018 annual monitoring report (WWAL 2019b) does not present groundwater level measurements.

The 2018 annual report (WWAL 2018b) contains the following recommendations regarding the groundwater monitoring program at the Site:

- Continue to monitor the newly added monitoring wells (MW18-10 and MW18-11) and, if the landowner agrees, add private water Well ID 22853 (screened in gravel and sand) to the groundwater monitoring program.
- Conduct two more years of water level and aquifer geochemical data collection to assess variation in groundwater flow direction in the bedrock and the presence of trends in concentrations of chloride and nitrate. If further exploration of the bedrock aquifer to assess for contamination is deemed appropriate, a downgradient, off-site monitoring well should be drilled, potentially at Pine Road and Golden Donald Upper Road, approximately 250 m southwest of MW18-10.

In addition to the recommendations made in the hydrogeological review (WWAL 2019a) and 2018 monitoring (WWAL 2019b) reports, Golder recommends that:

- Monitoring of bedrock monitoring well MW09-6D should be recommended. The groundwater geochemistry at MW09-6D differs from the overburden well at that location (MW09-6S) and monitoring both wells will help to discern the potential for Landfill-impacted groundwater to migrate through both the bedrock and overburden sediments at that location.
- The groundwater monitoring frequency be increased to quarterly to assess seasonal variations in water levels and chemistry. In 2018 sampling was conducted in June, September, and December. The first quarter sampling event should be timed to target peak groundwater levels (i.e. inferred to be March).
- A water level monitoring program should be implemented at the Landfill monitoring wells to assess seasonal variations in groundwater levels and flow direction. A high-accuracy geodetic elevation survey should be completed for the monitoring wells and should include the ground surface and water level monitoring datum for each well. A round of manual groundwater level measurements should be recorded for each water quality sampling event. After a year of water level measurements is collected, the frequency of water level measurements should be re-evaluated by the qualified professional responsible for analysis of the hydrogeological monitoring data. The water level data collected during the monitoring program should be tabulated and plotted appropriately to assess for seasonal changes in groundwater flow direction and

gradient. Installation of automatic recording pressure transducers in select monitoring wells at the Landfill would be helpful for this purpose.

- Should results of the groundwater level monitoring indicate that the groundwater monitoring program is not capturing the full range of annual seasonal fluctuations in groundwater level, consideration should be given to increasing the water level monitoring and quality sampling frequency. The sampling events should be timed to capture seasonal high and low groundwater levels.
- Response testing should be carried out at monitoring wells where the hydraulic conductivity has not already been estimated.

A summary of the proposed groundwater monitoring program is presented in Table 2.

Table 2: Proposed Golden Landfill Environmental Monitoring Groundwater Program

Well ID	Location	Water Level Monitoring	Field Parameters and Water Quality Sampling
MW09-3S (MW-6S)	Within Landfill footprint	Yes, assess for seasonal variations	quarterly
MW09-3D (MW-6D)	Within Landfill footprint	Yes, assess for seasonal variations	quarterly
MW09-07 (TH-7)	Downgradient	If accessible, monitor to confirm well is dry	None
MW10-08 (TH-8)	Upgradient	Yes, assess for seasonal variations	quarterly
MW18-1C	Within Landfill footprint	Yes, assess for seasonal variations	quarterly
MW18-11	Downgradient	Yes, assess for seasonal variations	quarterly
Town Well #4	Side-gradient	Not required as part of landfill monitoring	annually
Town Well #6	Side-gradient	Not required as part of landfill monitoring	annually
DMW-1b	Upgradient	If possible	quarterly
DMW-4	Upgradient	If possible	quarterly
Private Well 22863	Downgradient	Not required as part of landfill monitoring	quarterly

Well records for upgradient wells DMW-1b and DMW-4 are not available; however, based on their depths, both wells are inferred to be completed in bedrock. A review of bedrock mapping for the area indicates that bedrock upgradient, beneath and downgradient of the Site is characterized by mudstone, siltstone, shale and fine clastic rocks of the McKay Group. As a result, DMW-1b and DMW-4 are considered appropriate for monitoring of upgradient groundwater bedrock chemistry.

2.1.3 Field Measurements

At each sampling event a record should be made of the monitoring well condition, and a water level measurement should be recorded, along with the date and time of the measurement. Depending on the sampling method used, field parameter measurements should be recorded either following purging of the standing water, or stabilization (for low-flow, minimal drawdown sampling).

The following field parameters should be recorded:

- temperature
- pH
- electrical conductivity
- oxidation-reduction potential
- dissolved oxygen

In addition, the sample turbidity, colour and any other notable observations (odour, sheen) should be recorded. Efforts should be made to collect groundwater samples with a turbidity of less than 50 NTU.

2.1.4 Chemical Analyses

After the collection of groundwater samples, selected samples should be submitted to a certified analytical laboratory for chemical analyses. Each groundwater sample collected should be analyzed for the following suite of geochemical parameters, which are typical indicators of landfill leachate:

- electrical conductivity and pH
- total suspended solids and turbidity
- hardness and total alkalinity
- anions (chloride, fluoride, bromide, and sulphate)
- nutrients (ammonia, nitrate, and nitrite)
- dissolved metals

In addition, analyses should be conducted for total dissolved solids (TDS), biological oxygen demand (BOD) and chemical oxygen demand (COD).

Analysis for petroleum hydrocarbons and volatile organic compounds is recommended for each monitoring well location once per year, to evaluate potential impacts from contaminated soils that have been handled at the Landfill.

To provide additional insight into the groundwater chemistry of the site, sampling for isotopes is recommended on an annual basis over a two-year period (monitoring years 2020 and 2021). The analysis may include sampling and analysis for tritium (a leachate indicator parameter), oxygen and deuterium (an indicator of groundwater origin) and chlorine isotopes (as an indicator of chloride sources).

2.2 Surface Water Monitoring

The Landfill is located in an area with a relatively dry climate, with hot summers and moderate winters. The climate normals from 1981 to 2010 for the Golden A Climate Station (ID 1173210) from Environment Canada indicate that the average temperature at the Site is 5.1°C. The coldest month is January, with an average daily minimum temperature of -11.5°C. The warmest month is July, with an average daily maximum temperature of 24.5°C.

The general area where the Landfill is located receives an average annual precipitation of 467 mm. Most of this precipitation occurs as rainfall (325 mm), with the remainder as snowfall. Monthly precipitations vary from 24.1 to 51.1 mm.

Given the climate conditions at the Landfill, surface water is observed at or near the Landfill only during the spring melt, although ephemeral surface water might be present in the summer during and after short-duration, high-intensity rainfall events. Since surface water is not present at the Landfill consistently, no regular surface water monitoring is currently conducted at the Landfill.

The OC 17006 requires that the quality of surface water at the Site be monitored. No regular surface water monitoring is currently recommended because surface water is not present at the Landfill consistently; and, the closest water body to the Landfill is Hospital Creek, located approximately 800 m to the northwest. Similarly, the Kicking Horse River is located over 1 km to the southwest. Furthermore, upgrades to the Landfill surface water drainage are planned that would divert water around the footprint. Thus, a surface water monitoring program is not recommended at this time.

The 2019 DOCP update (Golder 2019) is recommending that future Landfill development phases be constructed with an engineered leachate containment and collection system. Leachate sampling should be included in the EMP once the leachate collection system is in place so that leachate quality can be characterized.

2.3 Landfill Gas Monitoring

As described in the DOCP (Golder 2019), the predicted annual rate of potential methane generation is expected to remain below the 1,000 tonne per year trigger in the *Landfill Gas Management Regulation* for preparing an LFG management facility design plan and the subsequent installation of such a system at the Landfill. Therefore, a detailed LFG monitoring plan is not required for the Landfill at this time.

Landfill gas has been monitored by CSRD since 2013 using two nested gas sampling probes, installed along Landfill property boundaries (CSRD 2019). Gas probe 6 (GP-6S/GP-6D) is located on the west side of the property and gas probe 7 (GP-7S/GP-7D) is located at the southwest corner of the property. The gas sampling probes are nested with monitoring wells MW09-06 and MW09-07 (Figure 2). Each probe has 3 m of screened pipe and the nested probes are isolated by a 1 m length bentonite plug. The shallow probes are screened from approximately 1-4 m below grade and the deep probes are screened approximately 5-8 m below grade within loose unsaturated sediments. The installation of additional soil gas probes is recommended on the eastern Landfill property boundary since there are off-site structures to the east of the Landfill.

The Landfill has a weigh scale and a reuse centre. The weigh scale is occupied by the Site attendant during most of the operating hours, and the reuse centre is frequented occasionally by staff or Landfill users. Typically, Landfill buildings and offices are, and will be, all built above ground to reduce the potential for LFG migration into

the structures. The scale house is equipped with a continuous gas monitoring detection unit so no additional gas monitoring is considered necessary at this time. The CSRD should carry out periodic LFG monitoring within the reuse centre and any other future enclosed structures (if any) to confirm that air in the structures and their crawlspaces complies with the *Occupational Health and Safety Regulation 3C Reg. 296/97* of the *Workers Compensation Act* (RSBC 1996).

The proposed landfill gas monitoring locations, frequency and constituents are provided in Table 3. The following QA/QC protocols should be implemented as part of the LFG monitoring program:

- The combustible gas meter used to sample ambient air within the scale house and reuse centre should be bump tested weekly and calibrated annually
- Field staff who monitor the soil gas probes should ensure that the portable landfill gas analyzer has been calibrated within the 30 days prior to the monitoring event

These QA/QC activities should be documented and included with the monitoring records.

Table 3: Landfill Gas Sampling Locations

Location	Instruments	Constituents	Monitoring Frequency
GP-6S/GP-6D	Portable landfill gas analyzer such as a Landtec GEM series or equivalent	Methane CO ₂	Twice a year
GP-7S/GP-7D	Portable landfill gas analyzer such as a Landtec GEM series or equivalent	H ₂ S O ₂ %LEL ¹	Twice a year
Soil Gas Probes on Eastern Property Boundary	Portable landfill gas analyzer such as a Landtec GEM series or equivalent		Twice a year
Reuse Centre ²	Portable combustible gas meter to sample ambient air	%LEL	Daily or as required by OHS legislation ³

Notes:

¹ Percent lower explosive limit

² Monitoring requirements can be avoided if building ventilation is enhanced as described in Section 2.3.1

³ Air sampling to detect landfill gas in enclosed work areas should be conducted according to applicable occupational health and safety legislation. If the frequency of sampling is not specified in the legislation, then a health and safety professional should be consulted to develop a risk-based monitoring plan. In the interim, daily monitoring would provide a regular frequency that should make scheduling easier to implement along with other site operation and maintenance activities.

2.3.1 Landfill Gas Monitoring in the Reuse Centre

The Landfill reuse centre has a sliding door that is open during Landfill operating hours and some ventilation provided by gaps below the side walls. However, there is the risk that if the building door remains closed for an extended period of time, landfill gas concentrations could accumulate within the structure.

If the CSRD would rather avoid the recommended monitoring requirements associated with this structure, it is recommended that building ventilation be improved. The recommended improvements include either removing the existing door or adding four 150 mm x 300 mm vents or openings on opposite walls and positioning them so that they are 0.6 to 1.5 m off the ground. These vents should remain unobstructed by materials inside the shed.

3.0 METHODS

3.1 Field Program

3.1.1 Protocols

As indicated in OC 17005, sampling for the environmental monitoring program must be carried out in accordance with the procedures described in the most recent edition of the British Columbia Field Sampling Manual (BC ENV 2013a), or suitable alternative procedures as authorized by the Director.

3.1.2 Health and Safety

The contractor responsible for implementing the environmental monitoring program should prepare a site-specific health and safety plan to identify hazards and appropriate controls to mitigate the risks. The contractor should implement the health and safety plan and conduct daily checks during field work to verify that the controls being implemented are appropriate.

3.2 Laboratory Analyses

As indicated in OC 17006, laboratory analyses for the environmental monitoring program must be carried out by a certified analytical laboratory in accordance with the procedures described in the most recent edition of the British Columbia Environmental Laboratory Manual (BC ENV 2013b), or suitable alternative procedures as authorized by the Director.

3.3 Quality Assurance/ Quality Control

The environmental monitoring program should implement quality assurance/quality control (QA/QC) measures that meet the requirements of OC 17006, the British Columbia Field Sampling Manual (BC ENV 2013a), and the British Columbia Environmental Laboratory Manual (BC ENV 2013b). The QA/QC measures should include:

- Chain-of-Custody procedures for the collection environmental quality samples and transportation to the analytical laboratory
- Decontamination of re-useable equipment
- Calibration of field equipment
- Collection of samples in laboratory-supplied containers, preservation of samples with chemicals supplied by the laboratory (if required), and storage of samples under refrigerated conditions until delivery to the analytical laboratory
- Field blank samples to assess the potential for contamination of samples
- Field replicate samples to assess the reproducibility of the sampling
- Checks and reviews during data tabulation, analysis and reporting

The OC 17006 has a requirement for CSRD to produce, on request, "Field and Laboratory Quality Protocols and Quality Assurance Criteria" acceptable to the Director. Specific requirements of these protocols and criteria are described in OC 17006, and include: procedures to assess precision, accuracy and blank quality; procedures for sampling and handling; corrective measures; and acceptance criteria for accuracy, precision, and method blanks.

3.4 Data and Interpretation

3.4.1 Data Management and Analysis

Documentation and samples collected for the environmental monitoring program should use consistent naming conventions. It is recommended that the environmental monitoring data be saved in a secure database-type system where results can be easily queried for reporting purposes. If required, analytical laboratory results for samples with EMS IDs should be uploaded to the Province of BC Environmental Monitoring System (EMS) database.

To meet the requirements of OC 17003, the data should be tabulated in accordance with the Guidelines for Environmental at Municipal Solid Waste Landfills (BC ENV 2019) and should be analyzed using appropriate statistical and graphical analyses to evaluate the potential impacts of the discharges on the receiving environment.

4.0 REGULATORY LIMITS, TRIGGERS AND REMEDIAL ACTIONS

4.1 Groundwater

The groundwater data from the monitoring wells should be compared with the CSR drinking water standards. Groundwater data from the off-Site drinking water wells should be compared to the same standards, along with the Canadian Drinking Water Guidelines established by Health Canada. Potential exceedances of these standards should be interpreted in the context of background groundwater quality conditions.

Should exceedances of the standards and/or guidelines occur at concentrations considered above the background groundwater quality, analysis of the results by a qualified professional should be undertaken to determine whether the exceedances are attributable to the Landfill (as opposed to alternative sources, such as road salt). This assessment should consist of refining the conceptual model for the Site (through additional geochemical sampling and analysis (for example, isotopic analysis and review of major ion ratios) of existing monitoring wells, and if possible, leachate characterization.

If, based on this analysis, groundwater exceedances are inferred to be attributable to the Landfill, the recommended action, which is consistent with the 2018 Hydrogeological Assessment Report (WWAL, 2019a), is to collect two years of additional water-level and aquifer geochemical data to support the interpretation. Based on discussions with the CSRD, it is recommended that this data be reviewed and the Environmental Monitoring Plan be updated to reflect the findings by the end of the 2021 monitoring year. If, based on that review, the additional data suggests a Landfill source, a field investigation (including installation of one or more additional monitoring wells) should be implemented to further investigate the extent of the Landfill influence, the inferred groundwater flow pathways, and the potential impact on downgradient receptors. This may include the installation of an off-site downgradient bedrock monitoring well near Pine Drive and Golden Donald Upper Road as recommended by WWAL (2019a), and/or an on-site overburden monitoring well near the southwest corner of the Landfill. The

Investigation should include an updated survey of nearby drinking water wells in accordance with WWAL (2019a). Should the field investigation identify a potential threat to downgradient receptors as a result of the Landfill, mitigative measures should be identified and implemented. Potential mitigative measures may include a Human Health and Environmental Risk Assessment to assess potential impacts, and/or the implementation of Landfill engineering controls.

4.2 Landfill Gas

Should elevated LFG concentrations be observed in enclosed spaces at the Landfill, the contingency response plans presented in the DOCP (Golder 2019) should be implemented immediately. If LFG concentrations exceed the regulatory criteria in the gas probes at the property boundary, then a qualified professional should be retained to assess the nature of the exceedance and recommend appropriate actions. Such follow-up actions could include verification monitoring, passive gas controls or active gas controls.

4.3 Reporting

The environmental monitoring program data should be compiled and reviewed annually by a qualified professional for submission of an annual report that meets the requirements of OC 17006. The current reporting requirements are to submit an Annual Report to the Director on or before 30 April each year for the previous calendar year and to submit a Five-Year Report to the Director on or before 30 April on the five-year anniversary of the last submission. Both these reports must include an outline of the current Environmental Monitoring Program and a compendium of all environmental monitoring data in accordance with requirements specified in the most recent version of Guidelines for Environmental Monitoring at Municipal Solid Waste Landfills and Landfill Criteria for Municipal Solid Waste. The reports must document any potential effect of the discharge on the quality of the receiving environment using appropriate statistical and graphical analysis. Trend analyses, as well as an evaluation of the potential impacts of discharges on the receiving environment must be included.

5.0 DOCUMENT TRACKING

The following table provides information on the revision status of this environmental monitoring plan.

Table 4: Document Revision Tracking Table

Version	Date Issued	Author	Reference No.	CSRD Approver	Distribution
1.0	December 20, 2019	Golder	19120797-002-R-Rev0	Ben Van Nostrend, P.Ag.	Golder CSRD

6.0 CLOSURE

This Environmental Monitoring Plan was prepared by Golder Associates Ltd. with inputs from the Columbia Shuswap Regional District. Any required updates to this Plan should be identified in each year's annual Landfill report submitted to ENV as a requirement of OC 17006.

Golder Associates Ltd.



Patti Amison, MSc, EP, PGeo
Senior Hydrogeologist



Dec 20, 2019

Michael Budzik, MEng, PEng
Senior Solid Waste Engineer



Jillian Sacré, MSc, PGeo
Principal, Senior Hydrogeologist



PVA/MB/JS/asd

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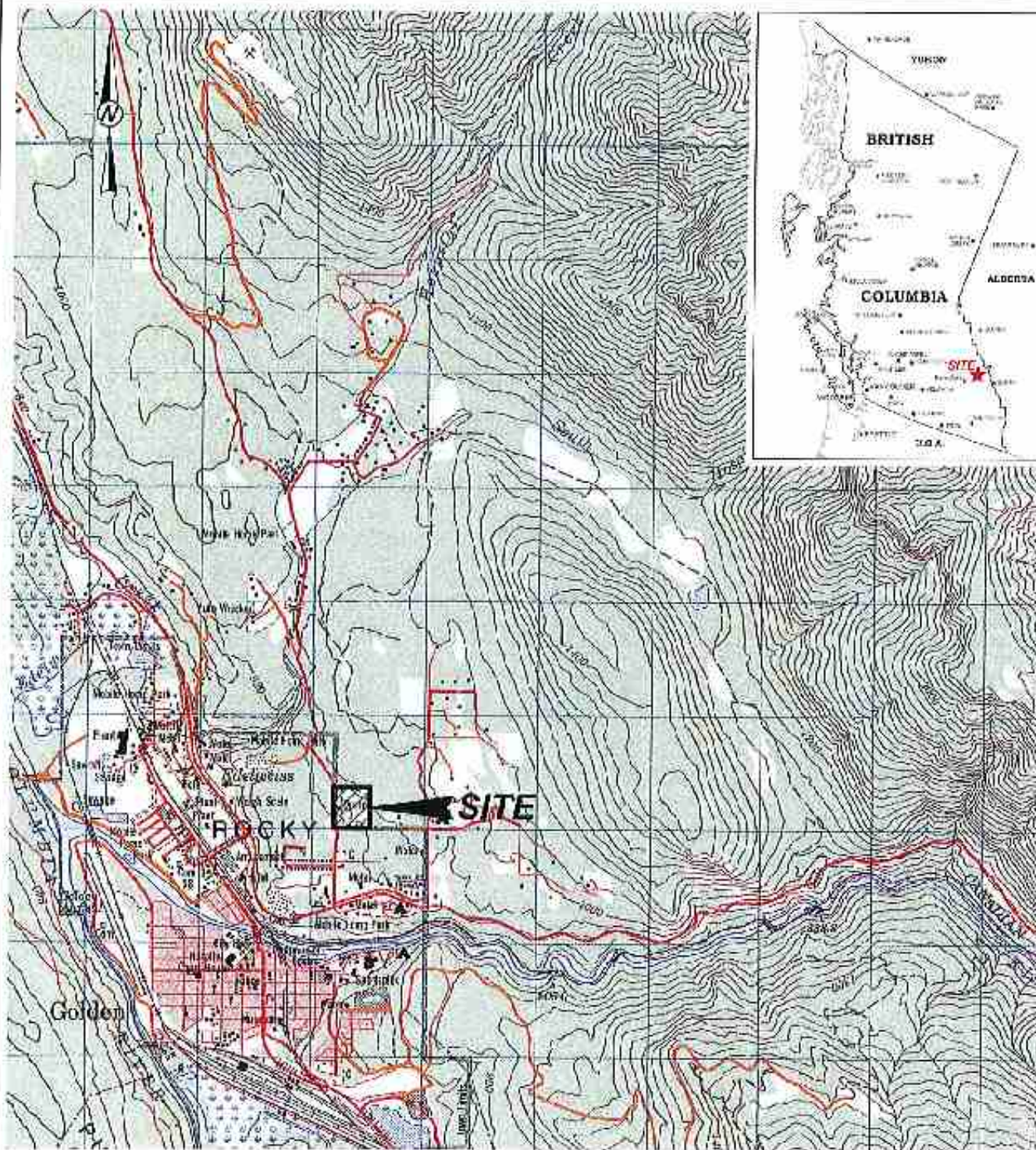
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REFERENCE

DATUM: NAD 83, UTM ZONE 11, 500,000 NTS, 82N07, EDITION 4, UTM ZONE 11.

CITY

COLUMBIA S-HUSWAP REGIONAL DISTRICT

GOVERNMENT

2019-2-16

DESIGNED: N/A

PREPARED: CR

REVIEWED: MS

APPROVED: CR



PROJECT

GOLDEN LANDFILL
ENVIRONMENTAL MONITORING PLAN
GOLDEN, B.C.

TITLE

KEY PLAN

PROJECT NO.
18123797

PPSL/TASK
1030/300

REV.
C

FIGURE
1





CONDUCT & MONITORING WELL BY OTHERS
MONITORING WELL BY OTHERS
RECOGNITION WELL BY OTHERS
MONITORING WELL AND LANDFILL GAS MONI-
TORGATION BY OTHERS

PRODUCTION WELL BY OTHERS
MONITORING WELL AND LANDFILL GAS MONITORING
LOCATION BY OTHERS

REFERENCE

CONCLUSION

MYT-147-DD	2015-12-18
CE3B125	M3
BB5P6F0	C8
MLV674D	M3
LM6045D	J8

CLIENT
COLUMBIA SHUSWAP REGIONAL DISTRICT

PROJECT
GOLDEN LANDFILL
ENVIRONMENTAL MONITORING PLAN
GOLDEN, B.C.

TITLE
MONITORING LOCATION PLAN

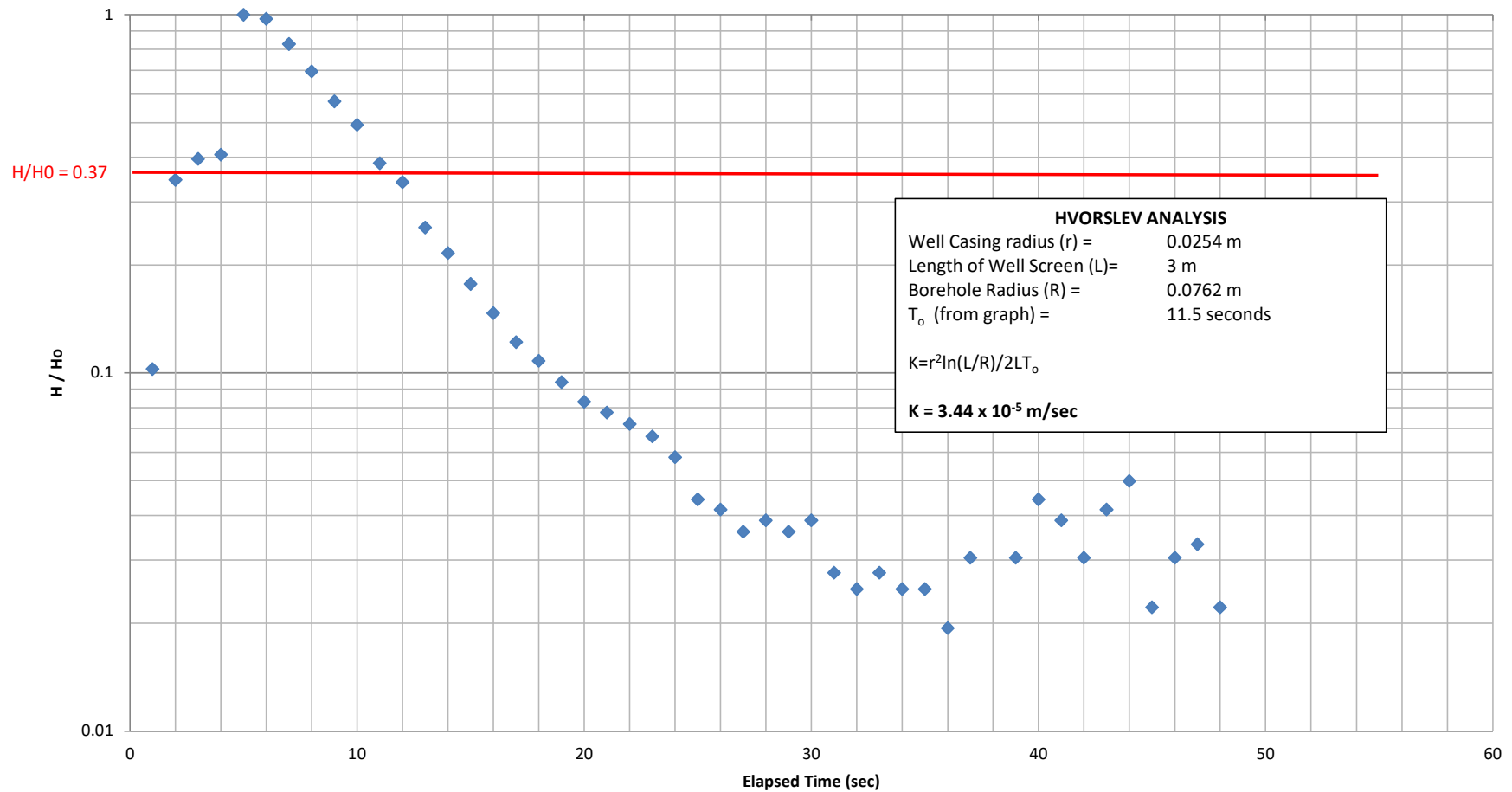
POLETT, INC.	PA882, 12-16	PLV.
19120797	1000,300	7



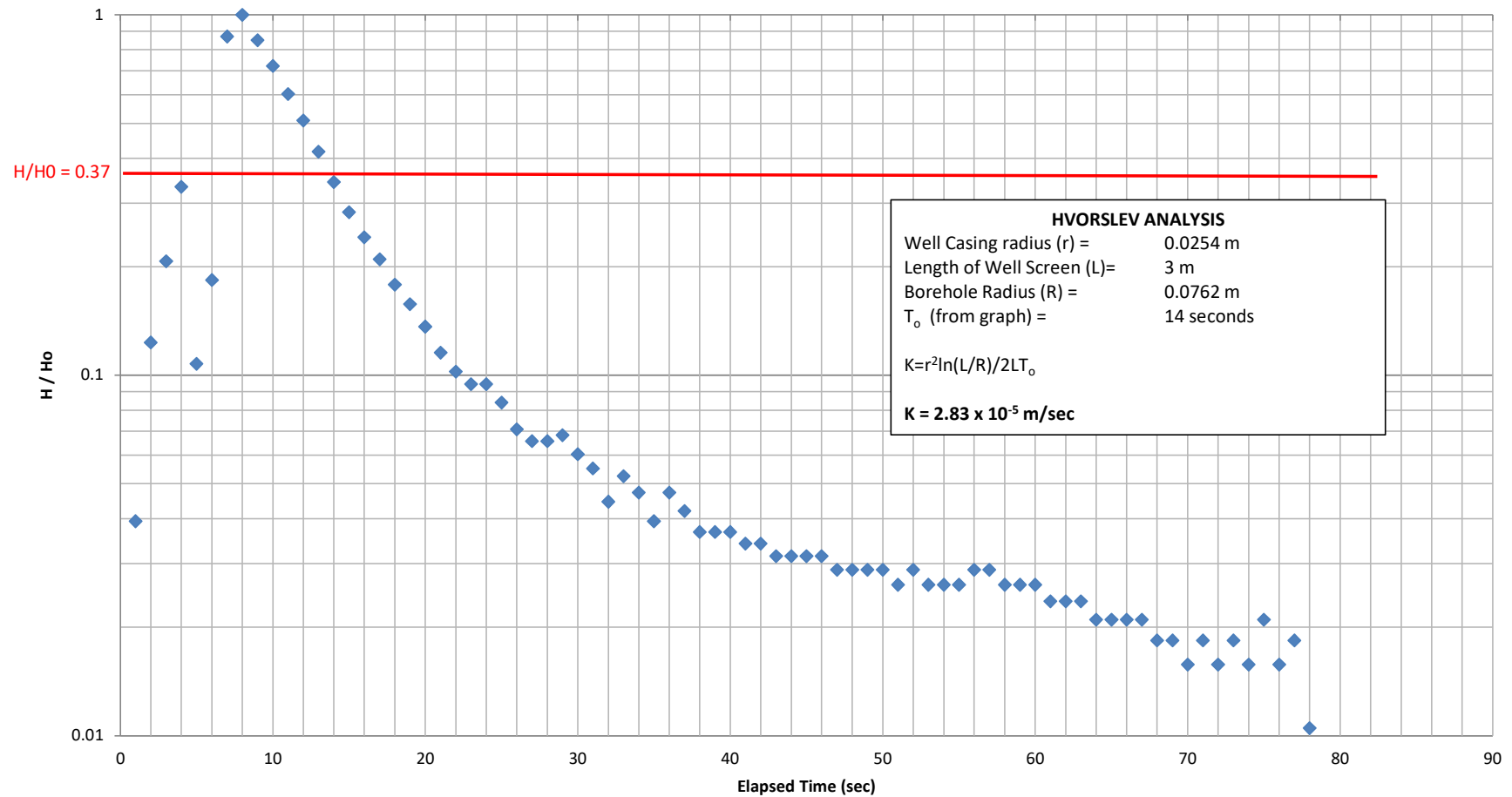
golder.com

APPENDIX H SINGLE WELL RESPONSE TESTING

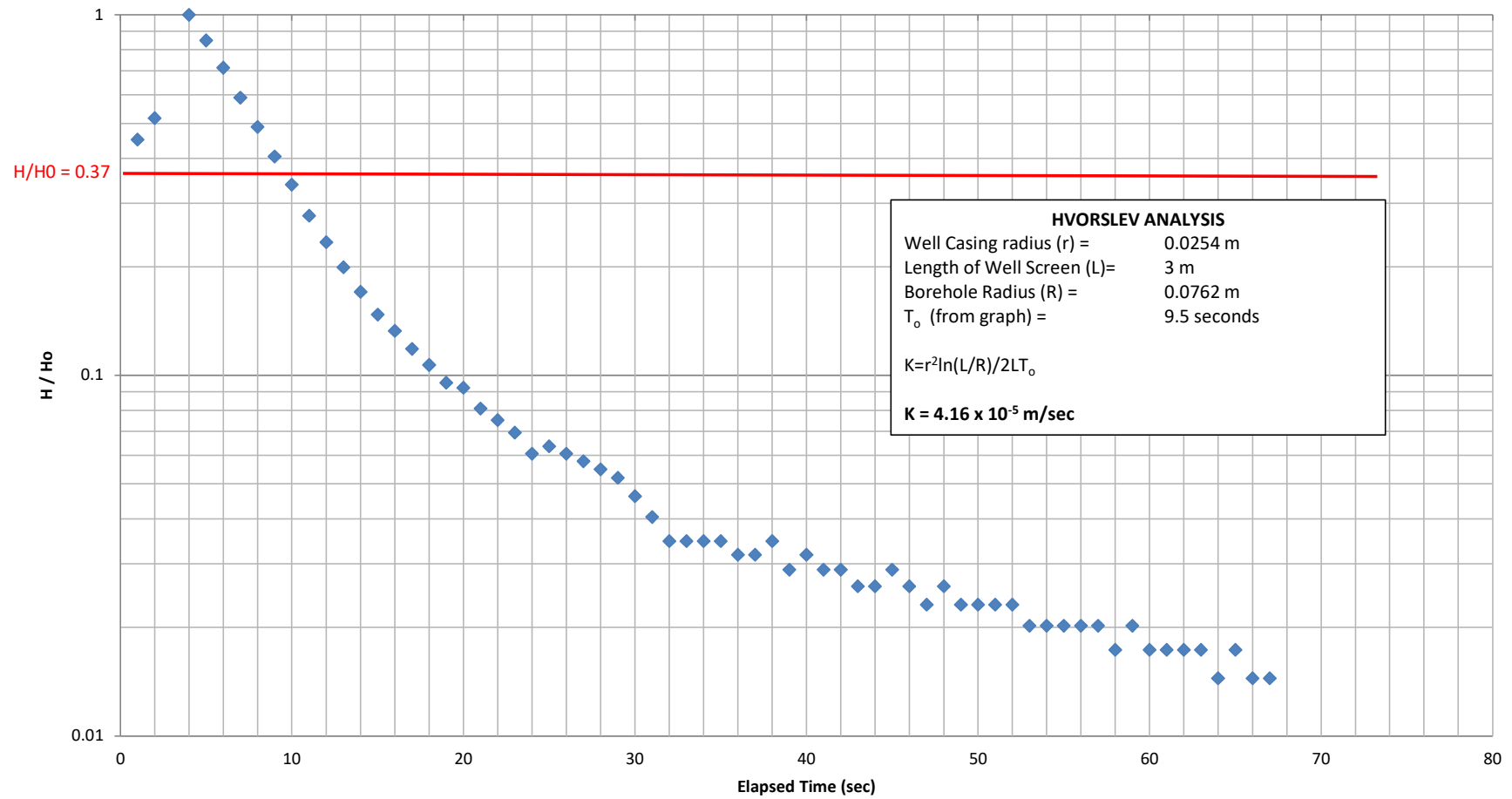
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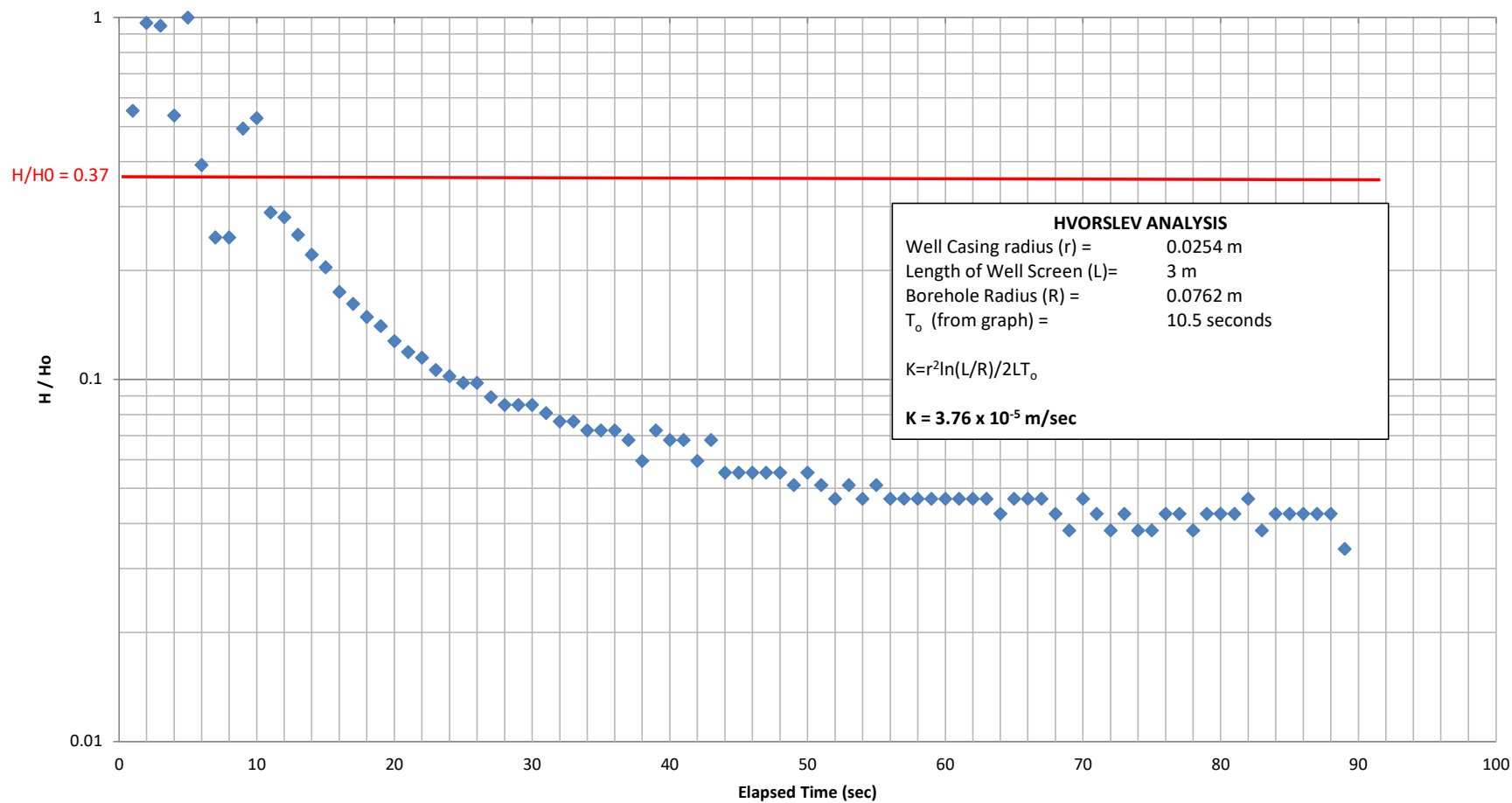
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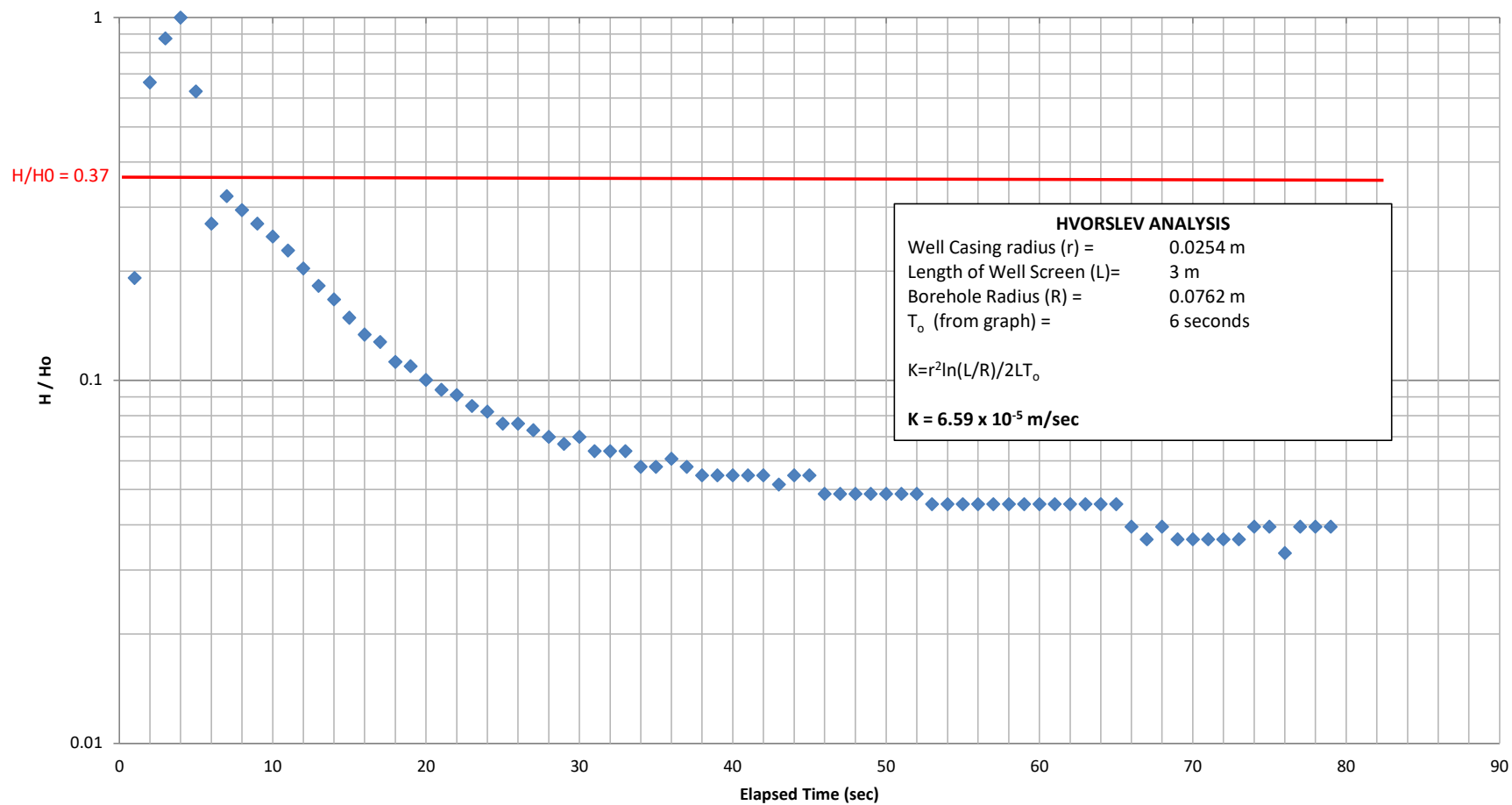
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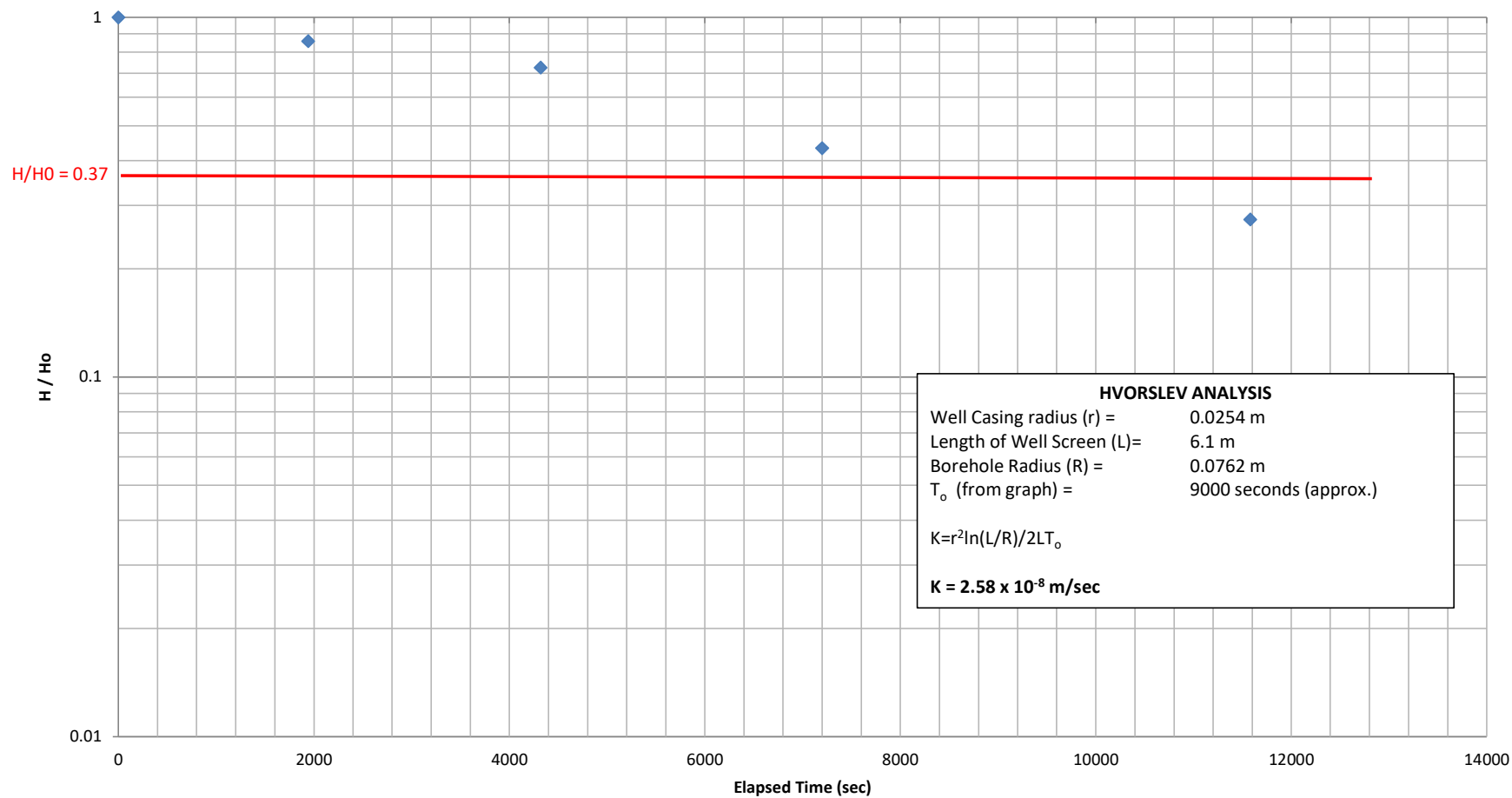
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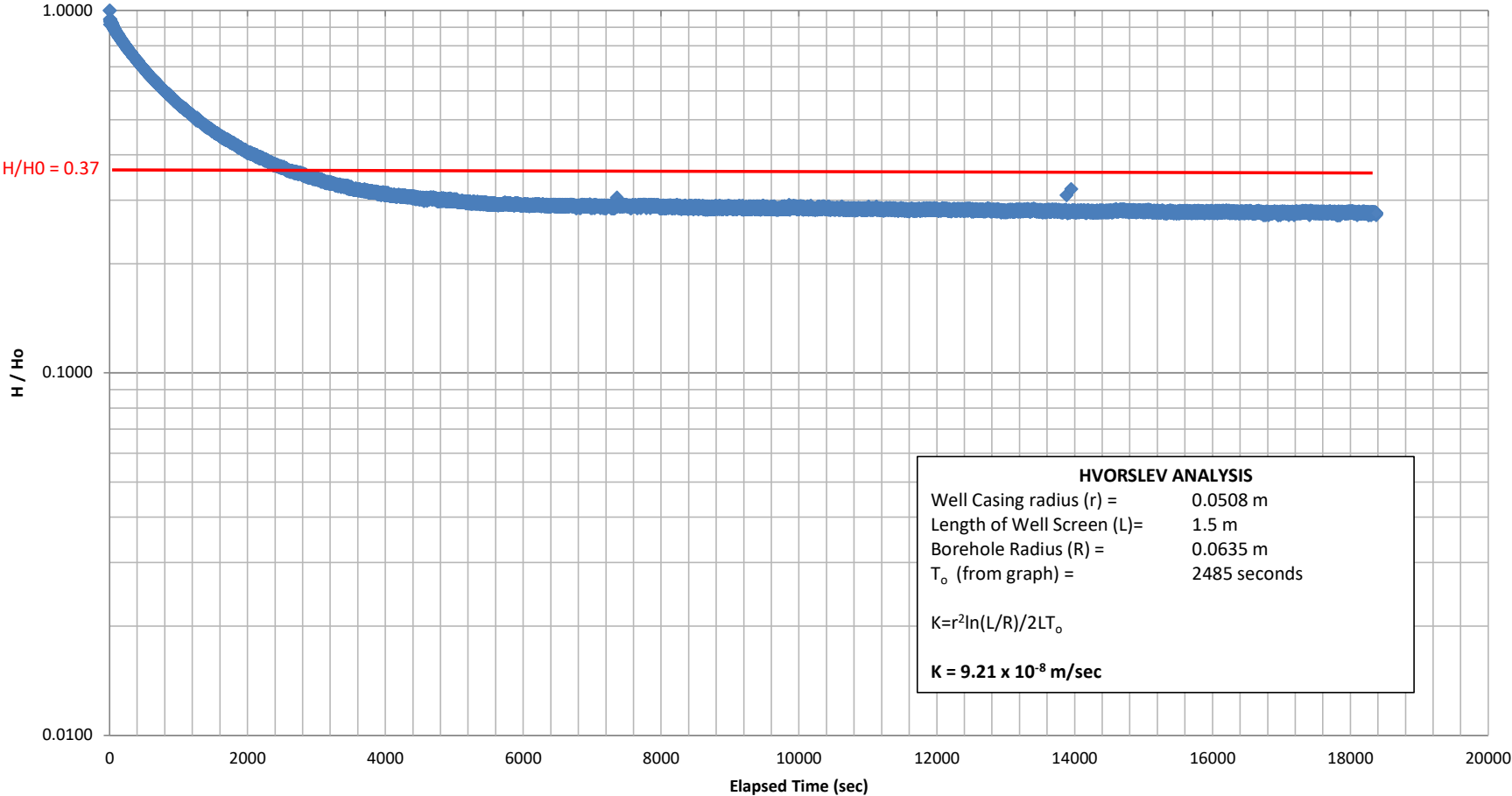
MW09-06S (Falling Head Test #2)



MW09-06D (Falling Head Test)



MW10-08 (Falling Head Test)



HVORSLEV ANALYSIS

Well Casing radius (r) = 0.0508 m
Length of Well Screen (L)= 1.5 m
Borehole Radius (R) = 0.0635 m
 T_0 (from graph) = 2485 seconds

$K=r^2\ln(L/R)/2LT_0$

$K = 9.21 \times 10^{-8}$ m/sec

MW18-11 (Falling Head Test)

