

# Chance Oil and Gas, Eagle Plains Project: Surface Water Quality and Hydrology Baseline



## Prepared For

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22Y0505  
May 2023



**Down to Earth Biology**



## EXECUTIVE SUMMARY

The Eagle Plains Project (the Project) is an oil and gas exploration program in north-central Yukon, approximately 605 km north of Whitehorse along the Dempster Highway. Chance Oil and Gas Ltd. intends to conduct exploratory activities over a 10-year period to confirm the quality, quantity, and areal extent of hydrocarbons. Project activities will include seismic exploration and exploratory wells supported by an expanded winter road network. The Project's Regional Study Area (RSA) is approximately 2,386 km<sup>2</sup> (238,566 ha) and is spatially bounded by the Peel River and Ogilvie River to the south and the northern reaches of Chance Creek to the north. The Project is within the Eagle Plains ecoregion, an intermontane basin underlain by sedimentary rock. The regional land cover comprises subarctic coniferous forest with mixed forest and arctic/alpine tundra while also lying within a continuous permafrost zone.

EDI Environmental Dynamics Inc. (EDI) was retained by Chance Oil and Gas in 2019 to provide a surface water quality and hydrology baseline report to inform background characteristics of surface water within the RSA. This report is intended to support the Chance Oil and Gas submission to the Yukon Environmental Socio-Economic Board for Executive Committee screening and guide any of their anticipated or intended water resource requirements.

This report was developed using historical data available from Environment and Climate Change Canada (ECCC), Yukon Government Water Resources Branch (YG WRB) and the Water Survey of Canada (WSC). In August 2019 and March 2020, EDI collected additional water quality data from the RSA and the broader adjacent area to support this baseline water quality assessment.

Water quality data are framed within the Canadian Council of Ministers of the Environment (CCME) guidelines for protecting freshwater 'aquatic life.' Key characteristics including general chemistry, major ions, nutrients, trace metals and hydrocarbons are analyzed to understand water quality as it exists within the RSA.

Water quality was similar across the RSA, with neutral to slightly acidic, brown stained water. Variable turbidity and total suspended sediment concentrations were likely associated with melting permafrost and resulting slumping banks that continuously deposit material into the water columns. The dominant ions reflect local geology and included bicarbonate, calcium, and sulphate. Nutrient concentrations were generally low to moderate, and total phosphorus concentrations indicated that streams were oligotrophic to mesotrophic. Metals including aluminum, cadmium, copper, iron, and manganese were present throughout the RSA at concentrations that exceeded the CCME guidelines for protecting freshwater aquatic life (CCME-FAL) guidelines.

Additionally, some other metals were present at concentrations above the CCME-FAL in isolated samples from each watershed area, including arsenic from Chance and Dalglish creek sites, and selenium from McParlon, Eagle and Dalglish creek sites. Volatile organic carbons were not present at or above laboratory detection limits at any of the sample locations. Common polycyclic aromatic hydrocarbons in the RSA included naphthalene, biphenyl, phenanthrene, and retene; these compounds are associated with naturally occurring oil and gas deposits and by-products of forest fires.



The hydrometric conditions in the RSA and surrounding region are snowmelt-dominated annual discharges, representative of a hydrologic regime of a northern climate. The highest flows occur in spring, driven by warming events and rainfall, which release water stored in the snowpack. The magnitude of the peak discharge during freshet is generally proportional to the contributing area of the snowpack. Over the summer, as snowmelt volume declines, stream discharge decreases, and flows are sustained by rainfall inputs, characterized by short-term peaks in discharge. Tributary watercourses, including first to third-order streams that originate within the RSA, are also snowmelt driven, but have flashier responses to precipitation events relative to watercourses with larger catchment areas. Stream discharges continue to decline into the fall as precipitation begins to be stored as snowpack and the active permafrost layer begins to refreeze. With no inputs to support baseflow during the winter, tributary channels tend to de-water or freeze to the bed over winter between October and November and do not resume discharge until the following freshet, typically beginning in April or early May. Thick continuous permafrost prevents interaction between aquifers and surface water, and limits groundwater interactions to perched seasonal suprapermafrost groundwater in the thin active layer. Watercourses with larger catchment areas (i.e., higher-order streams and rivers) do not reach zero flow winter conditions due to larger contributing areas and shorter periods where the active layer is frozen. In the larger watercourses, flows continue to decline through the winter, with the lowest discharge reported in February and March. In some third and fourth-order streams, water was found in residual pools in March. However, the water contained low dissolved oxygen. These conditions indicate zero or very low flow rates and are lower than minimum levels to support overwintering fish.



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*Suggested Citation:*

EDI Environmental Dynamics Inc. 2023. Chance Oil and Gas, Eagle Plains Project: Surface Water Quality and Hydrology Baseline. Prepared for Chance Oil and Gas, Calgary, Alberta.



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## ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
CaCO <sub>3</sub>	calcium carbonate
CCME	Canadian Council Ministers of the Environment
CCME-FAL	CCME guidelines for the protection of freshwater aquatic life
DO	dissolved oxygen
°C	degree Celsius
ECCC	Environment and Climate Change Canada
mg/L	milligrams per litre
mV	Millivolts
µS/cm	microSiemens per centimetre
NND	Na cho Nyäk Dun
NTU	Nephelometric Turbidity Units (turbidity)
ORP	oxidation reduction potential
PAHs	Polycyclic aromatic hydrocarbons
QA/QC	Quality Assurance/Quality Control
RSA	Regional Study Area
SPC	Specific conductivity
TGC	Tetlit Gwich'in Council
TSS	total suspended sediment
TKN	total Kjeldahl nitrogen
VG	Vuntut Gwitchin
VH	volatile hydrocarbons
VOC	volatile organic carbons
VPH	volatile petroleum hydrocarbons
WSC	Water Survey of Canada
YESAA	Yukon Environmental and Socio-Economic Assessment Act
YGS	Yukon Geological Survey
YG WRB	Yukon Government Water Resources Branch



## 1 INTRODUCTION

The Eagle Plains Project (the Project) is a proposed oil and gas exploration operation spanning approximately 2,500 km<sup>2</sup> in the Eagle Plains region in northern Yukon. The Project will consist of seismic exploration and up to 30 test wells; both supported via a winter road network. All exploration activities will occur in winter; however, year-round monitoring may be conducted at a subset of the well sites depending on exploration results.

The Regional Study Area (RSA) overlaps three Yukon First Nations Traditional Territories; these are the Na-cho Nyäk Dun (NND), Vuntut Gwitchin (VG), and the Tetlit Gwich'in Council (Secondary Use Area; TGC). The proposed Project is also within the boundaries of the North Yukon and Peel Planning Regions and is subject to Land Use Plans developed for both regions.

The Eagle Plains Ecoregion is in the Taiga Cordillera Ecozone, characterized by subarctic coniferous forest (90 %) and mixed forest and Arctic/alpine tundra (5% each; Yukon Ecoregions Working Group 2004). Black spruce woodlands dominate this Ecoregion, with black spruce-tussock tundra at lower elevations and shrub-tundra above 800 m (Yukon Ecoregions Working Group 2004). The area is characterized by long winters, generally extending from October to May, with a mean annual temperature of  $-7.5^{\circ}\text{C}$  (average  $-28^{\circ}\text{C}$  in January and  $13^{\circ}\text{C}$  in July). The Eagle Plains Ecoregion has extensive permafrost throughout the whole Ecoregion, approximately 89 m in depth, with the active layer in the top one metre (i.e., thaws in summer and refreezes in the winter). However, as was previously noted in the water quality baseline developed for this area in 2018, permafrost monitoring along the Dempster Highway since 2013 indicated that permafrost degradation is actively occurring in the Eagle Plains area (Idrees et al. 2015, Golder Associates Ltd. 2018).

Watercourses in active permafrost regions range from permanent to intermittent flow, which are seasonally timed. The annual discharge in streams in watersheds like those in the RSA are snowmelt driven, with peak flows during the spring and low flows during the winter. The lower order streams are more likely to be seasonally intermittent as inputs from precipitation decrease and permafrost re-freezes. Ice build-up in watercourses alters flow behaviour in all these watercourses from the beginning of freeze-up until spring thaw is complete. In the case of the smaller streams, the channel may fully freeze in early winter. There are four Water Survey of Canada (WSC) and two Yukon Geological Survey (YGS) hydrometric stations collecting discharge data on watercourses relevant to the RSA, collecting discharge data over variable periods of record from 2004, and all stations are currently operating. The Yukon Government Water Resources Branch (YG WRB) received funding via the Yukon Environmental and Socio-Economic Assessment Act (YESAA) to collect seasonal water quality samples in the Eagle Plains area in anticipation of further funding resource development in the area. They collected water quality data from 2012 through 2017; data relevant to this Project was collected from 2013 to 2016. These data were used to develop a water quality and sediment baseline for the Eagle Plains area in 2018 (Golder Associates Ltd. 2018) and their findings are reflected in this report.

The major drainages within and adjacent to the RSA include the Porcupine and Peel river watersheds, with the subdrainages of the Eagle and Whitestone rivers entering the Porcupine drainage and the Ogilvie River

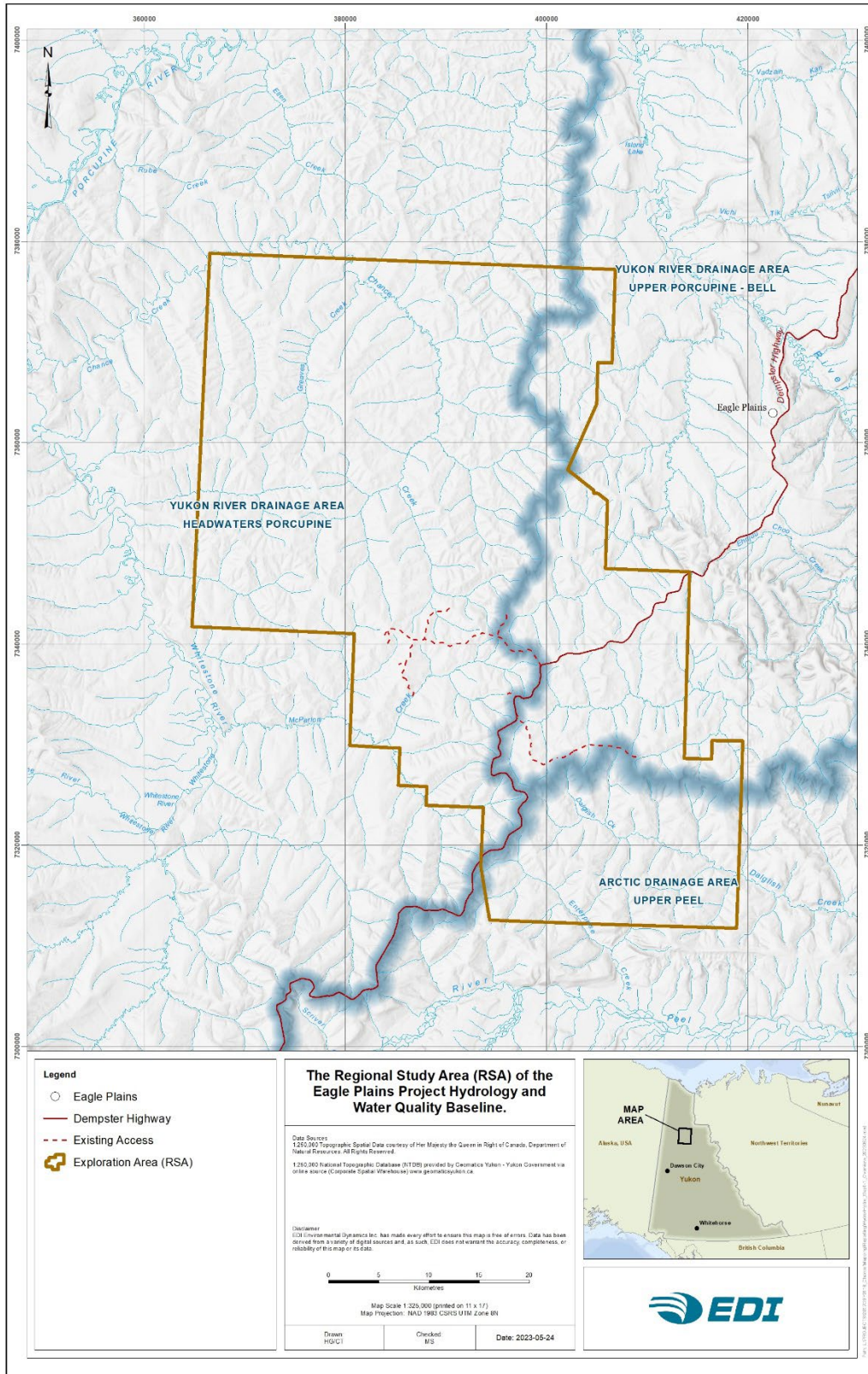


entering the Peel drainage (Map 1-1). The largest drainages within the RSA include Chance (Porcupine), McParlon (Porcupine), Dalglish (Peel), and Enterprise (Peel) creeks. The proposed Project would use winter roads that may include stream crossings. Thus, there was a need to understand the RSA's water quality and hydrology values, including seasonal and temporal trends. This report describes the baseline surface water resources conditions throughout the RSA.

## 1.1 PROGRAM OVERVIEW AND OBJECTIVES

This study aimed to document baseline information on surface water quality and hydrology within the RSA. This information could then be used to assess the Project's potential effects on water in the permit proposal to Yukon Environmental Socio-Economic Board and support management measures to mitigate potential effects.

Historical surface water quality and hydrology data, collected by various government and industry organizations are available for the RSA. EDI Environmental Dynamics Inc. (EDI) also conducted a modest surface water quality data collection program during the summer 2019 and winter 2020 to supplement the available water quality data with broader geographic sampling across the RSA, focusing on lower-order tributary streams, which were poorly represented in the historical data. This combination of historical and recent data was used to define the baseline surface water quality and quantity in the RSA.



Map 1-1. The Regional Study Area (RSA) of the Eagle Plains Project Hydrology and Water Quality Baseline.



## 2 METHODS

### 2.1 WATER QUALITY

The RSA was divided into four catchments to describe baseline water quality: McParlon, Chance, Eagle River Tributaries to the north and south, and Dalglish. Within each micro watershed, multiple sampling locations were established, including data historical collected by YG WRB from 2013 to 2016 (Section 2.1.1) and new surveys by EDI in August 2019 and March 2020 (Section 2.1.2; both summarized in Table 2-1). Water quality data at these sites represent water quality within and downstream of the RSA.

**Table 2-1. Water quality monitoring sites, organized by catchment, moving from upstream to downstream.**

Site Code	Site Name	YG WRB Data Collection Range	YG WRB Sample Frequency	EDI Sampling
<b>McParlon</b>				
McPL-002	McParlon Creek, upstream reach	2013, 2014, 2015, 2016	Quarterly	August 2019
McPL-001	McParlon Creek, just upstream from Whitestone River	2013, 2014, 2015	Quarterly	August 2019 March 2020
<b>Chance</b>				
CHNC-003	Chance Creek, upstream of inputs from CHNC-t-002	2013, 2014, 2015, 2016	Periodically	August 2019 March 2020
CHNC-t-002	Tributary to Chance Creek	2013, 2014, 2015, 2016	Periodically	August 2019
CHNC-001	Chance Creek, just upstream from Whitestone River	2013, 2014, 2015	Quarterly	August 2019 March 2020
<b>Eaglet North and South</b>				
NCY-PT19	Unnamed tributary to Eagle River	2013, 2014, 2015, 2016	Quarterly	August 2019 March 2020
EAGL-t-002	Unnamed tributary to Eagle River	2013, 2014, 2015	-	-
EAGL-t-003	Tributary to Eagle River	2013, 2014, 2015	Quarterly	August 2019 March 2020
EAGL-t-004	Tributary to Eagle River	-	-	August 2019 March 2020
<b>Dalglish</b>				
DALG-003	Dalglish Creek, upstream reach	-	-	August 2019
DALG-002	Dalglish Creek, just upstream from Ogilvie River	2014, 2015	Quarterly	August 2019 March 2020



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## 2.1.1 HISTORICAL DATA COMPILATION

The Yukon Government Water Resources Branch collected water quality data in the area surrounding the RSA between 2013 and 2016; this sampling was funded by the Yukon Environmental and Socio-Economic Assessment Act implementation funding in anticipation of further resource development in the area (Table 2-1). The frequency of data collection was quarterly (seasonal) at most sites, but only periodically at upper Chance Creek (CHNC-003) and in the small tributary to Chance Creek (CHNC-t-002), generally owing to winter conditions. Winter samples were not regularly collected at all sites as many small streams were dry or frozen to the substrate through the winter season.

Water quality samples were collected and analyzed for inorganics, metals, nutrients, organics, and physical parameters. These historical data are publicly available from the Yukon Environment website ([www.env.gov.yk.ca/air-water-waste/hydrogeology.php](http://www.env.gov.yk.ca/air-water-waste/hydrogeology.php)). EDI accessed and downloaded this data to review for the development of this baseline (A-1). These data were reviewed and described in a baseline data report drafted for the Yukon Government (Golder Associates Ltd. 2018).

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## 2.1.2 PROJECT-SPECIFIC FIELD SAMPLING

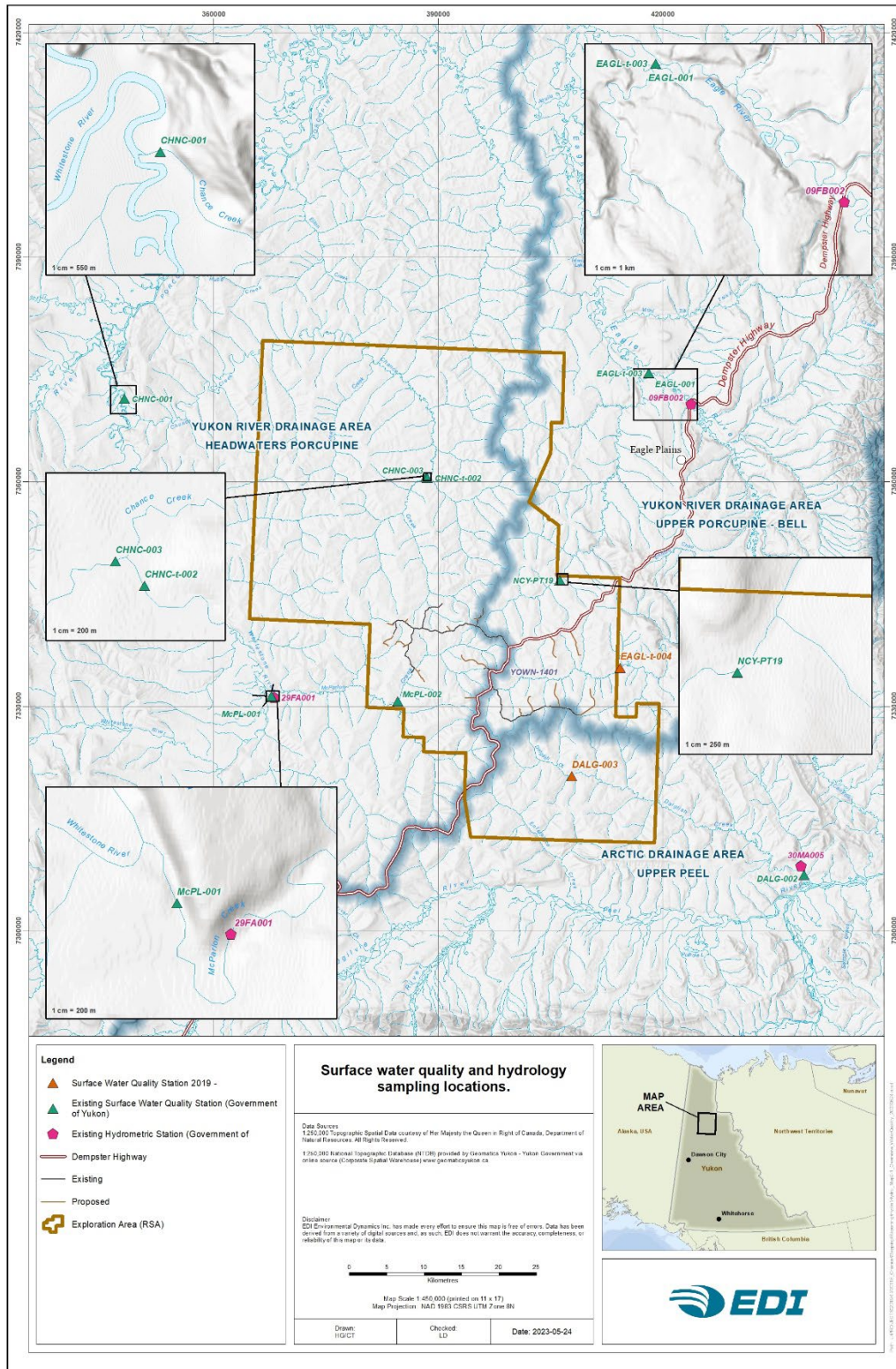
After reviewing the existing data, additional water quality data were collected from ten sites; five sites within the RSA and the other five sites downstream of streams and rivers contained within the RSA (Table 2-1, Table 2-2, Map 2-1). Eight of these sites fall within or downstream of the RSA and were previously sampled by YG WRB; these were resampled to such that more recent data could be added to evaluate any recent changes to water quality in the RSA. Two sites were added to expand coverage of the RSA and downstream areas; these included EAGL-t-003, a tributary to the Eagle River that drains the RSA to the northeast, and DALG-003, located on the upstream reaches of Dalglish Creek, within the Project footprint (Table 2-1, Table 2-2, Map 2-1). All water quality samples were analyzed for inorganics, metals, nutrients, organics, and physical parameters.





**Table 2-2. Record of EDI sampling conducted for the Project in August 2019 and March 2020.**

Site Code	August 2019	March 2020
<b>McParlon</b>		
McPL-002	August 1, 2019	No sample. Stream frozen to substrate
McPL-001	August 1, 2019	March 8, 2020
<b>Chance</b>		
CHNC-003	August 1, 2019	March 10, 2020
CHNC-t-002	August 1, 2019	No sample. Stream frozen to substrate
CHNC-001	August 1, 2019	March 9, 2020
<b>Eaglet North and South</b>		
EAGL-t-004	August 1, 2019	March 12, 2020
NCY-PT19	August 1, 2019	March 8, 2020
EAGL-t-003	August 1, 2019	March 9, 2020
<b>DalGLISH</b>		
DALG-003	August 1, 2019	No sample. Stream frozen to substrate
DALG-002	August 1, 2019	March 12, 2020



Map 2-1. Surface water quality and hydrology sampling locations.



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### 2.1.3 FIELD SAMPLING METHODS

Field staff used a YSI ProPlus multi-meter to measure in-situ water temperature (degrees Celsius [°C]), pH (pH units), specific conductivity (SPC; microSiemens per centimetre [ $\mu\text{S}/\text{cm}$ ]), oxidation-reduction potential (ORP; millivolts [mV]) and dissolved oxygen (DO; milligrams per litre [mg/L]). The YSI meter was calibrated on the first day of each trip, performed a 'bump test' to verify data at the end of each field sampling day and re-calibrated as required in the field. Staff used an Oakton T100 turbidity meter to collect in-situ turbidity (nephelometric turbidity units [NTU]) calibrated monthly in the office, according to instrument specifications and bump-tested pre- and post-trip.

Field staff recorded data on standard field data forms (either on an iPad tablet or hard copy datasheets). This information included station name, sample date and time, location (GPS coordinates), water temperature, SPC, pH, DO, ORP, turbidity, and photo numbers. Site conditions were also recorded, including flow stage (low, moderate, high), turbidity (clear, light, moderate, high), and any other qualitative observations.

In addition to in-situ data, water samples were collected from each monitoring site. Staff filled laboratory-cleaned bottles using clean techniques (i.e., nitrile gloves, appropriate bottle handling) and samples were filtered and preserved on site, as per instructions from the accredited lab. Samples were stored in coolers, with lab-supplied ice packs, when necessary, to maintain sample temperatures at approximately 4°C. On the final day of each sampling event, staff delivered the samples with laboratory Chain of Custody forms to Air North in Whitehorse for delivery to an analytical laboratory. Efforts were made to meet all sample holding times despite the remote location of the Project site.

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### 2.1.4 LABORATORY ANALYSIS

Laboratory analysis consisted of routine physical chemistry, anions, nutrients, dissolved organic carbon, total and dissolved metals, extractable hydrocarbons, and volatile organic carbons.

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### 2.1.5 QUALITY ASSURANCE / QUALITY CONTROL

The water quality field program included collecting quality assurance/quality control (QA/QC) samples, including replicate samples, field blanks, and travel blanks. Replicate samples are sample duplicates collected at the same date, time, and location as the regular sample. Sampling methodology is the same for the collection of both regular and replicate samples. Field staff collected replicates from randomly selected sites during each trip. The total number of replicates represented approximately 10% of the total sites sampled. The replicate samples determine the accuracy and precision of the laboratory analysis; they also provide a measure of variability in water quality at a site for a given time.

Field blank samples comprised one complete bottle set filled on-site with deionized water during the sampling trip. Sampling methodology is the same as if sampling from a stream, with filtering and preserving as required. Field blanks assist in identifying any contamination introduced to the sample during the act of field sampling (i.e., sample filling/handling, exposure to questionable air quality) or via the supplies (filter, syringe, bottle, or preservative). The analytical lab supplied the travel blank, which EDI field crews carry to and from the site



during the fieldwork. Field staff do not open the travel blank at any time during the trip. Travel blanks assist in the identification of any sample contamination caused during transportation or storage.

## 2.1.6 DATA MANAGEMENT AND ANALYSIS

Once field crews returned from the field, they reviewed and entered all in-situ data and site condition notes recorded on the field data forms (either a table export file or hard copy datasheets) into a Microsoft Excel template and updated the project water quality database (data available in Attachment B).

Upon receipt, laboratory data were reviewed and appended to the project database. As part of the data review, we compare the results with the Canadian Council of Ministers of the Environment (CCME) guidelines to protect freshwater ‘aquatic life’ (CCME-FAL; CCME 2015; Table 2-3). Water quality characteristics such as hardness and nutrient concentrations will be evaluated against accepted scales (Table 2-4 and Table 2-5).

**Table 2-3. Canadian Council of the Ministers of the Environment Guidelines for the Protection of Freshwater Aquatic Life (CCME-FAL) guidelines (CCME 2015).**

Water Quality Parameter	CCME FAL Guideline	Comments
Aluminum	0.1 mg/L	Guideline is 0.1 at pH ≥ 6.5; if pH is lower than 6.5, guideline is set at 0.005 mg/L.
Ammonia	Variable	Guideline is temperature and pH dependent. Guidelines are for pH ranging from 6 to 10. For pH below 6, guideline is set as if pH was 6.
Arsenic	0.005 mg/L	-
Boron	1.5 mg/L	-
Cadmium	Variable	Guideline is hardness dependent; the guideline is 0.04 µg/L when water hardness is >0 to <17 mg/L. At hardness >280 mg/L, the guideline is 0.37 µg/L. At hardness ≥17 to ≤280 mg/L, the guideline in µg/L is calculated using the following equation: Hardness Adjusted Guideline = $10^{(0.83(\log[\text{hardness}]) - 2.46)}$
Chloride	120 mg/L	-
Chromium – trivalent	0.0089 mg/L	Interim guideline
Copper	Variable	Guideline is hardness dependent; the guideline is 2 µg/L for water hardness between 0 to <82 mg/L. At hardness >180 mg/L, the guideline is 4 µg/L. At hardness ≥82 to ≤180 mg/L, the guideline in µg/L is calculated using the following equation: Hardness Adjusted Guideline = $e^{0.8545 (\ln[\text{hardness}] - 1.465) * 0.2}$
Dissolved oxygen	9.5 mg/L	Lowest acceptable dissolved oxygen concentration for cold water biota in early life stages.
Fluoride	0.120 mg/L	Interim guideline
Iron	0.3 mg/L	-
Lead	Variable	Guideline is hardness dependent; the guideline is 0.003 mg/L for a hardness of 100 mg/L. When hardness is 0 to ≤60 mg/L, the guideline is 0.001 mg/L. At hardness >180 mg/L, the guideline is 0.007 mg/L. At hardness >60 to ≤180 mg/L, the guideline in µg/L is calculated using the following equation: Hardness Adjusted Guideline = $e^{1.273 (\ln[\text{hardness}] - 4.705)}$



Water Quality Parameter	CCME FAL Guideline	Comments
Manganese	Variable	Guideline is pH and hardness dependent. Resulting guideline can be determined using a look up table/Canadian Water Quality Guideline (CWQG) calculator available at: <a href="http://ceqg-rcqe.ccme.ca/download/en/361">http://ceqg-rcqe.ccme.ca/download/en/361</a>
Mercury	0.000026 mg/L	-
Molybdenum	0.073 mg/L	-
Nickel	Variable	Guideline is hardness dependent; the guideline is 0.1 mg/L for a hardness of 100 mg/L. When hardness is 0 to ≤60 mg/L, the guideline is 25 µg/L. At hardness >180 mg/L, the guideline is 150 µg/L. At hardness >60 to ≤180 mg/L, the guideline in µg/L is calculated using the following equation: Hardness Adjusted Guideline = $e^{[0.76 (1.0 \ln[\text{hardness}] + 1.06)]}$
Nitrate (as NO <sub>3</sub> -N)	13 mg/L	-
Nitrite (as NO <sub>2</sub> -N)	0.06 mg/L	-
pH	6.5 - 9.0	-
Selenium	0.001 mg/L	-
Silver	0.00025 mg/L	-
Thallium	0.0008 mg/L	-
Uranium	0.015 mg/L	-
Zinc (dissolved)	Variable	Guideline is hardness and dissolved organic carbon (DOC) dependent; the short-term benchmark is for dissolved zinc in mg/L and is calculated using the following equation: Hardness and DOC Adjusted Guideline = $\exp^{(0.833[\ln(\text{hardness mg/L})] + 0.240[\ln(\text{DOC mg/L})] + 0.526)}$ At hardness (as CaCO <sub>3</sub> ) of 50 mg/L and DOC of 0.5 mg/L, the guideline value is 0.037 mg/L. The benchmark equation is valid for hardness between 13.8 and 250.5 mg/L and DOC between 0.3 and 17.3 mg/L. When hardness or DOC values are outside these limits, the nearest applicable limit is used in the equation.

Table 2-4. Qualitative scale of water hardness adapted from McNeely et al. 1979.

Hardness Category	Hardness (mg/L as CaCO <sub>3</sub> )
Very soft	0 – 30
Soft	31 – 75
Moderately soft	76 – 120
Hard	121 – 180
Very Hard	>180



**Table 2-5. General relationship of surface water productivity to total phosphorus.**

Trophic Status	Total Phosphorus (mg/L)	
	Waterbodies <sup>1</sup>	Watercourses <sup>2</sup>
Ultra-oligotrophic (very nutrient-poor)	<0.004	N/A
Oligotrophic (nutrient-poor)	0.004 – 0.01	<0.025
Mesotrophic (containing a moderate concentration of nutrients)	0.01 – 0.02	0.025 – 0.075
Meso-eutrophic (containing moderate to high concentration of nutrients)	0.02 – 0.035	N/A
Eutrophic (nutrient rich)	0.035 – 0.1	>0.075
Hypereutrophic (very nutrient rich)	>0.1	N/A

<sup>1</sup> (CCME Canadian Council of Ministers of the Environment 2007)

<sup>2</sup> (Dodds et al. 1998)

## 2.1.7 RISKS AND LIMITATIONS

Due to the number of streams within the RSA ( $n = 1,467$ ), the length of time needed to access and sample sites, and the cost associated with laboratory analysis of samples, only a very small proportion of streams were sampled as part of this program (~2.5%). However, past data are available, including a recent baseline water quality program administered by the YG WRB. The YG WRB program was designed to characterize the baseline water quality of the area, including that encompassed by the Project. This report incorporated that data, combined with the additional sampling in 2019 and 2020, to provide adequate, current baseline water quality conditions. In some historical data collected by YG WRB it appears that for some metals, including iron and manganese, the dissolved fraction is higher than the total fraction; given that only some metals exhibit this pattern, it is unlikely that this is a sampling error. Instead, it is an indication that most of the total metals are present in the dissolved form. Differences in concentrations are a result of laboratory methods.

## 2.2 HYDROLOGY

Hydrological data in this report are based solely on historical information. EDI did not collect supplemental hydrological data as part of this study.

### 2.2.1 ENVIRONMENT AND CLIMATE CHANGE CANADA HYDRO-CLIMATE DATA

Environment and Climate Change Canada (ECCC) operates a meteorological station near the Eagle Plains hotel (Table 2-6). The historical climate data collected at that station are available from the ECCC website ([https://climate.weather.gc.ca/historical\\_data/search\\_historic\\_data\\_e.html](https://climate.weather.gc.ca/historical_data/search_historic_data_e.html)). Rainfall and snowpack data recorded by this station were used to analyze precipitation and snowmelt trends and support flow regime data.



**Table 2-6. Environment and Climate Change Canada meteorological records used for baseline analysis.**

Station Code	Site Name/ID	Record Date Range	Coordinates
2100468	Eagle Plains – 2100468	1998–2005, 2007–2008	66° 22' 10" N 136° 43' 03" W

## 2.2.2 WATER SURVEY OF CANADA REGIONAL DATA

Surface water in the RSA flows into four major watercourses in the region: Eagle, Peel, Ogilvie, and Porcupine Rivers. The Water Survey of Canada (WSC) operates and maintains continuous hydrometric monitoring stations on these watercourses and provides real-time and historic discharge records to the public. The WSC discharge data are developed using rating curves maintained by WSC using regular field discharge measurements, stage elevation surveys, and continuous water level logger data. These records are computed based on active rating curves and revised by WSC for final publication following a detailed review of water level and discharge field measurement records. These data are available on-demand from the WSC website ([https://wateroffice.ec.gc.ca/index\\_e.html](https://wateroffice.ec.gc.ca/index_e.html)). Table 2-7 outlines the discharge records used to establish regional baseline flow trends. The rationale for the records chosen was based on the destination of outgoing flow from the RSA, geographic proximity to the RSA and completeness of records.

**Table 2-7. Water Survey of Canada discharge records used for baseline analysis.**

Station Code	Site Name	Record Date Range	Coordinates
09FB002	Eagle River at Dempster Highway Bridge	2013–2020	66° 26' 36" N 136° 42' 33" W
10MA001	Peel River Above Canyon Creek	2006–2020	65° 53' 33" N 136° 02' 17" W
10MA002	Ogilvie River at Kilometre 197.9 Dempster Highway	2016–2020	65° 21' 45" N 138° 17' 50" W
09FD003	Porcupine River Below Old Crow River	2004–2020	67° 34' 05" N 139° 50' 03" W

## 2.2.3 YUKON GOVERNMENT WATER RESOURCES BRANCH DATA

Yukon Government Water Resource Branch operates two continuous hydrometric monitoring stations on McParlon and Dalglish Creeks (Map 2-1). These tributaries originate within the RSA and feed into the Porcupine and Peel Rivers, respectively. The flow data are available upon request from YG WRB ([water.resources@gov.yk.ca](mailto:water.resources@gov.yk.ca)) and the YG WRB data catalogue is available at the YG WRB website (<http://yukonwater.ca/monitoring-yukon-water/water-data-catalogue>). The YG-WRB discharge data are developed using rating curves maintained by YG WRB using regular field discharge measurements, stage elevation surveys and continuous water level logger data. Table 2-8 outlines the discharge records used to analyze site-specific flow trends. The McParlon and Dalglish Creek flow records were the only records available for watercourses originating within the RSA.



**Table 2-8. Yukon Government Water Resources Branch discharge records used for baseline analysis.**

Station Code	Site Name	Record Date Range	Coordinates
30MA004	Dalglish Creek - Lower	2013–2014	65° 52' 56" N 136° 20' 15" W
29FA001	McParlon Creek	2013–2017	66° 4' 24" N 137° 54' 57" W

## 2.2.4 QUALITY ASSURANCE / QUALITY CONTROL

EDI performed independent QA/QC on all data used for hydrology and meteorological baseline analysis. Data records averaged across the complete annual and partial year records were not included in the analysis. As such, annual averages are calculated across different year ranges based on the records available.

ECCC performs data review before incorporation into their database and retroactively updates historical data records. Data include quality flags defined by ECCC in each data file, and where data was flagged as “Missing,” data points are displayed as gaps in this report. No other data flags were present in the date ranges used for this report. The “Missing” flag is about data that were never collected due to power outages, equipment failure, or station maintenance. All meteorological data are subject to a disclaimer for meteorological information, which can be viewed at the ECCC website ([https://climate.weather.gc.ca/climate\\_data/data\\_quality\\_e.html](https://climate.weather.gc.ca/climate_data/data_quality_e.html)).

Historical data records for watercourses originating from within the RSA are incomplete, with varying degrees of data quality. The YG WRB grades and approves all hydrometric data and provides grade and approval descriptions upon request. Where data were graded as “Unusable,” “Water Level Below Sensor,” or “Ice,” data points were rejected and displayed as gaps in this report. Data graded at these levels were primarily found to occur between September and April. The remaining gaps present in the data were blank cells in raw data files provided by YG WRB and were rejected during the internal approval process. The YG WRB monitoring stations on McParlon Creek and Dalglish Creek are subject to overwinter de-watering, adversely impacting water level logger data and low flow rating curve development. The review of the data records, data gaps and flags, suggests that the McParlon and Dalglish Creeks reach zero-flow levels during mid to late October. Additionally, these creeks experience more rapid hydromorphic change, such as banks caving in or sediment transport due to their small size and drastic flow fluctuations. Thus, long-term data are incomplete where stations have been required to be relocated or discontinued.

The WSC data records for regional watercourses were complete and of moderate to high quality. No provisional data were included in this analysis. The WSC monitoring stations on the Eagle, Peel, Ogilvie, and Porcupine Rivers are in watercourses that exhibit some flow year-round and do not de-water or freeze to bed during winter months. For these reasons, WSC records cover a greater period with complete over-winter flow data. Gaps present in the data were blank cells in raw data files provided by WSC and were rejected during the WSC internal approval process. All flow data provided by WSC are subject to a disclaimer for hydrometric information, which can be viewed at the WSC website ([https://wateroffice.ec.gc.ca/disclaimer\\_info\\_e.html](https://wateroffice.ec.gc.ca/disclaimer_info_e.html)).





## 3 RESULTS

### 3.1 WATER QUALITY

#### 3.1.1 MCPARLON CREEK

McParlon Creek drains the RSA to the west, emptying into the Whitestone River (Map 2-1). Available water quality data are from two sites in the McParlon watershed:

1. McPL-002, which lies in the upstream reaches of McParlon Creek (Photo 3-1); and,
2. McPL-001, which is located just upstream of the Whitestone River (Photo 3-2).

Water quality data were collected from McPL-001 periodically starting in July 2013, in spring and fall 2014, 2015 and 2016, in winter, spring and fall in 2017, and later winter 2018. Data were collected from McPL-002 from 2013 through 2016. EDI collected samples from both sites in the summer of 2019. While a sample was collected from McPL-001 in March 2020, McPL-002 was frozen to the substrate. McParlon Creek is a wide, shallow, slow-moving stream that freezes to substrate in the winter months. The YG WRB attempts to sample in March during all sampling years found either no water (as EDI also found in 2020), or only standing water, as was found in 2016.



Photo 3-1 Overview of site McPL-002.



Photo 3-2 Upstream view from site McPL-001.

##### 3.1.1.1 General Chemistry and Major Ions

Water in McParlon Creek was circumneutral to slightly acidic. Conductivity ranged widely with the seasons from between 50 to 100  $\mu\text{S}/\text{cm}$  in early summer during freshet to a high of 1,200  $\mu\text{S}/\text{cm}$  recorded in later winter when the water is dominated by basal, groundwater-sourced flow. Water was generally characterized as ‘very to moderately soft’ during the open water season with available hardness data ranging from 25 to



63 mg/L (as CaCO<sub>3</sub>), and 'hard to very hard' during the under-ice months, with hardness as high as 270 mg/L (Table 2-4).

Water was brown stained in colour, and turbidity ranged from very low during the under-ice period, to close to 100 NTUs at other times of the year. Aside from low turbidity under ice, turbidity showed no seasonal pattern and may have been influenced by precipitation events and bank material periodically entering the water column as melting permafrost resulting in slumping banks. The suspended sediment load was generally low, ranging from <1 mg/L (below detection) to 23 mg/L; however, like turbidity, there were some spikes to approximately 100 mg/L in samples collected at various open water times of the which were likely associated with precipitation events year, and melting permafrost. Major ions were predominantly comprised of bicarbonate, calcium and sulphate (Figure 3-1) and showed no variation with seasons and little difference among the two sites.

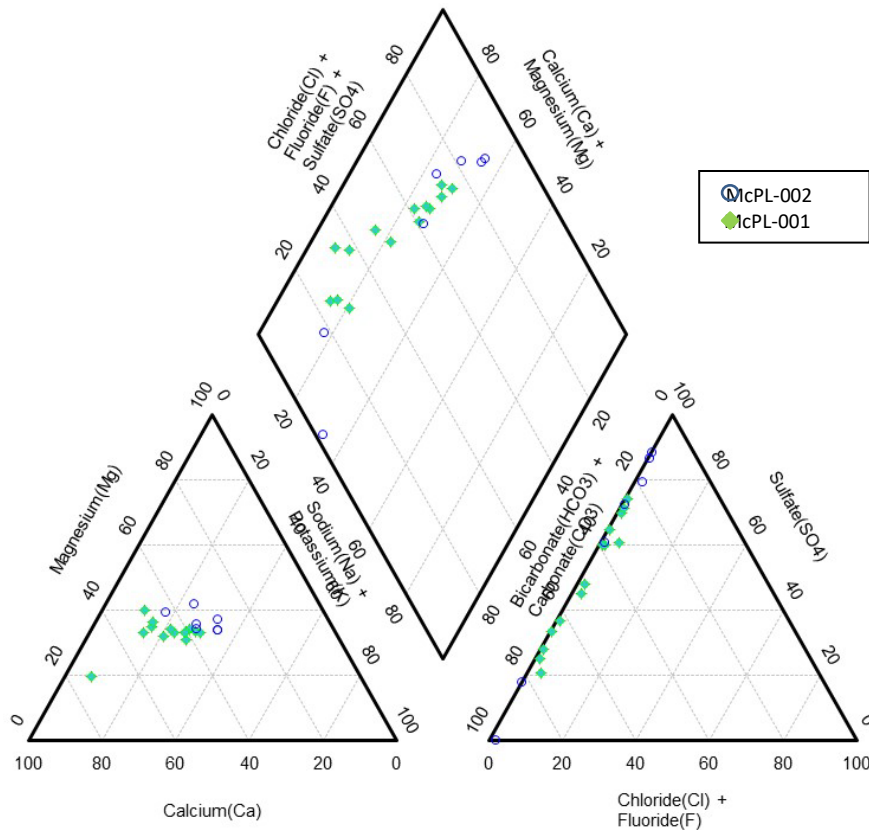


Figure 3-1. Piper plot showing major ion composition of waters in the McParlon watershed in % meq/kg.



### 3.1.1.2 Nutrients

Nutrient concentrations in McParlon Creek at both sampling sites were low. Concentrations of nitrate, nitrite, nitrate+nitrite, and total ammonia were below applicable guidelines for surface water. Total Kjeldahl Nitrogen (TKN), which is the total concentration of organic nitrogen and ammonia, ranged from 0.85 to 1.19 mg/L. Total phosphorus concentrations ranged from <0.050 (March 2020 at McPL-001) through 0.086 (July 2013 at McPL-001) mg/L, indicating oligotrophic to mesotrophic trophic status (Table 2-5).

### 3.1.1.3 Trace Metals

Aluminum, cadmium, copper, iron, manganese, and selenium in the McParlon Creek watershed occurred at concentrations that regularly exceeded the CCME-FAL concentrations (Table 2-3). Total aluminum exceeded the CCME-FAL guideline in nearly all samples from both sites; however, the dissolved fraction of aluminum in nearly all samples was below the CCME-FAL guideline (Figure 3-2 and Figure 3-3). Therefore, most of the aluminum in the water column was bound to suspended sediment. Total and dissolved cadmium, copper, iron, and manganese regularly exceeded their respective CCME-FAL guidelines (Figure 3-4 through Figure 3-11). Total selenium exceeded the CCME-FAL in three samples associated with under-ice sampling; dissolved fractions were below the guideline (Figure 3-12 and Figure 3-13).

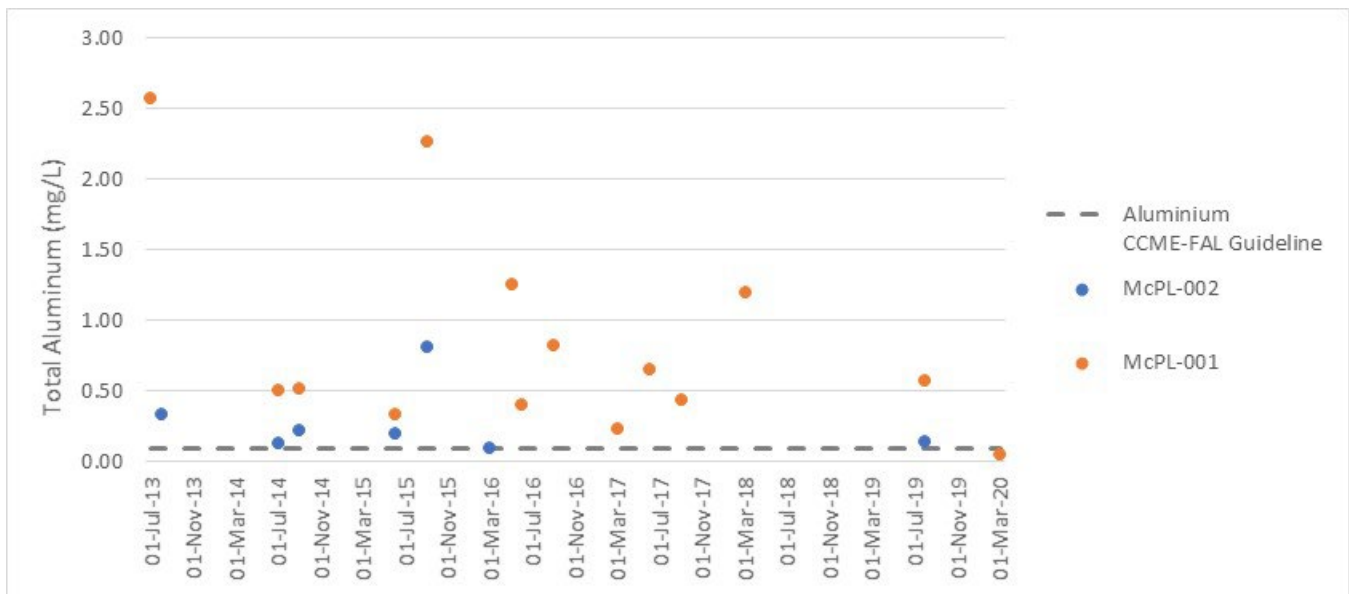


Figure 3-2. Total aluminum concentrations in McParlon Creek sites between July 2013 and March 2020.

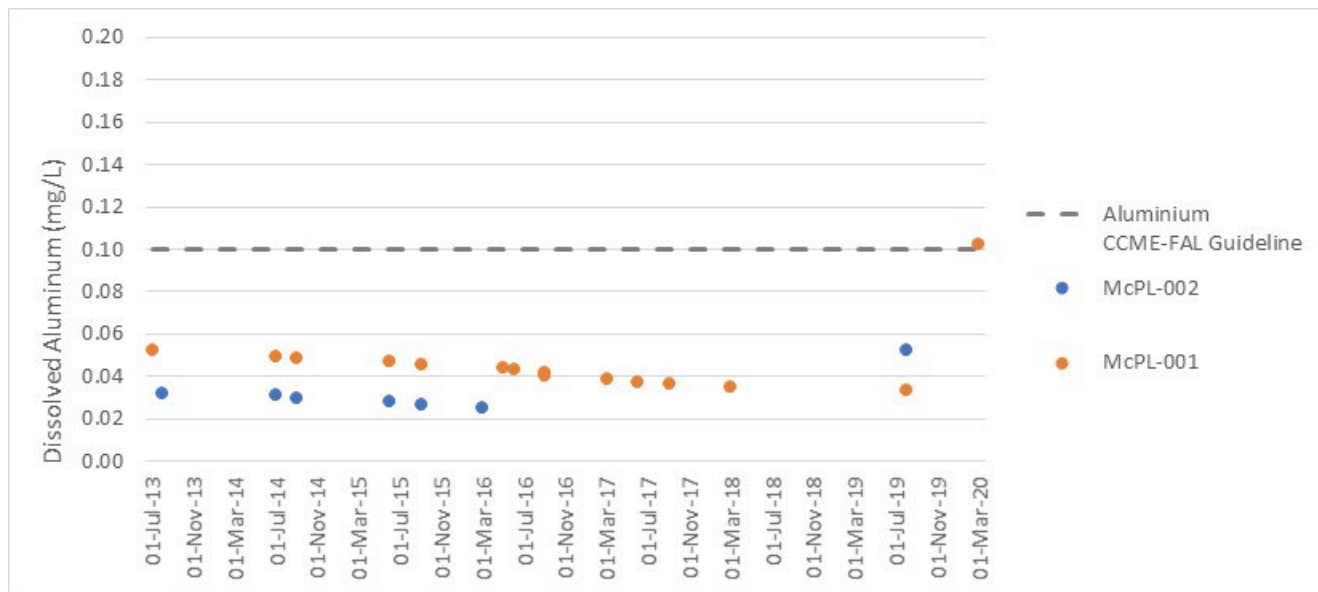


Figure 3-3. Dissolved aluminum concentrations in McParlon Creek sites between July 2013 and March 2020.

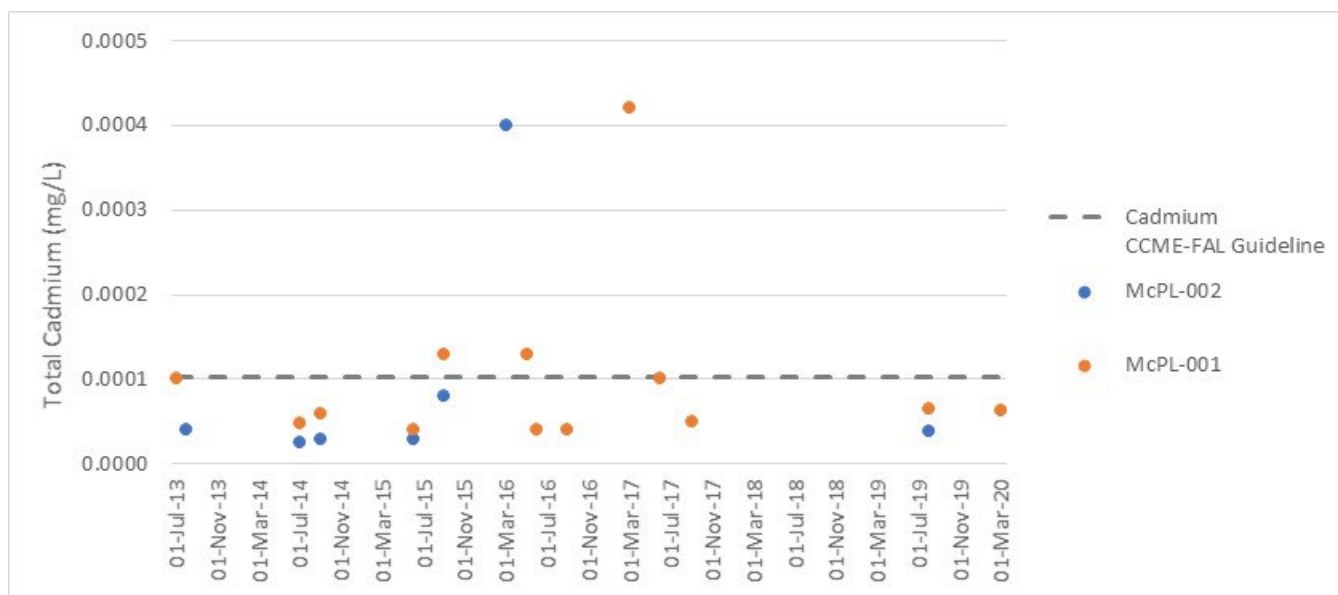


Figure 3-4. Total cadmium concentrations in McParlon Creek sites between July 2013 and March 2020.

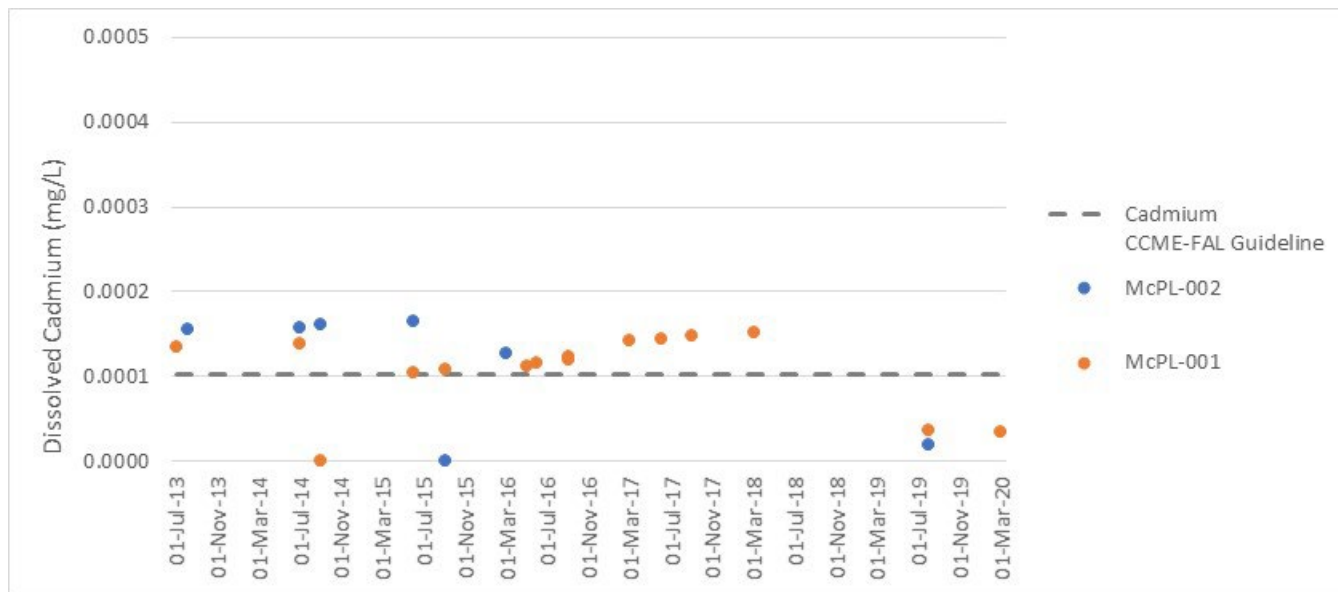


Figure 3-5. Dissolved cadmium concentrations in McParlon Creek sites between July 2013 and March 2020.

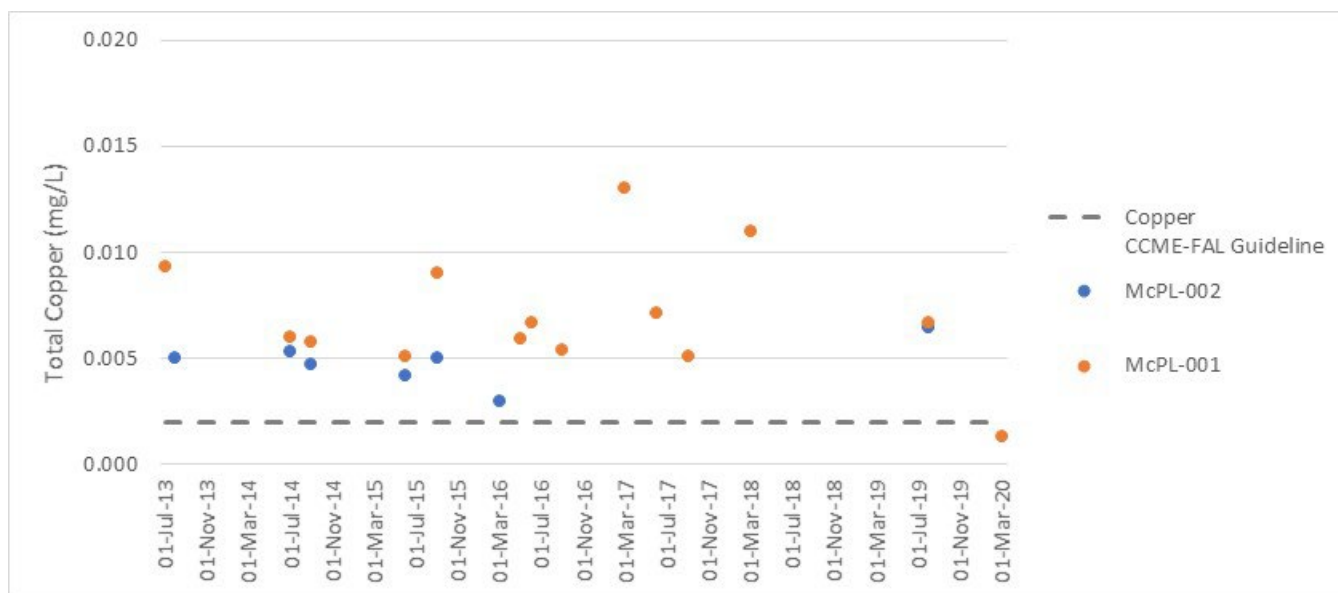


Figure 3-6. Total copper concentrations in McParlon Creek sites between July 2013 and March 2020.

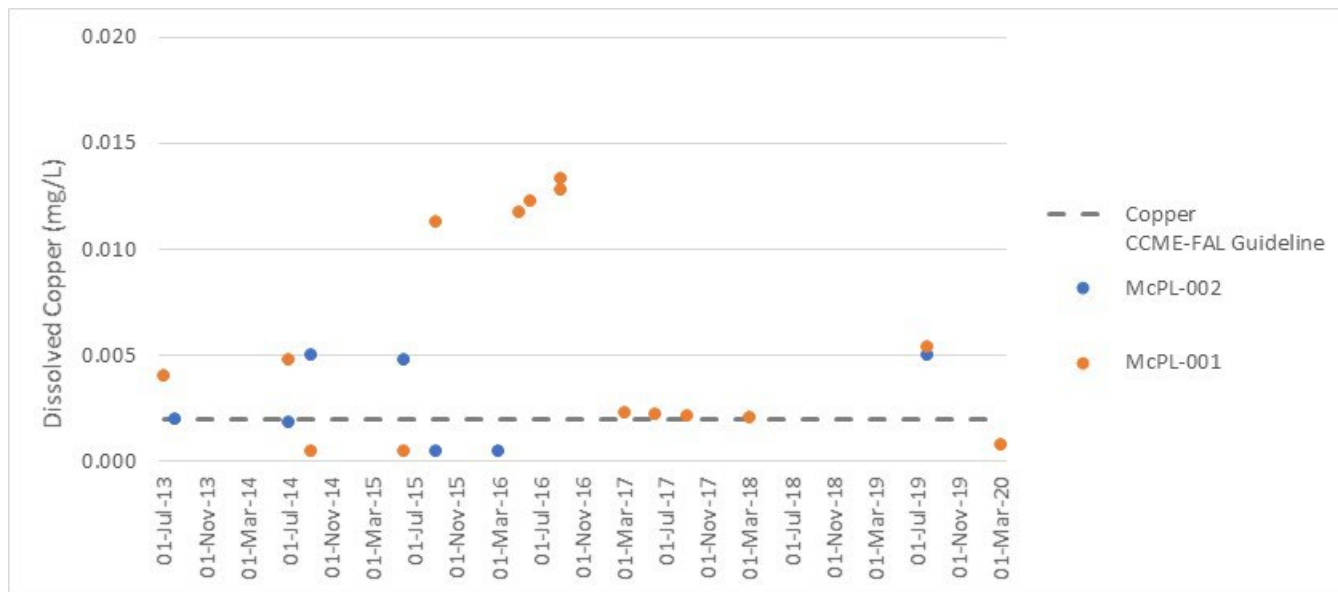


Figure 3-7. Dissolved copper concentrations in McParlon Creek sites between July 2013 and March 2020.

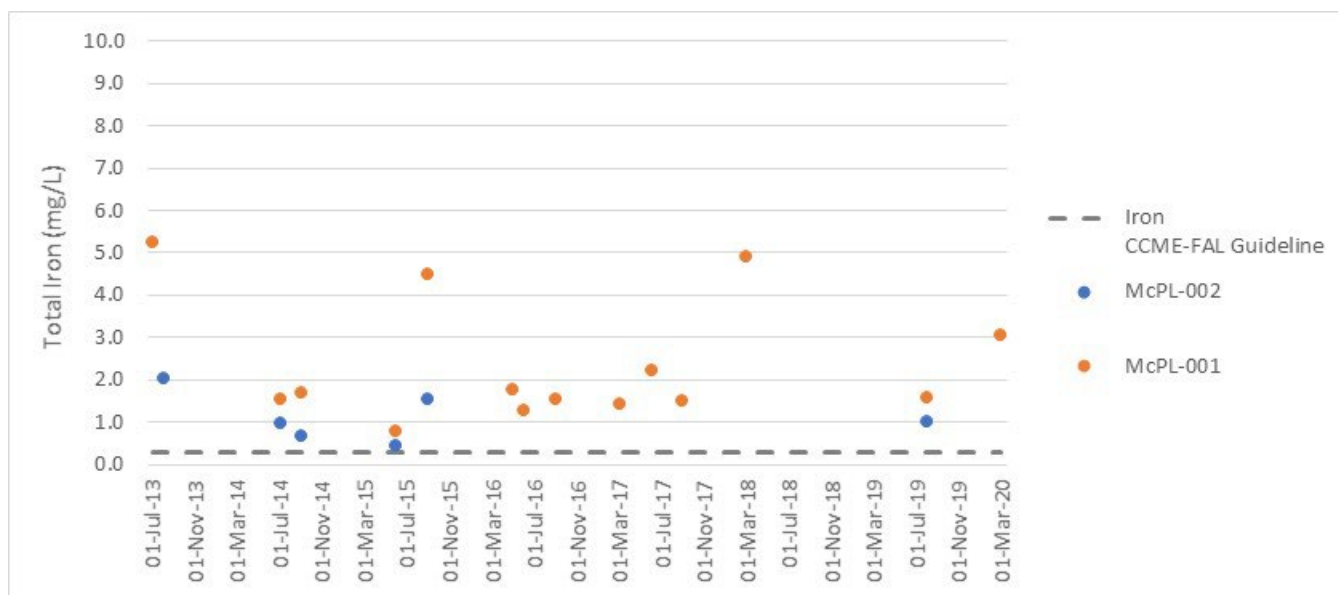


Figure 3-8. Total iron concentrations in McParlon Creek sites between July 2013 and March 2020.

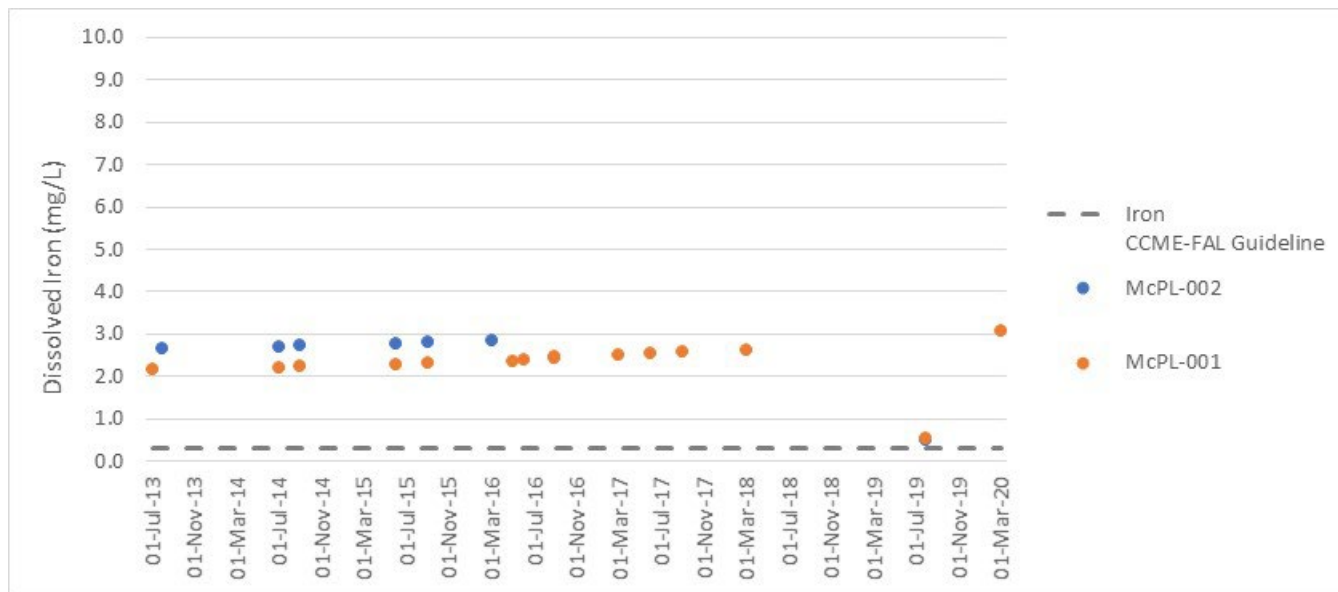


Figure 3-9. Dissolved iron concentrations in McParlon Creek sites between July 2013 and March 2020.

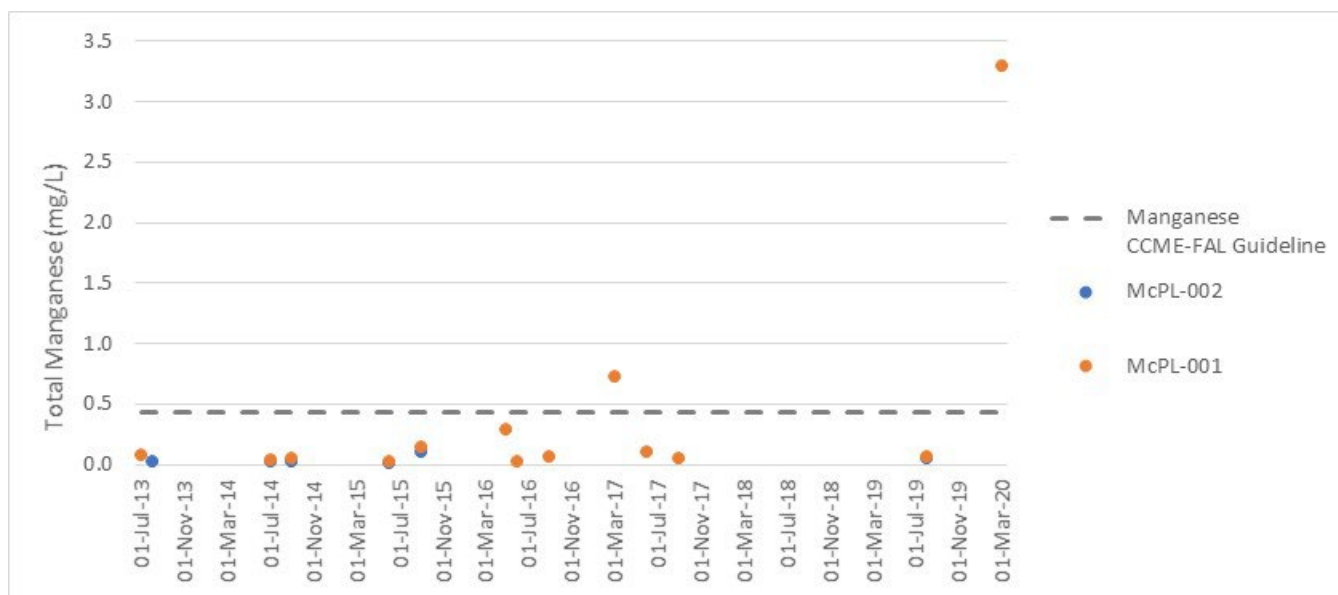


Figure 3-10. Total manganese concentrations in McParlon Creek sites between July 2013 and March 2020.

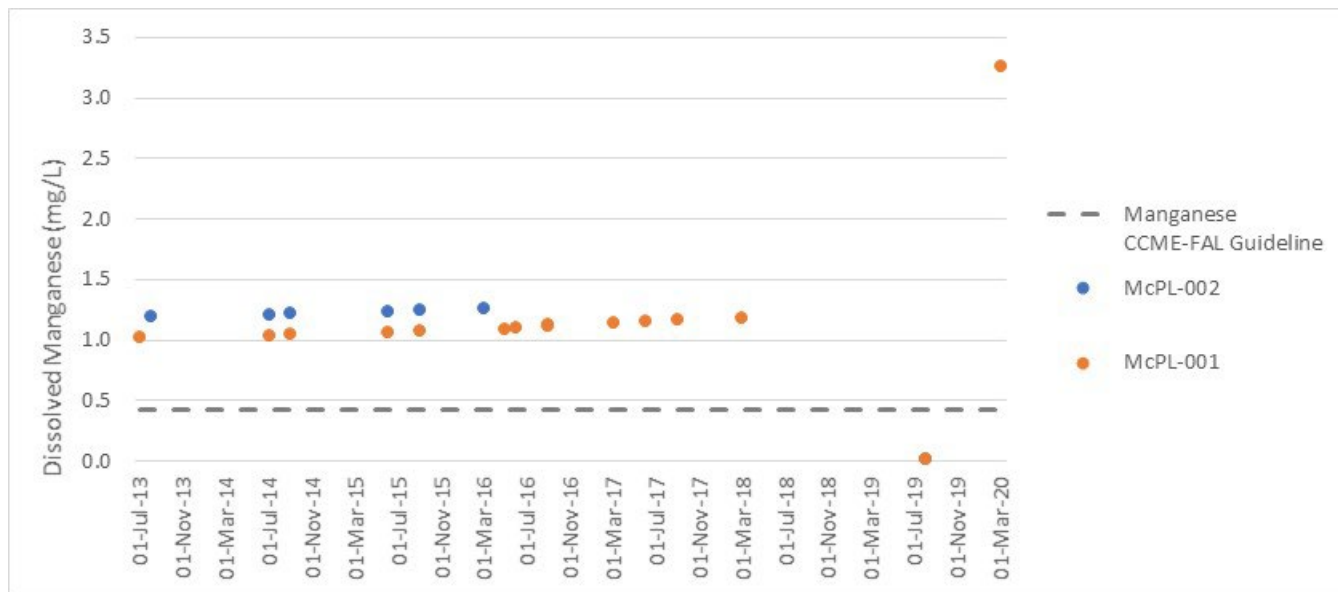


Figure 3-11. Dissolved manganese concentrations in McParlon Creek sites between July 2013 and March 2020.

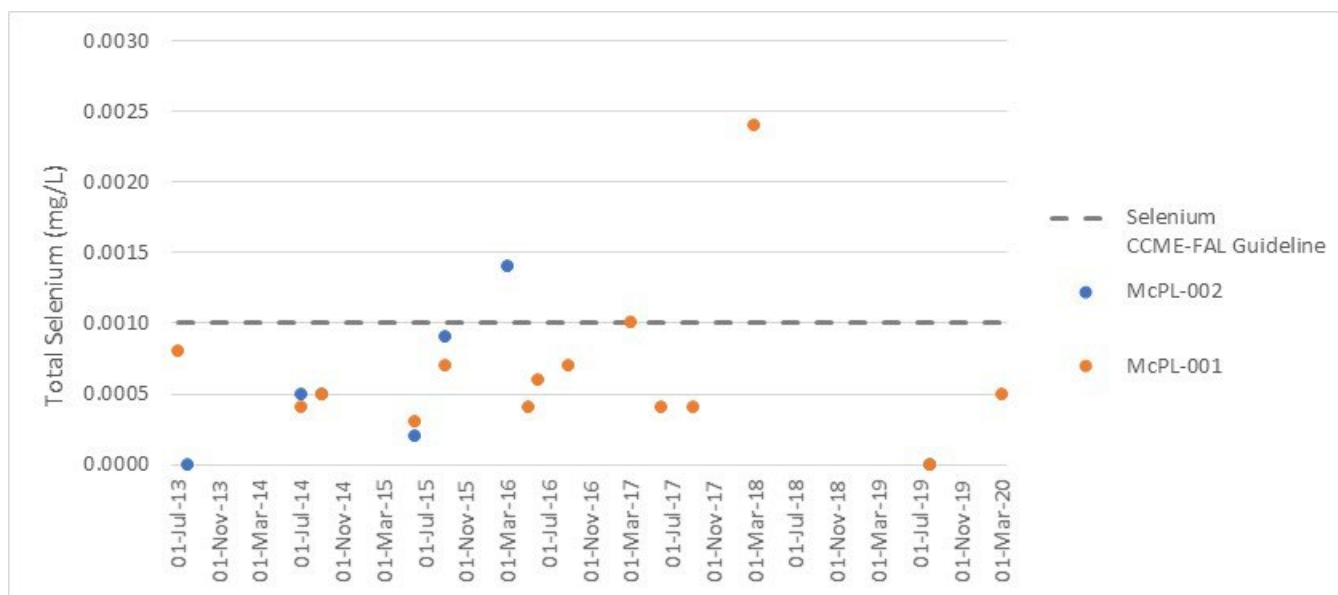


Figure 3-12. Total selenium concentrations in McParlon Creek sites between July 2013 and March 2020.



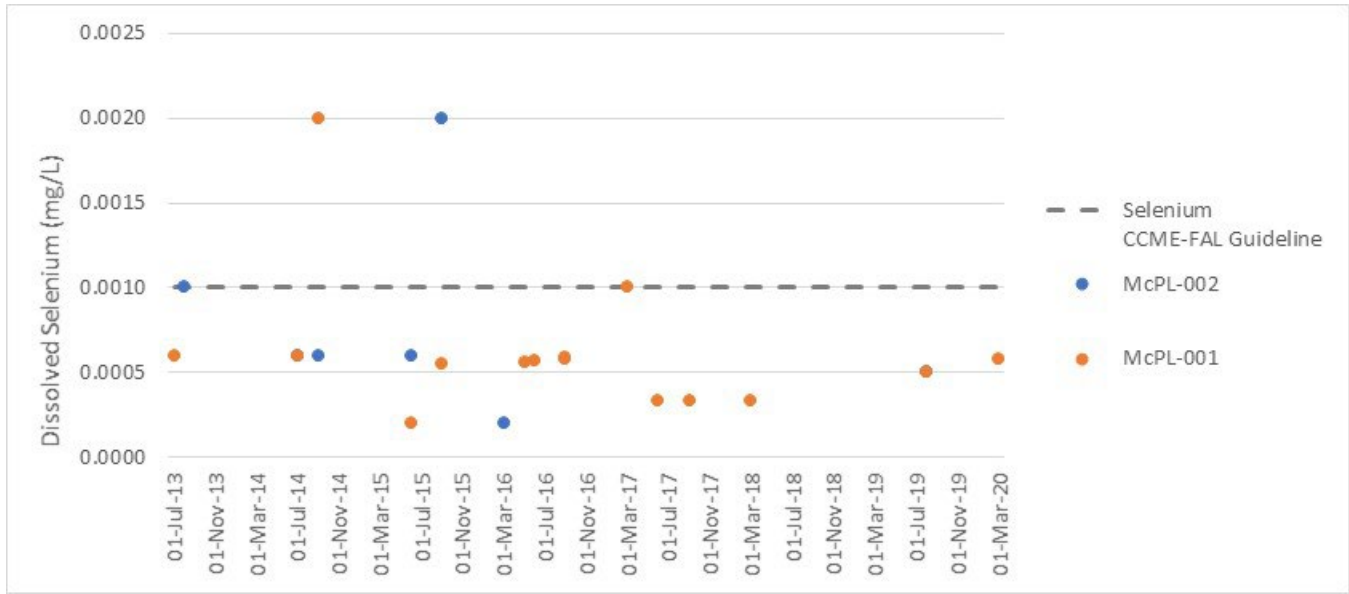


Figure 3-13. Dissolved selenium concentrations in McParlon Creek sites between July 2013 and March 2020.

### 3.1.1.4 Hydrocarbons

Hydrocarbons in the McParlon Creek sites were the lowest in the RSA. Hydrocarbons including volatile hydrocarbons (VHs), volatile petroleum hydrocarbons (VPHs), and volatile organic carbons (VOCs) were undetectable throughout the McParlon Creek sample sites. In general, naphthalene, biphenyl, phenanthrene, and retene were the major polycyclic aromatic hydrocarbons (PAHs) found at the McParlon Creek sites (Figure 3-14 and Figure 3-15).

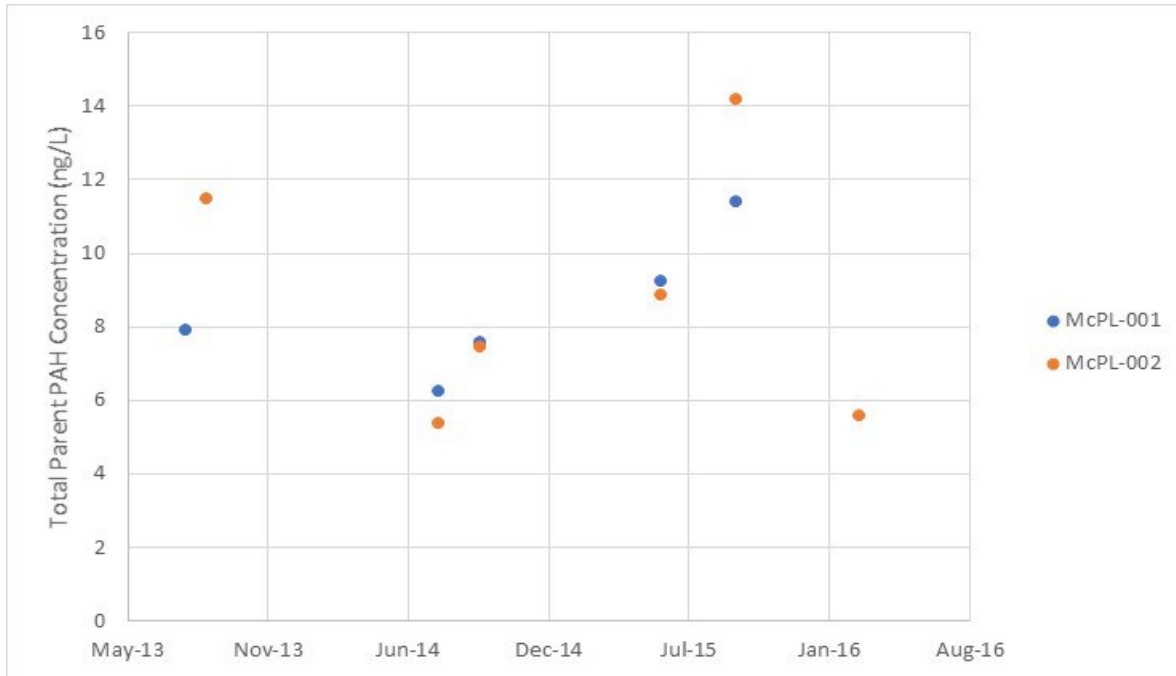


Figure 3-14. Total parent PAH concentrations in McParlon Creek sites from July 2013 through March 2016.

Note: Results that were below detection were treated as 0 ng/L.

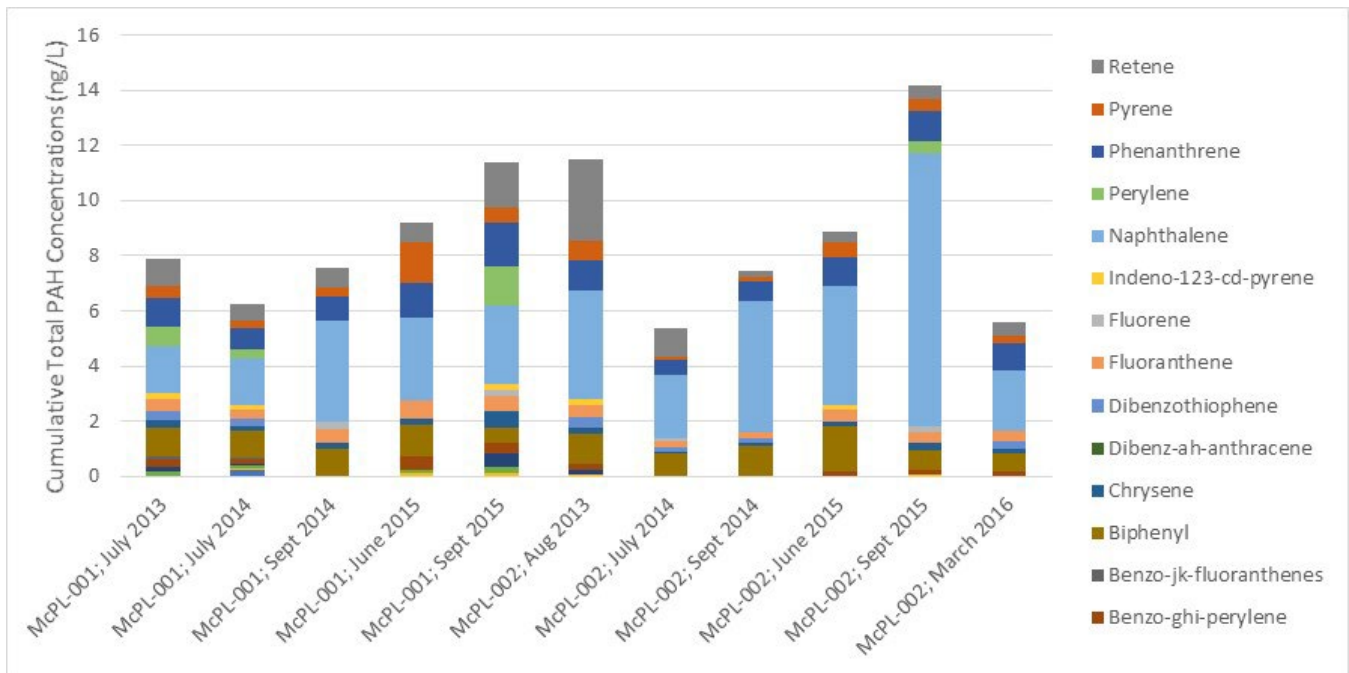


Figure 3-15. Cumulative parent PAH compounds in McParlon Creek sites from July 2013 through March 2016.

Note: Results that were below detection were treated as 0 ng/L.



### 3.1.2 CHANCE CREEK

The Chance Creek system is in the north of the RSA. It drains to the west, flowing first into the Whitestone River, and ultimately the headwaters of the Porcupine River. Data are available from three sites in the Chance Creek watershed:

1. CHNC-003, located in the upper reaches of Chance Creek, upstream of CHNC-t-002 (Photo 3-3);
2. CHNC-t-002, which is a small tributary to Chance Creek (Photo 3-4); and,
3. CHNC-001, which is just upstream from the Whitestone River (Photo 3-5).

Water quality data were collected from all sites periodically from July/August 2013 through March 2016 at CHNC-t-002, June 2017 at CHNC-003, and through March 2018 at CHNC-001. Chance Creek, which has brown stained water, is a wide, slow-moving stream. While some year-to-year variability is expected, many section of this stream and its tributaries within the RSA freeze to substrate during the winter months.



Photo 3-3. Downstream view from CHNC-003.



Photo 3-4. Upstream view from site CHNC-t-002.



Photo 3-5. Downstream view from CHNC-001.



### 3.1.2.1 General Chemistry and Major Ions

Water in Chance Creek and its tributary was circumneutral to slightly acidic. The headwaters of Chance Creek and the tributary sampled at CHNC-t-002 were more acidic and pH moved toward neutral by the CHNC-001 sample site. Conductivity in the Chance headwaters ranged from 28.5 to 58  $\mu\text{S}/\text{cm}$  at CHNC-003 and from 24.5 to 50  $\mu\text{S}/\text{cm}$  at CHNC-t-002, with one outlier at 285  $\mu\text{S}/\text{cm}$ , collected in March 2016. At CHNC-001, the conductivity range was greater at 28 to 507  $\mu\text{S}/\text{cm}$ . Water can be generally characterized as ‘very to moderately soft’ during the open water season and ‘hard to very hard’ during the under-ice months (Table 2-4).

Water was brown stained in colour, and turbidity ranged from very low during the under-ice period, to close to 100 NTUs at other times of the year. Aside from low turbidity under ice, turbidity showed no seasonal pattern and may be influenced by precipitation events. The suspended sediment load is generally low, ranging from <1 mg/L (below detection) to 88 mg/L; however, like turbidity, there are some spikes to approximately 245 mg/L in samples collected at various open water times of the year that were likely associated with precipitation events. Major ions were predominantly comprised of bicarbonate, calcium, and sulphate (Figure 3-16); the headwaters had higher proportions of magnesium in comparison with CHNC-001, and the sulfate increased with distance downstream.

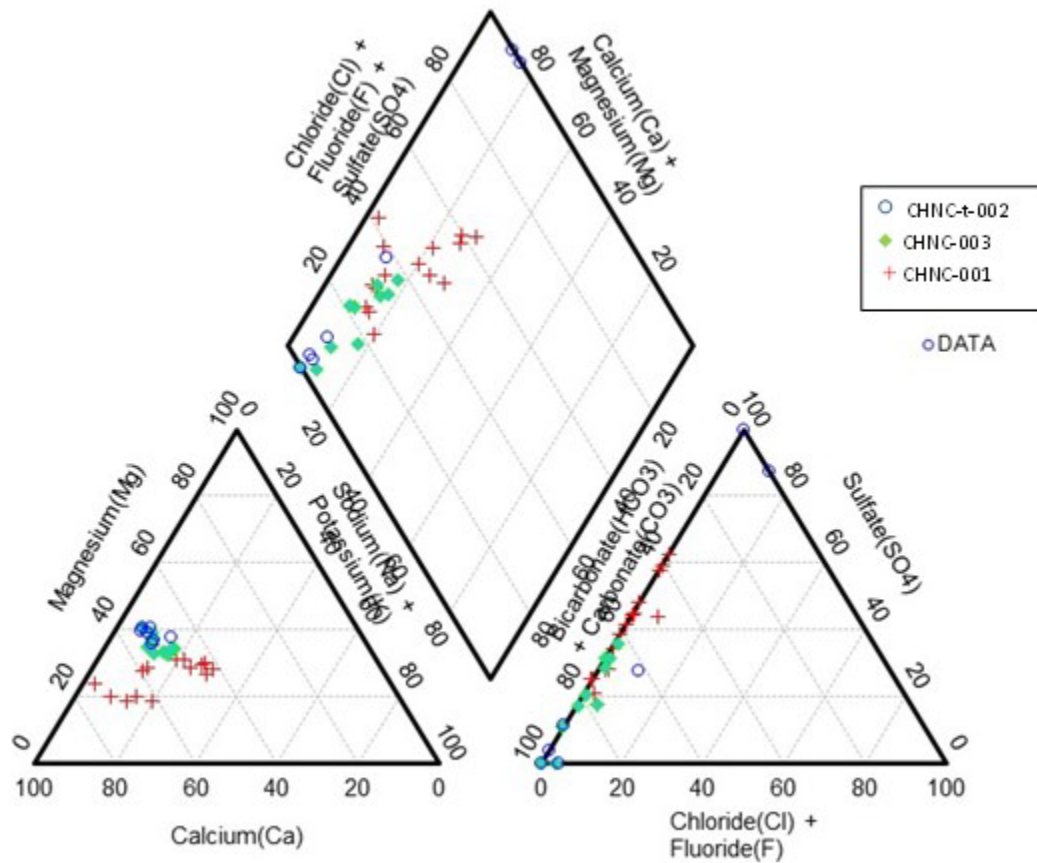


Figure 3-16. Piper plot showing major ion composition of waters in the Chance Creek watershed in % meq/kg.



### 3.1.2.2 Nutrients

Nutrient concentrations in the Chance Creek sites were low. Concentrations of nitrate, nitrate+nitrite, and total ammonia were below applicable guidelines in surface water. One nitrite sample, collected from CHNC-001 in March 2016, had a concentration of 0.11 mg/L, which exceeded the CCME-FAL of 0.06 mg/L; all other nitrite concentrations ranged from <0.010 mg/L (below detection) to 0.06 mg/L. Total Kjeldahl Nitrogen ranged from 0.85 to 1.19 mg/L.

Total phosphorus concentrations generally ranged from 0.020 through 0.085 mg/L, indicating that the trophic status generally ranged from oligotrophic to mesotrophic (Table 2-5); one sample, collected from CHNC-003 in March 2020, had a concentration of 0.218 mg/L.

### 3.1.2.3 Trace Metals

Aluminum, arsenic, copper, iron, and manganese in the Chance Creek watershed occurred in concentrations that regularly exceeded the CCME-FAL guideline. Total aluminum exceeded the CCME-FAL guideline in nearly all samples from both sites; however, most of the aluminum in the water column is likely bound to suspended sediment as the dissolved fraction of aluminum in nearly all samples was below the CCME-FAL guideline (Figure 3-17 and Figure 3-18). Total arsenic exceeded the CCME-FAL in two samples, both associated with under-ice sampling; dissolved fractions were below the guideline (Figure 3-19 and Figure 3-20). Total and dissolved copper, iron, and manganese regularly exceeded their respective CCME-FAL guidelines (Figure 3-21 through Figure 3-26).

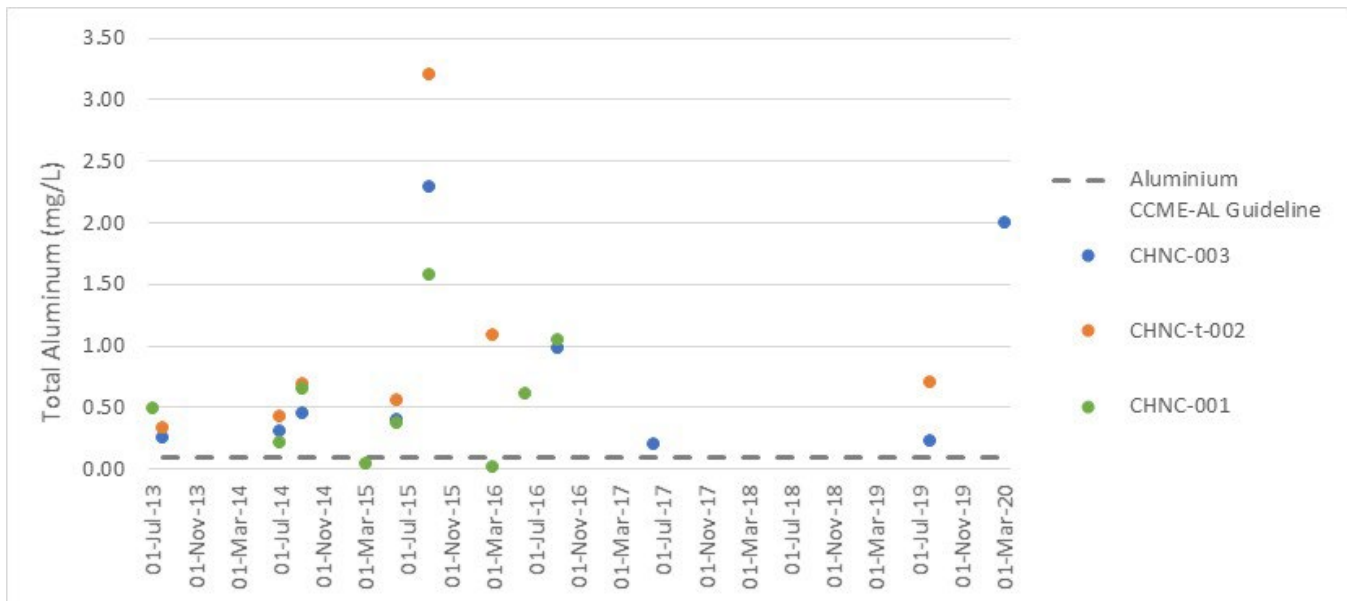


Figure 3-17. Total aluminum concentrations in Chance Creek sites between July 2013 and March 2020.

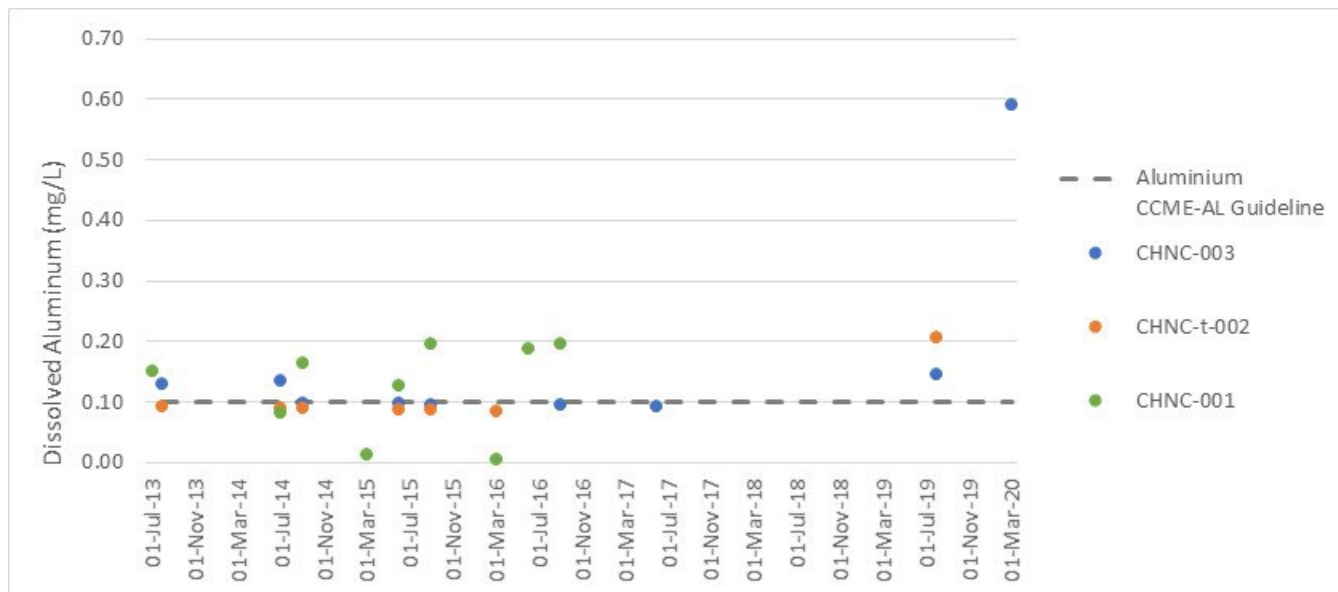


Figure 3-18. Dissolved aluminum concentrations in Chance Creek sites between July 2013 and March 2020.

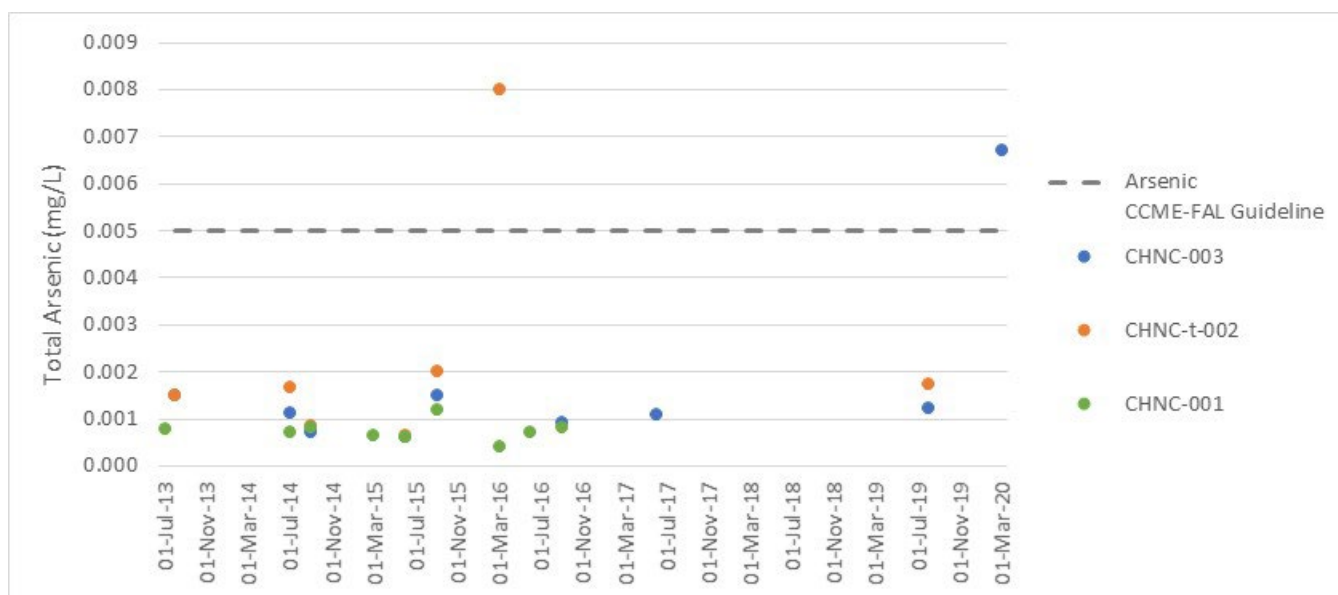


Figure 3-19. Total arsenic concentrations in Chance Creek sites between July 2013 and March 2020.

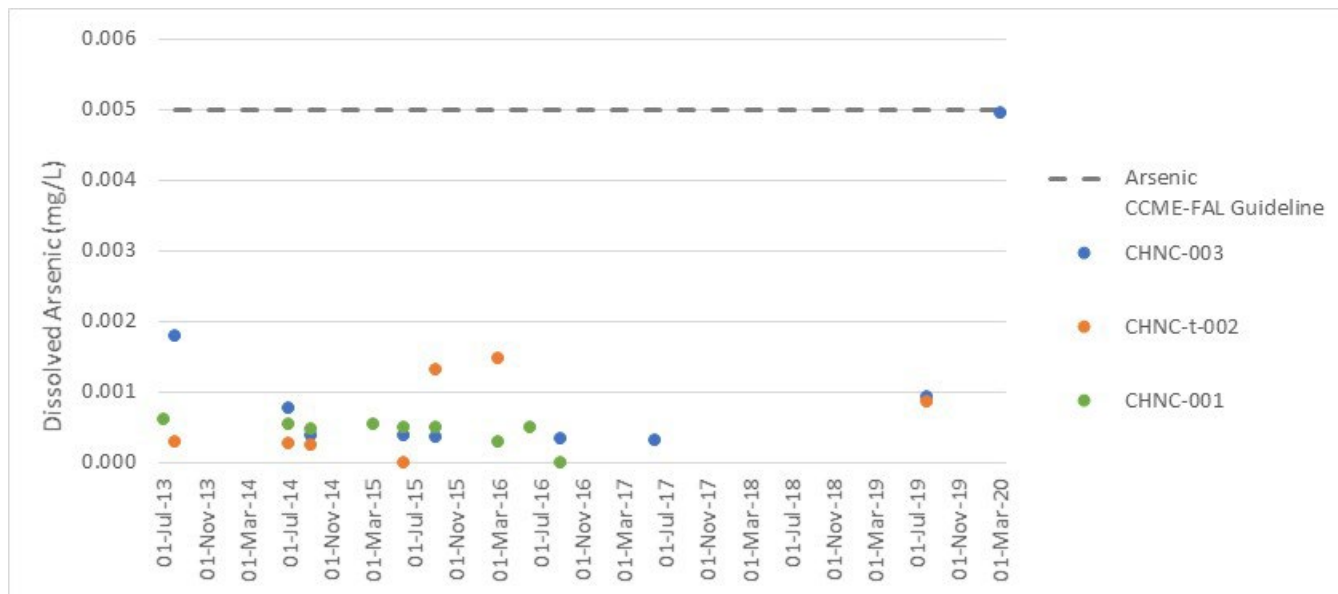


Figure 3-20. Dissolved arsenic concentrations in Chance Creek sites between July 2013 and March 2020.

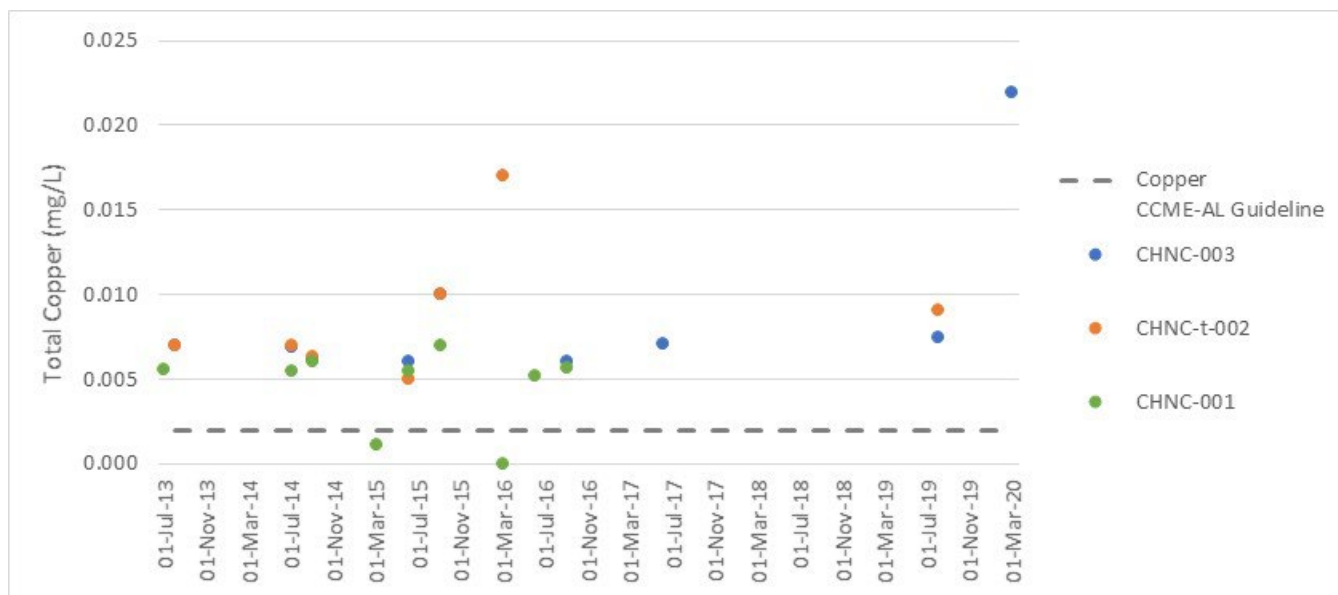


Figure 3-21. Total copper concentrations in Chance Creek sites between July 2013 and March 2020.

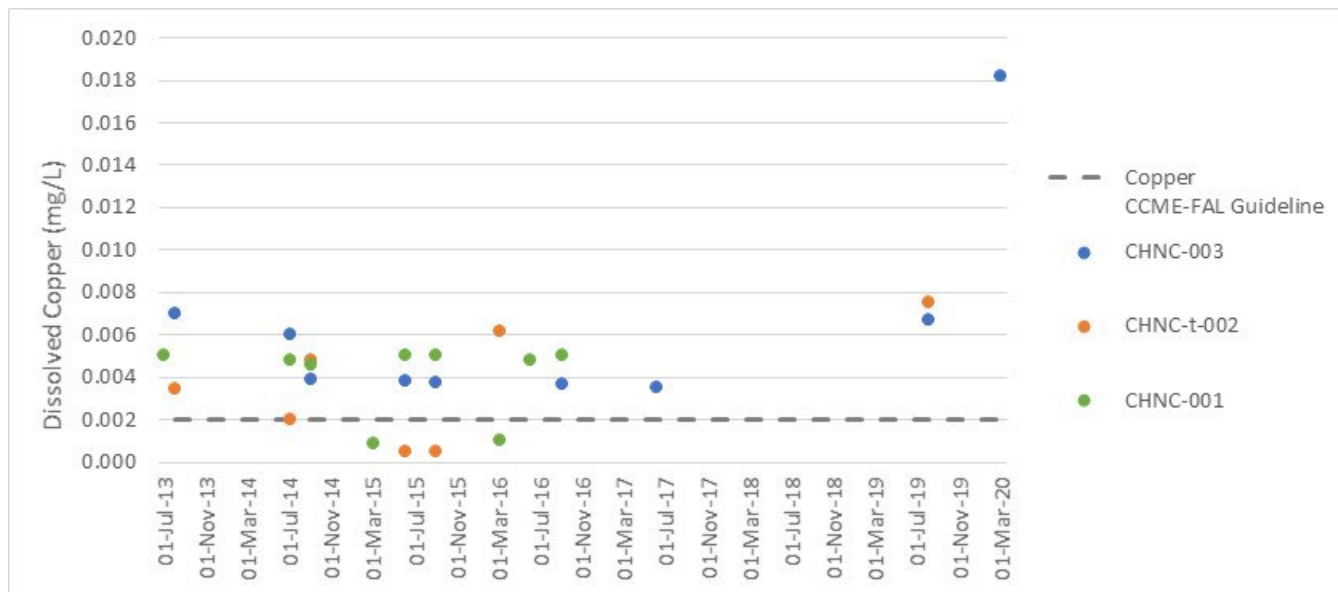


Figure 3-22. Dissolved copper concentrations in Chance Creek sites between July 2013 and March 2020.

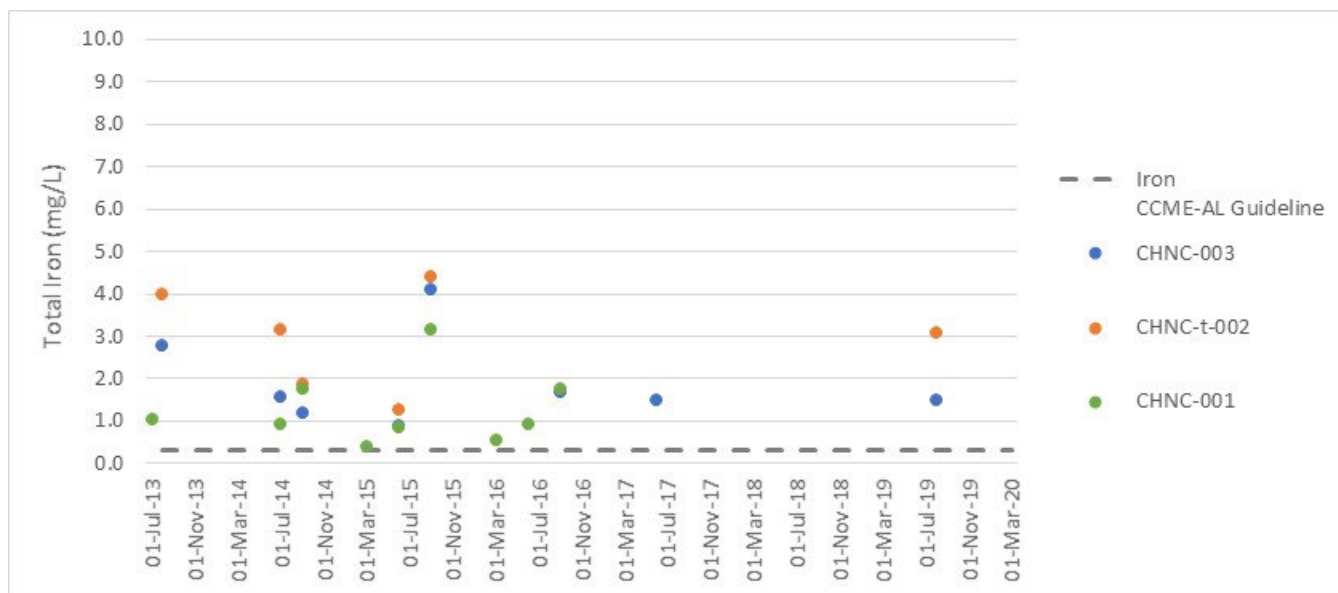


Figure 3-23. Total iron concentrations in Chance Creek sites between July 2013 and March 2020.



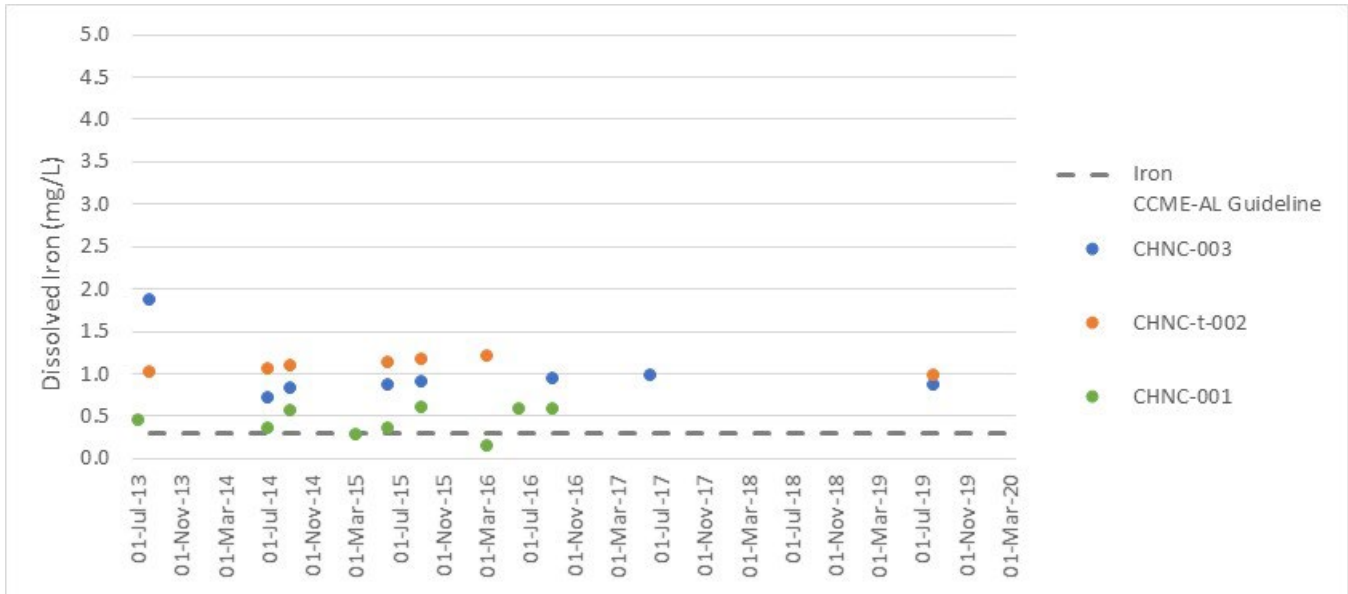


Figure 3-24. Dissolved iron concentrations in Chance Creek sites between July 2013 and March 2020.

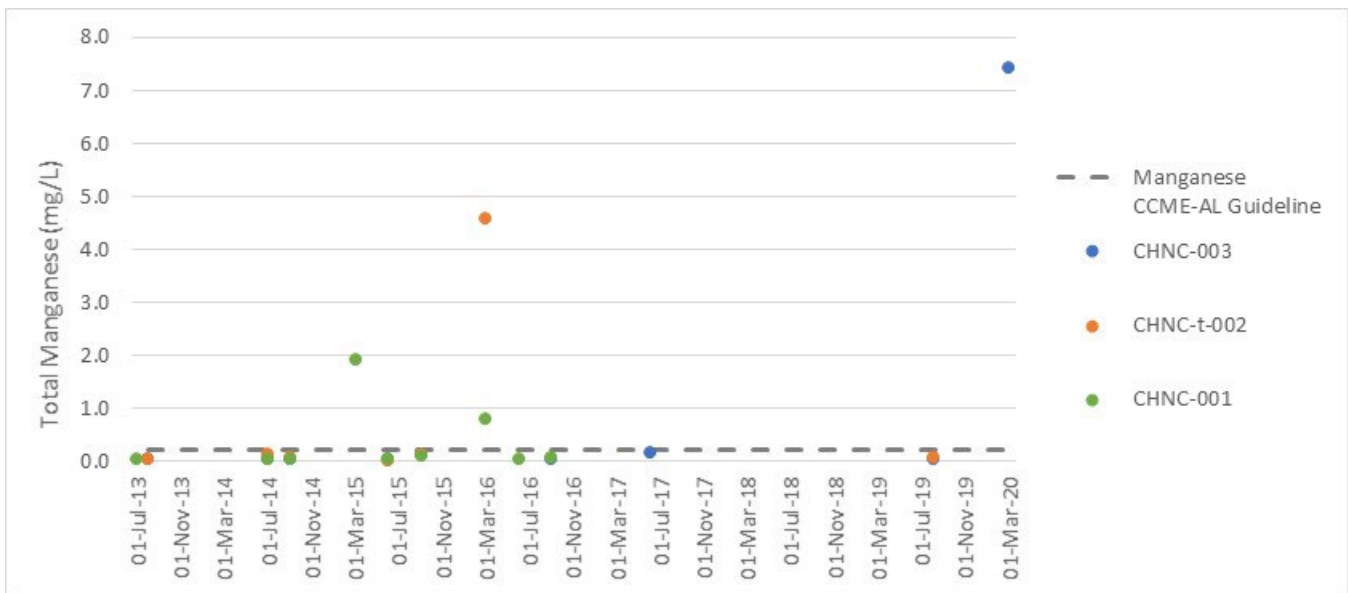


Figure 3-25. Total manganese concentrations in Chance Creek sites between July 2013 and March 2020.

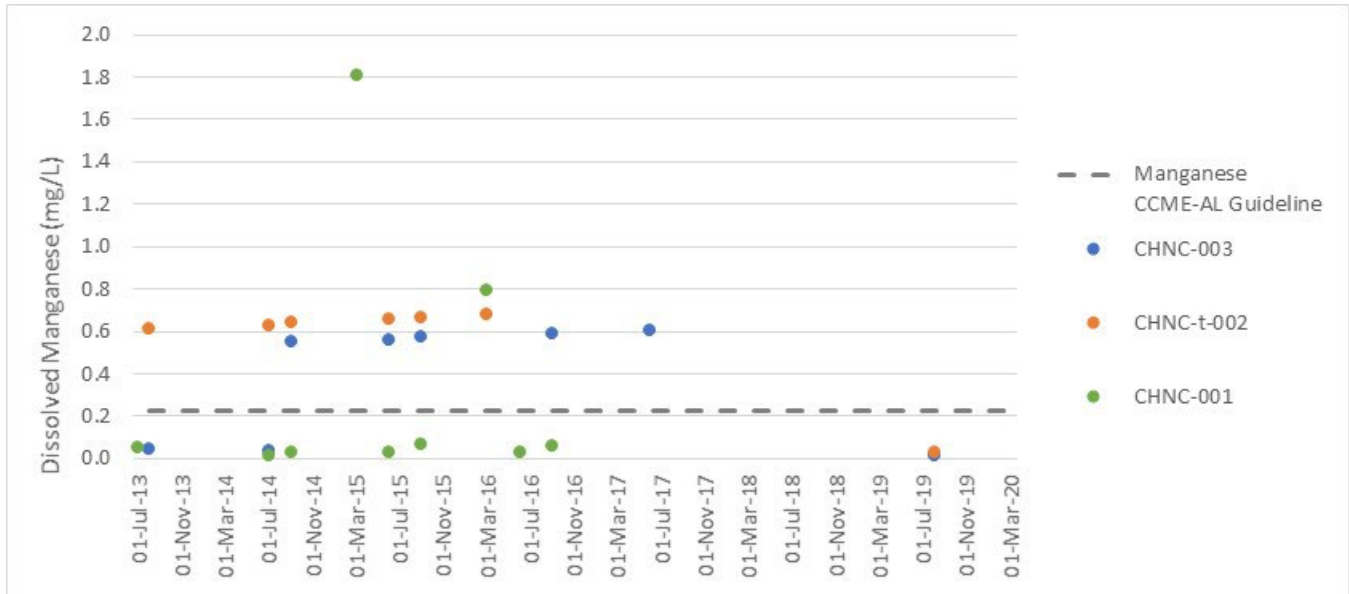


Figure 3-26. Dissolved manganese concentrations in Chance Creek sites between July 2013 and March 2020.

### 3.1.2.4 Hydrocarbons

Hydrocarbon concentrations in water from the Chance Creek sites including VHs, VPHs, and VOCs were undetectable throughout the Chance Creek sample sites. In general, PAH concentrations were higher in Chance Creek than in McParlon Creek. No pattern in total PAH concentration was identified among the Chance Creek sample sites (Figure 3-27). The PAHs that comprised most total parent PAHs at the Chance Creek sites included naphthalene and retene (Figure 3-28). The sample collected from CHNC-001 in March 2015 had significantly higher PAH concentrations, particularly naphthalene, than all other samples from all sites, indicating that this sample may have been contaminated (Figure 3-27).

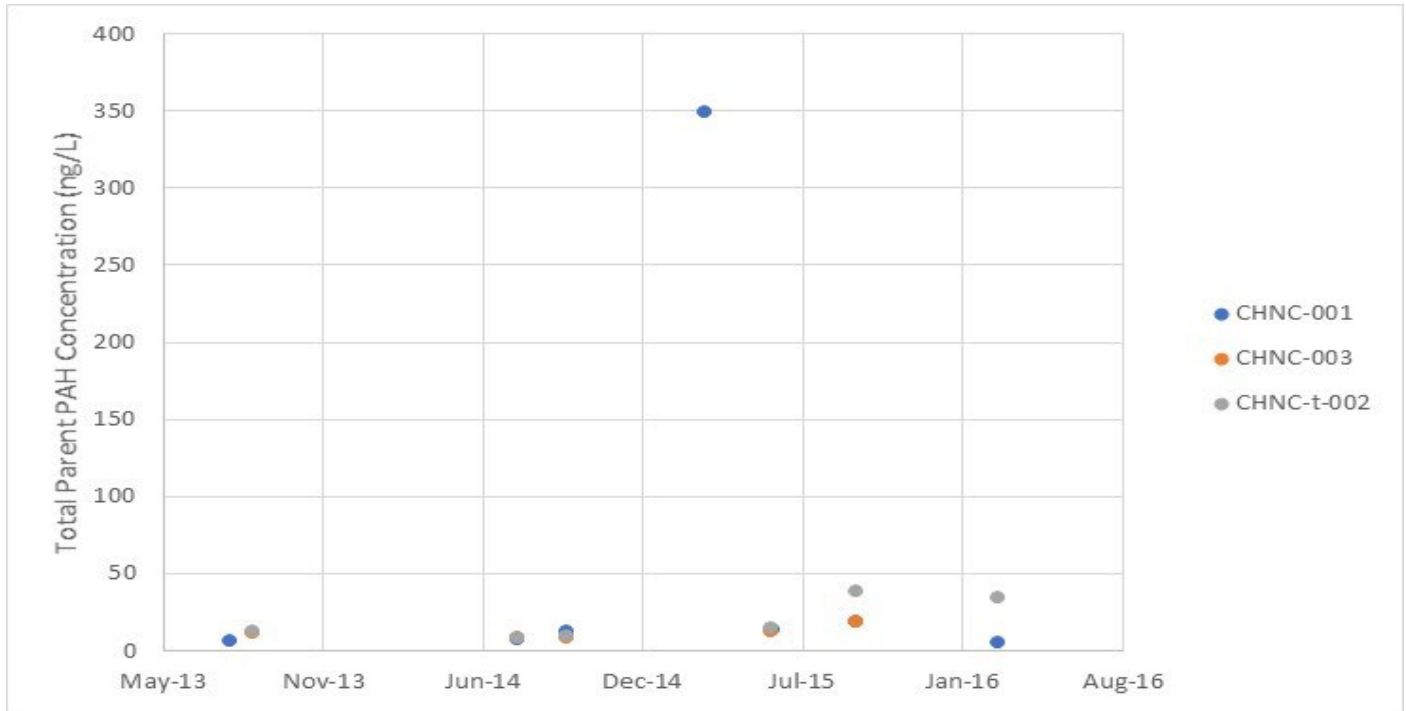


Figure 3-27. Total parent PAH concentrations in Chance Creek sites from July 2013 through March 2016.

Note: Results that were below detection were treated as 0 ng/L.

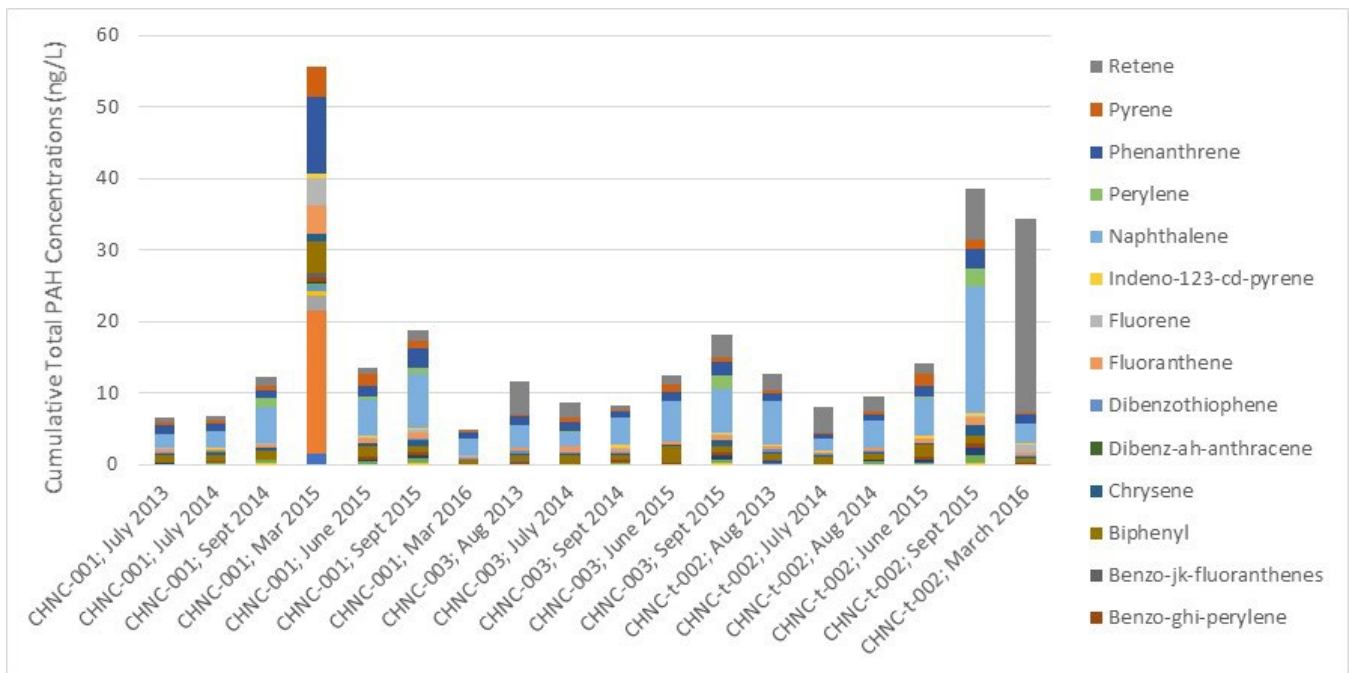


Figure 3-28. Cumulative parent PAH compounds in Chance Creek sites from July 2013 through March 2016.

Note: Results that were below detection were treated as 0 ng/L. The naphthalene at CNHC-001 in March 2015 result was removed from the bar chart due to suspected contamination error (294 ng/L).



### 3.1.3 EAGLE RIVER TRIBUTARIES, NORTH AND SOUTH

Water quality sampling took place in three tributaries to Eagle River, which ultimately drains into the headwaters of Porcupine River (Map 2-1):

1. NCY-PT19, an unnamed tributary that drains north from the RSA to the Eagle River (Photo 3-6);
2. EAGL-t-003, located in a tributary to the Eagle River, downstream of NCY-PT19 and EAGLE-t-002, and just upstream from the Eagle River (Photo 3-7); and,
3. EAGL-t-004, a tributary that drains the RSA south, to the Eagle River (Photo 3-8).

Water quality data were collected by YG WRB periodically at NCY-PT19 from August 2013 through September 2015. The longest sampling record in this catchment comes from EAGL-t-003, which YG WRB sampled from August 2013 through March 2018. EDI collected samples from all three sites in August 2019 and March 2020.



Photo 3-6. Upstream view from NCY-PT19.



Photo 3-7. Upstream view from site EAGL-t-003.



Photo 3-8. Downstream view from EAGL-t-004.



### 3.1.3.1 General Chemistry and Major Ions

Water in Eagle River tributaries (Eaglet north and south drainage) was circumneutral to slightly acidic. Conductivity was higher than noted in other RSAs, ranging from 142 to 626  $\mu\text{S}/\text{cm}$ . Water hardness can be generally characterized as ‘moderately hard’ during the open water season and ‘hard to very hard’ during the under-ice months, with hardness concentrations generally greater than 60 mg/L (as  $\text{CaCO}_3$ ).

Water was brown stained in colour, and turbidity was generally low. Turbidity showed no seasonal pattern and may be influenced by precipitation events and sampling. The suspended sediment load was generally low, ranging from <1 mg/L (below detection) to 39 mg/L; however, like turbidity, there are some spikes to approximately 182 mg/L in samples collected at various open water times of the year, which were likely associated with precipitation events or permafrost melt-related bank slumping. Major ions predominantly included bicarbonate, calcium, sodium, and sulphate (Figure 3-29); the furthest downstream site, EAGL-t-003 showed lower amounts of magnesium and higher amounts of calcium when compared with NCY-PT19.

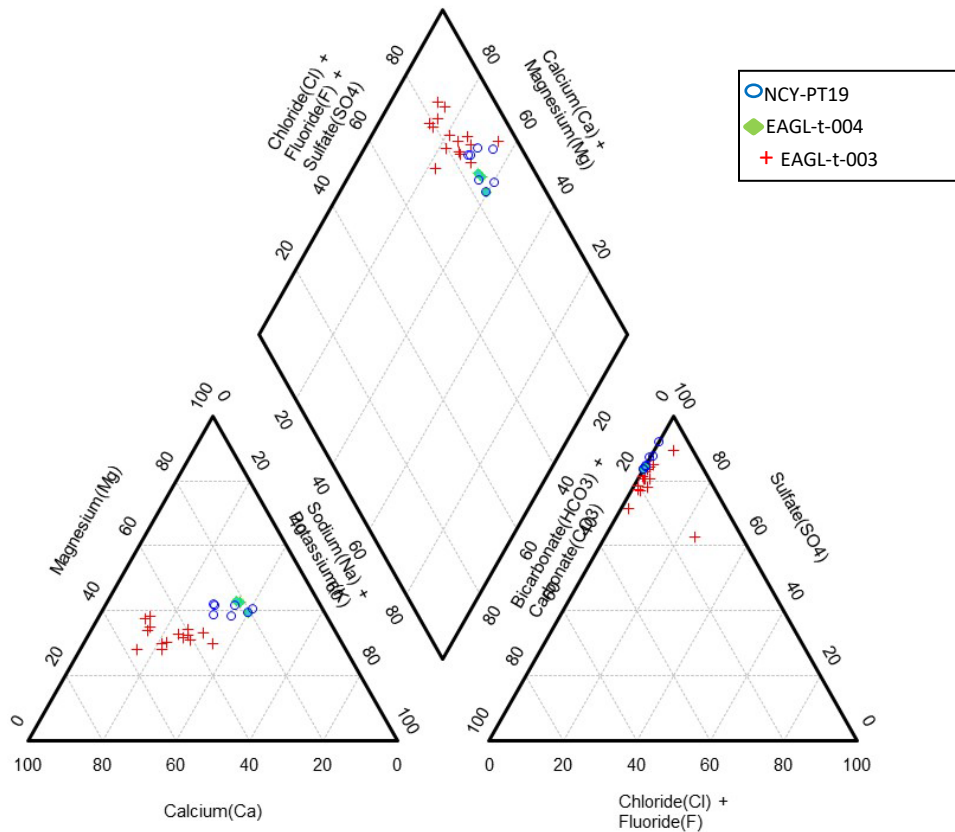


Figure 3-29. Piper plot showing major ion composition of waters in the Eaglet north and south watersheds in % meq/kg.



### 3.1.3.2 Nutrients

Nutrient concentrations in the Eagle Creek tributary sites were low; nitrate, nitrite, nitrate+nitrite, and total ammonia were below applicable guidelines in surface water. Total Kjeldahl Nitrogen ranged from 0.48 to 1.00 mg/L (NCY-PT19 in July 2014). Total phosphorus concentrations ranged from 0.014 to 0.05 mg/L, indicating mesotrophic trophic status (Table 2-5).

### 3.1.3.3 Trace Metals

Aluminum, cadmium, copper, iron, manganese, and selenium in the Eagle Creek tributary sites occurred in concentrations that regularly exceeded the CCME-FAL guideline. Total aluminum exceeded the CCME-FAL guideline in nearly all samples from all sites; however, the dissolved fraction of aluminum was below the CCME-FAL guideline in all but one sample (Figure 3-30 and Figure 3-31). Total and dissolved cadmium and selenium exceeded the CCME-FAL, a small number of samples associated with under-ice sampling (Figure 3-32, Figure 3-33, Figure 3-40, and Figure 3-41). Total and dissolved copper, iron, and manganese regularly exceeded their respective CCME-FAL guidelines (Figure 3-34 to Figure 3-38).

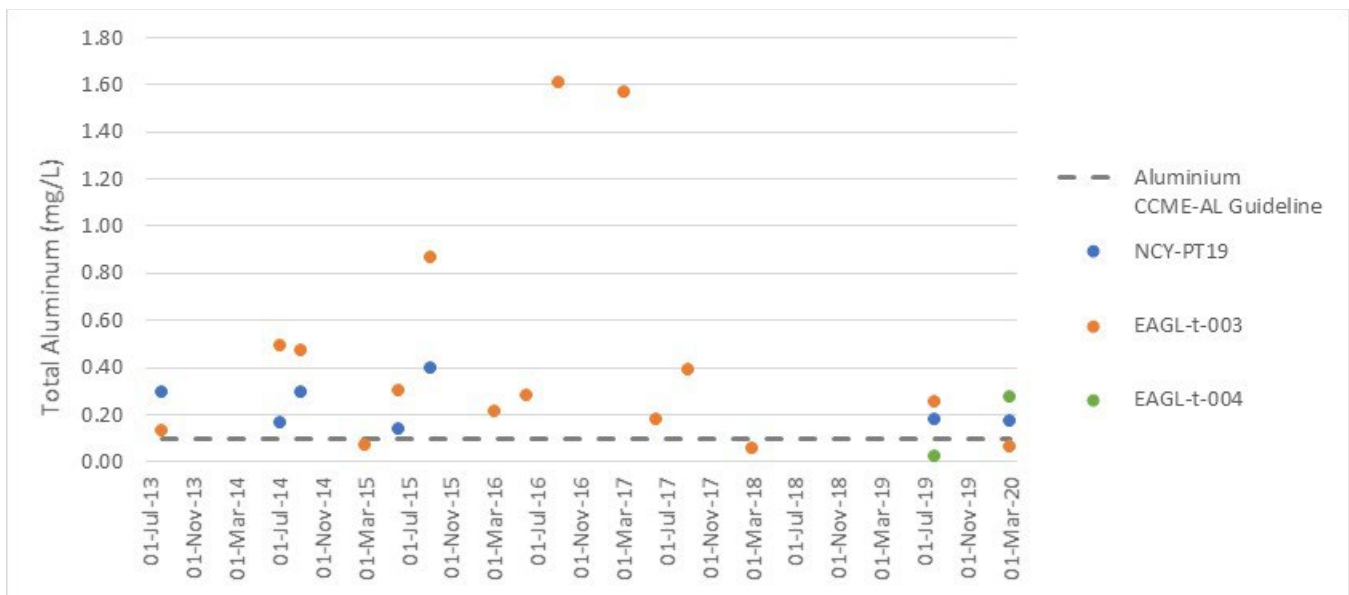


Figure 3-30. Total aluminum concentrations in Eagle Creek tributary sites between July 2013 and March 2020.

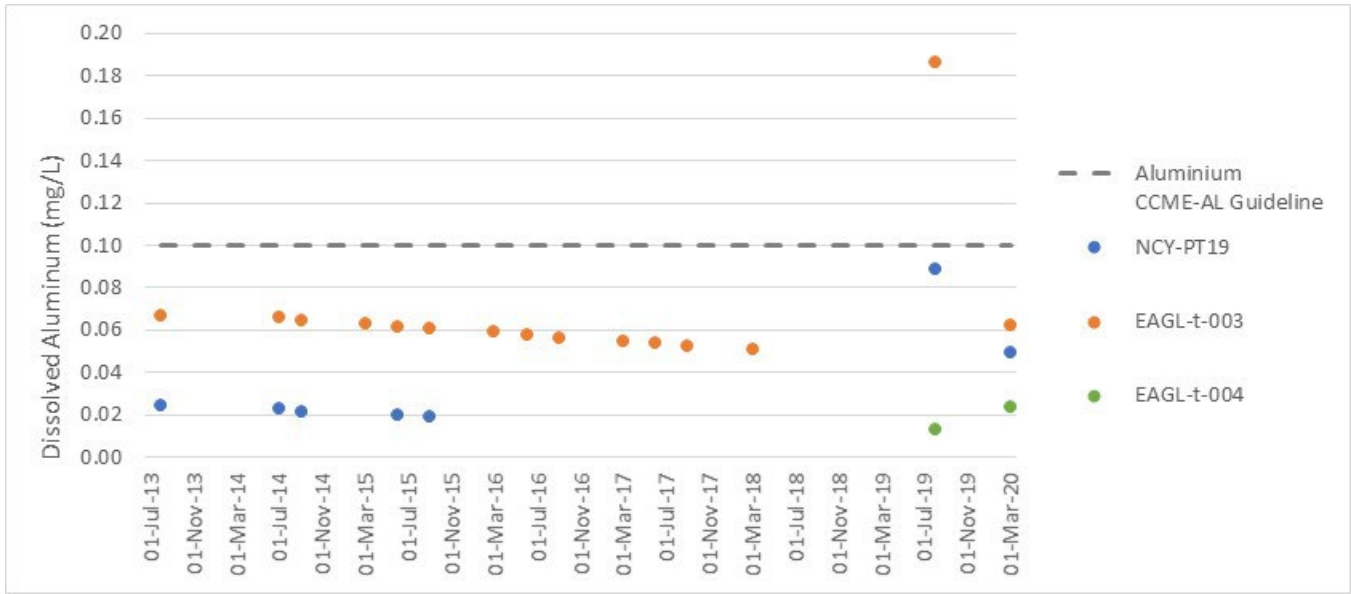


Figure 3-31. Dissolved aluminum concentrations in Eagle Creek tributary sites between July 2013 and March 2020.

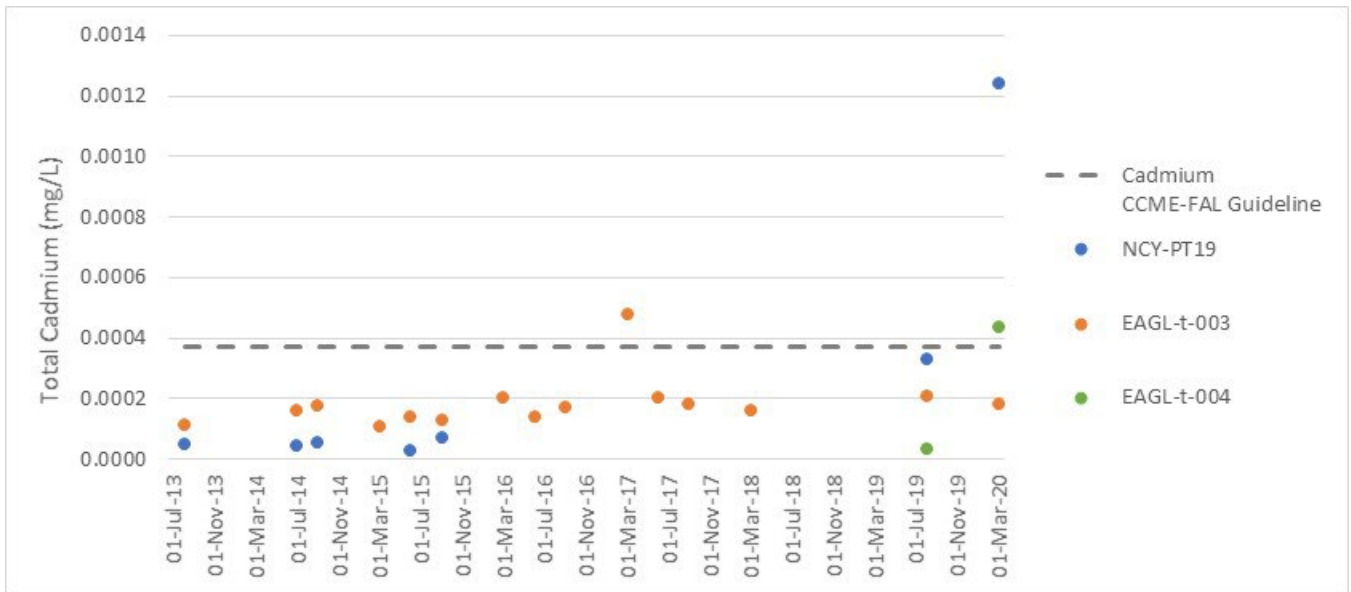


Figure 3-32. Total cadmium concentrations in Eagle Creek tributary sites between July 2013 and March 2020.

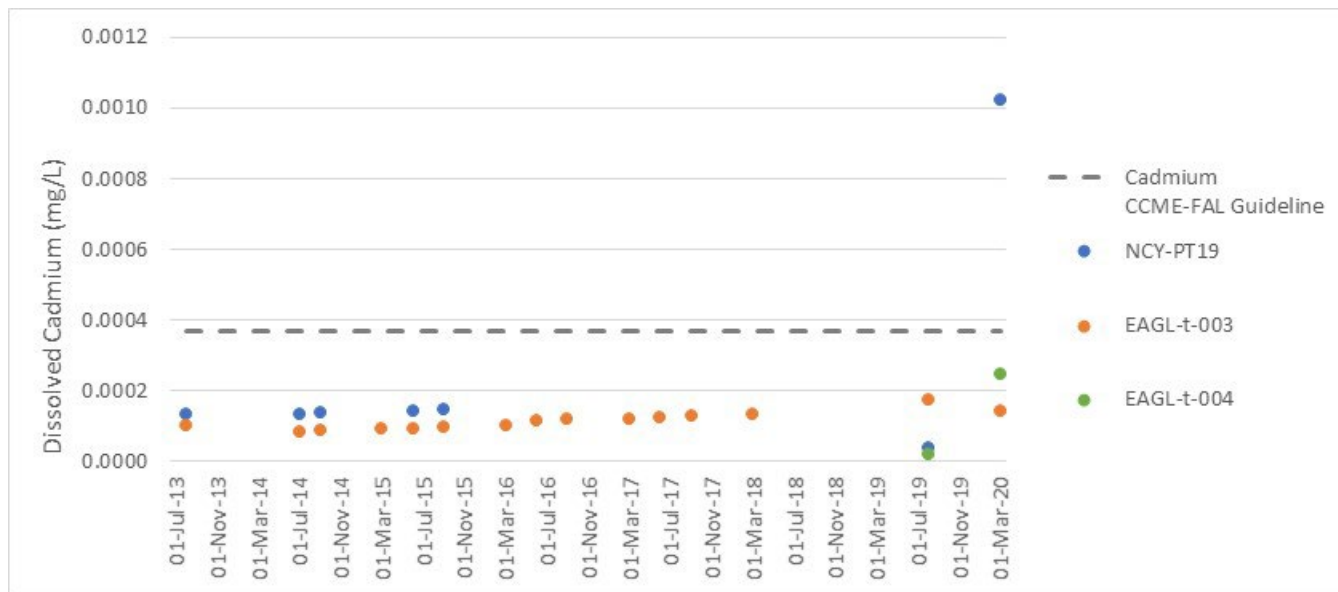


Figure 3-33. Dissolved cadmium concentrations in Eagle Creek tributary sites between July 2013 and March 2020.

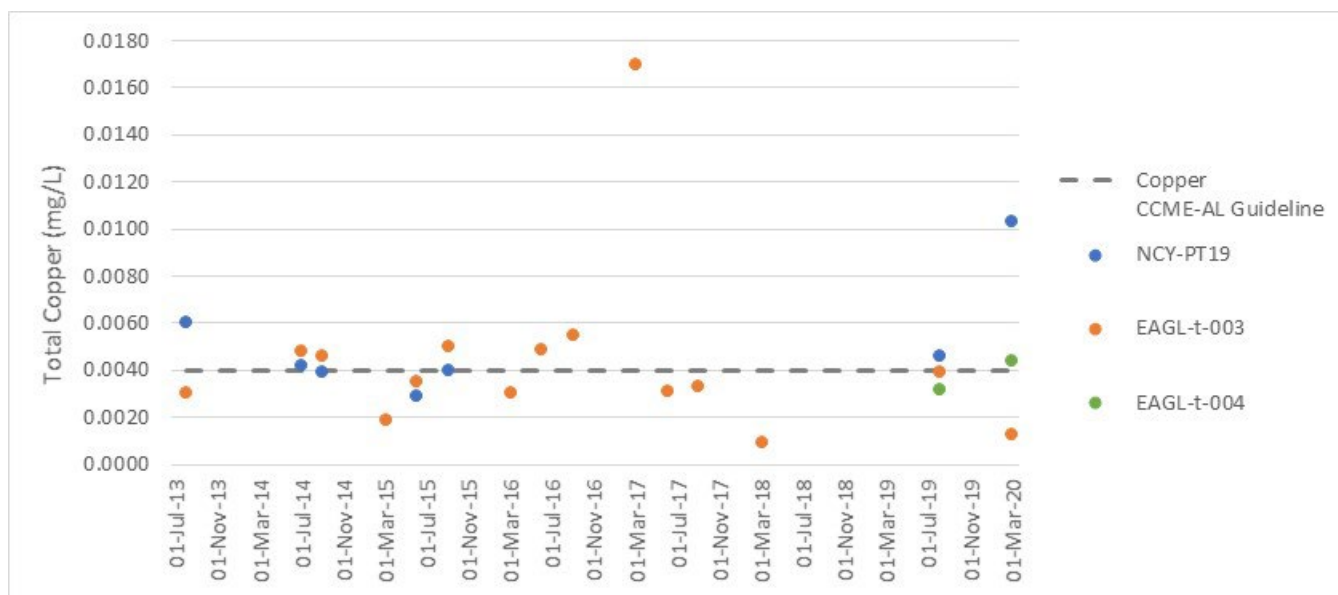


Figure 3-34. Total copper concentrations in Eagle Creek tributary sites between July 2013 and March 2020.



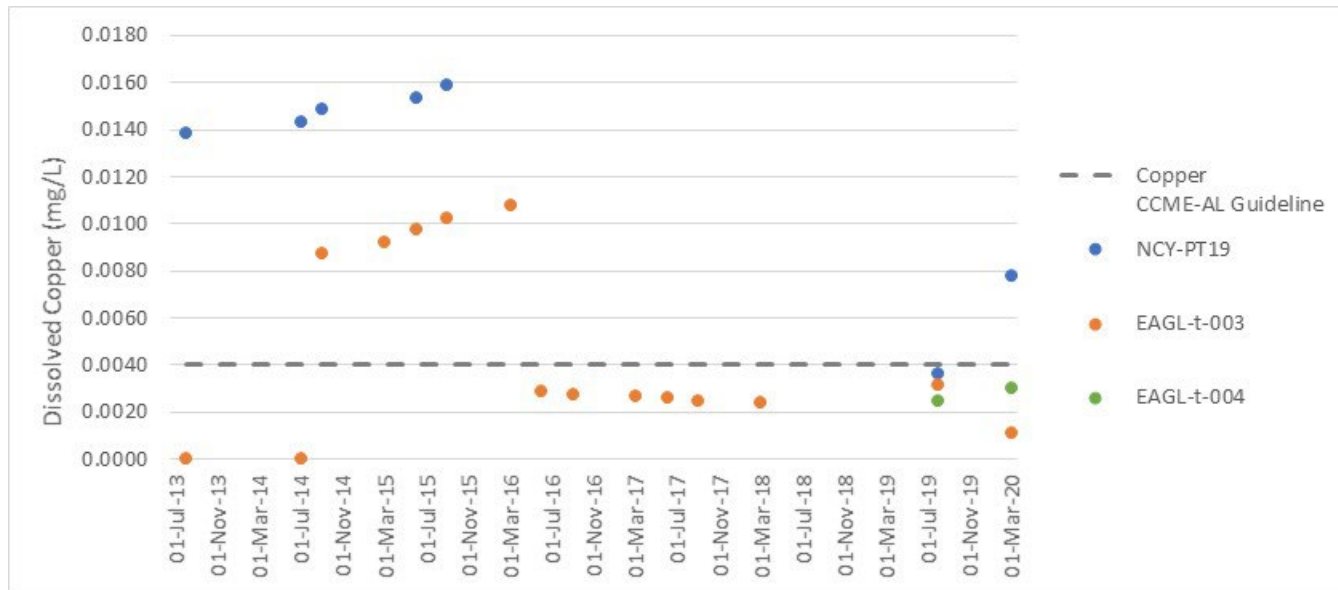


Figure 3-35. Dissolved copper concentrations in Eagle Creek tributary sites between July 2013 and March 2020.

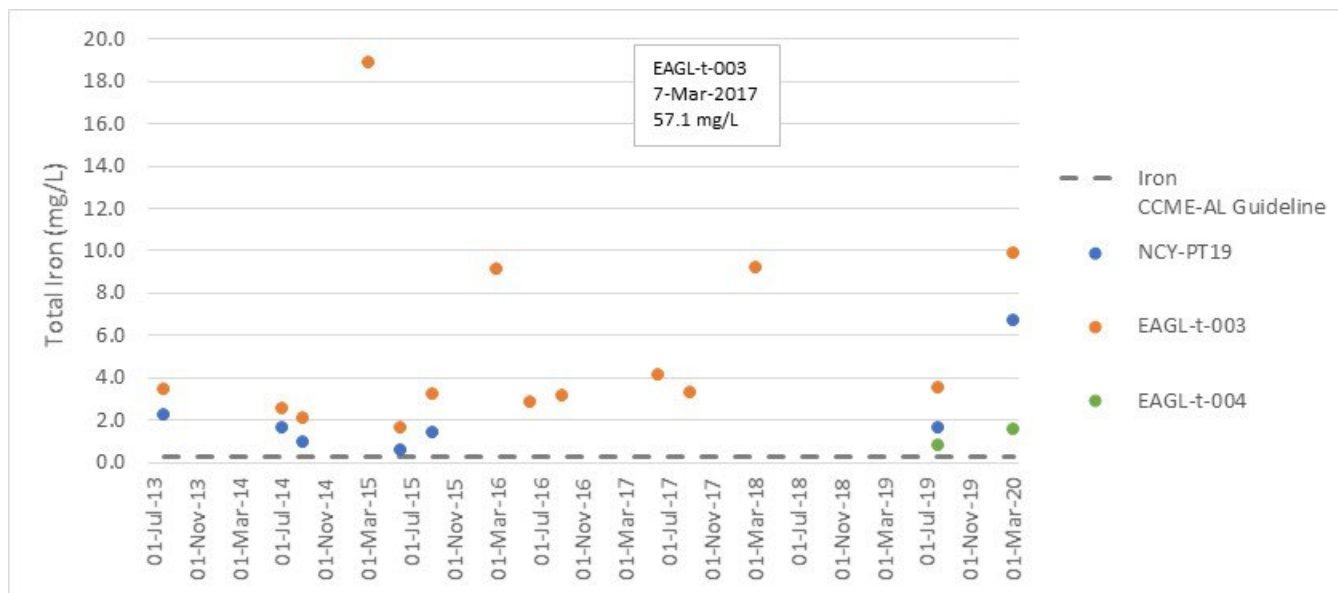


Figure 3-36. Total iron concentrations in Eagle Creek tributary sites between July 2013 and March 2020.

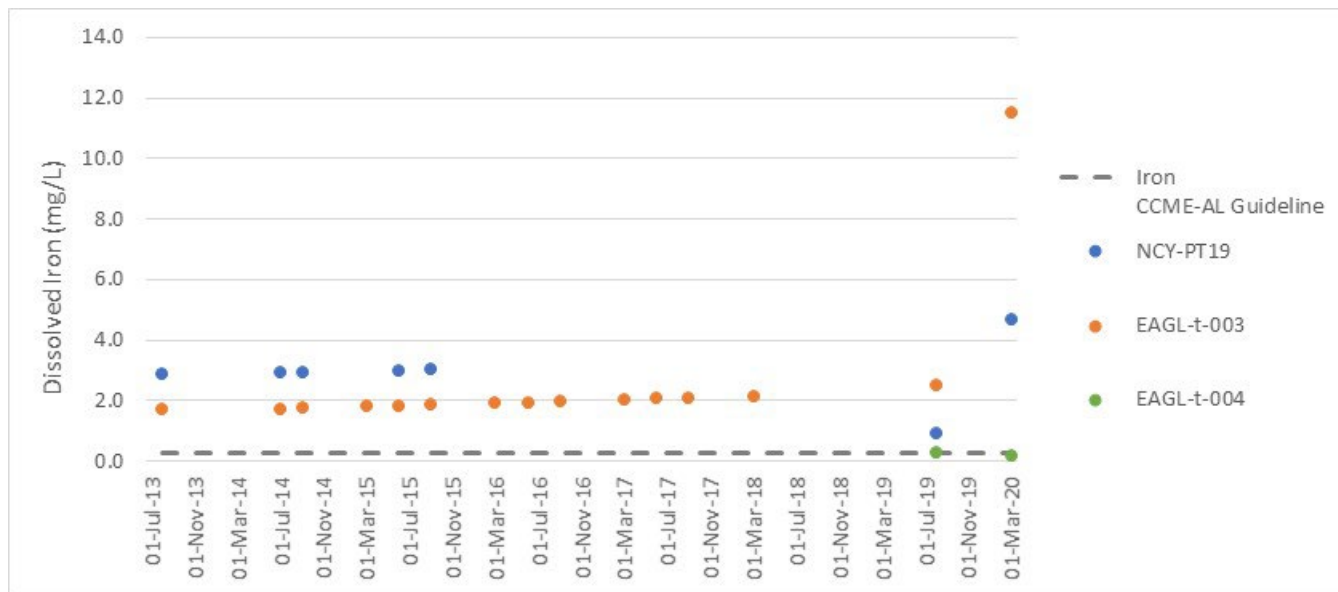


Figure 3-37. Dissolved iron concentrations in Eagle Creek tributary sites between July 2013 and March 2020.

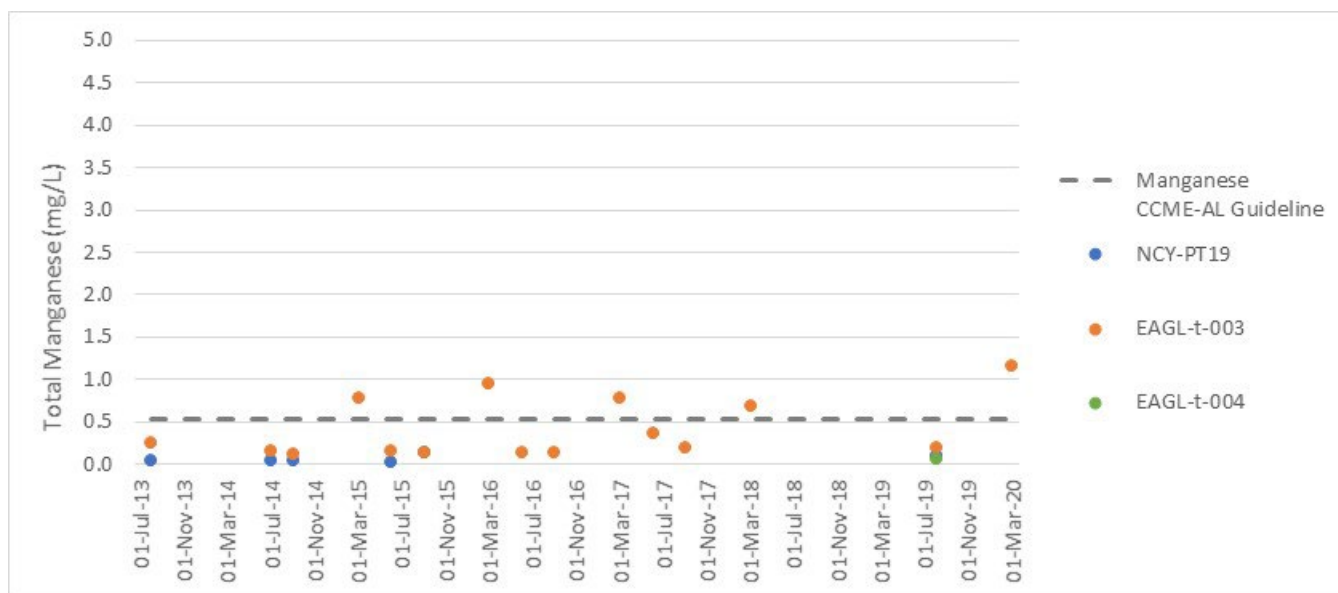


Figure 3-38. Total manganese concentrations in Eagle Creek tributary sites between July 2013 and March 2020.

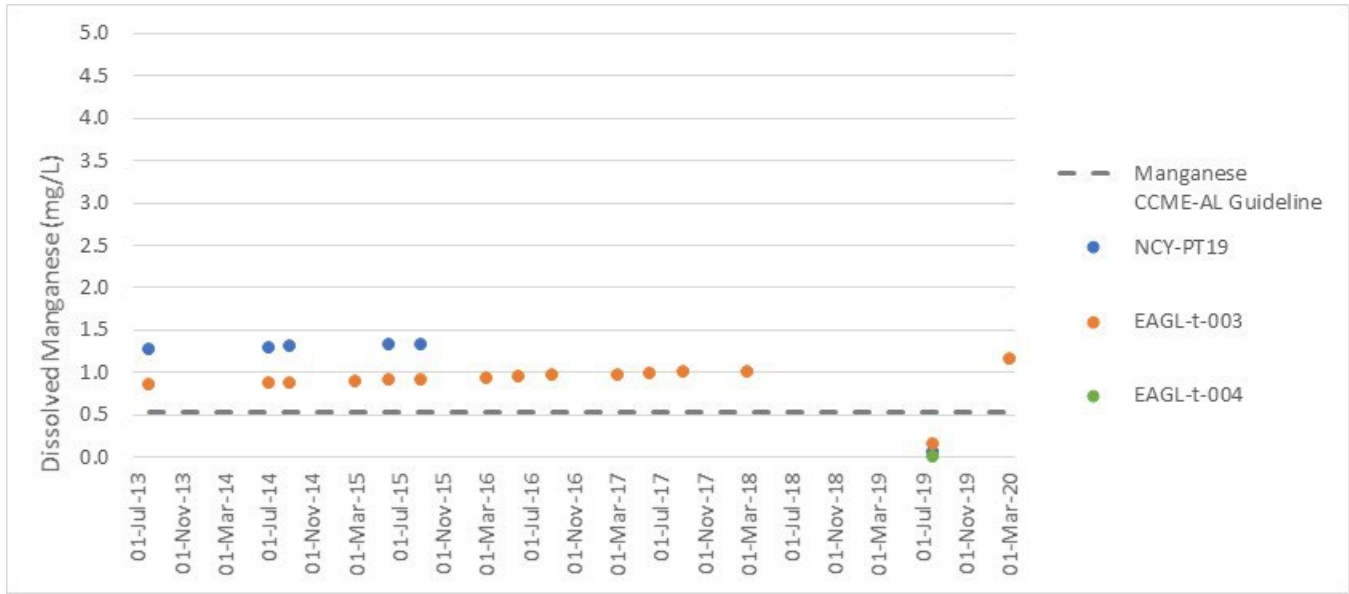


Figure 3-39. Dissolved manganese concentrations in Eagle Creek tributary sites between July 2013 and March 2020.

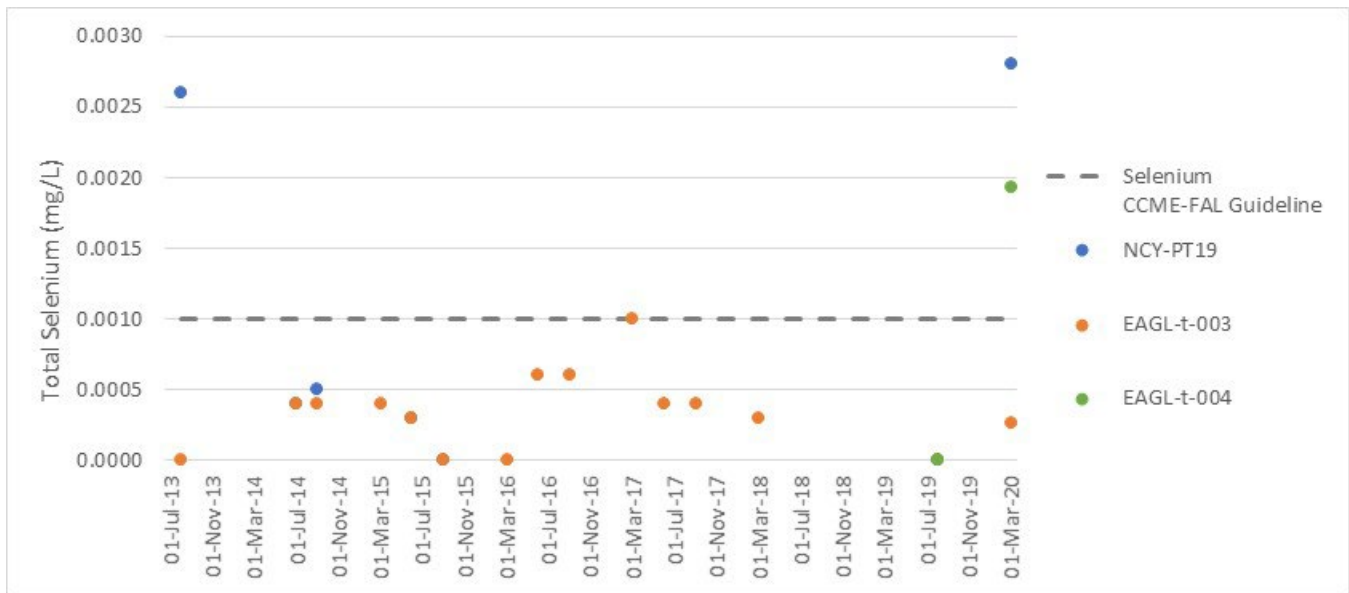


Figure 3-40. Total selenium concentrations in Eagle Creek tributary sites between July 2013 and March 2020.

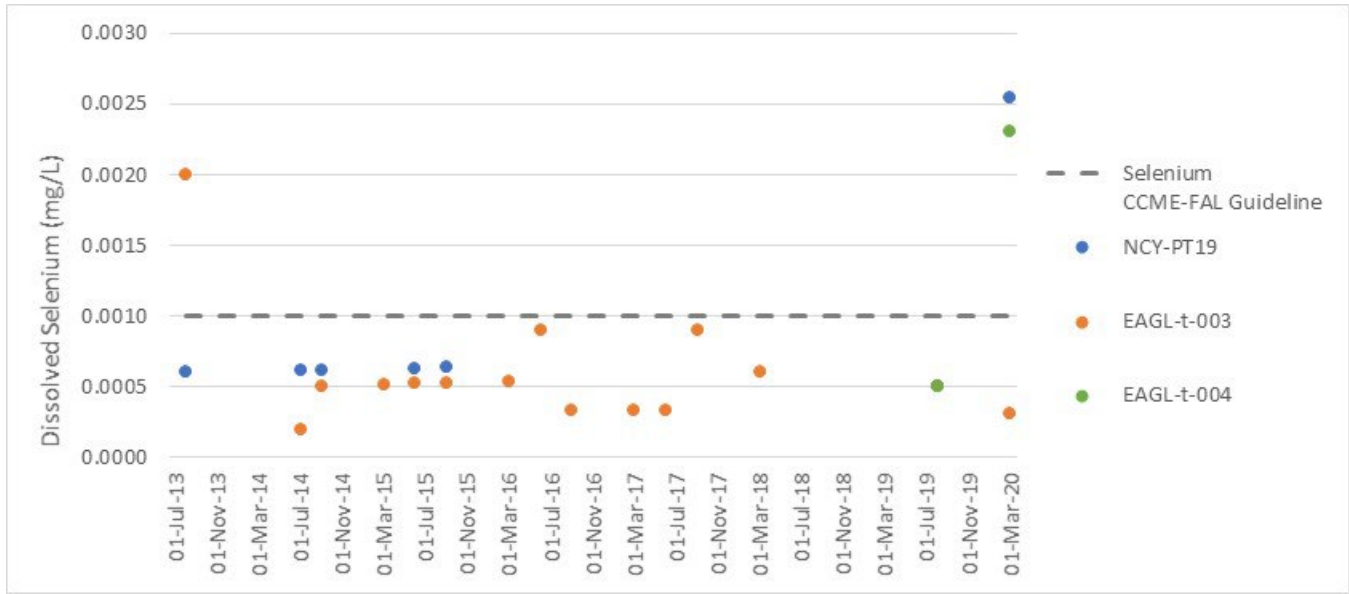


Figure 3-41. Dissolved selenium concentrations in Eagle Creek tributary sites between July 2013 and March 2020.

### 3.1.3.4 Hydrocarbons

As in McParlon Creek, hydrocarbons including VHs, VPHs, and (VOCs were undetectable throughout the Eagle Creek sample sites. The PAH concentrations were higher at EAGL-t-003 than at NCY-PT19 (Figure 3-42). The PAHs that comprised the majority of total parent PAHs at the Eagle Creek tributary included naphthalene, phenanthrene, and biphenyl (Figure 3-43).

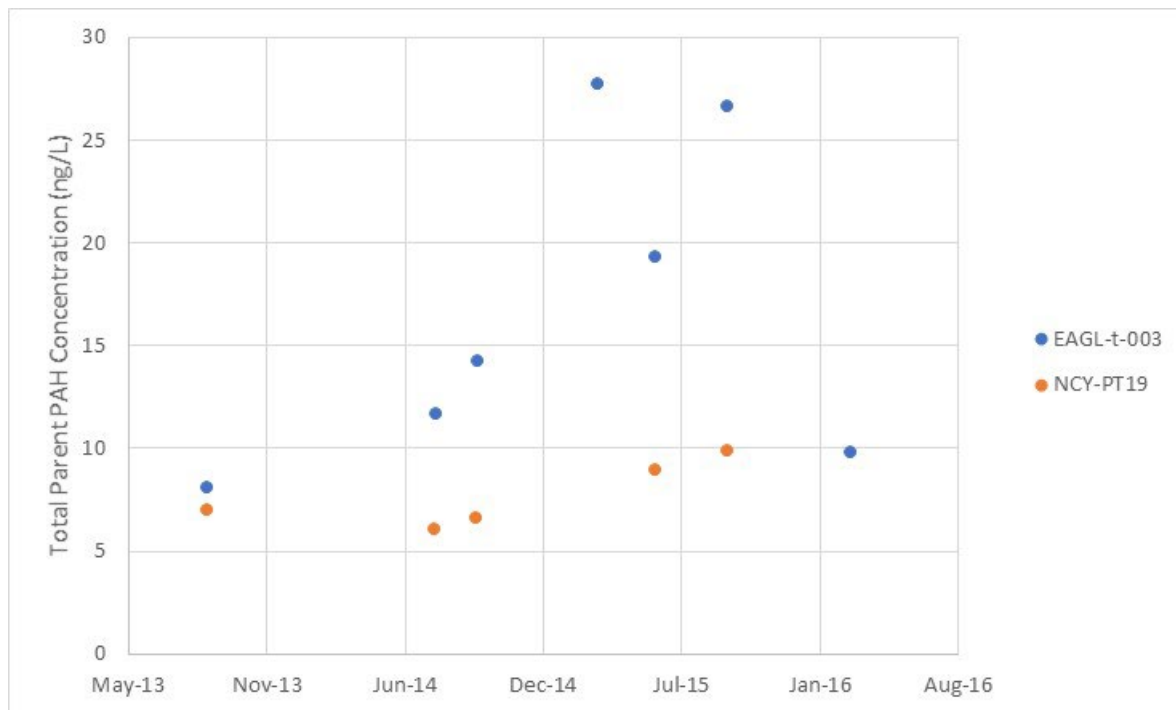


Figure 3-42. Total parent PAH concentrations in Eagle Creek tributaries from August 2013 through March 2016.

Note: Results that were below detection were treated as 0 ng/L.

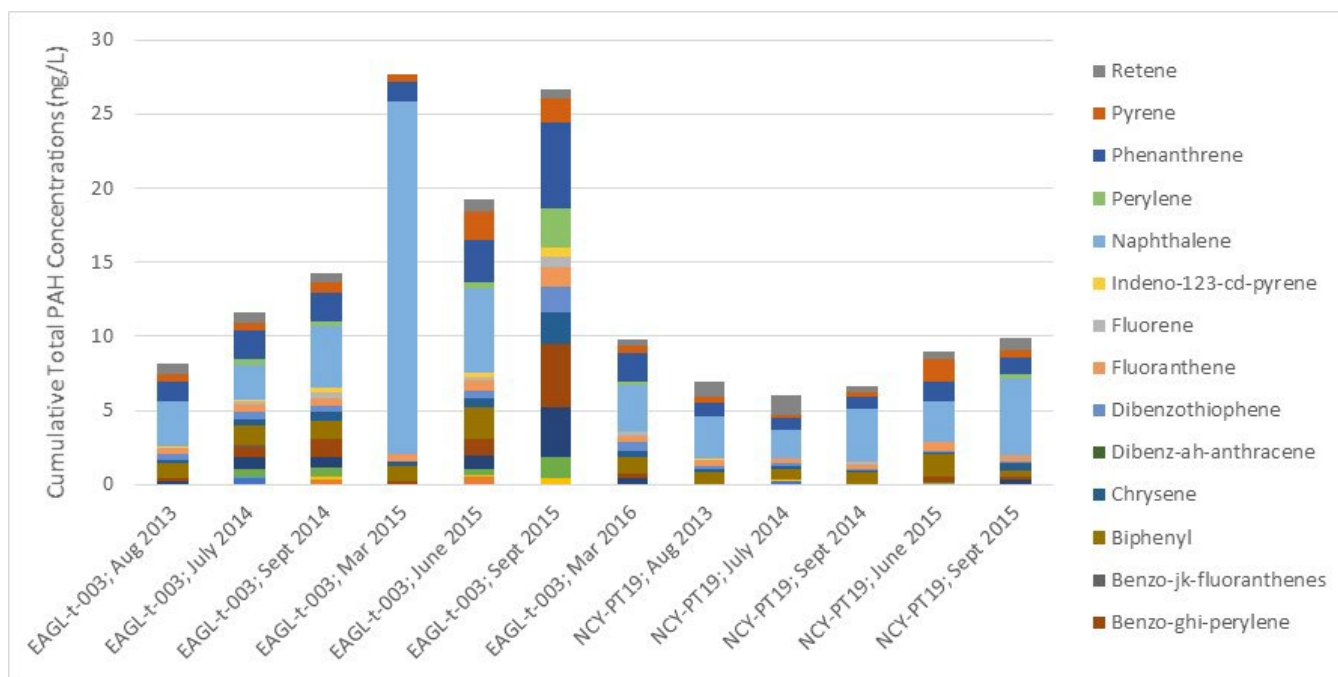


Figure 3-43. Cumulative parent PAH compounds in Eagle Creek tributaries from August 2013 through March 2016.

Note: Results that were below detection were treated as 0 ng/L.



### 3.1.4 DALGLISH CREEK

Dalglish Creek drains the RSA to the south, emptying into the Peel River. Water quality data were collected from two locations:

1. DALG-003, located on Dalglish Creek, in the upper reaches of the tributary (Photo 3-9); and,
2. DALG-002, located on Dalglish Creek, just upstream of the Peel River (Photo 3-10).

Water quality data were collected by YG WRB periodically at DALG-002 from September 2014 through March 2018. DALG-003 was sampled by EDI in August 2019 but was frozen to bed in March 2020.



Photo 3-9. Upstream view from DALG-003.



Photo 3-10. Upstream view from site DALG-002.

#### 3.1.4.1 General Chemistry and Major Ions

Water in Dalglish Creek was circumneutral to slightly acidic. Conductivity was higher than noted in other areas, ranging from 61 to 886  $\mu\text{S}/\text{cm}$ . Water hardness can be generally characterized as ‘soft to moderately soft’ during the open water season and ‘very hard’ during the under-ice months (Table 2-4).

Water was brown stained in colour, and turbidity was generally low. The suspended sediment load was variable throughout the year, with higher total suspended solids (TSS) samples likely associated with freshet and other rainfall events; it is suspected that elevated TSS in under-ice samples was associated with the sampling event itself, as the augur may have disturbed bottom sediments. Major ions predominantly comprised bicarbonate, calcium, magnesium, and sulphate (Figure 3-44).

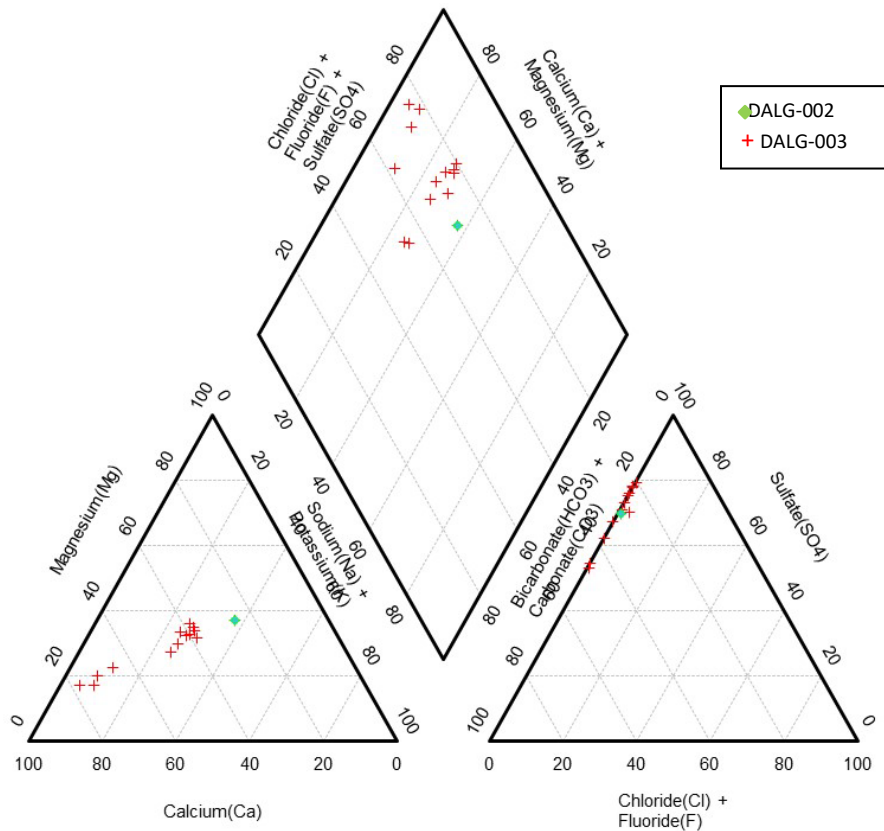


Figure 3-44. Piper plot showing major ion composition of waters in the Dalglish watershed in % meq/kg.

### 3.1.4.2 Nutrients

Nutrient concentrations in the Dalglish Creek sites were low; nitrate, nitrite, nitrate+nitrite, and total ammonia were below applicable guidelines in surface water. Total phosphorus concentrations ranged from 0.017 to 0.11 mg/L, indicating mesotrophic to oligotrophic trophic status (Table 2-5).

### 3.1.4.3 Trace Metals

Aluminum, copper, iron, and manganese in the Dalglish Creek sites occurred at concentrations that regularly exceeded the CCME-FAL guideline. Total aluminum exceeded the CCME-FAL guideline in nearly all samples from both sites; however, the dissolved fraction of aluminum was below the CCME-FAL guideline in all samples (Figure 3-45 and Figure 3-46). Total and dissolved copper, iron, and manganese regularly exceeded their respective CCME-FAL guidelines (Figure 3-47 through Figure 3-52). Total arsenic, cadmium and selenium exceeded the hardness-specific guideline in only one sample, an under-ice sample from March 2017, when there was no visible flow at the sampling time.

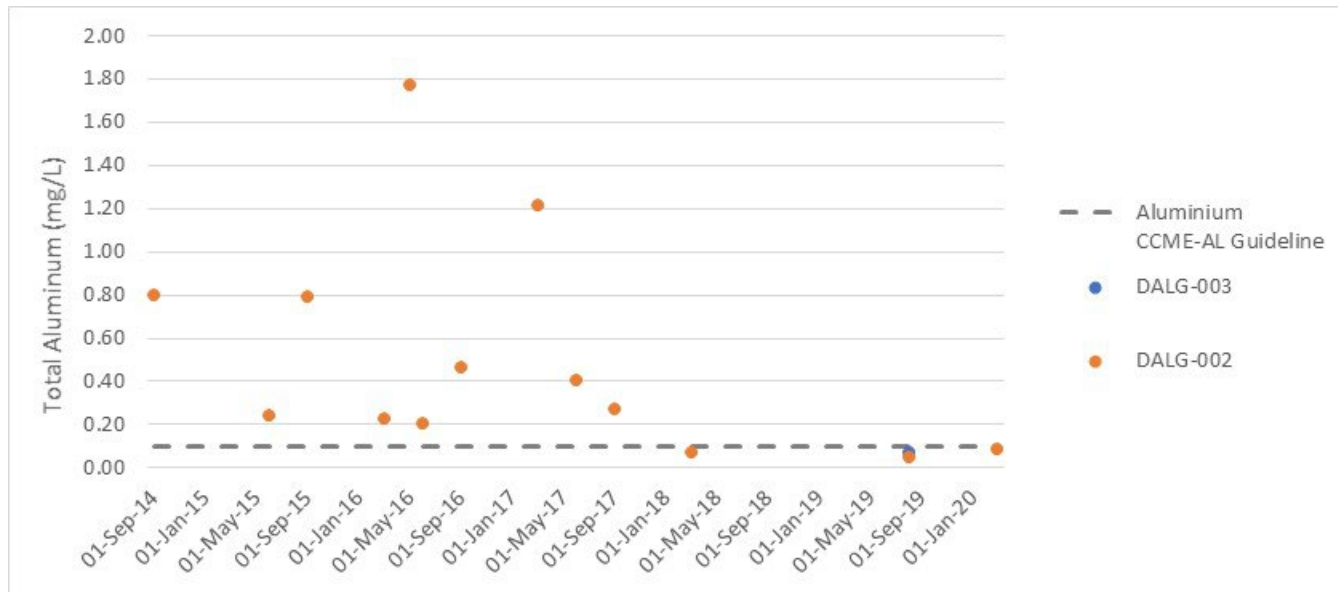


Figure 3-45. Total aluminum concentrations in Dalglish Creek sites between September 2014 and March 2020.

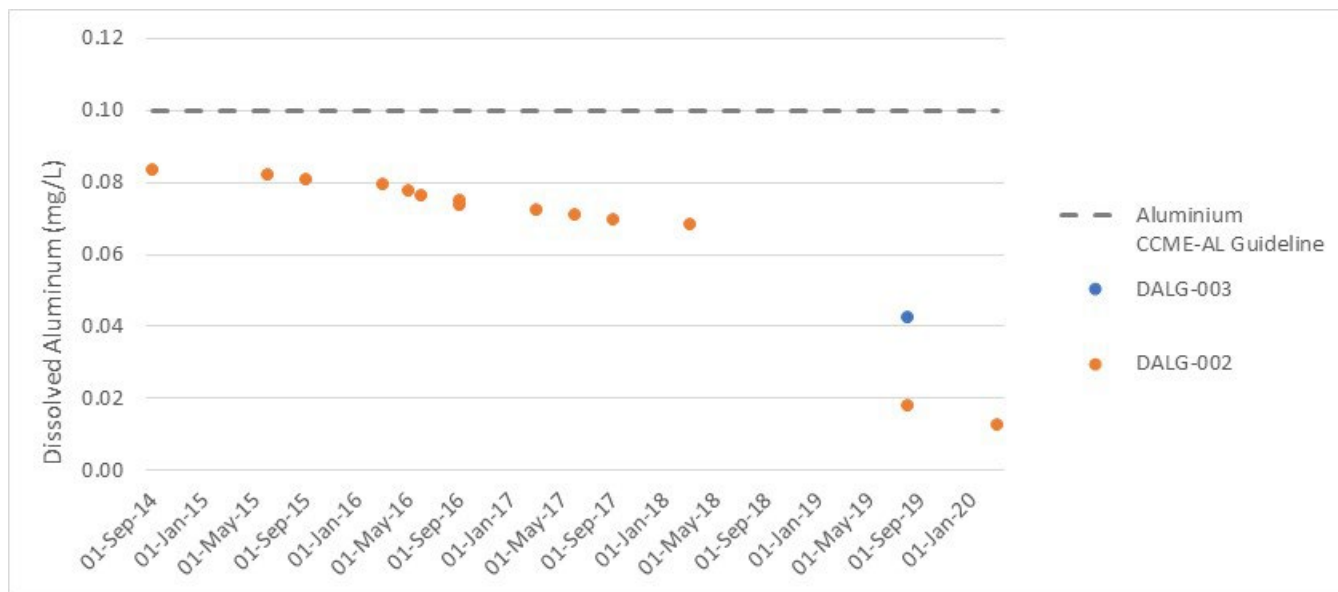


Figure 3-46. Dissolved aluminum concentrations in Dalglish Creek sites between September 2014 and March 2020.



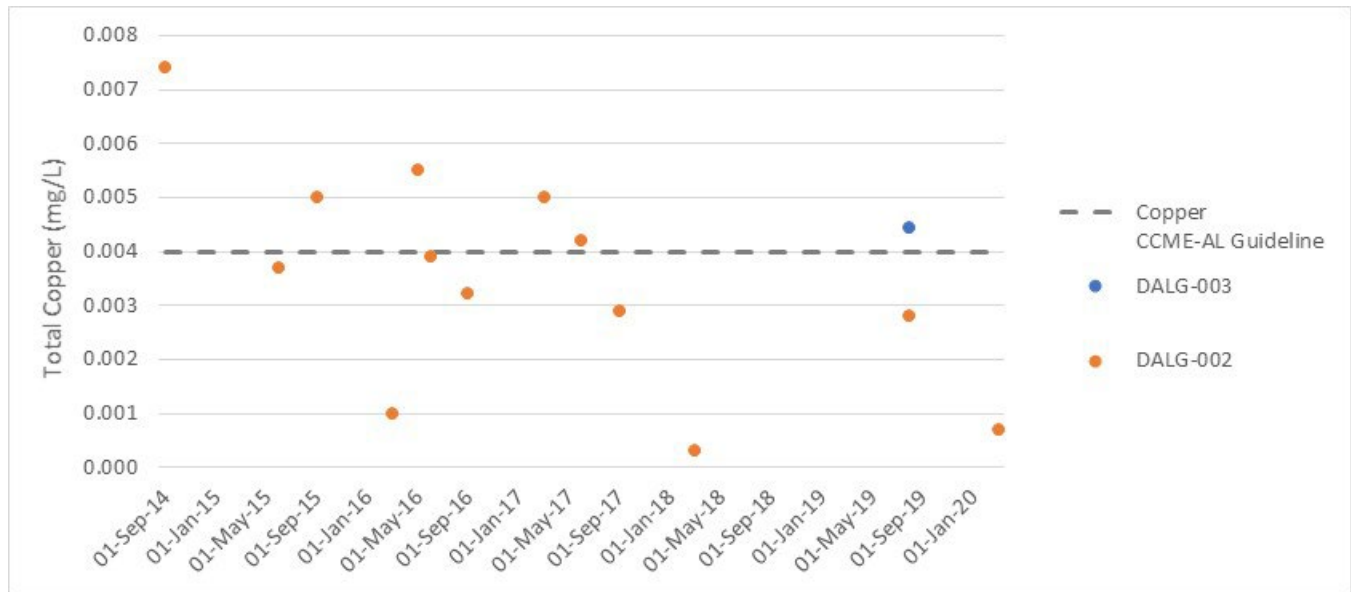


Figure 3-47. Total copper concentrations in Dalglish Creek sites between September 2014 and March 2020.

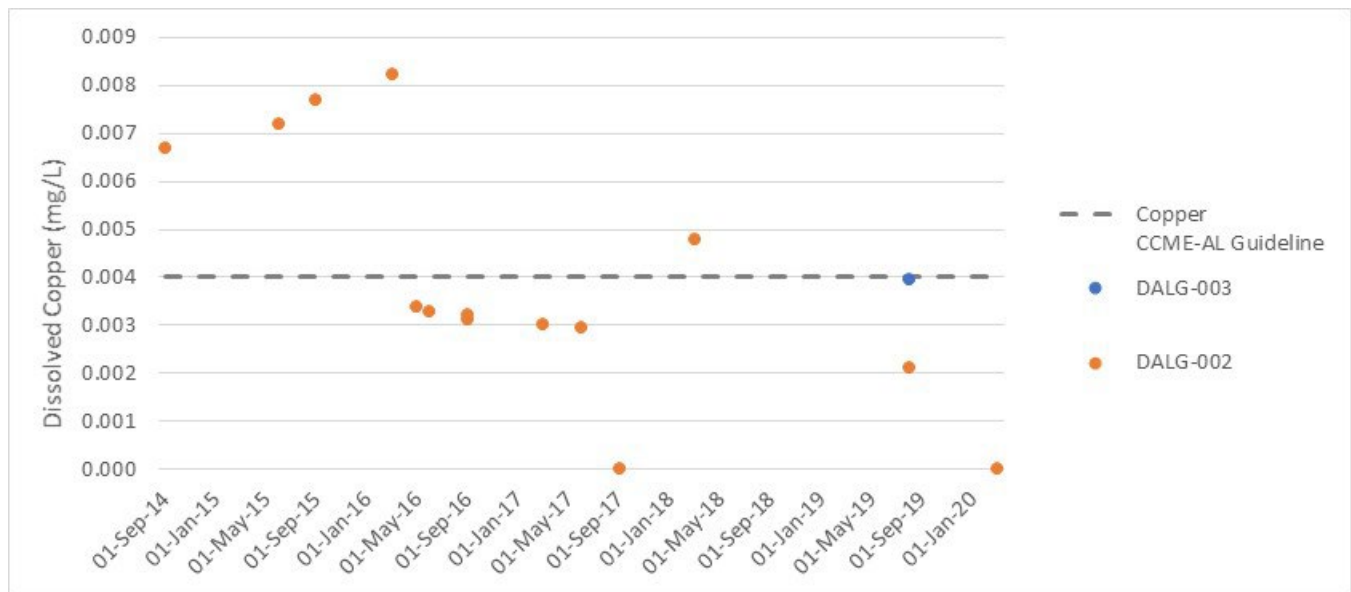


Figure 3-48. Dissolved copper concentrations in Dalglish Creek sites between September 2014 and March 2020.

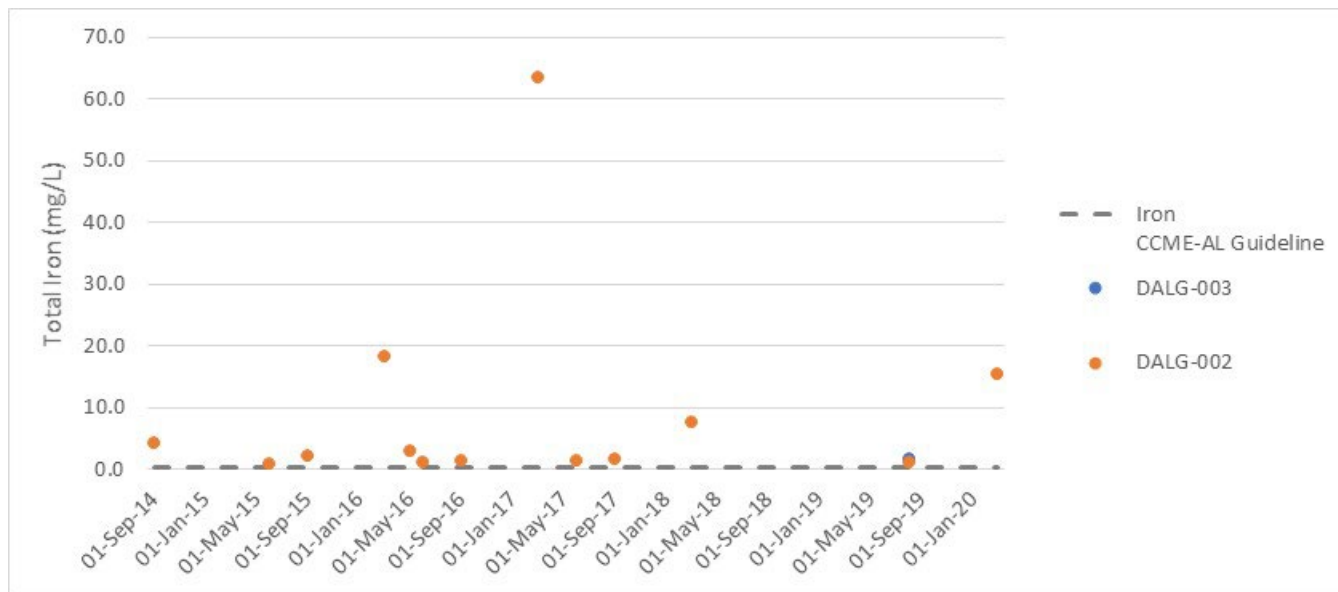


Figure 3-49. Total iron concentrations in DalGLISH Creek sites between September 2014 and March 2020.

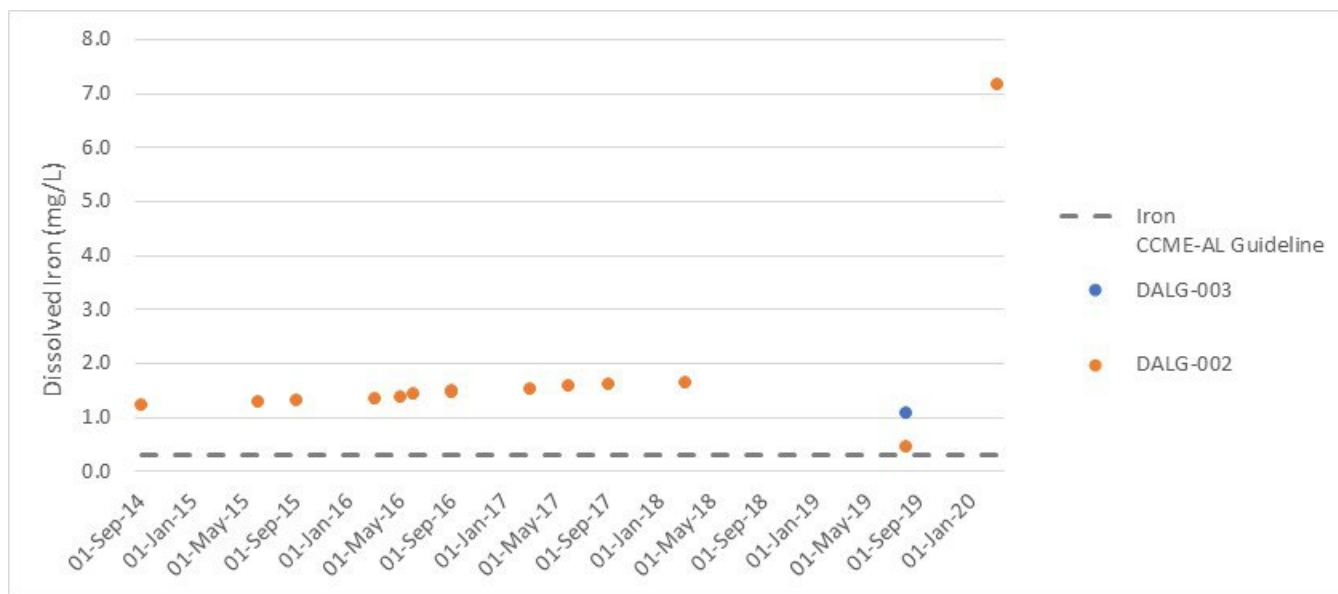


Figure 3-50. Dissolved iron concentrations in DalGLISH Creek sites between September 2014 and March 2020.

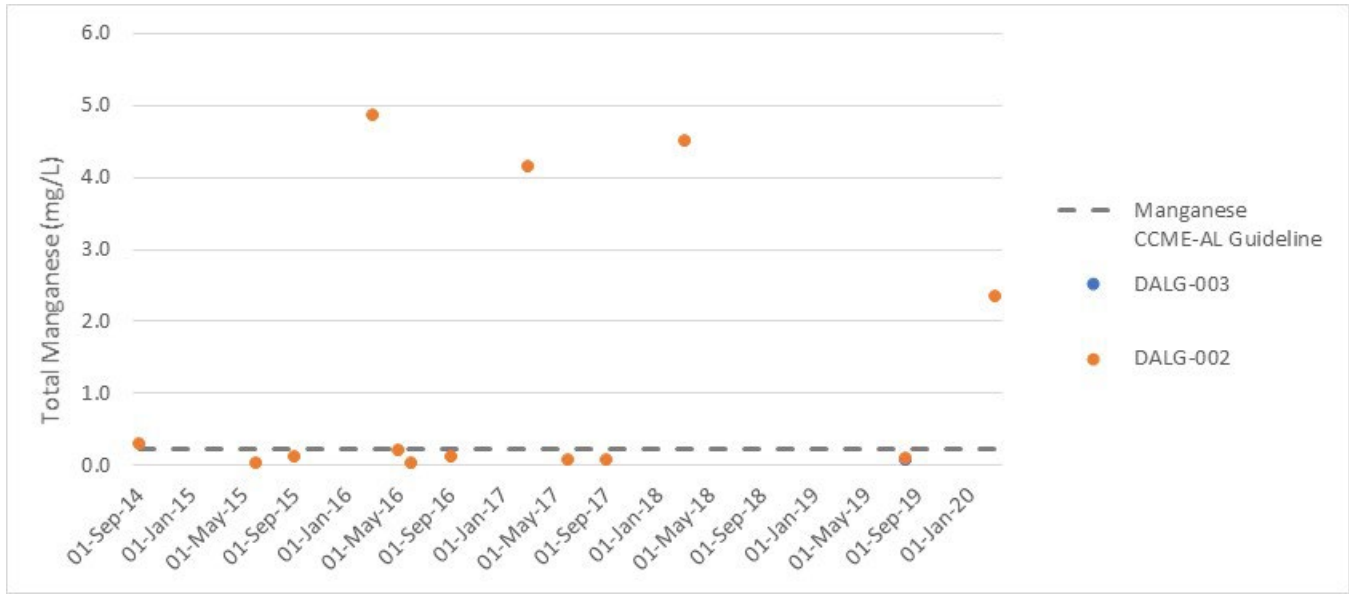


Figure 3-51. Total manganese concentrations in Dalglish Creek sites between September 2014 and March 2020.

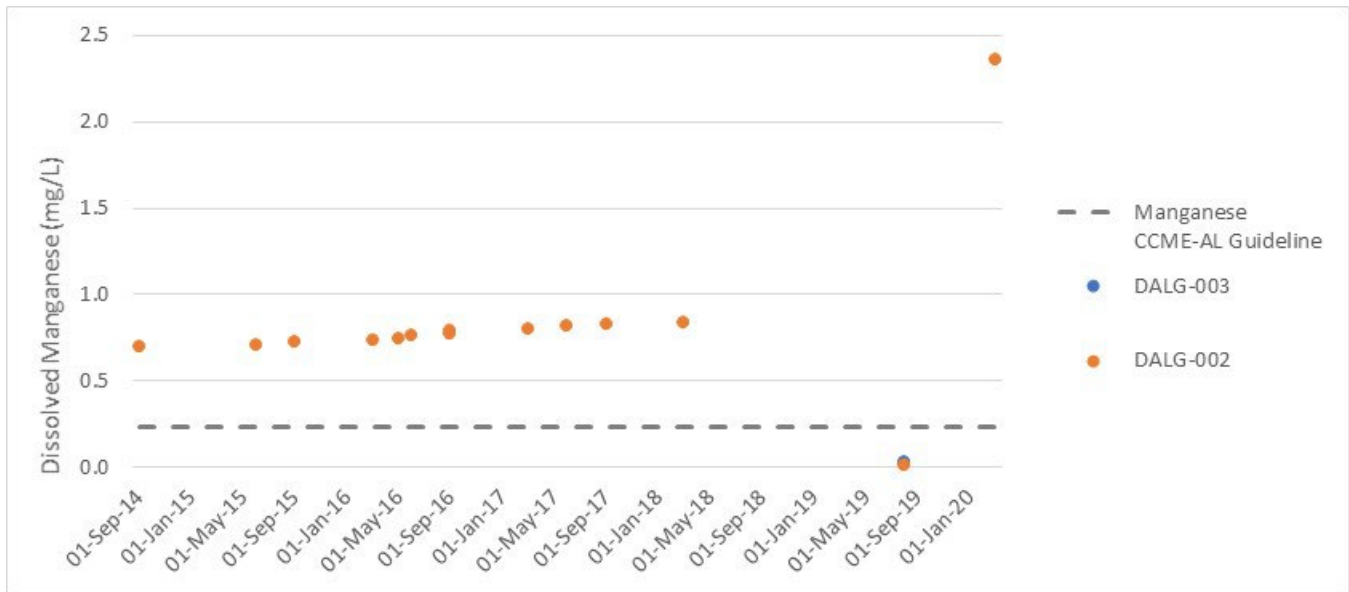


Figure 3-52. Dissolved manganese concentrations in Dalglish Creek sites between September 2014 and March 2020.

### 3.1.4.4 Hydrocarbons

As in the other Project sampling areas, VHs, VPHs, and VOCs were undetectable in Dalglish Creek. No seasonal/temporal pattern to PAH concentrations was identified in Dalglish Creek (Figure 3-53). The PAHs that comprised the majority of total parent PAHs in Dalglish Creek included naphthalene, phenanthrene, and retene (Figure 3-54).

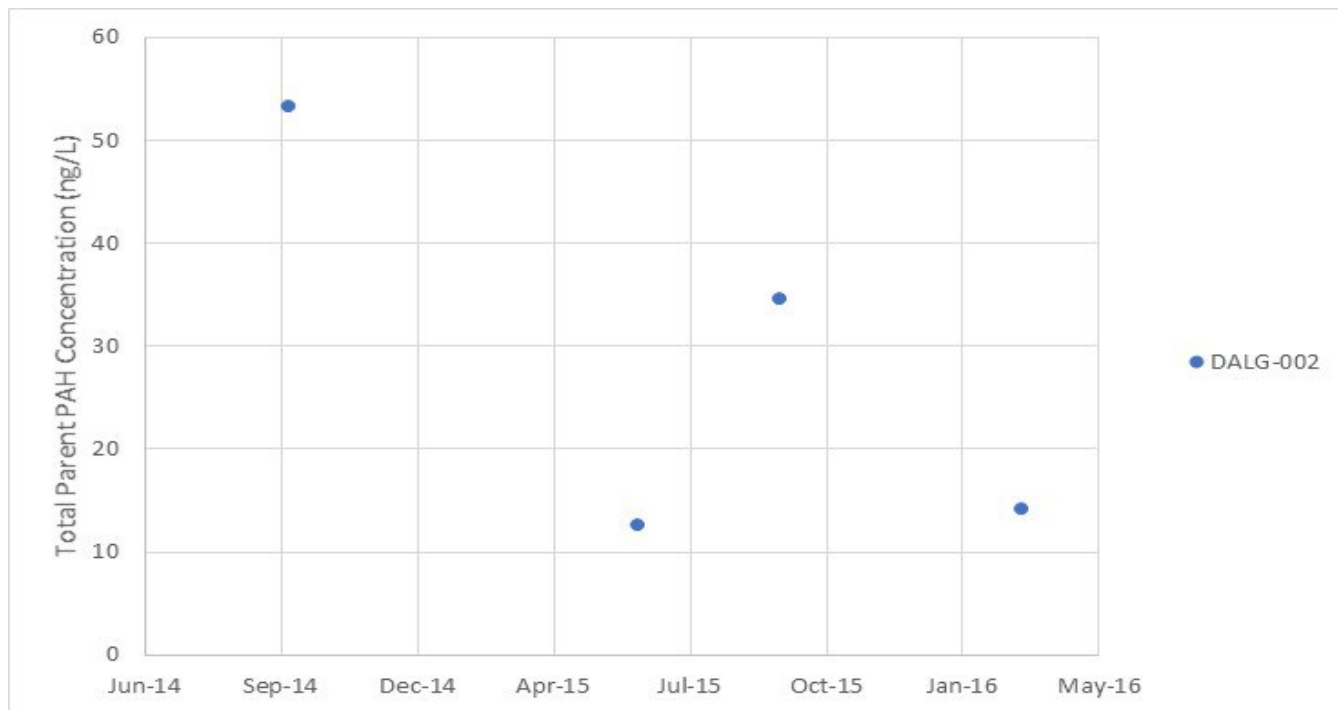


Figure 3-53. Total parent PAH concentrations in DalGLISH Creek from September 2014 through March 2016.

Note: Results that were below detection were treated as 0 ng/L.

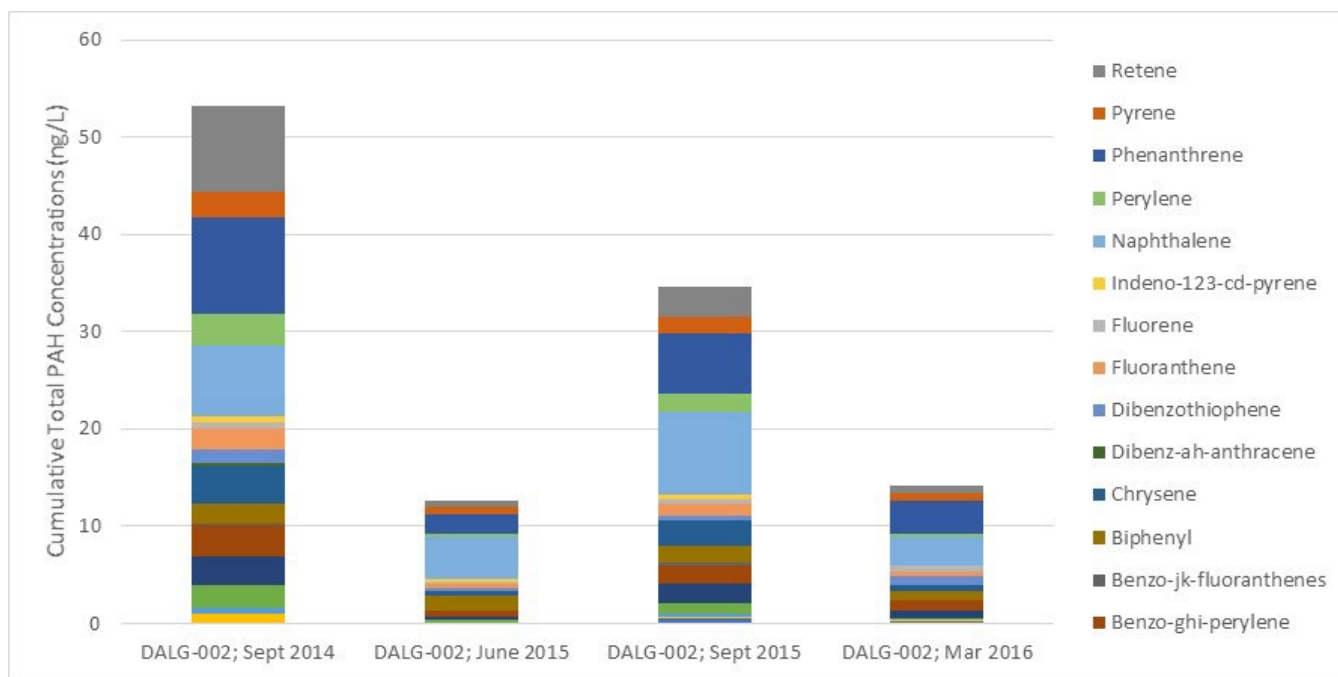


Figure 3-54. Cumulative parent PAH compounds in DalGLISH Creek from September 2014 through March 2016.

Note: Results that were below detection were treated as 0 ng/L.



## 3.2 HYDROLOGY

### 3.2.1 HYDRO-CLIMATE

ECCC meteorological data were used to evaluate daily rainfall, snowpack and temperature trends and the relationship with local and regional flow regimes in and around the RSA. The mean daily rainfall and snowpack data were calculated through the period of record available (1998 – 2005, 2007 – 2008) and plotted to identify the seasonal trends in rainfall-driven snowmelt events, annual precipitation trends and their relationship (Figure 3-55). Precipitation in the region begins to accumulate as snowpack begins as early as mid-September. Water in the region is stored as snowpack and accumulates through the winter. Spring rainfall events begin to occur as early as mid-April, increasing snowpack melt and contributing to surface water discharge. Some snowpack can be retained as late as early June, when snow depths at the Eagle Plains meteorological station will decline rapidly with sustained positive temperatures and rainfall events.

Mean daily temperature approaches 0°C in mid-April, corresponding to the first annual rainfall events, increasing frequency and magnitude beginning in May (Figure 3-56). Rainfall events occur throughout the summer months with the maximum mean daily rainfall occurring in July. Mean daily rainfall remains high in August and gradually declines through late August into September. Mean daily air temperatures decrease and approach 0°C in September and October, corresponding to the decrease in rainfall magnitude. Sustained negative temperatures over the winter result in precipitation accumulating in snowpack and refreezing the active permafrost layer. This area is classed as semi-arid, and the combination of persistent low temperatures and low to moderate snowpack are considered insufficient to insulate the ground fully, and cold penetration contributes to a thin permafrost active layer (Palmer Environmental Consulting Group 2015). The continuous permafrost thickness is reported between 61 to 244 m, with an average active layer depth of 0.74 m.

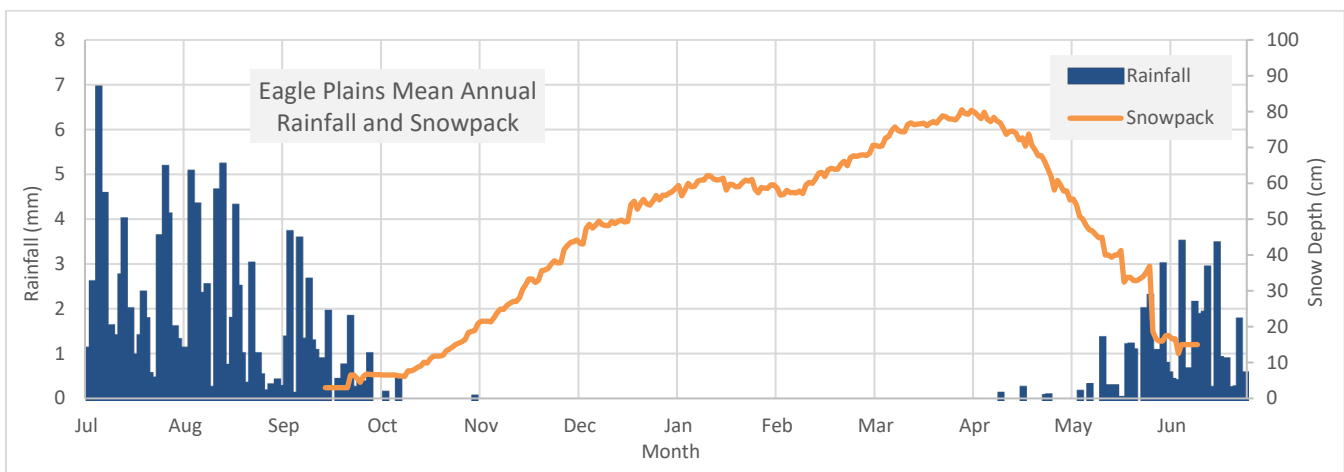


Figure 3-55. Mean daily rainfall and snowpack data averaged over the entire period on record from the Eagle Plains meteorological station (1998 – 2005, 2007 – 2008).

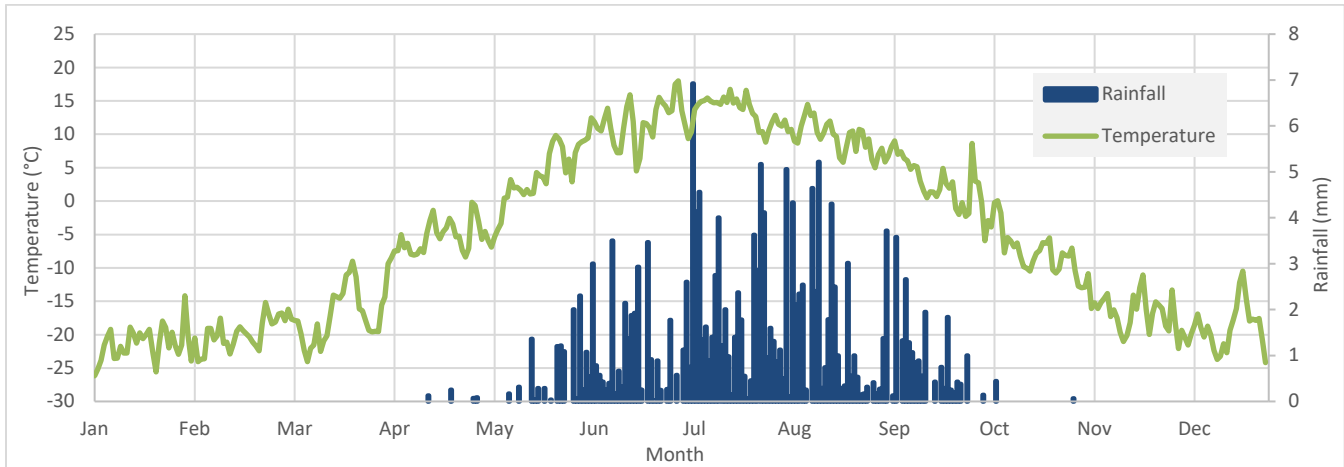


Figure 3-56. Rainfall and temperature data averaged over the entire period on record from the Eagle Plains meteorological station (1998 – 2005, 2007 – 2008).

### 3.2.2 REGIONAL SURFACE FLOW TRENDS

The WSC data were used to evaluate annual discharge trends in the region and inform a surface water flow regime baseline. Mean daily discharge data for each station’s entire period of record was plotted (Figure 3-57) to identify the timing and magnitude of peak events such as spring freshet and compare the trends with the regional flow regimes to better inform site-specific baseline flow regimes. Regional flow trends are consistent with a northern climate where flows are primarily driven by spring snowpack melt (freshet). This is evident in the high peak flows during late April to late May, with a rapid recession following freshet events. Flows are generally stable over the summer months and sustained by baseflow contributed by inter-flow in surficial material or supraperafrost water. Rainfall events drive peaks in the summer discharge. During late September through early October discharge decreases regionally as precipitation accumulates as snowpack and the active layer refreezes. Flows continue to decline over the winter, with low flow or zero-flow periods occurring annually from February into April.

Flows continue to decline from October into the winter period, and WSC data indicate these higher-order watercourses do not tend to exhibit zero-flow levels (Figure 3-58). The lowest flow period in the region is typically observed between late February and early April, with some occurrences observed as early as February 9 and as late as May 1.

Peak flows in the region are commonly observed between early and mid-May. Some precipitation-driven maximum discharge outliers occur after freshet as late as August 12. Table 3-1 indicates the three most extreme minimum and maximum flow values on record and the date on which the values were observed. Most maximum discharge values occurred in May, and most minimum discharge values occurred in April, and the timing of both are characteristic of snowmelt-driven flow regimes.

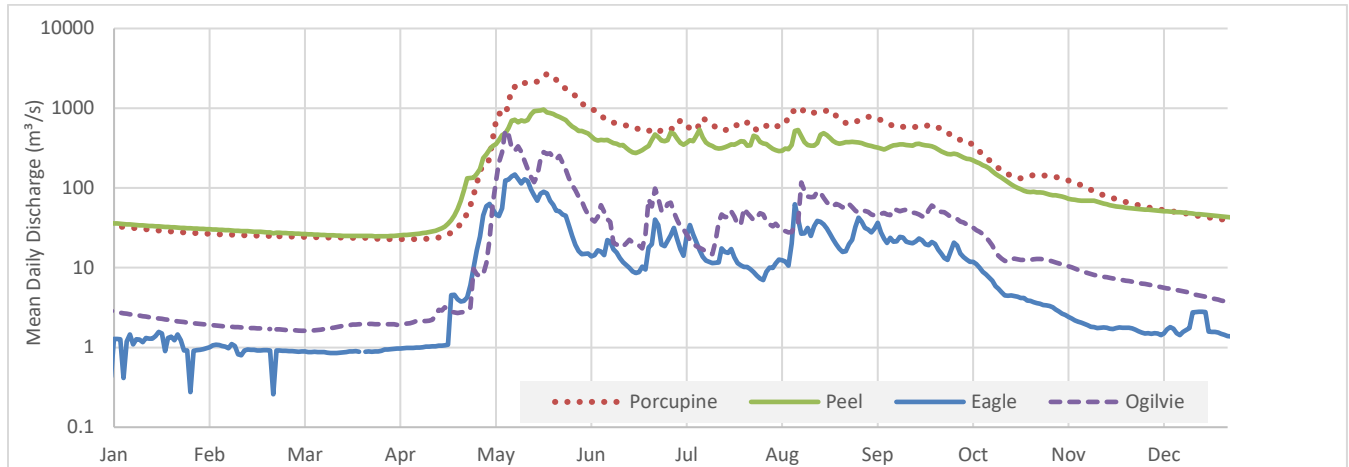


Figure 3-57. Mean daily discharge over available periods of record for the Eagle, Ogilvie, Porcupine and Peel Rivers. Note: = discharge values are displayed on a logarithmic scale.

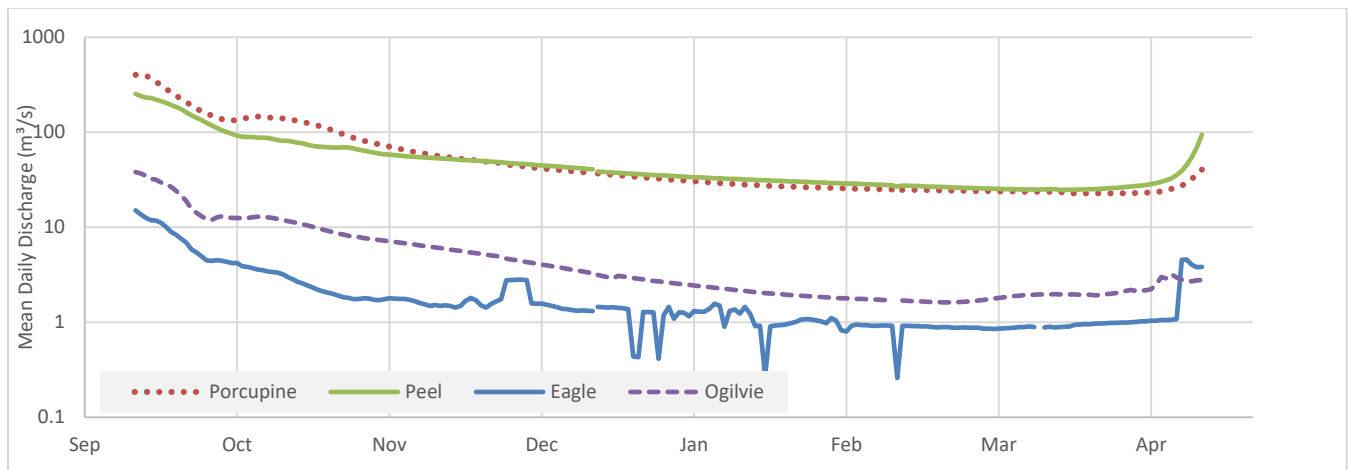


Figure 3-58. Fall and winter low flow mean daily discharges for the period on record for the Eagle, Ogilvie, Porcupine and Peel Rivers. Note: discharge values are displayed on a logarithmic scale.



**Table 3-1. The minimum and maximum recorded mean daily discharge values for the entire period on record for Eagle, Peel, Ogilvie, and Porcupine rivers.**

Watercourse	Minimum Recorded Discharge		Maximum Recorded Discharge	
	Discharge (m <sup>3</sup> /s)	Date	Discharge (m <sup>3</sup> /s)	Date
Eagle River	0.152 m <sup>3</sup> /s	April 27, 2017	334 m <sup>3</sup> /s	May 19, 2015
	0.164 m <sup>3</sup> /s	April 13, 2014	294 m <sup>3</sup> /s	May 15, 2019
	0.216 m <sup>3</sup> /s	May 1, 2015	279 m <sup>3</sup> /s	May 12, 2019
Peel River	21.2 m <sup>3</sup> /s	April 6, 2012	3070 m <sup>3</sup> /s	May 21, 2011
	22.8 m <sup>3</sup> /s	April 17, 2014	2880 m <sup>3</sup> /s	July 12, 2012
	23.0 m <sup>3</sup> /s	March 30, 2015	2730 m <sup>3</sup> /s	August 12, 2016
Ogilvie River	1.35 m <sup>3</sup> /s	March 9, 2019	1160 m <sup>3</sup> /s	August 12, 2016
	1.73 m <sup>3</sup> /s	April 20, 2017	811 m <sup>3</sup> /s	May 12, 2020
	2.41 m <sup>3</sup> /s	April 1, 2020	510 m <sup>3</sup> /s	May 16, 2017
Porcupine River	12.5 m <sup>3</sup> /s	March 23, 2008	6320 m <sup>3</sup> /s	May 25, 2011
	13.8 m <sup>3</sup> /s	April 1, 2005	5770 m <sup>3</sup> /s	May 16, 2015
	13.8 m <sup>3</sup> /s	April 13, 2006	5600 m <sup>3</sup> /s	May 18, 2019

### 3.2.3 TRIBUTARY SURFACE FLOW TRENDS

The WRB data for McParlon and Dalglish creeks were used to establish baseline flow trends for watercourses originating within the RSA. Mean daily discharge data for the period of record (Figure 3-59) were evaluated to identify timing and characteristics of peak flow events and compare the tributary and regional flow regimes. The peak flows are primarily snowmelt driven, tributary watercourses originating from the RSA exhibit high flow variability and flashiness between May and October. Precipitation events create short flashy discharge events followed by discharge returning to baseflow conditions (Figure 3-59). The two tributary watercourses exhibit similar flow regiments and discharge values, which is expected given their close geographical proximity. Both creeks either de-water or freeze to bed between early October and late April. No flow data are available for this period.

Discharge data for each tributary creek originating in the RSA were compared with the flow regime of each of the respective regional destination watercourse to compare the timing of peak flow events, low flow periods and the duration of these events (Figure 3-60 and Figure 3-61). The flow regimes in the destination watercourses have a lag relative to the tributary watercourses. However, the flow responses are similar. The regional watercourses respond to precipitation events more slowly. The peaks in discharge are longer duration than in the flashy tributaries, reflecting the cumulative inputs from tributaries over a larger contributing area.

McParlon Creek and Dalglish Creek exhibit zero-flow (defined as discharge < 1L/s) during the winter months. Data gaps exist between early October and late April where the channels freeze to bed, de-water, or channel ice inundates water level loggers and these channels are at zero-flow for most or all this period. Peak flows in the tributaries tend to occur in late April through early May, and in the regional watercourses in mid-May through early June. In the tributaries, flashy discharge is observed resulting from rainfall events throughout May to October. As indicated in Table 3-2, precipitation-driven peak flow outliers in the





tributaries may occur as late in the summer as August 11 in McParlon Creek and August 8 in Dalglish Creek and fluctuations in the discharge through the duration of the record also reflective of precipitation events.

The comparison between the tributary and regional watercourses shows similarities between the patterns and timing of the flow regimes. Lags between tributary and regional watercourses are variable related to the magnitude of the event driving the discharge fluctuation.

The regional and tributary watersheds are snowmelt driven, with seasonal inputs from rainfall, and little to no groundwater influxes to support the low flow winter periods after the active permafrost layer freezes seasonally. Groundwater – surface water interactions in these watersheds are limited to suprapermafrost perched groundwater within the shallow active layer of the permafrost. Water movement to surface flow is limited in these watersheds to direct runoff and interflow and lateral migration through the active layer, driven by precipitation or snowmelt, during the season of thaw in the active layer.

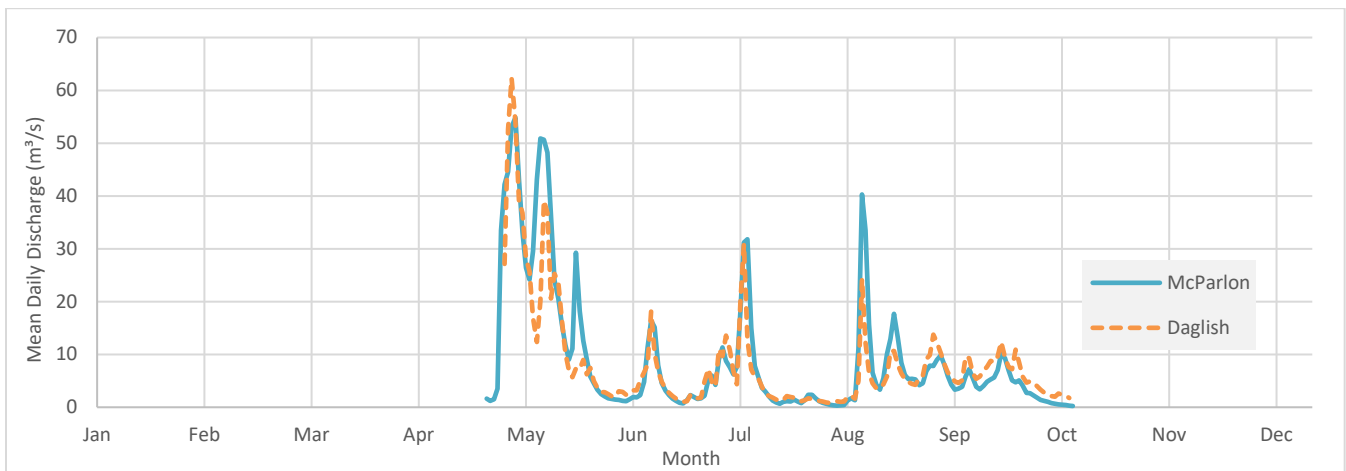


Figure 3-59. McParlon Creek and Dalglish Creek mean daily discharge rates over entire periods of record.

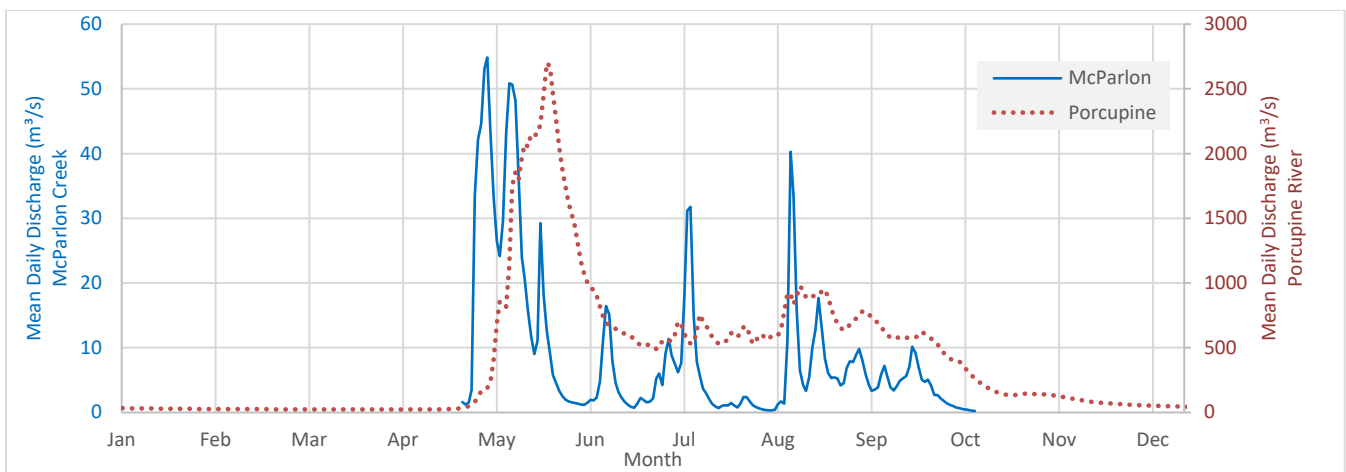


Figure 3-60. Comparative discharge plot for mean daily discharge for McParlon Creek and Porcupine River for the periods of record.

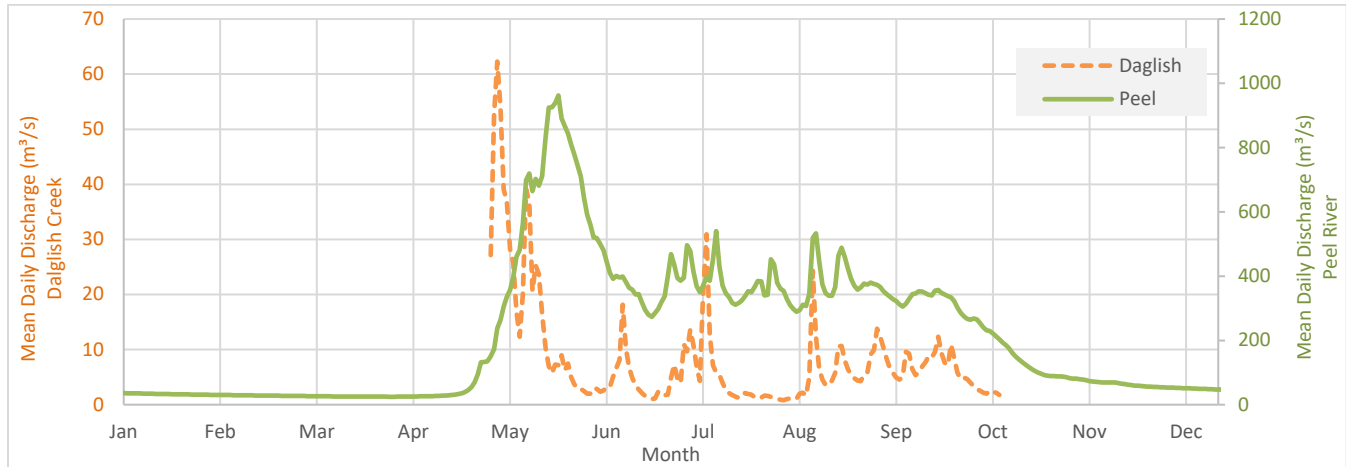


Figure 3-61. Comparative discharge plot for mean daily discharge for Dalglish Creek and Peel River for the periods on record.

Table 3-2. Maximum discharge values for the entire period on record for tributary watercourses McParlon and Dalglish creeks.

Watercourse	Maximum Recorded Discharge	Date
McParlon	138.92 m <sup>3</sup> /s	May 14, 2015
	131.49 m <sup>3</sup> /s	August 11, 2016
	64.58 m <sup>3</sup> /s	May 5, 2014
Dalglish	106.75 m <sup>3</sup> /s	July 7, 2015
	82.10 m <sup>3</sup> /s	August 8, 2016
	70.85 m <sup>3</sup> /s	May 5, 2014



## 4 DISCUSSION AND SUMMARY

### 4.1 WATER QUALITY

Water quality was comparable across the RSA, with neutral to slightly acidic, brown-stained water due to tannic acids from surrounding sediments/soils. Variable turbidity and TSS concentrations were likely associated with melting permafrost and resulting slumping banks that continuously deposit material into the water columns. Water hardness ranged from soft to moderately soft in the open water season, changing to moderately hard to hard during the winter, under-ice season. Water hardness affects the toxicity of various metals in the water column; harder water can bind with more metals, rendering them less bioavailable to aquatic biota.

Dissolved oxygen concentrations were highest during freshet but decreased throughout the summer and were low throughout the RSA during the under-ice season. Most streams in the RSA are small and freeze to the substrate in the winter except for some isolated pools. These winter conditions result in minimal to no stream flow and, consequently, low dissolved oxygen concentrations that provide fish with little to no overwintering habitat.

The primary source of ions to natural surface waters is the weathering of rocks. Therefore the chemical composition of the water reflects the local geology. The dominant ions in all areas were bicarbonate, calcium, and sulphate.

Nutrient concentrations were generally low across the RSA. Concentrations of nitrogen compounds were low to below laboratory detection, and total phosphorus concentrations indicated that streams were oligotrophic to mesotrophic. Low nutrient concentrations combined with cold water temperatures and low dissolved oxygen concentrations result in low-productivity streams throughout the RSA.

Metals including aluminum, cadmium, copper, iron, and manganese were present throughout the RSA at concentrations that exceeded the CCME-FAL guidelines. Additionally, some other metals were present at concentrations above the CCME-FAL in isolated samples from each watershed area, including arsenic from Chance and Dalglish creek sites, and selenium from McParlon, Eagle and Dalglish creek sites. These metals are naturally present and enter the surface water environment through various processes, including the weathering of rocks, atmospheric deposition, permafrost melting, and the subsequent sediment introduction of the watercourses.

Volatile organic carbons were not present at or above laboratory detection limits at any of the sample locations. Common PAHs present in the RSA included naphthalene, biphenyl, phenanthrene, and retene. These PAHs are associated with natural processes, including forest fires (retene; Gabos et al. 2001) and naturally occurring oil and gas deposits in the area.



## 4.2 HYDROLOGY

Hydrological regimes observed in the study area are characteristic of snowmelt-dominated flow regimes of northern climates. Regional watercourses (i.e., stream orders 6 and greater) exhibit peak discharge in May when temperatures increase, rain melts the snowpack, and stored water is rapidly discharged as surface water flow. Over the summer, the flow in large watercourses is sustained by rainfall events, and to a lesser extent, shallow suprapermafrost lateral flows in the active layer. In the fall, when precipitation begins to be stored as snowpack and the active permafrost layer begins to refreeze, discharge trends downward from September and more rapidly through October when temperatures decrease below 0°C. Annual low flows occur over the winter, with the lowest discharge rates occurring during February, March, and April.

As stream order decreases, the relative response, both in time and magnitude, of discharge rates increases in response to precipitation events because of smaller contributing areas to the watercourse. As temperatures decrease below freezing between October and November, precipitation begins to become stored as snowpack, and the active layer begins to re-freeze and subsequently discharges decrease rapidly and most tributary streams either de-water or freeze to bed by March. Tributary watercourses within the RSA do not exhibit flow again until the following spring melt begins. Intermediate order watercourses like McParlon and Dalglish creeks may retain limited water in residual pools and water quality metrics, such as very low dissolved oxygen, were indicative of zero or very low flow.

The hydrology metrics within the RSA are consistent with hydrology for similar watercourses across northern Canada, and more specifically, within the Yukon River Basin (Brabets et al. 2000, Buttle et al. 2012). Studies on hydrology report similar hydrograph trends for snowmelt-dominated watersheds, both in current research and historically. The general trend describes minimal runoff and a corresponding decrease in streamflow, beginning in October and ending in late April. Regionally, runoff occurs from May to September, dependent on basin characteristics, including drainage area. In some watersheds, including the Porcupine, winter low flow periods approach zero flow, and this is attributed to continuous permafrost, which is effectively a barrier to groundwater influxes to the surface water. The thin active layer of the permafrost does not retain storage capacity for groundwater, and suprapermafrost groundwater perched on the permafrost is only seasonal lateral migration of interflow, or seasonal melt water. Zero flow conditions are not observed in the larger watercourses and mainstem channels because the discharge is a cumulation of the flows from large catchment areas. Locally there may be a thicker active layer that supports flows later into winter before the freeze is complete.

The literature reports that climatic conditions influence observed flows. These conditions drive channel freeze up and thaw, snowmelt, precipitation, runoff, and permafrost — all of which influence the timing and amount of groundwater influxes to suprapermafrost water within the active layer. The literature indicates that streams that reach or approach zero-flows seasonally are predominantly in headwater (lower order) catchments — supporting what the hydrology data show for the RSA.



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# ATTACHMENTS



**ATTACHMENT A YG WRB WATER QUALITY DATA;  
2013 TO 2016**

O-DO-F	pH-F	Cond-F	TDS-F	ORP	Temp-F	Wlevel	Turb-F	Turb-F-FNU	PurgeVol	Alk-T	pH-L	Hard-T	Hard-D	Cond-L	TDS	TSS	N-NH4	N-NO3	N-NO23	N-NO2	N-TKN	P-PO4T	N-TN	N-NH3u(c)
inorg	phy	phy	phy	phy	phy	phy	phy	phy	phy	phy	phy	phy	phy	phy	phy	phy	nutr	nutr	nutr	nutr	nutr	nutr	Nx	nutr
Oxygen, Dis	pH, Field	Specific Cor	Total Dissol	Oxidation -	Temperatur	Water Level	Turbidity, fi	Turbidity, fi	Volume of v	Alkalinity,	pH, Labora	Hardness c	Hardness c	Specific Cc	Total Diss	Total Susp	Ammoniuir	Nitrate	Nit Nitrite	anc Nitrite	Nitri	Total Kjeld	Phosphoru	Nitrogen, -
mg/L	mg/L	uS/cm	mg/L	mV	C	m	NTU	FNU	L	mgCaCO3/	uS/cm	mgCaCO3/	mgCaCO3/	uS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
6.5	6.5 - 9.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	emp, pH-de	13	-	-	0.06	-	-	-

Stn.Code	Site Name	Group	Smpl Date	O-DO-F	pH-F	Cond-F	TDS-F	ORP	Temp-F	Wlevel	Turb-F	Turb-F-FNU	PurgeVol	Alk-T	pH-L	Hard-T	Hard-D	Cond-L	TDS	TSS	N-NH4	N-NO3	N-NO23	N-NO2	N-TKN	P-PO4T	N-TN	N-NH3u(c)	
CHNC-001	Chance Creek above confluence with Chance		2013-07-29		8.8	7.3	54		16.9			8.3			16	6.81			52	86	4	0.04	<0.01		<0.01		0.02		0.000
CHNC-001	Chance Creek above confluence with Chance		2014-07-22 10:47		-	6.34	89		16.38						29	7.32	47.7	40	89	102	3	<0.020	<0.010	<0.010	<0.010	0.7	0.017	0.7	0.000
CHNC-001	Chance Creek above confluence with Chance		2014-09-22 19:00		11.9	6.8	61		4.8						13	6.84	27.1	25	62	88	15	0.026	0.04	0.04	<0.01	1.01	0.064	1.05	0.000
CHNC-001	Chance Creek above confluence with Chance		2015-03-14 17:30		2	7.5	320		0.1						135	7.83	133	121	320	222	<2	0.156	0.02	0.02	<0.01	0.98	0.013	1	0.000
CHNC-001	Chance Creek above confluence with Chance		2015-06-06 11:00		10.22	7.07	59.6		10.8			5.9			14	6.64			63	32	4	<0.01	0.08		0.06		0.039	0.69	0.000
CHNC-001	Chance Creek above confluence with Chance		2015-09-18 18:05		12.34	7.02	116		3		45.8				23	6.7			116	12	81	0.01	0.03		0.04		0.063	0.75	0.000
CHNC-001	Chance Creek above confluence with Chance		2016-03-16		5.82	8.18	28		0		3.1				201	7.56			542	202	<2	0.09	<0.01		0.11	<0.003	0.47	0.001	
CHNC-001	Chance Creek above confluence with Chance		2016-06-21 11:15		8.83	6.82	71.6		15.1		8.4				13	6.52			64	184	5	0.02	0.01		<0.01		0.016	0.59	0.000
CHNC-001	Chance Creek above confluence with Chance		2016-09-20 12:00		13.75	7.44	136.6		1.4		16.8				26	6.94			135	146	11	<0.01	<0.01		<0.01		0.032	0.69	0.000
CHNC-001	Chance Creek above confluence with Chance		2017-03-07 10:40		0.93	7.42	507		0		6.5				200	7.52	248		528	310	3	0.22	<0.1		<0.01		0.007	0.51	0.001
CHNC-001	Chance Creek above confluence with Chance		2017-06-27 11:30		8.18	7.35	140.4		16.4		5.6				37	7.15		53	134	210	<2	0.03	<0.01		<0.01		0.024	0.72	0.000
CHNC-001	Chance Creek above confluence with Chance		2017-09-20 10:21		11.91	7.6	71.4	105.9	5.1		16.5				17	7.14		31	70	98	2	<0.01	<0.01		<0.01		0.026	0.7	0.000
CHNC-001	Chance Creek above confluence with Chance		2018-03-21 10:25		3.91	7.74	324.5	131.6	0		26.9				134	7.64	150		324	240	245	0.16	0.02		<0.01		0.164	0.58	0.001
CHNC-003	Chance Creek u/s tributary	Chance	2013-08-26 15:00		10.25	7	58		7.4		8.1				23	6.82			50	94	4	0.03	<0.01		<0.01		0.05		0.000
CHNC-003	Chance Creek u/s tributary	Chance	2014-07-22 18:30		-	6.36	42		15.93						11	6.69	22.7	21	41	86	4	<0.020	<0.010	<0.010	<0.010	0.88	0.071	0.878	0.000
CHNC-003	Chance Creek u/s tributary	Chance	2014-09-23 10:40		12.07	6.7	38		3.1						8	6.58	20.9	19	38	80	5	0.026	0.01	0.01	<0.01	0.83	0.04	0.84	0.000
CHNC-003	Chance Creek u/s tributary	Chance	2015-06-05 15:40		10.35	6.36	28.5		8.6			7.2			5	6.13			30	40	<3	0.01	0.01		0.05		0.035	0.63	0.000
CHNC-003	Chance Creek u/s tributary	Chance	2015-09-19 17:23		12.1	6.2	34		1.7		63.1				7	6.16			34	40	88	0.02	<0.01		0.04		0.092	0.68	0.000
CHNC-003	Chance Creek u/s tributary	Chance	2016-09-22 10:59		12.5	6.74	40.4	26.533	88.9	1.7	88.1				10	6.41		20	40	24	46	<0.01	0.01		<0.01		0.029	0.62	0.000
CHNC-003	Chance Creek u/s tributary	Chance	2017-06-27 9:30		6.76	6.09	51.8		13.9		7.5				17	6.51		24	47	86	11	0.04	<0.01		<0.01		0.039	1.53	0.000
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2013-08-26 14:02		10.7	6.8	50		5.9		0.8				16	6.69			42	88	4	0.03	<0.01		<0.01		0.056		0.000
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2014-07-22 18:50		-	6.91	46		15.59						13	6.54	24.6	23	42	111	8	<0.020	<0.010	<0.010	<0.010	1.12	0.112	1.12	0.000
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2014-09-21 15:10		12.1	6.02	31.6		2.7						6	6.39	18.2	16	32	86	19	<0.020	0.01	0.01	<0.01	1.01	0.062	1.02	0.000
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2015-06-05 16:10		10.27	6.18	24.5		8.3			12.5			<5	6.11			26	<5	<3	0.01	0.01		0.04		0.039	0.58	0.000
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2015-09-19 18:00		12.29	5.93	27		1.4		68.2				<5	5.77			28	<5	<5	0.05	<0.01		0.03		0.095	0.72	0.000
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2016-03-15		1.8	7.95	285		0		4.3				110	6.6			213	284	14	1.18	<0.01		<0.01		0.14	5.27	0.010
DALG-002	Dalglish Creek	Dalglish	2014-09-23 14:30		12.7	6.97	147		3.1						21	6.99	59.2	53	145	152	169	0.027	0.13	0.13	<0.01	1.35	0.289	1.47	0.000
DALG-002	Dalglish Creek	Dalglish	2015-06-06 17:40		10.61	7.33	131.2		11			5.7			17	6.73			135	<5	7	<0.01	0.02		0.05		0.029	0.63	0.000
DALG-002	Dalglish Creek	Dalglish	2015-09-18 13:45		12.48	7.3	228		3.1		30				29	7.01			225	118	46	0.08	0.08		0.03		0.054	1	0.000
DALG-002	Dalglish Creek	Dalglish	2016-03-15		1.2	7.72	148		0		26.3				141	7.13			886	578	83	0.44	<0.01		0.03		0.059	0.93	0.002
DALG-002	Dalglish Creek	Dalglish	2016-05-10		13.34	6.46	60.2		1.8		50.1				7	6.24			61	<5	75	0.04	<0.01		<0.01		0.111	0.78	0.000
DALG-002	Dalglish Creek	Dalglish	2016-06-21 17:43		9.33	7.32	199.7		17.1		3.8				34	6.88			183	250	3	0.02	<0.01		<0.01		0.02	0.75	0.000
DALG-002	Dalglish Creek	Dalglish	2016-09-20 15:30		14.13	7.42	280.6		1.9		12.8				31	7.07			272	246	4	<0.01	0.12		<0.01		0.022	0.75	0.000
DALG-002	Dalglish Creek	Dalglish	2016-09-22 14:50		13.01	7.53	301.8	196.135	42.8	2.7	10.4																		
DALG-002	Dalglish Creek	Dalglish	2017-03-07 15:00		7.03	7.94	380		-0.1		67.2				133	6.98		410	792	540	136	0.09	<0.01		<0.01		0.138	1.16	0.001
DALG-002	Dalglish Creek	Dalglish	2017-06-27 16:00		10.92	6.73	157.8		8.9		37.2				17	6.74		58	146	150	5	<0.01	0.03		<0.01		0.081	0.8	0.000
DALG-002	Dalglish Creek	Dalglish	2017-09-21 11:05		12.59	7.87	313		4.2		9.8				38	7.55		85	303	340	2	<0.01	0.2		<0.01		0.024	0.82	0.000
DALG-002	Dalglish Creek	Dalglish	2018-03-21 14:00		2.43	7.04	907	-44.3	0		39.4				127	7.31		450	875	660	60	0.45	<0.1		<0.1		0.013	0.73	0.000
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2013-08-26 15:45		10.7	7.31	352		7.9		7.2				52	7.21			296	268	<2	0.05	0.04		<0.01		0.012		0.000
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2014-07-23 11:55		-	6.68	1221		15.03						23	7.08	82.4	77	222	181	7	0.037	0.028	0.028	<0.010	0.48	0.053	0.509	0.000
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2014-09-23 11:15		12.4	7.02	156		3.5						14	6.85	58.9	55	156	135	6	0.034	0.03	0.03	<0.01	0.62	0.027	0.65	0.000
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2015-03-15 11:35		3.1	6.6	355		0.1						34	6.53	126	111	328	240	20	0.137	0.02	0.02	<0.01	0.56	0.007	0.57	0.000
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2015-06-05 17:50		10.07	6.95	239.9		11.2			6.2			17	6.66			251	142	6	0.03	0.03		0.05		0.016	0.66	0.000
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2015-09-18 18:55		12.53	7.06	182		3.2		29.3				16	6.5			186	68	34	0.04	0.03		0.03		0.042	0.63	0.000
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2016-03-16		5.81	7.76	38		0		1.5				36	6.42			396	320	39	0.11	<0.01		0.02		0.014	0.48	0.001
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2016-06-21 15:50		8.99	6.89	226.2		16.7		7.4				20	6.59			207	200	3	0.03	<0.01		<0.01		0.01	0.89	0.000
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2016-09-20 9:18		14.16	7.54	1																						



O-DO-F	pH-F	Cond-F	TDS-F	ORP	Temp-F	Wlevel	Turb-F	Turb-F-FNU	PurgeVol	Alk-T	pH-L	Hard-T	Hard-D	Cond-L	TDS	TSS	N-NH4	N-NO3	N-NO23	N-NO2	N-TKN	P-PO4T	N-TN	N-NH3u(c)
inorg	phy	phy	phy	phy	phy	phy	phy	phy	phy	phy	phy	phy	phy	phy	phy	phy	nutr	nutr	nutr	nutr	nutr	nutr	Nx	nutr
Oxygen, Dis	pH, Field	Specific Cor	Total Dissol	Oxidation -	Temperatur	Water Level	Turbidity, fi	Turbidity, fi	Volume of v	Alkalinity,	pH, Labora	Hardness c	Hardness c	Specific Cc	Total Dissc	Total Susp	Ammoniuir	Nitrate Nit	Nitrite and	Nitrite Nitr	Total Kjeld	Phosphoru	Nitrogen, -	Un-ionizec
mg/L	pH units	uS/cm	mg/L	mV	C	m	NTU	FNU	L	mgCaCO3/	pH units	mgCaCO3/	mgCaCO3/	uS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
6.5	6.5 - 9.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	emp,pH-de	13	-	0.06	-	-	-	-

Stn.Code	Site Name	Group	Smpl Date	O-DO-F	pH-F	Cond-F	TDS-F	ORP	Temp-F	Wlevel	Turb-F	Turb-F-FNU	PurgeVol	Alk-T	pH-L	Hard-T	Hard-D	Cond-L	TDS	TSS	N-NH4	N-NO3	N-NO23	N-NO2	N-TKN	P-PO4T	N-TN	N-NH3u(c)
McPL-002	McParlon Creek headwaters	McParlon	2013-08-27 11:05	10.9	7.1	77			4.5		8.9			30	7.24			68	88	4	0.03	<0.01		<0.01		0.049		0.000
McPL-002	McParlon Creek headwaters	McParlon	2014-07-23 9:30	-	6.53	166			13.23					32	7.07	63.3	58	164	152	<1	<0.020	<0.010	<0.010	<0.010	0.92	0.029	0.925	0.000
McPL-002	McParlon Creek headwaters	McParlon	2014-09-21 16:00	11.8	7	150			3.6					14	6.91	52.9	48	150	126	<1	<0.020	<0.01	<0.01	<0.01	0.72	0.026	0.72	0.000
McPL-002	McParlon Creek headwaters	McParlon	2015-06-05 11:05	11.03	6.71	126.3			5.6		4.8			7	6.29			131	75200	5	<0.01	<0.01		0.05	0.021	0.64	0.000	
McPL-002	McParlon Creek headwaters	McParlon	2015-09-19 14:30	11.93	6.67	256			1.8		23.4			16	6.47			256	84	24	0.01	0.01		0.02	0.037	0.72	0.000	
McPL-002	McParlon Creek headwaters	McParlon	2016-03-15	12.27	7.75	1200			-0.1		1.6			238	6.81			4650	5180	104	1.49	<0.01		<0.01	<0.003	3.83	0.008	
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2013-08-27 12:25	11.1	7.1	250			5.2		12.8			21	6.88			211	214	6	<0.01	0.04		<0.01	0.043		0.000	
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2014-07-22 10:20	-	6.73	324			14.61					27	6.99	117	108	322	250	<1	<0.020	<0.010	<0.010	<0.010	1	0.035	0.997	0.000
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2014-09-21 14:20	11.5	6.8	198			4					12	6.77	66.1	62	198	173	<1	0.02	0.06	0.06	<0.01	0.72	0.03	0.78	0.000
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2015-06-06 15:00	10.35	6.83	315			9.3		3.3			13	6.54			311	130	5	0.02	0.12		0.04	0.021	0.66	0.000	
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2015-09-18 14:51	11.92	7.15	413			2.2		10.2			36	6.82			411	146	11	0.02	0.05		0.01	0.025	0.83	0.000	

Notes:  
Sample classes included in query: All



Stn.Code	Site Name	Group	Smpl Date	Bromide	Chloride	Fluoride	SO4-D	Al-D	Sb-D	As-D	Ba-D	Be-D	Bi-D	B-D	Cd-D	Ca-D	Cr-D	Co-D	Cu-D	Fe-D	Pb-D	Li-D	Mg-D	Mn-D	Hg-D	Mo-D	Ni-D	P-D	
				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
					120	0.12	-	pH-dep		0.005					1.5	Hardness-de	0.0089		ardness-de		0.3	ardness-de			0.000026			ardness-de	
CHNC-001	Chance Creek above confluence with Chance		2013-07-29	<0.05			4.2	0.152	<0.0002	0.0006	0.09	0.00005	<0.001	0.006	0.00003	7.54	0.0009	0.0002	0.005	<b>0.448</b>	0.0001	0.002	2.26	0.05	0.00001	0.00025	0.006		
CHNC-001	Chance Creek above confluence with Chance		2014-07-22 10:47	<0.1	0.62		9.2	0.081	0.0002	0.00054	0.0933	0.00005	<0.0001	0.007	0.000017	10.8	0.0007	0.000078	0.0048	<b>0.349</b>	0.00026	0.00183	3.02	0.0147	<0.0001	0.00035	0.00438	0.01	
CHNC-001	Chance Creek above confluence with Chance		2014-09-22 19:00	<0.1	1.06		9.1	0.165	0.00016	0.00047	0.0672	0.00006	<0.0001	0.006	0.000034	6.09	0.0009	0.000262	0.0046	<b>0.569</b>	0.0001	0.0018	2.39	0.0334	<0.0001	0.00017	0.0056	0.01	
CHNC-001	Chance Creek above confluence with Chance		2015-03-14 17:30	<0.1	2.68		28.8	0.013	0.00009	0.00054	0.421	0.00001	<0.0001	0.013	0.000099	37.1	0.0003	0.000784	0.0009	<b>0.275</b>	<0.00005	0.00279	6.85	1.81	<0.00005	0.00138	0.00368	0.014	
CHNC-001	Chance Creek above confluence with Chance		2015-06-06 11:00	<0.02	0.08		9.09	0.127	<0.0002	0.0005	0.079	0.00007	<0.001	0.004	0.00002	5.91	0.0007	0.00011	0.005	<b>0.353</b>	0.0001	0.001	2.2	0.03	0.00001	0.00018	0.004		
CHNC-001	Chance Creek above confluence with Chance		2015-09-18 18:05	<0.02	0.12		26.5	0.195	<0.0002	0.0005	0.086	0.00007	<0.001	0.008	0.00005	11.4	0.0007	0.00044	0.005	<b>0.596</b>	<0.0001	0.002	4.61	0.07	<0.0001	0.00021	0.005		
CHNC-001	Chance Creek above confluence with Chance		2016-03-16	<0.02	0.46		99.4	0.006	<0.0002	0.0003	0.461	<0.00004	<0.0010	0.012	0.00008	89.5	<0.0004	0.00031	<0.001	<b>0.147</b>	<0.0001	0.005	15.3	0.792	<0.0001	0.0011	0.003		
CHNC-001	Chance Creek above confluence with Chance		2016-06-21 11:15	<0.02	0.1		14.1	0.188	<0.0002	0.0005	0.065	0.00006	<0.001	0.005	0.00003	6.8	0.0007	0.00012	0.0048	<b>0.578</b>	<0.0001	0.001	2.9	0.03	<0.0001	0.0001	0.004		
CHNC-001	Chance Creek above confluence with Chance		2016-09-20 12:00	<0.02	0.15		34.4	0.1956	<0.00020	<0.001	0.07	<0.00050	<0.001	<0.02	<0.0001	11.6	<0.00050	0.00041	<0.005	<b>0.58</b>	<0.0001	<0.005	4.7	0.06	<0.0001	0.00021	0.004		
CHNC-001	Chance Creek above confluence with Chance		2017-03-07 10:40	<0.020	0.957		82.9	0.004424	0.00005	0.0004	0.6325	<0.00050	<0.0001	0.013	0.00005	77.8	0.000107	0.001102	<0.0005	<b>0.257</b>	<0.00001	0.0051	13	2.06	<0.0001	0.001112	0.003		
CHNC-001	Chance Creek above confluence with Chance		2017-06-27 11:30	<0.02	0.09		27	0.078	0.00017	0.0006	0.1062	0.00006	<0.0001	0.012	0.00002	13	0.00082	0.000098	0.0047	<b>0.562</b>	0.00017	0.002	4.7	0.046	<0.0001	0.00037	0.005		
CHNC-001	Chance Creek above confluence with Chance		2017-09-20 10:21	<0.02	0.06		10.7	0.134	0.00013	0.0005	0.0751	<0.00005	<0.0001	0.005	0.00002	7.7	0.00084	0.00013	0.0045	<b>0.389</b>	0.00005	0.0015	2.9	0.025	0.00001	0.00023	0.005		
CHNC-001	Chance Creek above confluence with Chance		2018-03-21 10:25	<0.02	0.39		35.5	0.027	0.00002	0.0005	0.3271	<0.00005	<0.0001	0.015	0.00001	46	0.00018	0.00095	0.001	<b>0.265</b>	0.0001	0.0037	8.6	1.53	<0.0001	0.00142	0.0038		
CHNC-003	Chance Creek u/s tributary	Chance	2013-08-26 15:00	<0.05			2.2	0.129	0.0002	0.0018	0.115	<0.00004	<0.001	<0.004	0.00005	7.82	0.0013	0.00032	0.007	<b>1.88</b>	0.0003	<0.001	3.36	0.044	<0.0001	0.00046	0.009		
CHNC-003	Chance Creek u/s tributary	Chance	2014-07-22 18:30	<0.1	0.24		<1.0	0.135	0.00018	0.00078	0.0843	0.00007	<0.0001	0.006	0.000042	5.14	0.0011	0.000253	0.006	<b>0.72</b>	0.00035	0.00097	1.98	0.0372	<0.0001	0.00037	0.00586	0.015	
CHNC-003	Chance Creek u/s tributary	Chance	2014-09-23 10:40	<0.1	<0.10		2.9	0.202	0.00016	0.00048	0.0703	0.00007	<0.0001	0.006	0.000032	4.77	0.001	0.000226	0.005	<b>0.578</b>	0.00009	0.00143	1.75	0.0209	<0.0001	0.00019	0.00544	0.013	
CHNC-003	Chance Creek u/s tributary	Chance	2015-06-05 15:40	<0.02	0.06		2.24	0.155	<0.0002	0.0006	0.064	0.00006	<0.001	<0.004	0.00003	3.07	0.0008	0.00017	0.005	<b>0.496</b>	0.0001	0.001	1.32	0.024	0.00001	0.00019	0.004		
CHNC-003	Chance Creek u/s tributary	Chance	2015-09-19 17:23	<0.02	0.1		2.26	0.283	<0.0002	0.0006	0.069	0.00007	<0.001	0.006	0.00006	4.5	0.0009	0.00057	0.006	<b>0.795</b>	0.0001	0.001	1.75	0.082	<0.0001	0.00015	0.005		
CHNC-003	Chance Creek u/s tributary	Chance	2016-09-22 10:59	<0.02	0.11		3.7	0.2447	0.000163	0.0006	0.0708	0.000104	<0.0001	0.005	0.000054	4.9	0.000886	0.000373	0.0057	<b>0.744</b>	<0.00001	0.0013	1.9	0.041	0.00001	0.00016	0.006		
CHNC-003	Chance Creek u/s tributary	Chance	2017-06-27 9:30	<0.02	0.06		2.8	0.102	0.00018	0.0008	0.0972	0.00006	<0.0001	0.006	0.00006	5.6	0.00099	0.00058	0.0064	<b>0.615</b>	0.00016	0.0009	2.4	0.122	<0.0001	0.00034	0.0061		
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2013-08-26 14:02	<0.05			1.6	0.192	0.0002	0.002	0.101	0.00004	<0.001	<0.004	0.00006	6.93	0.0015	0.00048	0.007	<b>2.54</b>	0.0002	0.001	3.31	0.037	<0.0001	0.00045	0.012		
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2014-07-22 18:50	<0.1	0.35		<1.0	0.152	0.00019	0.00093	0.0953	0.00006	<0.0001	0.006	0.000052	5.18	0.0012	0.000834	0.0058	<b>0.985</b>	0.00016	0.00102	2.33	0.0943	<0.0001	0.00049	0.00837	0.034	
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2014-09-21 15:10	<0.1	0.57		2.1	0.218	0.00016	0.00056	0.0665	0.00006	<0.0001	0.008	0.000037	3.83	0.001	0.000568	0.0046	<b>0.757</b>	0.00012	0.00166	1.56	0.0428	<0.0001	0.00017	0.00631	0.013	
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2015-06-05 16:10	<0.02	<0.05		1.71	0.173	<0.0002	0.0005	0.061	0.0001	<0.001	<0.004	0.00003	2.62	0.0009	0.00022	0.005	<b>0.694</b>	0.0001	0.001	1.27	0.02	0.00001	0.00017	0.005		
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2015-09-19 18:00	<0.02	0.09		0.84	0.301	<0.0002	0.0006	0.066	0.00006	<0.001	0.004	0.00006	3.71	0.0011	0.00083	0.006	<b>1.1</b>	0.0001	0.001	1.58	0.087	0.00001	0.00015	0.006		
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2016-03-15	<0.02	0.23		3.5	0.93	<0.002	<b>0.007</b>	0.475	<0.00040	<0.010	<0.04	0.00037	30.8	<0.004	0.0272	0.013	<b>36.9</b>	0.001	<0.010	13.7	4.52	0.00001	0.001	0.045		
DALG-002	Dalglis Creek	Dalglis	2014-09-23 14:30	<0.1	0.34		41.4	0.117	0.00015	0.00051	0.0741	0.00004	<0.0001	0.027	0.000046	11.8	0.0008	0.00106	0.0036	<b>0.673</b>	0.00008	0.00498	5.69	0.0994	<0.0001	0.00021	0.00747	0.016	
DALG-002	Dalglis Creek	Dalglis	2015-06-06 17:40	<0.02	0.05		16.1	0.086	<0.0002	0.0005	0.068	0.00004	<0.001	0.024	0.00002	11	0.0006	0.00035	0.004	<b>0.542</b>	<0.0001	0.004	5.29	0.017	<0.0001	0.00025	0.006		
DALG-002	Dalglis Creek	Dalglis	2015-09-18 13:45	<0.02	0.14		70.1	0.117	<0.0002	0.0005	0.081	<0.00004	<0.001	0.031	0.00004	18.8	0.0005	0.00096	0.003	<b>0.678</b>	<0.0001	0.007	10.7	0.102	<0.0001	0.00023	0.007		
DALG-002	Dalglis Creek	Dalglis	2016-03-15	<0.02	0.18		356	0.006	<0.0002	0.0004	0.058	<0.00004	<0.0010	0.039	0.00006	177	<0.0004	0.0156	<0.001	<b>3.98</b>	<0.0001	0.008	23.8	4.96	<0.0001	0.0005	0.041		
DALG-002	Dalglis Creek	Dalglis	2016-05-10	<0.02	0.43		14.5	0.171	<0.0002	0.0005	0.044	<0.00004	<0.001	0.018	0.00006	4.8	0.0004	0.00154	0.0034	<b>0.815</b>	<0.0001	0.002	2.4	0.185	<0.0001	0.0001	0.005		
DALG-002	Dalglis Creek	Dalglis	2016-06-21 17:43	<0.02	<0.05		55.3	0.069	<0.0002	0.0005	0.059	<0.00004	<0.001	0.036	0.00002	18.1	0.0005	0.00025	0.0031	<b>0.665</b>	<0.0001	0.005	7.3	0.023	<0.0001	0.0003	0.005		
DALG-002	Dalglis Creek	Dalglis	2016-09-20 15:30	<0.02	0.4		95.7	0.07879	<0.00020	<0.001	0.076	<0.00050	<0.001	0.03	<0.0001	20.7	<0.00050	0.00087	<0.005	<b>0.56</b>	<0.0001	0.009	11.5						

Bromide	Chlord	Fluord	SO4-D	Al-D	Sb-D	As-D	Ba-D	Be-D	Bi-D	B-D	Cd-D	Ca-D	Cr-D	Co-D	Cu-D	Fe-D	Pb-D	Li-D	Mg-D	Mn-D	Hg-D	Mo-D	Ni-D	P-D
inorg	halo	halo	Sx	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met
Bromide	Chloride	Fluoride	Sulphate, D	Aluminum	Antimony,	Arsenic, di	Barium, di	Beryllium,	Bismuth, d	Boron, dis:	Cadmium,	Calcium, d	Chromium	Cobalt, dis	Copper, di	Iron, disso	Lead, dissc	Lithium, di	Magnesiur	Manganes	Mercury, diss	Molybden	Nickel, dis:	Phosphoru
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
-	120	0.12	-	pH-dep	-	0.005	-	-	-	-	1.5	Hardness-	-	0.0089	-	ardness-de	0.3	ardness-de	-	-	0.000026	-	ardness-de	-

Stn.Code	Site Name	Group	Smpl Date	Bromide	Chloride	Fluoride	SO4-D	Al-D	Sb-D	As-D	Ba-D	Be-D	Bi-D	B-D	Cd-D	Ca-D	Cr-D	Co-D	Cu-D	Fe-D	Pb-D	Li-D	Mg-D	Mn-D	Hg-D	Mo-D	Ni-D	P-D	
McPL-002	McParlon Creek headwaters	McParlon	2013-08-27 11:05		0.09		5.1	0.1	0.0002	0.0017	0.072	<0.00004	<0.001	<0.004	0.00004	8.28	0.0011	0.00015	0.004	1.19	0.0001	<0.001	4.57	0.012	<0.00001	0.00038	0.007		
McPL-002	McParlon Creek headwaters	McParlon	2014-07-23 9:30	<0.1	0.58		40.2	0.051	0.00022	0.00069	0.106	0.00004	<0.00001	0.01	0.00002	11.8	0.0008	0.000125	0.0047	0.568	0.00009	0.00086	6.96	0.0148	<0.00001	0.00042	0.00554	0.038	
McPL-002	McParlon Creek headwaters	McParlon	2014-09-21 16:00	<0.1	1.05		47.8	0.102	0.00017	0.0004	0.0936	0.00004	<0.00001	0.012	0.00002	10.1	0.0007	0.000126	0.004	0.376	0.00018	0.00165	5.6	0.0132	<0.00001	0.00018	0.00466	0.023	
McPL-002	McParlon Creek headwaters	McParlon	2015-06-05 11:05	<0.02	0.14		43.6	0.093	<0.0002	0.0004	0.092	<0.00004	<0.001	0.008	0.00002	7.82	0.0006	0.0001	0.004	0.285	<0.0001	0.001	5.06	0.012	<0.00001	0.00018	0.004		
McPL-002	McParlon Creek headwaters	McParlon	2015-09-19 14:30	<0.02	0.36		85.5	0.132	<0.0002	0.0004	0.121	<0.00004	<0.001	0.012	0.00006	17.1	<0.0004	0.00041	0.004	0.477	<0.0001	0.002	11.1	0.089	<0.00001	0.00022	0.005		
McPL-002	McParlon Creek headwaters	McParlon	2016-03-15	<0.02	3.05		<0.5	0.062	0.0003	0.0019	0.066	<0.00004	<0.0010	0.037	0.00006	431	<0.0004	0.0706	0.002	29.6	<0.0001	0.018	325	35.3	<0.00001	0.0009	0.044		
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2013-08-27 12:25		0.35		90.5	0.113	<0.0002	0.002	0.071	<0.00004	<0.001	0.009	0.00003	14.8	0.001	0.00041	0.007	1.17	<0.0001	0.008	13.2	0.037	<0.00001	0.0002	0.008		
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2014-07-22 10:20	<0.1	0.46		121	0.089	0.00016	0.00074	0.0984	0.00004	<0.00001	0.018	0.000032	17.6	0.0009	0.000308	0.0038	1.07	0.00013	0.00933	15.6	0.0416	<0.00001	0.00028	0.00682	0.019	
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2014-09-21 14:20	<0.1	0.49		70.3	0.151	0.00014	0.00041	0.0777	0.00005	<0.00001	0.014	0.000042	10.8	0.0009	0.000534	0.0034	0.562	0.00017	0.00702	8.44	0.0448	<0.00001	0.00013	0.00609	0.013	
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2015-06-06 15:00	<0.02	0.2		122	0.084	<0.0002	0.0004	0.072	<0.00004	<0.001	0.015	0.00002	14.6	0.0006	0.00028	0.003	0.388	<0.0001	0.013	15.8	0.028	<0.00001	0.00011	0.004		
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2015-09-18 14:51	<0.02	0.48		145	0.144	<0.0002	0.0004	0.081	0.00005	<0.001	0.022	0.00006	23	<0.0004	0.00111	0.003	0.695	<0.0001	0.016	20.6	0.13	<0.00001	0.00022	0.008		

Notes:  
Sample classes included in query: All



K-D	Se-D	Si-D	Ag-D	Na-D	Sr-D	S-D	Te-D	Tl-D	Th-D	Sn-D	Ti-D	W-D	U-D	V-D	Zn-D	Zr-D	Al-T	Sb-T	As-T	Ba-T	Be-T	Bi-T	B-T	Cd-T	Ca-T
met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met
Potassium	Selenium	Silicon, dis	Silver, diss	Sodium, di	Strontium,	Sulphur, D	Tellurium,	Thallium, r	Thorium, c	Tin, dissol	Titanium, r	Tungsten,	Uranium, r	Vanadium,	Zinc, disso	Zirconium,	Aluminum	Antimony,	Arsenic, to	Barium, to	Beryllium,	Bismuth, t	Boron, tot	Cadmium,	Calcium, tr
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
-	0.001 -	-	0.00025 -	-	-	-	-	0.0008 -	-	-	-	-	0.015 -	-	Hardness, d	-	-	-	-	-	-	-	-	-	-

Stn.Code	Site Name	Group	Smpl Date	K-D	Se-D	Si-D	Ag-D	Na-D	Sr-D	S-D	Te-D	Tl-D	Th-D	Sn-D	Ti-D	W-D	U-D	V-D	Zn-D	Zr-D	Al-T	Sb-T	As-T	Ba-T	Be-T	Bi-T	B-T	Cd-T	Ca-T
McPL-002	McParlon Creek headwaters	McParlon	2013-08-27 11:05	0.4	<0.0006	1.88	0.00002	3.7	0.034	2.4	<0.0001	<0.00001	<0.0004	<0.0001	<0.010	<0.0004	0.00083	0.005	0.00149	0.335	<0.0002	0.001	0.083	<0.00004	<0.0010	<0.005	0.00004	7.95	
McPL-002	McParlon Creek headwaters	McParlon	2014-07-23 9:30	0.617	0.0005	0.479	<0.00001	10	0.0506	13.5	<0.00005	<0.000004	0.00008	<0.00005	0.0013	0.000052	0.0006	0.002	0.00087	0.133	0.00024	0.00089	0.122	0.00005	<0.00001	0.011	0.000026	13.4	
McPL-002	McParlon Creek headwaters	McParlon	2014-09-21 16:00	0.448	0.0004	2.06	<0.00001	8.66	0.0418	13.1	<0.00005	<0.000004	0.00012	<0.00005	0.0019	0.00005	0.0003	0.00112	0.216	0.00018	0.0005	0.104	0.00004	<0.00001	0.016	0.00003	11.5		
McPL-002	McParlon Creek headwaters	McParlon	2015-06-05 11:05	0.5	<0.0006	1.31	<0.00001	9.6	0.034	15.6	<0.0001	<0.00001	<0.0004	<0.0001	<0.010	<0.0004	0.00043	0.005	0.0009	0.199	0.0001	0.00044	0.101	<0.00005	<0.0001	0.011	0.00003	9.04	
McPL-002	McParlon Creek headwaters	McParlon	2015-09-19 14:30	0.6	<b>0.0012</b>	2.89	<0.00001	21	0.057	34.7	<0.0001	<0.00001	<0.0004	<0.0001	<0.010	<0.0004	0.00021	0.007	0.00114	0.807	<0.0002	0.0007	0.146	0.00009	<0.0010	0.013	0.00008	16.2	
McPL-002	McParlon Creek headwaters	McParlon	2016-03-15	4.6	<b>0.0018</b>	7.59	<0.00001	545	0.919	1190	<0.0001	<0.00001	0.0014	<0.0001	0.031	0.0024	0.0007	0.011	0.0024	0.099	0.0003	0.0021	0.067	0.00006	<0.001	0.038	0.0004	422	
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2013-08-27 12:25	0.7	<b>0.0034</b>	1.99	0.00001	17.1	0.033	28.8	<0.0001	<0.00001	<0.0004	0.0001	<0.010	<0.0004	0.00071	0.008	0.0013	0.295	<0.0002	0.0022	0.085	<0.00004	<0.001	0.01	0.00005	15.4	
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2014-07-22 10:20	0.761	0.0004	0.887	<0.00001	20.9	0.0398	38.2	<0.00005	<0.000004	0.00011	<0.00005	0.0021	0.000073	0.0009	0.005	0.0011	0.163	0.00018	0.00099	0.11	0.00005	<0.00001	0.019	0.000044	19.8	
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2014-09-21 14:20	0.462	0.0004	2.4	<0.00001	12.5	0.0276	19.3	<0.00005	<0.000004	0.00017	<0.00005	0.0015	0.000116	0.0004	0.007	0.00114	0.298	0.00015	0.00054	0.0863	0.00005	<0.00001	0.017	0.000056	12.1	
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2015-06-06 15:00	0.8	<0.0006	1.58	<0.00001	25	0.032	44.9	<0.0001	<0.00001	<0.0004	<0.0001	<0.010	<0.0004	0.00038	0.006	0.00075	0.14	0.0001	0.00042	0.0754	<0.00005	<0.0001	0.018	0.00003	17.1	
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2015-09-18 14:51	1.1	<0.0006	2.89	0.00001	36.2	0.046	56.3	<0.0001	<0.00001	<0.0004	<0.0001	<0.010	<0.0004	0.00021	0.009	0.00127	0.398	<0.0002	0.0006	0.09	0.00004	<0.0010	0.023	0.00007	22	

Notes:  
Sample classes included in query: All

Cr-T	Co-T	Cu-T	Fe-T	Pb-T	Li-T	Mg-T	Mn-T	Hg-T	Mo-T	Ni-T	P-T	K-T	Se-T	Si-T	Ag-T	Na-T	Sr-T	S-T	Te-T	Tl-T	Th-T	Sn-T	Ti-T	U-T	V-T
met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met
Chromium mg/L	Cobalt, tot mg/L	Copper, tot mg/L	Iron, total mg/L	Lead, total mg/L	Lithium, tc mg/L	Magnesium mg/L	Manganese mg/L	Mercury, t mg/L	Molybdenum mg/L	Nickel, tot: mg/L	Phosphorus mg/L	Potassium mg/L	Selenium, t mg/L	Silicon, tot mg/L	Silver, tot: mg/L	Sodium, tc mg/L	Strontium mg/L	Sulphur, T mg/L	Tellurium, T mg/L	Thallium, t mg/L	Thorium, t mg/L	Tin, total mg/L	Titanium, t mg/L	Uranium, t mg/L	Vanadium, t mg/L

Stn.Code	Site Name	Group	Smpl Date	Cr-T	Co-T	Cu-T	Fe-T	Pb-T	Li-T	Mg-T	Mn-T	Hg-T	Mo-T	Ni-T	P-T	K-T	Se-T	Si-T	Ag-T	Na-T	Sr-T	S-T	Te-T	Tl-T	Th-T	Sn-T	Ti-T	U-T	V-T	
CHNC-001	Chance Creek above confluence with Chance		2013-07-29	0.0014	0.0003	0.0056	1.02	0.0003	0.0018	2.41	0.0546	<0.00001	0.00028	0.0055	0.02	0.4	0.0004	3.46	<0.00005	2.7	0.0357		<0.00001	0.00023	<0.0001	0.0147	0.00013	0.0019		
CHNC-001	Chance Creek above confluence with Chance		2014-07-22 10:47	0.0011	0.000176	0.0055	0.902	0.00075	0.0026	3.26	0.0393	<0.00001	0.00039	0.00501	0.028	0.525	0.0005	1.8	0.00003	2.65	0.0469	3.3	<0.00005	0.000005	0.00015	<0.00005	0.0039	0.000185	0.0013	
CHNC-001	Chance Creek above confluence with Chance		2014-09-22 19:00	0.0018	0.000546	0.006	1.76	0.00053	0.00235	2.57	0.0476	<0.00001	0.00024	0.0069	0.033	0.389	0.0005	3.2	0.00002	3.06	0.0331	2.5	<0.00005	0.000012	0.00025	0.00005	0.013	0.000142	0.0023	
CHNC-001	Chance Creek above confluence with Chance		2015-03-14 17:30	0.0004	0.000892	0.0011	0.389	0.00005	0.00356	7.22	1.93	<0.000005	0.00161	0.00401	0.02	0.829	0.0003	2.6	<0.00001	13.9	0.144	8.8	<0.00005	<0.000004	0.00002	<0.00005	0.0011	0.000293	0.0006	
CHNC-001	Chance Creek above confluence with Chance		2015-06-06 11:00	0.0011	0.0002	0.0055	0.827	0.0003	0.0016	2.37	0.0466	<0.00001	0.00017	0.005		0.6	0.0003	2.32	<0.00005	3.5	0.0309		<0.00001	0.00019	<0.0001	0.0085	0.00013	0.0014		
CHNC-001	Chance Creek above confluence with Chance		2015-09-18 18:05	0.0032	0.00133	0.007	3.14	0.0012	0.004	4.78	0.109	0.00002	0.0003	0.009		0.67	0.0008	5.83	0.00003	7.36	0.046	9.7	<0.0001	0.00002	<0.0004	<0.0001	0.0382	<0.0004	0.0054	
CHNC-001	Chance Creek above confluence with Chance		2016-03-16	<0.0004	0.00033	<0.001	0.54	<0.0001	0.005	15.8	0.804	<0.00001	0.00112	0.003		1.1	<0.0006	2.79	<0.00001	12.9	0.236	35.9	<0.0001	<0.00001	<0.0004	<0.0001	0.007	0.0009	0.00019	
CHNC-001	Chance Creek above confluence with Chance		2016-06-21 11:15	0.00125	0.00023	0.0052	0.925	0.00016	0.0018	3.07	0.028	0.00002	0.00018	0.0053		0.5	0.0004	3.16	0.00002	5.02	0.029	5.2	<0.00005	<0.00001	0.00025	<0.0001	0.018	0.00012	0.00137	
CHNC-001	Chance Creek above confluence with Chance		2016-09-20 12:00	0.00218	0.00072	0.0057	1.76	0.000521	0.0038	5.3	0.082	<0.00001	0.000261	0.006		0.6	0.0008	5.6	0.000021	9.86	0.0476	12.1	<0.000050	0.000021	0.000089	<0.0001	0.042	0.000251	0.0031	
CHNC-001	Chance Creek above confluence with Chance		2017-03-07 10:40	0.0003	0.00112	0.0005	1.04	<0.00001	0.0048	13.1	1.96	<0.00001	0.00123	0.003		1.2	<0.0002	2.68	<0.00001	17.7	0.223	30.1	<0.000050	<0.00001	0.000082	<0.0001	0.013	0.000404	0.000177	
CHNC-001	Chance Creek above confluence with Chance		2017-06-27 11:30	0.00057	0.00015	0.0051	0.75	0.00027	0.0022	4.8	0.061	<0.00001	0.00039	0.0042		0.73	0.0004	1.6	<0.00001	9.6	0.05	9.4	<0.00005	<0.00001	0.00018	<0.0001	0.004	0.00015	0.00064	
CHNC-001	Chance Creek above confluence with Chance		2017-09-20 10:21	0.0016	0.00032	0.0052	1.5	0.00036	0.0021	3.1	0.035	<0.00001	0.0003	0.0059		0.69	0.0004	5.1	0.00002	3.3	0.04	3.9	<0.00005	0.00001	0.00078	<0.0001	0.042	0.00014	0.002	
CHNC-001	Chance Creek above confluence with Chance		2018-03-21 10:25	0.0054	0.0045	0.0057	6.9	0.0022	0.0069	9.8	2.7	<0.00001	0.0016	0.011		1.6	0.0008	8.4	0.00006	12	0.16	12	<0.00005	0.00005	0.00054	<0.0001	0.095	0.0005	0.011	
CHNC-003	Chance Creek u/s tributary	Chance	2013-08-26 15:00	0.0018	0.00042	0.007	2.78	0.0004	0.001	3.24	0.0525	<0.00001	0.0005	0.01		0.46	0.0008	1.83	0.00003	1.71	0.045	0.9	<0.0001	<0.00001	<0.0004	<0.0001	0.0066	<0.0004	0.0026	
CHNC-003	Chance Creek u/s tributary	Chance	2014-07-22 18:30	0.0015	0.000379	0.0069	1.56	0.00083	0.00121	2.09	0.0538	<0.00001	0.00044	0.00664	0.042	0.457	0.0004	1.8	0.00003	0.942	0.0341	<0.5	<0.00005	0.000004	0.00018	<0.00005	0.0055	0.000104	0.0019	
CHNC-003	Chance Creek u/s tributary	Chance	2014-09-23 10:40	0.0015	0.000368	0.0061	1.18	0.00032	0.00167	1.88	0.0276	<0.00001	0.00027	0.00629	0.025	0.315	0.0003	3.1	0.00002	1.23	0.0274	0.57	<0.00005	0.000007	0.00022	<0.00005	0.006	0.000093	0.0016	
CHNC-003	Chance Creek u/s tributary	Chance	2015-06-05 15:40	0.0012	0.0002	0.006	0.886	0.0002	0.0012	1.37	0.0269	<0.00001	0.00019	0.0045		0.5	0.0002	2.24	<0.00005	1.2	0.0202		<0.00001	0.00019	<0.0001	0.0074	0.00009	0.0016		
CHNC-003	Chance Creek u/s tributary	Chance	2015-09-19 17:23	0.005	0.00189	0.01	4.1	0.0016	0.004	2.23	0.125	0.00002	0.0003	0.009		0.81	<0.0006	7.58	0.00005	1.32	0.027	1.2	<0.0001	0.00004	0.0005	<0.0001	0.0615	<0.0004	0.0066	
CHNC-003	Chance Creek u/s tributary	Chance	2016-09-22 10:59	0.00223	0.00068	0.006	1.69	0.00051	0.0022	2.27	0.053	<0.00001	0.000259	0.0067		0.5	0.0005	5.5	0.00002	2.06	0.0267	1.7	<0.000050	0.000016	0.00036	<0.0001	0.036	0.000113	0.00298	
CHNC-003	Chance Creek u/s tributary	Chance	2017-06-27 9:30	0.0011	0.00083	0.0071	1.5	0.00038	0.0011	2.6	0.17	<0.00001	0.00037	0.0073		0.66	0.0004	1.6	0.00001	2.1	0.033	1.3	<0.00005	<0.00001	0.00021	<0.0001	0.005	0.00011	0.0013	
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2013-08-26 14:02	0.002	0.00061	0.007	3.97	0.0004	0.001	3.07	0.043	<0.00001	0.0005	0.013		0.39	0.0007	2.52	0.00003	1.06	0.03		<0.00001	<0.00001	<0.0004	<0.0001	0.0052	<0.0004	0.0029	
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2014-07-22 18:50	0.002	0.00111	0.007	3.16	0.00062	0.00129	2.45	0.119	<0.00001	0.00062	0.00971	0.085	0.505	0.0005	1.7	0.00005	0.748	0.0256	<0.5	<0.00005	0.000005	0.00022	<0.00005	0.0099	0.000109	0.0034	
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2014-09-21 15:10	0.0019	0.000922	0.0063	1.88	0.00058	0.00214	1.74	0.0613	<0.00001	0.00021	0.00799	0.034	0.274	0.0004	3.4	0.00002	0.859	0.0183	<0.5	<0.00005	0.000009	0.00027	<0.00005	0.0084	0.000105	0.0024	
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2015-06-05 16:10	0.0013	0.0003	0.005	1.27	0.0003	0.0015	1.33	0.0231	<0.00001	0.00019	0.0052		0.5	0.0002	2.62	<0.00005	0.8	0.0131		<0.00001	0.0002	<0.0001	0.0112	0.00008	0.0021		
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2015-09-19 18:00	0.007	0.00244	0.01	4.4	0.002	0.005	2.06	0.124	0.00002	0.0003	0.01		0.66	<0.0001	7.21	0.00006	0.8	0.02	0.6	<0.0002	0.00006	<0.0008	<0.0002	0.0581	<0.0008	0.011	
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2016-03-15	0.0036	0.0282	0.017	33.6	0.0016	<0.005	14.6	4.58	0.00002	0.00149	0.048		1	0.002	12.4	0.00016	4.25	0.125	3	<0.0005	<0.0001	0.0017	<0.001	0.03	0.0005	0.0177	
DALG-002	DalGLISH Creek	DalGLISH	2014-09-23 14:30	0.0019	0.00343	0.0074	4.14	0.00174	0.00573	5.94	0.298	<0.00001	0.00026	0.0115	0.11	0.844	0.0006	2.9	0.00003	7.33	0.0414	11	<0.00005	0.00002	0.00046	<0.00005	0.012	0.00028	0.0047	
DALG-002	DalGLISH Creek	DalGLISH	2015-06-06 17:40	0.0009	0.0004	0.0037	0.844	0.0002	0.0041	5.1	0.0172	<0.00001	0.00024	0.0067		0.9	0.0003	2.24	<0.00005	7.8	0.0367		<0.00001	0.00017	<0.0001	0.0076	0.00013	0.0012		
DALG-002	DalGLISH Creek	DalGLISH	2015-09-18 13:45	0.0017	0.00162	0.005	2.19	0.0012	0.008	10.4	0.119	<0.00001	0.0003	0.009		0.92	0.0006	4	0.00005	13.1	0.051	25.7	<0.0001	0.00003	0.0008	<0.0001	0.0265	<0.0004	0.0032	
DALG-002	DalGLISH Creek	DalGLISH	2016-03-15	0.0005	0.0167	0.001	18.2	0.0002	0.008	24.6	4.87	<0.00001	0.00072	0.046		2.1	<0.0006	2.9	0.00001	13.6	0.298	149	<0.0001	0.00002	0.0005	<0.0001	0.015	0.0017	0.00192	
DALG-002	DalGLISH Creek	DalGLISH	2016-05-10	0.00338	0.00247	0.0055	2.92	0.00124	0.004	2.78	0.195	<0.00001	0.00022	0.0075																



Cr-T	Co-T	Cu-T	Fe-T	Pb-T	Li-T	Mg-T	Mn-T	Hg-T	Mo-T	Ni-T	P-T	K-T	Se-T	Si-T	Ag-T	Na-T	Sr-T	S-T	Te-T	Tl-T	Th-T	Sn-T	Ti-T	U-T	V-T
met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met	met
Chromium	Cobalt, tot	Copper, to	Iron, total	Lead, total	Lithium, tc	Magnesiur	Manganes	Mercury, t	Molybden	Nickel, tot:	Phosphoru	Potassium	Selenium,	Silicon, tot	Silver, tot:	Sodium, tc	Strontium,	Sulphur, T:	Tellurium,	Thallium, t	Thorium, t	Tin, total	Titanium, t	Uranium, t	Vanadium,
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L

Stn.Code	Site Name	Group	Smpl Date	Cr-T	Co-T	Cu-T	Fe-T	Pb-T	Li-T	Mg-T	Mn-T	Hg-T	Mo-T	Ni-T	P-T	K-T	Se-T	Si-T	Ag-T	Na-T	Sr-T	S-T	Te-T	Tl-T	Th-T	Sn-T	Ti-T	U-T	V-T	
McPL-002	McParlon Creek headwaters	McParlon	2013-08-27 11:05	0.0015	0.00023	0.005	2.04	0.0003	0.001	4.37	0.0168	<0.00001	0.0004	0.007			0.49	<0.0006	2.26	0.00003	3.56	0.035	1.9	<0.0001	<0.00001	<0.0004	<0.0001	0.0079	<0.0004	0.002
McPL-002	McParlon Creek headwaters	McParlon	2014-07-23 9:30	0.001	0.000172	0.0053	0.966	0.00017	0.00102	7.26	0.0198	<0.00001	0.00048	0.00615	0.037	0.659	0.0005	0.66	0.00002	10.5	0.0539	14	<0.00005	<0.000004	0.00009	<0.00005	0.0041	0.000067	0.0022	
McPL-002	McParlon Creek headwaters	McParlon	2014-09-21 16:00	0.001	0.000176	0.0047	0.667	0.00016	0.00186	5.88	0.0165	<0.00001	0.00021	0.00514	0.019	0.505	0.0005	2.3	0.00002	9.05	0.0456	14	<0.00005	<0.000004	0.00012	<0.00005	0.0042	0.000059	0.001	
McPL-002	McParlon Creek headwaters	McParlon	2015-06-05 11:05	0.0008	0.0001	0.0042	0.44	0.0001	0.0012	4.99	0.0128	<0.00001	0.00014	0.004		0.6	0.0002	1.68	<0.00005	9.7	0.034			<0.00001	0.00011	<0.0001	0.0058	0.00005	0.0009	
McPL-002	McParlon Creek headwaters	McParlon	2015-09-19 14:30	0.0014	0.00086	0.005	1.54	0.0006	0.003	10.5	0.105	<0.00001	0.0003	0.007		0.76	0.0009	4.27	0.00003	19.2	0.056	32.1	<0.0001	0.00002	<0.0004	<0.0001	0.0312	<0.0004	0.0022	
McPL-002	McParlon Creek headwaters	McParlon	2016-03-15	0.0004	0.0721	0.003	26.1	<0.0001	0.018	318	29.1	<0.00001	0.00099	0.046		4.8	0.0014	7.69	<0.00001	539	0.964	1140	<0.0001	<0.00001	0.0014	<0.0001	0.016	0.0025	0.00119	
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2013-08-27 12:25	0.0014	0.0005	0.006	2.28	0.0004	0.009	12.4	0.0456	<0.00001	0.0002	0.008		0.67	0.0026	2.56	0.00001	16.1	0.035	27.8	<0.0001	<0.00001	<0.0004	<0.0001	0.0114	<0.0004	0.0018	
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2014-07-22 10:20	0.0012	0.000391	0.0042	1.61	0.00019	0.0105	16.3	0.0491	<0.00001	0.00032	0.00749	0.05	0.826	0.0004	1	0.00002	22.1	0.0421	40	<0.00005	<0.000004	0.00014	<0.00005	0.0037	0.000095	0.0025	
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2014-09-21 14:20	0.0012	0.000629	0.0039	0.988	0.00017	0.00721	8.74	0.0502	<0.00001	0.00014	0.0066	0.021	0.512	0.0005	2.7	0.00002	13	0.0295	20	<0.00005	<0.000004	0.00018	<0.00005	0.0051	0.000136	0.0011	
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2015-06-06 15:00	0.0007	0.0003	0.0029	0.568	<0.0001	0.0127	15.8	0.0283	<0.00001	0.00011	0.0045		0.9	0.0003	1.74	<0.00005	25.4	0.0313			<0.00001	0.00011	<0.0001	0.0023	0.00014	0.0008	
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2015-09-18 14:51	0.001	0.00138	0.004	1.38	0.0002	0.017	19.6	0.132	<0.00001	0.0002	0.008		1.09	<0.0006	3.45	0.00001	33.9	0.046	53.6	<0.0001	<0.00001	<0.0004	<0.0001	0.0161	<0.0004	0.0011	

Notes:  
Sample classes included in query: All





Zn-T	Zr-T	C-DOC	C-TIC	C-TOC	C-DIC	VH	VPH	sum range C12 to C18	sum range C19 to C32	C12H18O2	C12H20O2	C12H22O2	C12H24O2	C13H20O2	C13H22O2	C13H24O2	C13H26O2	C14H20O2	C14H22O2	C14H24O2	C14H26O2	C14H28O2	C15H18O2	C15H20O2	C15H22O2	
met	met	org	org	org	org	org	org	org	org	org	org	org	org	org	org	org	org	org	org	org	org	org	org	org	org	
Zinc, total	Zirconium	Carbon, Di	Carbon, Tc	Carbon, Tc	Carbon, Tc	Carbon, Di	Volatile H <sub>y</sub>	Volatile Pe	EPHw10-1'	EPHw19-3'	C12H18O2	C12H20O2	C12H22O2	C12H24O2	C13H20O2	C13H22O2	C13H24O2	C13H26O2	C14H20O2	C14H22O2	C14H24O2	C14H26O2	C14H28O2	C15H18O2	C15H20O2	C15H22O2
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L

Stn.Code	Site Name	Group	Smpl Date	Zn-T	Zr-T	C-DOC	C-TIC	C-TOC	C-DIC	VH	VPH	sum range C12 to C18	sum range C19 to C32	C12H18O2	C12H20O2	C12H22O2	C12H24O2	C13H20O2	C13H22O2	C13H24O2	C13H26O2	C14H20O2	C14H22O2	C14H24O2	C14H26O2	C14H28O2	C15H18O2	C15H20O2	C15H22O2
McPL-002	McParlon Creek headwaters	McParlon	2013-08-27 11:05	0.005	0.0012	29.5				6		959.92	159.39	87.7	33.1	<5.05	<5.05	27.2	28.8	<5.05	16.9	31	43.4	<21	<5.05	<5.05	6.72	58.1	218
McPL-002	McParlon Creek headwaters	McParlon	2014-07-23 9:30	0.002	0.00097	54.9				6.2		1685.4	915.8	104	25.7	<15.1	<15.1	<28.3	40.4	<15.1	43.3	40.5	56.1	32.6	<15.1	<15.1	19.2	77.6	249
McPL-002	McParlon Creek headwaters	McParlon	2014-09-21 16:00	0.004	0.001	19.3	2.7	21.5	2.7	<0.1	<0.1	1041.2	289.04	52.1	24.5	<5.53	<5.53	27.4	29	<5.53	36.2	60.4	34.9	17.4	<5.53	<5.53	15.4	53.4	255
McPL-002	McParlon Creek headwaters	McParlon	2015-06-05 11:05	0.0045	0.0009	17.7	2	17.6	1.8	<0.05	<0.05	0	0																
McPL-002	McParlon Creek headwaters	McParlon	2015-09-19 14:30	0.01	0.0009	22.2	4.1	21.9	3.5	<0.05	<0.05	0	0																
McPL-002	McParlon Creek headwaters	McParlon	2016-03-15	0.012	0.0029	49.2	58	59.9	53.4	<0.05	<0.05	0	0																
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2013-08-27 12:25	0.013	0.0014	26.4				4.7		1949.03	142.18	110	138	50.8	<4.91	79.7	134	28.4	15.5	52.1	131	128	<14.1	<4.91	25.2	92.6	246
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2014-07-22 10:20	0.004	0.0012	56.8				5.3		1735.9	892.5	78.3	41.5	<26.4	<15.8	38	73.8	20.5	<19	48.5	81.9	78.2	<15.8	<15.8	22.5	70.5	157
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2014-09-21 14:20	0.008	0.0011	20.2	2.5	20.5	2.3	<0.1	<0.1	2606.6	297.7	88.5	148	73.7	<5.32	111	188	57.6	<5.32	95.5	178	186	<21.4	<5.32	23.7	107	332
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2015-06-06 15:00	0.0062	0.0007	16.8	3.6	16.6	3.3	<0.05	<0.05	0	0																
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2015-09-18 14:51	0.01	0.0011	21.9	7.9	22.3	7.4	<0.05	<0.05	0	0																

Notes:  
Sample classes included in query: All



C15H24O2 C15H26O2 C15H28O2 C15H30O2 C16H20O2 C16H22O2 C16H24O2 C16H26O2 C16H28O2 C16H30O2 C16H32O2 C17H22O2 C17H24O2 C17H26O2 C17H28O2 C17H30O2 C17H32O2 C17H34O2 C18H24O2 C18H26O2 C18H28O2 C18H30O2 C18H32O2 C18H34O2 C18H36O2 C19H26O2  
 NA  
 org  
 ng/L

Stn.Code	Site Name	Group	Smpl Date	C15H24O2	C15H26O2	C15H28O2	C15H30O2	C16H20O2	C16H22O2	C16H24O2	C16H26O2	C16H28O2	C16H30O2	C16H32O2	C17H22O2	C17H24O2	C17H26O2	C17H28O2	C17H30O2	C17H32O2	C17H34O2	C18H24O2	C18H26O2	C18H28O2	C18H30O2	C18H32O2	C18H34O2	C18H36O2	C19H26O2	
McPL-002	McParlon Creek headwaters	McParlon	2013-08-27 11:05	152	22.2	<5.05	<5.05	14.1	19.4	20.5	37	<5.05	<5.05	<5.05	<5.05	<5.05	14.6	101	<5.05	<5.05	<5.05	28.2	<5.05	<5.05	<5.05	<5.05	<5.05	<5.05	<5.05	16.2
McPL-002	McParlon Creek headwaters	McParlon	2014-07-23 9:30	288	17.3	<15.1	<15.1	<21.5	<15.1	<34.9	58	<15.1	<15.1	<15.4	<15.1	<15.1	30.8	529	73.9	<15.1	<17.7	<40.1	<15.1	<32.5	<15.1	<15.1	<15.1	<15.1	<15.1	38.5
McPL-002	McParlon Creek headwaters	McParlon	2014-09-21 16:00	169	30.4	<5.53	<5.53	22.2	18.3	<5.53	33.2	<5.53	<5.53	<13.3	<6.52	<5.53	<5.53	83.7	12.1	<5.53	<5.53	55.6	<5.53	11	<5.53	<5.53	<5.53	<5.53	63.4	
McPL-002	McParlon Creek headwaters	McParlon	2015-06-05 11:05																											
McPL-002	McParlon Creek headwaters	McParlon	2015-09-19 14:30																											
McPL-002	McParlon Creek headwaters	McParlon	2016-03-15																											
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2013-08-27 12:25	213	88.7	<4.91	<4.91	33.2	49.6	45	75.4	20	<4.91	<4.91	19.3	22.8	26.4	59.3	13.3	<4.91	<4.91	36.4	<15.6	8.75	6.58	<4.91	<4.91	<4.91	<4.91	23.8
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2014-07-22 10:20	236	61	<15.8	<15.8	38.4	36.7	<30.5	73.2	44.7	<15.8	<15.8	<26.9	29.1	34.7	290	60.6	<15.8	<15.8	68.4	21.6	30.8	<15.8	<15.8	<15.8	<15.8	<15.8	40.5
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2014-09-21 14:20	311	119	<5.32	<5.32	43.3	56	59.9	112	40.5	<5.32	<5.32	26.9	39.8	41.4	73	17.7	<5.32	<76.6	61.8	<5.32	15.3	<5.32	<5.32	<5.32	<6.83	74.4	
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2015-06-06 15:00																											
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2015-09-18 14:51																											

Notes:  
 Sample classes included in query: All

NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	PAH	PAH	PAH	PAH	PAH	PAH	PAH	PAH
org	org	org	org	org	org	org	org	org	org	org	org	org	org	org	org	org	org	org	org	org	org	org	org	org	org	org
C19H28O2	C19H30O2	C19H32O2	C19H34O2	C19H36O2	C19H38O2	C20H28O2	C20H30O2	C20H32O2	C20H34O2	C20H36O2	C20H38O2	C21H30O2	C21H32O2	C21H34O2	C21H36O2	C21H38O2	C21H40O2	126-Trime	12-Dimeth	1467-Tetra	17-Dimeth	17-Dimeth	18-Dimeth	1-Methylc	1-Methyln	
ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	

Stn.Code	Site Name	Group	Smpl Date	5.61	12.4	8.77	13.2	<13.2	<20.8	288	247	118	12.3	<4.9	10.3	76.1	<4.9	<4.9	<4.9	<4.9	<4.9	<0.0499	<0.236	<0.158	<0.193	<0.202	<0.203	<0.0486	0.646
CHNC-001	Chance Creek above confluence with Chance		2013-07-29																										
CHNC-001	Chance Creek above confluence with Chance		2014-07-22 10:47	<15.6	<15.6	<15.6	<29.7	19.1	71.7	<15.6	139	221	<15.6	<15.6	<15.6	22.2	<15.6	<15.6	<15.6	<15.6	<15.6	<0.0607	<0.561	<0.146	<0.444	<0.158	<0.161	<0.0954	0.706
CHNC-001	Chance Creek above confluence with Chance		2014-09-22 19:00	<5.01	<5.01	<5.01	<5.01	7.33	25.8	12.8	117	47.4	<5.01	<5.01	<5.01	11.3	<5.01	<5.01	<5.01	<5.01	<5.01	<0.16	<1.24	<0.741	<0.484	0.146	<0.0854	<0.259	1.59
CHNC-001	Chance Creek above confluence with Chance		2015-03-14 17:30	39.8	42.5	45.6	22.2	<15.2	<15.2	<15.2	247	79.5	44.9	<15.2	<15.2	32.6	<15.2	<15.2	<15.2	<15.2	<15.2	<0.27	7.72	1.54	<1.07	<0.281	<0.285	<0.103	1.29
CHNC-001	Chance Creek above confluence with Chance		2015-06-06 11:00																			<0.0873	<0.6	<0.183	<0.223	<0.084	<0.0854	<0.0954	0.77
CHNC-001	Chance Creek above confluence with Chance		2015-09-18 18:05																			<0.14	0.53	0.46	<0.277	0.196	<0.136	0.102	2.97
CHNC-001	Chance Creek above confluence with Chance		2016-03-16																			<0.0922	<0.353	<0.162	<0.123	0.047	<0.0348	<0.0692	0.658
CHNC-001	Chance Creek above confluence with Chance		2016-06-21 11:15																										
CHNC-001	Chance Creek above confluence with Chance		2016-09-20 12:00																										
CHNC-001	Chance Creek above confluence with Chance		2017-03-07 10:40																										
CHNC-001	Chance Creek above confluence with Chance		2017-06-27 11:30																										
CHNC-001	Chance Creek above confluence with Chance		2017-09-20 10:21																										
CHNC-001	Chance Creek above confluence with Chance		2018-03-21 10:25																										
CHNC-003	Chance Creek u/s tributary	Chance	2013-08-26 15:00	<5.02	<5.02	<5.02	<5.02	<5.02	<5.02	73.9	47.6	13.4	<5.02	<5.02	<5.02	<5.02	<5.02	<6.16	<5.02	<5.02	<5.02	<0.139	0.651	<0.407	<0.217	0.194	0.141	<0.0419	0.841
CHNC-003	Chance Creek u/s tributary	Chance	2014-07-22 18:30	<15.7	<15.7	<15.7	<15.7	<15.7	21.7	<15.7	40.8	115	<15.7	<15.7	<15.7	19.5	<15.7	<15.7	<15.7	<15.7	<15.7	<0.0975	<0.473	<0.296	<0.383	0.14	<0.0647	<0.0775	0.577
CHNC-003	Chance Creek u/s tributary	Chance	2014-09-23 10:40	<5.13	12.7	<5.13	26.3	23	84.1	<14	253	73.6	16.5	7.72	17	18.1	<5.13	<7.6	<5.13	<5.13	<5.13	<0.117	<0.644	<0.265	<0.317	0.094	<0.0721	<0.0806	0.82
CHNC-003	Chance Creek u/s tributary	Chance	2015-06-05 15:40																			<0.077	<0.589	<0.258	<0.205	<0.0654	<0.0665	<0.0932	0.561
CHNC-003	Chance Creek u/s tributary	Chance	2015-09-19 17:23																			<0.0881	<0.531	<0.317	<0.2	0.183	<0.0616	<0.215	1.92
CHNC-003	Chance Creek u/s tributary	Chance	2016-09-22 10:59																										
CHNC-003	Chance Creek u/s tributary	Chance	2017-06-27 9:30																										
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2013-08-26 14:02	<5.3	<5.3	<5.3	<5.3	9.69	<5.3	810	95.2	11.4	<5.3	<5.3	<5.3	9.15	<5.3	<5.3	<5.3	<5.3	<5.3	<0.119	0.66	0.599	<0.22	0.14	0.157	<0.054	1.01
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2014-07-22 18:50	<15.6	<15.6	<15.6	17.2	31.9	33.3	<15.6	87	122	<15.6	<15.6	<15.6	<15.6	<15.6	<15.6	<15.6	<15.6	<15.6	<0.0587	<0.384	<0.141	<0.165	0.038	<0.0374	<0.0701	0.6
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2014-09-21 15:10	<4.93	<4.93	<4.93	<4.93	<4.93	27.5	<84.1	85.6	60	15.5	<4.93	<4.93	9.84	<4.93	<8.05	<4.93	<4.93	6.38	<0.124	1.08	<0.242	<0.437	0.078	0.087	<0.151	0.948
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2015-06-05 16:10																			<0.0824	<0.602	<0.176	<0.185	<0.07	<0.0712	<0.067	0.635
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2015-09-19 18:00																			<0.166	<0.431	<0.489	<0.605	0.394	<0.09	0.263	3.79
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2016-03-15																			<0.108	<0.432	<0.364	<0.409	0.111	<0.0923	<0.0799	0.984
DALG-002	DalGLISH Creek	DalGLISH	2014-09-23 14:30	15.1	20.7	16.3	<5.16	<5.16	24.2	16.6	300	72.1	15.8	<5.16	<5.16	15.8	<5.16	<5.16	<5.16	<5.16	<5.16	<0.604	2.72	2.95	<1.15	2.22	0.614	<1.18	5.69
DALG-002	DalGLISH Creek	DalGLISH	2015-06-06 17:40																			<0.125	<0.923	<0.343	<0.238	0.105	<0.0648	<0.107	1.32
DALG-002	DalGLISH Creek	DalGLISH	2015-09-18 13:45																			0.319	<0.832	1.22	<0.935	1.13	<0.414	0.364	4.13
DALG-002	DalGLISH Creek	DalGLISH	2016-03-15																			0.2	1.38	1.19	<0.478	0.618	0.203	0.119	3.5
DALG-002	DalGLISH Creek	DalGLISH	2016-05-10																										
DALG-002	DalGLISH Creek	DalGLISH	2016-06-21 17:43																										
DALG-002	DalGLISH Creek	DalGLISH	2016-09-20 15:30																										
DALG-002	DalGLISH Creek	DalGLISH	2016-09-22 14:50																										
DALG-002	DalGLISH Creek	DalGLISH	2017-03-07 15:00																										
DALG-002	DalGLISH Creek	DalGLISH	2017-06-27 16:00																										
DALG-002	DalGLISH Creek	DalGLISH	2017-09-21 11:05																										
DALG-002	DalGLISH Creek	DalGLISH	2018-03-21 14:00																										
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2013-08-26 15:45	13	16.4	10.4	7.03	<4.94	5.01	72.5	94	17.1	5.01	<4.94	<4.94	10.3	<4.94	<4.94	<4.94	<4.94	<4.94	<0.113	<0.601	<0.394	<0.316	0.203	<0.0807	<0.12	1.13
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2014-07-23 11:55	17.1	15	10.9	9.58	<5.14	18.8	<9.47	58.4	42.5	9.77	<5.14	<5.14	13.7	<5.14	<5.14	<5.14	<5.14	<5.14	<0.134	0.518	0.469	<0.199	0.177	<0.0705	<0.0911	1.72
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2014-09-23 11:15	43	46.7	42.4	29.4	12.1	55.5	21	275	66.1	12.6	<4.91	16.7	28.8	<5.81	<4.91	<4.91	<4.91	<4.91	<0.243	1.18	0.505	<0.499	0.229	<0.114	<0.258	2.03
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2015-03-15 11:35	8.77	7.15	<5.18	7.57	<5.18	<5.18	<5.18	91.5	20.6	<5.18	<5.18	<5.18	<5.18	<5.18	<5.18	<5.18	<5.18	<5.18	<0.266	<0.977	<0.319	<0.74	<0.263	<0.268	<0.121	8.57
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2015-06-05 17:50																			<0.119	<1.02	0.394	<0.318	0.21	<0.107	<0.1	2.46
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2015-09-18 18:55																			<0.315		<0.556	0.651	<0.317	0.415		
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2016-03-16																			0.104	0.52	<0.561	<0.227	0.368	0.127	<0.0839	2.13
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2016-06-21 15:50																										
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2016-09-20 9:18																										
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2017-03-07 17:00																										
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2017-06-27 18:15																										
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2017-09-20 17:30																										
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2018-03-20 17:38																										

C19H28O2 C19H30O2 C19H32O2 C19H34O2 C19H36O2 C19H38O2 C20H28O2 C20H30O2 C20H32O2 C20H34O2 C20H36O2 C20H38O2 C21H30O2 C21H32O2 C21H34O2 C21H36O2 C21H38O2 C21H40O2 126-Trime 12-Dimeth 1467-Tetra 17-Dimeth 17-Dimeth 18-Dimeth 1-Methylc 1-Methyln  
 NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA PAH PAH PAH PAH PAH PAH PAH PAH  
 org  
 C19H28O2 C19H30O2 C19H32O2 C19H34O2 C19H36O2 C19H38O2 C20H28O2 C20H30O2 C20H32O2 C20H34O2 C20H36O2 C20H38O2 C21H30O2 C21H32O2 C21H34O2 C21H36O2 C21H38O2 C21H40O2 1,2,6-Trim 1,2-Dimeth 1,4,6,7-Tet 1,7-Dimeth 1,7-Dimeth 1,8-Dimeth 1-Methylc 1-Methyln  
 ng/L

Stn.Code	Site Name	Group	Smpl Date	C19H28O2	C19H30O2	C19H32O2	C19H34O2	C19H36O2	C19H38O2	C20H28O2	C20H30O2	C20H32O2	C20H34O2	C20H36O2	C20H38O2	C21H30O2	C21H32O2	C21H34O2	C21H36O2	C21H38O2	C21H40O2	1,2,6-Trim	1,2-Dimeth	1,4,6,7-Tet	1,7-Dimeth	1,7-Dimeth	1,8-Dimeth	1-Methylc	1-Methyln	
McPL-002	McParlon Creek headwaters	McParlon	2013-08-27 11:05	8.98	<5.05	<5.05	<5.05	<5.05	<5.05	54.8	58.3	14.9	6.21	<5.05	<5.05	<5.05	<5.05	<5.05	<5.05	<5.05	<5.05	<5.05	<0.192	1.03	0.255	<0.354	0.15	<0.116	<0.0664	1.09
McPL-002	McParlon Creek headwaters	McParlon	2014-07-23 9:30	49.6	<15.1	<15.1	25.7	<15.1	101	<15.1	312	389	<41.9	<15.1	<15.1	<15.6	<15.1	<15.1	<15.1	<15.1	<15.1	<15.1	<0.324	<0.379	<0.328	<0.224	<0.0492	<0.0501	<0.0418	0.505
McPL-002	McParlon Creek headwaters	McParlon	2014-09-21 16:00	<5.53	<5.53	<5.53	<5.53	<5.53	25.3	11.1	111	50.1	9.84	<5.53	<5.53	18.3	<5.53	<5.53	<5.53	<5.53	<5.53	<5.53	<0.09	0.851	<0.267	<0.152	<0.0597	<0.0608	<0.11	0.836
McPL-002	McParlon Creek headwaters	McParlon	2015-06-05 11:05																			<0.067	<0.645	<0.21	<0.201	<0.061	<0.062	<0.0804	0.679	
McPL-002	McParlon Creek headwaters	McParlon	2015-09-19 14:30																			<0.212	<0.394	<0.341	<0.443	<0.167	<0.169	<0.0808	1.5	
McPL-002	McParlon Creek headwaters	McParlon	2016-03-15																			<0.0484	<0.448	<0.168	<0.132	0.068	<0.0445	<0.0534	0.589	
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2013-08-27 12:25	7.02	7.78	<4.91	<4.91	<4.91	<4.91	27.2	57	13.8	<4.91	<4.91	<4.91	5.58	<4.91	<4.91	<4.91	<4.91	<4.91	<4.91	<0.105	1.58	<0.343	<0.21	<0.127	<0.128	<0.0645	0.655
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2014-07-22 10:20	35	27.4	<15.8	57.1	35.5	113	<15.8	198	312	33.7	<15.8	<15.8	40.3	<15.8	<15.8	<15.8	<15.8	<15.8	<15.8	<0.0574	<0.645	<0.211	<0.288	<0.15	<0.153	<0.0488	0.591
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2014-09-21 14:20	<5.32	<5.32	<5.32	<5.32	<5.32	27.4	<5.32	149	33	<5.32	<5.32	<5.32	13.9	<5.32	<5.32	<5.32	<5.32	<5.32	<5.32	<0.108	0.856	<0.191	<0.231	<0.0748	0.087	<0.133	0.675
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2015-06-06 15:00																			<0.118	<0.64	<0.243	<0.322	<0.0564	<0.0574	<0.0792	0.61	
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2015-09-18 14:51																			<0.124	<0.457	<0.22	<0.248	0.148	<0.0613	<0.0662	0.976	

Notes:  
 Sample classes included in query: All



1-Methylp 235-Trime 236-Trime 24-Dimeth 26-Dimeth 26-Dimeth 23-Methyl 2-Methyla 2-Methylfl 2-Methyln 2-Methylp 36-Dimeth 3-Methylfl 3-Methylp 59-Dimeth 56-Methyl 7-Methylb 94-Methyl Acenaphth Acenaphth Anthracen Benz-a-anl Benzo-a-p Benzo-b-fl Benzo-e-p Benzo-ghi-  
 PAH  
 org  
 1-Methylp 2,3,5-Trim 2,3,6-Trim 2,4-Dimeth 2,6-Dimeth 2,6-Dimeth 2/3-Methyl 2-Methyla 2-Methylfl 2-Methyln 2-Methylp 3,6-Dimeth 3-Methylfl 3-Methylp 5,9-Dimeth 5/6-Methyl 7-Methylb 9/4-Methyl Acenaphth Acenaphth Anthracen Benz[a]ant Benzo[a]p Benzo[b]fl Benzo[e]p Benzo[ghi]  
 ng/L

Stn.Code	Site Name	Group	Smpl Date	1-Methylp	235-Trime	236-Trime	24-Dimeth	26-Dimeth	26-Dimeth	23-Methyl	2-Methyla	2-Methylfl	2-Methyln	2-Methylp	36-Dimeth	3-Methylfl	3-Methylp	59-Dimeth	56-Methyl	7-Methylb	94-Methyl	Acenaphth	Acenaphth	Anthracen	Benz-a-anl	Benzo-a-p	Benzo-b-fl	Benzo-e-p	Benzo-ghi-
McPL-002	McParlon Creek headwaters	McParlon	2013-08-27 11:05	0.464	0.681	0.454	<0.22	0.824	<0.116	<0.235	<0.168	<0.497	1.78	0.176	<0.117	0.338	<0.163	<0.097	<0.0724	<0.166	<0.163	<0.273	<0.176	<0.165	0.081	<0.17	<0.0826	0.173	0.189
McPL-002	McParlon Creek headwaters	McParlon	2014-07-23 9:30	0.091	<0.198	0.253	<0.198	<0.317	<0.0501	<0.0992	<0.0671	<0.234	0.928	0.104	<0.051	<0.0747	0.111	<0.0475	<0.0445	<0.104	0.078	<0.248	<0.069	<0.0358	0.041	<0.144	<0.0983	<0.148	<0.05
McPL-002	McParlon Creek headwaters	McParlon	2014-09-21 16:00	<0.2	<0.291	0.326	<0.271	<0.523	<0.0608	<0.174	<0.199	<0.171	1.42	<0.199	<0.062	<0.223	<0.199	<0.111	<0.114	<0.715	<0.199	<0.412	<0.24	<0.136	<0.094	<0.514	<0.314	<0.503	<0.395
McPL-002	McParlon Creek headwaters	McParlon	2015-06-05 11:05	<0.234	0.33	0.259	<0.114	<0.545	<0.062	<0.13	<0.244	<0.155	1	<0.237	<0.063	<0.163	<0.239	<0.0774	<0.0853	<0.278	<0.239	<0.252	<0.115	<0.0844	<0.0546	<0.156	<0.101	<0.157	0.193
McPL-002	McParlon Creek headwaters	McParlon	2015-09-19 14:30	0.243	0.374	0.318	<0.393	<0.334	<0.169	<0.221	<0.151	<0.373	2.29	0.229	<0.171	0.281	0.267	<0.139	<0.087	<0.247	0.258	<0.399	<0.348	<0.177	0.065	<0.185	<0.125	<0.185	0.171
McPL-002	McParlon Creek headwaters	McParlon	2016-03-15	0.173	<0.340	<0.313	<0.102	<0.380	<0.0445	<0.164	<0.120	<0.267	0.925	0.218	0.055	<0.175	0.166	<0.119	<0.0549	<0.218	0.128	<0.295	<0.227	<0.122	0.04	<0.191	<0.122	<0.193	0.152
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2013-08-27 12:25	<0.381	0.254	0.447	<0.203	<0.492	<0.128	<0.145	<0.398	<0.403	0.991	<0.379	<0.129	0.31	<0.386	<0.0981	<0.0703	<0.163	<0.386	<0.24	<0.203	<0.166	<0.09	<0.256	<0.138	<0.234	<0.152
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2014-07-22 10:20	<0.231	<0.48	<0.438	<0.217	<0.539	<0.153	<0.123	<0.229	<0.14	0.988	<0.23	<0.156	<0.186	<0.23	<0.052	<0.0519	<0.193	<0.23	0.252	<0.105	<0.0369	0.045	<0.182	<0.112	<0.187	<0.0583
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2014-09-21 14:20	<0.195	0.15	0.204	<0.2	<0.357	<0.0762	<0.28	<0.193	<0.172	1.11	<0.193	<0.0777	<0.199	0.216	<0.191	<0.138	<0.473	<0.194	<0.32	<0.132	<0.148	<0.0958	<0.389	<0.248	<0.381	<0.325
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2015-06-06 15:00	<0.365	<0.302	<0.278	<0.245	<0.541	<0.0574	<0.127	<0.382	<0.173	0.901	<0.37	<0.0583	0.284	<0.373	<0.123	<0.084	<0.363	<0.373	<0.339	<0.139	<0.13	<0.0914	<0.175	0.124	<0.177	0.378
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2015-09-18 14:51	0.237	0.296	0.289	<0.599	<0.388	<0.0613	<0.351	<0.222	<0.332	1.4	<0.21	0.071	0.342	0.285	<0.176	<0.0712	<0.156	0.357	<0.231	<0.197	<0.201	0.056	<0.188	<0.125	0.244	0.194

Notes:  
 Sample classes included in query: All

Benzo-jk-f PAH PAH PAH C1-Phenar PAH PAH PAH C1-Acenap PAH PAH PAH C1-Benzo- PAH PAH PAH C1-Benzof PAH PAH PAH C1-Biphen PAH PAH PAH C1-Dibenz PAH PAH PAH C1-Fluorar PAH PAH PAH C1-Fluorer PAH PAH PAH C1-Napth PAH PAH PAH C2-Phenar PAH PAH PAH C2-Benzo- PAH PAH PAH C2-Benzof PAH PAH PAH C2-Biphen PAH PAH PAH C2-Dibenz PAH PAH PAH C2-Fluorar PAH PAH PAH C2-Fluorer PAH PAH PAH C2-Napth PAH PAH PAH C3-Benzo- PAH PAH PAH C3-Dibenz PAH PAH PAH C3-Fluorar PAH PAH PAH C3-Fluorer PAH PAH PAH C3-Napth PAH PAH PAH C3-Phenar

Stn.Code	Site Name	Group	Smpl Date	Benzo[j,k]f	Benzo[b]j	Biphenyl	C1-Phenar	C1-Acenap	C1-Benzo-	C1-Benzof	C1-Biphen	C1-Dibenz	C1-Fluorar	C1-Fluorer	C1-Napth	C2-Phenar	C2-Benzo-	C2-Benzof	C2-Biphen	C2-Dibenz	C2-Fluorar	C2-Fluorer	C2-Napth	C3-Benzo-	C3-Dibenz	C3-Fluorar	C3-Fluorer	C3-Napth	C3-Phenar
org	org	org	org	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L
CHNC-001	Chance Creek above confluence with Chance		2013-07-29	<0.0891	1	<0.194	<0.119	0.268	<0.12	1.82	<0.163	0.812	0.457	1.71	0.751	0.169	<0.108	8.56	0.686	1.14	0.841	2.85	0.195	0.497	0.81	2.05	2.42	0.608	
CHNC-001	Chance Creek above confluence with Chance		2014-07-22 10:47	<0.0848	1	0.575	<0.144	<0.0984	<0.112	3.08	<0.137	0.676	0.607	1.8	0.354	<0.122	0.156	14.8	<0.382	0.241	<0.444	0.799	<0.0497	<0.253	<0.204	0.458	2.13	0.512	
CHNC-001	Chance Creek above confluence with Chance		2014-09-22 19:00	<0.275	1.28	1.19	<0.46	0.541	<0.38	3.3	0.57	1.23	0.795	3.82	0.732	0.497	<0.317	16.4	0.662	1.36	<0.484	4.9	<0.16	1.54	0.708	1.48	7.07	0.897	
CHNC-001	Chance Creek above confluence with Chance		2015-03-14 17:30	0.439	4.47	8.78	<0.462	0.48	<0.278	5.85	<0.408	5.04	4.34	353	3.58	<0.301	<0.314	8.96	<0.357	3.49	6.64	95.8	<0.137	<0.14	<0.609	2.57	24.8	2.26	
CHNC-001	Chance Creek above confluence with Chance		2015-06-06 11:00	<0.154	1.48	<0.127	<0.221	0.235	<0.37	0.818	<0.106	0.934	0.792	1.9	0.58	<0.184	0.335	1.43	0.46	0.759	<0.223	1.78	0.24	0.406	<0.189	1.3	2.21	0.576	
CHNC-001	Chance Creek above confluence with Chance		2015-09-18 18:05	<0.187	0.849	3.14	<0.298	0.594	<0.174	0.953	0.366	2.67	0.863	6.71	1.04	<0.292	<0.305	0.279	0.662	2.45	<0.277	7.45	<0.135	0.888	<0.457	1.47	5.52	0.365	
CHNC-001	Chance Creek above confluence with Chance		2016-03-16	<0.0784	0.631	0.272	<0.314	<0.0702	<0.196	2.34	<0.170	<0.187	0.586	1.55	0.153	<0.0898	<0.0939	8.39	<0.155	<0.112	0.801	2.01	<0.0898	0.067	<0.131	0.818	1.15	0.109	
CHNC-001	Chance Creek above confluence with Chance		2016-06-21 11:15																										
CHNC-001	Chance Creek above confluence with Chance		2016-09-20 12:00																										
CHNC-001	Chance Creek above confluence with Chance		2017-03-07 10:40																										
CHNC-001	Chance Creek above confluence with Chance		2017-06-27 11:30																										
CHNC-001	Chance Creek above confluence with Chance		2017-09-20 10:21																										
CHNC-001	Chance Creek above confluence with Chance		2018-03-21 10:25																										
CHNC-003	Chance Creek u/s tributary	Chance	2013-08-26 15:00	0.138	0.9	<0.287	<0.372	0.328	0.898	2.13	<0.138	1.1	0.775	2.19	1.17	0.388	0.487	7.96	0.991	0.761	1.28	4.6	0.402	0.658	0.452	1.3	2.71	1.28	
CHNC-003	Chance Creek u/s tributary	Chance	2014-07-22 18:30	<0.0433	1.14	0.565	<0.0798	<0.0799	<0.121	5.3	<0.134	1	0.869	1.64	0.412	<0.086	0.181	23.7	<0.269	<0.268	0.57	1.07	<0.0958	0.209	0.101	1.46	1.75	0.546	
CHNC-003	Chance Creek u/s tributary	Chance	2014-09-23 10:40	<0.169	0.769	<0.211	<0.283	0.183	0.55	<0.549	0.184	0.341	0.566	2.07	0.368	0.241	0.389	0.643	0.737	0.67	<0.317	2.16	<0.0992	0.61	0.196	1.22	2.63	0.256	
CHNC-003	Chance Creek u/s tributary	Chance	2015-06-05 15:40	<0.178	2.12	<0.102	<0.417	<0.096	<0.317	0.642	<0.138	0.478	0.489	1.69	0.197	<0.132	<0.337	1.2	0.296	0.317	0.506	1.98	<0.139	0.201	<0.125	1.53	1.59	0.199	
CHNC-003	Chance Creek u/s tributary	Chance	2015-09-19 17:23	<0.212	0.919	2.06	<0.367	0.474	<0.333	0.828	0.272	1.94	0.748	4.33	1	<0.236	<0.281	0.521	0.64	1.46	0.63	4.09	<0.236	1.11	<0.243	1.1	3.22	0.215	
CHNC-003	Chance Creek u/s tributary	Chance	2016-09-22 10:59																										
CHNC-003	Chance Creek u/s tributary	Chance	2017-06-27 9:30																										
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2013-08-26 14:02	0.066	1.01	<0.21	<0.257	0.225	0.737	2.6	<0.111	0.915	2.16	2.49	0.748	0.371	0.42	10.1	0.78	0.916	1.07	2.83	0.255	0.869	0.568	1.66	2.62	0.943	
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2014-07-22 18:50	<0.0595	0.96	0.166	<0.236	<0.0723	<0.128	4.56	<0.113	0.19	0.59	1.48	0.245	<0.0516	0.245	21.3	<0.172	<0.165	0.403	2.19	0.162	0.102	0.101	1.32	1.93	0.177	
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2014-09-21 15:10	<0.127	0.831	0.216	<0.961	0.342	0.568	<0.613	0.19	0.86	0.596	2.6	0.664	0.327	0.228	0.978	0.968	1.09	0.504	4.23	<0.131	1.28	<0.177	2.89	3.15	0.416	
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2015-06-05 16:10	<0.15	1.64	<0.136	<0.403	0.208	0.691	0.94	<0.172	0.813	0.894	1.81	0.441	<0.123	0.814	1.78	0.22	0.843	0.527	2.6	0.332	0.581	<0.134	2.35	2.74	0.481	
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2015-09-19 18:00	<0.303	1.19	3.46	<0.273	1.2	<0.852	1.27	0.834	3.8	1.55	8.75	3.28	<0.399	<0.358	0.88	1.13	3.6	1	6.43	<0.146	2.17	<0.497	2.56	4.58	1.23	
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2016-03-15	<0.0952	0.532	0.284	<0.222	0.117	<0.195	3.13	<0.275	0.889	0.894	2.09	0.457	<0.0775	<0.195	17.6	0.381	0.364	3.31	2.45	<0.100	0.207	0.136	1.09	1.23	0.248	
DALG-002	DalGLISH Creek	DalGLISH	2014-09-23 14:30	0.294	2.01	16.6	<0.927	4.44	4.46	5.58	2.75	13.1	3.48	12.3	21.6	2.69	2.3	19.4	12.2	21.8	7.07	25.5	0.246	10.9	4.92	11.2	29.9	9.45	
DALG-002	DalGLISH Creek	DalGLISH	2015-06-06 17:40	<0.0941	1.59	0.367	<0.404	0.365	<0.317	1.17	0.26	1.16	0.787	2.91	0.856	<0.14	<0.219	2.17	1.07	1.19	0.962	4.04	<0.134	0.808	0.399	0.661	4.58	0.672	
DALG-002	DalGLISH Creek	DalGLISH	2015-09-18 13:45	0.378	1.75	11.7	<0.559	2.95	2.73	2.88	2.96	8.54	1.8	9.97	7.42	1.86	<0.203	2.19	6.76	10.6	3.29	15.6	<0.168	4.86	1.96	5.11	17.3	4.87	
DALG-002	DalGLISH Creek	DalGLISH	2016-03-15	<0.170	1	6.37	<0.272	0.782	0.362	4.24	2.62	3.41	1.81	7.22	4.46	0.617	<0.135	13.9	4.17	4.86	2.22	15.7	<0.128	3.08	1.02	2.66	14.6	2.92	
DALG-002	DalGLISH Creek	DalGLISH	2016-05-10																										
DALG-002	DalGLISH Creek	DalGLISH	2016-06-21 17:43																										
DALG-002	DalGLISH Creek	DalGLISH	2016-09-20 15:30																										
DALG-002	DalGLISH Creek	DalGLISH	2016-09-22 14:50																										
DALG-002	DalGLISH Creek	DalGLISH	2017-03-07 15:00																										
DALG-002	DalGLISH Creek	DalGLISH	2017-06-27 16:00																										
DALG-002	DalGLISH Creek	DalGLISH	2017-09-21 11:05																										
DALG-002	DalGLISH Creek	DalGLISH	2018-03-21 14:00																										
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2013-08-26 15:45	<0.112	1.03	0.6	<0.321	0.238	0.6	0.892	0.298	1.29	1.04	2.86	1.03	0.302	0.458	1.94	1.52	0.688	1.33	5.14	0.261	0.659	0.697	1.45	3.7	1.36	
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2014-07-23 11:55	0.07	1.32	2.55	<0.219	0.51	<0.183	4.98	0.989	2.11	1.83	3.87	0.994	<0.117	0.132	21.7	1.57	1.86	1.39	6.77	<0.0829	1.23	<0.305	2.61	6.79	1.14	
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2014-09-23 11:15	<0.195	1.28	2.61	<0.39	0.636	0.358	3.62	0.439	2.12	1.08	4.76	2.1	0.478	0.375	15.3	2.3	2.77	0.957	8.59	<0.147	1.5	0.792	3.36	6.1	1.45	
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2015-03-1																										



**Benzo-jk-f** **Benzo-bjk** **Biphenyl** **C1-Phenar** **C1-Acenap** **C1-Benzo-** **C1-Benzof** **C1-Biphen** **C1-Dibenz** **C1-Fluorar** **C1-Fluorer** **C1-Napth** **C2-Phenar** **C2-Benzo-** **C2-Benzof** **C2-Biphen** **C2-Dibenz** **C2-Fluorar** **C2-Fluorer** **C2-Napth** **C3-Benzo-** **C3-Dibenz** **C3-Fluorar** **C3-Fluorer** **C3-Napth** **C3-Phenar**  
 PAH  
 org  
 Benzo[j,k]f Benzo(b/j) Biphenyl C1 Phenar C1-Acenap C1-Benzo[ C1-Benzof C1-Biphen C1-Dibenz C1-Fluorar C1-Fluorer C1-Napth C2 Phenar C2-Benzo[ C2-Benzof C2-Biphen C2-Dibenz C2-Fluorar C2-Fluorer C2-Napth C3-Benzo[ C3-Dibenz C3-Fluorar C3-Fluorer C3-Napth C3-Phenar  
 ng/L

Stn.Code	Site Name	Group	Smpl Date	Benzo-jk-f	Benzo-bjk	Biphenyl	C1-Phenar	C1-Acenap	C1-Benzo-	C1-Benzof	C1-Biphen	C1-Dibenz	C1-Fluorar	C1-Fluorer	C1-Napth	C2-Phenar	C2-Benzo-	C2-Benzof	C2-Biphen	C2-Dibenz	C2-Fluorar	C2-Fluorer	C2-Napth	C3-Benzo-	C3-Dibenz	C3-Fluorar	C3-Fluorer	C3-Napth	C3-Phenar
McPL-002	McParlon Creek headwaters	McParlon	2013-08-27 11:05	<0.111	1.09	0.64	<0.378	0.238	0.436	0.523	<0.235	1.12	1.08	2.87	0.661	0.316	0.281	1.45	1.36	1.16	0.484	5.18	0.201	1.41	0.28	1.85	3.82	1.05	
McPL-002	McParlon Creek headwaters	McParlon	2014-07-23 9:30	<0.103	0.798	<0.0677	<0.258	<0.0431	<0.104	4.07	<0.0992	<0.0747	0.309	1.43	0.129	<0.0475	<0.15	18.7	<0.198	<0.112	0.243	0.98	0.114	0.102	0.117	0.242	1.16	<0.324	
McPL-002	McParlon Creek headwaters	McParlon	2014-09-21 16:00	<0.313	1.09	<0.2	<0.282	0.133	<0.715	2.11	0.222	0.735	0.689	2.26	0.303	<0.111	<0.424	9.86	0.444	0.677	<0.152	3.86	<0.223	0.921	<0.17	2.31	2.77	0.285	
McPL-002	McParlon Creek headwaters	McParlon	2015-06-05 11:05	<0.111	1.62	<0.234	<0.391	<0.0828	1.09	0.89	<0.13	0.222	0.83	1.68	0.214	<0.0774	1.36	1.66	0.409	<0.101	0.5	0.975	0.393	0.367	<0.101	5.25	2.23	0.512	
McPL-002	McParlon Creek headwaters	McParlon	2015-09-19 14:30	<0.135	0.709	0.769	<0.241	<0.0837	<0.247	0.714	<0.221	0.609	0.853	3.78	0.729	<0.139	<0.192	0.358	<0.393	0.143	0.487	2.87	<0.177	0.436	<0.147	1.63	0.747	<0.212	
McPL-002	McParlon Creek headwaters	McParlon	2016-03-15	<0.128	0.663	0.557	<0.362	0.106	<0.218	2.8	<0.164	0.213	0.373	1.51	0.361	<0.119	<0.160	10.9	<0.102	0.108	0.592	1.82	<0.109	0.298	<0.0718	0.599	0.625	0.053	
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2013-08-27 12:25	<0.181	0.811	<0.381	<0.25	0.157	0.381	2.34	<0.145	0.789	0.756	1.65	<0.128	0.301	0.215	9.43	0.833	0.978	0.53	5.18	0.28	1.26	0.467	1.47	2.84	0.631	
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2014-07-22 10:20	<0.121	0.787	<0.231	<0.224	<0.0503	<0.193	2.72	0.228	<0.186	0.519	1.58	<0.153	<0.052	0.163	11.9	<0.217	<0.0745	0.387	1.41	<0.0884	<0.203	<0.161	0.566	1.31	0.131	
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2014-09-21 14:20	<0.244	0.804	<0.195	<0.177	<0.135	<0.473	1.53	<0.28	0.688	0.559	1.78	0.373	<0.191	<0.361	6.83	0.522	1.13	<0.231	2.8	<0.2	0.71	0.459	2.06	1.75	0.22	
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2015-06-06 15:00	<0.129	1.52	<0.365	<0.514	0.097	<0.363	0.806	<0.127	0.644	0.757	1.51	0.272	<0.123	<0.221	1.22	0.424	0.417	0.744	1.26	<0.13	0.277	<0.132	1.67	1.79	0.347	
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2015-09-18 14:51	<0.134	0.469	0.879	<0.224	0.21	<0.156	0.412	<0.351	1.02	0.394	2.38	0.681	<0.176	<0.165	0.206	0.794	0.519	0.417	2.6	<0.112	0.802	<0.206	0.865	1	0.402	

Notes:  
Sample classes included in query: All



C4-Benzo-	C4-Dibenz	C4-Fluorar	C4-Napht	C4-Phenar	Chrysene	Dibenz-ah	Dibenzoth	Fluoranth	Fluorene	Indeno-12	Naphthale	Perylene	Phenanthr	Pyrene	Retene	Benz	E-Benz	MTBE	Styrn	Tolue	Xyl-T	CO2	C2	CH4	N2
PAH	PAH	PAH	PAH	PAH	PAH	PAH	PAH	PAH	PAH	PAH	PAH	PAH	PAH	PAH	PAH	VOC	VOC	VOC	VOC	VOC	VOC	diss. gas	diss. gas	diss. gas	diss. gas
org	org	org	org	org	org	org	org	org	org	org	org	org	org	org	org	org	org	org	org	org	org	mg/L	mg/L	mg/L	mg/L
C4-Benzo[	C4-Dibenz	C4-Fluorar	C4-Napht	C4-Phenar	Chrysene	Dibenz[a,h]	Dibenzoth	Fluoranth	Fluorene	Indeno[1,2]	Naphthale	Perylene	Phenanthr	Pyrene	Retene	Benzene	Ethylbenz	Methyl-ter	Styrene	Toluene	Xylenes,	Tr carbon dic	ethane, di	methane,	nitrogen g
ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	mg/L	mg/L

Stn.Code	Site Name	Group	Smpl Date																											
CHNC-001	Chance Creek above confluence with Chance		2013-07-29	<0.0997	0.652	0.538	<0.158	2.08	0.299	<0.0869	0.217	0.448	0.119	<0.101	1.82	0.162	1.17	0.361	0.63											
CHNC-001	Chance Creek above confluence with Chance		2014-07-22 10:47	<0.0967	0.488	<0.116	<0.146	0.925	0.197	0.096	0.192	0.352	<0.336	0.131	2.23	<0.139	1.24	0.284	0.758											
CHNC-001	Chance Creek above confluence with Chance		2014-09-22 19:00	<0.153	1.29	0.267	4.29	2.76	0.468	<0.334	<0.362	0.418	0.252	<0.303	5.08	1.12	1.18	0.597	1.15	<0.5	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0				
CHNC-001	Chance Creek above confluence with Chance		2015-03-14 17:30	<0.157	<0.311	<0.256	5.69	<1.12	1	<0.498	<0.751	4.05	3.88	0.6	294	<0.189	10.8	4.19	<1.12	<0.5	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0				
CHNC-001	Chance Creek above confluence with Chance		2015-06-06 11:00	0.315	0.624	<0.0944	0.868	1.32	0.338	<0.252	<0.0836	0.666	0.218	0.245	5.01	0.444	1.52	1.68	0.756	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5.133281	0	0.030679	19.96407	
CHNC-001	Chance Creek above confluence with Chance		2015-09-18 18:05	<0.135	0.876	<0.197	4.21	2.82	0.966	<0.299	0.187	0.786	0.349	0.229	7.53	0.853	2.86	0.959	1.43	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	4.770285	0	0.003601	21.03444	
CHNC-001	Chance Creek above confluence with Chance		2016-03-16	<0.0689	0.388	<0.123	0.593	0.19	0.103	<0.0903	0.173	0.223	0.181	<0.0974	2.35	<0.117	0.866	0.176	0.229	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	21.41678	0	0.004321	28.96514	
CHNC-001	Chance Creek above confluence with Chance		2016-06-21 11:15																	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5.476111	0	0.006049	26.44866	
CHNC-001	Chance Creek above confluence with Chance		2016-09-20 12:00																	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	6.775932	0	0.003889	31.8153	
CHNC-001	Chance Creek above confluence with Chance		2017-03-07 10:40																	<500	<500	<500	<500	<500	<500	<500				
CHNC-001	Chance Creek above confluence with Chance		2017-06-27 11:30																	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	4.207458	0	0.00749	36.63684	
CHNC-001	Chance Creek above confluence with Chance		2017-09-20 10:21																	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	4.519121	0	0.002737	23.31924	
CHNC-001	Chance Creek above confluence with Chance		2018-03-21 10:25																	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5				
CHNC-003	Chance Creek u/s tributary	Chance	2013-08-26 15:00	0.514	1.36	0.542	3.65	6.16	0.274	<0.229	0.336	0.368	<0.421	0.142	3.14	<0.212	1.15	0.336	4.5											
CHNC-003	Chance Creek u/s tributary	Chance	2014-07-22 18:30	<0.0934	0.485	<0.102	<0.296	1.91	0.261	<0.074	0.223	0.807	<0.131	<0.0693	1.98	0.116	1.37	0.602	2.13											
CHNC-003	Chance Creek u/s tributary	Chance	2014-09-23 10:40	0.123	1.07	<0.157	0.437	1.36	0.185	<0.179	0.205	0.287	0.225	0.409	3.93	<0.253	0.719	0.249	0.575	<0.5	<1.0				<1.0	<2.0				
CHNC-003	Chance Creek u/s tributary	Chance	2015-06-05 15:40	0.26	0.747	<0.0859	0.384	1.34	0.231	<0.374	<0.0669	0.533	<0.124	<0.22	5.58	<0.284	1.4	1.07	1.19	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5.190114	0	0.013251	21.6476	
CHNC-003	Chance Creek u/s tributary	Chance	2015-09-19 17:23	<0.171	0.342	<0.223	2.32	3.51	0.76	<0.268	<0.239	0.663	0.182	0.273	6.14	1.81	2	0.685	3.12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5.719942	0	0.005617	30.81275	
CHNC-003	Chance Creek u/s tributary	Chance	2016-09-22 10:59																	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.324643	0	0.006049	24.07731	
CHNC-003	Chance Creek u/s tributary	Chance	2017-06-27 9:30																	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	8.035419	0	0.043498	23.41372	
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2013-08-26 14:02	0.386	1.07	0.612	3.44	3.43	0.193	<0.0966	0.295	0.486	<0.139	0.148	6.11	0.143	1	0.413	2.23											
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2014-07-22 18:50	<0.0655	0.552	<0.0571	<0.141	3.64	0.159	<0.0432	0.185	0.276	0.085	0.084	1.75	<0.0866	0.714	0.171	3.47											
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2014-09-21 15:10	<0.126	1.35	<0.13	2.12	2.96	0.351	<0.24	0.133	0.354	0.169	<0.206	3.72	<0.184	0.933	0.346	1.99	<0.5	<1.0				<1.0	<2.0				
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2015-06-05 16:10	0.852	0.638	<0.125	0.387	2.27	0.376	<0.227	<0.117	0.65	<0.144	0.236	5.42	0.235	1.45	1.56	1.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5.147948	0	0.010082	19.26458	
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2015-09-19 18:00	<0.176	1.02	<0.231	18.3	10.8	1.51	<0.373	<0.43	0.902	0.278	0.416	17.8	2.5	2.66	1.23	7.16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	6.469768	0	0.010082	24.76777	
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2016-03-15	<0.0869	1.07	<0.117	0.656	27.4	0.279	<0.118	0.208	0.44	1.11	0.132	2.84	<0.143	1.21	0.286	27.1	<0.5	<0.5	<0.5	<0.5	<0.5	1	<0.5	81.70351	0	8.753601	24.03172
DALG-002	DalGLISH Creek	DalGLISH	2014-09-23 14:30	0.274	4.9	<0.559	19	23.6	3.87	0.304	1.35	2.19	0.637	0.509	7.37	3.21	10	2.59	8.85	<0.5	<1.0				<1.0	<2.0				
DALG-002	DalGLISH Creek	DalGLISH	2015-06-06 17:40	<0.101	0.679	<0.106	1.23	1.75	0.488	<0.195	0.215	0.562	0.195	0.255	4.35	0.305	2.03	0.694	0.659	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	3.782128	0	0.002305	64.21666	
DALG-002	DalGLISH Creek	DalGLISH	2015-09-18 13:45	<0.14	1.3	<0.491	9.8	8.57	2.52	<0.26	0.545	1.19	0.511	0.432	8.51	1.89	6.22	1.63	3.12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	3.725296	0	0.00216	22.8695	
DALG-002	DalGLISH Creek	DalGLISH	2016-03-15	<0.0782	1.28	<0.241	8.45	3.95	0.666	<0.121	0.82	0.528	0.55	<0.213	3.05	0.324	3.37	0.692	0.833	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	41.51175	0	0.122428	25.94122	
DALG-002	DalGLISH Creek	DalGLISH	2016-05-10																	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	9.694569	0	0.005041	18.90228	
DALG-002	DalGLISH Creek	DalGLISH	2016-06-21 17:43																	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	6.436768	0	0.002305	23.98437	
DALG-002	DalGLISH Creek	DalGLISH	2016-09-20 15:30																	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	3.712463	0	0.002305	24.66932	
DALG-002	DalGLISH Creek	DalGLISH	2016-09-22 14:50																											
DALG-002	DalGLISH Creek	DalGLISH	2017-03-07 15:00																	<500	<500	<500	<500	<500	<500	<500				
DALG-002	DalGLISH Creek	DalGLISH	2017-06-27 16:00																	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5.576944	0	0.001872	37.04076	
DALG-002	DalGLISH Creek	DalGLISH	2017-09-21 11:05																	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.719649	0	0.001296	22.85431	
DALG-002	DalGLISH Creek	DalGLISH	2018-03-21 14:00																	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5				
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2013-08-26 15:45	0.428	1.71	0.417	4.9	3.15	0.193	<0.0796	0.407	0.441	<0.23	0.075	3.08	<0.245	1.29	0.519	0.664											
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2014-07-23 11:55	<0.0728	0.534	<0.167	1.66	1.58	0.449	<0.0735	0.464	0.495	0.183	0.131	2.38	0.361	1.92	0.558	0.734											
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2014-09-23 11:15	<0.141	1.14	<0.284	2.25	2.06	0.562	<0.181	0.377	0.585	0.347	0.302	4.16	0.3	1.99	0.709	0.595	<0.5	<1.0				<1.0	<2.0				
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2015-03-15 11:35	<0.136	<0.36	<0.244	<0.319	<0.561	0.294	<0.406	<0.248	0.522	<0.513	<0.204	23.7	<0.182	1.39	0.513	<0.561	<0.5	<1.0	<1.0	<1.0	<1.0	<2.0					
EAGL-t-003	Unnamed tributary of Eagle R																													



C4-Benzo- org	C4-Dibenz org	C4-Fluorac org	C4-Napht org	C4-Phenar org	Chrysene org	Dibenz-ah org	Dibenzoth org	Fluoranth org	Fluorene org	Indeno-12 org	Naphthale org	Perylene org	Phenanthr org	Pyrene org	Retene org	Benz org	E-Benz org	MTBE org	Styrn org	Toluene org	Xyl-T org	CO2 diss. gas	C2 diss. gas	CH4 diss. gas	N2 diss. gas
ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	mg/L	mg/L

Stn.Code	Site Name	Group	Smpl Date	C4-Benzo- org	C4-Dibenz org	C4-Fluorac org	C4-Napht org	C4-Phenar org	Chrysene org	Dibenz-ah org	Dibenzoth org	Fluoranth org	Fluorene org	Indeno-12 org	Naphthale org	Perylene org	Phenanthr org	Pyrene org	Retene org	Benz org	E-Benz org	MTBE org	Styrn org	Toluene org	Xyl-T org	CO2 diss. gas	C2 diss. gas	CH4 diss. gas	N2 diss. gas		
McPL-002	McParlon Creek headwaters	McParlon	2013-08-27 11:05	0.613	1.75	0.3	2.77	5.51	0.243	<0.102	0.347	0.479	<0.126	0.184	3.96	<0.329	1.08	0.725	2.93												
McPL-002	McParlon Creek headwaters	McParlon	2014-07-23 9:30	<0.0578	0.392	<0.0809	<0.328	1.12	0.07	<0.0593	0.164	0.22	0.07	<0.0493	2.33	<0.154	0.505	0.159	1.02												
McPL-002	McParlon Creek headwaters	McParlon	2014-09-21 16:00	<0.167	1.18	0.206	1.55	1.65	0.147	<0.346	0.162	0.2	<0.172	<0.481	4.74	<0.515	0.71	0.202	0.203	<0.5	<1.0			<1.0	<2.0						
McPL-002	McParlon Creek headwaters	McParlon	2015-06-05 11:05	1.38	0.63	<0.0699	0.42	0.622	0.145	<0.31	<0.0903	0.443	<0.112	0.203	4.27	<0.169	1.08	0.55	0.371	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	4.451288	0	0.003457	23.20889	
McPL-002	McParlon Creek headwaters	McParlon	2015-09-19 14:30	<0.133	0.46	<0.178	5.24	1.1	0.282	<0.337	<0.151	0.399	0.205	<0.173	9.89	0.416	1.11	0.403	0.527	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	6.504601	0	0.003745	20.60717	
McPL-002	McParlon Creek headwaters	McParlon	2016-03-15	<0.0801	0.753	<0.0967	0.905	0.375	0.142	<0.112	0.273	0.38	<0.126	<0.107	2.2	<0.197	1	0.221	0.505	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	97.43335	0	2.4343	27.14022	
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2013-08-27 12:25	0.419	1.24	0.299	3.2	2.61	0.189	<0.156	0.286	0.339	<0.124	0.175	2.79	<0.273	0.931	0.383	1.07												
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2014-07-22 10:20	<0.0936	0.381	<0.0869	<0.211	1.84	0.151	<0.0681	0.178	0.343	<0.0821	<0.0577	1.96	<0.183	0.786	0.184	1.37												
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2014-09-21 14:20	0.188	1.18	0.373	1.49	0.803	0.131	<0.321	0.119	0.31	0.215	<0.376	3.53	<0.41	0.856	0.248	0.395	<0.5	<1.0			<1.0	<2.0						
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2015-06-06 15:00	<0.215	0.658	<0.12	<0.243	1.11	0.15	<0.181	0.137	0.577	<0.231	<0.192	2.69	<0.186	1.38	1.48	0.543	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5.191948	0.000285	0.005905	21.80133		
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2015-09-18 14:51	<0.151	0.511	<0.185	1.98	0.36	0.454	<0.405	0.143	0.419	<0.209	<0.194	5.19	0.267	1.13	0.515	0.763	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5.829941	0	0.003457	24.60567	

Notes:  
Sample classes included in query: All

O2	C3	d13C-DIC	d2H-water	d18O-SO4	d18O-water	d34S-SO4	Actinium2	Bismuth21	Bismuth21	Lead210	Lead211	Lead211	Lead212	Lead212	Potassium	Radium22	Radium22	Radon219	Thallium2	Thorium22	Thorium22	Thorium22	Thorium22	Uranium235
diss. gas	diss. gas	isotope	isotope	isotope	isotope	isotope	NORMs	NORMs	NORMs	NORMs	NORMs	NORMs	NORMs	NORMs	NORMs	NORMs	NORMs	NORMs	NORMs	NORMs	NORMs	NORMs	NORMs	NORMs
oxygen gas	propane, c	Carbon-13	i deuterium	Oxygen-18	i Oxygen-18	i Sulphur-34	Actinium2	Bismuth21	Bismuth21	Lead210	Lead211	Lead211	Lead212	Lead212	Potassium	Radium22	Radium22	Radon219	Thallium2	( Thorium22	Thorium22	Thorium22	Thorium22	Uranium235
mg/L	mg/L	%o VSMOW	%o VSMOW	%o VSMOW	%o VSMOW	%o VSMOW	Bq/L	Bq/L	Bq/L	Bq/L	Bq/L	Bq/L	Bq/L	Bq/L	Bq/L	Bq/L	Bq/L	Bq/L	Bq/L	Bq/L	Bq/L	Bq/L	Bq/L	Bq/L

Stn.Code	Site Name	Group	Smpl Date																								
CHNC-001	Chance Creek above confluence with Chance		2013-07-29																								
CHNC-001	Chance Creek above confluence with Chance		2014-07-22 10:47																								
CHNC-001	Chance Creek above confluence with Chance		2014-09-22 19:00																							0.007	
CHNC-001	Chance Creek above confluence with Chance		2015-03-14 17:30																							<0.005	
CHNC-001	Chance Creek above confluence with Chance		2015-06-06 11:00	9.749004	0	-19.39	-172.73	-7.8	-22.3	-5.66															<0.005		
CHNC-001	Chance Creek above confluence with Chance		2015-09-18 18:05	11.99237	0	-13.23	-161.33	-12.98	-20.88	-7.98	<0.8	<2	<0.5	<4	<3	0.5	<0.4	<5	<0.4	<0.01	<1	<0.2	<1	<10	<3	<1	
CHNC-001	Chance Creek above confluence with Chance		2016-03-16	1.856503	0	-13.41	-172.69	-8.33	-22.31	-5.31	<0.4	1.0	<0.3	<2	<2	0.4	<0.2	<2	<0.4	<2	<0.4	0.2	<0.4	<10	<1	<0.4	
CHNC-001	Chance Creek above confluence with Chance		2016-06-21 11:15	10.57949	0	-16.37	-163.65	-11.64	-20.197	-5.73	<0.6	<1	<0.3	<3	<2	0.3	0.4	<3	<0.7	<3	<1	<0.2	<0.9	<20	<2	<0.8	
CHNC-001	Chance Creek above confluence with Chance		2016-09-20 12:00	14.86674	0	-12.22	-162.98	-14.35	-20.706	-7.09	<0.9	<1	<0.6	<3	<2	<0.3	<0.5	<4	<0.8	0.02	<1	<0.2	<0.7	<20	<3	<0.9	
CHNC-001	Chance Creek above confluence with Chance		2017-03-07 10:40			-13.29	-171.17	-6.67	-22.184	-4.19	<0.9	<2	<0.5	<4	<6	0.6	0.5	14	<0.8	<4	<1	0.4	<0.9	<20	<4	<1	
CHNC-001	Chance Creek above confluence with Chance		2017-06-27 11:30	13.71904	0	-11.99	-166.64	-12.36	-20.235	-5.83	<1	<2	<0.8	<4	<2	1.2	<0.6	<6	<0.7	<5	<2	0.6	<1	<20	<4	1	
CHNC-001	Chance Creek above confluence with Chance		2017-09-20 10:21	11.06885	0	-11.49	-162.12	-7.84	-20.782	-8.1																	
CHNC-001	Chance Creek above confluence with Chance		2018-03-21 10:25								1	<2		1	<4	<6	0.5	0.7	9	<0.8	<5	<1	<0.3	<1	<30	6	<1
CHNC-003	Chance Creek u/s tributary	Chance	2013-08-26 15:00																								
CHNC-003	Chance Creek u/s tributary	Chance	2014-07-22 18:30																								
CHNC-003	Chance Creek u/s tributary	Chance	2014-09-23 10:40																								
CHNC-003	Chance Creek u/s tributary	Chance	2015-06-05 15:40	10.81786	0	-22.24	-171.82		-22.04																	<0.005	
CHNC-003	Chance Creek u/s tributary	Chance	2015-09-19 17:23	13.91221	0	-20.22	-165.63	12.76	-21.21		<1	<2	<0.5	<5	<7	0.5	<0.5	<6	<1	0.01	<1	0.3	<1	<20	<4	<1	
CHNC-003	Chance Creek u/s tributary	Chance	2016-09-22 10:59	12.17555	0	-14.64	-164.8	-9.24	-20.751	-4.18	<0.7	<2	0.7	<3	<3	<0.3	0.8	<4	<1	<3	<1	0.4	<0.6	<10	<3	<0.8	
CHNC-003	Chance Creek u/s tributary	Chance	2017-06-27 9:30	5.022071	0	-17.23	-166.79	9.31	-20.629	-4.17	<1	<2	<0.6	<5	<5	1.1	0.7	<6	<0.9	<5	<0.9	<0.3	<1	<20	<4	<1	
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2013-08-26 14:02																								
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2014-07-22 18:50																								
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2014-09-21 15:10																								
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2015-06-05 16:10	9.869372	0	-22.7	-172.1		-22.26																	<0.005	
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2015-09-19 18:00	12.77003	0	-21.95	-167.45	11.27	-21.15		1	<2	<0.5	<4	<3	<0.4	<0.5	<6	<1	0.008	<1	<0.2	<1	<30	<4	<1	
CHNC-t-002	Unnamed tributary of Chance Creek	Chance	2016-03-15	0.788435	0.001622	-19.53	-186.96		-24.31		0.8	<2	0.8	<4	<7	<0.4	<0.5	<6	<0.9	<4	<1	<0.2	<1	<30	<4	<1	
DALG-002	Dalglish Creek	Dalglish	2014-09-23 14:30																								
DALG-002	Dalglish Creek	Dalglish	2015-06-06 17:40	21.84229	0	-15.81	-170.54	-11.6	-21.79	-10.53																0.006	
DALG-002	Dalglish Creek	Dalglish	2015-09-18 13:45	12.80682	0	-10.8	-168.83	-13.24	-21.69	-10.78	<1	<2	1	<4	<6	<0.4	0.7	<5	<1	0.009	<2	<0.4	<1	<30	<4	<1	
DALG-002	Dalglish Creek	Dalglish	2016-03-15	0.719579	0.000406	-10.07	-172.56	-10.74	-21.95	-1.54	<0.9	<2	0.6	<4	<4	<0.4	<0.5	<5	<0.9	<5	<1	<0.2	<0.6	<20	<4	<1	
DALG-002	Dalglish Creek	Dalglish	2016-05-10	8.036785	0	-20.96	-188.1	-13.34	-24.24	-9.54	0.8	1	<0.4	<3	<3	0.5	<0.3	<4	<0.5	<3	<0.8	0.3	<0.7	<20	<2	<1.0	
DALG-002	Dalglish Creek	Dalglish	2016-06-21 17:43	8.988953	0	-12.29	-168.68	-13.52	-21.426	-11.66	2	4	<0.7	<6	<6	0.8	<0.6	<7	<0.7	<8	<2	<0.4	<1	<20	<5	<2	
DALG-002	Dalglish Creek	Dalglish	2016-09-20 15:30	13.1921	0	-8.87	-165.66	-14.26	-20.717	-9.65	1	<3	1	<4	<7	1	<0.7	<5	<1	0.01	<2	0.4	<0.9	<20	<4	<1	
DALG-002	Dalglish Creek	Dalglish	2016-09-22 14:50																								
DALG-002	Dalglish Creek	Dalglish	2017-03-07 15:00			-9.98	-170.38	-8.33	-21.955	-2.54	<0.9	<2	<0.6	<4	<4	0.7	<0.6	6	<1	<4	<1	0.7	<1	<20	<4	<1	
DALG-002	Dalglish Creek	Dalglish	2017-06-27 16:00	16.72666	0	-12.99	-164.6	-15.14	-20.71	-10.67	<0.7	<2	<0.6	<4	<5	0.7	0.8	<5	<1	<4	<0.6	<0.2	<1	<20	<4	<1	
DALG-002	Dalglish Creek	Dalglish	2017-09-21 11:05	11.13665	0	-8.94	-162.37	-11.85	-20.682	-11.77																	
DALG-002	Dalglish Creek	Dalglish	2018-03-21 14:00								<1	<3	1	9	<4	0.4	0.8	14	<1	<4	<1	0.4	<1	<20	6	1	
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2013-08-26 15:45																								
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2014-07-23 11:55																								
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2014-09-23 11:15																								
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2015-03-15 11:35			-20.56	-170.66	-7.53	-21.94	-0.65																<0.005	
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2015-06-05 17:50	9.456758	0	-11	-171.66	-12.4	-22.12	-2.16																<0.005	
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2015-09-18 18:55	14.9603	0	-10.11	-163.85	-11.05	-20.95	-4.28	<1	<1	0.7	<6	<4	<0.3	<0.4	<5	<0.9	0.006	<1	<0.2	<1	<30	<4	<0.8	
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2016-03-16	0.968462	0	-20.48	-172.16	-11.14	-21.78	-1.85	0.8	<0.9	<0.4	4	<4	<0.3	0.4	<4	<0.5	<4	<0.8	<0.2	<0.9	<10	<3	<0.7	
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2016-06-21 15:50	12.13034	0	-11.4	-166.55	-14.14	-20.914	-2.84	<1	<2	0.8	<5	<7	<0.4	<0.6	<5	<1	<5	<1	<0.4	<1	<30	<4	<1	
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2016-09-20 9:18	15.13428	0	-9.42	-164.79	-12.91	-20.682	-3.34	<0.8	<1	<0.5	<3	<3	<0.3	0.7	<4	<0.7	0.01	<1	<0.2	<1	<10	<3	<0.9	
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2017-03-07 17:00	2.165307	0	-18.27	-171.03	-10.42	-21.839	-1.78	<0.9	<2	<0.6	<4	<1	1.0	<0.6	10	<1	<5	<1	0.5	<0.8	<30	<4	<1	
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2017-06-27 18:15			-7.39	-163.72	-17.02	-20.105	-2.1	<0.4	<2	0.9	<4	<5	0.9	<0.5	<5	<0.8	<4	<1	<0.3	<1	<30	<4	<1	
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2017-09-20 17:30	37.96947	0	-6.26	-163.85	-12.04	-20.917	-2.02																	
EAGL-t-003	Unnamed tributary of Eagle R	EagleT	2018-03-20 17:38								<1	<2	1	9	<5	0.6	1	12	<0.8	<4	<0.9	<0.4	<1	<20	8	1	
McPL-001	McParlon Creek above confluence wi	McParlon	2013-07-29																								
McPL-001	McParlon Creek above confluence wi	McParlon	2014-07-22 16:55																								
McPL-001	McParlon Creek above confluence wi	McParlon	2014-09-21 13:10																								
McPL-001	McParlon Creek above confluence wi	McParlon	2015-06-05 12:45	10.04309	0	-21.16	-170.04	-9.58	-21.95	-4.63																<0.005	
McPL-001	McParlon Creek above confluence wi	McParlon	2015-09-19 15:25	18.17344	0	-16.49	-163.9	-8.73	-21.3	-5.9	<1	<2	<0.6	<4	5	0.8	<0.5	<4	<0.9	0.02							

<b>O2</b>	<b>C3</b>	<b>d13C-DIC</b>	<b>d2H-water</b>	<b>d18O-SO4</b>	<b>d18O-water</b>	<b>d34S-SO4</b>	<b>Actinium2</b>	<b>Bismuth21</b>	<b>Bismuth21</b>	<b>Lead210</b>	<b>Lead211</b>	<b>Lead212</b>	<b>Lead214</b>	<b>Potassium</b>	<b>Radium22</b>	<b>Radium22</b>	<b>Radon219</b>	<b>Thallium2</b>	<b>Thorium2</b>	<b>Thorium2</b>	<b>Thorium2</b>	<b>Thorium2</b>	<b>Uranium235</b>
diss. gas	diss. gas	isotope	isotope	isotope	isotope	isotope	NORMs	NORMs	NORMs	NORMs	NORMs	NORMs	NORMs	NORMs	NORMs	NORMs	NORMs	NORMs	NORMs	NORMs	NORMs	NORMs	NORMs
		iso	iso	iso	iso	iso	iso	iso	iso	iso	iso	iso	iso	iso	iso	iso	iso	iso	iso	iso	iso	iso	iso
oxygen gas	propane, c	Carbon-13 i	deuterium	Oxygen-18 i	Oxygen-18 i	Sulphur-34	Actinium2	Bismuth21	Bismuth21	Lead210	Lead211	Lead212	Lead214	Potassium	Radium22	Radium22	Radon219	Thallium2	Thorium2	Thorium2	Thorium2	Thorium2	Uranium235
mg/L	mg/L	‰ VSMOW	‰ VSMOW	‰ VSMOW	‰ VSMOW	‰ VSMOW	Bq/L	Bq/L	Bq/L	Bq/L	Bq/L	Bq/L	Bq/L	Bq/L	Bq/L	Bq/L	Bq/L	Bq/L	Bq/L	Bq/L	Bq/L	Bq/L	Bq/L

Stn.Code	Site Name	Group	Smpl Date																							
McPL-002	McParlon Creek headwaters	McParlon	2013-08-27 11:05																							
McPL-002	McParlon Creek headwaters	McParlon	2014-07-23 9:30																							
McPL-002	McParlon Creek headwaters	McParlon	2014-09-21 16:00																							
McPL-002	McParlon Creek headwaters	McParlon	2015-06-05 11:05	11.1017	0	-19.1	-167.43	-10.08	-21.47	-4.55														<0.005		
McPL-002	McParlon Creek headwaters	McParlon	2015-09-19 14:30	11.11352	0	-14.51	-169.02	-13.63	-21.55	-6.47	1	<1	<0.6	<4	<5	0.4	<0.5	<6	<0.6	0.005	<1	<0.3	<1	<30	<4	<1
McPL-002	McParlon Creek headwaters	McParlon	2016-03-15	0.541918	0.001217	-11.19	-193.7	-16.52	-25.43	-6.3	<1	<0.9	<0.7	<4	<4	<0.4	<0.6	<5	<1	<4	<1	<0.3	<1	<30	<4	<1
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2013-08-27 12:25																							
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2014-07-22 10:20																							
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2014-09-21 14:20																							
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2015-06-06 15:00	11.15295	0	-15.95	-168.9	-12.04	-21.83	-6.26															<0.005	
NCY-PT19	Unnamed Creek d/g Permit 19	EagleT	2015-09-18 14:51	12.549	0	-9.58	-167.3	-12.34	-21.52	-6.56	<0.7	<1	<0.4	<4	<3	0.7	<0.4	<4	<0.6	0.007	<1	0.3	<0.9	<30	<3	<0.8

**Notes:**  
Sample classes included in query: All



**ATTACHMENT B WATER QUALITY DATA  
COLLECTED; 2019 TO 2020**



Water quality results, Chance Oil and Gas

Table with columns for Analyte, Units, CCME-Aquatic Life (AL), Sample ID, WQ Site ID, Date Sampled, and various analyte values for 20 different sites. It includes sections for Physical Tests, Anions and Nutrients, Organic / Inorganic Carbon, and Total Metals.

Water quality results, Chance Oil and Gas

Table with columns for Analyte, Units, CCME Aquatic Life (AL), Sample ID, WQ Site ID, Date Sampled, Detection Limit, and 24 monitoring locations (9808353-02 to 9808353-10) plus QA/QC replicates. Rows include Dissolved Metals like Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Lead, Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tellurium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Zinc, and Zirconium.

Applied Guidelines: Federal CCME Canadian Environmental Quality Guidelines (2018), CCME: Freshwater Aquatic Life
Hardness-Dep = Hardness Dependent guideline for CCME-WATER-AL
\*The CCME WATER-AL guideline for total ammonia-N is temperature and pH dependent
\*\*The CCME WATER-AL guideline for aluminium is lowered to 0.005 mg/L when pH is below 6.5
†The CCME WATER-AL guideline for dissolved zinc is hardness and dissolved organic carbon dependent

COLOUR KEY:
Exceeds CCME Guideline
QA/QC Codes: RPD - Relative Percent Difference, <DL - below detection limit, and <2XDL - less than two times the detection limit.



Water quality results, Chance Oil and Gas

Analyte	Units	CCME-Aquatic Life (AL)	Sample ID WQ Site ID Date Sampled Detection Limit	9080353-08 Field Blank 01-Aug-2019	WR2000096-007 Field Blank 10-Mar-2020	WR2000096-010 Travel Blank 05-Mar-2020	9080353-13 82-SHEEN 31-Jul-2019	9080353-14 348-SHEEN 31-Jul-2019	9080353-15 1014-SHEEN 31-Jul-2019	9080353-16 1413-SHEEN 31-Jul-2019
<b>Physical Tests</b>										
Temperature (in-situ)	°C	-	-	-	-	-	-	-	-	-
Dissolved Oxygen (in-situ)	mg/L	6.5	-	-	-	-	-	-	-	-
Specific Conductivity (in-situ)	µS/cm	-	-	-	-	-	-	-	-	-
pH (in-situ)	pH	6.5 - 9.0	-	-	-	-	-	-	-	-
Turbidity (in-situ)	NTU	-	-	-	-	-	-	-	-	-
Conductivity	µS/cm	-	2	3.3	<2.0	<2.0	-	-	-	-
Hardness (as CaCO3)	mg/L	-	0.5	<0.500	<0.60	<0.60	75.1	76.1	86.6	144.0
pH (lab)	pH	6.5 - 9.0	0.1	5.86	5.38	5.39	-	-	-	-
Total Suspended Solids	mg/L	-	2	<2.0	<3.0	<3.0	-	-	-	-
Total Dissolved Solids	mg/L	-	10	<10	-	-	-	-	-	-
<b>Anions and Nutrients</b>										
Ammonia, total (as N)	mg/L	temp and pH dep.	0.0050	-	0.0088	0.0085	-	-	-	-
<i>Ammonia, total (as N) (pH and temperature adjusted Guideline)</i>										
Alkalinity, Bicarbonate (as CaCO3)	mg/L	-	1	<1.0	-	-	-	-	-	-
Alkalinity, Carbonate (as CaCO3)	mg/L	-	1	<1.0	-	-	-	-	-	-
Alkalinity, Hydroxide (as CaCO3)	mg/L	-	1	<1.0	-	-	-	-	-	-
Alkalinity, Total (as CaCO3)	mg/L	-	1	<1.0	<1.0	<1.0	-	-	-	-
Bromide (Br)	mg/L	-	0.05	-	<0.050	<0.050	-	-	-	-
Chloride (Cl)	mg/L	120	0.1	<0.10	<0.50	<0.50	-	-	-	-
Fluoride (F)	mg/L	0.12	0.1	<0.10	<0.020	<0.020	-	-	-	-
Nitrate (as N)	mg/L	3	0.01	0.025	<0.0050	<0.0050	-	-	-	-
Nitrite (as N)	mg/L	0.06	0.01	<0.010	<0.0010	<0.0010	-	-	-	-
Sulfate (SO4)	mg/L	-	1	<1.0	<0.30	<0.30	-	-	-	-
<b>Organic / Inorganic Carbon</b>										
Dissolved Organic Carbon	mg/L	-	0.5	<0.50	<0.50	-	-	-	-	-
Total Organic Carbon	mg/L	-	0.5	-	<0.50	<0.50	-	-	-	-
<b>Total Metals</b>										
Aluminum (Al)-Total (Lab Result)	mg/L	pH-dep	0.005	0.0054	<0.0030	<0.0030	0.8190	0.1290	0.2830	1.5200
<i>Aluminum (Al)-Total (pH adjusted Guideline)</i>										
Antimony (Sb)-Total	mg/L	-	0.0002	<0.00020	<0.00010	<0.00010	0.00041	0.00021	0.00031	0.00052
Arsenic (As)-Total	mg/L	0.005	0.0005	<0.00050	<0.00010	<0.00010	0.00726	0.00158	0.00823	0.00614
Barium (Ba)-Total	mg/L	-	0.005	<0.0050	<0.00010	<0.00010	0.87900	0.14300	0.55800	0.52100
Beryllium (Be)-Total	mg/L	-	0.0001	<0.00010	<0.000020	<0.000020	0.0003	<0.00010	0.00013	0.00036
Bismuth (Bi)-Total	mg/L	-	0.0001	<0.00010	<0.000050	<0.000050	<0.00010	<0.00010	<0.00010	<0.00010
Boron (B)-Total	mg/L	1.5	0.005	0.0124	<0.010	<0.010	0.0055	0.0221	0.0236	0.016
Cadmium (Cd)-Total (Lab Result)	mg/L	Hardness-dep	0.00001	<0.000010	<0.000050	<0.000050	0.0002810	0.0000200	0.0001950	0.0007370
<i>Cadmium (Cd)-Total (Hardness Adjusted Guideline)</i>										
Calcium (Ca)-Total	mg/L	-	0.2	<0.20	<0.050	<0.050	13.40	14.50	18.40	28.70
Chromium (Cr)-Total	mg/L	0.0089	0.0005	<0.00050	<0.00010	<0.00010	0.00135	0.00301	0.0054	0.0054
Coalbit (Co)-Total	mg/L	-	0.0001	<0.00010	<0.00010	<0.00010	0.00709	0.00034	0.00224	0.00223
Copper (Cu)-Total (Lab Result)	mg/L	Hardness-dep	0.0004	<0.00040	<0.00050	<0.00050	0.00546	0.00107	0.00415	0.0205
<i>Copper (Cu)-Total (Hardness Adjusted Guideline)</i>										
Copper (Cu)-Total	mg/L	Hardness-dep	-	-	-	-	0.00230	0.00200	0.00229	0.00323
Iron (Fe)-Total	mg/L	-	0.1	<0.10	<0.010	<0.010	87.7	5.26	39	28.8
Lead (Pb)-Total (Lab Result)	mg/L	Hardness-dep	0.0002	<0.00020	<0.000050	<0.000050	0.00096	<0.00020	0.0006	0.00613
<i>Lead (Pb)-Total (Hardness Adjusted Guideline)</i>										
Lithium (Li)-Total	mg/L	-	0.0001	<0.00010	<0.00010	<0.00010	0.00059	0.00279	0.00359	0.00196
Magnesium (Mg)-Total	mg/L	-	0.01	<0.010	<0.100	<0.100	10.10	9.67	9.82	17.60
Manganese (Mn)-Total	mg/L	-	0.0002	<0.00020	0.00013	<0.00010	1.87	0.792	2.01	8.02
<i>Manganese (Mn)-Total (Hardness Adjusted Guideline)</i>										
Mercury (Hg)-Total	mg/L	0.000026	0.00001	<0.000010	<0.000050	<0.000050	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum (Mo)-Total	mg/L	0.073	0.0001	0.001310	0.000205	<0.000050	0.000290	0.000540	0.002180	0.000880
Nickel (Ni)-Total (Lab Result)	mg/L	Hardness-dep	0.0004	<0.00040	<0.00050	<0.00050	0.02390	0.00700	0.03420	0.03920
<i>Nickel (Ni)-Total (Hardness Adjusted Guideline)</i>										
Phosphorus (P)-Total	mg/L	-	0.002	<0.0020	<0.050	<0.050	0.085	0.130	0.085	0.280
Potassium (K)-Total	mg/L	-	0.1	<0.10	<0.100	<0.100	0.76	0.62	1.17	1.20
Selenium (Se)-Total	mg/L	0.001	0.0005	<0.00050	<0.000050	<0.000050	0.00055	0.00058	0.00131	0.00143
Silicon (Si)-Total	mg/L	-	1.00	<1.0	<0.10	<0.10	2.90	2.20	3.90	2.30
Silver (Ag)-Total	mg/L	0.00025	0.00005	<0.000050	<0.000010	<0.000010	<0.000050	<0.000050	<0.000050	<0.000050
Sodium (Na)-Total	mg/L	-	0.1	1.160	<0.050	<0.050	11.500	50.700	4.960	28.400
Strontium (Sr)-Total	mg/L	-	0.001	<0.0010	<0.00020	<0.00020	0.09850	0.09880	0.09680	0.11700
Sulfur (S)-Total	mg/L	-	3	<3.0	<0.50	<0.50	<3.0	23.10	<3.0	10.00
Tellurium (Te)-Total	mg/L	-	0.0005	<0.00050	-	-	<0.00050	<0.00050	<0.00050	<0.00050
Thallium (Tl)-Total	mg/L	0.0008	0.00002	<0.000020	<0.000010	<0.000010	<0.000020	<0.000020	<0.000020	<0.000020
Thorium (Th)-Total	mg/L	-	0.0001	<0.00010	<0.00010	<0.00010	0.00042	<0.00010	0.00065	0.00141
Tin (Sn)-Total	mg/L	-	0.002	<0.0020	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Total	mg/L	-	0.05	<0.0500	<0.00030	<0.00030	0.01320	<0.0050	<0.0050	0.00560
Tungsten (W)-Total	mg/L	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Uranium (U)-Total	mg/L	0.015	0.00002	<0.000020	<0.000010	<0.000010	0.000524	0.000045	0.000422	0.001160
Vanadium (V)-Total	mg/L	-	0.001	<0.0010	<0.00050	<0.00050	0.01790	0.01120	0.00980	0.01960
Zinc (Zn)-Total	mg/L	-	0.004	<0.0040	<0.0030	<0.0030	0.0185	0.0052	0.0228	0.0442
Zirconium (Zr)-Total	mg/L	-	0.0001	<0.00010	<0.00030	<0.00030	0.00277	0.00048	0.00299	0.00428

Water quality results, Chance Oil and Gas

Analyte	Units	CCME-Aquatic Life (AL)	Sample ID	9080353-08	WR2000096-007	WR2000096-010	9080353-13	9080353-14	9080353-15	9080353-16
			WQ Site ID	Field Blank	Field Blank	Travel Blank	82-SHEEN	348-SHEEN	1014-SHEEN	1413-SHEEN
			Date Sampled	01-Aug-2019	10-Mar-2020	05-Mar-2020	31-Jul-2019	31-Jul-2019	31-Jul-2019	31-Jul-2019
			Detection Limit							
<b>Dissolved Metals</b>										
Aluminium (Al)-Dissolved (Lab Result)	mg/L	pH-dep	0.005	<0.0050	<0.0010	-	-	-	-	-
Aluminium (Al)-Diss. (pH adjusted Guideline)	mg/L	pH-dep	-	-	-	-	-	-	-	-
Antimony (Sb)-Dissolved	mg/L	-	0.0002	<0.00020	<0.00010	-	-	-	-	-
Arsenic (As)-Dissolved	mg/L	0.005	0.0005	<0.00050	<0.00010	-	-	-	-	-
Barium (Ba)-Dissolved	mg/L	-	0.005	<0.0050	<0.00010	-	-	-	-	-
Beryllium (Be)-Dissolved	mg/L	-	0.0001	<0.00010	<0.000020	-	-	-	-	-
Bismuth (Bi)-Dissolved	mg/L	-	0.0001	<0.00010	<0.000050	-	-	-	-	-
Boron (B)-Dissolved	mg/L	1.5	0.005	<0.0050	<0.010	-	-	-	-	-
Cadmium (Cd)-Dissolved (Lab Result)	mg/L	Hardness-dep	0.00001	<0.000010	<0.000050	-	-	-	-	-
Cadmium (Cd)-Diss. (Hardness Adjusted Guideline)	mg/L	Hardness-dep	-	-	-	-	-	-	-	-
Calcium (Ca)-Dissolved	mg/L	-	0.2	<0.20	<0.050	-	-	-	-	-
Chromium (Cr)-Dissolved	mg/L	0.0089	0.0005	<0.00050	<0.00010	-	-	-	-	-
Cobalt (Co)-Dissolved	mg/L	-	0.0001	<0.00010	<0.00010	-	-	-	-	-
Copper (Cu)-Dissolved (Lab Result)	mg/L	Hardness-dep	0.0004	<0.00040	<0.00020	-	-	-	-	-
Copper (Cu)-Diss. (Hardness Adjusted Guideline)	mg/L	Hardness-dep	-	-	-	-	-	-	-	-
Iron (Fe)-Dissolved	mg/L	0.3	0.01	<0.010	<0.010	-	-	-	-	-
Lead (Pb)-Dissolved (Lab Result)	mg/L	Hardness-dep	0.0002	<0.00020	<0.000050	-	-	-	-	-
Lead (Pb)-Diss. (Hardness Adjusted Guideline)	mg/L	Hardness-dep	-	-	-	-	-	-	-	-
Lithium (Li)-Dissolved	mg/L	-	0.0001	<0.00010	<0.0010	-	-	-	-	-
Magnesium (Mg)-Dissolved	mg/L	-	0.01	<0.010	<0.100	-	-	-	-	-
Manganese (Mn)-Dissolved	mg/L	-	0.0002	<0.00020	<0.00010	-	-	-	-	-
Manganese (Mn)-Dissolved (Hardness Adjusted Guideline)	mg/L	Hardness-dep	-	-	-	-	-	-	-	-
Mercury (Hg)-Dissolved	mg/L	0.000026	0.00004	<0.000040	<0.000050	-	-	-	-	-
Molybdenum (Mo)-Dissolved	mg/L	0.073	0.0001	0.00043	0.000213	-	-	-	-	-
Nickel (Ni)-Dissolved (Lab Result)	mg/L	Hardness-dep	0.0004	<0.00040	<0.00050	-	-	-	-	-
Nickel (Ni)-Diss. (Hardness Adjusted Guideline)	mg/L	Hardness-dep	-	-	-	-	-	-	-	-
Phosphorus (P)-Dissolved	mg/L	-	0.05	<0.050	<0.050	-	-	-	-	-
Potassium (K)-Dissolved	mg/L	-	0.1	<0.10	<0.100	-	-	-	-	-
Selenium (Se)-Dissolved	mg/L	0.001	0.0005	<0.00050	<0.000050	-	-	-	-	-
Silicon (Si)-Dissolved	mg/L	-	1	<1.0	<0.050	-	-	-	-	-
Silver (Ag)-Dissolved	mg/L	0.00025	0.00005	<0.000050	<0.000010	-	-	-	-	-
Sodium (Na)-Dissolved	mg/L	-	0.1	1.090	<0.050	-	-	-	-	-
Strontium (Sr)-Dissolved	mg/L	-	0.001	<0.0010	<0.00020	-	-	-	-	-
Sulfur (S)-Dissolved	mg/L	-	3	<3.0	<0.50	-	-	-	-	-
Tellurium (Te)-Dissolved	mg/L	-	0.0005	<0.00050	-	-	-	-	-	-
Thallium (Tl)-Dissolved	mg/L	0.0008	0.00002	<0.000020	<0.000010	-	-	-	-	-
Thorium (Th)-Dissolved	mg/L	-	0.0001	<0.00010	-	-	-	-	-	-
Tin (Sn)-Dissolved	mg/L	-	0.0002	<0.00020	<0.00010	-	-	-	-	-
Titanium (Ti)-Dissolved	mg/L	-	0.005	<0.0050	<0.00030	-	-	-	-	-
Tungsten (W)-Dissolved	mg/L	-	0.001	<0.0010	-	-	-	-	-	-
Uranium (U)-Dissolved	mg/L	0.015	0.00002	<0.000020	<0.000010	-	-	-	-	-
Vanadium (V)-Dissolved	mg/L	-	0.001	<0.0010	<0.00050	-	-	-	-	-
Zinc (Zn)-Dissolved (Lab Result)	mg/L	Hardness,DOC or	0.004	<0.0040	<0.0010	-	-	-	-	-
Zinc (Zn)-Diss. (DOC & Hardness Adjusted Guideline)	mg/L	Hardness,DOC slp	-	-	-	-	-	-	-	-
Zirconium (Zr)-Dissolved	mg/L	-	0.0001	<0.00010	<0.00030	-	-	-	-	-

Applied Guidelines: Federal CCME Canadian Environmental Quality Guidelines 2018, CCME: Freshwater Aquatic Life

Hardness-Dep = Hardness Dependent guideline for CCME-WATER-AL

\*The CCME WATER-AL guideline for total ammonia-N is temperature and pH dependent

†The CCME WATER-AL guideline for aluminium is lowered to 0.005 mg/L when pH is below 6.5

‡The CCME WATER-AL guideline for dissolved zinc is hardness and dissolved organic carbon dependent

**COLOUR KEY:**

**Exceeds CCME Guideline**

QA/QC Codes: RPD - Relative Percent Difference, <DL - below detection limit, and <2XDL - less than two times the detection limit.