Quinsam Coal
Annual Water Quality Monitoring Report 2020-2021

PREPARED BY: QUINSAM COAL CORPORATION

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GLOSSARY & ACRONYMS

B.C. British Columbia

CALA Calibration

CCR Coarse Coal Reject

COPC Contaminants of Potential Concern

CSR-AW B.C. Contaminated Sites Regulations for Freshwater Aquatic Life 2019

DL Detection Limit

DO Dissolved Oxygen

ENV Ministry of Environment and Climate Change Strategy

EMS Environmental Monitoring Station

MEMPR Ministry of Energy, Mines and Petroleum Resources

EPT Ephemeroptera, Plecoptera, and Trichoptera

Ha Hectares

Hp Horsepower

IDZ Initial Dilution Zone

km Kilometer

LLE Long Lake Entry

LLS Long Lake Seep

LLSM Long Lake Seep Middle

mASL Metres above sea level

MDL Mean Detection Limit

MOE Ministry of Environment and Climate Change Strategy

PTS Passive Treatment System

PAG-CCR Potentially Acid Generating Coarse Coal Reject

PAH Polyromantic Hydrocarbons

PEP Provincial Emergency Program

PNC Permit Non-compliance

QA/QC Quality Assurance/Quality Control

QCC Quinsam Coal Corporation

RPD Relative Percent Difference

TDS Total Dissolved Solids

TSS Total Suspended Solids

VIO Vancouver Island Objective for Phosphorus in Streams

WQG British Columbia Ambient Water Quality Guidelines for Protection of Aquatic Life

WQO Water Quality Objectives for Middle Quinsam Lake Sub-Basin

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EXECUTIVE SUMMARY

In accordance with the amended permit PE-7008 issued under the *Environmental Management Act*, Quinsam Coal Corporation (QCC) operates water management systems designed to mitigate effects of mining activities on the Middle Quinsam Sub-Basin and Iron River watershed(s). This effluent permit provides the framework for the comprehensive monitoring program along with allowable levels of Parameters of Interest (POI) within water released from the permitted management systems. In addition to surface water quality monitoring within management systems and receiving environments, local groundwater and biological monitoring was conducted at numerous stations for a more comprehensive understanding of effects within and outside of the mine footprint.

The main objective of this report is to inform governing bodies and stakeholders on the effectiveness of the management systems and compliance with the effluent permit for the 2020-2021 monitoring year (April 1, 2020 to March 31, 2021) including:

- Description of mine-site operations and their respective environmental management systems
- Report on environmental performance and compliance with the Effluent Permit PE-7008
- Provide updates on surface, groundwater and receiving environment water quality including biological health
- Provide insight and recommendations for future monitoring and best environmental practices.

During the reporting period, QCC operated only in a care and maintenance mode with The Bowra Group Inc. appointed as the receiver of QCC The mine has been in care and maintenance since May 29, 2019, ensuring the health and safety of the employees and environment while continuing to meet regulatory requirements.

Mine discharges released from permitted locations were within authorized limits for the permit for the majority of samples obtained this monitoring period except at Settling Pond #4 (SP4 / Environmental Management Site - EMS # E207409). Poor water quality developed at SP4 during late March 2020 and there were multiple permit limit exceedances. QCC believes the exceedances were related to historical high-water levels experienced in the underground 2-North mine caused by breakdowns of the 2-North mine dewatering system (1-Mains and 5-Mains well pumps). The mine pool was managed through the 3-Mains pumping system stationed at ~ 244 meters above sea level (MASL) until the well pumps were replaced in March 2021. Permit limit exceedances were observed for both dissolved iron (3x's) with results greater than 0.30 mg/L and total suspended solids (4x's) with results greater than 25 mg/L. There was limited dilution at SP4 while the 1-Mains and 5-Mains well pumps were being replaced. The 2-North mine pool water raised to an unprecedented elevation of 244 MASL by March 22, 2021. As a result, the oxidized mine walls were flushed causing elevated iron to be discharged at SP4. Water quality improved once the 5-Mains well pump was installed (March 24) providing more dilution at SP4. Dangerous Goods Incidence Report (DGIR) numbers were generated (204693, 204545, 204695 & 204752) for the elevated levels of iron and total suspended solids.

As a result of an elevated mine pool in 2-North an unauthorized discharge occurred in the 4th quarter (discovered on March 17th) from a groundwater well-draining into the Quinsam River. The well became artesian from pressure in the aquifer. Discharge was mitigated with a cap on the well as of March 19, 2021, reducing the flow rate into the river from the well head. Shallow mine impacted groundwater continued to seep up from the ground and flow into the river until the water table was reduced. The mine pool water levels have subsided in the area as a result of pumping down the water table in 2-North with the replacement of both dewatering pumps, 1-Mains and 5-Mains. The seepage has been monitored weekly for flow rate and water quality with both concentrations and discharge reducing as the water table drops. DGIR number 204584 was generated through the Provincial Emergency Line on March 17, 2021. Details are described in Section 4.0 and Appendix VII contains the initial non-compliance report for 2020 – 2021. Further details will be included in the Q1 report for 2021-2022.

SP4 permitted annual average rate of discharge is (0.08 m^3/s or 2,522,880 m^3) measured over 365 days / year. The 2020-2021 annual average rate of discharge rate was 0.074 m^3/s, lower than the authorized average rate of discharge by 179,107 m^3. Appendix II, Graph 64 displays the cumulative year over year discharges at Settling Pond #4.

Water quality results above the BC Water Quality Guideline's for Protection of Freshwater Aquatic Life (WQG) were observed in the Iron river for arsenic (low flow) and aluminum (high flow). There were no results above the WGQ for arsenic at IR6 and only 2 out of 5 results above the WQG for arsenic at IR8 during low flow periods.

WQG's for dissolved copper (maximum 0.002 mg/L and average 0.0003 mg/L) are applied to Iron river (IR6 and IR8), downstream on the Quinsam river (7SQR and IRQR), No Name Lake (NNL), No Name Lake Outlet (NNO) and Lower Quinsam Lake (LQL). Summer averages on the Iron river were elevated above the average guideline, and on the Quinsam river during spring and summer, 5 in 30 sampling. NNL and LQL displayed elevated results in spring for both maximum and average WQG's at all depths. NNO spring, summer and fall averages from 5 in 30 sampling were also elevated above the average WQG. The guideline derived for dissolved copper uses a conservative approach.

Average annual dissolved sulphate concentrations on the Quinsam river ranged from 1.31 mg/L upstream of the mine influence (WA) to 31 mg/L downstream of the mine influence (7SQR) and further downstream after the confluence with Iron river at IRQR results were 21 mg/L. Other than copper there were no other parameters observed to be above the WQG's or WQO's on the Quinsam River during this monitoring year.

Sulphate concentrations at depth in Long Lake have continued to be a focal point for receiving environment water quality as elevated levels have persisted throughout past monitoring. In 2019, average concentrations at 9 metres during spring were elevated above WQG's of 128 mg/, resulting in 130 mg/L. The bottom depth ranges from 20 to 22 metres and is sampled at 1 metre above bottom (1mb). Average results for spring (120 mg/L), summer (130 mg/L), and fall (130 mg/L) were elevated above WQG's of 128 mg/L using a background hardness concentration of 30 mg/L. In Middle Quinsam Lake sulphate remained well below average WQG's, with average sulphate results less than 33 mg/L throughout the monitoring year. This could be related to reduced discharge from Settling Pond #4 during 2020-2021.

Middle Quinsam Lake Sub-basin Water Quality Objectives (WQO) are applied to upstream Quinsam River (WA), Middle Quinsam Lake Outlet (WB), Middle Quinsam Lake, Long Lake and Long Lake Outlet (LLO). Total copper was elevated above the maximum (0.007 mg/L) and average (0.002 mg/L) WQO in Middle Quinsam Lake during spring due to one sampling event (April 29, 2020). On April 29th Long Lake experienced similar concentration increases to a lesser extent. Copper was elevated at WA approaching the Maximum WQO on one occasion on May 11th, 2020.

Hypolimnetic dissolved oxygen was observed in Long Lake during fall, where total manganese was elevated above guidelines and one event for Middle Quinsam Lake. Slightly acidic water quality was also observed mostly in No Name Lake but also in Long and Middle Quinsam lakes with pH values reported below WQG's of 6.5.

Total phosphorous was slightly elevated above the summer average WQO in both Long Lake at 4 meters and Middle Quinsam Lake at 9 meters. Phosphorus is normally only sampled once per sampling session. Sampling occurred during all 5 weeks in summer in order to have a comparison to the WQO.

The Passive Treatment System has been effective at reducing sulphate concentrations from mine pool water pumped to surface. This year the system operated from May 12, 2020 to present. The effluent from the system discharges to 2-South pit and flows to 3-South pit where it is pumped to Settling Pond #1, during fall/winter (high flow) or back to 2S in the summer (low flow). This aids in maintaining a water cover over 2S PAG-CCR and reduces the need to discharge to the receiving environment from Settling Pond #1 during the dry season. This system ensures all mine related discharge water is released through the authorized works where permit limits are maintained. Average sulphate concentrations ranged from 632 mg/L at 2-South mine pool (INF) to 485 mg/L discharging from the Sulphide Polishing Cell (SPC-EFF) resulting in a reduction of 147 mg/L. Annual average reduction rates where highest between INF and Settling Pond #1 resulting in 365 mg/L. Settling pond # 1 had an annual average sulphate concentration of 267 mg/L, indicating dilution through the system is working to reduce sulphate concentrations to below 300 mg/L as was intended for the PTS.

Groundwater monitoring provides an understanding of cumulative mine related effluence on groundwater. Parameters of interest are compared to source terms derived for mine water within the mine footprint (in-situ) and B.C. Contaminated Sites Regulations for Freshwater Aquatic Life (CSR-AW) are used to compare groundwater quality outside of the mine footprint (ex-situ). Arsenic iron, manganese, sulphate and sulphide are key parameters to monitor as they directly related to coal mining operations at Quinsam Coal. Currently, no inputs are known to have significant detrimental effects on receiving environments, but future monitoring will be an effective tool to identify and determine changes in the groundwater and observe long term trends.

1.0 INTRODUCTION

The Quinsam Mine is located in the Quinsam River Watershed, approximately 28 kilometers (km) by road southwest of Campbell River. The Quinsam mining operation consists of approximately 283 hectares (ha) owned and operated by QCC. Coal production occurred from both 2-North and 7-South mining areas until May 2019 when the mine went into a temporary shutdown and then later suspended coal operations.

When in operation Quinsam Mine produces High Volatile "A" Bituminous thermal coal. Coal is processed at an onsite preparation plant and transported by B-train highway trucks to the Middle Point Barge Terminal north of Campbell River. Coal is then shipped via barge, to local customers and to Texada Island where it is then loaded onto a ship and sent to local companies or exported abroad.

Due to the mine's location and sensitive habitat, adjacent to Middle Quinsam Lake, the Quinsam River, No Name Lake, and Long Lake, which drain into Lower Quinsam Lake the operational permits issued by the Ministry of Environment (MOE) and Climate Change Strategy (ENV) as well as the Ministry of Energy, Mines and Petroleum Resources (MEMPR) established stringent effluent quality standards. Accordingly, QCC has maintained an environmental management system defined by the requirements of Effluent Permit PE-7008 and the C-172 Mines Act permit. The mine has collaborated with regulators and stakeholders on key management aspects to minimize mine related effects in the receiving environment.

Sulphate concentrations in surface waters of the receiving environment (e.g. Long Lake) continued to be a focus for the QCC monitoring program. Although PE-7008 lists only one sulphate limit for effluent (500 mg/L at 7SSD), sulphate is routinely monitored at designated locations within the mine site and in the receiving environment. Quinsam continues to assess sources of sulphate and management options to mitigate concentrations in mine related discharge(s).

On-Site Water Quality and Activities

The North, South, and 7-South water management systems represent the cumulative mine related discharges to the Quinsam watershed. As such, strategic operation of management structures is designed for discharge waters to meet permit requirements and be of suitable quality for discharge into the receiving environment. Permit limits for parameters of interest have been established and are closely monitored to ensure environmental protection.

Acute and Chronic Bioassays and Toxicity Testing

Acute Rainbow trout bioassay (*Oncorhynchus mykiss*) are performed on water collected from the authorized discharge locations Settling Ponds #1, Settling Pond #4 and 7SSD during the first fall flush event. When discharge is occurring from 7SSD, samples are collected concurrently at 7SSD and the downstream site Stream 1, 7S during the first spring freshet and fall flush. Rainbow trout bioassays are performed on 7SSD discharge water and 7-day *Ceriodaphnia dubia* chronic toxicity testing is performed for water collected from Stream 1 ,7S. The acceptable criteria for a Rainbow trout bioassay test to pass includes no mortalities at 100% effluent concentration after 96 hours.

For the 7-day *Ceriodaphnia dubia* chronic toxicity testing the results are based on acute and chronic exposure levels. This toxicity test determines if the effluent causes death (acute toxicity) or reduction in the reproduction of the test organisms (chronic toxicity) during a 7- day period.

Receiving Water Quality

Water quality attainment in the Middle Quinsam Sub-Basin remains a key management objective at QCC. Comparison to provincial Water Quality Guidelines for Protection of Aquatic Life (WQG's) and Middle Quinsam Sub-Basin Water Quality Objectives (WQO's) are used to evaluate receiving water quality, aquatic health, and guide overall management operational performance. Although these guidelines do not have any legal standing, they are used to provide a basis for evaluating the health of the environment.

Monitoring sulphate concentrations continues to act as an essential practice to evaluate mine impacts as it is a key parameter traced back to coal mining. Sulphate concentrations are compared to an average WQG of 128 mg/L, calculated using a background hardness of 30 mg/L for the Middle Quinsam Sub-Basin. Sulphate results averaged over five weekly samples collected over 30 days (5 in 30) were compared to the WQG. Other parameters of interest for the receiving environment include total arsenic, copper, iron, manganese, and zinc and dissolved copper, iron and aluminum. Elevated dissolved aluminum and total and dissolved copper, and zinc concentrations are associated with rainfall events (elevated TSS) and may not be associated with mine related discharges; however, elevated concentrations are considered in the context of aquatic effects.

In 2019 the BC Ministry of Environment and Climate Change Strategy (ENV) updated the Copper (Cu) WQG to dissolved instead of total copper. The updated Cu WQG is calculated using a Biotic Ligand Model (BLM), which incorporates specific water chemistry data using specialized software. This model requires the input of site specific physical and chemical parameters (temperature, pH, alkalinity, dissolved copper, calcium, chloride, hardness, magnesium, sodium, potassium, sulphate, and organic carbon) where it then derives a site-specific guideline and normalizes the toxicity data to specific site conditions for specific aquatic receptors.

The BC BLM software allows the user to calculate either a chronic or acute guideline based on the underlying toxicity databases. Using the acute or chronic database, the BC BLM software first calculates a critical accumulation value and then normalizes this value to the water chemistry conditions specified in the input data. The normalized acute or chronic dataset of critical accumulations values is then used to identify the most sensitive endpoint of the most sensitive organism at the most sensitive life stage[1].

Quinsam is required to compare water quality guidelines to those sites outside of the Quinsam sub basin. This includes the Iron river (IR6 and IR8), downstream Quinsam River 7SQR and IRQR, No Name lake and the outlet and Lower Quinsam Lake.

[1] B.C. Ministry of Environment and Climate Change Strategy 2019. Copper Water Quality Guideline for the Protection of Freshwater Aquatic Life-Technical Report. Water Quality Guideline Series, WQG-03-1. Prov. B.C., Victoria B.C.

Monitoring at sites upstream of mine influences (e.g., Iron River (IR6 and IR8)) indicates naturally elevated concentrations of dissolved aluminum during high flow events. These metals and other parameters that are higher than WQGs or WQOs are discussed below.

Groundwater Quality

QCC maintains a comprehensive groundwater monitoring program to characterize water quality associated with mining development. There are numerous groundwater wells including underground sumps located in-situ (disturbance footprint) and ex-situ (outside of mine workings) that are monitored. In the absence of a groundwater well sample, underground sump samples are used for comparison. Results for ex-situ wells are compared to Contaminated Sites Regulations for Protection of Freshwater Aquatic Life (CSR-AW) and those for in-situ wells and sumps are compared to source terms derived for particular mining areas. Groundwater quality is influenced by bedrock chemistry, an example being the presence of realgar (arsenic sulphide) in the Dunsmuir Sandstone overlying the No. 4 coal zone, resulting in dissolved arsenic in the south area groundwater being naturally higher than the CSR-AW. Parameters of interest for groundwater are those with concentrations higher than the CSR-AW: arsenic, chloride, fluoride, sulphide as (H_2S) and sulphate. Overall, in-situ groundwater at Quinsam Coal is generally within the water quality prediction scenarios developed for specific mine waters and ex-situ groundwater typically trends below most CSR-AW. Two exceptions to this, is groundwater influenced by host geological formations (e.g. Dunsmuir Member sandstones, Cumberland Member No.1 Coal seam and mudstones) with naturally elevated concentrations of parameters of interest and by weathering processes (i.e. mine wall oxidation and flushing) of disturbed materials within the mine footprint.

Receiving Water Sediment and Biota

QCC conducted a comprehensive biological monitoring program in 2016, as stipulated in Section 4.2.4 and 4.2.7 of the effluent permit. The August through October program involved sediment and benthic invertebrate monitoring at 23 locations in the watershed (at five lakes, one wetland, and three locations on the Quinsam River). In the four lakes exposed to mine influences, samples were collected at inlets, deep sites, seeps, and outlets. Sediment results were compared to generic Canadian Council of Ministers of Environment (CCME) Interim Sediment Quality Guidelines (ISQG) and Probable Effect Levels (PEL) and to site-specific sediment quality objectives (SQOs) developed for Long Lake that reflect the naturally elevated background levels of some metals. The SQOs were derived from studies completed prior to mining influence in Long Lake (pre-1987). Where background levels are lower than ISQG's, the ISQGs are used for comparison. Primary parameters of interest for sediment are arsenic, iron, manganese, and total polycyclic aromatic hydrocarbons (PAH), identified based on concentrations, relative toxicity, and findings in previous reports. Most of the elevated concentrations are related to geology (host rock formations), although mining has contributed inputs. The next round of sediment sampling is scheduled for 2021-2022.

Water quality in the Middle Quinsam Sub-Basin and Iron River largely meets WQGs and WQOs and is considered a healthy aquatic ecosystem. Throughout the monitoring period, Quinsam has demonstrated that mine water management system(s) and procedure(s) are an effective tool in reducing parameters of interest loading in the receiving environment.

Benthic invertebrate samples from lakes and the wetland were analyzed for community metrics (density, taxon richness, diversity, evenness, major taxonomic groups), and for ecologically relevant and statistically significant differences among sites. Quinsam River sites were sampled and analyzed using the Canadian Aquatic Biomonitoring Network (CABIN) method.

Phytoplankton and zooplankton samples collected once per sampling event on all four lakes as a routine requirement of PE-7008s. Samples were analyzed for count, identification, and species abundance.

Long Lake Seep Passive Treatment System (PTS)

The Passive Treatment System (PTS) consists of a series of treatment cells designed to receive mine-water pumped from the 2-South underground workings to reduce POI's concentrations including dissolved sulphate and iron. This system was initiated as part of a remediation plan to limit localized mine-water seepage on the south-side of Long Lake as a result of subsidence caused by mining within close proximity and establishing an evident hydrologic connection.

The Passive Treatment System (PTS) continues to demonstrate reduction in sulphate concentrations throughout the system. Higher reduction is observed during warmer conditions, with reduction efficiencies upwards of 300 mg/L or 50% presented during optimal performance times. The addition of molasses (carbon source) has shown some capability to increase performance within the system but due to the viscosity of the molasses the injection system requires continuous replacement of pumps and as a result has been discontinued until a different system can be put in place.

2.0 WATER MANAGEMENT SYSTEMS AND MONITORING LOCATIONS

Settling ponds, sumps and ditches have been constructed to manage and treat mine contact water to help mitigate any negative effects on the receiving environment. Water management at the Quinsam Mine is divided into three discrete areas: North, South, and 7-South. Appendix IX, Site Maps, displays underground mine locations, groundwater wells and surface monitoring sites. Table 1 below describes the within-mine releases monitoring sites and associated initial dilution zones.

Table 1: Description of Monitoring Sites: In-Mine Releases & Initial Dilution Zones

EMS ID #	Monitoring Sites	Abbreviation (Station Code)	*Type of Water (MW, FW or GW)
North Coal Mining Operation			
E207409	Settling Pond #4 Decant	WD	**Discharge (MW)**
E207411	Culvert, at Middle Quinsam Lake Road	WC	MW & FW
E283433	2-North Portal Sump (Adit Sump)	2NPS	MW
E207412	2-North Pit Sump CCR Cover	WP	PAG-CCR Water Cover - MW
E292126	South Dyke Sump	SDS	MW
South Coal Mine			
E218582	Settling Pond #1 Decant	SPD	**Discharge (MW)**
E217014	Culvert, Downstream End at Access Road	SPC	MW & FW
E217015	South Pit Main Sump Water	3S	PAG-CCR Water Cover (MW & FW)
E292127	2-South Pit In Pit Water Cover (2-South Standpipe)	2S	PAG-CCR Water Cover (MW & FW)
E292128	1977 Bulk Sample Pit	3S77	MW & FW
E292129	Culvert Downstream of 4 South Access Road	4S-Lo	MW & FW
7-South Mining Operation			
E292069	7-South Surface Decant	7SSD	**Discharge (MW & FW)**
E292110	7-South Adit Sump	7SPS	MW
Seep Monitoring Sites			
E292131	Long Lake Seeps	LLS & LLSM	GW / MW
	Culvert that collects groundwater and Coal Main logging road water entering MQL (PDSR)	PDSR	GW / SW
Receiving Environment Monitoring Sites - Near Initial Zone of Dilution (NIDZ)			
Near Initial Dilution Zone (NIDZ) Monitoring Sites			
E292130	Long Lake Entrance (South end water entering Long Lake)	LLE	NIDZ
E292109	Road Crossing Bridge on Stream 1 above the Lower Wetland (Downstream of 7SSD).The site name is Stream 1, 7S.	7S	NIDZ
Receiving Water (Rivers & Lakes Monitoring Sites) 5 in 30 Monitoring Locations			
North Coal Mining Operation			
E0126402	Quinsam River at Argonaut Road	WA	FW
E206618	Middle Quinsam Lake Centre	MQL (1, 4, 9 & 1m from Bottom)	FW
E0900504	Outflow from Middle Quinsam Lake	WB	FW
South Coal Mine			
E217018	No Name Lake	NNL (1, 4, 9 & 1m from Bottom)	FW
E217017	No Name Lake Outlet	NNO	FW
E206619	Long Lake at Centre	LLM (1, 4, 9 & 1m from Bottom)	FW
E219412	Long Lake Outlet	LLO	FW
7-South Mining Operation (Areas 1 to 4)			
E286930	Quinsam River Upstream of 7-South Mining Operation	QRDS1	FW
E292113	Quinsam River Downstream of 7-South Mining Operation	7SQR	FW
E292112	Lower Wetland Outlet at the confluence of the Quinsam River	LWO	FW
E292118	Lower Quinsam Lake Centre	LQL (1, 4, 9 & 1m from Bottom)	FW
7-South (Proposed) Area 5 Mining Operation			
E297230	Iron River upstream of mining operations	IR1	FW
E297231	Iron River upstream of 7SA5	IR6	FW
E297232	Iron River downstream of 7SA5 and 242 inputs	IR8	FW
E299256	Quinsam River downstream of confluence with Iron River	IRQR	FW
E292118	Lower Quinsam Lake Centre	LQL (1, 4, 9 & 1m from Bottom)	FW
Block 242 Mining Operation (Reclaimed / Not Monitored)			
E225798	Iron River upstream of the 242 influence	Not Monitored	FW
E225808	Iron River downstream of the 242 influence	Not Monitored	FW
N/A	Old portal sump used for collection of water from underground	Reclaimed	FW / GW
Long Lake Seep Passive Treatment System			
N/A	Groundwater well (2-South Mine Pool) influent to the treatment system	QU11-11 (INF-EFF)	MW
N/A	Bio Cell Reactor	BCR-EFF	MW
N/A	Sulphide Polishing Cell	SPC-EFF	MW
N/A	2-South Inflow	2SI	MW
N/A	Aeration Lagoon	AL-EFF	Not in use
N/A	Settling Pond Effluent	SP-EFF	Not in use

*** MW= Mine Water, FW= Freshwater, GW =Groundwater NIDZ = Near Intial Dilution Zone**

2.1 MINE RELATED DISCHARGE

2.1.1 *THE NORTH WATER MANAGEMENT SYSTEM*

The north water management system (NWMS) is designed to collect mine related runoff from the north disturbed surface areas and pumped water from the 2-North, 5-South and 7-South underground mine operations. This system includes catchment sumps and ditches, pipelines, a subaqueous storage facility for potentially acid generating (PAG) coarse coal reject (CCR) and Settling Pond # 4 (SP4/WD) EMS #E207409.

The 2-North Mine is dewatered through a network of pump systems. These include 1 Mains 2-North (1M2N), 5 Mains 2-North (5M2N) and 3 Mains 2-North (3M2N). Table 2 below describes the underground pumps systems and Figure 1 describes the 2-North pumping network.

Table 2: 2-North Pump System

Area	Type of Pump	Pumping capacity gallons /min (GPM)	Total Pumping Capacity
1M2N #1	1 x 125 hp	750 (Failed November 30, 2020 replaced April 10, 2021)	750
5M2N	1 x 125 hp	750 (Failed February 2020 replaced March 25, 2021)	750
3M2N	2 x 250 hp	1000	2000
Contingency			
3M2N	1 x 250 hp & 3 x 58 hp	4000 (requires testing)	4000

Based on the hydrogeology of the area and depth of mine workings, the 2-North mine requires dewatering. The 1M2N and 5M2N pumps operate at dewatering the 1 Mains and 5 Mains areas of the 2-North mine pool to:

- maintain capacity for 7-South tailings injection,
- control underground water levels for a future restart and
- mitigate potential seepage from subsidence features.

In February 2020, the 5M2N dewatering pump failed and on November 30, 2020 the 1M2N dewatering pump failed. 1M2N and 5M2N were equipped with 200-hp, 600-volt, 3-phase submersible deep well pumps capable of pumping 750 gallons per minute each. Both 200 Hp pumps in 5M2N and 1M2N were replaced with 125 Hp pumps at the end of March early April 2021.

The 3M2N pumping network was used as the backup system for dewatering the mine pool until the failed pumps could be replaced. Additional systems in 3M2N were installed as contingency to dewater portions of the mine that are hosting operations and are used intermittently as required.

There were 3 x 58 Hp and 1 x 250 Hp pumps installed for contingency purposes to convey water from the old 3-Mains areas and overflow from 1-Mains and 5-Mains out of the mine. Collectively these pumps can dewater that section of the mine at a rate of approximately 6000 GPM.

Since December 2017, the combined 5-South and 7-South mine water and the South Dyke Sump (SDS) was redirected into two boreholes where water will discharge into 3M2N. Now all water from 5-South (includes 7-South water) and SDS will enter 2-North mine and be received at Settling Pond #4 or 2-North subaqueous PAG-CCR facility. SDS collects seepage water from the south side of the tailings dam and pumps it back 3-Mains (the seepage does not report to the Quinsam River or Middle Quinsam Lake from this location).

The 2-North subaqueous PAG-CCR facility (WP) EMS #E207412 contains waste rock from 5-South mine coal processing and is stored with at least 1.50 m of water cover to inhibit the onset of acid generation from the stowed material. This water cover is sourced from underground at either / or a combination of 1M2N, 5M2N, 3M2N or the 2-North Portal Sump (2NPS) EMS #E283433. Water is directed into the pond by opening gate values directing water into WP, maintained by QCC personnel. A permanent water cover of 1.5m is required until final reclamation of the site occurs.

Settling Pond # 4 collects gravity fed water from Brinco Brook, which includes disturbed surface runoff, tailings dam seepage, and underground water collected at 2NPS. When the gate values to Brinco Brook are open, all underground dewatering wells 1M2N and 5M2N discharges are directed into Brinco Brook mixing with the water from 2NPS and 3M2N. Settling Pond # 4 acts as the final collection point before discharge into a meadow/biomass system where it flows into a culvert at Middle Quinsam Lake road sampling location (WC) EMS #E207411, prior to entering another extensive wetland that flows into the inlet of Middle Quinsam Lake.

Settling Pond #4 encompasses approximately 2.4 ha of marshland with an average depth of 1.5 m and a storage capacity of approximately 30,000 m^3. It has been designed to receive a 1 in 10-year flood event and has an emergency spillway to prevent structure failure during extreme flood events. Water from Settling Pond #4 is pumped to the wash plant for use in coal processing. When processing 2-North coal the used wash plant water is pumped to the tailings dam at the pump site CPP collection ditch. From the tailings dam the water filters through the north and south sides of the structure into 2NPS and South Dyke Sump (SDS) EMS #E292126, respectively.

When processing 7-South coal, wash plant water and fine tailings are pumped directly underground to 1-Mains 2-North. Water in the 2NPS is used for underground equipment, dust suppression and emergency firefighting. Excess water in the 2NPS is conveyed with a 65 HP pump that ties into a 12-inch pipeline from 3-Mains 2-North, this pipeline extends along the 2-North high wall where it is discharged into Brinco Brook.

Below the wash plant is a natural drainage where groundwater surfaces and flows towards Middle Quinsam Lake. This area has two nested (deep and shallow) groundwater wells. This water flows towards Middle Quinsam Lake near the inlet end. Deep and shallow nested groundwater wells MW00-1 (S and D) and MW00-6 (S and D) represent the groundwater below the collection ditch, processing plant and coal pad. These wells were installed to monitor seepage from the plant site collection ditch. Historically, the plant site collection ditch was used to transport fine tailings from the processing of coal to WP, which was used as a fine-tailings settling pond, with excess water pumped into Brinco Brook and gravity feed into Settling Pond # 4. Figure 1 provides a flow chart describing the flow paths of water in the 2-North Water Management System.

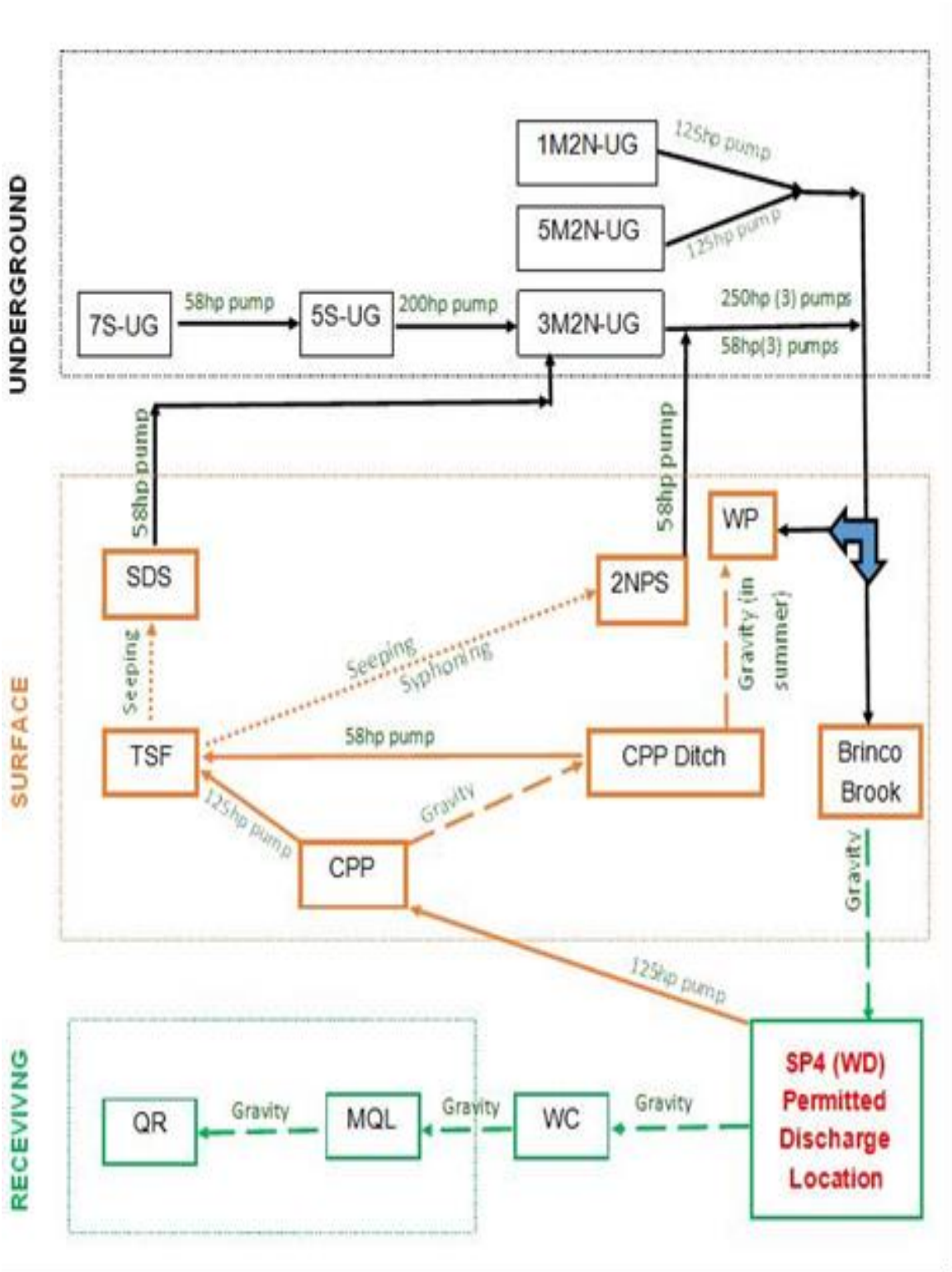


Figure 1: Water Movement and Flow Path in the North Management System

2.1.2 *THE SOUTH WATER MANAGEMENT SYSTEM*

The South Water Management System (SWMS) is designed to collect mine related runoff from the south disturbed surface areas and manage water in the 2-South (2S) EMS #E292127 and 3-South (3S) EMS #E217015 PAG-CCR containment pits and Passive Treatment System (PTS).

These two permanent PAG-CCR pits have been completed as part of the SWMS. Construction of the 2S pit was completed in 2014. It includes a clay-bentonite liner to retain water within the pit and a water cover fed by a series of ditches and pipes that collect local catchment water. Surface personnel control valves to direct fresh non-mine impacted water into the PAG-CCR facility or to No Name Lake. Source water for the 2-South pit is from local catchment and the PTS. Recently (2018) the PTS discharge has been permanently diverted into the 2S pit to maintain a water cover. This maintains a water cover and inflow rate of approximately 4.5 L/s. Flow rates are recorded at the well head INF of the PTS and at the inflow and outflow of the 2-South pit. The inflow of 2-South is equipped with a V-notch weir, pressure transducer and staff gauge where weekly measurements are recorded. A minimum of 1.0 m water cover is required in the 2S pit and excess water cover overflows down a spillway (built in 2015) into a large channel that leads to the 3S PAG-CCR storage pit. Seepage from under the liner of the 2S pit is directed down the channel to 3-South pit. The 2S water cover and seepage maintains a 1.0 m water cover over the 3S pit. Continuous outflow from 2S pit is recorded at the H-Flume before water enters 3S pit.

In late January 2021 a submersible 58 horsepower pump (Hp) was installed in 2S pit. The discharge from the 2-South 58 Hp pump leads into a pipeline that ties into the existing 3-South pipeline that discharges into a roadside ditch leading to Settling pond # 1. By reducing water levels in 2S pit below the 1.88 m outlet structure, water levels are restricted in 3S pit, mitigating any future unauthorized discharge during heavy rain events. Appendix I, Table 31 and Appendix II, Graphs 68 through 69 display the recorded inflow and outflow of the 2S and 3S areas.

Excess water in 3S is pumped via an 88 HP pump capable of pumping 500 gallons per minute directly into the roadside collection ditch that flows into Settling Pond #1 or during the summer (if required), a gate valve is opened on the highwall above the 2S pit, directing water back into the 2S pit making it a closed loop system.

Settling Pond #1 (SPD/ SP1) EMS #E218582 is the authorized discharge location and compliance point before water enters Long Lake. Settling Pond #1 encompasses 1.8 ha of wetland with an average depth of 1.5 m. An emergency overflow ditch built into the impoundment dam is located on the north end of the pond. A siphon pipeline from SP1 to the 3S pit provides an emergency source of water to maintain the 1 m cover over the 3S Pit or can be used to pump water out of the 3S pit to SP1.

The PTS is designed to inhibit flow at the Long Lake Seep by lowering the 2-South mine-pool through pumping from monitoring well QU11-11 (INF), where it is treated on surface. Previously four ponds were used. These include the Biochemical Reactor (BCR), Sulphide Polishing Cell (SPCEFF), Aeration Lagoon (AL) & Settling Pond (SP) where water passively flowed through processing. Since 2018 only the ponds BCR and SPCEFF have been operating, with the other two ponds decommissioned. Since May 2018, the treatment system discharge was directed into the 2S pit from the SPCEFF. The sample location before it enters the pit, is referred to as 2-South Inflow

(2SI). The reason for decommissioning the last two ponds was to keep the water within the authorized works and aid in maintaining a water cover over the 2S pit during the dry season.

SP1 channel leads into a series of meadow/biomass systems and combines with the surface and subsurface groundwater where it discharges at LLE near the outlet of Long lake.

Monitoring location SPC, EMS #E217014, located downstream of the 4-South pad and 4S-Lo, (does not interact with effluent from 4-South); captures SP1 discharge. The final collection point LLE (EMS #E292130) located at the downstream end of a culvert leading into Long lake, draining a wetland that discharges approximately 50 m upstream of Long Lake near the outlet. This site is considered the edge of the initial dilution zone (IDZ) for Long Lake.

The figures below provide a flow chart describing the SWMS.

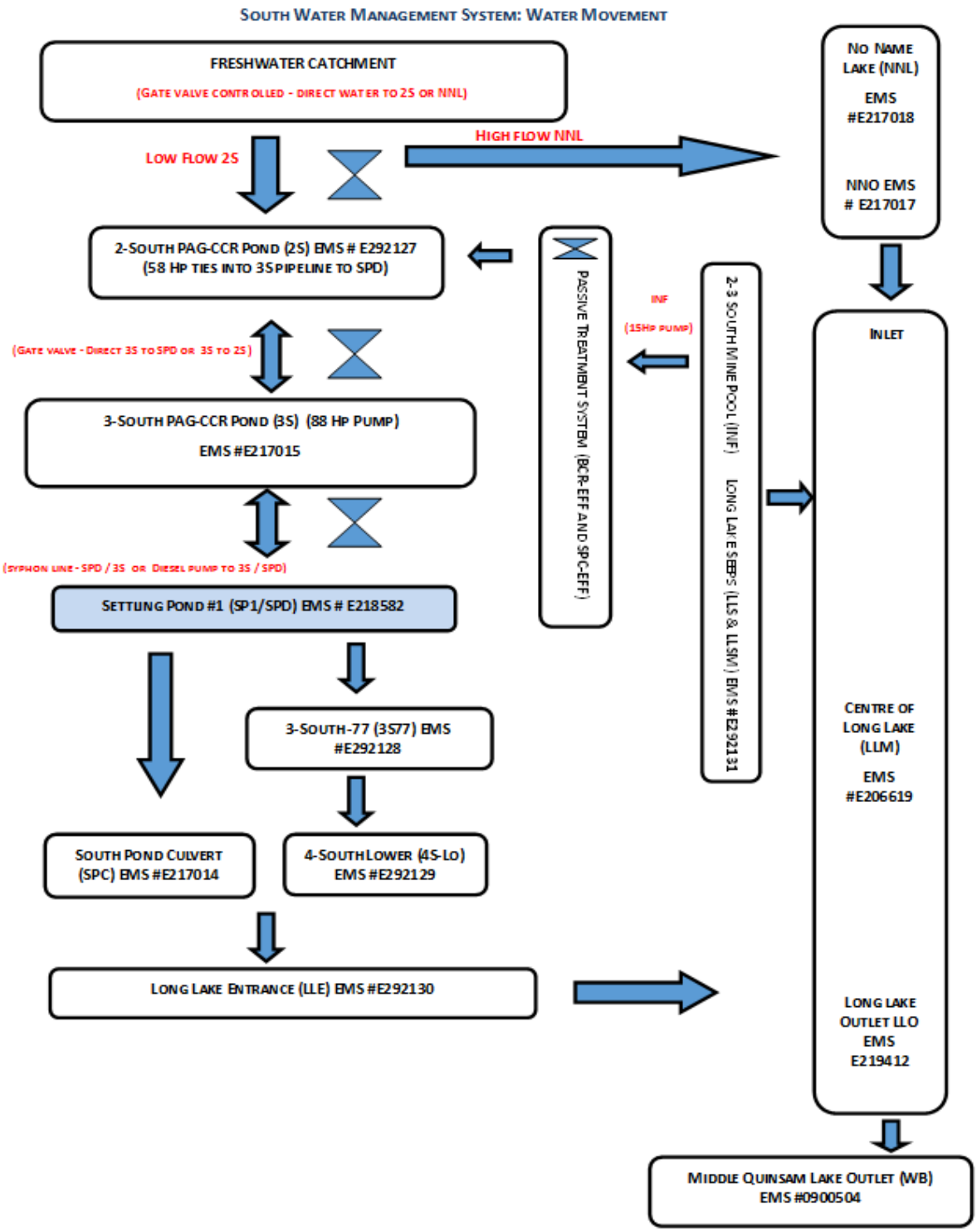


Figure 2: Water Movement & Flow Path in the South Water Management System

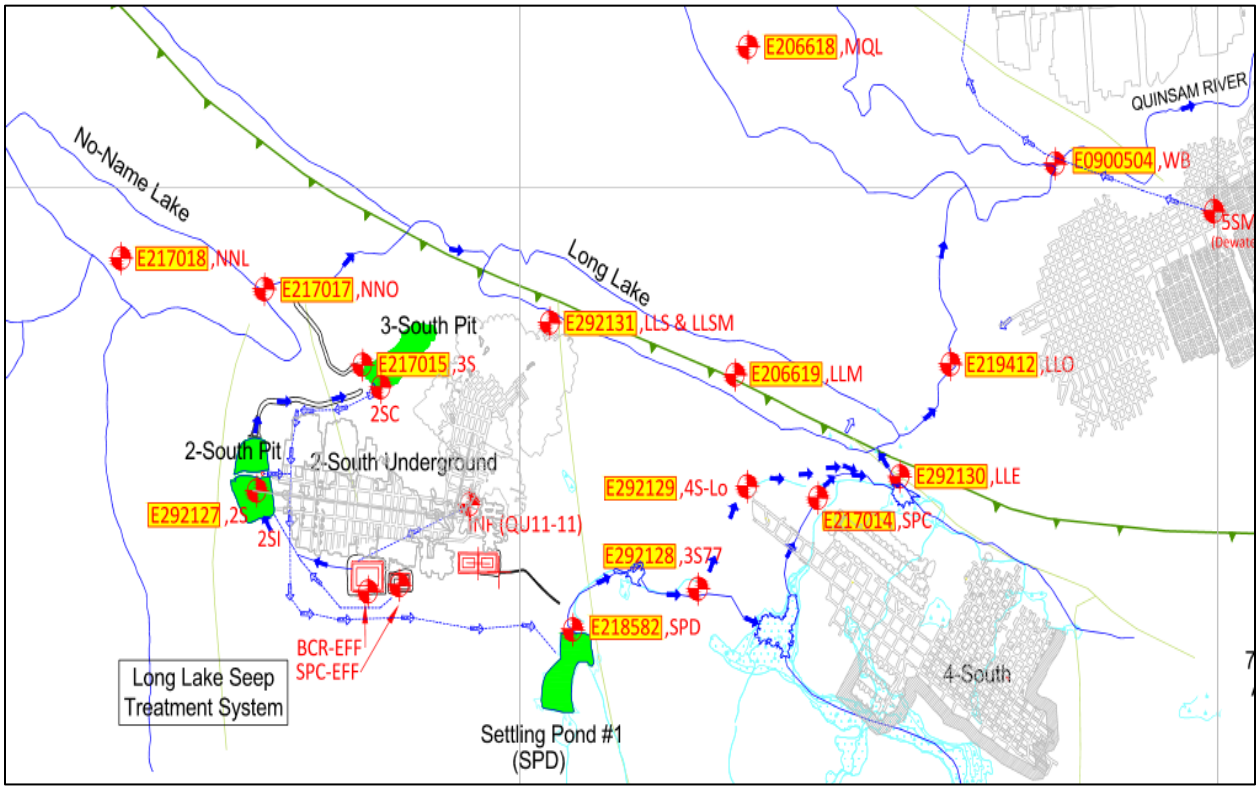


Figure 3: South Water Management System with Underground Workings

2.1.3 *7-South Water Management System*

The 7-South Water Management System includes permitted locations, 7-South Surface Decant Settling Pond (7SSD) EMS #E292069, 7-South-Adit Sump (7SPS) EMS #E292110, 7-South Containment Pond (7SCP), and receiving environment sites downstream at Stream 1 (7S) EMS #E292109, which flows into the lower wetland and monitoring location Lower Wetland Outlet (LWO) EMS #E292112 at the confluence of the Quinsam River. This system is designed to manage excess water from the 7-South catchment area and mitigate environmental impacts from disturbed surface locations affected by mining and underground activity. Water is collected and stored in three main ponds in the 7-South Mine catchment area: 7SPS, 7SCP, and 7SSD.

7SPS contains water that is collected from dewatering processes during mining activity while most of surface water from the coal storage pad is directed into the adit sump (7SPS). Water is pumped from active mining areas, 7-South Area 5 (7SA5) and 1-Mains 7-South (1M7S) and either stored in 7SPS adjacent to the portal entrance to use for dust suppression on mining equipment / fire suppression or pipelined directly into 5-South flooded mine pool at borehole QU05-13. Water levels at 7SPS are set up on an automated float system, when water levels rise beyond a desired storage capacity, excess water is pumped into the 5-South mine pool. From there water mixes with the 5-South water where it is pumped periodically into the 2-North mine at 3-Mains. 3-Mains

discharges into Brinco brook which is gravity fed to Settling Pond #4 and discharges into Middle Quinsam Lake.

7SCP collects surface runoff from the 7-South surface disturbance area, local groundwater, and infiltration water from the coal pad. This pond allows suspended solids in surface water to settle before the water enters 7SSD. When this pond reaches a certain capacity, it discharges through a culvert into 7SSD. In 2015, the 7SCP was enlarged to accommodate more water. Additional pumps were placed at 7SSD and 7SCP to decrease 7SSD discharge and assist with water management. The revised system pumps water from 7SSD and 7SCP to 7SPS which pumps into 5-South Mine Pool. The pump at 7SCP runs on an automated float system where water levels are kept below the overflow channel into 7SSD.

During high precipitation events, a secondary pump can be activated to assist in pumping water to 7SPS. This pump can also be relocated to 7SSD where accumulated water can be diverted into 7SCP. This system has helped reduce discharge from this location.

7SSD is the permitted discharge location and main water collection pond for the 7-South Mine area, with a cumulative catchment of 3.14 ha. 7SSD is a settling pond that receives water from groundwater infiltrated from the surrounding hillsides and the coal storage pad. This water is monitored for quality and quantity during discharge events. Water is discharged from the pond via a 2-inch discharge line equipped with a valve to allow environmental personal to set the discharge rate based on flow rates measured at the downstream site 7S in Stream 1. An 8:1 ratio (7S:7SSD) was calculated from previous water quality data and modelling conservatively to protect the Stream 1 receiving environment. Water quality downstream in Stream 1 meets applicable guidelines with dilution ratios greater than 8:1.

Discharge from 7SSD forms the headwaters of Stream 1, monitoring location 7S is located on Stream 1 below the confluence with Stream 2 and, for the purposes of the effluent permit, is compared to British Columbia water quality guidelines (WQGs) for protection of aquatic life to evaluate potential effects on aquatic receptors at this location.

Figure 4 provides a flow chart describing the flow paths of water in the 7-South Water Management System.

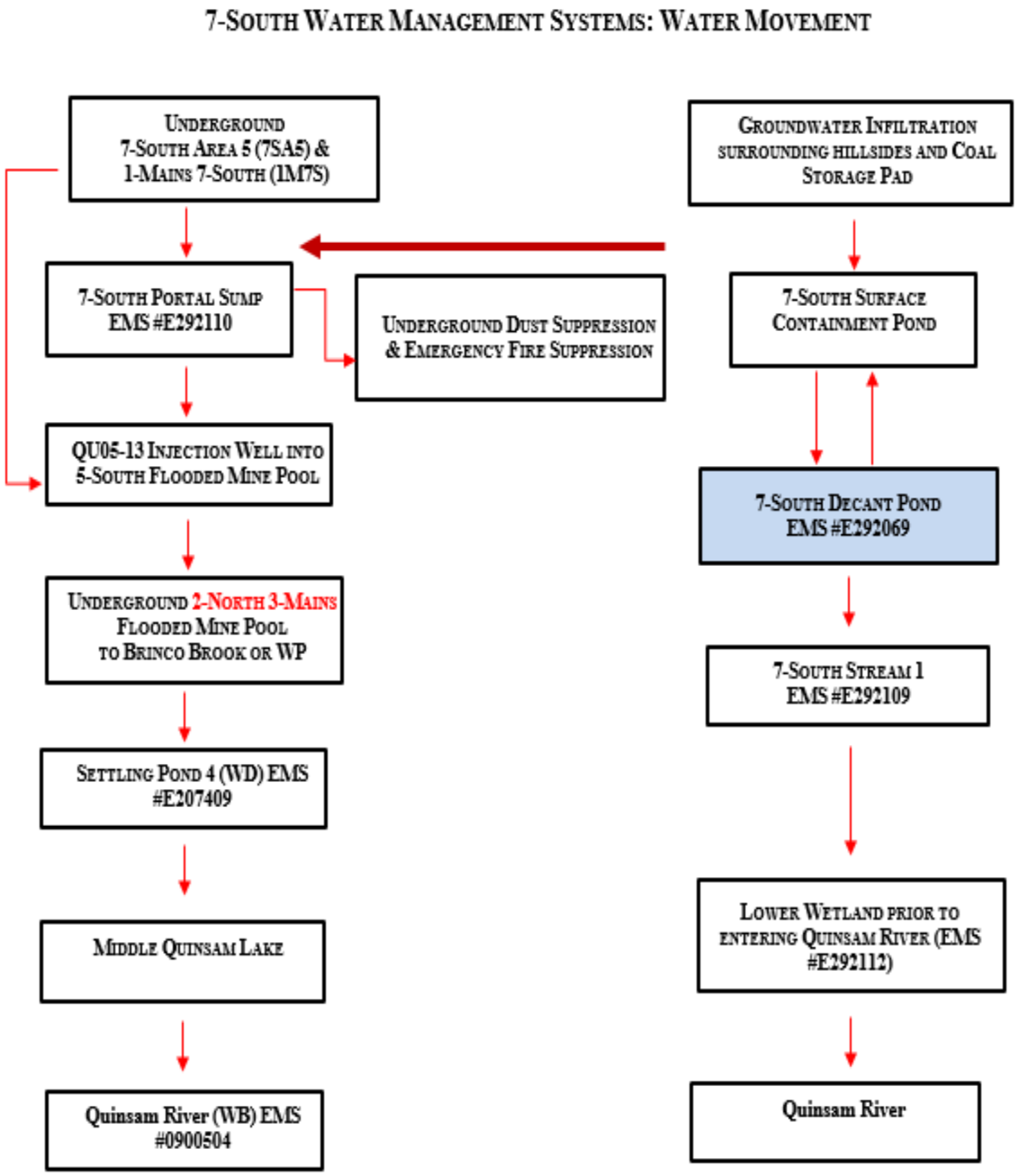


Figure 4: Water Movement and Flow Path at the 7-South Operation

2.2 RECEIVING ENVIRONMENT SITES

2.2.1 *RIVER, STREAM & LAKE MONITORING SITES*

Effluent Permit PE-7008 Section 4.2.3 identifies river, stream, and lake monitoring sites that represent the receiving environment for various mine related discharge(s). Most of these sites are monitored on a 5 in 30 sampling frequency (5 events in 30 days) during the spring, summer and fall seasons. Table 3 lists the receiving water monitoring sites.

Table 3: Receiving Water (Stream and Lake) Monitoring Sites

Streams	Lakes
North Mining Operation	
Quinsam River at Argonaut Road (WA) (EMS # 0126402) Outflow from Middle Quinsam Lake (WB) (EMS # 0900504)	Middle Quinsam Lake Centre (EMS # 206618)
South Mining Operation	
Long Lake Outlet (LLO) (EMS # E219412) No Name Lake Outlet (NNO) (EMS # E217017)	Long Lake at Centre (LLM) (EMS #E206619) No Name Lake (NNL) (EMS # E217018)
7-South Mining Operation (Areas 1 to 4)	
Quinsam River upstream of 7 South Mining Operation (QRDS1) (EMS # E286930) Quinsam River downstream of 7 South Mining Operation (7SQR) (EMS # E292113) Lower Wetland Outlet at the confluence of Quinsam River (LWO) (EMS # E292112)	Lower Quinsam Lake (LQL) (EMS #E292118)
7-South Area 5 Mining Operation	
Iron River upstream of mining operations (IR1) (EMS #E297230) Iron River upstream of 7SA5 (IR6) (EMS # E297231) Iron River downstream of 7SA5 and 242 inputs (IR8) (EMS # E297232) Quinsam River downstream of confluence with Iron River (IRQR) (EMS # E299256)	Lower Quinsam Lake (LQL) (EMS # E292118)

River and Stream Sites in the Quinsam River Sub-Basin

- Quinsam River at Argonaut Road (WA) EMS #0126402 – Located upstream of all mine related discharges; represents background (baseline) conditions for water quality comparisons.
- Outflow from Middle Quinsam Lake (WB) EMS #0900504 – Located at the outflow of Middle Quinsam lake; represents combined discharge from North and South water management systems.
- No Name Lake Outlet (NNO) EMS #E217017 – Located at the outflow of No Name Lake; not presently influenced by surface mine related discharge in the South. The groundwater influence from 2-South Pit to No Name Lake near the outlet site was estimated as 5 m^3/day or 10% of the seepage rate from 2-South Pit.
- Long Lake Outlet (LLO) EMS #E219412 – Located at the outflow to Long Lake; captures all South mine related inputs on surface and a percentage of groundwater (i.e. LLE and Long Lake Seep).
- Quinsam River Downstream Site 1 (QRDS1) EMS #E286930 – This site is located downstream of Middle Quinsam Lake Outflow (WB), the North Mining Operation and upstream of the 7-South Mining Operation; captures changes in water quality before the 7-South Mine and groundwater inputs related to mining.
- Lower Wetland Outlet at the confluence of the Quinsam River (LWO) EMS #E292112 – This site is located downstream of Stream 1 (7S); represents final surface discharge quality prior to combining with the Quinsam River.
- 7-South Quinsam River (7SQR) EMS #E292113 – Quinsam River downstream of QRDS1, LWO, and 7-South Mining Operation; captures incremental changes in water quality that may be attributed to 7-South PAG-CCR storage and flooded mine pool.

Iron River – Proposed 7-South Area 5 (7SA5) Mining Operation

- Iron River Upstream of Mining Operation (IR1) EMS #E297230 – Located upstream of any mine related activity; represents baseline conditions.
- Iron River Upstream of 7SA5 (IR6) EMS #E297231 – Located upstream of any mine related activity (currently); reflects baseline conditions in an area of different geologic formation(s) and baseline water quality influences than IR1 (mainly arsenic concentrations).
- Iron River downstream of 7SA5 and 242 inputs (IR8) EMS #E297232 – Downstream monitoring site on the Iron River; will be used to monitor potential influence of 7SA5.
- Quinsam River downstream of the confluence with the Iron River (IRQR) EMS #E299256 –Located downstream of all current and planned (7-South, Area 5) activities; represents the cumulative mine related discharge.

Lake Monitoring Sites

- No Name Lake (NNL) EMS #E217018– Located within the South mine development area.
- Long Lake (LLM) EMS #E206619 – Located within the South mine development area and receives water from No Name Lake, 2-South flooded mine pool as groundwater and surface water (Long Lake Seep). The outlet end receives seepage from 4-South flooded mine pool, estimated at 0.14 m^3/day and south water management discharge (LLE).
- Middle Quinsam Lake (MQL) EMS #E206618 – Located adjacent to the North mine development area and receives all discharge from the North water management system and

upstream (non-mine related) inputs. Long Lake flows into Middle Quinsam Lake at the south end near the outlet (WB) via a small tributary stream (LLO).

- Lower Quinsam Lake (LQL) EMS #E292118 – Located well below mine related discharge(s); reflects the combined influences of Quinsam River and Iron River water quality.

On November 1, 2019 authorization was approved from ENV for a minor permit amendment to PE:7008 to remove monitoring at certain locations and reduced the frequency of monitoring at others.

Receiving environment sites that were removed include:

- Iron River upstream of mining operations (IR1) (EMS #E297230)
- Quinsam River upstream of 7 South Mining Operation (QRDS1) (EMS # E286930)
- Lower Wetland Outlet at the confluence of Quinsam River (LWO) (EMS # E292112)

Sites with the frequency of monitoring reduced included:

- Long Lake Outlet (LLO) (EMS # E219412) - reduced to 5 in 30 spring, summer and fall, only removed weekly SO_4
- Quinsam River downstream of 7 South Mining Operation (7SQR) (EMS # E292113) - reduced to 5 in 30 spring, summer and fall, removed monthly
- Quinsam River downstream of confluence with Iron River (IRQR) (EMS # E299256) - reduced to 5 in 30 spring, summer and fall, removed monthly
- Iron River upstream of 7SA5 (IR6) (EMS # E297231) - reduced to 5 in 30 summer and fall only, removed monthly and spring monitoring
- Iron River downstream of 7SA5 and 242 inputs (IR8) (EMS # E297232) - reduced to 5 in 30 summer and fall only, removed monthly and spring monitoring
- No Name Lake (NNL) EMS #E217018 – reduced to spring 5 in 30 only, removed summer and fall
- Lower Quinsam Lake (LQL) EMS #E292118 - reduced to spring 5 in 30 only, removed summer and fall

2.2.2 *Groundwater Monitoring Sites*

Numerous groundwater observation wells in the vicinity of pits 2N, 1S, 2S, 3S, 4S, Block 242, and 7S are monitored. Table 4 (below) lists groundwater wells, location and geological details of these wells. For further information refer to Appendix I, Tables 47 to 49 for water chemistry and Appendix VI, *2012-2021 Annual Groundwater Monitoring Report*. As an alternative to the 2N, 1S, 2S, 3S, 4S and 7S wells, QCC established monitoring sites at underground sumps. During 2020-2021, QCC monitored 36 sites for groundwater.

Table 4: Groundwater Wells and Underground Sumps

Groundwater Wells - Description				
Area	**Groundwater ID**	**In-situ / Ex-situ**	**Screened Interval**	**Comment**
2-North	1 Mains 2-North (1M2N)	In-situ	No. 1 Seam	Flooded Underground Workings Dewatering well
	5 Mains 2-North (5M#2 / 5M2N)	In-situ	No. 1 Seam	Flooded Underground Workings Dewatering well
	QU08-21GD	Ex-situ	No. 1 Seam	Down gradient of u/g tailings disposal, measure water quality and hydraulic gradients downstream of forjan fault
	QU08-21GS	Ex-situ	No. 4 Coal Seam and	
	QU10-10D	Ex-situ	No. 1 Seam / mudstone	Down gradient of u/g tailings disposal, measure water quality and hydraulic head downstream of 2 North workings
	QU10-10S	Ex-situ	No. 4 Seam /	
	QU10-11S	Ex-situ	Fractured Sandstone	Measure water quality and hydraulic gradient in Forjan Fault
	QU10-11D	Ex-situ	No.1 Seam	Down gradient of u/g tailings disposal, measure water quality and hydraulic head downstream of 2 North workings
	QU10-13D	In-situ	Caved Zone	Measure hydraulic head above 2 North mine (1 mains), fine tailing disposal
5-South Mine Pool	5SMW	In-situ	Mine Pool (1 Seam)	5-S Mine Pool pumped into 2-North Mine Pool
River Barrier Pillar (RBP)	QU11-05S	Ex-situ	Sandstone	Monitoring water quality and vertical gradients downstream of the RBP and 2-North mine.
	QU11-05D	Ex-situ	Sandstone	Monitoring water quality and vertical gradients downstream of the RBP and 2-North mine.
	QU11-09S	Ex-situ	Sandstone	Monitor water quality & gradients downstream of the RBP and 2-North workings. Mine pool – CCR backfill in River Barrier Pillar
	QU11-09M	In-situ	RBP Mine Pool	Monitor water quality & gradients downstream of the RBP and 2-North workings. Mine pool – CCR backfill in River Barrier Pillar.
2-North Plant Site	MW00-1S	Ex-situ	Till	Seepage to MQL
	MW00-1D	Ex-situ	1-Seam	Seepage to MQL
	MW00-6D	Ex-situ	Till	Seepage to MQL
	MW00-6S	Ex-situ	Till	Seepage to MQL
4-South	QU10-08D	Ex-situ	No. 3 Seam	4 South (just outside mine pool) up gradient of existing workings
	QU11-01		Foot print area of 4 South GOB	Assess 4 South Mine Pool water quality
	QU10-09S	Ex-situ	Down gradient of existing workings	Access vertical gradients and water quality adjacent to Long Lake.
	QU10-09D	Ex-situ	Down gradient of existing workings	Access vertical gradients and water quality adjacent to Long Lake.
2-South & 3-South	MW00-2	Ex-situ	1 Seam	3S seepage to Long Lake
	MW00-4	In-Situ	Mine Pool (1 Seam)	2-South Mine Pool Gob depillared area
	MW12-23	Ex-situ	Silt Stone	2-South seepage to No Name Lake
	MW12-24	Ex-situ	Silt Stone	2-South seepage to No Name Lake
	QU11-11 (INF)	In-Situ	Mine Pool (1 Seam)	2-South mine pool dewatering well for Passive Treatment System
7-South	1M7SA5	In-Situ	No. 4 Coal Seam	Underground Sump
	QU08-10	Ex-situ	No. 4 Coal Seam	Downgradient of 7S -screened No. 3 Coal -Southern margin of workings
	QU08-13A	Ex-situ	No. 4 Coal Seam	Down Gradient of the CCR backfill towards QR
	QU08-13B	Ex-situ	Till & SST contact	Down Gradient of the CCR backfill towards QR
	QU14-10	In-Situ	Mine Void	PAG Storage Mine Void
7- South Area 5	7SA5	In-Situ	Mine Void	Groundwater draining into mine void
	QU11-28	Ex-situ	N0. 4 Seam and 4L	Upgradiernt of 7SA5. Background 7 South Area 5
	QU11-18S	Ex-situ	Till	Down Gradient of 7SA5 - Background info for 7S A5 Subcrop
	QU11-18D	Ex-situ	Sandstone	Down Gradient of 7SA5 - Background info for 7S A5 Subcrop
	QU12-06S	Ex-situ	Faulted sandstone near No. 4 Seam	Upgradient of 7SA5 along margine with proposed 4S expansion
	QU11-35	Ex-situ	Sandstone above No. 4 Seam	South end of 7SA5 footprint at 100280m N (mine grid)
242 AREA	QU11-36S	Ex-situ	Sandstone below No. 5 seam	Downgradient of 7SA5. Background (Between 242 and IR).
	QU11-36D	Ex-situ	Sandstone below No. 5 seam	Downgradient of 7SA5. Background (Between 242 and IR).
	242MW	In-situ	No. 4 Seam	Mine pool

2.3 ADDITIONAL MONITORING PROGRAMS

QCC conducts a diverse environmental monitoring program governed largely by the effluent permit PE: 7008. There are also additional baseline water quality monitoring programs, and in 2016, a sediment and benthic invertebrate monitoring program was conducted with the next program scheduled for 2021.

2.3.1 *BASELINE MONITORING PROGRAMS*

Quinsam conducts additional monitoring to support permit amendment efforts and to provide additional insight into water quality trends and observations. Although this information is not specifically included in this report, the data may be used in future submissions to ENV.

On August 9, 2020 an application titled "*Iron River Baseline Benthic Sampling (CABIN)*" was submitted for approval to Ministry of Environment and Climate Change Strategy (ENV) for approval on August 9, 2020, addressing the permit clause 4.2.4 (i) of PE: 7008:

> *Section 4.2.4 Sediment and Benthic Monitoring Sites i) The permittee shall propose sediment monitoring locations in the 7-South Area 5 receiving environment to the Director by October 1, 2014 for approval.*

The application was approved on September 4, 2020 for the purpose of performing sediment and benthic invertebrate sampling on the Iron River using the Canadian Aquatic Biomonitoring Network approach. While the submission of proposed locations for sediment and benthic monitoring was due October 1, 2014, limited mining has yet occurred in 7 South Area 5. Therefore, the data collected represents baseline conditions relative to any impacts from mining in 7-South Area 5.

Sediment and benthic invertebrate sampling were conducted early September 2021 as per the requirements and parameters listed in permit clause 4.2.7, and at the following sites:

- EMS ID E297231 (IR6) - upstream of 7-South Area 5 potential impact(s), downstream of 4-South potential impact (s)
- EMS ID E297232 (IR8) - New "Lower Iron River" site downstream of the IRT6 and the expected inflow of the mine impacted water.

Taxonomical analysis is currently under way and results will form part of the 1st Quarterly report for 2021-2022.

2.3.2 *SEDIMENT AND BENTHIC MONITORING PROGRAM ON THE QUINSAM WATERSHED FOR EFFLUENT PERMIT PE:7008*

QCC conducted sediment and benthic monitoring in August through October 2016 to meet condition 4.2.7 (iii) of the amended Permit PE-7008 (dated September 22, 2014). This monitoring program was designed to supplement existing water quality data by evaluating sediment chemistry

and benthic biota in waterbodies that receive mine impacted discharges and reference sites with similar characteristics. The *2016-2017 Annual Water Quality Monitoring Report* contains the findings of the program. The program included five lakes, one wetland, and one river system for a total of 23 sites. The table below lists the waterbody type, waterbody name and site outlined in the study.

Table 5: Sediment and Benthic Monitoring Sites

Waterbody Type	Waterbody Name	Site
Lakes	No Name Lake (NNL)	No Name Lake Inlet, NNLI (EMS # E224246) No Name Lake Deep, NNLD (EMS # E217018) No Name Lake Near Seep (EMS # E292114) No Name Lake Outlet (EMS # E217017)
	Middle Quinsam Lake (MQL)	Middle Quinsam Lake Inlet (EMS # E206901) Middle Quinsam Lake Deep (EMS # E292115) Middle Quinsam Lake Near Seep (EMS # E292116) Middle Quinsam Lake Outlet (EMS # 0900504)
	Lower Quinsam Lake (LQL)	Lower Quinsam Lake Inlet (EMS # E292117) Lower Quinsam Lake Deep 1 (EMS # E29118) Lower Quinsam Lake Deep 2 (EMS # E292119) Lower Quinsam Lake Outlet (EMS # E292120)
	Long Lake (LL)	Long Lake Inlet (EMS # E292121) Long Lake Deep (EMS # E292122) Long Lake Near Seep (EMS # E292123) Long Lake Outlet (EMS # E219412)
	Gooseneck Lake (GNL)	Middle Gooseneck Lake (EMS # 1132502)
Wetland	Lower Wetland	Lower Wetland Inlet (EMS # E292124) Lower Wetland Middle (EMS # E292125) Lower Wetland Outlet (EMS # E292112)
Quinsam River	At Argonaut Road (WA)	(EMS # 0126402)
	Upstream of 7 South Mining Operation (QRDS1)	(EMS # E286930)
	Downstream of 7 South Mining Operation (7SQR)	(EMS # E292113)

2.3.3 *Passive Treatment System (PTS)*

The PTS was operational from May 12th to present. The 15-horsepower pump in borehole QU11-11 (INF) was replaced on May 5th, 2020 and the flange at the well head required repair and was replaced May 11th, 2020. The treatment system was operating at 4.0 to 6.7 L/s, averaging 5 L/s annually. Annual average amount of pumped and treated mine water was 160117.72 m3. The mine pool water level was measured at 11.3 m above the pump in June and decreased to 5.9 m above the pump on September 14, 2020. Water levels increased in the mine pool in late fall coinciding with precipitation with peak levels of 18.5 m reached in January 2021 as displayed in Figure 5 below. The Middle Seep into long lake stopped flowing when the mine pool water level was 8.20 m above the pump and the smaller seep stopping at 7.80 m above the pump. Water quality and treatment system performance is discussed further in Section 8.2.4.

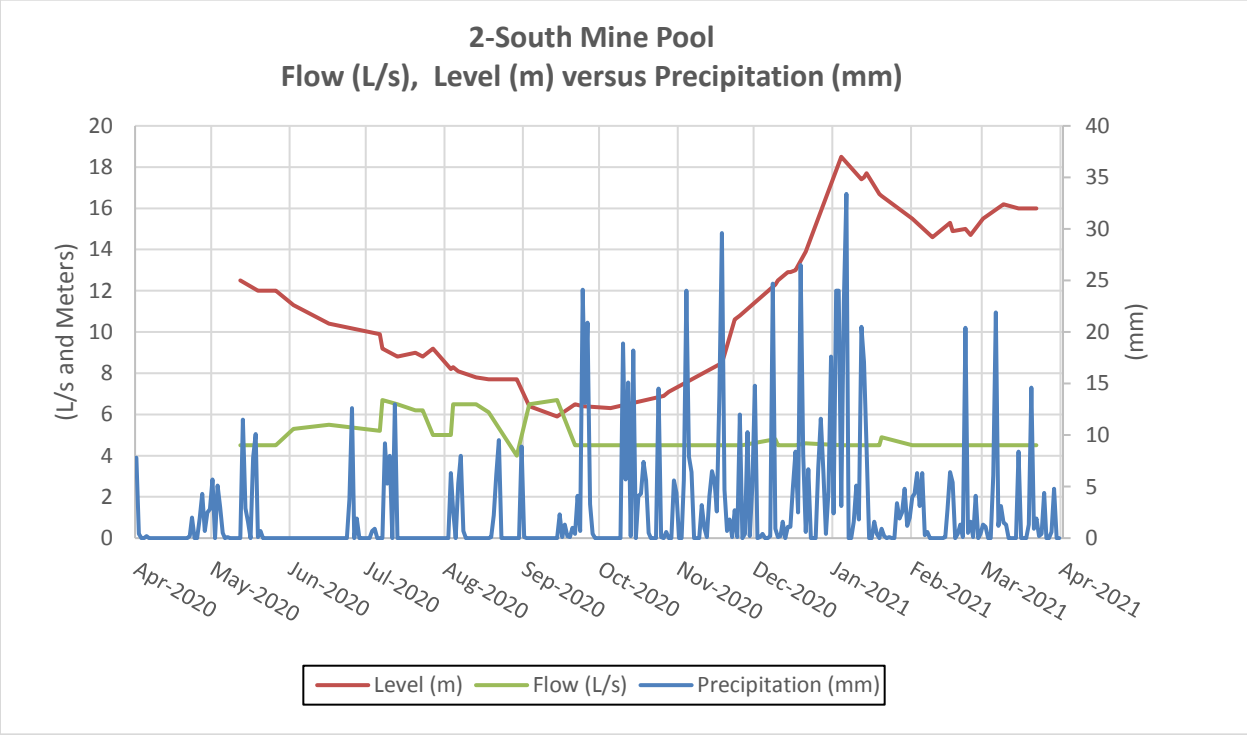


Figure 5: 2-South Mine Pool Flow Rate and Water Level versus Precipitation

2.4 Maintenance & Reclamation Activities

To ensure proper functioning of site wide water management systems, haul roads, roadside ditches, catchment ditches, ponds, culverts, pumps, and water lines are maintained on a routine basis. Regular maintenance activities include removal of debris from culverts, replacement of silt fences and straw bales, and removal of sediment build-up from catchment ditches and ponds. Pumps and water lines are inspected daily and maintained as part of the surface inspection. Maintenance and repair occurred within the water management systems of the North and South Water Management Areas.

2-North Underground Water Management

On February 23, 2020 the 5-Mains 2-North pump failed. As contingency for the 5M2N pump failure additional pumps were installed in 3 Mains 2-North (3 x 58 Hp and 1 x 250 Hp). The 3 Mains pumping system already included 2 x 250 Hp pumps. Collectively the 3 Mains pumping system can dewater the 3 Mains section of the mine at a rate of approximately 6000 GPM. These pumps were installed to manage water levels in the mine and protect underground infrastructure.

On November 30, 2020 the 1M2N#1 pump failed (1M2N#2 failed on startup September 2019). This system is a crucial component of the 2-North mine in order to maintain water levels underground.

Both the 5M2N and the 1M2N deep well replacement pumps were delayed, with new pumps installed on March 25, 2021 at 5M2N and April 13, 2021 at 1M2N.

South Water Management

The 2-South mine pool pump for the Passive Treatment System was turned off in an effort to control the water directed into 3S pit on January 22, 2020. The pump failed on restart on February 6, 2020 until May 5th, 2020 with a flange replaced on May 12th, 2020. The pump was started May 12th once the flange was replaced. The estimated cumulative total discharged into Long lake at the seeps from January 22nd to May 12th, 2020 was 119, 000 m^3.

Reclamation

There were no reclamation activates completed during 2020- 2021 (see the *Annual Reclamation Report for 2020, Mines Act Permit Number C-172* for further details).

3.0 CHEMICAL REAGENTS AND WASTE STORAGE

Waste oil and solvents are stored in sealed containers or tidy tanks at secure locations and removed from site for recycling by Terrapure Nanaimo. Scrap metal at the mine site is collected in designated containers and recycled. There were no waste oil / solvents removed from site or metal recycled in 2020-2021.

4.0 INCIDENTS - PERMIT LIMIT EXCEEDANCES & PERMIT NON-COMPLIANCES

Please refer to Appendix 1, Table 2 for a summary of all permit limit exceedances (P) and permit non-compliances (PNC) specific to missed samples, parameter analysis, and missing flow data. Appendix VII provides the non-compliance reports. All spill and excursion reports were submitted to the Environmental Compliance website at: environmentalcompliance@gov.bc.ca. Spill reports are available in Appendix VII.

Unauthorized Discharge – DGIR 204584

In February 2020, the 5-Mains 2-North dewatering pump failed and on November 30, 2020 the 1-Mains 2-North dewatering pump failed. The 3-Mains pumping network was used as the backup system for dewatering the mine pool until the pumps could be replaced. Consequently, the 2-North mine pool water elevation rose to about 243.7 meters above sea level (mASL) by March 17, 2021. The water was being managed through the 3-Mains pumping system, but the mine had never been flooded to that elevation historically.

As a result, an unauthorized discharge occurred at groundwater well QU11-09 when the well became artesian, discovered on March 17, 2021. QU11-09 is a nested well that accesses three zones, shallow groundwater, water cover over course coal refuse (CCR) in 1 seam and water quality below the 1 seam. This well is located in 88 panel of the River Barrier Pillar between the 2 North and 5-South Mine.

The water table in 2-North Mine (aquifer recharge zone) increased to an elevation of 243.7 mASL. The ground elevation at QU11-09 is 226.3 mASL. This caused the well to become artesian and discharge mine water into the Quinsam river. This occurred from January 4, 2021 until March 19th, 2021 when the well was capped, and discharge was reduced but did not completely stop until May 1st, 2021. The well pumps (1M2N and 5M2N) were both replaced by beginning of April 2021. Water levels decreased daily and by April 30th, 2021 the mine pool was reduced to 226.63 mASL from 243.7 mASL, the surface discharge was reduced but seepage continued in the area as the ground elevation is 226.3 mASL and the shallow groundwater was mine impacted and under pressure.

Once discovered the Provincial Emergency line was called and the unauthorized discharge was reported with a Dangerous Goods Information Reference (DGIR) number generated, (DGIR 204584). A report was submitted on March 19th to the environmental compliance and a follow up was included in the Q4 report submitted April 30, 2021.

Monitoring results display elevated arsenic, iron and sulphate at the well head with reduced concentrations entering the river. Monitoring was performed 80 meters upstream and downstream on the river within the vicinity of the of the well. Results were compared to BC Water Quality Guidelines for protection of aquatic life, maximum values (WQG-Max). All results in the river were below the WQG-Max except copper was elevated upstream, resulting in 0.00102 mg/L, exceeded the lowest level (0.0009 mg/L). QCC sampled upstream and downstream on the Quinsam River within the vicinity of the seepage areas for 5 weeks. Results will be included in the Q1 Quarterly report.

Weekly monitoring of flow rates and water quality continue to occur from where the shallow groundwater is percolating out of the ground. Water quality is elevated in arsenic, conductivity, iron and sulphate with an average flow rate of 20 L/min. Weekly monitoring will continue to occur until the seepage stops. Further investigation is underway to determine the contamination level and elevation where the groundwater will stop seeping. This will be reported in the Quarter 1 report for 2021-2022.

SP4 (EMS # 207409) – Elevated Dissolved Iron and Total Suspended Solids (DGIR: 204693, 204545, 204695 & 204752)

Dewatering 5-South mine pool into 3-Mains 2-North and elevated water levels in 2-North mine resulted in high concentrations of dissolved iron and total suspended solids at SP4 (EMS # 207409). Table 6 below, summarizes the events where TSS and Fe-D were elevated above permit limits at SP4.

Water quality improved once the 5-Mains 2-North well pump was replaced on March 24, 2021. Results of samples collected at SP4 from March 25 for Fe-D were 0.012 mg/L and on April 6, 0.0169

mg/L with corresponding downstream at WC from April 6, resulting in 0.0153 mg/L, indicating limited adverse effects for aquatic receptors. A non-compliance report was submitted on April 29, 2021.

Table 6 summarizes the exceedances and Table 7 summarises the missing flow data for the 2020-2021 monitoring year.

Table 6: Exceedance Summary Table for Settling Pond #4

Exceedance Summary Table for EMS ID: E207409 Settling Pond #4

Results

EMS ID - Site Name	**DGIR Number*	*Daily Max. Flow (m3/s)*	*Daily Average Flow (m3/s)*	*Date*	*Sample ID*	*BV Labs Sample ID*	*BV Labs Job ID*	*Parameter*	*Permit Limit*	*Result*	*DL*	*Units*
E207409 - SP4 / WD	204693 **(no discharge occurre**	0	0	04-Mar-21	WDCOMP-4MAR21-P	ZL1971	C114768	Dissolved Iron (Fe)	0.3	1.48	0.01	mg/L
	204694	0.131	0.109	09-Mar-21	WD-9MAR21-P	ZL5595	C115472	Dissolved Iron (Fe)	0.3	0.679	0.01	mg/L
	204545	0.084	0.033	15-Mar-21	WD-15MAR21-P	ZM3645	C116949	Dissolved Iron (Fe)	0.3	0.44	0.01	mg/L
	204695	0.081	0.047	10-Mar-21	WDCOMP-10MAR21-P	ZM3621	C116941	Total Suspended Solids (TSS)	25	65	1.0	mg/L
		0.12	0.068	11-Mar-21	WDCOMP-11MAR21-P	ZM3622	C116941	Total Suspended Solids (TSS)	25	39	1.0	mg/L
	204752	0.154	0.102	19-Mar-21	WDCOMP-19MAR21-P	ZN5782-01	C119472	Total Suspended Solids (TSS)	25	35	1.0	mg/L
	204752	0.144	0.093	22-Mar-21	WD-22MAR21-P	ZN3527-03	C118890	Dissolved Iron (Fe)	0.3	9.82	0.01	mg/L
		0.144	0.093	22-Mar-21	WD-22MAR21-P	ZN3527-01	C118890	Total Suspended Solids (TSS)	25	35	1.0	mg/L

**Dangerous Goods Information Reference Number*

Table 7: Summary of Permit Non-compliances for Flow Data

EMS ID & Site Name	**Non-Compliance (PNC)**	**Result (mg/L)**	**Requirement**	**Date**	**Non-Compliance Reason**	**Number of events or period for PNC, P or spill event.**
E292109 - 7S	Flow	None	Continuous	Nov. 20 through Jan. 27	Level logger could not be retrieved from well.	Missing 69 days of continuous discharge. Flow did not start until November as per field observations.
E292127 - 2S Outflow	Flow	None	Continuous	Dec.19	Battery failure on flow meter.	1 day
E218582 -SP1 / SPD	Flow	Staff guage was used to derive flow.	Continuous	Mar.09	Flow meter sensor failed. Exchanged with different sensor. Notice sent to ENV March 15.	1 day

5.0 MATERIALS AND METHODS: ENVIRONMENTAL MONITORING PROGRAM

All water samples were collected in accordance with methods described in "*The British Columbia Field Sampling Manual for Continuous Monitoring of Air- Emissions, Water, Soil, Sediment, and Biological Samples*" (MOE 2013)[2]. This includes following of specified field protocols: use of field duplicates, split samples, and method blanks and checking for transcription errors.
Bureau Veritas Laboratories (BV labs) located in Burnaby B.C., a Canadian Association for Laboratory Accreditation (CALA) designated laboratory, conducted the analysis of surface, groundwater, and sediment samples. Phytoplankton samples were analyzed by Stantec Consulting Ltd. (Burnaby B.C.). Zooplankton samples were analyzed by Fraser Environmental (Surrey, B.C.).

5.1 WATER QUALITY ANALYSIS

PE-7008 identifies the parameters to be analyzed in effluent. Each site has specific requirements for parameters to be analyzed. The following parameters are generally monitored at each station:

- Total suspended solids (TSS) (mg/L)
- Total dissolved solids (TDS) (mg/L)
- pH-Field (standard units)
- Conductivity-Field (uS/cm)
- Alkalinity (mg/L as $CaCO_3$)
- Hardness (mg/L as $CaCO_3$)
- Sulphate (mg/L)
- Ammonia as nitrogen (mg/L)
- Nitrate/nitrite combined as nitrogen (mg/L)
- Dissolved Organic Carbon (mg/L)
- Total phosphorus and dissolved phosphate (mg/L)
- Total and dissolved metals (mg/L)
- Oil and grease (for sites SPD and WD only) (mg/L)
- Rainbow trout bioassays (for sites SPD, WD and 7SSD only)
- 7 Day *Ceriodaphinia dubia* chronic toxicity test (at site 7S only)

The following parameters are specific to lake sampling:

- Dissolved oxygen (mg/L)
- Temperature (Celsius)
- Oxidation reduction potential
- Biological
    - Phytoplankton (chlorophyll "a" and phaeopigment)
    - Phytoplankton (counts and identification to species)
    - Zooplankton (counts and identification to species)

[2] MOE. 2013. "The British Columbia Field Sampling Manual for Continuous Monitoring of Air- Emissions, Water, Soil, Sediment, and Biological Samples". Available at: http://www2.gov.bc.ca/assets/gov/environment/research-monitoring-and-reporting/monitoring/emre/field_sample_man2013.pdf

All surface and groundwater samples were filtered through a 0.45 µm filter and most were preserved on site except for a few samples where preservation did not occur. BV Labs analyzed dissolved and total metals samples using the CCME/BC WQG analytical package to provide suitable detection limits for comparison with guidelines and as per ENV requirements. This included use of conventional and Inductively Coupled Plasma Mass Spectrometry (ICPMS) equipment.

5.2 ENVIRONMENTAL MONITORING EQUIPMENT

The following equipment was used to conduct the surface monitoring program at Quinsam Coal:

- ISCO 4210 flow metres equipped with a paper chart plotter and datalogger, which are connected to a sonic depth sensor to measure water height above decant (Settling Pond #1) and an ISCO signature flow metre with an ultrasonic sensor (Settling Pond #4). Both instruments use water height to determine discharge by using provided weir/orifice equations. Continuous monitoring is achieved using a datalogger and downloaded using a computer with Flow link software.
- A maidlabs technology, Flowmaid with an ultra-sonic depth sensor replaced the ISCO 4210 at Settling Pond #1
- A Sitrans F M MAG 8000 CT electromagnetic flow metre to record discharge at 7SSD.
- ISCO 12-volt automatic samplers programmed to collect daily composite samples for analysis of TSS deployed at all permitted discharge locations.
- A YSI Exo 1 multiparameter sonde and YSI Pro-Plus, to obtain physical water quality parameters, and calibrated prior to each sampling event following manufacturer specifications for maintenance and handling.
- Two handheld sondes (Oakton PC Tester 35), for routine monitoring of pH and conductivity.
- Level logger pressure transducers, used to obtain continuous water level measurements at Long Lake Outlet, Middle Quinsam Lake Outlet and the Iron River, with data used to create daily hydrographs.
- A 4-litre Beta sampler, to collect lake water samples; the sampler is constructed with materials to minimize interference cross contamination of metals and the 4 litre volume provides sufficient water for all required analyses in one deployment per depth.
- A Campbell Scientific weather site, to record temperature, precipitation, wind, humidity, solar intensity, and snow accumulation data (installed next to the 2-South pit in August 2015, became operational in October 2015).
- An Eckman grab sampler, for collection of sediment and benthic invertebrate samples.
- Hydro-lift used for collection of groundwater samples
- Portable Bladder pump used for collection of groundwater samples
- Peristaltic pump used for collection of groundwater samples

Although this list is not exhaustive, it provides an overview of the equipment used for environmental monitoring.

5.3 QUALITY ASSURANCE / QUALITY CONTROL

Quality Assurance / Quality Control (QA/QC) sampling followed protocols described in MOE (2016). QA/QC practices were integrated into the water sampling program to maintain the

integrity, consistency, and reproducibility of sampling techniques and results of environmental monitoring. Various samples, including field blanks, trip blanks, equipment blanks, and replicates, are used to evaluate methods and identify potential issues related to sampling techniques and equipment. Each sample type serves a specific purpose:

- Field Blanks – Samples of laboratory-grade, reverse osmosis, deionized water deposited into sample containers in the same location in which a field sample is collected. These samples are carried and treated in the same manner as a field sample to assess any potential cross-contamination that may occur due to sampler technique.
- Trip Blanks – Samples of laboratory-grade, reverse osmosis, deionized water deposited into sample containers in a laboratory setting are transported into field locations with samplers to determine if any cross-contamination occurs due to the handling or storage of sample bottles.
- Equipment Blanks – Samples of laboratory-grade, reverse osmosis, deionized water placed into a piece of equipment at a sampling station to identify potential cross-contamination associated with equipment (e.g., Beta sampler), sampling procedures, or general cleanliness.
- Replicates – Samples collected at the same location and time by the same sampler using the same techniques and equipment. Replicates samples are used to assess precision for each analyte analyzed. Observed variance between replicates identifies uncertainty in sampling, environmental heterogeneity, and laboratory analysis.

Field replicate samples are collected during every sampling event, accounting for approximately 10% of analyses requested from the laboratory. One sampling event may span two or more days. The primary sampling events are:

- Weekly, monthly, and quarterly sampling for all permitted monitoring locations
- 5 in 30-day programs, three times per year for receiving environment sampling for lakes, rivers, and streams
- Groundwater wells

For all replicates collected Relative Percent Difference (RPD) values were calculated for the analytical results from the sample and its respective replicate. In accordance with the British Columbia Field-Sampling Manual, the calculation was applied as stated below:

$$RPD = Absolute \frac{(Sample\ Concentration - Replicate\ Concentration)}{\left(\frac{Sample\ Concentration + Replicate\ Concentration}{2}\right)}\ x\ 100\%$$

RPD calculations were only practical for results where concentrations were found at or greater than five times the reported detection limit (RDL) as there is considerable uncertainty at low levels. In addition, mathematical calculations for RPD appear exaggerated with low values where absolute differences may be relatively low. It is expected to see variation between a sample and its respective field replicate for several reasons. Some considerations include redox reactive parameters, inconsistent sample stream at sampling locations; heterogeneity of water at sampling location; the possibility of minor contaminations; laboratory sample preparation and accuracy of analytical instrument and the lab mean detection limits for the results are different, to name a few. Taking these possibilities into consideration, RPD values less than 20% are deemed "acceptable" and indicate proper sampling methodology with representative results. It has been acknowledged

that RPD values greater than 20% indicate a potential problem with sampling integrity whereas values greater than 50% indicate a definite problem.

Appendix I, Tables 50 to 53 display the results of the RPD calculations.

During the 2020/2021 monitoring year, there were 1045 sample sets submitted to the laboratory and a total of 105 parent samples and their replicates collected. Of the analyzed 4690 parameters in these parent samples and their replicate samples, 37 out of 4690 (0.79%) had an RPD greater than 20% with 22 out of the 4690 had an RPD greater than 50% (0.47%). Duplicate analyses for Hydrogen sulphide and carbon were the most common parameters followed by dissolved nitrogen and turbidity accounting for the most frequent instances of RPD greater than 20%.

The parameters that were found with an RPD greater than 50% do seem to be displaying enough RPD magnitude to identify an issue requiring attention. Out of the 14 parent samples and their replicates, 22 parameters displayed an RPD greater than 50%. In the future parent samples and their replicates will be compared more closely within an appropriate time frame in order to have the opportunity to rerun the results.

Issues were raised when the parent sample and replicates were found to have two different laboratory mean detection limits reported. This occurred at 4 sites for 63 parameters. The analytical laboratories process is to report the lowest detection limit possible and only do dilution as necessary. It is recognized that having two different detection limits especially for replicated samples can reflect poor sampling techniques and/or laboratory analysis. As a response to this issue additional steps were introduced at the analytical laboratory in order to notify the lab of replicate samples for all future submissions. This will assist on ensuring that parent samples and their replicates are run at the same detection limits.

The RPD for field blank sample concentrations should not be significantly greater nor occur more frequently than for laboratory method blanks (MOE 2016). Results greater than two times the laboratory MDL are identified and investigated to determine potential contamination.

Field blank and trip blank results of laboratory grade deionized water were within the acceptable range for samples analyzed in 2020/2021. There were 4 trip blanks and 2 field blanks analyzed for sulphate and metals; all results met the RPD, indicating acceptable field sample collection and handling.

Results of QA/QC review indicate confidence in the ability of QCC to collect and analyze samples that meet required accuracy and precision requirements. Internal performance audits will continue, and any identified deficiencies will be investigated to adjust sampling protocol. All employees will be kept up to date with sampling procedures and provided with any training and equipment necessary. QCC will continue to adhere to sampling practices identified in MOE (2016) and promote best practices at all locations.

A variance analyses to identify outliers is performed prior to uploading analytical data into the database. Any results outside 95% confidence intervals (within 4 standard deviations) of previous results are investigated, and if needed BV's is contacted and the results are rerun, with a new report issued that include a review of BV's internal investigation.

BV laboratory performs internal QA/QC on all sample sets that are analyzed. This is included in the laboratory report provided by BV and reviewed by QCC. The internal QA/QC performed by BV meets laboratory standards. BV internal QA/QC involves the following procedures with every sample set analyzed:

- Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
- Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
- Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Outliers

There was one sample collected from No Name Lake at 1 metre from bottom on May 12, 2020 resulting in 61 mg/L, laboratory report number C032217. This is considered an outlier and, in the future, will be removed from the data set as it does not correspond with any historical result or hardness concentration from that day (15 mg/L). It seems to have been a decimal error that was missed by both the laboratory and QCC. All other results from the 5 in 30 sampling set remained within the acceptable range.

On April 29 and May 1st, 2020 during spring sampling total and dissolved copper results were elevated in most samples collected. Results are suspicious and will be monitored closely in future.

Field Filtering

Since the initiation of field filtering and preserving dissolved metal samples, dissolved iron displays an increase in concentrations signifying the importance of field filtering. Mine water high in iron concentrations has the highest observed effect from the transition of laboratory filtering compared to field filtering. This is most noticeable at the Long lake seeps and other mine discharge water like 1M2N and 5M2N. These areas were perceived to have less than detection limits in most samples for dissolved iron. Once field filtering was introduced dissolved iron resulted in elevated concentrations. Refer to Appendix II, Graph 22.

6.0 HYDROLOGY

6.1 NORTH WATER MANAGEMENT SYSTEM

6.1.1 *AUTHORIZED DISCHARGE RATES AT SETTLING POND #4 (SP4/WD) E207409*

Maximum authorized rates of discharge at SP4 are 0.32m^3/s (instantaneous) and 0.08m^3/s (annual average) or 2,522,880 m^3 over a period of 365 days. Maximum discharge rates were below 0.32 m^3/s throughout the entire monitoring period, peak discharge was observed in January and March during pumping and heavy precipitation events. For 2020-2021 the cumulative discharge was calculated as 2,343,773 m^3 lower compared to last year 2,912,065 m^3. This is equivalent to an

annual average discharge rate of 0.074 m^3/s; lower than the authorized average rate of discharge by 179,107 m^3 (0.08 m^3/s or 2,522,880 m^3). Figure 6 displays cumulative annual average discharge rate and daily discharge rates compared to the average annual authorized rate of discharge.

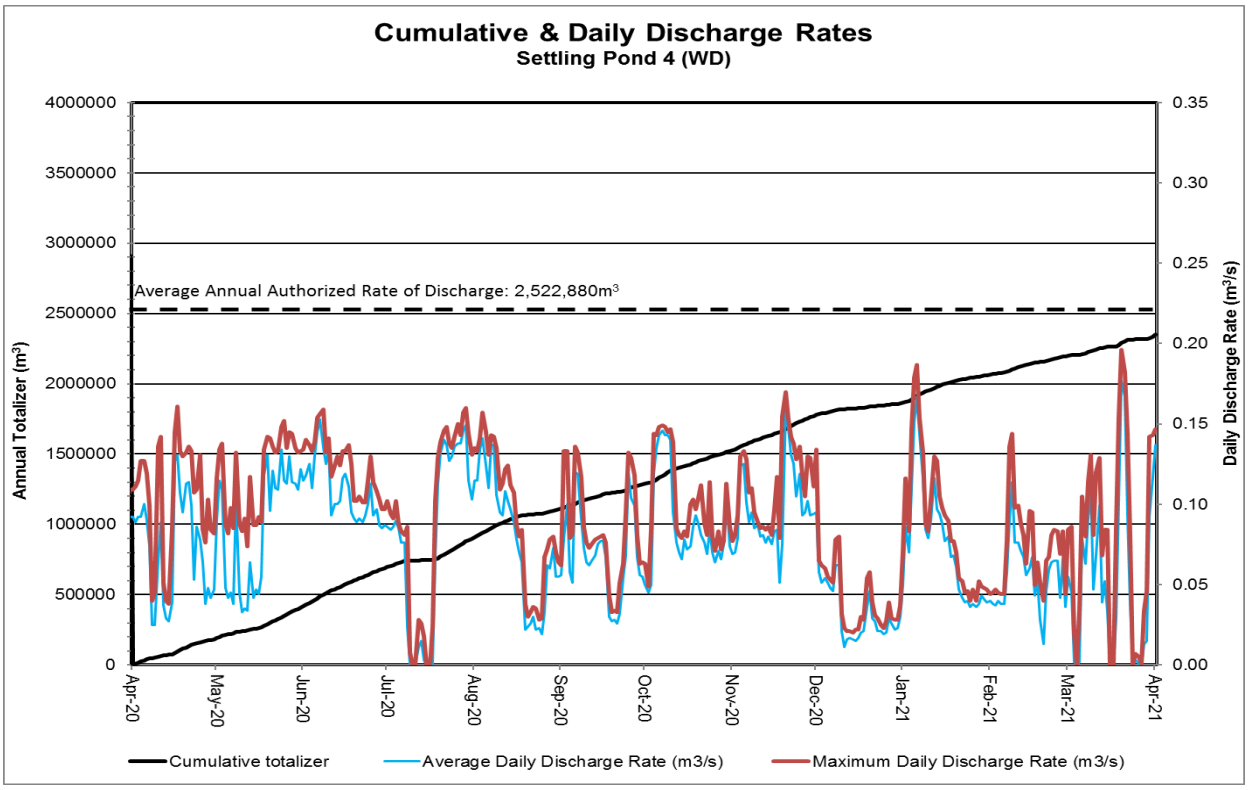


Figure 6: Settling Pond #4 Cumulative Annual Average Discharge Rate and Daily Discharge Rates

The annual average flow rate did not exceed the permissible value resulting from the dewatering pumps (5M2N and 1M2N) faulting in February 2019 and November 2020, respectively. This reduced discharge rates at SP4.

Discharge did not occur for 9 out of 365 days this reporting year (4 days in July and 5 days in March). Water was redirected to the 2North pond (WP) in order to maintain a water cover in the pond during the dry session and when poor water quality developed at Settling Pond #4 in March.

Coal processing water is pumped from SP4, reducing the discharge rates significantly when this occurs. Discharge rates are related to coal processing, dewatering from underground 2-North mine and precipitation. In the absence of coal processing the discharge rates increase as no water is pumped from the pond for coal processing.

A summary of discharges from Settling Pond # 4 is displayed in Appendix I, Tables (28).

6.2 SOUTH WATER MANAGEMENT SYSTEM

6.2.1 *AUTHORIZED DISCHARGE RATES AT SETTLING POND #1 (SP1/ SPD) E218582*

Maximum authorized rates of discharge at SP1 are 0.46 m^3/s (instantaneous) and 0.10 m^3/s (annual average) or 3,153,600m^3 over a period of 365 days. Both annual maximum flow (0.198 m^3/s) and annual average flow (0.023 m^3/s) were well below the permitted rates.

Discharge did not occur for 37 out of 365 days this reporting year (35 days in summer and 2 days in fall) due to low flow rates. Daily discharge peaked in late January due to heavy precipitation and pumping from 3-South pit. The fall and winter discharge coincide with heavy precipitation resulting in increased surface runoff and pumping from the 3-South pit and more recently 2-South pit (January 2020).

Figure 7 displays cumulative and daily discharge rates compared to permit limits. A summary of SP1 discharge is displayed in Appendix I, Table 29.

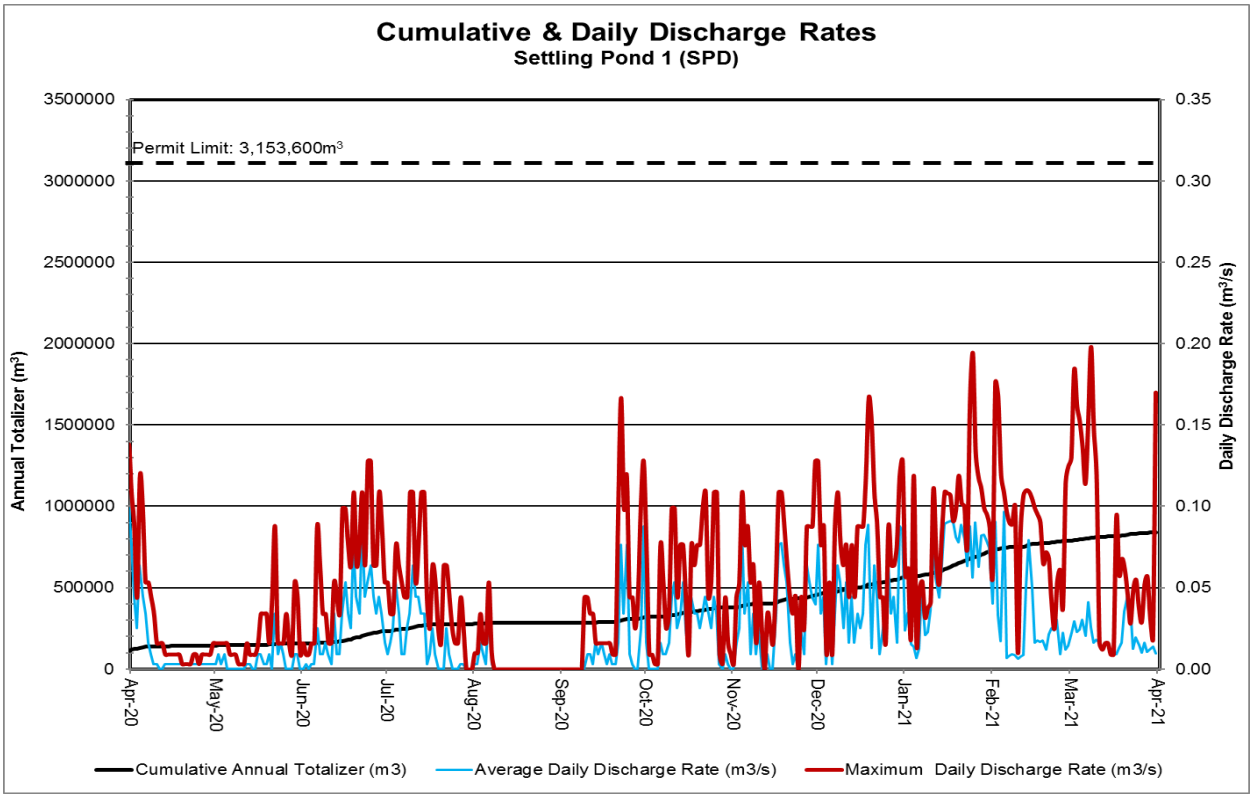


Figure 7: Settling Pond #1 Cumulative Annual Average Discharge Rate and Daily Discharge Rates

6.2.2 *SOUTH WATER MANAGEMENT SYSTEM ENTRANCE INTO LONG LAKE (LLE) E292130*

Flow monitoring is required weekly at LLE, which discharges near the outlet of Long Lake. Discharge at LLE represents the combined flow from the South water management systems along with groundwater from the 4-South coal pad area and non-mine related surface water from the

upstream wetland and drainage features. As such, this site provides cumulative flow data representing all discharges from the South water management system prior to entering Long Lake near the outlet.

Flow at LLE is well correlated with precipitation events and, historically, experiences a seasonal dry period during summer. Beaver activity occurs at the culvert in this wetland from spring to fall and as a result flow rates are sporadic when the dam is removed. Appendix I, Table 32 displays flow rates and Appendix II, Graph 60 discharge versus precipitation at LLE.

6.2.3 *Seep Monitoring Sites, Long Lake Seep (LLS/ LLSM) – E292131*

Manual flow measurements are obtained weekly at the two sites LLS and LLSM. At LLS a staff gauge is used to obtain a level at the weir. LLSM is equipped with an H-Flume, flow meter and sensor providing more accurate monitoring of seep discharge. Staff gauge measurements are obtained weekly and compared to the meter flow rates. The flow information is available in Appendix I, Table 32 and Appendix II, Graph 59. The flow recorded at Long Lake Seep's indicates a dependency on mine pool (void) water levels. Mine pool water levels correlate with seasonal precipitation, with highest levels observed in late January 2020 reaching 310 mASL. As mine pool levels decrease in late spring, flow at the seep decreases substantially and temporarily ceases during summer to fall. In 2020, discharge from the seep stopped for five months (July 13 through November 24). It has been determined that seep flow is most closely related to water level at the two wells QU11-11 (INF) and monitoring well MW004. The threshold level for seep flow is 301.5 mASL for LLS and 303.5 mASL for LLSM measured at QU11-11. This trend will continue to be monitored and verified in the future. Figure 8 below displays the relationship between mine void water elevation compared to the threshold elevation for seep flow. Figure 9 displays the seasonal flow rates for the larger seep, LLSM compared to precipitation.

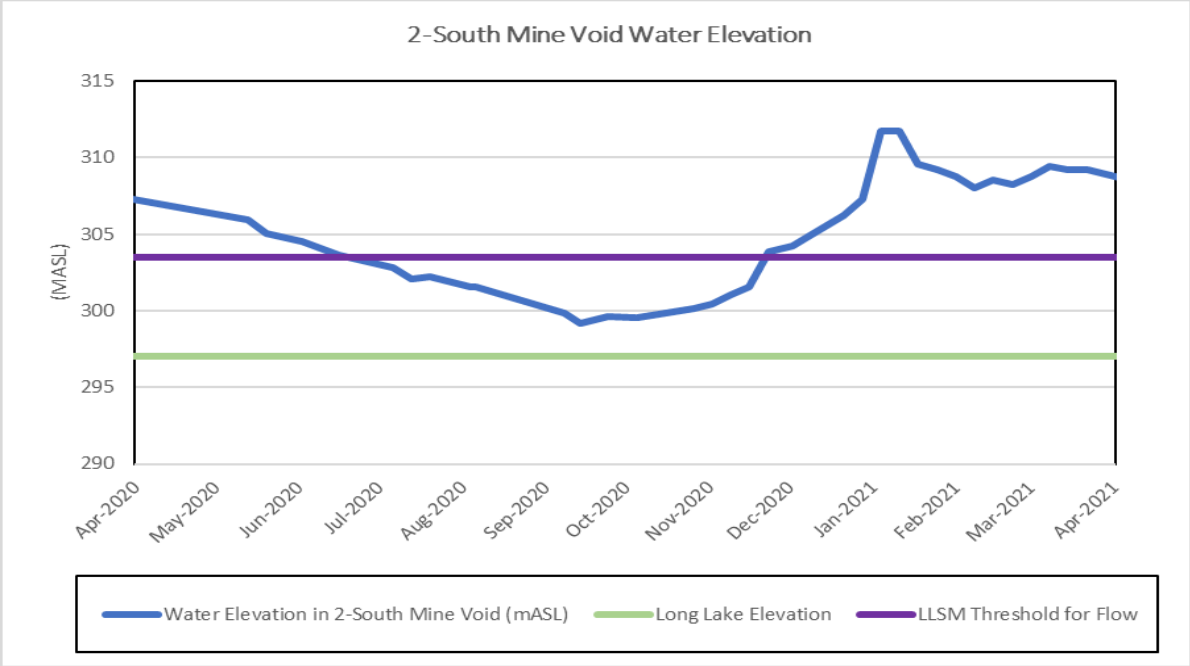


Figure 8: 2-South Mine Void Water Elevation versus Seep Flow

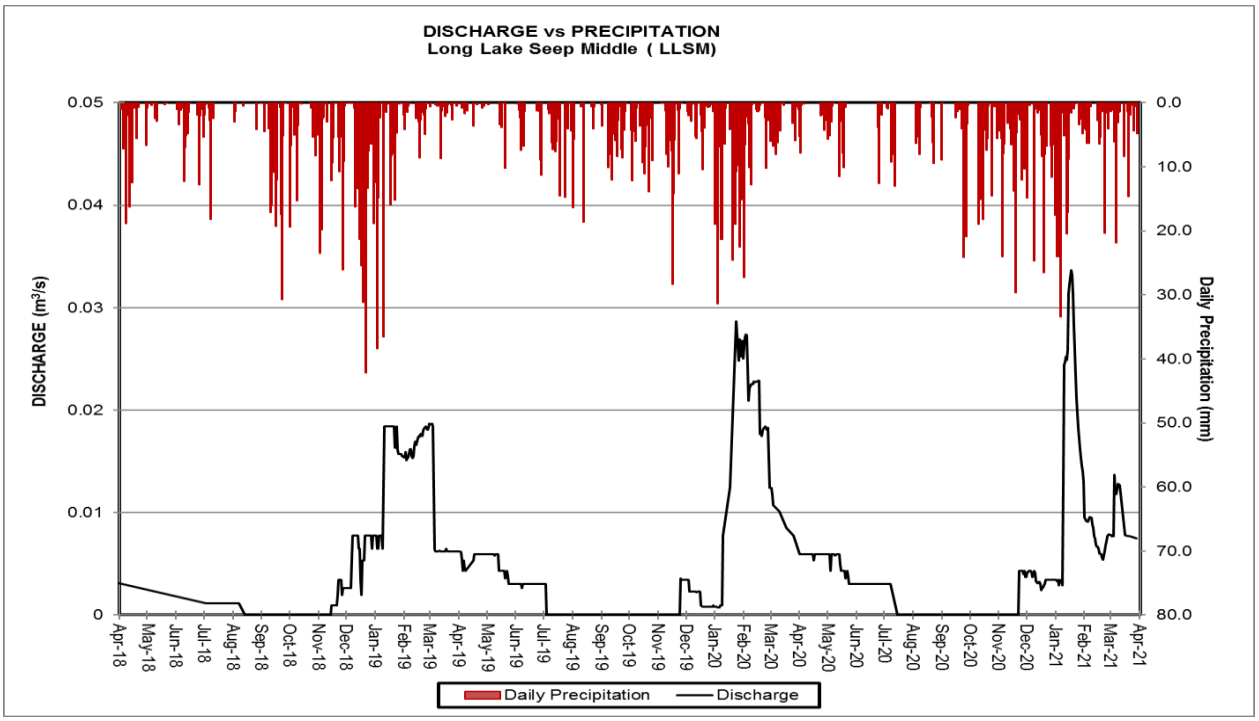


Figure 9: Discharge vs Precipitation Long Lake Seep Middle (LLSM)

6.3 7-SOUTH MINING OPERATION DECANT (7SSD) - E292069

The maximum authorized discharge from settling pond 7SSD is 0.005m^3/s (5 L/s). However, discharge is dependent on assimilative capacity of Stream 1 (7S) and, therefore, dynamic in nature. To facilitate determination of the appropriate discharge level at 7SSD, a flow rating curve was developed for monitoring site 7S (Figure 10) to allow instantaneous flow levels at 7S to be measured by reading the installed staff gauge.

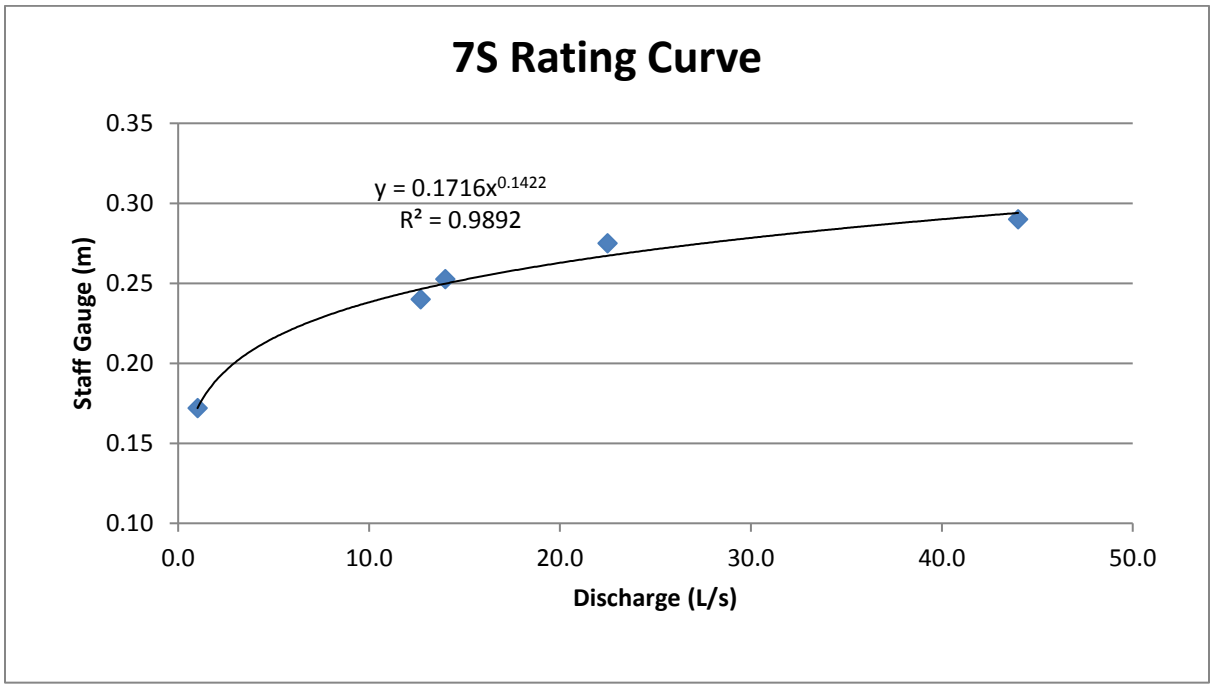


Figure 10: Monitoring Site 7S Stage Discharge Curve

Initially, an 8:1 dilution ratio was identified to maintain desirable water quality in the receiving environment, monitored at downstream site Stream 1 (7S). However, throughout the 7-South operational period, a lower dilution ratio has been shown to allow WQG's to be met in the receiving environment (site 7S). The dynamics of this system are still being monitored and measured; as a longer-term dataset is developed, the information will be evaluated to optimize discharge rates, while continuing to protect aquatic life.

In 2015, modifications were made to minimize discharge from 7SSD. The containment pond (7SCP) that delivers water into 7SSD was enlarged to accommodate more water. Additional pumps were placed at 7SSD and 7SCP to decrease 7SSD discharge and assist environmental personnel in water management. The revised system pumps water from 7SSD and 7SCP to 7SPS. The pump at 7SCP runs on an automated float system where water levels are kept below the overflow channel into 7SSD. During high precipitation events, a secondary pump can be activated to assist in pumping water to 7SPS. This pump can also be relocated to 7SSD, where any accumulated water can be diverted into 7SCP. This system does not eliminate all discharge from 7SSD but substantially reduces discharge frequency and aids in management during times of heavy precipitation.
No discharge occurred during 2020-2021, Appendix I, Table 30.

7.0 RECEIVING ENVIRONMENT HYDROLOGY

Hydrometric stations in the receiving environment monitor hydrological conditions at key locations affected by QCC operations. Stage discharge curves for these stations have been developed using various methods (e.g. staff gauge, pressure transducer, manual measurements) and are periodically updated to ensure that the full range of flow is captured. The information is used to evaluate water quality and, in turn, determine assimilative capacity of the receiving environment with respect to mine related discharge. Moreover, flow is well correlated with lake flushing and turnover events, which directly influence concentrations of certain parameters (e.g. sulphate).

Flow data for WA is obtained from the Environment Canada monitoring station "Quinsam River at the Argonaut Bridge"; the data is currently subject to revision and has not been approved. The flow for WA is controlled upstream by the BC Hydro diversion dam to Gooseneck Lake; therefore, the volume of water diverted for hydro generating purposes influences flows at WA and WB. Accordingly, water levels at these two stations are not as closely correlated with precipitation as they are for other receiving environment stations.

Flow monitoring stations on the Iron River, Stream 1, and Long Lake system(s) are directly influenced by precipitation and the hydrographs typically show a pronounced peak following a precipitation event. This increase generally represents additional dilution and, therefore, assimilative capacity (for most parameters) in the receiving environment.

Appendix II, Graphs (57, 58, 61, 62 and 63) display flows compared to water level measurements and precipitation for the receiving environment hydrometric stations (WA, WB, LLO, 7S and IR8).

8.0 WATER QUALITY: IN-SITU MINE RELEASES & WATER MANAGEMENT SYSTEMS

This section presents results of the 2020/2021 water quality monitoring program for the North, South, and 7-South in-situ (within) mine releases and water management systems for the major monitoring locations (e.g. settling ponds, discharges), permitted parameters and parameters of interest, to provide context for evaluating receiving environment water quality. The data for all in-situ mine monitoring stations are presented throughout Appendix I of the Tables section.

Appendix I, Table 26 provide a five year statistical summary (year over year, minimum, maximum, average, median, geometric mean, count, count < detection limit (DL), standard deviation, first quartile, third quartile and standard error) for 27 parameters measured in the settling ponds, applicable receiving environment monitoring stations, and ex-situ groundwater wells. Monitoring years 2015 to 2021 are presented, where data is available. Table 8 below lists the monitoring stations, parameters, and statistics included in this evaluation.

For a summary of permit limit exceedances please refer to Appendix I, Table 2 and Appendix VIII to review the Annual Status Form prepared for PE-7008.

Table 8: List of Monitoring Stations, Parameters and Statistics

Monitoring Stations		
WA	LLS	
WD	LLSM	QU0813A
MW001D	MW002	QU0813B
MW001S	QU1009D	QU0821GD
MW006D	QU1009S	QU0821GS
MW006S	SPD	QU1010D
WC	LLE	QU1010S
MQL1	LLM1	QU1011D
MQLB	LLMB	QU1011S
NNL1	LLO	QU1105S
NNLB	WB	QU1109S
NNO	7SSD	7SQR
Parameters		
Arsenic (As-T)	Iron (Fe-T)	Lead (Pb-T)
Arsenic (As-D)	Iron (Fe-D)	Lead (Pb-D)
Aluminum (Al-T)	Manganese (Mn-T)	Sulphate (SO4-D)
Aluminum (Al-D)	Manganese (Mn-D)	Zinc (Zn-T)
Alkalinity (Alk-T)	Mercury (Hg-T)	Zinc (Zn-D)
Cadmium (Cd-T)	Mercury (Hg-D)	Phosphorous (P-T)
Cadmium (Cd-D)	Hardness (Hard-T)	Phosphorous (P-D)
Copper (Cu-T)	Nickel (Ni-T)	Nitrate & Nitrite combined (N-NO2,3)
Copper (Cu-D)	Nickel (Ni-D)	Ammonia Nitrate (N-NH3)
Statistics		
Count	Geometric Mean	1st Quartile
Minimum	Count <DL	Median
Maximum	Standard Deviation	3rd Quartile

8.1 NORTH WATER MONITORING SITES

The 2-North mine pool could be considered a large reservoir with different chambers hosting a variety of geochemical water quality. The 2-North mine system holds fresh water from perched water tables above the mine that interact with exposed mine walls at 5-Mains. 1-Mains 2-North holds 7-South tailings from processing of 7-South coal and 3-Mains holds a mixture of water from flooded 5-South mine pool (5SMW), dewatering of the 7-South mine and tailings dam seepage collected at SDS.

Mine water from 7-South Area 5 (7SA5) is directed into the underground sump 1-Mains 7-South (1M7S). From here water is pumped into the 7-South portal sump (7SPS) where it mixes with surface water in the sump or is pumped directly into the flooded 5-South mine pool at borehole (QU0513). From the 5-South mine, water is pumped via a 6-inch pipeline directly into 3-Mains 2-North mine and includes water from the SDS. Water collected in the 2NPS is a mixture of 1-Mains 2-North and tailings dam seepage. 2NPS discharge line ties into the 3-Mains pipeline and discharges into Brinco brook.

Brinco brook also collects discharge water from underground dewatering wells 1-Mains, 2-North (1M2N) where 7-South tailings are injected and 5-Mains #2 (5M#2) where flooded workings are dewatered. Both wells dewater the flooded mine pool of the 2-North mine.

All discharge water pumped into Brinco brook is sampled on a monthly or quarterly basis from the well heads and portal sumps. These sites include: 2NPS, 1M2N, 5M#2, 5SMW, 7SA5, 1M7S and 7SPS (Appendix I, Tables 8, 25 and 48). Geochemical source terms were derived for specific areas and modeled with different scenarios where mine water interacts with tailings or flooded mine pools. This is discussed in more detail in Appendix (VI) Annual Groundwater Monitoring Report.

Discharge water quality from Brinco brook forms the headwaters for Settling Pond # 4 where water quality is compared to permit limits and source terms derived for this site. The two primary permitted monitoring locations in the North water management system are located at Settling Pond #4, (SP4) sedimentation pond decant (WD) EMS #E207409 and the final discharge point above Middle Quinsam Lake, (WC) EMS #E207411. Results for WD and WC including additional monitoring locations in the North mine area are provided in Appendix I, Tables (4-10).

8.1.1 *SETTLING POND #4 (WD) EMS #E207409*

Results for the 2020/2021 monitoring program demonstrated that water quality for most permitted parameters were within permit limits listed in Table 9. Appendix I, Tables (6 and 28) provide water quality results for Settling Pond #4. On November 1, 2019 authorization was received from ENV to reduce daily composite TSS sampling to weekly and incorporate dissolved metals monthly. Table 9 displays the list of permitted parameters and the limits applied. Table 10 lists the permit limit exceedances experienced in March 2021 as a result of poor water quality.

Table 9: Permit Limits Applied to Settling Pond #4

Parameters	Limit	Unit
Total Suspended Solids (daily composite)	25	mg/L
Total Suspended Solids (hourly composite)	35	mg/L
pH	6.0-8.5	mg/L
Ammonia (as N)	1.0	mg/L
Phosphorus (as P)	0.03	mg/L
Oil and Grease (total)	10	mg/L
Aluminum, dissolved	0.5	mg/L
Copper, dissolved	0.02	mg/L
Iron, dissolved	0.3	mg/L
Lead, dissolved	0.05	mg/L
Zinc, dissolved	0.1	mg/L
Rainbow Trout Bioassay (*Oncorhynchus mykiss*)	No mortalities at 100% effluent concentration after 96 hour	96LC50

Table 10: Exceedance Summary Settling Pond #4

Exceedance Summary Table for EMS ID: E207409 Settling Pond #4
Results

EMS ID - Site Name	DGIR #	Daily Max. Flow	Daily Average Flow	Date	Sample ID	BV Labs Sample ID	BV Labs Job ID	Parameter	Permit Limit	Result	DL	Units
E207409 - SP4 / WD	204693 **(no discharge occurred**	0	0	04-Mar-21	WDCOMP-4MAR21-P	ZL1971	C114768	Dissolved Iron (Fe)	0.3	**1.48**	0.005	mg/L
	204694	0.131	0.109	09-Mar-21	WD-9MAR21-P	ZL5595	C115472	Dissolved Iron (Fe)	0.3	**0.679**	0.01	mg/L
	204545	0.084	0.033	15-Mar-21	WD-15MAR21-P	ZM3645	C116949	Dissolved Iron (Fe)	0.3	**0.44**	0.01	mg/L
	204695	0.081	0.047	10-Mar-21	WDCOMP-10MAR21-P	ZM3621	C116941	Total Suspended Solids (TSS)	25	**65**	1.0	mg/L
		0.12	0.068	11-Mar-21	WDCOMP-11MAR21-P	ZM3622	C116941	Total Suspended Solids (TSS)	25	**39**	1.0	mg/L
	204752	0.154	0.102	19-Mar-21	WDCOMP-19MAR21-P	ZN5782-01	C119472	Total Suspended Solids (TSS)	25	**35**	1.0	mg/L
	204752	0.144	0.093	22-Mar-21	WD-22MAR21-P	ZN3527-03	C118890	Dissolved Iron (Fe)	0.3	**9.82**	0.01	mg/L
		0.144	0.093	22-Mar-21	WD-22MAR21-P	ZN3527-01	C118890	Total Suspended Solids (TSS)	25	**35**	1.0	mg/L

**Dangerous Goods Information Reference Number*

8.1.2 *GENERAL PARAMETERS*

pH

Field pH values displayed little variance, ranging from 6.90 to 8.49 and averaging 7.77. The water is pH neutral to alkaline. Starting in April 2013, field measurements (instead of lab) were used for improved accuracy and reliability. Consequently, a slight decline in reported pH was observed compared to historic results as depicted in Appendix II, Graph 3.

Total Suspended Solids (TSS)

Observations with respect to precipitation, dewatering system operations, pond turbidity in Brinco brook and WD, concentrations of TSS and metals will continue to refine best practices and minimize TSS concentrations in WD. TSS was below permit limits for most of the monitoring period with peak concentrations occurring in March (10, 11, 19 and 22) exceeding permit limits on 4 occasions resulting in 35 mg/L, 39 mg/L and 65 mg/L as displayed in Table 10 above.

Hardness and Dissolved Sulphate

Both hardness and sulphate concentrations at WD have displayed marked decreases since 1996; see Appendix II, Graphs 1 and 2. Total hardness ranged from 331 mg/L to 639 mg/L (averaging 482 mg/L), while weekly sulphate ranged from 420 mg/L to 1300 mg/L (averaging 697 mg/L). Sulphate concentrations were variable throughout the year with peak concentrations occurring in March associated with the pumping from 3M2N and lowest concentrations were observed in fall October through November when surface discharge and dilution is greatest.

Sulphate continues to be the primary parameter of interest from mine related discharges, as it is a common and traceable parameter associated with coal mining.

8.1.2.1 *Metals and Geochemical Source Terms*

Since commencement of underground mining in 1992, dissolved aluminum, copper, iron, lead and zinc concentrations have remained below permit limits, with minor, irregular fluctuations noted. This year most permitted dissolved metal parameters remained below permit limits. There were 4 reported dissolved iron exceedances occurring on March 4, 9, 15 and 22 resulting in 1.48 mg/L, 0.679 mg/L, 0.44 mg/L and 9.82 mg/L, respectively. On March 4th there was no discharge occurring and the dissolved iron result should not have been reported as an exceedance. Water quality was elevated in suspended solids and iron associated with the elevated mine pool water levels and dewatering from the 5-South Mine pool into 2-North at 3M2N. The 5M2N and 1M2N well pumps were not operating causing increased water levels in 2-North mine pool managed by 3M2N pumping system. Refer to section 4.0 and Appendix VII for further details.

Parameters of interest or those displaying trends such as dissolved arsenic, copper, total and dissolved iron, and total manganese are displayed graphically in Appendix II, Graphs 5 through 9.

The *7-South Area 5 Water Quality Effects Assessment*[3] prepared by Lorax Environmental Services Ltd (Lorax) 2013 in support of QCC's application to amend the mining permit C-172 to develop the 7-South mine into Area 5. Lorax was retained by QCC to developed and characterize the groundwater chemistry, predict seepage rates and geochemical mass loadings on receiving environment from 7-South Area 5 (7SA5). Monthly source terms were derived from modeling different scenarios of pumping rates from 7SA5 to SP4 discharge for Al-T, Al-D, As-T, B-T, Cd-T, Co-T, Cu-T, Fe-T, Fe-D, Pb-T, Mn-T, Ni-T, Se-T, Zn-T, Ca-T and Mg-T. This section and section

[3] Lorax. 2013. "7-South Area 5 Water Quality Effects Assessment".

8.1.3 will present the water quality for the parameters of interest and those that were above the monthly predicted source terms in scenario 3d (Table 11 below). The predicted water quality in Table 11 is where 30% of groundwater inflow to 7SA5 is directed to SP4. This equates to 12 L/s discharge to Settling Pond # 4 (SP4) from 7SA5, modeled in the report prepared by Lorax. The scenario uses only the 7SA5 water that was originally meant to discharge into the tailings dam where seepage would be captured at the 2NPS and then discharged into Brinco brook.

The parameters graphed below include As-T, Fe-T, Fe-D, Cu-T, Co-T, Mn-T and SO_4. Monthly concentrations of As-T were graphed against scenario 3d for a direct comparison (Figure 11).

Table 11: Scenario 3d, 2019 -30% of 12L/s Discharge to SP4

Scenario 3d, 2018 – 30% of 12 L/s Discharged to SP4.

	Concentration (mg/L - except pH)											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
pH	8.04	8.05	8.06	8.13	8.06	8.02	8.07	8.03	8.11	8.13	8.10	8.03
SO_4	533	517	517	589	708	741	762	771	750	842	678	614
Al-T	0.182	0.117	0.147	0.226	0.209	0.305	0.202	0.187	0.201	0.189	0.119	0.159
Al-D	0.089	0.092	0.075	0.090	0.171	0.262	0.148	0.168	0.150	0.174	0.077	0.073
As-T	0.0023	0.0024	0.0023	0.0021	0.0026	0.0032	0.0025	0.0025	0.0023	0.0023	0.0040	0.0031
B-T	0.92	0.82	0.93	0.75	0.82	0.82	0.95	0.96	0.94	0.99	1.02	0.95
Cd-T	0.000034	0.000024	0.000019	0.000024	0.000036	0.000055	0.000021	0.000032	0.000019	0.000114	0.000032	0.000021
Co-T	0.0045	0.0030	0.0032	0.0040	0.0070	0.0093	0.0053	0.0058	0.0053	0.0059	0.0029	0.0032
Cu-T	0.0029	0.0013	0.0019	0.0020	0.0018	0.0023	0.0018	0.0016	0.0015	0.0014	0.0015	0.0023
Fe-T	0.60	0.41	0.54	0.58	0.63	0.95	0.55	0.57	0.53	0.57	0.58	0.59
Fe-D	0.198	0.271	0.175	0.201	0.549	0.661	0.377	0.432	0.394	0.442	0.200	0.165
Pb-T	0.000224	0.000223	0.000222	0.000225	0.000256	0.000284	0.000391	0.000286	0.00025	0.000255	0.000224	0.00022
Mn-T	0.160	0.118	0.147	0.136	0.223	0.308	0.184	0.189	0.178	0.184	0.117	0.135
Ni-T	0.0096	0.0062	0.0074	0.0094	0.0150	0.0197	0.0112	0.0119	0.0107	0.0124	0.0063	0.0074
Se-T	0.00029	0.00016	0.00025	0.00031	0.00033	0.00035	0.00032	0.00026	0.00024	0.00045	0.00026	0.00022
Zn-T	0.0075	0.0075	0.0073	0.0076	0.0110	0.0139	0.0101	0.0108	0.0103	0.0108	0.0076	0.0071

Pink shaded values indicate a permit limit exceedance

7-South Area 5 Water Quality Effects Assessment[4]

Presently the SP4 discharge is influenced by many sources of water therefore, this evaluation demonstrates that water quality is falling within the range of predicted values at 30% groundwater inflow from 7SA5 discharging to SP4, which represents the worst-case scenario.

In February of 2019 mining commenced in 7SA5, dewatering had been occurring from this area since December 2019. From February 2019 to April 2021 a total of 5,931,247 m^3 has been pumped out of 7-South Area 5 with 2,491,826 m^3 pumped from April till March 31, 2021. This water becomes a combination of different sources (1-Mains 7-South and 5-South mine water) as it is stage pumped into 3Mains 2-North and into Brinco brook where it mixes with other sources of mine water and discharges at SP4. For the period April 1, 2020 to March 31, 2021 the 5-South well pump operated for 52 days. These dates include:

- Apr 1, 2020 to April 8, 2020 (8 days)
- Aug 24, 2020 (8 hours)

[2]Lorax. 2013. "7-South Area 5 Water Quality Effects Assessment".

- Nov 12, 2020 to Dec 7, 2020 (26 days)
- Jan 26, 2021 to Jan 27, 2021 (2 days)
- Feb 9, 2021 to Feb 17, 2021 (9 days)
- Mar 18, 2021 to Mar 23, 2021 (6 days)

Dissolved arsenic concentrations are graphed since 2011 in Appendix II, Graph 5 displaying a spike in concentrations attributed to the injection of 7-South tailings into the 2-North mine pool commencing in 2012. Peak concentrations occur in the winter and spring when pumping rates were greatest. Figure 10 below compares concentrations of total arsenic to the predicted values of scenario 3d. In 2020-2021 total arsenic has remained below the B.C. acute WQG of 0.005mg/L from the discharge water. The seasonal worst case was expected to be during the summer months when concentrations would peak but discharges would decrease to a minimal. The graph displays some seasonal peaks in fall and winter associated with dewatering commencing from all areas of the 2-North mine. In 2020-2021 concentrations were stable with a slight decline from October to March associated with the omission of 1M2N pumping system.

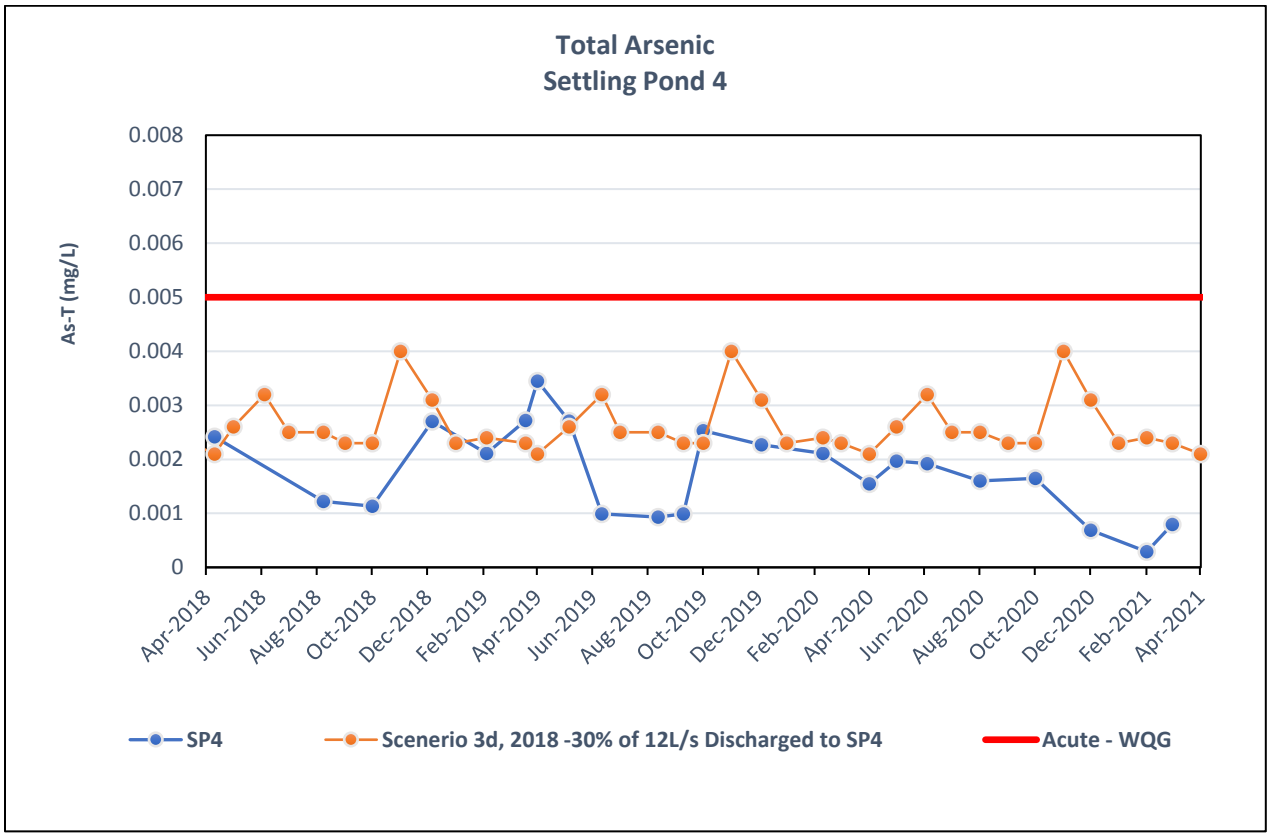


Figure 11:Total Arsenic at SP4 compared to predicted values

Iron speciation from ferrous iron to ferric iron occurs when waters are alkaline to pH neutral and exposed to oxygen. Ferric hydroxide ($Fe(OH)_3$) will result in the total form of iron and is the dominate species of iron in discharge water at SP4. Total iron concentrations (Fe-T) have shown an increasing trend since 2007, with concentration variations relating to fluctuating 2-North mine pool water elevations and pH of the discharge water. Concentrations ranged from 0.022 mg/L to 14.6 mg/L, averaging 1.98 mg/L. Peak concentrations were observed in March with elevated TSS

and dissolved iron concentrations. The relationship between the mine pool water elevation and elevated total iron concentrations at SP4 is believed to be directly related to water flushing the oxidized mine walls, releasing iron into the water column. Source waters such as tailings injection, 5-South and 7-South mine water also contribute to elevated iron in the water column. Scenario 3d predicted that iron would remain elevated in the total fraction due to precipitation of ferric hydroxides but remain below WQG levels of 1.00 mg/L. As displayed in Figure 12 below elevated total iron concentrations have been observed since 2015 above WQG's of 1.00 mg/L. Dissolved iron (Figure 13) has remined below permit limits historically with iron remaining in the ferric form until March 2021, as discussed above.

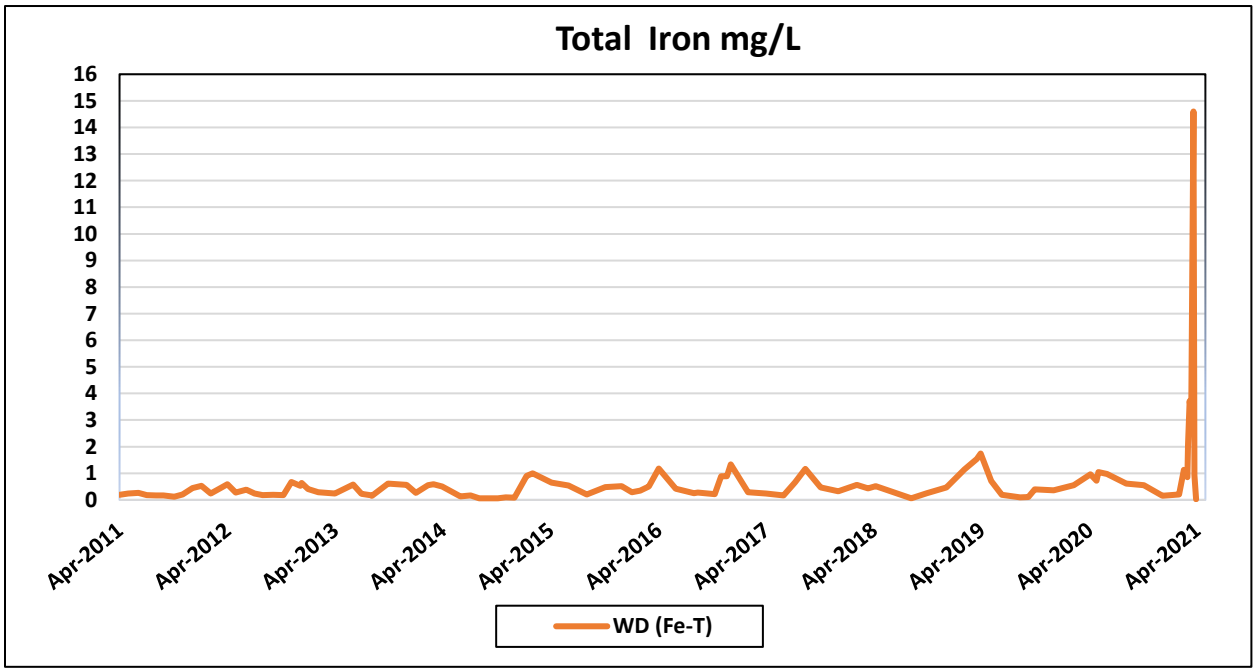


Figure 12: Total Iron at SP4

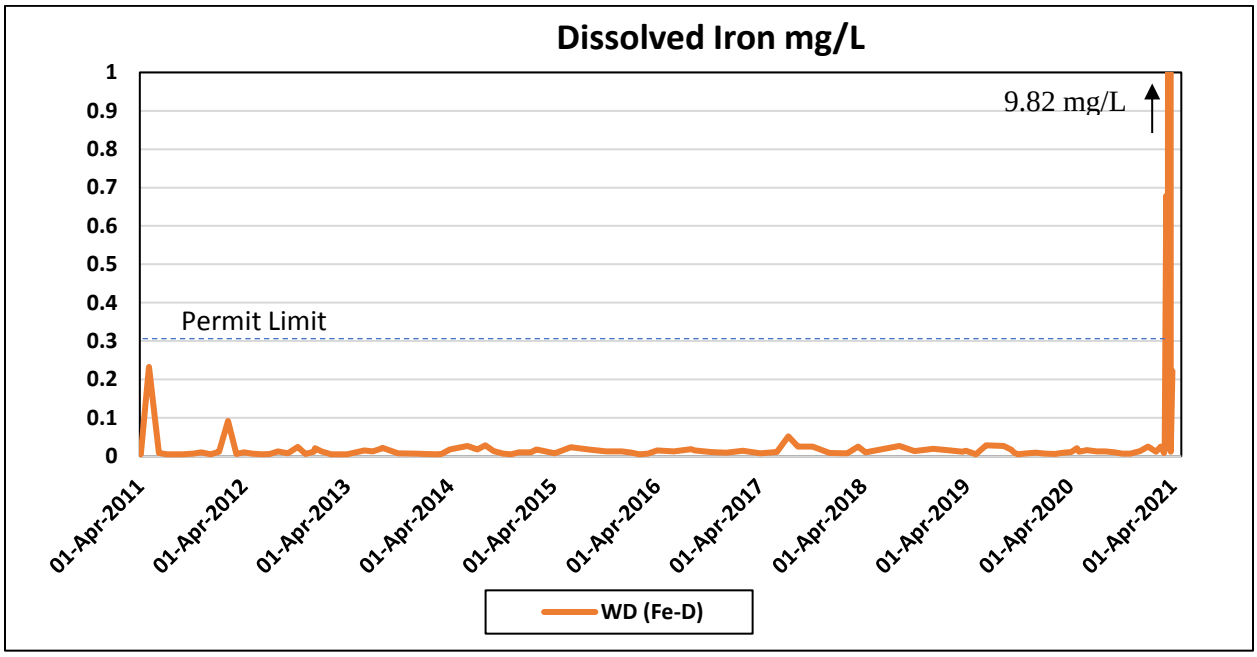


Figure 13: Dissolved Iron at SP4

8.1.3 *Culvert into Middle Quinsam Lake (WC) EMS #E207411*

Monitoring station WC represents the cumulative surface water discharge from WD prior to entering Middle Quinsam Lake. Concentrations for parameters of interest are typically slightly lower at WC than at WD, likely attributed to the attenuation that occurs along the WD-WC flow path that includes an expansive wetland. The exception observed is sulphate concentration during summer when discharge and dilution are lowest, and evapo-concentration is thought to occur. During 2020/2021, sulphate ranged from 200 mg/L to 1200 mg/L averaging 648 mg/L at WC.

Metal concentrations are attenuated in the wetland, likely due to uptake by vegetation. This was particularly evident for iron during times of elevated TSS and iron at WD. All concentrations of metals remained below permit limits and WQG's at this site. This site does not have permit limits but is graphed against WD discharge for comparison. Water quality at WC and WD are compared to scenario 3d from 2014 Lorax source terms predictions for those parameters displaying an increasing trend or approaching WQG.

The wetland below WD also provides additional settling and filtration for TSS, on most occasions TSS is below the detection limit of 4 mg/L, even when TSS was elevated at WD discharge historically (Appendix II, Graph 4). The results demonstrate the wetland is functioning to reduce TSS before the discharge enters Middle Quinsam Lake. It is important to remember that after passing WC, the discharge water enters another large wetland before entering near the inlet of Middle Quinsam Lake approximately 350 m downstream of WC.

The below figures compare concentrations of discharges from WD to WC from 2011 to present. As displayed water quality at WC is normally lower than concentrations from WD. Most parameters displayed in the figures below (As-T, Fe-T, Fe-D, Co-T, Cu-D and Mn-T) have remained lower than water quality guidelines historically to present and all parameters follow a

similar trend with WD at a lower concentration except for dissolved iron. There have been a few occasions where concentrations have become elevated nearing guideline levels in Co-T and Mn-T. Sulphate and Fe-D are the only parameters that do not display a decrease in concentrations from WD to WC. In the scenario 3d, cobalt was predicted to increase above background levels at WD. Concentrations of Co-T are observed to be elevated but are not above the acute-WQG of 0.11 mg/L at either station. Water quality in Middle Quinsam Lake has remained acceptable with POI remaining in low concentrations compared to WQG's.

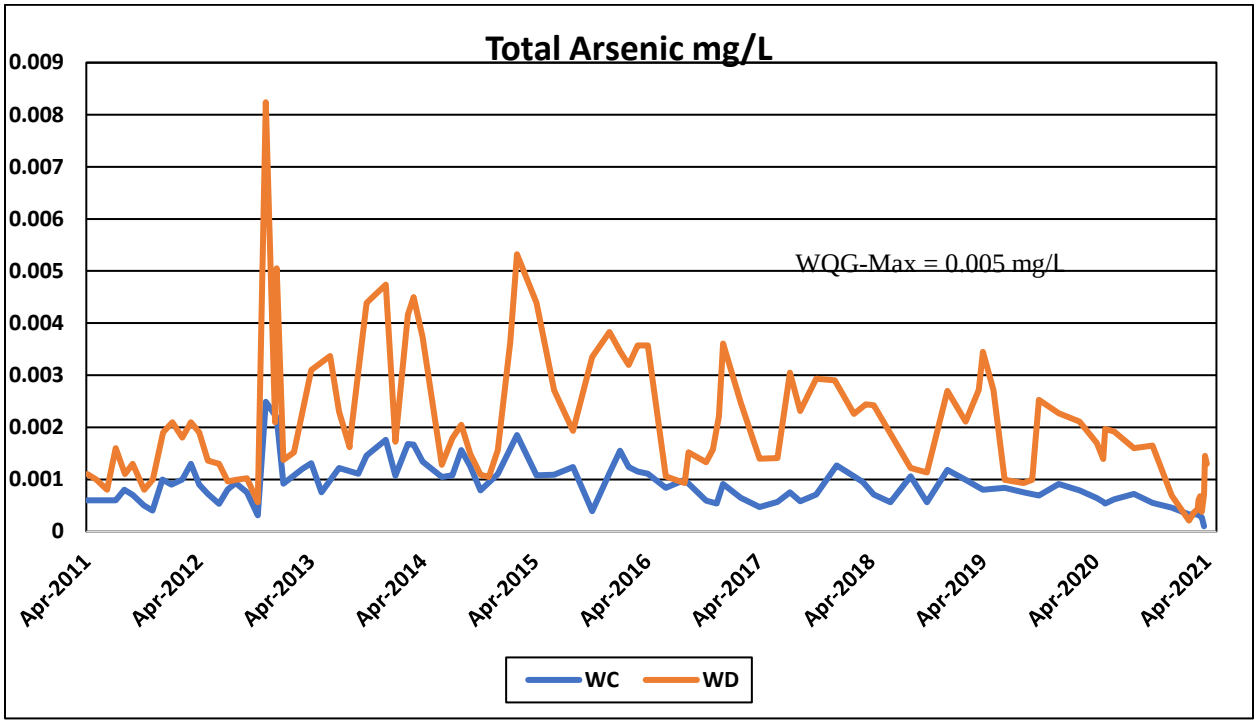


Figure 14: Total Arsenic Comparison at WC and WD

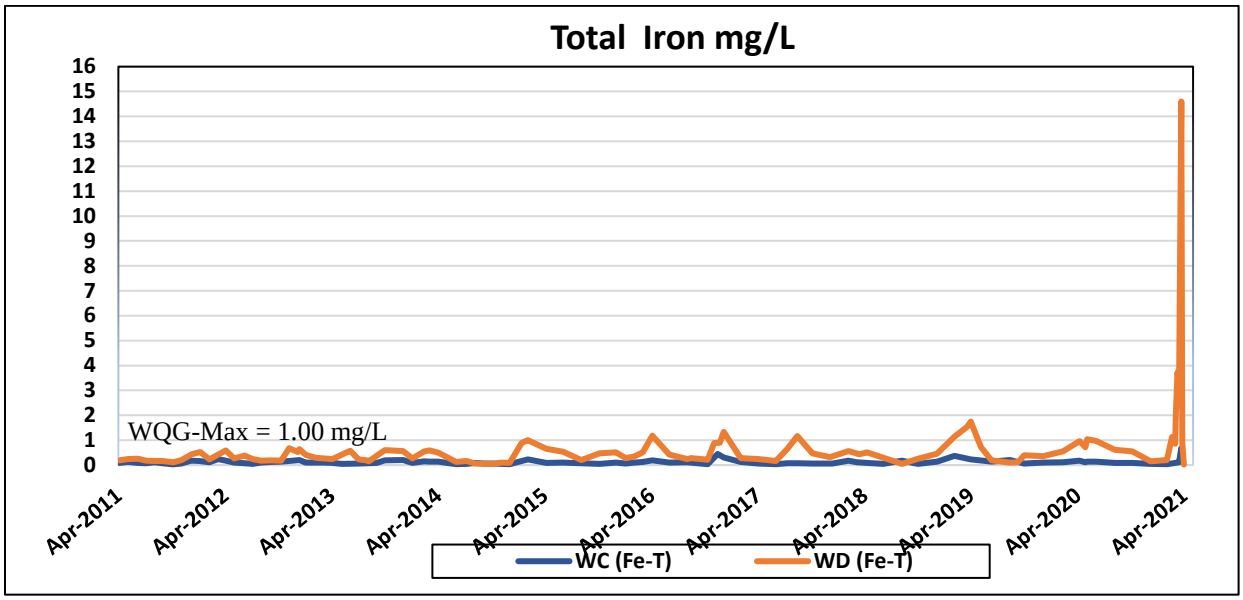


Figure 15: Total Iron Comparison at WC and WD

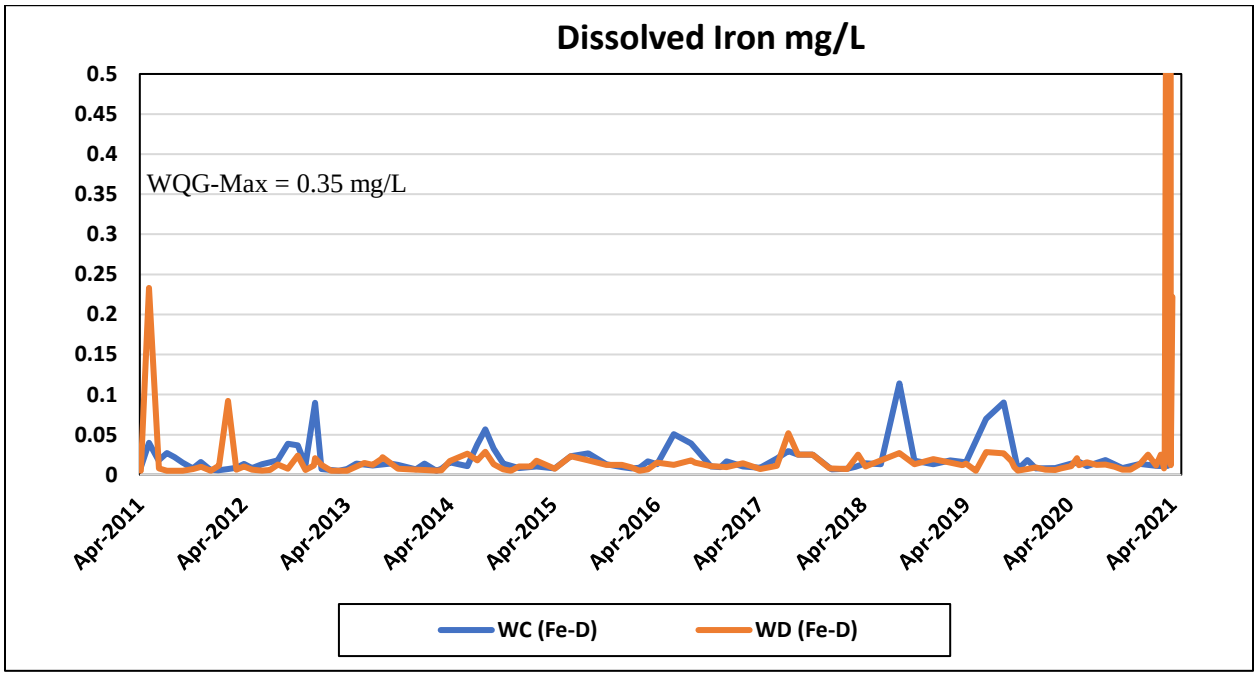


Figure 16: Dissolved Iron Comparison at WC and WD

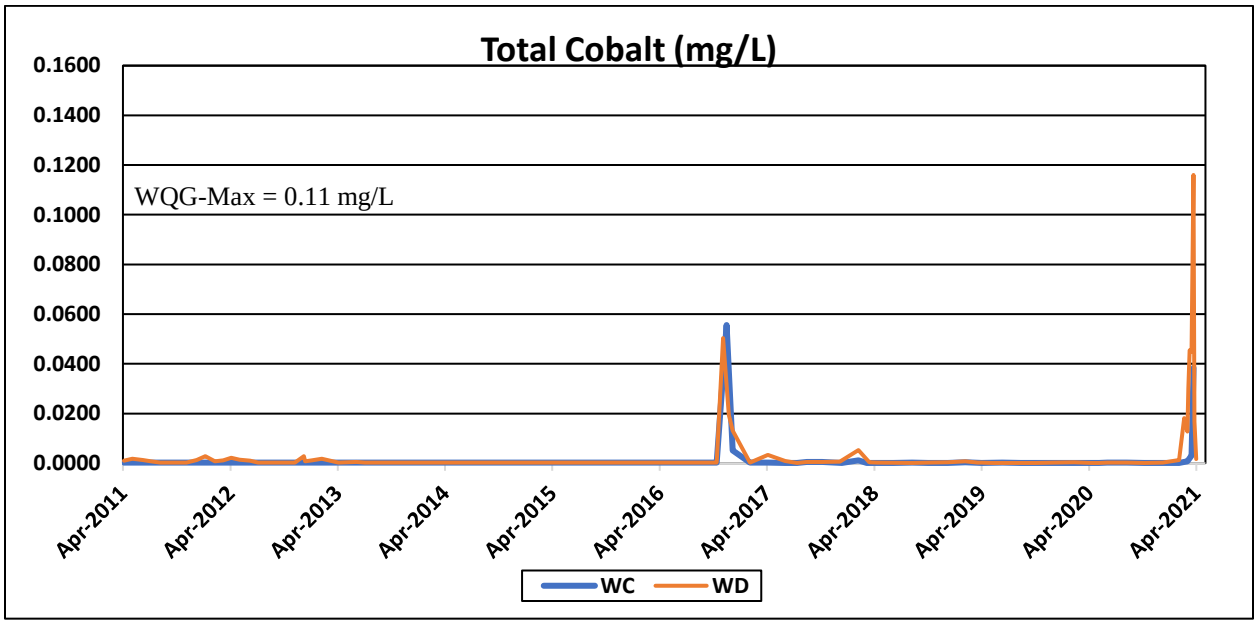


Figure 17: Total Cobalt Comparison at WC and WD

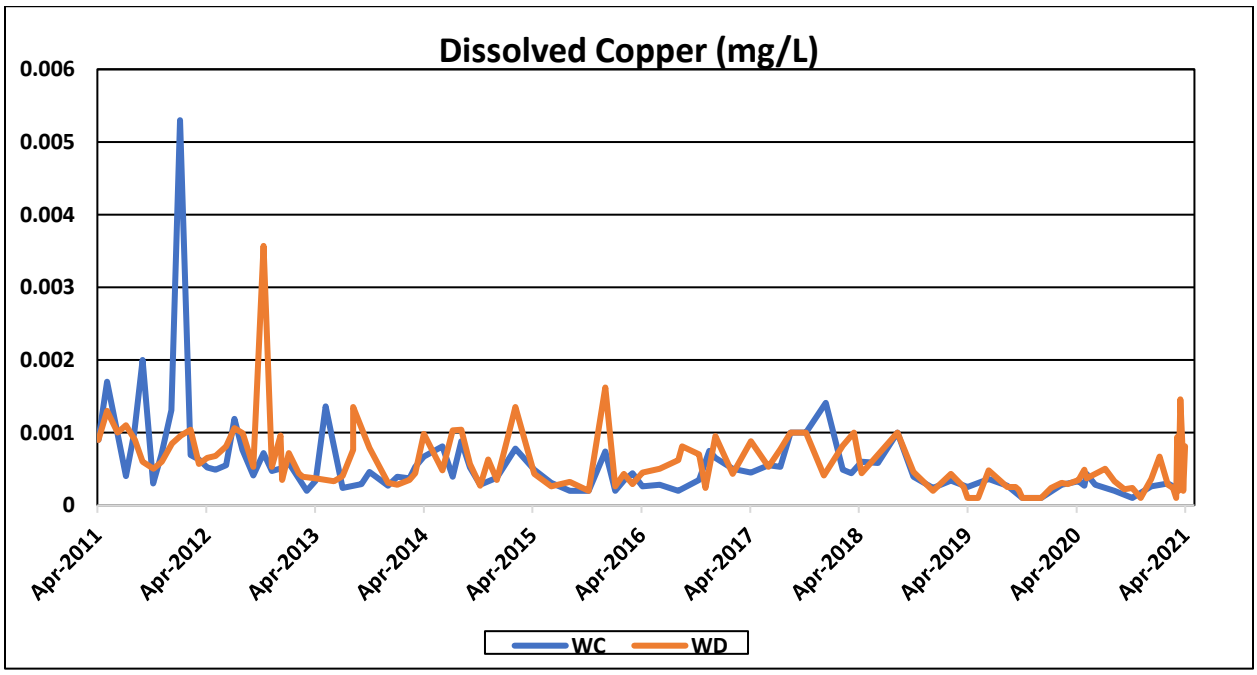


Figure 18: Dissolved Copper Comparison at WC and WD

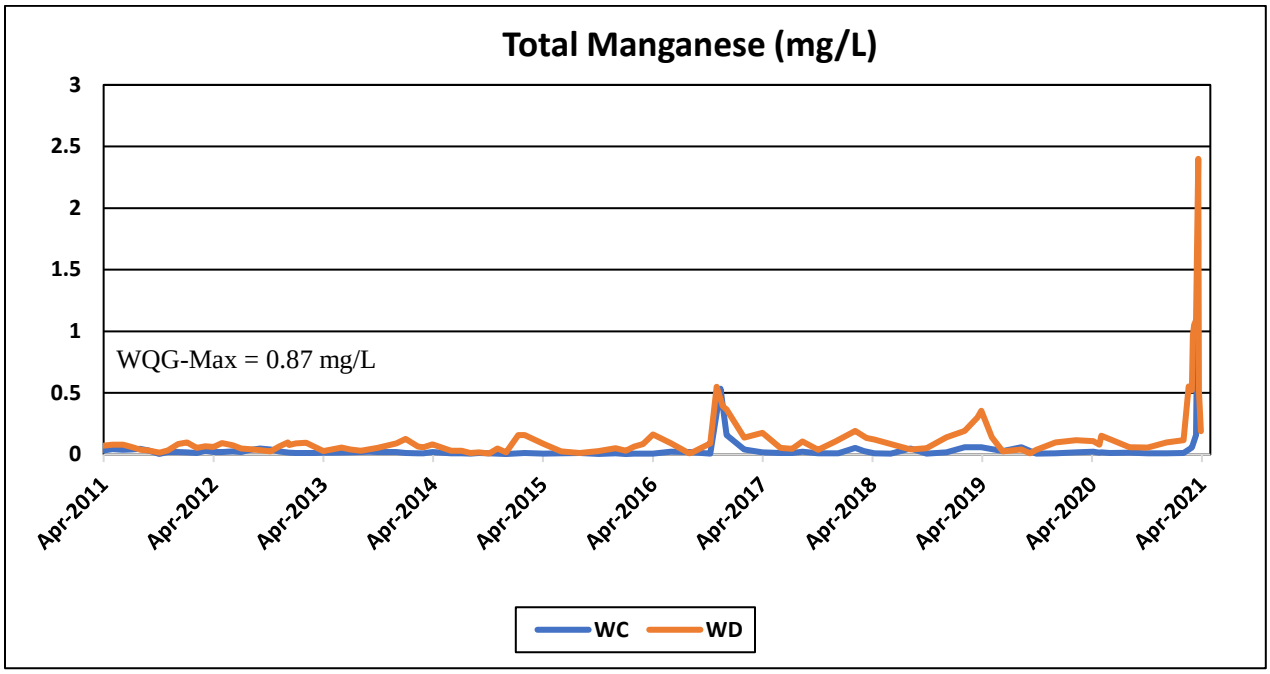


Figure 19: Total Manganese Comparison at WC and WD

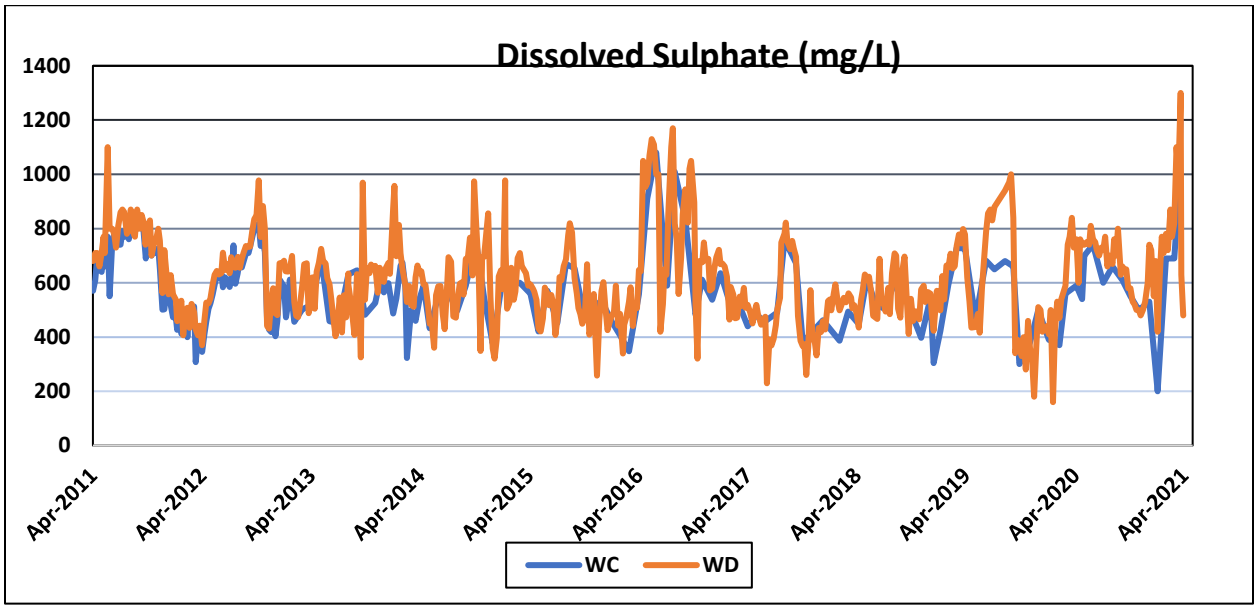


Figure 20: Dissolved Sulphate Comparison at WC and WD

8.2 SOUTH WATER MONITORING SITES

The primary monitoring locations in the South water management system are stations that directly influence water quality in Long Lake: Settling Pond #1 decant (SP1/SPD) EMS #E218582, Long Lake Entrance (LLE) EMS #E292130, and Long Lake Seeps (LLS & LLSM) EMS #E292131.

SP1 captures the combined discharge of the Long Lake Seep Passive Treatment System (PTS) from the Biochemical reactor cell (BCREFF) and the Sulphide polishing cell (SPCEFF). The treated discharge water from SPCEFF has been redirected to 2-South pit EMS #E292127, where (when overflowing from 2-South), flows to 3-South pit and is pumped to SP1. During the dry season until late fall, 3-South pit (EMS # E217015) water is directed back into 2-South pit for a closed loop circuit. The treatment system discharge aids in maintaining the required 1.5 m water cover over 2-South pit during times of low precipitation. All discharge is contained within the authorized works and meeting permit limits when discharging from SP1.

Water quality results for the monitoring locations in the South mine area are provided in Appendix I, Tables (11 - 22).

8.2.1 *SETTLING POND #1 (SP1/SPD) EMS #E218582*

Settling Pond #1 represents the cumulative mine related discharge from the South water management system. Permit limits applied to SPD are shown in the table below. All parameters remained within permit limits at SPD during 2020/2021.

Table **12** below represents the permit limits applied to the discharge waters at SPD. Refer to Appendix I, Table 19 contains results for SPD water quality. Appendix II, Graphs (11 through 14) display the parameters of interest for SPD.

Table 12: Permit Limits Applied to SPD

Parameters	Limit	Unit
Total Suspended Solids (daily composite)	25	mg/L
Total Suspended Solids (hourly composite)	35	mg/L
pH	6.0-8.5	mg/L
Ammonia (as N)	1.0	mg/L
Phosphorus (as P)	0.03	mg/L
Oil and Grease (total)	10	mg/L
Aluminum, dissolved	0.5	mg/L
Copper, dissolved	0.02	mg/L
Iron, dissolved	0.5	mg/L
Lead, dissolved	0.05	mg/L
Zinc, dissolved	0.2	mg/L
Rainbow Trout Bioassay (*Oncorhynchus mykiss*)	mortalities at 100% effluent concentration after 96 hour	96LC50

8.2.1.1 *General Parameters*

pH

All pH readings were within the permit limits in 2020/2021. Values of pH ranged from 6.72 to 8.13 and averaged 7.55. Appendix II, Graph 12 displays historical to present pH at SPD. Discharge water at SPD in the fall and winter can be described as having circumneutral pH (6.5 to 7.5) related to discharge conditions *i.e. pumping from 3-South pit.* Slightly acidic conditions are observed in fall and winter with more neutral to alkaline conditions in spring and summer.

Nutrients

Ammonia and total phosphorus remained below the permit criteria of 1 mg/L and 0.03 mg/L at SPD, respectively. Samples were collected in August to September 2020.

	mg/L	mg/L	mg/L	mg/L	mg/L
Date	**N-NH3**	**N-NO2**	**N-NO23**	**N-NO3**	**P-T**
6-Aug-20	<0.015	<0.0050	<0.020	<0.020	<0.0030
8-Sep-20	<0.015	<0.0050	<0.020	<0.020	0.0032
24-Sep-20	0.040		<0.020		<0.0030
Min	0.015	0.005	0.02	0.02	0.003
Max	0.040	0.005	0.02	0.02	0.0032
Ave	0.02333	0.005	0.02	0.02	0.00307

Total Suspended Solids (TSS)

Grab samples for TSS analysis were collected on a weekly basis depending on discharge rates. TSS ranged from <1.0 mg/L to 5.2mg/L, averaging 1.66 mg/L. Most results were less than the detection limits of 1.0 mg/L and 4.0 mg/L.

Hardness and Dissolved Sulphate

Hardness concentrations ranged from 151 mg/L to 467 mg/l, averaging 323 mg/L. Increased concentrations are observed with lower flow rates. Sulphate concentrations in Settling Pond #1 have varied, depending on pumping rates from 3-South Pit and historically 5-South underground during high flow. Since the 5-South Mine pool water was redirected to 2-North mine at the end of 2017, the main contributor to sulphate is water pumped from 3-South pit. This year weekly sulphate at SPD ranged from 75 mg/L to 400 mg//L and averaged 267 mg/L. Concentrations were highest from summer through fall (low dilution) and lowest during winter (higher flow and high dilution) as shown in Appendix II, Graph 10.

Typically, there is zero flow at SPD from late spring to early fall as there is no pumping from 3-South Pit. Discharge did not occur for 37 out of 365 days this reporting year (35 days in summer and 2 days in fall) due to low flow rates and beaver activity.

8.2.1.2 *Dissolved Metals*

All permitted dissolved metals (Al-D, Cu-D, Fe-D Pb-D and Zn-D) concentrations at SPD remained below SPD permit limits.

D-Fe is normally observed to have elevated concentrations during fall or winter. This year concentrations remained low ranging from 0.03 mg/L to 0.19 mg/L averaging 0.12 mg/L

Mn-T remained in low concentrations with peaks occurring sporadically throughout the year but remaining below WQG of 0.8 mg/L. Mn-T ranged from 0.0272 mg/L to 0.113 mg/L and averaged 0.060 mg/L.

Appendix II, Graphs (13 and 14) display Fe-D and Mn-T for SPD.

Besides slightly elevated sulphate and periodically elevated iron, the water quality at SPD has remained in good condition. It is expected that this trend will continue in the future.

8.2.2 *LONG LAKE ENTRANCE (LLE) EMS #E2922130*

Appendix I, Tables (20 and 32) provide the full set of data collected at LLE and Appendix II, Graphs 15 through 18 display POI. LLE is the most downstream monitoring station in the South Water Management System and represents cumulative mine water discharge into Long Lake (excluding the seeps and groundwater inputs). This station is located at the outflow of a culvert discharging from a wetland, where discharge water flows through an approximately 50 m long channel before entering Long Lake. LLE is not defined as a receiving environment station but rather constitutes the upstream segment of a mixing zone defined as the IDZ in the permit. For observation purposes, results for LLE are compared to WQGs and WQO's to assess overall water management system performance and influence on Long Lake.

Sulphate and iron are two main parameters of interest at LLE; both frequently exceeding WQGs as displayed in. The rolling average sulphate concentrations (averaged over 5 weeks) ranged from 89 mg/L to 216 mg/L; with 18 out of 42 weeks of rolling averages, above WQG-Ave of 128 mg/L. Peak concentrations were observed in summer during low flow periods.

The sulphate WQG varies with hardness (Table 13) and QCC follows a conservative approach defined in the WQG assuming a background hardness of 30 mg/L (very soft water, measured at WA) to derive a sulphate WQG of 128 mg/L. Annual average hardness concentration at LLE was 176 mg/L. If the sulphate guideline for very hard water (hardness between 181 mg/L and 250 mg/L) at LLE was applied, the sulphate WQG would be 429 mg/L and water quality would be below the WQG-Ave for sulphate.

These comparisons demonstrate the conservative approach incorporated into the WQG for protection of aquatic life. It should also be noted that during the summer low flow period LLE discharge may not be flowing into the lake before it is evaporated. This year there has also been beaver activity at LLE which blocked the culvert and stirred up the bottom sediment. The culvert

was cleaned out many times during fall. Discharge at LLE is extremely low to zero during summer and early fall.

Table 13: Approved 30-day Average Water Quality Guideline for Sulphate to Protect Aquatic Life

Water hardness* (mg/L)	Sulphate water quality guideline (mg/L)
Very Soft (0-30)	128
Soft to moderately soft (31-75)	218
Moderately soft/hard to hard (76-180)	309
Very hard (181-250)	429
>250	Need to determine based on site water

Both total (1.00 mg/L) and dissolved (0.35 mg/L) iron exceeded the WQG in monthly sampling events. Total iron had 2 out of 12 results above WQG in August and September resulting in 2.56 mg/L and 1.53 mg/L. Dissolved iron had 6 out of 12 results in spring and summer, where results were elevated above WQG ranging from 0.471 mg/L to 1.06 mg/L. Beaver activity occurred from September to November this year.

Elevated iron is observed during low flow periods when anoxic conditions occur in the wetland and also during high flow conditions causing the mixing of iron-rich bottom waters to be discharged at LLE. High flows may inhibit the typical redox reactions and iron precipitation processes that reduce dissolved iron to particulate iron.

The Vancouver Island Objective (VIO) for streams defines a maximum suitable concentration for total phosphorous of 0.01 mg/L and an average concentration of 0.005 mg/L applied from May through September. No exceedances occurred this year with a maximum concentration of 0.0058 mg/L and an average of 0.00438 mg/L. As previously stated, LLE is not considered a stream and the VIO is used for general comparison.

Nutrients are monitored at LLE to assess loading from the treatment system for potential adverse effects on Long Lake and the downstream receiving environment. Any elevated concentrations are most likely attributed to natural biotic processes including assimilation by vegetation, plankton, periphyton, and microorganisms. In wetlands, macrophytes play a significant role in uptake, assimilation and storage of phosphorous. Macrophytes absorb phosphorous directly from the water column and release it shortly after upon vegetation decomposition (R. Reddy, R. H. Kadlec, E. Flaig & P. M. Gale.1999)[5]. Elevated total phosphorus concentrations have been measured since before the treatment system was installed as displayed in the figure below. The measured concentrations are unlikely to be the cause of any eutrophication downstream given the low to zero discharge rates from LLE during summer and the absence of a measurable increase in phosphorus in Long Lake where LLE enters the lake. When comparing the two stations keep in mind that the VIO is used for streams and not lakes. Phosphorus's in Long lake is compared to the Water Quality Objectives using a summer average of 0.007 mg/L.

[5]R. Reddy, R. H. Kadlec, E. Flaig & P. M. Gale .1999. Phosphorus Retention in Streams and Wetlands: A Review, Critical Reviews in Environmental Science and Technology, 29:1, 83-146K

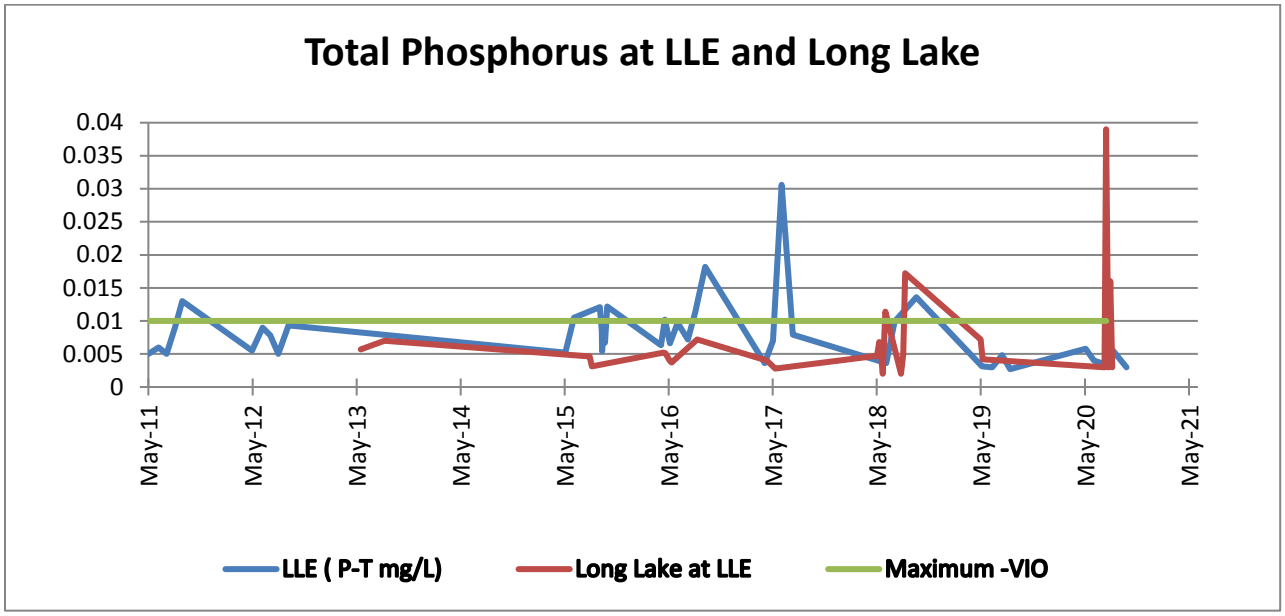


Figure 21: Total Phosphorus at LLE and Long Lake May through September 2011- 2019

Sulphate, iron, and TSS concentrations are influenced by precipitation events and source loading from the multiple disturbance areas within the South mining area. As sulphate and iron are continually found in high concentrations throughout routine monitoring. As a result, Lorax was contracted to perform a loading assessment for LLE to investigate the potential influence from the 4-South portal pad area. This was followed up with further water quality monitoring at LLE during times of low flow and additional studies. Lorax submitted a study in February 2017 entitled "*LLE Wetland Survey and Iron Discharge Study."* Quinsam submitted a report in April 2017 entitled "4-South Loading - LLE Water Quality Summary Report (Including Historical Reports)". These studies provide a greater understanding of elevated iron and sulphate concentrations within the LLE wetland.

Lorax (2017) concluded:

> "*The study results indicated that iron introduced into the LLE wetland via 4S-Lo is particulate Fe3+, which is stored within the wetland. Under typical conditions, the particulate Fe3+ settles in the wetland pond and cycles between the wetland substrate and the base of the oxic surface water layer. Water discharging from the wetland and sampled at LLE on August 29th, 2016 had a low concentration of Fe-T, and iron was less than detection limit in all the filtered samples. These data indicate that iron being discharged to Long Lake is present as particulate iron, which has a relatively low bioavailability. Therefore, potential effects from mine-related inputs of iron to Long Lake should be assessed for the Fe-T fraction."*

Water quality has improved following the reclamation work performed on the 4-South Pad as well as the new culvert (at a slightly higher elevation) installation at LLE. Total and dissolved iron has continued to exceed guidelines as the wetland experiences anoxic conditions during summer and fall flush causes turbidity during high flows stirring up the bottom waters.

8.2.3 *LONG LAKE SEEP*

The seep into Long Lake is a bedrock groundwater seep delivering water from the 2-3 South mine pool. This seep is monitored for water quality and quantity to assess overall loading into Long Lake. Long Lake seep water chemistry is influenced by groundwater levels in the 2-3 South mining area(s) and is subject to seasonal 'flushing' events due to local precipitation and infiltration.

Two seep sites are monitored for water quality on a monthly basis – LLS is the smaller seep and LLSM is the middle seep. LLSM is considered the primary seep, as flows at this site are typically much higher and more variable compared to LLS; as such, the hydrology monitoring station is located on this seep.

As experienced in previous years a similar pattern of high flow during winter and no flow through summer and early fall was observed. The middle seep flow ceases in July and commenced in November, when the mine pool is recharged with groundwater. The middle seep ceases to flow when the mine pool water level falls below the elevation of approximately 303.5 - 304 mASL (measured at INF). LLSM flowed for 8 months (no flow July 13 through November 24) and LLS flowed for 10 months (no flow August 25 through to November 10).

Overall, water chemistry at both seeps remained consistent with that observed during previous reporting periods. Sulphate concentrations at the seeps displayed peak concentrations in Spring. Results remained fairly consistent throughout the monitoring year ranging from 420 mg/L to 700 mg/L at LLS and 310 mg/L to 620 mg/L at LLSM.

Other parameters of interest include arsenic, iron, and total manganese. Metals display a seasonal trend, with peak concentrations in the summer and spring at the middle seep. Appendix II, Graphs 20 and 22 displays the concentrations of total arsenic, manganese and both total and dissolved iron since 2011.

This year concentrations of arsenic were moderately elevated with 4 out of 10 results at or just above WQG-Max (0.005 mg/L) at the smaller seep (LLS). Peak concentrations were observed in April, May, February and March ranging from 0.00495 mg/L to 0.0055 mg/L with 3 results above WQG-Max. The middle seep (LLSM) displayed low concentrations all year with a declining trend displayed compared to previous years.

Several exceedances for both total and dissolved iron at both seeps were observed. Fe-T exceeded the WQG of 1.00 mg/L at LLS on 8 out of 10 results and 2 out of 9 results at LLSM. Peak concentrations resulted in April and January resulting in 2.54 mg/ and 1.41 mg/L respectively, for LLS and LLSM.

Fe-D exceeded the WQG of 0.35 mg/L at LLS on 9 out of 10 monthly samples collected and 6 out of 9 samples collected at LLSM. Peak concentrations occurred in spring resulting in 2.39 mg/L and 1.00 mg/L respectively, for LLS and LLSM.

The increase in concentrations observed in spring is attributed to oxidation (and leaching) of the mine void walls. The mine void is recharged with the infiltration of groundwater after it is depleted during summer. These sites have elevated concentrations of iron, which is evident by the iron rich sediment deposited as it changes state from ferrous iron to its oxidized state ferric iron, when it

interacts with oxygen. Iron occurs naturally in water in soluble form as the ferrous iron (bivalent iron in dissolved form Fe2+ or Fe (OH)+) or complexed form like the ferric iron (trivalent iron: Fe3+ or precipitated as Fe (OH)3). The iron rich sediment deposited from the water makes sample collection extremely difficult at these locations and insurances are made so the flow path is not disturbed prior to sampling (as is routine everywhere). If any of the sediment is disturbed due to higher flow conditions or extremely low flow conditions the results will display elevated levels of iron. As a result, iron has a higher percentage of exceedances occurring here due to the flow path the water is taking over the iron rich sediment, sample collection and nature of the water.

All monthly water quality samples collected from the seeps are included in Appendix I, Tables 21 and 22 and flow data is included in Table 32.

8.2.4 *Passive Treatment System (PTS)*

Annual average concentrations of dissolved sulphate have been entering the system from the 2-South mine pool, measured at INF, resulting in 632 mg/L and leaving the system at the Sulphide Polishing Cell (SPCEFF) resulting in 485 mg/L with final discharge at measured at SPD averaging 267 mg/L (Figure 22).

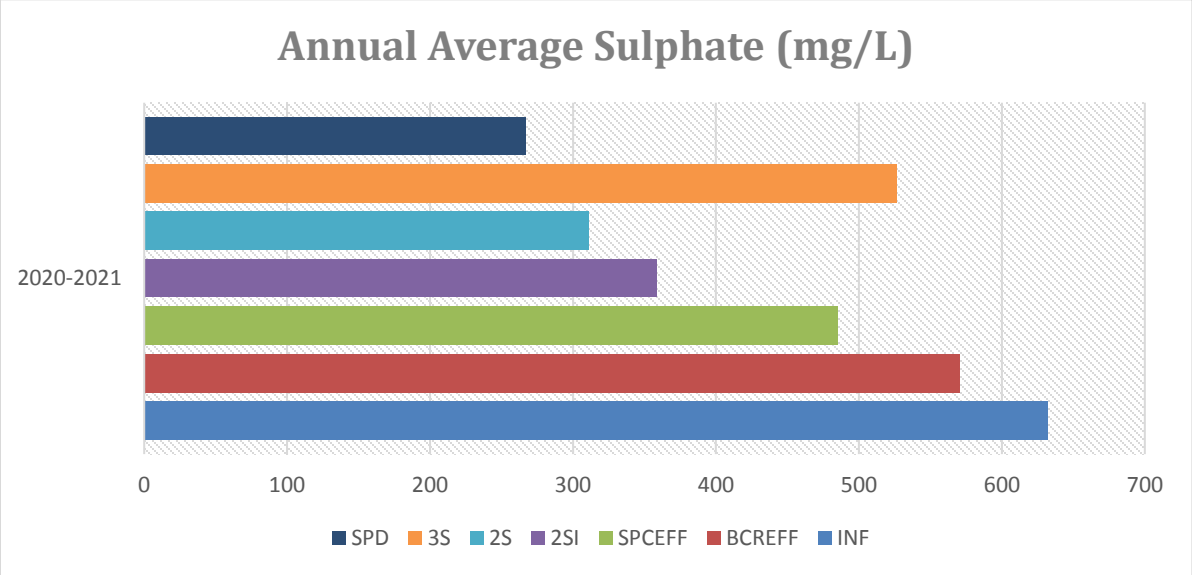


Figure 22: Annual Average Sulphate in the South Mine Area (mg/L)

In Figure 23 below displays the quarterly reductions in sulphate through the PTS including the sites 2-South Inflow (2SI) (receives discharge from the PTS) and SPD. As displayed in the charts the greatest reduction is observed between INF and SPD during all 4 quarters. This indicates that the water management system is working at reducing the concentrations of sulphate pumped from the from the mine pool into the treatment system and discharged at SPD.

The PTS displays the greatest reduction in sulphate in Q1 between INF and SPCEFF resulting in 274 mg/L and between INF and Biochemical Reactor (BCR) mg/L resulting in 71 mg/L.

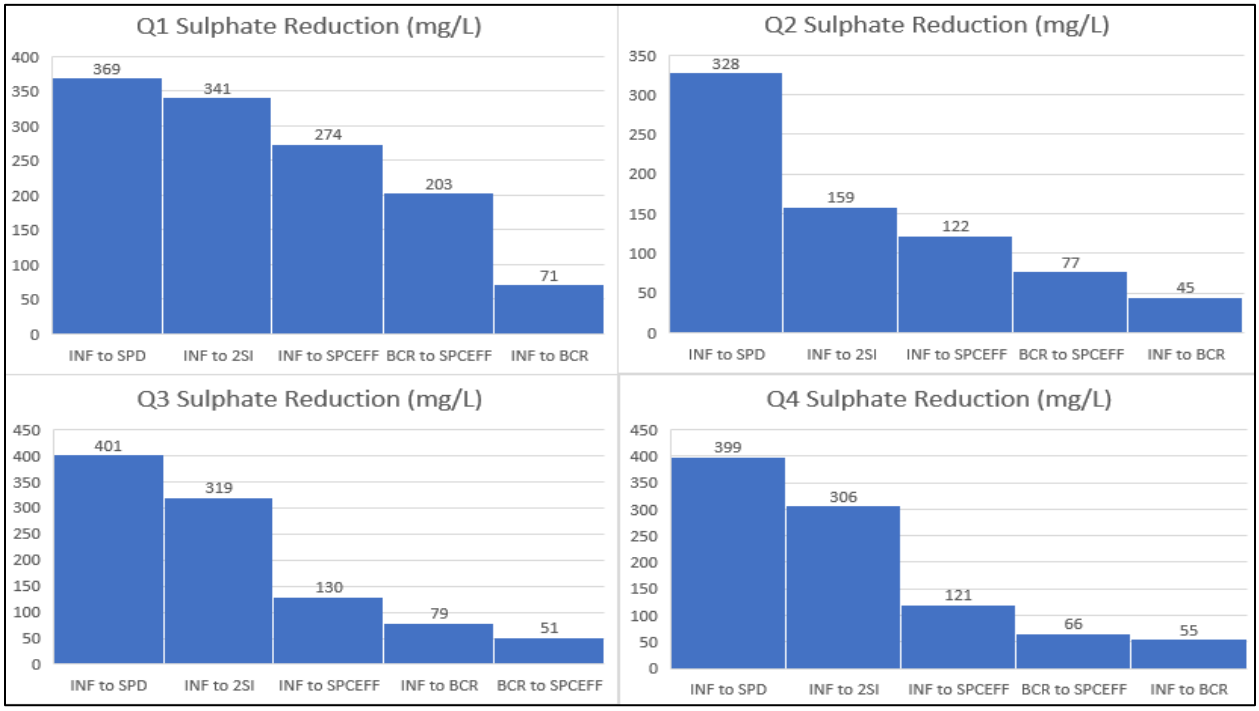


Figure 23: Quarterly Sulphate Reduction through the Water Management System

Warmer ambient temperatures normally increase microbial metabolic activity within the BCR and SPC during summer and early fall. The low average reduction rate between INF and BCR in summer could indicate that the substrate requires replacement in the BCR. In winter the cooler ambient temperatures decreased microbial activities and sulphate reduction rates are low. Overall, an annual average sulphate reduction of 365 mg/L was attained between INF and SPD. The original reduction goal has been achieved for the PTS, which was to reduce sulphate concentrations to 300 mg/L. Table 14 displays a summary for 2020-2021.

Table 14: Summary of Sites Sulphate Concentrations and Reduction Rates

2020-2021	INF	BCREFF	SPCEFF	2SI	2S	3S	SPD
Average	632	570	485	359	311	526	267
Count	51	46	42	52	14	16	54
Minimum	550	450	240	100	210	450	75
Maximum	710	670	580	570	450	640	400

The PTS is effective at maintaining water cover over the PAG-CCR in the 2-South pit and reducing discharge at the Seep into Long Lake during low flow periods. This is accomplished by decreasing the elevation of the mine pool below the elevation of the seep. The period of "no flow" at the Middle Seep into Long Lake (LLSM) has been observed to be extended by pumping down the mine pool.

Further monitoring of the PTS continues and includes the 2-South and 3-South systems and groundwater levels. Relationships between mine pool water elevations and seep flow rates continue to be developed with observations noted every quarter.

8.3 7-SOUTH WATER MONITORING SITES

The 7-South water management system is comprised of several structures (Section 2.1.3) to manage local water in and around the disturbed area, with the most substantial structure being the 7-South settling pond (7SSD). This structure represents the point of discharge for 7-South operations and is regulated under PE-7008. Table 15 outlines the applicable permit limits at 7SSD for each controlled parameter.

Table 15: Permit Limits Applied to 7SSD EMS #E292069

Parameters	Limit	Unit
Total Suspended Solids (daily composite)	25	mg/L
Total Suspended Solids (hourly composite)	35	mg/L
pH	6.0-8.0	mg/L
Sulphate	500	mg/L
Aluminum dissolved	0.1	mg/L
Cadmium dissolved	0.000045	mg/L
Copper dissolved	0.014	mg/L
Iron dissolved	0.35	mg/L
Selenium dissolved	0.016	mg/L
Rainbow Trout Bioassay (*Oncorhynchus mykiss*)	No mortalities at 100% effluent concentration after 96 hour	-

8.3.1 *7-SOUTH SETTLING POND (7SSD) EMS #E292069 AND STEAM 1, (7S) EMS #E292109*

A discussion of settling pond performance and validation of actual effluent water quality compared to the water quality prediction model developed for the 7-South water management plan by Lorax was not performed at 7SSD as there was no discharge from this location. Refer to section 8.1.1 for a comparison of geochemical source terms associated with 7-South Area 5 and SP4 discharge water quality predictions. Complete water chemistry datasets can be found in Appendix I, Tables (23 and 24).

Water quality compared to the water quality predictions model are presented in Table 16 for 7S. All annual average water quality parameter concentrations modeled (SO4-D, Al-D, As-D, B-D, Cd-D, Co-D, Cu-D, Fe-D, Mn-D, Ni-D, Se-D and Zn-D) at 7S were below the expected case predictions model. This indicates that water quality has improved from previous years, resultant of adopted water management practices that are effective at reducing impacts downstream at 7S. These methods include pumping all mine related discharged from the 7-South area into 5-South mine pool and then into 2-North mine pool where it is discharged at SP4. Appendix I, Table 23 provides water quality at 7S and Appendix II, Graph 62 provides flow vs precipitation at Stream 1, 7S.

Table 16: Water Quality Prediction Model-Best and Worst-Case Scenarios Compared to Measured Concentrations at 7S

7S WQ (2020-21 Averages) N0. = 7				
Parameter	**Expected Case (mg/L)**	**Worst Case (mg/L)**	**Average (mg/L)**	**Result**
Fluoride	N/A	N/A	N/A	
Sulphate	6.49-7.80	15.4-17.8	3.3	**Below Expected**
Aluminum	0.043	0.055-0.056	0.0356	**Below Expected**
Arsenic	0.0002	0.0003	0.000059	**Below Expected**
Boron	0.052-0.063	0.061-0.063	0.025	**Below Expected**
Cadmium	0.000010	0.000013	0.000005	**Below Expected**
Cobalt	0.00046-0.00047	0.00062-0.00065	0.0001	**Below Expected**
Copper	0.001	0.001	0.00036	**Below Expected**
Iron	0.020-0.021	0.030-0.031	0.01081	**Below Expected**
Manganese	0.0026-0.003	0.007	0.0005	**Below Expected**
Nickel	0.001	0.001	0.0005	**Below Expected**
Selenium	0.00028-0.00030	0.00070-0.00075	0.00005	**Below Expected**
Zinc	0.005	0.005	0.0025	**Below Expected**

***When calculating averages, 0.5 of the method detection limit values were used.**

8.4 BIOASSAYS

An LC50 (median lethal concentration) is the concentration of material (in this case, effluent) in water that is estimated to be lethal to 50% of the test organisms. The LC_{50} and its 95% confidence limits are usually derived by statistical analysis of percent mortalities in several test concentrations, after a fixed period of exposure. The duration of exposure must be specified (e.g., 96-h LC50). PE-7008 indicates that rainbow trout (*Oncorhynchus mykiss*) LC_{50} bioassays are required once per year (fall flush) at Settling Pond #1, EMS# E218582 and at Settling Pond #4, EMS# E207409. The bioassays are performed using 100% (non-diluted) discharge water to assess the potential survival of rainbow trout over a period of 96-hours. A successful test sees no mortalities throughout the 96-hour period. Discharge was collected from Settling Pond #1 and Settling Pond #4 on September 29, 2020.

If discharging, section permit requires a 96-hour LC_{50} test on rainbow trout to be completed using 7SSD EMS# E292069 effluent and, concurrently, a 7-day *Ceriodaphnia dubia* test from water obtained from 7S, EMS# E292109. This is required twice per year; once during the spring freshet and once during the fall flush, when discharging is occurring from 7SSD. The discharge from 7SSD pond did not occur this resulted in omitting the spring freshet and fall flush samples.

All rainbow trout bioassays had 100% survival (Appendix III). This indicated that mine related discharges at Settling Pond #1 and Settling Pond 4, are compliant, with no acute toxicity in the effluent discharged.

On March 15, 2020 water was collected from the Settling Pond #4 discharge to ensure water was not acutely toxic to aquatic organisms while iron was elevated. A 96-hour acute Rainbow Trout, single concentration bioassay was performed with 100% survival rates.

9.0 WATER QUALITY IN THE RECEIVING ENVIRONMENT

Preamble – Water Hardness

For this report, hardness dependent WQGs were derived using background levels of hardness (~30 mg/L) to provide a conservative assessment of receiving environment water quality. Guidelines and objectives do not have legal status but are designed to provide resource managers with direction and comparison for protection of receiving environments with aquatic life.

Guidelines and Objectives: Receiving environment water quality is compared to the British Columbia Ambient WQG for Protection of Aquatic Life for most parameters. The exceptions are hypolimnetic DO (using a WQO based on a site-specific conditions), total cobalt and total lead (using more recently established site-specific Water Quality Objectives (WQO)[6]), and total phosphorus in streams (using the Vancouver Island objective[7]). Table 17 lists the WQG, WQO and VIO used to screen receiving water quality.

Table 17: Water Quality Guidelines and Objectives Applied to Receiving Environment Stations

Parameter	Lakes (mg/L)		Streams (mg/L)	
	Maximum	5 in 30-day Avg	Maximum	5 in 30-day Avg
Phosphorus - total	0.007 summer avg - Long Lake		0.01	0.005**
	0.006 summer avg - Middle Quinsam L		(May-September)	
Turbidity	n/a	n/a	5.0 NTU	1.0 NTU
Non-filterable residue or TSS	25	5	n/a	n/a
Hypolimnetic DO	3 mg/L minimum during June-August		n/a	n/a
pH	6.5 – 9	n/a	6.5 – 9	n/a
Aluminum (dissolved)	0.1	0.05	0.1	0.05
Arsenic (total)	0.005	n/a	0.005	n/a
*Cadmium (dissolved)	0.00017	0.000088	0.00017	0.000088
Cobalt (total)	0.05	0.004	0.05	0.004
Copper (total)	0.007	0.002	0.007	0.002
Iron (total)	1.0	n/a	1.0	n/a
Iron (dissolved)	0.35	n/a	0.35	n/a
Lead (total)	0.005	0.003	0.005	0.003
Manganese (total)	0.8	0.7	0.8	0.7
Mercury (total)	0.0001	n/a	0.0001	n/a
Nickel (total)	0.025	n/a	0.025	n/a

[6] Campbell River Area Middle Quinsam Lake Sub-Basin Water Quality Assessment and Objectives. Ministry of Environment. 1989

[7] Guidance Document for Phosphorous Management in Vancouver Island Streams. Ministry of Environment. 2012

Parameter				
	Lakes (mg/L)		Streams (mg/L)	
	Maximum	5 in 30-day Avg	Maximum	5 in 30-day Avg
Silver (total)	0.0001	n/a	0.0001	n/a
Zinc (total)	0.03	n/a	0.03	n/a
*Sulphate dissolved	n/a	128	n/a	128

* Values represent Middle Quinsam sub-basin water quality using WA hardness.

** Average based on monthly samples from May to Sept

Water quality at locations outside of the Middle Quinsam Lake Sub-basin, such as the Iron River and 7-South (7SQR / IRQR), are compared exclusively to the WQG.

9.1 LAKES

The monitoring program for the Middle Quinsam Lake Sub-basin employed a 5 in 30 sampling approach at No Name Lake (NNL), Long Lake (LLM), Middle Quinsam Lake (MQL), and Lower Quinsam Lake (LQL). There are four depths monitored at each lake:

- 1 metre below surface (1m)
- 4 metres below surface (4m)
- 9 metres below surface (9m)
- 1 metre above bottom (1mb)

Monitoring occurred during three separate periods:

- Spring – April / May 2020 at NNL, LLM, MQL and LQL
- Summer – July / August 2020 at LLM and MQL
- Fall – October / November 2020 at LLM and MQL

Table 18 below summarizes those parameters above WQG and WQO observed in the lakes for 2020. A summary table is also provided in Appendix I, Table 4 and Tables 26 provide a statistical summary for parameters of interest with Tables 34 - 40 displaying the depth profiles and water chemistry results compared to WQG and WQO. Appendix II, Graphs (23 through 45) illustrate parameter trends at each lake.

Table 18: Summary of Water Quality Guideline Observations at Lake Monitoring Sites

SUMMARY OF WATER QUALITY GUIDELINE OBSERVATIONS AT RECEIVING MONITORING LOCATIONS 2020-2021						
EMS ID & Site Name	Parameter (mg/L or pH Units)	Guideline Limit	Result	Date	Guideline	Sampling Events Exceeding Guideline
E217018 - No Name Lake (NNL) 6-13 metres	pH	6.5	5.83 - 6.49	Spring 5 in 30	Min	(22/65) depths profiled during spring
NNL- 1m, 4m and 9m and 1 metre from Bottom (1MB)	Cu-D	0.002	0.00723 (1M), 0.0206 (4M), 0.00798 (9M)	April 29, 2020	M	(1/5) 1 result out of 5 weeks per depth (1m, 4m and 9m)
		0.0003	0.00174 (1M), 0.00445 (4M), 0.00189 (9M), 0.00065 (1MB)	Spring 5 in 30	A	Average of spring, 5 in 30 results for depths 1M, 4M, 9M and 1MB
E292118- Lower Quinsam Lake (LQL) 1M, 4M, 9M and 1MB	Cu-D	0.002	0.00395 (4M) and 0.00366 (9M)	May 1, 2020	M	(1/5) 1 result out of 5 weeks per depth (4m and 9m)
		0.0003	0.00081 (1M), 0.00138 (4M), 0.00117 (9M) and 0.00065 (1MB)	Spring 5 in 30	A	Average of spring, 5 in 30 results for depths 1M, 4M, 9M and 1MB
E206619 - Long Lake Middle (LLM) (7m-21m depths)	pH	<6.5	5.78 to 6.49	Summer and fall 5 in 30	Min	pH resulted in <6.5 in 20/105 results at 9m to 21m depths in summer and 54/110 results at 7m to 21m depths in fall.
E206619 - (LLM) 4 metre (4m)	P-T	0.007 summer average	0.00706	Summer 5 in 30	A	Summer 5 in 30 average
E206619 - (LLM) 9 metre (9m)	SO4-D	128	130	Spring 5 in 30	A	Spring 5 in 30 average
E206619 - LLM 1MB	Hypolimnetic DO	Minimum 3 mg/L June - August	1.10 - 2.90	Summer 5 in 30	Min	D.O. resulted in <3.00 mg/L in 19/105 results at 16m to 21m depths. (5/5) weeks resulted in DO <3.00mg/L in the hypolimnion. Results were also low in fall.
	SO4-D	128	130	Summer and fall 5 in 30	A	Average of summer and fall 5 in 30 results
	Mn-T	0.70	2.28	Fall 5 in 30	A	Average of fall, 5 in 30 results
		0.80	1.95, 1.97, 2.19, 2.20 and 3.10		M	(5/5) results in fall
E206618 - Middle Quinsam Lake (MQL) 7m-14.5 m depths	pH	<6.5	6.28 and 6.40	Fall 5 in 30	Min	pH resulted in <6.5 in (2/72) results at 1MB
E206618 -MQL 1m, 4m, 9m and 1MB	Cu-T	0.007	0.0376 (1M), 0.0813 (4M), 0.0472 (9M) and 0.0163 (1MB)	April 29, 2020	M	(1/5) results for Cu-T were elevated above WQO for one sampling event per depth.
		0.002	0.00799 (1M), 0.01682 (4M), 0.00987(9M) and 0.00368 (1MB)	Spring 5 in 30	A	Spring 5 in 30 average
E206618 -MQL 9m	P-T	0.006 summer average	0.00856	Summer 5 in 30	A	Summer 5 in 30 average
E206618 -MQL 1MB	Mn-T	0.8	0.82	October 15, 2020	M	(1/5) results in fall

Min = Minimum Water Quality Guideline (WQG) M = Maximum WQG /WQO, A = Average WQG /WQO

For all Middle Quinsam Lake Sub-basin and Iron River results background hardness of 30 mg/L was used to calculate those parameters that are hardness dependent.

9.1.1 *SEASONAL TRENDS*

Spring and fall sampling events are timed to cover lake turnover, when water circulates freely in the water column and nutrients become more available for phytoplankton growth (Wetzel 2001)[8]. Water is most dense at 4ºC, and during winter, the surface water (epilimnion) is typically colder than 4ºC and the deeper water (hypolimnion) is at about 4ºC (displaying inverse stratification). Spring turnover occurs when the surface water warms to 4ºC and begins to mix with the deeper water. The lake circulates freely throughout the water column for several days (Wetzel 2001). Through the spring and summer, surface temperatures increase, establishing a thermocline (region of rapid temperature change), with warmer water above and cooler water below. Temperatures cool in late summer, and eventually the thermal stratification breaks down, leading to fall overturn and to mixing of the water column. As surface waters continue to cool, a colder layer overlies the dense bottom water (4ºC) and inverse stratification persists from late fall to spring. During periods with distinct stratification, it has been observed that water chemistry often displays variable concentrations throughout the water column. During overturn, nutrients associated with decomposition of organic matter that has sunk to the bottom are brought into surface waters, where they are available for phytoplankton growth. The timing and duration of spring and fall turnover depend on the size and depth of the lake.

9.1.1.1 *Spring*

The spring sampling program is scheduled to capture the lake turnover that typically occurs in conjunction with warmer temperatures, snowmelt, and increased precipitation. Spring sampling was performed from April 15th through May 16th. The sampling regime commenced during the spring turnover event with warming ambient temperatures of greater than 4 ºC. From April 1st through to May 17th, 53.2 mm of precipitation was received.

Stratification gradually developed during the five weeks of sampling as temperatures warmed from a range of 9.88 ºC to 16.70 ºC in the upper water column, (1m below surface) for NNL, MQL, and in LQL.

Noteworthy observations resulting from the spring lake monitoring program include the following:

- Average sulphate concentrations were measured at or below the water quality guideline (130 mg/L) in all lakes with Long Lake displaying the highest results at a depth of 9m.
- Average sulphate concentrations resulted in 130 mg/L at 9 metres and 120 mg/L from the 1 metre from bottom (1mb), on Long Lake during spring sampling.
- Sulphate in Middle Quinsam lake remained well below average guideline levels throughout the lake averaging 24 mg/L to 31 mg/L, respectively from surface to bottom.
- No Name lake experience acidic conditions where pH fell below the minimum guideline of 6.5 at the 6 to 13 metre depths.
- Dissolved copper was above the acute and chronic guideline of 0.002 mg/L and 0.0003 mg/L in No Name and Lower Quinsam Lakes during spring. These guidelines provide a conservative comparison.

[8]Wetzel, R.G. 2001. Limnology, Third Edition. Academic Press, San Diego CA.

- Both total and dissolved copper were elevated above both the acute (maximum) WQO and WQG during April 29th and May 1st contributing to chronic (average) exceedances. In all lakes except Long lake.
- In NNL at 1MB on May 12, sulphate resulted in 61 mg/L. This result is considered an outlier as result falls outside the normal range for historical data.

9.1.1.2 *Summer*

The summer sampling program is scheduled to capture the period of low flow and lake stratification. The summer program spanned July 9th through August 5th. The summer program represents the lake's seasonal thermal stratification and a time when deeper lakes naturally develop anoxia in deeper waters. Results from this sampling period represent low dilution conditions when the lakes display minimum assimilative capacity and mine related surface discharges and groundwater infiltration have the greatest influence.

During the summer sampling program, there were high ambient temperatures and low precipitation (46 mm of accumulated precipitation for July through August 5th).

Noteworthy observations resulting from the summer monitoring program include the following:

- Sulphate remained below chronic WQ guideline level (128 mg/L) in MQL at all depths and LLM at depths 1m, 4m, and 9m below surface.
- In Long Lake sulphate accumulates at depth with average sulphate resulting in 54 mg/L at 1m, 61 mg/L at 4m and 118 mg/L at 9m and 130 mg/L at 1MB.
- During summer stratification period there are limited surface contribution to Long lake.
- Long Lake displayed pH values < 6.50 at depths 9 to 21 metres in 2 out of 5 weeks of sampling for 20/105 results. The minimum pH was observed to be 6.25.
- Hypolimnetic dissolved oxygen (DO) was below the site-specific WQO (3 mg/L) in LLM (>16m) in the hypolimnion zone. Minimum DO observed was 1.10 mg/L, indicating anoxic conditions developing.
- Total manganese was not elevated above acute and chronic WQG at depth as a result of anoxic conditions.
- Average sulphate in MQL averaged 24 mg/L to 36 mg/L, respectively from surface to bottom depths (1m, 4m, 9m and 1MB).
- Phosphorus (P-T) was above the water quality objective (WQO) derived for Middle Quinsam lake Sub-basin in Long and Middle Quinsam Lakes. The objective is different for each lake, Long Lake is 0.007 mg/L and Middle Lake is 0.006 mg/L.
- In Long Lake P-T was above WQO at 4m and where LLE enters the lake near the outlet (LLEZ2).
- In MQL at 9M, P-T was above the WQO and approaching the guideline at 4M and 1MB.

9.1.1.3 *Fall*

The fall sampling program is scheduled to capture the period of elevated precipitation following the summer dry season, representing fall overturn and a 'fall flushing' event that is correlated with elevated surface water metal concentrations resulting from localized weathering and mobilization. The lakes turn over in the fall as the water temperatures decrease and high inflows return. In 2020, the fall monitoring program spanned October 7th through November 5th during a time of light precipitation (143 mm from October 1st through November 5th).

During the fall turn over the deeper portions (hypolimnion) have been replenished with dissolved oxygen. This was evident in MQL as it is a long, shallow lake (14m to 15m) with inputs controlled by the upstream dam on the Quinsam River. Long lake is deeper (19m to 21m) and shorter in length with inputs received from No Name Lake and groundwater inputs including Long lake seeps and mine related discharge at the outlet (LLE).

When there is limited inflow at the inlet (from No Name Lake) and ambient temperatures remain warm, lake stratification is extended compared to MQL. In LL turn over occurs late in the fall, with stratification remaining late into November and dissolved oxygen levels depleted at depth, referred to as anoxic conditions. Anoxic conditions at depth causes manganese concentrations to increase at the sediment / water interface. This was observed during the fall sampling event in LL at the 1 metre from bottom depth (1MB).

In MQL turnover was apparent, distinguished by a less pronounced temperature gradient between surface (epilimnion), middle (metalimnion), and bottom (hypolimnion) depths compared to summer. Dissolve oxygen levels increased at depth throughout the sampling events.

Noteworthy observations resulting from the fall monitoring program include the following:

- Sulphate remained below the chronic WQG (128 mg/L) at all depths in MQL averaging 30 mg/L at 1M and 31 mg/L at depths 4M, 9M and 1MB, respectively.
- LL chronic sulphate was below 128 mg/L at all depths (1M, 4M and 9M) except 1MB where an average of 130 mg/L was observed. The 1M, 4M and 9M depths averaged 64 mg/L, 68 mg/L,114 mg/L, respectively.
- The fall turnover was apparent in MQL, observed through temperatures remaining consistent per depth.
- Stratification was still apparent during the first three weeks in LLM, again observed through temperature gradients. Turnover was commencing during the last two weeks.
- Dissolved oxygen (DO) was below 3 mg/L in LL and MQL in the hypolimnion zone resulting in anoxic conditions at depth where Mn-T was observed to be elevated at 1MB in all sampling events for LL and 1 sampling event for MQL.
- Mn-T was elevated above the chronic (0.70 mg/L) and acute (0.80 mg/L) WQO's during fall in LL.
- LL and MQL displayed slightly acidic conditions at depth during fall.
- LL displays elevated conductivity, increasing with depth.
- The Long Lake seeps were not flowing from late July until late November, indicating limited surface influence from the seeps.

9.1.1.4 *General Parameters*

pH

Lakes that are deeper and thermally stratified normally have pH that ranges from alkaline on the surface (epilimnion) to slightly acidic at bottom depths (hypolimnion). This trend is typically more pronounced during summer, when the lake is stratified, and surface temperatures are elevated.

The three lakes (NNL, LL and MQL) had several occurrences of slightly acidic conditions at depth in the hypolimnion portion. NNL normally has slightly acidic conditions year-round at a range of depths due to the natural features of the water body.

For all other lakes, pH remained mostly circumneutral (having a pH between 6.5 and 7.5) within WQG's 6.5 to 9.0.

Middle Quinsam Lake is generally neutral to slightly alkaline throughout the spring, summer, and fall and this trend continued for 2020, except 2 depths in fall (6.28 and 6.40). Both WA and WC, which enter Middle Quinsam Lake, exhibit neutral pH.

HARDNESS

The WQG for sulphate and several metals varies with hardness. The simple definition of water hardness is the amount of dissolved calcium and magnesium in the water. Hard water is high in dissolved minerals, largely calcium and magnesium.

Water hardness (mg/L CaCO3) is defined as:

- very soft if hardness ranges from 0 - 30 mg/L
- soft to moderately soft at 31- 75 mg/L
- moderately soft/hard to hard at 76-180 mg/L and
- very hard at 181-250 mg/L

No Name Lake is considered to have very soft water (average concentration of ~15 mg/L at all depths). Lower Quinsam Lake is characterized as soft to moderately soft (average concentration of ~34 mg/L at all depths). Since summer of 2014, Middle Quinsam Lake has had soft to moderately soft water throughout the water column. In 2020 the average concentration was ranged from 35 to 38 mg/L at all depths for all seasons.

Long Lake generally has moderate to hard water with the greatest variation between depths and highest hardness in deep water. The range varies with season and depth. Spring averages from surface to bottom ranged from 80 mg/L to 140 mg/L, summer ranged from 73 mg/L to 145 mg/L with fall averages ranging from 94 mg/L to 139 mg/L from surface to bottom. The spring and summer surface depths have the most variability compared to the deeper waters. The influence of freshwater inflow, lake turnover and stratification are most evident at surface 1m and 4m depths. Due to its depth (19-21 m), Long Lake has very little turnover or flushing in the hypolimnion zone.

SULPHATE

As noted previously, the sulphate WQG is hardness dependent, but for QCC, it is set at 128 mg/L (applying a background hardness of 30 mg/L from monitoring station WA, upstream of mine influences).

Sulphate concentrations were lower than the WQG of 128 mg/L in No Name, Middle Quinsam, and Lower Quinsam lakes at all depths, during all seasons and in Long Lake at 1 m, 4 m depths during spring, summer and fall. The 9 m depth averaged 130 mg/L in spring and remained below 128 mg/L during summer and fall averaging 119 mg/L and 112 mg/L, respectively. Sulphate concentrations increased with depth in LLM, MQL, and NNL and appeared to be correlated with thermal stratification.

Average sulphate results showed little variation between seasons at the 1mb depth in Long Lake. This vertical pattern through the seasons suggests that the deeper water (15 to 20 m depth) does not turn over.

If the sulphate WQG used average hardness measured in Long Lake at 1m depth during spring (58 mg/L), summer (71 mg/L) and fall (78 mg/L), the average sulphate guideline would range from 218 mg/L to 309 mg/L during these seasons. Recognizing that hardness and sulphate concentrations in Long Lake reflect the influence of mining discharges, and not baseline conditions, a higher hardness defined WQG would still be protective of aquatic life, given the protective mechanism provided by hardness (MOE 2013)[9].

Higher concentrations at depth is relate to sulphate sinking through the water column and accumulating, or groundwater influence. In Long Lake during summer and early fall there was limited surface contributions from the seeps from mid-July to mid-November and limited to no surface discharge from Settling Pond #1 or LLE; with low inflow and outflow from the inlet and outlet.

In Middle Quinsam Lake, the fall 2014 monitoring indicated a decrease in sulphate concentrations at 1 mb from above 128 mg/L to below 20 mg/L after a flushing event. Sulphate concentrations had remained below 52 mg/L from fall 2014 until spring 2017, when an increase was observed at depth. In 2020, the average sulphate concentrations remained similar throughout the year (< 33 mg/L) with the spring displaying the lowest concentrations at 1m and 4m depths (24 mg/L) compared to summer and fall. Middle Quinsam Lake has a fast flushing and turnover rate as is demonstrated by the low concentrations of sulphate in the water column. This lake receives water from dewatering the 2-North, 5-South and 7-South mines discharged at Settling Pond #4, where permit limits are applied.

No Name Lake and Lower Quinsam lakes continued to have sulphate concentrations well below the WQG. In Lower Quinsam Lake, concentrations remain in low concentrations (<21 mg/L) reported during spring suggesting some influence of mine related discharges with limited accumulation. In No Name Lake, the average sulphate concentration was <4 mg/L for all depths except the 1MB. A

[9] Ministry of Environment. 2013. Ambient water quality guidelines for sulphate. Technical Appendix Update. Available at:http://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/wqgs-wqos/approved-wqgs/bc_moe_wqg_sulphate.pd

result from May 12th, 2020 of 61 mg/L was returned was overlooked by QCC and could not be reanalyzed on time. This results falls outside of historical values and is considered an outlier. All other results from the 4 weeks of sampling ranged from 4.2 mg/L to 6.2 mg/L for 1MB. The 5-week average was 16.1 mg/L as displayed in Appendix II, Graph 25.

HYPOLIMNETIC DISSOLVED OXYGEN

The hypolimnetic dissolved oxygen (DO) Water Quality Objective of 3 mg/L minimum in June through August was developed for the Water Quality Objectives for Middle Quinsam Lake Sub-basin (MQL and LL); however, Quinsam also applies this objective to NNL and LQL. The hypolimnion is the dense, cold bottom layer below the thermocline in a thermally stratified lake. Typically, the hypolimnion is the coldest layer in summer and the warmest layer during winter. Anoxic conditions may develop naturally in deep waters over the summer due to the lack of circulation with upper, oxic water during stratification and the consumption of DO by microorganisms that decompose organic matter and by chemical reactions. The reducing environment can cause lake sediments to release iron, manganese, sulfide, and arsenic, all of which could have potential toxicological effects on aquatic receptors.

In 2020, hypolimnetic DO in Long Lake was below 3 mg/L during the summer and fall sampling period below the 14m depths. The low DO was observed during summer and fall sampling. Long Lake has a deep basin (21 - 22 m) and experiences anoxic conditions during summer and fall normally associated with elevated manganese. Manganese only elevated during fall in Long lake.

Lower Quinsam Lake has exhibited anoxic conditions in the hypolimnion during the summer and fall, sampling events. The November 1st permit amendment does not require summer and fall sampling in Lower Quinsam Lake. This lake has a deep basin (17 – 19 m) and typically experiences low DO (anoxic conditions) at depth when stratification is pronounced normally associated with elevated iron.

In Middle Quinsam Lake DO was below 3 mg/L in fall at 13 m to 14 m depths. Elevated manganese occurred at the 1MB depth with 1 results above Maximum WQO of 0.8 mg/L.

9.1.1.5 *Total and Dissolved Metals*

Concentrations of most metals at the four lake monitoring stations were low and below WQGs throughout the spring, summer, and fall sampling periods. Concentrations of total manganese and total and dissolved copper were elevated compared to the guidelines.

Manganese and Dissolved Oxygen

An inverse relationship between manganese (Mn-T) and DO is observed in lakes. Mn-T concentrations are highest when DO falls below 3 mg/L. In 2020, Mn-T concentrations remained low during spring and summer. During fall at 1MB concentrations exceeded average and maximum WQOs (0.7 mg/L and 0.8 mg/L, respectively) in Long Lake and the maximum WQO in Middle Quinsam Lake at 1MB. Appendix II, Graphs 28 and 35.

A similar trend of elevated Mn-T with low DO has been identified for Lower Quinsam Lake at 1mb during the summer monitoring period historically. Appendix II, Graph 45.

The Ambient Water Quality Guidelines for Manganese[10] state:

> "*Mn is only slightly to moderately toxic to aquatic organisms in excessive amounts. It is present in almost all organisms and often ameliorates the hazard posed by other metals. Hence jurisdictions in the international arena have not disseminated Mn guidelines to protect freshwater and marine life. Mn availability and, hence its toxicity in the aquatic environment, can be influenced by many factors including water hardness."*

In deeper lakes, stratification may result in anoxic conditions in the hypolimnion and the dissolution of the iron and manganese from sediment. Casey (2009)[11] noted:

> "*Iron and manganese are commonly found in groundwater and some surface water such as lakes that have a significant groundwater input. The existence of Fe and or Mn in groundwater generally infers prior anaerobic conditions with the result that the water is likely to be devoid of oxygen and may also have a high carbon dioxide (CO_2) concentration. As well as being associated with groundwater input the existence of Fe and Mn in some deep lakes and reservoirs may be due to stratification, resulting in the development of anaerobic conditions in the bottom water zone and the dissolution of the iron and manganese from floor deposits*."

Long Lake has historically been characterized as having very low DO at depth, with levels in September to October below 4 mg/L at depths greater than 15 m (Kangasniemi,1989)[12]. Nordin (2006)[13] reported that Long Lake stratifies into hyperlimnion and hypolimnion sections in April and May and remains stratified until October through November. Appendix II, Graph 28, displays the inverse relationship between historical DO vs Mn-T reported at 1MB since 2005 that occurs during late summer and fall when DO levels decline to below 3 mg/L.

SLR (2015)[14] suggested these findings have potential implications for the means by which sediments and Contaminants of Potential Concern (COPC) are distributed in Long Lake. They suggested that the deepest portion of the lake has the greatest potential to accumulate and retain COPCs whose mobility in aquatic systems is affected by oxygen availability in overlying waters and sediments.

It is conceivable that manganese has a greater loading rate from the parent rock and substrate materials, with mobility accelerated by anoxic conditions at depth (SLR, 2015); The regional geology of Long Lake is divided in half with the Nanaimo group in the southern half and the Island Plutonic Suite (IPS) in the northern half (SLR, 2015); this could have implications for different loading of arsenic and possibly manganese and other metals from parent material (SLR, 2015).

The Mn-T concentrations in deep waters of the lakes do not appear to be mine related, as concentrations at most discharge locations remains low; however, the WQO exceedances are of

[10] Ministry of Environment.2013. Ambient Water Quality Guidelines for Manganese

11 Casey,T.J. 2009. Iron and Manganese in Water Occurrence, Drinking Water Standards and Treatment Options through the Aquavarra Research LMT Water Engineering Papers. Paper 3..

[12] Kangasniemi, B.J.1989.Campbell River Area Middle Quinsam Lake Sub-Basin Water Quality Assessment and Objectives. Ministry of Environment, Lands and Parks. Summary.

[13] Nordin, R.N.2006.An Evaluation of the sediment quality and invertebrate benthic communities of Long and Middle Quinsam Lakes with regards to local coal mining activity.

[14]SLR.2015. Sediment Quality, Toxicity, and Bioavailability Review with Background Assessment Based on Current Knowledge of Sediment Dynamics and interpretation or Pre and Post Mining Sediment Concentrations and Distribution.

concerns for assessing potential effects in the receiving environment and trends will continue to be monitored in subsequent years.

Arsenic

Arsenic has become a parameter of interest in the Quinsam watershed, particularly for Long Lake; however, this parameter is not observed to be elevated in the receiving waters. In the 2020 monitoring programs, arsenic concentrations were well below the WQG (0.005 mg/L), in the four lakes monitored. Arsenic concentrations in sediment were elevated above guidelines in Long Lake, No Name Lake, and Lower Quinsam Lake as presented in the *2017-18 Annual Water Quality Monitoring Report* and in ex-situ groundwater throughout the site due to the host rock geology (See Appendix IX). The water quality data confirm that arsenic found in the sediment is not transported into the water column, even during times of anoxic conditions.

Copper

Total copper in Long and Middle Quinsam Lakes are compared to the maximum and average WQO's of 0.007 mg/L and 0.002 mg/L, respectively. No Name and Lower Quinsam Lakes are compared to the dissolved copper maximum and average WQG of 0.002 mg/L and 0.0003 mg/L, respectively.

Total and dissolved copper were elevated above guidelines during one sampling event (April 29 and May 1, 2020) during spring, in all lakes except Long Lake. Long Lake did experience an increase in copper on April 29th, but results remained below guidelines. There may have been some sort of contamination in the bottles or in the lake sampler that contributed to this. Middle Quinsam Lake experienced elevated total copper at all depths on April 29th. This resulted in the average of the 5 weeks exceeding the average WQO of 0.002 mg/L, in all depths during spring sampling.

Dissolved copper was elevated above the maximum WQG on April 29th in No Name Lake at 1M, 4M, 9M depths and on May 1st in Lower Quinsam Lake at 4M and 9M depths. The spring 5 in 30 average WQG was exceeded in all depths in both lakes.

9.2 RIVER AND STREAM SITES

The table below summarizes those river and stream sites that were observed to have parameters in excess of the WQOs and WQGs. This table is also available in Appendix I, Table 4.

Table 19: Summary of Water Quality Guideline Exceedances in the Streams and Rivers

SUMMARY OF WATER QUALITY GUIDELINE OBSERVATIONS AT RECEIVING MONITORING LOCATIONS 2020-2021						
EMS ID & Site Name	Parameter (mg/L or pH Units)	Guideline Limit	Result	Date	Guideline	Sampling Events Exceeding Guideline
E217017 - No Name Lake Outlet (NNO)	Cu-D	0.0003	0.00036, 0.00044 and 0.000452	Spring, summer and fall 5 in 30	A	5 in 30 Average
E292113 -7 South Quinsam River (7SQR)	Cu-D	0.0003	0.00047 and 0.00052	Spring and summer 5 in 30	A	5 in 30 Average
E299256 - Downstream of the confluence of the Iron River and Quinsam River (IRQR)	Cu-D	0.0003	0.00059 and 0.00045	Spring and summer 5 in 30	A	5 in 30 Average
E297231 - Iron River Upstream of 7SA5 (IR6)	Cu-D	0.0003	0.00061	Summer 5 in 30	A	Summer 5 in 30 Average
	Al-D	0.10	0.1060	fall	M	(1/5) results in fall. Al-D increases with increased flow rates.
		0.05	0.0602	Fall 5 in 30	A	Fall 5 in 30 Average
E297232 - Iron River Downstream of 7SA5 (IR8)	Al-D	0.05	0.0549	Fall 5 in 30	A	Fall 5 in 30 Average. Al-D increases with increased flow rates.
	Cu-D	0.0003	0.00057	Summer 5 in 30	A	Summer 5 in 30 Average
	As-T	0.005	0.00622 and 0.00561	28-Jul and 4-Aug	M	(2/5) sampling events
Min = Minimum Water Quality Guideline (WQG) M = Maximum WQG /WQO, A = Average WQG /WQO						
For all Middle Quinsam Lake Sub-basin and Iron River results background hardness of 30 mg/L was used to calculate those parameters that are hardness dependent.						

9.2.1 *MIDDLE QUINSAM LAKE INFLOW (WA) EMS #0126402 AND OUTFLOW (WB) EMS #0900504*

Comparing Middle Quinsam Lake's upstream river site, sampled at the Argonaut bridge (WA) EMS # 0126402 as the "*inlet"* and outlet (WB) EMS #0900504 offers an opportunity to assess potential mine-related effects on Middle Quinsam Lake water quality. Additionally, water quality results from WA are considered "baseline" for the Middle Quinsam sub-basin receiving environment stations as the site is situated upstream of any mine related discharge. Data obtained from WB (outlet of Middle Quinsam Lake) provides information on lake water quality after the addition of discharges from the South water management system, shallow and deep groundwater, Long Lake Outlet (LLO), mine related discharge from Settling Pond #4, and other anthropogenic sources (e.g., logging).

Summary statistics for the last five years are provided in Appendix I, Table 26 with Tables 41 through 45 presenting water quality data for WA and WB with comparison to WQOs and WQGs. Appendix II, Graphs (46 through 54) display the parameters of interest or those found elevated

above WQGs (dissolved sulphate, arsenic, iron, copper and manganese) in the Quinsam Sub-basin. Appendix II, Graph (57) displays Middle Quinsam Lake daily inflow obtained at the Argonaut bridge hydrometric station and Graph (58) compares discharge at WB with precipitation.

TSS results at WA and WB remained at or just above detection limits (1.0 - 2.0 mg/L) throughout all sampling events, as reported in previous years, and are expected to continue at low concentrations. Samples for WB are collected below the Coal Main road crossing on the Quinsam River and the low TSS results reflect the efforts made in reducing sediment and erosion at this location.

The pH values were similar at WA and WB, pH at WA and WB was weakly alkaline and within the WQG range of 6.5-9.0; pH values averaged 7.47 at WA and 7.63 at WB. Conductivity at WB reflected the mine influences (elevated conductivity and sulphate are considered signatures of mine influence). For example, average conductivity values were 63µs/cm at WA and 155 µs/cm at WB.

Significant increases of average sulphate, hardness and sulphate concentrations are observed between WA and WB. With average dissolved sulphate results at WA (1.31 mg/L) and WB (32 mg/L), remain below the WQG of 128 mg/L at both stations (Appendix II, Graph 47). Like sulphate, annual average hardness concentrations display a significant increase from WA to WB with average concentrations of 20 mg/L and 38 mg/L, respectively. Concentrations of sulphur are also notably significant between the two stations with WA averaging (3 mg/L) and WB averaging (10 mg/L).

Dissolved metals displaying an observable increase in annual average concentrations between WA and WB include arsenic, iron and manganese likely attributed to mine related discharge. All total and dissolved metals remained below WQGs, and concentrations were similar to previous years. Deceases in parameters are observed between WA and WB for parameters such as aluminum and copper as expressed in bold below.

		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		Hard-T	SO4-D	Al-D	As-D	As-T	Cu-D	Cu-T	Fe-D	Fe-T	Mn-D	Mn-T	S-D	S-T	TSS	Zn-D
WA	Average	19.9	1.31	0.0179	0.00012	0.00012	0.00057	0.00082	0.0116	0.019	0.00100	0.00151	3.00	3.00	1.40	0.00500
WB	Average	37.5	32.1	0.0117	0.00018	0.00018	0.00050	0.00061	0.0270	0.041	0.00370	0.00730	10.3	10.2	1.41	0.00500
Increase/Decrease (WB-WA)		17.6	30.79	**-0.0062**	0.000064	0.000061	**-0.00007**	**-0.000206**	0.0154	0.022	0.0027	0.00579	7.3	7.2	0.01	0

9.2.2 *No Name Outlet (NNO) EMS # E217017 and Long Lake Outlet (LLO) EMS # E219412*

Flow from No Name Lake (NNO) enters the west end of Long Lake and exits Long Lake at the site known as LLO. LLO discharges to Middle Quinsam Lake upstream of Middle Quinsam Lake outlet (WB). Water quality monitoring at NNO and LLO provides information on changes in water chemistry in both Long Lake and the channel connecting the two lakes. The sampling location on No Name Lake is considered to be outside of direct mine discharge but could be influenced by groundwater. Therefore, changes in water chemistry between NNO and LLO represent the incremental mine loading into Long Lake from various inputs, including shallow and deep groundwater (e.g. emanating from 2S/3S), Long Lake Seep discharge, mine related discharge from the South water management system, and other anthropogenic sources (e.g., logging).

Average TSS concentrations for LLO and NNO remained below 3 mg/L during the three monitoring periods. Both NNO and LLO exhibited similar pH, averaging 7.17 at NNO and 7.48 at LLO, with no WQG exceedances.

Conductivity, sulphate and hardness levels increase between NNO and LLO, reflecting mine related influences on Long Lake. Annual average conductivity was 43 µs/cm at NNO and 182 µs/cm at LLO. Annual average sulphate was 2.2 mg/L at NNO and 60 mg/L at LLO. Sulphate concentrations at LLO are cyclic, highest during summer and decreasing during fall along with higher flow rates and increased dilution, Appendix II, Graph (46). This year sulphate remained similar to spring and fall displayed the highest average concentrations. Sulphate was monitored weekly at LLO (until November 1st) to assess water quality exiting Long Lake. Appendix II, Graph 47, displays the average dissolved sulphate results from NNO compared to LLO. Like sulphate, water hardness increases from NNO (average of 16 mg/L) to LLO (average of 73 mg/L). Concentrations of sulphur also display a significant increase between the two sites related to mine discharges with averages of 3.00 mg/L at NNO and 19.6 mg/L at LLO.

Average concentrations of metals observed between NNO and LLO remained low, with many below laboratory DLs. Increases between the sites (NNO to LLO) are observed for all parameters except aluminum (D), copper (T and D), iron (T and D) expressed in bold below. All total and dissolved metals were below their WQGs except dissolved copper at NNO was elevated above the average WQG of 0.0003 mg/L during spring, summer and fall.

Stn.Code		Hard-T	SO4-D	Al-D	As-D	As-T	Cu-D	Cu-T	Fe-D	Fe-T	Mn-D	Mn-T	S-D	S-T	TSS	Zn-D
NNO	Average	15.9	2.2	0.01790	0.00033	0.00035	0.00042	0.000625	0.0793	0.106	0.0038	0.0070	3.00	3.00	1.80	0.00500
LLO	Average	73.2	59.8	0.00968	0.00042	0.00045	0.00030	0.000528	0.0451	0.077	0.00467	0.0110	19.3	19.6	1.63	0.00500
Increase/Decrease (LLO-NNO)		57.3	57.6	**-0.00822**	0.00009	0.0001	**-0.00012**	**-0.000097**	**-0.0342**	**-0.029**	0.00087	0.004	16.3	16.6	**-0.17**	0

Water quality data for sites LLO and NNO are presented in Appendix I, Tables (41 to 43) with comparison to WQOs and WQGs. Appendix II, Graph 61 compares discharge with precipitation at LLO.

9.2.3 *Stream 1 – (7S) EMS # E292109*

Results are displayed in Appendix I, Table 24 and Appendix II, Graph 62 displays discharge at 7S. The headwaters of Stream 1 are formed by the discharge of 7SSD, which combines with Stream 2 above sampling location 7S. Downstream of site 7S, Stream 1 enters the Lower Wetland then flows into the Quinsam River. Given the aquatic values (fish habitat) in the Quinsam River, the 7S station has been defined as the initial dilution zone for 7-South discharge water. This receiving environment site is used to evaluate the influence of 7-South operations on aquatic receptors. The Lower Wetland Outlet (LWO) station was established to monitor the cumulative water quality in Stream 1, and to understand overall contributions to the Quinsam River. The Lower Wetland Outlet station has not been representative of water quality from 7SSD nor from 7S. The November 1, 2019 permit amendment removed this site from the monitoring program.

There has been zero discharge from 7SSD since 2017, with only 24 hours and 12 days in 2016/2017; indicating the limited amount of surface loading from 7SSD discharge to the Lower Wetland.

Average sulphate was 3.3 mg/L and TSS was 1.49 mg/L at 7S, well below the WQG (128 mg/L), reflecting the water management measures employed at 7SSD sedimentation pond and surrounding 7-South operations are working. All total and dissolved metals were below WQGs at 7S. Continuous discharge was not recorded from November to late January at 7S due to problems obtaining the continuous logger / pressure transducer from the stilling well.

9.2.4 *Quinsam River Downstream Site 1 (QRDS1) EMS # E286930, 7-South Quinsam River (7SQR) EMS # E292113, Outflow (WB) EMS #0900504 & Quinsam River Downstream of the Confluence with Iron River (IRQR) EMS # E299256*

Quinsam River Downstream Site 1 (QRDS1) is located approximately 2 km downstream from the Middle Quinsam Lake outlet (sampling site WB) and upstream of any inputs associated with 7-South operations. QRDS1 was established to monitor groundwater inputs from the underground disposal of 7-South tailings into the 2-North mine and the underground sub-aqueously stored PAG-CCR material from processing of 5-South coal stored in the river barrier pillar.

7-South Quinsam River monitoring station (7SQR) is on the Quinsam River approximately 4 km downstream of QRDS1. 7SQR water quality is used to evaluate the influence of 7-South mine related discharge to the Quinsam River downstream of the LWO, and groundwater inputs to the Quinsam River from sub-aqueously stored PAG-CCR in the 7-South mine. Appendix I, Tables (41 through 43) and Appendix II, Graphs (46 - 53) display relevant parameters of interest for these sites.

On November 1st, 2019 authorization was received through ENV to remove the monitoring location QRDS1 from the permit. The monitoring locations WB, 7SQR and IRQR provide sufficient information for 2020-2021 with respect to parameter loading from the mine on the Quinsam River. Any incremental loading or seepage that could be associated with stored tailings from 2-North mine and PAG-CCR from 7-South mine was not observed for sulphate this monitoring year at QRDS1 and 7SRQ sites. The best comparison between the two sites is WB and downstream 7SQR.

WB and 7SQR had similar average concentrations of 32 mg/L and 31 mg/L, respectively, well below the WQG (128 mg/L).

Most average metals increased slightly between the sites with decreases (expressed in bold below) observed for hardness, copper (T) and manganese (T) and sulfur (T and D). There was no increase in dissolved copper between sites. The maximum and average WQG's for dissolved copper are compared to 7SQR water quality. The dissolved copper average for spring (0.00047 mg/L) and summer (0.00052 mg/L) 5 in 30 monitoring program was above the average WQG of 0.0003 mg/L for dissolved copper. This guideline uses a conservative approach.

Stn.Code		Hard-T	SO4-D	Al-D	As-D	As-T	Cu-D	Cu-T	Fe-D	Fe-T	Mn-D	Mn-T	S-D	S-T	TSS	Zn-D
WB	Average	37.5	32.1	0.0117	0.00018	0.00018	0.00050	0.000614	0.0270	0.041	0.0037	0.0073	10.3	10.2	1.41	0.00500
7SQR	Average	36.9	30.9	0.0122	0.00042	0.00047	0.00050	0.000553	0.0580	0.102	0.0049	0.0068	9.8	10.0	1.67	0.00500
Increase/Decrease (7SQR-WB)		**-0.6**	**-1.2**	0.0005	0.00024	0.00029	0	**-0.000061**	0.031	0.061	0.0012	**-0.0005**	**-0.5**	**-0.2**	0.26	0

Quinsam River Downstream of the Confluence with Iron River (IRQR) is located about 5 km downstream of 7SQR and captures the full mixing of the Iron and Quinsam rivers.

From 7SQR to IRQR parameter concentrations remained below WQG's for both sites except for average dissolved copper during spring and summer. Average concentrations for most parameters were higher upstream at 7SQR compared to downstream at IRQR. Decreases were observed for hardness, sulphate, iron (T and D), manganese (T and D) and sulphur (T and D). Arsenic was higher at IRQR than upstream at 7SQR as a result of loading from the Iron river.

Stn.Code		Hard-T	SO4-D	Al-D	As-D	As-T	Cu-D	Cu-T	Fe-D	Fe-T	Mn-D	Mn-T	S-D	S-T	TSS	Zn-D
7SQR	Average	36.9	30.9	0.0122	0.00042	0.00047	0.00050	0.000553	0.0580	0.102	0.0049	0.0068	9.8	10.0	1.67	0.00500
IRQR	Average	34.9	20.9	0.0223	0.00058	0.00061	0.00054	0.000623	0.0452	0.079	0.0035	0.0049	6.7	6.8	1.85	0.00500
Increase/Decrease (7SQR-IRQR)		**-2**	**-10**	0.0101	0.00016	0.00014	0.00004	0.00007	**-0.0128**	**-0.023**	**-0.0014**	**-0.0019**	**-3.1**	**-3.2**	0.18	0

9.2.5 *IRON RIVER*

The Iron River Baseline Summary Report was submitted to the ENV on March 31, 2016. The report reviewed the monitoring data at all sites in the Iron River, summarizing trends and parameters found to be naturally elevated due to the watershed geology and contact with the Benson/Dunsmuir members of the Comox Formation.

As part of the 7-South Area 5 permit application, baseline water quality data were collected at ten stations on the Iron River to gain an understanding of existing water quality and local influences. Additionally, six tributaries were monitored to identify incremental loading.

One year of monthly baseline samples was obtained at all sites to maximize interpretation of seasonal variations and trending on the Iron River. Post-baseline monitoring in 2019/2020 continued to consist of 5 in 30 and monthly sampling until November 1, 2020 at three stations on the Iron River (IR1, IR6 and IR8) and one station on the Quinsam River, downstream of the confluence of the Iron River (IRQR).

November 2019 permit amendment removed monitoring location IR1 and reduced the frequency of sampling at IR6 and IR8 to summer and fall 5 in 30 only. Monthly sampling has occurred at these sites since 2014 and a strong dataset is now available. The two seasons of worst water quality are summer and fall, so this reduction will provide the information necessary to compare to baseline data and to conditions at other sites.

Most general parameters (e.g., TSS and sulphate) had low concentrations at the two stations (IR6 and IR8) and remained well below WQGs. Hardness showed seasonal variability, with lower levels in spring and fall (higher flow) than in summer (low flow). A conservative approach was taken when calculating hardness dependent WQGs (using a background hardness of 30 mg/L).

Dissolved aluminum and total arsenic are the two primary parameters displaying a trend related to flows in the Iron River. Al-D concentrations were higher than the maximum WQG (0.100 mg/L) during one event at IR6 in fall resulting in 0.106 mg/L and above the average WQG of (0.05 mg/L) at all both sites (IR6 and IR8) during fall. Average results were 0.0602 mg/L and 0.0549 mg/L respectively, for IR6 and IR8. Appendix II, Graphs 54 ad 55.

As-T concentrations were elevated above WQGs (0.005 mg/L) during summer low flow at IR8 on 2 out of 5 weeks of sampling in summer resulting in 0.00622 mg/L and 0.00561 mg/L. Concentrations increased marginally from IR6 to IR8 (downstream) as displayed in Appendix II, Graph 56. IR6 remained below the guideline in summer with highest result of 0.003 mg/L.

An inverse relationship between As-T and Al-D has been identified: Al-D is elevated during periods of higher flow while As-T is elevated at times of low flow. In 2020-21 for example, As-T displayed highest concentrations at IR6 and IR8 in samples collected during the summer while Al-D is elevated during spring and fall.

Average dissolved copper was elevated above the average WQG (0.0003 mg/L) during summer at both IR6 and IR8, averaging 0.00061 mg/L and 0.00057 mg/L, respectively.

All other parameters of interest were below WQG's at IR6 and IR8 and there were no further parameters above WQGs observed IRQR. Therefore, mixing of the Quinsam and Iron rivers continues to provide sufficient dilution to maintain water quality.

Appendix I, Tables (39 - 40) and Appendix II, Graphs (54 to 56) display relevant data for all Iron River sites graphed against flow. Appendix II, Graph 63 displays the flow on the Iron river measured at IR8.

10.0 BIOTA MONITORING IN THE RECEIVING ENVIRONMENT

Phytoplankton and zooplankton are monitored every year at one station in each of No Name, Long, Middle Quinsam, and Lower Quinsam lakes. The sampling sites are shown in Appendix IX, Figure 1. This section of the report describes sampling objectives, methods, QA/QC, and results for phytoplankton and zooplankton. Refer to Appendix IV for all historical and present phytoplankton data.

10.1 PHYTOPLANKTON

Phytoplankton are photosynthetic microorganisms that live in lakes at depths to where adequate sunlight can penetrate. They are the main primary producers in lakes, converting sunlight, CO_2, and water into organic matter, and are the foundation for the aquatic food web (Wetzel 2001). Phytoplankton includes algae and cyanobacteria, both of which contain at least one form of chlorophyll (chlorophyll *a*), the major photosynthetic pigment. They are sensitive to changes in water quality (Wetzel 2001). Many lakes have a spring and fall phytoplankton bloom (peak growth period) following the seasonal "overturns" or mixing of the water column, which redistribute nutrients through the water column.

Historically phytoplankton have been monitored during once during spring, summer and fall at one station each in No Name, Long, Middle Quinsam, and Lower Quinsam lakes. Sampling takes place in the deepest portion of the lakes, where routine water quality monitoring is conducted. From 2013 to 2018, phytoplankton samples have been collected at the four lakes once each during the spring, summer and fall, 5 in 30-day monitoring periods as defined in amended Permit PE 7008. From the 1990s to 2012, Permit PE 7008 required sampling at 1, 4, and 9 m depth in April through September at Long Lake and Middle Quinsam Lake, with No Name Lake added in 2012 and Lower Quinsam Lake added in 2013. The November 1st, 2019 amended permit reduced monitoring at No Name and Lower Quinsam lakes to spring only as is reflected in the 2020 - 2021 monitoring report.

10.1.1 *METHODS*

10.1.1.1 *Field Methods*

In 2020, samples were collected from 1 m depth using a 4 L Beta sampler. Chlorophyll *a* sample were collected as 1 L raw water samples, shipped to BV laboratory (Burnaby B.C.) and laboratory filtered for analysis. A 250 mL sample was preserved with Lugol's in the field and analyzed for community composition, i.e., counts and identification to lowest practical level (Stantec Consulting Ltd., Burnaby B.C.). Field replicates were collected for QA/QC in August and October 2020, from Middle Quinsam and Long Lake, respectively.

10.1.1.2 *Laboratory Methods*

Organisms were identified to lowest practical level (species where possible) using an inverted microscope. A 27 mL volume of lake water was settled in a chamber. Counts were made at 100X, 400X, and 1000X magnifications, to record the size range of phytoplankton.

10.1.2 *RESULTS*

10.1.2.1 *Chlorophyll a*

This year samples were collected and sent to the laboratory during spring for all four lakes, then summer and fall for Middle Quinsam and Long Lake.

Chlorophyll *a* concentrations provide an indication of overall phytoplankton biomass at any given time and provide a basis for comparing primary production among lakes. Table 20 provides data for samples collected from 1 m depth in 2020. Concentrations ranged from 0.50 µg/L (Long Lake summer sample and Middle Quinsam Lake all samples) to 0.97 µg/L (Long Lake, spring sample).

Table 20: Chlorophyll a Concentrations, 1 m Depth, Quinsam Lakes System, 2020

Lake	Chlorophyll *a* (µg/L)		
	Spring	**Summer**	**Fall**
No Name Lake (NNL)	2.3	N/A	N/A
Long Lake (LL)	0.97	0.50	0.89
Middle Quinsam (MQL)	0.50	0.50	0.50
Lower Quinsam (LQL)	0.77	N/A	N/A

Concentrations of Chlorophyll *a* was within the range previously reported for all four lakes (NNL, LL, MQL and LQL) during spring and fall with LLM displaying the highest results.

Historically chlorophyll *a* concentrations reported for these lakes reflected oligotrophic conditions (mean of 1.7 µg/L, maximum of 4.5 µg/L), and low total phosphorous concentrations (mean of 8 µg/L, maximum of 18 µg/L), according to the trophic classification system for lakes developed by Vollenweider and Kerekes (1982; cited in Environment Canada 2004)[15]. Permit PE 7008 does not require nutrient analysis for the lakes, and nitrate, and ammonia data were not available to confirm this trophic classification.

Appendix IV and Figure 24 provide data for 2013 through 2020. Chlorophyll *a* result for 2020 spring and fall were within the range reported from 2013 to 2019 (0.48 to 2.68 µg/L).

[15] Vollenweider, R. and J. Kerekes. 1982. Eutrophication of Waters. Monitoring Assessment and Control. Organization for Economic Co-operation and Development (OECD) Paris. 55 pp. cited in Environment Canada 2004. Canadian Guidance Framework for the Management of Phosphorus in Freshwater Systems. Report No. 1-8. http://publications.gc.ca/collections/Collection/En1-34-8-2004E.pdf

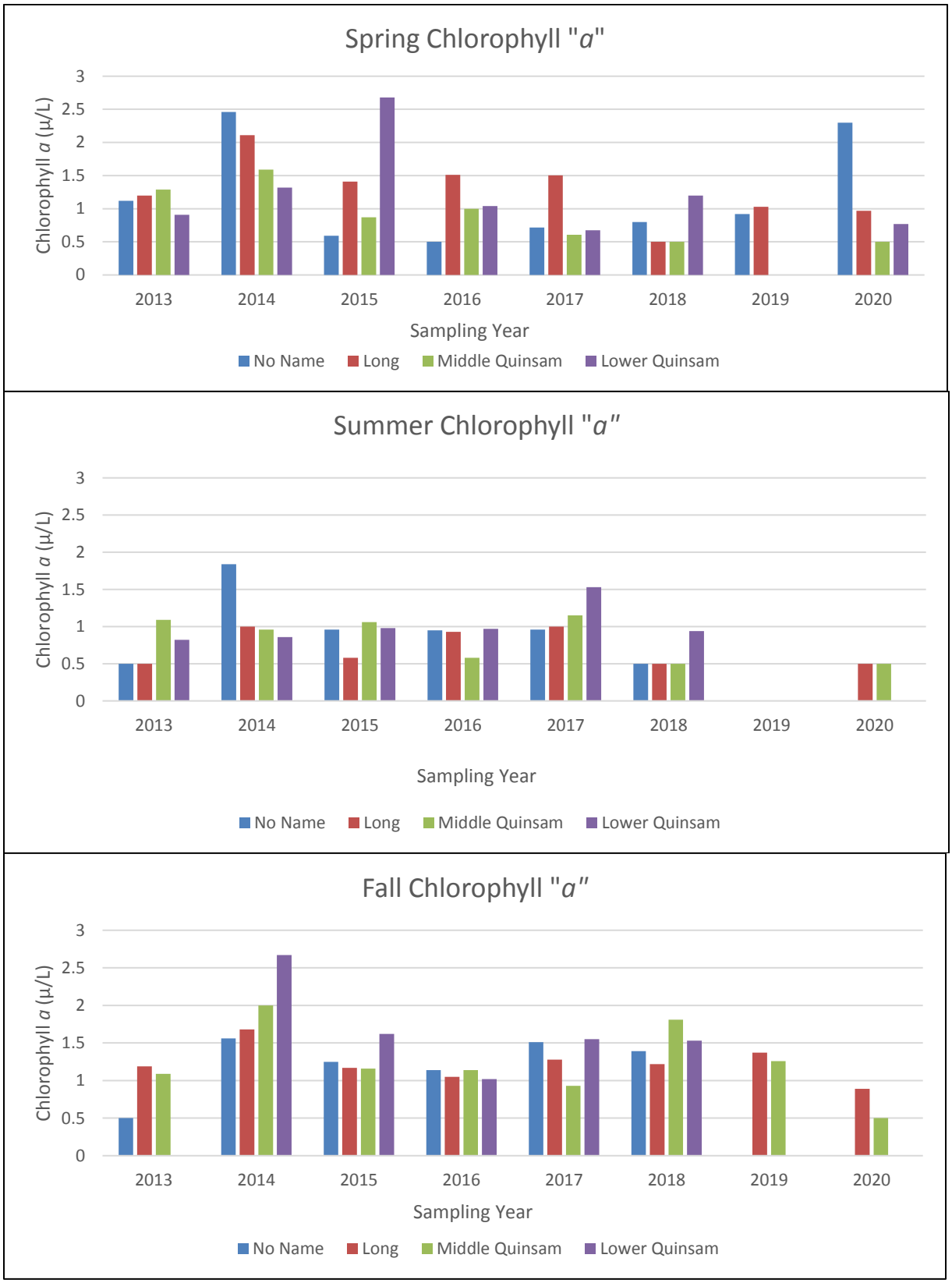


Figure 24: Chlorophyll a (µg/L) at 1 m Depth, Quinsam Lakes System, 2013 – 2020

10.1.2.2 *Phytoplankton Communities*

Phytoplankton taxonomy reports are included in Appendix IV and results are summarized here. Duplicate samples collected for Middle Quinsam in August and Long Lake October showed good agreement for the paired samples (within 20% of duplicate samples).

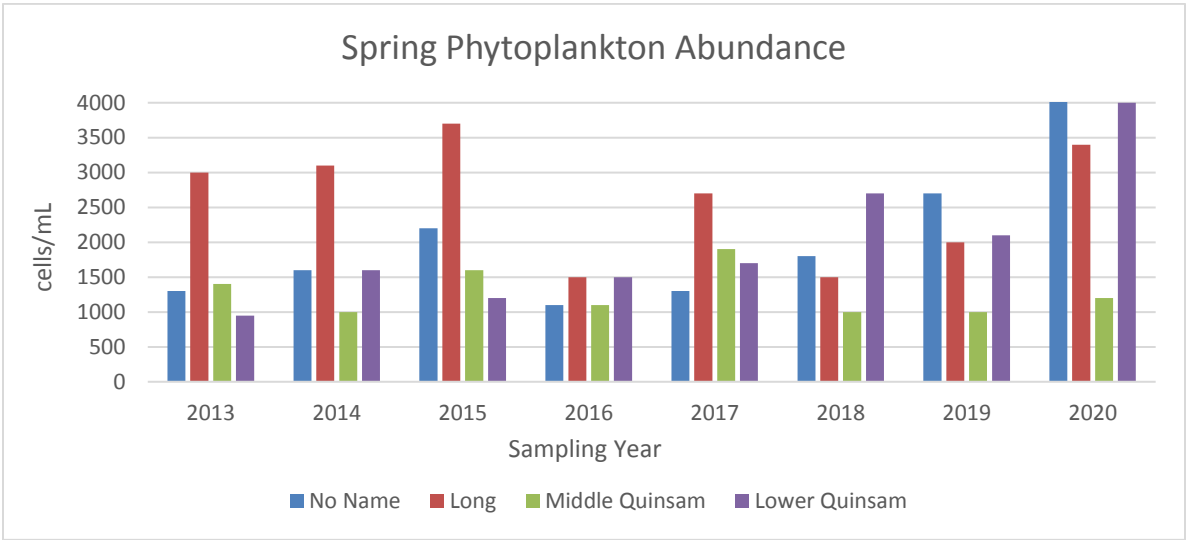
Abundance is summarized in Table 21 as total and by size fraction (identified at 1000X, 400X, and 100X magnifications). Total abundance ranged from 1,200 to 4100 cells/mL in 2020. The smallest size fraction (less than 5 µm in size) comprised of 82 % of the total abundance.

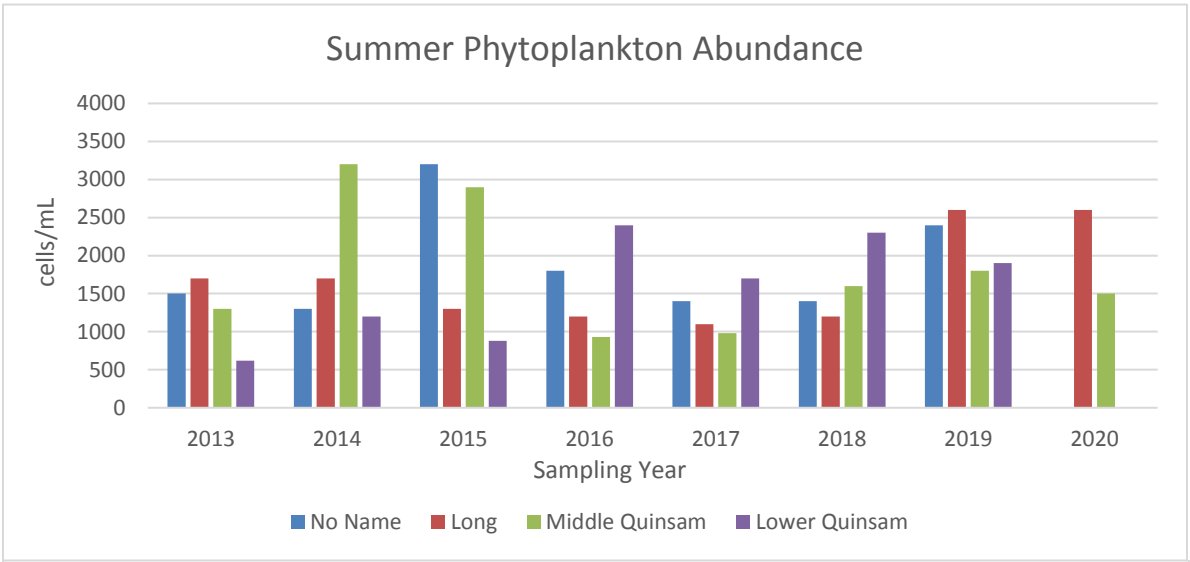
Table 21: Phytoplankton Abundance (cells/mL) in Quinsam Lake Systems, 2020

Lakes 2020	Date	Abundance (cells/mL) at 1 m depth			
		Total	<5 µm (1,000 X)	5 to 25 µm (400 X)	>25 µm (100 X)
Long Lake	May	3,400	2,800	330	275
Middle Quinsam		1,200	1,150	65	4.2
No Name		4,100	1,600	2,500	0.4
Lower Quinsam		4,000	3,500	360	95
Long Lake	August	2,600	2,400	160	13
Middle Quinsam		1,500	1,300	190	0.4
Middle Quinsam Rep.		1,400	1,200	200	0.5
Long Lake	October	3,200	3,000	200	2.6
Long Lake Rep.		3,000	2,800	200	1.6
Middle Quinsam		3,000	2,700	250	2.2

In 2020, abundance was greatest in spring at No Name (4,100 cells/mL) and Lower Quinsam Lake (4,000 cells/mL). Total abundance was lowest in spring at Middle Quinsam lake (1,200 cells/mL) which increased in abundance with each sampling set. Peak abundance and chlorophyll *a* concentrations did not always coincide, likely related to changes in size of abundant taxa over the sampling periods. There were two sets of samples collected during spring 2019 (May 1st and May 8th) for graphing purposes only May 8th samples were used (See Spring Phytoplankton Abundance Figure 22, below).

Variation in total abundance among lakes and through the three seasonal sampling periods for 2013 through 2020 are displayed in Figure 25. As noted for chlorophyll *a*, high variability among seasons, years, and lakes between 2013 and 2020 was likely related to variation in timing of spring and fall overturn and nutrient concentrations. Phytoplankton abundance data for 2020 were consistent with those of previous years for Middle Quinsam lake except in fall, where the greatest abundance was record since the 5 in 30 monitoring program began (2013). No Name, and Lower Quinsam Lakes display higher abundance than previously reported in spring 2020. Long lake displayed consistent abundance as pervious years with spring and fall having the most abundant results.





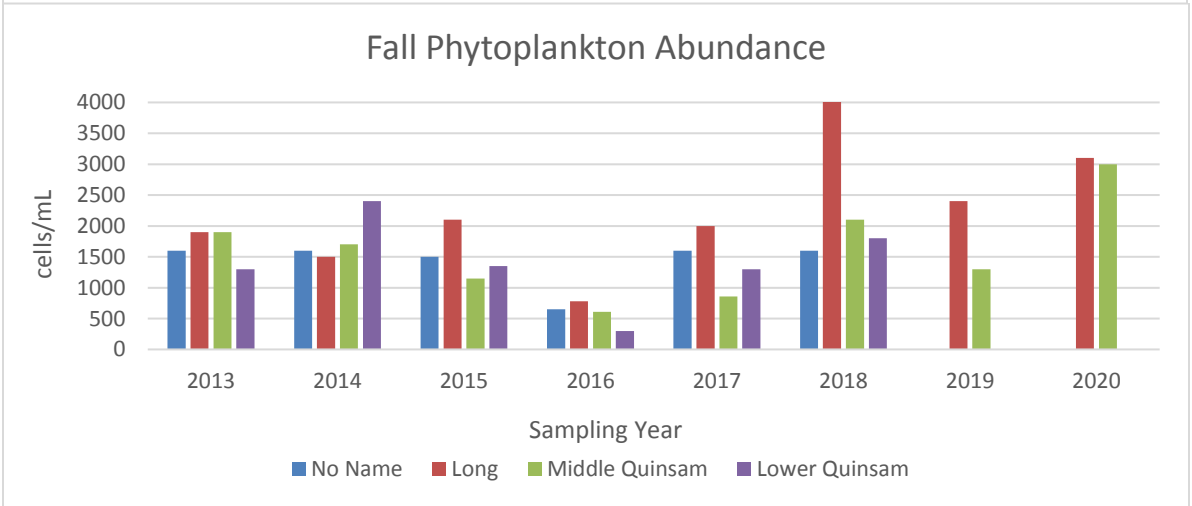


Figure 25: Total Phytoplankton Abundance, 1 m Depth, Quinsam Lakes System, 2013 – 2020

10.1.2.3 *Species Composition*

Spring

Species composition data for the May 2020 samples are contained in Appendix IV. The most abundant phytoplankton in Long, Middle Quinsam, and Lower Quinsam lakes were the very small (less than or equal to 5 µm) chrysoflagellates (*Ochromonas* spp. and *Chromulina* spp.). They were also common in No Name Lake. Although these ultra-nanoplankton species were very abundant numerically, they usually contribute little to algal biomass.

In Long Lake, No Name Lake, and Lower Quinsam Lake, there were blooms of various *Dinobryon* species (colonial chyrsophyte), which were the predominant species. The most abundant of the larger algae were as follows:

- In Long Lake, *Dinobryon bavaricum* and larger *Ochromonas* spp. were predominant, with *Dinobryon cylindricum* common.
- In Middle Quinsam Lake, larger *Ochromonas* spp. were predominant, with no obvious common species.
- In No Name Lake, *Dinobryon cylindricum* was predominant, and very small chrysophytes were common.
- In Lower Quinsam Lake, *Dinobryon sociale* and larger *Ochromonas* spp. were predominant,with *Cryptomonas* spp. common.

May 2019 samples showed a similar trend to May 2020 samples, with lower phytoplankton abundance in the sample from Middle Quinsam Lake (320 to 1,000 cells/mL) than in samples from the other three lakes (600 to 2,700 cells/mL). Given the variability in timing of the spring samples, it is not clear whether this difference between lakes is related to changes in water quality of the lakes or natural variability.

Summer

Species composition data for the August 2020 samples are contained in Appendix IV. The most abundant phytoplankton in Long and Middle Quinsam lakes were the very small (less than or equal to 5 µm) chrysoflagellates (*Ochromonas* spp. and *Chromulina* spp.). Although these ultra-nanoplankton species were very abundant numerically, they usually contribute little to algal biomass.

The most abundant of the larger algae were as follows:

- In Long Lake, larger *Ochromonas* spp. were predominant, with the cryptophyte *Rhodomonas minuta* and colonial cyanophyte *Chroococcus Prescottii* common.
- In Middle Quinsam Lake (both samples), larger *Ochromonas* spp. were predominant, with cryptophytes *Rhodomonas minuta* and *Cryptomonas* spp. common.

The August 2020 samples were similar in composition and abundance to samples collected during the summer in recent years.

Fall

Species composition data for the October 2020 samples are contained in Appendix IV. The most abundant phytoplankton in Long and Middle Quinsam lakes were the very small (less than or equal to 5 µm) chrysoflagellates (*Ochromonas* spp. and *Chromulina* spp.). Although these ultra-nanoplankton species were very abundant numerically, they usually contribute little to algal biomass.

The most abundant of the larger algae were as follows:

- In Long Lake (both samples), larger *Ochromonas* spp. were predominant, with the cryptophytes *Rhodomonas minuta* and *Cryptomonas* spp. and large dinoflagellate *Ceratium hirudinella* common.
- In Middle Quinsam Lake, larger *Ochromonas* spp. were predominant, with cryptophytes *Rhodomonas minuta* and *Cryptomonas* spp. common.

The October 2020 samples were similar in composition and abundance to samples collected during the autumn in recent years.

10.2 ZOOPLANKTON

Zooplankton form the second trophic level in the water column of lakes (secondary producers), grazing on phytoplankton, consuming organic matter, and providing a food source for juvenile fish (Wetzel 2001). Abundance and composition of the zooplankton community vary among lakes due to variation in water chemistry, lake characteristics, and grazing pressures from fish (Wetzel 2001[16]).

According to the November 1, 2019 amended permit PE:7008, zooplankton are monitored in the Quinsam mine receiving environment three times per year at one station in Middle Quinsam and Long lake. Lower Quinsam and No Name Lakes are monitored once a year (spring). From 2013 to 2018, zooplankton samples have been collected once in the spring, summer, and fall during the 5 in 30 water quality sampling periods.

10.2.1.1 *Field Methods*

Zooplankton were collected from No Name, Long, Middle Quinsam, and Lower Quinsam lakes historically three times per year (once during each 5 in 30-day period). In 2019 there was an extra set of samples collected in spring at each lake. In the fall only Middle Quinsam and Long lakes were sampled pursuant to a permit amendment received on November 1st, 2019. Samples were collected using a Wisconsin Plankton Sampler (63 µm net) in a 10 m vertical tow, with one sample collected per lake. Samples were preserved with ethanol and sent to Fraser Environmental Services (Surrey B.C.) for taxonomic analyses.

[16] Wetzel R. 2001. Limnology: Lake and River Ecosystems 150 pp

10.2.1.2 *Laboratory Methods*

Organisms were counted and identified to lowest practical level.

10.2.2 *RESULTS*

Detailed zooplankton taxonomic composition results are provided in Appendix I, Tables 1 through 3 and are summarized below. Abundance is the relative representation of a species in a particular ecosystem. It is usually measured as the number of individuals found per sample. Peak abundance ranged from 15,091 organisms/sample (Long Lake, May) to 4,927 organisms/sample (Long Lake, August) to 2,732 organisms/sample (Middle Quinsam, August). Lower Quinsam and Middle Quinsam Lakes had the lowest abundance among the four lakes, in the first set of samples collected during spring (May 1st). Middle Quinsam lake had 2,732 organisms/sample reported in August and dropped to 695 organisms/sample in October. Abundance was highest in Long Lake in spring and fall and lowest in Middle Quinsam Lake the fall.

Zooplankton organism abundance per sample collected in 2020 is displayed in Table 22, and Figure 26, below. For the two sample sets collected per lakes in May the results were summed. The most abundant of the Zooplankton were as follows:

- In No Name Lake spring samples all three groups *Rotifera, Cyclopoida* and *Cladocera* displayed similar results and *Calanoida* was most abundant.
- In Long Lake spring samples *Calanoida* and *Rotifera* were most abundant, while summer had higher abundance of *Calanoida* and *Cladocera*.
- In Middle Quinsam Lake, *Calanoida* were most abundant in spring, with *Rotifera* most abundant in the summer and in fall with *Calanoida*. Abundance was low in fall for Middle Quinsam lakes total count of 60.
- In Lower Quinsam Lake *Calanoida* were most abundant in spring samples, with both *Cladocera* and *Rotifera* having lower counts of 76.

Table 22: Zooplankton Abundance (Organisms/sample)

Lakes 2020	Month	Abundance (organisms/sample)				
		Total	Cyclopoida	Calanoida	Cladocera	Rotifera
No Name	May	2651	604	824	604	619
No Name	August	N/A	N/A	N/A	N/A	N/A
No Name	October	N/A	N/A	N/A	N/A	N/A
Long Lake	May	15,091	508	1,217	675	12,691
Long Lake	August	4,927	353	1,602	1667	1,305
Long Lake	October	1,171	35	96	109	931
Long Lake Rep.	October	1,026	66	103	101	756
Middle Quinsam	May	1,200	74	945	45	136
Middle Quinsam	August	2,732	104	693	1,223	712
Middle Quinsam Rep.	August	2,431	94	448	1,420	469
Middle Quinsam	October	695	11	120	224	340
Lower Quinsam	May	1621	621	848	76	76
Lower Quinsam	August	N/A	N/A	N/A	N/A	N/A
Lower Quinsam	October	N/A	N/A	N/A	N/A	N/A

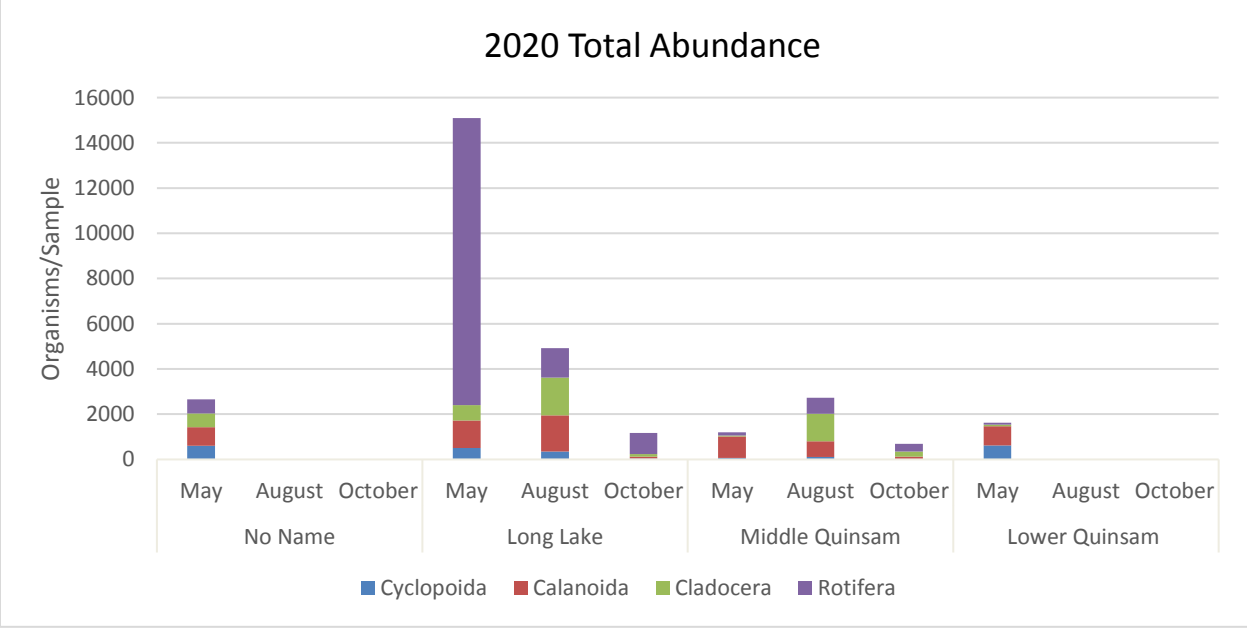
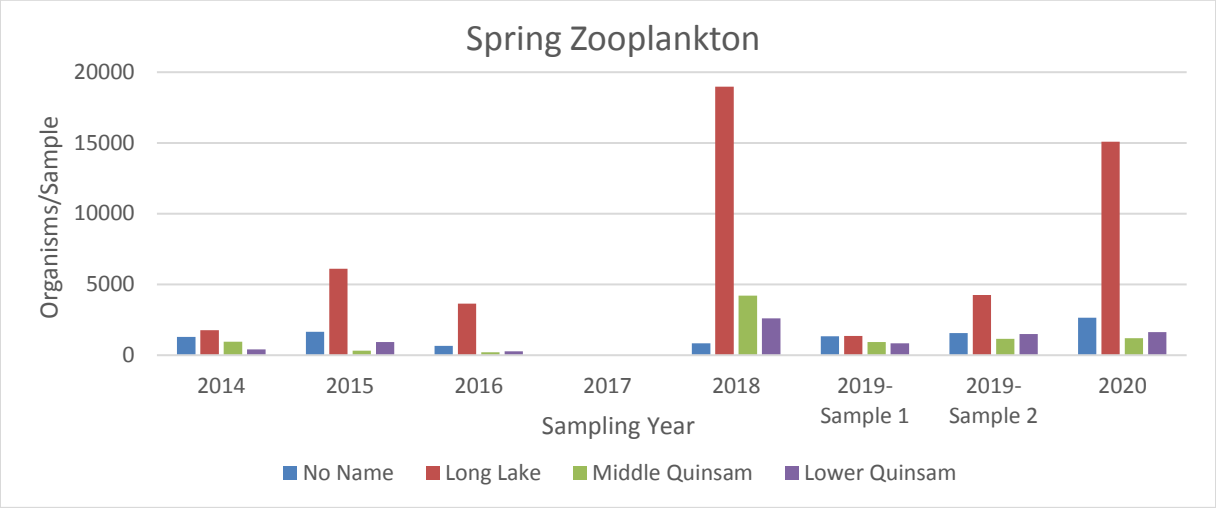
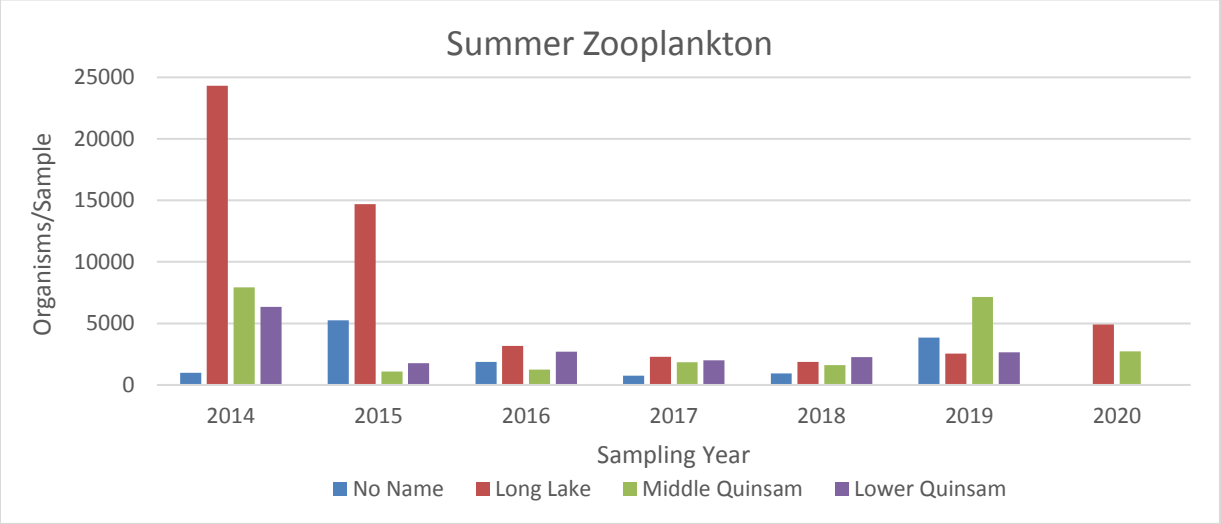


Figure 26: 2020 Total Abundance

Seasonal and spatial trends are displayed in Figure 27 below, for samples collected from 2014 through 2020. Results from the spring 2019 sampling had 2 sets submitted as displayed below in the Spring Zooplankton chart. There has been high variability among lakes, seasons, and years. In general, abundance is highest for the summer samples, following peaks in levels of phytoplankton and organic matter; however, there are exceptions, including low abundance in No Name Lake in summer 2014, 2017 - 2018 and peak abundance in Lower Quinsam Lake in fall 2015. Variations in total abundance when comparing lake phytoplankton abundance may be related to the month sampled and phytoplankton blooms. For example, spring, and summer sampling should occur during the last weeks of the 5 in 30 with fall sampling occurring during the first week of the 5 in 30 for a better representation. Some spring and fall samples were collected in either too early in the spring or too late in the fall, with colder waters representing the lowest species abundance and counts. This is mainly observed in Middle Quinsam lake during fall sampling events (2016, 2018 and 2019). In spring 2017 sample were not collected due and reported as a PNC.

Differences in taxonomic composition are related to seasonal conditions, including food supply (phytoplankton and organic matter) and grazing pressures from fish. The larger copepods and Cladocerans provide preferred food sources for fish. All four lakes are known to be fish bearing (e.g., salmon and trout species), but there is not enough information about fish populations to estimate grazing pressures on zooplankton.





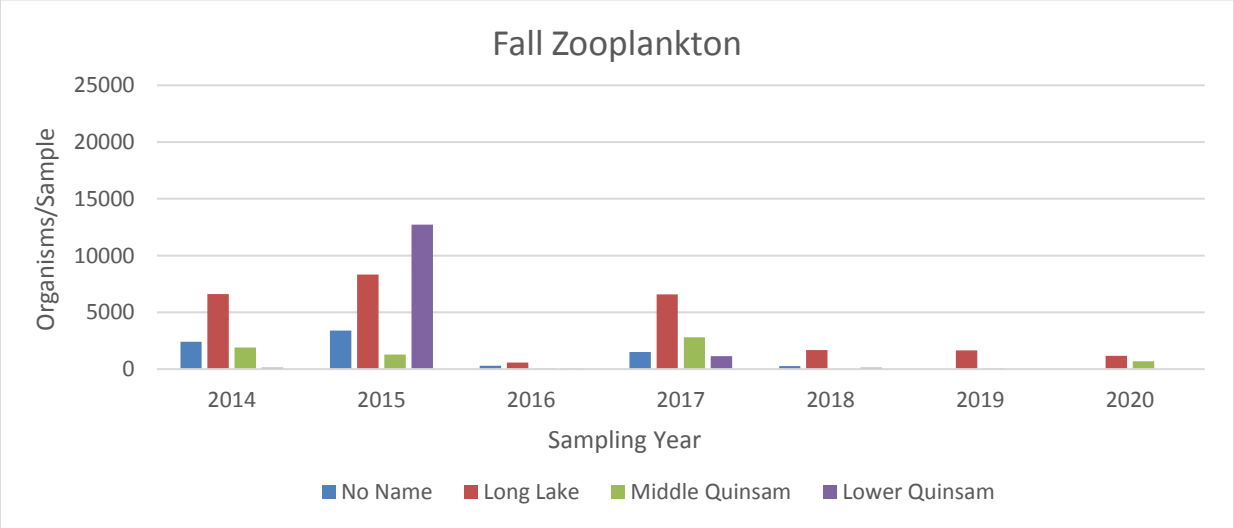


Figure 27: Total Zooplankton Abundance (0 to 10 m Vertical Tows), Quinsam Lakes System, 2014 – 2020

10.2.3 *CONCLUSION*

Water in lakes of the Quinsam River watershed near Quinsam Mine and in the Quinsam River itself is of good quality, meeting WQGs and WQOs on most sampling dates in 2020 in the Quinsam river and most WQGs and WQOs in the lakes. Average dissolved sulphate remains slightly higher than the WQG in deep water (9 m and 1 mb) of Long Lake (130 mg/L). Average dissolved sulphate concentrations in Middle Quinsam Lake remained in low concentrations (<33 mg/L) at 1mb and throughout the water column during all sampling periods.

Anoxic conditions represented by low DO levels in deep waters are common during summer and early fall in Long and (historically) Lower Quinsam lakes. This year slight anoxic conditions were also presented in fall for Middle Quinsam lake as well. Anoxic conditions result in mobilization of iron in Lower Quinsam Lake and manganese in Long Lake and occasionally Middle Quinsam Lake. Concentrations of manganese in deep water (1MB) were lower than in earlier years in both lakes.

Both total and dissolved copper results were elevated in the three lakes (NNL, MQL and LQL) during spring for one sampling event (April 29th for NNL and MQL and May 1st for LQL) causing the 5 in 30 averages to be elevated above the guidelines. Using a conservative guideline for dissolved copper, 5 in 30-day averages were elevated in NNO (spring, summer and fall) and downstream in the Quinsam river at 7SQR and IRQR (spring and summer) and in the Iron river (summer). On the Iron river dissolved aluminum was elevated during fall with increased flow rates and arsenic was elevated during summer with lower flow rates. Arsenic was only observed to be elevated at the downstream site, IR8.

In both Long and Middle Quinsam Lakes, summer average WQO for total phosphorus was just above the objective at 9M in MQL and 4M in LL. The zone of dilution measured where LLE enters the lake (LLEZ2) was slightly elevated as well. This year phosphorus was measured for all 5 weeks during summer where normally it is only measured once (as per permit); allowing for a more accurate comparison to the objective.

No Name, Long, Middle Quinsam, and Lower Quinsam lakes support phytoplankton communities typical of oligotrophic conditions and distinct zooplankton communities in each lake that provide typical prey for fish. There were no indications of adverse effects of mine discharges on the plankton communities of lakes (density, taxonomic richness, composition) in the spring and summer samples. During the fall sampling event (2019 and 2020) Middle Quinsam lake had normal counts for phytoplankton but low counts for zooplankton yet higher than the previous year during fall. Future monitoring is required to determine if this is related to seasonal limnological conditions such as temperature or water quality. Middle Quinsam Lake seems to have low counts for both phytoplankton and zooplankton year over year.

While levels of iron are low in discharges from the mine, they can be elevated along with arsenic in groundwater and seeps entering Long Lake (Golder 2011, Cullen 2011, SLR 2015). However, seep monitoring conducted since 2011 has shown a notable decline in concentrations of these metals (except for iron) and groundwater monitoring indicates naturally elevated concentrations in wells established in the Dunsmuir rock formation. The presence of anoxic or suboxic conditions in deep lake waters during the summer and early fall (which develop naturally in Long and Lower Quinsam lakes) leads to conditions where metals that are sensitive to changes in the redox environment can be mobilized and enter the deep waters. The amount of mobilization varies from year to year: In 2020, there were WQG exceedances for total manganese at 1mb in Long and

Middle Quinsam Lakes. However, in earlier years, the concentrations of iron and manganese were higher in Long Lake. Results from the 2016 Sediment and Benthic study and earlier studies, summarized in SLR (2015) cannot conclusively identify a mine-related source for these metals in Long Lake, aside from possible localized sources from seeps, and there are naturally elevated levels observed in other lakes in the watershed.

11.0 CLOSING

Water quality in the Middle Quinsam Sub-Basin remained consistent with previous years and is considered to be in good condition with little appreciable impacts associated with coal mining. The majority of parameters of concern were below Provincial guideline and objective levels indicating minimal health risk to sensitive aquatic receptors. For example, sulphate concentrations were recorded below its respective guideline during all sampling events in three out of four lakes sampled; this trend signifies water management features and controls at the mine site are effective.

This year, while waiting for pumps to be replaced in the 2-North mine Quinsam experienced permit limit exceedances for Fe-D (3) and TSS (4) at SP4 attributed to elevated fast rising water levels underground flushing the mine walls and limited dilution. Once the pumps were replaced the water quality improved and decreased underground.

Parameters of interest and those displaying slightly elevated concentrations in the lakes include total and dissolved iron (LQL 1mb) and concentrations of manganese at (LLM 1mb) both are associated with anoxic concentrations at depth. The relationship between low DO and elevated iron and manganese in Long Lake 1mb and Lower Quinsam Lake 1mb has been demonstrated in Appendix II, Graphs (27, 44 and 45). This pattern of elevated manganese and iron at depth in these lakes has become more evident since the initiation of the 5 in 30 monitoring in 2013. Previously, there were occasional exceedances occurring during monthly sampling over summer and fall and all events were associated with low DO.

Dissolved sulphate was elevated above WQG in Long lake at 9m and 1mb.This may be attributed to low inflows and outflows during summer and fall causing limited lake turnover throughout the year. Appendix II Graph 28 displays historic sulphate in Long lake and shows the cyclic pattern of sulphate with the 9m and 1mb following a similar trend. Graph 29 displays the average 5 in 30 sulphate concentrations with the upper portion of the lake (1m and 4m's) fluctuating in concentrations highs and lows but the deeper portions remaining fairly stagnant indicating little to no turnover at deep. In Middle Quinsam Lake sulphate concentrations increased at depth during spring and summer with a reduction experienced during fall. At surface (1m and 4m) depths average sulphate concentrations were lowest recorded since the 5 in 30 monitoring began in 2013 averaging 7 mg/L. Related to reduced discharges from Settling Pond #4 from July through September. Concentrations increased during the fall at surface (1m and 4m) depths indicating commencement of discharge at Settling Pond #4. Average sulphate remained below WQG during all seasons in Middle Quinsam lake.

Quinsam anticipates that the efforts invested into the reclamation projects will continue to contribute to improved water quality in Long Lake. This will be determined over the next few years as vegetation starts to become established within the areas of 1 South through 4 South and concentrations of parameter loading start to decline.

Once again depth profiling has resulted in low pH conditions exceeding lower water quality guidelines of 6.5 observed in No Name Lake during spring and fall. However, there is little concern as the slightly acidic conditions are likely naturally occurring.

The Iron River was added to the receiving environment monitoring program during the 2014/2015 monitoring period as a result of the 7-South Area 5 mine approval. This development commenced in mid- July of 2018 with the initiation of blasting through the Long Lake fault zone. The project was complete in mid- January 2019. This system experiences naturally elevated concentrations

(above water quality guidelines) of aluminum and arsenic; aluminum is present throughout the system (i.e. from IR1 through IR8) whereas arsenic is primarily detected below the sandstone unit of the Dunsmuir member contact represented by monitoring location IR6. These parameters have continued to be observed throughout 2019-20 monitoring in this system with less frequent exceedances of aluminum in fall and arsenic during low flow sampling. Arsenic was elevated in IR6 and IR8 during June but only two sampling events exceeded guidelines at IR8 during the summer low flow. The reducing concentrations is possibly due to remediation of the borehole on the Iron river. The main intention for monitoring is to develop water quality objectives reflective of baseline conditions and monitoring any affects from mining in 7-South Area 5.

Quinsam Coal will continue to focus on site wide water management with a target of mitigating parameter of interest concentrations in the receiving environment. To date, Quinsam has demonstrated that the existing mine related controls and features implemented have been effective at reducing concentrations of certain parameters (e.g. sulphate). This trend is expected to persist and will be highlighted by future monitoring programs.

In closing, Quinsam trusts the information herein addresses the environmental responsibilities and provisions applicable to effluent permit PE: 7008.

Should you have any questions or concerns please contact the undersigned at Quinsam Coal Environmental Department 250-286-3224 Ext 225.

Kathleen Russell, B.Sc. E.P. Environmental Coordinator - Quinsam Coal Corporation

Appendix I

Appendix 1 - 2021 Annual Water Quality Report

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Table 1 Description of Effluent, In-Mine Releases Receiving Environment Monitoring Sites 1 Page(s)

Description of Effluent, In-Mine Releases & Receiving Environment Monitoring Sites			
EMS ID #	**Monitoring Sites**	**Abbreviation (Station Code)**	***Type of Water (MW, FW or GW)**
	North Coal Mining Operation		
E207409	Settling Pond #4 Decant	WD	**Discharge (MW)**
E207411	Culvert, at Middle Quinsam Lake Road	WC	MW & FW
E283433	2-North Portal Sump (Adit Sump)	2NPS	MW
E207412	2-North Pit Sump CCR Cover	WP	PAG-CCR Water Cover - MW
E292126	South Dyke Sump	SDS	MW
	South Coal Mine		
E218582	Settling Pond #1 Decant	SPD	**Discharge (MW)**
E217014	Culvert, Downstream End at Access Road	SPC	MW & FW
E217015	South Pit Main Sump Water	3S	PAG-CCR Water Cover (MW & FW)
E292127	2-South Pit In Pit Water Cover (2-South Standpipe)	2S	PAG-CCR Water Cover (MW & FW)
E292128	1977 Bulk Sample Pit	3S77	MW & FW
E292129	Culvert Downstream of 4 South Access Road	4S-Lo	MW & FW
	7-South Mining Operation		
E292069	7-South Surface Decant	7SSD	**Discharge (MW & FW)**
E292110	7-South Adit Sump	7SPS	MW
	Seep Monitoring Sites		
E292131	Long Lake Seeps	LLS & LLSM	GW / MW
	Culvert that collects groundwater and Coal Main logging road water entering MQL (PDSR)	PDSR	GW / SW
	Receiving Environment Monitoring Sites - Near Initial Zone of Dilution (NIDZ)		
Near Initial Dilution Zone (NIDZ) Monitoring Sites			
E292130	Long Lake Entrance (South end water entering Long Lake)	LLE	NIDZ
E292109	Road Crossing Bridge on Stream 1 above the Lower Wetland (Downstream of 7SSD).The site name is Stream 1, 7S.	7S	NIDZ
	Receiving Water (Rivers & Lakes Monitoring Sites) 5 in 30 Monitoring Locations		
North Coal Mining Operation			
E0126402	Quinsam River at Argonaut Road	WA	FW
E206618	Middle Quinsam Lake Centre	MQL (1, 4, 9 & 1m from Bottom)	FW
E0900504	Outflow from Middle Quinsam Lake	WB	FW
South Coal Mine			
E217018	No Name Lake	NNL (1, 4, 9 & 1m from Bottom)	FW
E217017	No Name Lake Outlet	NNO	FW
E206619	Long Lake at Centre	LLM (1, 4, 9 & 1m from Bottom)	FW
E219412	Long Lake Outlet	LLO	FW
7-South Mining Operation (Areas 1 to 4)			
E286930	Quinsam River Upstream of 7-South Mining Operation	QRDS1	FW
E292113	Quinsam River Downstream of 7-South Mining Operation	7SQR	FW
E292112	Lower Wetland Outlet at the confluence of the Quinsam River	LWO	FW
E292118	Lower Quinsam Lake Centre	LQL (1, 4, 9 & 1m from Bottom)	FW
7-South (Proposed) Area 5 Mining Operation			
E297230	Iron River upstream of mining operations	IR1	FW
E297231	Iron River upstream of 7SA5	IR6	FW
E297232	Iron River downstream of 7SA5 and 242 inputs	IR8	FW
E299256	Quinsam River downstream of confluence with Iron River	IRQR	FW
E292118	Lower Quinsam Lake Centre	LQL (1, 4, 9 & 1m from Bottom)	FW
Block 242 Mining Operation (Reclaimed / Not Monitored)			
E225798	Iron River upstream of the 242 influence	Not Monitored	FW
E225808	Iron River downstream of the 242 influence	Not Monitored	FW
N/A	Old portal sump used for collection of water from underground	Reclaimed	FW / GW
Long Lake Seep Passive Treatment System			
N/A	Groundwater well (2-South Mine Pool) influent to the treatment system	QU11-11 (INF-EFF)	MW
N/A	Bio Cell Reactor	BCR-EFF	MW
N/A	Sulphide Polishing Cell	SPC-EFF	MW
N/A	2-South Inflow	2SI	MW
N/A	Aeration Lagoon	AL-EFF	Not in use
N/A	Settling Pond Effluent	SP-EFF	Not in use
*** MW= Mine Water, FW= Freshwater, GW =Groundwater NIDZ = Near Intial Dilution Zone**			

Table 2 Summary of Permit Limit Exceedances Permit Non-Compliances 1 Page(s)

SUMMARY OF PERMIT LIMIT EXCEEDANCES & PERMIT NON-COMPLIANCES

EMS ID & Site Name	Non-Compliance (PNC)	Result (mg/L)	Requirement	Date	Non-Compliance Reason	Number of events or period for PNC, P or spill event.
E292109 - 7S	Flow	None	Continuous	November 20 - January 27	Level logger could not be retrieved from well.	Missing 69 days of required continuous discharge. Flow did not start until November as per field observations.
E292127 - 2S Outflow	Flow	None	Continuous	Dec-19	Battery Died on Flow Meter	1 day
E218582 -SP1 / SPD	Flow	Flow was not recorded continuously for 1 day where staff gauge readings were used to derive flow rate.	Continuous	Mar-09	Flow meter sensor failed. Exchanged with different sensor. Notice sent to ENV March 15.	Missing 1 day of required continuous discharge
Unauthorized discharge at groundwater well QU11-09	Unauthorized discharge - DGIR 204584. All mine impacted discharge must pass through authorized works.	Elevated arsenic, iron and sulphate.	All mine impacted discharge must pass through authorized works.	Estimated based on groundwater elevations from February to May 13 from the groundwater well (QU11-09) with seepage from shalllow mine impacted groundwater continuing to occur in the area.	The water table in 2-North Mine (aquifer recharge zone) increased to a higher elevation (243.7 MASL*) than groundwater well QU11-09 (226.3 MASL) causing the well to become artesian and discharge mine water into the Quinsam river. Spill Report DGIR 204584 submitted report March 19 and additional follow up in Q4 report with further investigation continuing.	Estimated based on groundwater elevation that this occurred from February to May 13, 2021.
E207409 - SP4 / WD	Water quality failed to meet permit limits.	For Fe-D results ranged from 0.44 mg/L to 9.82 mg/L. For TSS results ranged from 35 mg/L to 65 mg/L.	Permit limits for Fe-D is 0.35 mg/L and TSS is 25 mg/L	March 4, 9, 10, 11, 15, 19 and 22	Dewatering 5-South mine pool into 3-Mains 2-North and elevated water levels in 2-North mine resulted in high concentrations of iron and TSS. The 5-Mains and 1-Mains 2-North pumps were being replaced, resulting in limited dilution at SP4. Water quality improved once 5-Mains 2-North was installed (March 24).	There were 5 reported events where water quality was above permit limits. Only 4 events where discharge occurred. On March 4 (DGI 204693) Fe-D sample was collected from a composite sample. There was zero discharge occuring. Altogether 4 iron and 4 TSS exceedances. **See table (2).**

**DGIR = Dangerous Goods Information Reference Number*

** MASL = meters above sea level*

Table 3 Exceedance Summary Table for EMS ID: E207409 Settling Pond #4 1 Page(s)

Exceedance Summary Table for EMS ID: E207409 Settling Pond #4 Results												
EMS ID - Site Name	**DGIR #**	**Daily Max. Flow (m3/s)**	**Daily Average Flow (m3/s)**	**Date**	**Sample ID**	**BV Labs Sample ID**	**BV Labs Job ID**	**Parameter**	**Permit Limit**	**Result**	**DL**	**Units**
E207409 - SP4 / WD	204693 **(no discharge occurred)**	0	0	4-Mar-21	WDCOMP-4MAR21-P	ZL1971	C114768	Dissolved Iron (Fe)	0.3	**1.48**	0.005	mg/L
	204694	0.131	0.109	9-Mar-21	WD-9MAR21-P	ZL5595	C115472	Dissolved Iron (Fe)	0.3	**0.679**	0.01	mg/L
	204545	0.084	0.033	15-Mar-21	WD-15MAR21-P	ZM3645	C116949	Dissolved Iron (Fe)	0.3	**0.44**	0.01	mg/L
	204695	0.081	0.047	10-Mar-21	WDCOMP-10MAR21-P	ZM3621	C116941	Total Suspended Solids (TSS)	25	**65**	1.0	mg/L
		0.12	0.068	11-Mar-21	WDCOMP-11MAR21-P	ZM3622	C116941	Total Suspended Solids (TSS)	25	**39**	1.0	mg/L
	204752	0.154	0.102	19-Mar-21	WDCOMP-19MAR21-P	ZN5782-01	C119472	Total Suspended Solids (TSS)	25	**35**	1.0	mg/L
	204752	0.144	0.093	22-Mar-21	WD-22MAR21-P	ZN3527-03	C118890	Dissolved Iron (Fe)	0.3	**9.82**	0.01	mg/L
		0.144	0.093	22-Mar-21	WD-22MAR21-P	ZN3527-01	C118890	Total Suspended Solids (TSS)	25	**35**	1.0	mg/L
**Dangerous Goods Information Reference Number*												

SUMMARY OF WATER QUALITY GUIDELINE OBSERVATIONS AT RECEIVING MONITORING LOCATIONS 2020-2021

Table 4 Summary Of Water Quality Guideline Observations At Receiving Monitoring Locations 1 Page(s)

EMS ID & Site Name	Parameter (mg/L or pH Units)	Guideline Limit	Result	Date	Guideline	Sampling Events Exceeding Guideline
E217018 - No Name Lake (NNL) 6-13 metres	pH	6.5	5.83 - 6.49	Spring 5 in 30	Min	(22/65) depths profiled during spring
NNL- 1m, 4m and 9m and 1 metre from Bottom (1MB)	Cu-D	0.002	0.00723 (1M), 0.0206 (4M), 0.00798 (9M)	April 29, 2020	M	(1/5) 1 result out of 5 weeks per depth (1m, 4m and 9m)
		0.0003	0.00174 (1M), 0.00445 (4M), 0.00189 (9M), 0.00065 (1MB)	Spring 5 in 30	A	Average of spring, 5 in 30 results for depths 1M, 4M, 9M and 1MB
E292118- Lower Quinsam Lake (LQL) 1M, 4M, 9M and 1MB	Cu-D	0.002	0.00395 (4M) and 0.00366 (9M)	May 1, 2020	M	(1/5) 1 result out of 5 weeks per depth (4m and 9m)
		0.0003	0.00081 (1M), 0.00138 (4M), 0.00117 (9M) and 0.00065 (1MB)	Spring 5 in 30	A	Average of spring, 5 in 30 results for depths 1M, 4M, 9M and 1MB
E206619 - Long Lake Middle (LLM) (7m-21m depths)	pH	<6.5	5.78 to 6.49	Summer and fall 5 in 30	Min	pH resulted in <6.5 in 20/105 results at 9m to 21m depths in summer and 54/110 results at 7m to 21m depths in fall.
E206619 - (LLM) 4 metre (4m)	P-T	0.007 summer average	0.00706	Summer 5 in 30	A	Summer 5 in 30 average
E206619 - (LLM) 9 metre (9m)	SO4-D	128	130	Spring 5 in 30	A	Spring 5 in 30 average
E206619 - LLM 1MB	Hypolimnetic DO	Minimum 3 mg/L June - August	1.10 - 2.90	Summer 5 in 30	Min	D.O. resulted in <3.00 mg/L in 19/105 results at 16m to 21m depths. (5/5) weeks resulted in DO <3.00mg/L in the hypolimnion. Results were also low in fall.
	SO4-D	128	130	Summer and fall 5 in 30	A	Average of summer and fall 5 in 30 results
	Mn-T	0.70	2.28	Fall 5 in 30	A	Average of fall, 5 in 30 results
		0.80	1.95, 1.97, 2.19, 2.20 and 3.10		M	(5/5) results in fall
E206618 - Middle Quinsam Lake (MQL) 7m-14.5 m depths	pH	<6.5	6.28 and 6.40	#N/A	Min	pH resulted in <6.5 in (2/72) results at 1MB
E206618 -MQL 1m, 4m, 9m and 1MB	Cu-T	0.007	0.0376 (1M), 0.0813 (4M), 0.0472 (9M) and 0.0163 (1MB)	April 29, 2020	M	(1/5) results for Cu-T were elevated above WQO for one sampling event per depth.
		0.002	0.00799 (1M), 0.01682 (4M), 0.00987(9M) and 0.00368 (1MB)	Spring 5 in 30	A	Spring 5 in 30 average
E206618 -MQL 9m	P-T	0.006 summer average	0.00856	Summer 5 in 30	A	Summer 5 in 30 average
E206618 -MQL 1MB	Mn-T	0.8	0.82	October 15, 2020	M	(1/5) results in fall
LLE Zone of Dilution 2- In Long lake where LLE enters near the outlet	P-T	0.007 summer average	0.0119	Summer 5 in 30	A	Summer 5 in 30 average
E217017 - No Name Lake Outlet (NNO)	Cu-D	0.0003	0.00036, 0.00044 and 0.000452	Spring, summer and fall 5 in 30	A	5 in 30 Average
E292113 -7 South Quinsam River (7SQR)	Cu-D	0.0003	0.00047 and 0.00052	Spring and summer 5 in 30	A	5 in 30 Average
E299256 - Downstream of the confluence of the Iron River and Quinsam River (IRQR)	Cu-D	0.0003	0.00059 and 0.00045	Spring and summer 5 in 30	A	5 in 30 Average
E297231 - Iron River Upstream of 7SA5 (IR6)	Cu-D	0.0003	0.00061	Summer 5 in 30	A	Summer 5 in 30 Average
	Al-D	0.10	0.1060	fall	M	(1/5) results in fall. Al-D increases with increased flow rates.
		0.05	0.0602	Fall 5 in 30	A	Fall 5 in 30 Average
E297232 - Iron River Downstream of 7SA5 (IR8)	Al-D	0.05	0.0549	Fall 5 in 30	A	Fall 5 in 30 Average. Al-D increases with increased flow rates.
	Cu-D	0.0003	0.00057	Summer 5 in 30	A	Summer 5 in 30 Average
	As-T	0.005	0.00622 and 0.00561	28-Jul and 4-Aug	M	(2/5) sampling events
E292130 - South end water entering Long Lake (LLE)	Fe-D	0.35	0.471 to 1.06	April through September	M	(6/12) Monthly sampling events
	Fe-T	1.00	2.56 and 1.53	August and September	M	(2/12) Monthly sampling events
	SO4	128	132 to 215	Rolling averages	A	(18/41) rolling averages < 128mg/L
E292131- Smaller seep into Long Lake (LLS)	As-T	0.005	0.00505, 0.00545 and 0.0055	February - April	M	(3/10) Monthly sampling events
	Fe-T	1.00	1.14 to 2.54	May - August and January - March	M	(8/10) Monthly sampling events
	Fe-D	0.35	0.545 to 2.39	July - August, November, January - March	M	(6/10) Monthly sampling events
E292131- Long Lake Seep Middle (LLSM)	Fe-T	1.00	1.32 and 1.41	May and January	M	(2/9) Monthly sampling events
	Fe-D	0.35	0.437 to 1.00	April - July and February - March	M	(6/9) Monthly sampling events

***SO4 at LLE was calculated using a rolling average.**

Min = Minimum Water Quality Guideline (WQG) M = Maximum WQG /WQO, A = Average WQG /WQO

For all Middle Quinsam Lake Sub-basin and Iron River results background hardness of 30 mg/L was used to calculate those parameters that are hardness dependent.

Table 5 Contaminated Sites Regulations - Aquatic Life Standards 1 Page(s)

Parameter	Site with Failures	CSR-AW	Results Program
As-D	QU08-13 (A and B), QU08-21G (S and D), QU10-09 (S and D), QU10-10 S, QU11-05 S, QU11-09 S, QU11-36 D, QU12-06S	0.05	0.0701 to 0.828
Se-D	QU11-05 D	0.02	0.0522 and 0.0637
Sulphide as H2S	QU08-10, QU08-13 (A and B), QU08-21G (S and D), QU11-05 (S and D), QU11-09S, QU10-09 D, QU10-08 D, QU10-10 (S and D), QU10-11 D, QU12-06S	0.02	0.0213 to 69.1
SO4-D	MW002	1280	1300
Cl-D	QU10-10D	1500	2600 and 3000
F-D	QU10-08D, QU12-06S	2	2

Table 6 Settling Pond # 4 - Authorized Discharge Location for North Mine Water 7 Page(s)

EMS ID	E207409			Stn Std	PL-N								
Site Description	Settling Pond # 4 - Authorized Discharge Location for North Mine Water												
Site Name	WD	Std Val		WD-7Apr20-P	WD-15Apr20-R	WD-15Apr20-P	WD-20APR20-P	WD-27APR20-P	WD-28APR20-P	WD-30APR20-P	WD-4MAY20-P	WD-11MAY20-P	WD-20MAY20-P
Date		Max	Min	4/7/2020	4/15/2020	4/15/2020	4/20/2020	4/27/2020	4/28/2020	4/30/2020	5/4/2020	5/11/2020	5/20/2020
pH-F	pH Units			7.66	7.63	7.63	7.76	7.68	7.7	7.58	7.71	7.4	7.44
Cond-F	uS/cm			1760	1987	1987	2104	2100	2440	2221	1998	1802	1660
pH-L	pH Units	8.5	6.0					8.19			8.24		8.24
Cond-L	uS/cm							2200			2200		2200
SO4-D	mg/L			760	650	600	760	740			740	750	740
TSS	mg/L	25	0	2.4	<1.0	2.0	3.0	3.2	3.2	3.2	3.2	2.8	2.9
Alk-T	mg/L			420				400			430		
Acidity83	mg/L			4.2				3.2			1.6		
Al-T	mg/L			0.0048				0.0038			0.0039		
As-T	mg/L			0.00170				0.00139			0.00197		
Ba-T	mg/L			0.0232				0.0221			0.0233		
B-T	mg/L			0.854				0.845			0.917		
Cd-T	mg/L			<0.000010				<0.000010			0.000022		
Ca-T	mg/L			158				156			163		
Cr-T	mg/L			<0.0010				<0.0010			<0.0010		
Co-T	mg/L			<0.00020				<0.00020			<0.00020		
Cu-T	mg/L			0.00148				0.00107			0.00153		
Hard-T	mg/L			468				457			477		
Fe-T	mg/L			0.962				0.723			1.04		
Pb-T	mg/L			<0.00020				<0.00020			<0.00020		
Mg-T	mg/L			17.6				16.4			16.8		
Mn-T	mg/L			0.108				0.0789			0.152		
Hg-T	mg/L			<0.0000019				<0.0000019			<0.0000019		
Mo-T	mg/L			<0.0010				<0.0010			<0.0010		
Ni-T	mg/L			<0.0010				<0.0010			<0.0010		
K-T	mg/L			4.78				4.57			5.32		
S-T	mg/L			284				259			268		
Se-T	mg/L			<0.00010				<0.00010			<0.00010		
Si-T	mg/L			2.92				2.64			3.16		
Ag-T	mg/L			<0.000020				<0.000020			<0.000020		
Na-T	mg/L			352				303			345		
Sr-T	mg/L			1.55				1.65			1.76		
Zn-T	mg/L			<0.0050				<0.0050			<0.0050		
Al-D	mg/L	0.5	0	<0.0030				<0.0030			<0.0030		
As-D	mg/L			0.00075				0.00074			0.00095		
Ba-D	mg/L			0.0218				0.0223			0.0219		
B-D	mg/L			0.794				0.833			0.957		
Be-D	mg/L			<0.00010				<0.00010			<0.00010		
Cd-D	mg/L			<0.000010				<0.000010			<0.000010		
Ca-D	mg/L			155				162			162		
Cr-D	mg/L			<0.0010				<0.0010			<0.0010		
Co-D	mg/L			<0.00020				<0.00020			<0.00020		
Cu-D	mg/L	0.02	0	0.00035				0.00049			0.00037		
Hard-D	mg/L			457				474			475		
Fe-D	mg/L	0.3	0	0.0107				0.0207			0.0119		
Pb-D	mg/L	0.05	0	<0.00020				<0.00020			<0.00020		
Mg-D	mg/L			17.1				16.5			17.4		
Mn-D	mg/L			0.102				0.0795			0.152		
Hg-D	mg/L			<0.0000019				<0.0000019			<0.0000019		
Mo-D	mg/L			<0.0010				<0.0010			<0.0010		
Ni-D	mg/L			<0.0010				<0.0010			<0.0010		
K-D	mg/L			4.63				4.88			5.01		
S-D	mg/L			263				267			275		
Se-D	mg/L			<0.00010				<0.00010			<0.00010		
Si-D	mg/L			2.80				2.69			3.05		
Na-D	mg/L			344				307			361		
Sr-D	mg/L			1.49				1.76			1.59		
Zn-D	mg/L	0.1	0	<0.0050				<0.0050			<0.0050		
O&G	mg/L	10	0	<1.0									

Table 6 Settling Pond # 4 - Authorized Discharge Location for North Mine Water 7 Page(s)

EMS ID	E207409												
Site Description													
Site Name	WD	Std Val		WD-25MAY20-P	WD-2JUN20-P	WD-9JUN20-P	WD-15JUN20-P	WD-22JUN20-P	WD-30JUN20-P	WD-6JUL20-P	WD-13JUL20-P	WD-20JUL20-P	WD-27JUL20-P
Date		Max	Min	5/25/2020	6/2/2020	6/9/2020	6/15/2020	6/22/2020	6/30/2020	7/6/2020	7/13/2020	7/20/2020	7/27/2020
pH-F	pH Units			7.76	7.88	7.78	7.80	7.88	7.92	7.65	8.01	8.05	7.95
Cond-F	uS/cm			1983	2011	2015	2000	2011	2000	2023	2011	2019	2011
pH-L	pH Units	8.5	6.0	8.15	8.23	8.15	8.21	8.18	8.18	8.21	8.33	8.18	8.22
Cond-L	uS/cm			2100		2100	2100	2200	2100		2100	2200	2200
SO4-D	mg/L			810	760	750	720	700	730	720	770	660	700
TSS	mg/L	25	0	3.2	3.6	4.0	6.4	4.0	3.6	1.6	2.0	3.2	2.8
Alk-T	mg/L				430					440			
Acidity83	mg/L				5.5					4.3			
Al-T	mg/L				<0.0060								
As-T	mg/L				0.00192								
Ba-T	mg/L				0.0216								
B-T	mg/L				1.06								
Cd-T	mg/L				<0.000020								
Ca-T	mg/L				155								
Cr-T	mg/L				<0.0020								
Co-T	mg/L				<0.00040								
Cu-T	mg/L				0.0013								
Hard-T	mg/L				459								
Fe-T	mg/L				0.975								
Pb-T	mg/L				<0.00040								
Mg-T	mg/L				17.1								
Mn-T	mg/L				0.124								
Hg-T	mg/L				<0.0000019								
Mo-T	mg/L				<0.0020								
Ni-T	mg/L				<0.0020								
K-T	mg/L				5.11								
S-T	mg/L				266								
Se-T	mg/L				<0.00020								
Si-T	mg/L				2.62								
Ag-T	mg/L				<0.000040								
Na-T	mg/L				365								
Sr-T	mg/L				1.50								
Zn-T	mg/L				<0.010								
Al-D	mg/L	0.5	0		<0.0030					<0.015			
As-D	mg/L				0.00083					0.00080			
Ba-D	mg/L				0.0196					0.0184			
B-D	mg/L				0.911					1.07			
Be-D	mg/L				<0.00010					<0.00050			
Cd-D	mg/L				<0.000010					<0.000050			
Ca-D	mg/L				158					141			
Cr-D	mg/L				<0.0010					<0.0050			
Co-D	mg/L				<0.00020					<0.0010			
Cu-D	mg/L	0.02	0		0.00043					<0.0010			
Hard-D	mg/L				461					420			
Fe-D	mg/L	0.3	0		0.0157					<0.025			
Pb-D	mg/L	0.05	0		<0.00020					<0.0010			
Mg-D	mg/L				16.0					16.3			
Mn-D	mg/L				0.106					0.0701			
Hg-D	mg/L				<0.0000019					<0.0000019			
Mo-D	mg/L				<0.0010					<0.0050			
Ni-D	mg/L				<0.0010					<0.0050			
K-D	mg/L				4.93					4.89			
S-D	mg/L				237					243			
Se-D	mg/L				<0.00010					<0.00050			
Si-D	mg/L				2.53					2.69			
Na-D	mg/L				333					349			
Sr-D	mg/L				1.49					1.44			
Zn-D	mg/L	0.1	0		<0.0050					<0.025			
O&G	mg/L	10	0		<1.0								

Table 6 Settling Pond # 4 - Authorized Discharge Location for North Mine Water 7 Page(s)

EMS ID	E207409												
Site Description													
Site Name	WD	Std Val		WD-6AUG20-P	WD-12AUG20-P	WD-18AUG20-P	WD-18AUG20-R	WD-24AUG20-P	WD-3SEP20-P	WD-3SEP20-R	WD-8SEP20-P	WD-14SEPT20-F	WD-21SEP20-P
Date		Max	Min	8/6/2020	8/12/2020	8/18/2020	8/18/2020	8/24/2020	9/3/2020	9/3/2020	9/8/2020	9/14/2020	9/21/2020
pH-F	pH Units			7.33	7.95	8.09	7.45	7.73	7.90	7.57	7.45	7.55	7.76
Cond-F	uS/cm			1105	2032	416	2000	2060	2012	1060	2014	2009	2001
pH-L	pH Units	8.5	6.0	8.25	8.26	8.13	8.19	8.09	8.32	8.24		8.13	8.23
Cond-L	uS/cm				2200	2200	2200	2100	2100	2100		2100	2100
SO4-D	mg/L			670	760	700	710	800	630	680	660	650	650
TSS	mg/L	25	0	4.4	4.8	4.8	4.0	2.0	4.8	2.8	2.8	3.2	2.0
Alk-T	mg/L			440							460		
Acidity83	mg/L			<1.0							4.7		
Al-T	mg/L			<0.0060									
As-T	mg/L			0.00160									
Ba-T	mg/L			0.0175									
B-T	mg/L			0.89									
Cd-T	mg/L			<0.000020									
Ca-T	mg/L			142									
Cr-T	mg/L			<0.0020									
Co-T	mg/L			<0.00040									
Cu-T	mg/L			<0.0010									
Hard-T	mg/L			418									
Fe-T	mg/L			0.613									
Pb-T	mg/L			<0.00040									
Mg-T	mg/L			15.1									
Mn-T	mg/L			0.0576									
Hg-T	mg/L			<0.0000019									
Mo-T	mg/L			<0.0020									
Ni-T	mg/L			<0.0020									
K-T	mg/L			4.79									
S-T	mg/L			239									
Se-T	mg/L			<0.00020									
Si-T	mg/L			2.73									
Ag-T	mg/L			<0.000040									
Na-T	mg/L			332									
Sr-T	mg/L			1.48									
Zn-T	mg/L			<0.010									
Al-D	mg/L	0.5	0	<0.0030							<0.0030		
As-D	mg/L			0.00072							0.00093		
Ba-D	mg/L			0.0171							0.0161		
B-D	mg/L			0.888							0.937		
Be-D	mg/L			<0.00010							<0.00010		
Cd-D	mg/L			<0.000010							<0.000010		
Ca-D	mg/L			152							143		
Cr-D	mg/L			<0.0010							<0.0010		
Co-D	mg/L			<0.00020							<0.00020		
Cu-D	mg/L	0.02	0	0.00033							0.00022		
Hard-D	mg/L			444							419		
Fe-D	mg/L	0.3	0	0.0126							0.0099		
Pb-D	mg/L	0.05	0	<0.00020							<0.00020		
Mg-D	mg/L			15.6							15.3		
Mn-D	mg/L			0.0543							0.0554		
Hg-D	mg/L			<0.0000019							<0.0000019		
Mo-D	mg/L			<0.0010							<0.0010		
Ni-D	mg/L			<0.0010							<0.0010		
K-D	mg/L			4.84							4.82		
S-D	mg/L			241							231		
Se-D	mg/L			<0.00010							<0.00010		
Si-D	mg/L			2.78							3.20		
Na-D	mg/L			331							316		
Sr-D	mg/L			1.51							1.57		
Zn-D	mg/L	0.1	0	<0.0050							<0.0050		
O&G	mg/L	10	0	<1.0									

Table 6 Settling Pond # 4 - Authorized Discharge Location for North Mine Water 7 Page(s)

EMS ID	E207409												
Site Description													
Site Name	WD	Std Val		WD-24SEPT20-P	WD-28SEP20-P	WD-5OCT20-P	WD-13OCT20-P	WD-19OCT20-P	WD-19OCT20-R	WD-26OCT20-P	WD-2NOV20-P	WD-9NOV20-P	WD-16NOV20-P
Date		Max	Min	9/24/2020	9/28/2020	10/5/2020	10/13/2020	10/19/2020	10/19/2020	10/26/2020	11/2/2020	11/9/2020	11/16/2020
pH-F	pH Units			7.73	7.86	8.17	7.7	7.68	8.18	7.94	7.61	8.18	8.27
Cond-F	uS/cm			1764	2001	2001	1903	1905	1608	1837	1522	1608	1341
pH-L	pH Units	8.5	6.0	8.04	8.16		8.32	8.34	8.32	8.32		8.24	
Cond-L	uS/cm			1800	1900		1800	1800	1800	1800		1600	
SO4-D	mg/L				580	580	530	520	510	500	500	480	500
TSS	mg/L	25	0		<1.0	1.2	2.0	1.6	1.2	1.2	3.6	<1.0	1.2
Alk-T	mg/L					450					470		
Acidity83	mg/L					7.9					5.3		
Al-T	mg/L					0.0098							
As-T	mg/L					0.00165							
Ba-T	mg/L					0.0157							
B-T	mg/L					1.04							
Cd-T	mg/L					<0.000010							
Ca-T	mg/L					130							
Cr-T	mg/L					<0.0010							
Co-T	mg/L					<0.00020							
Cu-T	mg/L					<0.00050							
Hard-T	mg/L					382							
Fe-T	mg/L					0.547							
Pb-T	mg/L					<0.00020							
Mg-T	mg/L					13.9							
Mn-T	mg/L					0.0570							
Hg-T	mg/L					<0.0000019							
Mo-T	mg/L					<0.0010							
Ni-T	mg/L					<0.0010							
K-T	mg/L					4.41							
S-T	mg/L					206							
Se-T	mg/L					<0.00010							
Si-T	mg/L					2.97							
Ag-T	mg/L					<0.000020							
Na-T	mg/L					323							
Sr-T	mg/L					1.22							
Zn-T	mg/L					<0.0050							
Al-D	mg/L	0.5	0			0.0035					<0.0030		
As-D	mg/L					0.00098					0.00121		
Ba-D	mg/L					0.0153					0.0149		
B-D	mg/L					0.984					0.981		
Be-D	mg/L					<0.00010					<0.00010		
Cd-D	mg/L					<0.000010					<0.000010		
Ca-D	mg/L					123					111		
Cr-D	mg/L					<0.0010					<0.0010		
Co-D	mg/L					<0.00020					<0.00020		
Cu-D	mg/L	0.02	0			0.00024					<0.00020		
Hard-D	mg/L					362					331		
Fe-D	mg/L	0.3	0			0.0064					0.0064		
Pb-D	mg/L	0.05	0			<0.00020					<0.00020		
Mg-D	mg/L					13.1					12.9		
Mn-D	mg/L					0.0468					0.0868		
Hg-D	mg/L					<0.0000019					<0.0000019		
Mo-D	mg/L					<0.0010					<0.0010		
Ni-D	mg/L					<0.0010					<0.0010		
K-D	mg/L					4.33					3.97		
S-D	mg/L					198					186		
Se-D	mg/L					<0.00010					<0.00010		
Si-D	mg/L					2.71					2.88		
Na-D	mg/L					310					293		
Sr-D	mg/L					1.22					1.11		
Zn-D	mg/L	0.1	0			<0.0050					<0.0050		
O&G	mg/L	10	0			<1.0							

Table 6 Settling Pond # 4 - Authorized Discharge Location for North Mine Water 7 Page(s)

EMS ID	E207409												
Site Description													
Site Name	WD	Std Val		WD-23NOV20-R	WD-23NOV20-P	WD-2DEC2020-F	WD-7DEC20-P	WD-14DEC2020-I	WD-22DEC2020-I	WD-29DEC20-R	WD-29DEC20-M	WD-4JAN21-P	WD-4JAN21-R
Date		Max	Min	11/23/2020	11/23/2020	12/2/2020	12/7/2020	12/14/2020	12/22/2020	12/29/2020	12/29/2020	1/4/2021	1/4/2021
pH-F	pH Units			7.87	7.87	7.96	7.97	8.16	7.75	7.83	7.83	7.66	7.66
Cond-F	uS/cm			1548	1548	1776	1995	1860	1376	1670	1670	1084	1084
pH-L	pH Units	8.5	6.0	8.25	8.18	8.27		8.25	8.13	8.27	8.25		
Cond-L	uS/cm			1800	1800	1700		1800	1400	1600	1700		
SO4-D	mg/L			560	530	600	740	720	550	630	680	420	410
TSS	mg/L	25	0	2.4	2.8	1.2	2.0	1.2	<1.0	<1.0	4.4	5.6	4.4
Alk-T	mg/L						340					140	140
Acidity83	mg/L						3.5					3.4	3.4
Al-T	mg/L						0.0068						
As-T	mg/L						0.00069						
Ba-T	mg/L						0.0162						
B-T	mg/L						0.727						
Cd-T	mg/L						0.000022						
Ca-T	mg/L						154						
Cr-T	mg/L						<0.0010						
Co-T	mg/L						0.00030						
Cu-T	mg/L						<0.00050						
Hard-T	mg/L						464						
Fe-T	mg/L						0.154						
Pb-T	mg/L						<0.00020						
Mg-T	mg/L						19.2						
Mn-T	mg/L						0.0988						
Hg-T	mg/L						<0.0000019						
Mo-T	mg/L						<0.0010						
Ni-T	mg/L						0.0013						
K-T	mg/L						3.47						
S-T	mg/L						247						
Se-T	mg/L						<0.00010						
Si-T	mg/L						3.07						
Ag-T	mg/L						<0.000020						
Na-T	mg/L						262						
Sr-T	mg/L						1.40						
Zn-T	mg/L						<0.0050						
Al-D	mg/L	0.5	0				<0.0030					0.0225	0.0214
As-D	mg/L						0.00053					0.00035	0.00033
Ba-D	mg/L						0.0157					0.0101	0.0098
B-D	mg/L						0.699					0.367	0.331
Be-D	mg/L						<0.00010					<0.00010	<0.00010
Cd-D	mg/L						<0.000010					<0.000010	<0.000010
Ca-D	mg/L						147					125	125
Cr-D	mg/L						<0.0010					<0.0010	<0.0010
Co-D	mg/L						0.00027					0.00110	0.00104
Cu-D	mg/L	0.02	0				0.00036					0.00067	0.00063
Hard-D	mg/L						443					371	370
Fe-D	mg/L	0.3	0				0.0135					0.0251	0.0293
Pb-D	mg/L	0.05	0				<0.00020					<0.00020	<0.00020
Mg-D	mg/L						18.7					14.5	14.2
Mn-D	mg/L						0.0941					0.0993	0.0994
Hg-D	mg/L						<0.0000019					<0.0000019	<0.0000019
Mo-D	mg/L						<0.0010					<0.0010	<0.0010
Ni-D	mg/L						0.0013					0.0036	0.0035
K-D	mg/L						3.43					1.74	1.80
S-D	mg/L						239					144	143
Se-D	mg/L						<0.00010					<0.00010	<0.00010
Si-D	mg/L						3.03					2.80	2.84
Na-D	mg/L						261					88.7	88.3
Sr-D	mg/L						1.40					0.856	0.868
Zn-D	mg/L	0.1	0				<0.0050					<0.0050	<0.0050
O&G	mg/L	10	0				<1.0						

Table 6 Settling Pond # 4 - Authorized Discharge Location for North Mine Water 7 Page(s)

EMS ID	E207409												
Site Description													
Site Name	WD	Std Val		WD-11JAN21-P	WD-18JAN21-P	WD-25JAN21-P	WD-1FEB21-P	WD-8FEB21-P	WD-16FEB21-P	WD-18FEB21-P	WD-22FEB21-P	WD-1MAR21-P	WD-4MAR21-P
Date		Max	Min	1/11/2021	1/18/2021	1/25/2021	2/1/2021	2/8/2021	2/16/2021	2/18/2021	2/22/2021	3/1/2021	3/4/2021
pH-F	pH Units			7.62	7.78	8.49	8.49	8.01	7.81	7.63	7.95	7.34	7.2
Cond-F	uS/cm			1759	2160	1515	1515	1903	2520	2130	2210	2730	2814
pH-L	pH Units	8.5	6.0	8.34	7.91	8.13		7.92	7.54		7.98		
Cond-L	uS/cm			1600	2000	1900		1900	2200		2000		
SO4-D	mg/L			610	770	710	780	720	870		770	820	
TSS	mg/L	25	0	3.2	3.6	1.2	3.6	4.8	7.6	2.0	4.4	2.0	
Alk-T	mg/L						330					300	
Acidity83	mg/L						<1.0					8.3	
Al-T	mg/L						0.0405			0.0399		0.0100	0.0239
As-T	mg/L						0.00021			0.00037		0.00042	0.00061
Ba-T	mg/L						0.0108			0.0151		0.0140	0.0185
B-T	mg/L						0.419			0.920		0.697	1.01
Cd-T	mg/L						0.000031			0.000036		0.000017	0.000061
Ca-T	mg/L						131			197		190	220
Cr-T	mg/L						<0.0010			<0.0010		<0.0010	<0.0020
Co-T	mg/L						0.00132			0.0181		0.0127	0.0301
Cu-T	mg/L						0.00084			0.00225		0.00087	0.0023
Hard-T	mg/L						404			584		561	659
Fe-T	mg/L						0.197			1.13		0.857	2.09
Pb-T	mg/L						<0.00020			<0.00020		<0.00020	<0.00040
Mg-T	mg/L						18.5			22.0		20.9	26.5
Mn-T	mg/L						0.116			0.552		0.520	0.965
Hg-T	mg/L						<0.0000019					<0.0000019	
Mo-T	mg/L						<0.0010			<0.0010		<0.0010	<0.0020
Ni-T	mg/L						0.0031			0.0385		0.0254	0.0539
K-T	mg/L						2.02			3.69		3.37	4.03
S-T	mg/L						170			329		288	378
Se-T	mg/L						0.00013			<0.00010		<0.00010	<0.00020
Si-T	mg/L						2.35			3.17		2.94	3.37
Ag-T	mg/L						<0.000020			<0.000020		<0.000020	<0.000040
Na-T	mg/L						147			295		271	350
Sr-T	mg/L						0.950			1.56		1.71	1.99
Zn-T	mg/L						<0.0050			0.0164		0.0101	0.012
Al-D	mg/L	0.5	0				0.0157			0.0034		0.0033	<0.0030
As-D	mg/L						0.00048			0.00017		0.00030	0.00028
Ba-D	mg/L						0.0126			0.0147		0.0142	0.0163
B-D	mg/L						0.625			0.845		0.685	0.870
Be-D	mg/L						<0.00010			<0.00010		<0.00010	<0.00010
Cd-D	mg/L						<0.000010			0.000012		<0.000010	0.000012
Ca-D	mg/L						207			198		202	208
Cr-D	mg/L						<0.0010			<0.0010		<0.0010	<0.0010
Co-D	mg/L						0.00071			0.0195		0.0131	0.0271
Cu-D	mg/L	0.02	0				0.00028			0.00024		<0.00020	0.00094
Hard-D	mg/L						610			585		592	618
Fe-D	mg/L	0.3	0				0.0115			0.0251		0.0080	0.0171
Pb-D	mg/L	0.05	0				<0.00020			<0.00020		<0.00020	<0.00020
Mg-D	mg/L						22.9			22.0		21.4	24.0
Mn-D	mg/L						0.122			0.598		0.538	0.913
Hg-D	mg/L						<0.0000019					<0.0000019	
Mo-D	mg/L						<0.0010			<0.0010		<0.0010	<0.0010
Ni-D	mg/L						0.0023			0.0405		0.0261	0.0479
K-D	mg/L						3.34			3.68		3.49	3.81
S-D	mg/L						278			321		295	358
Se-D	mg/L						<0.00010			<0.00010		<0.00010	<0.00010
Si-D	mg/L						3.24			3.12		3.12	3.07
Na-D	mg/L						233			291		272	325
Sr-D	mg/L						1.67			1.58		1.73	1.97
Zn-D	mg/L	0.1	0				<0.0050			0.0093		<0.0050	0.0073
O&G	mg/L	10	0				<1.0						

Table 6 Settling Pond # 4 - Authorized Discharge Location for North Mine Water 7 Page(s)

EMS ID	E207409							
Site Description								
Site Name	WD	Std Val		WD-9MAR21-P	WD-15MAR21-P	WD-22MAR21-P	WD-25MAR21-P	WD-31MAR21-P
Date		Max	Min	3/9/2021	3/15/2021	3/22/2021	3/25/2021	3/31/2021
pH-F	pH Units			7.25	7.45	7.3	8.16	7.44
Cond-F	uS/cm			2770	2460	2920	1661.7	1962
pH-L	pH Units	8.5	6.0	7.23		7.90	8.02	8.24
Cond-L	uS/cm			2300		2800	1900	1900
SO4-D	mg/L			1100	1000	1300	630	480
TSS	mg/L	25	0	11	4.4	35	2.8	3.2
Alk-T	mg/L			350	370	390	420	460
Acidity83	mg/L			18.8	17.4	13.9	6.9	1.9
Al-T	mg/L			0.0179	0.0126	0.0356	0.0070	0.0045
As-T	mg/L			0.00068	0.00038	0.00071	0.00145	0.00130
Ba-T	mg/L			0.0161	0.0153	0.0165	0.0179	0.0200
B-T	mg/L			0.92	0.94	1.09	1.03	0.902
Cd-T	mg/L			0.000041	0.000024	0.000058	<0.000020	<0.000010
Ca-T	mg/L			198	205	209	142	134
Cr-T	mg/L			<0.0020	<0.0020	<0.0020	<0.0020	<0.0010
Co-T	mg/L			0.0455	0.0449	0.116	0.0167	0.00164
Cu-T	mg/L			0.0030	0.0021	0.0036	<0.0010	0.00105
Hard-T	mg/L			591	615	652	428	389
Fe-T	mg/L			3.72	3.21	14.6	0.921	0.022
Pb-T	mg/L			<0.00040	<0.00040	<0.00040	<0.00040	<0.00020
Mg-T	mg/L			23.2	25.2	31.8	17.5	13.3
Mn-T	mg/L			1.05	1.09	2.40	0.515	0.188
Hg-T	mg/L				<0.0000019		<0.0000019	
Mo-T	mg/L			<0.0020	<0.0020	<0.0020	<0.0020	<0.0010
Ni-T	mg/L			0.0643	0.0698	0.149	0.0265	0.0066
K-T	mg/L			3.51	3.80	4.26	3.58	2.95
S-T	mg/L			347	330	423	233	163
Se-T	mg/L			<0.00020	<0.00020	<0.00020	<0.00020	<0.00010
Si-T	mg/L			2.94	3.12	3.61	3.40	3.14
Ag-T	mg/L			<0.000040	<0.000040	<0.000040	<0.000040	<0.000020
Na-T	mg/L			335	339	427	299	251
Sr-T	mg/L			2.08	1.73	2.02	1.31	1.17
Zn-T	mg/L			0.015	0.018	0.032	0.031	0.0158
Al-D	mg/L	0.5	0	<0.0060	<0.0060	<0.0060	<0.0060	0.0075
As-D	mg/L			<0.00020	<0.00020	0.00033	0.00091	0.00156
Ba-D	mg/L			0.0148	0.0140	0.0146	0.0150	0.0209
B-D	mg/L			0.85	0.92	1.12	0.93	0.888
Be-D	mg/L			<0.00020	<0.00020	<0.00020	<0.00020	<0.00010
Cd-D	mg/L			<0.000020	<0.000020	<0.000020	<0.000020	<0.000010
Ca-D	mg/L			195	202	205	122	129
Cr-D	mg/L			<0.0020	<0.0020	<0.0020	<0.0020	<0.0010
Co-D	mg/L			0.0380	0.0430	0.110	0.0143	0.00160
Cu-D	mg/L	0.02	0	<0.00040	0.00146	0.00086	<0.00040	0.00081
Hard-D	mg/L			584	608	639	369	383
Fe-D	mg/L	0.3	0	0.679	0.440	9.82	0.012	0.222
Pb-D	mg/L	0.05	0	<0.00040	<0.00040	<0.00040	<0.00040	<0.00020
Mg-D	mg/L			23.5	25.2	30.8	15.6	15.1
Mn-D	mg/L			0.945	1.06	2.39	0.445	0.189
Hg-D	mg/L				<0.0000019		<0.0000019	
Mo-D	mg/L			<0.0020	<0.0020	<0.0020	<0.0020	<0.0010
Ni-D	mg/L			0.0602	0.0673	0.149	0.0230	0.0063
K-D	mg/L			3.42	3.78	3.99	3.09	3.35
S-D	mg/L			333	332	407	197	196
Se-D	mg/L			<0.00020	<0.00020	<0.00020	<0.00020	<0.00010
Si-D	mg/L			2.82	2.98	3.30	2.98	2.83
Na-D	mg/L			314	334	402	265	282
Sr-D	mg/L			1.75	1.71	1.86	1.17	1.18
Zn-D	mg/L	0.1	0	<0.010	<0.010	0.028	0.021	0.0148
O&G	mg/L	10	0					

Table 7 2 North Pit Sump CCR Water Cover 1 Page(s)

EMS ID	E207412												
Site Description 2 North Pit Sump CCR Water Cover													
Site Name	WP	WP-7Apr20-M	WP-4MAY20-M	WP-2JUN20-M	WP-6JUL20-M	WP-6AUG20-M	WP-8SEP20-M	WP-5OCT20-M	WP-2NOV20-M	WP-7DEC20-M	WP-4JAN21-M	WP-1FEB21-M	WP-1MAR21-M
Date		4/7/2020	5/4/2020	6/2/2020	7/6/2020	8/6/2020	9/8/2020	10/5/2020	11/2/2020	12/7/2020	1/4/2021	2/1/2021	3/1/2021
pH-F	pH Units	7.42	7.20	7.27	7.35	7.35	7.8	8.26	8.35	8.24	7.79	8.22	7.35
Cond-F	uS/cm	2010	2000	2003	2004	1223	2002	2001	1596	1623	1132	1420	1452
SO4-D	mg/L	660	780	730	750	750	650	590	590	550	460	480	550
TSS	mg/L	2.8	5.2	2.8	2.0	1.2	3.2	4.4	6.8	1.6	10	<1.0	9.2
Alk-T	mg/L	180	330	310	190	390	410	400	300	270	120	240	280
Acidity83	mg/L	2.5	2.8	<1.0	<1.0	<1.0	1.4	2.3	<1.0	<1.0	5.1	<1.0	<1.0
Al-T	mg/L	0.0279	0.0350	0.0094	0.0345	<0.0060	0.0062	0.0132	0.261	0.0177	0.245	0.0521	0.0526
As-T	mg/L	0.00138	0.00159	0.00074	0.00107	0.00152	0.00149	0.00133	0.00176	0.00066	0.00079	0.00054	0.00034
Ba-T	mg/L	0.0162	0.0222	0.0173	0.0126	0.0180	0.0195	0.0167	0.0133	0.0121	0.0145	0.0130	0.0122
B-T	mg/L	0.468	0.755	0.93	0.92	0.94	1.06	1.01	0.944	0.748	0.192	0.631	0.500
Cd-T	mg/L	<0.000010	<0.000010	<0.000020	<0.000020	<0.000020	<0.000010	<0.000010	<0.000010	<0.000010	0.000030	<0.000010	<0.000010
Ca-T	mg/L	196	160	131	70.2	115	111	107	70.1	94.5	158	204	124
Cr-T	mg/L	<0.0010	<0.0010	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Co-T	mg/L	0.00058	0.00021	<0.00040	<0.00040	<0.00040	<0.00020	0.00027	0.00067	0.00072	0.00177	0.00074	0.00074
Cu-T	mg/L	0.00212	0.00145	<0.0010	0.0025	<0.0010	0.00051	0.00083	0.00379	0.00081	0.00356	0.00061	0.00110
Hard-T	mg/L	606	479	407	251	352	336	323	235	298	463	606	380
Fe-T	mg/L	0.304	0.785	0.162	0.139	0.223	0.232	0.202	0.573	0.100	0.461	0.154	0.233
Pb-T	mg/L	<0.00020	<0.00020	<0.00040	<0.00040	<0.00040	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Mg-T	mg/L	28.5	19.6	19.1	18.3	15.9	14.4	13.8	14.6	15.0	16.6	23.6	17.2
Mn-T	mg/L	0.0670	0.0927	0.0170	0.0210	0.0375	0.0251	0.0277	0.0207	0.0291	0.0756	0.125	0.0489
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019
Mo-T	mg/L	<0.0010	<0.0010	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Ni-T	mg/L	0.0028	0.0010	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	0.0017	0.0024	0.0066	0.0024	0.0029
K-T	mg/L	3.22	4.50	4.56	4.76	5.07	5.31	4.82	4.44	3.65	1.23	3.52	2.18
S-T	mg/L	240	255	256	258	251	273	223	211	194	150	283	181
Se-T	mg/L	0.00015	<0.00010	<0.00020	<0.00020	<0.00020	<0.00010	<0.00010	<0.00010	<0.00010	0.00031	<0.00010	0.00010
Si-T	mg/L	1.76	2.91	2.29	0.31	2.62	3.26	3.11	1.93	2.30	2.43	2.96	2.09
Ag-T	mg/L	<0.000020	<0.000020	<0.000040	<0.000040	<0.000040	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Na-T	mg/L	148	278	321	313	355	366	347	303	247	37.0	244	175
Sr-T	mg/L	1.37	1.63	1.37	1.16	1.46	1.43	1.28	1.08	1.04	0.747	1.62	1.05
Zn-T	mg/L	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	0.0061	<0.0050	<0.0050
Al-D	mg/L	0.0032	<0.0030	<0.0030	<0.015	<0.0030	<0.0030	0.0087	0.0033	0.0072	0.0035	0.0130	0.0118
As-D	mg/L	0.00113	0.00056	0.00051	0.00106	0.00125	0.00107	0.00109	0.00081	0.00060	<0.00010	0.00018	0.00018
Ba-D	mg/L	0.0147	0.0213	0.0164	0.0141	0.0177	0.0174	0.0161	0.0115	0.0117	0.0159	0.0112	0.0116
B-D	mg/L	0.433	0.809	0.850	1.13	0.942	0.962	1.01	0.889	0.725	0.146	0.507	0.476
Be-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000050	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000026	0.000013	<0.000010
Ca-D	mg/L	175	158	128	77.1	123	112	93.4	71.0	87.5	224	133	123
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Co-D	mg/L	0.00051	<0.00020	<0.00020	<0.0010	<0.00020	<0.00020	<0.00020	<0.00020	0.00062	<0.00020	0.00111	0.00054
Cu-D	mg/L	0.00172	0.00062	0.00046	0.0046	0.00049	0.00034	0.00057	0.00082	0.00088	0.00023	0.00046	0.00044
Hard-D	mg/L	548	479	396	279	372	340	286	233	279	626	410	375
Fe-D	mg/L	0.0600	0.0098	0.0086	0.074	0.118	0.0410	0.0240	0.0079	0.0263	0.0147	<0.0050	<0.0050
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.0010	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Mg-D	mg/L	26.8	20.4	18.8	20.9	16.0	14.7	12.8	13.6	14.7	16.0	19.1	16.5
Mn-D	mg/L	0.0590	0.0647	<0.0010	0.0161	0.0315	0.0032	0.0114	0.0027	0.0252	0.0126	0.102	0.0388
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0010	0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Ni-D	mg/L	0.0025	<0.0010	<0.0010	<0.0050	<0.0010	<0.0010	<0.0010	<0.0010	0.0023	0.0053	0.0029	0.0027
K-D	mg/L	3.01	4.23	4.60	5.35	4.98	5.33	4.71	4.37	3.51	0.929	2.26	2.29
S-D	mg/L	220	255	245	285	248	243	218	209	191	178	185	176
Se-D	mg/L	0.00014	<0.00010	<0.00010	<0.00050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00060	0.00011	0.00010
Si-D	mg/L	1.53	2.75	2.19	<0.50	2.72	3.45	2.85	1.67	2.17	2.09	2.46	2.21
Na-D	mg/L	139	291	309	360	343	351	334	298	244	5.12	161	169
Sr-D	mg/L	1.24	1.46	1.44	1.32	1.42	1.51	1.25	1.07	1.02	0.714	1.05	1.04
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.025	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050

Table 8 2-North Portal Sump Effuent 2 Page(s)

EMS ID	E283433							
Site Description		2-North Portal Sump Effuent						
Site Name	2NPS	2NPS-7Apr20-M	2NPS-4MAY20-M	2NPS-2JUN20-M	2NPS-6JUL20-M	2NPS-6AUG20-M	2NPS-8SEP20-M	2NPS-5OCT20-M
Date		4/7/2020	5/4/2020	6/2/2020	7/6/2020	8/6/2020	9/8/2020	10/5/2020
pH-F	pH Units	7.96	8.05	8.13	7.88	6.88	7.22	7.77
Cond-F	uS/cm	1983	2200	2100	2023	1774	1645	2028
SO4-D	mg/L	940	940	1000	930	960	1000	940
Alk-T	mg/L	260	280	280	300	310	320	280
Acidity83	mg/L	3.8	10.1	9.5	7.9	5.0	10.7	12.4
Al-T	mg/L	0.0312	0.0537	0.0276	0.0133	0.0330	0.0518	0.145
As-T	mg/L	0.00087	0.00102	0.00071	0.00099	0.00086	0.00080	0.00106
Ba-T	mg/L	0.0124	0.0117	0.0106	0.0114	0.0124	0.0132	0.0146
B-T	mg/L	0.655	0.68	0.74	0.79	0.74	0.875	0.884
Cd-T	mg/L	<0.000010	<0.000020	<0.000020	<0.000020	<0.000020	<0.000010	0.000031
Ca-T	mg/L	253	265	257	250	262	257	265
Cr-T	mg/L	<0.0010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010
Co-T	mg/L	0.00121	0.00130	0.00084	0.00082	0.00051	0.00101	0.00395
Cu-T	mg/L	<0.00050	<0.0010	<0.0010	<0.0010	<0.0010	0.00074	0.00236
Hard-T	mg/L	743	779	754	741	769	751	770
Fe-T	mg/L	0.178	0.366	0.257	0.286	0.202	0.276	0.279
Pb-T	mg/L	<0.00020	<0.00040	<0.00040	<0.00040	<0.00040	<0.00020	<0.00020
Mg-T	mg/L	27.2	28.4	27.4	28.3	27.9	26.4	26.2
Mn-T	mg/L	0.229	0.246	0.169	0.211	0.0968	0.239	0.324
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019
Mo-T	mg/L	<0.0010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010
Ni-T	mg/L	0.0032	0.0027	0.0025	0.0021	0.0020	0.0032	0.0106
K-T	mg/L	3.61	3.71	3.56	3.85	3.75	3.85	3.84
S-T	mg/L	331	318	300	322	325	400	329
Se-T	mg/L	<0.00010	<0.00020	<0.00020	<0.00020	<0.00020	<0.00010	<0.00010
Si-T	mg/L	2.67	3.03	2.64	2.95	2.96	3.35	3.89
Ag-T	mg/L	<0.000020	<0.000040	<0.000040	<0.000040	<0.000040	<0.000020	<0.000020
Na-T	mg/L	216	212	223	230	227	241	234
Sr-T	mg/L	1.92	2.15	1.76	1.87	2.04	2.01	1.89
Zn-T	mg/L	<0.0050	<0.010	<0.010	<0.010	<0.010	<0.0050	0.0159
Al-D	mg/L	0.0166	0.0090	0.0054	<0.0060	<0.0060	0.0181	0.0288
As-D	mg/L	0.00063	0.00073	0.00051	0.00066	0.00041	0.00050	0.00066
Ba-D	mg/L	0.0121	0.0113	0.0107	0.0109	0.0126	0.0120	0.0136
B-D	mg/L	0.607	0.74	0.694	0.75	0.82	0.90	0.824
Be-D	mg/L	<0.00010	<0.00020	<0.00010	<0.00020	<0.00020	<0.00020	<0.00010
Cd-D	mg/L	<0.000010	<0.000020	<0.000010	<0.000020	<0.000020	<0.000020	0.000040
Ca-D	mg/L	244	258	262	254	274	255	245
Cr-D	mg/L	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	<0.0020	<0.0010
Co-D	mg/L	0.00115	0.00131	0.00080	0.00080	0.00047	0.00109	0.00379
Cu-D	mg/L	0.00023	<0.00040	<0.00020	<0.00040	<0.00040	0.00045	0.00122
Hard-D	mg/L	722	767	768	749	804	751	715
Fe-D	mg/L	<0.0050	0.042	0.0070	0.015	0.011	0.014	0.0078
Pb-D	mg/L	<0.00020	<0.00040	<0.00020	<0.00040	<0.00040	<0.00040	<0.00020
Mg-D	mg/L	27.4	30.0	27.8	28.0	29.4	27.9	25.0
Mn-D	mg/L	0.222	0.253	0.180	0.205	0.102	0.219	0.317
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019
Mo-D	mg/L	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	<0.0020	<0.0010
Ni-D	mg/L	0.0031	0.0028	0.0022	0.0021	<0.0020	0.0031	0.0104
K-D	mg/L	3.57	3.74	3.64	3.69	3.73	3.82	3.71
S-D	mg/L	316	327	303	318	313	319	321
Se-D	mg/L	<0.00010	<0.00020	<0.00010	<0.00020	<0.00020	0.00020	<0.00010
Si-D	mg/L	2.50	2.95	2.71	2.84	3.13	3.22	3.48
Na-D	mg/L	218	226	217	226	222	237	226
Sr-D	mg/L	1.82	1.87	1.93	1.79	1.94	2.00	1.82
Zn-D	mg/L	<0.0050	<0.010	<0.0050	<0.010	<0.010	<0.010	0.0139

Table 8 2-North Portal Sump Effuent 2 Page(s)

EMS ID	E283433						
Site Description							
Site Name	2NPS	2NPS-2NOV20-M	2NPS-7DEC20-M	2NPS-4JAN21-M	2NPS-1FEB21-M	2NPS-1MAR21-M	2NPS-24MAR21-M
Date		11/2/2020	12/7/2020	1/4/2021	2/1/2021	3/1/2021	3/24/2021
pH-F	pH Units	7.61	7.72	7.98	7.41	6.89	6.89
Cond-F	uS/cm	1974	1168	807.0	2017	2036	2360
SO4-D	mg/L	900	460	220	950	970	1000
Alk-T	mg/L	340	140	65	350	350	300
Acidity83	mg/L	12.2	3.0	1.9	8.8	15.5	9.1
Al-T	mg/L	0.0513	0.896	0.225	0.122	0.0060	0.0326
As-T	mg/L	0.00135	0.00214	0.00061	0.00108	0.00061	0.00074
Ba-T	mg/L	0.0131	0.0147	0.0123	0.0122	0.0132	0.0106
B-T	mg/L	0.934	0.453	0.177	0.72	0.781	0.69
Cd-T	mg/L	<0.000010	0.000017	0.000028	<0.000020	<0.000010	<0.000020
Ca-T	mg/L	226	153	67.7	270	251	264
Cr-T	mg/L	<0.0010	0.0027	<0.0010	<0.0020	<0.0010	<0.0020
Co-T	mg/L	0.00132	0.00209	0.00452	0.00150	0.00180	0.00173
Cu-T	mg/L	0.00059	0.00776	0.00277	0.0011	<0.00050	<0.0010
Hard-T	mg/L	671	445	198	792	740	778
Fe-T	mg/L	0.357	2.23	0.315	0.425	0.265	0.339
Pb-T	mg/L	<0.00020	0.00029	<0.00020	<0.00040	<0.00020	<0.00040
Mg-T	mg/L	25.8	15.4	7.04	28.5	27.4	28.6
Mn-T	mg/L	0.329	0.173	0.101	0.282	0.210	0.243
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010	<0.0020
Ni-T	mg/L	0.0024	0.0040	0.0095	0.0033	0.0022	0.0033
K-T	mg/L	3.91	2.36	0.996	3.64	3.71	3.74
S-T	mg/L	314	176	74.5	335	327	331
Se-T	mg/L	<0.00010	0.00015	<0.00010	<0.00020	<0.00010	<0.00020
Si-T	mg/L	3.14	3.41	1.27	3.03	3.11	3.09
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000040	<0.000020	<0.000040
Na-T	mg/L	242	106	39.4	235	227	216
Sr-T	mg/L	1.88	0.981	0.410	1.83	2.04	1.94
Zn-T	mg/L	<0.0050	0.0062	0.0086	<0.010	<0.0050	<0.010
Al-D	mg/L	0.0066	0.0121	0.0084	0.0102	0.0033	<0.015
As-D	mg/L	0.00095	0.00035	0.00016	0.00069	0.00059	<0.00050
Ba-D	mg/L	0.0122	0.0119	0.0115	0.0126	0.0133	0.0114
B-D	mg/L	0.882	0.497	0.197	0.79	0.706	0.85
Be-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00020	<0.00010	<0.00050
Cd-D	mg/L	<0.000010	0.000012	0.000022	<0.000020	<0.000010	<0.000050
Ca-D	mg/L	227	158	71.8	290	255	270
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010	<0.0050
Co-D	mg/L	0.00123	0.00110	0.00436	0.00146	0.00164	0.0020
Cu-D	mg/L	<0.00020	0.00046	0.00049	<0.00040	<0.00020	<0.0010
Hard-D	mg/L	666	463	210	856	744	796
Fe-D	mg/L	0.0566	0.0088	<0.0050	0.042	0.221	0.171
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00040	<0.00020	<0.0010
Mg-D	mg/L	24.3	16.7	7.49	32.1	26.3	29.7
Mn-D	mg/L	0.312	0.199	0.103	0.301	0.214	0.241
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010	<0.0050
Ni-D	mg/L	0.0021	0.0024	0.0093	0.0033	0.0021	<0.0050
K-D	mg/L	3.88	2.54	1.03	4.06	3.62	3.58
S-D	mg/L	308	197	79.3	380	307	346
Se-D	mg/L	<0.00010	0.00012	<0.00010	<0.00020	<0.00010	<0.00050
Si-D	mg/L	3.22	2.24	1.01	3.36	3.21	3.08
Na-D	mg/L	237	124	42.8	255	215	218
Sr-D	mg/L	1.81	1.12	0.428	2.06	2.11	2.05
Zn-D	mg/L	<0.0050	<0.0050	0.0063	<0.010	<0.0050	<0.025

Table 9 Road Side Ditch Draining into MQL 1 Page(s)

EMS ID								
Site Description		Road Side Ditch Draining into MQL						
Site Name	PDSR	PDSR-7Apr20-M	PDSR-4MAY20-M	PDSR-2NOV20-M	PDSR-7DEC20-M	DSR-4JAN21-	DSR-1FEB21-I	PDSR-1MAR21-M
Date		4/7/2020	5/4/2020	11/2/2020	12/7/2020	1/4/2021	2/1/2021	3/1/2021
pH-F	pH Units	7.94	7.85	7.44	7.9	7.64	7.95	7.89
Cond-F	uS/cm	595	648	1345	1183	727.0	1149	1241
SO4-D	mg/L	470	710	620	510	200	430	510
TSS	mg/L		1.2	3.6	4.0	<1.0	1.6	<1.0
Al-T	mg/L	0.0084	0.0110	0.0084	0.327	0.0142	0.0247	0.0108
As-T	mg/L	0.00013	<0.00020	0.00012	0.00024	<0.00010	<0.00010	0.00011
Ba-T	mg/L	0.0182	0.0295	0.0259	0.0180	0.0077	0.0130	0.0158
B-T	mg/L	0.204	0.29	0.252	0.225	0.130	0.182	0.187
Cd-T	mg/L	<0.000010	<0.000020	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Ca-T	mg/L	193	260	198	172	78.5	157	177
Cr-T	mg/L	<0.0010	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Co-T	mg/L	<0.00020	<0.00040	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Cu-T	mg/L	0.00054	<0.0010	<0.00050	0.00113	<0.00050	<0.00050	<0.00050
Hard-T	mg/L	616	819	644	554	254	499	564
Fe-T	mg/L	<0.010	<0.020	<0.010	0.348	<0.010	0.018	<0.010
Pb-T	mg/L	<0.00020	<0.00040	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Mg-T	mg/L	32.4	41.1	36.3	30.1	14.0	26.1	29.3
Mn-T	mg/L	<0.0010	<0.0020	<0.0010	0.0088	<0.0010	<0.0010	<0.0010
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.000001	<0.000001	<0.0000019
Mo-T	mg/L	<0.0010	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Ni-T	mg/L	<0.0010	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
K-T	mg/L	1.43	2.01	1.59	1.27	0.751	0.997	1.07
S-T	mg/L	190	247	219	172	72.2	147	179
Se-T	mg/L	<0.00010	<0.00020	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Si-T	mg/L	3.30	3.78	3.34	3.83	3.12	3.28	3.46
Ag-T	mg/L	<0.000020	<0.000040	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Na-T	mg/L	48.8	59.8	60.1	47.9	23.4	37.7	41.3
Sr-T	mg/L	1.20	1.85	1.32	1.08	0.474	0.958	1.20
Zn-T	mg/L	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Al-D	mg/L	0.0060	0.0068	0.0056	0.0121	0.0219	0.0082	0.0072
As-D	mg/L	0.00011	<0.00020	0.00012	0.00010	<0.00010	0.00012	0.00012
Ba-D	mg/L	0.0184	0.0291	0.0258	0.0179	0.0076	0.0139	0.0152
B-D	mg/L	0.189	0.32	0.241	0.222	0.132	0.187	0.195
Be-D	mg/L	<0.00010	<0.00020	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cd-D	mg/L	<0.000010	<0.000020	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Ca-D	mg/L	193	248	201	170	80.3	163	172
Cr-D	mg/L	<0.0010	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Co-D	mg/L	<0.00020	<0.00040	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Cu-D	mg/L	0.00028	0.00044	0.00037	0.00039	0.00035	0.00042	0.00025
Hard-D	mg/L	615	792	644	550	259	519	547
Fe-D	mg/L	<0.0050	<0.010	<0.0050	<0.0050	0.0127	<0.0050	<0.0050
Pb-D	mg/L	<0.00020	<0.00040	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Mg-D	mg/L	32.1	42.1	34.6	30.3	14.3	27.5	28.2
Mn-D	mg/L	<0.0010	<0.0020	<0.0010	<0.0010	0.0013	<0.0010	<0.0010
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.000001	<0.000001	<0.0000019
Mo-D	mg/L	<0.0010	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Ni-D	mg/L	<0.0010	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
K-D	mg/L	1.42	1.89	1.57	1.26	0.756	1.08	1.09
S-D	mg/L	184	244	216	178	72.8	154	166
Se-D	mg/L	<0.00010	<0.00020	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Si-D	mg/L	3.17	3.45	3.44	3.47	3.17	3.51	3.32
Na-D	mg/L	48.1	61.4	58.8	48.6	23.6	39.3	40.0
Sr-D	mg/L	1.17	1.57	1.30	1.13	0.480	1.03	1.14
Zn-D	mg/L	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050

Table 10 Culvert at Middle Quinsam Lake Road 2 Page(s)

EMS ID	E207411								
Site Description	Culvert at Middle Quinsam Lake Road								
Site Name	WC	WC-7Apr20-M	WC-7Apr20-R	WC-27APR20-N	WC-4MAY20-N	WC-2JUN20-M	WC-6JUL20-M	WC-6AUG20-R	WC-6AUG20-M
Date		4/7/2020	4/7/2020	4/27/2020	5/4/2020	6/2/2020	7/6/2020	8/6/2020	8/6/2020
pH-F	pH Units	8.01	8.01	7.77	7.82	8.22	8.30	7.79	7.79
Cond-F	uS/cm	865	865	143	848	2009	2002	1943	1943
SO4-D	mg/L	590	640	540	700	740	600	670	660
TSS	mg/L	<1.0	1.2	1.6	2.8	<1.0	<1.0	2.8	2.0
Al-T	mg/L	0.0069	0.0065	0.0031	<0.0030	<0.0060		<0.0060	<0.0060
As-T	mg/L	0.00064	0.00066	0.00057	0.00054	0.00062		0.00071	0.00072
Ba-T	mg/L	0.0203	0.0202	0.0203	0.0202	0.0189		0.0166	0.0176
B-T	mg/L	0.780	0.787	0.834	0.848	0.99		0.88	0.90
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000020		<0.000020	<0.000020
Ca-T	mg/L	131	134	127	134	124		107	113
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020		<0.0020	<0.0020
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00040		<0.00040	<0.00040
Cu-T	mg/L	0.0141	0.00065	0.00061	<0.00050	<0.0010		<0.0010	<0.0010
Hard-T	mg/L	393	401	381	401	375		327	344
Fe-T	mg/L	0.176	0.180	0.111	0.134	0.144		0.076	0.088
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00040		<0.00040	<0.00040
Mg-T	mg/L	16.0	16.0	15.2	16.3	16.0		14.3	14.8
Mn-T	mg/L	0.0213	0.0212	0.0143	0.0164	0.0119		0.0149	0.0156
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019		<0.0000019	<0.0000019
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020		<0.0020	<0.0020
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020		<0.0020	<0.0020
K-T	mg/L	4.33	4.35	4.41	4.89	4.59		4.57	4.77
S-T	mg/L	242	243	246	256	245		226	234
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020		<0.00020	<0.00020
Si-T	mg/L	2.62	2.68	2.37	2.59	2.39		3.05	3.20
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000040		<0.000040	<0.000040
Na-T	mg/L	318	316	291	326	339		314	324
Sr-T	mg/L	1.36	1.37	1.49	1.58	1.33		1.33	1.38
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.010		<0.010	<0.010
Al-D	mg/L	0.0036	0.0035	<0.0030	<0.0030	<0.0030		<0.0030	<0.0030
As-D	mg/L	0.00048	0.00046	0.00050	0.00048	0.00048		0.00056	0.00057
Ba-D	mg/L	0.0192	0.0191	0.0203	0.0201	0.0188		0.0177	0.0180
B-D	mg/L	0.737	0.737	0.814	0.905	0.903		0.915	0.900
Be-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010	<0.00010
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		<0.000010	<0.000010
Ca-D	mg/L	129	127	130	132	124		122	118
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		<0.0010	<0.0010
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020		<0.00020	<0.00020
Cu-D	mg/L	0.00033	0.00031	0.00027	0.00043	0.00028		<0.00020	0.00020
Hard-D	mg/L	385	381	388	399	375		368	359
Fe-D	mg/L	0.0140	0.0130	0.0149	0.0164	0.0108		0.0182	0.0183
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020		<0.00020	<0.00020
Mg-D	mg/L	15.4	15.5	15.4	17.2	16.1		15.5	15.8
Mn-D	mg/L	0.0198	0.0196	0.0136	0.0166	0.0105		0.0155	0.0157
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019		<0.0000019	<0.0000019
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		<0.0010	<0.0010
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		<0.0010	<0.0010
K-D	mg/L	4.15	4.13	4.53	4.71	4.78		4.80	4.82
S-D	mg/L	230	230	246	264	238		238	240
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010	<0.00010
Si-D	mg/L	2.51	2.51	2.41	2.51	2.36		3.36	3.23
Na-D	mg/L	311	312	297	344	339		324	330
Sr-D	mg/L	1.28	1.26	1.57	1.40	1.44		1.43	1.42
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050		<0.0050	<0.0050

Table 10 Culvert at Middle Quinsam Lake Road 2 Page(s)

EMS ID	E207411										
Site Description	Culvert a										
Site Name	WC	WC-8SEP20-M	WC-5OCT20-M	WC-2NOV20-R	WC-2NOV20-M	WC-7DEC20-M	WC-4JAN21-M	WC-1FEB21-M	WC-1MAR21-M	WC-15MAR21-M	WC-22MAR21-M
Date		9/8/2020	10/5/2020	11/2/2020	11/2/2020	12/7/2020	1/4/2021	2/1/2021	3/1/2021	3/15/2021	3/22/2021
pH-F	pH Units	7.75	8.66	8.35	8.35	8.35	7.97	8.47	8.18	8.18	8.08
Cond-F	uS/cm	2006	1983	1596	1596	1575	651	1727	2230	2230	2920
SO4-D	mg/L	610	550	510	500	530	200	690	690	920	1200
TSS	mg/L	<1.0	<1.0	<1.0	<1.0	1.2	<1.0	<1.0	1.2	<1.0	3.6
Al-T	mg/L		<0.0030			0.0099		0.0149	0.0106	<0.0060	<0.0060
As-T	mg/L		0.00055			0.00046		0.00033	0.00033	0.00027	<0.00020
Ba-T	mg/L		0.0132			0.0147		0.0137	0.0138	0.0153	0.0188
B-T	mg/L		0.982			0.605		0.564	0.628	0.81	1.02
Cd-T	mg/L		<0.000010			<0.000010		<0.000010	0.000010	<0.000020	<0.000020
Ca-T	mg/L		92.4			112		175	148	180	200
Cr-T	mg/L		<0.0010			<0.0010		<0.0010	<0.0010	<0.0020	<0.0020
Co-T	mg/L		<0.00020			<0.00020		<0.00020	0.00074	0.00308	0.0384
Cu-T	mg/L		<0.00050			<0.00050		<0.00050	0.00075	<0.0010	<0.0010
Hard-T	mg/L		283			337		521	439	540	620
Fe-T	mg/L		0.081			0.046		0.033	0.093	0.113	0.677
Pb-T	mg/L		<0.00020			<0.00020		<0.00020	<0.00020	<0.00040	<0.00040
Mg-T	mg/L		12.7			14.2		20.5	17.1	22.1	29.1
Mn-T	mg/L		0.0087			0.0094		0.0109	0.0553	0.157	1.74
Hg-T	mg/L		<0.0000019			<0.0000019		<0.0000019	<0.0000019	<0.0000019	
Mo-T	mg/L		<0.0010			<0.0010		<0.0010	<0.0010	<0.0020	<0.0020
Ni-T	mg/L		<0.0010			<0.0010		<0.0010	0.0102	0.0215	0.0722
K-T	mg/L		4.39			2.85		2.94	2.70	3.45	4.09
S-T	mg/L		193			184		244	232	291	406
Se-T	mg/L		<0.00010			<0.00010		<0.00010	<0.00010	<0.00020	<0.00020
Si-T	mg/L		3.06			3.19		2.95	2.93	2.93	3.21
Ag-T	mg/L		<0.000020			<0.000020		<0.000020	<0.000020	<0.000040	<0.000040
Na-T	mg/L		324			212		209	227	300	412
Sr-T	mg/L		1.10			1.05		1.34	1.30	1.58	1.89
Zn-T	mg/L		<0.0050			<0.0050		<0.0050	<0.0050	<0.010	<0.010
Al-D	mg/L		<0.0030			0.0081		0.0110	0.0074	<0.0060	0.0068
As-D	mg/L		0.00049			0.00042		0.00039	0.00029	0.00024	<0.00020
Ba-D	mg/L		0.0136			0.0141		0.0148	0.0133	0.0151	0.0193
B-D	mg/L		0.950			0.604		0.559	0.582	0.80	1.08
Be-D	mg/L		<0.00010			<0.00010		<0.00010	<0.00010	<0.00020	<0.00020
Cd-D	mg/L		<0.000010			<0.000010		<0.000010	<0.000010	<0.000020	<0.000020
Ca-D	mg/L		91.3			106		174	142	177	206
Cr-D	mg/L		<0.0010			<0.0010		<0.0010	<0.0010	<0.0020	<0.0020
Co-D	mg/L		<0.00020			<0.00020		<0.00020	0.00067	0.00299	0.0383
Cu-D	mg/L		<0.00020			0.00026		0.00030	0.00024	0.00041	0.00046
Hard-D	mg/L		278			325		521	421	532	639
Fe-D	mg/L		0.0084			0.0135		0.0112	0.0109	0.011	0.082
Pb-D	mg/L		<0.00020			<0.00020		<0.00020	<0.00020	<0.00040	<0.00040
Mg-D	mg/L		12.0			14.3		21.1	16.2	21.9	30.0
Mn-D	mg/L		0.0082			0.0086		0.0111	0.0532	0.153	1.78
Hg-D	mg/L		<0.0000019			<0.0000019		<0.0000019	<0.0000019	<0.0000019	
Mo-D	mg/L		<0.0010			<0.0010		<0.0010	<0.0010	<0.0020	<0.0020
Ni-D	mg/L		<0.0010			<0.0010		<0.0010	0.0092	0.0212	0.0764
K-D	mg/L		4.35			2.83		2.99	2.75	3.29	3.99
S-D	mg/L		189			185		257	225	289	410
Se-D	mg/L		<0.00010			<0.00010		<0.00010	<0.00010	<0.00020	<0.00020
Si-D	mg/L		3.02			3.10		2.96	2.88	2.87	3.20
Na-D	mg/L		310			212		218	217	295	410
Sr-D	mg/L		1.10			1.07		1.47	1.30	1.54	1.86
Zn-D	mg/L		<0.0050			<0.0050		<0.0050	<0.0050	<0.010	<0.010

Table 11 Settling Pond #1 - Authorized Discharge Location for South Mine Water 4 Page(s)

EMS ID	E218582						Stn Std	PL-S				
Site Description	Settling Pond #1 - Authorized Discharge Location for South Mine Water											
Site Name	SPD	Std Val		SPD-6Apr20-P	SPD-15Apr20-P	SPD-20APR20-P	SPD-4MAY20-P	SPD-20MAY20-R	SPD-20MAY20-P	SPD-25MAY20-P	SPD-2JUN20-P	SPD-9JUN20-P
Date		Max	Min	4/6/2020	4/15/2020	4/20/2020	5/4/2020	5/20/2020	5/20/2020	5/25/2020	6/2/2020	6/9/2020
pH-F	pH Units			7.98	8.02	7.73	7.94	7.99	7.99	7.99	7.8	7.73
Cond-F	uS/cm			790	780	782	730	740	740	760	750	772
pH-L	pH Units	8.5	6.0					8.03	7.98	8.02	7.73	7.97
Cond-L	uS/cm							790	790	780		750
SO4-D	mg/L			340	210	290	370	340	370	310	310	280
TSS	mg/L	25	0	<1.0	3.2	1.6		2.1	<1.0	<1.0	2.0	1.8
Alk-T	mg/L			100				87	86		89	
Acidity83	mg/L			1.6				1.2	1.5		<1.0	
Al-T	mg/L			0.0110							0.0034	
As-T	mg/L			0.00051							0.00079	
Ba-T	mg/L			0.0114							0.0139	
B-T	mg/L			0.172							0.198	
Cd-T	mg/L			<0.000010							<0.000010	
Ca-T	mg/L			148							118	
Cr-T	mg/L			<0.0010							<0.0010	
Co-T	mg/L			<0.00020							<0.00020	
Cu-T	mg/L			0.00102							<0.00050	
Hard-T	mg/L			447							360	
Fe-T	mg/L			0.180							0.152	
Pb-T	mg/L			<0.00020							<0.00020	
Mg-T	mg/L			18.6							15.7	
Mn-T	mg/L			0.0272							0.0419	
Hg-T	mg/L			<0.0000019							<0.0000019	
Mo-T	mg/L			<0.0010							<0.0010	
Ni-T	mg/L			0.0013							<0.0010	
K-T	mg/L			1.39							1.32	
S-T	mg/L			128							98.7	
Se-T	mg/L			<0.00010							<0.00010	
Si-T	mg/L			1.93							0.45	
Ag-T	mg/L			<0.000020							<0.000020	
Na-T	mg/L			20.7							20.0	
Sr-T	mg/L			0.867							0.697	
Zn-T	mg/L			<0.0050							<0.0050	
Al-D	mg/L	0.5	0	0.0036			<0.0030				<0.0030	
As-D	mg/L			0.00039			0.00055				0.00072	
Ba-D	mg/L			0.0110			0.0132				0.0143	
B-D	mg/L			0.168			0.176				0.173	
Be-D	mg/L			<0.00010			<0.00010				<0.00010	
Cd-D	mg/L			<0.000010			<0.000010				<0.000010	
Ca-D	mg/L			146			132				120	
Cr-D	mg/L			<0.0010			<0.0010				<0.0010	
Co-D	mg/L			<0.00020			<0.00020				<0.00020	
Cu-D	mg/L	0.02	0	0.00023			0.00035				0.00035	
Hard-D	mg/L			439			405				366	
Fe-D	mg/L	0.5	0	0.0312			0.0697				0.110	
Pb-D	mg/L	0.05	0	<0.00020			<0.00020				<0.00020	
Mg-D	mg/L			18.3			18.1				16.2	
Mn-D	mg/L			0.0158			0.0220				0.0352	
Hg-D	mg/L			<0.0000019			<0.0000019				<0.0000019	
Mo-D	mg/L			<0.0010			<0.0010				<0.0010	
Ni-D	mg/L			<0.0010			<0.0010				<0.0010	
K-D	mg/L			1.36			1.32				1.40	
S-D	mg/L			126			121				101	
Se-D	mg/L			<0.00010			<0.00010				<0.00010	
Si-D	mg/L			1.84			0.62				0.46	
Na-D	mg/L			20.9			21.0				20.2	
Sr-D	mg/L			0.819			0.820				0.745	
Zn-D	mg/L	0.2	0	<0.0050			<0.0050				<0.0050	
O&G	mg/L	10	0	<1.0							<1.0	

Table 11 Settling Pond #1 - Authorized Discharge Location for South Mine Water 4 Page(s)

EMS ID	E218582														
Site Description	Settling Pc														
Site Name	SPD	SPD-15JUN20-R	SPD-15JUN20-P	SPD-22JUN20-P	SPD-30JUN20-P	SPD-6JUL20-P	SPD-13JUL20-P	SPD-13JUL20-R	PD-22JUL20-	PD-27JUL20-	PD-6AUG20-	SPD-12AUG-I	PD-18AUG20-	SPD-24AUG20-R	PD-24AUG20
Date		6/15/2020	6/15/2020	6/22/2020	6/30/2020	7/6/2020	7/13/2020	7/13/2020	7/22/2020	7/27/2020	8/6/2020	8/12/2020	8/18/2020	8/24/2020	8/24/2020
pH-F	pH Units	7.75	7.75	7.78	7.59	7.80	7.84	7.74	7.74	8.04	7.52	7.05	7.24	7.73	7.73
Cond-F	uS/cm	686	686	685	725	785	832	847	847	1139	832	1658	1703	1003	1003
pH-L	pH Units	7.93	7.94	7.99	7.99	7.96	8.07	8.02	7.80	8.08	7.92	7.61	8.08	7.84	8.03
Cond-L	uS/cm	720	730	740	760		760	760		790		850	870	880	890
SO4-D	mg/L	240	260	290	240	260	300	280	190	230	350	260	300	330	340
TSS	mg/L	<1.0	2.4	5.2	2.8	2.4	1.6	2.0	1.2	1.2	2.0	1.6	1.6	1.2	<1.0
Alk-T	mg/L					96					120				
Acidity83	mg/L					<1.0					<1.0				
Al-T	mg/L										0.0046				
As-T	mg/L										0.00640				
Ba-T	mg/L										0.0164				
B-T	mg/L										0.255				
Cd-T	mg/L										0.000011				
Ca-T	mg/L										125				
Cr-T	mg/L										0.0055				
Co-T	mg/L										0.00020				
Cu-T	mg/L										0.00110				
Hard-T	mg/L										380				
Fe-T	mg/L										0.224				
Pb-T	mg/L										<0.00020				
Mg-T	mg/L										16.4				
Mn-T	mg/L										0.113				
Hg-T	mg/L										<0.0000019				
Mo-T	mg/L										<0.0010				
Ni-T	mg/L										<0.0010				
K-T	mg/L										1.61				
S-T	mg/L										108				
Se-T	mg/L										<0.00010				
Si-T	mg/L										1.93				
Ag-T	mg/L										<0.000020				
Na-T	mg/L										26.6				
Sr-T	mg/L										0.877				
Zn-T	mg/L										<0.0050				
Al-D	mg/L					<0.0030					<0.0030				
As-D	mg/L					0.00084					0.00112				
Ba-D	mg/L					0.0141					0.0160				
B-D	mg/L					0.207					0.216				
Be-D	mg/L					<0.00010					<0.00010				
Cd-D	mg/L					<0.000010					<0.000010				
Ca-D	mg/L					112					125				
Cr-D	mg/L					<0.0010					<0.0010				
Co-D	mg/L					<0.00020					<0.00020				
Cu-D	mg/L					<0.00020					<0.00020				
Hard-D	mg/L					345					379				
Fe-D	mg/L					0.125					0.134				
Pb-D	mg/L					<0.00020					<0.00020				
Mg-D	mg/L					15.7					16.2				
Mn-D	mg/L					0.0210					0.0512				
Hg-D	mg/L					<0.0000019					<0.0000019				
Mo-D	mg/L					<0.0010					<0.0010				
Ni-D	mg/L					<0.0010					<0.0010				
K-D	mg/L					1.37					1.59				
S-D	mg/L					100					103				
Se-D	mg/L					<0.00010					<0.00010				
Si-D	mg/L					1.15					1.85				
Na-D	mg/L					23.2					26.6				
Sr-D	mg/L					0.710					0.821				
Zn-D	mg/L					<0.0050					<0.0050				
O&G	mg/L										<1.0				

Table 11 Settling Pond #1 - Authorized Discharge Location for South Mine Water 4 Page(s)

EMS ID	E218582																	
Site Description	Settling Pc																	
Site Name	SPD	SPD-3SEP20-1	SPD-8SEP20-1	D-14SEPT20	PD-21SEP20-	PD-24SEPT20	PD-28SEP20-	PD-5OCT20-	PD-13OCT20	PD-19OCT20-	PD-26OCT20	PD-2NOV20-	PD-9NOV20-	PD-16NOV20	PD-23NOV20	PD-2DEC2020	PD-7DEC20-	D-14DEC202
Date		9/3/2020	9/8/2020	9/14/2020	9/21/2020	9/24/2020	9/28/2020	10/5/2020	10/13/2020	10/19/2020	10/26/2020	11/2/2020	11/9/2020	11/16/2020	11/23/2020	12/2/2020	12/7/2020	12/14/2020
pH-F	pH Units	7.57	7.19	7.53	7.41	7.57	8.13	7.49	7.71	7.8	7.74	7.45	7.27	7.32	7.41	7.46	7.16	6.85
Cond-F	uS/cm	1060	995	1137	1092	1102	1027	1048	935	929	806	754	759	752	738	449	577	324
pH-L	pH Units	8.15		7.62	8.00	7.64	7.70		8.10	7.73	8.09		7.86		7.66	7.60		7.85
Cond-L	uS/cm	940		970	960	970	1000		990	870	830		720		440	520		580
SO4-D	mg/L	330	370	380	370	390	400	380	360	320	280	320	270	240	160	190	150	170
TSS	mg/L	<1.0	2.4	2.0	<1.0	3.2	1.2	2.4	<1.0	<1.0	<1.0	2.0	<1.0	<1.0	2.4	1.2	<1.0	4.0
Alk-T	mg/L		120			130		130				110					58	
Acidity83	mg/L		1.7			<1.0		2.0				2.5					3.2	
Al-T	mg/L					<0.0030		<0.0030									0.0454	
As-T	mg/L					0.00102		0.00075									0.00043	
Ba-T	mg/L					0.0195		0.0190									0.0069	
B-T	mg/L					0.300		0.337									0.100	
Cd-T	mg/L					<0.000010		<0.000010									<0.000010	
Ca-T	mg/L					146		151									55.8	
Cr-T	mg/L					<0.0010		<0.0010									<0.0010	
Co-T	mg/L					<0.00020		<0.00020									<0.00020	
Cu-T	mg/L					<0.00050		<0.00050									<0.00050	
Hard-T	mg/L					447		462									169	
Fe-T	mg/L					0.270		0.170									0.304	
Pb-T	mg/L					<0.00020		<0.00020									<0.00020	
Mg-T	mg/L					20.1		20.4									7.27	
Mn-T	mg/L					0.0900		0.0360									0.0629	
Hg-T	mg/L					<0.000001		<0.000001									<0.000001	
Mo-T	mg/L					<0.0010		<0.0010									<0.0010	
Ni-T	mg/L					<0.0010		<0.0010									<0.0010	
K-T	mg/L					1.98		2.06									0.616	
S-T	mg/L					137		143									48.2	
Se-T	mg/L					<0.00010		<0.00010									<0.00010	
Si-T	mg/L					1.81		1.32									3.34	
Ag-T	mg/L					<0.000020		<0.000020									<0.000020	
Na-T	mg/L					36.3		40.4									12.5	
Sr-T	mg/L					0.976		1.04									0.335	
Zn-T	mg/L					<0.0050		<0.0050									<0.0050	
Al-D	mg/L		<0.0030			<0.0030		<0.0030				0.0069					0.0304	
As-D	mg/L		0.00088			0.00093		0.00076				0.00044					0.00035	
Ba-D	mg/L		0.0170			0.0199		0.0186				0.0139					0.0064	
B-D	mg/L		0.293			0.299		0.340				0.246					0.099	
Be-D	mg/L		<0.00010			<0.00010		<0.00010				<0.00010					<0.00010	
Cd-D	mg/L		<0.000010			<0.000010		<0.000010				<0.000010					<0.000010	
Ca-D	mg/L		145			145		154				114					54.2	
Cr-D	mg/L		<0.0010			<0.0010		<0.0010				<0.0010					<0.0010	
Co-D	mg/L		<0.00020			<0.00020		<0.00020				<0.00020					<0.00020	
Cu-D	mg/L		<0.00020			<0.00020		<0.00020				<0.00020					0.00036	
Hard-D	mg/L		441			441		467				346					166	
Fe-D	mg/L		0.136			0.166		0.0986				0.0707					0.146	
Pb-D	mg/L		<0.00020			<0.00020		<0.00020				<0.00020					<0.00020	
Mg-D	mg/L		19.3			19.5		20.2				15.1					7.40	
Mn-D	mg/L		0.0486			0.0854		0.0326				0.0365					0.0604	
Hg-D	mg/L		<0.000001			<0.000001		<0.000001				<0.000001					<0.000001	
Mo-D	mg/L		<0.0010			<0.0010		<0.0010				<0.0010					<0.0010	
Ni-D	mg/L		<0.0010			<0.0010		<0.0010				<0.0010					<0.0010	
K-D	mg/L		1.91			2.00		2.03				1.53					0.611	
S-D	mg/L		133			138		144				110					49.4	
Se-D	mg/L		<0.00010			<0.00010		<0.00010				<0.00010					<0.00010	
Si-D	mg/L		1.54			1.95		1.25				2.14					3.25	
Na-D	mg/L		33.6			36.1		39.4				30.1					12.6	
Sr-D	mg/L		1.09			0.994		1.05				0.766					0.348	
Zn-D	mg/L		<0.0050			<0.0050		<0.0050				<0.0050					<0.0050	
O&G	mg/L							<1.0									<1.0	

Table 11 Settling Pond #1 - Authorized Discharge Location for South Mine Water 4 Page(s)

EMS ID	E218582														
Site Description	Settling Pc														
Site Name	SPD	PD-21DEC202	PD-29DEC20	PD-4JAN21-N	PD-11JAN21-	PD-18JAN21-	PD-25JAN21-	PD-1FEB21-I	PD-8FEB21-I	PD-16FEB21-	PD-22FEB21-	PD-1MAR21-	PD-9MAR21-	PD-16MAR21	PD-22MAR21
Date		12/21/2020	12/29/2020	1/4/2021	1/11/2021	1/18/2021	1/25/2021	2/1/2021	2/8/2021	2/16/2021	2/22/2021	3/1/2021	3/9/2021	3/16/2021	3/22/2021
pH-F	pH Units	7.16	6.85	6.82	7.78	7.51	7.66	7.16	7.39	7.49	7.22	6.72	7.62	7.25	7.71
Cond-F	uS/cm	577	324	911.3	775	724	787	507	261	745	486	378	363	792	829
pH-L	pH Units	7.76	7.18		7.93	7.62	8.02		7.71	7.66	7.31		7.92	7.96	8.02
Cond-L	uS/cm	530	230		730	590	770		230	700	440		360	720	800
SO4-D	mg/L	200	75	140	270	210	250	150	75	270	160	150	120	260	320
TSS	mg/L	2.0	<1.0	1.2	<1.0	2.0	<1.0	1.2	<1.0	<1.0	<1.0	1.2	<1.0	1.6	2.0
Alk-T	mg/L			44				99				71			
Acidity83	mg/L			1.7				<1.0				5.2			
Al-T	mg/L							0.0274							
As-T	mg/L							0.00074							
Ba-T	mg/L							0.0072							
B-T	mg/L							0.095							
Cd-T	mg/L							<0.000010							
Ca-T	mg/L							60.4							
Cr-T	mg/L							<0.0010							
Co-T	mg/L							<0.00020							
Cu-T	mg/L							<0.00050							
Hard-T	mg/L							184							
Fe-T	mg/L							0.269							
Pb-T	mg/L							<0.00020							
Mg-T	mg/L							8.13							
Mn-T	mg/L							0.0546							
Hg-T	mg/L							<0.0000019							
Mo-T	mg/L							<0.0010							
Ni-T	mg/L							<0.0010							
K-T	mg/L							0.677							
S-T	mg/L							53.5							
Se-T	mg/L							<0.00010							
Si-T	mg/L							3.21							
Ag-T	mg/L							<0.000020							
Na-T	mg/L							14.9							
Sr-T	mg/L							0.367							
Zn-T	mg/L							<0.0050							
Al-D	mg/L	0.0420		0.0496				0.0193				0.0167			
As-D	mg/L	0.00028		0.00029				0.00062				0.00072			
Ba-D	mg/L	0.0076		0.0051				0.0077				0.0081			
B-D	mg/L	0.103		0.080				0.102				0.094			
Be-D	mg/L	<0.00010		<0.00010				<0.00010				<0.00010			
Cd-D	mg/L	<0.000010		<0.000010				<0.000010				<0.000010			
Ca-D	mg/L	77.7		50.2				59.7				56.0			
Cr-D	mg/L	<0.0010		<0.0010				<0.0010				<0.0010			
Co-D	mg/L	<0.00020		<0.00020				<0.00020				0.00023			
Cu-D	mg/L	0.00040		0.00039				0.00025				0.00093			
Hard-D	mg/L	234		151				182				171			
Fe-D	mg/L	0.108		0.127				0.147				0.194			
Pb-D	mg/L	<0.00020		<0.00020				<0.00020				<0.00020			
Mg-D	mg/L	9.69		6.30				8.07				7.63			
Mn-D	mg/L	0.0297		0.0238				0.0594				0.0667			
Hg-D	mg/L			<0.0000019				<0.0000019				<0.0000019			
Mo-D	mg/L	<0.0010		<0.0010				<0.0010				<0.0010			
Ni-D	mg/L	<0.0010		<0.0010				<0.0010				<0.0010			
K-D	mg/L	0.830		0.525				0.650				0.612			
S-D	mg/L	69.0		44.1				52.5				48.9			
Se-D	mg/L	<0.00010		<0.00010				<0.00010				<0.00010			
Si-D	mg/L	3.15		2.95				3.37				2.84			
Na-D	mg/L	16.8		10.8				14.1				12.8			
Sr-D	mg/L	0.454		0.291				0.371				0.358			
Zn-D	mg/L	<0.0050		<0.0050				<0.0050				<0.0050			
O&G	mg/L							<1.0							

Table 12 Passage Treatment System Biochemical Reactor Cell 2 Page(s)

EMS ID											
Site Description	**Passive Treatment System (PTS) Influent from 2-S Mine Pool**										
Site Name	**INF**	**INF-20MAY20-M**	**INF-25MAY20-M**	**INF-2JUN20-M**	**INF-9JUN20-M**	**INF-15JUN20-M**	**INF-22JUN20-M**	**INF-22JUN20-R**	**INF-30JUN20-M**	**INF-6JUL20-M**	**INF-13JUL20-M**
Date		**5/20/2020**	**5/25/2020**	**6/2/2020**	**6/9/2020**	**6/15/2020**	**6/22/2020**	**6/22/2020**	**6/30/2020**	**7/6/2020**	**7/13/2020**
pH-F	pH Units	7.68	7.51	7.50	6.95	7.08	7.00	7.00	7.11	7.16	7.02
Cond-F	uS/cm	1092	1104	1214	1734	1617	1762	1762	1681	1640	1670
SO4-D	mg/L	630	710	610	680	680	670	670	670	690	660
TSS	mg/L	11								10	
Alk-T	mg/L	250								260	
Acidity83	mg/L	20.1								16.8	
Al-T	mg/L	<0.0030		<0.0030						<0.0060	
As-T	mg/L	0.00424		0.00416						0.00409	
Ba-T	mg/L	0.0206		0.0226						0.0214	
B-T	mg/L	0.747		0.729						0.72	
Cd-T	mg/L	<0.000010		<0.000010						<0.000020	
Ca-T	mg/L	233		250						227	
Cr-T	mg/L	<0.0010		<0.0010						<0.0020	
Co-T	mg/L	0.00066		0.00060						0.00049	
Cu-T	mg/L	<0.00050		0.00266						<0.0010	
Hard-T	mg/L	644		687						628	
Fe-T	mg/L	3.96		4.15						3.97	
Pb-T	mg/L	<0.00020		<0.00020						<0.00040	
Mg-T	mg/L	15.1		15.4						14.9	
Mn-T	mg/L	0.398		0.423						0.420	
Hg-T	mg/L	<0.0000019								<0.0000019	
Mo-T	mg/L	<0.0010		<0.0010						<0.0020	
Ni-T	mg/L	0.0011		0.0010						<0.0020	
K-T	mg/L	1.86		1.98						1.86	
S-T	mg/L	225		220						213	
Se-T	mg/L	<0.00010		<0.00010						<0.00020	
Si-T	mg/L	3.21		3.07						3.12	
Ag-T	mg/L	<0.000020		<0.000020						<0.000040	
Na-T	mg/L	121		125						115	
Sr-T	mg/L	2.32		2.28						2.12	
Zn-T	mg/L	<0.0050		<0.0050						<0.010	
Al-D	mg/L	<0.0030		<0.0030						<0.0060	
As-D	mg/L	0.00410		0.00384						0.00416	
Ba-D	mg/L	0.0220		0.0233						0.0216	
B-D	mg/L	0.682		0.699						0.73	
Be-D	mg/L	<0.00010		<0.00010						<0.00020	
Cd-D	mg/L	<0.000010		<0.000010						<0.000020	
Ca-D	mg/L	245		239						239	
Cr-D	mg/L	<0.0010		<0.0010						<0.0020	
Co-D	mg/L	0.00069		0.00057						0.00048	
Cu-D	mg/L	<0.00020		<0.00020						<0.00040	
Hard-D	mg/L	677		660						662	
Fe-D	mg/L	4.16		4.03						4.03	
Pb-D	mg/L	<0.00020		<0.00020						<0.00040	
Mg-D	mg/L	15.5		15.4						15.7	
Mn-D	mg/L	0.406		0.416						0.442	
Hg-D	mg/L	<0.0000019								<0.0000019	
Mo-D	mg/L	<0.0010		<0.0010						<0.0020	
Ni-D	mg/L	0.0011		0.0010						<0.0020	
K-D	mg/L	1.97		2.04						1.98	
S-D	mg/L	227		213						218	
Se-D	mg/L	<0.00010		<0.00010						<0.00020	
Si-D	mg/L	2.97		2.97						3.28	
Na-D	mg/L	126		120						118	
Sr-D	mg/L	2.34		2.29						2.12	
Zn-D	mg/L	<0.0050		0.0052						<0.010	

Table 12 Passage Treatment System Biochemical Reactor Cell 2 Page(s)

EMS ID						
Site Description	Passive Treatı					
Site Name	INF	INF-20JUL20-M	INF-27JUL20-R	INF-27JUL20-M	INF-6AUG20-M	INF-13AUG20-M
Date		7/20/2020	7/27/2020	7/27/2020	8/6/2020	8/13/2020
pH-F	pH Units	7.42	6.98	6.98	7.11	7.01
Cond-F	uS/cm	1726	1686	1686	1415	1423
SO4-D	mg/L	620	620	680	590	660
TSS	mg/L				12	
Alk-T	mg/L				270	
Acidity83	mg/L				9.7	
Al-T	mg/L				<0.0030	
As-T	mg/L				0.00550	
Ba-T	mg/L				0.0217	
B-T	mg/L				0.672	
Cd-T	mg/L				0.000032	
Ca-T	mg/L				239	
Cr-T	mg/L				<0.0010	
Co-T	mg/L				0.00049	
Cu-T	mg/L				0.00081	
Hard-T	mg/L				658	
Fe-T	mg/L				3.94	
Pb-T	mg/L				<0.00020	
Mg-T	mg/L				14.9	
Mn-T	mg/L				0.412	
Hg-T	mg/L				<0.0000019	
Mo-T	mg/L				<0.0010	
Ni-T	mg/L				<0.0010	
K-T	mg/L				1.97	
S-T	mg/L				223	
Se-T	mg/L				<0.00010	
Si-T	mg/L				3.45	
Ag-T	mg/L				<0.000020	
Na-T	mg/L				116	
Sr-T	mg/L				2.44	
Zn-T	mg/L				0.0080	
Al-D	mg/L				<0.0060	
As-D	mg/L				0.00444	
Ba-D	mg/L				0.0227	
B-D	mg/L				0.75	
Be-D	mg/L				<0.00020	
Cd-D	mg/L				<0.000020	
Ca-D	mg/L				249	
Cr-D	mg/L				<0.0020	
Co-D	mg/L				0.00050	
Cu-D	mg/L				<0.00040	
Hard-D	mg/L				689	
Fe-D	mg/L				4.32	
Pb-D	mg/L				<0.00040	
Mg-D	mg/L				16.3	
Mn-D	mg/L				0.453	
Hg-D	mg/L				<0.0000019	
Mo-D	mg/L				<0.0020	
Ni-D	mg/L				<0.0020	
K-D	mg/L				2.04	
S-D	mg/L				216	
Se-D	mg/L				<0.00020	
Si-D	mg/L				3.49	
Na-D	mg/L				119	
Sr-D	mg/L				2.30	
Zn-D	mg/L				<0.010	

Table 13 Passage Treatment System Sulphide Polishing Cell 5 Page(s)

EMS ID									
Site Description	**Passage Treatment System Biochemical Reactor Cell**								
Site Name	**BCR**	**BCREFF-20MAY20-M**	**BCREFF-25MAY20-M**	**BCREFF-2JUN20-M**	**BCREFF-9JUN20-M**	**BCREFF-15JUN20-M**	**BCREFF-22JUN20-M**	**BCREFF-30JUN20-M**	**BCREFF-6JUL20-M**
Date		**5/20/2020**	**5/25/2020**	**6/2/2020**	**6/9/2020**	**6/15/2020**	**6/22/2020**	**6/30/2020**	**7/6/2020**
pH-F	pH Units	7.8	7.54	7.63	7.8	7.67	7.71	7.87	7.55
Cond-F	uS/cm	1528	1601	1536	1489	1467	1570	1591	1632
pH-L	pH Units	8.13	8.12		7.88	8.14	7.95	8.03	7.98
Cond-L	uS/cm	1300	1400		1500	1500	1500	1500	
SO4-D	mg/L	460	580	590	630	610	640	650	650
TSS	mg/L	3.3							2.0
Alk-T	mg/L	230							210
Acidity83	mg/L	5.1							7.1
Al-T	mg/L	0.0098		0.0032					0.0034
As-T	mg/L	0.00235		0.00107					0.00112
Ba-T	mg/L	0.0272		0.0232					0.0198
B-T	mg/L	0.648		0.738					0.722
Cd-T	mg/L	<0.000010		<0.000010					<0.000010
Ca-T	mg/L	181		211					216
Cr-T	mg/L	<0.0010		<0.0010					<0.0010
Co-T	mg/L	0.00034		<0.00020					<0.00020
Cu-T	mg/L	<0.00050		<0.00050					<0.00050
Hard-T	mg/L	501		587					602
Fe-T	mg/L	0.926		0.407					0.487
Pb-T	mg/L	<0.00020		<0.00020					<0.00020
Mg-T	mg/L	11.9		14.9					15.2
Mn-T	mg/L	0.259		0.0752					0.100
Hg-T	mg/L	<0.0000019							<0.0000019
Mo-T	mg/L	<0.0010		<0.0010					<0.0010
Ni-T	mg/L	<0.0010		<0.0010					<0.0010
K-T	mg/L	1.74		1.91					1.91
S-T	mg/L	164		207					220
Se-T	mg/L	<0.00010		<0.00010					<0.00010
Si-T	mg/L	2.66		2.22					2.59
Ag-T	mg/L	<0.000020		<0.000020					<0.000020
Na-T	mg/L	95.5		120					118
Sr-T	mg/L	1.83		2.09					2.19
Zn-T	mg/L	<0.0050		<0.0050					<0.0050
Al-D	mg/L	<0.0030		<0.0030					<0.0030
As-D	mg/L	0.00139		0.00086					0.00090
Ba-D	mg/L	0.0283		0.0243					0.0195
B-D	mg/L	0.624		0.704					0.735
Be-D	mg/L	<0.00010		<0.00010					<0.00010
Cd-D	mg/L	<0.000010		<0.000010					<0.000010
Ca-D	mg/L	196		218					224
Cr-D	mg/L	<0.0010		<0.0010					<0.0010
Co-D	mg/L	0.00032		<0.00020					<0.00020
Cu-D	mg/L	<0.00020		<0.00020					<0.00020
Hard-D	mg/L	542		607					624
Fe-D	mg/L	0.108		0.119					0.104
Pb-D	mg/L	<0.00020		<0.00020					<0.00020
Mg-D	mg/L	12.6		15.2					15.9
Mn-D	mg/L	0.258		0.0546					0.0483
Hg-D	mg/L	<0.0000019							<0.0000019
Mo-D	mg/L	<0.0010		<0.0010					<0.0010
Ni-D	mg/L	<0.0010		<0.0010					<0.0010
K-D	mg/L	1.84		1.93					1.94
S-D	mg/L	171		205					225
Se-D	mg/L	<0.00010		<0.00010					<0.00010
Si-D	mg/L	2.47		2.31					2.51
Na-D	mg/L	104		118					122
Sr-D	mg/L	1.88		2.16					2.19
Zn-D	mg/L	<0.0050		<0.0050					<0.0050

Table 13 Passage Treatment System Sulphide Polishing Cell 5 Page(s)

EMS ID									
Site Description	**Passage T**								
Site Name	**BCR**	**BCREFF-13JUL20-M**	**BCREFF-20JUL20-M**	**BCREFF-27JUL20-M**	**BCREFF-6AUG20-M**	**BCREFF-13AUG20-M**	**BCREFF-18AUG20-M**	**CREFF-24AUG20-I**	**CREFF-3SEP20-M**
Date		**7/13/2020**	**7/20/2020**	**7/27/2020**	**8/6/2020**	**8/13/2020**	**8/18/2020**	**8/24/2020**	**9/3/2020**
pH-F	pH Units	7.76	7.91	7.63	7.34	7.50	7.48	8.01	7.91
Cond-F	uS/cm	1359	1625	1596	1601	1600	1651	928	1600
pH-L	pH Units	8.16	8.03	8.16	7.89	8.12	7.58	7.81	8.17
Cond-L	uS/cm	1500	1600	1600		1600	1600	1600	1600
SO4-D	mg/L	610	610	640	560	670	540	590	550
TSS	mg/L				2.0				
Alk-T	mg/L				360				
Acidity83	mg/L				12.9				
Al-T	mg/L				0.0121				
As-T	mg/L				0.00074				
Ba-T	mg/L				0.0360				
B-T	mg/L				0.751				
Cd-T	mg/L				0.000047				
Ca-T	mg/L				238				
Cr-T	mg/L				<0.0010				
Co-T	mg/L				<0.00020				
Cu-T	mg/L				<0.00050				
Hard-T	mg/L				655				
Fe-T	mg/L				0.017				
Pb-T	mg/L				<0.00020				
Mg-T	mg/L				14.8				
Mn-T	mg/L				0.268				
Hg-T	mg/L				<0.000038				
Mo-T	mg/L				<0.0010				
Ni-T	mg/L				<0.0010				
K-T	mg/L				2.16				
S-T	mg/L				186				
Se-T	mg/L				<0.00010				
Si-T	mg/L				4.54				
Ag-T	mg/L				<0.000020				
Na-T	mg/L				121				
Sr-T	mg/L				2.53				
Zn-T	mg/L				<0.0050				
Al-D	mg/L				0.0079				
As-D	mg/L				0.00031				
Ba-D	mg/L				0.0359				
B-D	mg/L				0.83				
Be-D	mg/L				<0.00020				
Cd-D	mg/L				<0.000020				
Ca-D	mg/L				242				
Cr-D	mg/L				<0.0020				
Co-D	mg/L				<0.00040				
Cu-D	mg/L				<0.00040				
Hard-D	mg/L				666				
Fe-D	mg/L				0.013				
Pb-D	mg/L				<0.00040				
Mg-D	mg/L				15.3				
Mn-D	mg/L				0.292				
Hg-D	mg/L				<0.0000019				
Mo-D	mg/L				<0.0020				
Ni-D	mg/L				<0.0020				
K-D	mg/L				2.10				
S-D	mg/L				191				
Se-D	mg/L				0.00576				
Si-D	mg/L				4.32				
Na-D	mg/L				118				
Sr-D	mg/L				2.29				
Zn-D	mg/L				<0.010				

Table 13 Passage Treatment System Sulphide Polishing Cell 5 Page(s)

EMS ID											
Site Description	**Passage T**										
Site Name	**BCR**	CREFF-8SEP20-N	REFF-14SEPT20-	CREFF-21SEP20-	CREFF-28SEP20-	CREFF-5OCT20-	CREFF-13OCT20-	CREFF-19OCT20-	CREFF-26OCT20-	CREFF-2NOV20-	CREFF-9NOV20-
Date		**9/8/2020**	**9/14/2020**	**9/21/2020**	**9/28/2020**	**10/5/2020**	**10/13/2020**	**10/19/2020**	**10/26/2020**	**11/2/2020**	**11/9/2020**
pH-F	pH Units	7.17	7.28	7.12	7.84	8.03	7.50	7.83	7.86	7.47	7.60
Cond-F	uS/cm	1610	1618	1620	1598	1539	1508	1357	1528	1383	1587
pH-L	pH Units		7.92	8.13	8.22		8.23	8.08	8.16		7.91
Cond-L	uS/cm		1600	1600	1400		1400	1400	1400		1500
SO4-D	mg/L	590	650	630	540	570	540	540	540	590	540
TSS	mg/L	2.0				2.4					
Alk-T	mg/L	340				230				260	
Acidity83	mg/L	20.6				7.6				8.4	
Al-T	mg/L	0.0066				<0.0030				0.0059	
As-T	mg/L	0.00019				0.00071				0.00120	
Ba-T	mg/L	0.0353				0.0178				0.0185	
B-T	mg/L	0.752				0.709				0.773	
Cd-T	mg/L	<0.000010				<0.000010				<0.000010	
Ca-T	mg/L	241				218				220	
Cr-T	mg/L	<0.0010				<0.0010				<0.0010	
Co-T	mg/L	<0.00020				<0.00020				<0.00020	
Cu-T	mg/L	<0.00050				<0.00050				<0.00050	
Hard-T	mg/L	665				606				614	
Fe-T	mg/L	<0.010				0.306				0.786	
Pb-T	mg/L	<0.00020				<0.00020				<0.00020	
Mg-T	mg/L	15.5				15.3				16.0	
Mn-T	mg/L	0.324				0.0187				0.0829	
Hg-T	mg/L	<0.0000019				<0.0000019					
Mo-T	mg/L	<0.0010				<0.0010				<0.0010	
Ni-T	mg/L	<0.0010				<0.0010				<0.0010	
K-T	mg/L	2.01				1.83				2.04	
S-T	mg/L	207				204				218	
Se-T	mg/L	<0.00010				<0.00010				<0.00010	
Si-T	mg/L	3.98				2.67				3.10	
Ag-T	mg/L	<0.000020				<0.000020				<0.000020	
Na-T	mg/L	120				113				117	
Sr-T	mg/L	2.38				2.10				2.27	
Zn-T	mg/L	<0.0050				<0.0050				<0.0050	
Al-D	mg/L	0.0056				<0.0030				<0.0030	
As-D	mg/L	0.00014				0.00066				0.00081	
Ba-D	mg/L	0.0360				0.0175				0.0168	
B-D	mg/L	0.718				0.695				0.692	
Be-D	mg/L	<0.00010				<0.00010				<0.00010	
Cd-D	mg/L	<0.000010				<0.000010				<0.000010	
Ca-D	mg/L	243				209				210	
Cr-D	mg/L	<0.0010				<0.0010				<0.0010	
Co-D	mg/L	<0.00020				<0.00020				<0.00020	
Cu-D	mg/L	<0.00020				<0.00020				<0.00020	
Hard-D	mg/L	671				580				586	
Fe-D	mg/L	0.0080				0.101				0.0858	
Pb-D	mg/L	<0.00020				<0.00020				<0.00020	
Mg-D	mg/L	15.4				14.2				14.7	
Mn-D	mg/L	0.303				0.0172				0.0973	
Hg-D	mg/L	<0.0000019				<0.0000019					
Mo-D	mg/L	<0.0010				<0.0010				<0.0010	
Ni-D	mg/L	<0.0010				<0.0010				<0.0010	
K-D	mg/L	2.06				1.81				1.90	
S-D	mg/L	239				201				204	
Se-D	mg/L	0.00431				<0.00010				<0.00010	
Si-D	mg/L	4.31				2.60				2.97	
Na-D	mg/L	114				108				108	
Sr-D	mg/L	2.52				2.03				2.05	
Zn-D	mg/L	<0.0050				<0.0050				<0.0050	

Table 13 Passage Treatment System Sulphide Polishing Cell 5 Page(s)

EMS ID											
Site Description	**Passage T**										
Site Name	**BCR**	**CREFF-16NOV20-C**	**CREFF-23NOV20-C**	**REFF-2DEC2020-C**	**CREFF-7DEC20-N**	**REFF-14DEC2020C**	**REFF-21DEC2020C**	**REFF-21DEC2020C**	**CREFF-29DEC20-N**	**CREFF-4JAN21-N**	**CREFF-18JAN21-**
Date		**11/16/2020**	**11/23/2020**	**12/2/2020**	**12/7/2020**	**12/14/2020**	**12/21/2020**	**12/21/2020**	**12/29/2020**	**1/4/2021**	**1/18/2021**
pH-F	pH Units	7.82	7.71	7.45	7.86	7.72	7.58	7.58	7.41	7.6	7.77
Cond-F	uS/cm	1476	1500	1468	1682	1608	1321	1321	1531	3055	1352
pH-L	pH Units		7.73	8.17		7.54	8.12	8.10	8.23		7.99
Cond-L	uS/cm		1500	1400		1500	1300	1300	1500		1200
SO4-D	mg/L	580	490	550	580	580	510	520	600	590	450
TSS	mg/L				1.6					<1.0	
Alk-T	mg/L				240					270	
Acidity83	mg/L				7.7					24.8	
Al-T	mg/L				0.0074					0.0059	
As-T	mg/L				0.00133					0.00016	
Ba-T	mg/L				0.0177					0.0272	
B-T	mg/L				0.646					0.521	
Cd-T	mg/L				<0.000010					<0.000010	
Ca-T	mg/L				213					218	
Cr-T	mg/L				<0.0010					<0.0010	
Co-T	mg/L				0.00046					<0.00020	
Cu-T	mg/L				<0.00050					<0.00050	
Hard-T	mg/L				588					602	
Fe-T	mg/L				0.907					0.011	
Pb-T	mg/L				<0.00020					<0.00020	
Mg-T	mg/L				13.7					14.3	
Mn-T	mg/L				0.294					0.271	
Hg-T	mg/L				<0.0000019					<0.0000019	
Mo-T	mg/L				<0.0010					<0.0010	
Ni-T	mg/L				0.0012					<0.0010	
K-T	mg/L				1.88					1.78	
S-T	mg/L				199					191	
Se-T	mg/L				<0.00010					<0.00010	
Si-T	mg/L				3.22					3.50	
Ag-T	mg/L				<0.000020					<0.000020	
Na-T	mg/L				102					101	
Sr-T	mg/L				2.02					2.05	
Zn-T	mg/L				<0.0050					<0.0050	
Al-D	mg/L				<0.0030					0.0038	
As-D	mg/L				0.00097					0.00014	
Ba-D	mg/L				0.0169					0.0276	
B-D	mg/L				0.624					0.562	
Be-D	mg/L				<0.00010					<0.00010	
Cd-D	mg/L				<0.000010					<0.000010	
Ca-D	mg/L				200					223	
Cr-D	mg/L				<0.0010					<0.0010	
Co-D	mg/L				0.00044					<0.00020	
Cu-D	mg/L				<0.00020					<0.00020	
Hard-D	mg/L				554					615	
Fe-D	mg/L				0.0228					0.0074	
Pb-D	mg/L				<0.00020					<0.00020	
Mg-D	mg/L				13.3					14.3	
Mn-D	mg/L				0.293					0.278	
Hg-D	mg/L				<0.0000019					<0.0000019	
Mo-D	mg/L				<0.0010					<0.0010	
Ni-D	mg/L				0.0011					<0.0010	
K-D	mg/L				1.88					1.79	
S-D	mg/L				194					260	
Se-D	mg/L				<0.00010					0.0193	
Si-D	mg/L				3.00					3.45	
Na-D	mg/L				101					102	
Sr-D	mg/L				2.00					2.09	
Zn-D	mg/L				<0.0050					<0.0050	

Table 13 Passage Treatment System Sulphide Polishing Cell 5 Page(s)

EMS ID											
Site Description	**Passage T**										
Site Name	**BCR**	**CREFF-25JAN21-**	**CREFF-1FEB21-M**	**CREFF-8FEB21-M**	**CREFF-16FEB21-**	**CREFF-22FEB21-**	**CREFF-1MAR21-**	**CREFF-9MAR21-**	**REFF-15MAR21-C**	**REFF-15MAR21-C**	**REFF-22MAR21-**
Date		**1/25/2021**	**2/1/2021**	**2/8/2021**	**2/16/2021**	**2/22/2021**	**3/1/2021**	**3/9/2021**	**3/15/2021**	**3/15/2021**	**3/22/2021**
pH-F	pH Units	7.68	6.16	7.6	7.48	7.6	7.22	7.36	7.28	7.28	7.25
Cond-F	uS/cm	1492	1180.5	2071	1420	1527	1561	1528	1502	1502	1510
pH-L	pH Units	8.02		8.12	7.74	7.55		8.01			7.71
Cond-L	uS/cm	1300		1500	1400	1500		1500			1400
SO4-D	mg/L	470	520	530	560	550	560	570	570	560	590
TSS	mg/L		4.0				2.0				
Alk-T	mg/L		330				310				
Acidity83	mg/L		12.6				19.5				
Al-T	mg/L		0.0051				0.0048				
As-T	mg/L		<0.00010				<0.00010				
Ba-T	mg/L		0.0254				0.0263				
B-T	mg/L		0.588				0.645				
Cd-T	mg/L		<0.000010				<0.000010				
Ca-T	mg/L		201				208				
Cr-T	mg/L		<0.0010				<0.0010				
Co-T	mg/L		<0.00020				<0.00020				
Cu-T	mg/L		<0.00050				<0.00050				
Hard-T	mg/L		556				572				
Fe-T	mg/L		<0.010				<0.010				
Pb-T	mg/L		<0.00020				<0.00020				
Mg-T	mg/L		13.3				12.7				
Mn-T	mg/L		0.237				0.238				
Hg-T	mg/L		<0.000019				<0.0000019				
Mo-T	mg/L		<0.0010				<0.0010				
Ni-T	mg/L		<0.0010				<0.0010				
K-T	mg/L		1.65				1.54				
S-T	mg/L		180				180				
Se-T	mg/L		<0.00010				<0.00010				
Si-T	mg/L		3.48				3.27				
Ag-T	mg/L		<0.000020				<0.000020				
Na-T	mg/L		101				104				
Sr-T	mg/L		1.94				2.04				
Zn-T	mg/L		<0.0050				<0.0050				
Al-D	mg/L		0.0048				0.0069				
As-D	mg/L		0.00014				0.00010				
Ba-D	mg/L		0.0267				0.0267				
B-D	mg/L		0.617				0.581				
Be-D	mg/L		<0.00010				<0.00010				
Cd-D	mg/L		<0.000010				<0.000010				
Ca-D	mg/L		222				209				
Cr-D	mg/L		<0.0010				<0.0010				
Co-D	mg/L		<0.00020				<0.00020				
Cu-D	mg/L		<0.00020				<0.00020				
Hard-D	mg/L		612				572				
Fe-D	mg/L		0.0070				0.0150				
Pb-D	mg/L		<0.00020				<0.00020				
Mg-D	mg/L		14.0				12.1				
Mn-D	mg/L		0.260				0.244				
Hg-D	mg/L		<0.000019				<0.0000019				
Mo-D	mg/L		<0.0010				<0.0010				
Ni-D	mg/L		<0.0010				<0.0010				
K-D	mg/L		1.87				1.61				
S-D	mg/L		196				212				
Se-D	mg/L		0.00217				0.00507				
Si-D	mg/L		3.81				3.41				
Na-D	mg/L		105				98.1				
Sr-D	mg/L		2.15				2.07				
Zn-D	mg/L		<0.0050				<0.0050				

Table 14 PTS Sulphide Polishing Cell 4 Page(s)

EMS ID								
Site Description	Passage Treatment System Sulphide Polishing Cell							
Site Name	SPCEFF	SPCEFF-20MAY20-M	SPCEFF-25MAY20-M	SPCEFF-2JUN20-M	SPCEFF-9JUN20-M	SPCEFF-15JUN20-M	SPCEFF-22JUN20-M	SPCEFF-30JUN20-M
Date		5/20/2020	5/25/2020	6/2/2020	6/9/2020	6/15/2020	6/22/2020	6/30/2020
pH-F	pH Units	7.48	7.51	7.57	7.60	7.85	7.75	7.47
Cond-F	uS/cm	1520	1512	1493	1406	1451	1517	1513
SO4-D	mg/L	240	260	340	440	500	490	470
TSS	mg/L	6.3						
Alk-T	mg/L	490						
Acidity83	mg/L	18.4						
Al-T	mg/L	0.0131		0.0114				
As-T	mg/L	0.00380		0.00511				
Ba-T	mg/L	0.0537		0.0633				
B-T	mg/L	0.694		0.791				
Cd-T	mg/L	0.000013		<0.000010				
Ca-T	mg/L	170		209				
Cr-T	mg/L	<0.0010		<0.0010				
Co-T	mg/L	0.00189		0.00039				
Cu-T	mg/L	0.0105		0.00278				
Hard-T	mg/L	483		578				
Fe-T	mg/L	1.05		1.61				
Pb-T	mg/L	<0.00020		<0.00020				
Mg-T	mg/L	14.1		13.7				
Mn-T	mg/L	0.324		0.0982				
Hg-T	mg/L	<0.0000019						
Mo-T	mg/L	0.0013		<0.0010				
Ni-T	mg/L	<0.0010		<0.0010				
K-T	mg/L	1.91		2.17				
S-T	mg/L	71.6		121				
Se-T	mg/L	<0.00010		<0.00010				
Si-T	mg/L	4.26		4.78				
Ag-T	mg/L	<0.000020		<0.000020				
Na-T	mg/L	117		112				
Sr-T	mg/L	1.94		2.05				
Zn-T	mg/L	<0.0050		<0.0050				
Al-D	mg/L	<0.0030		0.0031				
As-D	mg/L	0.00286		0.00199				
Ba-D	mg/L	0.0548		0.0626				
B-D	mg/L	0.632		0.746				
Be-D	mg/L	<0.00010		<0.00010				
Cd-D	mg/L	<0.000010		<0.000010				
Ca-D	mg/L	176		190				
Cr-D	mg/L	<0.0010		<0.0010				
Co-D	mg/L	0.00176		0.00034				
Cu-D	mg/L	0.00396		<0.00020				
Hard-D	mg/L	496		533				
Fe-D	mg/L	0.0361		0.0246				
Pb-D	mg/L	<0.00020		<0.00020				
Mg-D	mg/L	14.1		14.3				
Mn-D	mg/L	0.315		0.0936				
Hg-D	mg/L	<0.0000019						
Mo-D	mg/L	0.0013		<0.0010				
Ni-D	mg/L	<0.0010		<0.0010				
K-D	mg/L	1.96		2.20				
S-D	mg/L	71.4		123				
Se-D	mg/L	<0.00010		<0.00010				
Si-D	mg/L	3.80		4.28				
Na-D	mg/L	120		110				
Sr-D	mg/L	1.93		2.15				
Zn-D	mg/L	<0.0050		<0.0050				

Table 14 PTS Sulphide Polishing Cell 4 Page(s)

EMS ID											
Site Description	Passage T										
Site Name	SPCEFF	SPCEFF-6JUL20-M	SPCEFF-13JUL20-M	SPCEFF-20JUL20-M	SPCEFF-27JUL20-M	SPCEFF-6AUG20-M	PCEFF-13AUG20-M	PCEFF-18AUG20-M	PCEFF-24AUG20-M	CEFF-3SEP20	CEFF-8SEP20
Date		7/6/2020	7/13/2020	7/20/2020	7/27/2020	8/6/2020	8/13/2020	8/18/2020	8/24/2020	9/3/2020	9/8/2020
pH-F	pH Units	7.33	7.71	7.84	7.62	8.09	7.98	7.99	7.23	7.28	7.65
Cond-F	uS/cm	1598	1522	1605	1502	1516	1520	913	1675	1620	1568
SO4-D	mg/L	500	500	500	530	550	580	530	510	460	550
TSS	mg/L	4.4				14					5.6
Alk-T	mg/L	350				390					360
Acidity83	mg/L	13.5				14.0					16.3
Al-T	mg/L	0.0052				0.0146					0.0065
As-T	mg/L	0.00204				0.00454					0.00291
Ba-T	mg/L	0.0585				0.0559					0.0556
B-T	mg/L	0.786				0.751					0.738
Cd-T	mg/L	<0.000010				<0.000010					<0.000010
Ca-T	mg/L	226				230					247
Cr-T	mg/L	<0.0010				<0.0010					<0.0010
Co-T	mg/L	0.00033				0.00034					<0.00020
Cu-T	mg/L	0.00213				0.00649					<0.00050
Hard-T	mg/L	623				634					681
Fe-T	mg/L	0.792				4.32					1.53
Pb-T	mg/L	<0.00020				<0.00020					<0.00020
Mg-T	mg/L	14.3				14.3					15.5
Mn-T	mg/L	0.105				0.0630					0.0783
Hg-T	mg/L	<0.0000019				<0.0000019					<0.000001
Mo-T	mg/L	<0.0010				<0.0010					<0.0010
Ni-T	mg/L	<0.0010				<0.0010					<0.0010
K-T	mg/L	2.10				2.15					1.99
S-T	mg/L	176				167					205
Se-T	mg/L	<0.00010				<0.00010					<0.00010
Si-T	mg/L	4.46				5.02					4.54
Ag-T	mg/L	<0.000020				<0.000020					<0.000020
Na-T	mg/L	115				117					123
Sr-T	mg/L	2.26				2.45					2.42
Zn-T	mg/L	<0.0050				<0.0050					<0.0050
Al-D	mg/L	<0.0030				0.0064					<0.0060
As-D	mg/L	0.00104				0.00331					0.00219
Ba-D	mg/L	0.0536				0.0576					0.0508
B-D	mg/L	0.777				0.781					0.74
Be-D	mg/L	<0.00010				<0.00010					<0.00020
Cd-D	mg/L	<0.000010				<0.000010					<0.000020
Ca-D	mg/L	231				239					232
Cr-D	mg/L	<0.0010				<0.0010					<0.0020
Co-D	mg/L	0.00030				<0.00020					<0.00040
Cu-D	mg/L	0.00061				<0.00020					<0.00040
Hard-D	mg/L	637				658					644
Fe-D	mg/L	0.0252				0.171					0.931
Pb-D	mg/L	<0.00020				<0.00020					<0.00040
Mg-D	mg/L	14.8				15.0					15.8
Mn-D	mg/L	0.100				0.0650					0.0763
Hg-D	mg/L	<0.0000019				<0.0000019					<0.000001
Mo-D	mg/L	<0.0010				<0.0010					<0.0020
Ni-D	mg/L	<0.0010				<0.0010					<0.0020
K-D	mg/L	2.03				2.13					1.89
S-D	mg/L	177				167					184
Se-D	mg/L	<0.00010				0.00268					<0.00020
Si-D	mg/L	4.42				4.80					4.34
Na-D	mg/L	116				116					114
Sr-D	mg/L	2.19				2.35					2.40
Zn-D	mg/L	<0.0050				<0.0050					<0.010

Table 14 PTS Sulphide Polishing Cell 4 Page(s)

EMS ID														
Site Description	Passage T													
Site Name	SPCEFF	EFF-14SEPT2	CEFF-21SEP2	CEFF-28SEP2	CEFF-5OCT20	EFF-13OCT2	CEFF-19OCT2	CEFF-26OCT2	CEFF-2NOV2	CEFF-9NOV2	EFF-16NOV2	EFF-23NOV2	CEFF-7DEC20	EFF-14DEC20
Date		9/14/2020	9/21/2020	9/28/2020	10/5/2020	10/13/2020	10/19/2020	10/26/2020	11/2/2020	11/9/2020	11/16/2020	11/23/2020	12/7/2020	12/14/2020
pH-F	pH Units	7.37	7.44	7.88	7.40	7.53	7.44	7.37	7.73	7.41	7.52	7.80	7.86	7.38
Cond-F	uS/cm	1602	1653	1593	1584	1330	1568	1399	1527	1503	1520	1601	1398	1463
SO4-D	mg/L	540	550	530	550	500	460	520	530	490	490	520	510	550
TSS	mg/L				2.4								5.2	
Alk-T	mg/L				370				340				310	
Acidity83	mg/L				11.6				14.2				10.3	
Al-T	mg/L				0.0043				0.0056				0.0073	
As-T	mg/L				0.00159				0.00187				0.00192	
Ba-T	mg/L				0.0461				0.0445				0.0378	
B-T	mg/L				0.727				0.678				0.547	
Cd-T	mg/L				<0.000010				<0.000010				<0.000010	
Ca-T	mg/L				237				230				213	
Cr-T	mg/L				<0.0010				<0.0010				<0.0010	
Co-T	mg/L				<0.00020				<0.00020				0.00021	
Cu-T	mg/L				0.00062				0.00189				0.00271	
Hard-T	mg/L				657				644				593	
Fe-T	mg/L				0.503				0.760				1.79	
Pb-T	mg/L				<0.00020				<0.00020				<0.00020	
Mg-T	mg/L				16.0				16.8				14.8	
Mn-T	mg/L				0.0653				0.0689				0.130	
Hg-T	mg/L				<0.0000019								<0.0000019	
Mo-T	mg/L				<0.0010				<0.0010				<0.0010	
Ni-T	mg/L				<0.0010				<0.0010				<0.0010	
K-T	mg/L				1.90				1.89				1.69	
S-T	mg/L				185				202				174	
Se-T	mg/L				<0.00010				<0.00010				<0.00010	
Si-T	mg/L				4.51				3.95				3.78	
Ag-T	mg/L				<0.000020				<0.000020				<0.000020	
Na-T	mg/L				118				116				104	
Sr-T	mg/L				2.29				2.34				2.00	
Zn-T	mg/L				<0.0050				<0.0050				<0.0050	
Al-D	mg/L				<0.0030				<0.0030				0.0031	
As-D	mg/L				0.00115				0.00135				0.00175	
Ba-D	mg/L				0.0442				0.0424				0.0364	
B-D	mg/L				0.697				0.632				0.537	
Be-D	mg/L				<0.00010				<0.00010				<0.00010	
Cd-D	mg/L				<0.000010				<0.000010				<0.000010	
Ca-D	mg/L				226				222				200	
Cr-D	mg/L				<0.0010				<0.0010				<0.0010	
Co-D	mg/L				<0.00020				<0.00020				<0.00020	
Cu-D	mg/L				<0.00020				<0.00020				<0.00020	
Hard-D	mg/L				627				618				559	
Fe-D	mg/L				0.0541				0.364				1.12	
Pb-D	mg/L				<0.00020				<0.00020				<0.00020	
Mg-D	mg/L				15.0				15.2				14.6	
Mn-D	mg/L				0.0645				0.0637				0.113	
Hg-D	mg/L				<0.0000019								<0.0000019	
Mo-D	mg/L				<0.0010				<0.0010				<0.0010	
Ni-D	mg/L				<0.0010				<0.0010				<0.0010	
K-D	mg/L				1.84				1.77				1.66	
S-D	mg/L				176				186				176	
Se-D	mg/L				<0.00010				<0.00010				<0.00010	
Si-D	mg/L				4.34				3.80				3.81	
Na-D	mg/L				113				108				105	
Sr-D	mg/L				2.25				2.12				1.99	
Zn-D	mg/L				<0.0050				<0.0050				<0.0050	

Table 14 PTS Sulphide Polishing Cell 4 Page(s)

EMS ID													
Site Description	Passage T												
Site Name	SPCEFF	EFF-21DEC20	EFF-29DEC2	EFF-4JAN21	EFF-18JAN2	EFF-25JAN21	EFF-1FEB21	EFF-8FEB21	EFF-16FEB2	EFF-22FEB2	EFF-1MAR21	EFF-15MAR2	EFF-22MAR2
Date		12/21/2020	12/29/2020	1/4/2021	1/18/2021	1/25/2021	2/1/2021	2/8/2021	2/16/2021	2/22/2021	3/1/2021	3/15/2021	3/22/2021
pH-F	pH Units	7.38	7.81	7.06	7.4	7.64	6.21	7.7	7.58	7.72	7.71	7.9	8.16
Cond-F	uS/cm	1668	1668	3386	1627	1488	1198	1457	1453	968	1412	1350	1373
SO4-D	mg/L	410	510	510	540	500	520	530	540	250	450	450	470
TSS	mg/L			4.4			2.0				4.0		
Alk-T	mg/L			260			330				340		
Acidity83	mg/L			11.2			<1.0				4.6		
Al-T	mg/L			0.0069			0.0049				0.0119		
As-T	mg/L			0.00105			0.00041				0.00125		
Ba-T	mg/L			0.0312			0.0278				0.0311		
B-T	mg/L			0.481			0.607				0.569		
Cd-T	mg/L			<0.000010			<0.000010				<0.000010		
Ca-T	mg/L			195			216				188		
Cr-T	mg/L			<0.0010			<0.0010				<0.0010		
Co-T	mg/L			<0.00020			<0.00020				0.00030		
Cu-T	mg/L			0.00078			<0.00050				0.00599		
Hard-T	mg/L			541			598				519		
Fe-T	mg/L			0.772			0.271				0.449		
Pb-T	mg/L			<0.00020			<0.00020				<0.00020		
Mg-T	mg/L			13.2			13.9				12.2		
Mn-T	mg/L			0.0991			0.236				0.0858		
Hg-T	mg/L			<0.0000019			<0.000019				<0.0000019		
Mo-T	mg/L			<0.0010			<0.0010				<0.0010		
Ni-T	mg/L			<0.0010			<0.0010				<0.0010		
K-T	mg/L			1.52			1.71				1.41		
S-T	mg/L			173			182				151		
Se-T	mg/L			<0.00010			<0.00010				<0.00010		
Si-T	mg/L			3.27			3.71				3.31		
Ag-T	mg/L			<0.000020			<0.000020				<0.000020		
Na-T	mg/L			92.9			104				93.3		
Sr-T	mg/L			1.90			2.02				1.85		
Zn-T	mg/L			<0.0050			<0.0050				<0.0050		
Al-D	mg/L			<0.0030			0.0042				0.0043		
As-D	mg/L			0.00070			0.00034				0.00074		
Ba-D	mg/L			0.0296			0.0283				0.0309		
B-D	mg/L			0.503			0.620				0.515		
Be-D	mg/L			<0.00010			<0.00010				<0.00010		
Cd-D	mg/L			<0.000010			<0.000010				<0.000010		
Ca-D	mg/L			199			229				188		
Cr-D	mg/L			<0.0010			<0.0010				<0.0010		
Co-D	mg/L			<0.00020			<0.00020				0.00023		
Cu-D	mg/L			<0.00020			<0.00020				0.00041		
Hard-D	mg/L			550			629				519		
Fe-D	mg/L			0.0468			0.198				0.0219		
Pb-D	mg/L			<0.00020			<0.00020				<0.00020		
Mg-D	mg/L			13.1			13.7				12.0		
Mn-D	mg/L			0.0991			0.247				0.0847		
Hg-D	mg/L			<0.0000019			<0.000019				<0.0000019		
Mo-D	mg/L			<0.0010			<0.0010				<0.0010		
Ni-D	mg/L			<0.0010			<0.0010				<0.0010		
K-D	mg/L			1.47			1.79				1.50		
S-D	mg/L			168			187				151		
Se-D	mg/L			0.00129			0.00170				0.00017		
Si-D	mg/L			3.20			3.99				3.34		
Na-D	mg/L			91.5			102				88.8		
Sr-D	mg/L			1.85			2.10				1.91		
Zn-D	mg/L			<0.0050			<0.0050				<0.0050		

Table 15 2 South Pit Inflow 5 Page(s)

EMS ID											
Site Description	**2 South Pit Inflow**										
Site Name	**2SI**	**2SI-7Apr20-M**	**2SI-20MAY20-M**	**2SI-2JUN20-M**	**2SI-9JUN20-R**	**2SI-9JUN20-M**	**2SI-15JUN20-M**	**2SI-22JUN20-M**	**2SI-30JUN20-R**	**2SI-30JUN20-M**	**2SI-6JUL20-M**
Date		**4/7/2020**	**5/20/2020**	**6/2/2020**	**6/9/2020**	**6/9/2020**	**6/15/2020**	**6/22/2020**	**6/30/2020**	**6/30/2020**	**7/6/2020**
pH-F	pH Units	7.79	7.52	7.72	8.02	8.02	7.96	7.98	7.98	7.98	7.72
Cond-F	uS/cm	257.8	201	1331	1184	1184	1400	1345	1508	1508	1509
SO4-D	mg/L	100	140	300	360	330	390	440	430	430	420
TSS	mg/L		1.7								1.6
Alk-T	mg/L	55	120								300
Acidity83	mg/L	2.5	2.4								3.7
Al-T	mg/L	0.0135	0.0045	0.0049							0.0036
As-T	mg/L	0.00011	0.00020	0.00055							0.00029
Ba-T	mg/L	0.0077	0.0140	0.0421							0.0400
B-T	mg/L	0.062	0.195	0.663							0.610
Cd-T	mg/L	<0.000010	<0.000010	<0.000010							<0.000010
Ca-T	mg/L	45.4	68.1	194							176
Cr-T	mg/L	<0.0010	<0.0010	<0.0010							<0.0010
Co-T	mg/L	0.00029	<0.00020	0.00020							<0.00020
Cu-T	mg/L	0.00062	0.00061	<0.00050							0.00054
Hard-T	mg/L	137	202	540							493
Fe-T	mg/L	0.239	0.101	0.259							0.188
Pb-T	mg/L	<0.00020	<0.00020	<0.00020							0.00191
Mg-T	mg/L	5.67	7.67	13.6							13.0
Mn-T	mg/L	0.125	0.104	0.0714							0.0803
Hg-T	mg/L	<0.0000019	<0.0000019								<0.0000019
Mo-T	mg/L	<0.0010	<0.0010	<0.0010							<0.0010
Ni-T	mg/L	<0.0010	<0.0010	<0.0010							<0.0010
K-T	mg/L	0.309	0.435	1.76							1.46
S-T	mg/L	31.2	45.0	118							142
Se-T	mg/L	<0.00010	<0.00010	<0.00010							<0.00010
Si-T	mg/L	3.64	3.98	4.61							4.08
Ag-T	mg/L	<0.000020	<0.000020	<0.000020							<0.000020
Na-T	mg/L	5.92	24.0	96.9							90.1
Sr-T	mg/L	0.241	0.470	1.68							1.69
Zn-T	mg/L	<0.0050	<0.0050	<0.0050							<0.0050
Al-D	mg/L	0.0075	<0.0030	0.0035							<0.0030
As-D	mg/L	0.00010	0.00020	0.00052							0.00026
Ba-D	mg/L	0.0077	0.0138	0.0470							0.0396
B-D	mg/L	0.059	0.173	0.651							0.600
Be-D	mg/L	<0.00010	<0.00010	<0.00010							<0.00010
Cd-D	mg/L	<0.000010	<0.000010	<0.000010							<0.000010
Ca-D	mg/L	44.0	68.1	172							191
Cr-D	mg/L	<0.0010	<0.0010	<0.0010							<0.0010
Co-D	mg/L	0.00028	<0.00020	0.00031							<0.00020
Cu-D	mg/L	0.00046	0.00057	0.00021							0.00022
Hard-D	mg/L	133	202	486							535
Fe-D	mg/L	0.180	0.0427	0.0557							0.0504
Pb-D	mg/L	<0.00020	<0.00020	<0.00020							<0.00020
Mg-D	mg/L	5.57	7.71	13.6							14.2
Mn-D	mg/L	0.123	0.100	0.125							0.0799
Hg-D	mg/L	<0.0000019	<0.0000019								<0.0000019
Mo-D	mg/L	<0.0010	<0.0010	<0.0010							<0.0010
Ni-D	mg/L	<0.0010	<0.0010	<0.0010							<0.0010
K-D	mg/L	0.300	0.444	1.79							1.53
S-D	mg/L	30.0	45.7	117							150
Se-D	mg/L	<0.00010	<0.00010	<0.00010							<0.00010
Si-D	mg/L	3.43	3.53	4.01							4.35
Na-D	mg/L	5.83	24.6	93.8							97.6
Sr-D	mg/L	0.232	0.460	1.73							1.72
Zn-D	mg/L	<0.0050	<0.0050	<0.0050							<0.0050

Table 15 2 South Pit Inflow 5 Page(s)

EMS ID												
Site Description	2 South Pi											
Site Name	2SI	2SI-13JUL20-M	2SI-20JUL20-M	2SI-27JUL20-M	2SI-6AUG20-M	2SI-13AUG20-M	2SI-18AUG20-M	SI-24AUG20-M	2SI-3SEP20-M	2SI-8SEP20-M	SI-14SEPT20-M	2SI-21SEP20-M
Date		7/13/2020	7/20/2020	7/27/2020	8/6/2020	8/13/2020	8/18/2020	8/24/2020	9/3/2020	9/8/2020	9/14/2020	9/21/2020
pH-F	pH Units	7.45	7.1	7.52	7.74	7.67	7.51	7.1	7.5	7.41	7.2	7.58
Cond-F	uS/cm	1201	1700	1639	1050	1554	1428	1540	1412	1204	1480	1501
SO4-D	mg/L	450	400	450	440	490	550	460	560	550	530	570
TSS	mg/L				2.4					2.0		
Alk-T	mg/L				360					330		
Acidity83	mg/L				<1.0					4.1		
Al-T	mg/L				0.0041					0.0039		
As-T	mg/L				0.00052					0.00032		
Ba-T	mg/L				0.0466					0.0479		
B-T	mg/L				0.663					0.691		
Cd-T	mg/L				<0.000010					<0.000010		
Ca-T	mg/L				207					227		
Cr-T	mg/L				<0.0010					<0.0010		
Co-T	mg/L				0.00023					<0.00020		
Cu-T	mg/L				<0.00050					<0.00050		
Hard-T	mg/L				576					630		
Fe-T	mg/L				0.192					0.113		
Pb-T	mg/L				<0.00020					<0.00020		
Mg-T	mg/L				14.2					15.4		
Mn-T	mg/L				0.0715					0.0492		
Hg-T	mg/L									<0.000001		
Mo-T	mg/L				<0.0010					<0.0010		
Ni-T	mg/L				<0.0010					<0.0010		
K-T	mg/L				1.94					1.84		
S-T	mg/L				162					203		
Se-T	mg/L				<0.00010					<0.00010		
Si-T	mg/L				4.99					4.29		
Ag-T	mg/L				<0.000020					<0.000020		
Na-T	mg/L				110					117		
Sr-T	mg/L				2.14					2.12		
Zn-T	mg/L				<0.0050					<0.0050		
Al-D	mg/L				<0.0030					<0.0030		
As-D	mg/L				0.00038					0.00027		
Ba-D	mg/L				0.0484					0.0483		
B-D	mg/L				0.683					0.654		
Be-D	mg/L				<0.00010					<0.00010		
Cd-D	mg/L				<0.000010					<0.000010		
Ca-D	mg/L				223					229		
Cr-D	mg/L				<0.0010					<0.0010		
Co-D	mg/L				0.00021					<0.00020		
Cu-D	mg/L				<0.00020					<0.00020		
Hard-D	mg/L				618					639		
Fe-D	mg/L				0.0420					0.0424		
Pb-D	mg/L				<0.00020					<0.00020		
Mg-D	mg/L				14.8					15.9		
Mn-D	mg/L				0.0742					0.0438		
Hg-D	mg/L									<0.000001		
Mo-D	mg/L				<0.0010					<0.0010		
Ni-D	mg/L				<0.0010					<0.0010		
K-D	mg/L				1.97					1.89		
S-D	mg/L				158					188		
Se-D	mg/L				<0.00010					<0.00010		
Si-D	mg/L				4.80					4.71		
Na-D	mg/L				110					112		
Sr-D	mg/L				2.05					2.36		
Zn-D	mg/L				<0.0050					<0.0050		

Table 15 2 South Pit Inflow 5 Page(s)

EMS ID													
Site Description	**2 South Pi**												
Site Name	**2SI**	2SI-21SEP20-M	2SI-28SEP20-M	2SI-5OCT20-M	2SI-13OCT20-M	2SI-19OCT20-M	2SI-26OCT20-M	2SI-26OCT20-M	2SI-2NOV20-M	2SI-9NOV20-M	2SI-16NOV20-I	2SI-16NOV20-M	2SI-23NOV20-M
Date		9/21/2020	9/28/2020	10/5/2020	10/13/2020	10/19/2020	10/26/2020	10/26/2020	11/2/2020	11/9/2020	11/16/2020	11/16/2020	11/23/2020
pH-F	pH Units	7.58	7.72	8.46	7.57	7.81	7.69	7.54	7.86	7.69	7.25	7.41	7.58
Cond-F	uS/cm	1501	1600	1565	1119	1268	1266	794	1194	1266	614	1045	1147
SO4-D	mg/L	540	510	490	320	400	220	220	420	420	330	320	200
TSS	mg/L			1.6									
Alk-T	mg/L			320					260				
Acidity83	mg/L			4.6					3.5				
Al-T	mg/L			<0.0030					0.0044				
As-T	mg/L			0.00025					0.00022				
Ba-T	mg/L			0.0424					0.0351				
B-T	mg/L			0.650					0.500				
Cd-T	mg/L			<0.000010					<0.000010				
Ca-T	mg/L			221					180				
Cr-T	mg/L			<0.0010					<0.0010				
Co-T	mg/L			<0.00020					<0.00020				
Cu-T	mg/L			<0.00050					<0.00050				
Hard-T	mg/L			619					511				
Fe-T	mg/L			0.091					0.087				
Pb-T	mg/L			<0.00020					<0.00020				
Mg-T	mg/L			16.3					15.3				
Mn-T	mg/L			0.0274					0.0317				
Hg-T	mg/L			<0.000001									
Mo-T	mg/L			<0.0010					<0.0010				
Ni-T	mg/L			<0.0010					<0.0010				
K-T	mg/L			1.84					1.49				
S-T	mg/L			180					163				
Se-T	mg/L			<0.00010					<0.00010				
Si-T	mg/L			4.74					4.09				
Ag-T	mg/L			<0.000020					<0.000020				
Na-T	mg/L			112					87.9				
Sr-T	mg/L			2.04					1.68				
Zn-T	mg/L			<0.0050					<0.0050				
Al-D	mg/L			<0.0030					0.0032				
As-D	mg/L			0.00028					0.00021				
Ba-D	mg/L			0.0416					0.0348				
B-D	mg/L			0.631					0.477				
Be-D	mg/L			<0.00010					<0.00010				
Cd-D	mg/L			<0.000010					<0.000010				
Ca-D	mg/L			206					171				
Cr-D	mg/L			<0.0010					<0.0010				
Co-D	mg/L			<0.00020					<0.00020				
Cu-D	mg/L			<0.00020					<0.00020				
Hard-D	mg/L			577					486				
Fe-D	mg/L			0.0284					0.0595				
Pb-D	mg/L			<0.00020					<0.00020				
Mg-D	mg/L			15.4					14.6				
Mn-D	mg/L			0.0266					0.0312				
Hg-D	mg/L			<0.000001									
Mo-D	mg/L			<0.0010					<0.0010				
Ni-D	mg/L			<0.0010					<0.0010				
K-D	mg/L			1.80					1.44				
S-D	mg/L			176					155				
Se-D	mg/L			<0.00010					<0.00010				
Si-D	mg/L			4.40					3.95				
Na-D	mg/L			111					86.2				
Sr-D	mg/L			1.98					1.57				
Zn-D	mg/L			<0.0050					<0.0050				

Table 15 2 South Pit Inflow 5 Page(s)

EMS ID													
Site Description	2 South Pi												
Site Name	2SI	SI-2DEC2020-	SI-2DEC2020-I	2SI-7DEC20-M	I-14DEC2020-	SI-21DEC20-N	SI-29DEC20-N	2SI-4JAN21-M	SI-11JAN21-M	SI-18JAN21-F	SI-18JAN21-M	SI-25JAN21-M	2SI-1FEB21-M
Date		12/2/2020	12/2/2020	12/7/2020	12/14/2020	12/21/2020	12/29/2020	1/4/2021	1/11/2021	1/18/2021	1/18/2021	1/25/2021	2/1/2021
pH-F	pH Units	7.69	7.69	7.89	7.44	7.5	7.12	7.11	7.25	7.59	7.59	7.59	6.6
Cond-F	uS/cm	1048	1048	856	747	914	400	1398	614	586	586	479	791
SO4-D	mg/L	340	340	250	380	180	310	200	190	180	180	130	310
TSS	mg/L							2.4					
Alk-T	mg/L			140				82					180
Acidity83	mg/L			3.8				4.6					<1.0
Al-T	mg/L			0.0228				0.0569					0.0115
As-T	mg/L			0.00017				0.00016					0.00013
Ba-T	mg/L			0.0203				0.0148					0.0196
B-T	mg/L			0.273				0.157					0.324
Cd-T	mg/L			<0.000010				<0.000010					<0.000010
Ca-T	mg/L			114				82.8					133
Cr-T	mg/L			<0.0010				<0.0010					<0.0010
Co-T	mg/L			<0.00020				0.00034					<0.00020
Cu-T	mg/L			<0.00050				0.00072					<0.00050
Hard-T	mg/L			330				243					378
Fe-T	mg/L			0.174				0.152					0.100
Pb-T	mg/L			<0.00020				<0.00020					<0.00020
Mg-T	mg/L			10.7				8.71					11.0
Mn-T	mg/L			0.0573				0.0443					0.0786
Hg-T	mg/L			<0.0000019				<0.0000019					<0.0000019
Mo-T	mg/L			<0.0010				<0.0010					<0.0010
Ni-T	mg/L			<0.0010				0.0012					<0.0010
K-T	mg/L			0.908				0.640					0.964
S-T	mg/L			97.4				71.7					115
Se-T	mg/L			<0.00010				<0.00010					<0.00010
Si-T	mg/L			4.06				3.76					3.66
Ag-T	mg/L			<0.000020				<0.000020					<0.000020
Na-T	mg/L			46.0				24.2					56.1
Sr-T	mg/L			0.896				0.595					1.06
Zn-T	mg/L			<0.0050				<0.0050					<0.0050
Al-D	mg/L			0.0077				0.0278					0.0111
As-D	mg/L			0.00015				0.00012					0.00017
Ba-D	mg/L			0.0193				0.0141					0.0212
B-D	mg/L			0.263				0.153					0.335
Be-D	mg/L			<0.00010				<0.00010					<0.00010
Cd-D	mg/L			<0.000010				<0.000010					<0.000010
Ca-D	mg/L			106				81.7					139
Cr-D	mg/L			<0.0010				<0.0010					<0.0010
Co-D	mg/L			<0.00020				0.00033					<0.00020
Cu-D	mg/L			0.00037				0.00053					0.00056
Hard-D	mg/L			307				239					395
Fe-D	mg/L			0.132				0.0694					0.0800
Pb-D	mg/L			<0.00020				<0.00020					<0.00020
Mg-D	mg/L			10.3				8.57					11.4
Mn-D	mg/L			0.0584				0.0428					0.0830
Hg-D	mg/L			<0.0000019				<0.0000019					<0.0000019
Mo-D	mg/L			<0.0010				<0.0010					<0.0010
Ni-D	mg/L			<0.0010				0.0012					<0.0010
K-D	mg/L			0.831				0.611					1.03
S-D	mg/L			94.8				71.5					122
Se-D	mg/L			<0.00010				<0.00010					<0.00010
Si-D	mg/L			4.01				3.55					3.87
Na-D	mg/L			42.2				23.8					56.6
Sr-D	mg/L			0.827				0.582					1.14
Zn-D	mg/L			<0.0050				<0.0050					<0.0050

Table 15 2 South Pit Inflow 5 Page(s)

EMS ID								
Site Description	2 South Pi							
Site Name	2SI	SI-8FEB21	I-16FEB21	I-22FEB21	I-1MAR21	I-9MAR21	-15MAR21	-22MAR21
Date		2/8/2021	2/16/2021	2/22/2021	3/1/2021	3/9/2021	3/15/2021	3/22/2021
pH-F	pH Units	7.96	7.89	7.9	7.68	7.77	7.58	7.4
Cond-F	uS/cm	1113	1067	837	984	960	1039	1050
SO4-D	mg/L	390	390	310	330	360	350	350
TSS	mg/L				1.6			
Alk-T	mg/L				200			
Acidity83	mg/L				3.5			
Al-T	mg/L				0.0162			
As-T	mg/L				0.00018			
Ba-T	mg/L				0.0194			
B-T	mg/L				0.324			
Cd-T	mg/L				<0.000010			
Ca-T	mg/L				124			
Cr-T	mg/L				<0.0010			
Co-T	mg/L				<0.00020			
Cu-T	mg/L				<0.00050			
Hard-T	mg/L				349			
Fe-T	mg/L				0.094			
Pb-T	mg/L				<0.00020			
Mg-T	mg/L				9.71			
Mn-T	mg/L				0.0395			
Hg-T	mg/L				<0.0000019			
Mo-T	mg/L				<0.0010			
Ni-T	mg/L				<0.0010			
K-T	mg/L				0.870			
S-T	mg/L				112			
Se-T	mg/L				<0.00010			
Si-T	mg/L				3.49			
Ag-T	mg/L				<0.000020			
Na-T	mg/L				52.7			
Sr-T	mg/L				1.08			
Zn-T	mg/L				<0.0050			
Al-D	mg/L				0.0108			
As-D	mg/L				0.00016			
Ba-D	mg/L				0.0194			
B-D	mg/L				0.303			
Be-D	mg/L				<0.00010			
Cd-D	mg/L				<0.000010			
Ca-D	mg/L				119			
Cr-D	mg/L				<0.0010			
Co-D	mg/L				<0.00020			
Cu-D	mg/L				0.00036			
Hard-D	mg/L				337			
Fe-D	mg/L				0.0742			
Pb-D	mg/L				<0.00020			
Mg-D	mg/L				9.66			
Mn-D	mg/L				0.0422			
Hg-D	mg/L				<0.0000019			
Mo-D	mg/L				<0.0010			
Ni-D	mg/L				<0.0010			
K-D	mg/L				0.919			
S-D	mg/L				107			
Se-D	mg/L				<0.00010			
Si-D	mg/L				3.54			
Na-D	mg/L				50.9			
Sr-D	mg/L				1.03			
Zn-D	mg/L				<0.0050			

Table 16 2-South Pit in Pit Water Cover Over PAG-CCR 2 Page(s)

EMS ID	E292127									
Site Description	2-South Pit in Pit Water Cover Over PAG-CCR									
Site Name	2S	2S-6Apr20-M	2S-4MAY20-M	2S-2JUN20-M	2S-6JUL20-M	2S-6AUG20-M	2S-8SEP20-M	2S-5OCT20-M	2S-2NOV20-M	2S-7DEC20-M
Date		4/6/2020	5/4/2020	12/7/2020	7/6/2020	8/6/2020	9/8/2020	10/5/2020	11/2/2020	12/7/2020
pH-F	pH Units	7.48	8.01		8.15	7.92	7.65	8.33	7.82	8.17
Cond-F	uS/cm	630	616		855	1215	1452	1124	1057	1086
SO4-D	mg/L	210	210		290	440	340	420	450	400
TSS	mg/L				1.6	2.0		2.0		
Alk-T	mg/L	120	67		100	170	120	130	140	160
Acidity83	mg/L	<1.0	<1.0		<1.0	1.5	<1.0	<1.0	2.1	<1.0
Al-T	mg/L	0.0082	0.0172		0.0047	0.0031	<0.0030	0.0048	0.0077	0.0307
As-T	mg/L	0.00270	0.00052		0.00356	0.00826	0.00629	0.00590	0.00454	0.00481
Ba-T	mg/L	0.0132	0.0111		0.0190	0.0403	0.0275	0.0264	0.0258	0.0204
B-T	mg/L	0.260	0.137		0.349	0.501	0.547	0.520	0.475	0.373
Cd-T	mg/L	<0.000010	<0.000010		0.000019	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Ca-T	mg/L	108	95.2		110	159	145	147	140	142
Cr-T	mg/L	<0.0010	<0.0010		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Co-T	mg/L	<0.00020	<0.00020		<0.00020	0.00029	<0.00020	<0.00020	<0.00020	0.00026
Cu-T	mg/L	<0.00050	0.00075		0.00221	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Hard-T	mg/L	320	288		330	462	433	440	418	419
Fe-T	mg/L	0.042	0.036		0.046	0.084	0.076	0.099	0.082	0.145
Pb-T	mg/L	<0.00020	<0.00020		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Mg-T	mg/L	12.3	12.2		13.3	16.1	17.0	17.8	17.0	15.8
Mn-T	mg/L	0.0147	0.0076		0.0517	0.116	0.0290	0.0607	0.0742	0.124
Hg-T	mg/L	<0.0000019	<0.0000019		<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019
Mo-T	mg/L	<0.0010	<0.0010		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Ni-T	mg/L	<0.0010	<0.0010		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
K-T	mg/L	1.35	0.886		1.72	2.11	2.36	2.31	2.17	1.86
S-T	mg/L	101	84.9		108	152	169	162	165	146
Se-T	mg/L	<0.00010	<0.00010		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Si-T	mg/L	1.32	1.69		0.69	3.27	0.80	1.22	1.31	1.81
Ag-T	mg/L	<0.000020	<0.000020		<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Na-T	mg/L	42.8	17.0		39.4	73.0	69.8	76.1	74.4	70.7
Sr-T	mg/L	0.773	0.689		0.899	1.34	1.23	1.22	1.21	1.06
Zn-T	mg/L	<0.0050	0.0115		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Al-D	mg/L	<0.0030	0.0045		<0.0030	0.0246	<0.0030	<0.0030	<0.0030	<0.0030
As-D	mg/L	0.00223	0.00046		0.00313	0.00568	0.00562	0.00521	0.00394	0.00430
Ba-D	mg/L	0.0131	0.0113		0.0180	0.0430	0.0246	0.0251	0.0250	0.0195
B-D	mg/L	0.258	0.143		0.358	0.523	0.501	0.503	0.452	0.369
Be-D	mg/L	<0.00010	<0.00010		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cd-D	mg/L	<0.000010	<0.000010		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Ca-D	mg/L	105	90.9		113	163	138	143	141	136
Cr-D	mg/L	<0.0010	<0.0010		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Co-D	mg/L	<0.00020	<0.00020		<0.00020	0.00032	<0.00020	<0.00020	<0.00020	0.00023
Cu-D	mg/L	0.00022	0.00076		0.00048	0.00051	0.00039	0.00028	<0.00020	<0.00020
Hard-D	mg/L	314	278		340	480	413	424	422	403
Fe-D	mg/L	<0.0050	0.0115		0.0162	0.0760	0.0445	0.0370	0.0362	0.0340
Pb-D	mg/L	<0.00020	<0.00020		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Mg-D	mg/L	12.3	12.2		13.7	17.4	16.3	16.3	16.9	15.5
Mn-D	mg/L	0.0055	0.0026		0.0013	0.122	0.0180	0.0291	0.0673	0.113
Hg-D	mg/L	<0.0000019	<0.0000019		<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019
Mo-D	mg/L	<0.0010	<0.0010		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Ni-D	mg/L	<0.0010	<0.0010		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
K-D	mg/L	1.30	0.849		1.69	2.15	2.33	2.20	2.13	1.81
S-D	mg/L	98.3	81.4		106	151	150	157	164	145
Se-D	mg/L	<0.00010	<0.00010		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Si-D	mg/L	1.22	1.50		0.66	3.12	0.88	1.10	1.34	1.66
Na-D	mg/L	43.5	17.4		39.8	74.4	62.9	71.4	75.3	70.4
Sr-D	mg/L	0.755	0.585		0.846	1.32	1.26	1.18	1.19	1.08
Zn-D	mg/L	<0.0050	<0.0050		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050

Table 16 2-South Pit in Pit Water Cover Over PAG-CCR 2 Page(s)

EMS ID	E292127					
Site Description	2-South Pit in					
Site Name	2S	2S-4JAN21-M	2SS-11JAN21-M	2S-1FEB21-M	2S-1MAR21-M	2S-1MAR21-R
Date		1/4/2021	1/11/2021	2/1/2021	3/1/2021	3/1/2021
pH-F	pH Units	7.58	7.15	7.95	7.95	7.95
Cond-F	uS/cm	1610	912	814	814	814
SO4-D	mg/L	230	310	290	270	270
TSS	mg/L					
Alk-T	mg/L	110		170	160	160
Acidity83	mg/L	2.4		<1.0	1.2	1.1
Al-T	mg/L	0.0717		0.0319	0.0261	0.0267
As-T	mg/L	0.00015		0.00294	0.00231	0.00231
Ba-T	mg/L	0.0147		0.0136	0.0130	0.0132
B-T	mg/L	0.202		0.264	0.247	0.253
Cd-T	mg/L	<0.000010		<0.000010	<0.000010	<0.000010
Ca-T	mg/L	91.4		115	102	104
Cr-T	mg/L	<0.0010		<0.0010	<0.0010	<0.0010
Co-T	mg/L	<0.00020		<0.00020	<0.00020	<0.00020
Cu-T	mg/L	0.00089		<0.00050	0.00053	<0.00050
Hard-T	mg/L	265		338	300	306
Fe-T	mg/L	0.128		0.089	0.056	0.059
Pb-T	mg/L	<0.00020		<0.00020	<0.00020	<0.00020
Mg-T	mg/L	8.89		12.7	11.1	11.3
Mn-T	mg/L	0.0087		0.0335	0.0263	0.0272
Hg-T	mg/L	<0.0000019		<0.0000019	<0.0000019	<0.0000019
Mo-T	mg/L	<0.0010		<0.0010	<0.0010	<0.0010
Ni-T	mg/L	<0.0010		<0.0010	<0.0010	<0.0010
K-T	mg/L	0.770		1.32	1.13	1.15
S-T	mg/L	80.3		104	90.1	96.8
Se-T	mg/L	<0.00010		<0.00010	<0.00010	<0.00010
Si-T	mg/L	3.17		1.69	1.41	1.42
Ag-T	mg/L	<0.000020		<0.000020	<0.000020	<0.000020
Na-T	mg/L	34.4		48.2	39.3	40.5
Sr-T	mg/L	0.710		0.849	0.804	0.808
Zn-T	mg/L	<0.0050		<0.0050	<0.0050	<0.0050
Al-D	mg/L	0.0077		<0.0030	0.0036	<0.0030
As-D	mg/L	0.00011		0.00269	0.00216	0.00209
Ba-D	mg/L	0.0145		0.0141	0.0128	0.0129
B-D	mg/L	0.206		0.268	0.235	0.233
Be-D	mg/L	<0.00010		<0.00010	<0.00010	<0.00010
Cd-D	mg/L	<0.000010		<0.000010	<0.000010	<0.000010
Ca-D	mg/L	94.2		117	102	101
Cr-D	mg/L	<0.0010		<0.0010	<0.0010	<0.0010
Co-D	mg/L	<0.00020		<0.00020	<0.00020	<0.00020
Cu-D	mg/L	0.00054		0.00043	0.00100	0.00114
Hard-D	mg/L	272		346	299	296
Fe-D	mg/L	0.0144		<0.0050	0.0063	<0.0050
Pb-D	mg/L	<0.00020		<0.00020	<0.00020	<0.00020
Mg-D	mg/L	8.87		13.1	10.8	10.8
Mn-D	mg/L	0.0071		0.0302	0.0155	0.0153
Hg-D	mg/L	<0.0000019		<0.0000019	<0.0000019	<0.0000019
Mo-D	mg/L	<0.0010		<0.0010	<0.0010	<0.0010
Ni-D	mg/L	<0.0010		<0.0010	<0.0010	<0.0010
K-D	mg/L	0.759		1.44	1.21	1.20
S-D	mg/L	81.3		109	93.4	93.2
Se-D	mg/L	<0.00010		<0.00010	<0.00010	<0.00010
Si-D	mg/L	3.10		1.82	1.44	1.42
Na-D	mg/L	34.3		48.5	38.3	38.6
Sr-D	mg/L	0.705		0.899	0.815	0.797
Zn-D	mg/L	<0.0050		<0.0050	<0.0050	<0.0050

Table 17 2-South Outflow Culvert into 3-South Pit 2 Page(s)

EMS ID										
Site Description	**2-South Outflow Culvert into 3-South Pit**									
Site Name	**2SC**	**2SC-6Apr20-M**	**2SC-4MAY20-M**	**2SC-2JUN20-M**	**2SC-6JUL20-M**	**2SC-6AUG20-M**	**2SC-8SEP20-M**	**2SC-5OCT20-M**	**2SC-5OCT20-R**	**2SC-2NOV20-M**
Date		**4/6/2020**	**5/4/2020**	**6/2/2020**	**7/6/2020**	**8/6/2020**	**9/8/2020**	**10/5/2020**	**10/5/2020**	**11/2/2020**
pH-F	pH Units	7.47	7.98	7.85	7.75	8.08	7.58	8.23	8.23	7.67
Cond-F	uS/cm	2590	1038	1280	1431	1211	1229	1520	1520	1283
SO4-D	mg/L	640	510	520	560	470	470	630	620	620
Alk-T	mg/L	200	200		220	170	230	230	230	200
Acidity83	mg/L	3.7	<1.0		3.6	<1.0	4.5	4.0	3.8	4.0
Al-T	mg/L	<0.0030	<0.0030	0.0030	<0.0030	0.0044	<0.0030	<0.0030	<0.0030	0.0040
As-T	mg/L	0.00046	0.00040	0.00037	0.00042	0.00116	0.00040	0.00043	0.00044	0.00057
Ba-T	mg/L	0.0133	0.0142	0.0143	0.0170	0.0178	0.0170	0.0184	0.0188	0.0193
B-T	mg/L	0.294	0.309	0.353	0.359	0.389	0.428	0.438	0.442	0.426
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Ca-T	mg/L	248	239	209	230	183	238	257	260	230
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Cu-T	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Hard-T	mg/L	740	710	621	681	543	701	755	764	687
Fe-T	mg/L	0.020	0.016	0.020	0.017	0.036	0.010	<0.010	<0.010	0.046
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Mg-T	mg/L	29.5	27.3	24.1	25.9	20.9	25.6	27.4	28.2	27.2
Mn-T	mg/L	0.0059	0.0044	0.0083	0.0068	0.0051	0.0030	0.0025	0.0026	0.0192
Hg-T	mg/L	<0.0000019					<0.0000019	<0.0000019	<0.0000019	<0.0000019
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
K-T	mg/L	2.27	2.28	2.31	2.43	2.33	2.49	2.69	2.75	2.69
S-T	mg/L	209	193	157	186	165	207	209	213	216
Se-T	mg/L	0.00017	0.00014	0.00010	0.00014	0.00011	0.00015	0.00018	0.00019	0.00018
Si-T	mg/L	2.26	2.41	2.32	2.46	1.71	2.61	2.69	2.71	2.38
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Na-T	mg/L	37.1	36.1	42.7	42.1	48.2	47.5	50.5	52.6	53.7
Sr-T	mg/L	1.46	1.59	1.21	1.42	1.31	1.49	1.52	1.60	1.55
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0054
Al-D	mg/L	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0060	<0.0030	<0.0030	<0.0030
As-D	mg/L	0.00043	0.00042	0.00037	0.00039	0.00094	0.00036	0.00049	0.00050	0.00055
Ba-D	mg/L	0.0125	0.0143	0.0147	0.0168	0.0181	0.0161	0.0182	0.0178	0.0253
B-D	mg/L	0.283	0.319	0.329	0.353	0.395	0.42	0.433	0.440	0.451
Be-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	<0.00010	<0.00010	<0.00010
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000020	<0.000010	<0.000010	<0.000010
Ca-D	mg/L	238	230	192	233	188	238	247	252	225
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010	<0.0010	<0.0010
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00040	<0.00020	<0.00020	<0.00020
Cu-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	0.00029	<0.00040	<0.00020	<0.00020	<0.00020
Hard-D	mg/L	715	693	582	693	554	707	727	738	667
Fe-D	mg/L	<0.0050	0.0069	<0.0050	0.0058	0.0211	<0.010	<0.0050	<0.0050	0.0358
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00040	<0.00020	<0.00020	<0.00020
Mg-D	mg/L	29.5	28.6	24.9	27.0	20.8	27.0	26.9	26.4	25.5
Mn-D	mg/L	0.0054	0.0035	0.0076	0.0063	0.0044	0.0030	0.0024	0.0024	0.0185
Hg-D	mg/L	<0.0000019					<0.0000019	<0.0000019	<0.0000019	<0.0000019
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010	<0.0010	<0.0010
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010	<0.0010	<0.0010
K-D	mg/L	2.26	2.32	2.44	2.45	2.31	2.51	2.64	2.64	2.44
S-D	mg/L	204	193	158	189	156	195	206	207	199
Se-D	mg/L	0.00017	0.00016	<0.00010	0.00017	<0.00010	0.00022	0.00021	0.00020	<0.00010
Si-D	mg/L	2.09	2.24	2.08	2.41	1.72	2.50	2.53	2.56	1.36
Na-D	mg/L	36.1	38.1	42.0	43.6	47.7	46.9	50.2	49.0	53.2
Sr-D	mg/L	1.39	1.39	1.29	1.38	1.29	1.55	1.54	1.52	1.19
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050

Table 17 2-South Outflow Culvert into 3-South Pit 2 Page(s)

EMS ID						
Site Description	2-South Outf					
Site Name	2SC	2SC-7DEC20-R	2SC-7DEC20-M	2SC-4JAN21-M	2SC-1FEB21-M	2SC-1MAR21-M
Date		12/7/2020	12/7/2020	1/4/2021	2/1/2021	3/1/2021
pH-F	pH Units	7.89	7.89	7.27	7.82	7.96
Cond-F	uS/cm	1318	1318	2700	1439	1459
SO4-D	mg/L	600	600	480	640	640
Alk-T	mg/L	180	180	150	230	240
Acidity83	mg/L	2.3	3.9	7.4	<1.0	3.7
Al-T	mg/L	0.0119	0.0065	0.0170	0.0065	0.0036
As-T	mg/L	0.00063	0.00060	0.00157	0.00031	0.00041
Ba-T	mg/L	0.0156	0.0149	0.0135	0.0122	0.0130
B-T	mg/L	0.333	0.314	0.245	0.28	0.277
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000020	<0.000010
Ca-T	mg/L	220	222	181	253	244
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00040	<0.00020
Cu-T	mg/L	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050
Hard-T	mg/L	654	660	540	757	728
Fe-T	mg/L	0.040	0.030	0.091	0.022	0.018
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00040	<0.00020
Mg-T	mg/L	25.5	25.6	21.4	30.6	28.7
Mn-T	mg/L	0.0188	0.0185	0.0601	0.0066	0.0065
Hg-T	mg/L			<0.0000019		<0.0000019
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010
K-T	mg/L	2.18	2.17	1.57	2.01	1.84
S-T	mg/L	205	204	163	220	218
Se-T	mg/L	0.00017	0.00018	0.00022	<0.00020	0.00023
Si-T	mg/L	2.38	2.37	2.26	2.33	2.38
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000040	<0.000020
Na-T	mg/L	46.2	46.7	37.0	32.5	30.1
Sr-T	mg/L	1.42	1.38	1.15	1.41	1.48
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.010	<0.0050
Al-D	mg/L	<0.0030	<0.0030	0.0060	<0.0060	<0.0030
As-D	mg/L	0.00054	0.00051	0.00120	0.00040	0.00038
Ba-D	mg/L	0.0148	0.0149	0.0132	0.0128	0.0131
B-D	mg/L	0.311	0.316	0.250	0.30	0.250
Be-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00020	<0.00010
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000020	<0.000010
Ca-D	mg/L	210	214	188	270	240
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00040	<0.00020
Cu-D	mg/L	<0.00020	<0.00020	0.00022	0.00071	0.00079
Hard-D	mg/L	627	638	559	805	714
Fe-D	mg/L	0.0100	0.0082	0.0137	<0.010	<0.0050
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00040	<0.00020
Mg-D	mg/L	24.9	25.2	22.1	31.9	27.7
Mn-D	mg/L	0.0178	0.0176	0.0471	0.0053	0.0061
Hg-D	mg/L			<0.0000019		<0.0000019
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010
K-D	mg/L	2.15	2.11	1.64	2.12	2.03
S-D	mg/L	198	203	172	232	207
Se-D	mg/L	0.00017	0.00017	0.00020	<0.00020	0.00025
Si-D	mg/L	2.28	2.33	2.27	2.76	2.49
Na-D	mg/L	45.6	45.5	37.3	32.8	29.4
Sr-D	mg/L	1.40	1.40	1.17	1.50	1.56
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.010	<0.0050

Table 18 3-South Pit Water Cover Over PAG-CCR 2 Page(s)

EMS ID	E217015									
Site Description	3-South Pit Water Cover Over PAG-CCR									
Site Name	3S	3S-6Apr20-M	3S-4MAY20-M	3S-2JUN20-M	3S-6JUL20-M	3S-6JUL20-R	3S-6AUG20-M	3S-8SEP20-M	3S-8SEP20-R	3S-5OCT20-M
Date		4/6/2020	5/4/2020	6/2/2020	7/6/2020	7/6/2020	8/6/2020	9/8/2020	9/8/2020	10/5/2020
pH-F	pH Units	7.97	7.75	7.90	8.06	8.06	7.03	6.84	8.06	8.2
Cond-F	uS/cm	1036	1304	1091	1224	1224	1714	1626	1224	1318
SO4-D	mg/L	640	540	510	460	500	460	490	520	570
Alk-T	mg/L	170	150	140	140	140	150	150	150	150
Acidity83	mg/L	2.7	2.7	2.5	1.8	1.7	<1.0	2.4	2.4	2.2
Al-T	mg/L	0.0093		0.0082			0.0046			0.0223
As-T	mg/L	0.00050		0.00068			0.00084			0.00054
Ba-T	mg/L	0.0136		0.0161			0.0165			0.0173
B-T	mg/L	0.277		0.350			0.368			0.437
Cd-T	mg/L	<0.000010		<0.000010			<0.000010			<0.000010
Ca-T	mg/L	237		204			185			212
Cr-T	mg/L	<0.0010		<0.0010			<0.0010			<0.0010
Co-T	mg/L	<0.00020		<0.00020			<0.00020			<0.00020
Cu-T	mg/L	<0.00050		0.00101			<0.00050			<0.00050
Hard-T	mg/L	713		618			559			635
Fe-T	mg/L	0.030		0.032			0.030			0.055
Pb-T	mg/L	<0.00020		<0.00020			<0.00020			<0.00020
Mg-T	mg/L	29.4		26.5			23.8			25.9
Mn-T	mg/L	0.0093		0.0166			0.0091			0.0047
Hg-T	mg/L	<0.0000019		<0.0000019			<0.0000019			<0.0000019
Mo-T	mg/L	<0.0010		<0.0010			<0.0010			<0.0010
Ni-T	mg/L	<0.0010		<0.0010			<0.0010			<0.0010
K-T	mg/L	2.20		2.44			2.41			2.58
S-T	mg/L	207		178			175			195
Se-T	mg/L	0.00013		0.00011			<0.00010			0.00011
Si-T	mg/L	1.87		0.74			1.43			1.33
Ag-T	mg/L	<0.000020		<0.000020			<0.000020			<0.000020
Na-T	mg/L	35.1		40.7			44.3			53.3
Sr-T	mg/L	1.45		1.31			1.38			1.41
Zn-T	mg/L	<0.0050		<0.0050			<0.0050			<0.0050
Al-D	mg/L	<0.0030		<0.0030			<0.0030			<0.0030
As-D	mg/L	0.00047		0.00069			0.00072			0.00059
Ba-D	mg/L	0.0132		0.0148			0.0164			0.0169
B-D	mg/L	0.284		0.323			0.379			0.422
Be-D	mg/L	<0.00010		<0.00010			<0.00010			<0.00010
Cd-D	mg/L	<0.000010		<0.000010			<0.000010			<0.000010
Ca-D	mg/L	233		195			192			199
Cr-D	mg/L	<0.0010		<0.0010			<0.0010			<0.0010
Co-D	mg/L	<0.00020		<0.00020			<0.00020			<0.00020
Cu-D	mg/L	0.00024		0.00043			0.00031			0.00021
Hard-D	mg/L	701		599			578			596
Fe-D	mg/L	0.0059		0.0192			0.0184			0.0067
Pb-D	mg/L	<0.00020		<0.00020			<0.00020			<0.00020
Mg-D	mg/L	28.8		27.1			23.8			24.3
Mn-D	mg/L	0.0070		0.0139			0.0061			<0.0010
Hg-D	mg/L	<0.0000019		<0.0000019			<0.0000019			<0.0000019
Mo-D	mg/L	<0.0010		<0.0010			<0.0010			<0.0010
Ni-D	mg/L	<0.0010		<0.0010			<0.0010			<0.0010
K-D	mg/L	2.21		2.57			2.39			2.52
S-D	mg/L	204		180			168			189
Se-D	mg/L	0.00013		<0.00010			<0.00010			<0.00010
Si-D	mg/L	1.81		0.70			1.47			1.10
Na-D	mg/L	35.1		41.0			44.9			51.4
Sr-D	mg/L	1.39		1.37			1.32			1.39
Zn-D	mg/L	<0.0050		<0.0050			<0.0050			<0.0050

Table 18 3-South Pit Water Cover Over PAG-CCR 2 Page(s)

EMS ID	E217015							
Site Description	3-South Pi							
Site Name	3S	3S-2NOV20-M	3S-7DEC20-M	3S-4JAN21-M	3S-11JAN21-M	3S-1FEB21-M	3S-1FEB21-R	3S-1MAR21-M
Date		11/2/2020	12/7/2020	1/4/2021	1/11/2021	2/1/2021	2/1/2021	3/1/2021
pH-F	pH Units	7.48	7.57	7.47	7.57	7.13	7.13	7.64
Cond-F	uS/cm	1122	1165	2590	1287	1194.3	1194.3	1240
SO4-D	mg/L	510	480	450	530	630	630	500
Alk-T	mg/L	170	160	140		230	230	210
Acidity83	mg/L	5.2	5.3	4.8		<1.0	<1.0	3.3
Al-T	mg/L		0.152	0.0502				0.0101
As-T	mg/L		0.00045	0.00124				0.00044
Ba-T	mg/L		0.0185	0.0138				0.0126
B-T	mg/L		0.310	0.239				0.267
Cd-T	mg/L		<0.000010	<0.000010				<0.000010
Ca-T	mg/L		209	182				218
Cr-T	mg/L		<0.0010	<0.0010				<0.0010
Co-T	mg/L		0.00021	<0.00020				<0.00020
Cu-T	mg/L		0.00112	<0.00050				<0.00050
Hard-T	mg/L		626	541				656
Fe-T	mg/L		0.251	0.106				0.023
Pb-T	mg/L		<0.00020	<0.00020				<0.00020
Mg-T	mg/L		25.2	20.8				26.9
Mn-T	mg/L		0.0117	0.0366				0.0078
Hg-T	mg/L		<0.0000019	<0.0000019				<0.000001
Mo-T	mg/L		<0.0010	<0.0010				<0.0010
Ni-T	mg/L		<0.0010	<0.0010				<0.0010
K-T	mg/L		2.08	1.60				1.82
S-T	mg/L		190	162				196
Se-T	mg/L		0.00012	0.00017				0.00015
Si-T	mg/L		2.23	2.27				2.00
Ag-T	mg/L		<0.000020	<0.000020				<0.000020
Na-T	mg/L		41.0	37.7				31.3
Sr-T	mg/L		1.31	1.13				1.38
Zn-T	mg/L		<0.0050	<0.0050				<0.0050
Al-D	mg/L		<0.0030	0.0069				<0.0030
As-D	mg/L		0.00034	0.00096				0.00040
Ba-D	mg/L		0.0164	0.0127				0.0113
B-D	mg/L		0.275	0.248				0.233
Be-D	mg/L		<0.00010	<0.00010				<0.00010
Cd-D	mg/L		<0.000010	<0.000010				<0.000010
Ca-D	mg/L		178	178				191
Cr-D	mg/L		<0.0010	<0.0010				<0.0010
Co-D	mg/L		<0.00020	<0.00020				<0.00020
Cu-D	mg/L		0.00063	0.00025				0.00060
Hard-D	mg/L		534	529				569
Fe-D	mg/L		<0.0050	0.0100				<0.0050
Pb-D	mg/L		<0.00020	<0.00020				<0.00020
Mg-D	mg/L		21.8	20.2				22.5
Mn-D	mg/L		0.0093	0.0337				0.0027
Hg-D	mg/L		<0.0000019	<0.0000019				<0.000001
Mo-D	mg/L		<0.0010	<0.0010				<0.0010
Ni-D	mg/L		<0.0010	<0.0010				<0.0010
K-D	mg/L		1.89	1.55				1.71
S-D	mg/L		164	159				164
Se-D	mg/L		<0.00010	0.00040				0.00015
Si-D	mg/L		1.82	2.11				1.90
Na-D	mg/L		37.2	37.6				26.9
Sr-D	mg/L		1.16	1.11				1.25
Zn-D	mg/L		<0.0050	<0.0050				<0.0050

Table 19 Culvert Downstream End at Access Road 1 Page(s)

EMS ID	E217014									
Site Description		Culvert Downstream End at Access Road								
Site Name	SPC	SPC-6Apr20-M	SPC-4MAY20-M	SPC-2JUN20-M	SPC-26OCT20-M	SPC-2NOV20-M	SPC-7DEC20-M	SPC-4JAN21-M	SPC-1FEB21-M	SPC-1MAR21-M
Date		06/Apr/20	04/May/20	02/Jun/20	10/26/2020	11/2/2020	12/7/2020	1/4/2021	2/1/2021	3/1/2021
pH-F	pH Units	8.05	7.84	7.47	7.80	7.91	7.86	7.51	6.78	7.49
Cond-F	uS/cm	367	287	224	352	413	352	268.0	169.8	280
pH-L	pH Units		7.18	7.15	7.80					
Cond-L	uS/cm		130		390					
SO4-D	mg/L	160	36	63	140	140	120	470	63	95
TSS	mg/L	<1.0	5.2	12	<1.0	<1.0	1.2	<1.0	1.2	1.2
Alk-T	mg/L	43	26	39	49	50	43	29	40	39
Acidity83	mg/L	<1.0	3.6	<1.0	<1.0	<1.0	<1.0	1.2	<1.0	<1.0
Al-T	mg/L	0.0501		0.118	0.0695		0.0573		0.0631	0.0453
As-T	mg/L	0.00029		0.00073	0.00039		0.00030		0.00024	0.00026
Ba-T	mg/L	0.0110		0.0081	0.0120		0.0087		0.0049	0.0068
B-T	mg/L	0.073		0.064	0.085		0.078		<0.050	0.064
Cd-T	mg/L	<0.000010		<0.000010	<0.000010		<0.000010		<0.000010	<0.000010
Ca-T	mg/L	58.2		28.2	50.6		43.6		23.1	36.6
Cr-T	mg/L	<0.0010		<0.0010	<0.0010		<0.0010		<0.0010	<0.0010
Co-T	mg/L	<0.00020		<0.00020	<0.00020		<0.00020		<0.00020	<0.00020
Cu-T	mg/L	<0.00050		0.00064	<0.00050		<0.00050		<0.00050	<0.00050
Hard-T	mg/L	177		87.0	156		133		71.7	112
Fe-T	mg/L	0.079		0.325	0.116		0.110		0.102	0.064
Pb-T	mg/L	<0.00020		<0.00020	<0.00020		<0.00020		<0.00020	<0.00020
Mg-T	mg/L	7.70		4.02	7.22		5.79		3.39	5.00
Mn-T	mg/L	0.0022		0.0103	0.0033		0.0029		0.0026	0.0019
Hg-T	mg/L	<0.0000019		0.0000021	0.0000024		<0.0000019		<0.0000019	<0.0000019
Mo-T	mg/L	<0.0010		<0.0010	<0.0010		<0.0010		<0.0010	<0.0010
Ni-T	mg/L	<0.0010		<0.0010	<0.0010		<0.0010		<0.0010	<0.0010
K-T	mg/L	0.537		0.264	0.617		0.515		0.317	0.410
S-T	mg/L	51.0		17.5	45.5		37.6		20.4	31.8
Se-T	mg/L	<0.00010		<0.00010	<0.00010		<0.00010		<0.00010	<0.00010
Si-T	mg/L	2.34		1.96	3.43		3.25		2.94	2.70
Ag-T	mg/L	<0.000020		<0.000020	<0.000020		<0.000020		<0.000020	<0.000020
Na-T	mg/L	9.83		5.82	13.6		10.2		6.73	8.56
Sr-T	mg/L	0.341		0.166	0.325		0.259		0.136	0.217
Zn-T	mg/L	<0.0050		<0.0050	<0.0050		<0.0050		<0.0050	<0.0050
Al-D	mg/L	0.0357		0.0637	0.0547		0.0418		0.0516	0.0346
As-D	mg/L	0.00025		0.00060	0.00033		0.00024		0.00025	0.00024
Ba-D	mg/L	0.0106		0.0078	0.0117		0.0082		0.0051	0.0066
B-D	mg/L	0.071		<0.050	0.090		0.078		<0.050	0.062
Be-D	mg/L	<0.00010		<0.00010	<0.00010		<0.00010		<0.00010	<0.00010
Cd-D	mg/L	<0.000010		<0.000010	<0.000010		<0.000010		<0.000010	<0.000010
Ca-D	mg/L	57.8		29.0	51.1		41.7		24.3	35.5
Cr-D	mg/L	<0.0010		<0.0010	<0.0010		<0.0010		<0.0010	<0.0010
Co-D	mg/L	<0.00020		<0.00020	<0.00020		<0.00020		<0.00020	<0.00020
Cu-D	mg/L	0.00029		0.00057	0.00036		0.00031		0.00049	0.00067
Hard-D	mg/L	176		89.9	157		128		75.0	108
Fe-D	mg/L	0.0448		0.156	0.0940		0.0627		0.0806	0.0491
Pb-D	mg/L	<0.00020		<0.00020	<0.00020		<0.00020		<0.00020	<0.00020
Mg-D	mg/L	7.76		4.26	7.04		5.72		3.50	4.71
Mn-D	mg/L	<0.0010		<0.0010	0.0028		0.0012		0.0015	0.0012
Hg-D	mg/L	<0.0000019		0.0000022	0.0000021		<0.0000019		<0.0000019	<0.0000019
Mo-D	mg/L	<0.0010		<0.0010	<0.0010		<0.0010		<0.0010	<0.0010
Ni-D	mg/L	<0.0010		<0.0010	<0.0010		<0.0010		<0.0010	<0.0010
K-D	mg/L	0.506		0.286	0.620		0.499		0.325	0.423
S-D	mg/L	50.4		18.3	45.3		38.6		20.7	29.8
Se-D	mg/L	<0.00010		<0.00010	<0.00010		<0.00010		<0.00010	<0.00010
Si-D	mg/L	2.24		1.92	3.61		3.24		3.13	2.81
Na-D	mg/L	9.71		5.93	12.9		10.3		6.67	8.27
Sr-D	mg/L	0.335		0.181	0.312		0.260		0.151	0.222
Zn-D	mg/L	<0.0050		<0.0050	<0.0050		<0.0050		<0.0050	<0.0050

Table 20 South End Mine Water Entering Long Lake Near the Outlet 6 Page(s)

EMS ID	E292130				Stn Std	WQG-Max					
Site Description	South End Mine Water Entering Long Lake Near the Outlet										
Site Name	LLE	Std Val	LLE-6Apr20-M	LLE-15Apr20-M	LLE-20APR20-R	LLE-20APR20-M	LLE-27APR20-M	LLE-4MAY20-M	LLE-11MAY20-M	LLE-20MAY20-M	LLE-25MAY20-M
Date		Max	4/6/2020	4/15/2020	4/20/2020	4/20/2020	4/27/2020	5/4/2020	5/11/2020	5/20/2020	5/25/2020
pH-F	pH Units		6.56	7.18	7.3	7.3	7.47	7.15	7.28	6.9	7.57
Cond-F	uS/cm		331.8	350.1	348	348	490	340	352	470	260
SO4-D	mg/L		120	150	160	160	200	120	290	160	88
TSS	mg/L	25	2.8					1.6			
Alk-T	mg/L		38					43			
Acidity83	mg/L		1.7					1.8			
N-NH3	mg/L	12.9	<0.015					0.15			
N-NO23	mg/L		<0.020					<0.020			
P-T	mg/L		<0.0030					0.0058			
Al-T	mg/L		0.0605					0.0450			
As-T	mg/L	0.005	0.00057					0.00054			
Ba-T	mg/L		0.0127					0.0149			
B-T	mg/L		0.072					0.090			
Cd-T	mg/L		<0.000010					<0.000010			
Ca-T	mg/L		49.0					46.0			
Cr-T	mg/L		<0.0010					<0.0010			
Co-T	mg/L	0.11	<0.00020					<0.00020			
Cu-T	mg/L		<0.00050					<0.00050			
Hard-T	mg/L		150					142			
Fe-T	mg/L	1.0	0.694					0.930			
Pb-T	mg/L	0.01763	<0.00020					<0.00020			
Mg-T	mg/L		6.74					6.54			
Mn-T	mg/L	0.8706	0.0452					0.102			
Hg-T	mg/L		<0.0000019					<0.0000019			
Mo-T	mg/L	2.0	<0.0010					<0.0010			
Ni-T	mg/L		<0.0010					<0.0010			
K-T	mg/L		0.490					0.566			
S-T	mg/L		43.6					39.5			
Se-T	mg/L		<0.00010					<0.00010			
Si-T	mg/L		2.54					2.34			
Ag-T	mg/L	0.0001	<0.000020					<0.000020			
Na-T	mg/L		9.26					10.7			
Sr-T	mg/L		0.288					0.292			
Zn-T	mg/L	0.033	<0.0050					<0.0050			
Al-D	mg/L	0.1	0.0276					0.0256			
As-D	mg/L		0.00041					0.00048			
Ba-D	mg/L		0.0119					0.0150			
B-D	mg/L		0.067					0.091			
Be-D	mg/L		<0.00010					<0.00010			
Cd-D	mg/L	0.00017	<0.000010					<0.000010			
Ca-D	mg/L		46.2					44.4			
Cr-D	mg/L		<0.0010					<0.0010			
Co-D	mg/L		<0.00020					<0.00020			
Cu-D	mg/L	0.002	0.00033					0.00058			
Hard-D	mg/L		142					139			
Fe-D	mg/L	0.35	**0.558**					**0.776**			
Pb-D	mg/L		<0.00020					<0.00020			
Mg-D	mg/L		6.46					6.74			
Mn-D	mg/L		0.0424					0.107			
Hg-D	mg/L		<0.0000019					<0.0000019			
Mo-D	mg/L		<0.0010					<0.0010			
Ni-D	mg/L		<0.0010					<0.0010			
K-D	mg/L		0.466					0.557			
S-D	mg/L		40.3					39.1			
Se-D	mg/L		<0.00010					<0.00010			
Si-D	mg/L		2.32					2.11			
Na-D	mg/L		8.97					11.4			
Sr-D	mg/L		0.269					0.274			
Zn-D	mg/L		<0.0050					<0.0050			

Table 20 South End Mine Water Entering Long Lake Near the Outlet 6 Page(s)

EMS ID	E292130									
Site Description	South End									
Site Name	LLE	LLE-2JUN20-M	LLE-9JUN20-M	LLE-15JUN20-M	LLE-22JUN20-M	LLE-30JUN20-M	LLE-6JUL20-M	LLE-13JUL20-M	LLE-20JUL20-M	LLE-27JUL20-M
Date		6/2/2020	6/9/2020	6/15/2020	6/22/2020	6/30/2020	7/6/2020	7/13/2020	7/20/2020	7/27/2020
pH-F	pH Units	7.22	7.56	7.36	7.74	7.73	7.16	7.23	7.29	6.77
Cond-F	uS/cm	329	250	300	400	470	610	536	573	738
SO4-D	mg/L	120	84	98	140	160	180	88	190	240
TSS	mg/L	4.4					2.8			
Alk-T	mg/L	51					74			
Acidity83	mg/L	1.7					1.8			
N-NH3	mg/L	<0.015					<0.015			
N-NO23	mg/L	<0.020					<0.020			
P-T	mg/L	0.0040					0.0035			
Al-T	mg/L	0.0247					0.0110			
As-T	mg/L	0.00066					0.00088			
Ba-T	mg/L	0.0163					0.0246			
B-T	mg/L	0.113					0.160			
Cd-T	mg/L	<0.000010					<0.000010			
Ca-T	mg/L	46.1					70.3			
Cr-T	mg/L	<0.0010					<0.0010			
Co-T	mg/L	<0.00020					<0.00020			
Cu-T	mg/L	<0.00050					<0.00050			
Hard-T	mg/L	144					219			
Fe-T	mg/L	0.657					0.799			
Pb-T	mg/L	<0.00020					<0.00020			
Mg-T	mg/L	6.94					10.6			
Mn-T	mg/L	0.0665					0.117			
Hg-T	mg/L	<0.0000019					<0.0000019			
Mo-T	mg/L	<0.0010					<0.0010			
Ni-T	mg/L	<0.0010					<0.0010			
K-T	mg/L	0.539					0.829			
S-T	mg/L	37.0					64.0			
Se-T	mg/L	<0.00010					<0.00010			
Si-T	mg/L	1.96					2.33			
Ag-T	mg/L	<0.000020					<0.000020			
Na-T	mg/L	12.2					19.0			
Sr-T	mg/L	0.269					0.449			
Zn-T	mg/L	<0.0050					<0.0050			
Al-D	mg/L	0.0191					0.0049			
As-D	mg/L	0.00061					0.00080			
Ba-D	mg/L	0.0163					0.0237			
B-D	mg/L	0.095					0.162			
Be-D	mg/L	<0.00010					<0.00010			
Cd-D	mg/L	<0.000010					<0.000010			
Ca-D	mg/L	46.5					70.6			
Cr-D	mg/L	<0.0010					<0.0010			
Co-D	mg/L	<0.00020					<0.00020			
Cu-D	mg/L	0.00046					0.00024			
Hard-D	mg/L	144					223			
Fe-D	mg/L	**0.549**					**0.478**			
Pb-D	mg/L	<0.00020					<0.00020			
Mg-D	mg/L	6.89					11.2			
Mn-D	mg/L	0.0637					0.118			
Hg-D	mg/L	<0.0000019					<0.0000019			
Mo-D	mg/L	<0.0010					<0.0010			
Ni-D	mg/L	<0.0010					<0.0010			
K-D	mg/L	0.555					0.835			
S-D	mg/L	36.3					64.6			
Se-D	mg/L	<0.00010					<0.00010			
Si-D	mg/L	1.98					2.17			
Na-D	mg/L	12.1					19.5			
Sr-D	mg/L	0.285					0.430			
Zn-D	mg/L	<0.0050					<0.0050			

Table 20 South End Mine Water Entering Long Lake Near the Outlet 6 Page(s)

EMS ID	E292130									
Site Description	South End									
Site Name	LLE	LLE-6AUG20-M	LLE-24SEPT20-M	LLE-28SEP20-M	LLE-5OCT20-M	LLE-13OCT20-M	LLE-19OCT20-M	LLE-26OCT20-M	LLE-2NOV20-M	LLE-9NOV20-M
Date		8/6/2020	9/24/2020	9/28/2020	10/5/2020	10/13/2020	10/19/2020	10/26/2020	11/2/2020	11/9/2020
pH-F	pH Units	7.6	7.05	7.06	6.89	7.25	7.59	7.11	7.32	7.46
Cond-F	uS/cm	841	873	753	716	738	702	502	482	467
SO4-D	mg/L	380	230	210	220	160	100	130	120	99
TSS	mg/L	7.2	9.2		<1.0				5.6	
Alk-T	mg/L	120	110		85				46	
Acidity83	mg/L	3.3	1.4		2.7				<1.0	
N-NH3	mg/L	0.018	0.049		0.016				<0.015	
N-NO23	mg/L	<0.020	0.089		<0.020				<0.020	
P-T	mg/L	0.0056	<0.0030		0.0039				0.0099	
Al-T	mg/L	0.0400	0.244		0.0079				0.110	
As-T	mg/L	0.00160	0.00107		0.00062				0.00048	
Ba-T	mg/L	0.0306	0.0272		0.0304				0.0129	
B-T	mg/L	0.280	0.223		0.153				0.089	
Cd-T	mg/L	<0.000010	<0.000010		<0.000010				<0.000010	
Ca-T	mg/L	120	97.1		79.9				45.4	
Cr-T	mg/L	<0.0010	<0.0010		<0.0010				<0.0010	
Co-T	mg/L	0.00026	0.00039		<0.00020				<0.00020	
Cu-T	mg/L	<0.00050	0.00150		<0.00050				0.00064	
Hard-T	mg/L	377	309		247				142	
Fe-T	mg/L	**2.56**	**1.53**		0.456				0.257	
Pb-T	mg/L	<0.00020	<0.00020		<0.00020				<0.00020	
Mg-T	mg/L	18.5	16.2		11.5				6.94	
Mn-T	mg/L	0.445	0.249		0.0700				0.0205	
Hg-T	mg/L	<0.0000019	<0.0000019		<0.0000019				0.0000025	
Mo-T	mg/L	<0.0010	<0.0010		<0.0010				<0.0010	
Ni-T	mg/L	<0.0010	<0.0010		<0.0010				<0.0010	
K-T	mg/L	1.60	2.04		0.984				0.820	
S-T	mg/L	118	95.4		71.5				43.8	
Se-T	mg/L	<0.00010	<0.00010		<0.00010				<0.00010	
Si-T	mg/L	3.02	4.31		3.97				3.38	
Ag-T	mg/L	<0.000020	<0.000020		<0.000020				<0.000020	
Na-T	mg/L	35.6	30.0		20.3				12.3	
Sr-T	mg/L	0.791	0.606		0.505				0.306	
Zn-T	mg/L	<0.0050	<0.0050		<0.0050				<0.0050	
Al-D	mg/L	<0.0030	<0.0030		0.0040				0.0486	
As-D	mg/L	0.00109	0.00077		0.00057				0.00031	
Ba-D	mg/L	0.0323	0.0269		0.0299				0.0116	
B-D	mg/L	0.295	0.233		0.161				0.085	
Be-D	mg/L	<0.00010	<0.00010		<0.00010				<0.00010	
Cd-D	mg/L	<0.000010	<0.000010		<0.000010				<0.000010	
Ca-D	mg/L	124	97.6		82.3				43.7	
Cr-D	mg/L	<0.0010	<0.0010		<0.0010				<0.0010	
Co-D	mg/L	0.00021	<0.00020		<0.00020				<0.00020	
Cu-D	mg/L	<0.00020	0.00025		0.00030				0.00042	
Hard-D	mg/L	388	310		253				135	
Fe-D	mg/L	**1.06**	**0.471**		0.297				0.182	
Pb-D	mg/L	<0.00020	<0.00020		<0.00020				<0.00020	
Mg-D	mg/L	18.9	16.1		11.5				6.28	
Mn-D	mg/L	0.461	0.244		0.0697				0.0174	
Hg-D	mg/L	<0.0000019	<0.0000019		<0.0000019				0.0000030	
Mo-D	mg/L	<0.0010	<0.0010		<0.0010				<0.0010	
Ni-D	mg/L	<0.0010	<0.0010		<0.0010				<0.0010	
K-D	mg/L	1.61	2.07		1.03				0.756	
S-D	mg/L	112	95.4		71.9				40.4	
Se-D	mg/L	<0.00010	<0.00010		<0.00010				<0.00010	
Si-D	mg/L	2.85	4.01		4.10				3.12	
Na-D	mg/L	35.7	30.4		20.2				11.5	
Sr-D	mg/L	0.779	0.636		0.518				0.274	
Zn-D	mg/L	<0.0050	<0.0050		<0.0050				<0.0050	

Table 20 South End Mine Water Entering Long Lake Near the Outlet 6 Page(s)

EMS ID	E292130									
Site Description	South End									
Site Name	LLE	LLE-16NOV20-M	LLE-23NOV20-M	LLE-2DEC2020-M	LLE-7DEC20-M	LLE-14DEC2020-M	LLE-14DEC2020-R	LLE-21DEC20-M	LLE-29DEC20-M	LLE-4JAN21-M
Date		11/16/2020	11/23/2020	12/2/2020	12/7/2020	12/14/2020	12/14/2020	12/21/2020	12/29/2020	1/4/2021
pH-F	pH Units	7.54	7.36	7.55	7.48	7.44	7.44	7.69	7.97	7.54
Cond-F	uS/cm	330	342	382	360	303	303	393	416	234
SO4-D	mg/L	130	80	99	110	140	140	94	87	63
TSS	mg/L				2.4					2.0
Alk-T	mg/L				41					25
Acidity83	mg/L				1.8					<1.0
N-NH3	mg/L				<0.015					<0.015
N-NO23	mg/L				0.026					<0.020
P-T	mg/L				<0.0030					<0.0030
Al-T	mg/L				0.0863					0.110
As-T	mg/L				0.00078					0.00024
Ba-T	mg/L				0.0104					0.0057
B-T	mg/L				0.077					<0.050
Cd-T	mg/L				<0.000010					<0.000010
Ca-T	mg/L				38.4					23.5
Cr-T	mg/L				<0.0010					<0.0010
Co-T	mg/L				<0.00020					<0.00020
Cu-T	mg/L				<0.00050					0.00052
Hard-T	mg/L				118					72.1
Fe-T	mg/L				0.374					0.167
Pb-T	mg/L				<0.00020					<0.00020
Mg-T	mg/L				5.33					3.26
Mn-T	mg/L				0.0431					0.0086
Hg-T	mg/L				<0.0000019					0.0000023
Mo-T	mg/L				<0.0010					<0.0010
Ni-T	mg/L				<0.0010					<0.0010
K-T	mg/L				0.508					0.361
S-T	mg/L				34.9					20.2
Se-T	mg/L				<0.00010					<0.00010
Si-T	mg/L				3.51					2.96
Ag-T	mg/L				<0.000020					<0.000020
Na-T	mg/L				9.44					5.46
Sr-T	mg/L				0.233					0.133
Zn-T	mg/L				<0.0050					<0.0050
Al-D	mg/L				0.0370					0.0584
As-D	mg/L				0.00065					0.00021
Ba-D	mg/L				0.0103					0.0052
B-D	mg/L				0.072					<0.050
Be-D	mg/L				<0.00010					<0.00010
Cd-D	mg/L				<0.000010					<0.000010
Ca-D	mg/L				36.7					23.3
Cr-D	mg/L				<0.0010					<0.0010
Co-D	mg/L				<0.00020					<0.00020
Cu-D	mg/L				0.00031					0.00037
Hard-D	mg/L				113					71.6
Fe-D	mg/L				0.278					0.0959
Pb-D	mg/L				<0.00020					<0.00020
Mg-D	mg/L				5.24					3.27
Mn-D	mg/L				0.0420					0.0061
Hg-D	mg/L				<0.0000019					<0.0000019
Mo-D	mg/L				<0.0010					<0.0010
Ni-D	mg/L				<0.0010					<0.0010
K-D	mg/L				0.479					0.346
S-D	mg/L				33.2					19.0
Se-D	mg/L				<0.00010					0.00020
Si-D	mg/L				3.33					2.80
Na-D	mg/L				9.38					5.55
Sr-D	mg/L				0.234					0.131
Zn-D	mg/L				<0.0050					<0.0050

Table 20 South End Mine Water Entering Long Lake Near the Outlet 6 Page(s)

EMS ID	E292130									
Site Description	South End									
Site Name	LLE	LLE-11JAN21-M	LLE-18JAN21-M	LLE-25JAN21-M	LLE-1FEB21-M	LLE-8FEB21-M	LLE-8FEB21-R	LLE-16FEB21-M	LLE-22FEB21-R	LLE-22FEB21-M
Date		1/11/2021	1/18/2021	1/25/2021	2/1/2021	2/8/2021	2/8/2021	2/16/2021	2/22/2021	2/22/2021
pH-F	pH Units	7.53	7.8	7.65	6.66	8.12	8.12	7.65	7.68	7.68
Cond-F	uS/cm	391	303	568	191	276	276	409	354	354
SO4-D	mg/L	120	80	170	68	95	85	96	110	110
TSS	mg/L				1.6					
Alk-T	mg/L				41					
Acidity83	mg/L				<1.0					
N-NH3	mg/L				0.025					
N-NO23	mg/L				0.060					
P-T	mg/L				0.0073					
Al-T	mg/L				0.0873					
As-T	mg/L				0.00056					
Ba-T	mg/L				0.0066					
B-T	mg/L				<0.050					
Cd-T	mg/L				<0.000010					
Ca-T	mg/L				25.3					
Cr-T	mg/L				<0.0010					
Co-T	mg/L				<0.00020					
Cu-T	mg/L				<0.00050					
Hard-T	mg/L				79.4					
Fe-T	mg/L				0.352					
Pb-T	mg/L				<0.00020					
Mg-T	mg/L				3.94					
Mn-T	mg/L				0.0390					
Hg-T	mg/L				<0.0000019					
Mo-T	mg/L				<0.0010					
Ni-T	mg/L				<0.0010					
K-T	mg/L				0.357					
S-T	mg/L				23.9					
Se-T	mg/L				<0.00010					
Si-T	mg/L				3.05					
Ag-T	mg/L				<0.000020					
Na-T	mg/L				7.42					
Sr-T	mg/L				0.151					
Zn-T	mg/L				<0.0050					
Al-D	mg/L				0.0429					
As-D	mg/L				0.00043					
Ba-D	mg/L				0.0069					
B-D	mg/L				<0.050					
Be-D	mg/L				<0.00010					
Cd-D	mg/L				<0.000010					
Ca-D	mg/L				27.2					
Cr-D	mg/L				<0.0010					
Co-D	mg/L				<0.00020					
Cu-D	mg/L				0.00068					
Hard-D	mg/L				84.1					
Fe-D	mg/L				0.303					
Pb-D	mg/L				<0.00020					
Mg-D	mg/L				3.91					
Mn-D	mg/L				0.0396					
Hg-D	mg/L				<0.0000019					
Mo-D	mg/L				<0.0010					
Ni-D	mg/L				<0.0010					
K-D	mg/L				0.381					
S-D	mg/L				22.7					
Se-D	mg/L				<0.00010					
Si-D	mg/L				3.21					
Na-D	mg/L				7.40					
Sr-D	mg/L				0.162					
Zn-D	mg/L				<0.0050					

Table 20 South End Mine Water Entering Long Lake Near the Outlet 6 Page(s)

EMS ID	E292130				
Site Description	South End				
Site Name	LLE	LLE-1MAR21-M	LLE-9MAR21-M	LLE-15MAR21-M	LLE-22MAR21-M
Date		3/1/2021	3/9/2021	3/15/2021	3/22/2021
pH-F	pH Units	7.04	7.74	7.91	7.5
Cond-F	uS/cm	317	296	286	464
SO4-D	mg/L	100	90	96	170
TSS	mg/L	1.6			
Alk-T	mg/L	50			
Acidity83	mg/L	1.5			
N-NH3	mg/L	<0.015			
N-NO23	mg/L	0.031			
P-T	mg/L	<0.0030			
Al-T	mg/L	0.0623			
As-T	mg/L	0.00041			
Ba-T	mg/L	0.0087			
B-T	mg/L	0.073			
Cd-T	mg/L	<0.000010			
Ca-T	mg/L	38.2			
Cr-T	mg/L	<0.0010			
Co-T	mg/L	<0.00020			
Cu-T	mg/L	<0.00050			
Hard-T	mg/L	118			
Fe-T	mg/L	0.242			
Pb-T	mg/L	<0.00020			
Mg-T	mg/L	5.39			
Mn-T	mg/L	0.0219			
Hg-T	mg/L	<0.0000019			
Mo-T	mg/L	<0.0010			
Ni-T	mg/L	<0.0010			
K-T	mg/L	0.432			
S-T	mg/L	34.4			
Se-T	mg/L	<0.00010			
Si-T	mg/L	2.76			
Ag-T	mg/L	<0.000020			
Na-T	mg/L	9.29			
Sr-T	mg/L	0.221			
Zn-T	mg/L	<0.0050			
Al-D	mg/L	0.0310			
As-D	mg/L	0.00039			
Ba-D	mg/L	0.0083			
B-D	mg/L	0.062			
Be-D	mg/L	<0.00010			
Cd-D	mg/L	<0.000010			
Ca-D	mg/L	36.9			
Cr-D	mg/L	<0.0010			
Co-D	mg/L	<0.00020			
Cu-D	mg/L	0.00153			
Hard-D	mg/L	112			
Fe-D	mg/L	0.186			
Pb-D	mg/L	<0.00020			
Mg-D	mg/L	4.76			
Mn-D	mg/L	0.0201			
Hg-D	mg/L	<0.0000019			
Mo-D	mg/L	<0.0010			
Ni-D	mg/L	<0.0010			
K-D	mg/L	0.431			
S-D	mg/L	30.6			
Se-D	mg/L	<0.00010			
Si-D	mg/L	2.89			
Na-D	mg/L	8.38			
Sr-D	mg/L	0.239			
Zn-D	mg/L	<0.0050			

Table 21 Seep into Long Lake 1 Page(s)

EMS ID	E292131	Stn Std	WQG-Max									
Site Description		Seep into Long Lake										
Site Name	LLS	Std Val	LLS-6Apr20-M	LLS-4MAY20-M	LLS-2JUN20-M	LLS-6JUL20-M	LLS-6AUG20-M	LLS-23NOV20-M	LLS-7DEC20-M	LLS-4JAN21-M	LLS-1FEB21-M	LLS-1MAR21-M
Date		Max	4/6/2020	5/4/2020	6/2/2020	7/6/2020	8/6/2020	11/23/2020	12/7/2020	1/4/2021	2/1/2021	3/1/2021
pH-F	pH Unit		7.65	7.27	7.24	6.74	7.05	7.01	7.33	7.08	7.16	7.2
Cond-F	uS/cm		1051	1480	1264	1575	873	1281	1155	1322	1649	1653
SO4-D	mg/L		660	600	640	620	490	420	420	420	660	700
TSS	mg/L	25	4.8	6.0	4.8	6.4	3.6	2.8	3.2	4.4	4.0	5.2
Alk-T	mg/L		240	240	250	250	230	180	190	140	270	270
Acidity83	mg/L		17.6	13.9	19.4	17.2	4.8	4.2	12.0	9.1	1.9	16.1
Al-T	mg/L		0.0033	0.0033	<0.0030	<0.0030	0.0036	0.0356	0.0199	0.103	0.0048	0.0031
As-T	mg/L	0.005	**0.00505**	0.00495	0.00376	0.00377	0.00269	0.00140	0.00122	0.00257	**0.00545**	**0.00550**
Ba-T	mg/L		0.0193	0.0198	0.0187	0.0185	0.0183	0.0191	0.0189	0.0170	0.0189	0.0188
B-T	mg/L		0.598	0.587	0.623	0.577	0.457	0.465	0.414	0.364	0.548	0.611
Cd-T	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	0.000014	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Ca-T	mg/L		255	253	234	221	186	177	168	153	242	245
Cr-T	mg/L		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Co-T	mg/L	0.11	0.00231	0.00169	0.00138	0.00130	0.00106	0.00165	0.00077	0.00148	0.00130	0.00158
Cu-T	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00091	0.00063	0.00146	<0.00050	0.00096
Hard-T	mg/L		725	713	661	629	528	507	482	442	696	697
Fe-T	mg/L	1.0	**2.54**	**1.98**	**1.69**	**1.88**	**1.14**	0.708	0.495	**1.38**	**2.30**	**2.46**
Pb-T	mg/L	0.01763	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Mg-T	mg/L		21.3	19.9	18.6	18.5	15.4	15.6	15.4	14.3	22.6	20.5
Mn-T	mg/L	0.8706	0.555	0.538	0.491	0.443	0.322	0.208	0.180	0.187	0.529	0.511
Hg-T	mg/L		<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019
Mo-T	mg/L	2.0	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Ni-T	mg/L		0.0046	0.0031	0.0024	0.0023	0.0019	0.0045	0.0025	0.0042	0.0031	0.0033
K-T	mg/L		2.57	2.53	2.38	2.44	2.24	2.18	2.12	1.81	2.65	2.27
S-T	mg/L		237	228	202	203	159	154	149	144	249	232
Se-T	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00011	<0.00010	<0.00010	<0.00010	<0.00010
Si-T	mg/L		3.07	3.21	2.74	2.84	2.60	3.01	2.60	2.91	3.10	2.89
Ag-T	mg/L	0.0001	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Na-T	mg/L		106	99.5	103	97.0	78.5	65.9	62.9	54.0	103	95.6
Sr-T	mg/L		2.34	2.51	2.13	2.06	1.80	1.57	1.52	1.34	2.31	2.37
Zn-T	mg/L	0.033	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0053	<0.0050	<0.0050	<0.0050	<0.0050
Al-D	mg/L	0.1	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.0063	0.0058	0.0116	<0.0030	0.0034
As-D	mg/L		0.00478	0.00455	0.00374	0.00362	0.00209	0.00115	0.00099	0.00124	0.00578	0.00508
Ba-D	mg/L		0.0186	0.0198	0.0197	0.0181	0.0186	0.0181	0.0177	0.0159	0.0196	0.0188
B-D	mg/L		0.577	0.604	0.638	0.579	0.484	0.417	0.392	0.373	0.565	0.515
Be-D	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cd-D	mg/L	0.00017	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000010	<0.000010	<0.000010
Ca-D	mg/L		246	245	227	227	190	162	157	154	249	244
Cr-D	mg/L		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Co-D	mg/L		0.00226	0.00185	0.00149	0.00130	0.00107	0.00160	0.00075	0.00145	0.00119	0.00145
Cu-D	mg/L	0.002	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00032	0.00032	0.00042	<0.00020	0.00026
Hard-D	mg/L		704	700	650	645	540	468	454	444	708	688
Fe-D	mg/L	0.35	**2.39**	**2.07**	**1.62**	**1.82**	**1.16**	**0.545**	0.330	**0.741**	**2.27**	**2.28**
Pb-D	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Mg-D	mg/L		21.4	21.2	20.1	19.2	16.0	15.1	15.0	14.5	21.1	19.3
Mn-D	mg/L		0.544	0.541	0.502	0.443	0.335	0.203	0.162	0.187	0.497	0.495
Hg-D	mg/L		<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019
Mo-D	mg/L		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Ni-D	mg/L		0.0045	0.0033	0.0025	0.0023	0.0019	0.0045	0.0025	0.0043	0.0028	0.0031
K-D	mg/L		2.53	2.49	2.53	2.42	2.22	2.16	2.11	1.91	2.53	2.49
S-D	mg/L		234	230	208	205	155	151	145	146	236	233
Se-D	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00022	<0.00010	<0.00010
Si-D	mg/L		2.94	2.99	2.57	2.80	2.61	2.92	2.50	2.84	3.23	3.16
Na-D	mg/L		105	107	109	98.2	78.5	63.5	61.0	55.2	97.0	91.1
Sr-D	mg/L		2.25	2.22	2.24	2.05	1.76	1.54	1.49	1.38	2.43	2.46
Zn-D	mg/L		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050

Table 22 Long Lake Middle Seep 2 Page(s)

EMS ID	E292131		WQG-Max								
Site Description			Long Lake Middle Seep								
Site Name	LLSM	Std Val	LLSM-6Apr20-M	LLSM-4MAY20-M	LLSM-2JUN20-M	LLSM-6JUL20-M	LLSM-23NOV20-M	LLSM-7DEC20-M	LLSM-4JAN21-M	LLSM-1FEB21-M	LLSM-1MAR21-M
Date		Max	4/6/2020	5/4/2020	6/2/2020	7/6/2020	11/23/2020	12/7/2020	1/4/2021	2/1/2021	3/1/2021
pH-F	pH Units		7.45	7.17	7.15	7.99	7.62	7.64	7.3	7.3	7.58
Cond-F	uS/cm		1110	1367	1413	1241	1370	1022	1052	1382	1296
SO4-D	mg/L		520	620	530	390	330	340	310	560	500
TSS	mg/L	25	<1.0	2.8	3.6	1.6	2.4	2.4	3.2	3.6	2.0
Alk-T	mg/L		210	230	220	200	130	160	110	240	230
Acidity83	mg/L		9.0	9.4	9.8	5.2	2.0	4.7	7.1	<1.0	7.4
Al-T	mg/L		0.0037	0.0145	<0.0030	0.0050	0.211	0.0571	0.264	0.0074	0.0290
As-T	mg/L	0.005	0.00146	0.00201	0.00145	0.00112	0.00061	0.00044	0.00159	0.00127	0.00130
Ba-T	mg/L		0.0174	0.0183	0.0173	0.0179	0.0177	0.0168	0.0174	0.0176	0.0172
B-T	mg/L		0.482	0.518	0.508	0.412	0.332	0.359	0.277	0.464	0.441
Cd-T	mg/L		<0.000010	<0.000010	0.000014	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Ca-T	mg/L		203	218	195	158	136	135	119	202	176
Cr-T	mg/L		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Co-T	mg/L	0.11	0.00194	0.00230	0.00129	0.00070	0.00161	0.00064	0.00118	0.00070	0.00112
Cu-T	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	0.00218	0.00097	0.00254	<0.00050	<0.00050
Hard-T	mg/L		581	616	554	453	398	395	351	578	508
Fe-T	mg/L	1.0	0.936	**1.32**	0.822	0.556	0.500	0.288	**1.41**	0.635	0.685
Pb-T	mg/L	0.01763	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Mg-T	mg/L		18.0	17.8	16.4	14.3	13.8	13.9	12.8	17.6	16.6
Mn-T	mg/L	0.8706	0.353	0.465	0.359	0.216	0.113	0.0827	0.0692	0.188	0.198
Hg-T	mg/L		<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019
Mo-T	mg/L	2.0	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Ni-T	mg/L		0.0042	0.0037	0.0024	0.0016	0.0048	0.0026	0.0031	0.0027	0.0031
K-T	mg/L		2.20	2.29	2.17	2.03	1.86	1.91	1.61	2.02	1.89
S-T	mg/L		189	199	165	137	121	125	112	184	168
Se-T	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	0.00018	0.00013	<0.00010	<0.00010	<0.00010
Si-T	mg/L		2.67	2.87	2.39	2.57	2.78	2.53	2.73	2.77	2.48
Ag-T	mg/L	0.0001	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Na-T	mg/L		84.7	88.3	84.2	64.2	45.5	47.9	41.8	78.6	70.0
Sr-T	mg/L		1.85	2.18	1.74	1.45	1.17	1.21	1.04	1.80	1.67
Zn-T	mg/L	0.033	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Al-D	mg/L	0.1	<0.0030	<0.0030	<0.0030	<0.0030	0.0253	0.0100	0.0223	0.0040	0.0056
As-D	mg/L		0.00136	0.00155	0.00135	0.00098	0.00020	0.00026	0.00021	0.00143	0.00130
Ba-D	mg/L		0.0182	0.0185	0.0179	0.0176	0.0168	0.0168	0.0168	0.0191	0.0177
B-D	mg/L		0.446	0.525	0.504	0.412	0.305	0.332	0.289	0.487	0.396
Be-D	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cd-D	mg/L	0.00017	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Ca-D	mg/L		208	215	176	167	133	136	121	221	173
Cr-D	mg/L		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Co-D	mg/L		0.00201	0.00241	0.00133	0.00068	0.00128	0.00061	0.00092	0.00073	0.00100
Cu-D	mg/L	0.002	<0.00020	<0.00020	0.00020	0.00032	0.00137	0.00068	0.00099	0.00022	0.00095

Table 22 Long Lake Middle Seep 2 Page(s)

EMS ID	**E292131**		**WQG-Max**								
Site Description			**Long Lake Middle Seep**								
Hard-D	mg/L		591	615	512	477	387	397	355	628	495
Fe-D	mg/L	0.35	**0.894**	**1.00**	**0.715**	**0.437**	0.0746	0.0871	0.107	**0.571**	**0.563**
Pb-D	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Mg-D	mg/L		17.3	18.8	17.3	14.9	13.7	14.0	12.8	18.4	15.3
Mn-D	mg/L		0.350	0.467	0.357	0.204	0.0623	0.0811	0.0431	0.209	0.192
Hg-D	mg/L		<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019
Mo-D	mg/L		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Ni-D	mg/L		0.0042	0.0040	0.0025	0.0016	0.0044	0.0024	0.0027	0.0027	0.0028
K-D	mg/L		2.15	2.30	2.27	2.00	1.90	1.90	1.65	2.22	2.03
S-D	mg/L		184	198	166	141	122	127	113	194	164
Se-D	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	0.00016	0.00014	0.00023	<0.00010	<0.00010
Si-D	mg/L		2.49	2.71	2.16	2.57	2.80	2.52	2.70	3.05	2.70
Na-D	mg/L		82.3	92.9	84.1	67.6	44.1	49.3	41.7	81.8	64.7
Sr-D	mg/L		1.86	1.94	1.80	1.42	1.17	1.24	1.07	2.01	1.76
Zn-D	mg/L		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050

Table 23 Authorised Discharge Location for 7S South Mine Water 1 Page(s)

EMS ID	E292069		Stn Std	PL-7S			
Site Description	Authorised Discharge Location for 7S South Mine Water						
Site Name	7SSD	Std Val		7SSD-4MAY20-P	7SSD-6JUL20-P	7SSD-5OCT20-P	7SSD-4JAN21-P
Date		Max	Min	5/4/2020	7/6/2020	10/5/2020	1/4/2021
pH-F	pH Units			7.49	7.98	7.95	7.02
Cond-F	uS/cm			310	351	289	342.0
SO4-D	mg/L	500	0	19	9.2	7.3	4.5
TSS	mg/L	25	0	2.4	4.0	2.0	4.8
Alk-T	mg/L			130	130	120	91
Acidity83	mg/L			<1.0	<1.0	<1.0	1.3
DOC	mg/L			3.8	5.8	3.1	0.77
Al-T	mg/L			0.0355	0.0093	0.0075	0.217
As-T	mg/L			0.00257	0.00862	0.00737	0.00095
Ba-T	mg/L			0.0063	0.0058	0.0050	0.0055
B-T	mg/L			<0.050	<0.050	<0.050	<0.050
Cd-T	mg/L			<0.000010	<0.000010	<0.000010	<0.000010
Ca-T	mg/L			33.6	31.1	24.0	23.5
Cr-T	mg/L			<0.0010	<0.0010	<0.0010	<0.0010
Co-T	mg/L			<0.00020	<0.00020	<0.00020	<0.00020
Cu-T	mg/L			0.00101	0.00101	0.00096	0.00102
Hard-T	mg/L			136	128	109	83.9
Fe-T	mg/L			0.111	0.143	0.078	0.274
Pb-T	mg/L			<0.00020	<0.00020	<0.00020	<0.00020
Mg-T	mg/L			12.7	12.1	11.9	6.15
Mn-T	mg/L			0.107	0.0919	0.172	0.0410
Hg-T	mg/L			<0.0000019	<0.0000019	<0.0000019	<0.0000019
Mo-T	mg/L			<0.0010	<0.0010	<0.0010	<0.0010
Ni-T	mg/L			<0.0010	<0.0010	<0.0010	<0.0010
K-T	mg/L			0.419	0.840	0.749	0.324
S-T	mg/L			6.0	<3.0	<3.0	<3.0
Se-T	mg/L			<0.00010	<0.00010	<0.00010	<0.00010
Si-T	mg/L			1.87	2.73	1.89	3.12
Ag-T	mg/L			<0.000020	<0.000020	<0.000020	<0.000020
Na-T	mg/L			6.88	6.33	6.40	2.53
Sr-T	mg/L			0.176	0.164	0.132	0.0845
Zn-T	mg/L			<0.0050	<0.0050	<0.0050	<0.0050
Al-D	mg/L	0.1	0	<0.0030	0.0038	<0.0030	0.0063
As-D	mg/L			0.00222	0.00802	0.00646	0.00074
Ba-D	mg/L			0.0058	0.0053	0.0030	0.0044
B-D	mg/L			<0.050	<0.050	<0.050	<0.050
Be-D	mg/L			<0.00010	<0.00010	<0.00010	<0.00010
Cd-D	mg/L	0.000045	0	<0.000010	<0.000010	<0.000010	<0.000010
Ca-D	mg/L			32.9	30.7	25.5	23.4
Cr-D	mg/L			<0.0010	<0.0010	<0.0010	<0.0010
Co-D	mg/L			<0.00020	<0.00020	<0.00020	<0.00020
Cu-D	mg/L	0.014	0	0.00097	0.00094	0.00064	0.00036
Hard-D	mg/L			136	125	110	83.6
Fe-D	mg/L	0.35	0	0.0270	0.0992	0.0081	0.0084
Pb-D	mg/L			<0.00020	<0.00020	<0.00020	<0.00020
Mg-D	mg/L			13.2	11.8	11.1	6.11
Mn-D	mg/L			0.0419	0.0432	0.0053	0.0155
Hg-D	mg/L			<0.0000019	<0.0000019	<0.0000019	<0.0000019
Mo-D	mg/L			<0.0010	<0.0010	<0.0010	<0.0010
Ni-D	mg/L			<0.0010	<0.0010	<0.0010	<0.0010
K-D	mg/L			0.401	0.800	0.724	0.296
S-D	mg/L			5.9	<3.0	<3.0	<3.0
Se-D	mg/L	0.016	0	<0.00010	<0.00010	<0.00010	<0.00010
Si-D	mg/L			1.69	2.55	1.81	2.78
Na-D	mg/L			7.19	6.25	6.18	2.60
Sr-D	mg/L			0.161	0.154	0.137	0.0818
Zn-D	mg/L			<0.0050	<0.0050	<0.0050	<0.0050

Table 24 Road Side Crossing Bridge on Stream 1 above the Lower Wetland 2 Page(s)

EMS ID	E292109		Stn Std	WQG-Max			
Site Description	Road Side Crossing Bridge on Stream 1 above the Lower Wetland						
Site Name	7S	Std Val		7S-7Apr20-M	7S-4MAY20-M	7S-4MAY20-R	7S-2NOV20-M
Date		Max	Min	4/7/2020	5/4/2020	5/4/2020	11/2/2020
pH-F	pH Units			8.16	7.91	7.91	7.54
Cond-F	uS/cm			52.3	68	68	330
SO4-D	mg/L			3.7	3.7	3.2	4.6
TSS	mg/L	25	0	<1.0	1.6	<1.0	2.8
Alk-T	mg/L			13	20	17	22
Acidity83	mg/L			<1.0	<1.0	<1.0	<1.0
DOC	mg/L			1.7	0.85	0.56	2.7
Al-T	mg/L			0.0201	0.0175	0.0187	0.0510
As-T	mg/L	0.005	0	<0.00010	<0.00010	<0.00010	0.00012
Ba-T	mg/L			0.0014	0.0018	0.0018	0.0024
B-T	mg/L			<0.050	<0.050	<0.050	<0.050
Cd-T	mg/L			<0.000010	<0.000010	<0.000010	<0.000010
Ca-T	mg/L			4.70	5.91	5.90	5.90
Cr-T	mg/L			<0.0010	<0.0010	<0.0010	<0.0010
Co-T	mg/L	0.11	0	<0.00020	<0.00020	<0.00020	<0.00020
Cu-T	mg/L			<0.00050	<0.00050	<0.00050	<0.00050
Hard-T	mg/L			16.4	20.2	20.2	21.1
Fe-T	mg/L	1.0	0	<0.010	<0.010	<0.010	0.018
Pb-T	mg/L	0.01763	0	<0.00020	<0.00020	<0.00020	<0.00020
Mg-T	mg/L			1.13	1.33	1.32	1.54
Mn-T	mg/L	0.8706	0	<0.0010	<0.0010	<0.0010	<0.0010
Hg-T	mg/L			<0.0000019	<0.0000019	<0.0000019	<0.0000019
Mo-T	mg/L	2.0	0	<0.0010	<0.0010	<0.0010	<0.0010
Ni-T	mg/L			<0.0010	<0.0010	<0.0010	<0.0010
K-T	mg/L			0.088	0.122	0.120	0.137
S-T	mg/L			<3.0	<3.0	<3.0	<3.0
Se-T	mg/L			<0.00010	<0.00010	<0.00010	<0.00010
Si-T	mg/L			4.09	4.83	4.79	4.45
Ag-T	mg/L	0.0001	0	<0.000020	<0.000020	<0.000020	<0.000020
Na-T	mg/L			1.57	1.76	1.76	2.03
Sr-T	mg/L			0.0182	0.0261	0.0261	0.0261
Zn-T	mg/L	0.033	0	<0.0050	<0.0050	<0.0050	<0.0050
Al-D	mg/L	0.1	0	0.0171	0.0150	0.0149	0.0402
As-D	mg/L			<0.00010	<0.00010	<0.00010	0.00011
Ba-D	mg/L			0.0013	0.0017	0.0017	0.0022
B-D	mg/L			<0.050	<0.050	<0.050	<0.050
Be-D	mg/L			<0.00010	<0.00010	<0.00010	<0.00010
Cd-D	mg/L	0.00017	0	<0.000010	<0.000010	<0.000010	<0.000010
Ca-D	mg/L			4.72	5.75	5.65	5.93
Cr-D	mg/L			<0.0010	<0.0010	<0.0010	<0.0010
Co-D	mg/L			<0.00020	<0.00020	<0.00020	<0.00020
Cu-D	mg/L	0.002	0	0.00020	0.00029	0.00028	0.00041
Hard-D	mg/L			16.2	20.2	19.9	20.7
Fe-D	mg/L	0.35	0	<0.0050	<0.0050	<0.0050	0.0133
Pb-D	mg/L			<0.00020	<0.00020	<0.00020	<0.00020
Mg-D	mg/L			1.07	1.41	1.41	1.42
Mn-D	mg/L			<0.0010	<0.0010	<0.0010	<0.0010
Hg-D	mg/L			<0.0000019	<0.0000019	<0.0000019	0.0000020
Mo-D	mg/L			<0.0010	<0.0010	<0.0010	<0.0010
Ni-D	mg/L			<0.0010	<0.0010	<0.0010	<0.0010
K-D	mg/L			0.085	0.113	0.106	0.137
S-D	mg/L			<3.0	<3.0	<3.0	<3.0
Se-D	mg/L			<0.00010	<0.00010	<0.00010	<0.00010
Si-D	mg/L			3.84	4.36	4.34	4.41
Na-D	mg/L			1.52	1.86	1.81	1.92
Sr-D	mg/L			0.0184	0.0241	0.0240	0.0249
Zn-D	mg/L			<0.0050	<0.0050	<0.0050	<0.0050

Table 24 Road Side Crossing Bridge on Stream 1 above the Lower Wetland 2 Page(s)

EMS ID	E292109				
Site Description	Road Side				
Site Name	7S	7S-7DEC20-M	7S-4JAN21-M	7S-1FEB21-M	7S-1MAR21-M
Date		12/7/2020	1/4/2021	2/1/2021	3/1/2021
pH-F	pH Units	6.90	6.9	7.58	7.35
Cond-F	uS/cm	73.7	73.7	118.6	52
SO4-D	mg/L	3.5	1.9	1.9	3.5
TSS	mg/L	<1.0	<1.0	2.0	<1.0
Alk-T	mg/L	14	9.4	12	11
Acidity83	mg/L	<1.0	<1.0	<1.0	<1.0
DOC	mg/L	2.2	3.2	1.9	1.4
Al-T	mg/L	0.0378	0.112	0.0385	0.0285
As-T	mg/L	<0.00010	0.00014	<0.00010	<0.00010
Ba-T	mg/L	0.0015	0.0015	0.0014	0.0011
B-T	mg/L	<0.050	<0.050	<0.050	<0.050
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010
Ca-T	mg/L	4.51	3.28	3.74	3.90
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Cu-T	mg/L	<0.00050	0.00052	<0.00050	<0.00050
Hard-T	mg/L	15.7	11.4	13.2	13.5
Fe-T	mg/L	0.012	0.052	<0.010	<0.010
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Mg-T	mg/L	1.09	0.776	0.932	0.921
Mn-T	mg/L	<0.0010	0.0010	<0.0010	<0.0010
Hg-T	mg/L	<0.0000019	0.0000028	<0.0000019	<0.0000019
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010
K-T	mg/L	0.095	0.104	0.079	0.072
S-T	mg/L	<3.0	<3.0	<3.0	<3.0
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010
Si-T	mg/L	4.27	3.75	3.73	4.01
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020
Na-T	mg/L	1.57	1.25	1.44	1.47
Sr-T	mg/L	0.0186	0.0135	0.0156	0.0157
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050
Al-D	mg/L	0.0350	0.0749	0.0430	0.0237
As-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010
Ba-D	mg/L	0.0016	0.0013	0.0014	0.0011
B-D	mg/L	<0.050	<0.050	<0.050	<0.050
Be-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010
Ca-D	mg/L	4.34	3.21	4.03	3.70
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Cu-D	mg/L	0.00060	0.00044	0.00032	0.00026
Hard-D	mg/L	15.3	11.2	14.3	12.8
Fe-D	mg/L	0.0112	0.0304	0.0133	<0.0050
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Mg-D	mg/L	1.09	0.783	1.02	0.863
Mn-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010
Hg-D	mg/L	<0.0000019	0.0000030	<0.0000019	<0.0000019
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010
K-D	mg/L	0.091	0.099	0.080	0.078
S-D	mg/L	<3.0	<3.0	<3.0	<3.0
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010
Si-D	mg/L	4.26	3.51	4.10	3.82
Na-D	mg/L	1.60	1.27	1.44	1.36
Sr-D	mg/L	0.0182	0.0131	0.0162	0.0154
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050

Table 25 7 South Portal Sump 2 Page(s)

EMS ID	E292110							
Site Description		7 South Portal Sump						
Site Name	7SPS	7SPS-7Apr20-M	7SPS-4MAY20-M	7SPS-2JUN20-M	7SPS-6JUL20-M	7SPS-6AUG20-M	7SPS-8SEP20-M	7SPS-5OCT20-M
Date		4/7/2020	5/4/2020	6/2/2020	7/6/2020	8/6/2020	9/8/2020	10/5/2020
pH-F	pH Units	7.51	7.35	7.01	7.47	7.45	7.31	5.78
Cond-F	uS/cm	602	519	874	1085	1052	875	1183
SO4-D	mg/L	270	250	260	350	370	260	570
TSS	mg/L	13	10	14	5.2	15	6.8	8.4
Alk-T	mg/L	110	140	120	120	110	140	<1.0
Acidity83	mg/L	5.5	3.2	5.2	4.7	1.4	3.2	73.9
Al-T	mg/L	0.0706	0.0502	0.0399	0.0116	0.323	0.0466	0.186
As-T	mg/L	0.00185	0.00088	0.00102	0.00055	0.00213	0.00254	0.00030
Ba-T	mg/L	0.0154	0.0191	0.0194	0.0186	0.0265	0.0643	0.0327
B-T	mg/L	0.062	0.056	0.106	0.093	0.130	0.249	0.170
Cd-T	mg/L	0.000017	<0.000010	0.000011	<0.000010	0.000020	0.000013	0.000224
Ca-T	mg/L	102	107	117	138	155	120	142
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Co-T	mg/L	0.00267	0.00110	0.00214	0.00323	0.00417	0.00168	0.0324
Cu-T	mg/L	0.00157	0.00082	0.00085	<0.00050	0.00247	0.00111	0.0338
Hard-T	mg/L	360	369	404	485	530	405	500
Fe-T	mg/L	6.25	2.90	6.35	3.13	2.13	2.70	36.1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Mg-T	mg/L	25.3	24.6	27.0	34.5	34.5	25.9	35.3
Mn-T	mg/L	0.323	0.177	0.245	0.317	0.350	0.127	0.832
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Ni-T	mg/L	0.0060	0.0027	0.0049	0.0074	0.0086	0.0046	0.0499
K-T	mg/L	1.09	1.28	1.43	1.56	2.07	2.09	1.98
S-T	mg/L	87.4	85.4	98.1	133	154	103	195
Se-T	mg/L	<0.00010	<0.00010	0.00010	<0.00010	0.00018	0.00010	0.00018
Si-T	mg/L	5.59	5.69	5.05	5.91	6.70	5.22	6.83
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Na-T	mg/L	10.3	13.5	12.4	14.9	16.0	20.3	9.68
Sr-T	mg/L	0.389	0.468	0.441	0.553	0.644	0.631	0.575
Zn-T	mg/L	0.0099	<0.0050	0.0062	<0.0050	<0.0050	0.0054	0.0942
Al-D	mg/L	<0.0030	<0.0030	<0.0030	<0.0030	0.0050	0.0035	0.115
As-D	mg/L	0.00056	0.00034	0.00027	0.00027	0.00036	0.00046	0.00022
Ba-D	mg/L	0.0148	0.0178	0.0189	0.0176	0.0241	0.0658	0.0310
B-D	mg/L	0.052	0.056	0.091	0.092	0.115	0.246	0.174
Be-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00017
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	0.000014	<0.000010	0.000230
Ca-D	mg/L	101	106	119	143	148	122	148
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Co-D	mg/L	0.00269	0.00107	0.00218	0.00328	0.00359	0.00130	0.0307
Cu-D	mg/L	0.00038	0.00049	0.00038	0.00025	0.00068	0.00055	0.0304
Hard-D	mg/L	352	367	417	502	509	413	508
Fe-D	mg/L	1.41	0.200	0.273	0.0196	0.0290	0.356	35.3
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Mg-D	mg/L	24.0	24.8	29.0	35.5	34.0	26.1	33.8
Mn-D	mg/L	0.323	0.181	0.243	0.319	0.341	0.0955	0.813
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	0.0000034
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Ni-D	mg/L	0.0059	0.0029	0.0049	0.0073	0.0079	0.0042	0.0481
K-D	mg/L	1.06	1.24	1.56	1.59	1.99	2.15	1.88
S-D	mg/L	84.4	83.3	103	136	141	105	192
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	0.00014	<0.00010	0.00019
Si-D	mg/L	4.82	5.14	4.77	5.65	5.60	5.61	6.87
Na-D	mg/L	10.1	13.8	13.1	15.2	15.4	20.0	9.35
Sr-D	mg/L	0.376	0.421	0.476	0.540	0.586	0.708	0.565
Zn-D	mg/L	0.0070	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0892

Table 25 7 South Portal Sump 2 Page(s)

EMS ID	E292110					
Site Description						
Site Name	7SPS	7SPS-2NOV20-M	7SPS-7DEC20-M	7SPS-4JAN21-M	7SPS-1FEB21-M	7SPS-1MAR21-M
Date		11/2/2020	12/7/2020	1/4/2021	2/1/2021	3/1/2021
pH-F	pH Units	6.95	7.17	6.27	7.31	6.87
Cond-F	uS/cm	437	519	526.0	875	620
SO4-D	mg/L	190	200	86	140	190
TSS	mg/L	35	130	150	18	12
Alk-T	mg/L	39	47	16	66	110
Acidity83	mg/L	4.2	7.7	4.6	2.7	4.1
Al-T	mg/L	0.746	3.79	4.10	0.418	0.194
As-T	mg/L	0.00302	0.0100	0.00944	0.00160	0.00171
Ba-T	mg/L	0.0179	0.0310	0.0239	0.0109	0.0143
B-T	mg/L	0.101	0.078	<0.050	<0.050	0.068
Cd-T	mg/L	0.000061	0.000062	0.000050	0.000023	0.000024
Ca-T	mg/L	63.1	68.5	26.8	56.2	65.6
Cr-T	mg/L	0.0022	0.0050	0.0060	0.0011	<0.0010
Co-T	mg/L	0.00706	0.00944	0.00727	0.00405	0.00355
Cu-T	mg/L	0.0105	0.0195	0.0221	0.00599	0.00340
Hard-T	mg/L	225	247	98.4	193	227
Fe-T	mg/L	9.07	14.3	10.2	4.88	3.97
Pb-T	mg/L	<0.00020	0.00082	0.00078	<0.00020	<0.00020
Mg-T	mg/L	16.3	18.5	7.68	12.7	15.3
Mn-T	mg/L	0.235	0.335	0.212	0.163	0.152
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	0.0000066	<0.0000019
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Ni-T	mg/L	0.0132	0.0162	0.0127	0.0079	0.0069
K-T	mg/L	1.24	1.18	0.663	0.659	0.767
S-T	mg/L	72.8	70.8	26.6	47.5	58.4
Se-T	mg/L	0.00013	0.00011	<0.00010	<0.00010	<0.00010
Si-T	mg/L	4.31	9.32	7.79	4.97	4.43
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Na-T	mg/L	4.30	5.16	1.73	3.57	4.79
Sr-T	mg/L	0.256	0.260	0.0952	0.183	0.234
Zn-T	mg/L	0.0268	0.0377	0.0260	0.0157	0.0152
Al-D	mg/L	0.0109	0.0059	0.0085	0.0153	0.0056
As-D	mg/L	0.00029	0.00054	0.00012	0.00077	0.00078
Ba-D	mg/L	0.0154	0.0149	0.0085	0.0108	0.0131
B-D	mg/L	0.099	0.068	<0.050	<0.050	0.056
Be-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cd-D	mg/L	0.000046	0.000039	0.000024	0.000027	0.000022
Ca-D	mg/L	59.7	65.6	26.2	54.6	64.5
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Co-D	mg/L	0.00587	0.00560	0.00377	0.00382	0.00336
Cu-D	mg/L	0.00241	0.00117	0.00172	0.00182	0.00107
Hard-D	mg/L	209	236	92.1	189	223
Fe-D	mg/L	4.04	5.56	0.262	1.75	1.67
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Mg-D	mg/L	14.6	17.5	6.46	12.9	15.0
Mn-D	mg/L	0.200	0.250	0.122	0.162	0.150
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Ni-D	mg/L	0.0109	0.0108	0.0072	0.0077	0.0066
K-D	mg/L	1.14	0.867	0.431	0.658	0.793
S-D	mg/L	64.4	71.8	26.2	48.4	55.7
Se-D	mg/L	0.00010	<0.00010	0.00018	<0.00010	<0.00010
Si-D	mg/L	3.59	4.08	2.45	4.54	4.19
Na-D	mg/L	4.14	4.95	1.56	3.58	4.55
Sr-D	mg/L	0.227	0.255	0.0884	0.203	0.255
Zn-D	mg/L	0.0194	0.0227	0.0109	0.0137	0.0123

Table 26 Statistics 2016 -2021 30 Page(s)

2016-17 Statistics Stn.Code EMS. ID	Site Name & Description	Statistics	As-T	As-D	Al-T	Al-D	Alk-T	Cd-T	Cd-D	Cu-T	Cu-D	Fe-T	Fe-D	Mn-T	Mn-D	Hg-T	Hg-D	Hard-T	Ni-T	Ni-D	Pb-T	Pb-D	SO4-D	Zn-T	Zn-D	P-T	P-D	N-NO23	N-NH3
WA			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	mg/L
E0126402	Quinsam River at Argonaut Road Upstream of Mining Operation.	Average	0.000124	0.000151	0.0266	0.0212	21	0.0000056	0.00002272	0.000879	0.00068	0.021	0.01248	0.00146	0.00058	0.0000011	0.0000014	20.4	0.0005	0.00054	0.000118	0.000117	1.34	0.00250	0.0025				
		Count	16	16	16	16	15	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16				
		Minimum	<0.00010	<0.00010	0.0172	0.0142	17.2	<0.000010	<0.0000050	<0.00050	0.00035	0.01	<0.0050	<0.0010	<0.0010	<0.0000002	<0.0000002	18.4	<0.0010	<0.0010	<0.00020	<0.00020	0.97	<0.0050	<0.0050				
		Maximum	0.00029	0.00028	0.0536	0.0343	24.2	0.000014	0.0000006	0.00356	0.0017	0.046	0.0238	0.0042	0.0018	0.0000032	0.0000031	22.2	<0.0010	0.0012	0.00039	0.00037	2.12	<0.0050	<0.0050				
		Geometric Mean	0.000113	0.000141	0.025	0.0207	20.9	0.0000053	0.00002264	0.000749	0.00064	0.019	0.0112	0.00122	0.00054	0.00000108	0.00000128	20.4	0.0005	0.00053	0.000109	0.000109	1.32	0.00250	0.0025				
		Count <DL	3	1	0	0	0	15	15	1	0	0	1	4	15	15	12	0	16	15	15	15	0	16	16				
		Standard Deviation	0.000058	1	0.0111	0.0049	1.5	0.0000023	0.00000088	0.000734	0.00031	0.009	0.00538	0.00096	0.00032	0.00000055	0.00000079	1.3	0	0.00017	0.000072	0.000067	0.28	4E-11	4E-11				
		1st Quartile	0.000108	1	0.0199	0.0174	20.2	<0.000010	<0.0000050	0.000658	0.00054	0.016	0.0093	0.00095	<0.0010	<0.0000020	<0.0000020	19.5	<0.0010	<0.0010	<0.00020	<0.00020	1.21	<0.0050	<0.0050				
		Median	0.00012	1	0.0232	0.0218	21.0	<0.000010	<0.0000050	0.00071	0.00058	0.02	0.0124	0.00135	<0.0010	<0.0000020	<0.0000002	20.3	<0.0010	<0.0010	<0.00020	<0.00020	1.3	<0.0050	<0.0050				
		3rd Quartile	0.000132	0.000155	0.0274	0.0236	21.8	<0.000010	<0.0000050	0.000772	0.0007	0.024	0.01498	0.00152	<0.0010	<0.0000020	0.0000014	21.4	<0.0010	<0.0010	<0.00020	<0.00020	1.44	<0.0050	<0.0050				
WD	Settling Pond #4	Average	0.00203	0.00108	0.0467	0.01319	366.5	0.0000282	0.00000775	0.00193	0.00059	0.637	0.0132	0.2017	0.09038	0.000001	0.000001	403	0.01831	0.00395	0.000100	0.000100	733	0.01471	0.00325				
E207409		Count	9	8	9	8	13	9	8	9	8	9	8	9	8	8	8	9	9	8	9	8	53	9	8				
		Minimum	0.00093	0.00032	0.0045	<0.0030	321	<0.000010	<0.0000050	0.00055	0.00024	0.215	0.0094	0.009	<0.0010	<0.0000020	<0.0000020	292	<0.0010	<0.0010	<0.00020	<0.00020	320	<0.0050	<0.0050				
		Maximum	0.00361	0.00181	0.178	0.0297	413	0.000115	0.000033	0.00369	0.00095	1.33	0.0180	0.551	0.362	<0.0000020	<0.0000020	664	0.0925	0.0263	<0.00020	<0.00020	1170	0.0507	0.0085				
		Geometric Mean	0.00182	0.00095	0.0236	0.00967	365.4	0.0000131	0.0000048	0.00147	0.00054	0.506	0.0129	0.1103	0.02302	0.000001	0.000001	390	0.0031	0.0011	0.000100	0.000100	703	0.00701	0.00291				
		Count <DL	0	0	0	1	0	5	4	0	0	0	0	0	1	8	8	0	3	5	9	8	0	5	7				
		Standard Deviation	0.00101	0.00053	0.0564	0.00952	28.7	0.0000383	0.00001045	0.00139	0.00023	0.438	0.003	0.1889	0.12317	0	0.0000000	118	0.03134	0.00904	0.000000	0.000000	211	0.01837	0.00212				
		1st Quartile	0.00133	0.00076	0.0064	0.00695	337	<0.000010	<0.0000050	0.00069	0.00044	0.279	0.0106	0.0893	0.00422	<0.0000020	<0.0000020	304	<0.0010	<0.0010	<0.00020	<0.00020	579	<0.0050	<0.0050				
		Median	0.00157	0.00103	0.0268	0.0102	375	<0.000010	0.00000375	0.00119	0.00056	0.42	0.0134	0.137	0.0403	<0.0000020	<0.0000020	389	0.0013	<0.0010	<0.00020	<0.00020	676	<0.0050	<0.0050				
		3rd Quartile	0.00248	0.00153	0.0521	0.01992	387	0.000038	0.000006	0.00332	0.00073	0.893	0.0152	0.366	0.1335	<0.0000020	<0.0000020	419	0.0267	0.00135	<0.00020	<0.00020	896	0.0168	<0.0050				
MW001D	Ex-situ 2-North deep groundwater well below the coal wash plant (Till)	Average		0.0208		0.1134	87.8		0.00000425		0.00204		0.0968		0.0078		0.0000058			0.0005		0.0001	26.8		0.0025		0.168		
		Count		2		2	2		2		2		2		2		2			2		2	2		2		2		
		Minimum		0.0193		0.0989	87.1		<0.0000050		0.00177		0.0746		0.0051		0.0000048			<0.0010		<0.00020	25.8		<0.0050		0.164		
		Maximum		0.0223		0.128	88.4		0.000006		0.0023		0.119		0.0106		0.0000067			<0.0010		<0.00020	27.9		<0.0050		0.172		
		Geometric Mean		0.0207		0.1125	87.7		0.00000387		0.00202		0.0942		0.0074		0.0000057			0.0005		0.0001	26.8		0.0025		0.168		
		Count <DL		0		0	0		1		0		0		0		0			2		2	0		2		0		
		Standard Deviation		0.0021		0.0206	0.9		0.00000247		0.00037		0.0314		0.003900		0.0000013			0		0	1.5		0		0.006		
		1st Quartile		0.0201		0.1062	87.4		0.00000338		0.0019		0.0857		0.0065		0.0000053			<0.0010		<0.00020	26.3		<0.0050		0.166		
		Median		0.0208		0.1134	87.8		0.00000425		0.00204		0.0968		0.0078		0.0000058			<0.0010		<0.00020	26.8		<0.0050		0.168		
		3rd Quartile		0.0216		0.1207	88.1		0.00000512		0.00217		0.1079		0.0092		0.0000062			<0.0010		<0.00020	27.4		<0.0050		0.170		
MW001S	Ex-situ 2-North shallow groundwater well below the coal wash plant (Till)	Average		0.00009		0.01045	355.5		0.000066		0.0001		0.057		1.316		0.0000043			0.002		0.0001000	810		0.0025		0.00330		
		Count		2		2	2		2		2		2		2		2			2		2	2		2		2		
		Minimum		<0.00010		<0.0030	348		0.0000291		<0.00020		0.0284		0.681		0.0000032			0.0012		<0.00020	644		<0.0050		0.003		
		Maximum		0.00013		0.0194	363		0.000103		<0.00020		0.0857		1.95		0.0000054			0.0027		<0.00020	977		<0.0050		0.0036		
		Geometric Mean		0.00008		0.00539	355.4		0.0000547		0.0001		0.0493		1.152		0.0000042			0.0018		0.0001000	793		0.0025		0.0033		
		Count <DL		1		1	0		0		2		0		0		0			0		2	0		2		0		
		Standard Deviation		0.000057		0.01266	10.6		0.0000523		0		0.0405		0.897		0.0000016			0.0011		0.0000000	235		0		0.00040		
		1st Quartile		0.00007		0.00597	351.8		0.0000476		<0.00020		0.0427		0.998		0.0000038			0.0016		<0.00020	727		<0.0050		0.00320		
		Median		0.00009		0.01045	355.5		0.000066		<0.00020		0.057		1.316		0.0000043			0.002		<0.00020	810		<0.0050		0.00330		
				0.00011		0.01492	359.2		0.000085		<0.00020		0.0714		1.633		0.0000048			0.0023		<0.00020	893		<0.0050		0.00340		
MW006D	Ex-situ 2-North deep groundwater well below the coal wash plant (Till)	Average		0.0284		0.021	80.2		0.0000025		0.00088		0.0087		0.001		0.0000069			0.000500		0.0001000	11.8		0.00515		0.165		
		Count		2		2	2		2		2		2		2		2			2		2	2		2		2		
		Minimum		0.0277		0.0194	78.1		<0.0000050		0.00064		<0.0050		<0.0010		0.0000059			<0.0010		<0.00020	11.6		<0.0050		0.165		
		Maximum		0.0291		0.0226	82.4		<0.0000050		0.00111		0.0148		0.0015		0.0000079			<0.0010		<0.00020	12		0.0078		0.165		
		Geometric Mean		0.0284		0.0209	80.2		0.0000025		0.00084		0.00608		0.00087		0.0000068			0.000500		0.0001000	11.8		0.00442		0.165		
		Count <DL		0		0	0		2		0		1		1		0			2		2	0		1		0		
		Standard Deviation		0.001		0.0023	3.0		0.0000000		0.00033		0.0087		0.00071		0.0000014			0.000000		0.0000000	0.3		0.00375		0		
		1st Quartile		0.028		0.0202	79.2		<0.0000050		0.00076		0.00558		0.00075		0.0000064			<0.0010		<0.00020	11.7		0.00382		0.165		
		Median		0.0284		0.021	80.2		<0.0000050		0.00088		0.0087		0.001		0.0000069			<0.0010		<0.00020	11.8		0.00515		0.165		
		3rd Quartile		0.0288		0.0218	81.3		<0.0000050		0.00099		0.01172		0.00125		0.0000074			<0.0010		<0.00020	11.9		0.00648		0.165		
MW006S	Ex-situ 2-North shallow groundwater well below the coal wash plant (Till)	Average		0.00164		0.00540	179.0		0.0000225		0.00082		0.0156		0.0501		0.0000058			0.0005		0.0001	606.5		0.00250		0.0556		
		Count		2		2	2		2		2		2		2		2			2		2	2		2		2		
		Minimum		0.00156		0.0041	172		0.000015		0.0008		0.0073		0.0451		0.0000053			<0.0010		<0.00020	606		<0.0050		0.0536		
		Maximum		0.00173		0.0067	186		0.00003		0.00084		0.0239		0.0551		0.0000064			<0.0010		<0.00020	607		<0.0050		0.058		
		Geometric Mean		0.00164		0.0052	178.9		0.0000212		0.00082		0.0132		0.0498		0.0000058			0.00050		0.0001000	606.5		0.0025		0.0556		
		Count <DL		0		0	0		0		0		0		0		0			2		2	0		2		0		
		Standard Deviation		0.00012		0.0018	9.9		0.000011		0.000030		0.0117		0.0071		0.0000008			0		0.0000000	0.7		0		0.0028		
		1st Quartile		0.0016		0.00480	175.5		0.0000188		0.00081		0.0114		0.0476		0.0000056			<0.0010		<0.00020	606.2		<0.0050		0.0546		
		Median		0.00164		0.00540	179		0.0000225		0.00082		0.0156		0.0501		0.0000058			<0.0010		<0.00020	606.5		<0.0050		0.0556		
		3rd Quartile		0.00169		0.00600	182.5		0.0000262		0.00083		0.0198		0.0526		0.0000061			<0.0010		<0.00020	606.8		<0.0050		0.0566		
WC		Average	0.0008	0.00067	0.019	0.0112	315	0.000024	0.0000205	0.000751	0.000413	0.19	0.0214	0.1125	0.1117	0.000001	0.000001	391	0.01929	0.0191	0.000100	0.000100	691	0.01013	0.00884				
E207411	2-North Pit Culvert discharge into Middle Quinsam Lake	Count	7	7	7	7	2	7	7	7	7	7	7	7	7	6	6	7	7	7	7	7	12	7	7				
		Minimum	0.00054	0.00035	0.0063	0.0037	282	<0.000010	<0.0000050	<0.00050	<0.00020	0.039	0.0095	0.0075	0.0031	<0.0000020	<0.0000020	290	<0.0010	<0.0010	<0.00020	<0.00020	482	<0.0050	<0.0050				
		Maximum	0.00111	0.00096	0.0416	0.0179	348	0.000116	0.000096	0.00176	0.00075	0.451	0.0506	0.533	0.545	<0.0000020	<0.0000020	524	0.114	0.111	<0.00020	<0.00020	1080	0.0507	0.0438				
		Geometric Mean	0.00078	0.00064	0.0149	0.0098	313.3	0.00001	0.00000776	0.00055	0.000348	0.1480	0.0171	0.036	0.0251	0.000001	0.000001	381	0.00219	0.00218	0.000100	0.000100	664	0.00451	0.00422				
		Count <DL	0	0	0	0	0	5	3	3	1	0	0	0	0	6	6	0	4	4	7	7	0	5	5				
		Standard Deviation	0.00022	0.00019	0.0142	0.0055	46.7	0.0000414	0.0000344	0.000631	0.000231	0.143	0.0166	0.1928	0.1998	2E-14	2E-14	94	0.0422	0.04109	0.000000	0.000000	209	0.01799	0.01546				
		1st Quartile	0.00062	0.00058	0.0082	0.0068	298.5	<0.000010	<0.0000050	<0.00050	0.000270	0.107	0.01020	0.0132	0.006	<0.0000020	<0.0000020	314	<0.0010	<0.0010	<0.00020	<0.00020	535	<0.0050	<0.0050				
		Median	0.00084	0.00066	0.0136	0.0117	315	<0.000010	0.000006	0.00056	0.00035	0.132	0.0132	0.0213	0.0166	<0.0000020	<0.0000020	370	<0.0010	<0.0010	<0.00020	<0.00020	600	<0.0050	<0.0050				
		3rd Quartile	0.00095	0.00078	0.0274	0.0158	331.5	0.000016	0.000017	0.001095	0.000575	0.2470	0.028	0.0998	0.1026	<0.0000020	<0.0000020	463	0.00950	0.01035	<0.00020	<0.00020	853	0.0051	0.00405				
MQL1	Middle Quinsam Lake 1 metre below surface	Average	0.00019	0.0001600	0.0256	0.0194	32.6	0.000005	0.00000303	0.000703	0.00061	0.043	0.0187	0.0059	0.00153	0.00000134	0.00000112	34.3	0.00067	0.00065	0.0001	0.0001	27.64	0.0025	0.00276	0.0036			
E206618		Count	15	15	15	15	4	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	3				
		Minimum	0.00011	0.00011	0.0134	0.0113	29	<0.000010	<0.0000050	<0.00050	0.0004	0.028	0.0064	0.0039	<0.0010	<0.0000020	<0.0000020	22.8	<0.0010	<0.0010	<0.00020	<0.00020	7.66	<0.0050	<0.0050	0.0029			
		Maximum	0.0008	0.0002	0.0635	0.0323	37.1	<0.000010	0.000008	0.00114	0.00142	0.065	0.0309	0.0072	0.0051	0.0000042	0.0000028	39.5	0.0018	0.0017	<0.00020	<0.00020	38.7	<0.0050	0.0064	0.0042			
		Geometric Mean	0.00016	0.00016	0.0228	0.0186	32.5	0.000005	0.00000283	0.000663	0.00058	0.041	0.0175	0.0058	0.00094	0.00000118	0.00000107	34	0.00059	0.00059	0.0001	0.00010000	26.24	0.0025	0.00266	0.0035			
		Count <DL	0	0	0	0	0	15	13	1	0	0	0	0	10	13	14	0	13	13	15	15	0	15	14	0			
		Standard Deviation	0.00017	0.00003	0.0144	0.0061	3.4	1E-13	0.00000152	0.000239	0.00024	0.013	0.0066	0.0011	0.00168	0.00000093	0.00000046	4.2	0.00044	0.00041	0	0	7.44	4E-11	0.00101	0.0007			
		1st Quartile	0.00013	0.00014	0.0165	0.0152	30.9	<0.000010	<0.0000050	0.000565	0.000480	0.032	0.0148	0.0048	<0.0010	<0.0000020	<0.0000020	32.4	<0.0010	<0.0010	<0.00020	<0.00020	24.45	<0.0050	<0.0050	0.0032			
		Median	0.00015	0.0001700	0.0203	0.0175	32.2	<0.000010	<0.0000050	0.000680	0.00053	0.038	0.0176	0.0061	<0.0010	<0.0000020	<0.0000020	34.8	<0.0010	<0.0010	<0.00020	<0.00020	28.30	<0.0050	<0.0050	0.0036			
		3rd Quartile	0.00018	0.00018	0.031	0.0231	34	<0.000010	<0.0000050	0.00073	0.00064	0.052	0.0220	0.0068	0.00230	<0.0000020	<0.0000020	37.7	<0.0010	<0.0010	<0.00020	<0.00020	31.35	<0.0050	<0.0050	0.0039			
MQL8	Middle Quinsam Lake 1 metre from bottom	Average	0.000154	0.000133	0.0202	0.0164	34.6	0.000005	0.00000274	0.000559	0.00058	0.071	0.0238	0.033	0.02559	0.000001	0.00000100	34.2	0.00068	0.00067	0.0001	0.0001	25.8	0.002500	0.0025	0.00430			
E206618		Count	15	15	15	15	4	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	3				
		Minimum	<0.00010	<0.00010	0.0076	0.0047	32.6	<0.000010	<0.0000050	<0.00050	0.00032	0.0160	0.0082	0.0017	<0.0010	<0.0000020	<0.0000020	28.6	<0.0010	<0.0010	<0.00020	<0.00020	17	<0.0050	<0.0050	0.0031			
		Maximum	0.00034	0.00017	0.043	0.0291	36	<0.000010	0.0000061	0.00079	0.00093	0.231	0.0498	0.159	0.131	<0.0000020	<0.0000020	39.7	0.0019	0.0018	<0.00020	<0.00020	40	<0.0050	<0.0050	0.0059			
		Geometric Mean	0.000142	0.000128	0.017	0.0144	34.5	0.000005	0.00000265	0.000534	0.000570	0.05	0.0209	0.0115	0.00414	0.000001	0.000001	34.1	0.0006	0.00059	0.0001	0.0001	25.2	0.0025	0.0025	0.00410			
		Count <DL	1	1	0	0	0	15	14	2	0	0	0	0	5	15	15	0	13	13	15	15	0	15	15	0			
		Standard Deviation	0.000065	0.000033	0.0123	0.0078	1.6	1E-13	0.00000093	0.00015	0.00014	0.07	0.0126	0.0484	0.04098	0	0	3	0.00048	0.00046	0	0.00000000	6.2	4E-11	4E-11	0.00150			
		1st Quartile	0.000115	0.00011	0.0102	0.00860	33.6	<0.000010	<0.0000050	0.000525	0.0005	0.029	0.0142	0.0042	<0.0010	<0.0000020	<0.0000020	32.4	<0.0010	<0.0010	<0.00020	<0.00020	23	<0.0050	<0.0050	0.0034			
		Median	0.00014	0.0001400	0.0166	0.0175	34.8	<0.000010	<0.0000050	0.00055	0.000580	0.038	0.0174	0.0066	0.0014	<0.0000020	<0.0000020	34.0	<0.0010	<0.0010	<0.00020	<0.00020	23.8	<0.0050	<0.0050	0.0038			
		3rd Quartile	0.000185	0.00016	0.0248	0.022	35.8	<0.000010	<0.0000050	0.00064	0.00065	0.076	0.0318	0.0506	0.04005	<0.0000020	<0.0000020	36.3	<0.0010	<0.0010	<0.00020	<0.00020	24.6	<0.0050	<0.0050	0.0048			

Notes:
factor applied to less-than results when calculating statistics: 0.5

Table 26 Statistics 2016 -2021 30 Page(s)

2016-17 Statistics Stn.Code																												
EMS. ID	Site Name & Description	Statistics	As-T	As-D	Al-T	Al-D	Alk-T	Cd-T	Cd-D	Cu-T	Cu-D	Fe-T	Fe-D	Mn-T	Mn-D	Hg-T	Hg-D	Hard-T	Ni-T	Ni-D	Pb-T	Pb-D	SO4-D	Zn-T	Zn-D	P-T	P-D	N-NO23	N-NH3
NNL1			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	mg/L
EZ17018		Average	0.00033	0.000350	0.0418	0.035	13.6	0.000005	0.0000025	0.000517	0.00073	0.086	0.0603	0.005	0.00291	0.00000128	0.00000119	13.9	0.0005	0.00066	0.0001	0.0001	1.025	0.0025	0.0025	0.0087			
		Count	15	15	15	15	5	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	3			
		Minimum	0.00018	0.00022	0.0221	0.017	11.3	<0.000010	<0.0000050	<0.00050	0.00037	0.035	0.0325	0.0032	<0.0010	<0.0000020	<0.0000020	9.96	<0.0010	<0.0010	<0.00020	<0.00020	<0.50	<0.0050	<0.0050	<0.0020			
		Maximum	0.00055	0.00053	0.0803	0.0603	16.8	<0.000010	<0.0000050	0.00112	0.00279	0.127	0.0817	0.0081	0.0053	0.000004	0.0000025	19.4	<0.0010	0.0029	<0.00020	<0.00020	1.95	<0.0050	<0.0050	0.0163			
		Geometric Mean	0.00031	0.00033	0.0376	0.0327	13.4	0.00000500	0.0000025	0.000454	0.00063	0.08	0.058	0.00480	0.00248	0.00000116	0.00000112	13.64	0.0005	0.00056	0.0001	0.0001	0.849	0.0025	0.0025	0.00523			
		Count <DL	0	0	0	0	0	15	15	6	0	0	0	0	1	13	13	0	15	14	15	15	3	15	15	1			
		Standard Deviation	0.000130	0.00012	0.0208	0.0135	2.7	1E-13	1E-13	0.00027	0.00059	0.03	0.0162	0.0014	0.00148	0.00000081	0.00000049	2.87	0	0.00062	0.00000000	0	0.553	4E-11	4E-11	0.00765			
		1st Quartile	0.00024	0.00025	0.0256	0.0232	11.6	<0.000010	<0.0000050	<0.00050	0.00048	0.058	0.0501	0.0043	0.00195	<0.0000020	<0.0000020	11.95	<0.0010	<0.0010	<0.00020	<0.00020	0.755	<0.0050	<0.0050	0.0049			
		Median	0.00028	0.000310	0.0305	0.0317	12.2	<0.000010	<0.0000050	0.00056	0.00055	0.093	0.0635	0.00460	0.00310	<0.0000020	<0.0000020	12.3	<0.0010	<0.0010	<0.00020	<0.00020	0.97	<0.0050	<0.0050	0.0088			
		3rd Quartile	0.00046	0.00048	0.0639	0.0487	16.3	<0.000010	<0.0000050	0.00064	0.0007	0.107	0.0718	0.0055	0.00425	<0.0000020	<0.0000020	16.8	<0.0010	<0.0010	<0.00020	<0.00020	1.42	<0.0050	<0.0050	0.01255			
NNLB		Average	0.00025	0.00022	0.0478	0.0384	10.4	0.000005	0.0000025	0.000441	0.00049	0.136	0.0812	0.011	0.00672	0.00000107	0.00000109	12.6	0.0005	0.00068	0.0001	0.0001	2.62	0.0025	0.003070	0.00500			
EZ17018		Count	15	15	15	15	5	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	3			
		Minimum	0.00017	0.00017	0.0338	0.0309	9.72	<0.000010	<0.0000050	<0.00050	0.00026	0.049	0.0303	0.0024	<0.0010	<0.0000020	<0.0000020	11	<0.0010	<0.0010	<0.00020	<0.00020	0.68	<0.0050	<0.0050	0.0027			
		Maximum	0.00037	0.00029	0.0756	0.0549	11.3	<0.000010	<0.0000050	0.00111	0.00091	0.255	0.168	0.0364	0.0291	0.0000021	0.0000023	14.5	<0.0010	0.0032	<0.00020	<0.00020	3.77	<0.0050	0.0111	0.0065			
	No Name Lake 1 metre from bottom	Geometric Mean	0.00024	0.000220	0.0466	0.0377	10.39	0.000005	0.0000025	0.000387	0.00046	0.119	0.0721	0.0079	0.00383	0.00000105	0.00000106	12.5	0.0005000	0.00057	0.0001	0.0001	2.36	0.0025	0.00276	0.00470			
		Count <DL	0	0	0	0	0	15	15	8	0	0	0	0	1	14	14	0	15	14	15	15	0	15	14	0			
		Standard Deviation	0.00006	0.00004	0.0118	0.0076	0.59	1E-13	1E-13	0.00025	0.00017	0.067	0.0401	0.0097	0.00756	0.00000028	0.00000034	1.1	0	0.0007000	0	0	0.99	4E-11	0.002220	0.00200			
		1st Quartile	0.0002	0.00019	0.0408	0.0327	10.1	<0.000010	<0.0000050	<0.00050	0.00037	0.065	0.0507	0.0036	0.00145	<0.0000020	<0.0000020	11.9	<0.0010	<0.0010	<0.00020	<0.00020	2.49	<0.0050	<0.0050	0.0043			
		Median	0.00023	0.0002	0.0438	0.0358	10.3	<0.000010	<0.0000050	<0.00050	0.00048	0.141	0.0830	0.0092	0.0059	<0.0000020	<0.0000020	12.4	<0.0010	<0.0010	<0.00020	<0.00020	2.78	<0.0050	<0.0050	0.0059			
		3rd Quartile	0.0003	0.00026	0.0528	0.0395	10.6	<0.000010	<0.0000050	0.000585	0.00054	0.181	0.0957	0.0138	0.0088	<0.0000020	<0.0000020	13.2	<0.0010	<0.0010	<0.00020	<0.00020	3.32	<0.0050	<0.0050	0.0062			
NNO		Average	0.00036	0.00034	0.0457	0.0352	13.16	0.0000077	0.00000283	0.000591	0.00054	0.091	0.0582	0.006	0.00256	0.0000024	0.0000013	14	0.0005	0.00050	0.000100	0.000100	1.2	0.0025	0.0025	0.0082	0.0097		
EZ17017		Count	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	2	2		
		Minimum	0.00017	0.0002	0.0257	0.0192	9.74	<0.000010	<0.0000050	<0.00050	0.00021	0.03	0.0252	0.0031	<0.0010	<0.000002	<0.000002	10.3	<0.0010	<0.0010	<0.00020	<0.00020	0.58	<0.0050	<0.0050	0.0066	0.0084		
		Maximum	0.00061	0.00055	0.0766	0.0588	17.5	0.000046	0.0000050	0.00188	0.00094	0.152	0.084	0.0166	0.0051	0.0000074	0.0000033	18	<0.0010	<0.0010	<0.00020	<0.00020	2.06	<0.0050	<0.0050	0.0099	0.011		
	No Name Lake Outlet	Geometric Mean	0.00033	0.00033	0.0423	0.0330	12.93	0.0000058	0.00000274	0.000484	0.00052	0.082	0.0546	0.0054	0.00203	0.00000169	0.00000117	13.8	0.0005	0.00050	0.000100	0.000100	1.11	0.0025	0.0025	0.0081	0.0096		
		Count <DL	0	0	0	0	0	14	13	6	0	0	0	0	3	10	13	0	15	15	15	15	0	15	15	0	0		
		Standard Deviation	0.00015	0.00012	0.0189	0.0135	2.6	0.0000106	0.00000088	0.000434	0.00017	0.0390	0.0193	0.0033	0.00144	0.00000229	0.00000079	2.5	0	0.00000	0.000000	0.000000	0.5	4E-11	4E-11	0.0023	0.0018		
		1st Quartile	0.00022	0.00026	0.0309	0.0247	11.1	<0.000010	<0.0000050	<0.00050	0.00047	0.056	0.0434	0.0044	0.00165	<0.0000020	<0.0000020	12.1	<0.0010	<0.0010	<0.00020	<0.00020	0.88	<0.0050	<0.0050	0.0074	0.009		
		Median	0.00031	0.0003	0.0374	0.0307	12.5	<0.000010	<0.0000050	0.00056	0.00053	0.095	0.0624	0.0051	0.0026	<0.0000020	<0.0000020	12.7	<0.0010	<0.0010	<0.00020	<0.00020	1.05	<0.0050	<0.0050	0.0082	0.0097		
		3rd Quartile	0.00048	0.00044	0.0655	0.0454	15.5	<0.000010	<0.0000050	0.00066	0.00055	0.118	0.0728	0.0066	0.0033	0.00000315	<0.0000020	16.5	<0.0010	<0.0010	<0.00020	<0.00020	1.68	<0.0050	<0.0050	0.0091	0.0104		
LLS		Average	0.00376	0.0017	0.0081	0.0065	233.4	0.00000500	0.00000667	0.000273	0.000236	1.159	0.00598	0.288	0.286	0.0000011	0.0000010	556	0.0016	0.0015	0.000100	0.0001	500	0.00282	0.0025	0.0021			
EZ92131		Count	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	3			
		Minimum	0.00077	0.00055	<0.0030	<0.0030	201	<0.000010	<0.0000050	<0.00050	<0.00020	0.255	<0.0050	0.159	0.152	<0.0000020	<0.0000020	431	0.0011	0.0011	<0.00020	<0.00020	333	<0.0050	<0.0050	<0.0020			
		Maximum	0.00939	0.00292	0.0206	0.0128	256	<0.000010	0.000049	0.00053	0.00051	3.6	0.022	0.439	0.443	0.0000025	<0.0000020	744	0.0028	0.0025	<0.00020	<0.00020	656	0.0064	<0.0050	0.003			
	Small Seep into Long Lake	Geometric Mean	0.00292	0.00148	0.00551	0.00533	232.8	0.000005	0.00000345	0.000266	0.00019	0.857	0.00384	0.272	0.27	0.00000108	0.000001	548	0.0015	0.0015	0.000100	0.0001	488	0.0027	0.0025	0.0019			
		Count <DL	0	0	3	2	0	12	10	11	6	0	9	0	0	11	12	0	0	0	12	12	0	11	12	1			
		Standard Deviation	0.00257	0.00083	0.00669	0.00383	17	1E-13	0.00001337	0.000081	0.000158	0.968	0.00745	0.096	0.095	0.00000043	0	96	0.0005	0.0005	0.000000	0.000000	114	0.00113	1E-10	0.00101			
		1st Quartile	0.00176	0.00089	0.00285	0.00428	226	<0.000010	<0.0000050	<0.00050	<0.00020	0.492	<0.0050	0.22	0.222	<0.0000020	<0.0000020	458	0.0013	0.0013	<0.00020	<0.00020	393	<0.0050	<0.0050	0.00165			
		Median	0.00348	0.00172	0.0056	0.0054	231.5	<0.000010	<0.0000050	<0.00050	0.000170	0.91	<0.0050	0.300	0.289	<0.0000020	<0.0000020	574	0.0014	0.0013	<0.00020	<0.00020	543	<0.0050	<0.0050	0.0023			
		3rd Quartile	0.00537	0.00237	0.01478	0.0094	246.5	<0.000010	<0.0000050	<0.00050	0.000360	1.56	0.00328	0.359	0.354	<0.0000020	<0.0000020	612	0.0016	0.0016	<0.00020	<0.00020	571	<0.0050	<0.0050	0.00265			
LLSM		Average	0.00181	0.00122	0.02865	0.01710	212.9	0.000005	0.00000531	0.000483	0.000408	0.562	0.00579	0.1786	0.1749	0.000001	0.000001	525	0.0021	0.0021	0.0001	0.0001	470	0.0025	0.0025				
EZ92131		Count	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8				
		Minimum	0.00111	0.00048	<0.0030	0.004	163	<0.000010	<0.0000050	<0.00050	<0.00020	0.288	<0.0050	0.0842	0.0902	<0.0000020	<0.0000020	377	0.0016	0.0016	<0.00020	<0.00020	320	<0.0050	<0.0050				
		Maximum	0.00282	0.00178	0.107	0.0613	235	<0.000010	0.000017	0.00154	0.00081	0.758	0.0144	0.281	0.252	<0.0000020	<0.0000020	653	0.0035	0.0032	<0.00020	<0.00020	519	<0.0050	<0.0050				
	Long Lake Middle Seep	Geometric Mean	0.00172	0.00115	0.01314	0.0113	211.7	0.000005	0.00000401	0.000364	0.00035	0.532	0.00434	0.1671	0.164	0.000001	0.000001	518	0.002	0.0021	0.000100	0.0001	466	0.0025	0.00250				
		Count <DL	0	0	1	0	0	8	5	6	1	0	5	0	0	8	8	0	0	0	8	8	0	8	8				
		Standard Deviation	0.00061	0.00042	0.03627	0.0191	22.6	1E-13	0.00000512	0.000472	0.00022	0.182	0.00491	0.0661	0.0629	0.0000000	0.0000000	86	0.0006	0.0005	0	0	66	3E-11	3E-11				
		1st Quartile	0.00128	0.00107	0.00402	0.0052	209	<0.000010	<0.0000050	<0.00050	0.000235	0.414	<0.0050	0.1360	0.1272	<0.0000020	<0.0000020	473	0.0017	0.0018	<0.00020	<0.00020	459	<0.0050	<0.0050				
		Median	0.00176	0.0011	0.01645	0.0108	216.5	<0.000010	<0.0000050	<0.00050	0.00043	0.602	<0.0050	0.1775	0.1790	<0.0000020	<0.0000020	535	0.002	0.002	<0.00020	<0.00020	491	<0.0050	<0.0050				
		3rd Quartile	0.0022	0.00153	0.03158	0.0173	227	<0.000010	0.00000575	0.000392	0.000508	0.72	0.0086	0.2222	0.2275	<0.0000020	<0.0000020	580	0.0021	0.0022	<0.00020	<0.00020	512	<0.0050	<0.0050				

Notes:
Factor applied to less-than results when calculating statistics: 0.5

Table 26 Statistics 2016 -2021 30 Page(s)

2016-17 Statistics Stn.Code EMS. ID	Site Name & Description	Statistics	As-T	As-D	Al-T	Al-D	Alk-T	Cd-T	Cd-D	Cu-T	Cu-D	Fe-T	Fe-D	Mn-T	Mn-D	Hg-T	Hg-D	Hard-T	Ni-T	Ni-D	Pb-T	Pb-D	SO4-D	Zn-T	Zn-D	P-T	P-D	N-NO23	N-NH3
			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	mg/L
MW002	Ex-situ 2-3 South shallow groundwater well beside 3-South Pit (1 Seam)	Average		0.0006		0.00395	203.2		0.0000081		0.000100		2.68		2.53		0.0000031			0.0027		0.000100	1265		0.0025		0.00190		
		Count		4		4	4		4		4		4		4		4			4		4	4		4		4		
		Minimum		0.0004		<0.0030	187		<0.0000050		<0.00020		2.39		2.4		<0.0000020			0.0025		<0.00020	1210		<0.0050		<0.0020		
		Maximum		0.00082		0.0097	215		0.0000012		<0.00020		3.07		2.68		0.0000051			0.0029		<0.00020	1320		<0.0050		0.0046		
		Geometric Mean		0.00058		0.00287	203		0.0000068		0.0001		2.67		2.53		0.0000027			0.0027		0.000100	1264		0.0025		0.00146		
		Count <DL		0		2	0		1		4		0		0		1			0		4	0		4		3		
		Standard Deviation		0.0002		0.00391	11.7		0.0000047		0		0.29		0.12		0.0000017			0.0002		0.000000	49		0		0.0018		
		1st Quartile		0.00046		<0.0030	200.5		0.00000512		<0.00020		2.51		2.48		0.0000025			0.0026		<0.00020	1232		<0.0050		<0.0020		
		Median		0.0006		0.0023	205.5		0.000009		<0.00020		2.62		2.51		0.00000315			0.0026		<0.00020	1265		<0.0050		<0.0020		
		3rd Quartile		0.00074		0.00475	208.2		0.000012		<0.00020		2.79		2.56		0.00000375			0.0028		<0.00020	1297		<0.0050		0.00190		
QU1009D	Ex-situ 4-South deep groundwater well. Down gradient of 4-South Mine. Base of Dunsmuir Member. Assesses vertical gradients & water quality down gradient of the 4-South Mine workings. Just outside of mine pool. (Below 3 Seam)	Average		0.0988		0.00150	186		0.0000025		0.000100		0.544		0.131		0.0000028			0.000500		0.0001000	89.3		0.00250		0.0403		
		Count		2		2	2		2		2		2		2		2			2		2	2		2		2		
		Minimum		0.098		<0.0030	184		<0.0000050		<0.00020		0.346		0.115		<0.0000020			<0.0010		<0.00020	84.8		<0.0050		0.0338		
		Maximum		0.1		<0.0030	188		<0.0000050		<0.00020		0.741		0.147		0.0000045			<0.0010		<0.00020	93.8		<0.0050		0.0468		
		Geometric Mean		0.0988		0.0015	186		0.0000025		0.000100		0.506		0.13		0.0000021			0.000500		0.0001000	89.2		0.00250		0.0398		
		Count <DL		0		2	0		2		2		0		0		1			2		2	0		2		0		
		Standard Deviation		0.0016		0	2.8		0.0000000		0.000000		0.279		0.023		0.0000025			0.000000		0.0000000	6.4		0.00000		0.0092		
		1st Quartile		0.0983		<0.0030	185		<0.0000050		<0.00020		0.445		0.123		0.00000188			<0.0010		<0.00020	87		<0.0050		0.037		
		Median		0.0988		<0.0030	186		<0.0000050		<0.00020		0.544		0.131		0.00000275			<0.0010		<0.00020	89.3		<0.0050		0.0403		
		3rd Quartile		0.0994		<0.0030	187		<0.0000050		<0.00020		0.642		0.139		0.00000362			<0.0010		<0.00020	91.6		<0.0050		0.0436		
QU1009S	Ex-situ 4-South shallow groundwater well. Fracture zone 10 m below till. Assesses vertical gradients & water quality down gradient of the 4-South Mine workings. Just outside of mine pool. (Below 3 Seam)	Average		0.0868		0.00150	144.5		0.0000025		0.000100		5.4		0.38		0.0000046			0.000500		0.0001000	112.5		0.00250		0.0290		
		Count		2		2	2		2		2		2		2		2			2		2	2		2		2		
		Minimum		0.0829		<0.0030	132		<0.0000050		<0.00020		5.07		0.354		0.0000033			<0.0010		<0.00020	109		<0.0050		0.0232		
		Maximum		0.0907		<0.0030	157		<0.0000050		<0.00020		5.72		0.405		0.0000058			<0.0010		<0.00020	116		<0.0050		0.0347		
		Geometric Mean		0.0867		0.0015	144		0.0000025		0.000100		5.39		0.379		0.0000044			0.0005		0.0001000	112.4		0.00250		0.0284		
		Count <DL		0		2	0		2		2		0		0		0			2		2	0		2		0		
		Standard Deviation		0.0055		0	17.7		0.0000000		0.000000		0.46		0.036		0.0000018			0		0.0000000	4.9		0.00000		0.0081		
		1st Quartile		0.0849		<0.0030	138.2		<0.0000050		<0.00020		5.23		0.367		0.0000039			<0.0010		<0.00020	110.8		<0.0050		0.0261		
		Median		0.0868		<0.0030	144.5		<0.0000050		<0.00020		5.4		0.38		0.0000046			<0.0010		<0.00020	112.5		<0.0050		0.029		
		3rd Quartile		0.0888		<0.0030	150.8		<0.0000050		<0.00020		5.56		0.392		0.0000052			<0.0010		<0.00020	114.2		<0.0050		0.0318		
SPD			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	mg/L
EZ18582	Settling Pond # 1	Average	0.00093	0.00064	0.0597	0.01586	102.00	0.000005	0.00000438	0.001293	0.00076	0.893	0.0812	0.1021	0.09174	0.00000116	0.000001	318.3	0.00269	0.00255	0.0001	0.000100	282.6	0.00250	0.0025	0.0105	0.0073		
		Count	12	12	12	12	10	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	45	12	12	10	11		
		Minimum	0.0003	0.00023	0.0032	<0.0030	22.50	<0.000010	<0.0000050	<0.00050	0.00031	0.145	0.0102	0.0059	<0.0010	<0.0000020	<0.0000020	37.4	<0.0010	<0.0010	<0.00020	<0.00020	32.8	<0.0050	<0.0050	0.0053	0.0026		
		Maximum	0.00335	0.00273	0.254	0.0768	280.0	<0.000010	0.000015	0.00321	0.00153	2.85	0.138	0.544	0.56	0.0000029	<0.0000020	520	0.0067	0.0073	<0.00020	<0.00020	632	<0.0050	<0.0050	0.0218	0.0228		
		Geometric Mean	0.00075	0.00049	0.0284	0.00978	81	0.000005	0.00000357	0.001085	0.00071	0.501	0.0619	0.0541	0.0194	0.0000011	0.0000010	266.6	0.00189	0.00171	0.0001	0.000100	225.40	0.0025	0.0025	0.0095	0.00600		
		Count <DL	0	0	0	1	0	12	8	1	0	0	0	0	3	11	12	0	2	3	12	12	0	12	12	0	0		
		Standard Deviation	0.00080	0.00068	0.0715	0.02031	74.1	1E-13	0.00000371	0.000791	0.00031	0.969	0.0507	0.1468	0.15459	0.0000006	0	150.4	0.00226	0.00228	0.000000	0.000000	163.3	1E-10	1E-10	0.0053	0.0058		
		1st Quartile	0.00055	0.00032	0.0069	0.00538	48.8	<0.000010	<0.0000050	0.00091	0.00058	0.202	0.0331	0.0271	0.0044	<0.0000020	<0.0000020	183.5	0.001	0.00095	<0.00020	<0.00020	151	<0.0050	<0.0050	0.0071	0.004		
		Median	0.00074	0.0004	0.0386	0.0106	92	<0.000010	<0.0000050	0.00103	0.00074	0.298	0.0934	0.0607	0.04905	<0.0000020	<0.0000020	341.5	0.00165	0.0014	<0.00020	<0.00020	267.00	<0.0050	<0.0050	0.0088	0.0055		
		3rd Quartile	0.00099	0.00063	0.0866	0.01485	118.5	<0.000010	0.00000500	0.001655	0.00082	1.748	0.1260	0.0921	0.09335	<0.0000020	<0.0000020	440.5	0.0037	0.00342	<0.00020	<0.00020	441	<0.0050	<0.0050	0.01040	0.0087		
LLE	Long Lake Entrance (LLE)	Average	0.00085	0.00072	0.065	0.02323	71.9	0.00000500	0.00000282	0.000583	0.00046	0.327	0.165	0.0499	0.0472	0.00000135	0.0000014	268.8	0.00050	0.0005	0.0001	0.000100	229.6	0.0025	0.00250	0.0081	0.0084	0.0395	0.01663
EZ92130		Count	14	14	14	14	12	14	14	14	14	14	14	14	14	13	14	14	14	14	14	14	52	14	14	13	2	12	12
		Minimum	0.00055	0.00049	0.0071	<0.0030	38.1	<0.000010	<0.0000050	<0.00050	<0.00020	0.142	0.0306	0.0184	0.0024	<0.0000020	<0.0000020	95.8	<0.0010	<0.0010	<0.00020	<0.00020	81.3	<0.0050	<0.0050	0.004	0.0063	<0.020	<0.0050
		Maximum	0.00144	0.00119	0.192	0.0676	106	<0.000010	0.000007	0.00131	0.00072	0.812	0.595	0.107	0.119	0.0000028	0.0000058	610	<0.0010	<0.0010	<0.00020	<0.00020	566	<0.0050	<0.0050	0.0182	0.0106	0.105	0.0560
		Geometric Mean	0.00082	0.0007	0.0402	0.01441	68.8	0.000005	0.00000269	0.0005	0.000423	0.298	0.1246	0.0453	0.0355	0.00000123	0.00000114	219.9	0.0005	0.0005	0.0001	0.000100	198.6	0.0025	0.00250	0.0074	0.0082	0.0269	0.0109
		Count <DL	0	0	0	1	0	14	13	5	1	0	0	0	0	10	12	0	14	14	14	14	0	14	14	0	0	5	3
		Standard Deviation	0.00024	0.00019	0.0572	0.01985	21.2	1E-13	0.0000012	0.000328	0.000158	0.166	0.1477	0.0232	0.0299	0.00000067	0.00000133	179.1	0	0	0	0.000000	133.7	1E-10	0.00000	0.0038	0.003	0.0328	0.01515
		1st Quartile	0.00067	0.00056	0.0141	0.0062	58.8	<0.000010	<0.0000050	<0.00050	0.00038	0.24	0.093	0.035	0.0273	<0.0000020	<0.0000020	135.5	<0.0010	<0.0010	<0.00020	<0.00020	139.8	<0.0050	<0.0050	0.0062	0.0074	<0.020	0.00542
		Median	0.0008	0.00072	0.0601	0.02075	73.1	<0.000010	<0.0000050	0.00055	0.00047	0.302	0.119	0.0468	0.0496	<0.0000020	<0.0000020	197.5	<0.0010	<0.0010	<0.00020	<0.00020	183.5	<0.0050	<0.0050	0.007	0.0084	0.028	0.015
		3rd Quartile	0.00091	0.00076	0.0959	0.03645	87.4	<0.000010	<0.0000050	0.000742	0.000568	0.326	0.1755	0.060	0.0598	<0.0000020	<0.0000020	397.5	<0.0010	<0.0010	<0.00020	<0.00020	267.2	<0.0050	<0.0050	0.00970	0.0095	0.0652	0.02325
LLM1	Long Lake Middle 1 metre below Surface	Average	0.00047	0.00044	0.0324	0.0256	31.9	0.00000500	0.00000485	0.0004433	0.00053	0.068	0.0407	0.0084	0.0027	0.00000108	0.00000126	63.1	0.00050	0.00050	0.000100	0.000100	50.43	0.00250	0.00250	0.0038			
EZ06619		Count	15	15	15	15	6	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	5			
		Minimum	0.00034	0.0003	0.0073	0.0066	13.4	<0.000010	<0.0000050	<0.00050	<0.00020	0.032	0.0193	0.0043	<0.0010	<0.0000002	<0.0000002	12.8	<0.0010	<0.0010	<0.00020	<0.00020	3.6	<0.0050	<0.0050	0.0027			
		Maximum	0.00071	0.00063	0.0775	0.0513	37.8	<0.000010	0.0000241	0.00132	0.001	0.127	0.0719	0.0204	0.0107	0.0000022	0.0000035	91.8	<0.0010	<0.0010	<0.00020	<0.00020	81.1	<0.0050	<0.0050	0.0057			
		Geometric Mean	0.00045	0.00043	0.0233	0.0206	30.2	0.000005	0.00000341	0.00037	0.000469	0.062	0.0371	0.0076	0.0016	0.00000105	0.00000115	52.5	0.00050	0.00050	0.000100	0.000100	35.94	0.0025	0.00250	0.0037			
		Count <DL	0	0	0	0	0	15	12	9	1	0	0	0	6	14	13	0	15	15	15	15	0	15	15	0			
		Standard Deviation	0.00012	0.00011	0.0265	0.0170	9.3	0.00000000	0.00000606	0.000295	0.000225	0.032	0.0185	0.0044	0.00288	0.00000031	0.00000072	29.7	0.00000	0.00000	0.000000	0.000000	27.88	4E-11	0.00000	0.0012			
		1st Quartile	0.00038	0.00036	0.0114	0.0124	33.2	<0.000010	<0.0000050	<0.00050	0.000385	0.044	0.0276	0.0052	<0.0010	<0.0000020	<0.0000020	39	<0.0010	<0.0010	<0.00020	<0.00020	30.85	<0.0050	<0.0050	0.003			
		Median	0.0004	0.0004	0.018	0.018	35.4	<0.000010	<0.0000050	<0.00050	0.0005	0.059	0.033	0.0077	0.002	<0.0000020	<0.000002	76.6	<0.0010	<0.0010	<0.00020	<0.00020	62.5	<0.0050	<0.0050	0.0033			
		3rd Quartile	0.0006	0.00055	0.0584	0.0445	36.8	<0.000010	<0.0000050	0.000565	0.000615	0.0940	0.0562	0.0088	0.0034	<0.0000020	<0.0000020	84.8	<0.0010	<0.0010	<0.00020	<0.00020	69.45	<0.0050	<0.0050	0.0043			

Notes:
Values adjusted to detection limits when censored values exist.

Table 26 Statistics 2016 -2021 30 Page(s)

2016-17 Statistics Stn.Code EMS. ID	Site Name & Description	Statistics	As-T	As-D	Al-T	Al-D	Alk-T	Cd-T	Cd-D	Cu-T	Cu-D	Fe-T	Fe-D	Mn-T	Mn-D	Hg-T	Hg-D	Hard-T	Ni-T	Ni-D	Pb-T	Pb-D	SO4-D	Zn-T	Zn-D	P-T	P-D	N-NO23	N-NH3
			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	mg/L
LLMB	Long Lake Middle 1 metre From Bottom	Average	0.00029	0.00024	0.0168	0.0119	48.8	0.00000500	0.00000411	0.00039	0.000419	0.052	0.01493	0.3531	0.1721	0.000001	0.000001	134	0.00050	0.00050	0.000100	0.000100		0.00250	0.00250	0.00360			
E206619		Count	15	15	15	15	6	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	5			
		Minimum	0.00017	0.00019	0.0095	0.0044	47.1	<0.000010	<0.0000050	<0.00050	<0.00020	0.026	<0.0050	0.0378	<0.0010	<0.0000002	<0.0000002	87.6	<0.0010	<0.0010	<0.00020	<0.00020	123	<0.0050	<0.0050	0.003			
		Maximum	0.00034	0.00029	0.0278	0.0236	50.3	<0.000010	0.0000186	0.00085	0.00091	0.075	0.0317	1.02	0.62	<0.0000002	<0.0000002	158	<0.0010	<0.0010	<0.00020	<0.00020	138	<0.0050	<0.0050	0.0047			
		Geometric Mean	0.00029	0.00024	0.016	0.0101	48.7	0.000005	0.00000314	0.000346	0.000385	0.05	0.01112	0.2128	0.03415	0.000001	0.000001	133	0.00050	0.00050	0.000100	0.000100	131.1	0.00250	0.00250	0.00360			
		Count <DL	0	0	0	0	0	15	13	10	1	0	2	0	3	15	15	0	15	15	15	15	0	15	15	0			
		Standard Deviation	0.00004	0.00003	0.0057	0.0068	1.3	1E-13	0.00000451	0.000214	0.000172	0.013	0.0106	0.337	0.2069	0	0	15.4	0.00000	0.00000	0.000000	0.000000	3.4	4E-11	0.00000	0.00070			
		1st Quartile	0.00028	0.00022	0.013	0.0051	48	<0.000010	<0.0000050	<0.00050	0.00035	0.043	0.00605	0.0754	0.02275	<0.0000020	<0.0000020	131	<0.0010	<0.0010	<0.00020	<0.00020	130	<0.0050	<0.0050	0.0031			
		Median	0.00029	0.00024	0.0144	0.0107	48.4	<0.000010	<0.0000050	<0.00050	0.00041	0.05	0.01180	0.174	0.0506	<0.0000020	<0.0000020	134	<0.0010	<0.0010	<0.00020	<0.00020	132.0	<0.0050	<0.0050	0.0033			
		3rd Quartile	0.0003	0.00026	0.0201	0.0176	49.9	<0.000010	<0.0000050	0.00058	0.00046	0.06	0.02400	0.4845	0.361	<0.0000002	<0.0000002	143.5	<0.0010	<0.0010	<0.00020	<0.00020	132.5	<0.0050	<0.0050	0.004			
LLO	Long Lake Outlet	Average	0.00045	0.00043	0.0383	0.0241	29.1	0.0000056	0.00000250	0.000458	0.00051	0.0680	0.0397	0.0075	0.00198	0.00000149	0.00000165	64.7	0.0005	0.00050	0.000100	0.000100	57	0.00250	0.00250	0.00401	0.00530		
E219412		Count	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	52	15	15	7	2		
		Minimum	0.00034	0.0003	0.0088	0.0046	15	<0.000010	<0.0000050	<0.00050	<0.00020	0.015	0.0116	0.0033	<0.0010	<0.0000002	<0.0000002	18.3	<0.0010	<0.0010	<0.00020	<0.00020	10.7	<0.0050	<0.0050	<0.0020	0.0027		
		Maximum	0.00057	0.00057	0.102	0.0568	38.6	0.000014	<0.0000050	0.001	0.00108	0.158	0.087	0.0152	0.0052	0.0000047	0.0000006	91.1	<0.0010	<0.0010	<0.00020	<0.00020	101	<0.0050	<0.0050	0.007	0.0079		
		Geometric Mean	0.00044	0.00042	0.0258	0.0177	27.9	0.0000054	0.0000025	0.000399	0.000443	0.055	0.0323	0.0067	0.00146	0.0000013	0.0000014	58.2	0.0005	0.00050	0.000100	0.000100	49.8	0.00250	0.00250	0.00346	0.00460		
		Count <DL	0	0	0	0	0	14	15	8	1	0	0	0	5	12	11	0	15	15	15	15	0	15	15	1	0		
		Standard Deviation	0.00007	0.00007	0.0345	0.0185	7.9	0.0000023	1E-13	0.000255	0.000272	0.046	0.0264	0.0035	0.00142	0.00000113	0.00000141	24.6	0	0.00000	0.000000	0.000000	26.2	4E-11	4E-11	0.00202	0.0037		
		1st Quartile	0.00039	0.00038	0.0113	0.0086	25.1	<0.000010	<0.0000050	<0.00050	0.00037	0.036	0.0199	0.0048	<0.0010	<0.0000020	<0.0000020	48.6	<0.0010	<0.0010	<0.00020	<0.00020	32.6	<0.0050	<0.0050	0.0028	0.004		
		Median	0.00043	0.00041	0.0209	0.016	32.9	<0.000010	<0.0000050	<0.00050	0.00042	0.043	0.0285	0.0072	0.0017	<0.0000002	<0.0000002	76.9	<0.0010	<0.0010	<0.00020	<0.00020	62.5	<0.0050	<0.0050	0.0039	0.0053		
		3rd Quartile	0.0005	0.00047	0.0712	0.04	34.2	<0.000010	<0.0000050	0.000605	0.00056	0.110	0.0635	0.0100	0.00295	<0.0000020	0.0000015	80.1	<0.0010	<0.0010	<0.00020	<0.00020	77.5	<0.0050	<0.0050	0.0053	0.0066		
WB	Middle Quinsam Lake Outlet	Average	0.00021	0.00021	0.0265	0.0202	30.9	0.000005	0.00000323	0.000641	0.00066	0.049	0.0265	0.0072	0.00185	0.0000013	0.0000011	35.3	0.00050	0.00050	0.000100	0.000100	28.6	0.00250	0.00250	0.00320			
E0900504		Count	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	4			
		Minimum	0.0001	0.00014	0.0137	0.0129	22.3	<0.000010	<0.0000050	<0.00050	0.00045	0.023	0.0114	0.0038	<0.0010	<0.0000002	<0.0000002	27.6	<0.0010	<0.0010	<0.00020	<0.00020	17.7	<0.0050	<0.0050	0.0021			
		Maximum	0.00037	0.00025	0.0506	0.0385	35.7	<0.000010	0.00001	0.00135	0.00147	0.099	0.0568	0.0103	0.0071	0.0000048	0.0000022	44.7	<0.0010	<0.0010	<0.00020	<0.00020	40.4	<0.0050	<0.0050	0.005			
		Geometric Mean	0.0002	0.000210	0.0237	0.019	30.7	0.000005	0.00000291	0.000591	0.00062	0.045	0.0241	0.007	0.00122	0.00000111	0.00000105	35.1	0.00050	0.00050	0.000100	0.000100	27.9	0.00250	0.00250	0.00310			
		Count <DL	0	0	0	0	0	15	13	2	0	0	0	0	7	14	14	0	15	15	15	15	0	15	15	0			
		Standard Deviation	0.00007	0.00004	0.0136	0.0078	3.8	1E-13	0.00000208	0.000267	0.00027	0.0230	0.013	0.0019	0.00182	0.00000098	0.00000031	4.3	0.00000	0.00000	0.000000	0.000000	6.3	4E-11	4E-11	0.0013			
		1st Quartile	0.00016	0.00018	0.0169	0.0152	30.4	<0.000010	<0.0000050	0.000535	0.00052	0.034	0.0174	0.0058	<0.0010	<0.0000020	<0.0000020	32.6	<0.0010	<0.0010	<0.00020	<0.00020	24.4	<0.0050	<0.0050	0.0025			
		Median	0.0002	0.000220	0.0182	0.0177	31.5	<0.000010	<0.0000050	0.00057	0.00054	0.044	0.0245	0.0075	0.0014	<0.0000020	<0.0000020	34.6	<0.0010	<0.0010	<0.00020	<0.00020	28.9	<0.0050	<0.0050	0.0029			
		3rd Quartile	0.00026	0.000240	0.0382	0.0227	33.5	<0.000010	<0.0000050	0.00073	0.00068	0.056	0.0286	0.0087	0.00285	<0.0000002	<0.0000020	38.5	<0.0010	<0.0010	<0.00020	<0.00020	31.4	<0.0050	<0.0050	0.0036			
			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	mg/L
75SD	Settling Pond at 75- Discharge to Stream 1 -75	Average	0.00251	0.00204	0.1667	0.00909	141.8	0.0000064	0.00000368	0.00161	0.001	0.248	0.01791	0.0834	0.05288	0.00000119	0.000001	147	0.00059	0.0005	0.0001	0.0001	15.82	0.0025	0.0025				
E292069		Count	17	17	17	17	17	17	17	17	17	17	17	17	17	16	17	17	17	17	17	17	17	17	17				
		Minimum	0.00063	0.00029	0.0228	<0.0030	50.7	<0.000010	<0.0000050	0.00055	0.00043	0.057	<0.0050	0.01	<0.0010	<0.0000020	<0.0000020	63.5	<0.0010	<0.0010	<0.00020	<0.00020	8.22	<0.0050	<0.0050				
		Maximum	0.0112	0.01	1.03	0.0298	219	0.000019	0.000009	0.00511	0.00347	1.37	0.085	0.479	0.423	0.0000029	<0.0000020	230	0.002	<0.0010	<0.00020	<0.00020	31	<0.0050	<0.0050				
		Geometric Mean	0.0016	0.00114	0.0823	0.00501	130.5	0.00000590	0.00000322	0.00128	0.00084	0.154	0.00975	0.0570	0.01442	0.00000112	0.000001	138.1	0.00054	0.0005	0.000100	0.000100	14.94	0.0025	0.00250				
		Count <DL	0	0	0	6	0	14	13	0	0	0	4	0	2	14	17	0	16	17	17	17	0	17	17				
		Standard Deviation	0.00284	0.00261	0.2564	0.01005	51.3	0.0000036	0.00000231	0.00127	0.00075	0.326	0.02177	0.1071	0.1006	0.00000054	0	49.7	0.00036	0	0	0.000000	5.7	4E-11	0.00000				
		1st Quartile	0.0007	0.0006	0.0443	<0.0030	114	<0.000010	<0.0000050	0.00077	0.0006	0.088	0.005	0.0382	0.0035	<0.0000020	<0.0000020	108.0	<0.0010	<0.0010	<0.00020	<0.00020	11.2	<0.0050	<0.0050				
		Median	0.0012	0.00073	0.0596	0.0046	154	<0.000010	<0.0000050	0.00105	0.00066	0.115	0.0073	0.054	0.024	<0.0000020	<0.0000020	155	<0.0010	<0.0010	<0.00020	<0.00020	15.7	<0.0050	<0.0050				
		3rd Quartile	0.00271	0.0023	0.194	0.0135	174	<0.000010	<0.0000050	0.00176	0.00114	0.293	0.0247	0.0784	0.0482	<0.0000020	<0.0000020	181.0	<0.0010	<0.0010	<0.00020	<0.00020	19.7	<0.0050	<0.0050				
75	Stream 1-75 discharge to LWO	Average	0.000099	0.000086	0.0489	0.038	15.4	0.000005	0.00000329	0.000409	0.00039	0.0172	0.00975	0.0006	0.00054	0.00000109	0.00000146	16.5	0.00050	0.00050	0.000100	0.000100	2.990	0.00278	0.00250				
E292109		Count	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14				
		Minimum	<0.00010	<0.00010	0.0163	0.0177	10.3	<0.000010	<0.0000050	<0.00050	<0.00020	<0.010	<0.0050	<0.0010	<0.0010	<0.0000020	<0.0000020	12.1	<0.0010	<0.0010	<0.00020	<0.00020	1.26	<0.0050	<0.0050				
		Maximum	0.00018	0.00023	0.13	0.0776	26.8	<0.000010	0.00001	0.00112	0.00062	0.075	0.037	0.0014	0.0011	0.0000022	0.0000046	24.3	<0.0010	<0.0010	<0.00020	<0.00020	4.37	0.0064	<0.0050				
		Geometric Mean	0.00009	0.000073	0.0403	0.034	14.9	0.000005	0.00000294	0.000355	0.000349	0.0104	0.00589	0.00057	0.00053	0.00000106	0.00000127	16.1	0.00050	0.00050	0.000100	0.000100	2.87	0.00267	0.00250				
		Count <DL	5	9	0	0	0	14	12	9	2	8	6	12	13	13	11	0	14	14	14	14	0	13	14				
		Standard Deviation	0.000042	0.000057	0.034	0.0195	4.2	1E-13	0.00000215	0.00026	0.000164	0.0206	0.01134	0.00027	0.00016	0.00000032	0.00000104	3.7	0.00000	0.00000	0.000000	0.000000	0.8	0.00104	1E-10				
		1st Quartile	<0.00010	<0.00010	0.0257	0.0234	13.3	<0.000010	<0.0000050	<0.00050	0.00032	<0.010	<0.0050	<0.0010	<0.0010	<0.0000020	<0.0000020	13.8	<0.0010	<0.0010	<0.00020	<0.00020	2.48	<0.0050	<0.0050				
		Median	0.00011	<0.00010	0.0359	0.0326	14.3	<0.000010	<0.0000050	<0.00050	0.00041	<0.010	0.0051	<0.0010	<0.0010	<0.0000020	<0.0000020	15.5	<0.0010	<0.0010	<0.00020	<0.00020	2.98	<0.0050	<0.0050				
		3rd Quartile	0.000127	0.000108	0.0599	0.0465	16	<0.000010	<0.0000050	0.000568	0.000492	0.0172	0.01052	<0.0010	<0.0010	<0.0000020	<0.0000020	17.8	<0.0010	<0.0010	<0.00020	<0.00020	3.59	<0.0050	<0.0050				
QU0813A	Ex-situ 7-South groundwater well down gradient of the CCR backfill towards QR (No. 4 Seam)	Average	0.458	0.427	0.0178	0.00338	175.8	0.0000050	0.0000025	0.000250	0.000100	0.24	0.216	0.0492	0.0556		0.0000016		0.000500	0.000500	0.0001000	0.0001000	17.8	0.00250	0.00250		0.1480		
		Count	1	4	1	4	4	1	4	1	4	1	4	1	4		4		1	4	1	4	4	1	4		4		
		Minimum	0.458	0.405	0.0178	<0.0030	169	<0.000010	<0.0000050	<0.00050	<0.00020	0.24	0.205	0.0492	0.0431		<0.0000020		<0.0010	<0.0010	<0.00020	<0.00020	17	<0.0050	<0.0050		0.0931		
		Maximum	0.458	0.447	0.0178	0.0057	180	<0.000010	<0.0000050	<0.00050	<0.00020	0.24	0.222	0.0492	0.0813		0.0000034		<0.0010	<0.0010	<0.00020	<0.00020	19.2	<0.0050	<0.0050		0.174		
		Geometric Mean	0.458	0.426	0.0178	0.0028	175.7	0.0000050	0.0000025	0.00025	0.000100	0.24	0.216	0.0492	0.0538		0.0000014		0.000500	0.000500	0.0001000	0.0001000	17.8	0.0025	0.00250		0.1437		
		Count <DL	0	0	0	2	0	1	4	1	4	0	0	0	0		3		1	4	1	4	0	1	4		0		
		Standard Deviation	0	0.017	0	0.0022	5.0	0.0000000	0	0	0.000000	0.000	0.008	0	0.0175		0.0000012		0.000000	0.000000	0.0000000	0.0000000	1	0	0.00000		0.0375		
		1st Quartile	0.458	0.42	0.0178	<0.0030	173.5	<0.000010	<0.0000050	<0.00050	<0.00020	0.24	0.213	0.0492	0.0452		<0.0000020		<0.0010	<0.0010	<0.00020	<0.00020	17.2	<0.0050	<0.0050		0.1395		
		Median	0.458	0.427	0.0178	0.00315	177	<0.000010	<0.0000050	<0.00050	<0.00020	0.24	0.218	0.0492	0.049		<0.0000020		<0.0010	<0.0010	<0.00020	<0.00020	17.4	<0.0050	<0.0050		0.1625		
		3rd Quartile	0.458	0.434	0.0178	0.0050	179.2	<0.000010	<0.0000050	<0.00050	<0.00020	0.24	0.221	0.0492	0.0594		0.0000016		<0.0010	<0.0010	<0.00020	<0.00020	18.1	<0.0050	<0.0050		0.171		
QU0813B	Ex-situ 7-South groundwater well down gradient of the CCR backfill towards QR (Till & SST contact)	Average	0.519	0.497	0.248	0.0124	127.5	0.0000050	0.0000079	0.00086	0.000100	0.411	0.143	0.084	0.0832		0.0000056		0.0005	0.005000	0.0001	0.0001000	9.39	0.0025	0.00512		0.2370		
		Count	1	4	1	4	4	1	4	1	4	1	4	1	4		4		1	4	1	4	4	1	4		4		
		Minimum	0.519	0.469	0.248	0.0073	124	<0.000010	<0.0000050	0.00086	<0.00020	0.411	0.109	0.084	0.0749		0.0000021		<0.0010	<0.0010	<0.00020	<0.00020	9.05	<0.0050	<0.0050		0.213		
		Maximum	0.519	0.528	0.248	0.0201	131	<0.000010	0.000024	0.00086	<0.00020	0.411	0.228	0.084	0.0888		0.0000121		<0.0010	0.0185	<0.00020	<0.00020	9.62	<0.0050	<0.0050		0.299		
		Geometric Mean	0.519	0.496	0.248	0.0114	127.5	0.0000050	0.0000044	0.00086	0.000100	0.411	0.136	0.084	0.083		0.0000044		0.0005	0.001230	0.0001	0.0001000	9.39	0.0025	0.00378		0.2350		
		Count <DL	0	0	0	0	0	1	3	0	4	0	0	0	0		0		1	3	1	4	0	1	3		0		
		Standard Deviation	0.000	0.026	0.00	0.0059	3.1	0.0000000	0.0000108	0.00000	0.000000	0.00	0.057	0.000	0.0065		0.0000045		0.00000	0.009000	0.000000	0.0000000	0.3	0.0000	0.00525		0.0410		
		1st Quartile	0.519	0.479	0.248	0.0081	125.5	<0.000010	<0.0000050	0.00086	<0.00020	0.411	0.114	0.084	0.0794		0.0000028		<0.0010	<0.0010	<0.00020	<0.00020	9.28	<0.0050	<0.0050		0.215		
		Median	0.519	0.495	0.248	0.0111	127.5	<0.000010	<0.0000050	0.00086	<0.00020	0.411	0.118	0.084	0.0844		0.000004		<0.0010	<0.0010	<0.00020	<0.00020	9.44	<0.0050	<0.0050		0.218		
		3rd Quartile	0.519	0.513	0.248	0.0154	129.5	<0.000010	0.00000788	0.00086	<0.00020	0.411	0.147	0.084	0.0882		0.0000067		<0.0010	0.005	<0.00020	<0.00020	9.56	<0.0050	0.00512		0.24		

Notes:
Factor applied to less-than results when calculating statistics: 0.5

Table 26 Statistics 2016 -2021 30 Page(s)

2016-17 Statistics Stn.Code EMS. ID	Site Name & Description	Statistics	As-T	As-D	Al-T	Al-D	Alk-T	Cd-T	Cd-D	Cu-T	Cu-D	Fe-T	Fe-D	Mn-T	Mn-D	Hg-T	Hg-D	Hard-T	Ni-T	Ni-D	Pb-T	Pb-D	SO4-D	Zn-T	Zn-D	P-T	P-D	N-NO23	N-NH3
			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	mg/L
QU0821GD	Ex-situ 2-North groundwater well down gradient of u/g tailings disposal, measures water quality & hydraulic gradients downstream of Forjan Fault (No. 4 Seam)	Average		0.158		0.0056	213.0		0.0000052		0.00013		0.934		0.1111		0.0000027			0.0005		0.0001	0.35		0.0025		0.082		
		Count		4		4	4		4		4		4		4		4			4		4	4		4		4		
		Minimum		0.111		0.0036	197		<0.0000050		<0.00020		0.303		0.0535		<0.0000020			<0.0010		<0.00020	<0.50		<0.0050		0.0579		
		Maximum		0.208		0.0084	220		0.0000133		0.00022		1.59		0.174		0.0000049			<0.0010		<0.00020	0.64		<0.0050		0.104		
		Geometric Mean		0.155		0.0053	212.8		0.0000038		0.000122		0.799		0.1023		0.0000021			0.0005		0.0001	0.316		0.0025		0.0794		
		Count <DL		0		0	0		3		3		0		0		2			4		4	3		4		0		
		Standard Deviation		0.04		0.00220	10.9		0.0000054		0.00006		0.529		0.0494		0.0000020			0		0	0.195		0.00000		0.0234		
		1st Quartile		0.143		0.004	210.5		<0.0000050		<0.00020		0.714		0.091		<0.0000020			<0.0010		<0.00020	<0.50		<0.0050		0.0639		
		Median		0.158		0.0052	217.5		<0.0000050		<0.00020		0.922		0.1085		0.00000245			<0.0010		<0.00020	<0.50		<0.0050		0.083		
		3rd Quartile		0.174		0.0067	220		0.0000052		0.00013		1.142		0.1282		0.00000415			<0.0010		<0.00020	0.35		<0.0050		0.101		
QU0821GS	Ex-situ 2-North groundwater well down gradient of u/g tailings disposal, measures water quality & hydraulic gradients downstream of Forjan Fault (No. 1 Seam)	Average		0.198		0.008	207.0		0.0000031		0.000125		0.546		0.0912		0.0000041			0.000620		0.0001250	0.512		0.00312		0.0899		
		Count		4		4	4		4		4		4		4		4			4		4	4		4		4		
		Minimum		0.153		0.0066	200		<0.0000050		<0.00020		0.314		0.0698		0.0000024			<0.0010		<0.00020	<0.50		<0.0050		0.0385		
		Maximum		0.218		0.0097	222		<0.000010		<0.00040		1.01		0.128		0.0000078			<0.0020		<0.00040	1.01		<0.010		0.154		
		Geometric Mean		0.196		0.0079	206.8		0.0000030		0.000119		0.483		0.0884		0.0000036			0.000590		0.0001190	0.43		0.00297		0.0793		
		Count <DL		0		0	0		4		4		0		0		0			4		4	2		4		0		
		Standard Deviation		0.03		0.0016	10.1		0.0000013		0.00005		0.327		0.027		0.0000025			0.000250		0.0000500	0.359		0.00125		0.0498		
		1st Quartile		0.194		0.0068	202.2		<0.0000050		<0.00020		0.316		0.0717		0.0000026			<0.0010		<0.00020	<0.50		<0.0050		0.0592		
		Median		0.21		0.0079	203		<0.0000050		<0.00020		0.43		0.0834		0.000003			<0.0010		<0.00020	0.395		<0.0050		0.0836		
		3rd Quartile		0.214		0.0092	207.8		0.00000312		0.000125		0.66		0.103		0.0000046			0.00062		0.000125	0.658		0.00312		0.1142		
QU1010D	Ex-situ 2-North deep groundwater well. Down gradient of u/g tailings disposal, measures water quality & hydraulic head downstream of 2-North workings. (No. 1 Seam / Mudstone).																												
		Average		0.0152		0.0129	92.3		0.000022		0.00085		10.2		0.433		0.0000023			0.00100		0.000430	0.25		0.0050		0.06650		
		Count		1		1	1		1		1		1		1		1			1		1	1		1		1		
		Minimum		0.0152		0.0129	92.3		0.000022		0.00085		10.2		0.433		0.0000023			<0.0020		0.00043	<0.50		<0.010		0.0665		
		Maximum		0.0152		0.0129	92.3		0.000022		0.00085		10.2		0.433		0.0000023			<0.0020		0.00043	<0.50		<0.010		0.0665		
		Geometric Mean		0.0152		0.0129	92.3		0.000022		0.00085		10.2		0.433		0.0000023			0.00100		0.000430	0.25		0.0050		0.06650		
		Count <DL		0		0	0		0		0		0		0		0			1		0	1		1		0		
		Standard Deviation		0.0000		0.0000	0		0.000000		0.00000		0.0		0.00		0.0000000			0.00000		0.000000	0.0		0.0000		0.00000		
		1st Quartile		0.0152		0.0129	92.3		0.000022		0.00085		10.2		0.433		0.0000023			<0.0020		0.00043	<0.50		<0.010		0.0665		
		Median		0.0152		0.0129	92.3		0.000022		0.00085		10.2		0.433		0.0000023			<0.0020		0.00043	<0.50		<0.010		0.0665		
		3rd Quartile		0.0152		0.0129	92.3		0.000022		0.00085		10.2		0.433		0.0000023			<0.0020		0.00043	<0.50		<0.010		0.0665		
QU1010S	Ex-situ 2-North shallow groundwater well. Down gradient of u/g tailings disposal, measures water quality & hydraulic head downstream of 2-North workings. (No. 1 Seam / Sandstone).	Average		0.133		0.0188	151.0		0.0000025		0.0001		0.351		0.0531		0.0000054			0.000500		0.0001000	49.8		0.00250		0.0686		
		Count		1		1	1		1		1		1		1		1			1		1	1		1		1		
		Minimum		0.133		0.0188	151		<0.0000050		<0.00020		0.351		0.0531		0.0000054			<0.0010		<0.00020	49.8		<0.0050		0.0686		
		Maximum		0.133		0.0188	151		<0.0000050		<0.00020		0.351		0.0531		0.0000054			<0.0010		<0.00020	49.8		<0.0050		0.0686		
		Geometric Mean		0.133		0.01880	151.0		0.0000025		0.0001		0.351		0.0531		0.0000054			0.000500		0.0001000	49.8		0.0025		0.0686		
		Count <DL		0		0	0		1		1		0		0		0			1		1	0		1		0		
		Standard Deviation		0		0	0.0		0.0000000		0		0		0		0.0000000			0.000000		0.0000000	0		0		0		
		1st Quartile		0.133		0.0188	151		<0.0000050		<0.00020		0.351		0.0531		0.0000054			<0.0010		<0.00020	49.8		<0.0050		0.0686		
		Median		0.133		0.0188	151		<0.0000050		<0.00020		0.351		0.0531		0.0000054			<0.0010		<0.00020	49.8		<0.0050		0.0686		
		3rd Quartile		0.133		0.0188	151		<0.0000050		<0.00020		0.351		0.0531		0.0000054			<0.0010		<0.00020	49.8		<0.0050		0.0686		
QU1011D	Ex-situ 2-North deep groundwater well. Measures water quality & hydraulic gradient in Forjian Fault (Fractured sandstone).	Average		0.00905		0.0215	360		0.0000025		0.0001		4.09		0.453		0.0000031			0.0005		0.0001	1.0		0.0025		0.076		
		Count		1		1	1		1		1		1		1		1			1		1	1		1		1		
		Minimum		0.00905		0.0215	360		<0.0000050		<0.00020		4.09		0.453		0.0000031			<0.0010		<0.00020	0.95		<0.0050		0.0764		
		Maximum		0.00905		0.0215	360		<0.0000050		<0.00020		4.09		0.453		0.0000031			<0.0010		<0.00020	0.95		<0.0050		0.0764		
		Geometric Mean		0.00905		0.0215	360		0.0000025		0.0001		4.09		0.453		0.0000031			0.0005		0.0001	1.0		0.0025		0.076		
		Count <DL		0		0	0		1		1		0		0		0			1		1	0		1		0		
		Standard Deviation		0.00000		0.0000	0		0.0000000		0.00000		0.00		0.000		0.0000000			0.00000		0.0000000	0.0		0.0000		0.000		
		1st Quartile		0.00905		0.0215	360		<0.0000050		<0.00020		4.09		0.453		0.0000031			<0.0010		<0.00020	0.95		<0.0050		0.0764		
		Median		0.00905		0.0215	360		<0.0000050		<0.00020		4.09		0.453		0.0000031			<0.0010		<0.00020	0.95		<0.0050		0.0764		
		3rd Quartile		0.00905		0.0215	360		<0.0000050		<0.00020		4.09		0.453		0.0000031			<0.0010		<0.00020	0.95		<0.0050		0.0764		
QU1011S	Ex-situ 2-North shallow groundwater well. Measures water quality & hydraulic gradient in Forjian Fault (Fractured sandstone).	Average		0.00495		0.012	106.3		0.0000025		0.000175		0.265		0.0602		0.0000055			0.0005		0.0001000	5.84		0.00250		0.0125		
		Count		2		2	2		2		2		2		2		2			2		2	2		2		2		
		Minimum		0.00169		0.0056	59.6		<0.0000050		<0.00020		0.179		0.0488		0.0000048			<0.0010		<0.00020	3.94		<0.0050		0.0055		
		Maximum		0.0082		0.0183	153		<0.0000050		0.00025		0.352		0.0716		0.0000063			<0.0010		<0.00020	7.73		<0.0050		0.0195		
		Geometric Mean		0.00372		0.0101	95.5		0.0000025		0.000158		0.251		0.0591		0.0000055			0.0005		0.0001000	5.52		0.0025		0.0104		
		Count <DL		0		0	0		2		1		0		0		0			2		2	0		2		0		
		Standard Deviation		0.0046		0.009	66		0.0000000		0.000106		0.122		0.0161		0.0000011			0		0.0000000	2.68		0		0.0099		
		1st Quartile		0.00332		0.0088	83		<0.0000050		0.000138		0.222		0.0545		0.0000052			<0.0010		<0.00020	4.89		<0.0050		0.009		
		Median		0.00494		0.0119	106.3		<0.0000050		0.000175		0.265		0.0602		0.0000055			<0.0010		<0.00020	5.84		<0.0050		0.0125		
		3rd Quartile		0.00657		0.0151	129.6		<0.0000050		0.000213		0.309		0.0659		0.0000059			<0.0010		<0.00020	6.78		<0.0050		0.016		

Notes:
Factor applied to less than results when calculating statistics: 0.5

Table 26 Statistics 2016 -2021 30 Page(s)

2016-17 Statistics Stn.Code EMS. ID	Site Name & Description	Statistics	As-T	As-D	Al-T	Al-D	Alk-T	Cd-T	Cd-D	Cu-T	Cu-D	Fe-T	Fe-D	Mn-T	Mn-D	Hg-T	Hg-D	Hard-T	Ni-T	Ni-D	Pb-T	Pb-D	SO4-D	Zn-T	Zn-D	P-T	P-D	N-NO23	N-NH3
			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	mg/L
QU1105S	Ex-situ River Barrier Pillar (RBP) shallow groundwater well. Monitors water quality & gradients above the RBP & 2-North Mine. (Sandstone)	Average		0.0716		0.00562	207.8		0.0000033		0.000178		1.395		0.176		0.0000049			0.000500		0.0001000	92.9		0.00250		0.030		
		Count		4		4	4		4		4		4		4		4			4		4	4		4		4		
		Minimum		0.0362		<0.0030	82.8		<0.0000050		<0.00020		0.358		0.0988		0.0000024			<0.0010		<0.00020	42.3		<0.0050		0.0126		
		Maximum		0.103		0.0083	329		0.0000055		0.00027		2.46		0.254		0.0000108			<0.0010		<0.00020	156		<0.0050		0.0479		
		Geometric Mean		0.065		0.00472	170.7		0.0000030		0.000160		1.038		0.1629		0.0000040			0.000500		0.0001000	80.4		0.00250		0.027		
		Count <DL		0		1	0		3		2		0		0		0			4		4	0		4		0		
		Standard Deviation		0.0344		0.00295	136.6		0.0000015		0.000090		1.063		0.0765		0.0000040			0.000000		0.0000000	54.7		0.00000		0.015		
		1st Quartile		0.0452		0.00465	93.1		<0.0000050		<0.00020		0.549		0.117		0.000003			<0.0010		<0.00020	49.8		<0.0050		0.0222		
		Median		0.0737		0.00635	209.8		<0.0000050		0.00017		1.382		0.1755		0.0000032			<0.0010		<0.00020	86.6		<0.0050		0.0298		
		3rd Quartile		0.1001		0.00732	324.5		0.00000325		0.000248		2.228		0.2345		0.0000051			<0.0010		<0.00020	129.8		<0.0050		0.0377		
QU1109S	Ex-situ River Barrier Pillar (RBP) shallow groundwater well. Monitors water quality & gradients above the RBP & 2-North Mine. (Sandstone)	Average		0.077		0.006	512		0.0000054		0.0001		0.2270		0.0217		0.0000015			0.0005		0.0001	477		0.0025		0.029		
		Count		4		4	4		4		4		4		4		4			4		4	4		4		4		
		Minimum		0.067		0.0045	458		<0.0000050		<0.00020		0.171		0.0193		<0.0000020			<0.0010		<0.00020	435		<0.0050		<0.0020		
		Maximum		0.095		0.0097	554		0.000014		<0.00020		0.292		0.0233		0.0000028			<0.0010		<0.00020	540		<0.0050		0.0469		
		Geometric Mean		0.076		0.0057	510.5		0.0000039		0.0001		0.2220		0.0216		0.0000013			0.0005		0.0001	475		0.0025		0.015		
		Count <DL		0		0	0		3		4		0		0		3			4		4	0		4		1		
		Standard Deviation		0.013		0.0025	45.1		0.0000058		0.00000		0.0560		0.00170		0.0000009			0.00000		0.000000	50.0		0.0000		0.020		
		1st Quartile		0.068		0.0046	483.5		<0.0000050		<0.00020		0.186		0.0213		<0.0000020			<0.0010		<0.00020	436		<0.0050		0.02635		
		Median		0.072		0.0048	518		<0.0000050		<0.00020		0.223		0.0221		<0.0000020			<0.0010		<0.00020	467		<0.0050		0.03485		
		3rd Quartile		0.082		0.0062	546.5		0.00000538		<0.00020		0.264		0.0225		0.00000145			<0.0010		<0.00020	508		<0.0050		0.0379		
7SQR	7-South Quinsam River downstream of 7-South Mining Operation	Average	0.0008	0.00058	0.0419	0.0212	32.2	0.0000053	0.00000332	0.000781	0.00061	0.109	0.0484	0.0075	0.00245	0.00000156	0.00000109	35.9	0.00050	0.00050	0.000100	0.000100	28.9	0.0025	0.0025	0.00610			
E292113		Count	22	22	22	22	21	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	4			
		Minimum	0.00021	0.0002	0.0136	0.009	22.9	<0.000010	<0.0000050	<0.00050	0.00042	0.045	0.0211	0.0028	<0.0010	<0.000002	<0.000002	24.9	<0.0010	<0.0010	<0.00020	<0.00020	12.5	<0.0050	<0.0050	0.0038			
		Maximum	0.00558	0.00244	0.203	0.0448	37.8	0.000012	0.000012	0.00213	0.00089	0.465	0.0804	0.0359	0.0056	0.0000046	0.000003	44.4	<0.0010	<0.0010	<0.00020	<0.00020	39.3	<0.0050	<0.0050	0.0117			
		Geometric Mean	0.0005	0.00045	0.0307	0.0186	32	0.0000052	0.00000293	0.000701	0.0006	0.093	0.0459	0.0064	0.00192	0.00000129	0.00000105	35.6	0.00050	0.00050	0.000100	0.000100	28.2	0.0025	0.0025	0.00540			
		Count <DL	0	0	0	0	0	21	19	1	0	0	0	0	5	18	21	0	22	22	22	22	0	22	22	0			
		Standard Deviation	0.0013	0.00056	0.0432	0.0111	3.8	0.00000150	0.00000236	0.000432	0.00014	0.088	0.0159	0.0066	0.00142	0.00000122	0.00000043	4.8	0.00000	0.00000	0.000000	0.000000	5.7	0	0	0.0038			
		1st Quartile	0.00037	0.00033	0.0171	0.0121	29.6	<0.000010	<0.0000050	0.000552	0.00051	0.065	0.0381	0.0048	0.00142	<0.0000020	<0.0000020	33.2	<0.0010	<0.0010	<0.00020	<0.00020	25.8	<0.0050	<0.0050	0.004			
		Median	0.00042	0.00036	0.0242	0.0164	33.3	<0.000010	<0.0000050	0.00062	0.00058	0.085	0.0462	0.006	0.0028	<0.000002	<0.0000020	37	<0.0010	<0.0010	<0.00020	<0.00020	30	<0.0050	<0.0050	0.0044			
		3rd Quartile	0.00048	0.00046	0.0519	0.0292	34.8	<0.000010	<0.0000050	0.0008	0.00066	0.117	0.0554	0.0078	0.0031	<0.0000020	<0.0000020	38.8	<0.0010	<0.0010	<0.00020	<0.00020	32.60	<0.0050	<0.0050	0.0066			
LQL1	Lower Quinsam Lake 1 metre below surface	Average	0.00054	0.00051	0.0723	0.0321	29.6	0.0000075	0.00000434	0.000851	0.00070	0.133	0.0468	0.0069	0.00186	0.00000116	0.00000129	31.8	0.00091	0.00050	0.000100	0.000100	17.5	0.00250	0.00250	0.0117			
E292118		Count	16	16	16	16	4	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	3			
		Minimum	0.00032	0.00026	0.0069	0.0071	25.2	<0.000010	<0.0000050	<0.00050	0.00036	0.033	0.0161	0.0035	<0.0010	<0.0000020	<0.0000020	25.0	<0.0010	<0.0010	<0.00020	<0.00020	10.5	<0.0050	<0.0050	0.0044			
		Maximum	0.00071	0.00081	0.374	0.0813	34.3	0.000025	0.0000150	0.00195	0.00128	0.587	0.0862	0.0203	0.0053	0.0000024	0.0000028	42.3	0.0070	<0.0010	<0.00020	<0.00020	23.3	<0.0050	<0.0050	0.0220			
		Geometric Mean	0.00053	0.00049	0.0337	0.0241	29.4	0.0000063	0.00000358	0.000711	0.00066	0.092	0.0431	0.0062	0.00117	0.00000111	0.00000119	31.4	0.00059	0.00050	0.000100	0.000100	16.9	0.00250	0.00250	0.0094			
		Count <DL	0	0	0	0	0	13	11	3	0	0	0	0	8	14	13	0	15	16	16	16	0	16	16	0			
		Standard Deviation	0.00011	0.00015	0.1009	0.0245	3.7	0.0000058	0.00000343	0.000512	0.00024	0.145	0.0188	0.0040	0.00184	0.00000043	0.00000062	5.3	0.00162	0.00000	0.000000	0.000000	4.4	4E-11	4E-11	0.0092			
		1st Quartile	0.00045	0.00043	0.0118	0.0113	28.1	<0.000010	<0.0000050	0.000565	0.00049	0.052	0.0384	0.0049	<0.0010	<0.0000020	<0.0000020	28.0	<0.0010	<0.0010	<0.00020	<0.00020	14.5	<0.0050	<0.0050	0.0066			
		Median	0.00052	0.00048	0.0276	0.0244	29.4	<0.000010	<0.0000050	0.000700	0.00065	0.070	0.0435	0.0056	0.00080	<0.0000020	<0.0000020	29.6	<0.0010	<0.0010	<0.00020	<0.00020	16.8	<0.0050	<0.0050	0.0087			
		3rd Quartile	0.00064	0.00063	0.0888	0.0457	30.9	<0.000010	0.0000060	0.000990	0.00085	0.144	0.0516	0.0082	0.0034	<0.0000020	<0.0000020	36.1	<0.0010	<0.0010	<0.00020	<0.00020	21.8	<0.0050	<0.0050	0.0154			
LQL8	LQL8 1 metre from Bottom	Average	0.00119	0.00066	0.0840	0.0331	29.0	0.0000110	0.00000612	0.00100	0.00072	0.684	0.1917	0.2085	0.1350	0.00000107	0.00000134	29.1	0.00050	0.00050	0.000100	0.000100	12.8	0.00321	0.00250	0.0131			
E292118		Count	16	16	16	16	4	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	3			
		Minimum	0.00038	0.00028	0.0259	0.0095	26.7	<0.000010	<0.0000050	0.00062	0.00042	0.102	0.0461	0.0072	0.0016	<0.0000020	<0.0000020	24.5	<0.0010	<0.0010	<0.00020	<0.00020	10.3	<0.0050	<0.0050	0.0042			
		Maximum	0.00271	0.00128	0.437	0.0813	33.6	0.000026	0.0000120	0.00211	0.00119	2.36	0.498	0.689	0.392	0.0000021	0.0000027	34.0	<0.0010	<0.0010	<0.00020	<0.00020	15.2	0.0139	<0.0050	0.0267			
		Geometric Mean	0.00096	0.00061	0.0518	0.0265	28.9	0.0000090	0.00000543	0.00092	0.00069	0.396	0.1405	0.0650	0.0369	0.00000105	0.00000124	29.0	0.00050	0.00050	0.000100	0.000100	12.7	0.00278	0.00250	0.0098			
		Count <DL	0	0	0	0	0	8	4	0	0	0	0	0	0	15	12	0	16	16	16	16	0	15	16	0			
		Standard Deviation	0.00081	0.00028	0.1115	0.0237	3.1	0.0000072	0.00000287	0.00045	0.00021	0.693	0.1533	0.2557	0.1599	0.0000027	0.00000063	3.0	0.00000	0.00000	0.000000	0.000000	1.4	0.00285	4E-11	0.0120			
		1st Quartile	0.00060	0.00050	0.0290	0.0168	27.4	<0.000010	0.00000438	0.00066	0.00058	0.150	0.0789	0.0173	0.0054	<0.0000020	<0.0000020	27.3	<0.0010	<0.0010	<0.00020	<0.00020	12.0	<0.0050	<0.0050	0.0062			
		Median	0.00073	0.00060	0.0332	0.0230	28.0	0.0000085	0.00000590	0.00083	0.00072	0.270	0.0985	0.0438	0.0350	<0.0000020	<0.000002	27.8	<0.0010	<0.0010	<0.00020	<0.00020	12.7	<0.0050	<0.0050	0.0083			
		3rd Quartile	0.00193	0.00078	0.0752	0.0478	29.6	0.0000138	0.00000810	0.00120	0.00083	1.168	0.3492	0.4218	0.3062	<0.0000020	0.00000127	32.0	<0.0010	<0.0010	<0.00020	<0.00020	13.6	<0.0050	<0.0050	0.0175			

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 26 Statistics 2016 -2021 30 Page(s)

2017 -18 Statistics Stn.Code EMS. ID	Site Name & Description	Statistics	As-T	As-D	Al-T	Al-D	Alk-T	Cd-T	Cd-D	Cu-T	Cu-D	Fe-T	Fe-D	Mn-T	Mn-D	Hg-T	Hg-D	Hard-T	Ni-T	Ni-D	Pb-T	Pb-D	SO4-D	Zn-T	Zn-D	P-T	P-D	N-NO23	N-NH3
WA			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	mg/L
E0126402	Quinsam River at Argonaut Road Upstream of Mining Operation.	Average	0.00011	0.000099	0.0288	0.0228	20.9	0.000005	0.0000025	0.000687	0.00068	0.0161	0.0147	0.00114	0.00057	0.0000010	0.0000010	19.8	0.0005	0.00050	0.000100	0.000100	0.916	0.00250	0.0025				
		Count	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16				
		Minimum	<0.00010	<0.00010	0.0174	0.0148	16.9	<0.000010	<0.0000050	<0.00050	0.00055	<0.010	0.0076	<0.0010	<0.0010	<0.0000020	<0.0000020	17	<0.0010	<0.0010	<0.00020	<0.00020	<0.50	<0.0050	<0.0050				
		Maximum	0.0002	0.00017	0.0885	0.0359	23.9	<0.000010	<0.0000050	0.00101	0.001	0.023	0.0308	0.0021	0.0011	<0.0000020	<0.0000020	22.1	<0.0010	<0.0010	<0.00020	<0.00020	1.43	<0.0050	<0.0050				
		Geometric Mean	0.000101	0.00009	0.0262	0.0222	20.8	0.000005	0.0000025	0.00066	0.00067	0.0153	0.0139	0.00101	0.00055	0.000001	0.000001	19.8	0.0005	0.00050	0.000100	0.000100	0.795	0.00250	0.0025				
		Count <DL	4	6	0	0	0	16	16	1	0	1	0	5	14	16	16	0	16	16	16	16	6	16	16				
		Standard Deviation	0.000041	0.000041	0.0171	0.0059	2.2	1E-14	4E-15	0.000182	0.00013	0.0046	0.0057	0.00051	0.00019	0	0	1.5	0	0.00000	0.000000	0.000000	0.424	4E-11	4E-11				
		1st Quartile	0.000095	<0.00010	0.0202	0.0186	20.2	<0.000010	<0.0000050	0.000625	0.00061	0.014	0.0109	<0.0010	<0.0010	<0.0000020	<0.0000020	18.8	<0.0010	<0.0010	<0.00020	<0.00020	<1.0	<0.0050	<0.0050				
		Median	0.00012	0.00011	0.0245	0.0221	21.2	<0.000010	<0.0000050	0.00066	0.00062	0.017	0.0138	0.0012	<0.0010	<0.0000020	<0.0000020	20	<0.0010	<0.0010	<0.00020	<0.00020	1.05	<0.0050	<0.0050				
		3rd Quartile	0.00013	0.00013	0.0293	0.0264	22.7	<0.000010	<0.0000050	0.000762	0.00072	0.0185	0.0159	0.00143	<0.0010	<0.0000020	<0.0000020	21.1	<0.0010	<0.0010	<0.00020	<0.00020	1.275	<0.0050	<0.0050				
WD		Average	0.00234	0.00146	0.03103	0.00926	369	0.0000257	0.00001214	0.00132	0.00061	0.502	0.01539	0.1064	0.0948	0.000001	0.000001	317	0.004	0.00378	0.000200	0.000250	506	0.00558	0.00668				
E207409	Settling Pond #4	Count	8	8	8	8	15	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	52	8	8				
		Minimum	0.0014	0.00097	<0.015	0.0055	321	<0.000010	<0.0000050	0.00061	0.00041	0.166	0.0072	0.0376	0.0314	<0.0000020	<0.0000020	222	<0.0010	<0.0010	<0.00020	<0.00020	229	<0.0050	<0.0050				
		Maximum	0.00305	0.00226	0.14	0.0174	453	0.000068	0.0000271	0.00386	0.00088	1.17	0.0519	0.191	0.167	<0.0000020	<0.0000020	451	0.0117	0.0099	<0.0010	<0.0010	822	<0.025	<0.025				
		Geometric Mean	0.00225	0.0014	0.01864	0.00878	366	0.0000204	0.0000099	0.001094	0.000592	0.427	0.01216	0.0911	0.0781	0.000001	0.000001	310	0.0027	0.0027	0.000150	0.000183	490	0.00426	0.00509				
		Count <DL	0	0	2	3	0	3	4	2	3	0	3	0	0	8	8	0	3	4	8	8	0	7	7				
		Standard Deviation	0.00065	0.00046	0.04453	0.00359	43	0.0000191	0.00000764	0.001065	0.000179	0.315	0.01494	0.0583	0.057	1E-14	0.0000000	70	0.00386	0.00322	0.000185	0.000207	130	0.00456	0.00496				
		1st Quartile	0.00205	0.00109	0.01148	<0.015	337	0.0000163	0.00000725	0.000723	<0.0010	0.298	0.0079	0.0518	0.0408	<0.0000020	<0.0000020	273	0.00167	0.00225	<0.00020	<0.00020	425	<0.0050	<0.0050				
		Median	0.00237	0.00138	0.0155	0.00835	350	0.0000235	<0.000025	0.00107	0.000515	0.452	0.0118	0.107	0.0914	<0.0000020	<0.0000020	319	<0.0050	<0.0050	<0.00020	<0.00020	498	<0.0050	0.0042				
		3rd Quartile	0.00291	0.00171	0.02455	0.00967	398	0.0000267	0.00001363	0.001265	0.000782	0.586	<0.025	0.1442	0.1415	<0.0000020	<0.0000020	342	0.00458	0.00435	0.0002	<0.0010	545	0.00845	<0.025				
MW001D	Ex-situ 2-North deep groundwater well below the coal wash plant (Till)	Average		0.0197		0.0355	92.4		0.00000375		0.00143		0.0080		0.0082		0.0000010			0.0005		0.0001	27.4		0.0025		0.173		
		Count		2		2	1		2		2		2		2		2			2		2	2		2		2		
		Minimum		0.0189		0.0319	92.4		<0.0000050		0.00124		<0.0050		0.0029		<0.0000020			<0.0010		<0.00020	26.6		<0.0050		0.172		
		Maximum		0.0205		0.0391	92.4		0.000005		0.00161		0.0135		0.0134		<0.0000020			<0.0010		<0.00020	28.2		<0.0050		0.175		
		Geometric Mean		0.0197		0.0353	92.4		0.00000354		0.00141		0.00581		0.0062		0.0000010			0.0005		0.0001	27.4		0.0025		0.173		
		Count <DL		0		0	0		1		0		1		0		2			2		2	0		2		0		
		Standard Deviation		0.0011		0.0051	0.0		0.00000177		0.00026		0.00778		0.007400		0.0000000			0		0	1.1		1E-11		0.002		
		1st Quartile		0.0193		0.0337	92.4		0.00000313		0.00133		0.00525		0.0055		<0.0000020			<0.0010		<0.00020	27		<0.0050		0.173		
		Median		0.0197		0.0355	92.4		0.00000375		0.00143		0.0080		0.0082		<0.0000020			<0.0010		<0.00020	27.4		<0.0050		0.173		
		3rd Quartile		0.0201		0.0373	92.4		0.00000438		0.00152		0.01075		0.0108		<0.0000020			<0.0010		<0.00020	27.8		<0.0050		0.174		
MW001S	Ex-situ 2-North shallow groundwater well below the coal wash plant (Till)	Average		0.000215		0.0045	344		0.000100		0.000515		0.0605		2.53		0.0000010			0.0025		0.0003000	754		0.0075		0.00920		
		Count		2		2	1		2		2		2		2		2			2		2	1		2		2		
		Minimum		0.00018		<0.0030	344		0.000092		<0.0010		0.047		1.84		<0.0000020			<0.0050		<0.00020	754		<0.0050		0.0068		
		Maximum		<0.000050		<0.015	344		0.000107		0.00053		0.074		3.22		<0.0000020			0.0025		<0.0010	754		<0.025		0.0117		
		Geometric Mean		0.00021		0.00335	344		0.0000992		0.000515		0.059		2.4341		0.0000010			0.0025		0.0002240	754		0.00559		0.0089		
		Count <DL		1		2	0		0		1		0		2		0			1		2	0		2		0		
		Standard Deviation		0.000049		0.00424	0		0.0000106		0.000021		0.0191		0.9758		0.0000000			1E-11		0.0002830	0		0.00707		0.00350		
		1st Quartile		0.000198		0.003	344		0.0000957		0.000508		0.0537		2.185		<0.0000020			<0.0050		0.0002	754		0.005		0.00800		
		Median		0.000215		0.0045	344		0.000100		0.000515		0.0605		2.53		<0.0000020			<0.0050		0.0003	754		0.0075		0.00920		
		3rd Quartile		0.000233		0.006	344		0.000103		0.000522		0.0673		2.875		<0.0000020			<0.0050		0.0004	754		0.01		0.01050		
MW006D	Ex-situ 2-North deep groundwater well below the coal wash plant (Till)	Average		0.0299		0.0221	76.8		0.0000148		0.00294		0.0025		0.0016		0.0000010			0.000500		0.0001000	16.2		0.00400		0.164		
		Count		2		2	2		2		2		2		2		2			2		2	2		2		2		
		Minimum		0.0296		0.0189	72.8		<0.0000050		0.00073		<0.0050		0.0014		<0.0000020			<0.0010		<0.00020	12.9		<0.0050		0.156		
		Maximum		0.0301		0.0254	80.9		0.000027		0.00516		<0.0050		0.0019		<0.0000020			<0.0010		<0.00020	19.5		0.0055		0.173		
		Geometric Mean		0.0298		0.0219	76.7		0.0000082		0.00194		0.0025		0.0016		0.0000010			0.000500		0.0001000	15.9		0.00371		0.164		
		Count <DL		0		0	0		1		0		2		2		2			2		2	0		1		0		
		Standard Deviation		0.0004		0.0046	5.7		0.0000173		0.00313		1E-11		0.0004		0.0000000			0.000000		0.0000000	4.7		0.00212		0.012		
		1st Quartile		0.0297		0.0205	74.8		0.00000862		0.00184		<0.0050		0.0015		<0.0000020			<0.0010		<0.00020	14.6		0.00325		0.16		
		Median		0.0299		0.0221	76.8		0.00001475		0.00294		<0.0050		0.0016		<0.0000020			<0.0010		<0.00020	16.2		0.00400		0.164		
		3rd Quartile		0.03		0.0238	78.9		0.00002087		0.00405		<0.0050		0.0018		<0.0000020			<0.0010		<0.00020	17.9		0.00475		0.169		
MW006S	Ex-situ 2-North shallow groundwater well below the coal wash plant (Till)	Average		0.00153		0.00450	167.0		0.00006		0.00153		0.0050		0.0469		0.0000010			0.0005		0.0001	553.5		0.00250		0.0544		
		Count		2		2	2		2		2		2		2		2			2		2	2		2		2		
		Minimum		0.00151		0.0036	165		0.000027		0.0011		<0.0050		0.03		<0.0000020			<0.0010		<0.00020	533		<0.0050		0.0543		
		Maximum		0.00155		0.0054	169		0.000093		0.00197		0.0075		0.0639		<0.0000020			<0.0010		<0.00020	574		<0.0050		0.055		
		Geometric Mean		0.00153		0.0044	167.0		0.0000501		0.00147		0.00433		0.0438		0.0000010			0.00050		0.0001000	553.1		0.0025		0.0544		
		Count <DL		0		0	0		0		0		1		0		2			2		2	0		2		0		
		Standard Deviation		0.00003		0.0013	2.8		0.000047		0.000620		0.00354		0.024		0.0000000			0		0.0000000	29		1E-11		0.0002		
		1st Quartile		0.00152		0.00400	166		0.0000435		0.00132		0.00375		0.0385		<0.0000020			<0.0010		<0.00020	543.2		<0.0050		0.0544		
		Median		0.00153		0.00450	167		0.00006		0.00153		0.0050		0.0469		<0.0000020			<0.0010		<0.00020	553.5		<0.0050		0.0544		
		3rd Quartile		0.00154		0.00500	168		0.0000765		0.00175		0.00625		0.0554		<0.0000020			<0.0010		<0.00020	563.8		<0.0050		0.0545		
WC		Average	0.0008	0.00065	0.01811	0.01128	381.5	0.0000288	0.00000589	0.000874	0.000609	0.083	0.01293	0.0207	0.01798	0.00000116	0.000001	287	0.00229	0.002	0.000200	0.000213	514	0.00500	0.00531				
E207411	2-North Pit Culvert discharge into Middle Quinsam Lake	Count	8	8	8	8	2	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	12	8	8				
		Minimum	0.00047	0.00039	<0.015	0.0061	353	<0.000010	<0.0000050	<0.00050	0.00044	0.034	<0.010	0.0096	<0.0010	<0.0000020	<0.0000020	198	<0.0010	<0.0010	<0.00020	<0.00020	381	<0.0050	<0.0050				
		Maximum	0.00127	0.00121	0.0662	0.0272	410	0.000081	<0.000025	0.00149	0.00141	0.181	0.0297	0.0543	0.0472	0.0000023	<0.0000020	379	0.0058	0.0052	<0.0010	<0.0010	757	<0.025	<0.025				
		Geometric Mean	0.00076	0.00062	0.01334	0.0098	380.4	0.000015	0.00000464	0.00072	0.000562	0.0740	0.01103	0.0174	0.01111	0.00000111	0.000001	282	0.00183	0.0015	0.000150	0.000163	501	0.00374	0.00408				
		Count <DL	0	0	2	2	0	6	7	4	2	0	3	0	1	7	8	0	3	5	8	8	0	8	8				
		Standard Deviation	0.00028	0.00025	0.01983	0.00738	40.3	0.0000328	0.0000044	0.000488	0.000326	0.046	0.0083	0.0149	0.0145	0.00000046	1E-14	57	0.00163	0.00157	0.000185	0.000181	131	0.00463	0.00452				
		1st Quartile	0.00058	0.00054	0.00765	0.00728	367.2	<0.000010	<0.0000050	0.000505	0.000480	0.059	0.00750	0.0117	0.00985	<0.0000020	<0.0000020	254	0.00122	0.00088	<0.00020	<0.00020	434	<0.0050	<0.0050				
		Median	0.00073	0.0006	0.0118	0.0080	381.5	0.000015	0.00000375	0.000955	<0.0010	0.07	0.0106	0.0149	0.0129	<0.0000020	<0.0000020	289	0.0022	0.00185	<0.00020	<0.00020	471	<0.0050	<0.0050				
		3rd Quartile	0.00098	0.00066	0.01473	0.01135	395.8	0.0000385	0.00000845	<0.0025	0.000535	0.0850	0.01448	0.0234	0.02465	<0.0000020	<0.0000020	320	0.00258	0.00252	0.0002	0.000275	538	0.005	0.00688				
MQL1	Middle Quinsam Lake 1 metre below surface	Average	0.00017	0.0001600	0.0185	0.0162	40.6	0.000005	0.00000273	0.0007	0.00111	0.036	0.0211	0.0054	0.00091	0.000001	0.00000100	35.5	0.0005	0.0005	0.0001	0.0001	32.2	0.00306	0.0025	0.0029			
EZ06618		Count	15	15	15	15	8	15	15	15	15	15	15	15	15	14	14	15	15	15	15	15	15	15	15	6			
		Minimum	0.00011	0.0001	0.0103	0.0076	34.4	<0.000010	<0.0000050	0.00051	0.0004	0.025	0.0141	0.0014	<0.0010	<0.0000020	<0.0000020	31.9	<0.0010	<0.0010	<0.00020	<0.00020	23.3	<0.0050	<0.0050	<0.0020			
		Maximum	0.00021	0.00022	0.0255	0.024	45.7	<0.000010	0.000006	0.00098	0.00854	0.055	0.0318	0.0069	0.0035	<0.0000020	<0.0000020	39.8	<0.0010	<0.0010	<0.00020	<0.00020	36.9	0.0109	<0.0050	0.0042			
		Geometric Mean	0.00016	0.00015	0.0179	0.0155	40.5	0.000005	0.00000265	0.00068	0.00067	0.035	0.0203	0.0051	0.00073	0.000001	0.000001	35.4	0.0005	0.0005	0.0001	0.00010000	32	0.00276	0.0025	0.00264			
		Count <DL	0	0	0	0	0	15	14	0	0	0	0	0	10	14	14	0	15	15	15	15	0	14	15	1			
		Standard Deviation	0.00004	0.00003	0.0048	0.0047	3.7	0	0.0000009	0.00016	0.00206	0.008	0.0061	0.0015	0.00081	0	0	2.1	0	0	0	0	3.8	0.00217	1E-10	0.00116			
		1st Quartile	0.00013	0.00013	0.0153	0.0129	39.4	<0.000010	<0.0000050	0.00057	0.000500	0.03	0.0168	0.0044	<0.0010	<0.0000020	<0.0000020	34.2	<0.0010	<0.0010	<0.00020	<0.00020	31	<0.0050	<0.0050	0.0025			
		Median	0.00017	0.0001700	0.0170	0.0166	40.5	<0.000010	<0.0000050	0.000620	0.00054	0.035	0.0185	0.0058	<0.0010	<0.0000020	<0.0000020	35.3	<0.0010	<0.0010	<0.00020	<0.00020	32.20	<0.0050	<0.0050	0.0029			
		3rd Quartile	0.0002	0.00018	0.0228	0.0202	42.3	<0.000010	<0.0000050	0.0008	0.00061	0.037	0.0251	0.0063	0.00115	<0.0000020	<0.0000020	36.8	<0.0010	<0.0010	<0.00020	<0.00020	35.4	<0.0050	<0.0050	0.00375			
MQL8	Middle Quinsam Lake 1 metre from bottom	Average	0.000117	0.0001	0.0123	0.0104	42.6	0.000005	0.00000267	0.000613	0.00052	0.047	0.0179	0.0176	0.01197	0.000001	0.00000100	61.0	0.0005	0.00058	0.0001	0.0001	61.5	0.003650	0.0025	0.00323			
EZ06618		Count	15	15	15	15	8	15	15	15	15	15	15	15	15	14	14	15	15	15	15	15	15	15	15	6			
		Minimum	<0.00010	<0.00010	0.0073	0.0046	38.3	<0.000010	<0.0000050	<0.00050	0.00038	0.0170	0.0079	0.0052	<0.0010	<0.0000020	<0.0000020	27.6	<0.0010	<0.0010	<0.00020	<0.00020	23.8	<0.0050	<0.0050	<0.0020			
		Maximum	0.00019	0.00016	0.0185	0.0162	45.5	<0.000010	0.000005	0.00147	0.00069	0.225	0.0347	0.0693	0.0637	<0.0000020	<0.0000020	116	<0.0010	0.0017	<0.00020	<0.00020	136	0.0197	<0.0050	0.0049			
		Geometric Mean	0.000107	0.000091	0.0117	0.0098	42.5	0.000005	0.00000262	0.000549	0.000520	0.037	0.0163	0.0133	0.00581	0.000001	0.000001	56.6	0.0005	0.00054	0.0001	0.0001	55.2	0.00287	0.0025	0.00265			
		Count <DL	3	5	0	0	0	15	14	3	0	0	0	0	1	14	14	0	15	14	15	15	0	14	15	2			
		Standard Deviation	0.00005	0.000042	0.0041	0.0035	2.3	0	0.00000065	0.000306	0.00008	0.05	0.0083	0.0167	0.01655	0	0	23.9	0	0.00031	0	0.00000000	29.4	0.00444	1E-10	0.00179			
		1st Quartile	0.0001	<0.00010	0.0081	0.00730	41.5	<0.000010	<0.0000050	0.000515	0.00047	0.028	0.0127	0.0076	0.00235	<0.0000020	<0.0000020	45.5	<0.0010	<0.0010	<0.00020	<0.00020	44.9	<0.0050	<0.0050	0.00163			
		Median	0.00011	0.0001100	0.0133	0.0107	42.9	<0.000010	<0.0000050	0.00057	0.000520	0.038	0.0141	0.0119	0.0063	<0.0000020	<0.0000020	60.8	<0.0010	<0.0010	<0.00020	<0.00020	58.4	<0.0050	<0.0050	0.00395			
		3rd Quartile	0.00015	0.000125	0.0148	0.0127	44.1	<0.000010	<0.0000050	0.00069	0.00055	0.042	0.0229	0.0204	0.01425	<0.0000020	<0.0000020	72.1	<0.0010	<0.0010	<0.00020	<0.00020	72.7	<0.0050	<0.0050	0.00455			

Notes:
Factor applied to less-than results when calculating statistics: 0.5

2017 -18 Statistics Stn.Code																												
EMS. ID	Site Name & Description	Statistics	As-T	As-D	Al-T	Al-D	Alk-T	Cd-T	Cd-D	Cu-T	Cu-D	Fe-T	Fe-D	Mn-T	Mn-D	Hg-T	Hg-D	Hard-T	Ni-T	Ni-D	Pb-T	Pb-D	SO4-D	Zn-T	Zn-D	P-T	P-D	N-NO23	N-NH3
NNL1			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	mg/L
EZ17018		Average	0.00027	0.000260	0.0294	0.0248	13.1	0.0000089	0.0000025	0.000561	0.00054	0.065	0.0418	0.00739	0.00437	0.00000109	0.000001	14.1	0.0005	0.0005	0.000126	0.0001	1.685	0.00438	0.0025	0.0051			
		Count	15	15	15	15	8	15	15	15	15	15	15	15	15	14	14	15	15	15	15	15	15	15	15	6			
		Minimum	0.00016	0.00015	0.0096	0.0092	10.3	<0.000010	<0.0000050	<0.00050	0.00032	0.028	0.0222	<0.0010	<0.0010	<0.0000020	<0.0000020	10.9	<0.0010	<0.0010	<0.00020	<0.00020	<0.50	<0.0050	<0.0050	0.0044			
		Maximum	0.00036	0.00037	0.0755	0.0511	15.2	0.000063	<0.0000050	0.0021	0.0013	0.145	0.0939	0.0285	0.0252	0.0000023	<0.0000020	17.1	<0.0010	<0.0010	0.00049	<0.00020	3.2	0.0307	<0.0050	0.0073			
		Geometric Mean	0.00026	0.00025	0.0239	0.0221	13	0.00000590	0.0000025	0.000418	0.00051	0.058	0.0363	0.00501	0.00185	0.00000106	0.00000100	14	0.0005	0.0005	0.000111	0.0001	1.453	0.00295	0.0025	0.00500			
		Count <DL	0	0	0	0	0	14	15	9	0	0	0	1	5	13	14	0	15	15	14	15	2	14	15	0			
		Standard Deviation	0.000070	0.00008	0.0188	0.0119	2.0	0.000015	0	0.000535	0.00024	0.035	0.0255	0.00788	0.00697	0.00000035	0.00000000	1.8	0	0	0.00010100	0	0.785	0.00728	1E-10	0.0011			
		1st Quartile	0.00019	0.00018	0.0113	0.0131	11.3	<0.000010	<0.0000050	<0.00050	0.00042	0.042	0.0251	0.0036	<0.0010	<0.0000020	<0.0000020	12.8	<0.0010	<0.0010	<0.00020	<0.00020	1.345	<0.0050	<0.0050	0.0045			
		Median	0.00027	0.000270	0.0300	0.0239	14.2	<0.000010	<0.0000050	<0.00050	0.00048	0.055	0.0272	0.00420	0.00180	<0.0000020	<0.0000020	14.5	<0.0010	<0.0010	<0.00020	<0.00020	1.68	<0.0050	<0.0050	0.0047			
		3rd Quartile	0.00032	0.00033	0.0386	0.0309	14.5	<0.000010	<0.0000050	0.00061	0.00063	0.076	0.0519	0.00675	0.00405	<0.0000020	<0.0000020	15.2	<0.0010	<0.0010	<0.00020	<0.00020	1.9	<0.0050	<0.0050	0.005			
NNLB		Average	0.00021	0.0002	0.0343	0.0285	11.8	0.000005	0.00000267	0.000859	0.0005	0.129	0.0855	0.0282	0.0243	0.00000109	0.00000126	15.5	0.0005	0.0005	0.0001	0.0001	4.08	0.0025	0.002500	0.00620			
EZ17018		Count	15	15	15	15	8	15	15	15	15	15	15	15	15	14	14	15	15	15	15	15	15	15	15	6			
		Minimum	0.00016	0.00015	0.0138	<0.0030	10.3	<0.000010	<0.0000050	<0.00050	0.00033	0.091	0.0507	0.0078	0.0026	<0.0000020	<0.0000020	12.6	<0.0010	<0.0010	<0.00020	<0.00020	1.7	<0.0050	<0.0050	0.0042			
		Maximum	0.00032	0.00029	0.06	0.0519	14	<0.000010	0.000005	0.00664	0.00134	0.233	0.156	0.0989	0.0984	0.0000022	0.0000034	18.3	<0.0010	<0.0010	<0.00020	<0.00020	5.13	<0.0050	<0.0050	0.0111			
		Geometric Mean	0.00021	0.000190	0.0328	0.02419	11.8	0.000005	0.00000262	0.00047	0.00046	0.124	0.0812	0.0193	0.0134	0.00000106	0.00000115	15.4	0.0005000	0.0005	0.0001	0.0001	3.93	0.0025	0.0025	0.00590			
		Count <DL	0	0	0	1	0	15	14	8	0	0	0	0	0	13	12	0	15	15	15	15	0	15	15	0			
		Standard Deviation	0.00005	0.00004	0.0104	0.01076	1.4	0	0.00000065	0.001616	0.00025	0.043	0.0311	0.0306	0.0311	0.00000032	0.00000069	1.6	0	0.0000000	0	0	1	1E-10	0.000000	0.00250			
		1st Quartile	0.00018	0.00017	0.0297	0.0274	10.6	<0.000010	<0.0000050	<0.00050	0.00038	0.097	0.0653	0.0117	0.0076	<0.0000020	<0.0000020	14.5	<0.0010	<0.0010	<0.00020	<0.00020	3.58	<0.0050	<0.0050	0.0049			
		Median	0.0002	0.00018	0.0312	0.0284	11.6	<0.000010	<0.0000050	<0.00050	0.00042	0.125	0.0791	0.0137	0.0099	<0.0000020	<0.0000020	15.3	<0.0010	<0.0010	<0.00020	<0.00020	4.4	<0.0050	<0.0050	0.0054			
		3rd Quartile	0.00023	0.00022	0.0381	0.03055	13.0	<0.000010	<0.0000050	0.000705	0.00049	0.133	0.0864	0.0226	0.0189	<0.0000020	<0.0000020	16.8	<0.0010	<0.0010	<0.00020	<0.00020	4.84	<0.0050	<0.0050	0.0063			
NNO		Average	0.00025	0.00024	0.0544	0.037	11.23	0.0000073	0.00000363	0.000625	0.00056	0.092	0.0564	0.00992	0.00658	0.0000014	0.0000012	13.17	0.0005	0.00050	0.000100	0.000100	1.633	0.00288	0.0025	0.0058	0.00519	0.0349	0.01655
EZ17017		Count	15	16	15	16	15	15	16	15	16	15	16	15	16	15	15	15	15	16	15	16	15	15	16	14	14	14	14
		Minimum	0.00017	0.00016	0.015	0.0134	6.5	<0.000010	<0.0000050	<0.00050	0.00036	0.042	0.024	<0.0010	<0.0010	<0.0000020	<0.0000020	7.87	<0.0010	<0.0010	<0.00020	<0.00020	<1.0	<0.0050	<0.0050	0.0026	<0.0020	<0.020	0.0058
		Maximum	0.0004	0.00038	0.136	0.0664	16.6	0.000039	0.0000170	0.00111	0.00075	0.205	0.0901	0.0287	0.0231	0.0000028	0.0000027	16.7	<0.0010	<0.0010	<0.00020	<0.00020	2.7	0.0082	<0.0050	0.0136	0.015	0.075	0.042
		Geometric Mean	0.00024	0.00023	0.0462	0.0340	10.95	0.0000057	0.00000298	0.000572	0.00055	0.084	0.0529	0.0069	0.00409	0.00000125	0.00000112	12.87	0.0005	0.00050	0.000100	0.000100	1.43	0.00271	0.0025	0.0053	0.00433	0.0263	0.01364
		Count <DL	0	0	0	0	0	14	14	3	0	0	0	1	1	11	13	0	15	16	15	16	3	14	16	0	1	5	7
		Standard Deviation	0.00007	0.00006	0.0352	0.015	2.58	0.0000088	0.00000367	0.000241	0.00013	0.0430	0.0203	0.00795	0.00665	0.00000063	0.00000051	2.8	0	0.00000	0.000000	0.000000	0.723	0.00147	4E-11	0.0028	0.00347	0.0249	0.01195
		1st Quartile	0.00020	0.00019	0.0341	0.0263	9.86	<0.000010	<0.0000050	0.00052	0.00044	0.063	0.0416	0.00415	0.00245	<0.0000020	<0.0000020	11.4	<0.0010	<0.0010	<0.00020	<0.00020	1.265	<0.0050	<0.0050	0.0043	0.00333	<0.020	<0.020
		Median	0.00025	0.00024	0.0432	0.0351	11.2	<0.000010	<0.0000050	0.00068	0.00055	0.081	0.0524	0.0069	0.00325	<0.0000020	<0.0000020	13.2	<0.0010	<0.0010	<0.00020	<0.00020	1.62	<0.0050	<0.0050	0.0052	0.0044	0.031	<0.020
		3rd Quartile	0.00027	0.00026	0.0625	0.0483	12.4	<0.000010	<0.0000050	0.000765	0.00068	0.119	0.0763	0.01385	0.01103	0.00000155	<0.0000020	15.6	<0.0010	<0.0010	<0.00020	<0.00020	2.08	<0.0050	<0.0050	0.0064	0.00577	0.0573	0.020
LLS		Average	0.00226	0.00163	0.0055	0.00332	213.3	0.00000670	0.00000377	0.000478	0.000324	0.69	0.30810	0.1757	0.1784	0.0000010	0.0000010	526	0.00155	0.00146	0.000133	0.000133	470	0.00333	0.00333	0.0031	0.0025	0.01	0.021
EZ92131		Count	12	12	12	12	12	12	12	12	12	12	12	12	12	11	11	12	12	12	12	12	12	12	12	3	2	1	1
		Minimum	0.00034	0.00026	<0.0030	<0.0030	161	<0.000010	<0.0000050	<0.00050	<0.00020	0.088	<0.0050	0.0343	0.0316	<0.0000020	<0.0000020	405	<0.0010	<0.0010	<0.00020	<0.00020	377	<0.0050	<0.0050	0.0026	0.0021	<0.020	0.021
		Maximum	0.00492	0.00443	0.0129	0.009	252	<0.000050	<0.000025	<0.0025	0.00084	2.05	1.5	0.357	0.358	<0.0000020	<0.0000020	677	<0.0050	<0.0050	<0.0010	<0.0010	567	<0.025	<0.025	0.0036	0.0029	<0.020	0.021
		Geometric Mean	0.00165	0.00117	0.00402	0.00257	210.7	0.0000057	0.00000314	0.000394	0.000256	0.421	0.04709	0.1367	0.1368	0.000001	0.000001	519	0.00144	0.00132	0.000114	0.000114	466	0.00286	0.00286	0.0031	0.0025	0.01	0.021
		Count <DL	0	0	5	8	0	12	11	8	5	0	2	0	0	11	11	0	2	3	12	12	0	12	12	0	0	1	0
		Standard Deviation	0.00171	0.00139	0.00415	0.00267	34	0.0000058	0.00000313	0.000349	0.00022	0.655	0.56137	0.1191	0.1226	0	0	85	0.00057	0.00061	0.000115	0.000115	60	0.00289	0.00289	0.0005	0.0006	0	0
		1st Quartile	0.00093	0.00058	<0.0030	<0.0030	189.8	<0.000010	<0.0000050	<0.00050	<0.00020	0.164	0.01375	0.077	0.0788	<0.0000020	<0.0000020	453	0.00135	0.0012	<0.00020	<0.00020	410	<0.0050	<0.0050	0.0029	0.0023	<0.020	0.021
		Median	0.00147	0.00109	0.0038	<0.0030	211.5	<0.000010	<0.0000050	<0.00050	0.000340	0.429	0.0304	0.150	0.1535	<0.0000020	<0.0000020	529	0.0014	0.0014	<0.00020	<0.00020	480	<0.0050	<0.0050	0.0031	0.0025	<0.020	0.021
		3rd Quartile	0.0037	0.00213	0.00847	0.00465	248.2	<0.000010	<0.0000050	0.000565	0.000410	1.143	0.22225	0.298	0.3155	<0.0000020	<0.0000020	555	0.00202	0.00183	<0.00020	<0.00020	496	<0.0050	<0.0050	0.0033	0.0027	<0.020	0.021
LLSM		Average	0.00226	0.00119	0.0658	0.01168	193.2	0.0000057	0.0000043	0.001088	0.000719	1.006	0.18570	0.1703	0.1634	0.000001	0.00000126	491	0.0024	0.00252	0.0001	0.000133	438	0.00312	0.0039	0.003	0.0029	0.01	0.018
EZ92131		Count	12	12	12	12	12	12	12	12	12	12	12	12	12	11	11	12	12	12	12	12	12	12	12	4	4	2	2
		Minimum	0.0004	0.00025	0.0035	<0.0030	80.4	<0.000010	<0.0000050	<0.00050	<0.00020	0.14	0.0073	0.0376	0.0369	<0.0000020	<0.0000020	304	0.0011	0.0012	<0.00020	<0.00020	288	<0.0050	<0.0050	0.0021	0.0021	<0.020	<0.020
		Maximum	0.00624	0.00258	0.527	0.03	241	0.0000130	<0.000025	0.00655	0.00319	3.63	1.1	0.35	0.296	<0.0000020	0.0000039	631	0.0079	0.008	<0.00020	<0.0010	532	0.0099	<0.025	0.0036	0.0035	<0.020	0.026
		Geometric Mean	0.00159	0.00089	0.0169	0.00847	186.2	0.0000054	0.00000344	0.000593	0.00043	0.627	0.0598	0.1342	0.1313	0.000001	0.00000113	482	0.0021	0.00218	0.000100	0.000114	432	0.0028	0.00319	0.0029	0.0028	0.01	0.0161
		Count <DL	0	0	0	2	0	11	10	5	4	0	0	0	0	11	10	0	0	1	12	12	0	11	11	0	0	2	1
		Standard Deviation	0.00173	0.00081	0.14790	0.0098	47	0.0000023	0.00000369	0.001769	0.00087	1.023	0.32000	0.1106	0.1005	0.0000000	0.0000009	94	0.0018	0.00182	0	0.000115	72	0.00214	0.00334	0.0007	0.0006	4E-11	0.0113
		1st Quartile	0.00077	0.00042	0.0056	0.00652	164.5	<0.000010	<0.0000050	<0.00050	0.000265	0.22	0.02210	0.0790	0.0842	<0.0000020	<0.0000020	445	0.0016	0.00162	<0.00020	<0.00020	400	<0.0050	<0.0050	0.0026	0.0027	<0.020	0.014
		Median	0.00269	0.00119	0.0081	<0.015	204.5	<0.000010	<0.0000050	0.000595	0.00048	0.789	0.04290	0.15	0.1430	<0.0000020	<0.0000020	490	0.0019	0.00205	<0.00020	<0.00020	441	<0.0050	<0.0050	0.0031	0.0029	<0.020	0.018
		3rd Quartile	0.00306	0.00174	0.04240	0.01348	232.8	<0.000010	0.00000313	0.000822	0.00068	1.238	0.1735	0.2662	0.2708	<0.0000020	<0.0000020	542	0.0024	0.0027	<0.00020	<0.00020	490	<0.0050	<0.0050	0.0034	0.0031	<0.020	0.022

Notes:
Factor applied to less-than results when calculating statistics: 0.5

Table 26 Statistics 2016 -2021 30 Page(s)

2017 -18 Statistics Stn.Code EMS. ID	Site Name & Description	Statistics	As-T	As-D	Al-T	Al-D	Alk-T	Cd-T	Cd-D	Cu-T	Cu-D	Fe-T	Fe-D	Mn-T	Mn-D	Hg-T	Hg-D	Hard-T	Ni-T	Ni-D	Pb-T	Pb-D	SO4-D	Zn-T	Zn-D	P-T	P-D	N-NO23	N-NH3
			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	mg/L
MW002	Ex-situ 2-3 South shallow groundwater well beside 3-South Pit (1 Seam)	Average	0.00086	0.00098	0.00695	0.0105	229.5	0.0000150	0.0000106	0.00075	0.000445	2.64	2.92	1.77	1.77	0.0000010	0.0000010	1220	0.00225	0.0024	0.000300	0.000400	1282	0.00750	0.01		0.00277		
		Count	2	4	2	4	4	2	4	2	4	2	4	2	4	1	4	2	2	4	2	4	4	2	4		4		
		Minimum	0.00074	0.00066	0.0064	0.005	209	<0.000010	0.000005	<0.00050	0.00028	2.3	2.44	1.69	1.69	<0.0000020	<0.0000020	1170	0.002	0.002	<0.00020	<0.00020	1220	<0.0050	<0.0050		<0.0020		
		Maximum	0.00097	0.00122	<0.015	0.022	249	<0.000050	<0.000025	<0.0025	<0.0010	2.98	3.42	1.85	1.95	<0.0000020	<0.0000020	1270	<0.0050	<0.0050	<0.0010	<0.0010	1360	<0.025	<0.025		0.0038		
		Geometric Mean	0.00085	0.00096	0.00693	0.00887	228.7	0.0000112	0.0000099	0.00056	0.000433	2.62	2.8992	1.77	1.767	0.0000010	0.0000010	1218	0.00224	0.0024	0.000224	0.000334	1280	0.00559	0.00836		0.00247		
		Count <DL	0	0	1	2	0	2	3	2	3	0	0	0	0	1	4	0	1	3	2	4	0	2	4		1		
		Standard Deviation	0.00016	0.00025	0.00078	0.00776	21.4	0.0000141	0.0000038	0.00071	0.00011	0.48	0.4016	0.11	0.1208	0.0000000	0.0000000	70	0.00035	0.00025	0.000283	0.000200	73	0.00707	0.005		0.00126		
		1st Quartile	0.0008	0.00086	0.00668	0.00688	212	0.00001	0.00001063	0.0005	0.000445	2.47	2.7625	1.73	1.7125	<0.0000020	<0.0000020	1195	0.0021	0.00237	0.0002	0.0004	1220	0.005	0.01000		0.00235		
		Median	0.00086	0.00103	0.00695	<0.015	230	0.000015	<0.000025	0.00075	<0.0010	2.64	2.91	1.77	1.72	<0.0000020	<0.0000020	1220	0.00225	<0.0050	0.0003	<0.0010	1275	0.0075	<0.025		0.00315		
		3rd Quartile	0.00091	0.00116	0.00722	0.01112	247.5	0.00002	<0.000025	0.001	<0.0010	2.81	3.0675	1.81	1.7775	<0.0000020	<0.0000020	1245	0.00237	<0.0050	0.0004	<0.0010	1337	0.01	<0.025		0.00358		
QU1009D	Ex-situ 4-South deep groundwater well. Down gradient of 4-South Mine. Base of Dunsmuir Member. Assesses vertical gradients & water quality down gradient of the 4-South Mine workings. Just outside of mine pool. (Below 3 Seam)	Average		0.101		0.00250	185		0.0000063		0.000550		0.655		0.1165		0.0000010			0.000500		0.0001000	83.7		0.00250		0.0265		
		Count		2		2	2		2		2		2		2		2			2		2	2		2		2		
		Minimum		0.100		<0.0030	184		<0.0000050		0.00033		0.517		0.098		<0.0000020			<0.0010		<0.00020	79		<0.0050		0.0178		
		Maximum		0.102		0.0035	186		0.00001		0.00076		0.793		0.135		<0.0000020			<0.0010		<0.00020	88.4		<0.0050		0.0352		
		Geometric Mean		0.101		0.00229	185		0.0000050		0.000500		0.6403		0.115		0.0000010			0.000500		0.0001000	83.6		0.00250		0.0250		
		Count <DL		0		1	0		1		0		0		0		2			2		2	0		2		0		
		Standard Deviation		0.001		0.00141	1.4		0.0000053		0.000300		0.1952		0.0262		0.0000000			0.000000		0.0000000	6.6		0.00000		0.0123		
		1st Quartile		0.101		0.00200	184.5		0.00000438		0.00044		0.586		0.1073		<0.0000020			<0.0010		<0.00020	81.3		<0.0050		0.0221		
		Median		0.101		0.00250	185		0.00000625		0.00055		0.655		0.1165		<0.0000020			<0.0010		<0.00020	83.7		<0.0050		0.0265		
		3rd Quartile		0.101		0.00300	185.5		0.00000813		0.00065		0.724		0.1258		<0.0000020			<0.0010		<0.00020	86.1		<0.0050		0.0309		
QU1009S	Ex-situ 4-South shallow groundwater well. Fracture zone 10 m below till. Assesses vertical gradients & water quality down gradient of the 4-South Mine workings. Just outside of mine pool. (Below 3 Seam)	Average		0.0838		0.00150	137.5		0.0000025		0.000155		5.55		0.3955		0.0000010			0.000500		0.0001000	128.0		0.00250		0.0295		
		Count		2		2	2		2		2		2		2		2			2		2	2		2		2		
		Minimum		0.0807		<0.0030	136		<0.0000050		<0.00020		5.37		0.389		<0.0000020			<0.0010		<0.00020	128		<0.0050		0.0283		
		Maximum		0.0869		<0.0030	139		<0.0000050		0.00021		5.73		0.402		<0.0000020			<0.0010		<0.00020	128		<0.0050		0.0307		
		Geometric Mean		0.0837		0.0015	137.5		0.0000025		0.000145		5.5471		0.3954		0.0000010			0.0005		0.0001000	128.0		0.00250		0.0295		
		Count <DL		0		2	0		2		1		0		0		2			2		2	0		2		0		
		Standard Deviation		0.0044		0	2.1		0.0000000		0.000078		0.2546		0.0092		0.0000000			0		0.0000000	0.0		0.00000		0.0017		
		1st Quartile		0.0822		<0.0030	136.8		<0.0000050		0.000128		5.46		0.3922		<0.0000020			<0.0010		<0.00020	128		<0.0050		0.0289		
		Median		0.0838		<0.0030	137.5		<0.0000050		0.000155		5.55		0.3955		<0.0000020			<0.0010		<0.00020	128		<0.0050		0.0295		
		3rd Quartile		0.0854		<0.0030	138.2		<0.0000050		0.000183		5.64		0.3988		<0.0000020			<0.0010		<0.00020	128		<0.0050		0.0301		
SPD																													
EZ18582	Settling Pond # 1	Average	0.00109	0.00072	0.0599	0.02083	103.30	0.0000076	0.00000538	0.000991	0.00058	0.638	0.1611	0.0668	0.05851	0.00000121	0.00000117	215	0.00136	0.00104	0.0001	0.000100	204.2	0.00250	0.0025	0.113	0.0053	0.3925	0.0396
		Count	14	14	14	14	16	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	40	14	14	12	11	8	8
		Minimum	0.00037	0.0002	0.0045	<0.0030	40.80	<0.000010	<0.0000050	<0.00050	0.0003	0.088	0.0104	0.0142	<0.0010	<0.0000020	<0.0000020	127	<0.0010	<0.0010	<0.00020	<0.00020	94.5	<0.0050	<0.0050	0.0037	0.0032	<0.020	<0.020
		Maximum	0.00282	0.00151	0.249	0.078	275.0	0.000032	0.000021	0.00219	0.00083	2.25	0.614	0.220	0.241	0.0000026	0.0000023	333	0.0031	0.0028	<0.00020	<0.00020	367	<0.0050	<0.0050	1.27	0.0098	<2.0	0.17
		Geometric Mean	0.00088	0.0006	0.0351	0.01169	91.9	0.0000062	0.00000409	0.000883	0.00056	0.411	0.1009	0.0494	0.02626	0.0000011	0.0000011	206	0.00109	0.00086	0.0001	0.000100	196.50	0.0025	0.0025	0.0113	0.00500	0.0750	0.0207
		Count <DL	0	0	0	1	0	12	8	1	0	0	0	0	2	12	12	0	5	7	14	14	0	14	14	0	0	8	5
		Standard Deviation	0.00079	0.00042	0.0641	0.0226	55.9	0.0000075	0.00000522	0.000484	0.00015	0.664	0.1674	0.0554	0.06226	0.0000005	0.00000044	64.0	0.00091	0.0007	0.000000	0.000000	55.9	1E-10	1E-10	0.3644	0.0021	0.504	0.0564
		1st Quartile	0.00049	0.00034	0.0206	0.0053	63.1	<0.000010	<0.0000050	0.000685	0.0005	0.233	0.0592	0.0281	0.0277	<0.0000020	<0.0000020	165	<0.0010	<0.0010	<0.00020	<0.00020	170.2	<0.0050	<0.0050	0.0065	0.0037	<0.020	<0.020
		Median	0.00089	0.00069	0.0423	0.009	101.2	<0.000010	<0.0000050	0.00079	0.0006	0.353	0.102	0.0563	0.04405	<0.0000020	<0.0000020	195	0.00115	0.0008	<0.00020	<0.00020	204.50	<0.0050	<0.0050	0.0076	0.0046	0.055	<0.020
		3rd Quartile	0.00128	0.00101	0.072	0.0363	121.8	<0.000010	0.00000500	0.001267	0.00064	0.772	0.1878	0.077	0.06368	<0.0000020	<0.0000020	268	0.00195	0.00127	<0.00020	<0.00020	236.2	<0.0050	<0.0050	0.01010	0.0059	<2.0	0.03930
LLE	Long Lake Entrance (LLE)	Average	0.000999	0.000814	0.06775	0.02976	72.2	0.00000790	0.00000429	0.000698	0.000586	0.49	0.2533	0.0871	0.0855	0.00000131	0.0000016	289.5	0.00079	0.00079	0.000157	0.000157	261.41	0.00393	0.00648	0.0094	0.0064	0.0502	0.04829
EZ92130		Count	14	14	14	14	13	14	14	14	14	14	14	14	14	12	12	14	14	14	14	14	48	14	14	10	5	11	11
		Minimum	0.00024	0.00018	<0.015	0.0039	22.8	<0.000010	<0.0000050	<0.00050	0.00029	0.059	0.0524	0.0107	0.0097	<0.0000020	<0.0000020	55.9	<0.0010	<0.0010	<0.00020	<0.00020	4.1	<0.0050	<0.0050	0.0033	0.0029	<0.020	<0.0050
		Maximum	0.00163	0.00136	0.203	0.0734	160	<0.000050	0.000012	<0.0025	0.00088	2.17	1.27	0.251	0.281	0.000003	0.0000042	866	<0.0050	<0.0050	<0.0010	<0.0010	906	<0.025	0.0347	0.0306	0.0093	0.154	0.2500
		Geometric Mean	0.000828	0.000681	0.0515	0.02138	60.4	0.0000063	0.00000352	0.000611	0.000559	0.325	0.1686	0.0501	0.0486	0.00000119	0.0000014	191.4	0.00063	0.00063	0.000126	0.000126	150.17	0.00315	0.00404	0.0077	0.006	0.0261	0.02019
		Count <DL	2	2	1	2	0	14	10	5	2	0	0	0	0	10	8	0	14	14	14	14	0	14	12	0	0	7	4
		Standard Deviation	0.000502	0.000408	0.05007	0.02087	44.3	0.0000073	0.00000331	0.000343	0.000179	0.583	0.3125	0.085	0.0871	0.00000072	0.00000103	296.9	0.00073	0.00073	0.000145	0.000145	281.27	0.00363	0.00889	0.0078	0.0024	0.0555	0.07722
		1st Quartile	0.000612	0.00045	0.03148	0.0085	46.6	<0.000010	<0.0000050	0.000543	0.000455	0.215	0.100	0.0192	0.0189	<0.0000020	<0.0000020	110.5	<0.0010	<0.0010	<0.00020	<0.00020	85	<0.0050	<0.0050	0.0063	0.0057	<0.020	<0.020
		Median	0.001085	0.00087	0.0622	0.0306	60.9	<0.000010	<0.0000050	0.00059	0.000565	0.323	0.144	0.0509	0.0492	<0.0000020	<0.0000020	142	<0.0010	<0.0010	<0.00020	<0.00020	125	<0.0050	<0.0050	0.0075	0.0071	<0.020	0.013
		3rd Quartile	0.001415	0.001112	0.08378	0.04108	84	<0.000010	0.00000513	0.00094	0.000732	0.359	0.2923	0.139	0.123	0.0000020	0.00000212	315.8	<0.0010	<0.0010	<0.00020	<0.00020	312.5	<0.0050	0.00513	0.00880	0.0071	0.0975	0.03200
LLM1	Long Lake Middle 1 metre below Surface	Average	0.00044	0.00043	0.0202	0.0172	32.4	0.00000500	0.0000025	0.001167	0.00041	0.051	0.031	0.0068	0.00203	0.0000001	0.0000001	82.2	0.00050	0.00050	0.000100	0.000100	69.6	0.00250	0.00250	0.00319			
EZ06619		Count	15	15	15	15	10	15	15	15	15	15	15	15	15	14	14	15	15	15	15	15	15	15	15	7			
		Minimum	0.00024	0.00023	0.0065	0.0044	14.8	<0.000010	<0.0000050	<0.00050	0.00022	0.016	0.0088	0.0011	<0.0010	<0.0000020	<0.0000020	23.6	<0.0010	<0.0010	<0.00020	<0.00020	12.6	<0.0050	<0.0050	<0.0020			
		Maximum	0.00062	0.00061	0.0503	0.0449	47.8	<0.000010	<0.0000050	0.00899	0.0007	0.109	0.0774	0.0090	0.0066	<0.0000020	<0.0000020	133	<0.0010	<0.0010	<0.00020	<0.00020	117	<0.0050	<0.0050	0.0060			
		Geometric Mean	0.00042	0.00041	0.0161	0.014	30.3	0.000005	0.0000025	0.00055	0.00038	0.042	0.0251	0.0063	0.00154	0.000001	0.000001	71.3	0.00050	0.00050	0.000100	0.000100	57.7	0.0025	0.00250	0.00264			
		Count <DL	0	0	0	0	0	15	15	7	0	0	0	0	3	14	14	0	15	15	15	15	0	15	15	2			
		Standard Deviation	0.00013	0.00014	0.0137	0.0114	11.4	0.00000000	0	0.002248	0.00015	0.032	0.0218	0.002	0.00167	0	0	39.5	0.00000	0.00000	0.000000	0.000000	36.3	1E-10	0.00000	0.00186			
		1st Quartile	0.00033	0.0003	0.0083	0.0079	26.8	<0.000010	<0.0000050	<0.00050	0.0003	0.022	0.0146	0.0059	0.00115	<0.0000020	<0.0000020	48.4	<0.0010	<0.0010	<0.00020	<0.00020	38.8	<0.0050	<0.0050	0.00205			
		Median	0.00043	0.00043	0.017	0.0125	32.7	<0.000010	<0.0000050	0.00050	0.00037	0.039	0.0261	0.0073	0.0016	<0.0000020	<0.0000020	81.8	<0.0010	<0.0010	<0.00020	<0.00020	72.2	<0.0050	<0.0050	0.0031			
		3rd Quartile	0.00056	0.00057	0.0294	0.0247	40.1	<0.000010	<0.0000050	0.000785	0.0005	0.0720	0.036	0.0083	0.00225	<0.0000020	<0.0000020	122	<0.0010	<0.0010	<0.00020	<0.00020	103.5	<0.0050	<0.0050	0.00405			

Notes:
Please disregard for Alkalinity results where calculation statistics is 0.

Table 26 Statistics 2016 -2021 30 Page(s)

2017 -18 Statistics Stn.Code EMS. ID	Site Name & Description	Statistics	As-T	As-D	Al-T	Al-D	Alk-T	Cd-T	Cd-D	Cu-T	Cu-D	Fe-T	Fe-D	Mn-T	Mn-D	Hg-T	Hg-D	Hard-T	Ni-T	Ni-D	Pb-T	Pb-D	SO4-D	Zn-T	Zn-D	P-T	P-D	N-NO23	N-NH3
			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	mg/L
LLMB	Long Lake Middle 1 metre From Bottom	Average	0.00028	0.00023	0.0125	0.009	57.6	0.00000500	0.0000025	0.004655	0.00037	0.07	0.02570	0.5811	0.5005	0.000001	0.000001	133.7	0.00050	0.00050	0.000126	0.000100	127.5	0.00250	0.00250	0.00410			
EZ06619		Count	15	15	15	15	10	15	15	15	15	15	15	15	15	15	14	14	15	15	15	15	15	15	15	7			
		Minimum	0.0002	0.00017	0.0067	0.0043	55.8	<0.000010	<0.0000050	<0.00050	0.00026	0.013	0.0081	0.0014	0.0014	<0.0000020	<0.0000020	127	<0.0010	<0.0010	<0.00020	<0.00020	122	<0.0050	<0.0050	0.0023			
		Maximum	0.00036	0.0003	0.0216	0.0155	61.7	<0.000010	<0.0000050	0.0655	0.00055	0.156	0.0742	1.63	1.45	<0.0000020	<0.0000020	143	<0.0010	<0.0010	0.00034	<0.00020	134	<0.0050	<0.0050	0.0071			
		Geometric Mean	0.00028	0.00022	0.0114	0.0082	57.6	0.000005	0.0000025	0.000421	0.00036	0.061	0.0185	0.2585	0.1299	0.000001	0.000001	133.6	0.00050	0.00050	0.000115	0.000100	127.5	0.00250	0.00250	0.00380			
		Count <DL	0	0	0	0	0	15	15	11	0	0	0	0	0	14	14	0	15	15	13	15	0	15	15	0			
		Standard Deviation	0.00005	0.00004	0.0056	0.0042	1.9	0	0	0.016833	0.00008	0.037	0.022	0.6065	0.6002	0	0	4.3	0.00000	0.00000	0.000071	0.000000	3.0	1E-10	0.00000	0.00170			
		1st Quartile	0.00024	0.00020	0.0084	0.0056	56.3	<0.000010	<0.0000050	<0.00050	0.00032	0.048	0.0097	0.1435	0.0692	<0.0000020	<0.0000020	132	<0.0010	<0.0010	<0.00020	<0.00020	126	<0.0050	<0.0050	0.003			
		Median	0.00028	0.00022	0.0088	0.0073	57.1	<0.000010	<0.0000050	<0.00050	0.00034	0.054	0.01160	0.258	0.14	<0.0000020	<0.0000020	133	<0.0010	<0.0010	<0.00020	<0.00020	127.0	<0.0050	<0.0050	0.0034			
		3rd Quartile	0.00032	0.00026	0.0188	0.0136	58.7	<0.000010	<0.0000050	0.00038	0.00041	0.097	0.04810	1.26	1.17	<0.0000020	<0.0000020	135	<0.0010	<0.0010	<0.00020	<0.00020	129.5	<0.0050	<0.0050	0.0049			
LLO	Long Lake Outlet	Average	0.00051	0.0004	0.058	0.015	36.6	0.0000054	0.00000275	0.000523	0.00042	0.1270	0.0294	0.0332	0.0048	0.00000122	0.00000109	92.3	0.0005	0.00050	0.000100	0.000100	68.5	0.00250	0.00250	0.0078	0.00540	0.0503	0.00864
EZ19412		Count	18	18	18	18	19	18	18	18	18	18	18	18	18	18	17	18	18	18	18	18	52	18	18	9	7	8	8
		Minimum	0.00027	0.00023	0.0071	0.004	20.6	<0.000010	<0.0000050	<0.00050	0.00026	0.024	0.0061	0.0047	0.0015	<0.0000020	<0.0000020	37.2	<0.0010	<0.0010	<0.00020	<0.00020	15.9	<0.0050	<0.0050	0.0032	0.0033	<0.020	<0.0050
		Maximum	0.00139	0.0006	0.287	0.054	54.9	0.000012	0.000007	0.00144	0.00098	0.643	0.084	0.279	0.0138	0.0000034	0.0000026	134	<0.0010	<0.0010	<0.00020	<0.00020	119	<0.0050	<0.0050	0.0167	0.0112	0.134	0.015
		Geometric Mean	0.00047	0.00038	0.0294	0.0107	35.2	0.0000052	0.00000265	0.000427	0.00039	0.077	0.0229	0.0147	0.0041	0.0000011	0.0000011	84.7	0.0005	0.00050	0.000100	0.000100	60.6	0.00250	0.00250	0.0069	0.00500	0.0341	0.00729
		Count <DL	0	0	0	0	0	17	17	10	0	0	0	0	0	16	16	0	18	18	18	18	0	18	18	0	0	2	5
		Standard Deviation	0.00026	0.00010	0.0813	0.0136	9.8	0.0000016	0.00000106	0.000357	0.00019	0.161	0.0232	0.0664	0.0029	0.00000065	0.00000039	34.5	0	0.00000	0.000000	0.000000	31.3	3E-11	3E-11	0.0042	0.0027	0.0454	0.00439
		1st Quartile	0.00035	0.00031	0.0132	0.0054	28.8	<0.000010	<0.0000050	<0.00050	0.00031	0.037	0.0153	0.0075	0.0031	<0.0000020	<0.0000020	55.0	<0.0010	<0.0010	<0.00020	<0.00020	42.6	<0.0050	<0.0050	0.0047	0.004	0.0205	0.00595
		Median	0.00044	0.00043	0.0261	0.0094	39.6	<0.000010	<0.0000050	<0.00050	0.00035	0.075	0.0197	0.0103	0.0043	<0.0000020	<0.0000020	107	<0.0010	<0.0010	<0.00020	<0.00020	60.5	<0.0050	<0.0050	0.0066	0.0042	0.0305	<0.020
		3rd Quartile	0.00055	0.00045	0.0523	0.022	43.5	<0.000010	<0.0000050	0.000752	0.00041	0.129	0.036	0.0165	0.0057	<0.0000020	<0.0000020	118.2	<0.0010	<0.0010	<0.00020	<0.00020	97.6	<0.0050	<0.0050	0.0095	0.0057	0.0723	0.01050
WB	Middle Quinsam Lake Outlet	Average	0.00019	0.00018	0.0184	0.0159	41.2	0.000005	0.00000294	0.000564	0.00063	0.036	0.0256	0.0068	0.0024	0.0000012	0.0000010	38.2	0.00050	0.00050	0.000100	0.000100	34.3	0.00250	0.00250	0.00430	0.00350	0.0100	0.00886
E0900504		Count	16	16	16	16	16	16	16	16	16	16	16	16	16	16	15	16	16	16	16	16	17	16	16	9	7	8	8
		Minimum	0.00013	0.00012	0.0096	0.0082	32.9	<0.000010	<0.0000050	<0.00050	0.00044	0.027	0.0187	0.0032	0.001	<0.0000020	<0.0000020	32.9	<0.0010	<0.0010	<0.00020	<0.00020	28.7	<0.0050	<0.0050	0.0031	0.0023	<0.020	<0.0050
		Maximum	0.00025	0.00022	0.0288	0.0228	45.2	<0.000010	0.000006	0.00094	0.00144	0.051	0.0387	0.0120	0.0056	0.000004	<0.0000020	61.2	<0.0010	<0.0010	<0.00020	<0.00020	54	<0.0050	<0.0050	0.0073	0.0049	<0.020	0.025
		Geometric Mean	0.00018	0.000180	0.0174	0.0151	41	0.000005	0.00000279	0.000539	0.00059	0.036	0.0252	0.0064	0.0022	0.00000109	0.000001	37.8	0.00050	0.00050	0.000100	0.000100	34	0.00250	0.00250	0.00420	0.00350	0.0100	0.0065
		Count <DL	0	0	0	0	0	16	14	2	0	0	0	0	0	15	15	0	16	16	16	16	0	16	16	0	0	8	5
		Standard Deviation	0.00003	0.00003	0.0062	0.0051	3.2	1E-14	0.0000012	0.00016	0.00027	0.0070	0.0053	0.0025	0.0011	0.00000075	0	6.8	0.00000	0.00000	0.000000	0.000000	5.8	4E-11	4E-11	0.0013	0.0009	1E-10	0.00748
		1st Quartile	0.00017	0.00015	0.012	0.0099	39.7	<0.000010	<0.0000050	0.000535	0.00050	0.032	0.0225	0.005	0.0018	<0.0000020	<0.0000020	34.6	<0.0010	<0.0010	<0.00020	<0.00020	30.8	<0.0050	<0.0050	0.0036	0.003	<0.020	<0.0050
		Median	0.00018	0.000190	0.0185	0.0172	41.8	<0.000010	<0.0000050	0.000555	0.00055	0.036	0.024	0.0063	0.0023	<0.0000020	<0.0000020	36.7	<0.0010	<0.0010	<0.00020	<0.00020	32.3	<0.0050	<0.0050	0.004	0.0037	<0.020	0.0087
		3rd Quartile	0.00021	0.000200	0.024	0.02	43	<0.000010	<0.0000050	0.000615	0.0006	0.039	0.0278	0.0085	0.0027	<0.0000020	<0.0000020	38.6	<0.0010	<0.0010	<0.00020	<0.00020	35.5	<0.0050	<0.0050	0.0044	0.004	<0.020	0.01025
75SD																													
EZ92069	Settling Pond at 75- Discharge to Stream 1 -75	Average	0.00283	0.00223	0.0893	0.00465	143.3	0.0000065	0.00000357	0.00149	0.00127	0.18	0.02697	0.0621	0.03594	0.000001	0.000001	140.4	0.0005	0.0005	0.0001	0.0001	19.26	0.0025	0.0025	0.0232	0.0094	0.01	0.01
		Count	14	14	14	14	14	14	14	14	14	14	14	14	14	12	12	14	14	14	14	14	1	1	1	1	1	1	1
		Minimum	0.00047	0.00029	0.0136	<0.0030	45.4	<0.000010	<0.0000050	0.00064	0.00049	0.026	<0.0050	0.0084	<0.0010	<0.0000020	<0.0000020	43.3	<0.0010	<0.0010	<0.00020	<0.00020	6	<0.0050	<0.0050	0.0232	0.0094	<0.020	<0.020
		Maximum	0.0112	0.00622	0.46	0.0105	195	0.000019	0.000009	0.00271	0.00266	0.592	0.0722	0.174	0.135	<0.0000020	<0.0000020	183	<0.0010	<0.0010	<0.00020	<0.00020	50.4	<0.0050	<0.0050	0.0232	0.0094	<0.020	<0.020
		Geometric Mean	0.0018	0.00149	0.053	0.00382	133.7	0.00000590	0.00000322	0.00132	0.00106	0.128	0.01447	0.0440	0.01773	0.000001	0.000001	132	0.0005	0.0005	0.000100	0.000100	16.14	0.0025	0.00250	0.0232	0.0094	0.01	0.01
		Count <DL	0	0	0	4	0	12	10	0	0	0	2	0	1	12	12	0	14	14	14	14	0	14	14	0	0	1	1
		Standard Deviation	0.00304	0.002	0.1194	0.00285	46.1	0.0000041	0.00000198	0.00077	0.00082	0.165	0.02707	0.0489	0.0424	0	0	42.6	0	0	0	0.000000	12.6	1E-10	0.00000	0	0	0	0
		1st Quartile	0.00087	0.00076	0.0278	0.002	122.5	<0.000010	<0.0000050	0.00088	0.00069	0.072	0.00588	0.0261	0.0097	<0.0000020	<0.0000020	123.0	<0.0010	<0.0010	<0.00020	<0.00020	10.48	<0.0050	<0.0050	0.0232	0.0094	<0.020	<0.020
		Median	0.0015	0.00134	0.0391	0.00425	152	<0.000010	<0.0000050	0.00117	0.00084	0.159	0.00985	0.0446	0.018	<0.0000020	<0.0000020	149	<0.0010	<0.0010	<0.00020	<0.00020	15.3	<0.0050	<0.0050	0.0232	0.0094	<0.020	<0.020
		3rd Quartile	0.00431	0.00329	0.092	0.0056	181.2	<0.000010	0.0000044	0.00223	0.00199	0.176	0.0464	0.092	0.03787	<0.0000020	<0.0000020	178.2	<0.0010	<0.0010	<0.00020	<0.00020	24.45	<0.0050	<0.0050	0.0232	0.0094	<0.020	<0.020
75	Stream 1-75 discharge to LWO	Average	0.000066	0.000062	0.0361	0.0319	14.1	0.000005	0.00000322	0.000366	0.00038	0.0126	0.0075	0.0005	0.0005	0.00000151	0.00000126	14.8	0.00050	0.00050	0.000100	0.000100	3.070	0.00250	0.00250				
EZ92109		Count	9	9	9	9	9	9	9	9	9	9	9	9	9	8	8	9	9	9	9	9	9	9	9				
		Minimum	<0.00010	<0.00010	0.0158	0.0149	8.4	<0.000010	<0.0000050	<0.00050	0.00023	<0.010	<0.0050	<0.0010	<0.0010	<0.0000020	<0.0000020	11.4	<0.0010	<0.0010	<0.00020	<0.00020	2.3	<0.0050	<0.0050				
		Maximum	0.00014	0.00011	0.104	0.0713	27.2	<0.000010	0.000009	0.00067	0.00052	0.047	0.024	<0.0010	<0.0010	0.0000028	0.0000031	23.6	<0.0010	<0.0010	<0.00020	<0.00020	4.10	<0.0050	<0.0050				
		Geometric Mean	0.000061	0.000059	0.0307	0.029	13.3	0.000005	0.00000288	0.000334	0.00037	0.0079	0.00546	0.0005	0.0005	0.00000138	0.00000115	14.4	0.00050	0.00050	0.000100	0.000100	3.01	0.00250	0.00250				
		Count <DL	7	7	0	0	0	9	8	6	0	7	4	9	9	5	7	0	9	9	9	9	0	9	9				
		Standard Deviation	0.000032	0.000024	0.0267	0.0167	5.4	0	0.00000217	0.000177	0.0001	0.0155	0.00698	0	0	0.00000074	0.00000074	3.7	0.00000	0.00000	0.000000	0.000000	0.62	4E-11	4E-11				
		1st Quartile	<0.00010	<0.00010	0.0212	0.0216	11.5	<0.000010	<0.0000050	<0.00050	0.00031	<0.010	<0.0050	<0.0010	<0.0010	<0.0000020	<0.0000020	13.1	<0.0010	<0.0010	<0.00020	<0.00020	2.5	<0.0050	<0.0050				
		Median	<0.00010	<0.00010	0.0284	0.0267	13.1	<0.000010	<0.0000050	<0.00050	0.00036	<0.010	0.0067	<0.0010	<0.0010	<0.0000020	<0.0000020	13.5	<0.0010	<0.0010	<0.00020	<0.00020	3.2	<0.0050	<0.0050				
		3rd Quartile	<0.00010	<0.00010	0.0381	0.0375	15.3	<0.000010	<0.0000050	0.00052	0.00044	<0.010	0.0092	<0.0010	<0.0010	0.00000212	<0.0000020	15.9	<0.0010	<0.0010	<0.00020	<0.00020	3.5	<0.0050	<0.0050				
QU0813A	Ex-situ 7-South groundwater well down gradient of the CCR backfill towards QR (No. 4 Seam)	Average		0.408		0.00215	177.0		0.0000025		0.000100		0.2307		0.0538		0.0000010			0.000500		0.0001000	22.8		0.00250		0.1480		
		Count		4		4	4		4		4		4		4		4			4		4	4		4		4		
		Minimum		0.382		<0.0030	171		<0.0000050		<0.00020		0.216		0.0456		<0.0000020			<0.0010		<0.00020	15.2		<0.0050		0.12		
		Maximum		0.435		0.0041	181		<0.0000050		<0.00020		0.249		0.0637		<0.0000020			<0.0010		<0.00020	30.1		<0.0050		0.184		
		Geometric Mean		0.408		0.00193	177.0		0.0000025		0.000100		0.2304		0.0534		0.0000010			0.000500		0.0001000	21.6		0.00250		0.1460		
		Count <DL		0		3	0		4		4		0		0		4			4		4	0		4		0		
		Standard Deviation		0.024		0.0013	4.5		4E-15		0.000000		0.015		0.0082		0.0000000			0.000000		0.0000000	8.3		0.00000		0.0270		
		1st Quartile		0.391		<0.0030	174.8		<0.0000050		<0.00020		0.2213		0.048		<0.0000020			<0.0010		<0.00020	15.8		<0.0050		0.133		
		Median		0.408		<0.0030	178		<0.0000050		<0.00020		0.229		0.053		<0.0000020			<0.0010		<0.00020	22.9		<0.0050		0.144		
		3rd Quartile		0.425		0.0022	180.2		<0.0000050		<0.00020		0.2385		0.0588		<0.0000020			<0.0010		<0.00020	29.9		<0.0050		0.159		
QU0813B	Ex-situ 7-South groundwater well down gradient of the CCR backfill towards QR (Till & SST contact)	Average		0.506		0.0678	135.8		0.0000034		0.000100		0.2425		0.0871		0.0000010			0.000500		0.0001000	67.3		0.00250		0.1362		
		Count		4		4	4		4		4		4		4		4			4		4	4		4		4		
		Minimum		0.493		0.0035	126		<0.0000050		<0.00020		0.127		0.0615		<0.0000020			<0.0010		<0.00020	10.2		<0.0050		0.0486		
		Maximum		0.518		0.241	147		0.000006		<0.00020		0.524		0.143		<0.0000020			<0.0010		<0.00020	221		<0.0050		0.168		
		Geometric Mean		0.505		0.0174	135.5		0.0000031		0.000100		0.2027		0.0821		0.0000010			0.000500		0.0001000	28.7		0.00250		0.1217		
		Count <DL		0		0	0		3		4		0		0		4			4		4	0		4		0		
		Standard Deviation		0.014		0.1157	9.2		0.0000018		0.000000		0.188		0.0377		0.0000000			0.000000		0.0000000	102.7		0.00000		0.0584		
		1st Quartile		0.493		0.0046	129.8		<0.0000050		<0.00020		0.1457		0.0664		<0.0000020			<0.0010		<0.00020	11		<0.0050		0.1344		
		Median		0.506		0.0135	135		<0.0000050		<0.00020		0.1595		0.072		<0.0000020			<0.0010		<0.00020	19		<0.0050		0.164		
		3rd Quartile		0.518		0.0767	141		0.00000338		<0.00020		0.2563		0.0926		<0.0000020			<0.0010		<0.00020	75.3		<0.0050		0.1658		

Notes:
Factor appears to jess-than results when calculating statistics: U 2

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2017 -18 Statistics Stn.Code EMS. ID	Site Name & Description	Statistics	As-T	As-D	Al-T	Al-D	Alk-T	Cd-T	Cd-D	Cu-T	Cu-D	Fe-T	Fe-D	Mn-T	Mn-D	Hg-T	Hg-D	Hard-T	Ni-T	Ni-D	Pb-T	Pb-D	SO4-D	Zn-T	Zn-D	P-T	P-D	N-NO23	N-NH3
			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	mg/L
QU0821GD	Ex-situ 2-North groundwater well down gradient of u/g tailings disposal, measures water quality & hydraulic gradients downstream of Forjan Fault (No. 4 Seam)	Average		0.132		0.0076	215.0		0.00001033		0.000367		1.334		0.1573		0.0000010			0.00183		0.000367	1.58		0.00917		0.1014		
		Count		3		3	3		3		3		3		3		3			3		3	3		3		3		
		Minimum		0.121		<0.015	210		0.000006		<0.00020		0.982		0.0799		<0.0000020			<0.0010		<0.00020	<1.0		<0.0050		0.0493		
		Maximum		0.147		0.0078	218		<0.000025		<0.0010		1.73		0.278		<0.0000020			<0.0050		<0.0010	2.3		<0.025		0.141		
		Geometric Mean		0.131		0.0076	215.0		0.00000979		0.000292		1.2989		0.1363		0.0000010			0.00146		0.000292	1.304		0.00731		0.0925		
		Count <DL		0		2	0		2		3		0		0		3			3		3	1		3		0		
		Standard Deviation		0.014		0.00017	4.4		0.00000375		0.000231		0.3759		0.1059		0.0000000			0.00115		0.000231	0.951		0.00577		0.0471		
		1st Quartile		0.124		<0.015	213.5		0.00000925		0.0003		1.136		0.097		<0.0000020			0.0015		0.0003	1.22		0.0075		0.0817		
		Median		0.127		<0.015	217		<0.000025		<0.0010		1.29		0.114		<0.0000020			<0.0050		<0.0010	1.93		<0.025		0.114		
		3rd Quartile		0.137		0.00765	217.5		<0.000025		<0.0010		1.51		0.196		<0.0000020			<0.0050		<0.0010	2.12		<0.025		0.1275		
QU0821GS	Ex-situ 2-North groundwater well down gradient of u/g tailings disposal, measures water quality & hydraulic gradients downstream of Forjan Fault (No. 1 Seam)	Average		0.195		0.00832	201.2		0.0000099		0.000443		0.3953		0.0839		0.0000010			0.001500		0.0003000	0.613		0.00750		0.101		
		Count		4		4	4		4		4		4		4		4			4		4	4		4		4		
		Minimum		0.178		0.006	194		<0.0000050		0.00033		0.286		0.0493		<0.0000020			<0.0010		<0.00020	<1.0		<0.0050		0.0029		
		Maximum		0.208		0.0123	209		<0.000025		<0.0010		0.555		0.15		<0.0000020			<0.0050		<0.0010	0.95		<0.025		0.155		
		Geometric Mean		0.194		0.00803	201.2		0.0000083		0.000436		0.3825		0.0754		0.0000010			0.001120		0.0002240	0.587		0.00559		0.051		
		Count <DL		0		2	0		3		2		0		0		4			4		4	3		4		0		
		Standard Deviation		0.016		0.00274	6.3		0.0000049		0.00008		0.1194		0.0469		0.0000000			0.001150		0.0002310	0.225		0.00577		0.0673		
		1st Quartile		0.183		0.00712	197.8		0.00000963		0.000412		0.315		0.0512		<0.0000020			<0.0010		<0.00020	<1.0		<0.0050		0.0877		
		Median		0.197		<0.015	201		0.00001225		0.00047		0.37		0.0681		<0.0000020			0.0015		0.0003	<1.0		0.00750		0.123		
		3rd Quartile		0.208		0.0087	204.5		<0.000025		<0.0010		0.45		0.1008		<0.0000020			<0.0050		<0.0010	0.613		<0.025		0.1363		
QU1010D																													
		Average		0.0141		0.0098	92.2		0.000014		0.00061		8.7		0.3745		0.0000010			0.00275		0.000550	0.375		0.0138		0.07380		
		Count		2		2	2		2		2		2		2		2			2		2	2		2		2		
		Minimum		0.0139		0.0045	91.3		<0.0000050		0.00021		7.95		0.332		<0.0000020			<0.0010		<0.00020	<0.50		<0.0050		0.0711		
		Maximum		0.0144		<0.030	93.2		<0.000050		<0.0020		9.45		0.417		<0.0000020			<0.010		<0.0020	<1.0		<0.050		0.0766		
		Geometric Mean		0.0141		0.0082	92.2		0.000008		0.00046		8.6676		0.3721		0.0000010			0.00158		0.000316	0.354		0.0079		0.07380		
		Count <DL		0		1	0		2		1		0		0		2			2		2	2		2		0		
		Standard Deviation		0.0004		0.0074	1.3		0.000016		0.00056		1.1		0.06		0.0000000			0.00318		0.000636	0.2		0.0159		0.00390		
		1st Quartile		0.014		0.00712	91.8		0.00000813		0.000407		8.325		0.3533		<0.0000020			0.00163		0.000325	0.312		0.00813		0.0725		
		Median		0.0141		0.00975	92.2		0.00001375		0.000605		8.7		0.3745		<0.0000020			0.00275		0.00055	0.375		0.01375		0.0738		
		3rd Quartile		0.0143		0.01237	92.7		0.00001937		0.000803		9.075		0.3957		<0.0000020			0.00387		0.000775	0.438		0.01937		0.0752		
QU1010S	Ex-situ 2-North shallow groundwater well. Down gradient of u/g tailings disposal, measures water quality & hydraulic head downstream of 2-North workings. (No. 1 Seam / Sandstone).	Average		0.113		0.0083	152.0		0.0000025		0.0001		0.2325		0.0407		0.0000010			0.000500		0.0005300	19.9		0.00250		0.0551		
		Count		2		2	2		2		2		2		2		2			2		2	2		2		2		
		Minimum		0.112		<0.0030	152		<0.0000050		<0.00020		0.221		0.0361		<0.0000020			<0.0010		<0.00020	19.6		<0.0050		0.0468		
		Maximum		0.113		0.0151	152		<0.0000050		<0.00020		0.244		0.0453		<0.0000020			<0.0010		0.00096	20.1		<0.0050		0.0634		
		Geometric Mean		0.112		0.00476	152.0		0.0000025		0.0001		0.2322		0.0404		0.0000010			0.000500		0.0003100	19.8		0.0025		0.0545		
		Count <DL		0		1	0		2		2		0		0		2			2		1	0		2		0		
		Standard Deviation		0.001		0.00962	0.0		0.0000000		0		0.0163		0.0065		0.0000000			0.000000		0.0006080	0.4		1E-11		0.0117		
		1st Quartile		0.112		0.0049	152		<0.0000050		<0.00020		0.2268		0.0384		<0.0000020			<0.0010		0.000315	19.7		<0.0050		0.051		
		Median		0.113		0.0083	152		<0.0000050		<0.00020		0.2325		0.0407		<0.0000020			<0.0010		0.00053	19.9		<0.0050		0.0551		
		3rd Quartile		0.113		0.0117	152		<0.0000050		<0.00020		0.2382		0.043		<0.0000020			<0.0010		0.000745	20		<0.0050		0.0592		
QU1011D	Ex-situ 2-North deep groundwater well. Measures water quality & hydraulic gradient in Forjian Fault (Fractured sandstone).	Average		0.0088		0.0075	305		0.0000125		0.0012		4.44		0.502		0.0000010			0.0025		0.0005	0.5		0.0125		0.160		
		Count		1		1	1		1		1		1		1		1			1		1	1		1		1		
		Minimum		0.0088		<0.015	305		<0.000025		0.0012		4.44		0.502		<0.0000020			<0.0050		<0.0010	<1.0		<0.025		0.16		
		Maximum		0.0088		<0.015	305		<0.000025		0.0012		4.44		0.502		<0.0000020			<0.0050		<0.0010	<1.0		<0.025		0.16		
		Geometric Mean		0.0088		0.0075	305		0.0000125		0.0012		4.44		0.502		0.0000010			0.0025		0.0005	0.5		0.0125		0.160		
		Count <DL		0		1	0		1		0		0		0		1			1		1	1		1		0		
		Standard Deviation		0.00000		0.0000	0		0.0000000		0.00000		0.00		0.000		0.0000000			0.00000		0.000000	0.0		0.0000		0.000		
		1st Quartile		0.0088		<0.015	305		<0.000025		0.0012		4.44		0.502		<0.0000020			<0.0050		<0.0010	<1.0		<0.025		0.16		
		Median		0.0088		<0.015	305		<0.000025		0.0012		4.44		0.502		<0.0000020			<0.0050		<0.0010	<1.0		<0.025		0.16		
		3rd Quartile		0.0088		<0.015	305		<0.000025		0.0012		4.44		0.502		<0.0000020			<0.0050		<0.0010	<1.0		<0.025		0.16		
QU1011S	Ex-situ 2-North shallow groundwater well. Measures water quality & hydraulic gradient in Forjian Fault (Fractured sandstone).	Average		0.00145		0.0042	68.7		0.0000025		0.00027		0.177		0.0334		0.0000010			0.0005		0.0001000	5.3		0.00250		0.0076		
		Count		1		1	1		1		1		1		1		1			1		1	1		1		1		
		Minimum		0.00145		0.0042	68.7		<0.0000050		0.00027		0.177		0.0334		<0.0000020			<0.0010		<0.00020	5.3		<0.0050		0.0076		
		Maximum		0.00145		0.0042	68.7		<0.0000050		0.00027		0.177		0.0334		<0.0000020			<0.0010		<0.00020	5.3		<0.0050		0.0076		
		Geometric Mean		0.00145		0.0042	68.7		0.0000025		0.00027		0.177		0.0334		0.0000010			0.0005		0.0001000	5.3		0.0025		0.0076		
		Count <DL		0		0	0		1		0		0		0		1			1		1	0		1		0		
		Standard Deviation		0		0	0		0.0000000		0		0		0		0.0000000			0		0.0000000	0		0		0		
		1st Quartile		0.00145		0.0042	68.7		<0.0000050		0.00027		0.177		0.0334		<0.0000020			<0.0010		<0.00020	5.3		<0.0050		0.0076		
		Median		0.00145		0.0042	68.7		<0.0000050		0.00027		0.177		0.0334		<0.0000020			<0.0010		<0.00020	5.3		<0.0050		0.0076		
		3rd Quartile		0.00145		0.0042	68.7		<0.0000050		0.00027		0.177		0.0334		<0.0000020			<0.0010		<0.00020	5.3		<0.0050		0.0076		

Notes:
Factor applied to less-than results when calculating statistics: 0.5

Table 26 Statistics 2016 -2021 30 Page(s)

2017 -18 Statistics Stn.Code EMS. ID	Site Name & Description	Statistics	As-T	As-D	Al-T	Al-D	Alk-T	Cd-T	Cd-D	Cu-T	Cu-D	Fe-T	Fe-D	Mn-T	Mn-D	Hg-T	Hg-D	Hard-T	Ni-T	Ni-D	Pb-T	Pb-D	SO4-D	Zn-T	Zn-D	P-T	P-D	N-NO23	N-NH3
			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	mg/L
QU1105S	Ex-situ River Barrier Pillar (RBP) shallow groundwater well. Monitors water quality & gradients above the RBP & 2-North Mine. (Sandstone)	Average		0.0762		0.00437	252.4		0.0000041		0.000135		1.2705		0.1618		0.0000010			0.000500		0.0001000	108.8		0.00250		0.029		
		Count		4		4	4		4		4		4		4		4			4		4	4		4		4		
		Minimum		0.0487		<0.0030	89.8		<0.0000050		<0.00020		0.492		0.0751		<0.0000020			<0.0010		<0.00020	50.8		<0.0050		0.0189		
		Maximum		0.0957		0.008	442		0.000009		0.00024		1.55		0.24		<0.0000020			<0.0010		<0.00020	166		<0.0050		0.0396		
		Geometric Mean		0.0739		0.00372	217		0.0000034		0.000124		1.1521		0.1491		0.0000010			0.000500		0.0001000	98.9		0.00250		0.028		
		Count <DL		0		1	0		3		3		0		0		4			4		4	0		4		0		
		Standard Deviation		0.0204		0.00269	147.6		0.0000033		0.000070		0.519		0.0681		0.0000000			0.000000		0.0000000	51.2		0.00000		0.010		
		1st Quartile		0.0676		0.00323	174.7		<0.0000050		<0.00020		1.248		0.135		<0.0000020			<0.0010		<0.00020	76.1		<0.0050		0.0221		
		Median		0.0803		0.004	239		<0.0000050		<0.00020		1.52		0.166		<0.0000020			<0.0010		<0.00020	109.2		<0.0050		0.0289		
		3rd Quartile		0.089		0.00515	316.8		0.00000413		0.000135		1.5425		0.1927		<0.0000020			<0.0010		<0.00020	142		<0.0050		0.0358		
QU1109S	Ex-situ River Barrier Pillar (RBP) shallow groundwater well. Monitors water quality & gradients above the RBP & 2-North Mine. (Sandstone)	Average		0.111		0.00652	470		0.0000100		0.0004		0.3168		0.0429		0.0000010			0.002		0.0004	430.5		0.01		0.060		
		Count		4		4	4		4		4		4		4		4			4		4	4		4		4		
		Minimum		0.071		0.0036	436		<0.0000050		<0.00020		0.162		0.0221		<0.0000020			<0.0010		<0.00020	402		<0.0050		0.0401		
		Maximum		0.140		<0.015	538		<0.000025		<0.0010		0.402		0.0531		<0.0000020			<0.0050		<0.0010	458		<0.025		0.0748		
		Geometric Mean		0.107		0.00624	469		0.0000084		0.000334		0.2992		0.0406		0.0000010			0.00167		0.000334	430		0.00836		0.058		
		Count <DL		0		3	0		4		4		0		4		4			4		4	0		4		0		
		Standard Deviation		0.029		0.0020	45		0.0000050		0.00020		0.1076		0.01430		0.0000000			0.00100		0.000200	24.3		0.0050		0.015		
		1st Quartile		0.103		0.00652	447		0.00001		0.0004		0.2865		0.0394		<0.0000020			0.002		0.0004	416.2		0.01		0.0534		
		Median		0.116		<0.015	454		<0.000025		<0.0010		0.3515		0.0483		<0.0000020			<0.0050		<0.0010	431		<0.025		0.0619		
		3rd Quartile		0.124		<0.015	478		<0.000025		<0.0010		0.3818		0.0518		<0.0000020			<0.0050		<0.0010	445.2		<0.025		0.068		
75QR	7-South Quinsam River downstream of 7-South Mining Operation	Average	0.00042	0.0004	0.0231	0.0183	39.5	0.000005	0.00000266	0.000671	0.00055	0.073	0.0496	0.0054	0.0044	0.000001	0.000001	37.2	0.00050	0.00050	0.000105	0.000100	31.5	0.00262	0.0025	0.00490	0.00530	0.0252	0.00732
EZ92113		Count	22	22	22	22	22	22	22	22	22	22	22	22	22	21	20	22	22	22	22	22	22	22	22	12	7	11	11
		Minimum	0.00027	0.00025	0.0102	0.0071	26.4	<0.000010	<0.0000050	<0.00050	0.00041	0.051	0.0324	0.0022	0.0015	<0.0000020	<0.0000020	28.7	<0.0010	<0.0010	<0.00020	<0.00020	17	<0.0050	<0.0050	0.0021	0.0033	<0.020	<0.0050
		Maximum	0.00056	0.00055	0.0529	0.0574	45.2	<0.000010	0.000006	0.00212	0.00099	0.099	0.0822	0.0079	0.0078	<0.0000020	<0.0000020	53.7	<0.0010	<0.0010	0.00021	<0.00020	42.3	0.0051	<0.0050	0.0174	0.0086	0.038	<0.020
		Geometric Mean	0.00041	0.00039	0.0207	0.0159	39.1	0.000005	0.0000026	0.000621	0.00054	0.072	0.0486	0.0051	0.0042	0.000001	0.000001	36.9	0.00050	0.00050	0.000103	0.000100	31.1	0.00258	0.0025	0.00420	0.00510	0.024	0.00633
		Count <DL	0	0	0	0	0	22	21	1	0	0	0	0	0	21	20	0	22	22	21	22	0	21	22	0	0	1	9
		Standard Deviation	0.00009	0.00009	0.0115	0.0115	5.2	0.00000000	0.00000075	0.00035	0.00014	0.014	0.0107	0.0015	0.0014	0	0	5	0.00000	0.00000	0.000023	0.000000	5.2	0.00055	0	0.004	0.0018	0.0075	0.00339
		1st Quartile	0.00037	0.00034	0.0143	0.0107	37	<0.000010	<0.0000050	0.000525	0.00048	0.064	0.0428	0.0043	0.0034	<0.0000020	<0.0000020	34.7	<0.0010	<0.0010	<0.00020	<0.00020	29	<0.0050	<0.0050	0.0036	0.0043	0.0215	0.00425
		Median	0.00043	0.00040	0.0215	0.0152	41.9	<0.000010	<0.0000050	0.00058	0.00052	0.074	0.048	0.0055	0.0045	<0.0000020	<0.0000020	37.2	<0.0010	<0.0010	<0.00020	<0.00020	31.9	<0.0050	<0.0050	0.004	0.0045	0.023	<0.020
		3rd Quartile	0.00047	0.00046	0.027	0.0214	42.9	<0.000010	<0.0000050	0.000702	0.00055	0.083	0.0542	0.0066	0.0053	<0.0000020	<0.0000020	38.9	<0.0010	<0.0010	<0.00020	<0.00020	34.40	<0.0050	<0.0050	0.0046	0.006	0.0305	<0.020
LQL1	Lower Quinsam Lake 1 metre below surface	Average	0.00061	0.00058	0.0329	0.0251	34.9	0.000005	0.0000038	0.00087	0.00069	0.104	0.0652	0.0128	0.00581	0.00000115	0.00000112	32.8	0.0005	0.00050	0.000100	0.000100	21.1	0.00250	0.00250	0.005			
EZ92118		Count	15	15	15	15	5	15	15	15	15	15	15	15	15	13	13	15	15	15	15	15	15	15	15	6			
		Minimum	0.00047	0.0004	0.0077	0.0079	24.2	<0.000010	<0.0000050	0.00052	0.00042	0.037	0.0242	0.0037	<0.0010	<0.0000020	<0.0000020	27.0	<0.0010	<0.0010	<0.00020	<0.00020	13.8	<0.0050	<0.0050	0.004			
		Maximum	0.00076	0.00068	0.0871	0.0603	43.3	<0.000010	0.0000090	0.0036	0.00167	0.219	0.136	0.0455	0.0291	0.0000029	0.0000026	39.8	<0.0010	<0.0010	<0.00020	<0.00020	27.1	<0.0050	<0.0050	0.0060			
		Geometric Mean	0.0006	0.00057	0.0264	0.0203	34.2	0.000005	0.00000339	0.00074	0.00065	0.088	0.055	0.0092	0.0026	0.00000109	0.00000108	32.5	0.0005	0.00050	0.000100	0.000100	20.5	0.00250	0.00250	0.0049			
		Count <DL	0	0	0	0	0	15	10	0	0	0	0	0	3	12	12	0	15	15	15	15	0	15	15	0			
		Standard Deviation	0.0001	0.0001	0.0213	0.0164	7.8	0	0.0000021	0.00077	0.0003	0.061	0.0392	0.0125	0.00811	0.00000053	0.00000044	4.3	0	0.00000	0.000000	0.000000	5.1	1E-10	1E-10	0.0008			
		1st Quartile	0.00051	0.00049	0.0147	0.0111	30.7	<0.000010	<0.0000050	0.00057	0.00054	0.05	0.0324	0.0056	0.0012	<0.0000020	<0.0000020	29.4	<0.0010	<0.0010	<0.00020	<0.00020	15.6	<0.0050	<0.0050	0.0045			
		Median	0.00066	0.00063	0.0309	0.0184	35.5	<0.000010	<0.0000050	0.000640	0.00063	0.086	0.0522	0.0067	0.00160	<0.0000020	<0.0000020	32	<0.0010	<0.0010	<0.00020	<0.00020	23.4	<0.0050	<0.0050	0.005			
		3rd Quartile	0.0007	0.00065	0.0452	0.0374	41	<0.000010	0.0000050	0.000810	0.0007	0.143	0.0899	0.0148	0.00685	<0.0000020	<0.0000020	36.3	<0.0010	<0.0010	<0.00020	<0.00020	25.4	<0.0050	<0.0050	0.0055			
LQLB	LQLB 1 metre from Bottom	Average	0.001	0.00073	0.0423	0.0303	31.7	0.0000074	0.00000626	0.00097	0.00068	0.44	0.2442	0.1377	0.1297	0.00000114	0.00000112	31.4	0.00050	0.00050	0.000100	0.000100	16.3	0.0025	0.00250	0.0067			
EZ92118		Count	15	15	15	15	4	15	15	15	15	15	15	15	15	13	13	15	15	15	15	15	15	15	15	6			
		Minimum	0.00048	0.00038	0.0241	0.0157	24.5	<0.000010	<0.0000050	0.0005	0.00056	0.086	0.0514	0.0044	0.0024	<0.0000020	<0.0000020	25.4	<0.0010	<0.0010	<0.00020	<0.00020	12.5	<0.0050	<0.0050	0.0049			
		Maximum	0.00204	0.00119	0.0876	0.0681	35.7	0.000014	0.0000130	0.00268	0.00097	1.15	0.632	0.438	0.43	0.0000028	0.0000026	37.5	<0.0010	<0.0010	<0.00020	<0.00020	24.5	<0.0050	<0.0050	0.0086			
		Geometric Mean	0.00086	0.00068	0.0395	0.0279	31.4	0.0000068	0.00000559	0.0009	0.00067	0.288	0.1668	0.0451	0.0318	0.00000108	0.00000108	31.2	0.00050	0.00050	0.000100	0.000100	15.8	0.0025	0.00250	0.0066			
		Count <DL	0	0	0	0	0	9	3	0	0	0	0	0	0	12	12	0	15	15	15	15	0	15	15	0			
		Standard Deviation	0.00056	0.00029	0.0179	0.0138	4.9	0.0000032	0.00000299	0.00051	0.00011	0.383	0.2063	0.1608	0.1597	0.0000005	0.00000044	3.6	0.00000	0.00000	0.000000	0.000000	4.2	1E-10	1E-10	0.0013			
		1st Quartile	0.00051	0.00050	0.0297	0.0205	31	<0.000010	0.000005	0.00073	0.00061	0.119	0.0809	0.0105	0.0069	<0.0000020	<0.0000020	29.2	<0.0010	<0.0010	<0.00020	<0.00020	12.9	<0.0050	<0.0050	0.0058			
		Median	0.00068	0.00062	0.0368	0.0258	33.3	<0.000010	0.00000520	0.00087	0.00065	0.209	0.125	0.028	0.0147	<0.0000020	<0.0000020	30.9	<0.0010	<0.0010	<0.00020	<0.00020	15.3	<0.0050	<0.0050	0.0071			
		3rd Quartile	0.00153	0.00099	0.0468	0.0378	34	0.00001	0.00000800	0.00091	0.0007	0.772	0.4275	0.2745	0.264	<0.0000020	<0.0000020	33.0	<0.0010	<0.0010	<0.00020	<0.00020	17.8	<0.0050	<0.0050	0.0072			

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 26 Statistics 2016 -2021 30 Page(s)

2018 -19 Statistics Stn.Code EMS. ID	Site Name & Description	Statistics	As-T	As-D	Al-T	Al-D	Alk-T	Cd-T	Cd-D	Cu-T	Cu-D	Fe-T	Fe-D	Mn-T	Mn-D	Hg-T	Hg-D	Hard-T	Ni-T	Ni-D	Pb-T	Pb-D	SO4-D	Zn-T	Zn-D	P-T	P-D	N-NO23	N-NH3
WA			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	mg/L
E0126402	Quinsam River at Argonaut Road Upstream of Mining Operation.	Average	0.00011	0.000111	0.0247	0.0208	20.2	0.000005	0.0000364	0.00089	0.0007	0.018	0.0139	0.00127	0.00059	0.0000010	0.0000016	19.5	0.0005	0.00050	0.000100	0.000100	1.14	0.00250	0.002398				
		Count	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15				
		Minimum	<0.00010	<0.00010	0.0154	0.0152	15.6	<0.000010	<0.0000050	0.00059	0.00058	0.011	0.0069	<0.0010	<0.0010	<0.0000020	<0.0000020	17.8	<0.0010	<0.0010	<0.00020	<0.00020	<1.0	<0.0050	0.000964				
		Maximum	0.00016	0.00014	0.0317	0.0286	23	<0.000010	0.0000196	0.0016	0.00085	0.028	0.0287	0.002	0.0014	<0.0000020	0.0000031	21	<0.0010	<0.0010	<0.00020	<0.00020	1.9	<0.0050	<0.0050				
		Geometric Mean	0.000101	0.000107	0.0244	0.0205	20.1	0.000005	0.0000287	0.00084	0.00069	0.017	0.0132	0.00119	0.00056	0.000001	0.00000138	19.5	0.0005	0.00050	0.000100	0.000100	1.03	0.00250	0.002346				
		Count <DL	4	2	0	0	0	15	14	0	0	0	0	2	13	15	10	0	15	15	15	15	4	15	14				
		Standard Deviation	0.000041	0.000027	0.0041	0.0037	2.2	0	0.0000442	0.00034	0.0001	0.005	0.0051	0.00043	0.00026	0	0.00000083	0.9	0	0.00000	0.000000	0.000000	0.47	0	0.000397				
		1st Quartile	0.00008	0.00011	0.0218	0.0183	18.8	<0.000010	<0.0000050	0.0007	0.0006	0.014	0.0111	0.0011	<0.0010	<0.0000020	<0.0000020	18.8	<0.0010	<0.0010	<0.00020	<0.00020	0.8	<0.0050	<0.0050				
		Median	0.00012	0.00012	0.0248	0.0204	21.0	<0.000010	<0.0000050	0.00074	0.00068	0.016	0.0139	0.0012	<0.0010	<0.0000020	<0.0000020	19.7	<0.0010	<0.0010	<0.00020	<0.00020	1.2	<0.0050	<0.0050				
		3rd Quartile	0.00014	0.00013	0.0274	0.0225	21.6	<0.000010	<0.0000050	0.00092	0.00077	0.022	0.0154	0.00145	<0.0010	<0.0000020	0.0000022	20.2	<0.0010	<0.0010	<0.00020	<0.00020	1.4	<0.0050	<0.0050				
WD	Settling Pond #4	Average	0.00132	0.00205	0.0209	0.00488	368	0.000006	0.0000417	0.001028	0.00036	0.661	0.0162	0.1403	0.1347	0.000001	0.000001	385	0.0017	0.00182	0.000100	0.000167	579	0.00313	0.00417	0.0052	0.00380	0.024	0.05
E207409		Count	6	6	6	6	12	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	52	6	6	3	1	2	3
		Minimum	0.00079	0.00113	0.0035	<0.0030	252	<0.000010	<0.0000050	<0.00050	<0.00020	0.055	0.0103	0.0412	0.0435	<0.0000020	<0.0000020	313	0.001	<0.0010	<0.00020	<0.00020	411	<0.0050	<0.0050	0.0045	0.0038	<0.020	<0.020
		Maximum	0.00207	0.00272	0.0679	<0.015	437	0.000011	<0.000025	0.00198	<0.0010	1.54	0.0270	0.3	0.278	<0.0000020	<0.0000020	436	0.0041	0.0044	<0.00020	<0.0010	798	0.0063	<0.025	0.0063	0.0038	0.038	0.13
		Geometric Mean	0.00126	0.00193	0.0139	0.00437	363	0.0000057	0.0000033	0.000845	0.000321	0.424	0.0153	0.1125	0.1111	0.000001	0.000001	382	0.0014	0.0014	0.000100	0.000131	571	0.00292	0.00327	0.0051	0.00380	0.0195	0.0235
		Count <DL	0	0	0	2	0	5	6	1	2	0	0	0	0	6	6	0	0	2	6	6	0	5	6	0	0	1	2
		Standard Deviation	0.00045	0.00071	0.0235	0.0021	54	0.0000024	0.0000408	0.000646	0.000155	0.565	0.0062	0.096	0.0865	0	0.0000000	44	0.0012	0.00143	0.000000	0.000163	99	0.00155	0.00408	0.001	0	0.0198	0.0693
		1st Quartile	0.00107	0.00144	0.0107	0.004	358	<0.000010	<0.0000050	0.00072	0.000295	0.306	0.0122	0.0688	0.0697	<0.0000020	<0.0000020	367	0.001	0.00105	<0.00020	<0.00020	494	<0.0050	<0.0050	0.0046	0.0038	0.017	<0.020
		Median	0.00123	0.00226	0.0128	0.00515	382	<0.000010	<0.0000050	0.0008	0.000435	0.49	0.014	0.1295	0.1285	<0.0000020	<0.0000020	389	0.0012	0.00125	<0.00020	<0.00020	565	<0.0050	<0.0050	0.0047	0.0038	0.024	<0.020
		3rd Quartile	0.00147	0.00263	0.017	0.00608	404	<0.000010	<0.0000050	0.001435	0.000455	0.984	0.0184	0.1773	0.167	<0.0000020	<0.0000020	414	0.0014	0.0022	<0.00020	<0.00020	654	<0.0050	<0.0050	0.0055	0.0038	0.031	0.07000
MW001D	Ex-situ 2-North deep groundwater well below the coal wash plant (Till)	Average	0.0214			0.0326	92.2		0.0000025		0.001		0.0074		0.0139		0.0000033			0.0005		0.0001	27.3		0.0025		0.173		
		Count	2			2	2		2		2		2		2		2			2		2	2		2		2		
		Minimum	0.0212			0.0299	90.3		<0.0000050		0.00083		0.0058		0.0061		<0.0000020			<0.0010		<0.00020	26.8		<0.0050		0.173		
		Maximum	0.0215			0.0354	94		<0.0000050		0.00118		0.0091		0.0217		0.0000055			<0.0010		<0.00020	27.8		<0.0050		0.173		
		Geometric Mean	0.0213			0.0325	92.1		0.0000025		0.00099		0.0073		0.0115		0.0000024			0.0005		0.0001	27.3		0.0025		0.173		
		Count <DL	0			0	0		2		0		0		0		1			2		2	0		2		0		
		Standard Deviation	0.0002			0.0039	2.6		0		0.00025		0.0023		0.011000		0.0000032			0		0	0.7		0		0		
		1st Quartile	0.0213			0.0313	91.2		<0.0000050		0.00092		0.0066		0.01		0.00000212			<0.0010		<0.00020	27		<0.0050		0.173		
		Median	0.0214			0.0326	92.2		<0.0000050		0.001		0.0074		0.0139		0.00000325			<0.0010		<0.00020	27.3		<0.0050		0.173		
		3rd Quartile	0.0214			0.034	93.1		<0.0000050		0.00109		0.0083		0.0178		0.00000437			<0.0010		<0.00020	27.6		<0.0050		0.173		
MW001S	Ex-situ 2-North shallow groundwater well below the coal wash plant (Till)	Average	0.0001			0.003	327		0.000104		0.00135		0.059		2.83		0.0000010			0.0025		0.0002000	799		0.005		0.00500		
		Count	1			1	1		1		1		1		1		1			1		1	1		1		1		
		Minimum	<0.00020			<0.0060	327		0.000104		0.00135		0.059		2.83		<0.0000020			0.0025		<0.00040	799		<0.010		0.005		
		Maximum	<0.00020			<0.0060	327		0.000104		0.00135		0.059		2.83		<0.0000020			0.0025		<0.00040	799		<0.010		0.005		
		Geometric Mean	0.0001			0.003	327		0.000104		0.00135		0.059		2.83		0.0000010			0.0025		0.0002000	799		0.005		0.005		
		Count <DL	1			1	0		0		0		0		0		1			0		1	0		1		0		
		Standard Deviation	0			0	0		0		0		0		0		0.0000000			0		0.0000000	0		0		0.00000		
		1st Quartile	<0.00020			<0.0060	327		0.000104		0.00135		0.059		2.83		<0.0000020			0.0025		<0.00040	799		<0.010		0.00500		
		Median	<0.00020			<0.0060	327		0.000104		0.00135		0.059		2.83		<0.0000020			0.0025		<0.00040	799		<0.010		0.00500		
		3rd Quartile	<0.00020			<0.0060	327		0.000104		0.00135		0.059		2.83		<0.0000020			0.0025		<0.00040	799		<0.010		0.00500		
MW006D	Ex-situ 2-North deep groundwater well below the coal wash plant (Till)	Average	0.0273			0.0165	81.9		0.0000025		0.00094		0.0025		0.0008		0.0000010			0.000500		0.0001000	12.4		0.00250		0.16		
		Count	2			2	2		2		2		2		2		2			2		2	2		2		2		
		Minimum	0.027			0.016	79.8		<0.0000050		0.00073		<0.0050		<0.0010		<0.0000020			<0.0010		<0.00020	12		<0.0050		0.157		
		Maximum	0.0276			0.017	84		<0.0000050		0.00116		<0.0050		0.0011		<0.0000020			<0.0010		<0.00020	12.7		<0.0050		0.163		
		Geometric Mean	0.0273			0.0165	81.9		0.0000025		0.00092		0.0025		0.00074		0.0000010			0.000500		0.0001000	12.3		0.0025		0.16		
		Count <DL	0			0	0		2		0		2		1		2			2		2	0		2		0		
		Standard Deviation	0.0004			0.0007	3.0		0.0000000		0.0003		0		0.00042		0.0000000			0.000000		0.0000000	0.5		0		0.004		
		1st Quartile	0.0272			0.0162	80.8		<0.0000050		0.00084		<0.0050		0.00065		<0.0000020			<0.0010		<0.00020	12.2		<0.0050		0.158		
		Median	0.0273			0.0165	81.9		<0.0000050		0.00094		<0.0050		0.0008		<0.0000020			<0.0010		<0.00020	12.4		<0.0050		0.16		
		3rd Quartile	0.0274			0.0168	83		<0.0000050		0.00105		<0.0050		0.00095		<0.0000020			<0.0010		<0.00020	12.5		<0.0050		0.162		
MW006S	Ex-situ 2-North shallow groundwater well below the coal wash plant (Till)	Average	0.00158			0.00245	156.5		0.0000168		0.00086		0.0074		0.0215		0.0000010			0.0005		0.0001	546.0		0.00250		0.0537		
		Count	2			2	2		2		2		2		2		2			2		2	2		2		2		
		Minimum	0.00149			<0.0030	155		0.000013		0.00071		<0.0050		0.0108		<0.0000020			<0.0010		<0.00020	519		<0.0050		0.0516		
		Maximum	0.00167			0.0034	158		0.0000205		0.00101		0.0123		0.0322		<0.0000020			<0.0010		<0.00020	573		<0.0050		0.056		
		Geometric Mean	0.00158			0.00226	156.5		0.0000163		0.00085		0.00555		0.0186		0.0000010			0.00050		0.0001000	545.3		0.0025		0.0537		
		Count <DL	0			1	0		0		0		1		0		2			2		2	0		2		0		
		Standard Deviation	0.00013			0.00134	2.1		0.000005		0.000210		0.00693		0.0151		0.0000000			0		0.0000000	38.2		0		0.003		
		1st Quartile	0.00154			0.00198	155.8		0.0000149		0.00078		0.00495		0.0162		<0.0000020			<0.0010		<0.00020	532.5		<0.0050		0.0526		
		Median	0.00158			0.00245	156.5		0.0000168		0.00086		0.0074		0.0215		<0.0000020			<0.0010		<0.00020	546.0		<0.0050		0.0537		
		3rd Quartile	0.00163			0.00292	157.2		0.0000186		0.00094		0.00985		0.0268		<0.0000020			<0.0010		<0.00020	559.5		<0.0050		0.0548		
WC		Average	0.0007	0.00084	0.0083	0.0068	332	0.000005	0.0000417	0.000548	0.00044	0.145	0.0317	0.0247	0.0261	0.000001	0.000001	318	0.00143	0.00163	0.000100	0.000167	518	0.00250	0.00417				
E207411	2-North Pit Culvert discharge into Middle Quinsam Lake	Count	6	6	6	6	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	13	6	6				
		Minimum	0.00048	0.00056	0.0043	0.0048	257	<0.000010	<0.0000050	<0.00050	0.00024	0.054	0.0133	0.0068	0.0072	<0.0000020	<0.0000020	274	<0.0010	<0.0010	<0.00020	<0.00020	304	<0.0050	<0.0050				
		Maximum	0.00094	0.00118	0.0149	0.0098	370	<0.000010	<0.000025	0.00098	0.0006	0.366	0.114	0.0594	0.0598	<0.0000020	<0.0000020	393	0.0056	0.0053	<0.00020	<0.0010	729	<0.0050	<0.025				
		Geometric Mean	0.00067	0.00081	0.0078	0.0066	329	0.000005	0.0000327	0.00049	0.00042	0.1130	0.0212	0.0168	0.0182	0.000001	0.000001	315	0.00084	0.00097	0.000100	0.000131	507	0.00250	0.00327				
		Count <DL	0	0	0	1	0	6	6	2	1	0	0	0	0	6	6	0	4	5	6	6	0	6	6				
		Standard Deviation	0.00019	0.00027	0.0036	0.0018	46	0.0000000	0.0000041	0.000275	0.00014	0.119	0.0404	0.0231	0.0236	0	0	45	0.00205	0.00197	0.000000	0.000163	110	0	0.00408				
		1st Quartile	0.00056	0.00060	0.0069	0.0056	321	<0.000010	<0.0000050	0.000322	0.000350	0.061	0.01350	0.0076	0.0091	<0.0000020	<0.0000020	286	<0.0010	<0.0010	<0.00020	<0.00020	448	<0.0050	<0.0050				
		Median	0.00066	0.00085	0.0075	0.0068	343	<0.000010	<0.0000050	0.000585	0.00044	0.108	0.0158	0.0136	0.0142	<0.0000020	<0.0000020	306	<0.0010	<0.0010	<0.00020	<0.00020	524	<0.0050	<0.0050				
		3rd Quartile	0.00086	0.00104	0.0087	0.0074	370	<0.000010	<0.0000050	0.000638	0.000560	0.1700	0.0179	0.0403	0.0438	<0.0000020	<0.0000020	339	0.00088	0.002	<0.00020	<0.00020	593	<0.0050	<0.0050				
MQL1	Middle Quinsam Lake 1 metre below surface	Average	0.00016	0.0001800	0.0177	0.0145	35.0	0.000005	0.0000025	0.000693	0.00061	0.037	0.0238	0.0071	0.00278	0.00000137	0.00000166	37	0.0005	0.0005	0.0001	0.0001	29.4	0.0025	0.0025	0.00333	0.00376	0.0100	0.02130
E206618		Count	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	13	14	15	15
		Minimum	0.00012	0.00014	0.0126	0.0093	29.7	<0.000010	<0.0000050	<0.00050	0.00047	0.023	0.0152	0.0045	<0.0010	<0.0000020	<0.0000020	26.1	<0.0010	<0.0010	<0.00020	<0.00020	15.6	<0.0050	<0.0050	<0.0020	<0.0020	<0.020	<0.020
		Maximum	0.0002	0.00023	0.0293	0.0206	41.3	<0.000010	<0.0000050	0.00153	0.00128	0.05	0.0302	0.0099	0.0084	0.000004	0.0000035	51.3	<0.0010	<0.0010	<0.00020	<0.00020	49.1	<0.0050	<0.0050	0.0079	0.0072	<0.020	0.18
		Geometric Mean	0.00016	0.00018	0.0173	0.0142	34.8	0.000005	0.0000025	0.000653	0.00059	0.037	0.0234	0.0069	0.00145	0.00000119	0.00000143	36.3	0.0005	0.0005	0.0001	0.00010000	28	0.0025	0.0025	0.00292	0.00327	0.01	0.0121
		Count <DL	0	0	0	0	0	15	15	1	0	0	0	0	7	13	10	0	15	15	15	15	0	15	15	7	6	15	14
		Standard Deviation	0.00003	0.00003	0.0043	0.003	3.6	0	0	0.000265	0.0002	0.009	0.0039	0.0016	0.00312	0.00000099	0.00000101	7.6	0	0	0	0	9.6	0	0	0.00173	0.00179	0	0.04390
		1st Quartile	0.00014	0.00016	0.0151	0.0119	32.1	<0.000010	<0.0000050	0.0006	0.000520	0.032	0.0226	0.0062	<0.0010	<0.0000020	<0.0000020	32.4	<0.0010	<0.0010	<0.00020	<0.00020	23.4	<0.0050	<0.0050	0.0025	0.00235	<0.020	<0.020
		Median	0.00016	0.0001700	0.0170	0.0156	34.7	<0.000010	<0.0000050	0.000630	0.00053	0.035	0.0237	0.0069	0.00120	<0.0000020	<0.0000020	35.3	<0.0010	<0.0010	<0.00020	<0.00020	27.20	<0.0050	<0.0050	0.0032	0.00385	<0.020	<0.020
		3rd Quartile	0.00018	0.0002	0.0198	0.016	37.4	<0.000010	<0.0000050	0.000745	0.00062	0.044	0.0264	0.0082	0.00515	<0.0000020	0.0000024	40.9	<0.0010	<0.0010	<0.00020	<0.00020	33.5	<0.0050	<0.0050	0.0036	<0.010	<0.020	<0.020
MQL8	Middle Quinsam Lake 1 metre from bottom	Average	0.000108	0.000121	0.0123	0.0088	38.44	0.000005	0.0000025	0.00067	0.00056	0.042	0.0193	0.0859	0.0827	0.00000159	0.00000163	47.2	0.0005	0.0005	0.0001	0.0001	41.5	0.002500	0.0025	0.00440	0.00334	0.0100	0.0247
E206618		Count	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	13	14	15	15
		Minimum	<0.00010	<0.00010	0.0054	0.0041	<1.0	<0.000010	<0.0000050	0.00056	0.00048	0.0180	0.0093	0.0028	<0.0010	<0.0000020	<0.0000020	35.5	<0.0010	<0.0010	<0.00020	<0.00020	26.7	<0.0050	<0.0050	0.0025	<0.0020	<0.020	<0.020
		Maximum	0.00014	0.00016	0.0308	0.0121	52.2	<0.000010	<0.0000050	0.00085	0.00088	0.124	0.0359	0.634	0.63	0.0000053	0.0000057	53.1	<0.0010	<0.0010	<0.00020	<0.00020	49.3	<0.0050	<0.0050	0.0096	0.005	<0.020	0.13
		Geometric Mean	0.000102	0.000115	0.011	0.0085	30.43	0.000005	0.0000025	0.00066	0.000550	0.035	0.0175	0.0131	0.00429	0.00000134	0.00000136	46.8	0.0005	0.0005	0.0001	0.0001	40.8	0.0025	0.0025	0.00410	0.00294	0.01	0.0139
		Count <DL	3	2	0	0	1	15	15	0	0	0	0	0	3	11	11	0	15	15	15	15	0	15	15	0	6	15	13
		Standard Deviation	0.000032	0.000034	0.0065	0.0024	11.77	0	0	0.00009	0.0001	0.032	0.0089	0.2067	0.21073	0.00000122	0.00000131	5.5	0	0	0	0.00000000	7.8	0	0	0.00180	0.00152	0	0.0389
		1st Quartile	0.00011	0.00011	0.0074	0.00660	36.5	<0.000010	<0.0000050	0.00058	0.0005	0.025	0.0116	0.0068	0.0012	<0.0000020	<0.0000020	45.6	<0.0010	<0.0010	<0.00020	<0.00020	35.4	<0.0050	<0.0050	0.0034	0.00225	<0.020	<0.020
		Median	0.00012	0.0001300	0.0109	0.0098	41	<0.000010	<0.0000050	0.00067	0.000540	0.027	0.0161	0.0089	0.003	<0.0000020	<0.0000020	48.2	<0.0010	<0.0010	<0.00020	<0.00020	45	<0.0050	<0.0050	0.0039	0.00315	<0.020	<0.020
		3rd Quartile	0.00013	0.00014	0.0145	0.0106	42.6	<0.000010	<0.0000050	0.00071	0.00056	0.048	0.0266	0.0107	0.0062	0.0000016	0.0000017	51.4	<0.0010	<0.0010	<0.00020	<0.00020	47.2	<0.0050	<0.0050	0.0046	<0.010	<0.020	<0.020

Notes:
factor applied to less-than results when calculating statistics: 0.5

2018 -19 Statistics Stn.Code																												
EMS. ID	Site Name & Description	Statistics	As-T	As-D	Al-T	Al-D	Alk-T	Cd-T	Cd-D	Cu-T	Cu-D	Fe-T	Fe-D	Mn-T	Mn-D	Hg-T	Hg-D	Hard-T	Ni-T	Ni-D	Pb-T	Pb-D	SO4-D	Zn-T	Zn-D	P-T	P-D	N-NO23	N-NH3
NNL1			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	mg/L
E217018	No Name Lake 1 metre below surface	Average	0.00032	0.000340	0.0322	0.0284	11.23	0.000005	0.0000025	0.000694	0.00059	0.07	0.0511	0.0063	0.00490	0.00001141	0.00000152	14.8	0.0005	0.0005	0.0001	0.0001	1.81	0.0025	0.0025	0.00418	0.00466	0.0847	0.010
		Count	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	13	15	15	15
		Minimum	0.00024	0.00025	0.0127	0.0118	<1.0	<0.000010	<0.0000050	<0.00050	0.00039	0.049	0.0365	0.0028	0.0012	<0.0000020	<0.0000020	13.3	<0.0010	<0.0010	<0.00020	<0.00020	<1.0	<0.0050	<0.0050	<0.0020	<0.0020	<0.020	<0.020
		Maximum	0.00043	0.00043	0.0645	0.0536	16.2	<0.000010	<0.0000050	0.0012	0.00115	0.11	0.0775	0.0146	0.0138	0.0000059	0.0000053	16.7	<0.0010	<0.0010	<0.00020	<0.00020	3.5	<0.0050	<0.0050	0.0069	0.0125	1.130	<0.020
		Geometric Mean	0.00031	0.00034	0.0281	0.0257	9.42	0.00000500	0.0000025	0.000656	0.00057	0.068	0.0497	0.00580	0.004	0.00000119	0.00000130	14.8	0.0005	0.0005	0.0001	0.0001	1.68	0.0025	0.0025	0.00380	0.00413	0.0137	0.01
		Count <DL	0	0	0	0	1	15	15	1	0	0	0	0	0	13	11	0	15	15	15	15	1	15	15	1	6	14	15
		Standard Deviation	0.000060	0.00005	0.0161	0.0124	4.0	0	0	0.000239	0.00018	0.019	0.0128	0.0032	0.0034	0.00000129	0.00000115	1	0	0	0.00000000	0	0.67	0	0	0.00161	0.00250	0.2892	0.000
		1st Quartile	0.00027	0.0003	0.0155	0.0169	10.25	<0.000010	<0.0000050	0.00059	0.0005	0.055	0.0411	0.0048	0.00290	<0.0000020	<0.0000020	14	<0.0010	<0.0010	<0.00020	<0.00020	1.45	<0.0050	<0.0050	0.003	0.00365	<0.020	<0.020
		Median	0.00031	0.000340	0.0319	0.0288	12.1	<0.000010	<0.0000050	0.00066	0.00056	0.07	0.0475	0.00540	0.00380	<0.0000020	<0.0000020	14.9	<0.0010	<0.0010	<0.00020	<0.00020	1.80	<0.0050	<0.0050	0.0043	<0.010	<0.020	<0.020
		3rd Quartile	0.00036	0.00038	0.0428	0.0357	13.45	<0.000010	<0.0000050	0.00071	0.00062	0.079	0.0592	0.006	0.00580	<0.0000020	0.0000015	15.3	<0.0010	<0.0010	<0.00020	<0.00020	2.05	<0.0050	<0.0050	0.0054	<0.010	<0.020	<0.020
NNLB	No Name Lake 1 metre from bottom	Average	0.00021	0.00025	0.0403	0.0344	11.3	0.000005	0.0000025	0.0007	0.00054	0.144	0.0854	0.0295	0.0259	0.00000205	0.00000185	15.5	0.0005	0.0005	0.0001	0.0001	4.4	0.0025	0.002500	0.00480	0.00430	0.0409	0.0182
E217018		Count	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	13	15	15	15
		Minimum	0.00017	0.00022	0.0327	0.0256	9.4	<0.000010	<0.0000050	0.00051	0.00038	0.114	0.0668	0.015	0.0134	<0.0000020	<0.0000020	13.7	<0.0010	<0.0010	<0.00020	<0.00020	1	<0.0050	<0.0050	0.0034	0.0026	<0.020	<0.020
		Maximum	0.00028	0.00033	0.0566	0.047	13.6	<0.000010	<0.0000050	0.00103	0.00092	0.216	0.112	0.0774	0.0698	0.0000068	0.0000049	16.8	<0.0010	<0.0010	<0.00020	<0.00020	5.9	<0.0050	<0.0050	0.0066	0.0065	0.051	0.090
		Geometric Mean	0.00021	0.000250	0.0397	0.0339	11.2	0.000005	0.0000025	0.00067	0.00053	0.141	0.0847	0.0239	0.0205	0.00000144	0.00000145	15.5	0.0005000	0.0005	0.0001	0.0001	4.1	0.0025	0.0025	0.00470	0.00420	0.0386	0.0135
		Count <DL	0	0	0	0	0	15	15	0	0	0	0	0	0	12	11	0	15	15	15	15	0	15	15	0	5	1	12
		Standard Deviation	0.00003	0.00003	0.0074	0.0063	1.3	0	0	0.00019	0.00014	0.032	0.0117	0.0239	0.0219	0.00000219	0.00000156	0.7	0	0.0000000	0	0	1.4	0	0.000000	0.00090	0.00100	0.011	0.0212
		1st Quartile	0.00018	0.00023	0.034	0.0301	10.6	<0.000010	<0.0000050	0.00054	0.00043	0.124	0.0774	0.0169	0.0139	<0.0000020	<0.0000020	15.2	<0.0010	<0.0010	<0.00020	<0.00020	4.4	<0.0050	<0.0050	0.0038	0.0036	0.037	<0.020
		Median	0.0002	0.00025	0.037	0.0330	11.2	<0.000010	<0.0000050	0.000600	0.00049	0.135	0.0833	0.0189	0.0158	<0.0000020	<0.0000020	15.6	<0.0010	<0.0010	<0.00020	<0.00020	4.8	<0.0050	<0.0050	0.005	0.0042	0.045	<0.020
		3rd Quartile	0.00022	0.00026	0.044	0.0369	12.0	<0.000010	<0.0000050	0.000840	0.00062	0.147	0.0905	0.0215	0.019	<0.0000020	0.00000175	15.8	<0.0010	<0.0010	<0.00020	<0.00020	5.2	<0.0050	<0.0050	0.0051	<0.010	0.0485	<0.020
NNO	No Name Lake Outlet	Average	0.00031	0.00032	0.0359	0.0288	13.7	0.000005	0.0000032	0.000709	0.0006	0.075	0.0522	0.0117	0.0135	0.0000021	0.0000020	14.7	0.0005	0.00050	0.000100	0.000100	1.94	0.0025	0.0025				
E217017		Count	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15				
		Minimum	0.00019	0.00021	0.0112	0.0081	8.6	<0.000010	<0.0000050	<0.00050	0.00027	0.048	0.0393	0.004	0.0029	<0.0000020	<0.0000020	12	<0.0010	<0.0010	<0.00020	<0.00020	<1.0	<0.0050	<0.0050				
		Maximum	0.00041	0.00042	0.0551	0.044	22	<0.000010	0.0000070	0.00141	0.00103	0.161	0.075	0.0408	0.086	0.0000074	0.0000073	19.2	<0.0010	<0.0010	<0.00020	<0.00020	2.9	<0.0050	<0.0050				
		Geometric Mean	0.0003	0.00031	0.0321	0.0254	13.4	0.000005	0.00000297	0.000615	0.00057	0.071	0.051	0.0089	0.0073	0.00000151	0.00000148	14.6	0.0005	0.00050	0.000100	0.000100	1.82	0.0025	0.0025				
		Count <DL	0	0	0	0	0	15	12	3	0	0	0	0	0	11	11	0	15	15	15	15	1	15	15				
		Standard Deviation	0.00007	0.00007	0.0147	0.0125	3.2	0	0.0000015	0.000373	0.0002	0.0290	0.0118	0.0109	0.022	0.00000211	0.00000205	1.9	0	0.00000	0.0000000	0.0000000	0.56	0	0				
		1st Quartile	0.00025	0.00026	0.0276	0.0162	11.6	<0.000010	<0.0000050	0.000505	0.00046	0.056	0.0422	0.0055	0.004	<0.0000020	<0.0000020	13.4	<0.0010	<0.0010	<0.00020	<0.00020	1.8	<0.0050	<0.0050				
		Median	0.00032	0.00034	0.0397	0.0328	14.5	<0.000010	<0.0000050	0.00065	0.00063	0.066	0.0497	0.0068	0.0056	<0.0000020	<0.0000020	14.9	<0.0010	<0.0010	<0.00020	<0.00020	2.00	<0.0050	<0.0050				
		3rd Quartile	0.00035	0.00037	0.0438	0.0387	15	<0.000010	<0.0000050	0.00094	0.00071	0.079	0.0598	0.0114	0.0076	0.00000195	0.0000017	15.4	<0.0010	<0.0010	<0.00020	<0.00020	2.2	<0.0050	<0.0050				
LLS	Small Seep into Long Lake	Average	0.00161	0.00223	0.0324	0.00406	223	0.00002050	0.00000387	0.000764	0.000248	0.808	0.49620	0.375	0.357	0.0000010	0.0000011	577	0.00345	0.0032	0.000138	0.0001	534	0.00489	0.00284				
E292131		Count	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13				
		Minimum	0.00062	0.00087	<0.0030	<0.0030	142	<0.000010	<0.0000050	<0.00050	<0.00020	0.167	0.0373	0.155	0.151	<0.0000020	<0.0000020	505	0.0015	0.0015	<0.00020	<0.00020	376	<0.0050	<0.0050				
		Maximum	0.00385	0.00649	0.267	0.0142	255	0.000134	0.00001	0.00401	0.00065	2.77	1.44	0.546	0.508	<0.0000020	0.0000022	649	0.0095	0.008	<0.0010	<0.00020	640	0.0163	0.0069				
		Geometric Mean	0.0014	0.00188	0.01052	0.00292	220	0.0000095	0.0000034	0.000494	0.000205	0.591	0.297	0.362	0.342	0.000001	0.00000106	575	0.00295	0.0028	0.000119	0.0001	530	0.00374	0.0027				
		Count <DL	0	0	2	6	0	10	9	8	5	0	0	0	0	13	12	0	1	0	13	13	0	11	12				
		Standard Deviation	0.00096	0.00156	0.07143	0.00409	34	0.0000361	0.00000237	0.001026	0.000162	0.721	0.4623	0.094	0.096	0	0.00000033	46	0.00232	0.002	0.000112	0.000000	71	0.00452	0.00122				
		1st Quartile	0.00088	0.00126	0.0045	<0.0030	203	<0.000010	<0.0000050	<0.00050	<0.00020	0.371	0.16	0.339	0.298	<0.0000020	<0.0000020	550	0.0021	0.002	<0.00020	<0.00020	491	<0.0050	<0.0050				
		Median	0.00139	0.00169	0.0080	0.0033	238	<0.000010	<0.0000050	<0.0010	0.000210	0.498	0.373	0.378	0.365	<0.0000020	<0.0000020	577	0.0023	0.0021	<0.00020	<0.00020	546	<0.0050	<0.0050				
		3rd Quartile	0.00177	0.00281	0.0243	0.0035	245	0.000018	0.0000058	0.00063	0.000340	1.13	0.52600	0.419	0.429	<0.0000020	<0.0000020	609	0.0038	0.0035	<0.00020	<0.00020	579	<0.010	<0.0050				
LLSM	Long Lake Middle Seep	Average	0.00056	0.00075	0.0543	0.00635	197	0.000005	0.00000433	0.000837	0.000496	0.432	0.21470	0.1953	0.1964	0.00000134	0.00000115	505	0.003	0.003	0.0001	0.0001	458	0.0025	0.0025				
E292131		Count	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10				
		Minimum	0.00026	0.00038	<0.0030	<0.0030	120	<0.000010	<0.0000050	<0.00050	<0.00020	0.132	0.0265	0.0742	0.0471	<0.0000020	<0.0000020	362	0.0012	0.0012	<0.00020	<0.00020	325	<0.0050	<0.0050				
		Maximum	0.00083	0.00130	0.186	0.0171	244	<0.000010	0.000009	0.00242	0.00159	1.03	0.483	0.348	0.339	0.0000044	0.0000025	573	0.0061	0.0062	<0.00020	<0.00020	545	<0.0050	<0.0050				
		Geometric Mean	0.00054	0.00071	0.01521	0.00377	192	0.000005	0.00000377	0.000564	0.00032	0.375	0.1499	0.1752	0.1709	0.00000116	0.0000011	501	0.0026	0.0027	0.000100	0.0001	453	0.0025	0.00250				
		Count <DL	0	0	2	5	0	10	6	5	3	0	0	0	0	9	9	0	0	0	10	10	0	10	10				
		Standard Deviation	0.00017	0.00025	0.07250	0.00654	47	0	0.00000251	0.000786	0.00048	0.248	0.16180	0.0924	0.0968	0.0000011	0.0000005	65	0.0015	0.0015	0	0	70	0	0				
		1st Quartile	0.0005	0.00059	0.00352	<0.0030	159	<0.000010	<0.0000050	<0.00050	0.00013	0.294	0.08190	0.1342	0.1405	<0.0000020	<0.0000020	472	0.0018	0.0019	<0.00020	<0.00020	418	<0.0050	<0.0050				
		Median	0.00056	0.00074	0.01515	0.00235	220	<0.000010	<0.0000050	0.00044	0.00030	0.434	0.17750	0.169	0.1760	<0.0000020	<0.0000020	535	0.003	0.0027	<0.00020	<0.00020	451	<0.0050	<0.0050				
		3rd Quartile	0.00062	0.00086	0.07505	0.01048	235	<0.000010	0.0000648	0.001135	0.000705	0.489	0.3113	0.2635	0.2785	<0.0000020	<0.0000020	547	0.0034	0.0034	<0.00020	<0.00020	518	<0.0050	<0.0050				

Notes:
Factor applied to less-than results when calculating statistics: 0.5

Table 26 Statistics 2016 -2021 30 Page(s)

2018 -19 Statistics Stn.Code EMS. ID	Site Name & Description	Statistics	As-T	As-D	Al-T	Al-D	Alk-T	Cd-T	Cd-D	Cu-T	Cu-D	Fe-T	Fe-D	Mn-T	Mn-D	Hg-T	Hg-D	Hard-T	Ni-T	Ni-D	Pb-T	Pb-D	SO4-D	Zn-T	Zn-D	P-T	P-D	N-NO23	N-NH3
			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	mg/L
MW002	Ex-situ 2-3 South shallow groundwater well beside 3-South Pit (1 Seam)	Average	0.00125	0.0017	0.01230	0.0085	249.7	0.0000100	0.0000281	0.00050	0.000533	4.04	3.36	1.31	1.63		0.0000010	1220	0.0065	0.0044	0.000200	0.000450	1295	0.00500	0.0197	0.00570	0.00560	0.01	0.44
		Count	6	1	1	6	6	1	6	1	6	1	6	1	6		6	1	1	6	1	6	6	1	6	1	6	1	1
		Minimum	0.00088	0.0017	0.0123	<0.0060	239	<0.000020	<0.000010	<0.0010	<0.00040	4.04	2.61	1.31	1.3		<0.0000020	1220	0.0065	0.002	<0.00040	<0.00040	1240	<0.010	<0.010	0.0057	0.0032	<0.020	0.44
		Maximum	0.00186	0.0017	0.0123	0.018	271	<0.000020	0.000096	<0.0010	0.001	4.04	4.2	1.31	1.83		<0.0000020	1220	0.0065	0.0142	<0.00040	<0.0010	1340	<0.010	0.063	0.0057	0.0106	<0.020	0.44
		Geometric Mean	0.00121	0.0017	0.01230	0.00745	249.4	0.0000100	0.0000174	0.00050	0.000482	4.04	3.32	1.31	1.62		0.0000010	1220	0.0065	0.0032	0.000200	0.000429	1294	0.00500	0.014	0.0057	0.0052	0.01	0.44
		Count <DL	0	0	0	5	0	1	4	1	5	0	0	0	0		6	0	0	4	1	6	0	1	5	0	0	1	0
		Standard Deviation	0.00033	0	0.00000	0.00499	12.2	0.0000000	0.0000343	0.00000	0.000258	0	0.55	0.00	0.2		0.0000000	0	0	0.00482	0.000000	0.000122	38	0.00000	0.0214	0.00000	0.0027	0	0
		1st Quartile	0.00112	0.0017	0.0123	<0.015	241.8	<0.000020	<0.000025	<0.0010	<0.0010	4.04	3.03	1.31	1.55		<0.0000020	1220	0.0065	<0.0050	<0.00040	<0.0010	1280	<0.010	<0.025	0.0057	0.0039	<0.020	0.44
		Median	0.00114	0.0017	0.0123	<0.015	245	<0.000020	<0.000025	<0.0010	<0.0010	4.04	3.46	1.31	1.7		<0.0000020	1220	0.0065	<0.0050	<0.00040	<0.0010	1285	<0.010	<0.025	0.0057	0.005	<0.020	0.44
		3rd Quartile	0.0013	0.0017	0.0123	<0.015	254.2	<0.000020	0.0000256	<0.0010	<0.0010	4.04	3.52	1.31	1.75		<0.0000020	1220	0.0065	<0.0050	<0.00040	<0.0010	1327	<0.010	<0.025	0.00570	0.00610	<0.020	0.44
QU1009D	Ex-situ 4-South deep groundwater well. Down gradient of 4-South Mine. Base of Dunsmuir Member. Assesses vertical gradients & water quality down gradient of the 4-South Mine workings. Just outside of mine pool. (Below 3 Seam)	Average	0.0954			0.00150	173.3		0.0000025		0.000100		0.620		0.0834		0.0000010			0.000500		0.0001000	87.1		0.00250		0.0149		0.110
		Count	3			3	3		3		3		3		3		3			3		3	3		3		3		1
		Minimum	0.0883			<0.0030	158		<0.0000050		<0.00020		0.434		0.0618		<0.0000020			<0.0010		<0.00020	80.1		<0.0050		0.01		0.110
		Maximum	0.101			<0.0030	185		<0.0000050		<0.00020		0.724		0.111		<0.0000020			<0.0010		<0.00020	99.9		<0.0050		0.0227		0.110
		Geometric Mean	0.0953			0.0015	173		0.0000025		0.000100		0.604		0.081		0.0000010			0.000500		0.0001000	86.7		0.00250		0.0140		0.110
		Count <DL	0			3	0		3		3		0		0		3			3		3	0		3		0		0
		Standard Deviation	0.007			0	13.9		0.0000000		0.000000		0.161		0.0251		0.0000000			0.000000		0.0000000	11.1		0.00000		0.0068		0.000
		1st Quartile	0.0927			<0.0030	167.5		<0.0000050		<0.00020		0.568		0.0696		<0.0000020			<0.0010		<0.00020	80.8		<0.0050		0.011		0.110
		Median	0.097			<0.0030	177		<0.0000050		<0.00020		0.701		0.0774		<0.0000020			<0.0010		<0.00020	81.4		<0.0050		0.012		0.110
		3rd Quartile	0.099			<0.0030	181		<0.0000050		<0.00020		0.712		0.0942		<0.0000020			<0.0010		<0.00020	90.6		<0.0050		0.0174		0.110
QU1009S	Ex-situ 4-South shallow groundwater well. Fracture zone 10 m below till. Assesses vertical gradients & water quality down gradient of the 4-South Mine workings. Just outside of mine pool. (Below 3 Seam)	Average	0.0758			0.00150	143.5		0.0000025		0.000200		4.67		0.36		0.0000010			0.000500		0.0001000	116.5		0.00250		0.0151		
		Count	2			2	2		2		2		2		2		2			2		2	2		2		2		
		Minimum	0.073			<0.0030	130		<0.0000050		<0.00020		4.57		0.353		<0.0000020			<0.0010		<0.00020	109		<0.0050		0.0089		
		Maximum	0.0787			<0.0030	157		<0.0000050		0.0003		4.77		0.368		<0.0000020			<0.0010		<0.00020	124		<0.0050		0.0213		
		Geometric Mean	0.0758			0.0015	142.9		0.0000025		0.000173		4.67		0.36		0.0000010			0.0005		0.0001000	116.3		0.00250		0.0138		
		Count <DL	0			2	0		2		1		0		0		2			2		2	0		2		0		
		Standard Deviation	0.004			0	19.1		0.0000000		0.000141		0.14		0.011		0.0000000			0		0.0000000	10.6		0.00000		0.0088		
		1st Quartile	0.0744			<0.0030	136.8		<0.0000050		0.00015		4.62		0.357		<0.0000020			<0.0010		<0.00020	112.8		<0.0050		0.012		
		Median	0.0758			<0.0030	143.5		<0.0000050		0.0002		4.67		0.36		<0.0000020			<0.0010		<0.00020	116.5		<0.0050		0.0151		
		3rd Quartile	0.0773			<0.0030	150.2		<0.0000050		0.00025		4.72		0.364		<0.0000020			<0.0010		<0.00020	120.2		<0.0050		0.0182		
SPD																													
E218582	Settling Pond # 1	Average	0.00096	0.00129	0.0564	0.01979	67.70	0.0000079	0.00000609	0.001126	0.00067	0.398	0.1153	0.0922	0.07257	0.00000129	0.00000151	316	0.00177	0.00166	0.000114	0.000100	196.8	0.00320	0.0031	0.0059	0.0015	0.0100	0.022
		Count	7	7	7	7	11	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	37	7	7	3	1	2	2
		Minimum	0.00032	0.00041	0.008	<0.0030	38.30	<0.000010	<0.0000050	<0.00050	0.00045	0.115	0.0082	0.0183	<0.0010	<0.0000020	<0.0000020	152	<0.0010	<0.0010	<0.00020	<0.00020	25.1	<0.0050	<0.0050	<0.0030	<0.0030	<0.020	<0.020
		Maximum	0.00333	0.00357	0.138	0.0556	99.5	0.000025	0.000020	0.00255	0.00105	0.962	0.238	0.349	0.31	0.000003	0.0000032	401	0.007	0.0067	0.0002	<0.00020	368	0.0074	0.0067	0.0138	<0.0030	<0.020	0.034
		Geometric Mean	0.00068	0.00096	0.0377	0.01152	64.1	0.0000063	0.0000041	0.000868	0.00064	0.314	0.0715	0.0574	0.02425	0.0000012	0.0000013	302	0.00103	0.00091	0.00011	0.000100	158.20	0.00292	0.00288	0.00368	0.00150	0.0100	0.0184
		Count <DL	0	0	0	1	0	6	5	1	0	0	0	0	1	6	5	0	4	5	6	7	0	6	6	1	1	2	1
		Standard Deviation	0.00107	0.00114	0.0449	0.01951	22.4	0.0000076	0.00000681	0.000846	0.00021	0.294	0.0913	0.1162	0.1082	0.0000008	0.00000091	92.0	0.00239	0.00233	0.000038	0.0000000	109.9	0.00185	0.00159	0.00686	0	0	0.017
		1st Quartile	0.00043	0.00052	0.0243	0.00585	48.6	<0.000010	<0.0000050	0.0006	0.00052	0.194	0.0414	0.0313	0.01525	<0.0000020	<0.0000020	283	<0.0010	<0.0010	<0.00020	<0.00020	92.4	<0.0050	<0.0050	0.00195	<0.0030	<0.020	0.016
		Median	0.00055	0.00081	0.055	0.0128	74.4	<0.000010	<0.0000050	0.00065	0.00065	0.347	0.127	0.0481	0.035	<0.0000020	<0.0000020	345	<0.0010	<0.0010	<0.00020	<0.00020	217.00	<0.0050	<0.0050	0.0024	<0.0030	<0.020	0.02200
		3rd Quartile	0.00082	0.0016	0.0725	0.02845	85.6	<0.000010	0.0000620	0.001615	0.00074	0.485	0.1755	0.0838	0.066	<0.0000020	0.0000017	376	0.0017	0.00145	<0.00020	<0.00020	293	<0.0050	<0.0050	0.00810	<0.0030	<0.020	0.02800
LLE	Long Lake Entrance (LLE)	Average	0.00085	0.00103	0.1098	0.03650	50.97	0.00000700	0.00000400	0.000835	0.00054	0.576	0.339	0.127	0.1314	0.00000172	0.0000019	215.6	0.00070	0.0005	0.00014	0.000116	204.2	0.0035	0.00250	0.0086	0.0015	0.0484	0.02190
E292130		Count	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	44	10	10	10	1	10	10
		Minimum	0.00046	0.00051	<0.015	<0.0030	<1.0	<0.000010	<0.0000050	<0.00050	0.00035	0.159	0.0665	0.0075	0.0073	<0.0000020	<0.0000020	87.8	<0.0010	<0.0010	<0.00020	<0.00020	44.3	<0.0050	<0.0050	0.0036	<0.0030	<0.020	<0.015
		Maximum	0.0013	0.00172	0.336	0.0682	110	<0.000050	0.0000084	0.00209	0.00117	1.93	0.869	0.501	0.488	0.0000049	0.0000044	601	<0.0050	<0.0010	<0.0010	0.00026	631	<0.025	<0.0050	0.0207	<0.0030	0.129	0.0550
		Geometric Mean	0.0008	0.00094	0.0802	0.02126	30.86	0.0000059	0.00000358	0.000694	0.0005	0.405	0.2520	0.0653	0.0671	0.00000142	0.00000156	168.7	0.00059	0.0005	0.000117	0.000110	157.9	0.00294	0.00250	0.0075	0.0015	0.0299	0.0171
		Count <DL	0	0	1	1	1	10	6	3	0	0	0	0	0	7	6	0	10	10	10	9	0	10	10	0	1	4	5
		Standard Deviation	0.00031	0.00045	0.0873	0.02538	36.3	0.0000063	0.00000212	0.000538	0.00026	0.568	0.2796	0.1608	0.1624	0.00000132	0.00000136	177.2	0.00063	0	0.000126	0.000051	164	0.00316	0.00000	0.0053	0	0.0453	0.0164
		1st Quartile	0.00064	0.00064	0.0695	0.01165	29.1	<0.000010	<0.0000050	0.000572	0.00038	0.222	0.134	0.0364	0.0369	<0.0000020	<0.0000020	100.1	<0.0010	<0.0010	<0.00020	<0.00020	97.1	<0.0050	<0.0050	0.0051	<0.0030	<0.020	<0.020
		Median	0.00076	0.00092	0.103	0.04255	39.6	<0.000010	<0.0000050	0.00076	0.00045	0.312	0.270	0.0634	0.0699	<0.0000020	<0.0000020	132	<0.0010	<0.0010	<0.00020	<0.00020	134.5	<0.0050	<0.0050	0.0076	<0.0030	0.027	0.016
		3rd Quartile	0.00113	0.00142	0.1118	0.05198	78.65	<0.000010	0.0000545	0.000942	0.0006	0.84	0.3675	0.119	0.1256	0.00000205	0.00000218	279.2	<0.0010	<0.0010	<0.00020	<0.00020	269.5	<0.0050	<0.0050	0.00970	<0.0030	0.0870	0.02920
LLM1	Long Lake Middle 1 metre below Surface	Average	0.000481	0.00053	0.021	0.0175	33.6	0.00000500	0.00000317	0.000658	0.00050	0.05	0.0318	0.0089	0.00505	0.00000177	0.00000183	79.7	0.00050	0.00063	0.000100	0.000127	64.1	0.00250	0.00317	0.00384	0.00491	0.0113	0.0177
E206619		Count	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	14	15	15	15
		Minimum	<0.00050	0.00039	0.0083	0.0081	20.7	<0.000010	<0.0000050	<0.00050	0.00027	0.012	0.0118	0.0036	<0.0010	<0.0000020	<0.0000020	41.7	<0.0010	<0.0010	<0.00020	<0.00020	25.8	<0.0050	<0.0050	<0.0020	<0.0020	<0.020	<0.020
		Maximum	0.00064	0.00066	0.0449	0.037	44	<0.000010	<0.0000025	0.00164	0.00088	0.119	0.0703	0.0150	0.0127	0.0000048	0.0000046	112	<0.0010	<0.0050	<0.00020	<0.0010	99.7	<0.0050	<0.025	0.0067	<0.050	0.029	0.056
		Geometric Mean	0.00047	0.00052	0.0188	0.0156	32.6	0.000005	0.00000278	0.00056	0.00048	0.04	0.0271	0.0082	0.0033	0.00000142	0.00000149	76.3	0.00050	0.00056	0.000100	0.000111	59	0.0025	0.00278	0.00341	0.00358	0.0107	0.0141
		Count <DL	1	0	0	0	0	15	15	4	1	0	0	0	2	11	10	0	15	15	15	15	0	15	15	1	7	14	11
		Standard Deviation	0.000102	0.00008	0.0102	0.0091	8.2	0.00000000	0.0000258	0.000398	0.00017	0.032	0.0182	0.0035	0.00405	0.00000144	0.00000138	23.3	0.00000	0.00052	0.000000	0.000103	25.9	0	0.00258	0.00183	0.00572	0.0049	0.0152
		1st Quartile	0.00042	0.00049	0.0144	0.0099	27	<0.000010	<0.0000050	0.00039	0.00039	0.023	0.0168	0.0064	0.00135	<0.0000020	<0.0000020	65	<0.0010	<0.0010	<0.00020	<0.00020	41.6	<0.0050	<0.0050	0.0025	0.0029	<0.020	<0.020
		Median	0.00046	0.0005	0.0188	0.0155	34.1	<0.000010	<0.0000050	0.00056	0.00048	0.047	0.0311	0.0085	0.004	<0.0000020	<0.0000020	76.9	<0.0010	<0.0010	<0.00020	<0.00020	56.4	<0.0050	<0.0050	0.0035	0.0034	<0.020	<0.020
		3rd Quartile	0.000545	0.00059	0.0253	0.0206	42	<0.000010	<0.0000050	0.0008	0.00059	0.0600	0.035	0.0116	0.00755	0.00000155	0.00000215	104.5	<0.0010	<0.0010	<0.00020	<0.00020	92.2	<0.0050	<0.0050	0.0048	<0.010	<0.020	0.015

Notes:
Please append QA/QC statistical results when calculating summaries (e.g.)

Table 26 Statistics 2016 -2021 30 Page(s)

2018 -19 Statistics Stn.Code EMS. ID	Site Name & Description	Statistics	As-T	As-D	Al-T	Al-D	Alk-T	Cd-T	Cd-D	Cu-T	Cu-D	Fe-T	Fe-D	Mn-T	Mn-D	Hg-T	Hg-D	Hard-T	Ni-T	Ni-D	Pb-T	Pb-D	SO4-D	Zn-T	Zn-D	P-T	P-D	N-NO23	N-NH3
			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	mg/L
LLMB	Long Lake Middle 1 metre From Bottom	Average	0.0002	0.00024	0.0136	0.0094	56.8	0.00000500	0.0000025	0.000405	0.00047	0.037	0.01153	0.1771	0.11405	0.0000019	0.00000174	148.9	0.00050	0.00050	0.000100	0.000100	139.1	0.00250	0.00250	0.00384	0.00333	0.082	0.0147
E206619		Count	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	14	15	15	15
		Minimum	0.00016	0.0002	0.0064	0.0048	54	<0.000010	<0.0000050	<0.00050	0.00032	0.012	<0.0050	0.0387	<0.0010	<0.0000020	<0.0000020	138	<0.0010	<0.0010	<0.00020	<0.00020	129	<0.0050	<0.0050	<0.0020	<0.0020	0.049	<0.020
		Maximum	0.00023	0.0003	0.0291	0.0144	58.7	<0.000010	<0.0000050	0.00103	0.00136	0.053	0.0214	0.391	0.391	0.0000059	0.000006	166	<0.0010	<0.0010	<0.00020	<0.00020	147	<0.0050	<0.0050	0.0085	<0.010	0.121	0.039
		Geometric Mean	0.0002	0.00024	0.0121	0.0088	56.7	0.000005	0.0000025	0.000359	0.00044	0.035	0.00915	0.1478	0.02769	0.00000146	0.00000134	148.7	0.00050	0.00050	0.000100	0.000100	139	0.00250	0.00250	0.00331	0.00298	0.078	0.0127
		Count <DL	0	0	0	0	0	15	15	9	0	0	3	0	3	11	12	0	15	15	15	15	0	15	15	2	7	0	12
		Standard Deviation	0.00002	0.00002	0.0069	0.0032	1.6	0	0	0.000229	0.00026	0.01	0.00657	0.106	0.1238	0.00000172	0.00000172	7	0.00000	0.00000	0.000000	0.000000	5.6	0	0.00000	0.00201	0.00144	0.025	0.01
		1st Quartile	0.00019	0.00023	0.0078	0.0066	55.6	<0.000010	<0.0000050	<0.00050	0.00035	0.034	0.00515	0.0915	0.0056	<0.0000020	<0.0000020	145	<0.0010	<0.0010	<0.00020	<0.00020	135	<0.0050	<0.0050	0.0026	0.0026	0.058	<0.020
		Median	0.0002	0.00024	0.0121	0.0093	57.1	<0.000010	<0.0000050	<0.00050	0.0004	0.037	0.01260	0.129	0.0673	<0.0000020	<0.0000020	148	<0.0010	<0.0010	<0.00020	<0.00020	140.0	<0.0050	<0.0050	0.00365	0.0029	0.083	<0.020
		3rd Quartile	0.00021	0.00026	0.0176	0.0121	58	<0.000010	<0.0000050	0.00055	0.00047	0.044	0.01540	0.242	0.207	0.00000155	<0.0000020	152.5	<0.0010	<0.0010	<0.00020	<0.00020	143	<0.0050	<0.0050	0.00492	<0.010	0.106	<0.020
LLO	Long Lake Outlet	Average	0.00048	0.00051	0.026	0.0179	32.5	0.000005	0.00000333	0.001834	0.00055	0.0550	0.0307	0.0126	0.004	0.00000171	0.00000177	73.7	0.0005	0.00050	0.000100	0.000100	54.9	0.00250	0.00316				
E219412		Count	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	51	15	15				
		Minimum	0.00036	0.00035	0.0109	0.0054	15.9	<0.000010	<0.0000050	<0.00050	0.00033	0.012	0.0065	0.0048	0.0015	<0.0000020	<0.0000020	39.1	<0.0010	<0.0010	<0.00020	<0.00020	12.7	<0.0050	<0.0050				
		Maximum	0.00064	0.00066	0.0705	0.0403	43.9	<0.000010	0.000008	0.0204	0.00094	0.132	0.052	0.035	0.0085	0.0000067	0.0000076	105	<0.0010	<0.0010	<0.00020	<0.00020	110	<0.0050	0.0124				
		Geometric Mean	0.00048	0.0005	0.0221	0.0151	31.2	0.000005	0.00000303	0.000564	0.00052	0.049	0.0278	0.0106	0.0036	0.0000013	0.0000014	69.5	0.0005	0.00050	0.000100	0.000100	47.8	0.00250	0.00278				
		Count <DL	0	0	0	0	0	15	12	6	0	0	0	0	0	12	11	0	15	15	15	15	0	15	14				
		Standard Deviation	0.00009	0.00009	0.0167	0.0104	9.2	0	0.00000182	0.005145	0.00018	0.027	0.0118	0.0085	0.0019	0.00000164	0.00000176	24.7	0	0.00000	0.000000	0.000000	27.1	0	0.00256				
		1st Quartile	0.0004	0.00046	0.0143	0.0094	23.9	<0.000010	<0.0000050	<0.00050	0.00038	0.046	0.0246	0.0068	0.0028	<0.0000020	<0.0000020	50.6	<0.0010	<0.0010	<0.00020	<0.00020	30.8	<0.0050	<0.0050				
		Median	0.00049	0.00049	0.0181	0.0154	34.2	<0.000010	<0.0000050	0.00052	0.00053	0.052	0.031	0.009	0.0035	<0.0000020	<0.0000020	74.5	<0.0010	<0.0010	<0.00020	<0.00020	54.6	<0.0050	<0.0050				
		3rd Quartile	0.00054	0.00057	0.0343	0.0246	41.8	<0.000010	<0.0000050	0.00062	0.00065	0.062	0.0387	0.0150	0.0044	<0.0000020	0.00000165	101	<0.0010	<0.0010	<0.00020	<0.00020	81.8	<0.0050	<0.0050				
WB	Middle Quinsam Lake Outlet	Average	0.00019	0.0002	0.0450	0.0161	35.3	0.000005	0.0000028	0.00083	0.0006	0.059	0.0262	0.0077	0.0028	0.0000020	0.0000015	36.5	0.00050	0.00050	0.000100	0.000100	29.1	0.00250	0.00250				
E0900504		Count	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	17	15	15				
		Minimum	0.00015	0.00014	0.0134	0.0101	31	<0.000010	<0.0000050	0.00053	0.00047	0.028	0.0214	0.0048	0.0013	<0.0000020	<0.0000020	29.5	<0.0010	<0.0010	<0.00020	<0.00020	20.5	<0.0050	<0.0050				
		Maximum	0.00024	0.00033	0.2870	0.025	41	<0.000010	0.000007	0.00141	0.00084	0.337	0.0318	0.0126	0.006	0.0000075	0.0000031	48.1	<0.0010	<0.0010	<0.00020	<0.00020	38.5	<0.0050	<0.0050				
		Geometric Mean	0.00019	0.000200	0.0278	0.0156	35.2	0.000005	0.00000268	0.0008	0.00059	0.044	0.0260	0.0074	0.0026	0.00000141	0.00000135	36.2	0.00050	0.00050	0.000100	0.000100	28.8	0.00250	0.00250				
		Count <DL	0	0	0	0	0	15	14	0	0	0	0	0	0	12	10	0	15	15	15	15	0	15	15				
		Standard Deviation	0.00003	0.00005	0.0694	0.0039	2.3	0	0.00000116	0.00025	0.0001	0.0770	0.0033	0.0024	0.0012	0.00000207	0.00000077	5	0.00000	0.00000	0.000000	0.000000	4.4	0	0				
		1st Quartile	0.00017	0.00018	0.0173	0.0134	34	<0.000010	<0.0000050	0.00066	0.00052	0.034	0.0246	0.0055	0.002	<0.0000020	<0.0000020	33.8	<0.0010	<0.0010	<0.00020	<0.00020	26.9	<0.0050	<0.0050				
		Median	0.00019	0.000190	0.0195	0.0164	35	<0.000010	<0.0000050	0.00079	0.0006	0.039	0.0256	0.0079	0.0028	<0.0000020	<0.0000020	35.1	<0.0010	<0.0010	<0.00020	<0.00020	27.8	<0.0050	<0.0050				
		3rd Quartile	0.0002	0.000220	0.0394	0.0178	36.3	<0.000010	<0.0000050	0.00095	0.00061	0.044	0.0285	0.0088	0.0031	<0.0000020	0.00000215	38	<0.0010	<0.0010	<0.00020	<0.00020	30.5	<0.0050	<0.0050				
75SD	Settling Pond at 75- Discharge to Stream 1 -75																												
E292069		Average	0.00377	0.00397	0.1122	0.00906	110.4	0.000005	0.00000341	0.00173	0.00137	0.149	0.022	0.0496	0.0192	0.000001	0.00000117	131.3	0.0005	0.00068	0.0001	0.000136	35.5	0.0025	0.00341	0.0278		0.01	0.0092
		Count	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	2		2	3
		Minimum	<0.00050	0.00098	0.011	<0.0030	51.7	<0.000010	<0.0000050	0.00071	0.00048	0.024	0.0062	0.019	0.0017	<0.0000020	<0.0000020	56.8	<0.0010	<0.0010	<0.00020	<0.00020	10.9	<0.0050	<0.0050	0.0238		<0.020	<0.015
		Maximum	0.0124	0.013	0.954	0.03	151	<0.000010	<0.0000025	0.00274	0.00235	0.886	0.0462	0.104	0.0533	<0.0000020	0.0000029	228	<0.0010	<0.0050	<0.00020	<0.0010	115	<0.0050	<0.025	0.0319		<0.020	<0.020
		Geometric Mean	0.002302	0.00275	0.0291	0.00684	106.1	0.00000500	0.00000289	0.00157	0.00123	0.074	0.017	0.0441	0.0131	0.000001	0.0000011	123.7	0.0005	0.00058	0.000100	0.000116	27.3	0.0025	0.00289	0.0276		0.01	0.0091
		Count <DL	1	0	0	1	0	11	11	0	0	0	0	0	0	11	10	0	11	11	11	11	0	11	11	0		2	3
		Standard Deviation	0.003742	0.00383	0.2808	0.00791	30.5	0	0.00000302	0.00075	0.00062	0.252	0.0156	0.026	0.0166	0	0.00000057	46.3	0	0.0006	0	0.000121	30.9	0	0.00302	0.0057		0	0.0014
		1st Quartile	0.0011	0.00125	0.014	0.0044	93	<0.000010	<0.0000050	0.00113	0.00087	0.032	0.0085	0.031	0.0086	<0.0000020	<0.0000020	103.2	<0.0010	<0.0010	<0.00020	<0.00020	14	<0.0050	<0.0050	0.0258		<0.020	0.0088
		Median	0.00315	0.00313	0.0159	0.0067	108	<0.000010	<0.0000050	0.00167	0.00119	0.075	0.016	0.0416	0.012	<0.0000020	<0.0000020	132	<0.0010	<0.0010	<0.00020	<0.00020	27.7	<0.0050	<0.0050	0.0278		<0.020	<0.020
		3rd Quartile	0.0044	0.00435	0.032	0.0099	135.5	<0.000010	<0.0000050	0.00233	0.00181	0.103	0.037	0.0624	0.0264	<0.0000020	<0.0000020	154.5	<0.0010	<0.0010	<0.00020	<0.00020	34.2	<0.0050	<0.0050	0.0299		<0.020	<0.020
75	Stream 1-75 discharge to LWO	Average	0.000075	0.000116	0.0892	0.0262	25.1	0.000005	0.00000356	0.000486	0.00044	0.0558	0.00549	0.00244	0.0005	0.00000114	0.00000196	16.5	0.00050	0.00050	0.000100	0.000100	4.000	0.00250	0.00250				
E292109		Count	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8				
		Minimum	<0.00010	<0.00010	0.0195	0.0159	10.4	<0.000010	<0.0000050	<0.00050	<0.00020	<0.010	<0.0050	<0.0010	<0.0010	<0.0000020	<0.0000020	13.2	<0.0010	<0.0010	<0.00020	<0.00020	3	<0.0050	<0.0050				
		Maximum	0.00013	0.0004	0.514	0.033	93.1	<0.000010	0.000011	0.00137	0.00059	0.411	0.008	0.016	<0.0010	0.0000021	0.0000046	23.5	<0.0010	<0.0010	<0.00020	<0.00020	4.80	<0.0050	<0.0050				
		Geometric Mean	0.000069	0.000087	0.0404	0.0254	18.4	0.000005	0.00000301	0.000389	0.000392	0.0087	0.00504	0.00077	0.0005	0.0000011	0.0000016	16.2	0.00050	0.00050	0.000100	0.000100	3.9	0.00250	0.00250				
		Count <DL	5	4	0	0	0	8	7	5	1	7	2	7	8	7	5	0	8	8	8	8	0	8	8				
		Standard Deviation	0.000035	0.000118	0.1717	0.0065	28	0	0.00000301	0.000401	0.000167	0.1435	0.00215	0.00548	0	0.00000039	0.00000142	3.8	0.00000	0.00000	0.000000	0.000000	0.6	0	0				
		1st Quartile	<0.00010	<0.00010	0.0263	0.0233	11.2	<0.000010	<0.0000050	<0.00050	0.00038	<0.010	0.00438	<0.0010	<0.0010	<0.0000020	<0.0000020	14	<0.0010	<0.0010	<0.00020	<0.00020	3.6	<0.0050	<0.0050				
		Median	<0.00010	0.00008	0.0292	0.0284	14.2	<0.000010	<0.0000050	<0.00050	0.00049	<0.010	0.00565	<0.0010	<0.0010	<0.0000020	<0.0000020	14.8	<0.0010	<0.0010	<0.00020	<0.00020	4	<0.0050	<0.0050				
		3rd Quartile	0.00011	0.00011	0.0348	0.0305	23	<0.000010	<0.0000050	0.000582	0.000562	<0.010	0.007	<0.0010	<0.0010	<0.0000020	0.00000288	17.9	<0.0010	<0.0010	<0.00020	<0.00020	4.3	<0.0050	<0.0050				
QU0813A	Ex-situ 7-South groundwater well down gradient of the CCR backfill towards QR (No. 4 Seam)	Average	0.398			0.0015	180.5		0.0000025		0.000100		0.198		0.0451		0.0000014			0.000500		0.0001000	31.7		0.00250		0.0712		
		Count	4			4	4		4		4		4		4		4			4		4	4		4		4		
		Minimum	0.368			<0.0030	178		<0.0000050		<0.00020		0.171		0.0387		<0.0000020			<0.0010		<0.00020	27.5		<0.0050		0.044		
		Maximum	0.42			<0.0030	182		<0.0000050		<0.00020		0.217		0.0513		0.0000027			<0.0010		<0.00020	37		<0.0050		0.0826		
		Geometric Mean	0.398			0.0015	180.5		0.0000025		0.000100		0.198		0.0448		0.0000013			0.000500		0.0001000	31.5		0.00250		0.0690		
		Count <DL	0			4	0		4		4		0		0		3			4		4	0		4		0		
		Standard Deviation	0.023			0	1.7		0		0.000000		0.020		0.0055		0.0000009			0.000000		0.0000000	4		0.00000		0.0182		
		1st Quartile	0.388			<0.0030	180.2		<0.0000050		<0.00020		0.19		0.0418		<0.0000020			<0.0010		<0.00020	29.4		<0.0050		0.0691		
		Median	0.402			<0.0030	181		<0.0000050		<0.00020		0.203		0.0451		<0.0000020			<0.0010		<0.00020	31.2		<0.0050		0.079		
		3rd Quartile	0.413			<0.0030	181.2		<0.0000050		<0.00020		0.211		0.0484		0.00000142			<0.0010		<0.00020	33.5		<0.0050		0.081		
QU0813B	Ex-situ 7-South groundwater well down gradient of the CCR backfill towards QR (Till & SST contact)	Average	0.33622			0.0039	123.7		0.0000033		0.000300		0.13383		0.0874		0.0000010			0.000700		0.0001000	58.9		0.00250		0.0763		
		Count	3			3	3		3		3		3		3		3			3		3	3		3		3		
		Minimum	0.00067			0.003	122		<0.0000050		<0.00020		<0.0050		0.0773		<0.0000020			<0.0010		<0.00020	42.3		<0.0050		0.022		
		Maximum	0.509			0.0049	125		0.000005		0.0007		0.272		0.0956		<0.0000020			0.0011		<0.00020	91.9		<0.0050		0.141		
		Geometric Mean	0.05542			0.0039	123.7		0.0000032		0.000191		0.0442		0.0871		0.0000010			0.000650		0.0001000	54.9		0.00250		0.0589		
		Count <DL	0			0	0		2		2		1		0		3			2		3	0		3		0		
		Standard Deviation	0.291			0.0010	1.5		0.0000014		0.000346		0.135		0.0093		0.0000000			0.000350		0.0000000	28.6		0.00000		0.0602		
		1st Quartile	0.24984			0.0034	123		<0.0000050		<0.00020		0.06475		0.0833		<0.0000020			<0.0010		<0.00020	42.4		<0.0050		0.044		
		Median	0.499			0.0039	124		<0.0000050		<0.00020		0.127		0.0894		<0.0000020			<0.0010		<0.00020	42.5		<0.0050		0.066		
		3rd Quartile	0.504			0.0044	124.5		0.00000375		0.0004		0.1995		0.0925		<0.0000020			0.0008		<0.00020	67.2		<0.0050		0.1035		

Notes:
Same applied to less-than results when calculating statistics: U-2

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2018 -19 Statistics Stn.Code EMS. ID	Site Name & Description	Statistics	As-T	As-D	Al-T	Al-D	Alk-T	Cd-T	Cd-D	Cu-T	Cu-D	Fe-T	Fe-D	Mn-T	Mn-D	Hg-T	Hg-D	Hard-T	Ni-T	Ni-D	Pb-T	Pb-D	SO4-D	Zn-T	Zn-D	P-T	P-D	N-NO23	N-NH3
			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	mg/L
QU0821GD	Ex-situ 2-North groundwater well down gradient of u/g tailings disposal, measures water quality & hydraulic gradients downstream of Forjan Fault (No. 4 Seam)	Average	0.184			0.0113	196.8		0.00001		0.0004		0.882		0.1043		0.0000013			0.002		0.0004	0.62		0.01		0.0801		
		Count	4			4	4		4		4		4		4		4			4		4	4		4		4		
		Minimum	0.155			0.0041	186		<0.0000050		<0.00020		0.555		0.0798		<0.0000020			<0.0010		<0.00020	<1.0		<0.0050		0.0374		
		Maximum	0.221			0.026	213		<0.000025		<0.0010		1.4		0.119		0.0000022			<0.0050		<0.0010	1		<0.025		0.163		
		Geometric Mean	0.182			0.0088	196.5		0.00000836		0.000334		0.823		0.1029		0.0000012			0.00167		0.000334	0.59		0.00836		0.066		
		Count <DL	0			2	0		4		4		0		0		3			4		4	3		4		0		
		Standard Deviation	0.028			0.00990	11.6		0.000005		0.0002		0.386		0.0188		0.0000006			0.001		0.0002	0.25		0.00500		0.0591		
		1st Quartile	0.168			0.0066	190.5		0.00001		0.0004		0.604		0.095		<0.0000020			0.002		0.0004	<1.0		0.01		0.0378		
		Median	0.18			<0.015	194		<0.000025		<0.0010		0.786		0.1092		<0.0000020			<0.0050		<0.0010	<1.0		<0.025		0.06		
		3rd Quartile	0.196			0.0121	200.2		<0.000025		<0.0010		1.063		0.119		0.0000013			<0.0050		<0.0010	0.62		<0.025		0.1023		
QU0821GS	Ex-situ 2-North groundwater well down gradient of u/g tailings disposal, measures water quality & hydraulic gradients downstream of Forjan Fault (No. 1 Seam)	Average	0.199			0.0064	205.5		0.0000098		0.0003		1.524		0.1839		0.0000010			0.001500		0.0003000	0.5		0.00750	0.0703	0.1526		
		Count	4			4	4		4		4		4		4		4			4		4	4		4	1	3		
		Minimum	0.137			0.0037	197		<0.0000050		<0.00020		0.423		0.0625		<0.0000020			<0.0010		<0.00020	<1.0		<0.0050	0.0703	0.0958		
		Maximum	0.289			<0.015	213		<0.000025		<0.0010		3.31		0.461		<0.0000020			<0.0050		<0.0010	<1.0		<0.025	0.0703	0.207		
		Geometric Mean	0.191			0.0061	205.4		0.0000082		0.000224		1.163		0.134		0.0000010			0.001120		0.0002240	0.5		0.00559	0.0703	0.1454		
		Count <DL	0			2	0		3		4		0		0		4			4		4	4		4	0	0		
		Standard Deviation	0.068			0.0018	6.6		0.0000049		0.000231		1.267		0.186		0.0000000			0.001150		0.0002310	0		0.00577	0	0.0556		
		1st Quartile	0.154			0.006	203		0.00000948		<0.00020		0.769		0.0885		<0.0000020			<0.0010		<0.00020	<1.0		<0.0050	0.0703	0.1254		
		Median	0.185			0.0071	206		0.00001215		0.0003		1.182		0.1061		<0.0000020			0.0015		0.0003	<1.0		0.00750	0.0703	0.155		
		3rd Quartile	0.23			<0.015	208.5		<0.000025		<0.0010		1.938		0.2015		<0.0000020			<0.0050		<0.0010	<1.0		<0.025	0.0703	0.181		
QU1010D																													
		Average	0.0138			0.1135	89.3		0.000019		0.00075		8.82		0.347		0.0000010			0.00375		0.000750	0.5		0.0188		0.07580		
		Count	2			2	2		2		2		2		2		2			2		2	2		2		2		
		Minimum	0.0135			<0.030	86.3		<0.000025		<0.0010		8.82		0.346		<0.0000020			<0.0050		<0.0010	<1.0		<0.025		0.0521		
		Maximum	0.0142			0.212	92.3		<0.0000050		<0.0020		8.82		0.348		<0.0000020			<0.010		<0.0020	<1.0		<0.050		0.0994		
		Geometric Mean	0.0138			0.0564	89.2		0.000018		0.00071		8.82		0.347		0.0000010			0.00354		0.000710	0.5		0.0177		0.07200		
		Count <DL	0			1	0		2		2		0		2		2			2		2	2		2		0		
		Standard Deviation	0.0005			0.1393	4.2		0.000009		0.00035		0.0		0.00		0.0000000			0.00177		0.000350	0.0		0.0088		0.03340		
		1st Quartile	0.0137			0.0642	87.8		0.0000156		0.00062		8.82		0.346		<0.0000020			0.00312		0.00062	<1.0		0.0156		0.0639		
		Median	0.0138			0.1135	89.3		0.0000188		0.00075		8.82		0.347		<0.0000020			0.00375		0.00075	<1.0		0.0188		0.0758		
		3rd Quartile	0.014			0.1628	90.8		0.0000219		0.00088		8.82		0.348		<0.0000020			0.00438		0.00088	<1.0		0.0219		0.0876		
QU1010S	Ex-situ 2-North shallow groundwater well. Down gradient of u/g tailings disposal, measures water quality & hydraulic head downstream of 2-North workings. (No. 1 Seam / Sandstone).	Average	0.107			0.0027	152.0		0.0000025		0.0001		0.192		0.042		0.0000010			0.000500		0.0001000	12.4		0.00250		0.0479		
		Count	2			2	2		2		2		2		2		2			2		2	2		2		2		
		Minimum	0.101			<0.0030	151		<0.0000050		<0.00020		0.175		0.0417		<0.0000020			<0.0010		<0.00020	11.4		<0.0050		0.0475		
		Maximum	0.113			0.0039	153		<0.0000050		<0.00020		0.21		0.0422		<0.0000020			<0.0010		<0.00020	13.5		<0.0050		0.0482		
		Geometric Mean	0.107			0.00242	152.0		0.0000025		0.0001		0.192		0.0419		0.0000010			0.000500		0.0001000	12.4		0.0025		0.0478		
		Count <DL	0			1	0		2		2		0		0		2			2		2	0		2		0		
		Standard Deviation	0.008			0.0017	1.4		0.0000000		0		0.025		0.0004		0.0000000			0.000000		0.0000000	1.5		0		0.0005		
		1st Quartile	0.104			0.0021	151.5		<0.0000050		<0.00020		0.184		0.0418		<0.0000020			<0.0010		<0.00020	11.9		<0.0050		0.0477		
		Median	0.107			0.0027	152		<0.0000050		<0.00020		0.192		0.042		<0.0000020			<0.0010		<0.00020	12.4		<0.0050		0.0479		
		3rd Quartile	0.11			0.0033	152.5		<0.0000050		<0.00020		0.201		0.0421		<0.0000020			<0.0010		<0.00020	13		<0.0050		0.048		
QU1011D	Ex-situ 2-North deep groundwater well. Measures water quality & hydraulic gradient in Forjian Fault (Fractured sandstone).	Average	0.00712			0.0075	350		0.0000125		0.0011		3.24		0.36		0.0000061			0.0025		0.0005	0.5		0.0125		0.068		
		Count	1			1	1		1		1		1		1		1			1		1	1		1		1		
		Minimum	0.00712			<0.015	350		<0.000025		0.0011		3.24		0.36		0.0000061			<0.0050		<0.0010	<1.0		<0.025		0.0684		
		Maximum	0.00712			<0.015	350		<0.000025		0.0011		3.24		0.36		0.0000061			<0.0050		<0.0010	<1.0		<0.025		0.0684		
		Geometric Mean	0.00712			0.0075	350		0.0000125		0.0011		3.24		0.36		0.0000061			0.0025		0.0005	0.5		0.0125		0.068		
		Count <DL	0			1	0		1		0		0		0		0			1		1	1		1		0		
		Standard Deviation	0.00000			0.0000	0		0.0000000		0.00000		0.00		0.000		0.0000000			0.00000		0.0000000	0.0		0.0000		0.000		
		1st Quartile	0.00712			<0.015	350		<0.000025		0.0011		3.24		0.36		0.0000061			<0.0050		<0.0010	<1.0		<0.025		0.0684		
		Median	0.00712			<0.015	350		<0.000025		0.0011		3.24		0.36		0.0000061			<0.0050		<0.0010	<1.0		<0.025		0.0684		
		3rd Quartile	0.00712			<0.015	350		<0.000025		0.0011		3.24		0.36		0.0000061			<0.0050		<0.0010	<1.0		<0.025		0.0684		
QU1011S	Ex-situ 2-North shallow groundwater well. Measures water quality & hydraulic gradient in Forjian Fault (Fractured sandstone).	Average	0.00156			0.0035	81.2		0.0000025		0.0001		0.378		0.0521		0.0000028			0.0005		0.0001000	6.5		0.00250		0.0112		
		Count	1			1	1		1		1		1		1		1			1		1	1		1		1		
		Minimum	0.00156			0.0035	81.2		<0.0000050		<0.00020		0.378		0.0521		0.0000028			<0.0010		<0.00020	6.5		<0.0050		0.0112		
		Maximum	0.00156			0.0035	81.2		<0.0000050		<0.00020		0.378		0.0521		0.0000028			<0.0010		<0.00020	6.5		<0.0050		0.0112		
		Geometric Mean	0.00156			0.0035	81.2		0.0000025		0.0001		0.378		0.0521		0.0000028			0.0005		0.0001000	6.5		0.0025		0.0112		
		Count <DL	0			0	0		1		1		0		0		0			1		1	0		1		0		
		Standard Deviation	0			0	0		0.0000000		0		0		0		0.0000000			0		0.0000000	0		0		0		
		1st Quartile	0.00156			0.0035	81.2		<0.0000050		<0.00020		0.378		0.0521		0.0000028			<0.0010		<0.00020	6.5		<0.0050		0.0112		
		Median	0.00156			0.0035	81.2		<0.0000050		<0.00020		0.378		0.0521		0.0000028			<0.0010		<0.00020	6.5		<0.0050		0.0112		
		3rd Quartile	0.00156			0.0035	81.2		<0.0000050		<0.00020		0.378		0.0521		0.0000028			<0.0010		<0.00020	6.5		<0.0050		0.0112		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 26 Statistics 2016 -2021 30 Page(s)

2018 -19 Statistics Stn.Code EMS. ID	Site Name & Description	Statistics	As-T	As-D	Al-T	Al-D	Alk-T	Cd-T	Cd-D	Cu-T	Cu-D	Fe-T	Fe-D	Mn-T	Mn-D	Hg-T	Hg-D	Hard-T	Ni-T	Ni-D	Pb-T	Pb-D	SO4-D	Zn-T	Zn-D	P-T	P-D	N-NO23	N-NH3
			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	mg/L
QU1105S	Ex-situ River Barrier Pillar (RBP) shallow groundwater well. Monitors water quality & gradients above the RBP & 2-North Mine. (Sandstone)	Average	0.04295			0.00402	191.3		0.0000050		0.000200		0.6426		0.116		0.0000010			0.001000		0.0002000	118.8		0.00500		0.081		
		Count	4			4	4		4		4		4		4		4			4		4	4		4		4		
		Minimum	0.00609			<0.0030	96.3		<0.0000050		<0.00020		<0.025		0.0795		<0.0000020			<0.0010		<0.00020	56.5		<0.0050		0.011		
		Maximum	0.0606			<0.015	314		<0.000025		<0.0010		1.16		0.183		<0.0000020			<0.0050		<0.0010	214		<0.025		0.259		
		Geometric Mean	0.03177			0.00345	169.6		0.0000037		0.000150		0.2896		0.1102		0.0000010			0.000750		0.0001500	103.9		0.00374		0.037		
		Count <DL	0			2	0		4		4		1		0		4			4		4	0		4		0		
		Standard Deviation	0.0249			0.00251	104.5		0.0000050		0.000200		0.475		0.0458		0.0000000			0.001000		0.0002000	71.0		0.00500		0.119		
		1st Quartile	0.03992			0.00292	108.8		<0.0000050		<0.00020		0.4846		0.0945		<0.0000020			<0.0010		<0.00020	69.4		<0.0050		0.0205		
		Median	0.05255			0.00355	177.5		<0.0000050		<0.00020		0.699		0.1008		<0.0000020			<0.0010		<0.00020	102.4		<0.0050		0.0262		
		3rd Quartile	0.05558			0.00465	260		0.000005		0.0002		0.857		0.1222		<0.0000020			0.001		0.0002	151.8		0.005		0.0863		
QU1109S	Ex-situ River Barrier Pillar (RBP) shallow groundwater well. Monitors water quality & gradients above the RBP & 2-North Mine. (Sandstone)	Average	0.08961			0.00582	441.8		0.0000081		0.000325		2.7040		0.1053		0.0000033			0.00163		0.000325	423		0.00812		0.056		
		Count	4			4	4		4		4		4		4		4			4		4	4		4		4		
		Minimum	0.00344			<0.0030	427		<0.0000050		<0.00020		0.161		0.0317		<0.0000020			<0.0010		<0.00020	273		<0.0050		0.0058		
		Maximum	0.123			<0.015	462		<0.000025		<0.0010		10		0.309		<0.0000020			<0.0050		<0.0010	712		<0.025		0.0834		
		Geometric Mean	0.04885			0.00489	441.6		0.0000067		0.000266		0.6450		0.0631		0.0000018			0.00133		0.000266	395		0.00665		0.038		
		Count <DL	0			3	0		4		4		0		0		4			4		4	0		4		0		
		Standard Deviation	0.058			0.0029	14.7		0.0000052		0.00021		4.8650		0.13590		0.0000045			0.00103		0.000206	196.0		0.0052		0.035		
		1st Quartile	0.08711			0.00547	435.2		0.0000438		0.000175		0.284		0.0376		<0.0000020			0.00088		0.000175	333		0.00438		0.048		
		Median	0.116			0.00715	439		0.00000875		0.00035		0.328		0.0402		<0.0000020			0.00175		0.00035	355		0.00875		0.0674		
		3rd Quartile	0.1185			<0.015	445.5		<0.000025		<0.0010		2.748		0.108		0.00000325			<0.0050		<0.0010	445		<0.025		0.0754		
7SQR	7-South Quinsam River downstream of 7-South Mining Operation	Average	0.00036	0.00039	0.0329	0.0183	34.3	0.000005	0.00000341	0.00073	0.00264	0.09	0.0570	0.0063	0.0049	0.0000018	0.00000139	36.1	0.00050	0.00050	0.000109	0.000100	26.5	0.0025	0.0025	0.00185		0.0215	0.0088
E292113		Count	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	19	20	20	2		2	2
		Minimum	0.00022	0.00025	0.0126	0.0088	26.6	<0.000010	<0.0000050	0.00053	0.00046	0.065	0.035	0.0044	0.0025	<0.0000020	<0.0000020	28.1	<0.0010	<0.0010	<0.00020	<0.00020	14.1	<0.0050	<0.0050	<0.0020		<0.020	<0.015
		Maximum	0.00052	0.00056	0.0603	0.0356	41.8	<0.000010	0.0000093	0.00115	0.0383	0.127	0.0836	0.0097	0.0082	0.0000085	0.0000049	48.8	<0.0010	<0.0010	0.00027	<0.00020	37.3	<0.0050	<0.0050	0.0027		0.033	<0.020
		Geometric Mean	0.00035	0.00038	0.0303	0.0168	34.1	0.000005	0.00000305	0.00071	0.00078	0.088	0.0555	0.0062	0.0047	0.00000131	0.0000012	35.8	0.00050	0.00050	0.000105	0.000100	25.9	0.0025	0.0025	0.00164		0.0182	0.0087
		Count <DL	0	0	0	0	0	20	16	0	0	0	0	0	0	17	17	0	20	20	19	20	0	20	20	1		1	2
		Standard Deviation	0.00008	0.00008	0.0135	0.0079	4.1	0.00000000	0.00000206	0.00017	0.00843	0.018	0.0137	0.0015	0.0013	0.00000214	0.00000106	4.9	0.00000	0.00000	0.000038	0.000000	5.4	0	0	0.0012		0.0163	0.0018
		1st Quartile	0.00032	0.00034	0.0246	0.0122	31.2	<0.000010	<0.0000050	0.00058	0.00052	0.079	0.0484	0.0053	0.004	<0.0000020	<0.0000020	33.4	<0.0010	<0.0010	<0.00020	<0.00020	25	<0.0050	<0.0050	0.00142		0.0158	0.0081
		Median	0.00036	0.00038	0.0284	0.015	34.6	<0.000010	<0.0000050	0.00069	0.00058	0.086	0.0518	0.006	0.0048	<0.0000020	<0.0000020	35.6	<0.0010	<0.0010	<0.00020	<0.00020	27.6	<0.0050	<0.0050	0.00185		0.0215	0.0088
		3rd Quartile	0.00042	0.00043	0.0438	0.0242	37.9	<0.000010	<0.0000050	0.00081	0.00067	0.096	0.0649	0.0075	0.0056	<0.0000020	<0.0000020	38.5	<0.0010	<0.0010	<0.00020	<0.00020	29.30	<0.0050	<0.0050	0.00228		0.0273	0.0094
LQL1	Lower Quinsam Lake 1 metre below surface	Average	0.00057	0.00063	0.03	0.0216	29.58	0.000005	0.00000387	0.00079	0.00072	0.101	0.0683	0.012	0.00781	0.00000151	0.00000141	33.4	0.0005	0.00050	0.000100	0.000100	18.5	0.00250	0.00250	0.00544	0.0047	0.104	0.01
E292118		Count	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	14	14	15	15
		Minimum	0.00047	0.00044	0.0103	0.0079	<1.0	<0.000010	<0.0000050	0.00058	0.0005	0.052	0.0287	0.0046	<0.0010	<0.0000020	<0.0000020	30.1	<0.0010	<0.0010	<0.00020	<0.00020	13.2	<0.0050	<0.0050	<0.0020	<0.0020	<0.020	<0.020
		Maximum	0.00063	0.00071	0.0535	0.0355	38.7	<0.000010	0.0000070	0.00125	0.00108	0.229	0.142	0.0311	0.0264	0.0000058	0.0000047	36.1	<0.0010	<0.0010	<0.00020	<0.00020	24.6	<0.0050	<0.0050	0.0106	0.017	1.42	<0.020
		Geometric Mean	0.00057	0.00062	0.0264	0.0188	23.79	0.000005	0.00000352	0.00077	0.0007	0.089	0.0608	0.0095	0.0036	0.00000123	0.00000121	33.3	0.0005	0.00050	0.000100	0.000100	18	0.00250	0.00250	0.00482	0.0038	0.0139	0.01
		Count <DL	0	0	0	0	1	15	9	0	0	0	0	0	3	13	13	0	15	15	15	15	0	15	15	1	5	14	15
		Standard Deviation	0.00005	0.00008	0.0138	0.0105	9.19	0	0.00000181	0.00017	0.00016	0.055	0.0353	0.0090	0.0088	0.0000014	0.00000111	1.9	0	0.00000	0.000000	0.000000	4.1	0	0	0.00245	0.00386	0.3641	0
		1st Quartile	0.00054	0.00059	0.0175	0.0105	28.05	<0.000010	<0.0000050	0.0007	0.00062	0.056	0.0448	0.0062	0.00145	<0.0000020	<0.0000020	31.8	<0.0010	<0.0010	<0.00020	<0.00020	15.2	<0.0050	<0.0050	0.00407	0.00265	<0.020	<0.020
		Median	0.00059	0.00065	0.0311	0.0203	30.5	<0.000010	<0.0000050	0.000750	0.00073	0.080	0.0542	0.0072	0.00310	<0.0000020	<0.0000020	33.6	<0.0010	<0.0010	<0.00020	<0.00020	17	<0.0050	<0.0050	0.005	0.00405	<0.020	<0.020
		3rd Quartile	0.0006	0.0007	0.0405	0.0305	35.5	<0.000010	0.0000053	0.000860	0.00078	0.134	0.0952	0.018	0.01455	<0.0000020	<0.0000020	34.6	<0.0010	<0.0010	<0.00020	<0.00020	21.9	<0.0050	<0.0050	0.00652	<0.010	<0.020	<0.020
LQLB	LQLB 1 metre from Bottom	Average	0.00073	0.00105	0.0374	0.0232	30.6	0.0000071	0.00000666	0.00089	0.00071	0.485	0.2679	0.1767	0.1636	0.00000122	0.00000163	32	0.00050	0.00050	0.000100	0.000100	15.1	0.0025	0.00250	0.0054	0.00442	0.0387	0.0452
E292118		Count	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	14	14	15	15
		Minimum	0.00046	0.00049	0.0225	0.0123	25.9	<0.000010	<0.0000050	0.00063	0.0006	0.102	0.0585	0.0108	0.0075	<0.0000020	<0.0000020	29.6	<0.0010	<0.0010	<0.00020	<0.00020	12.5	<0.0050	<0.0050	0.0027	<0.0020	<0.020	<0.020
		Maximum	0.00127	0.00218	0.0696	0.0326	34.8	0.000015	0.0000110	0.00193	0.00088	1.35	0.746	0.532	0.511	0.0000028	0.0000043	35.4	<0.0010	<0.0010	<0.00020	<0.00020	17.2	<0.0050	<0.0050	0.0086	0.0064	0.124	0.17
		Geometric Mean	0.00069	0.00095	0.0356	0.0226	30.5	0.0000064	0.00000582	0.00085	0.0007	0.35	0.1965	0.0945	0.0786	0.00000114	0.0000014	31.9	0.00050	0.00050	0.000100	0.000100	15	0.0025	0.00250	0.0051	0.00407	0.0274	0.0282
		Count <DL	0	0	0	0	0	11	4	0	0	0	0	0	0	13	10	0	15	15	15	15	0	15	15	0	5	5	6
		Standard Deviation	0.00025	0.00052	0.0125	0.0054	2.9	0.0000036	0.00000317	0.00032	0.00009	0.398	0.2167	0.1701	0.1621	0.00000058	0.00000106	1.7	0.00000	0.00000	0.000000	0.000000	1.3	0	0	0.0018	0.00149	0.0338	0.0462
		1st Quartile	0.00054	0.00066	0.0300	0.0199	28.2	<0.000010	0.0000041	0.00076	0.00063	0.186	0.1065	0.03	0.0241	<0.0000020	<0.0000020	30.9	<0.0010	<0.0010	<0.00020	<0.00020	14.5	<0.0050	<0.0050	0.0037	0.00328	<0.020	<0.020
		Median	0.00062	0.00082	0.0351	0.0238	31.4	<0.000010	0.00000600	0.00079	0.00069	0.234	0.133	0.16	0.1510	<0.0000020	<0.0000020	31.5	<0.0010	<0.0010	<0.00020	<0.00020	14.8	<0.0050	<0.0050	0.0053	<0.010	0.027	0.029
		3rd Quartile	0.00091	0.00129	0.0451	0.026	32.7	0.0000085	0.00000980	0.00090	0.00076	0.694	0.3985	0.272	0.2595	<0.0000020	0.0000021	33.0	<0.0010	<0.0010	<0.00020	<0.00020	16	<0.0050	<0.0050	0.007	<0.010	0.0495	0.07

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 26 Statistics 2016 -2021 30 Page(s)

2019 -20 Statistics Stn.Code EMS. ID	Site Name & Description	Statistic	As-T	As-D	Al-T	Al-D	Alk-T	Cd-T	Cd-D	Cu-T	Cu-D	Fe-T	Fe-D	Mn-T	Mn-D	Hg-T	Hg-D	Hard-T	Ni-T	Ni-D	Pb-T	Pb-D	SO4-D	Zn-T	Zn-D	P-T	P-D	N-NO23	N-NH3
WA			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	mg/L
E0126402	Quinsam River at Argonaut Road Upstream of Mining Operation.	Average	0.000112	0.000106	0.0301	0.0202	18.5	0.0000050	0.00000411	0.00063	0.00055	0.0256	0.0120	0.00147	0.00069	0.00000134	0.00000100	19.4	0.00050	0.00050	0.000100	0.000100	1.28	0.00250	0.00250			0.0100	
		Count	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	13	14	14			1	
		Minimum	<0.00010	<0.00010	0.0161	0.0142	14.0	<0.000010	<0.0000050	0.00052	0.00050	<0.010	0.0077	<0.0010	<0.0010	<0.0000020	<0.0000020	16.5	<0.0010	<0.0010	<0.00020	<0.00020	<1.0	<0.0050	<0.0050			<0.020	
		Maximum	0.00021	0.00018	0.106	0.0380	22	<0.000010	<0.000010	0.00094	0.00060	0.123	0.0202	0.0052	0.0016	0.0000037	<0.0000020	20.9	<0.0010	<0.0010	<0.00020	<0.00020	2.5	<0.0050	<0.0050			<0.020	
		Geometric Mean	0.000100	0.000097	0.0258	0.0196	18.4	0.0000050	0.00000390	0.00062	0.00055	0.0190	0.0115	0.00121	0.00062	0.0000119	0.00000100	19.4	0.00050	0.00050	0.000100	0.000100	1.11	0.00250	0.00250			0.0100	
		Count <DL	4	4	0	0	0	14	14	0	0	1	0	3	11	12	14	0	14	14	14	14	4	14	14			1	
		Standard Deviation	0.000053	0.000045	0.0235	0.0057	2.4	0.0000000	0.00000124	0.00011	0.00003	0.0290	0.0038	0.00116	0.00038	0.00000088	0.00000000	1.1	0.00000	0.00000	0.000000	0.000000	0.66	0.00000	0.00000			0.0000	
		1st Quartile	0.000063	0.000063	0.0192	0.0166	17	<0.000010	<0.0000050	0.00055	0.00052	0.0135	0.0095	0.00103	<0.0010	<0.0000020	<0.0000020	19.0	<0.0010	<0.0010	<0.00020	<0.00020	<1.0	<0.0050	<0.0050			<0.020	
		Median	0.000115	0.000105	0.0231	0.0193	18.9	<0.000010	<0.000010	0.00058	0.00055	0.0170	0.0099	0.0013	<0.0010	<0.0000020	<0.0000020	19.3	<0.0010	<0.0010	<0.00020	<0.00020	1.3	<0.0050	<0.0050			<0.020	
		3rd Quartile	0.000127	0.000135	0.0294	0.0215	20.1	<0.000010	<0.000010	0.00067	0.00056	0.0227	0.0143	0.00162	<0.0010	<0.0000020	<0.0000020	20.5	<0.0010	<0.0010	<0.00020	<0.00020	1.7	<0.0050	<0.0050			<0.020	
WD	Settling Pond #4	Average	0.00200	0.00124	0.0099	0.00328	363	0.0000050	0.00000438	0.000493	0.000211	0.519	0.01167	0.1028	0.0830	0.0000100	0.00000147	447	0.00094	0.00083	0.000100	0.000100	549	0.00290	0.00250	0.0037	0.00200	0.0155	0.055
E207409		Count	8	12	8	12	12	8	12	8	12	8	12	8	12	8	12	8	8	12	8	12	47	8	12	3	2	4	4
		Minimum	0.00093	0.00081	0.0037	<0.0030	240	<0.000010	<0.0000050	<0.00050	<0.00020	0.095	<0.0050	0.0101	0.0078	<0.0000020	<0.0000019	281	<0.0010	<0.0010	<0.00020	<0.00020	160	<0.0050	<0.0050	0.0034	<0.0030	<0.020	0.020
		Maximum	0.00345	0.00164	0.0296	0.0101	490	<0.000010	<0.000010	0.00107	0.00048	1.74	0.0282	0.354	0.359	<0.0000020	0.0000040	637	0.0020	0.0019	<0.00020	<0.00020	1000	0.0057	<0.0050	0.0042	0.0025	0.032	0.14
		Geometric Mean	0.00179	0.00119	0.0080	0.00231	352	0.0000050	0.00000420	0.000402	0.000182	0.344	0.00936	0.0624	0.0491	0.0000100	0.00000125	428	0.00082	0.00073	0.000100	0.000100	507	0.00277	0.00250	0.0037	0.00194	0.0134	0.039
		Count <DL	0	0	0	9	0	8	12	5	5	0	1	0	0	8	10	0	4	7	8	12	0	7	12	0	1	3	0
		Standard Deviation	0.00094	0.00034	0.0083	0.00337	94	0.0000000	0.00000113	0.000345	0.000118	0.538	0.00834	0.1115	0.0969	0.00000000	0.00000111	139	0.00054	0.00046	0.000000	0.000000	217	0.00113	0.00000	0.0004	0.00071	0.0110	0.057
		1st Quartile	0.00099	0.00088	0.0052	<0.0030	277	<0.000010	0.00000438	<0.00050	<0.00020	0.171	0.00635	0.0356	0.0216	<0.0000020	<0.0000020	343	<0.0010	<0.0010	<0.00020	<0.00020	395	<0.0050	<0.0050	0.0035	0.00175	<0.020	0.024
		Median	0.00219	0.00129	0.0078	<0.0030	375	<0.000010	<0.000010	<0.00050	0.000225	0.378	0.00860	0.0695	0.0468	<0.0000020	<0.0000020	410	0.00080	<0.0010	<0.00020	<0.00020	486	<0.0050	<0.0050	0.0036	0.00200	<0.020	0.030
		3rd Quartile	0.00258	0.00152	0.0098	0.00263	442	<0.000010	<0.000010	0.000790	0.000260	0.593	0.01468	0.1218	0.1065	<0.0000020	<0.0000020	576	0.0012	0.00113	<0.00020	<0.00020	755	<0.0050	<0.0050	0.0039	0.00225	0.0155	0.061
MW001D	Ex-situ 2-North deep groundwater well below the coal wash plant (Till)	Average		0.01763		0.0171	171		0.0000180		0.00046		0.01057		0.5891		0.00000098			0.00263		0.000100	132		0.00250			0.102	
		Count		3		3	3		3		3		3		3		3			3		3	3		3			3	
		Minimum		0.00540		0.0053	81		<0.000010		0.00036		<0.0050		0.0032		<0.0000019			<0.0010		<0.00020	11		<0.0050			0.027	
		Maximum		0.0280		0.0294	340		0.000044		0.00061		0.0230		1.76		<0.0000020			0.0069		<0.00020	360		<0.0050			0.15	
		Geometric Mean		0.01434		0.0137	137		0.0000103		0.00045		0.00709		0.0285		0.00000098			0.00120		0.000100	46		0.00250			0.081	
		Count <DL		0		0	0		2		0		1		0		3			2		3	0		3			0	
		Standard Deviation		0.01142		0.0121	145		0.0000225		0.00013		0.01093		1.0140		0.00000003			0.00370		0.000000	197		0.00000			0.066	
		1st Quartile		0.01245		0.0109	87		<0.000010		0.00039		0.00435		0.0037		0.00000097			<0.0010		<0.00020	18		<0.0050			0.079	
		Median		0.0195		0.0165	94		<0.000010		0.00041		0.0062		0.0041		<0.0000020			<0.0010		<0.00020	26		<0.0050			0.13	
		3rd Quartile		0.02375		0.0229	217		0.0000245		0.00051		0.01460		0.8821		<0.0000020			0.00370		<0.00020	193		<0.0050			0.140	
MW001S	Ex-situ 2-North shallow groundwater well below the coal wash plant (Till)	Average		0.00047		0.00150	310.0		0.000065		0.00048		0.129		2.60		0.00000100			0.0012		0.000100	400.0		0.00250			0.0026	
		Count		1		1	1		1		1		1		1		1			1		1	1		1			1	
		Minimum		0.00047		<0.0030	310		0.000065		0.00048		0.129		2.60		<0.0000020			0.0012		<0.00020	400		<0.0050			0.0026	
		Maximum		0.00047		<0.0030	310		0.000065		0.00048		0.129		2.60		<0.0000020			0.0012		<0.00020	400		<0.0050			0.0026	
		Geometric Mean		0.00047		0.00150	310.0		0.000065		0.00048		0.129		2.60		0.00000100			0.0012		0.000100	400.0		0.00250			0.0026	
		Count <DL		0		1	0		0		0		0		0		1			0		1	0		1			0	
		Standard Deviation		0.00000		0.00000	0.0		0.000000		0.00000		0.000		0.00		0.00000000			0.0000		0.000000	0.0		0.00000			0.0000	
		1st Quartile		0.00047		<0.0030	310		0.000065		0.00048		0.129		2.60		<0.0000020			0.0012		<0.00020	400		<0.0050			0.0026	
		Median		0.00047		<0.0030	310		0.000065		0.00048		0.129		2.60		<0.0000020			0.0012		<0.00020	400		<0.0050			0.0026	
		3rd Quartile		0.00047		<0.0030	310		0.000065		0.00048		0.129		2.60		<0.0000020			0.0012		<0.00020	400		<0.0050			0.0026	
MW006D	Ex-situ 2-North deep groundwater well below the coal wash plant (Till)	Average		0.0282		0.0164	83.0		0.0000050		0.00075		0.00250		0.00050		0.00000100			0.00050		0.000100	12.0		0.00250			0.12	
		Count		1		1	1		1		1		1		1		1			1		1	1		1			1	
		Minimum		0.0282		0.0164	83		<0.000010		0.00075		<0.0050		<0.0010		<0.0000020			<0.0010		<0.00020	12		<0.0050			0.12	
		Maximum		0.0282		0.0164	83		<0.000010		0.00075		<0.0050		<0.0010		<0.0000020			<0.0010		<0.00020	12		<0.0050			0.12	
		Geometric Mean		0.0282		0.0164	83.0		0.0000050		0.00075		0.00250		0.00050		0.00000100			0.00050		0.000100	12.0		0.00250			0.12	
		Count <DL		0		0	0		1		0		1		1		1			1		1	0		1			0	
		Standard Deviation		0.0000		0.0000	0.0		0.0000000		0.00000		0.00000		0.00000		0.00000000			0.00000		0.000000	0.0		0.00000			0.00	
		1st Quartile		0.0282		0.0164	83		<0.000010		0.00075		<0.0050		<0.0010		<0.0000020			<0.0010		<0.00020	12		<0.0050			0.12	
		Median		0.0282		0.0164	83		<0.000010		0.00075		<0.0050		<0.0010		<0.0000020			<0.0010		<0.00020	12		<0.0050			0.12	
		3rd Quartile		0.0282		0.0164	83		<0.000010		0.00075		<0.0050		<0.0010		<0.0000020			<0.0010		<0.00020	12		<0.0050			0.12	
MW006S	Ex-situ 2-North shallow groundwater well below the coal wash plant (Till)	Average		0.00170		0.00360	155.0		0.000022		0.00072		0.01510		0.0846		0.00000100			0.00050		0.000100	475		0.00250			0.043	
		Count		2		2	2		2		2		2		2		2			2		2	2		2			2	
		Minimum		0.00153		<0.0030	150		0.000022		0.00063		<0.0050		0.0432		<0.0000020			<0.0010		<0.00020	400		<0.0050			0.039	
		Maximum		0.00187		0.0057	160		0.000023		0.00080		0.0277		0.126		<0.0000020			<0.0010		<0.00020	550		<0.0050			0.048	
		Geometric Mean		0.00169		0.00292	154.9		0.000022		0.00071		0.00832		0.0738		0.00000100			0.00050		0.000100	469		0.00250			0.043	
		Count <DL		0		1	0		0		0		1		0		2			2		2	0		2			0	
		Standard Deviation		0.00024		0.00297	7.1		0.000001		0.00012		0.01782		0.0585		0.00000000			0.00000		0.000000	106		0.00000			0.006	
		1st Quartile		0.00161		0.00255	152.5		0.000022		0.00067		0.00880		0.0639		<0.0000020			<0.0010		<0.00020	437		<0.0050			0.041	
		Median		0.00170		0.00360	155.0		0.000022		0.00072		0.01510		0.0846		<0.0000020			<0.0010		<0.00020	475		<0.0050			0.043	
		3rd Quartile		0.00178		0.00465	157.5		0.000023		0.00076		0.02140		0.1053		<0.0000020			<0.0010		<0.00020	512		<0.0050			0.046	
WC	2-North Pit Culvert discharge into Middle Quinsam Lake	Average	0.00080	0.00068	0.00708	0.00443	328	0.0000050	0.00000429	0.000297	0.000209	0.142	0.0310	0.0300	0.0263	0.00000100	0.00000100	344	0.00082	0.00077	0.000100	0.000100	530	0.00250	0.00250				
E207411		Count	6	7	6	7	3	6	7	6	7	6	7	6	7	6	7	6	6	7	6	7	12	6	7				
		Minimum	0.00069	0.00060	<0.0030	<0.0030	210	<0.000010	<0.0000050	<0.00050	<0.00020	0.065	0.0067	0.0080	0.0051	<0.0000020	<0.0000020	253	<0.0010	<0.0010	<0.00020	<0.00020	300	<0.0050	<0.0050				
		Maximum	0.00091	0.00086	0.0221	0.0135	394	<0.000010	<0.000010	0.00053	0.00036	0.229	0.0903	0.0598	0.0605	<0.0000020	<0.0000020	436	0.0012	0.0012	<0.00020	<0.00020	726	<0.0050	<0.0050				
		Geometric Mean	0.00079	0.00068	0.00495	0.00339	315	0.0000050	0.00000410	0.000283	0.000183	0.130	0.0187	0.0221	0.0177	0.00000100	0.00000100	338	0.00075	0.00071	0.000100	0.000100	510	0.00250	0.00250				
		Count <DL	0	0	1	2	0	6	7	5	3	0	0	0	0	6	7	0	3	4	6	7	0	6	7				
		Standard Deviation	0.00008	0.00009	0.00753	0.00413	102	0.0000000	0.00000122	0.000114	0.000107	0.063	0.0343	0.0239	0.0239	0.00000000	0.00000000	65	0.00035	0.00034	0.000000	0.000000	148	0.00000	0.00000				
		1st Quartile	0.00076	0.00063	0.00350	0.00230	295	<0.000010	0.00000375	<0.00050	<0.00020	0.105	0.0082	0.0109	0.0083	<0.0000020	<0.0000020	300	<0.0010	<0.0010	<0.00020	<0.00020	387	<0.0050	<0.0050				
		Median	0.00080	0.00068	0.00510	0.0036	380	<0.000010	<0.000010	<0.00050	0.00025	0.128	0.0155	0.0219	0.0153	<0.0000020	<0.0000020	354	0.00080	<0.0010	<0.00020	<0.00020	530	<0.0050	<0.0050				
		3rd Quartile	0.00083	0.00069	0.00558	0.00390	387	<0.000010	<0.000010	<0.00050	0.000275	0.188	0.0440	0.0512	0.0433	<0.0000020	<0.0000020	376	0.0011	0.0011	<0.00020	<0.00020	665	<0.0050	<0.0050				
MQL1	Middle Quinsam Lake 1 metre below surface	Average	0.00015	0.00014	0.0160	0.0138	44.4	0.0000050	0.00000411	0.000888	0.00048	0.041	0.0253	0.0056	0.00184	0.00000111	0.00000116	35.7	0.00064	0.00050	0.000100	0.000100	30.1	0.00250	0.00292	0.00310	0.00419	0.0134	
E206618		Count	14	14	14	14	10	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	6	14	5	
		Minimum	0.00013	0.00013	0.0120	0.0081	41	<0.000010	<0.0000050	<0.00050	0.00038	0.031	0.0199	0.0043	<0.0010	<0.0000020	<0.0000020	23.5	<0.0010	<0.0010	<0.00020	<0.00020	5.8	<0.0050	<0.0050	<0.0030	<0.0030	<0.020	
		Maximum	0.00018	0.00016	0.0232	0.0192	48.6	<0.000010	<0.000010	0.00677	0.00057	0.052	0.0304	0.0082	0.0042	0.0000025	0.0000033	45.4	0.0025	<0.0010	<0.00020	<0.00020	57.1	<0.0050	0.0084	0.0076	<0.010	0.027	
		Geometric Mean	0.00015	0.00014	0.0156	0.0134	44.3	0.0000050	0.00000390	0.000496	0.00048	0.040	0.0250	0.0055	0.00131	0.00000107	0.00000109	34.7	0.00056	0.00050	0.000100	0.000100	23.8	0.00250	0.00273	0.00240	0.00391	0.0122	
		Count <DL	0	0	0	0	0	14	14	5	0	0	0	0	5	13	13	0	13	14	14	14	0	14	13	4	11	4	
		Standard Deviation	0.00002	0.00001	0.0037	0.0034	2.6	0.0000000	0.00000124	0.001700	0.00005	0.007	0.0036	0.0013	0.00148	0.00000040	0.00000061	8.2	0.00053	0.00000	0.000000	0.000000	16.5	0.00000	0.00158	0.00261	0.00131	0.0076	
		1st Quartile	0.00014	0.00013	0.0128	0.0112	42.0	<0.000010	<0.0000050	<0.00050	0.00046	0.035	0.0218	0.0046	<0.0010	<0.0000020	<0.0000020	27.3	<0.0010	<0.0010	<0.00020	<0.00020	13.2	<0.0050	<0.0050	<0.0030	0.00367	<0.020	
		Median	0.00015	0.00014	0.0144	0.0131	45	<0.000010	<0.000010	0.000520	0.00048	0.040	0.0260	0.0052	0.00115	<0.0000020	<0.0000020	37.9	<0.0010	<0.0010	<0.00020	<0.00020	34.0	<0.0050	<0.0050	<0.0030	<0.010	<0.020	
		3rd Quartile	0.00017	0.00015	0.0190	0.0172	45.8	<0.000010	<0.000010	0.00054	0.00052	0.048	0.0278	0.0063	0.00328	<0.0000020	<0.0000020	41.8	<0.0010	<0.0010	<0.00020	<0.00020	40.7	<0.0050	<0.0050	0.00413	<0.010	<0.020	
MQL8	Middle Quinsam Lake 1 metre from bottom	Average	0.00014	0.000123	0.0137	0.0098	46.3	0.0000050	0.00000411	0.000399	0.00046	0.043	0.0208	0.0099	0.00416	0.00000134	0.00000100	47.3	0.00050	0.00050	0.000100	0.000100	52.6	0.00250	0.00250	0.00292	0.00482	0.0100	
E206618		Count	14	14	14	14	10	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	6	14	5	
		Minimum	0.00011	<0.00010	0.0064	0.0042	44	<0.000010	<0.0000050	<0.00050	0.00040	0.027	0.0146	0.0061	<0.0010	<0.0000020	<0.0000020	36.0	<0.0010	<0.0010	<0.00020	<0.00020	34	<0.0050	<0.0050	<0.0030	<0.0030	<0.020	
		Maximum	0.00018	0.00016	0.0266	0.0170	50.7	<0.000010	<0.000010	0.00061	0.00054	0.077	0.0312	0.0157	0.0102	0.0000038	<0.0000020	53.2	<0.0010	<0.0010	<0.00020	<0.00020	68.1	<0.0050	<0.0050	0.0043	0.011	<0.020	
		Geometric Mean	0.00014	0.000119	0.0129	0.0089	46.3	0.0000050	0.00000390	0.000370	0.00046	0.041	0.0200	0.0094	0.00262	0.00000119	0.00000100	46.8	0.00050	0.00050	0.000100	0.000100	51.0	0.00250	0.00250	0.00268	0.00446	0.0100	
		Count <DL	0	1	0	0	0	14	14	7	0	0	0	0	3	12	14	0	14	14	14	14	0	14	14	2	9	5	
		Standard Deviation	0.00002	0.000028	0.0052	0.0041	2.3	0.0000000	0.00000124	0.000157	0.00004	0.014	0.0065	0.0033	0.00356	0.00000089	0.00000000	6.7	0.00000	0.00000	0.000000	0.000000	12.8	0.00000	0.00000	0.00118	0.00205	0.0000	
		1st Quartile	0.00012	0.00011	0.0112	0.0063	44	<0.000010	<0.0000050	<0.00050	0.00044	0.032	0.0156	0.0076	0.00137	<0.0000020	<0.0000020	40.2	<0.0010	<0.0010	<0.00020	<0.00020	38.2	<0.0050	<0.0050	0.00190	0.00405	<0.020	
		Median	0.00013	0.00012	0.0127	0.0090	46.7	<0.000010	<0.000010	0.000380	0.00046	0.043	0.0180	0.0088	0.00300	<0.0000020	<0.0000020	51.3	<0.0010	<0.0010	<0.00020	<0.00020	59.5	<0.0050	<0.0050	0.00315	<0.010	<0.020	
		3rd Quartile	0.00016	0.000147	0.0161	0.0126	47.2	<0.000010	<0.000010	0.000545	0.00049	0.050	0.0274	0.0116	0.00630	<0.0000020	<0.0000020	52.5	<0.0010	<0.0010	<0.00020	<0.00020	61.8	<0.0050	<0.0050	0.00373	<0.010	<0.020	

Notes:
Factor applied to less-than results when calculating statistics: 0.5

Table 26 Statistics 2016 -2021 30 Page(s)

2019 -20 Statistics Stn.Code																												
EMS. ID	Site Name & Description	Statistic	As-T	As-D	Al-T	Al-D	Alk-T	Cd-T	Cd-D	Cu-T	Cu-D	Fe-T	Fe-D	Mn-T	Mn-D	Hg-T	Hg-D	Hard-T	Ni-T	Ni-D	Pb-T	Pb-D	SO4-D	Zn-T	Zn-D	P-T	P-D	N-NO23	N-NH3
NNL1			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	mg/L
E217018	No Name Lake 1 metre below surface	Average	0.00030	0.00028	0.0281	0.0229	10.5	0.0000050	0.00000422	0.000250	0.00043	0.065	0.0488	0.0043	0.0036	0.0000100	0.0000123	13.8	0.00050	0.00050	0.000100	0.000100	1.8	0.00250	0.00250	0.00290	0.00348	0.0224	
		Count	9	9	9	9	5	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	5	8	5	
		Minimum	0.00019	0.00018	0.0120	0.0116	9.0	<0.000010	<0.0000050	<0.00050	0.00032	0.049	0.0313	0.0028	0.0020	<0.0000020	<0.0000020	11.5	<0.0010	<0.0010	<0.00020	<0.00020	1.2	<0.0050	<0.0050	<0.0030	<0.0030	<0.020	
		Maximum	0.00041	0.00041	0.0463	0.0343	12.0	<0.000010	0.0000080	<0.00050	0.00086	0.087	0.0758	0.0065	0.0057	<0.0000020	0.0000031	16.5	<0.0010	<0.0010	<0.00020	<0.00020	2.4	<0.0050	<0.0050	0.0048	<0.010	0.045	
		Geometric Mean	0.00029	0.00026	0.0244	0.0208	10.5	0.0000050	0.00000387	0.000250	0.00041	0.063	0.0467	0.0042	0.0034	0.0000100	0.0000113	13.6	0.00050	0.00050	0.000100	0.000100	1.7	0.00250	0.00250	0.00260	0.00315	0.0176	
		Count <DL	0	0	0	0	0	9	8	9	0	0	0	0	0	9	8	0	9	9	9	9	0	9	9	2	5	3	
		Standard Deviation	0.00009	0.00010	0.0146	0.0098	1.1	0.0000000	0.00000189	0.000000	0.00016	0.014	0.0157	0.0010	0.0012	0.0000000	0.0000070	2.1	0.00000	0.00000	0.000000	0.000000	0.4	0.00000	0.00000	0.00144	0.00146	0.0172	
		1st Quartile	0.00022	0.00018	0.0134	0.0126	10.2	<0.000010	<0.0000050	<0.00050	0.00035	0.055	0.0374	0.0039	0.0026	<0.0000020	<0.0000020	11.8	<0.0010	<0.0010	<0.00020	<0.00020	1.5	<0.0050	<0.0050	<0.0030	0.00278	<0.020	
		Median	0.00028	0.00021	0.0335	0.0277	10.3	<0.000010	<0.000010	<0.00050	0.00040	0.062	0.0419	0.0042	0.0037	<0.0000020	<0.0000020	13.1	<0.0010	<0.0010	<0.00020	<0.00020	1.9	<0.0050	<0.0050	0.0029	0.00330	<0.020	
		3rd Quartile	0.00039	0.00037	0.0408	0.0306	11.0	<0.000010	<0.000010	<0.00050	0.00041	0.068	0.0644	0.0045	0.0042	<0.0000020	<0.0000020	15.5	<0.0010	<0.0010	<0.00020	<0.00020	2.0	<0.0050	<0.0050	0.0038	<0.010	0.037	
NNLB	No Name Lake 1 metre from bottom	Average	0.00025	0.00019	0.0393	0.0324	10.9	0.0000050	0.00000422	0.000349	0.00037	0.113	0.0722	0.0122	0.0096	0.00000100	0.00000112	17.0	0.00050	0.00050	0.000100	0.000100	4.4	0.00250	0.00250	0.00362	0.00433	0.028	
E217018		Count	9	9	9	9	5	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	5	8	5	
		Minimum	0.00018	0.00013	0.0239	0.0185	9.8	<0.000010	<0.0000050	<0.00050	0.00032	0.080	0.0473	0.0049	0.0040	<0.0000020	<0.0000020	14.3	<0.0010	<0.0010	<0.00020	<0.00020	2.5	<0.0050	<0.0050	<0.0030	<0.0030	0.024	
		Maximum	0.00046	0.00030	0.0510	0.0387	13.1	<0.000010	0.0000080	0.00074	0.00046	0.135	0.190	0.0160	0.0159	<0.0000020	0.0000021	33.6	<0.0010	<0.0010	<0.00020	<0.00020	5.7	<0.0050	<0.0050	0.0066	0.0067	0.031	
		Geometric Mean	0.00024	0.00018	0.0383	0.0318	10.9	0.0000050	0.00000387	0.000314	0.00037	0.112	0.0652	0.0115	0.0089	0.00000100	0.00000109	16.3	0.00050	0.00050	0.000100	0.000100	4.3	0.00250	0.00250	0.00326	0.00399	0.028	
		Count <DL	0	0	0	0	0	9	8	7	0	0	0	0	0	9	8	0	9	9	9	9	0	9	9	1	4	0	
		Standard Deviation	0.00009	0.00006	0.0086	0.0061	1.3	0.0000000	0.00000189	0.000198	0.00004	0.019	0.0447	0.0037	0.0037	0.0000000	0.0000037	6.2	0.00000	0.00000	0.000000	0.000000	0.9	0.00000	0.00000	0.00185	0.00161	0.003	
		1st Quartile	0.00020	0.00017	0.0349	0.0304	10.0	<0.000010	<0.0000050	<0.00050	0.00034	0.111	0.0539	0.0119	0.0075	<0.0000020	<0.0000020	15.0	<0.0010	<0.0010	<0.00020	<0.00020	4.1	<0.0050	<0.0050	0.0032	0.00335	0.027	
		Median	0.00021	0.00017	0.0395	0.0341	10.9	<0.000010	<0.000010	<0.00050	0.00037	0.114	0.0564	0.0136	0.0086	<0.0000020	<0.0000020	15.1	<0.0010	<0.0010	<0.00020	<0.00020	4.7	<0.0050	<0.0050	0.0034	<0.010	0.028	
		3rd Quartile	0.00025	0.00018	0.0446	0.0362	10.9	<0.000010	<0.000010	<0.00050	0.00039	0.128	0.0665	0.0147	0.0114	<0.0000020	<0.0000020	15.2	<0.0010	<0.0010	<0.00020	<0.00020	4.8	<0.0050	<0.0050	0.0034	<0.010	0.029	
NNO	No Name Lake Outlet	Average	0.00031	0.00031	0.0301	0.0229	13.0	0.0000050	0.00000417	0.000305	0.00039	0.093	0.0623	0.0059	0.0041	0.00000109	0.00000109	14.5	0.00050	0.00050	0.000100	0.000100	1.89	0.00250	0.00250	0.00260	0.00356	0.0122	0.0075
E217017		Count	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	14	15	15	6	5	6	1
		Minimum	0.00016	0.00017	0.0151	0.0113	9.7	<0.000010	<0.0000050	<0.00050	0.00033	0.053	0.0371	0.0041	0.0025	<0.0000020	<0.0000020	10.5	<0.0010	<0.0010	<0.00020	<0.00020	<1.0	<0.0050	<0.0050	<0.0030	<0.0030	<0.020	<0.015
		Maximum	0.00045	0.00043	0.0448	0.0345	15	<0.000010	<0.000010	0.00079	0.00048	0.169	0.0920	0.0079	0.0054	0.0000023	0.0000024	17.9	<0.0010	<0.0010	<0.00020	<0.00020	4.9	<0.0050	<0.0050	0.0048	0.0054	0.023	<0.015
		Geometric Mean	0.00029	0.00029	0.0281	0.0209	12.9	0.0000050	0.00000397	0.000284	0.00039	0.086	0.0586	0.0057	0.0040	0.00000106	0.00000106	14.3	0.00050	0.00050	0.000100	0.000100	1.64	0.00250	0.00250	0.00231	0.00328	0.0115	0.0075
		Count <DL	0	0	0	0	0	15	15	13	0	0	0	0	0	14	14	0	15	15	15	15	1	15	15	3	1	5	1
		Standard Deviation	0.00010	0.00009	0.0108	0.0092	1.7	0.0000000	0.00000122	0.000152	0.00004	0.036	0.0218	0.0012	0.0011	0.00000034	0.00000036	2.2	0.00000	0.00000	0.000000	0.000000	1.17	0.00000	0.00000	0.00143	0.00142	0.0053	0.0000
		1st Quartile	0.00020	0.00020	0.0188	0.0125	11.5	<0.000010	<0.0000050	<0.00050	0.00036	0.064	0.0382	0.0050	0.0030	<0.0000020	<0.0000020	12.1	<0.0010	<0.0010	<0.00020	<0.00020	1.4	<0.0050	<0.0050	<0.0030	0.0031	<0.020	<0.015
		Median	0.00035	0.00034	0.0311	0.0261	13	<0.000010	<0.000010	<0.00050	0.00040	0.089	0.0639	0.0059	0.0046	<0.0000020	<0.0000020	15.2	<0.0010	<0.0010	<0.00020	<0.00020	1.55	<0.0050	<0.0050	0.00195	0.0038	<0.020	<0.015
		3rd Quartile	0.00037	0.00038	0.0389	0.0316	14.5	<0.000010	<0.000010	<0.00050	0.00043	0.118	0.0786	0.0066	0.0051	<0.0000020	<0.0000020	15.9	<0.0010	<0.0010	<0.00020	<0.00020	1.8	<0.0050	<0.0050	0.00352	0.0040	<0.020	<0.015
LLS	Small Seep into Long Lake	Average	0.00265	0.00224	0.01663	0.00315	245	0.0000050	0.00000450	0.000492	0.000163	1.200	0.9827	0.3230	0.3102	0.00000111	0.00000115	571	0.0032	0.0033	0.000100	0.000100	499	0.00250	0.00250				
E292131		Count	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10				
		Minimum	0.00052	0.00028	<0.0030	<0.0030	170	<0.000010	<0.0000050	<0.00050	<0.00020	0.225	0.0612	0.0835	0.0826	<0.0000019	<0.0000019	473	0.0020	0.0020	<0.00020	<0.00020	360	<0.0050	<0.0050				
		Maximum	0.00518	0.00483	0.0507	0.0060	390	<0.000010	0.0000050	0.00105	0.00060	2.11	1.96	0.488	0.441	0.0000022	0.0000025	696	0.0056	0.0058	<0.00020	<0.00020	750	<0.0050	<0.0050				
		Geometric Mean	0.00235	0.00185	0.00774	0.00264	239	0.0000050	0.00000435	0.000406	0.000130	1.075	0.7657	0.2929	0.2818	0.00000108	0.00000109	567	0.0030	0.0031	0.000100	0.000100	490	0.00250	0.00250				
		Count <DL	0	0	3	5	0	10	8	6	8	0	0	0	0	9	9	0	0	0	10	10	0	10	10				
		Standard Deviation	0.00115	0.00122	0.01815	0.00195	58	0.0000000	0.00000105	0.000326	0.000159	0.459	0.5147	0.1243	0.1178	0.00000038	0.00000048	67	0.0013	0.0014	0.000000	0.000000	106	0.00000	0.00000				
		1st Quartile	0.00233	0.00158	0.00195	<0.0030	222	<0.000010	<0.000010	<0.00050	<0.00020	1.107	0.6893	0.2412	0.2307	<0.0000020	<0.0000020	530	0.0022	0.0022	<0.00020	<0.00020	440	<0.0050	<0.0050				
		Median	0.00266	0.00222	0.00785	0.00225	243	<0.000010	<0.000010	<0.00050	<0.00020	1.225	1.0700	0.3360	0.3280	<0.0000020	<0.0000020	575	0.0029	0.0029	<0.00020	<0.00020	483	<0.0050	<0.0050				
		3rd Quartile	0.00286	0.00272	0.02672	0.00500	257	<0.000010	<0.000010	0.000793	<0.00020	1.298	1.2000	0.4108	0.4030	<0.0000020	<0.0000020	604	0.0040	0.0046	<0.00020	<0.00020	531	<0.0050	<0.0050				
LLSM	Long Lake Middle Seep	Average	0.00080	0.00069	0.06331	0.00799	184	0.0000059	0.00000556	0.000959	0.000591	0.539	0.361	0.1827	0.1794	0.00000099	0.00000153	481	0.0034	0.0032	0.000251	0.000100	410	0.00284	0.00250				
E292131		Count	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8				
		Minimum	0.00043	0.00039	<0.0030	<0.0030	110	<0.000010	<0.0000050	<0.00050	<0.00020	0.251	0.207	0.0927	0.0890	<0.0000019	<0.0000019	372	0.0020	0.0019	<0.00020	<0.00020	280	<0.0050	<0.0050				
		Maximum	0.00122	0.00133	0.259	0.0209	240	0.000012	0.000010	0.00294	0.00163	0.787	0.783	0.338	0.336	<0.0000020	0.0000053	615	0.0051	0.0047	0.00131	<0.00020	580	0.0052	<0.0050				
		Geometric Mean	0.00076	0.00062	0.02106	0.00575	179	0.0000056	0.00000523	0.000603	0.000379	0.514	0.326	0.1594	0.1559	0.00000099	0.00000122	474	0.0032	0.0031	0.000138	0.000100	400	0.00274	0.00250				
		Count <DL	0	0	1	1	0	7	5	4	2	0	0	0	0	8	7	0	0	0	7	8	0	7	8				
		Standard Deviation	0.00027	0.00036	0.08999	0.00690	44	0.0000025	0.00000209	0.000999	0.000569	0.163	0.194	0.1015	0.1021	0.00000002	0.00000152	84	0.0012	0.0010	0.000428	0.000000	94	0.00095	0.00000				
		1st Quartile	0.00064	0.00042	0.00918	0.00347	155	<0.000010	<0.000010	<0.00050	0.000228	0.476	0.234	0.0974	0.0953	<0.0000020	<0.0000020	404	0.0024	0.0024	<0.00020	<0.00020	345	<0.0050	<0.0050				
		Median	0.00073	0.00056	0.01780	0.00550	194	<0.000010	<0.000010	0.000555	0.000345	0.537	0.292	0.1535	0.1490	<0.0000020	<0.0000020	495	0.0033	0.0033	<0.00020	<0.00020	405	<0.0050	<0.0050				
		3rd Quartile	0.00090	0.00083	0.08342	0.00990	220	<0.000010	0.0000060	0.001162	0.000820	0.619	0.416	0.2415	0.2342	<0.0000020	<0.0000020	530	0.0042	0.0037	<0.00020	<0.00020	464	<0.0050	<0.0050				

Notes:
Factor applied to less-than results when calculating statistics: 0.5

Table 26 Statistics 2016 -2021 30 Page(s)

2019 -20 Statistics Stn.Code EMS. ID	Site Name & Description	Statistic	As-T	As-D	Al-T	Al-D	Alk-T	Cd-T	Cd-D	Cu-T	Cu-D	Fe-T	Fe-D	Mn-T	Mn-D	Hg-T	Hg-D	Hard-T	Ni-T	Ni-D	Pb-T	Pb-D	SO4-D	Zn-T	Zn-D	P-T	P-D	N-NO23	N-NH3
			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	mg/L
MW002	Ex-situ 2-3 South shallow groundwater well beside 3-South Pit (1 Seam)	Average		0.00197		0.00413	272.7		0.0000125		0.000333		4.11		1.40		0.00000274			0.00262		0.000275	1300		0.0069		0.00147		0.16
		Count		4		4	3		4		4		4		4		4			4		4	4		4		3		1
		Minimum		0.00184		<0.0060	258		<0.000010		<0.00040		3.84		1.27		<0.0000019			0.0024		<0.00040	1200		<0.010		0.0014		0.16
		Maximum		0.00232		<0.015	290		<0.000050		<0.0010		4.40		1.54		0.0000068			0.0029		<0.0010	1400		<0.025		<0.0030		0.16
		Geometric Mean		0.00197		0.00377	272.3		0.0000106		0.000305		4.10		1.40		0.00000194			0.00262		0.000251	1298		0.0063		0.00147		0.16
		Count <DL		0		4	0		4		3		0		0		2			1		4	0		4		2		0
		Standard Deviation		0.00023		0.00225	16.2		0.0000087		0.000156		0.27		0.11		0.00000277			0.00022		0.000150	81		0.0038		0.00006		0.00
		1st Quartile		0.00186		<0.0060	264.0		0.0000088		<0.00040		3.90		1.35		0.00000099			0.00247		<0.00040	1275		<0.010		0.00145		0.16
		Median		0.00187		<0.0060	270		<0.000020		0.000315		4.09		1.41		0.00000160			0.00260		<0.00040	1300		<0.010		<0.0030		0.16
		3rd Quartile		0.00199		0.00413	280.0		0.0000138		0.000447		4.30		1.46		0.00000335			0.00275		0.000275	1325		0.0069		<0.0030		0.16
QU1009D	Ex-situ 4-South deep groundwater well. Down gradient of 4-South Mine. Base of Dunsmuir Member. Assesses vertical gradients & water quality down gradient of the 4-South Mine workings. Just outside of mine pool. (Below 3 Seam)	Average		0.1106		0.00150	183.5		0.00000375		0.000100		0.474		0.0542		0.00000100			0.00050		0.000100	72.5		0.00250		0.017		
		Count		2		2	2		2		2		2		2		2			2		2	2		2		2		
		Minimum		0.0993		<0.0030	177		<0.0000050		<0.00020		0.472		0.0502		<0.0000020			<0.0010		<0.00020	69		<0.0050		0.013		
		Maximum		0.122		<0.0030	190		<0.000010		<0.00020		0.477		0.0581		<0.0000020			<0.0010		<0.00020	76		<0.0050		0.020		
		Geometric Mean		0.1101		0.00150	183.4		0.00000354		0.000100		0.474		0.0540		0.00000100			0.00050		0.000100	72.4		0.00250		0.016		
		Count <DL		0		2	0		2		2		0		0		2			2		2	0		2		0		
		Standard Deviation		0.0161		0.00000	9.2		0.00000177		0.000000		0.004		0.0056		0.00000000			0.00000		0.000000	4.9		0.00000		0.005		
		1st Quartile		0.1050		<0.0030	180.2		0.00000313		<0.00020		0.473		0.0522		<0.0000020			<0.0010		<0.00020	70.8		<0.0050		0.015		
		Median		0.1106		<0.0030	183.5		0.00000375		<0.00020		0.474		0.0542		<0.0000020			<0.0010		<0.00020	72.5		<0.0050		0.017		
		3rd Quartile		0.1163		<0.0030	186.8		0.00000438		<0.00020		0.476		0.0561		<0.0000020			<0.0010		<0.00020	74.2		<0.0050		0.018		
QU1009S	Ex-situ 4-South shallow groundwater well. Fracture zone 10 m below till. Assesses vertical gradients & water quality down gradient of the 4-South Mine workings. Just outside of mine pool. (Below 3 Seam)	Average		0.0822		0.01120	138.5		0.00000375		0.000100		4.56		0.363		0.00000100			0.00050		0.000100	110.0		0.00250		0.0097		
		Count		2		2	2		2		2		2		2		2			2		2	2		2		2		
		Minimum		0.0722		<0.0030	137		<0.0000050		<0.00020		4.37		0.350		<0.0000020			<0.0010		<0.00020	100		<0.0050		0.0055		
		Maximum		0.0921		0.0209	140		<0.000010		<0.00020		4.75		0.377		<0.0000020			<0.0010		<0.00020	120		<0.0050		0.014		
		Geometric Mean		0.0815		0.00560	138.5		0.00000354		0.000100		4.56		0.363		0.00000100			0.00050		0.000100	109.5		0.00250		0.0088		
		Count <DL		0		1	0		2		2		0		0		2			2		2	0		2		0		
		Standard Deviation		0.0141		0.01372	2.1		0.00000177		0.000000		0.27		0.019		0.00000000			0.00000		0.000000	14.1		0.00000		0.0060		
		1st Quartile		0.0772		0.00635	137.8		0.00000313		<0.00020		4.46		0.357		<0.0000020			<0.0010		<0.00020	105.0		<0.0050		0.0076		
		Median		0.0822		0.01120	138.5		0.00000375		<0.00020		4.56		0.363		<0.0000020			<0.0010		<0.00020	110.0		<0.0050		0.0097		
		3rd Quartile		0.0871		0.01605	139.2		0.00000438		<0.00020		4.66		0.370		<0.0000020			<0.0010		<0.00020	115.0		<0.0050		0.0119		
SPD																													
EZ18582	Settling Pond # 1	Average	0.00129	0.00087	0.0509	0.01866	76.9	0.0000079	0.00000505	0.000497	0.000332	0.589	0.2094	0.1430	0.0979	0.00000149	0.00000118	289	0.00147	0.00102	0.000100	0.000100	254	0.00296	0.00250	0.0077	0.00215	0.0152	0.0290
		Count	7	10	7	10	12	7	10	7	10	7	10	7	10	7	10	7	7	10	7	10	45	7	10	5	4	5	5
		Minimum	0.00039	0.00031	0.0053	<0.0030	30	<0.000010	<0.0000050	<0.00050	<0.00020	0.178	0.0275	0.0380	0.0271	<0.0000020	<0.0000019	117	<0.0010	<0.0010	<0.00020	<0.00020	47	<0.0050	<0.0050	0.0043	<0.0030	<0.020	<0.015
		Maximum	0.00384	0.00232	0.187	0.0711	120	0.000018	0.0000080	0.00150	0.00065	1.35	0.517	0.271	0.230	0.0000044	0.0000028	407	0.0030	0.0021	<0.00020	<0.00020	390	0.0057	<0.0050	0.013	0.0032	0.036	0.055
		Geometric Mean	0.00099	0.00072	0.0279	0.01035	72.2	0.0000068	0.00000489	0.000376	0.000294	0.485	0.1602	0.1144	0.0776	0.00000124	0.00000110	262	0.00127	0.00090	0.000100	0.000100	235	0.00281	0.00250	0.0072	0.00204	0.0129	0.0210
		Count <DL	0	0	0	1	0	5	9	5	1	0	0	0	0	6	9	0	1	4	7	10	0	6	10	0	2	4	2
		Standard Deviation	0.00119	0.00061	0.0637	0.02188	25.2	0.0000052	0.00000130	0.000477	0.000166	0.404	0.1421	0.0891	0.0690	0.00000129	0.00000057	119	0.00088	0.00055	0.000000	0.000000	81	0.00121	0.00000	0.0033	0.00082	0.0116	0.0219
		1st Quartile	0.00068	0.00052	0.0144	0.0057	67.8	<0.000010	<0.000010	<0.00050	0.000225	0.331	0.1308	0.0712	0.0483	<0.0000020	<0.0000020	203	0.0011	<0.0010	<0.00020	<0.00020	220	<0.0050	<0.0050	0.0063	<0.0030	<0.020	<0.015
		Median	0.00089	0.00064	0.0296	0.00885	80.0	<0.000010	<0.000010	<0.00050	0.000300	0.499	0.1855	0.155	0.0614	<0.0000020	<0.0000020	336	0.0011	0.00105	<0.00020	<0.00020	269	<0.0050	<0.0050	0.0067	0.00195	<0.020	0.028
		3rd Quartile	0.00127	0.00097	0.0527	0.02135	92.2	0.0000085	<0.000010	0.000490	0.000428	0.716	0.2655	0.1975	0.1512	<0.0000020	<0.0000020	381	0.00175	0.00125	<0.00020	<0.00020	310	<0.0050	<0.0050	0.0082	0.00260	<0.020	0.047
LLE	Long Lake Entrance (LLE)	Average	0.00080	0.00066	0.0515	0.02248	63.0	0.0000050	0.00000409	0.000359	0.000368	0.541	0.3567	0.0704	0.0702	0.00000131	0.00000176	219.1	0.00050	0.00050	0.000100	0.000100	196.0	0.00320	0.00292	0.00301		0.0349	0.0264
EZ92130		Count	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	45	11	11	11		11	11
		Minimum	0.00054	0.00045	0.0038	<0.0030	28	<0.000010	<0.0000050	<0.00050	<0.00020	0.156	0.0764	0.0112	0.0106	<0.0000019	<0.0000019	92.3	<0.0010	<0.0010	<0.00020	<0.00020	57	<0.0050	<0.0050	<0.0030		<0.020	<0.015
		Maximum	0.00121	0.00093	0.101	0.0455	140	<0.000010	<0.000010	0.00081	0.00072	1.05	0.985	0.151	0.152	0.0000045	0.0000064	547	<0.0010	<0.0010	<0.00020	<0.00020	620	0.0102	0.0071	0.0079		0.141	0.052
		Geometric Mean	0.00078	0.00064	0.0340	0.01339	53.8	0.0000050	0.00000389	0.000323	0.000332	0.473	0.2707	0.0545	0.0534	0.00000114	0.00000139	182.3	0.00050	0.00050	0.000100	0.000100	157.1	0.00284	0.00275	0.00255		0.0228	0.0185
		Count <DL	0	0	0	2	0	11	11	8	1	0	0	0	0	10	8	0	11	11	11	11	0	10	10	5		5	5
		Standard Deviation	0.00020	0.00016	0.0370	0.01636	39.8	0.0000000	0.00000126	0.000197	0.000162	0.266	0.2717	0.0447	0.0454	0.00000106	0.00000166	156.9	0.00000	0.00000	0.000000	0.000000	153.3	0.00232	0.00139	0.00200		0.0395	0.0204
		1st Quartile	0.00071	0.00054	0.0186	0.00785	35.1	<0.000010	<0.0000050	<0.00050	0.000300	0.373	0.1400	0.0388	0.0370	<0.0000020	<0.0000020	126.0	<0.0010	<0.0010	<0.00020	<0.00020	110	<0.0050	<0.0050	<0.0030		<0.020	<0.015
		Median	0.00081	0.00065	0.0506	0.0214	41.5	<0.000010	<0.000010	<0.00050	0.00033	0.556	0.334	0.0624	0.0638	<0.0000020	<0.0000020	142	<0.0010	<0.0010	<0.00020	<0.00020	140	<0.0050	<0.0050	0.0027		0.024	0.016
		3rd Quartile	0.00082	0.00077	0.0859	0.03705	80	<0.000010	<0.000010	0.000395	0.00045	0.688	0.4685	0.1019	0.1038	<0.0000020	0.00000160	246.0	<0.0010	<0.0010	<0.00020	<0.00020	180	<0.0050	<0.0050	0.00360		0.039	0.0460
LLM1	Long Lake Middle 1 metre below Surface	Average	0.00042	0.00040	0.0243	0.0188	23.3	0.0000050	0.00000411	0.000303	0.00035	0.065	0.0430	0.00714	0.00496	0.00000100	0.00000126	65.4	0.00050	0.00050	0.000100	0.000100	50.9	0.00250	0.00250	0.00377	0.00392	0.0158	
EZ06619		Count	14	14	14	14	10	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	6	12	5	
		Minimum	0.00029	0.00026	0.0080	0.0067	14	<0.000010	<0.0000050	<0.00050	0.00026	0.014	0.0137	<0.0010	<0.0010	<0.0000020	<0.0000020	23.4	<0.0010	<0.0010	<0.00020	<0.00020	10	<0.0050	<0.0050	<0.0030	<0.0020	<0.020	
		Maximum	0.00054	0.00053	0.0578	0.0450	30.2	<0.000010	<0.000010	0.00071	0.00051	0.133	0.0825	0.0148	0.0121	<0.0000020	0.0000047	103	<0.0010	<0.0010	<0.00020	<0.00020	85	<0.0050	<0.0050	0.0070	<0.010	0.039	
		Geometric Mean	0.00041	0.00039	0.0204	0.0166	23.0	0.0000050	0.00000390	0.000284	0.00035	0.054	0.0373	0.00595	0.00380	0.00000100	0.00000112	61.1	0.00050	0.00050	0.000100	0.000100	45.1	0.00250	0.00250	0.00323	0.00343	0.0131	
		Count <DL	0	0	0	0	0	14	14	12	0	0	0	1	1	14	13	0	14	14	14	14	0	14	14	2	11	4	
		Standard Deviation	0.00009	0.00010	0.0138	0.0099	4.0	0.0000000	0.00000124	0.000139	0.00006	0.036	0.0206	0.00342	0.00317	0.00000000	0.00000099	23.9	0.00000	0.00000	0.000000	0.000000	23.3	0.00000	0.00000	0.00211	0.00166	0.0130	
		1st Quartile	0.00033	0.00030	0.0113	0.0129	23	<0.000010	<0.0000050	<0.00050	0.00031	0.031	0.0300	0.00525	0.00263	<0.0000020	<0.0000020	50.9	<0.0010	<0.0010	<0.00020	<0.00020	36.5	<0.0050	<0.0050	0.00198	0.00263	<0.020	
		Median	0.00044	0.00042	0.0245	0.0190	23.6	<0.000010	<0.000010	<0.00050	0.00035	0.066	0.0435	0.00720	0.00480	<0.0000020	<0.0000020	57.9	<0.0010	<0.0010	<0.00020	<0.00020	43.8	<0.0050	<0.0050	0.00395	<0.010	<0.020	
		3rd Quartile	0.00052	0.00049	0.0310	0.0233	24.3	<0.000010	<0.000010	<0.00050	0.00038	0.089	0.0568	0.00822	0.00630	<0.0000020	<0.0000020	88.5	<0.0010	<0.0010	<0.00020	<0.00020	73.5	<0.0050	<0.0050	0.00465	<0.010	<0.020	

Notes:
Values qualified by less than (DL) values were calculated

Table 26 Statistics 2016 -2021 30 Page(s)

2019-20 Statistics Stn.Code EMS. ID	Site Name & Description	Statistic	As-T	As-D	Al-T	Al-D	Alk-T	Cd-T	Cd-D	Cu-T	Cu-D	Fe-T	Fe-D	Mn-T	Mn-D	Hg-T	Hg-D	Hard-T	Ni-T	Ni-D	Pb-T	Pb-D	SO4-D	Zn-T	Zn-D	P-T	P-D	N-NO23	N-NH3
			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	mg/L
LLMB	Long Lake Middle 1 metre From Bottom	Average	0.00026	0.00021	0.0133	0.00870	53.5	0.0000050	0.00000411	0.000250	0.00029	0.055	0.0167	0.4699	0.3841	0.00000100	0.00000100	145.4	0.00050	0.00050	0.000100	0.000100	132.9	0.00250	0.00269	0.00205	0.00396	0.052	
E206619		Count	14	14	14	14	10	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	6	12	5	
		Minimum	0.00021	0.00016	0.0054	<0.0030	44.5	<0.000010	<0.0000050	<0.00050	0.00024	0.034	0.0054	0.0834	0.0323	<0.0000020	<0.0000020	126	<0.0010	<0.0010	<0.00020	<0.00020	102	<0.0050	<0.0050	<0.0030	<0.0030	0.039	
		Maximum	0.00034	0.00034	0.0274	0.0183	57	<0.000010	<0.000010	<0.00050	0.00036	0.085	0.0412	1.24	1.08	<0.0000020	<0.0000020	158	<0.0010	<0.0010	<0.00020	<0.00020	150	<0.0050	0.0051	0.0040	<0.010	0.057	
		Geometric Mean	0.00026	0.00020	0.0115	0.00717	53.4	0.0000050	0.00000390	0.000250	0.00029	0.052	0.0124	0.2865	0.1958	0.00000100	0.00000100	145.1	0.00050	0.00050	0.000100	0.000100	132.3	0.00250	0.00263	0.00190	0.00355	0.052	
		Count <DL	0	0	0	1	0	14	14	14	0	0	0	0	0	14	14	0	14	14	14	14	0	14	13	4	11	0	
		Standard Deviation	0.00003	0.00005	0.0075	0.00502	3.5	0.0000000	0.00000124	0.000000	0.00003	0.017	0.0134	0.4484	0.4105	0.00000000	0.00000000	9.6	0.00000	0.00000	0.000000	0.000000	11.6	0.00000	0.00069	0.00101	0.00159	0.007	
		1st Quartile	0.00023	0.00016	0.0073	0.00465	53.1	<0.000010	<0.0000050	<0.00050	0.00026	0.040	0.0066	0.1070	0.0787	<0.0000020	<0.0000020	143.2	<0.0010	<0.0010	<0.00020	<0.00020	130	<0.0050	<0.0050	<0.0030	0.00263	0.054	
		Median	0.00026	0.00020	0.0097	0.00755	54.2	<0.000010	<0.000010	<0.00050	0.00030	0.052	0.0083	0.2305	0.1120	<0.0000020	<0.0000020	146	<0.0010	<0.0010	<0.00020	<0.00020	132.5	<0.0050	<0.0050	<0.0030	<0.010	0.055	
		3rd Quartile	0.00028	0.00023	0.0200	0.01327	55.1	<0.000010	<0.000010	<0.00050	0.00031	0.070	0.0301	0.9370	0.8090	<0.0000020	<0.0000020	153.5	<0.0010	<0.0010	<0.00020	<0.00020	140	<0.0050	<0.0050	0.00210	<0.010	0.056	
LLO	Long Lake Outlet	Average	0.00042	0.00039	0.0276	0.0163	30.3	0.0000050	0.00000411	0.000278	0.00034	0.074	0.0387	0.0092	0.0041	0.00000122	0.00000112	73.0	0.00050	0.00050	0.000100	0.000100	64.8	0.00250	0.00282			0.023	
E219412		Count	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	26	14	14			1	
		Minimum	0.00026	0.00025	0.0088	0.0045	21.3	<0.000010	<0.0000050	<0.00050	0.00025	0.018	0.0093	0.0041	0.0013	<0.0000020	<0.0000020	48.0	<0.0010	<0.0010	<0.00020	<0.00020	2.9	<0.0050	<0.0050			0.023	
		Maximum	0.00054	0.00047	0.0866	0.0274	39	<0.000010	<0.000010	0.00064	0.00062	0.214	0.0592	0.0227	0.0093	0.0000026	0.0000027	99.9	<0.0010	<0.0010	<0.00020	<0.00020	97	<0.0050	0.0070			0.023	
		Geometric Mean	0.00041	0.00038	0.0229	0.0138	29.6	0.0000050	0.00000390	0.000267	0.00033	0.060	0.0318	0.0084	0.0033	0.00000114	0.00000107	70.5	0.00050	0.00050	0.000100	0.000100	56.8	0.00250	0.00269			0.023	
		Count <DL	0	0	0	0	0	14	14	13	0	0	0	0	0	12	13	0	14	14	14	14	0	14	13			0	
		Standard Deviation	0.00008	0.00008	0.0197	0.0084	6.6	0.0000000	0.00000124	0.000104	0.00010	0.049	0.0195	0.0047	0.0028	0.00000056	0.00000045	19.7	0.00000	0.00000	0.000000	0.000000	23.4	0.00000	0.00120			0.000	
		1st Quartile	0.00035	0.00031	0.0152	0.0073	25.2	<0.000010	<0.0000050	<0.00050	0.00028	0.040	0.0181	0.0060	0.0016	<0.0000020	<0.0000020	54.5	<0.0010	<0.0010	<0.00020	<0.00020	46.4	<0.0050	<0.0050			0.023	
		Median	0.00046	0.00042	0.0239	0.0175	28.6	<0.000010	<0.000010	<0.00050	0.00034	0.075	0.0455	0.0081	0.0037	<0.0000020	<0.0000020	68.9	<0.0010	<0.0010	<0.00020	<0.00020	67.3	<0.0050	<0.0050			0.023	
		3rd Quartile	0.00047	0.00045	0.0332	0.0232	36	<0.000010	<0.000010	<0.00050	0.00037	0.089	0.0547	0.0105	0.0062	<0.0000020	<0.0000020	93.3	<0.0010	<0.0010	<0.00020	<0.00020	81.2	<0.0050	<0.0050			0.023	
WB	Middle Quinsam Lake Outlet	Average	0.00019	0.00018	0.0220	0.0133	38.0	0.0000050	0.00000411	0.000442	0.00047	0.054	0.0283	0.0074	0.0032	0.00000124	0.00000100	39.2	0.00050	0.00050	0.000100	0.000100	31.4	0.00250	0.00250			0.0100	
E0900504		Count	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	13	14	14			1	
		Minimum	0.00014	0.00013	0.0103	0.0076	24	<0.000010	<0.0000050	<0.00050	0.00038	0.030	0.0205	0.0039	0.0022	<0.0000020	<0.0000020	24.5	<0.0010	<0.0010	<0.00020	<0.00020	9.0	<0.0050	<0.0050			<0.020	
		Maximum	0.00028	0.00024	0.0869	0.0189	47.5	<0.000010	<0.000010	0.00084	0.00062	0.166	0.0378	0.0134	0.0064	0.0000031	<0.0000020	51.0	<0.0010	<0.0010	<0.00020	<0.00020	57.9	<0.0050	<0.0050			<0.020	
		Geometric Mean	0.00019	0.00018	0.0183	0.0127	37.0	0.0000050	0.00000390	0.000403	0.00046	0.049	0.0279	0.0071	0.0031	0.00000115	0.00000100	38.0	0.00050	0.00050	0.000100	0.000100	25.7	0.00250	0.00250			0.0100	
		Count <DL	0	0	0	0	0	14	14	6	0	0	0	0	0	12	14	0	14	14	14	14	0	14	14			1	
		Standard Deviation	0.00004	0.00003	0.0195	0.0041	8.3	0.0000000	0.00000124	0.000196	0.00006	0.033	0.0047	0.0023	0.0011	0.00000062	0.00000000	9.2	0.00000	0.00000	0.000000	0.000000	16.9	0.00000	0.00000			0.0000	
		1st Quartile	0.00017	0.00017	0.0137	0.0102	30.6	<0.000010	<0.0000050	<0.00050	0.00044	0.041	0.0266	0.0059	0.0025	<0.0000020	<0.0000020	30.6	<0.0010	<0.0010	<0.00020	<0.00020	9.4	<0.0050	<0.0050			<0.020	
		Median	0.00018	0.00018	0.0146	0.0123	40.4	<0.000010	<0.000010	0.000505	0.00047	0.046	0.0284	0.0073	0.0029	<0.0000020	<0.0000020	41.9	<0.0010	<0.0010	<0.00020	<0.00020	38	<0.0050	<0.0050			<0.020	
		3rd Quartile	0.00020	0.00020	0.0219	0.0175	44.7	<0.000010	<0.000010	0.00053	0.00048	0.054	0.0293	0.0083	0.0037	<0.0000020	<0.0000020	45.4	<0.0010	<0.0010	<0.00020	<0.00020	42.2	<0.0050	<0.0050			<0.020	
75SD	Settling Pond at 75- Discharge to Stream 1 -75																												
E292069		Average	0.00481	0.00458	0.0197	0.00357	129	0.0000050	0.00000393	0.00085	0.00073	0.061	0.0160	0.0878	0.0733	0.00000179	0.00000203	147.5	0.00050	0.00050	0.000100	0.000100	34.7	0.00250	0.00250	0.021		0.0100	0.041
		Count	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	1		1	1
		Minimum	0.00102	0.00082	0.0097	<0.0030	88	<0.000010	<0.0000050	0.00051	0.00037	0.030	0.0073	0.0247	0.0031	<0.0000020	<0.0000020	87.6	<0.0010	<0.0010	<0.00020	<0.00020	21	<0.0050	<0.0050	0.021		<0.020	0.041
		Maximum	0.00966	0.00923	0.0365	0.0075	190	<0.000010	<0.000010	0.00113	0.00099	0.149	0.0307	0.335	0.398	0.0000031	0.0000051	225	<0.0010	<0.0010	<0.00020	<0.00020	97.3	<0.0050	<0.0050	0.021		<0.020	0.041
		Geometric Mean	0.00354	0.00326	0.0182	0.00295	124	0.0000050	0.00000371	0.00082	0.00069	0.053	0.0147	0.0575	0.0203	0.00000156	0.00000154	138.4	0.00050	0.00050	0.000100	0.000100	29.3	0.00250	0.00250	0.021		0.0100	0.041
		Count <DL	0	0	0	3	0	7	7	0	0	0	0	0	0	4	5	0	7	7	7	7	0	7	7	0		1	0
		Standard Deviation	0.00370	0.00363	0.0087	0.00230	39	0.0000000	0.00000134	0.00023	0.00022	0.041	0.0074	0.1110	0.1442	0.00000099	0.00000178	56.8	0.00000	0.00000	0.000000	0.000000	27.8	0.00000	0.00000	0.000		0.0000	0.000
		1st Quartile	0.00211	0.00190	0.0144	<0.0030	97	<0.000010	<0.0000050	0.00068	0.00058	0.038	0.0128	0.0367	0.0066	<0.0000020	<0.0000020	101.5	<0.0010	<0.0010	<0.00020	<0.00020	21.5	<0.0050	<0.0050	0.021		<0.020	0.041
		Median	0.00265	0.00259	0.0199	0.0033	118	<0.000010	<0.000010	0.00088	0.00083	0.046	0.0142	0.0440	0.0177	<0.0000020	<0.0000020	127	<0.0010	<0.0010	<0.00020	<0.00020	23	<0.0050	<0.0050	0.021		<0.020	0.041
		3rd Quartile	0.00807	0.00782	0.0215	0.00485	158	<0.000010	<0.000010	0.00102	0.00087	0.062	0.0172	0.0687	0.0406	0.0000027	0.00000255	195.0	<0.0010	<0.0010	<0.00020	<0.00020	29.3	<0.0050	<0.0050	0.021		<0.020	0.041
75	Stream 1-75 discharge to LWO	Average	0.000059	0.000050	0.0283	0.0227	14.2	0.0000050	0.00000429	0.000287	0.00028	0.0103	0.00357	0.00050	0.00050	0.00000099	0.00000099	17.0	0.00050	0.00050	0.000100	0.000100	5.1	0.00250	0.00250				
E292109		Count	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7				
		Minimum	<0.00010	<0.00010	0.0182	0.0162	9.2	<0.000010	<0.0000050	<0.00050	0.00023	<0.010	<0.0050	<0.0010	<0.0010	<0.0000019	<0.0000019	12.9	<0.0010	<0.0010	<0.00020	<0.00020	3.9	<0.0050	<0.0050				
		Maximum	0.00011	<0.00010	0.0482	0.0358	22	<0.000010	<0.000010	0.00051	0.00041	0.017	0.0100	<0.0010	<0.0010	<0.0000020	<0.0000020	22.5	<0.0010	<0.0010	<0.00020	<0.00020	7.3	<0.0050	<0.0050				
		Geometric Mean	0.000056	0.000050	0.0270	0.0220	13.7	0.0000050	0.00000410	0.000277	0.00027	0.0091	0.00305	0.00050	0.00050	0.00000099	0.00000099	16.6	0.00050	0.00050	0.000100	0.000100	5.0	0.00250	0.00250				
		Count <DL	6	7	0	0	0	7	7	6	0	3	6	7	7	7	7	0	7	7	7	7	0	7	7				
		Standard Deviation	0.000023	0.000000	0.0100	0.0066	4.5	0.0000000	0.00000122	0.000098	0.00007	0.0052	0.00283	0.00000	0.00000	0.00000002	0.00000002	3.7	0.00000	0.00000	0.000000	0.000000	1.2	0.00000	0.00000				
		1st Quartile	<0.00010	<0.00010	0.0223	0.0188	10.9	<0.000010	0.00000375	<0.00050	0.00024	<0.010	<0.0050	<0.0010	<0.0010	<0.0000020	<0.0000020	13.7	<0.0010	<0.0010	<0.00020	<0.00020	4.2	<0.0050	<0.0050				
		Median	<0.00010	<0.00010	0.0264	0.0211	14	<0.000010	<0.000010	<0.00050	0.00024	0.012	<0.0050	<0.0010	<0.0010	<0.0000020	<0.0000020	16.8	<0.0010	<0.0010	<0.00020	<0.00020	4.7	<0.0050	<0.0050				
		3rd Quartile	<0.00010	<0.00010	0.0305	0.0243	16.3	<0.000010	<0.000010	<0.00050	0.00030	0.014	<0.0050	<0.0010	<0.0010	<0.0000020	<0.0000020	19.6	<0.0010	<0.0010	<0.00020	<0.00020	5.8	<0.0050	<0.0050				
QU0813A	Ex-situ 7-South groundwater well down gradient of the CCR backfill towards QR (No. 4 Seam)	Average		0.383		0.00150	186.7		0.0000050		0.000100		0.222		0.0403		0.00000098			0.00050		0.000100	33.3		0.00250		0.034		
		Count		3		3	3		3		3		3		3		3			3		3	3		3		3		
		Minimum		0.371		<0.0030	180		<0.000010		<0.00020		0.166		0.0349		<0.0000019			<0.0010		<0.00020	28		<0.0050		0.020		
		Maximum		0.398		<0.0030	190		<0.000010		<0.00020		0.317		0.0508		<0.0000020			<0.0010		<0.00020	36		<0.0050		0.055		
		Geometric Mean		0.383		0.00150	186.6		0.0000050		0.000100		0.212		0.0396		0.00000098			0.00050		0.000100	33.1		0.00250		0.031		
		Count <DL		0		3	0		3		3		0		0		3			3		3	0		3		0		
		Standard Deviation		0.014		0.00000	5.8		0.0000000		0.000000		0.083		0.0091		0.00000003			0.00000		0.000000	4.6		0.00000		0.019		
		1st Quartile		0.376		<0.0030	185.0		<0.000010		<0.00020		0.174		0.0350		0.00000097			<0.0010		<0.00020	32.0		<0.0050		0.024		
		Median		0.380		<0.0030	190		<0.000010		<0.00020		0.182		0.0351		<0.0000020			<0.0010		<0.00020	36		<0.0050		0.027		
		3rd Quartile		0.389		<0.0030	190		<0.000010		<0.00020		0.249		0.0430		<0.0000020			<0.0010		<0.00020	36		<0.0050		0.041		
QU0813B	Ex-situ 7-South groundwater well down gradient of the CCR backfill towards QR (Till & SST contact)	Average		0.474		0.00150	135.0		0.0000050		0.000100		0.1392		0.0757		0.00000097			0.00050		0.000100	34.5		0.00250		0.053		
		Count		2		2	2		2		2		2		2		2			2		2	2		2		2		
		Minimum		0.462		<0.0030	110		<0.000010		<0.00020		0.0594		0.0673		<0.0000019			<0.0010		<0.00020	32		<0.0050		0.039		
		Maximum		0.486		<0.0030	160		<0.000010		<0.00020		0.219		0.0841		<0.0000020			<0.0010		<0.00020	37		<0.0050		0.067		
		Geometric Mean		0.474		0.00150	132.7		0.0000050		0.000100		0.1141		0.0752		0.00000097			0.00050		0.000100	34.4		0.00250		0.051		
		Count <DL		0		2	0		2		2		0		0		2			2		2	0		2		0		
		Standard Deviation		0.017		0.00000	35.4		0.0000000		0.000000		0.1129		0.0119		0.00000004			0.00000		0.000000	3.5		0.00000		0.020		
		1st Quartile		0.468		<0.0030	122.5		<0.000010		<0.00020		0.0993		0.0715		0.00000096			<0.0010		<0.00020	33.2		<0.0050		0.046		
		Median		0.474		<0.0030	135.0		<0.000010		<0.00020		0.1392		0.0757		0.00000097			<0.0010		<0.00020	34.5		<0.0050		0.053		
		3rd Quartile		0.480		<0.0030	147.5		<0.000010		<0.00020		0.1791		0.0799		0.00000099			<0.0010		<0.00020	35.8		<0.0050		0.060		

Notes:
Factor applied to less-than results when calculating statistics: 0.5

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2019-20 Statistics Stn.Code EMS. ID	Site Name & Description	Statistic	As-T	As-D	Al-T	Al-D	Alk-T	Cd-T	Cd-D	Cu-T	Cu-D	Fe-T	Fe-D	Mn-T	Mn-D	Hg-T	Hg-D	Hard-T	Ni-T	Ni-D	Pb-T	Pb-D	SO4-D	Zn-T	Zn-D	P-T	P-D	N-NO23	N-NH3
			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	mg/L
QU0821GD	Ex-situ 2-North groundwater well down gradient of u/g tailings disposal, measures water quality & hydraulic gradients downstream of Forjan Fault (No. 4 Seam)	Average		0.158		0.00525	203.0		0.0000163		0.000350		0.963		0.1383		0.00000099			0.00175		0.000350	0.90		0.0088		0.080		
		Count		4		4	4		4		4		4		4		4			4		4	4		4		4		
		Minimum		0.109		<0.0060	200		<0.000010		<0.00040		0.689		0.0500		<0.0000019			<0.0020		<0.00040	<1.0		<0.010		0.015		
		Maximum		0.231		<0.015	210		<0.000050		<0.0010		1.53		0.238		<0.0000020			<0.0050		<0.0010	2.1		<0.025		0.17		
		Geometric Mean		0.152		0.00474	203.0		0.0000133		0.000316		0.914		0.1192		0.00000099			0.00158		0.000316	0.72		0.0079		0.055		
		Count <DL		0		4	0		4		4		0		0		4			4		4	3		4		0		
		Standard Deviation		0.052		0.00260	4.8		0.0000103		0.000173		0.387		0.0796		0.00000002			0.00087		0.000173	0.80		0.0043		0.070		
		1st Quartile		0.132		<0.0060	200		0.0000088		<0.00040		0.730		0.0935		0.00000099			<0.0020		<0.00040	<1.0		<0.010		0.030		
		Median		0.147		0.00525	201.0		0.0000175		0.000350		0.817		0.1325		<0.0000020			0.00175		0.000350	<1.0		0.0088		0.068		
		3rd Quartile		0.172		<0.015	204.0		<0.000050		<0.0010		1.051		0.1772		<0.0000020			<0.0050		<0.0010	0.90		<0.025		0.118		
QU0821GS	Ex-situ 2-North groundwater well down gradient of u/g tailings disposal, measures water quality & hydraulic gradients downstream of Forjan Fault (No. 1 Seam)	Average		0.179		0.00632	198.5		0.00001688		0.000350		0.617		0.1010		0.00000099			0.00175		0.000350	0.50		0.00875		0.095		
		Count		4		4	4		4		4		4		4		4			4		4	4		4		4		
		Minimum		0.125		<0.0060	190		<0.0000050		<0.00020		0.247		0.0403		<0.0000019			<0.0010		<0.00020	<1.0		<0.0050		0.024		
		Maximum		0.222		<0.030	204		<0.00010		<0.0020		1.15		0.144		<0.0000020			<0.010		<0.0020	<1.0		<0.050		0.18		
		Geometric Mean		0.175		0.00495	198.4		0.00000889		0.000211		0.533		0.0902		0.00000099			0.00106		0.000211	0.50		0.00529		0.074		
		Count <DL		0		2	0		4		4		0		0		4			4		4	4		4		0		
		Standard Deviation		0.040		0.00579	6.0		0.00002230		0.000436		0.383		0.0485		0.00000002			0.00218		0.000436	0.00		0.01090		0.069		
		1st Quartile		0.168		0.00337	197.5		0.00000438		<0.00020		0.425		0.0728		0.00000099			<0.0010		<0.00020	<1.0		<0.0050		0.049		
		Median		0.184		0.00365	200		0.00000750		0.000150		0.535		0.1099		<0.0000020			0.00075		0.000150	<1.0		0.00375		0.088		
		3rd Quartile		0.195		0.00660	201.0		0.00002000		0.000400		0.726		0.1380		<0.0000020			0.00200		0.000400	<1.0		0.01000		0.135		
QU1010D	Ex-situ 2-North deep groundwater well. Measures water quality & hydraulic gradient in Forjian Fault (Fractured sandstone).																												
		Average		0.0148		0.0622	87.5		0.0000250		0.00090		10.30		0.418		0.00000100			0.00250		0.00050	0.50		0.0125		0.03325		
		Count		2		2	2		2		2		2		2		2			2		2	2		2		2		
		Minimum		0.0147		<0.015	87		<0.000050		<0.0010		9.60		0.409		<0.0000020			<0.0050		<0.0010	<1.0		<0.025		<0.0030		
		Maximum		0.0149		0.117	88		<0.000050		0.0013		11.0		0.427		<0.0000020			<0.0050		<0.0010	<1.0		<0.025		0.065		
		Geometric Mean		0.0148		0.0296	87.5		0.0000250		0.00081		10.28		0.418		0.00000100			0.00250		0.00050	0.50		0.0125		0.00987		
		Count <DL		0		1	0		2		1		0		0		2			2		2	2		2		1		
		Standard Deviation		0.0001		0.0774	0.7		0.0000000		0.00057		0.99		0.013		0.00000000			0.00000		0.00000	0.00		0.0000		0.04490		
		1st Quartile		0.0147		0.0349	87.2		<0.000050		0.00070		9.95		0.413		<0.0000020			<0.0050		<0.0010	<1.0		<0.025		0.01738		
		Median		0.0148		0.0622	87.5		<0.000050		0.00090		10.30		0.418		<0.0000020			<0.0050		<0.0010	<1.0		<0.025		0.03325		
		3rd Quartile		0.0149		0.0896	87.8		<0.000050		0.00110		10.65		0.422		<0.0000020			<0.0050		<0.0010	<1.0		<0.025		0.04913		
QU1010S	Ex-situ 2-North shallow groundwater well. Down gradient of u/g tailings disposal, measures water quality & hydraulic head downstream of 2-North workings. (No. 1 Seam / Sandstone).	Average		0.0973		0.0086	150.0		0.0000050		0.000100		0.197		0.0418		0.00000100			0.00050		0.000100	4.6		0.00250		0.025		
		Count		2		2	2		2		2		2		2		2			2		2	2		2		2		
		Minimum		0.0969		0.0037	150		<0.000010		<0.00020		0.181		0.0389		<0.0000020			<0.0010		<0.00020	3.4		<0.0050		0.021		
		Maximum		0.0978		0.0134	150		<0.000010		<0.00020		0.213		0.0448		<0.0000020			<0.0010		<0.00020	5.8		<0.0050		0.028		
		Geometric Mean		0.0973		0.0070	150.0		0.0000050		0.000100		0.196		0.0417		0.00000100			0.00050		0.000100	4.4		0.00250		0.024		
		Count <DL		0		0	0		2		2		0		0		2			2		2	0		2		0		
		Standard Deviation		0.0006		0.0069	0.0		0.0000000		0.000000		0.023		0.0042		0.00000000			0.00000		0.000000	1.7		0.00000		0.005		
		1st Quartile		0.0971		0.0061	150		<0.000010		<0.00020		0.189		0.0404		<0.0000020			<0.0010		<0.00020	4.0		<0.0050		0.023		
		Median		0.0973		0.0086	150		<0.000010		<0.00020		0.197		0.0418		<0.0000020			<0.0010		<0.00020	4.6		<0.0050		0.025		
		3rd Quartile		0.0976		0.0110	150		<0.000010		<0.00020		0.205		0.0433		<0.0000020			<0.0010		<0.00020	5.2		<0.0050		0.026		
QU1011D	Ex-situ 2-North deep groundwater well. Measures water quality & hydraulic gradient in Forjian Fault (Fractured sandstone).	Average		0.0186		0.233	320.0		0.0000050		0.00081		2.21		0.267		0.00000095			0.00050		0.000100	0.50		0.00250		0.072		
		Count		1		1	1		1		1		1		1		1			1		1	1		1		1		
		Minimum		0.0186		0.233	320		<0.000010		0.00081		2.21		0.267		<0.0000019			<0.0010		<0.00020	<1.0		<0.0050		0.072		
		Maximum		0.0186		0.233	320		<0.000010		0.00081		2.21		0.267		<0.0000019			<0.0010		<0.00020	<1.0		<0.0050		0.072		
		Geometric Mean		0.0186		0.233	320.0		0.0000050		0.00081		2.21		0.267		0.00000095			0.00050		0.000100	0.50		0.00250		0.072		
		Count <DL		0		0	0		1		0		0		0		1			1		1	1		1		0		
		Standard Deviation		0.0000		0.000	0.0		0.0000000		0.00000		0.00		0.000		0.00000000			0.00000		0.000000	0.00		0.00000		0.000		
		1st Quartile		0.0186		0.233	320		<0.000010		0.00081		2.21		0.267		<0.0000019			<0.0010		<0.00020	<1.0		<0.0050		0.072		
		Median		0.0186		0.233	320		<0.000010		0.00081		2.21		0.267		<0.0000019			<0.0010		<0.00020	<1.0		<0.0050		0.072		
		3rd Quartile		0.0186		0.233	320		<0.000010		0.00081		2.21		0.267		<0.0000019			<0.0010		<0.00020	<1.0		<0.0050		0.072		
QU1011S	Ex-situ 2-North shallow groundwater well. Measures water quality & hydraulic gradient in Forjian Fault (Fractured sandstone).	Average	**Lab results were not released 2019-2020**																										
		Count																											
		Minimum																											
		Maximum																											
		Geometric Mean																											
		Count <DL																											
		Standard Deviation																											
		1st Quartile																											
		Median																											
		3rd Quartile																											

Notes:
Factor applied to less-than results when calculating statistics: 0.5

Table 26 Statistics 2016 -2021 30 Page(s)

2019 -20 Statistics Stn.Code EMS. ID	Site Name & Description	Statistic	As-T	As-D	Al-T	Al-D	Alk-T	Cd-T	Cd-D	Cu-T	Cu-D	Fe-T	Fe-D	Mn-T	Mn-D	Hg-T	Hg-D	Hard-T	Ni-T	Ni-D	Pb-T	Pb-D	SO4-D	Zn-T	Zn-D	P-T	P-D	N-NO23	N-NH3
			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	mg/L
QU1105S	Ex-situ River Barrier Pillar (RBP) shallow groundwater well. Monitors water quality & gradients above the RBP & 2-North Mine. (Sandstone)	Average		0.0811		0.00225	245.0		0.0000050		0.000100		1.062		0.1496		0.00000097			0.00050		0.000100	125.0		0.00250		0.0086		
		Count		2		2	2		2		2		2		2		2			2		2	2		2		2		
		Minimum		0.0522		<0.0030	200		<0.000010		<0.00020		0.824		0.0862		<0.0000019			<0.0010		<0.00020	100		<0.0050		0.0079		
		Maximum		0.110		0.0030	290		<0.000010		<0.00020		1.30		0.213		<0.0000020			<0.0010		<0.00020	150		<0.0050		0.0093		
		Geometric Mean		0.0758		0.00212	240.8		0.0000050		0.000100		1.035		0.1355		0.00000097			0.00050		0.000100	122.5		0.00250		0.0086		
		Count <DL		0		1	0		2		2		0		0		2			2		2	0		2		0		
		Standard Deviation		0.0409		0.00106	63.6		0.0000000		0.000000		0.337		0.0897		0.00000004			0.00000		0.000000	35.4		0.00000		0.0010		
		1st Quartile		0.0667		0.00187	222.5		<0.000010		<0.00020		0.943		0.1179		0.00000096			<0.0010		<0.00020	112.5		<0.0050		0.0083		
		Median		0.0811		0.00225	245.0		<0.000010		<0.00020		1.062		0.1496		0.00000097			<0.0010		<0.00020	125.0		<0.0050		0.0086		
		3rd Quartile		0.0955		0.00263	267.5		<0.000010		<0.00020		1.181		0.1813		0.00000099			<0.0010		<0.00020	137.5		<0.0050		0.0089		
QU1109S	Ex-situ River Barrier Pillar (RBP) shallow groundwater well. Monitors water quality & gradients above the RBP & 2-North Mine. (Sandstone)	Average		0.146		0.00150	410.0		0.0000050		0.000100		0.132		0.0257		0.00000100			0.00050		0.000100	210.0		0.00250		0.033		
		Count		2		2	2		2		2		2		2		2			2		2	2		2		1		
		Minimum		0.142		<0.0030	400		<0.000010		<0.00020		0.116		0.0230		<0.0000020			<0.0010		<0.00020	200		<0.0050		0.033		
		Maximum		0.150		<0.0030	420		<0.000010		<0.00020		0.147		0.0284		<0.0000020			<0.0010		<0.00020	220		<0.0050		0.033		
		Geometric Mean		0.146		0.00150	409.9		0.0000050		0.000100		0.131		0.0256		0.00000100			0.00050		0.000100	209.8		0.00250		0.033		
		Count <DL		0		2	0		2		2		0		0		2			2		2	0		2		0		
		Standard Deviation		0.006		0.00000	14.1		0.0000000		0.000000		0.022		0.0038		0.00000000			0.00000		0.000000	14.1		0.00000		0.000		
		1st Quartile		0.144		<0.0030	405.0		<0.000010		<0.00020		0.124		0.0244		<0.0000020			<0.0010		<0.00020	205.0		<0.0050		0.033		
		Median		0.146		<0.0030	410.0		<0.000010		<0.00020		0.132		0.0257		<0.0000020			<0.0010		<0.00020	210.0		<0.0050		0.033		
		3rd Quartile		0.148		<0.0030	415.0		<0.000010		<0.00020		0.139		0.0271		<0.0000020			<0.0010		<0.00020	215.0		<0.0050		0.033		
7SQR	7-South Quinsam River downstream of 7-South Mining Operation	Average	0.00037	0.00033	0.0277	0.0150	36.9	0.0000050	0.00000400	0.000553	0.000456	0.103	0.0632	0.0061	0.0045	0.00000100	0.00000108	36.7	0.00050	0.00050	0.000100	0.000100	29.1	0.00250	0.00269				
E292113		Count	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15				
		Minimum	0.00024	0.00021	0.0145	0.0076	26	<0.000010	<0.0000050	<0.00050	<0.00020	0.076	0.0459	0.0048	0.0012	<0.0000020	<0.0000020	25.3	<0.0010	<0.0010	<0.00020	<0.00020	7.9	<0.0050	<0.0050				
		Maximum	0.00047	0.00042	0.0689	0.0343	45.3	<0.000010	<0.000010	0.00107	0.00063	0.187	0.106	0.0096	0.0064	<0.0000020	0.0000022	44.6	<0.0010	<0.0010	<0.00020	<0.00020	49.0	<0.0050	0.0053				
		Geometric Mean	0.00036	0.00033	0.0248	0.0138	36.3	0.0000050	0.00000379	0.000502	0.000429	0.099	0.0608	0.0060	0.0043	0.00000100	0.00000105	36.0	0.00050	0.00050	0.000100	0.000100	24.5	0.00250	0.00263				
		Count <DL	0	0	0	0	0	15	15	4	1	0	0	0	0	15	14	0	15	15	15	15	0	15	14				
		Standard Deviation	0.00007	0.00007	0.0149	0.0071	6.5	0.0000000	0.00000127	0.000233	0.000123	0.030	0.0196	0.0013	0.0013	0.00000000	0.00000031	7.1	0.00000	0.00000	0.000000	0.000000	14.3	0.00000	0.00072				
		1st Quartile	0.00032	0.00028	0.0161	0.0100	31.5	<0.000010	<0.0000050	0.000380	0.000420	0.084	0.0484	0.0052	0.0039	<0.0000020	<0.0000020	29.8	<0.0010	<0.0010	<0.00020	<0.00020	16.2	<0.0050	<0.0050				
		Median	0.00039	0.00036	0.0240	0.0154	39.7	<0.000010	<0.000010	0.00058	0.00046	0.092	0.0563	0.0054	0.0044	<0.0000020	<0.0000020	40.6	<0.0010	<0.0010	<0.00020	<0.00020	33	<0.0050	<0.0050				
		3rd Quartile	0.00043	0.00039	0.0328	0.0169	41.8	<0.000010	<0.000010	0.000650	0.000510	0.106	0.0706	0.0069	0.0054	<0.0000020	<0.0000020	41.5	<0.0010	<0.0010	<0.00020	<0.00020	40.2	<0.0050	<0.0050				
LQL1	Lower Quinsam Lake 1 metre below surface	Average	0.00058	0.00053	0.0294	0.0186	33.3	0.0000050	0.0000538	0.000526	0.00052	0.065	0.0440	0.0049	0.00269	0.00000200	0.00000138	34.0	0.00050	0.00050	0.000100	0.000100	20.8	0.00250	0.00250	0.00282	0.0040	0.0820	
E292118		Count	8	8	8	8	4	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	4	7	4	
		Minimum	0.00046	0.00040	0.0090	0.0070	31.1	<0.000010	<0.0000050	<0.00050	0.00037	0.041	0.0285	0.0027	<0.0010	<0.0000020	<0.0000020	33.0	<0.0010	<0.0010	<0.00020	<0.00020	13	<0.0050	<0.0050	<0.0030	0.0025	<0.020	
		Maximum	0.00072	0.00068	0.0646	0.0358	36.1	<0.000010	0.0000130	0.00062	0.00076	0.100	0.0588	0.0062	0.0059	0.0000056	0.0000040	36.0	<0.0010	<0.0010	<0.00020	<0.00020	29.7	<0.0050	<0.0050	0.0047	<0.010	0.164	
		Geometric Mean	0.00057	0.00052	0.0220	0.0153	33.3	0.0000050	0.00000474	0.000509	0.00051	0.062	0.0428	0.0047	0.00218	0.00000149	0.00000119	34.0	0.00050	0.00050	0.000100	0.000100	20.0	0.00250	0.00250	0.00248	0.0039	0.0392	
		Count <DL	0	0	0	0	0	8	6	1	0	0	0	0	1	6	7	0	8	8	8	8	0	8	8	2	3	2	
		Standard Deviation	0.00011	0.00011	0.0219	0.0117	2.1	0.0000000	0.00000328	0.000122	0.00012	0.021	0.0106	0.0011	0.00167	0.00000188	0.00000106	1.0	0.00000	0.00000	0.000000	0.000000	6.0	0.00000	0.00000	0.00159	0.0010	0.0835	
		1st Quartile	0.00049	0.00043	0.0100	0.0088	32.5	<0.000010	0.0000438	0.000508	0.00047	0.049	0.0358	0.0043	0.00153	<0.0000020	<0.0000020	33.5	<0.0010	<0.0010	<0.00020	<0.00020	16	<0.0050	<0.0050	<0.0030	0.0034	<0.020	
		Median	0.00058	0.00052	0.0246	0.0163	33.0	<0.000010	<0.000010	0.000550	0.00050	0.063	0.0461	0.0052	0.00270	<0.0000020	<0.0000020	33.6	<0.0010	<0.0010	<0.00020	<0.00020	20.6	<0.0050	<0.0050	0.00255	0.0038	0.0770	
		3rd Quartile	0.00067	0.00062	0.0457	0.0261	33.9	<0.000010	<0.000010	0.000612	0.00057	0.079	0.0502	0.0056	0.00325	0.00000185	<0.0000020	34.6	<0.0010	<0.0010	<0.00020	<0.00020	25.1	<0.0050	<0.0050	0.00387	<0.010	0.1490	
LQLB	LQLB 1 metre from Bottom	Average	0.00100	0.00062	0.0379	0.0225	33.3	0.0000081	0.00000667	0.00066	0.00062	0.471	0.2050	0.2039	0.1917	0.00000153	0.00000153	35.8	0.00050	0.00050	0.000100	0.000100	24.7	0.00250	0.00318	0.00398	0.00441	0.0152	
E292118		Count	9	9	9	9	5	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	5	8	5	
		Minimum	0.00047	0.00039	0.0218	0.0126	31.7	<0.000010	<0.0000050	0.00057	0.00049	0.092	0.0552	0.0065	0.0041	<0.0000020	<0.0000020	34.6	<0.0010	<0.0010	<0.00020	<0.00020	21	<0.0050	<0.0050	<0.0030	<0.0020	<0.020	
		Maximum	0.00171	0.00091	0.0601	0.0307	34.4	0.000015	0.0000140	0.00093	0.00101	1.09	0.419	0.532	0.461	0.0000035	0.0000058	37.3	<0.0010	<0.0010	<0.00020	<0.00020	29.6	<0.0050	0.0086	0.0055	0.0075	0.024	
		Geometric Mean	0.00085	0.00059	0.0359	0.0215	33.2	0.0000073	0.00000572	0.00066	0.00061	0.281	0.1421	0.0534	0.0436	0.00000131	0.00000122	35.8	0.00050	0.00050	0.000100	0.000100	24.6	0.00250	0.00287	0.00364	0.00371	0.0139	
		Count <DL	0	0	0	0	0	5	4	0	0	0	0	0	0	7	8	0	9	9	9	9	0	9	8	1	5	3	
		Standard Deviation	0.00059	0.00022	0.0133	0.0069	1.1	0.0000039	0.00000386	0.00011	0.00016	0.438	0.1671	0.2336	0.2192	0.00000106	0.00000160	1.0	0.00000	0.00000	0.000000	0.000000	2.8	0.00000	0.00203	0.00158	0.00220	0.0072	
		1st Quartile	0.00050	0.00043	0.0266	0.0155	32.5	<0.000010	<0.000010	0.00057	0.00052	0.107	0.0577	0.0075	0.0048	<0.0000020	<0.0000020	35.1	<0.0010	<0.0010	<0.00020	<0.00020	23	<0.0050	<0.0050	0.0038	0.00345	<0.020	
		Median	0.00058	0.00053	0.0410	0.0236	33.5	<0.000010	0.0000050	0.00065	0.00057	0.134	0.0821	0.0187	0.0154	<0.0000020	<0.0000020	35.6	<0.0010	<0.0010	<0.00020	<0.00020	25.0	<0.0050	<0.0050	0.0039	<0.010	<0.020	
		3rd Quartile	0.00162	0.00078	0.0469	0.0278	34.2	0.000011	0.000010	0.00068	0.00066	0.861	0.385	0.437	0.431	<0.0000020	<0.0000020	36.4	<0.0010	<0.0010	<0.00020	<0.00020	25.8	<0.0050	<0.0050	0.0052	0.00530	0.022	

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 26 Statistics 2016 -2021 30 Page(s)

2020 -21 Statistics Stn.Code EMS. ID	Site Name & Description	Statistic	As-T	As-D	Al-T	Al-D	Alk-T	Cd-T	Cd-D	Cu-T	Cu-D	Fe-T	Fe-D	Mn-T	Mn-D	Hg-T	Hg-D	Hard-T	Ni-T	Ni-D	Pb-T	Pb-D	SO4-D	Zn-T	Zn-D	P-T	P-D	N-NO23	N-NH3
WA			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	mg/L
E0126402	Quinsam River at Argonaut Road Upstream of Mining Operation.	Average	0.000102	0.000089	0.0226	0.0179	19.5	0.0000050	0.0000050	0.00082	0.00057	0.019	0.0116	0.00144	0.00050	0.00000114	0.00000095	19.9	0.00050	0.00050	0.000100	0.000100	1.27	0.00250	0.00250	0.01370	0.0050	0.0100	0.0075
		Count	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	13	13	15	15	15	15	15	15	15	3	3	5
		Minimum	<0.00010	<0.00010	0.0176	0.0126	16	<0.000010	<0.000010	0.00052	0.00049	0.011	0.0056	<0.0010	<0.0010	<0.0000019	<0.0000019	18.2	<0.0010	<0.0010	<0.00020	<0.00020	<1.0	<0.0050	<0.0050	<0.0030	<0.010	<0.020	<0.015
		Maximum	0.00018	0.00017	0.0397	0.0432	23	<0.000010	<0.000010	0.00337	0.00074	0.036	0.0245	0.0021	<0.0010	0.0000026	<0.0000019	21.6	<0.0010	<0.0010	<0.00020	<0.00020	1.7	<0.0050	<0.0050	0.053	<0.010	<0.020	<0.015
		Geometric Mean	0.000092	0.000079	0.0221	0.0170	19.3	0.0000050	0.0000050	0.00071	0.00056	0.018	0.0107	0.00134	0.00050	0.00000107	0.00000095	19.9	0.00050	0.00050	0.000100	0.000100	1.23	0.00250	0.00250	0.00456	0.0050	0.0100	0.0075
		Count <DL	5	8	0	0	0	15	15	15	0	0	0	2	15	13	15	0	15	15	15	15	1	15	15	3	1	5	5
		Standard Deviation	0.000044	0.000047	0.0053	0.0071	2.6	0.0000000	0.0000000	0.00071	0.00007	0.007	0.0051	0.00047	0.00000	0.00000050	0.00000000	0.9	0.00000	0.00000	0.000000	0.000000	0.31	0.00000	0.00000	0.02235	0.0000	0.0000	0.0000
		1st Quartile	<0.00010	<0.00010	0.0196	0.0152	17	<0.000010	<0.000010	0.00057	0.00052	0.013	0.0082	0.00125	<0.0010	<0.0000019	<0.0000019	19.6	<0.0010	<0.0010	<0.00020	<0.00020	1.1	<0.0050	<0.0050	<0.0030	<0.010	<0.020	<0.015
		Median	0.00011	<0.00010	0.0220	0.0164	20	<0.000010	<0.000010	0.00062	0.00055	0.018	0.0101	0.0015	<0.0010	<0.0000019	<0.0000019	20.0	<0.0010	<0.0010	<0.00020	<0.00020	1.3	<0.0050	<0.0050	<0.0030	<0.010	<0.020	<0.015
		3rd Quartile	0.000125	0.000125	0.0234	0.0176	21.5	<0.000010	<0.000010	0.00072	0.00058	0.022	0.0132	0.00175	<0.0010	<0.0000019	<0.0000019	20.4	<0.0010	<0.0010	<0.00020	<0.00020	1.5	<0.0050	<0.0050	0.011	<0.010	<0.020	<0.015
WD	Settling Pond #4	Average	0.00107	0.000651	0.01419	0.00444	391	0.0000226	0.0000077	0.001431	0.000458	1.985	0.5690	0.5045	0.4071	0.00000095	0.00000095	500	0.02765	0.02170	0.000144	0.000140	696	0.01096	0.00665	0.00150		0.0147	0.029
EZ07409		Count	16	20	16	20	18	16	20	16	20	16	20	16	20	11	15	16	16	20	16	20	53	16	20	3		3	3
		Minimum	0.00021	<0.00020	<0.0065	<0.0030	140	<0.000010	<0.000010	<0.00050	<0.00020	0.022	0.0064	0.0570	0.0468	<0.0000019	<0.0000019	382	<0.0010	<0.0010	<0.00020	<0.00020	420	<0.0050	<0.0050	<0.0030		<0.020	0.024
		Maximum	0.00197	0.00156	0.0405	0.0225	470	0.000061	<0.000050	0.0036	0.00146	14.6	9.82	2.40	2.39	<0.0000019	<0.0000019	659	0.149	0.149	<0.00040	<0.0010	1300	0.032	0.028	<0.0030		0.024	0.033
		Geometric Mean	0.00087	0.000514	0.00947	0.00295	379	0.0000161	0.0000068	0.001098	0.000362	0.831	0.0297	0.2603	0.1967	0.00000095	0.00000095	492	0.00578	0.00383	0.000135	0.000124	681	0.00719	0.00449	0.00150		0.0134	0.029
		Count <DL	0	2	2	14	0	7	18	4	5	0	1	0	0	11	15	0	6	9	16	20	0	8	15	3		2	0
		Standard Deviation	0.00061	0.000390	0.01345	0.00543	79	0.0000184	0.0000049	0.000984	0.000339	3.519	2.1844	0.6256	0.5726	0.00000000	0.00000000	94	0.04063	0.03710	0.000051	0.000094	152	0.00988	0.00718	0.00000		0.0081	0.005
		1st Quartile	0.00056	0.000322	0.00435	<0.0030	355	0.0000088	<0.000010	0.000755	0.000235	0.596	0.0113	0.1057	0.0850	<0.0000019	<0.0000019	425	0.00088	<0.0010	<0.00020	<0.00020	600	<0.0050	<0.0050	<0.0030		<0.020	0.028
		Median	0.00100	0.000730	0.00840	<0.0060	420	0.0000195	<0.000010	0.001185	0.000355	0.942	0.0130	0.1700	0.1140	<0.0000019	<0.0000019	466	0.00485	0.00240	<0.00020	<0.00020	710	0.00755	<0.0050	<0.0030		<0.020	0.031
		3rd Quartile	0.00161	0.000915	0.01940	0.00342	440	0.0000322	<0.000020	0.002137	0.000542	1.370	0.0251	0.6552	0.5530	<0.0000019	<0.0000019	585	0.04235	0.02970	<0.00040	0.000125	760	0.01595	0.00780	<0.0030		0.0170	0.032
MW001D	Ex-situ 2-North deep groundwater well below the coal wash plant (Till)	Average		0.00282		0.00150	340.0		0.000044		0.000250		3.74		2.39		0.00000095			0.0034		0.000100	640		0.00250		0.00530		
		Count		2		2	2		2		2		2		2		2			2		2	2		2		2		
		Minimum		0.00274		<0.0030	340		0.000021		<0.00020		3.39		2.20		<0.0000019			0.0032		<0.00020	580		<0.0050		<0.0030		
		Maximum		0.00289		<0.0030	340		0.000066		0.00040		4.09		2.58		<0.0000019			0.0035		<0.00020	700		<0.0050		0.0091		
		Geometric Mean		0.00281		0.00150	340.0		0.000037		0.000200		3.72		2.38		0.00000095			0.0033		0.000100	637		0.00250		0.00369		
		Count <DL		0		2	0		0		1		0		0		2			0		2	0		2		1		
		Standard Deviation		0.00011		0.00000	0.0		0.000032		0.000212		0.49		0.27		0.00000000			0.0002		0.000000	84		0.00000		0.00537		
		1st Quartile		0.00278		<0.0030	340		0.000032		0.000175		3.56		2.30		<0.0000019			0.0033		<0.00020	610		<0.0050		0.00340		
		Median		0.00282		<0.0030	340		0.000044		0.000250		3.74		2.39		<0.0000019			0.0034		<0.00020	640		<0.0050		0.00530		
		3rd Quartile		0.00285		<0.0030	340		0.000055		0.000325		3.92		2.49		<0.0000019			0.0034		<0.00020	670		<0.0050		0.00720		
MW001S	Ex-situ 2-North shallow groundwater well below the coal wash plant (Till)	Average		0.00088		0.00150	315.0		0.000061		0.00045		0.627		3.06		0.00000095			0.0016		0.000100	661		0.00250		0.00400		
		Count		2		2	2		2		2		2		2		2			2		2	2		2		2		
		Minimum		0.00077		<0.0030	310		0.000059		0.00039		0.594		2.06		<0.0000019			0.0011		<0.00020	600		<0.0050		<0.0030		
		Maximum		0.00100		<0.0030	320		0.000063		0.00051		0.660		4.05		<0.0000019			0.0021		<0.00020	730		<0.0050		0.0065		
		Geometric Mean		0.00088		0.00150	315.0		0.000061		0.00045		0.626		2.89		0.00000095			0.0015		0.000100	661		0.00250		0.00312		
		Count <DL		0		2	0		0		0		0		0		2			0		2	0		2		1		
		Standard Deviation		0.00016		0.00000	7.1		0.000003		0.00008		0.047		1.41		0.00000000			0.0007		0.000000	91		0.00000		0.00354		
		1st Quartile		0.00083		<0.0030	312.5		0.000060		0.00042		0.610		2.56		<0.0000019			0.0014		<0.00020	632		<0.0050		0.00275		
		Median		0.00088		<0.0030	315.0		0.000061		0.00045		0.627		3.06		<0.0000019			0.0016		<0.00020	661		<0.0050		0.00400		
		3rd Quartile		0.00094		<0.0030	317.5		0.000062		0.00048		0.644		3.55		<0.0000019			0.0018		<0.00020	697		<0.0050		0.00525		
MW006D	Ex-situ 2-North deep groundwater well below the coal wash plant (Till)	Average		0.0264		0.0100	77.0		0.0000050		0.00064		0.00250		0.0151		0.00000095			0.00050		0.000100	11.0		0.00250		0.11		
		Count		1		1	1		1		1		1		1		1			1		1	1		1		1		
		Minimum		0.0264		0.0100	77		<0.000010		0.00064		<0.0050		0.0151		<0.0000019			<0.0010		<0.00020	11		<0.0050		0.11		
		Maximum		0.0264		0.0100	77		<0.000010		0.00064		<0.0050		0.0151		<0.0000019			<0.0010		<0.00020	11		<0.0050		0.11		
		Geometric Mean		0.0264		0.0100	77.0		0.0000050		0.00064		0.00250		0.0151		0.00000095			0.00050		0.000100	11.0		0.00250		0.11		
		Count <DL		0		0	0		1		0		1		0		1			1		1	0		1		0		
		Standard Deviation		0.0000		0.0000	0.0		0.0000000		0.00000		0.00000		0.0000		0.00000000			0.00000		0.000000	0.0		0.00000		0.00		
		1st Quartile		0.0264		0.0100	77		<0.000010		0.00064		<0.0050		0.0151		<0.0000019			<0.0010		<0.00020	11		<0.0050		0.11		
		Median		0.0264		0.0100	77		<0.000010		0.00064		<0.0050		0.0151		<0.0000019			<0.0010		<0.00020	11		<0.0050		0.11		
		3rd Quartile		0.0264		0.0100	77		<0.000010		0.00064		<0.0050		0.0151		<0.0000019			<0.0010		<0.00020	11		<0.0050		0.11		
MW006S	Ex-situ 2-North shallow groundwater well below the coal wash plant (Till)	Average		0.00171		0.00150	150.0		0.000035		0.00072		0.00250		0.0493		0.00000095			0.00050		0.000100	580.0		0.00250		0.040		
		Count		1		1	1		1		1		1		1		1			1		1	1		1		1		
		Minimum		0.00171		<0.0030	150		0.000035		0.00072		<0.0050		0.0493		<0.0000019			<0.0010		<0.00020	580		<0.0050		0.040		
		Maximum		0.00171		<0.0030	150		0.000035		0.00072		<0.0050		0.0493		<0.0000019			<0.0010		<0.00020	580		<0.0050		0.040		
		Geometric Mean		0.00171		0.00150	150.0		0.000035		0.00072		0.00250		0.0493		0.00000095			0.00050		0.000100	580.0		0.00250		0.040		
		Count <DL		0		1	0		0		0		1		0		1			1		1	0		1		0		
		Standard Deviation		0.00000		0.00000	0.0		0.000000		0.00000		0.00000		0.0000		0.00000000			0.00000		0.000000	0.0		0.00000		0.000		
		1st Quartile		0.00171		<0.0030	150		0.000035		0.00072		<0.0050		0.0493		<0.0000019			<0.0010		<0.00020	580		<0.0050		0.040		
		Median		0.00171		<0.0030	150		0.000035		0.00072		<0.0050		0.0493		<0.0000019			<0.0010		<0.00020	580		<0.0050		0.040		
		3rd Quartile		0.00171		<0.0030	150		0.000035		0.00072		<0.0050		0.0493		<0.0000019			<0.0010		<0.00020	580		<0.0050		0.040		
WC	2-North Pit Culvert discharge into Middle Quinsam Lake	Average	0.000466	0.000404	0.00549	0.00431	337.5	0.0000073	0.0000059	0.001678	0.000298	0.154	0.0192	0.1873	0.1900	0.00000095	0.00000095	421	0.00990	0.01007	0.000136	0.000118	648	0.00341	0.00295				
EZ07411		Count	11	11	11	11	4	11	11	11	11	11	11	11	11	10	10	11	11	11	11	15	15	11	11				
		Minimum	<0.00020	<0.00020	<0.0030	<0.0030	320	<0.000010	<0.000010	<0.00050	<0.00020	0.033	0.0084	0.0087	0.0082	<0.0000019	<0.0000019	283	<0.0010	<0.0010	<0.00020	<0.00020	200	<0.0050	<0.0050				
		Maximum	0.00072	0.00057	0.0149	0.0110	380	0.000010	<0.000020	0.0141	0.00046	0.677	0.082	1.74	1.78	<0.0000019	<0.0000019	620	0.0722	0.0764	<0.00040	<0.00040	1200	<0.010	<0.010				
		Geometric Mean	0.000416	0.000370	0.00414	0.00321	336.6	0.0000069	0.0000057	0.000556	0.000278	0.110	0.0150	0.0291	0.0280	0.00000095	0.00000095	411	0.00165	0.00145	0.000129	0.000113	610	0.00322	0.00284				
		Count <DL	1	1	6	6	0	10	11	8	1	0	0	0	0	10	10	0	8	8	11	11	0	11	11				
		Standard Deviation	0.000187	0.000139	0.00445	0.00341	28.7	0.0000026	0.0000020	0.004123	0.000106	0.178	0.0210	0.5168	0.5290	0.00000000	0.00000000	100	0.02169	0.02293	0.000050	0.000040	216	0.00126	0.00101				
		1st Quartile	0.00033	0.000340	<0.0060	<0.0030	320	<0.000010	<0.000010	<0.00050	0.000250	0.084	0.0110	0.0114	0.0108	<0.0000019	<0.0000019	359	<0.0010	<0.0010	<0.00020	<0.00020	545	<0.0050	<0.0050				
		Median	0.00054	0.00048	<0.0060	<0.0060	325.0	<0.000010	<0.000010	<0.0010	0.00028	0.111	0.0135	0.0156	0.0157	<0.0000019	<0.0000019	393	<0.0010	<0.0010	<0.00020	<0.00020	610	<0.0050	<0.0050				
		3rd Quartile	0.000595	0.000485	0.00840	0.00710	342.5	<0.000020	<0.000010	0.000555	0.000370	0.139	0.0156	0.0383	0.0365	<0.0000019	<0.0000019	480	0.00560	0.00485	<0.00040	<0.00040	695	<0.010	<0.010				
MQL1	Middle Quinsam Lake 1 metre below surface	Average	0.00016	0.000139	0.0142	0.0114	35.2	0.0000050	0.0000050	0.002941	0.00230	0.038	0.0221	0.0069	0.00213	0.00000095	0.00000095	33.8	0.00050	0.00050	0.000100	0.000100	28.1	0.00250	0.00250	0.00168	0.0050	0.0241	0.0075
EZ06618		Count	15	15	15	15	13	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	12	14	10	5
		Minimum	0.00011	<0.00010	0.0083	0.0055	26	<0.000010	<0.000010	<0.00050	0.00037	0.025	0.0169	0.0037	<0.0010	<0.0000019	<0.0000019	31.3	<0.0010	<0.0010	<0.00020	<0.00020	23	<0.0050	<0.0050	<0.0030	<0.010	<0.020	<0.015
		Maximum	0.00019	0.00018	0.0197	0.0154	44	<0.000010	<0.000010	0.0376	0.0279	0.051	0.0276	0.0107	0.0040	<0.0000019	<0.0000019	36.8	<0.0010	<0.0010	<0.00020	<0.00020	34	<0.0050	<0.0050	0.0037	<0.010	0.151	<0.015
		Geometric Mean	0.00015	0.000134	0.0137	0.0108	34.8	0.0000050	0.0000050	0.000580	0.00061	0.037	0.0218	0.0066	0.00180	0.00000095	0.00000095	33.8	0.00050	0.00050	0.000100	0.000100	27.9	0.00250	0.00250	0.00162	0.0050	0.0131	0.0075
		Count <DL	0	1	0	0	0	15	15	15	0	0	0	0	2	15	15	0	15	15	15	15	0	15	15	11	14	9	5
		Standard Deviation	0.00003	0.000032	0.0037	0.0036	5.7	0.0000000	0.0000000	0.009590	0.00708	0.010	0.0037	0.0022	0.00109	0.00000000	0.00000000	1.8	0.00000	0.00000	0.000000	0.000000	3.6	0.00000	0.00000	0.00064	0.0000	0.0446	0.0000
		1st Quartile	0.00012	0.00012	0.0104	0.0075	31	<0.000010	<0.000010	<0.00050	0.00042	0.028	0.0184	0.0050	0.0013	<0.0000019	<0.0000019	32.4	<0.0010	<0.0010	<0.00020	<0.00020	25	<0.0050	<0.0050	<0.0030	<0.010	<0.020	<0.015
		Median	0.00017	0.00015	0.0151	0.0129	36	<0.000010	<0.000010	0.00055	0.00048	0.040	0.0225	0.0069	0.0018	<0.0000019	<0.0000019	33.8	<0.0010	<0.0010	<0.00020	<0.00020	28	<0.0050	<0.0050	<0.0030	<0.010	<0.020	<0.015
		3rd Quartile	0.00018	0.00016	0.0169	0.0142	39	<0.000010	<0.000010	0.000585	0.00052	0.046	0.0248	0.0081	0.00305	<0.0000019	<0.0000019	35.0	<0.0010	<0.0010	<0.00020	<0.00020	31	<0.0050	<0.0050	<0.0030	<0.010	<0.020	<0.015
MQLB	Middle Quinsam Lake 1 metre from bottom	Average	0.000129	0.000107	0.0104	0.00748	37.5	0.0000050	0.0000050	0.001583	0.00082	0.047	0.0172	0.1063	0.09458	0.00000095	0.00000095	38.2	0.00055	0.00050	0.000100	0.000100	30.9	0.00250	0.00250	0.00385	0.0054	0.0133	0.0127
EZ06618		Count	15	15	15	15	13	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	12	14	10	5
		Minimum	<0.00010	<0.00010	0.0063	<0.0030	32	<0.000010	<0.000010	<0.00050	0.00040	0.016	0.0089	0.0033	<0.0010	<0.0000019	<0.0000019	33.1	<0.0010	<0.0010	<0.00020	<0.00020	29	<0.0050	<0.0050	<0.0030	<0.010	<0.020	<0.015
		Maximum	0.00019	0.00016	0.0168	0.0127	50	<0.000010	<0.000010	0.0163	0.00547	0.236	0.0432	0.820	0.750	<0.0000019	<0.0000019	44.5	0.0012	<0.0010	<0.00020	<0.00020	36	<0.0050	<0.0050	0.016	0.010	0.027	0.021
		Geometric Mean	0.000123	0.000100	0.0099	0.00642	37.1	0.0000050	0.0000050	0.000642	0.00057	0.033	0.0148	0.0139	0.00631	0.00000095	0.00000095	38.1	0.00053	0.00050	0.000100	0.000100	30.9	0.00250	0.00250	0.00263	0.0053	0.0122	0.0112
		Count <DL	1	3	0	2	0	15	15	2	0	0	0	0	1	15	15	0	14	15	15	15	0	15	15	7	13	8	3
		Standard Deviation	0.000036	0.000037	0.0035	0.00342	5.9	0.0000000	0.0000000	0.000474	0.00129	0.058	0.0108	0.2322	0.21320	0.00000000	0.00000000	2.7	0.00018	0.00000	0.000000	0.000000	1.9	0.00000	0.00000	0.00440	0.0013	0.0070	0.0071
		1st Quartile	0.00011	0.00010	0.0078	0.00570	33	<0.000010	<0.000010	0.00052	0.00046	0.020	0.0107	0.0049	0.00175	<0.0000019	<0.0000019	36.4	<0.0010	<0.0010	<0.00020	<0.00020	30	<0.0050	<0.0050	<0.0030	<0.010	<0.020	<0.015
		Median	0.00012	0.00011	0.0095	0.0070	36	<0.000010	<0.000010	0.00053	0.00050	0.023	0.0117	0.0060	0.0035	<0.0000019	<0.0000019	38.0	<0.0010	<0.0010	<0.00020	<0.00020	30	<0.0050	<0.0050	<0.0030	<0.010	<0.020	<0.015
		3rd Quartile	0.000155	0.000130	0.0132	0.01020	41	<0.000010	<0.000010	0.000605	0.00052	0.050	0.0208	0.0105	0.00415	<0.0000019	<0.0000019	39.4	<0.0010	<0.0010	<0.00020	<0.00020	31.5	<0.0050	<0.0050	0.00368	<0.010	<0.020	0.020

Notes:
Factor applied to less-than results when calculating statistics: 0.5

Appendix 1 - 2021 Annual Water Quality Report

Table 26 Statistics 2016 -2021 30 Page(s)

2020 -21 Statistics Stn.Code																													
EMS. ID	Site Name & Description	Statistic	As-T	As-D	Al-T	Al-D	Alk-T	Cd-T	Cd-D	Cu-T	Cu-D	Fe-T	Fe-D	Mn-T	Mn-D	Hg-T	Hg-D	Hard-T	Ni-T	Ni-D	Pb-T	Pb-D	SO4-D	Zn-T	Zn-D	P-T	P-D	N-NO23	N-NH3
NNL1			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	mg/L
E217018	No Name Lake 1 metre below surface	Average	0.00022	0.00021	0.0264	0.0214	10.7	0.0000050	0.0000050	0.004340	0.00174	0.058	0.0414	0.0048	0.0039	0.0000120	0.0000116	13.7	0.00050	0.00050	0.000100	0.000100	2.6	0.00250	0.00250	0.00237	0.0050		
		Count	5	5	5	5	3	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	3	5		
		Minimum	0.00018	0.00019	0.0242	0.0201	10	<0.000010	<0.000010	<0.00050	0.00034	0.054	0.0359	0.0044	0.0033	<0.0000019	<0.0000019	13.3	<0.0010	<0.0010	<0.00020	<0.00020	2.3	<0.0050	<0.0050	<0.0030	<0.010		
		Maximum	0.00025	0.00023	0.0293	0.0230	11	<0.000010	<0.000010	0.0207	0.00723	0.060	0.0487	0.0051	0.0045	0.0000022	0.0000020	14.0	<0.0010	<0.0010	<0.00020	<0.00020	3.0	<0.0050	<0.0050	0.0041	<0.010		
		Geometric Mean	0.00022	0.00021	0.0263	0.0214	10.7	0.0000050	0.0000050	0.000605	0.00066	0.058	0.0411	0.0048	0.0039	0.0000112	0.0000110	13.7	0.00050	0.00050	0.000100	0.000100	2.6	0.00250	0.00250	0.00210	0.0050		
		Count <DL	0	0	0	0	0	5	5	4	0	0	0	0	0	4	4	0	5	5	5	5	0	5	5	2	5		
		Standard Deviation	0.00003	0.00002	0.0019	0.0011	0.6	0.0000000	0.0000000	0.009146	0.00307	0.002	0.0056	0.0003	0.0005	0.00000056	0.00000047	0.3	0.00000	0.00000	0.000000	0.000000	0.3	0.00000	0.00000	0.00150	0.0000		
		1st Quartile	0.00019	0.00020	0.0257	0.0208	10.5	<0.000010	<0.000010	<0.00050	0.00036	0.057	0.0362	0.0046	0.0038	<0.0000019	<0.0000019	13.5	<0.0010	<0.0010	<0.00020	<0.00020	2.3	<0.0050	<0.0050	<0.0030	<0.010		
		Median	0.00024	0.00022	0.0259	0.0212	11	<0.000010	<0.000010	<0.00050	0.00037	0.058	0.0407	0.0048	0.0039	<0.0000019	<0.0000019	13.7	<0.0010	<0.0010	<0.00020	<0.00020	2.4	<0.0050	<0.0050	<0.0030	<0.010		
		3rd Quartile	0.00024	0.00023	0.0268	0.0221	11	<0.000010	<0.000010	<0.00050	0.00039	0.060	0.0454	0.0049	0.0042	<0.0000019	<0.0000019	13.8	<0.0010	<0.0010	<0.00020	<0.00020	2.9	<0.0050	<0.0050	0.00280	<0.010		
NNLB	No Name Lake 1 metre from bottom	Average	0.00021	0.00019	0.0373	0.0271	10.3	0.0000050	0.0000050	0.002064	0.00065	0.112	0.0490	0.0097	0.0061	0.00000095	0.00000095	15.5	0.00050	0.00050	0.000100	0.000100	16.1	0.00250	0.00250	0.00150	0.0050		
E217018		Count	5	5	5	5	3	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	3	5		
		Minimum	0.00019	0.00017	0.0320	0.0259	9.8	<0.000010	<0.000010	<0.00050	0.00035	0.072	0.0379	0.0063	0.0034	<0.0000019	<0.0000019	14.6	<0.0010	<0.0010	<0.00020	<0.00020	4.2	<0.0050	<0.0050	<0.0030	<0.010		
		Maximum	0.00024	0.00020	0.0399	0.0284	11	<0.000010	<0.000010	0.00932	0.00165	0.175	0.0665	0.0166	0.0132	<0.0000019	<0.0000019	17.3	<0.0010	<0.0010	<0.00020	<0.00020	61	<0.0050	<0.0050	<0.0030	<0.010		
		Geometric Mean	0.00021	0.00019	0.0372	0.0271	10.3	0.0000050	0.0000050	0.000516	0.00052	0.108	0.0480	0.0092	0.0053	0.00000095	0.00000095	15.5	0.00050	0.00050	0.000100	0.000100	7.9	0.00250	0.00250	0.00150	0.0050		
		Count <DL	0	0	0	0	0	5	5	4	0	0	0	0	0	5	5	0	5	5	5	5	0	5	5	3	5		
		Standard Deviation	0.00002	0.00001	0.0032	0.0010	0.6	0.0000000	0.0000000	0.004056	0.00057	0.038	0.0116	0.0040	0.0040	0.00000000	0.00000000	1.0	0.00000	0.00000	0.000000	0.000000	25.1	0.00000	0.00000	0.00000	0.0000		
		1st Quartile	0.00020	0.00018	0.0369	0.0265	9.9	<0.000010	<0.000010	<0.00050	0.00035	0.098	0.0392	0.0082	0.0039	<0.0000019	<0.0000019	15.1	<0.0010	<0.0010	<0.00020	<0.00020	4.4	<0.0050	<0.0050	<0.0030	<0.010		
		Median	0.00021	0.00019	0.0383	0.0269	10	<0.000010	<0.000010	<0.00050	0.00036	0.108	0.0490	0.0086	0.0045	<0.0000019	<0.0000019	15.1	<0.0010	<0.0010	<0.00020	<0.00020	4.5	<0.0050	<0.0050	<0.0030	<0.010		
		3rd Quartile	0.00022	0.00019	0.0395	0.0277	10.5	<0.000010	<0.000010	<0.00050	0.00053	0.108	0.0526	0.0088	0.0054	<0.0000019	<0.0000019	15.4	<0.0010	<0.0010	<0.00020	<0.00020	6.2	<0.0050	<0.0050	<0.0030	<0.010		
NNO	No Name Lake Outlet	Average	0.00035	0.00033	0.0243	0.0179	14.3	0.0000050	0.0000069	0.000425	0.00042	0.106	0.0793	0.0070	0.0038	0.00000095	0.00000095	15.9	0.00050	0.00050	0.000100	0.000100	2.2	0.00250	0.00250	0.01986	0.0050	0.0100	0.0178
E217017		Count	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	5	5	5	5
		Minimum	0.00021	0.00019	0.0105	0.0079	10	<0.000010	<0.000010	<0.00050	0.00034	0.056	0.0346	0.0034	0.0019	<0.0000019	<0.0000019	13.5	<0.0010	<0.0010	<0.00020	<0.00020	1.4	<0.0050	<0.0050	<0.0030	<0.010	<0.020	<0.015
		Maximum	0.00047	0.00047	0.0311	0.0231	17	<0.000010	0.000019	0.00203	0.00064	0.152	0.125	0.0136	0.0074	<0.0000019	<0.0000019	17.7	<0.0010	<0.0010	<0.00020	<0.00020	9.1	<0.0050	<0.0050	0.048	<0.010	<0.020	0.039
		Geometric Mean	0.00034	0.00031	0.0235	0.0173	14.0	0.0000050	0.0000053	0.000327	0.00041	0.098	0.0724	0.0064	0.0036	0.00000095	0.00000095	15.8	0.00050	0.00050	0.000100	0.000100	2.2	0.00250	0.00250	0.00893	0.0050	0.0100	0.0146
		Count <DL	0	0	0	0	0	15	14	12	0	0	0	0	0	15	15	0	15	15	15	15	0	15	15	1	1	5	2
		Standard Deviation	0.00009	0.00009	0.0054	0.0045	2.8	0.0000000	0.0000036	0.000471	0.00009	0.038	0.0316	0.0031	0.0014	0.00000000	0.00000000	1.6	0.00000	0.00000	0.000000	0.000000	0.5	0.00000	0.00000	0.02266	0.0000	0.0000	0.0130
		1st Quartile	0.00026	0.00023	0.0225	0.0152	11	<0.000010	<0.000010	<0.00050	0.00036	0.059	0.0452	0.0046	0.0030	<0.0000019	<0.0000019	14.0	<0.0010	<0.0010	<0.00020	<0.00020	1.8	<0.0050	<0.0050	0.0040	<0.010	<0.020	<0.015
		Median	0.00038	0.00036	0.0256	0.0200	16	<0.000010	<0.000010	<0.00050	0.00038	0.115	0.0856	0.0060	0.0033	<0.0000019	<0.0000019	16.7	<0.0010	<0.0010	<0.00020	<0.00020	2.2	<0.0050	<0.0050	0.0048	<0.010	<0.020	0.015
		3rd Quartile	0.00040	0.00038	0.0274	0.0207	16.5	<0.000010	<0.000010	<0.00050	0.00046	0.140	0.1045	0.0092	0.0046	<0.0000019	<0.0000019	16.9	<0.0010	<0.0010	<0.00020	<0.00020	2.6	<0.0050	<0.0050	0.041	<0.010	<0.020	0.020
LLS	Small Seep into Long Lake	Average	0.00364	0.00330	0.01796	0.00361	226	0.0000059	0.0000055	0.000546	0.000192	1.657	1.523	0.396	0.391	0.00000095	0.00000095	608	0.0032	0.0032	0.000100	0.000100	583	0.00278	0.00250				
E292131		Count	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10				
		Minimum	0.00122	0.00099	<0.0030	<0.0030	140	<0.000010	<0.000010	<0.00050	<0.00020	0.495	0.330	0.180	0.162	<0.0000019	<0.0000019	442	0.0019	0.0019	<0.00020	<0.00020	420	<0.0050	<0.0050				
		Maximum	0.00550	0.00578	0.103	0.0116	270	0.000014	0.000010	0.00146	0.00042	2.54	2.39	0.555	0.544	<0.0000019	<0.0000019	725	0.0046	0.0045	<0.00020	<0.00020	700	0.0053	<0.0050				
		Geometric Mean	0.00323	0.00276	0.00628	0.00264	221	0.0000055	0.0000054	0.000426	0.000160	1.478	1.279	0.363	0.357	0.00000095	0.00000095	598	0.0031	0.0030	0.000100	0.000100	552	0.00270	0.00250				
		Count <DL	0	0	2	6	0	9	9	6	6	0	0	0	0	10	10	0	0	0	10	10	0	9	10				
		Standard Deviation	0.00161	0.00180	0.03183	0.00338	42	0.0000028	0.0000016	0.000431	0.000125	0.714	0.775	0.156	0.155	0.00000000	0.00000000	107	0.0010	0.0010	0.000000	0.000000	132	0.00089	0.00000				
		1st Quartile	0.00260	0.00145	0.00315	<0.0030	200	<0.000010	<0.000010	<0.00050	<0.00020	1.200	0.846	0.236	0.236	<0.0000019	<0.0000019	512	0.0024	0.0025	<0.00020	<0.00020	437	<0.0050	<0.0050				
		Median	0.00376	0.00368	0.00345	<0.0030	240	<0.000010	<0.000010	<0.00050	<0.00020	1.785	1.720	0.467	0.469	<0.0000019	<0.0000019	645	0.0031	0.0030	<0.00020	<0.00020	610	<0.0050	<0.0050				
		3rd Quartile	0.00502	0.00472	0.01612	0.00520	250	<0.000010	<0.000010	0.000840	0.000305	2.220	2.220	0.524	0.501	<0.0000019	<0.0000019	696	0.0040	0.0040	<0.00020	<0.00020	655	<0.0050	<0.0050				
LLSM	Long Lake Middle Seep	Average	0.00117	0.00096	0.06222	0.00813	190	0.0000060	0.0000050	0.000777	0.000548	0.741	0.4943	0.2122	0.2184	0.00000095	0.00000095	492	0.0031	0.0030	0.000100	0.000100	459	0.00250	0.00250				
E292131		Count	10	9	10	9	10	9	9	10	9	10	9	9	9	9	9	10	10	9	10	9	10	10	9				
		Minimum	0.00043	0.00020	<0.0030	<0.0030	110	<0.000010	<0.000010	<0.00050	<0.00020	0.254	0.0746	0.0692	0.0431	<0.0000019	<0.0000019	351	0.0016	0.0016	<0.00020	<0.00020	330	<0.0050	<0.0050				
		Maximum	0.00201	0.00155	0.264	0.0253	240	0.000014	<0.000010	0.00254	0.00137	1.41	1.00	0.465	0.467	<0.0000019	<0.0000019	616	0.0048	0.0044	<0.00020	<0.00020	620	<0.0050	<0.0050				
		Geometric Mean	0.00104	0.00073	0.01950	0.00442	184	0.0000056	0.0000050	0.000488	0.000368	0.646	0.3411	0.1730	0.1675	0.00000095	0.00000095	484	0.0030	0.0029	0.000100	0.000100	446	0.00250	0.00250				
		Count <DL	0	0	1	4	0	8	9	6	2	0	0	0	0	9	9	0	0	0	10	9	0	10	9				
		Standard Deviation	0.00052	0.00057	0.09472	0.00934	45	0.0000030	0.0000000	0.000870	0.000465	0.391	0.3482	0.1379	0.1472	0.00000000	0.00000000	90	0.0009	0.0009	0.000000	0.000000	108	0.00000	0.00000				
		1st Quartile	0.00074	0.00026	0.00560	<0.0030	162	<0.000010	<0.000010	<0.00050	0.00020	0.514	0.107	0.0903	0.0811	<0.0000019	<0.0000019	411	0.0026	0.0025	<0.00020	<0.00020	352	<0.0050	<0.0050				
		Median	0.00128	0.00130	0.02175	0.0040	205	<0.000010	<0.000010	<0.00050	0.00032	0.660	0.563	0.1930	0.204	<0.0000019	<0.0000019	499	0.0029	0.0027	<0.00020	<0.00020	495	<0.0050	<0.0050				
		3rd Quartile	0.00146	0.00136	0.05007	0.0100	227	<0.000010	<0.000010	0.000872	0.00095	0.908	0.715	0.3188	0.350	<0.0000019	<0.0000019	572	0.0036	0.0040	<0.00020	<0.00020	527	<0.0050	<0.0050				

Notes:
Factor applied to less-than results when calculating statistics: 0.5

Table 26 Statistics 2016 -2021 30 Page(s)

2020 -21 Statistics Stn.Code EMS. ID	Site Name & Description	Statistic	As-T	As-D	Al-T	Al-D	Alk-T	Cd-T	Cd-D	Cu-T	Cu-D	Fe-T	Fe-D	Mn-T	Mn-D	Hg-T	Hg-D	Hard-T	Ni-T	Ni-D	Pb-T	Pb-D	SO4-D	Zn-T	Zn-D	P-T	P-D	N-NO23	N-NH3
			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	mg/L
MW002	Ex-situ 2-3 South shallow groundwater well beside 3-South Pit (1 Seam)	Average		0.00192		0.00412	280.0		0.0000138		0.000275		4.17		1.48		0.00000095			0.00255		0.000275	1300.0		0.0069		0.00280		
		Count		4		4	4		4		4		4		4		4			4		4	4		4		4		
		Minimum		0.00166		<0.0060	270		<0.000020		<0.00040		3.95		1.35		<0.0000019			0.0024		<0.00040	1300		<0.010		<0.0010		
		Maximum		0.00220		<0.015	290		<0.000050		<0.0010		4.32		1.57		<0.0000019			0.0029		<0.0010	1300		<0.025		0.0077		
		Geometric Mean		0.00191		0.00377	279.9		0.0000126		0.000251		4.17		1.47		0.00000095			0.00254		0.000251	1300.0		0.0063		0.00172		
		Count <DL		0		4	0		4		4		0		0		4			1		4	0		4		3		
		Standard Deviation		0.00024		0.00225	8.2		0.0000075		0.000150		0.16		0.09		0.00000000			0.00024		0.000150	0.0		0.0038		0.00330		
		1st Quartile		0.00176		<0.0060	277.5		<0.000020		<0.00040		4.12		1.44		<0.0000019			0.0024		<0.00040	1300		<0.010		0.00125		
		Median		0.00192		<0.0060	280		<0.000020		<0.00040		4.20		1.49		<0.0000019			0.00245		<0.00040	1300		<0.010		<0.0030		
		3rd Quartile		0.00209		0.00412	282.5		0.0000138		0.000275		4.26		1.52		<0.0000019			0.00260		0.000275	1300		0.0069		0.00305		
QU1009D	Ex-situ 4-South deep groundwater well. Down gradient of 4-South Mine. Base of Dunsmuir Member. Assesses vertical gradients & water quality down gradient of the 4-South Mine workings. Just outside of mine pool. (Below 3 Seam)	Average		0.104		0.00150	175.0		0.0000050		0.000100		0.594		0.0521		0.00000095			0.00050		0.000100	80.0		0.00250		0.0074		
		Count		2		2	2		2		2		2		2		2			2		2	2		2		2		
		Minimum		0.103		<0.0030	170		<0.000010		<0.00020		0.534		0.0485		<0.0000019			<0.0010		<0.00020	78		<0.0050		0.0054		
		Maximum		0.104		<0.0030	180		<0.000010		<0.00020		0.654		0.0557		<0.0000019			<0.0010		<0.00020	82		<0.0050		0.0095		
		Geometric Mean		0.103		0.00150	174.9		0.0000050		0.000100		0.591		0.0520		0.00000095			0.00050		0.000100	80.0		0.00250		0.0072		
		Count <DL		0		2	0		2		2		0		0		2			2		2	0		2		0		
		Standard Deviation		0.001		0.00000	7.1		0.0000000		0.000000		0.085		0.0051		0.00000000			0.00000		0.000000	2.8		0.00000		0.0029		
		1st Quartile		0.103		<0.0030	172.5		<0.000010		<0.00020		0.564		0.0503		<0.0000019			<0.0010		<0.00020	79.0		<0.0050		0.0064		
		Median		0.104		<0.0030	175.0		<0.000010		<0.00020		0.594		0.0521		<0.0000019			<0.0010		<0.00020	80.0		<0.0050		0.0074		
		3rd Quartile		0.104		<0.0030	177.5		<0.000010		<0.00020		0.624		0.0539		<0.0000019			<0.0010		<0.00020	81.0		<0.0050		0.0085		
QU1009S	Ex-situ 4-South shallow groundwater well. Fracture zone 10 m below till. Assesses vertical gradients & water quality down gradient of the 4-South Mine workings. Just outside of mine pool. (Below 3 Seam)	Average		0.0823		0.00250	150.0		0.0000050		0.000100		4.56		0.364		0.00000095			0.00050		0.000100	110.0		0.00250		0.00400		
		Count		2		2	2		2		2		2		2		2			2		2	2		2		2		
		Minimum		0.0821		<0.0030	140		<0.000010		<0.00020		4.54		0.360		<0.0000019			<0.0010		<0.00020	100		<0.0050		<0.0030		
		Maximum		0.0825		0.0035	160		<0.000010		<0.00020		4.59		0.367		<0.0000019			<0.0010		<0.00020	120		<0.0050		0.0065		
		Geometric Mean		0.0823		0.00229	149.7		0.0000050		0.000100		4.56		0.363		0.00000095			0.00050		0.000100	109.5		0.00250		0.00312		
		Count <DL		0		1	0		2		2		0		0		2			2		2	0		2		1		
		Standard Deviation		0.0003		0.00141	14.1		0.0000000		0.000000		0.04		0.005		0.00000000			0.00000		0.000000	14.1		0.00000		0.00354		
		1st Quartile		0.0822		0.00200	145.0		<0.000010		<0.00020		4.55		0.362		<0.0000019			<0.0010		<0.00020	105.0		<0.0050		0.00275		
		Median		0.0823		0.00250	150.0		<0.000010		<0.00020		4.56		0.364		<0.0000019			<0.0010		<0.00020	110.0		<0.0050		0.00400		
		3rd Quartile		0.0824		0.00300	155.0		<0.000010		<0.00020		4.58		0.365		<0.0000019			<0.0010		<0.00020	115.0		<0.0050		0.00525		
SPD																													
EZ18582	Settling Pond # 1	Average	0.00152	0.00064	0.01354	0.01279	96.4	0.0000059	0.0000050	0.000481	0.000276	0.224	0.1188	0.0608	0.0420	0.00000095	0.00000095	349	0.00061	0.00050	0.000100	0.000100	264	0.00250	0.00250	0.00207		0.0100	0.0183
		Count	7	14	7	14	13	7	14	7	14	7	14	7	14	7	13	7	7	14	7	14	50	7	14	3		3	3
		Minimum	0.00043	0.00028	<0.0030	<0.0030	44	<0.000010	<0.000010	<0.00050	<0.00020	0.152	0.0312	0.0272	0.0158	<0.0000019	<0.0000019	169	<0.0010	<0.0010	<0.00020	<0.00020	75	<0.0050	<0.0050	<0.0030		<0.020	<0.015
		Maximum	0.00640	0.00112	0.0454	0.0496	130	0.0000011	<0.000010	0.00110	0.00093	0.304	0.194	0.113	0.0854	<0.0000019	<0.0000019	462	0.0013	<0.0010	<0.00020	<0.00020	400	<0.0050	<0.0050	0.0032		<0.020	0.040
		Geometric Mean	0.00094	0.00058	0.00648	0.00513	92.3	0.0000056	0.0000050	0.000378	0.000212	0.217	0.1096	0.0545	0.0375	0.00000095	0.00000095	326	0.00057	0.00050	0.000100	0.000100	247	0.00250	0.00250	0.00193		0.0100	0.0131
		Count <DL	0	0	7	7	0	6	14	5	6	0	0	0	0	7	13	0	6	14	7	14	0	7	14	2		3	7
		Standard Deviation	0.00216	0.00026	0.01676	0.01661	26.8	0.0000023	0.0000000	0.000396	0.000226	0.059	0.0421	0.0309	0.0205	0.00000000	0.00000000	124	0.00030	0.00000	0.000000	0.000000	85	0.00000	0.00000	0.00098		0.0000	0.0188
		1st Quartile	0.00062	0.00040	0.00245	<0.0030	86	<0.000010	<0.000010	<0.00050	<0.00020	0.175	0.1010	0.0390	0.0253	<0.0000019	<0.0000019	272	<0.0010	<0.0010	<0.00020	<0.00020	202	<0.0050	<0.0050	<0.0030		<0.020	<0.015
		Median	0.00075	0.00067	0.0046	0.00255	99	<0.000010	<0.000010	<0.00050	0.000240	0.224	0.1260	0.0546	0.0358	<0.0000019	<0.0000019	380	<0.0010	<0.0010	<0.00020	<0.00020	270	<0.0050	<0.0050	<0.0030		<0.020	<0.015
		3rd Quartile	0.00090	0.00082	0.01920	0.01865	120	<0.000010	<0.000010	0.000635	0.000358	0.270	0.1435	0.0764	0.0574	<0.0000019	<0.0000019	447	<0.0010	<0.0010	<0.00020	<0.00020	327	<0.0050	<0.0050	0.00235		<0.020	0.0238
LLE	Long Lake Entrance (LLE)	Average	0.00070	0.00056	0.0741	0.02518	60.3	0.0000050	0.0000050	0.000409	0.000464	0.752	0.4362	0.1023	0.1026	0.00000119	0.00000112	176.5	0.00050	0.00050	0.000100	0.000100	138	0.00250	0.00250	0.00396		0.0238	0.0259
EZ92130		Count	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	45	12	12	12		12	12
		Minimum	0.00024	0.00021	0.0079	<0.0030	25	<0.000010	<0.000010	<0.00050	<0.00020	0.167	0.0959	0.0086	0.0061	<0.0000019	<0.0000019	72.1	<0.0010	<0.0010	<0.00020	<0.00020	63	<0.0050	<0.0050	<0.0030		<0.020	<0.015
		Maximum	0.00160	0.00109	0.244	0.0584	120	<0.000010	<0.000010	0.00150	0.00153	2.56	1.06	0.445	0.461	0.0000025	0.0000030	377	<0.0010	<0.0010	<0.00020	<0.00020	380	<0.0050	<0.0050	0.0099		0.089	0.15
		Geometric Mean	0.00063	0.00051	0.0512	0.01445	54.4	0.0000050	0.0000050	0.000334	0.000376	0.554	0.3592	0.0591	0.0560	0.00000111	0.00000105	156.7	0.00050	0.00050	0.000100	0.000100	127	0.00250	0.00250	0.00316		0.0166	0.0143
		Count <DL	0	0	0	2	0	12	12	9	1	0	0	0	0	10	11	0	12	12	12	12	0	12	12	5		8	7
		Standard Deviation	0.00036	0.00024	0.0639	0.01946	30.2	0.0000000	0.0000000	0.000367	0.000170	0.685	0.2764	0.1258	0.1300	0.00000057	0.00000059	93.3	0.00000	0.00000	0.000000	0.000000	62	0.00000	0.00000	0.00275		0.0255	0.0410
		1st Quartile	0.00052	0.00040	0.0362	0.00468	41	<0.000010	<0.000010	<0.00050	0.000288	0.328	0.2550	0.0347	0.0347	<0.0000019	<0.0000019	118	<0.0010	<0.0010	<0.00020	<0.00020	96	<0.0050	<0.0050	<0.0030		<0.020	<0.015
		Median	0.00060	0.00052	0.0614	0.02660	48.0	<0.000010	<0.000010	<0.00050	0.000350	0.556	0.3870	0.0558	0.0530	<0.0000019	<0.0000019	143.0	<0.0010	<0.0010	<0.00020	<0.00020	120	<0.0050	<0.0050	0.00370		<0.020	<0.015
		3rd Quartile	0.00080	0.00068	0.0930	0.03847	76.8	<0.000010	<0.000010	0.000317	0.000490	0.832	0.5512	0.1058	0.1098	<0.0000019	<0.0000019	226.0	<0.0010	<0.0010	<0.00020	<0.00020	160	<0.0050	<0.0050	0.00565		0.0272	0.0198
LLM1	Long Lake Middle 1 metre below Surface	Average	0.00046	0.00043	0.0141	0.01078	31.7	0.0000050	0.0000050	0.000335	0.00048	0.066	0.0463	0.0098	0.00657	0.00000095	0.00000103	72.4	0.00050	0.00050	0.000100	0.000100	58.9	0.00327	0.00250	0.00255	0.0053	0.0100	0.0094
EZ06619		Count	15	15	15	15	14	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	13	15	10	5
		Minimum	0.00033	0.00031	0.0058	<0.0030	22	<0.000010	<0.000010	<0.00050	0.00026	0.026	0.0116	0.0039	<0.0010	<0.0000019	<0.0000019	43.8	<0.0010	<0.0010	<0.00020	<0.00020	30	<0.0050	<0.0050	<0.0030	<0.010	<0.020	<0.015
		Maximum	0.00057	0.00053	0.0267	0.0227	40	<0.000010	<0.000010	0.00126	0.00250	0.107	0.0833	0.0194	0.0189	<0.0000019	0.0000022	95.4	<0.0010	<0.0010	<0.00020	<0.00020	79	0.0111	<0.0050	0.0052	0.010	<0.020	0.017
		Geometric Mean	0.00045	0.00042	0.0127	0.00889	31.3	0.0000050	0.0000050	0.000292	0.00037	0.062	0.0419	0.0085	0.00345	0.00000095	0.00000100	71.3	0.00050	0.00050	0.000100	0.000100	57.4	0.00291	0.00250	0.00222	0.0052	0.0100	0.0088
		Count <DL	0	0	0	1	0	15	15	13	0	0	0	0	2	15	14	0	15	15	15	15	0	13	15	8	14	10	4
		Standard Deviation	0.00009	0.00008	0.0065	0.00614	5.1	0.0000000	0.0000000	0.000265	0.00056	0.020	0.0182	0.0054	0.00698	0.00000000	0.00000032	12.7	0.00000	0.00000	0.000000	0.000000	13.0	0.00230	0.00000	0.00147	0.0013	0.0000	0.0042
		1st Quartile	0.00036	0.00035	0.0088	0.00720	29	<0.000010	<0.000010	<0.00050	0.00030	0.054	0.0409	0.0058	0.00175	<0.0000019	<0.0000019	61.8	<0.0010	<0.0010	<0.00020	<0.00020	52.5	<0.0050	<0.0050	<0.0030	<0.010	<0.020	<0.015
		Median	0.00049	0.00045	0.0137	0.0085	31	<0.000010	<0.000010	<0.00050	0.00032	0.067	0.0461	0.0074	0.0024	<0.0000019	<0.0000019	73.3	<0.0010	<0.0010	<0.00020	<0.00020	61	<0.0050	<0.0050	<0.0030	<0.010	<0.020	<0.015
		3rd Quartile	0.00052	0.00049	0.0170	0.01505	34.8	<0.000010	<0.000010	<0.00050	0.00034	0.072	0.0548	0.0144	0.01285	<0.0000019	<0.0000019	78.9	<0.0010	<0.0010	<0.00020	<0.00020	67.0	<0.0050	<0.0050	0.0034	<0.010	<0.020	<0.015

Notes:
Values reported to less than detection limits were calculated using ½ DL

Table 26 Statistics 2016 -2021 30 Page(s)

2020 -21 Statistics Stn.Code EMS. ID	Site Name & Description	Statistic	As-T	As-D	Al-T	Al-D	Alk-T	Cd-T	Cd-D	Cu-T	Cu-D	Fe-T	Fe-D	Mn-T	Mn-D	Hg-T	Hg-D	Hard-T	Ni-T	Ni-D	Pb-T	Pb-D	SO4-D	Zn-T	Zn-D	P-T	P-D	N-NO23	N-NH3
			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	mg/L
LLMB	Long Lake Middle 1 metre From Bottom	Average	0.00029	0.00020	0.0112	0.00649	51.6	0.0000062	0.0000050	0.000471	0.00034	0.102	0.0178	0.9445	0.8000	0.00000095	0.00000095	128.1	0.00050	0.00050	0.000100	0.000100	126.7	0.00250	0.00250	0.00165	0.0050	0.090	0.026
EZ06619		Count	15	15	15	15	14	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	13	15	10	5
		Minimum	0.00022	0.00017	0.0051	<0.0030	42	<0.000010	<0.000010	<0.00050	0.00025	0.055	0.0074	0.0230	0.0150	<0.0000019	<0.0000019	34.7	<0.0010	<0.0010	<0.00020	<0.00020	110	<0.0050	<0.0050	<0.0030	<0.010	0.066	0.015
		Maximum	0.00037	0.00024	0.0309	0.0240	63	0.000023	<0.000010	0.00303	0.00094	0.180	0.0371	3.10	2.94	<0.0000019	<0.0000019	145	<0.0010	<0.0010	<0.00020	<0.00020	130	<0.0050	<0.0050	0.0035	<0.010	0.113	0.038
		Geometric Mean	0.00029	0.00020	0.0095	0.00461	51.3	0.0000055	0.0000050	0.000319	0.00032	0.096	0.0161	0.4541	0.2792	0.00000095	0.00000095	123.0	0.00050	0.00050	0.000100	0.000100	126.5	0.00250	0.00250	0.00160	0.0050	0.089	0.024
		Count <DL	0	0	0	4	0	14	15	13	0	0	0	0	0	15	15	0	15	15	15	15	0	15	15	12	15	0	0
		Standard Deviation	0.00004	0.00002	0.0073	0.00598	5.4	0.0000046	0.0000000	0.000721	0.00017	0.040	0.0087	1.0215	1.0068	0.00000000	0.00000000	26.7	0.00000	0.00000	0.000000	0.000000	7.2	0.00000	0.00000	0.00055	0.0000	0.016	0.011
		1st Quartile	0.00027	0.00018	0.0060	0.00270	48.3	<0.000010	<0.000010	<0.00050	0.00027	0.076	0.0115	0.1815	0.0890	<0.0000019	<0.0000019	132.5	<0.0010	<0.0010	<0.00020	<0.00020	130	<0.0050	<0.0050	<0.0030	<0.010	0.076	0.017
		Median	0.00028	0.00020	0.0081	0.0046	50.5	<0.000010	<0.000010	<0.00050	0.00029	0.086	0.0160	0.383	0.140	<0.0000019	<0.0000019	134	<0.0010	<0.0010	<0.00020	<0.00020	130	<0.0050	<0.0050	<0.0030	<0.010	0.094	0.024
		3rd Quartile	0.00031	0.00020	0.0146	0.00920	53.8	<0.000010	<0.000010	<0.00050	0.00031	0.115	0.0212	1.9600	1.7200	<0.0000019	<0.0000019	139	<0.0010	<0.0010	<0.00020	<0.00020	130	<0.0050	<0.0050	<0.0030	<0.010	0.104	0.036
LLO	Long Lake Outlet	Average	0.00045	0.00042	0.0168	0.00958	31.6	0.0000050	0.0000050	0.000311	0.00030	0.077	0.0451	0.0110	0.00463	0.00000095	0.00000101	73.2	0.00050	0.00050	0.000100	0.000100	59.8	0.00250	0.00250	0.01156	0.0050	0.0128	0.0100
EZ19412		Count	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	5	1	5	5
		Minimum	0.00035	0.00030	0.0065	<0.0030	25	<0.000010	<0.000010	<0.00050	0.00026	0.022	0.0096	0.0033	<0.0010	<0.0000019	<0.0000019	53.2	<0.0010	<0.0010	<0.00020	<0.00020	39	<0.0050	<0.0050	<0.0030	<0.010	<0.020	<0.015
		Maximum	0.00056	0.00054	0.0271	0.0187	40	<0.000010	<0.000010	0.00074	0.00036	0.125	0.0759	0.0158	0.0095	<0.0000019	<0.0000019	97.9	<0.0010	<0.0010	<0.00020	<0.00020	85	<0.0050	<0.0050	0.027	<0.010	0.024	0.020
		Geometric Mean	0.00045	0.00041	0.0157	0.00820	31.4	0.0000050	0.0000050	0.000287	0.00030	0.072	0.0410	0.0102	0.00349	0.00000095	0.00000099	72.4	0.00050	0.00050	0.000100	0.000100	58.7	0.00250	0.00250	0.00624	0.0050	0.0119	0.0091
		Count <DL	0	0	0	1	0	15	15	13	0	0	0	0	1	15	14	0	15	15	15	15	0	15	15	2	1	4	4
		Standard Deviation	0.00007	0.00008	0.0063	0.00497	4.0	0.0000000	0.0000000	0.000162	0.00003	0.026	0.0171	0.0036	0.00311	0.00000000	0.00000025	11.4	0.00000	0.00000	0.000000	0.000000	13.2	0.00000	0.00000	0.01147	0.0000	0.0063	0.0056
		1st Quartile	0.00038	0.00032	0.0126	0.00595	29	<0.000010	<0.000010	<0.00050	0.00028	0.061	0.0321	0.0088	0.00220	<0.0000019	<0.0000019	67.7	<0.0010	<0.0010	<0.00020	<0.00020	52.5	<0.0050	<0.0050	<0.0030	<0.010	<0.020	<0.015
		Median	0.00047	0.00045	0.0148	0.0080	30	<0.000010	<0.000010	<0.00050	0.00030	0.078	0.0470	0.0125	0.0032	<0.0000019	<0.0000019	71.4	<0.0010	<0.0010	<0.00020	<0.00020	56	<0.0050	<0.0050	0.0078	<0.010	<0.020	<0.015
		3rd Quartile	0.00050	0.00048	0.0211	0.01275	34.5	<0.000010	<0.000010	<0.00050	0.00032	0.088	0.0539	0.0140	0.00750	<0.0000019	<0.0000019	77.6	<0.0010	<0.0010	<0.00020	<0.00020	64.5	<0.0050	<0.0050	0.020	<0.010	<0.020	<0.015
WB	Middle Quinsam Lake Outlet	Average	0.00018	0.00018	0.0152	0.0117	33.7	0.0000050	0.0000050	0.000531	0.00050	0.041	0.0270	0.0073	0.0037	0.00000095	0.00000095	37.5	0.00050	0.00050	0.000100	0.000100	32.1	0.00250	0.00250	0.00870	0.0050	0.0100	0.0075
E0900504		Count	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	5	1	5	5
		Minimum	0.00010	0.00011	0.0096	0.0062	28	<0.000010	<0.000010	<0.00050	0.00040	0.024	0.0158	0.0026	0.0016	<0.0000019	<0.0000019	32.8	<0.0010	<0.0010	<0.00020	<0.00020	26	<0.0050	<0.0050	<0.0030	<0.010	<0.020	<0.015
		Maximum	0.00033	0.00030	0.0221	0.0157	42	<0.000010	<0.000010	0.00116	0.00070	0.099	0.0563	0.0112	0.0078	<0.0000019	<0.0000019	47.0	<0.0010	<0.0010	<0.00020	<0.00020	43	<0.0050	<0.0050	0.027	<0.010	<0.020	<0.015
		Geometric Mean	0.00017	0.00017	0.0149	0.0114	33.5	0.0000050	0.0000050	0.000471	0.00049	0.038	0.0255	0.0068	0.0035	0.00000095	0.00000095	37.2	0.00050	0.00050	0.000100	0.000100	31.7	0.00250	0.00250	0.00405	0.0050	0.0100	0.0075
		Count <DL	0	0	0	0	0	15	15	5	0	0	0	0	0	15	15	0	15	15	15	15	0	15	15	3	1	5	5
		Standard Deviation	0.00006	0.00005	0.0033	0.0028	4.3	0.0000000	0.0000000	0.000266	0.00007	0.018	0.0102	0.0026	0.0015	0.00000000	0.00000000	5.0	0.00000	0.00000	0.000000	0.000000	5.4	0.00000	0.00000	0.01119	0.0000	0.0000	0.0000
		1st Quartile	0.00013	0.00014	0.0134	0.0106	30	<0.000010	<0.000010	<0.00050	0.00046	0.028	0.0197	0.0051	0.0030	<0.0000019	<0.0000019	34.0	<0.0010	<0.0010	<0.00020	<0.00020	27	<0.0050	<0.0050	<0.0030	<0.010	<0.020	<0.015
		Median	0.00017	0.00017	0.0158	0.0126	35	<0.000010	<0.000010	0.00053	0.00049	0.042	0.0256	0.0084	0.0034	<0.0000019	<0.0000019	35.3	<0.0010	<0.0010	<0.00020	<0.00020	31	<0.0050	<0.0050	<0.0030	<0.010	<0.020	<0.015
		3rd Quartile	0.00020	0.00020	0.0168	0.0134	36	<0.000010	<0.000010	0.000635	0.00050	0.044	0.0280	0.0092	0.0040	<0.0000019	<0.0000019	39.0	<0.0010	<0.0010	<0.00020	<0.00020	37	<0.0050	<0.0050	0.012	<0.010	<0.020	<0.015
75SD	Settling Pond at 75- Discharge to Stream 1 -75																												
EZ92069		Average	0.00488	0.00436	0.0673	0.00328	117.8	0.0000050	0.0000050	0.00100	0.00073	0.152	0.0357	0.1030	0.0265	0.00000095	0.00000095	114.2	0.00050	0.00050	0.000100	0.000100	10.0	0.00250	0.00250	0.011			0.0075
		Count	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	1			1
		Minimum	0.00095	0.00074	0.0075	<0.0030	91	<0.000010	<0.000010	0.00096	0.00036	0.078	0.0081	0.0410	0.0053	<0.0000019	<0.0000019	83.9	<0.0010	<0.0010	<0.00020	<0.00020	4.5	<0.0050	<0.0050	0.011			<0.015
		Maximum	0.00862	0.00802	0.217	0.0063	130	<0.000010	<0.000010	0.00102	0.00097	0.274	0.0992	0.172	0.0432	<0.0000019	<0.0000019	136	<0.0010	<0.0010	<0.00020	<0.00020	19	<0.0050	<0.0050	0.011			<0.015
		Geometric Mean	0.00353	0.00304	0.0271	0.00271	116.6	0.0000050	0.0000050	0.00100	0.00068	0.136	0.0207	0.0913	0.0196	0.00000095	0.00000095	112.3	0.00050	0.00050	0.000100	0.000100	8.7	0.00250	0.00250	0.011			0.0075
		Count <DL	0	0	0	2	0	4	4	0	0	0	0	0	0	4	4	0	4	4	4	4	0	4	4	0			1
		Standard Deviation	0.00370	0.00344	0.1006	0.00229	18.4	0.0000000	0.0000000	0.00003	0.00029	0.086	0.0433	0.0540	0.0190	0.00000000	0.00000000	23.2	0.00000	0.00000	0.000000	0.000000	6.3	0.00000	0.00000	0.000			0.0000
		1st Quartile	0.00216	0.00185	0.0088	<0.0030	112.8	<0.000010	<0.000010	0.00100	0.00057	0.103	0.0081	0.0792	0.0130	<0.0000019	<0.0000019	102.7	<0.0010	<0.0010	<0.00020	<0.00020	6.6	<0.0050	<0.0050	0.011			<0.015
		Median	0.00497	0.00434	0.0224	0.00265	125.0	<0.000010	<0.000010	0.00101	0.00079	0.127	0.0177	0.0994	0.0287	<0.0000019	<0.0000019	118.5	<0.0010	<0.0010	<0.00020	<0.00020	8.2	<0.0050	<0.0050	0.011			<0.015
		3rd Quartile	0.00768	0.00685	0.0809	0.00442	130	<0.000010	<0.000010	0.00101	0.00095	0.176	0.0450	0.1232	0.0422	<0.0000019	<0.0000019	130.0	<0.0010	<0.0010	<0.00020	<0.00020	11.6	<0.0050	<0.0050	0.011			<0.015
75	Stream 1-75 discharge to LWO	Average	0.000073	0.000059	0.0436	0.0356	14.5	0.0000050	0.0000050	0.000289	0.00036	0.0146	0.01081	0.00057	0.00050	0.00000121	0.00000139	15.9	0.00050	0.00050	0.000100	0.000100	3.3	0.00250	0.00250				
EZ92109		Count	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7				
		Minimum	<0.00010	<0.00010	0.0175	0.0150	9.4	<0.000010	<0.000010	<0.00050	0.00020	<0.010	<0.0050	<0.0010	<0.0010	<0.0000019	<0.0000019	11.4	<0.0010	<0.0010	<0.00020	<0.00020	1.9	<0.0050	<0.0050				
		Maximum	0.00014	0.00011	0.112	0.0749	22	<0.000010	<0.000010	0.00052	0.00060	0.052	0.0304	0.0010	<0.0010	0.0000028	0.0000030	21.1	<0.0010	<0.0010	<0.00020	<0.00020	4.6	<0.0050	<0.0050				
		Geometric Mean	0.000066	0.000056	0.0363	0.0310	13.9	0.0000050	0.0000050	0.000278	0.00034	0.0095	0.00713	0.00055	0.00050	0.00000111	0.00000125	15.6	0.00050	0.00050	0.000100	0.000100	3.1	0.00250	0.00250				
		Count <DL	5	6	0	0	0	7	7	6	0	4	3	6	7	6	5	0	7	7	7	7	0	7	7				
		Standard Deviation	0.000039	0.000023	0.0323	0.0205	4.7	0.0000000	0.0000000	0.000102	0.00013	0.0173	0.01003	0.00019	0.00000	0.00000070	0.00000081	3.6	0.00000	0.00000	0.000000	0.000000	1.0	0.00000	0.00000				
		1st Quartile	<0.00010	<0.00010	0.0243	0.0204	11.5	<0.000010	<0.000010	<0.00050	0.00027	<0.010	<0.0050	<0.0010	<0.0010	<0.0000019	<0.0000019	13.4	<0.0010	<0.0010	<0.00020	<0.00020	2.7	<0.0050	<0.0050				
		Median	<0.00010	<0.00010	0.0378	0.0350	13	<0.000010	<0.000010	<0.00050	0.00032	<0.010	0.0112	<0.0010	<0.0010	<0.0000019	<0.0000019	15.7	<0.0010	<0.0010	<0.00020	<0.00020	3.5	<0.0050	<0.0050				
		3rd Quartile	0.000085	<0.00010	0.0448	0.0416	17.0	<0.000010	<0.000010	<0.00050	0.00042	0.0150	0.0133	<0.0010	<0.0010	<0.0000019	0.0000147	18.3	<0.0010	<0.0010	<0.00020	<0.00020	3.7	<0.0050	<0.0050				
QU0813A	Ex-situ 7-South groundwater well down gradient of the CCR backfill towards QR (No. 4 Seam)	Average		0.407		0.00282	185.0		0.0000050		0.000100		0.230		0.0427		0.00000316			0.00050		0.000100	36.2		0.00250		0.038		
		Count		4		4	4		4		4		4		4		4			4		4	4		4		4		
		Minimum		0.383		<0.0030	170		<0.000010		<0.00020		0.167		0.0347		<0.0000019			<0.0010		<0.00020	29		<0.0050		0.030		
		Maximum		0.443		0.0068	190		<0.000010		<0.00020		0.273		0.0506		0.0000098			<0.0010		<0.00020	42		<0.0050		0.058		
		Geometric Mean		0.407		0.00219	184.8		0.0000050		0.000100		0.226		0.0423		0.00000170			0.00050		0.000100	35.8		0.00250		0.036		
		Count <DL		0		3	0		4		4		0		0		3			4		4	0		4		0		
		Standard Deviation		0.028		0.00265	10.0		0.0000000		0.000000		0.045		0.0065		0.00000442			0.00000		0.000000	6.8		0.00000		0.014		
		1st Quartile		0.385		<0.0030	185.0		<0.000010		<0.00020		0.219		0.0406		<0.0000019			<0.0010		<0.00020	31.2		<0.0050		0.030		
		Median		0.401		<0.0030	190		<0.000010		<0.00020		0.239		0.0427		<0.0000019			<0.0010		<0.00020	37.0		<0.0050		0.031		
		3rd Quartile		0.424		0.00282	190		<0.000010		<0.00020		0.250		0.0449		0.0000316			<0.0010		<0.00020	42		<0.0050		0.038		
QU0813B	Ex-situ 7-South groundwater well down gradient of the CCR backfill towards QR (Till & SST contact)	Average		0.478		0.00338	150.0		0.0000050		0.000100		0.1639		0.0716		0.00000095			0.00050		0.000100	40.0		0.00250		0.055		
		Count		4		4	4		4		4		4		4		4			4		4	4		4		4		
		Minimum		0.442		<0.0030	120		<0.000010		<0.00020		0.0437		0.0637		<0.0000019			<0.0010		<0.00020	31		<0.0050		0.030		
		Maximum		0.511		0.0041	210		<0.000010		<0.00020		0.240		0.0780		<0.0000019			<0.0010		<0.00020	50		<0.0050		0.072		
		Geometric Mean		0.477		0.00313	145.9		0.0000050		0.000100		0.1368		0.0714		0.00000095			0.00050		0.000100	39.3		0.00250		0.053		
		Count <DL		0		1	0		4		4		0		0		4			4		4	0		4		0		
		Standard Deviation		0.033		0.00125	42.4		0.0000000		0.000000		0.0886		0.0061		0.00000000			0.00000		0.000000	8.6		0.00000		0.018		
		1st Quartile		0.455		0.00330	120		<0.000010		<0.00020		0.1249		0.0686		<0.0000019			<0.0010		<0.00020	34.0		<0.0050		0.052		
		Median		0.479		0.00395	135.0		<0.000010		<0.00020		0.1860		0.0723		<0.0000019			<0.0010		<0.00020	39.5		<0.0050		0.060		
		3rd Quartile		0.502		0.00402	165.0		<0.000010		<0.00020		0.2250		0.0752		<0.0000019			<0.0010		<0.00020	45.5		<0.0050		0.063		

Notes:
Factor applied to less-than results when calculating statistics: 0.5

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2020 -21 Statistics Stn.Code EMS. ID	Site Name & Description	Statistic	As-T	As-D	Al-T	Al-D	Alk-T	Cd-T	Cd-D	Cu-T	Cu-D	Fe-T	Fe-D	Mn-T	Mn-D	Hg-T	Hg-D	Hard-T	Ni-T	Ni-D	Pb-T	Pb-D	SO4-D	Zn-T	Zn-D	P-T	P-D	N-NO23	N-NH3
			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	mg/L
QU0821GD	Ex-situ 2-North groundwater well down gradient of u/g tailings disposal, measures water quality & hydraulic gradients downstream of Forjan Fault (No. 4 Seam)	Average		0.169		0.0075	205.0		0.0002250		0.00050		1.084		0.0923		0.00000095			0.00250		0.00050	0.50		0.0125		0.126		
		Count		4		4	4		4		4		4		4		4			4		4	4		4		4		
		Minimum		0.152		<0.015	200		<0.000050		<0.0010		0.610		0.0624		<0.0000019			<0.0050		<0.0010	<1.0		<0.025		0.014		
		Maximum		0.186		<0.015	210		<0.000050		<0.0010		1.62		0.132		<0.0000019			<0.0050		<0.0010	<1.0		<0.025		0.45		
		Geometric Mean		0.169		0.0075	204.9		0.0002250		0.00050		1.012		0.0872		0.00000095			0.00250		0.00050	0.50		0.0125		0.039		
		Count <DL		0		4	0		4		4		0		0		4			4		4	4		4		0		
		Standard Deviation		0.015		0.0000	5.8		0.0000000		0.00000		0.450		0.0353		0.00000000			0.00000		0.00000	0.00		0.0000		0.216		
		1st Quartile		0.161		<0.015	200		<0.000050		<0.0010		0.779		0.0627		<0.0000019			<0.0050		<0.0010	<1.0		<0.025		0.016		
		Median		0.169		<0.015	205.0		<0.000050		<0.0010		1.052		0.0874		<0.0000019			<0.0050		<0.0010	<1.0		<0.025		0.019		
		3rd Quartile		0.178		<0.015	210		<0.000050		<0.0010		1.358		0.1170		<0.0000019			<0.0050		<0.0010	<1.0		<0.025		0.128		
QU0821GS	Ex-situ 2-North groundwater well down gradient of u/g tailings disposal, measures water quality & hydraulic gradients downstream of Forjan Fault (No. 1 Seam)	Average		0.264		0.00328	195.0		0.0000088		0.000175		0.540		0.0526		0.00000095			0.00088		0.000175	0.50		0.00437		0.061		
		Count		4		4	4		4		4		4		4		4			4		4	4		4		4		
		Minimum		0.206		<0.0060	190		<0.000010		<0.00020		0.246		0.0299		<0.0000019			<0.0010		<0.00020	<1.0		<0.0050		0.024		
		Maximum		0.414		0.0041	200		<0.000020		<0.00040		1.19		0.0656		<0.0000019			<0.0020		<0.00040	<1.0		<0.010		0.11		
		Geometric Mean		0.252		0.00324	194.9		0.0000084		0.000168		0.442		0.0504		0.00000095			0.00084		0.000168	0.50		0.00420		0.053		
		Count <DL		0		3	0		4		4		0		0		4			4		4	4		4		0		
		Standard Deviation		0.101		0.00055	5.8		0.0000025		0.000050		0.437		0.0160		0.00000000			0.00025		0.000050	0.00		0.00125		0.036		
		1st Quartile		0.208		<0.0060	190		0.0000088		0.000175		0.314		0.0474		<0.0000019			0.00088		0.000175	<1.0		0.00438		0.045		
		Median		0.218		<0.0060	195.0		<0.000020		<0.00040		0.362		0.0576		<0.0000019			<0.0020		<0.00040	<1.0		<0.010		0.055		
		3rd Quartile		0.274		0.00328	200		<0.000020		<0.00040		0.587		0.0628		<0.0000019			<0.0020		<0.00040	<1.0		<0.010		0.072		
QU1010D	Ex-situ 2-North shallow groundwater well. Down gradient of u/g tailings disposal, measures water quality & hydraulic head downstream of 2-North workings. (No. 1 Seam / Sandstone).																												
		Average		0.0154		0.0075	105.0		0.0002250		0.00050		8.83		0.364		0.00000095			0.00250		0.00050	0.50		0.0125		0.082		
		Count		2		2	2		2		2		2		2		2			2		2	2		2		2		
		Minimum		0.0150		<0.015	100		<0.000050		<0.0010		8.72		0.344		<0.0000019			<0.0050		<0.0010	<1.0		<0.025		0.065		
		Maximum		0.0157		<0.015	110		<0.000050		<0.0010		8.94		0.385		<0.0000019			<0.0050		<0.0010	<1.0		<0.025		0.10		
		Geometric Mean		0.0153		0.0075	104.9		0.0002250		0.00050		8.83		0.364		0.00000095			0.00250		0.00050	0.50		0.0125		0.081		
		Count <DL		0		2	0		2		2		0		0		2			2		2	2		2		0		
		Standard Deviation		0.0005		0.0000	7.1		0.0000000		0.00000		0.16		0.029		0.00000000			0.00000		0.00000	0.00		0.0000		0.025		
		1st Quartile		0.0152		<0.015	102.5		<0.000050		<0.0010		8.78		0.354		<0.0000019			<0.0050		<0.0010	<1.0		<0.025		0.074		
		Median		0.0154		<0.015	105.0		<0.000050		<0.0010		8.83		0.364		<0.0000019			<0.0050		<0.0010	<1.0		<0.025		0.082		
		3rd Quartile		0.0155		<0.015	107.5		<0.000050		<0.0010		8.88		0.375		<0.0000019			<0.0050		<0.0010	<1.0		<0.025		0.091		
QU1010S	Ex-situ 2-North shallow groundwater well. Down gradient of u/g tailings disposal, measures water quality & hydraulic head downstream of 2-North workings. (No. 1 Seam / Sandstone).	Average		0.106		0.00240	160.0		0.0000050		0.000100		0.180		0.0320		0.00000095			0.00050		0.000100	2.2		0.00250		0.025		
		Count		2		2	2		2		2		2		2		2			2		2	2		2		2		
		Minimum		0.103		<0.0030	150		<0.000010		<0.00020		0.168		0.0296		<0.0000019			<0.0010		<0.00020	1.1		<0.0050		0.022		
		Maximum		0.108		0.0033	170		<0.000010		<0.00020		0.193		0.0343		<0.0000019			<0.0010		<0.00020	3.4		<0.0050		0.028		
		Geometric Mean		0.105		0.00222	159.7		0.0000050		0.000100		0.180		0.0319		0.00000095			0.00050		0.000100	1.9		0.00250		0.025		
		Count <DL		0		1	0		2		2		0		0		2			2		2	0		2		0		
		Standard Deviation		0.004		0.00127	14.1		0.0000000		0.000000		0.018		0.0033		0.00000000			0.00000		0.000000	1.6		0.00000		0.004		
		1st Quartile		0.104		0.00195	155.0		<0.000010		<0.00020		0.174		0.0308		<0.0000019			<0.0010		<0.00020	1.7		<0.0050		0.024		
		Median		0.106		0.00240	160.0		<0.000010		<0.00020		0.180		0.0320		<0.0000019			<0.0010		<0.00020	2.2		<0.0050		0.025		
		3rd Quartile		0.107		0.00285	165.0		<0.000010		<0.00020		0.187		0.0331		<0.0000019			<0.0010		<0.00020	2.8		<0.0050		0.026		
QU1011D	Ex-situ 2-North deep groundwater well. Measures water quality & hydraulic gradient in Forjian Fault (Fractured sandstone).	Average		0.0127		0.00300	340.0		0.0000100		0.000200		2.67		0.279		0.00000095			0.00100		0.000200	0.50		0.0050		0.082		
		Count		1		1	1		1		1		1		1		1			1		1	1		1		1		
		Minimum		0.0127		<0.0060	340		<0.000020		<0.00040		2.67		0.279		<0.0000019			<0.0020		<0.00040	<1.0		<0.010		0.082		
		Maximum		0.0127		<0.0060	340		<0.000020		<0.00040		2.67		0.279		<0.0000019			<0.0020		<0.00040	<1.0		<0.010		0.082		
		Geometric Mean		0.0127		0.00300	340.0		0.0000100		0.000200		2.67		0.279		0.00000095			0.00100		0.000200	0.50		0.0050		0.082		
		Count <DL		0		1	0		1		1		0		0		1			1		1	1		1		0		
		Standard Deviation		0.0000		0.00000	0.0		0.0000000		0.000000		0.00		0.000		0.00000000			0.00000		0.000000	0.00		0.0000		0.000		
		1st Quartile		0.0127		<0.0060	340		<0.000020		<0.00040		2.67		0.279		<0.0000019			<0.0020		<0.00040	<1.0		<0.010		0.082		
		Median		0.0127		<0.0060	340		<0.000020		<0.00040		2.67		0.279		<0.0000019			<0.0020		<0.00040	<1.0		<0.010		0.082		
		3rd Quartile		0.0127		<0.0060	340		<0.000020		<0.00040		2.67		0.279		<0.0000019			<0.0020		<0.00040	<1.0		<0.010		0.082		
QU1011S	Ex-situ 2-North shallow groundwater well. Measures water quality & hydraulic gradient in Forjian Fault (Fractured sandstone).	Average		0.00213		0.00150	160.0		0.0000050		0.000100		1.03		0.112		0.00000095			0.00050		0.000100	5.3		0.0185		0.016		
		Count		1		1	1		1		1		1		1		1			1		1	1		1		1		
		Minimum		0.00213		<0.0030	160		<0.000010		<0.00020		1.03		0.112		<0.0000019			<0.0010		<0.00020	5.3		0.0185		0.016		
		Maximum		0.00213		<0.0030	160		<0.000010		<0.00020		1.03		0.112		<0.0000019			<0.0010		<0.00020	5.3		0.0185		0.016		
		Geometric Mean		0.00213		0.00150	160.0		0.0000050		0.000100		1.03		0.112		0.00000095			0.00050		0.000100	5.3		0.0185		0.016		
		Count <DL		0		1	0		1		1		0		0		1			1		1	0		0		0		
		Standard Deviation		0.00000		0.00000	0.0		0.0000000		0.000000		0.00		0.000		0.00000000			0.00000		0.000000	0.0		0.0000		0.000		
		1st Quartile		0.00213		<0.0030	160		<0.000010		<0.00020		1.03		0.112		<0.0000019			<0.0010		<0.00020	5.3		0.0185		0.016		
		Median		0.00213		<0.0030	160		<0.000010		<0.00020		1.03		0.112		<0.0000019			<0.0010		<0.00020	5.3		0.0185		0.016		
		3rd Quartile		0.00213		<0.0030	160		<0.000010		<0.00020		1.03		0.112		<0.0000019			<0.0010		<0.00020	5.3		0.0185		0.016		

Notes:
Factor applied to less-than results when calculating statistics: 0.5

Table 26 Statistics 2016 -2021 30 Page(s)

2020 -21 Statistics Stn.Code EMS. ID	Site Name & Description	Statistic	As-T	As-D	Al-T	Al-D	Alk-T	Cd-T	Cd-D	Cu-T	Cu-D	Fe-T	Fe-D	Mn-T	Mn-D	Hg-T	Hg-D	Hard-T	Ni-T	Ni-D	Pb-T	Pb-D	SO4-D	Zn-T	Zn-D	P-T	P-D	N-NO23	N-NH3
QU1105S	Ex-situ River Barrier Pillar (RBP) shallow groundwater well. Monitors water quality & gradients above the RBP & 2-North Mine. (Sandstone)	Average		0.0805		0.01268	251		0.0000050		0.000100		1.305		0.1470		0.00000095			0.00050		0.000100	208		0.00250		0.0087		
		Count		4		4	4		4		4		4		4		4			4		4	4		4		4		
		Minimum		0.0489		<0.0030	84		<0.000010		<0.00020		0.472		0.0548		<0.0000019			<0.0010		<0.00020	44		<0.0050		0.0033		
		Maximum		0.115		0.0462	470		<0.000010		<0.00020		2.23		0.218		<0.0000019			<0.0010		<0.00020	510		<0.0050		0.013		
		Geometric Mean		0.0768		0.00353	209		0.0000050		0.000100		1.127		0.1281		0.00000095			0.00050		0.000100	141		0.00250		0.0077		
		Count <DL		0		3	0		4		4		0		0		4			4		4	0		4		0		
		Standard Deviation		0.0280		0.02235	164		0.0000000		0.000000		0.746		0.0780		0.00000000			0.00000		0.000000	208		0.00000		0.0043		
		1st Quartile		0.0648		<0.0030	156		<0.000010		<0.00020		0.883		0.0962		<0.0000019			<0.0010		<0.00020	86		<0.0050		0.0064		
		Median		0.0791		<0.0030	225		<0.000010		<0.00020		1.260		0.1575		<0.0000019			<0.0010		<0.00020	140		<0.0050		0.0092		
		3rd Quartile		0.0948		0.01267	320		<0.000010		<0.00020		1.682		0.2082		<0.0000019			<0.0010		<0.00020	262		<0.0050		0.0115		
QU1109S	Ex-situ River Barrier Pillar (RBP) shallow groundwater well. Monitors water quality & gradients above the RBP & 2-North Mine. (Sandstone)	Average		0.1272		0.00200	443.3		0.0000067		0.000133		0.206		0.0233		0.00000095			0.00067		0.000133	166.7		0.00333		0.03850		
		Count		3		3	3		3		3		3		3		3			3		3	3		3		3		
		Minimum		0.0945		<0.0030	430		<0.000010		<0.00020		0.107		0.0199		<0.0000019			<0.0010		<0.00020	160		<0.0050		<0.0030		
		Maximum		0.147		<0.0060	460		<0.00020		<0.00040		0.263		0.0275		<0.0000019			<0.0020		<0.00040	180		<0.010		0.060		
		Geometric Mean		0.1248		0.00189	443.2		0.0000063		0.000126		0.191		0.0231		0.00000095			0.00063		0.000126	166.4		0.00315		0.01694		
		Count <DL		0		3	0		3		3		0		0		3			3		3	0		3		1		
		Standard Deviation		0.0285		0.00087	15.3		0.0000029		0.000058		0.086		0.0039		0.00000000			0.00029		0.000058	11.5		0.00144		0.01218		
		1st Quartile		0.1172		<0.0030	435.0		<0.000010		<0.00020		0.177		0.0212		<0.0000019			<0.0010		<0.00020	160		<0.0050		0.02775		
		Median		0.140		<0.0030	440		<0.000010		<0.00020		0.247		0.0225		<0.0000019			<0.0010		<0.00020	160		<0.0050		0.054		
		3rd Quartile		0.1435		0.00225	450.0		0.0000075		0.000150		0.255		0.0250		<0.0000019			0.00075		0.000150	170.0		0.00375		0.05700		
7SQR	7-South Quinsam River downstream of 7-South Mining Operation	Average	0.00047	0.00042	0.0262	0.0122	35.6	0.0000050	0.0000050	0.000503	0.00050	0.102	0.0580	0.0068	0.0049	0.00000095	0.00000095	36.9	0.00050	0.00050	0.000100	0.000100	30.9	0.00250	0.00250	0.01552	0.0050	0.0100	0.0090
E292113		Count	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	1	5	5
		Minimum	0.00033	0.00033	0.0155	0.0056	30	<0.000010	<0.000010	<0.00050	0.00042	0.068	0.0373	0.0044	0.0034	<0.0000019	<0.0000019	34.1	<0.0010	<0.0010	<0.00020	<0.00020	26	<0.0050	<0.0050	<0.0030	<0.010	<0.020	<0.015
		Maximum	0.00060	0.00053	0.0782	0.0397	42	<0.000010	<0.000010	0.00089	0.00085	0.229	0.137	0.0096	0.0063	<0.0000019	<0.0000019	42.8	<0.0010	<0.0010	<0.00020	<0.00020	39	<0.0050	<0.0050	0.064	<0.010	<0.020	0.015
		Geometric Mean	0.00046	0.00042	0.0242	0.0110	35.4	0.0000050	0.0000050	0.000476	0.00049	0.096	0.0547	0.0067	0.0048	0.00000095	0.00000095	36.9	0.00050	0.00050	0.000100	0.000100	30.6	0.00250	0.00250	0.00572	0.0050	0.0100	0.0086
		Count <DL	0	0	0	0	0	15	15	3	0	0	0	0	0	15	15	0	15	15	15	15	0	15	15	1	1	5	4
		Standard Deviation	0.00007	0.00006	0.0147	0.0079	3.9	0.0000000	0.0000000	0.000162	0.00012	0.040	0.0245	0.0015	0.0009	0.00000000	0.00000000	2.5	0.00000	0.00000	0.000000	0.000000	4.7	0.00000	0.00000	0.02713	0.0000	0.0000	0.0034
		1st Quartile	0.00043	0.00036	0.0218	0.0092	32.5	<0.000010	<0.000010	0.000505	0.00044	0.074	0.0442	0.0055	0.0042	<0.0000019	<0.0000019	35.0	<0.0010	<0.0010	<0.00020	<0.00020	26.5	<0.0050	<0.0050	0.0034	<0.010	<0.020	<0.015
		Median	0.00047	0.00042	0.0227	0.0099	36	<0.000010	<0.000010	0.00052	0.00045	0.097	0.0524	0.0073	0.0051	<0.0000019	<0.0000019	36.2	<0.0010	<0.0010	<0.00020	<0.00020	29	<0.0050	<0.0050	0.0039	<0.010	<0.020	<0.015
		3rd Quartile	0.00048	0.00046	0.0248	0.0121	38	<0.000010	<0.000010	0.000535	0.00049	0.108	0.0616	0.0079	0.0054	<0.0000019	<0.0000019	38.8	<0.0010	<0.0010	<0.00020	<0.00020	35.0	<0.0050	<0.0050	0.0048	<0.010	<0.020	<0.015
LQL1	Lower Quinsam Lake 1 metre below surface	Average	0.00055	0.00052	0.0271	0.0225	28.0	0.0000050	0.0000050	0.00121	0.00081	0.057	0.0428	0.0037	0.0027	0.00000095	0.00000095	31.4	0.00050	0.00094	0.000100	0.000100	16.6	0.00250	0.00250	0.00150	0.0050		
E292118		Count	5	5	5	5	2	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	2	5		
		Minimum	0.00052	0.00049	0.0235	0.0179	28	<0.000010	<0.000010	0.00054	0.00053	0.036	0.0340	0.0019	0.0018	<0.0000019	<0.0000019	29.9	<0.0010	<0.0010	<0.00020	<0.00020	15	<0.0050	<0.0050	<0.0030	<0.010		
		Maximum	0.00057	0.00055	0.0300	0.0278	28	<0.000010	<0.000010	0.00295	0.00176	0.072	0.0568	0.0048	0.0039	<0.0000019	<0.0000019	32.2	<0.0010	0.0027	<0.00020	<0.00020	19	<0.0050	<0.0050	<0.0030	<0.010		
		Geometric Mean	0.00055	0.00052	0.0270	0.0223	28.0	0.0000050	0.0000050	0.00094	0.00071	0.055	0.0420	0.0036	0.0026	0.00000095	0.00000095	31.4	0.00050	0.00070	0.000100	0.000100	16.5	0.00250	0.00250	0.00150	0.0050		
		Count <DL	0	0	0	0	0	5	5	0	0	0	0	0	0	5	5	0	5	4	5	5	0	5	5	2	5		
		Standard Deviation	0.00002	0.00002	0.0031	0.0036	0.0	0.0000000	0.0000000	0.00104	0.00053	0.013	0.0091	0.0011	0.0009	0.00000000	0.00000000	0.9	0.00000	0.00098	0.000000	0.000000	1.5	0.00000	0.00000	0.00000	0.0000		
		1st Quartile	0.00053	0.00052	0.0242	0.0207	28	<0.000010	<0.000010	0.00056	0.00055	0.053	0.0360	0.0039	0.0020	<0.0000019	<0.0000019	31.3	<0.0010	<0.0010	<0.00020	<0.00020	16	<0.0050	<0.0050	<0.0030	<0.010		
		Median	0.00055	0.00053	0.0278	0.0228	28	<0.000010	<0.000010	0.00058	0.00058	0.060	0.0411	0.0039	0.0025	<0.0000019	<0.0000019	31.8	<0.0010	<0.0010	<0.00020	<0.00020	16	<0.0050	<0.0050	<0.0030	<0.010		
		3rd Quartile	0.00057	0.00053	0.0300	0.0233	28	<0.000010	<0.000010	0.00144	0.00061	0.062	0.0459	0.0042	0.0035	<0.0000019	<0.0000019	31.9	<0.0010	<0.0010	<0.00020	<0.00020	17	<0.0050	<0.0050	<0.0030	<0.010		
LQLB	LQLB 1 metre from Bottom	Average	0.00065	0.00057	0.0244	0.0145	28.5	0.0000050	0.0000050	0.00118	0.00065	0.143	0.0785	0.0225	0.0176	0.00000095	0.00000095	33.0	0.00050	0.00050	0.000100	0.000100	20.2	0.00250	0.00250	0.00150	0.0050		
E292118		Count	5	5	5	5	2	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	2	5		
		Minimum	0.00055	0.00053	0.0235	0.0126	28	<0.000010	<0.000010	0.00052	0.00048	0.109	0.0667	0.0095	0.0077	<0.0000019	<0.0000019	32.3	<0.0010	<0.0010	<0.00020	<0.00020	20	<0.0050	<0.0050	<0.0030	<0.010		
		Maximum	0.00070	0.00061	0.0257	0.0159	29	<0.000010	<0.000010	0.00323	0.00128	0.176	0.0956	0.0381	0.0298	<0.0000019	<0.0000019	33.6	<0.0010	<0.0010	<0.00020	<0.00020	21	<0.0050	<0.0050	<0.0030	<0.010		
		Geometric Mean	0.00064	0.00057	0.0244	0.0145	28.5	0.0000050	0.0000050	0.00089	0.00060	0.141	0.0779	0.0201	0.0159	0.00000095	0.00000095	33.0	0.00050	0.00050	0.000100	0.000100	20.2	0.00250	0.00250	0.00150	0.0050		
		Count <DL	0	0	0	0	0	5	5	0	0	0	0	0	0	5	5	0	5	5	5	5	0	5	5	2	5		
		Standard Deviation	0.00006	0.00003	0.0009	0.0014	0.7	0.0000000	0.0000000	0.00116	0.00035	0.027	0.0111	0.0113	0.0085	0.00000000	0.00000000	0.5	0.00000	0.00000	0.000000	0.000000	0.4	0.00000	0.00000	0.00000	0.0000		
		1st Quartile	0.00061	0.00055	0.0236	0.0135	28.2	<0.000010	<0.000010	0.00056	0.00049	0.123	0.0711	0.0139	0.0117	<0.0000019	<0.0000019	32.7	<0.0010	<0.0010	<0.00020	<0.00020	20	<0.0050	<0.0050	<0.0030	<0.010		
		Median	0.00068	0.00057	0.0243	0.0152	28.5	<0.000010	<0.000010	0.00057	0.00049	0.150	0.0779	0.0243	0.0183	<0.0000019	<0.0000019	32.9	<0.0010	<0.0010	<0.00020	<0.00020	20	<0.0050	<0.0050	<0.0030	<0.010		
		3rd Quartile	0.00069	0.00058	0.0248	0.0154	28.8	<0.000010	<0.000010	0.00104	0.00053	0.155	0.0812	0.0268	0.0207	<0.0000019	<0.0000019	33.4	<0.0010	<0.0010	<0.00020	<0.00020	20	<0.0050	<0.0050	<0.0030	<0.010		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 27 Field Conductivity (uS/cm) pH 3 Page(s)

Field Conductivity (uS/cm) & pH (North Mine Area & 7-South)

EMS ID	E283433		E207409		E207412		E207411				E292069		E292109		GW and SW from	
Site Name	2-N-Portal Sump		Settling Pond #4		2 North Pit Sump		North Pit Culvert		7 South Portal		Settling Pond at 7S		Stream 1 -7S		2N Area at Road	
Site Code	2NPS		WD		WP		WC		7SPS		7SSD		7S		PDSR	
	Cond	pH	Cond	pH	Cond	pH	Cond	pH	Cond	pH	Cond	pH	Cond	pH	Cond	pH
April 2020	1983	7.96	1760	7.66	2010	7.42	865	8.01	602	7.51	Dry	Dry	52.3	8.16	595	7.94
			1987	7.63												
			2104	7.76												
			2100	7.68												
May 2020	2200	8.05	2440	7.7	2000	7.20	848	7.82	519	7.35	310	7.49	68	7.91	1600	8.11
			2221	7.7												
			1998	7.7												
			1802	7.7												
June 2020	2100	8.13	1660	7.44	2003	7.27	2009	8.22	874	7.01	Dry	Dry	Dry	Dry	Dry	Dry
			1983	7.76												
			2011	7.88												
			2015	7.78												
			2000	7.80												
July 2020	2023	7.88	2023	7.65	2004	7.35	2002	8.30	1085	7.47	351	7.98	Dry	Dry	Dry	Dry
			2011	8.01												
			2019	8.05												
			2011	7.95												
August 2020	1774	6.88	1105	7.33	1223	7.35	1943	7.79	1052	7.45	Dry	Dry	Dry	Dry	Dry	Dry
			2032	7.95												
			416	8.09												
			2060	7.73												
September 2020	1645	7.22	2012	7.90	2002	7.80	2006	7.75	875	7.31	Dry	Dry	Dry	Dry	Dry	Dry
			2014	7.45												
			2009	7.55												
			2001	7.76												
			2001	7.86												
October 2020	2.28	7.77	2001	8.17	2.1	8.26	1983	8.66	1183	5.78	289	7.95	Dry	Dry	Dry	Dry
			1903	7.7									Dry	Dry	Dry	Dry
			1905	7.68									Dry	Dry	Dry	Dry
			1837	7.94									Dry	Dry	Dry	Dry
November 2020	1974	7.61	1522	7.61	1596	8.35	1596	8.35	437	6.95			330	7.54	1345	7.44
			1608	8.18												
			1341	8.27												
			1548	7.87												
December 2020	1168	7.72	1776	7.96	1623	8.24	1575	8.35	519	7.17			73.7	6.90	1183	7.90
			1995	7.97												
			1860	8.16												
			1376	7.75												
January 2021	2098	8.07	1759	7.62	1132	7.79	651	7.97	526	6.27	342	7.02	73.7	6.90	727	7.64
			1084	7.66												
			2016	7.78												
			1515	8.49												
			1872	7.73												
February 2021	2017	7.41	1903	8.01	1420	8.22	1727	8.47	399	6.89			118.6	7.58	1149	7.95
			2013	7.63												
			2520	7.81												
			2210	7.95												
March 2021	2036	6.89	2730	7.34	1452	7.35	2230	8.18	621	6.87			52	7.35	1241	7.89
			2770	7.25			2920	8.08								
			2460	7.45												
			2920	6.90												
			1662	8.16												

Table 27 Field Conductivity (uS/cm) pH 3 Page(s)

Field Conductivity (uS/cm) & pH (South Mine Area)

EMS ID	E292127		E217015		E218582		E217014		E292130		E292131		E292131	
Site Name	2 South Pit CCR		3 South Pit CCR		Settling Pond # 1		South Pit Culvert		Long Lake Entry		Seep into Long Lake		Long Lake Middle	
Site Code	2S (2SS)		3S		SPD		SPC		LLE		LLS		LLSM	
	Cond	pH	Cond	pH	Cond	pH	Cond	pH	Cond	pH	Cond	pH	Cond	pH
April 2020	630	7.48	1036	7.97	790	7.98	367.00	8.05	331.80	6.56	1051	7.65	1110	7.45
					780	8.02			350.1	7.18				
					782	7.73			348	7.3				
					750	7.97			490	7.47				
May 2020	616	8.01	1304	7.75	730	7.94	287.00	7.84	340	7.15	1480	7.27	1367	7.17
					740	7.99			352	7.28				
					760	7.99			470	6.90				
					750	7.80			260	7.57				
June 2020	729	8.05	1091	7.90	772	7.73	224.00	7.47	329	7.22	1264	7.24	1413	7.15
					686	7.75			250	7.56				
					685	7.78			300	7.36				
					725	7.59			400	7.74				
					785	7.80			470	7.73				
July 2020	855	8.15	1224	8.06	832	7.84	Dry	Dry	610	7.16	1575	6.74	1241	7.99
					847	7.74			536	7.23				
					1139	8.04			573	7.29				
					832	7.52			738	6.77				
August 2020	1215	7.92	1714	7.03	1658	7.05	Dry	Dry	841	7.60	873	7.05	Dry	Dry
						dry			873	7.05				
					1703	7.24			Dry	Dry				
					1003	7.73			Dry	Dry				
September 2020	1452	7.65	1626	6.84	1060	7.57	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
					995	7.19			Dry	Dry				
					1137	7.53			753	7.06				
					1092	7.41			716	6.89				
					1102	7.57			738	7.25				
October 2020	1124	8.33	1318	8.2	1027	8.13			702	7.59	Dry	Dry	Dry	Dry
					1048	7.49			502	7.11	Dry	Dry	Dry	Dry
					935	7.71			482	7.32	Dry	Dry	Dry	Dry
					929	7.8			467	7.46	Dry	Dry	Dry	Dry
November 2020	1057	7.82	1122	7.48	806	7.74	413	7.91	330	7.54	Dry	Dry	Dry	Dry
					754	7.45			342	7.36	Dry	Dry	Dry	Dry
					759	7.27			382	7.55	Dry	Dry	Dry	Dry
					7.52	7.32			360	7.48	1281	7.01	1370	7.62
December 2020	1086	8.17	1165	7.57	738	7.41	352	7.86	303	7.44				
					449	7.46			393	7.69	1155	7.33	1022	7.64
					683	7.47			416	7.97				
					324	6.85			311	7.48				
January 2021	2850	7.55	2590	7.47	911	6.82	260	7.51	234	7.54	1322	7.08	1052	7.3
					775	7.78			303	7.8				
					724	7.51			391	7.53			1342	7.34
					787	7.66			568	7.65				
					295	7.15			320	7.2				
February 2021	702	6.98	1194	7.13	507	7.16	170	6.78	191	6.66	1649	7.16	1382	7.3
					261	7.39			276	8.12				
					745	7.49			253	7.66				
					295	7.15			354	7.68				
March 2021	814	7.95	1240	7.64	378	6.72	280	7.49	317	7.04	1653	7.2	1296	7.58
					363	7.62			296	7.74				
					792	7.25			286	7.91				
					829	7.71			464	7.50				
					842.0	7.16			313	7.18				

Table 27 Field Conductivity (uS/cm) pH 3 Page(s)

Field Conductivity (uS/cm) & pH (Rivers)

EMS ID	E297231		E297232		E0126402		E0900504		E217017		E219412		E292113		E299256	
Site Name	Iron River Site 6		Iron River Site 8		Quinsam River at		Middle Quinsam		No Name Lake		Long Lake Outlet		7 South Quinsam		Iron River &	
Site Code	IR6		IR8		WA		WB		NNO		LLO		7SQR		IRQR	
	Cond	pH	Cond	pH	Cond	pH	Cond	pH	Cond	pH	Cond	pH	Cond	pH	Cond	pH
April 2020	N/A	N/A	N/A	N/A												
					51.40	7.11	118.60	7.39	32.80	6.92	149.00	7.50	118.30	7.03	90.70	7.00
					61.00	7.28	121.00	7.36	30.10	7.25	152.10	7.48	143.00	7.70	110.00	7.85
					48.00	7.32	143.00	7.77	33.00	7.01	143.00	7.63	164.00	7.38	105.70	8.01
May 2020	N/A	N/A	N/A	N/A	51.00	7.52	158.00	7.73	40.30	7.12	121.80	7.67	156.00	7.54	112.00	8.11
					52.40	7.48	141.20	7.82	41.00	7.11	130.00	7.30	161.00	7.57	138.00	7.61
June 2020	N/A	N/A	N/A	N/A												
July 2020	115.9	7.42	98	7.35	48.8	7.72	174.8	8.09	55.4	7.56	187	7.65	169.5	7.79	158	7.15
	79.5	7.80	88.6	7.71	220	7.92	182	8.05	47.8	7.58	197.6	7.77	138	7.78	143.8	7.76
	113	8.18	108.7	8.15	57	7.83	170	7.8	43.8	7.34	200	7.84	142	7.24	133.2	7.96
	127.3	7.90	125.2	7.91	48.8	7.72	164	7.28	41.2	7.05	182	7.41	156	7.32	135.5	7.38
August 2020	134.9	7.84	135	7.85	49.6	7.62	149.7	7.87	48	7.45	197.3	7.45	152	7.80	159.2	7.5
September 2020																
October 2020	112.4	7.44	117.4	7.28	80.3	6.88	174.3	7.13	48.4	7.02	259	7.16	174.4	6.94	150.5	6.87
	64.1	7.35	94.6	7.24	48.4	7	179.4	7.34	49.1	7.06	248	7.32	174.8	7.26	109	7.24
	76.6	7.51	82.5	7.62	47.6	7.56	168.9	7.82	51.2	7.01	246	7.36	165	7.37	136	7.47
	70.4	7.96	67.4	7.94	50.8	7.73	148.4	7.66	47.3	7.06	172.5	7.53	146.3	7.74	124.4	7.72
November 2020	68.1	7.41	51.2	7.45	39.5	7.35	142	7.34	38.1	7.01	146	7.25	148.6	7.38	121.3	7.52
December 2020																
January 2021																
February 2021																
March 2021																

Table 28 Discharge From Settling Pond #4 (WD) 2 Page(s)

EMS ID	E207409											
Discharge From Settling Pond #4 (SP4/WD)												
Date	**April** Max. (m^3/s)	**April** Daily (m^3/s)	**May** Max. (m^3/s)	**May** Daily (m^3/s)	**June** Max. (m^3/s)	**June** Daily (m^3/s)	**July** Max. (m^3/s)	**July** Daily (m^3/s)	**August** Max. (m^3/s)	**August** Daily (m^3/s)	**September** Max. (m^3/s)	**September** Daily (m^3/s)
1	0.1090	0.0920	0.1160	0.0900	0.1340	0.1150	0.1020	0.0860	0.1350	0.1150	0.0620	0.0560
2	0.1110	0.0890	0.1340	0.1150	0.1400	0.1180	0.0940	0.0840	0.1330	0.1150	0.1330	0.0780
3	0.1150	0.0920	0.1380	0.1090	0.1370	0.1250	0.0910	0.0860	0.1410	0.1340	0.1330	0.1000
4	0.1270	0.0920	0.0880	0.0480	0.1330	0.1100	0.1020	0.0900	0.1570	0.1410	0.0790	0.0580
5	0.1270	0.1000	0.0820	0.0420	0.1390	0.1300	0.0880	0.0850	0.1450	0.1240	0.0820	0.0510
6	0.1190	0.0900	0.0980	0.0450	0.1540	0.1450	0.0830	0.0760	0.1310	0.1100	0.1360	0.1200
7	0.0990	0.0740	0.0850	0.0450	0.1560	0.1530	0.0810	0.0760	0.1430	0.1370	0.1320	0.1190
8	0.0400	0.0250	0.1320	0.0450	0.1590	0.1350	0.0860	0.0240	0.1420	0.1370	0.1170	0.0910
9	0.0450	0.0250	0.0880	0.0450	0.1320	0.1250	0.0080	0.0010	0.1350	0.1060	0.0860	0.0730
10	0.1360	0.0650	0.0830	0.0330	0.1410	0.1340	**NF**	**NF**	0.1090	0.0950	0.0760	0.0640
11	0.1420	0.0890	0.0910	0.0350	0.1170	0.0930	**NF**	**NF**	0.1130	0.0930	0.0730	0.0620
12	0.0510	0.0370	0.0740	0.0340	0.1240	0.1000	0.0280	0.0110	0.1220	0.1080	0.0750	0.0650
13	0.0400	0.0290	0.1170	0.0640	0.1300	0.1000	0.0260	0.0150	0.1240	0.1020	0.0780	0.0680
14	0.0380	0.0270	0.0870	0.0420	0.1240	0.1020	0.0180	0.0030	0.1120	0.0970	0.0790	0.0750
15	0.0850	0.0390	0.0870	0.0470	0.1330	0.1160	**NF**	**NF**	0.1070	0.0890	0.0800	0.0770
16	0.1450	0.1270	0.0920	0.0440	0.1330	0.1190	**NF**	**NF**	0.0870	0.0780	0.0810	0.0770
17	0.1610	0.1310	0.0890	0.0550	0.1370	0.1110	0.0240	0.0010	0.0800	0.0700	0.0760	0.0670
18	0.1330	0.1070	0.1340	0.1180	0.1250	0.0950	0.1020	0.0670	0.0840	0.0640	0.0430	0.0300
19	0.1300	0.0950	0.1420	0.1310	0.1020	0.0910	0.1290	0.1130	0.0380	0.0220	0.0330	0.0270
20	0.1320	0.1130	0.1410	0.0960	0.1020	0.0890	0.1390	0.1320	0.0300	0.0240	0.0340	0.0280
21	0.1360	0.1140	0.1360	0.1210	0.1050	0.0910	0.1460	0.1400	0.0330	0.0260	0.0330	0.0260
22	0.1330	0.0990	0.1320	0.1100	0.1010	0.0890	0.1480	0.1370	0.0360	0.0300	0.0510	0.0320
23	0.1070	0.0530	0.1330	0.1090	0.1010	0.0930	0.1380	0.1270	0.0350	0.0220	0.0630	0.0540
24	0.1090	0.0860	0.1480	0.1340	0.1150	0.1000	0.1350	0.1300	0.0280	0.0230	0.0940	0.0680
25	0.1310	0.0780	0.1520	0.1150	0.1300	0.1130	0.1420	0.1360	0.0290	0.0190	0.1320	0.1200
26	0.0840	0.0640	0.1350	0.1130	0.1140	0.0930	0.1500	0.1380	0.0670	0.0330	0.1290	0.1040
27	0.0760	0.0380	0.1450	0.1300	0.1080	0.0970	0.1430	0.1380	0.0720	0.0620	0.1180	0.0990
28	0.1030	0.0480	0.1440	0.1140	0.1030	0.0870	0.1570	0.1460	0.0780	0.0600	0.0810	0.0670
29	0.0840	0.0420	0.1350	0.1130	0.0970	0.0850	0.1600	0.1490	0.0800	0.0730	0.0630	0.0560
30	0.0820	0.0470	0.1320	0.1090	0.0970	0.0870	0.1440	0.1150	0.0700	0.0550	0.0640	0.0550
31			0.1330	0.1220			0.1310	0.1030	0.0640	0.0550		
Monthly Max	**0.1610**		**0.1520**		**0.1590**		**0.1600**		**0.1570**		**0.1360**	
Monthly Avg		**0.0736**		**0.0846**		**0.1080**		**0.0777**		**0.0780**		**0.0689**

TSS is required **weekly** when max daily flow > 0.054 m^3/s

NF= No Flow All flow data is subject to review

Table 28 Discharge From Settling Pond #4 (WD) 2 Page(s)

EMS ID	E207409											
Discharge From Settling Pond #4 (SP4/WD)												
Date	October	October	November	November	December	December	January	January	February	February	March	March
	Max. (m3/s)	Daily (m3/s)	Max. (m3/s)	Daily (m3/s)	Max. (m3/s)	Daily (m3/s)	Max. (m3/s)	Daily (m3/s)	Max. (m3/s)	Daily (m3/s)	Max. (m3/s)	Daily (m3/s)
1	0.0630	0.0500	0.0770	0.0690	0.1340	0.0950	0.0700	0.0500	0.0440	0.0400	0.0840	0.0550
2	0.0490	0.0450	0.0810	0.0700	0.0650	0.0580	0.1160	0.0860	0.0450	0.0380	0.0860	0.0450
3	0.0840	0.0500	0.0930	0.0790	0.0620	0.0510	0.0830	0.0700	0.0470	0.0370	0.0190	0.0020
4	0.1440	0.1190	0.1300	0.1240	0.0600	0.0540	0.1470	0.1100	0.0450	0.0400	**NF**	**NF**
5	0.1430	0.1350	0.1330	0.1250	0.0550	0.0510	0.1790	0.1510	0.0440	0.0380	0.0340	0.0020
6	0.1480	0.1430	0.1280	0.1010	0.0530	0.0480	0.1870	0.1670	0.0440	0.0380	0.1050	0.0790
7	0.1490	0.1460	0.1070	0.0890	0.0510	0.0460	0.1540	0.1440	0.0770	0.0580	0.0800	0.0630
8	0.1480	0.1430	0.1100	0.0950	0.0780	0.0620	0.1320	0.1160	0.1360	0.0900	0.1140	0.0910
9	0.1450	0.1430	0.0950	0.0850	0.0800	0.0620	0.0880	0.0840	0.1440	0.1140	0.1310	0.1090
10	0.1470	0.1400	0.0890	0.0870	0.0320	0.0210	0.0830	0.0790	0.0980	0.0760	0.0810	0.0470
11	0.1390	0.0950	0.0850	0.0800	0.0230	0.0110	0.1030	0.0900	0.0990	0.0760	0.1200	0.0680
12	0.0850	0.0760	0.0860	0.0810	0.0210	0.0160	0.1300	0.1160	0.0880	0.0710	0.1290	0.0990
13	0.0810	0.0700	0.0840	0.0760	0.0210	0.0170	0.1270	0.0970	0.0810	0.0670	0.0680	0.0390
14	0.0790	0.0660	0.0860	0.0800	0.0200	0.0160	0.1050	0.0940	0.0630	0.0560	0.0840	0.0520
15	0.0830	0.0780	0.0810	0.0750	0.0220	0.0150	0.0980	0.0880	0.0960	0.0600	0.0840	0.0330
16	0.0800	0.0720	0.0970	0.0830	0.0220	0.0170	0.0930	0.0770	0.0950	0.0670	**NF**	**NF**
17	0.1000	0.0740	0.1170	0.0840	0.0300	0.0200	0.0900	0.0800	0.0500	0.0430	**NF**	**NF**
18	0.1030	0.0860	0.0790	0.0510	0.0280	0.0210	0.0770	0.0670	0.0640	0.0530	0.0850	0.0290
19	0.0970	0.0930	0.1550	0.0750	0.0540	0.0360	0.0770	0.0680	0.0510	0.0280	0.1540	0.1020
20	0.1040	0.0880	0.1700	0.1600	0.0580	0.0460	0.0700	0.0610	0.0400	0.0130	0.1960	0.1770
21	0.1120	0.0810	0.1530	0.1470	0.0390	0.0290	0.0540	0.0470	0.0650	0.0460	0.1820	0.1670
22	0.0880	0.0760	0.1420	0.1310	0.0310	0.0270	0.0520	0.0420	0.0670	0.0590	0.1440	0.0930
23	0.0810	0.0690	0.1380	0.1250	0.0290	0.0210	0.0450	0.0390	0.0810	0.0640	0.0810	0.0380
24	0.1140	0.0840	0.1280	0.1050	0.0250	0.0210	0.0460	0.0400	0.0840	0.0650	**NF**	**NF**
25	0.0800	0.0700	0.1360	0.1190	0.0230	0.0190	0.0400	0.0360	0.0830	0.0650	0.0070	0.0030
26	0.0710	0.0640	0.1180	0.0930	0.0270	0.0200	0.0470	0.0380	0.0690	0.0420	0.0050	0.0010
27	0.0830	0.0710	0.1050	0.0950	0.0390	0.0290	0.0400	0.0360	0.0830	0.0660	**NF**	**NF**
28	0.0720	0.0660	0.1300	0.1020	0.0290	0.0260	0.0520	0.0380	0.0440	0.0360	0.0340	0.0130
29	0.0770	0.0750	0.1290	0.0930	0.0280	0.0220	0.0490	0.0430			0.0460	0.0150
30	0.1130	0.1050	0.1110	0.0940	0.0280	0.0230	0.0480	0.0410			0.1420	0.0920
31	0.0860	0.0740			0.0370	0.0300	0.0470	0.0390			0.1430	0.1170
Monthly Max	**0.1490**		**0.1700**		**0.1340**		**0.1870**		**0.1440**		**0.1960**	
Monthly Avg		**0.0886**		**0.0958**		**0.0332**		**0.0753**		**0.0552**		**0.0526**

TSS is required **weekly** when max daily flow > 0.054 m^3/s

NF= No Flow All flow data is subject to review

Table 29 Discharge From Settling Pond # 1 (SPD) 2 Page(s)

EMS ID	E218582											
Discharge From Settling Pond #1 (SP1/SPD)												
Date	**April** Max. (m^3/s)	**April** Daily (m^3/s)	**May** Max. (m^3/s)	**May** Daily (m^3/s)	**June** Max. (m^3/s)	**June** Daily (m^3/s)	**July** Max. (m^3/s)	**July** Daily (m^3/s)	**August** Max. (m^3/s)	**August** Daily (m^3/s)	**September** Max. (m^3/s)	**September** Daily (m^3/s)
1	0.1088	0.0764	0.0160	0.0032	0.0160	0.0000	0.0534	0.0091	0.0100	0.0032	**NF**	**NF**
2	0.0877	0.0443	0.0160	0.0091	0.0091	0.0032	0.0341	0.0160	0.0100	0.0032	**NF**	**NF**
3	0.0443	0.0250	0.0160	0.0032	0.0091	0.0000	0.0341	0.0250	0.0341	0.0160	**NF**	**NF**
4	0.1185	0.0639	0.0160	0.0091	0.0160	0.0032	0.0764	0.0534	0.0160	0.0091	**NF**	**NF**
5	0.0989	0.0443	0.0160	0.0000	0.0160	0.0032	0.0639	0.0341	0.0160	0.0032	**NF**	**NF**
6	0.0534	0.0341	0.0091	0.0000	0.0877	0.0250	0.0534	0.0091	0.0534	0.0341	**NF**	**NF**
7	0.0534	0.0160	0.0091	0.0000	0.0639	0.0091	0.0443	0.0091	0.0100	0.0032	**NF**	**NF**
8	0.0443	0.0091	0.0091	0.0000	0.0341	0.0091	0.0443	0.0250	**NF**	**NF**	**NF**	**NF**
9	0.0341	0.0032	0.0032	0.0000	0.0341	0.0160	0.1088	0.0341	**NF**	**NF**	0.0443	0.0000
10	0.0160	0.0032	0.0032	0.0000	0.0160	0.0091	0.1088	0.0639	**NF**	**NF**	0.0443	0.0091
11	0.0160	0.0000	0.0032	0.0000	0.0160	0.0032	0.0534	0.0443	**NF**	**NF**	0.0341	0.0091
12	0.0160	0.0000	0.0160	0.0032	0.0534	0.0341	0.0764	0.0443	**NF**	**NF**	0.0341	0.0032
13	0.0091	0.0032	0.0091	0.0032	0.0443	0.0091	0.1088	0.0341	**NF**	**NF**	0.0160	0.0160
14	0.0091	0.0032	0.0091	0.0000	0.0341	0.0091	0.1088	0.0341	**NF**	**NF**	0.0160	0.0091
15	0.0091	0.0032	0.0091	0.0000	0.0989	0.0341	0.0443	0.0032	**NF**	**NF**	0.0160	0.0160
16	0.0091	0.0032	0.0160	0.0091	0.0989	0.0534	0.0250	0.0091	**NF**	**NF**	0.0160	0.0091
17	0.0091	0.0032	0.0341	0.0091	0.0764	0.0341	0.0639	0.0250	**NF**	**NF**	0.0160	0.0032
18	0.0091	0.0032	0.0341	0.0032	0.0639	0.0250	0.0534	0.0091	**NF**	**NF**	0.0160	0.0091
19	0.0032	0.0032	0.0341	0.0032	0.1088	0.0764	0.0250	0.0000	**NF**	**NF**	0.0091	0.0032
20	0.0032	0.0032	0.0160	0.0091	0.0639	0.0443	0.0160	0.0000	**NF**	**NF**	0.0091	0.0032
21	0.0032	0.0032	0.0443	0.0000	0.0764	0.0341	0.0639	0.0000	**NF**	**NF**	0.0989	0.0160
22	0.0032	0.0032	0.0877	0.0341	0.1088	0.0877	0.0639	0.0250	**NF**	**NF**	0.1667	0.0764
23	0.0091	0.0032	0.0160	0.0091	0.0639	0.0443	0.0443	0.0091	**NF**	**NF**	0.0989	0.0341
24	0.0091	0.0032	0.0160	0.0160	0.1279	0.0534	0.0250	0.0000	**NF**	**NF**	0.1185	0.0764
25	0.0032	0.0032	0.0160	0.0091	0.1279	0.0639	0.0160	0.0000	**NF**	**NF**	0.0443	0.0091
26	0.0091	0.0032	0.0341	0.0000	0.0639	0.0443	0.0160	0.0000	**NF**	**NF**	0.0443	0.0032
27	0.0091	0.0032	0.0160	0.0000	0.0639	0.0341	0.0443	0.0032	**NF**	**NF**	0.0250	0.0000
28	0.0091	0.0032	0.0091	0.0000	0.1088	0.0443	0.0250	0.0032	**NF**	**NF**	0.0443	0.0000
29	0.0091	0.0032	0.0534	0.0091	0.0877	0.0341	**NF**	**NF**	**NF**	**NF**	0.0989	0.0250
30	0.0160	0.0032	0.0443	0.0091	0.0534	0.0160	**NF**	**NF**	**NF**	**NF**	0.1279	0.0877
31			0.0091	0.0000			**NF**	**NF**	**NF**	**NF**		
Monthly Max	**0.1185**		**0.0877**		**0.1279**		**0.1088**		**0.0534**		**0.1667**	
Monthly Avg		**0.0126**		**0.0049**		**0.0286**		**0.0169**		**0.0023**		**0.0139**

TSS is required **weekly** when max daily flow > $0.046 m^3/s$

NF= No Flow All flow data is subject to review

Table 29 Discharge From Settling Pond # 1 (SPD) 2 Page(s)

EMS ID	E218582											
Discharge From Settling Pond #1 (SP1/SPD)												
Date	October	October	November	November	December	December	January	January	February	February	March	March
	Max. (m3/s)	Daily (m3/s)	Max. (m3/s)	Daily (m3/s)	Max. (m3/s)	Daily (m3/s)	Max. (m3/s)	Daily (m3/s)	Max. (m3/s)	Daily (m3/s)	Max. (m3/s)	Daily (m3/s)
1	0.0764	0.0160	0.0032	0.0000	0.1279	0.0764	0.0470	0.0196	0.0870	0.0711	0.0400	0.0216
2	0.0091	0.0000	0.0443	0.0160	0.0764	0.0341	0.0120	0.0093	0.0780	0.0594	0.0660	0.0458
3	0.0091	0.0000	0.0534	0.0250	0.0877	0.0443	0.0090	0.0044	0.1030	0.0794	0.0310	0.0174
4	0.0032	0.0000	0.1088	0.0877	0.0091	0.0032	0.0060	0.0001	0.1120	0.0969	0.0550	0.0335
5	0.0032	0.0000	0.0764	0.0341	0.0534	0.0341	0.0120	0.0037	0.0980	0.0849	0.0420	0.0287
6	0.0764	0.0160	0.0877	0.0534	0.0091	0.0032	0.0140	0.0109	0.0820	0.0679	0.0260	0.0237
7	0.0534	0.0091	0.0534	0.0091	0.0877	0.0341	0.0330	0.0205	0.0740	0.0610	0.0580	0.0376
8	0.0250	0.0091	0.0639	0.0341	0.1088	0.0639	0.0520	0.0380	0.0630	0.0408	0.0450	0.0349
9	0.0341	0.0160	0.0160	0.0091	0.0764	0.0534	0.0870	0.0725	0.0640	0.0330	0.0590	0.0294
10	0.0989	0.0443	0.0534	0.0250	0.0639	0.0250	0.0690	0.0486	0.0520	0.0310	0.0760	0.0502
11	0.0989	0.0534	0.0250	0.0000	0.0764	0.0534	0.0510	0.0417	0.0320	0.0163	0.0390	0.0271
12	0.0443	0.0250	**NF**	**NF**	0.0443	0.0160	0.0620	0.0383	0.0490	0.0253	0.0350	0.0245
13	0.0764	0.0341	0.0341	0.0091	0.0764	0.0443	0.0630	0.0413	0.0190	0.0142	0.0730	0.0539
14	0.0764	0.0534	0.0250	0.0000	0.0443	0.0160	0.0660	0.0498	0.0460	0.0181	0.0470	0.0328
15	0.0443	0.0250	0.0160	0.0000	0.0877	0.0341	0.0650	0.0366	0.0280	0.0146	0.0740	0.0332
16	0.0091	0.0091	0.0534	0.0341	0.0877	0.0250	0.0750	0.0582	0.0420	0.0223	0.0730	0.0347
17	0.0764	0.0443	0.1088	0.0764	0.0877	0.0341	0.1640	0.1043	0.0250	0.0165	0.0760	0.0476
18	0.0639	0.0341	0.1088	0.0773	0.1185	0.0764	0.1830	0.1472	0.0530	0.0217	0.0560	0.0305
19	0.0764	0.0341	0.0877	0.0639	0.1667	0.0885	0.1330	0.0958	0.0550	0.0267	0.0310	0.0202
20	0.0764	0.0250	0.0639	0.0534	0.1522	0.0128	0.1790	0.0648	0.0250	0.0173	0.0660	0.0447
21	0.0989	0.0341	0.0443	0.0160	0.1088	0.0639	0.2560	0.2157	0.0230	0.0171	0.0380	0.0286
22	0.1088	0.0443	0.0341	0.0032	0.0877	0.0443	0.1790	0.1284	0.0240	0.0122	0.0650	0.0353
23	0.0443	0.0341	0.0443	0.0091	0.0443	0.0091	0.1170	0.1128	0.0640	0.0270	0.0590	0.0353
24	0.0534	0.0250	**NF**	**NF**	0.0443	0.0250	0.1110	0.0961	0.0650	0.0301	0.0290	0.0197
25	0.1088	0.0443	0.0443	0.0250	0.0160	0.0358	0.1000	0.0948	0.0470	0.0223	0.0510	0.0348
26	0.1088	0.0341	0.0250	0.0091	0.0877	0.0639	0.0950	0.0698	0.0380	0.0191	0.0420	0.0342
27	0.0091	0.0032	0.0877	0.0639	0.0639	0.0341	0.0610	0.0448	0.0640	0.0317	0.0350	0.0276
28	0.0032	0.0000	0.0877	0.0534	0.0639	0.0443	0.0910	0.0664	0.0550	0.0337	0.0600	0.0290
29	0.0443	0.0091	0.0877	0.0443	0.0764	0.0160	0.1160	0.0974			0.0690	0.0503
30	0.0160	0.0032	0.1279	0.0399	0.1185	0.0877	0.1160	0.0974			0.0510	0.0317
31	0.0091	0.0000			0.1279	0.0854	0.1160	0.0974			0.0560	0.0425
Monthly Max	**0.1088**		**0.128**		**0.1667**		**0.256**		**0.1120**		**0.076**	
Monthly Avg		**0.022**		**0.031**		**0.041**		**0.065**		**0.036**		**0.034**

TSS is required **weekly** when max daily flow > 0.046m^3/s

NF= No Flow **All flow data is subject to revisons**

Table 30 Discharge From 7 South Surface Decant Pond (7SSD) 1 Page(s)

EMS ID E292069 Discharge From 7 South Surface Decant Pond (7SSD)	April	May	June	July	August	September	October	November	December	January	February	March
Date	Daily Average L/S											
1	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF
2	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF
3	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF
4	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF
5	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF
6	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF
7	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF
8	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF
9	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF
10	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF
11	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF
12	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF
13	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF
14	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF
15	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF
16	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF
17	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF
18	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF
19	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF
20	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF
21	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF
22	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF
23	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF
24	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF
25	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF
26	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF
27	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF
28	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF
29	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF		NF
30	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF		NF
31	NF	NF	NF	NF	NF		NF	NF	NF	NF		NF
Monthly Avg	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Annual Avg												
Cummulative Daily Totalizer Value												
For Maximum Decant Flow (5.00 L/s)												

Table 31 2S Inflow Outflow 2 Page(s)

EMS ID: E292127 2-South Pit Continous Inflow and Outflow

2S Inflow

Date	April	May	June	July	August	September	October	November	December	January	February	March
	Q (L/s)	Q (L/s)	Q (L/s)	Q (L/s)	Q (L/s)	Q (L/s)	Q (L/s)	Q (L/s)	Q (L/s)	Q (L/s)	Q (L/s)	Q (L/s)
1	1.879	0.541	6.10	2.21	4.06	6.43	2.204	4.440	7.471	16.940	5.230	6.102
2	1.386	0.660	6.03	2.51	4.57	6.24	2.242	4.428	5.357	26.258	6.461	4.944
3	1.214	0.768	5.61	2.73	4.58	10.49	2.246	10.182	3.636	16.062	7.775	5.102
4	1.140	2.767	6.52	2.72	4.04	0.85	2.434	10.054	3.313	20.957	6.010	5.922
5	1.231	1.421	6.24	2.49	4.09	1.13	2.200	9.591	3.321	14.845	7.865	13.534
6	1.376	1.692	7.27	3.81	6.25	1.09	2.180	6.715	3.351	18.467	6.420	9.313
7	1.358	1.114	7.07	3.81	6.48	1.13	2.124	5.818	8.094	8.331	5.920	8.907
8	1.178	1.029	6.13	3.81	6.14	6.59	2.206	5.018	10.640	8.119	5.634	6.430
9	1.102	0.992	6.34	3.81	5.88	4.33	2.899	4.406	8.145	4.138	4.949	6.596
10	1.094	0.826	5.87	6.24	5.55	6.61	3.370	3.588	6.780	4.427	4.792	6.569
11	1.077	0.394	5.61	7.60	5.07	8.74	2.834	2.969	6.857	8.733	4.070	5.688
12	0.893	1.108	5.50	6.81	2.75	8.72	2.849	2.112	5.600	10.518	3.411	5.283
13	0.794	0.971	5.42	5.95	0.96	8.93	5.864	3.851	5.747	15.662	4.911	4.186
14	0.779	1.008	5.51	5.67	2.73	4.06	4.353	3.390	5.270	5.155	3.531	6.106
15	0.742	3.218	6.61	5.24	2.74	4.23	3.511	4.754	5.369	4.775	4.964	5.274
16	0.689	3.165	6.57	5.54	2.79	4.27	4.328	6.179	3.540	2.820	5.215	4.644
17	0.716	4.710	5.71	5.51	3.88	4.37	4.055	24.739	5.331	3.332	4.023	4.490
18	0.713	4.053	5.21	5.20	5.53	4.38	6.256	12.742	9.819	4.623	3.485	4.661
19	0.682	3.098	5.28	5.16	5.42	4.50	10.232	6.743	11.198	7.562	4.402	7.339
20	0.455	1.968	5.97	4.78	5.71	4.15	3.756	3.230	8.582	3.959	4.147	6.465
21	0.617	5.483	5.59	4.74	6.71	4.87	1.315	2.046	7.034	1.564	6.601	5.399
22	0.310	5.998	5.21	4.86	6.17	4.87	0.869	1.701	6.685	1.338	8.646	5.852
23	0.277	6.014	5.20	5.02	6.27	6.31	2.349	1.718	4.930	0.900	7.324	4.978
24	0.180	6.519	7.90	4.40	6.52	6.34	1.925	3.123	4.508	1.046	4.505	5.515
25	0.246	8.036	5.85	4.28	6.48	8.07	1.222	5.898	5.015	1.786	5.480	5.692
26	0.198	9.449	5.63	4.09	6.41	5.66	2.411	8.707	10.091	3.791	6.364	5.392
27	0.148	8.612	5.18	4.09	6.37	5.41	5.096	6.802	7.810	4.765	5.383	4.704
28	0.416	8.364	5.11	4.27	6.28	5.15	5.209	6.653	6.839	4.737	4.639	5.480
29	0.462	7.915	4.63	4.19	6.15	3.75	4.886	5.343	6.998	4.039		5.033
30	0.621	6.484	3.50	3.99	6.60	2.05	6.856	13.221	12.715	4.893		4.511
31		6.64		4.25	6.89		5.013	6.888	13.355	6.558		3.897

Table 31 2S Inflow Outflow 2 Page(s)

EMS ID: E292127 2-South Pit Continous Inflow and Outflow

2S Outflow Culvert into 3S Pit

Date	April	May	June	July	August	September	October	November	December	January	February	March
	Q (L/s)	Q (L/s)	Q (L/s)	Q (L/s)	Q (L/s)	Q (L/s)	Q (L/s)	Q (L/s)	Q (L/s)	Q (L/s)	Q (L/s)	Q (L/s)
1	6.220	4.952	4.557	5.206	7.768	7.930	4.884	9.323	22.426	32.952	7.459	8.167
2	6.079	5.092	4.908	4.922	8.093	7.112	4.361	9.183	19.360	71.379	7.451	8.205
3	5.895	4.871	4.583	5.001	7.049	6.311	4.399	17.782	16.022	52.957	8.120	8.104
4	6.035	4.999	4.964	5.111	5.784	5.160	4.588	21.137	13.284	61.267	8.631	8.339
5	5.614	4.534	4.967	5.136	7.461	4.820	4.604	21.356	11.848	50.293	8.859	10.678
6	5.457	4.210	4.993	5.009	11.299	4.659	4.538	18.652	11.104	57.833	9.361	12.034
7	5.419	4.289	4.646	5.541	8.400	4.551	4.262	15.770	15.496	44.528	9.309	11.659
8	5.290	4.202	5.384	7.517	9.095	4.206	4.649	13.360	21.998	31.204	8.587	11.188
9	5.224	4.209	7.294	8.755	12.438	3.907	5.262	12.437	20.688	21.775	8.121	10.756
10	5.309	4.058	6.896	16.019	7.587	3.911	5.366	11.579	18.742	15.522	8.200	9.782
11	5.151	4.244	6.295	12.321	6.634	3.995	6.534	9.858	17.458	16.329	7.605	9.180
12	5.097	4.803	10.720	12.515	10.231	4.171	7.392	9.548	15.988	18.281	7.506	9.043
13	5.142	4.453	9.386	10.240	5.768	4.599	11.546	10.050	15.048	21.931	7.384	8.310
14	5.026	4.279	7.386	12.638	4.485	4.620	9.399	10.141	14.217	20.891	7.344	8.502
15	4.910	4.376	9.460	7.603	4.221	4.549	8.079	11.292	14.593	18.519	6.808	7.411
16	4.938	4.940	14.960	6.696	4.242	4.295	8.831	13.530	13.749	16.019	6.557	7.267
17	5.043	5.004	8.476	9.966	4.118	4.509	8.249	37.722	14.055	13.979	6.249	7.091
18	4.912	4.568	6.548	8.418	5.557	5.522	12.096	38.506	18.119	12.466	6.692	7.222
19	4.963	4.372	10.523	6.376	7.644	5.981	10.934	27.457	PNC	11.366	6.329	7.885
20	5.028	4.762	8.406	5.784	7.958	11.167	14.436	19.517	27.385	10.669	6.398	7.642
21	5.038	4.366	7.210	5.917	9.505	15.901	8.192	14.870	23.982	9.906	7.237	7.815
22	5.087	4.530	11.887	9.940	8.022	9.393	6.090	12.521	21.104	9.246	8.042	7.524
23	4.801	4.920	8.589	7.327	7.381	11.941	6.840	11.029	18.338	8.740	8.638	7.725
24	5.024	5.196	11.278	5.527	7.029	13.307	6.609	11.982	16.465	8.636	9.026	7.697
25	4.603	4.959	14.121	5.038	7.079	15.342	6.344	12.428	16.031	8.107	9.007	7.039
26	4.969	4.508	8.670	4.833	7.125	10.684	6.171	17.462	21.505	7.948	8.798	6.863
27	4.839	4.578	7.051	8.038	7.019	8.984	6.493	17.743	22.509	7.727	8.567	7.272
28	5.224	4.387	8.285	6.468	7.320	7.523	8.459	17.315	21.116	7.147	8.433	7.199
29	5.186	4.453	9.119	5.274	6.927	7.039	9.182	16.223	19.556	7.188		6.568
30	5.055	4.575	6.071	4.815	8.141	5.722	11.772	23.837	26.371	7.074		6.422
31		4.693		4.855	8.759		10.199		31.312	7.411		6.461

Table 32 Flow Tables LLE, LLS LLSM 3 Page(s)

Weekly Flow Requirements (L/s)
EMS ID: E292130
Site LLE
Flow (L/S)

Date	April	May	June	July	August	September	October	November	December	January	February	March
1	43	7	5	2	2	**NF**	3	***2156***	*96*	*275*	*19*	*32*
2	39	4	5	2	3	**NF**	2	***2155***	*537*	*74*	*37*	*51*
3	28	4	3	2	4	**NF**	2	***1521***	*48*	*73*	*39*	*45*
4	29	5	6	2	3	**NF**	2	***944***	*20*	*64*	*41*	*38*
5	46	3	3	2	3	**NF**	2	***303***	*12*	*58*	*37*	*199*
6	23	2	1	2	7	**NF**	1	***376***	*10*	*62*	*37*	*226*
7	37	4	3	2	11	**NF**	1	***289***	*17*	*80*	*21*	*204*
8	17	2	25	2	9	**NF**	1	***399***	*78*	*87*	*199*	*137*
9	9	1	18	26	7	**NF**	2	***227***	*64*	*87*	*226*	*79*
10	10	1	3	38	7	**NF**	3	10	*52*	*62*	*5*	*82*
11	6	1	2	34	**NF**	**NF**	8	12	*30*	*248*	*7*	*60*
12	6	2	2	41	**NF**	**NF**	3	5	*27*	*180*	*256*	*42*
13	12	**0**	3	30	**NF**	**NF**	22	8	*12*	*117*	*89*	*36*
14	7	**0**	5	24	**NF**	**NF**	93	16	*15*	*100*	*2*	*39*
15	6	5	9	19	**NF**	**NF**	62	19	*10*	*52*	*2*	*12*
16	5	3	25	13	**NF**	**NF**	24	39	*17*	*44*	*13*	*28*
17	5	4	16	9	**NF**	**NF**	20	278	*43*	*20*	*291*	*24*
18	3	7	8	8	**NF**	**NF**	84	341	*103*	*25*	*21*	*24*
19	3	6	37	7	**NF**	**NF**	176	140	*359*	*32*	*17*	*41*
20	3	5	10	7	**NF**	**NF**	79	75	*244*	*68*	*130*	*66*
21	4	5	6	7	**NF**	**NF**	197	46	*115*	*138*	*17*	*78*
22	3	3	5	5	**NF**	**NF**	***444***	22	*289*	*101*	*44*	*62*
23	3	6	4	5	**NF**	**NF**	***634***	26	*48*	*119*	*90*	*48*
24	1	11	13	4	**NF**	5	***739***	23	*45*	*152*	*224*	*38*
25	2	15	7	4	**NF**	34	***1118***	43	*27*	*128*	*49*	*36*
26	2	13	26	3	**NF**	19	***1879***	35	*92*	*13*	*41*	*28*
27	3	8	13	3	**NF**	20	***2155***	27	*126*	*9*	*25*	*26*
28	3	6	6	3	**NF**	12	***2155***	46	*102*	*46*	*16*	*26*
29	3	4	3	2	**NF**	7	***2155***	39	*63*	*46*		*24*
30	4	4	3	2	**NF**	4	***2155***	70	*102*	*74*		*19*
31		6		2	**NF**		***2155***		*241*	*57*		*18*

Notes:

Italics - October throughNovember indicates beaver activity (dams and dam release) caused sensor errors and fluctuation anomalies (*bold*). Logs and debris were removed from under the sensor daily.

Table 32 Flow Tables LLE, LLS LLSM 3 Page(s)

Weekly Flow Requirements (L/s)

EMS ID: **E292131**

Site

Flow (L/S) **LLSM**

Date	April	May	June	July	August	September	October	November	December	January	February	March
1	5.9	5.9	3.0	3.0	NF	NF	NF	NF	4.2	3.4	9.5	7.8
2		5.9	3.0	3.0	NF	NF	NF	NF	4.2	3.3	9.4	7.7
3		5.9	3.0	3.0	NF	NF	NF	NF	4.3	3.4	9.2	7.7
4		4.3	3.0	3.0	NF	NF	NF	NF	4.3	2.9	9.1	7.7
5		5.9	3.0	3.0	NF	NF	NF	NF	4.3	3.4	9.4	13.7
6		5.9	3.0	3.0	NF	NF	NF	NF	4.2	3.3	9.6	11.9
7		5.9	3.0		NF	NF	NF	NF	3.7	3.4	9.5	11.8
8	5.9	5.9	3.0		NF	NF	NF	NF	3.9	2.9	9.5	12.3
9		5.8	3.0		NF	NF	NF	NF	4.3	12.7	8.8	12.8
10		5.9	3.0		NF	NF	NF	NF	4.1	24.4	8.5	
11		5.9	3.0		NF	NF	NF	NF	3.3	24.7	7.7	12.7
12		5.9	3.0		NF	NF	NF	NF	3.1	25.2	7.5	
13		5.9	3.0	NF	NF	NF	NF	NF	3.2	24.9	6.9	
14		4.9	3.0	NF	NF	NF	NF	NF	3.2	25.9	6.7	
15	5.9	4.3	3.0	NF	NF	NF	NF	NF	3.0	31.4	6.7	
16	5.3	4.3	3.0	NF	NF	NF	NF	NF	2.4	32.3	6.5	7.8
17	5.9	4.3	3.0	NF	NF	NF	NF	NF	2.6	33.7	6.0	7.8
18	5.9	4.3	3.0	NF	NF	NF	NF	NF	2.7	33.2	6.0	
19	5.9	4.3	3.0	NF	NF	NF	NF	NF	2.9	31.4	5.9	
20	5.9	3.6	3.0	NF	NF	NF	NF	NF	3.0	28.3	5.6	
21	5.9	4.0	3.0	NF	NF	NF	NF	NF	3.4	25.9	5.4	
22	5.9	4.3	3.0	NF	NF	NF	NF	NF	3.4	23.4	6.3	7.7
23	5.9	3.8	3.0	NF	NF	NF	NF	4.3	3.4	21.1	6.8	
24	5.9	3.0	3.0	NF	NF	NF	NF	4.3	3.4	19.7	7.2	
25	5.9	3.0	3.0	NF	NF	NF	NF	4.3	3.4	18.3	7.7	
26	5.9	3.0	3.0	NF	NF	NF	NF	4.3	3.4	17.2	7.8	
27	5.9	3.0	3.0	NF	NF	NF	NF	4.0	3.4	16.2	7.9	
28	5.9	3.0	3.0	NF	NF	NF	NF	4.3	3.4	15.3	7.8	
29	5.9	3.0	3.0	NF	NF	NF	NF	3.7	3.4	14.6		7.5
30	5.9	3.0	3.0	NF	NF	NF	NF	3.7	3.4	14.0		
31		3.0		NF	NF		NF		3.4	13.0		

Notes:

Seep stopped flowing July 13 and started flowing November 24.

Table 32 Flow Tables LLE, LLS LLSM 3 Page(s)

Weekly Flow Requirements (L/s)					
EMS ID:	E292131				
Site					
Flow (L/S)	LLS	Estimated Flow	LLS	LLS	Estimated Flow
Weeks	Level	L/s	Weeks	Level	L/s
31/Mar/20	0.100	0.018	06/Oct/20	NF	NF
07/Apr/20	0.100	0.018	13/Oct/20	NF	NF
14/Apr/20	0.100	0.018	20/Oct/20	NF	NF
21/Apr/20	0.100	0.018	27/Oct/20	NF	NF
28/Apr/20	0.100	0.018	03/Nov/20	NF	NF
05/May/20	0.100	0.018	10/Nov/20	0.011	0.010
12/May/20	0.100	0.018	17/Nov/20	0.011	0.010
19/May/20	0.100	0.018	24/Nov/20	0.011	0.010
26/May/20	0.100	0.018	01/Dec/20	0.011	0.010
02/Jun/20	0.100	0.018	08/Dec/20	0.100	0.018
09/Jun/20	0.100	0.018	15/Dec/20	0.100	0.018
16/Jun/20	0.100	0.018	22/Dec/20	0.100	0.018
23/Jun/20	0.100	0.018	29/Dec/20	0.100	0.018
30/Jun/20	0.100	0.018	05/Jan/21	0.100	0.500
07/Jul/20	0.100	0.018	12/Jan/21	0.100	0.500
14/Jul/20	0.100	0.018	19/Jan/21	0.100	0.500
21/Jul/20	0.100	0.018	26/Jan/21	0.100	0.500
28/Jul/20	0.100	0.018	02/Feb/21	0.100	0.500
04/Aug/20	0.011	0.010	09/Feb/21	0.100	0.500
11/Aug/20	0.011	0.010	16/Feb/21	0.100	0.500
18/Aug/20	0.011	0.010	23/Feb/21	0.100	0.500
25/Aug/20	NF	NF	02/Mar/21	0.100	0.500
01/Sep/20	NF	NF	09/Mar/21	0.100	0.500
08/Sep/20	NF	NF	16/Mar/21	0.010	0.300
15/Sep/20	NF	NF	23/Mar/21	0.010	0.300
22/Sep/20	NF	NF	30/Mar/21	0.010	0.300
29/Sep/20	NF	NF	06/Apr/21	0.010	0.300

Notes:

Seep stopped flowing around August 25 and started flowing around November 10.

Table 33 Precipitation 1 Page(s)

Daily Precipitation (mm)												
DATE	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR
1	7.8	5.7	0	0.0	0.0	0.1	0.0	0.0	14.8	2.4	4	1.3
2	0.4	0	0	0.0	0.0	0.0	0.0	0.0	0.0	24	4.3	1.1
3	0	5.1	0	0.7	6.3	0.0	0.0	5.6	0.1	24	6.3	0
4	0	3	0	0.9	2.7	0.0	0.0	24.0	0.4	3.1	3.1	0
5	0.2	0.5	0	0.0	0.0	0.0	0.0	7.9	0.0	22.9	6.3	6.1
6	0	0	0	0.0	5.3	0.0	0.0	6.4	0.0	33.4	0.3	21.9
7	0	0.1	0	0.0	8.0	0.0	0.0	0.0	0.2	0	0.6	1.2
8	0	0	0	9.2	0.7	0.0	0.0	0.0	24.7	0	0	3.1
9	0	0	0	9.2	0.0	0.0	0.0	0.0	0.9	1.6	0	1.5
10	0	0	0	9.2	0.0	0.0	18.9	3.2	0.1	5.1	0	1.3
11	0	0	0	9.2	0.0	0.0	5.7	1.0	0.2	1.8	0	0
12	0	0	0	13.0	0.0	0.0	15.1	0.1	1.6	20.5	0	0
13	0	11.5	0	0.0	0.0	0.0	0.2	4.1	0.0	17.1	0	0
14	0	2.9	0	0.0	0.0	0.0	18.2	6.5	1.1	8.8	0.1	0
15	0	1.6	0	0.0	0.0	2.3	0.0	5.5	1.1	0	2.8	8.4
16	0	0	0	0.0	0.0	0.1	4.1	2.6	5.0	0	6.4	0
17	0	7.8	0	0.0	0.0	1.3	4.3	13.8	8.4	1.6	5.4	0
18	0	10.1	0	0.0	0.0	0.2	7.4	29.6	2.5	0.4	0	0
19	0	0.1	0	0.0	0.1	0.1	5.6	4.7	26.5	0	0.4	1.3
20	0	0.7	0	0.0	2.2	1.0	0.5	0.7	8.1	0.9	1.3	14.6
21	0	0	0	0.0	6.2	0.4	0.0	1.8	0.6	0.2	0.1	0.9
22	0.2	0	0	0.0	9.5	4.1	0.0	0.1	6.7	0	20.4	1.9
23	2	0	0	0.0	0.0	0.7	0.0	2.7	0.0	0.1	0.5	0.2
24	0	0	3.8	0.0	0.0	24.1	14.5	0.1	0.0	0	1.6	0.4
25	0	0	12.6	0.0	0.0	13.1	0.1	12.0	0.0	0	0.1	4.4
26	1.9	0	0	0.0	0.0	20.9	0.0	0.0	6.8	3.4	4.1	0
27	4.3	0	1.9	0.0	0.0	3.3	0.6	0.4	11.6	1.9	0	0
28	0.7	0	0	0.0	0.0	0.4	0.0	10.3	6.5	2.5	0.4	0.6
29	2.5	0	0	0.0	0.0	0.0	0.0	0.2	0.4	4.8		4.8
30	2.8	0	0	0.0	0.0	0.0	5.6	5.0	4.5	1.2		0
31		0		0.0	8.9		4.4		17.60	2		0
Monthly Total (mm)	**22.80**	**49.10**	**18.30**	**51.40**	**49.90**	**72.10**	**105.20**	**148.30**	**150.40**	**183.70**	**68.50**	**75.00**
Annual Total (mm)	**994.70**											

Table 34 No Name Lake Depth Profiling 1 Page(s)

EMS ID: E217018
Site NAME: NO NAME LAKE (NNL) **NO NAME LAKE DEPTH PROFILING SPRING**

Sample Date	16-Apr						22-Apr						29-Apr						6-May						12-May					
Parameter	TEMP.	pH	COND.	% Sat.	D.O.	ORP	TEMP.	pH	COND.	% Sat.	D.O.	ORP	TEMP.	pH	COND.	% Sat.	D.O.	ORP	TEMP.	pH	COND.	% Sat.	D.O.	ORP	TEMP.	pH	COND.	% Sat.	D.O.	ORP
Sample Depth (m)	°C		µS/cm		mg/L	mV	°C		µS/cm		mg/L	mV	°C		µS/cm		mg/L	mV	°C		µS/cm		mg/L	mV	°C		µS/cm		mg/L	mV
1	11.84	6.75	28.60	102.10	11.05	157.20	13.13	7.33	36.10	100.00	10.50	211.90	11.84	7.44	36.90	97.60	10.56	152.60	11.71	7.81	37.70	98.60	103.69	15.80	15.92	7.83	36.70	102.90	10.10	162.20
2	9.92	6.88	28.60	100.80	11.49	150.20	12.89	7.19	36.20	100.00	10.55	217.70	11.75	7.33	36.70	97.30	10.56	152.70	11.74	7.58	37.60	98.20	10.64	152.10	14.66	7.57	37.50	100.10	10.13	156.10
3	7.85	6.88	28.40	99.10	11.81	152.00	8.91	6.82	35.70	101.80	11.78	237.20	10.58	6.93	36.90	97.00	10.74	163.40	11.59	7.49	37.60	97.70	10.63	147.00	14.02	7.41	37.10	98.90	10.32	155.50
4	6.54	6.83	29.20	96.30	11.77	153.60	7.21	6.69	36.30	98.10	11.83	243.90	9.50	6.81	37.60	96.00	11.09	170.80	9.41	7.36	39.20	93.70	10.73	146.40	10.86	7.27	37.00	94.90	10.60	158.00
5	6.02	6.78	30.50	92.00	11.49	155.40	9.33	6.58	37.40	93.10	11.48	249.60	7.80	6.50	38.20	93.80	11.23	185.50	6.98	7.22	39.50	90.50	10.94	148.90	8.30	7.07	38.30	91.60	10.74	164.80
6	5.55	6.74	30.40	92.00	1.11	156.30	5.60	*6.49*	68.90	88.40	11.08	253.40	6.52	*6.25*	39.80	90.10	11.07	194.80	6.37	7.10	40.10	86.70	10.75	151.30	7.10	6.79	38.70	879.00	10.69	176.00
7	5.39	6.71	31.40	92.00	10.96	157.90	5.31	*6.39*	40.20	83.20	10.53	256.60	5.86	*6.09*	39.70	85.70	10.69	202.00	5.99	6.90	40.10	84.70	10.54	154.70	6.25	6.58	39.00	84.90	10.48	180.00
8	5.20	6.68	31.90	92.00	10.74	158.50	5.19	*6.37*	40.80	81.60	10.36	257.30	5.58	*6.00*	40.30	83.30	10.47	205.60	5.94	6.88	40.30	84.10	10.48	156.60	5.97	*6.44*	39.30	83.00	10.32	183.70
9	5.16	6.69	32.10	84.00	10.67	158.60	5.20	*6.33*	40.70	81.20	10.31	258.30	5.43	*6.02*	40.70	81.20	10.26	201.90	5.57	6.80	40.90	82.10	10.33	158.30	5.88	*6.35*	39.40	81.60	10.19	186.90
10	5.15	6.67	32.40	83.50	10.63	160.10	5.14	*6.30*	41.30	80.50	10.23	258.80	5.55	*6.03*	40.50	81.40	10.26	205.90	5.51	6.72	41.50	80.10	10.09	159.70	5.77	*6.18*	39.60	80.50	10.06	193.30
11	5.11	6.63	32.60	83.00	10.57	160.10	5.12	*6.29*	41.60	80.10	10.19	259.30	5.39	*5.91*	40.90	80.00	10.18	206.30	5.43	6.68	41.60	78.90	9.96	161.10	5.73	*6.09*	39.70	79.70	9.99	196.20
12	5.08	6.61	32.80	82.60	10.52	161.50	5.04	*6.25*	43.00	78.70	10.03	260.50	5.29	*5.88*	41.30	79.80	10.10	207.90	5.38	6.59	41.90	78.20	9.89	164.70	5.63	*6.02*	39.90	78.80	9.91	198.40
13	5.06	6.62	33.10	82.10	10.48	162.30	4.95	*6.20*	49.70	76.10	9.51	262.10	5.25	*5.83*	41.80	78.50	9.94	209.40	5.66	6.50	41.90	77.10	9.75	165.40	5.20	*6.01*	40.10	78.20	9.86	199.81
1m from Bottom (BS)	13.00						13.00						13.00						13.00						13.00					

Table 35 Long Lake Depth Profiling 1 Page(s)

EMS ID: E206619

Site NAME: LONG LAKE (LLM)

LONG LAKE DEPTH PROFILING SPRING

Sample Date	16-Apr						22-Apr						29-Apr						6-May						12-May					
Parameter	TEMP.	pH	COND.	% Sat.	D.O.	ORP	TEMP.	pH	COND.	% Sat.	D.O.	ORP	TEMP.	pH	COND.	% Sat.	D.O.	ORP	TEMP.	pH	COND.	% Sat.	D.O.	ORP	TEMP.	pH	COND.	% Sat.	D.O.	ORP
Sample Depth (m)	°C		µS/cm		mg/L	mV	°C		µS/cm		mg/L	mV	°C		µS/cm		mg/L	mV	°C		µS/cm		mg/L	mV	°C		µS/cm		mg/L	mV
1	11.41	6.95	134.80	102.90	11.25	169.90	12.90	7.24	187.50	101.00	10.66	215.70	12.06	7.03	216.50	97.40	10.48	151.10	12.43	7.15	235.80	99.00	10.56	190.30	15.74	7.21	228.80	101.00	10.02	125.50
2	9.83	6.98	160.10	102.50	11.64	170.50	12.70	7.24	201.90	101.90	10.84	216.00	12.01	7.06	217.10	97.40	10.49	151.20	12.35	7.19	179.20	98.50	10.53	188.20	14.77	7.22	240.90	99.60	10.18	123.70
3	8.50	6.95	221.90	100.00	11.64	173.20	9.62	7.19	277.90	101.10	11.51	219.20	11.97	7.06	293.70	97.00	10.48	151.80	12.19	7.22	237.30	98.10	10.52	187.00	12.92	7.21	263.00	97.70	10.34	123.80
4	6.88	6.92	265.30	93.90	11.36	174.60	7.47	7.13	327.60	93.30	11.18	222.30	9.01	6.92	329.80	93.60	11.01	1578.00	8.93	7.13	318.90	91.10	10.11	190.40	8.80	7.09	349.00	87.60	10.24	127.90
5	5.77	6.87	296.50	80.10	9.95	176.10	6.17	7.07	365.00	82.40	10.03	225.00	6.64	6.85	370.90	82.70	9.85	160.50	6.49	7.01	382.30	78.90	9.54	192.40	6.39	6.99	377.30	71.40	8.73	129.90
6	5.38	6.83	207.20	80.10	8.97	177.40	5.53	7.01	381.20	70.30	8.74	227.50	6.17	6.79	387.90	70.20	8.68	162.20	5.63	6.93	396.60	69.00	8.47	193.90	5.59	6.94	384.50	63.90	7.91	131.00
7	5.15	6.80	313.00	80.10	8.06	178.50	5.20	7.00	388.90	65.30	8.24	228.40	5.38	6.75	395.60	62.70	7.80	163.20	5.45	6.87	399.70	61.60	7.70	194.50	5.43	6.90	386.20	59.30	7.44	131.80
8	5.04	6.79	317.00	80.10	7.66	178.50	5.07	6.95	393.50	59.30	7.52	229.40	5.17	6.73	398.30	57.30	7.26	164.00	5.33	6.84	400.10	57.60	7.28	194.40	5.28	6.87	388.30	55.30	6.96	132.60
9	5.00	6.79	318.50	57.90	7.38	178.90	5.04	6.93	395.60	57.40	7.29	229.00	5.14	6.71	399.30	55.90	7.08	164.80	5.12	6.79	404.40	54.20	6.89	194.70	5.22	6.84	389.10	53.30	6.73	133.10
10	4.97	6.78	319.00	56.50	7.17	178.90	5.00	6.92	397.70	55.20	7.02	230.20	5.08	6.69	400.10	54.40	6.92	165.70	5.14	6.87	405.50	58.80	7.43	182.80	5.18	6.83	389.30	52.40	6.65	133.60
11	4.95	6.77	320.80	54.70	6.78	179.00	4.98	6.91	398.80	53.60	6.82	230.90	5.03	6.68	402.60	52.10	6.59	166.20	5.08	6.83	406.30	54.00	6.96	183.90	5.12	6.82	389.40	52.00	6.61	134.00
12	4.93	6.76	321.90	52.20	6.66	179.10	4.93	6.89	400.20	52.30	6.63	231.20	5.01	6.67	403.10	50.90	6.50	166.90	5.05	6.80	406.90	52.60	6.70	184.80	5.08	6.81	390.20	51.10	6.49	134.50
13	4.91	6.76	322.30	52.20	6.66	179.10	4.91	6.88	401.70	49.80	6.33	231.70	5.00	6.65	403.10	50.50	6.42	167.40	5.00	6.79	408.00	50.90	6.17	185.00	5.06	6.80	391.00	49.90	6.35	135.00
14	4.88	6.76	323.70	50.30	6.43	179.00	4.90	6.85	402.50	48.10	6.12	232.10	4.95	6.64	404.50	49.10	6.24	168.00	4.98	6.73	408.10	48.02	6.00	185.20	5.04	6.79	391.50	49.10	6.24	135.40
15	4.89	6.75	323.80	49.00	6.25	178.80	4.90	6.85	402.80	47.00	6.00	232.50	4.93	6.62	406.10	46.70	5.92	168.60	4.95	6.77	409.20	47.50	5.87	185.70	5.02	6.78	392.30	47.80	6.02	135.80
16	4.88	6.75	324.20	48.60	6.22	178.90	4.90	6.85	403.20	46.70	5.97	232.40	4.92	6.61	406.20	44.90	5.71	169.40	4.95	6.77	409.26	46.91	5.74	185.71	4.99	6.77	392.00	46.20	5.82	136.30
17	4.88	6.75	324.60	48.20	6.17	178.70	4.90	6.85	403.30	46.30	5.91	232.60	4.92	6.59	406.40	43.20	5.49	170.20	4.95	6.77	409.30	45.18	5.42	186.81	4.97	6.76	393.00	44.40	5.64	136.70
18	4.88	6.73	324.90	47.50	6.07	178.80	4.90	6.84	403.50	45.80	5.85	232.80	4.92	6.58	406.60	42.70	5.45	170.60	4.95	6.76	409.35	44.00	5.00	186.79	4.96	6.75	393.10	42.60	5.42	137.40
19	4.89	6.61	326.10	44.00	5.55	171.10	4.90	6.83	403.70	45.20	5.78	232.00	4.92	6.57	406.70	41.50	5.29	171.20	4.96	6.77	410.80	42.50	4.78	188.12	4.95	6.74	394.00	40.20	5.13	137.70
20							4.90	6.68	403.80	42.50	5.40	237.50	4.93	6.53	407.40	34.70	4.23	107.10												
1m from Bottom (BS)	BS= 19m						BS=20m						BS=20m						BS= 19m						BS= 19m					

LONG LAKE DEPTH PROFILING SUMMER

Sample Date	9-Jul						15-Jul						22-Jul						29-Jul						5-Aug					
Parameter	TEMP.	pH	COND.	% Sat.	D.O.	ORP	TEMP.	pH	COND.	% Sat.	D.O.	ORP	TEMP.	pH	COND.	% Sat.	D.O.	ORP	TEMP.	pH	COND.	% Sat.	D.O.	ORP	TEMP.	pH	COND.	% Sat.	D.O.	ORP
Sample Depth (m)	Celcius		µS/cm		mg/L	mV	Celcius		µS/cm		mg/L	mV	Celcius		µS/cm		mg/L	mV	Celcius		µS/cm		mg/L	mV	Celcius		µS/cm		mg/L	mV
1	18.70	7.90	197.80	94.60	9.70	123.00	19.45	7.75	179.00	99.60	9.16	165.70	22.30	7.42	197.30	98.80	8.58	198.50	21.84	7.44	202.20	97.40	8.53	154.00	22.19	7.26	186.10	98.50	8.57	208.50
2	18.80	7.82	198.10	94.20	8.80	121.00	18.85	7.67	182.40	98.20	9.13	158.30	21.35	7.36	19.40	99.00	8.74	198.10	21.78	7.43	201.90	96.50	8.47	152.20	22.11	7.26	186.50	97.50	8.50	201.90
3	18.51	7.71	200.16	94.30	9.20	122.40	18.30	7.62	173.70	96.30	9.05	153.70	20.02	7.30	196.50	97.50	8.89	198.80	20.79	7.32	210.60	95.60	8.56	153.20	21.88	7.26	188.90	96.10	7.43	200.40
4	15.26	7.61	302.10	95.90	9.56	129.00	16.69	7.34	244.50	94.60	9.22	158.30	17.84	7.20	255.50	94.30	9.05	204.50	17.73	7.03	284.80	95.80	9.14	158.70	19.56	7.17	248.40	95.80	8.70	204.50
5	11.30	7.37	368.20	86.50	9.60	134.70	11.98	7.18	321.00	91.60	9.84	162.60	12.66	7.02	360.50	91.30	9.75	213.00	13.30	6.95	362.10	94.40	9.84	163.30	14.18	7.00	326.10	94.90	9.79	209.60
6	8.80	7.32	377.20	79.00	9.16	137.60	8.62	7.10	334.80	76.10	8.87	163.80	9.82	6.86	370.50	86.00	9.75	216.80	9.98	6.91	377.00	82.00	9.20	164.40	10.20	6.85	341.00	82.60	9.22	213.10
7	7.20	7.23	381.00	67.70	8.03	142.00	7.58	7.03	338.20	66.10	7.90	164.20	7.69	6.73	375.20	66.00	7.84	219.30	7.77	6.84	380.20	63.30	7.50	166.00	8.62	6.73	346.20	69.40	8.06	215.80
8	6.19	7.10	383.40	54.10	6.66	146.50	6.56	6.98	340.60	55.70	6.83	164.60	6.57	6.63	378.60	53.30	6.51	220.50	6.87	6.81	382.40	54.80	6.65	166.40	6.88	6.57	347.50	53.90	6.53	218.70
9	5.99	7.04	384.00	51.20	6.40	148.10	6.06	6.94	341.80	52.20	6.47	164.80	6.29	6.60	378.60	52.20	6.60	220.30	6.45	6.78	383.80	50.50	6.29	166.90	6.18	*6.47*	347.60	49.50	6.11	220.10
10	5.77	7.00	384.40	48.00	6.11	149.10	5.77	6.92	342.50	50.00	6.42	164.40	5.80	6.58	379.90	47.60	5.92	220.50	5.98	6.76	383.50	46.40	5.77	167.30	5.91	*6.41*	349.10	41.20	5.14	219.70
11	5.56	6.98	385.90	44.90	5.62	150.10	5.61	6.89	343.10	46.90	5.90	164.30	5.60	6.55	381.00	42.60	5.32	220.60	5.84	6.74	384.90	42.70	5.31	167.50	5.78	*6.39*	349.40	38.90	4.80	219.80
12	5.45	6.98	386.00	42.90	5.40	150.50	5.51	6.87	343.50	44.80	5.57	164.00	5.66	6.54	381.60	41.10	5.16	220.70	5.63	6.73	384.90	40.70	5.11	167.60	5.67	*6.37*	349.60	38.80	4.87	219.70
13	5.35	6.98	386.90	41.00	5.16	150.90	5.41	6.85	344.40	39.70	4.97	163.80	5.45	6.52	382.20	37.70	4.74	220.70	5.48	6.71	385.30	38.20	4.63	167.60	5.51	*6.35*	349.80	35.20	4.43	219.90
14	5.25	6.98	385.60	37.90	4.80	196.30	5.28	6.83	344.60	36.70	4.63	163.90	5.32	6.50	338.70	34.70	4.34	220.60	5.24	6.68	386.70	27.00	3.42	167.90	5.32	*6.32*	350.30	30.30	3.83	220.40
15	5.16	6.98	386.50	33.30	4.20	195.40	5.20	6.81	345.50	31.50	4.00	163.80	5.26	*6.49*	383.10	31.60	3.98	220.50	5.24	6.67	387.00	26.70	3.37	168.00	5.27	*6.30*	351.00	25.80	3.26	220.40
16	5.12	6.98	387.00	301.00	3.80	194.20	5.16	6.79	345.90	28.60	3.62	164.00	5.18	*6.46*	383.30	26.10	3.31	220.20	5.20	6.66	387.10	23.80	3.04	168.10	5.21	*6.28*	351.20	22.50	*2.85*	219.90
17	5.11	6.98	387.10	27.60	3.50	193.10	5.14	6.78	345.90	26.80	3.40	164.10	5.15	*6.45*	383.70	23.60	3.08	219.40	5.18	6.65	387.30	22.20	*2.81*	168.20	5.19	*6.27*	351.50	19.30	*2.44*	220.30
18	5.10	6.98	387.30	26.20	3.33	192.10	5.12	6.77	346.20	24.70	3.14	163.60	5.15	*6.44*	383.80	22.50	*2.88*	219.50	5.17	6.65	387.50	21.70	*2.70*	168.50	5.18	*6.26*	351.90	17.70	*2.25*	220.00
19	5.10	6.95	387.00	24.70	3.14	194.30	5.12	6.76	346.50	22.90	*2.90*	163.70	5.14	*6.44*	384.00	21.00	*2.67*	219.30	5.16	6.64	388.10	19.10	*2.41*	168.90	5.18	*6.27*	352.40	16.60	*2.11*	219.50
20	5.10	6.82	387.60	23.60	3.00	191.00	5.12	6.75	346.80	22.30	*2.83*	163.80	5.14	*6.43*	384.20	20.20	*2.56*	219.30	5.16	6.63	388.60	18.00	*2.29*	169.00	5.17	*6.27*	352.60	15.40	*1.97*	219.30
1m from Bottom (BS)	5.10	6.67	396.50	17.40	*2.10*	192.30	5.12	6.73	357.20	8.40	*1.10*	160.40	5.14	*6.37*	385.90	17.70	*2.21*	201.30	5.16	6.67	389.00	16.80	*2.14*	141.00	5.17	*6.25*	357.20	10.80	*1.36*	166.80
	BS=21m						BS=21m						BS=21m						BS=21m						BS=21m					

LONG LAKE DEPTH PROFILING FALL

Sample Date	7-Oct						15-Oct						21-Oct						28-Oct						5-Nov					
Parameter	TEMP.	pH	COND.	% Sat.	D.O.	ORP	TEMP.	pH	COND.	% Sat.	D.O.	ORP	TEMP.	pH	COND.	% Sat.	D.O.	ORP	TEMP.	pH	COND.	% Sat.	D.O.	ORP	TEMP.	pH	COND.	% Sat.	D.O.	ORP
Sample Depth (m)	°C		µS/cm		mg/L	mV	°C		µS/cm		mg/L	mV	ºC		µS/cm		mg/L	mV	ºC		µS/cm		mg/L	mV	ºC		µS/cm		mg/L	mV
1	16.11	7.44	266.20	95.20	9.37	177.70	13.25	7.23	277.10	90.70	9.49	191.70	11.50	6.64	240.40	97.20	10.48	200.20	9.40	7.03	232.20	88.70	10.13	134.80	8.56	6.93	128.10	88.00	10.43	190.30
2	16.07	7.37	265.00	94.70	9.32	177.60	13.26	7.21	214.90	90.30	9.46	191.80	11.60	6.53	241.50	91.60	9.94	194.30	9.36	6.87	232.60	87.50	10.03	137.70	8.68	6.83	145.30	89.00	10.33	189.10
3	16.06	7.27	264.90	94.30	9.29	179.50	13.26	7.23	277.40	90.10	9.43	191.40	11.60	6.51	241.10	90.60	9.83	193.30	9.35	6.86	232.40	87.90	10.06	137.50	8.75	6.80	156.80	88.40	10.26	189.40
4	16.04	7.21	265.40	94.10	9.27	180.10	13.24	7.22	276.60	90.00	9.42	191.30	11.65	6.50	243.50	90.00	9.76	193.50	9.35	6.84	233.40	87.30	10.00	137.10	8.86	6.77	170.20	87.80	10.17	189.60
5	15.87	7.16	274.00	92.20	9.12	181.50	13.23	7.23	275.90	89.80	9.41	191.10	11.63	6.50	240.20	89.30	9.70	193.60	9.32	6.82	231.50	86.80	9.95	139.10	8.86	6.76	173.60	87.20	10.10	189.70
6	13.59	6.89	386.70	82.20	8.58	190.90	13..22	7.22	276.10	80.70	9.40	190.70	11.61	6.50	237.00	89.00	9.67	193.90	9.29	6.81	250.50	86.10	9.88	140.20	8.77	6.72	180.20	86.90	10.10	190.00
7	11.04	6.74	389.40	68.00	7.48	193.60	12.26	7.11	338.60	81.70	8.74	195.00	11.43	*6.43*	223.50	84.00	9.17	197.40	8.89	6.77	289.40	81.20	9.37	142.70	8.78	6.66	197.30	85.60	9.89	190.70
8	8.51	6.66	393.00	50.40	5.84	194.40	9.28	6.89	398.00	53.10	6.03	199.30	9.70	*6.24*	392.90	53.40	6.10	202.10	7.88	6.62	266.40	56.10	6.50	147.70	8.77	6.60	215.40	81.70	9.50	190.20
9	7.25	6.64	393.00	44.40	5.34	194.10	7.78	6.68	398.80	44.10	5.24	200.90	7.95	*6.19*	392.20	44.30	5.23	202.70	7.77	6.55	397.80	47.00	5.54	148.50	8.41	*6.29*	316.50	43.50	5.12	195.20
10	6.62	6.60	394.40	39.70	4.77	194.10	6.94	6.67	400.70	39.20	4.74	200.70	6.89	*6.14*	392.90	38.90	4.72	203.00	6.95	*6.45*	398.70	39.40	4.77	149.10	7.07	*6.27*	328.30	37.40	4.47	194.70
11	6.33	6.54	394.20	32.60	4.00	194.40	6.54	6.64	400.60	37.40	4..56	201.60	6.49	*6.10*	393.60	34.60	4.23	202.50	6.51	*6.41*	399.80	35.70	4.37	149.80	6.78	*6.23*	327.70	32.50	3.94	194.90
12	6.15	6.52	394.60	32.60	4.03	194.20	6.25	6.59	400.90	30.90	3.81	201.10	6.21	*6.09*	394.20	32.30	3.99	202.00	6.26	*6.38*	400.40	32.20	3.95	150.10	6.36	*6.21*	328.10	30.30	3.62	194.50
13	5.90	*6.49*	395.00	28.20	3.51	194.50	6.00	6.58	401.80	28.50	3.53	201.20	6.04	*6.08*	393.90	30.30	3.75	201.40	6.03	*6.36*	400.70	29.50	3.65	150.40	6.13	*6.20*	328.10	26.30	3.25	194.10
14	5.66	*6.44*	395.60	22.50	2.81	195.20	5.81	6.58	401.90	24.60	3.05	200.60	5.86	*6.08*	394.10	26.60	3.30	200.90	5.82	*6.35*	400.80	26.40	3.19	150.40	5.87	*6.18*	328.20	22.40	*2.83*	193.60
15	5.49	*6.38*	396.40	15.70	7.96	195.60	5.63	6.56	402.30	20.80	*2.56*	201.10	5.69	*6.07*	394.50	22.40	*2.80*	200.60	5.67	*6.33*	401.00	22.70	*2.82*	150.70	5.69	*6.16*	328.50	18.20	*2.31*	193.30
16	5.43	*6.38*	397.60	11.40	*1.44*	193.30	5.51	6.54	404.00	17.10	*2.11*	202.30	5.50	*6.05*	249.00	14.70	*1.84*	201.50	5.56	*6.31*	402.60	16.10	*2.01*	152.10	5.56	*6.15*	330.70	11.80	*1.47*	193.10
17	5.40	*6.37*	398.50	10.90	*1.36*	193.40	5.44	6.53	405.30	13.60	*1.67*	202.80	5.43	*6.04*	398.80	10.60	*1.33*	201.70	5.45	*6.28*	405.00	12.90	*1.61*	153.00	5.52	*6.15*	331.00	10.40	*1.30*	192.60
18	5.38	*6.34*	399.90	8.80	*1.11*	193.60	5.42	6.52	406.50	10.90	*1.36*	203.00	5.40	*6.04*	400.20	8.10	*1.02*	201.50	5.42	*6.27*	407.30	9.90	*1.23*	153.90	5.45	*6.15*	333.50	7.30	*0.94*	192.80
19	5.36	*6.35*	400.50	7.80	*0.99*	192.90	5.39	6.50	408.10	8.70	*1.08*	203.20	5.40	*6.03*	400.70	7.40	*0.92*	201.10	5.41	*6.28*	408.40	7.70	*0.97*	153.40	5.44	*6.15*	334.30	6.00	*0.75*	192.60
20	5.36	*6.35*	401.60	7.10	*0.89*	192.80	5.38	6.50	408.90	7.80	*0.98*	202.90	5.39	*6.02*	401.90	6.50	*0.82*	200.90	5.41	*6.27*	408.60	7.00	*0.89*	153.20	5.42	*6.16*	335.30	5.00	*0.63*	192.40
21	5.35	*6.32*	405.00	5.80	*0.73*	183.60	5.38	6.50	409.60	7.10	*0.90*	202.60	5.39	*6.02*	403.30	6.02	*0.75*	201.00	5.40	*6.27*	410.80	6.30	*0.80*	153.50	5.42	*6.16*	335.80	4.60	*0.58*	192.00
21.5							5.38	*6.48*	410.30	6.60	*0.84*	163.20	5.38	*5.91*	409.60	5.20	*0.66*	99.90	5.39	*6.17*	421.00	5.50	*0.69*	153.00	5.41	*5.78*	348.40	4.10	*0.52*	182.20
1m from Bottom (BS)																									5.41	*5.86*	351.20	4.00	*0.50*	120.40
	BS= 21m						BS=21.5m						BS=21.5m						BS=18.5m						BS=22m					

WQG-Max / Min *pH. 6.5 - 9.0* *Hypolimnetic DO minimum 3 mg/L June -August*

Table 36 Middle Quinsam Lake Depth Profiling 1 Page(s)

EMS ID E206618

Site NAME: MIDDLE QUINSAM LAKE (MQL)

MIDDLE QUINSAM LAKE DEPTH PROFILING SPRING

Sample Date	16-Apr						22-Apr						29-Apr						6-May						12-May					
Parameter	TEMP.	pH	COND.	% Sat.	D.O.	ORP	TEMP.	pH	COND.	% Sat.	D.O.	ORP	TEMP.	pH	COND.	% Sat.	D.O.	ORP	TEMP.	pH	COND.	% Sat.	D.O.	ORP	TEMP.	pH	COND.	% Sat.	D.O.	ORP
Sample Depth (m)	°C		µS/cm		mg/L	mV	°C		µS/cm		mg/L	mV	°C		µS/cm		mg/L	mV	°C		µS/cm		mg/L	mV	°C		µS/cm		mg/L	mV
1	12.639	7.52	99.7	103.9	11.09	167.7	13.5	7.4	126.1	100.2	10.44	196.1	12.057	7.34	128.30	99.1	10.6	106	12.52	7.52	129	99.4	10.66	164.2	16.67	7.56	126	103.0	10.02	138.1
2	11.442	7.46	95.5	105.1	11.47	158.5	13.449	7.4	126.2	100.2	10.45	196	12.052	7.35	128.30	98.2	10.61	105.6	12.10	7.51	129	99.4	10.67	165.0	15.16	7.57	128	103.0	10.37	134.5
3	10.224	7.43	96.8	103.9	11.69	158.9	12.797	7.41	128.3	100.6	10.76	196.1	11.761	7.38	127.90	98	10.62	107.5	12.06	7.51	130	99.3	10.68	165.2	14.22	7.57	126	102.2	10.58	134.5
4	9.007	7.43	107.8	103.1	11.94	157.6	10.695	7.41	134.6	100.8	11.33	196.1	11.474	7.37	128.30	98.5	10.74	109.5	11.95	7.51	129	99.2	10.70	164.6	13.63	7.59	124	103.8	10.84	133.8
5	8.109	7.42	116.5	103.5	12.25	157.2	8.998	7.43	141.1	104.3	12.08	196.2	10.597	7.36	132.30	98.3	11.17	110.8	11.87	7.51	129	99.0	10.70	164.9	13.01	7.60	125	102.4	10.93	133.4
6	7.528	7.43	118	103.5	12.42	155.9	7.607	7.45	147.7	103.3	12.38	196.2	9.184	7.37	143.60	102.1	11.9	12.6	10.99	7.51	133	99.5	10.95	165.1	11.72	7.60	127	102.5	11.18	133.4
7	6.943	7.44	118.6	103.5	12.58	154.5	7.187	7.44	147.9	102.5	12.38	196.6	7.781	7.37	149.50	102.3	12.26	113.7	9..725	7.50	105	101.2	11.52	165.6	9.71	7.58	137	105.3	11.96	135.0
8	6.244	7.43	118.2	103.5	12.53	154.4	6.719	7.43	147.9	102.2	12.51	197.3	7.336	7.36	150.20	102.1	12.41	114.9	8.25	7.49	150	102.6	12.17	166.0	7.94	7.57	146	103.9	12.35	136.2
9	5.098	7.42	118.9	101.1	12.56	153.7	6.347	7.43	148.7	101.1	12.47	197.3	6.83	7.35	150.70	101.4	12.4	115.9	7.50	7.48	152	101.5	12.28	166.4	7.45	7.55	148	102.9	12.44	137.1
10	5.929	7.41	119	100.4	12.52	153	6.066	7.4	150.2	99	12.29	198.4	6.424	7.34	151.90	99.2	12.2	116.4	6.67	7.45	154	99.3	12.15	167.1	7.06	7.53	148	102.4	12.48	137.7
11	5.752	7.40	120.7	99.3	12.42	152.6	5.97	7.37	151.3	97.5	12.13	199.3	6.214	7.29	153.50	97.3	12.04	118.9	6.49	7.40	155	97.7	11.97	167.3	6.74	7.50	150	99.5	12.14	138.0
12	5.701	7.33	121.3	98.4	12.34	152.7	5.945	7.36	150.9	97.4	12.15	199.6	6.209	7.28	153.90	96.6	11.95	119.6	6.43	7.38	156	96.6	11.88	167.9	6.63	7.48	150	98.5	12.11	138.6
13	5.666	7.37	121.8	98	12.3	152.4	5.885	7.34	154.4	96	11.98	200.3	6.129	7.25	155.80	94.9	11.74	120.7	6.39	7.37	156	95.8	11.81	167.7	6.60	7.47	150	98.1	12.03	138.7
14	5.487	6.89	373	30.1	3.52	168.3							6.108	6.97	208.40	71.7	8.68	129.9	6.32	7.19	169	78.1	9.65	171.2	6.50	7.15	223	73.6	9.01	131.5
1m from Bottom (BS)	BS=14m						BS=13m						BS=14m						BS=14m						BS=14.00m					

MIDDLE QUINSAM LAKE DEPTH PROFILING SUMMER

Sample Date	9-Jul						15-Jul						22-Jul						29-Jul						5-Aug					
Parameter	TEMP.	pH	COND.	% Sat.	D.O.	ORP	TEMP.	pH	COND.	% Sat.	D.O.	ORP	TEMP.	pH	COND.	% Sat.	D.O.	ORP	TEMP.	pH	COND.	% Sat.	D.O.	ORP	TEMP.	pH	COND.	% Sat.	D.O.	ORP
Sample Depth (m)	Celcius		µS/cm		mg/L	mV	Celcius		µS/cm		mg/L	mV	Celcius		µS/cm		mg/L	mV	Celcius		µS/cm		mg/L	mV	Celcius		µS/cm		mg/L	mV
1	19.20	7.71	172.60	101.70	9.38	128.60	20.45	8.03	143.40	106.00	9.56	36 .5	23.11	7.77	132.30	105.50	9.03	153.50	22.62	7.94	145.10	105.20	9.08	130.80	23.06	7.70	141.60	104.10	8.92	176.40
2	19.20	7.64	172.50	101.70	9.39	124.70	19.94	8.01	143.50	105.10	9.57	40.10	22.40	7.78	133.30	104.60	9.06	153.20	22.51	7.96	145.00	104.70	9.06	130.80	22.76	7.76	141.40	104.50	9.00	171.00
3	19.26	7.88	172.30	101.80	9.40	123.80	19.42	7.99	145.00	106.00	9.75	42.50	22.14	7.78	132.00	106.60	9.32	153.00	22.43	7.98	144.80	104.00	9.01	131.10	22.66	7.76	141.50	103.60	8.94	170.50
4	19.11	7.92	171.60	101.10	9.35	122.50	19.11	7.97	143.90	104.00	9.62	45.20	20.61	7.83	151.00	108.90	9.79	152.70	21.95	7.92	150.90	108.10	9.47	133.30	22.36	7.72	142.00	103.40	8.98	171.40
5	18.81	7.68	171.00	101.40	9.44	123.20	18.81	7.93	144.20	192.90	9.58	47.60	19.90	7.76	154.90	105.70	9.62	153.60	20.83	7.96	160.20	109.00	9.75	133.00	21.93	7.69	146.10	106.40	9.35	171.90
6	18.52	7.86	167.70	101.50	9.68	123.50	18.22	7.89	144.10	104.20	9.82	50.20	19.23	7.72	159.60	102.30	9.44	154.60	19.51	7.91	162.90	102.50	9.42	134.70	19.94	7.69	147.80	104.20	9.49	172.10
7	14.08	7.91	141.00	113.00	11.72	122.40	15.81	7.85	129.80	110.90	11.10	52.80	15.28	7.68	139.90	117.30	11.77	155.90	16.89	7.83	154.60	111.50	10.68	136.80	16.93	7.68	134.00	116.90	11.33	172.90
8	11.83	7.89	143.90	114.90	12.51	124.10	13.06	7.85	127.50	116.70	12.39	58.00	12.62	7.69	143.30	117.70	12.57	156.10	14.03	7.84	143.70	119.60	12.41	137.10	14.81	7.67	132.20	121.40	12.59	172.40
9	9.11	7.87	147.70	109.90	12.44	126.00	10.10	7.60	132.20	111.30	12.56	71.80	10.31	7.60	146.80	111.30	12.45	158.70	11.08	7.77	148.20	112.90	12.40	140.10	11.63	7.68	135.60	113.80	12.40	175.80
10	9.16	7.80	150.30	103.60	11.99	130.30	9.09	7.53	134.80	104.20	11.99	75.20	9.35	7.40	149.90	11.74	102.40	162.20	9.83	7.63	151.70	105.10	11.88	142.20	9.82	7.44	138.90	101.70	11.51	180.10
11	8.63	7.66	151.10	101.00	11.75	131.10	8.67	7.45	136.00	98.50	11.47	79.70	9.06	7.37	151.00	99.70	11.48	162.90	9.42	7.53	154.00	96.70	11.10	144.20	9.37	7.29	140.30	92.00	10.55	183.70
12	8.36	7.60	125.40	95.30	11.18	132.60	8.52	7.35	136.70	95.70	11.18	83.40	8.80	7.33	152.10	95.00	10.98	163.90	8.98	7.45	154.70	92.00	10.62	145.70	9.11	7.79	141.10	88.20	10.14	185.20
13	8.34	7.47	152.20	92.40	10.85	134.20	8.45	7.28	137.40	93.00	10.01	85.50	8.71	7.29	152.40	92.70	10.77	164.80	8.89	7.40	155.30	88.70	10.27	147.30	8.96	7.11	142.20	82.20	9.48	186.70
14	8.20	7.52	155.10	85.40	10.03	134.20	8.36	7.21	139.50	84.30	9.87	88.40	8.63	7.26	153.70	89.40	10.34	165.50	8.88	7.36	155.50	87.30	10.17	148.10	8.89	7.04	143.40	74.30	8.59	188.30
1m from Bottom (BS)	BS=14m						BS=14m						BS=14m						BS=14m						BS=14m					

MIDDLE QUINSAM LAKE DEPTH PROFILING FALL

Sample Date	7-Oct						15-Oct						21-Oct						28-Oct						5-Nov					
Parameter	TEMP.	pH	COND.	% Sat.	D.O.	ORP	TEMP.	pH	COND.	% Sat.	D.O.	ORP	TEMP.	pH	COND.	% Sat.	D.O.	ORP	TEMP.	pH	COND.	% Sat.	D.O.	ORP	TEMP.	pH	COND.	% Sat.	D.O.	ORP
Sample Depth (m)	ºC		µS/cm		mg/L	mV	ºC		µS/cm		mg/L	mV	ºC		µS/cm		mg/L	mV	ºC		µS/cm		mg/L	mV	ºC		µS/cm		mg/L	mV
1	16.821	7.33	158.5	96.8	9.39	166.6	13.5	7.42	170	89.9	9.37	173	9.891	7.06	167.30	87.80	9.92	130.1	12.073	6.93	167	88.80	9.55	124.3	9.45	6.97	135	88.9	10.16	147.5
2	16.759	7.32	158.5	96.8	9.40	166.5	13.469	7.44	168.7	89.9	9.36	172.5	9.856	7.06	167.10	87.40	9.90	132.6	12.077	6.91	167	88.80	9.55	125.2	9.42	6.96	135	88.7	10.15	147.5
3	16.744	7.31	158.5	96.6	9.38	166.2	13.48	7.44	169.9	89.8	9.35	172.5	9.83	7.06	167.00	87.20	9.88	135.7	12.061	6.92	167	88.80	9.55	125.1	9.41	6.96	125	88.7	10.15	147.9
4	16.733	7.32	158.5	96.5	9.38	166.3	13.477	7.44	168.9	89.7	9.35	172.5	9.811	7.06	166.90	87.10	9.88	137.7	12.055	6.92	167	88.70	9.54	124.7	9.40	6.95	135	88.6	10.14	148.2
5	16.673	7.28	158.7	94.4	9.19	166.6	13.481	7.45	169.9	89.7	9.35	171.9	9.793	7.06	166.90	87.00	9.86	138.7	12.049	6.92	167	88.70	9.54	124.2	9.40	6.94	135	88.5	10.13	148.7
6	16.612	7.27	159.6	94	9.15	166.8	13.48	7.44	169.9	89.7	9.34	172.2	9.782	7.06	166.90	87.00	9.86	139.7	12.048	6.92	167	88.60	9.50	123.9	9.39	6.94	135	88.5	10.13	148.7
7	16.507	7.24	159.3	92.3	9.00	167.3	13.468	7.45	169.8	89.5	9.33	171.7	9.78	7.06	167.00	87.00	9.86	141.7	12.04	6.92	167	88.50	9.53	124.3	9.39	6.93	135	88.4	10.13	149.0
8	16.372	7.22	159.6	89.9	8.80	167.6	13.457	7.43	170	89.4	9.32	171.2	9.779	7.06	167.10	87.00	9.86	142.2	12.035	6.92	167	88.50	9.52	123.5	9.39	6.93	135	88.4	10.12	149.3
9	15.153	7.08	160.2	82.2	8.30	169.6	13.446	7.43	170	89.2	9.30	171.8	9.777	7.06	167.20	87.00	9.85	143.1	12.036	6.91	167	88.40	9.52	123.7	9.39	6.93	135	88.4	10.12	149.5
10	12.282	6.83	162.5	78.3	8.39	175.2	13.415	7.42	171.6	88.6	9.25	171.7	9.771	7.06	167.10	86.60	9.83	143.9	12.035	6.92	167	88.40	9.52	124.6	9.39	6.92	135	88.4	10.12	149.8
11	10.763	6.70	165.5	60.9	6.77	177.8	13.274	7.39	171	87	9.10	172.2	9.73	7.03	167.10	86.10	9.80	144.7	12.029	6.91	167	88.30	9.51	124.5	9.38	6.92	135	88.4	10.12	149.8
12	9.811	6.52	173.8	34.1	3.88	182	12.545	7.16	172	71.6	7.64	174.6	9.657	7.03	167.00	86.00	9.77	145.6	11.602	6.78	180	76.50	8.31	128.2	9.38	6.92	135	88.4	10.12	149.9
13	9.545	6.51	179.7	20.4	*2.35*	183.8	9.719	6.88	187.1	23.7	*2.72*	181.2	9.639	7.02	167.00	85.70	9.75	146.4	11.317	6.71	174	72.30	8.01	128.2	9.37	6.91	136	88.3	10.11	150.1
14	9.325	6.51	204	6.5	*0.75*	183.4	9.458	6.84	200	12.5	*1.40*	183.6	9.629	7.01	166.80	85.20	9.69	47.1	9.406	6.53	198	12.90	*1.44*	136.3	9.36	6.91	137	87.0	10.08	150.1
14.5																			9.255	*6.28*	227	7.30	*0.82*	17.0	9.37	*6.40*	259	65.7	6.53	131.9
1m from Bottom (BS)	BS=14m						BS=14m						BS=14m						BS=14.5m						BS=14.5m					

WQG-Max / Min pH 6.5 -9.0 Hypolimnetic DO minimum 3 mg/L June -August

Table 37 Lower Quinsam Lake Depth Profiling 1 Page(s)

EMS ID E292118 **LOWER QUINSAM LAKE DEPTH PROFILING SPRING**

Site NAME: LOWER QUINSAM LAKE (LQL)

Sample Date	15-Apr						22-Apr						1-May						5-May						13-May					
Parameter	TEMP.	pH	C	% Sat.	D.O.	ORP	TEMP.	pH	C	% Sat.	D.O.	ORP	TEMP.	pH	C	% Sat.	D.O.	ORP	TEMP.	pH	C	% Sat.	D.O.	ORP	TEMP.	pH	C	% Sat.	D.O.	ORP
Sample Depth (m	°C		µS/cm		mg/L	mV	°C		µS/cm		mg/L	mV	°C		µS/cm		mg/L	mV	°C		µS/cm		mg/L	mV	°C		µS/cm		mg/L	mV
1	9.88	7.54	145.00	104.20	11.78	117.80	11.47	7.52	107.20	102.30	11.15	219.30	10.97	7.63	108.00	100.80	11.12	135.20	10.66	7.15	108.10	99.60	11.06	143.2	14.03	7.67	94.20	101.40	10.45	135.60
2	9.48	7.39	145.00	103.50	11.81	123.60	10.83	7.45	105.40	103.70	11.09	218.20	10.42	7.56	108.30	99.70	11.13	137.20	10.50	7.06	108.20	99.10	11.70	146.3	12.18	7.61	97.30	100.40	10.78	130.00
3	8.35	7.17	144.20	100.50	11.79	132.20	9.57	7.43	105.80	99.40	11.34	217.60	10.32	7.52	108.00	98.70	11.08	138.10	10.40	7.03	108.10	98.60	11.06	148.0	11.66	7.54	98.00	99.80	10.84	130.10
4	8.07	7.14	142.90	99.30	11.80	133.20	9.19	7.40	106.40	99.00	11.39	218.60	9.92	7.47	107.80	98.00	11.07	138.00	9.99	6.94	107.90	97.80	11.04	152.0	11.35	7.50	98.50	99.70	10.92	139.60
5	7.53	7.06	142.90	98.50	11.79	136.10	8.89	7.38	107.70	98.50	11.41	218.10	9.92	7.44	107.60	97.90	11.06	138.90	9.94	6.90	108.00	97.40	11.04	153.9	10.97	7.46	102.30	99.80	11.01	141.90
6	7.01	6.99	143.00	98.50	11.80	136.70	8.67	7.37	109.10	98.80	11.51	218.00	9.66	7.42	108.10	97.20	11.05	138.60	9.70	6.88	108.40	97.00	11.00	154.7	10.21	7.41	104.90	98.30	11.03	143.70
7	7.40	6.98	143.10	98.50	11.80	137.00	8.22	7.35	112.60	98.90	11.66	218.90	9.56	7.40	108.40	97.00	11.05	138.40	9.65	6.82	108.70	95.50	10.99	157.6	9.99	7.36	105.20	96.90	10.94	145.50
8	7.24	6.96	145.00	98.50	11.83	137.50	7.66	7.33	115.10	97.80	11.68	219.10	9.30	7.37	110.20	96.40	11.07	138.70	9.56	6.80	109.40	96.10	10.97	159.1	9.59	7.30	105.90	95.70	95.60	147.90
9	7.20	6.94	145.60	98.00	11.87	138.30	7.53	7.31	116.20	96.80	11.66	219.40	8.92	7.34	111.40	95.70	11.09	138.70	9.32	6.75	109.20	95.50	10.96	161.9	9.35	7.23	106.60	94.90	10.87	150.70
10	6.78	6.85	146.50	96.80	11.83	142.80	7.13	7.29	116.60	95.90	11.60	219.60	8.48	7.31	114.00	94.50	11.15	139.10	9.22	6.78	109.90	95.00	10.94	164.3	9.08	7.16	107.30	93.70	10.81	153.50
11	6.62	6.82	146.40	96.30	11.80	144.00	6.88	7.27	117.40	94.80	11.55	220.30	7.71	7.28	116.00	93.50	11.16	139.30	9.07	6.66	110.00	95.00	10.92	166.5	8.73	7.11	108.30	92.50	10.77	155.80
12	6.55	6.81	146.40	95.90	11.77	144.80	6.80	7.26	117.60	94.40	11.52	220.10	7.42	7.26	117.10	92.70	11.15	139.70	7.96	6.61	116.00	91.00	10.81	168.5	8.41	7.06	109.50	91.30	10.72	158.10
13	6.49	6.80	147.00	95.10	11.68	145.20	6.68	7.25	118.40	93.90	11.48	220.50	7.15	7.22	117.60	92.00	11.11	140.70	7.31	6.55	118.70	88.00	10.71	170.2	8.37	7.02	109.60	90.70	10.64	158.90
14	6.32	6.77	147.00	93.70	11.55	146.90	6.56	7.23	118.80	92.60	11.33	220.70	7.05	7.20	118.10	91.20	11.05	141.10	7.17	6.50	119.20	87.20	10.55	170.20	7.82	6.98	112.30	88.20	10.46	160.40
15	6.30	6.75	147.70	92.00	11.38	147.40	6.53	7.22	118.80	91.70	11.26	220.90	6.77	7.16	119.20	89.50	10.91	142.40	7.00	6.50	120.20	85.00	10.36	173.00	7.03	6.77	115.60	80.40	9.74	168.30
16	6.24	6.75	148.00	92.00	11.35	147.50	6.50	7.21	119.10	91.40	11.23	221.10	6.67	7.11	119.80	87.00	10.64	143.50	6.85	6.50	120.70	83.50	10.16	173.20	6.94	6.72	115.80	78.50	9.54	170.20
17	6.22	6.73	147.00	91.40	11.28	148.10	6.49	7.20	119.10	91.20	11.21	221.50	6.57	7.08	119.90	85.20	10.42	144.30	6.77	6.50	120.70	82.00	10.00	174.20	6.90	6.60	116.20	77.10	9.34	171.80
18	6.22	6.61	144.50	90.30	11.16	134.70	6.41	7.18	119.40	89.00	10.92	221.60	6.55	7.04	120.20	83.10	10.13	145.40	6.65	6.50	121.70	79.20	9.66	174.50	6.83	6.63	116.40	74.00	9.01	172.80
1m from Bottom	BS=18.0m						BS=18.0m						BS=18.0m						BS=18.0m						BS=18.0m					

Table 38 Spring Q1- Lakes 16 Page(s)

EMS ID		E217018								Water Quality Guidelines	
StnName		No Name Lake 1 metre from surface									
StnCode		NNL1									
Date		16/Apr/20	22/Apr/20	29/Apr/20	6/May/20	12/May/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	2.3	2.3	2.4	2.9	3.0	5	3.0	2.6	128	
Chlr-a	ug/L					2.3	1	2.3	2.3		
Turb	NTU	0.27		0.50	0.29	0.51	4	0.51	0.39	2.5	8.5
Alk-T	mg/L	11	11	10			3	11	10.7		
P-T	mg/L	<0.0030	0.0041	<0.0030			3	0.0041	0.00237		
Al-T	mg/L	0.0293	0.0268	<0.0030	0.0259	0.0242	5	0.0293	0.0264		
As-T	mg/L	0.00019	0.00018	<0.0030	0.00025	0.00024	5	0.00025	0.00022		0.005
Ba-T	mg/L	0.0011	0.0011	<0.0030	0.0011	0.0011	5	0.0011	0.0011	1	5
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	3.93	3.99	4.04	4.18	4.10	5	4.18	4.05		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	<0.00050	<0.00050	0.0207	<0.00050	<0.00050	5	0.0207	0.004340		
Hard-T	mg/L	13.3	13.5	13.7	14.0	13.8	5	14.0	13.7		
Fe-T	mg/L	0.058	0.057	0.060	0.060	0.054	5	0.060	0.058		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.0039978	0.01763
Mg-T	mg/L	0.857	0.850	0.867	0.858	0.860	5	0.867	0.858		
Mn-T	mg/L	0.0046	0.0048	0.0051	0.0049	0.0044	5	0.0051	0.0048	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	0.0000022	5	0.0000022	0.00000120	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.064	0.073	0.084	0.069	0.072	5	0.084	0.072		
S-T	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	5	<3.0	1.50		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	1.09	1.08	1.16	1.04	1.13	5	1.16	1.10		
Sr-T	mg/L	0.0124	0.0131	0.0135	0.0134	0.0133	5	0.0135	0.0131		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0230	0.0212	0.0221	0.0208	0.0201	5	0.0230	0.0214	0.05	0.1
As-D	mg/L	0.00020	0.00019	0.00023	0.00023	0.00022	5	0.00023	0.00021		
Ba-D	mg/L	0.0011	0.0011	0.0013	0.0012	0.0011	5	0.0013	0.0012		
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	3.91	3.97	4.05	4.10	4.07	5	4.10	4.02		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00036	0.00034	0.00723	0.00037	0.00039	5	0.00723	0.00174	0.0003	0.002
Hard-D	mg/L	13.3	13.5	13.7	14.0	13.9	5	14.0	13.7		
DOC	mg/L		2.7	2.4	2.9	2.5	4	2.9	2.6		
Fe-D	mg/L	0.0359	0.0362	0.0407	0.0487	0.0454	5	0.0487	0.0414		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	0.846	0.863	0.865	0.912	0.897	5	0.912	0.877		
Mn-D	mg/L	0.0033	0.0039	0.0045	0.0042	0.0038	5	0.0045	0.0039		
Hg-D	mg/L	<0.0000019	0.0000020	<0.0000019	<0.0000019	<0.0000019	5	0.0000020	0.00000116		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.066	0.068	0.084	0.069	0.071	5	0.084	0.072		
S-D	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	5	<3.0	1.50		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	1.02	1.05	1.13	1.10	1.15	5	1.15	1.09		
Sr-D	mg/L	0.0124	0.013	0.0138	0.0129	0.0135	5	0.0138	0.0131		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 38 Spring Q1- Lakes 16 Page(s)

EMS ID		E217018								Water Quality Guidelines	
StnName		No Name Lake 4 metre from surface									
StnCode		NNL4									
Date		16/Apr/20	22/Apr/20	29/Apr/20	6/May/20	12/May/20	Count	Max	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	2.7	2.7	2.5	2.7	2.6	5	2.7	2.6	128	
Turb	NTU	0.50		0.44	0.29	0.32	4	0.50	0.39	2.5	8.5
Alk-T	mg/L	11	10	11			3	11	10.7		
P-T	mg/L	<0.0030	<0.0030	0.0060			3	0.0060	0.00300		
Al-T	mg/L	0.0330	0.0309	0.0294	0.0253	0.0257	5	0.0330	0.0289		
As-T	mg/L	0.00019	0.00019	0.00023	0.00024	0.00026	5	0.00026	0.00022		0.005
Ba-T	mg/L	0.0011	0.0011	0.0012	0.0011	0.0011	5	0.0012	0.0011	1	5
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	4.00	4.15	4.06	4.10	4.16	5	4.16	4.09		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	<0.00050	<0.00050	0.0282	<0.00050	<0.00050	5	0.0282	0.005840		
Hard-T	mg/L	13.6	13.9	13.9	13.8	13.9	5	13.9	13.8		
Fe-T	mg/L	0.071	0.061	0.063	0.059	0.064	5	0.071	0.064		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.0039978	0.01763
Mg-T	mg/L	0.887	0.860	0.910	0.866	0.856	5	0.910	0.876		
Mn-T	mg/L	0.0050	0.0046	0.0053	0.0049	0.0049	5	0.0053	0.0049	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.067	0.072	0.097	0.071	0.069	5	0.097	0.075		
S-T	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	5	<3.0	1.50		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	1.08	1.07	1.48	1.04	1.11	5	1.48	1.16		
Sr-T	mg/L	0.0128	0.0134	0.0139	0.0135	0.0137	5	0.0139	0.0135		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0251	0.0230	0.0208	0.0205	0.0196	5	0.0251	0.0218	0.05	0.1
As-D	mg/L	0.00019	0.00019	0.00022	0.00022	0.00023	5	0.00023	0.00021		
Ba-D	mg/L	0.0011	0.0011	0.0011	0.0012	0.0011	5	0.0012	0.0011		
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	4.06	3.91	4.07	4.10	4.15	5	4.15	4.06		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00037	0.00058	0.0206	0.00037	0.00035	5	0.0206	0.00445	0.0003	0.002
Hard-D	mg/L	13.8	13.4	13.8	14.0	14.0	5	14.0	13.8		
DOC	mg/L		3.1	2.3	1.4	2.5	4	3.1	2.3		
Fe-D	mg/L	0.0333	0.0303	0.0400	0.0476	0.0491	5	0.0491	0.0401		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	0.891	0.874	0.890	0.904	0.879	5	0.904	0.888		
Mn-D	mg/L	0.0030	0.0029	0.0043	0.0041	0.0037	5	0.0043	0.0036		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.069	0.071	0.092	0.069	0.069	5	0.092	0.074		
S-D	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	5	<3.0	1.50		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	1.05	1.06	1.45	1.10	1.11	5	1.45	1.15		
Sr-D	mg/L	0.0130	0.0129	0.0139	0.0131	0.0131	5	0.0139	0.0132		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 38 Spring Q1- Lakes 16 Page(s)

EMS ID		E217018								Water Quality Guidelines	
StnName		No Name Lake 9 metres from surface									
StnCode		NNL9									
Date		16/Apr/20	22/Apr/20	29/Apr/20	6/May/20	12/May/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	3.5	4.0	4.1	4.1	4.1	5	4.1	4.0	128	
Turb	NTU	0.44		0.60	0.32	0.35	4	0.60	0.43	2.5	8.5
Alk-T	mg/L	11	11	10			3	11	10.7		
P-T	mg/L	<0.0030	0.0033	0.0043			3	0.0043	0.00303		
Al-T	mg/L	0.0383	0.0376	0.0358	0.0318	0.0287	5	0.0383	0.0344		
As-T	mg/L	0.00022	0.00018	0.00021	0.00021	0.00017	5	0.00022	0.00020		0.005
Ba-T	mg/L	0.0013	0.0012	0.0013	0.0013	0.0013	5	0.0013	0.0013	1	5
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	4.52	4.52	4.45	4.53	4.39	5	4.53	4.48		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	<0.00050	<0.00050	0.0169	<0.00050	<0.00050	5	0.0169	0.003580		
Hard-T	mg/L	15.3	15.1	15.0	15.0	14.5	5	15.3	15.0		
Fe-T	mg/L	0.097	0.102	0.085	0.063	0.053	5	0.102	0.080		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.0039978	0.01763
Mg-T	mg/L	0.969	0.929	0.938	0.892	0.860	5	0.969	0.918		
Mn-T	mg/L	0.0073	0.0081	0.0069	0.0058	0.0048	5	0.0081	0.0066	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	0.0000022	5	0.0000022	0.00000120	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.071	0.084	0.102	0.077	0.074	5	0.102	0.082		
S-T	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	5	<3.0	1.50		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	1.10	1.11	1.44	1.05	1.08	5	1.44	1.16		
Sr-T	mg/L	0.0147	0.0157	0.0161	0.0156	0.0151	5	0.0161	0.0154		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0274	0.0287	0.0259	0.0270	0.0247	5	0.0287	0.0267	0.05	0.1
As-D	mg/L	0.00018	0.00017	0.00019	0.00018	0.00017	5	0.00019	0.00018		
Ba-D	mg/L	0.0013	0.0013	0.0012	0.0013	0.0012	5	0.0013	0.0013		
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	4.37	4.34	4.39	4.37	4.36	5	4.39	4.37		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00036	0.00040	0.00798	0.00037	0.00035	5	0.00798	0.00189	0.0003	0.002
Hard-D	mg/L	14.7	14.7	14.7	14.8	14.5	5	14.8	14.7		
DOC	mg/L		2.4	2.6	<0.50	2.7	4	2.7	1.988		
Fe-D	mg/L	0.0434	0.0411	0.0353	0.0368	0.0331	5	0.0434	0.0379		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	0.920	0.932	0.912	0.949	0.879	5	0.949	0.918		
Mn-D	mg/L	0.0040	0.0047	0.0032	0.0030	0.0029	5	0.0047	0.0036		
Hg-D	mg/L	<0.0000019	0.0000025	<0.0000019	<0.0000019	<0.0000019	5	0.0000025	0.00000126		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.075	0.074	0.096	0.076	0.074	5	0.096	0.079		
S-D	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	5	<3.0	1.50		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	1.07	1.06	1.27	1.08	1.08	5	1.27	1.11		
Sr-D	mg/L	0.0147	0.0159	0.0160	0.0148	0.0149	5	0.0160	0.0153		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 38 Spring Q1- Lakes 16 Page(s)

EMS ID		E217018								Water Quality Guidelines	
StnName		No Name Lake 1 metre from bottom									
StnCode		NNLB									
Date		16/Apr/20	22/Apr/20	29/Apr/20	6/May/20	12/May/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	4.2	6.2	4.4	4.5	***61****	5	61	16.1	128	
Turb	NTU	0.47		0.48	0.41	0.44	4	0.48	0.45	2.5	8.5
Alk-T	mg/L	11	10	9.8			3	11	10.3		
P-T	mg/L	<0.0030	<0.0030	<0.0030			3	<0.0030	0.00150		
Al-T	mg/L	0.0399	0.0395	0.0383	0.0369	0.0320	5	0.0399	0.0373		
As-T	mg/L	0.00020	0.00022	0.00024	0.00021	0.00019	5	0.00024	0.00021		0.005
Ba-T	mg/L	0.0013	0.0014	0.0013	0.0013	0.0013	5	0.0014	0.0013	1	5
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	4.57	5.25	4.54	4.58	4.40	5	5.25	4.67		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	<0.00050	<0.00050	0.00932	<0.00050	<0.00050	5	0.00932	0.002064		
Hard-T	mg/L	15.4	17.3	15.1	15.1	14.6	5	17.3	15.5		
Fe-T	mg/L	0.108	0.175	0.098	0.108	0.072	5	0.175	0.112		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.0039978	0.01763
Mg-T	mg/L	0.968	1.01	0.923	0.890	0.868	5	1.01	0.932		
Mn-T	mg/L	0.0086	0.0166	0.0082	0.0088	0.0063	5	0.0166	0.0097	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.075	0.083	0.098	0.076	0.077	5	0.098	0.082		
S-T	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	5	<3.0	1.50		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	1.12	1.14	1.30	1.02	1.06	5	1.30	1.13		
Sr-T	mg/L	0.0171	0.0199	0.0164	0.0161	0.0156	5	0.0199	0.0170		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0284	0.0269	0.0265	0.0277	0.0259	5	0.0284	0.0271	0.05	0.1
As-D	mg/L	0.00020	0.00017	0.00019	0.00019	0.00018	5	0.00020	0.00019		
Ba-D	mg/L	0.0013	0.0014	0.0013	0.0014	0.0013	5	0.0014	0.0013		
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	4.65	5.11	4.50	4.47	4.52	5	5.11	4.65		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00053	0.00036	0.00165	0.00035	0.00035	5	0.00165	**0.00065**	0.0003	0.002
Hard-D	mg/L	15.6	17.0	15.0	15.2	15.0	5	17.0	15.6		
DOC	mg/L		2.7	2.3	3.2	1.6	4	3.2	2.4		
Fe-D	mg/L	0.0490	0.0665	0.0392	0.0526	0.0379	5	0.0665	0.0490		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	0.956	1.03	0.908	0.970	0.903	5	1.03	0.953		
Mn-D	mg/L	0.0054	0.0132	0.0039	0.0045	0.0034	5	0.0132	0.0061		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.078	0.081	0.092	0.079	0.077	5	0.092	0.081		
S-D	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	5	<3.0	1.50		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	1.07	1.13	1.14	1.10	1.10	5	1.14	1.11		
Sr-D	mg/L	0.0160	0.0198	0.0162	0.0156	0.0157	5	0.0198	0.0167		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes: * Outlier. Result falls otside the normal range for historical data.

Factor applied to less-than results when calculating statistics: 0.5

Table 38 Spring Q1- Lakes 16 Page(s)

EMS ID		E206619								Water Quality Guidelines	
StnName		Long Lake Middle 1 metre from surface									
StnCode		LLM1									
Date		16/Apr/20	22/Apr/20	29/Apr/20	6/May/20	12/May/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	43	52	62	70	65	5	70	58.4	128	
Chlr-a	ug/L					0.97	1	0.97	0.97		
Turb	NTU	0.43	0.48	0.51	0.35	0.35	5	0.51	0.42	2.5	8.5
Alk-T	mg/L	26	27	29	31		4	31	28.2		
P-T	mg/L	<0.0030	<0.0030	0.0047	<0.0030		4	0.0047	0.00230		
Al-T	mg/L	0.0267	0.0238	0.0148	0.0179	0.0160	5	0.0267	0.0198		
As-T	mg/L	0.00033	0.00035	0.00033	0.00034	0.00036	5	0.00036	0.00034		0.005
Ba-T	mg/L	0.0040	0.0043	0.0046	0.0050	0.0050	5	0.0050	0.0046	1	5
B-T	mg/L	<0.050	<0.050	0.052	0.055	0.066	5	0.066	0.0446	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	18.7	20.3	23.1	25.3	26.9	5	26.9	22.9		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	<0.00050	<0.00050	0.00126	<0.00050	<0.00050	5	0.00126	0.000452	0.002	0.007
Hard-T	mg/L	56.9	61.7	69.9	75.6	80.5	5	80.5	68.9		
Fe-T	mg/L	0.093	0.087	0.050	0.074	0.065	5	0.093	0.074		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.0039978	0.01763
Mg-T	mg/L	2.47	2.65	2.93	3.04	3.22	5	3.22	2.86		
Mn-T	mg/L	0.0134	0.0155	0.0159	0.0194	0.0190	5	0.0194	0.0166	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.221	0.242	0.292	0.289	0.305	5	0.305	0.270		
S-T	mg/L	14.1	16.6	19.2	19.8	22.2	5	22.2	18.4		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	5.97	6.78	8.01	8.43	9.09	5	9.09	7.66		
Sr-T	mg/L	0.117	0.140	0.168	0.177	0.199	5	0.199	0.160		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0195	0.0179	0.0227	0.0133	0.0127	5	0.0227	0.0172	0.05	0.1
As-D	mg/L	0.00031	0.00032	0.00035	0.00032	0.00034	5	0.00035	0.00033		
Ba-D	mg/L	0.0040	0.0045	0.0055	0.0050	0.0052	5	0.0055	0.0048		
B-D	mg/L	<0.050	<0.050	0.051	0.055	0.062	5	0.062	0.0436		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	18.6	20.2	23.6	25.3	26.9	5	26.9	22.9		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00033	0.00034	0.00250	0.00030	0.00032	5	0.00250	0.00076		
Hard-D	mg/L	56.1	61.2	70.9	76.0	80.1	5	80.1	68.9		
DOC	mg/L		2.6	2.6	2.5	2.7	4	2.7	2.6		
Fe-D	mg/L	0.0626	0.0567	0.0833	0.0491	0.0431	5	0.0833	0.0590		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	2.37	2.60	2.90	3.13	3.16	5	3.16	2.83		
Mn-D	mg/L	0.0119	0.0138	0.0189	0.0173	0.0171	5	0.0189	0.0158		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	0.0000022	<0.0000019	5	0.0000022	0.00000120		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.223	0.254	0.292	0.308	0.300	5	0.308	0.275		
S-D	mg/L	14.7	16.7	19.5	21.4	21.4	5	21.4	18.7		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	5.70	6.69	7.90	8.72	9.19	5	9.19	7.64		
Sr-D	mg/L	0.124	0.145	0.173	0.191	0.205	5	0.205	0.168		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 38 Spring Q1- Lakes 16 Page(s)

EMS ID		E206619								Water Quality Guidelines	
StnName		Long Lake Middle 4 metres from surface									
StnCode		LLM4									
Date		16/Apr/20	22/Apr/20	29/Apr/20	6/May/20	12/May/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	89	80	68	70	80	5	89	77.4	128	
Turb	NTU	0.45	0.42	0.49	0.36	0.38	5	0.49	0.42	2.5	8.5
Alk-T	mg/L	38	34	30	30		4	38	33.0		
P-T	mg/L	<0.0030	<0.0030	<0.0030	<0.0030		4	<0.0030	0.00150		
Al-T	mg/L	0.0246	0.0232	0.0197	0.0172	0.0160	5	0.0246	0.0201		
As-T	mg/L	0.00032	0.00032	0.00035	0.00035	0.00036	5	0.00036	0.00034		0.005
Ba-T	mg/L	0.0055	0.0052	0.0049	0.0050	0.0054	5	0.0055	0.0052	1	5
B-T	mg/L	0.069	0.064	0.055	0.054	0.074	5	0.074	0.063	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	30.8	28.8	24.1	24.6	31.2	5	31.2	27.9		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	<0.00050	<0.00050	0.00240	<0.00050	<0.00050	5	0.00240	0.000680	0.002	0.007
Hard-T	mg/L	92.1	86.5	72.8	73.4	92.6	5	92.6	83.5		
Fe-T	mg/L	0.109	0.099	0.083	0.077	0.078	5	0.109	0.089		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.0039978	0.01763
Mg-T	mg/L	3.69	3.52	3.06	2.92	3.57	5	3.69	3.35		
Mn-T	mg/L	0.0320	0.0283	0.0205	0.0195	0.0253	5	0.0320	0.0251	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	0.0000020	<0.0000019	5	0.0000020	0.00000116	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.361	0.338	0.306	0.286	0.346	5	0.361	0.327		
S-T	mg/L	26.2	25.2	20.3	19.5	25.5	5	26.2	23.3		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	11.3	10.3	8.38	8.34	10.6	5	11.3	9.78		
Sr-T	mg/L	0.235	0.214	0.183	0.178	0.231	5	0.235	0.208		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0176	0.0167	0.0144	0.0142	0.0120	5	0.0176	0.0150	0.05	0.1
As-D	mg/L	0.00033	0.00033	0.00035	0.00031	0.00034	5	0.00035	0.00033		
Ba-D	mg/L	0.0057	0.0052	0.0048	0.0051	0.0056	5	0.0057	0.0053		
B-D	mg/L	0.072	0.063	0.054	0.055	0.070	5	0.072	0.063		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	32.0	28.5	24.4	25.1	31.4	5	32.0	28.3		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00030	0.00034	0.00080	0.00039	0.00030	5	0.00080	0.00043		
Hard-D	mg/L	94.8	85.1	73.3	75.7	93.3	5	94.8	84.4		
DOC	mg/L		2.7	1.9	2.4	2.6	4	2.7	2.4		
Fe-D	mg/L	0.0707	0.0638	0.0506	0.0516	0.0460	5	0.0707	0.0565		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	3.64	3.35	3.02	3.14	3.59	5	3.64	3.35		
Mn-D	mg/L	0.0306	0.0241	0.0169	0.0176	0.0204	5	0.0306	0.0219		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.373	0.331	0.300	0.304	0.347	5	0.373	0.331		
S-D	mg/L	28.0	23.4	20.4	21.1	26.1	5	28.0	23.8		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	11.0	9.70	8.33	8.62	10.7	5	11.0	9.67		
Sr-D	mg/L	0.240	0.210	0.182	0.189	0.241	5	0.241	0.212		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 38 Spring Q1- Lakes 16 Page(s)

EMS ID		E206619								Water Quality Guidelines	
StnName		Long Lake Middle 9 metres from surface									
StnCode		LLM9									
Date		16/Apr/20	22/Apr/20	29/Apr/20	6/May/20	12/May/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	130	130	130	130	130	5	130	130.0	128	
Turb	NTU	0.47	0.35	0.38	0.32	0.39	5	0.47	0.38	2.5	8.5
Alk-T	mg/L	49	48	48	46		4	49	47.8		
P-T	mg/L	<0.0030	<0.0030	<0.0030	<0.0030		4	<0.0030	0.00150		
Al-T	mg/L	0.0195	0.0172	0.0163	0.0153	0.0158	5	0.0195	0.0168		
As-T	mg/L	0.00027	0.00023	0.00026	0.00024	0.00023	5	0.00027	0.00025		0.005
Ba-T	mg/L	0.0074	0.0071	0.0072	0.0071	0.0072	5	0.0074	0.0072	1	5
B-T	mg/L	0.104	0.100	0.099	0.095	0.115	5	0.115	0.103	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	44.9	45.4	43.8	42.7	48.5	5	48.5	45.1		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	<0.00050	<0.00050	0.00359	<0.00050	0.00061	5	0.00359	0.000990	0.002	0.007
Hard-T	mg/L	133	134	130	126	142	5	142	133.0		
Fe-T	mg/L	0.074	0.071	0.053	0.051	0.056	5	0.074	0.061		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.0039978	0.01763
Mg-T	mg/L	5.18	5.10	4.87	4.72	5.19	5	5.19	5.01		
Mn-T	mg/L	0.134	0.128	0.110	0.110	0.118	5	0.134	0.120	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	0.0000019	5	0.0000019	0.00000114	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.535	0.537	0.528	0.508	0.564	5	0.564	0.534		
S-T	mg/L	40.1	41.3	39.5	37.1	43.7	5	43.7	40.3		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	17.5	16.7	16.0	15.8	17.5	5	17.5	16.7		
Sr-T	mg/L	0.360	0.356	0.357	0.332	0.372	5	0.372	0.355		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0128	0.0121	0.0115	0.0125	0.0113	5	0.0128	0.0120	0.05	0.1
As-D	mg/L	0.00024	0.00020	0.00024	0.00023	0.00023	5	0.00024	0.00023		
Ba-D	mg/L	0.0071	0.0071	0.0069	0.0074	0.0072	5	0.0074	0.0071		
B-D	mg/L	0.101	0.101	0.099	0.097	0.106	5	0.106	0.101		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	45.2	43.7	43.6	43.8	46.4	5	46.4	44.5		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00031	0.00029	0.00085	0.00030	0.00032	5	0.00085	0.00041		
Hard-D	mg/L	133	129	129	130	136	5	136	131.4		
DOC	mg/L		2.1	2.2	2.6	2.4	4	2.6	2.3		
Fe-D	mg/L	0.0333	0.0312	0.0286	0.0286	0.0269	5	0.0333	0.0297		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	4.96	4.84	4.90	4.99	4.90	5	4.99	4.92		
Mn-D	mg/L	0.122	0.116	0.0992	0.100	0.0976	5	0.122	0.1070		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.559	0.520	0.535	0.534	0.526	5	0.559	0.535		
S-D	mg/L	40.8	39.1	39.7	39.5	40.3	5	40.8	39.9		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	16.2	16.2	16.3	16.3	16.7	5	16.7	16.3		
Sr-D	mg/L	0.349	0.351	0.366	0.357	0.372	5	0.372	0.359		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 38 Spring Q1- Lakes 16 Page(s)

EMS ID		E206619								Water Quality Guidelines	
StnName		Long Lake Middle 1 metre from bottom									
StnCode		LLMB									
Date		16/Apr/20	22/Apr/20	29/Apr/20	6/May/20	12/May/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	130	110	120	130	110	5	130	120.0	128	
Turb	NTU	1.0	0.78	1.2	0.47	0.42	5	1.2	0.77	2.5	8.5
Alk-T	mg/L	50	42	48	47		4	50	46.8		
P-T	mg/L	<0.0030	<0.0030	<0.0030	<0.0030		4	<0.0030	0.00150		
Al-T	mg/L	0.0183	0.0194	0.0156	0.0137	0.0309	5	0.0309	0.0196		
As-T	mg/L	0.00027	0.00027	0.00028	0.00023	0.00022	5	0.00028	0.00025		0.005
Ba-T	mg/L	0.0080	0.0064	0.0080	0.0072	0.0024	5	0.0080	0.0064	1	5
B-T	mg/L	0.109	0.086	0.101	0.098	<0.050	5	0.109	0.0838	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	47.0	38.1	44.4	44.6	11.2	5	47.0	37.1		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	0.00078	<0.00050	0.00303	<0.00050	<0.00050	5	0.00303	0.000912	0.002	0.007
Hard-T	mg/L	139	114	132	131	34.7	5	139	110.1		
Fe-T	mg/L	0.086	0.080	0.067	0.055	0.075	5	0.086	0.073		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.0039978	0.01763
Mg-T	mg/L	5.24	4.48	5.04	4.86	1.64	5	5.24	4.25		
Mn-T	mg/L	0.208	0.120	0.155	0.114	0.0230	5	0.208	0.1240	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.540	0.454	0.550	0.518	0.158	5	0.550	0.444		
S-T	mg/L	40.7	34.5	40.8	37.8	7.8	5	40.8	32.3		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	17.8	14.3	16.8	16.2	3.66	5	17.8	13.75		
Sr-T	mg/L	0.359	0.295	0.367	0.339	0.0656	5	0.367	0.2851		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0098	0.0125	0.0086	0.0103	0.0240	5	0.0240	0.0130	0.05	0.1
As-D	mg/L	0.00024	0.00023	0.00020	0.00020	0.00018	5	0.00024	0.00021		
Ba-D	mg/L	0.0074	0.0063	0.0073	0.0070	0.0021	5	0.0074	0.0060		
B-D	mg/L	0.107	0.085	0.101	0.099	<0.050	5	0.107	0.0834		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	46.4	37.2	44.5	44.6	10.5	5	46.4	36.6		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00031	0.00030	0.00094	0.00029	0.00036	5	0.00094	0.00044		
Hard-D	mg/L	137	110	132	132	32.8	5	137	108.8		
DOC	mg/L		2.0	2.4	2.4	2.6	4	2.6	2.4		
Fe-D	mg/L	0.0250	0.0339	0.0185	0.0239	0.0371	5	0.0371	0.0277		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	5.08	4.14	4.94	4.92	1.56	5	5.08	4.13		
Mn-D	mg/L	0.127	0.0719	0.0555	0.0813	0.0150	5	0.127	0.0701		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.580	0.441	0.544	0.536	0.143	5	0.580	0.449		
S-D	mg/L	43.0	32.6	39.6	39.8	7.0	5	43.0	32.4		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	17.1	13.3	16.6	16.4	3.40	5	17.1	13.36		
Sr-D	mg/L	0.358	0.290	0.368	0.356	0.0643	5	0.368	0.2873		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 38 Spring Q1- Lakes 16 Page(s)

EMS ID		E206618								Water Quality Guidelines	
StnName		Middle Quinsam Lake 1 metre from surface									
StnCode		MQL1									
Date		16/Apr/20	22/Apr/20	29/Apr/20	6/May/20	12/May/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	23	24	26	24	25	5	26	24.4	128	
Chlr-a	ug/L					<0.50	1	<0.50	0.250		
Turb	NTU	0.22	0.32	0.25	0.24	0.20	5	0.32	0.25	2.5	8.5
Alk-T	mg/L	29	26	26			3	29	27.0		
P-T	mg/L	<0.0030	<0.0030	<0.0030			3	<0.0030	0.00150		
Al-T	mg/L	0.0197	0.0182	0.0172	0.0167	0.0171	5	0.0197	0.0178		
As-T	mg/L	0.00011	0.00012	0.00013	0.00012	0.00012	5	0.00013	0.00012		0.005
Ba-T	mg/L	0.0015	0.0015	0.0016	0.0015	0.0015	5	0.0016	0.0015	1	5
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	11.0	10.9	10.8	10.5	10.7	5	11.0	10.8		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	0.00065	0.00058	0.0376	0.00057	0.00057	5	0.0376	0.00799	0.002	0.007
Hard-T	mg/L	33.0	32.5	32.4	31.5	32.1	5	33.0	32.3		
Fe-T	mg/L	0.026	0.027	0.028	0.025	0.025	5	0.028	0.026		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.0039978	0.01763
Mg-T	mg/L	1.33	1.26	1.29	1.25	1.30	5	1.33	1.29		
Mn-T	mg/L	0.0037	0.0048	0.0048	0.0050	0.0050	5	0.0050	0.0047	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.182	0.195	0.193	0.184	0.188	5	0.195	0.188		
S-T	mg/L	7.4	8.0	8.0	8.0	9.1	5	9.1	8.1		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	9.91	9.89	10.1	10.1	10.3	5	10.3	10.06		
Sr-T	mg/L	0.0477	0.0521	0.0523	0.0492	0.0504	5	0.0523	0.0503		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0147	0.0145	0.0133	0.0129	0.0145	5	0.0147	0.0140	0.05	0.1
As-D	mg/L	0.00012	<0.00010	0.00012	0.00012	0.00011	5	0.00012	0.000104		
Ba-D	mg/L	0.0015	0.0015	0.0015	0.0015	0.0015	5	0.0015	0.0015		
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	10.8	10.7	10.4	10.2	10.4	5	10.8	10.5		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00052	0.00052	0.0279	0.00053	0.00056	5	0.0279	0.00601		
Hard-D	mg/L	32.3	32.0	31.4	30.7	31.5	5	32.3	31.6		
DOC	mg/L		2.3	2.8	2.0	3.6	4	3.6	2.7		
Fe-D	mg/L	0.0170	0.0174	0.0169	0.0175	0.0194	5	0.0194	0.0176		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	1.28	1.25	1.30	1.28	1.30	5	1.30	1.28		
Mn-D	mg/L	0.0028	0.0032	0.0030	0.0032	0.0040	5	0.0040	0.0032		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.185	0.190	0.191	0.190	0.194	5	0.194	0.190		
S-D	mg/L	7.9	7.8	7.9	7.4	9.5	5	9.5	8.1		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	9.45	9.70	10.1	10.3	10.5	5	10.5	10.01		
Sr-D	mg/L	0.0489	0.0511	0.0505	0.0494	0.0501	5	0.0511	0.0500		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 38 Spring Q1- Lakes 16 Page(s)

EMS ID		E206618								Water Quality Guidelines	
StnName		Middle Quinsam Lake 4 metres from surface									
StnCode		MQL4									
Date		16/Apr/20	22/Apr/20	29/Apr/20	6/May/20	12/May/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	23	25	25	24	25	5	25	24.4	128	
Turb	NTU	0.23	0.20	0.42	0.24	0.26	5	0.42	0.27	2.5	8.5
Alk-T	mg/L	29	29	28			3	29	28.7		
P-T	mg/L	<0.0030	<0.0030	0.0085			3	0.0085	0.00383		
Al-T	mg/L	0.0167	0.0176	0.0176	0.0162	0.0154	5	0.0176	0.0167		
As-T	mg/L	0.00010	0.00011	0.00014	0.00010	0.00011	5	0.00014	0.00011		0.005
Ba-T	mg/L	0.0014	0.0015	0.0017	0.0015	0.0015	5	0.0017	0.0015	1	5
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	10.4	11.1	10.5	10.6	10.7	5	11.1	10.7		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	0.00078	0.00090	0.0813	0.00056	0.00056	5	0.0813	0.01682	0.002	0.007
Hard-T	mg/L	31.4	32.9	31.6	31.5	32.0	5	32.9	31.9		
Fe-T	mg/L	0.026	0.027	0.028	0.025	0.018	5	0.028	0.025		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.0039978	0.01763
Mg-T	mg/L	1.31	1.29	1.29	1.24	1.30	5	1.31	1.29		
Mn-T	mg/L	0.0038	0.0049	0.0048	0.0049	0.0028	5	0.0049	0.0042	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.178	0.198	0.193	0.180	0.192	5	0.198	0.188		
S-T	mg/L	7.3	8.1	7.9	7.7	9.0	5	9.0	8.0		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	9.80	10.4	10.1	10.1	10.4	5	10.4	10.16		
Sr-T	mg/L	0.0465	0.0539	0.0516	0.0492	0.0504	5	0.0539	0.0503		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0144	0.0142	0.0138	0.0156	0.0158	5	0.0158	0.0148	0.05	0.1
As-D	mg/L	0.00011	<0.00010	0.00013	0.00012	0.00012	5	0.00013	0.000106		
Ba-D	mg/L	0.0015	0.0015	0.0015	0.0015	0.0015	5	0.0015	0.0015		
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	10.8	10.8	10.5	10.3	10.7	5	10.8	10.6		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00052	0.00052	0.0755	0.00051	0.00055	5	0.0755	0.01552		
Hard-D	mg/L	32.0	32.2	31.6	31.1	32.1	5	32.2	31.8		
DOC	mg/L		2.6	1.6	1.8	2.0	4	2.6	2.0		
Fe-D	mg/L	0.0166	0.0171	0.0171	0.0178	0.0239	5	0.0239	0.0185		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	1.24	1.25	1.28	1.27	1.30	5	1.30	1.27		
Mn-D	mg/L	0.0024	0.0027	0.0026	0.0033	0.0045	5	0.0045	0.0031		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.177	0.187	0.193	0.190	0.193	5	0.193	0.188		
S-D	mg/L	7.3	8.0	7.9	7.4	8.4	5	8.4	7.8		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	9.15	10.0	10.0	10.2	10.4	5	10.4	9.95		
Sr-D	mg/L	0.0479	0.0523	0.0508	0.0485	0.0507	5	0.0523	0.0500		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 38 Spring Q1- Lakes 16 Page(s)

EMS ID		E206618								Water Quality Guidelines	
StnName		Middle Quinsam Lake 9 metres from surface									
StnCode		MQL9									
Date		16/Apr/20	22/Apr/20	29/Apr/20	6/May/20	12/May/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	29	31	30	29	32	5	32	30.2	128	
Turb	NTU	0.25	0.19	0.24	0.17	0.18	5	0.25	0.21	2.5	8.5
Alk-T	mg/L	31	31	32			3	32	31.3		
P-T	mg/L	<0.0030	<0.0030	<0.0030			3	<0.0030	0.00150		
Al-T	mg/L	0.0166	0.0157	0.0157	0.0154	0.0149	5	0.0166	0.0157		
As-T	mg/L	0.00012	0.00013	0.00011	0.00012	0.00010	5	0.00013	0.00012		0.005
Ba-T	mg/L	0.0016	0.0016	0.0017	0.0016	0.0017	5	0.0017	0.0016	1	5
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	11.8	11.5	11.3	11.5	11.9	5	11.9	11.6		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	0.00053	0.00052	0.0472	0.00053	0.00057	5	0.0472	0.00987	0.002	0.007
Hard-T	mg/L	35.5	34.4	33.9	34.4	35.7	5	35.7	34.8		
Fe-T	mg/L	0.024	0.021	0.021	0.019	0.016	5	0.024	0.020		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.0039978	0.01763
Mg-T	mg/L	1.48	1.38	1.39	1.37	1.49	5	1.49	1.42		
Mn-T	mg/L	0.0033	0.0030	0.0029	0.0029	0.0024	5	0.0033	0.0029	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	0.0000025	<0.0000019	5	0.0000025	0.00000126	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.214	0.215	0.213	0.201	0.215	5	0.215	0.212		
S-T	mg/L	9.2	9.4	9.3	9.4	10.2	5	10.2	9.5		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	12.8	12.6	12.1	12.0	12.2	5	12.8	12.3		
Sr-T	mg/L	0.0576	0.0616	0.0587	0.0572	0.0599	5	0.0616	0.0590		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0131	0.0126	0.0135	0.0118	0.0113	5	0.0135	0.0125	0.05	0.1
As-D	mg/L	0.00012	<0.00010	0.00010	0.00012	0.00012	5	0.00012	0.000102		
Ba-D	mg/L	0.0017	0.0016	0.0016	0.0017	0.0016	5	0.0017	0.0016		
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	12.0	11.7	11.6	11.0	11.4	5	12.0	11.5		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00049	0.00050	0.0263	0.00049	0.00049	5	0.0263	0.00565		
Hard-D	mg/L	35.7	35.0	34.8	33.1	34.5	5	35.7	34.6		
DOC	mg/L		2.3	2.8	2.0	<0.50	4	2.8	1.838		
Fe-D	mg/L	0.0136	0.0114	0.0110	0.0129	0.0098	5	0.0136	0.0117		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	1.42	1.41	1.43	1.39	1.44	5	1.44	1.42		
Mn-D	mg/L	0.0013	<0.0010	<0.0010	<0.0010	<0.0010	5	0.0013	0.00066		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.213	0.217	0.220	0.212	0.209	5	0.220	0.214		
S-D	mg/L	9.7	9.8	9.8	8.9	9.4	5	9.8	9.5		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	12.1	12.7	12.5	11.9	12.1	5	12.7	12.3		
Sr-D	mg/L	0.0594	0.0600	0.0611	0.0565	0.0586	5	0.0611	0.0591		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 38 Spring Q1- Lakes 16 Page(s)

EMS ID		E206618								Water Quality Guidelines	
StnName		Middle Quinsam Lake 1 metre from bottom									
StnCode		MQLB									
Date		16/Apr/20	22/Apr/20	29/Apr/20	6/May/20	12/May/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	30	29	30	33	31	5	33	30.6	128	
Turb	NTU	0.26	0.20	0.29	0.30	0.23	5	0.30	0.26	2.5	8.5
Alk-T	mg/L	33	33	33			3	33	33.0		
P-T	mg/L	<0.0030	<0.0030	<0.0030			3	<0.0030	0.00150		
Al-T	mg/L	0.0161	0.0168	0.0144	0.0137	0.0126	5	0.0168	0.0147		
As-T	mg/L	0.00011	<0.00010	0.00012	0.00011	0.00011	5	0.00012	0.000100		0.005
Ba-T	mg/L	0.0018	0.0017	0.0018	0.0017	0.0018	5	0.0018	0.0018	1	5
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	12.4	12.2	11.6	12.1	12.1	5	12.4	12.1		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	0.00053	0.00052	0.0163	0.00052	0.00052	5	0.0163	0.00368	0.002	0.007
Hard-T	mg/L	37.4	36.4	35.1	36.2	36.4	5	37.4	36.3		
Fe-T	mg/L	0.023	0.022	0.022	0.018	0.016	5	0.023	0.020		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.0039978	0.01763
Mg-T	mg/L	1.59	1.45	1.49	1.48	1.48	5	1.59	1.50		
Mn-T	mg/L	0.0047	0.0039	0.0056	0.0041	0.0033	5	0.0056	0.0043	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.212	0.215	0.211	0.207	0.208	5	0.215	0.211		
S-T	mg/L	9.7	9.8	10.0	10.0	10.5	5	10.5	10.0		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	13.1	12.5	12.3	12.6	12.2	5	13.1	12.5		
Sr-T	mg/L	0.0583	0.0612	0.0605	0.0607	0.0616	5	0.0616	0.0605		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0127	0.0118	0.0108	0.0106	0.0098	5	0.0127	0.0111	0.05	0.1
As-D	mg/L	0.00012	0.00011	<0.00010	0.00011	0.00010	5	0.00012	0.000098		
Ba-D	mg/L	0.0018	0.0017	0.0018	0.0019	0.0017	5	0.0019	0.0018		
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	12.3	12.0	11.9	11.8	11.8	5	12.3	12.0		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00048	0.00051	0.00547	0.00050	0.00046	5	0.00547	0.00148		
Hard-D	mg/L	37.1	36.0	35.9	35.8	36.0	5	37.1	36.2		
DOC	mg/L		2.9	2.9	2.0	1.0	4	2.9	2.2		
Fe-D	mg/L	0.0120	0.0111	0.0100	0.0107	0.0089	5	0.0120	0.0105		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	1.55	1.47	1.52	1.52	1.55	5	1.55	1.52		
Mn-D	mg/L	0.0025	0.0013	0.0018	0.0014	<0.0010	5	0.0025	0.00150		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.223	0.214	0.213	0.217	0.210	5	0.223	0.215		
S-D	mg/L	10.3	9.8	10.1	9.7	10.5	5	10.5	10.1		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	12.4	12.6	12.6	12.5	12.4	5	12.6	12.5		
Sr-D	mg/L	0.0611	0.0604	0.0614	0.0605	0.0614	5	0.0614	0.0610		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 38 Spring Q1- Lakes 16 Page(s)

EMS ID		E292118								Water Quality Guidelines	
StnName		Lower Quinsam Lake 1 metre from surface									
StnCode		LQL1									
Date		15/Apr/20	22/Apr/20	1/May/20	5/May/20	13/May/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	19	16	17	16	15	5	19	16.6	128	
Chlr-a	ug/L					0.77	1	0.77	0.77		
Turb	NTU	0.35	0.39	0.47	0.41	0.36	5	0.47	0.40	2.5	8.5
Alk-T	mg/L	28	28				2	28	28.0		
P-T	mg/L	<0.0030	<0.0030				2	<0.0030	0.00150		
Al-T	mg/L	0.0235	0.0300	0.0300	0.0242	0.0278	5	0.0300	0.0271		
As-T	mg/L	0.00053	0.00052	0.00057	0.00055	0.00057	5	0.00057	0.00055		0.005
Ba-T	mg/L	0.0031	0.0030	0.0031	0.0031	0.0028	5	0.0031	0.0030	1	5
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	10.6	10.6	10.8	11.0	10.2	5	11.0	10.6		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	0.00054	0.00144	0.00295	0.00056	0.00058	5	0.00295	0.00121		
Hard-T	mg/L	31.9	31.3	31.8	32.2	29.9	5	32.2	31.4		
Fe-T	mg/L	0.072	0.060	0.062	0.036	0.053	5	0.072	0.057		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.0039978	0.01763
Mg-T	mg/L	1.33	1.16	1.20	1.17	1.11	5	1.33	1.19		
Mn-T	mg/L	0.0048	0.0039	0.0042	0.0019	0.0039	5	0.0048	0.0037	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.191	0.192	0.195	0.202	0.182	5	0.202	0.192		
S-T	mg/L	5.9	5.1	5.3	5.2	5.3	5	5.9	5.4		
Se-T	mg/L	<0.00010	0.00010	<0.00010	<0.00010	<0.00010	5	0.00010	0.000060	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	7.98	6.65	6.80	6.71	6.15	5	7.98	6.86		
Sr-T	mg/L	0.0491	0.0478	0.0493	0.0532	0.0453	5	0.0532	0.0489		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0179	0.0233	0.0207	0.0278	0.0228	5	0.0278	0.0225	0.05	0.1
As-D	mg/L	0.00055	0.00053	0.00049	0.00052	0.00053	5	0.00055	0.00052		
Ba-D	mg/L	0.0031	0.0030	0.0030	0.0032	0.0028	5	0.0032	0.0030		
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	11.2	10.7	10.6	11.1	10.3	5	11.2	10.8		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00055	0.00061	0.00176	0.00053	0.00058	5	0.00176	0.00081	0.0003	0.002
Hard-D	mg/L	33.6	31.6	31.4	32.5	30.3	5	33.6	31.9		
DOC	mg/L		3.3	2.0	3.0	1.5	4	3.3	2.4		
Fe-D	mg/L	0.0459	0.0360	0.0340	0.0568	0.0411	5	0.0568	0.0428		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	1.36	1.20	1.19	1.16	1.09	5	1.36	1.20		
Mn-D	mg/L	0.0035	0.0020	0.0018	0.0039	0.0025	5	0.0039	0.0027		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	0.0027	<0.0010	<0.0010	<0.0010	<0.0010	5	0.0027	0.00094		
K-D	mg/L	0.200	0.198	0.191	0.212	0.185	5	0.212	0.197		
S-D	mg/L	6.5	5.3	5.2	5.2	5.1	5	6.5	5.5		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	7.91	6.91	6.77	6.62	6.24	5	7.91	6.89		
Sr-D	mg/L	0.0510	0.0482	0.0475	0.0523	0.0462	5	0.0523	0.0490		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 38 Spring Q1- Lakes 16 Page(s)

EMS ID		E292118								Water Quality Guidelines	
StnName		Lower Quinsam Lake 4 metres from surface									
StnCode		LQL4									
Date		15/Apr/20	22/Apr/20	1/May/20	5/May/20	13/May/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	19	16	17	16	15	5	19	16.6	128	
Turb	NTU	0.38	0.39	0.37	0.49	0.38	5	0.49	0.40	2.5	8.5
Alk-T	mg/L	28	28				2	28	28.0		
P-T	mg/L	<0.0030	<0.0030				2	<0.0030	0.00150		
Al-T	mg/L	0.0253	0.0342	0.0310	0.0343	0.0365	5	0.0365	0.0323		
As-T	mg/L	0.00061	0.00055	0.00053	0.00057	0.00056	5	0.00061	0.00056		0.005
Ba-T	mg/L	0.0033	0.0031	0.0031	0.0031	0.0031	5	0.0033	0.0031	1	5
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	11.3	10.8	10.6	10.7	10.0	5	11.3	10.7		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	0.00056	0.00061	0.00686	0.00056	0.00062	5	0.00686	0.00184		
Hard-T	mg/L	34.1	31.8	31.4	31.6	29.4	5	34.1	31.7		
Fe-T	mg/L	0.075	0.065	0.070	0.067	0.061	5	0.075	0.068		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.0039978	0.01763
Mg-T	mg/L	1.41	1.16	1.16	1.16	1.07	5	1.41	1.19		
Mn-T	mg/L	0.0053	0.0041	0.0043	0.0044	0.0041	5	0.0053	0.0044	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.202	0.195	0.191	0.199	0.182	5	0.202	0.194		
S-T	mg/L	6.2	5.1	5.1	5.1	5.0	5	6.2	5.3		
Se-T	mg/L	<0.00010	0.00010	<0.00010	<0.00010	<0.00010	5	0.00010	0.000060	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	8.36	6.64	6.72	6.45	5.99	5	8.36	6.83		
Sr-T	mg/L	0.0516	0.0492	0.0479	0.0512	0.0446	5	0.0516	0.0489		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0374	0.0244	0.0231	0.0215	0.0262	5	0.0374	0.0265	0.05	0.1
As-D	mg/L	0.00060	0.00051	0.00047	0.00048	0.00053	5	0.00060	0.00052		
Ba-D	mg/L	0.0044	0.0029	0.0030	0.0030	0.0030	5	0.0044	0.0033		
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250		
Cd-D	mg/L	0.000012	<0.000010	<0.000010	<0.000010	<0.000010	5	0.000012	0.0000064	0.000087	0.00017
Ca-D	mg/L	13.9	10.6	10.5	10.7	10.3	5	13.9	11.2		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00132	0.00056	0.00395	0.00049	0.00060	5	0.00395	0.00138	0.0003	0.002
Hard-D	mg/L	43.5	31.3	31.0	31.5	30.0	5	43.5	33.5		
DOC	mg/L		2.2	1.4	3.2	1.3	4	3.2	2.0		
Fe-D	mg/L	0.0594	0.0349	0.0350	0.0347	0.0373	5	0.0594	0.0403		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	1.40	1.17	1.18	1.15	1.06	5	1.40	1.19		
Mn-D	mg/L	0.0044	0.0020	0.0017	0.0016	0.0013	5	0.0044	0.0022		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	0.0902	<0.0010	<0.0010	<0.0010	<0.0010	5	0.0902	0.01844		
K-D	mg/L	0.234	0.196	0.193	0.213	0.181	5	0.234	0.203		
S-D	mg/L	6.1	5.4	5.1	5.3	4.2	5	6.1	5.2		
Se-D	mg/L	<0.00010	0.00010	<0.00010	<0.00010	<0.00010	5	0.00010	0.000060		
Na-D	mg/L	7.76	6.64	6.71	6.62	5.90	5	7.76	6.73		
Sr-D	mg/L	0.0537	0.0475	0.0484	0.0507	0.0452	5	0.0537	0.0491		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 38 Spring Q1- Lakes 16 Page(s)

EMS ID		E292118								Water Quality Guidelines	
StnName		Lower Quinsam Lake 9 metres from surface									
StnCode		LQL9									
Date		15/Apr/20	22/Apr/20	1/May/20	5/May/20	13/May/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	19	19	17	17	17	5	19	17.8	128	
Turb	NTU	0.27	0.38	0.31	0.36	0.35	5	0.38	0.33	2.5	8.5
Alk-T	mg/L		30				1	30	30.0		
P-T	mg/L	<0.0030	<0.0030				2	<0.0030	0.00150		
Al-T	mg/L	0.0275	0.0244	0.0299	0.0305	0.0283	5	0.0305	0.0281		
As-T	mg/L	0.00059	0.00051	0.00052	0.00059	0.00056	5	0.00059	0.00055		0.005
Ba-T	mg/L	0.0031	0.0030	0.0031	0.0031	0.0030	5	0.0031	0.0031	1	5
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	11.3	10.7	10.6	11.0	10.7	5	11.3	10.9		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	0.00056	0.00056	0.00579	0.00054	0.00059	5	0.00579	0.00161		
Hard-T	mg/L	33.9	32.0	31.4	32.2	31.6	5	33.9	32.2		
Fe-T	mg/L	0.083	0.066	0.066	0.062	0.065	5	0.083	0.068		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.0039978	0.01763
Mg-T	mg/L	1.40	1.27	1.20	1.18	1.18	5	1.40	1.25		
Mn-T	mg/L	0.0057	0.0051	0.0048	0.0046	0.0052	5	0.0057	0.0051	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.204	0.200	0.192	0.201	0.190	5	0.204	0.197		
S-T	mg/L	6.3	5.9	5.4	5.3	6.1	5	6.3	5.8		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	8.56	7.81	6.95	6.81	6.76	5	8.56	7.38		
Sr-T	mg/L	0.0522	0.0513	0.0485	0.0525	0.0484	5	0.0525	0.0506		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0187	0.0190	0.0202	0.0214	0.0205	5	0.0214	0.0200	0.05	0.1
As-D	mg/L	0.00053	0.00058	0.00050	0.00051	0.00052	5	0.00058	0.00053		
Ba-D	mg/L	0.0031	0.0029	0.0030	0.0031	0.0031	5	0.0031	0.0030		
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	11.1	10.8	10.6	11.0	10.7	5	11.1	10.8		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00053	0.00058	0.00366	0.00051	0.00056	5	0.00366	0.00117	0.0003	0.002
Hard-D	mg/L	33.1	32.3	31.5	32.4	31.5	5	33.1	32.2		
DOC	mg/L	1.7	2.0	1.9	2.9	1.3	5	2.9	2.0		
Fe-D	mg/L	0.0490	0.0421	0.0350	0.0354	0.0351	5	0.0490	0.0393		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	1.32	1.28	1.20	1.16	1.17	5	1.32	1.23		
Mn-D	mg/L	0.0033	0.0024	0.0016	0.0019	0.0017	5	0.0033	0.0022		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.203	0.200	0.193	0.211	0.195	5	0.211	0.200		
S-D	mg/L	6.7	6.1	5.4	5.2	5.1	5	6.7	5.7		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	8.09	7.97	7.00	6.74	6.78	5	8.09	7.32		
Sr-D	mg/L	0.0512	0.0513	0.0475	0.0516	0.0483	5	0.0516	0.0500		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 38 Spring Q1- Lakes 16 Page(s)

EMS ID		E292118								Water Quality Guidelines	
StnName		Lower Quinsam Lake 1 metre from bottom									
StnCode		LQLB									
Date		15/Apr/20	22/Apr/20	1/May/20	5/May/20	13/May/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	20	21	20	20	20	5	21	20.2	128	
Turb	NTU	0.50	0.47	0.47	0.53	0.67	5	0.67	0.53	2.5	8.5
Alk-T	mg/L	28	29				2	29	28.5		
P-T	mg/L	<0.0030	<0.0030				2	<0.0030	0.00150		
Al-T	mg/L	0.0257	0.0243	0.0236	0.0248	0.0235	5	0.0257	0.0244		
As-T	mg/L	0.00061	0.00055	0.00068	0.00069	0.00070	5	0.00070	0.00065		0.005
Ba-T	mg/L	0.0032	0.0031	0.0035	0.0035	0.0037	5	0.0037	0.0034	1	5
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	11.1	10.8	10.9	11.0	11.1	5	11.1	11.0		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	0.00104	0.00052	0.00323	0.00056	0.00057	5	0.00323	0.00118		
Hard-T	mg/L	33.4	32.3	32.9	32.7	33.6	5	33.6	33.0		
Fe-T	mg/L	0.109	0.123	0.155	0.150	0.176	5	0.176	0.143		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.0039978	0.01763
Mg-T	mg/L	1.38	1.28	1.38	1.30	1.40	5	1.40	1.35		
Mn-T	mg/L	0.0095	0.0139	0.0243	0.0268	0.0381	5	0.0381	0.0225	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.198	0.201	0.211	0.211	0.210	5	0.211	0.206		
S-T	mg/L	6.3	6.3	6.7	6.3	7.6	5	7.6	6.6		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	8.45	8.10	8.43	7.77	7.91	5	8.45	8.13		
Sr-T	mg/L	0.0515	0.0531	0.0532	0.0571	0.0539	5	0.0571	0.0538		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0159	0.0152	0.0135	0.0154	0.0126	5	0.0159	0.0145	0.05	0.1
As-D	mg/L	0.00058	0.00053	0.00055	0.00057	0.00061	5	0.00061	0.00057		
Ba-D	mg/L	0.0032	0.0031	0.0033	0.0035	0.0036	5	0.0036	0.0033		
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	11.2	10.7	10.7	11.1	11.1	5	11.2	11.0		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00049	0.00049	0.00128	0.00048	0.00053	5	0.00128	0.00065	0.0003	0.002
Hard-D	mg/L	33.6	32.2	32.2	33.2	33.4	5	33.6	32.9		
DOC	mg/L		2.1	1.7	2.4	2.7	4	2.7	2.2		
Fe-D	mg/L	0.0667	0.0711	0.0812	0.0779	0.0956	5	0.0956	0.0785		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	1.37	1.32	1.35	1.31	1.36	5	1.37	1.34		
Mn-D	mg/L	0.0077	0.0117	0.0183	0.0207	0.0298	5	0.0298	0.0176		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.208	0.206	0.202	0.222	0.207	5	0.222	0.209		
S-D	mg/L	6.9	6.5	6.5	6.5	6.8	5	6.9	6.6		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	8.34	8.25	8.20	7.99	7.92	5	8.34	8.14		
Sr-D	mg/L	0.0528	0.0535	0.0514	0.0553	0.0534	5	0.0553	0.0533		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 39 Summer Q2- Lakes 9 Page(s)

EMS ID		E206619								Water Quality Guidelines	
StnName		Long Lake Middle 1 Metre									
StnCode		LLM1									
Date		9/Jul/20	15/Jul/20	22/Jul/20	29/Jul/20	5/Aug/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	55	54	53	49	61	5	61	54.4	128	
Chlr-a	ug/L					<0.50	1	<0.50	0.25		
Turb	NTU	0.25	0.23	0.19	0.23	0.20	5	0.25	0.22		
Alk-T	mg/L	29	30	31	34	34	5	34	31.6		
P-T	mg/L	0.0052	0.0046	<0.0030	0.0032	<0.0030	5	0.0052	0.00320	0.007	
Al-T	mg/L	0.0139	0.0101	0.0091	0.0083	0.0086	5	0.0139	0.0100		
As-T	mg/L	0.00047	0.00050	0.00052	0.00056	<0.50	5	0.00057	0.00052		0.005
Ba-T	mg/L	0.0051	0.0050	0.0050	0.0052	0.0054	5	0.0054	0.0051	1	5
B-T	mg/L	0.052	0.057	<0.050	0.058	0.052	5	0.058	0.0488	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	22.0	23.5	22.5	24.3	24.4	5	24.4	23.3		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		0.05
Cu-T	mg/L	0.00051	<0.00050	<0.00050	<0.00050	<0.00050	5	0.00051	0.000302	0.002	0.007
Hard-T	mg/L	66.8	71.6	68.4	73.3	73.4	5	73.4	70.7		
Fe-T	mg/L	0.067	0.068	0.059	0.058	0.050	5	0.068	0.060		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.003	0.005
Mg-T	mg/L	2.87	3.10	2.93	3.04	3.05	5	3.10	3.00		
Mn-T	mg/L	0.0065	0.0074	0.0050	0.0042	0.0048	5	0.0074	0.0056	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.278	0.260	0.243	0.248	0.258	5	0.278	0.257		
S-T	mg/L	17.3	18.5	16.9	17.7	18.6	5	18.6	17.8		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	7.04	7.15	6.61	6.96	6.92	5	7.15	6.94		
Sr-T	mg/L	0.151	0.154	0.149	0.154	0.163	5	0.163	0.154		
Zn-T	mg/L	0.0111	<0.0050	<0.0050	<0.0050	<0.0050	5	0.0111	0.00422	0.0075	0.033
Al-D	mg/L	0.0088	0.0081	0.0081	0.0075	0.0069	5	0.0088	0.0079	0.05	0.1
As-D	mg/L	0.00048	0.00045	0.00050	0.00053	0.00053	5	0.00053	0.00050		
Ba-D	mg/L	0.0051	0.0052	0.0050	0.0052	0.0050	5	0.0052	0.0051		
B-D	mg/L	0.056	0.052	0.054	0.053	0.054	5	0.056	0.054		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	22.8	23.8	23.0	23.5	23.1	5	23.8	23.2		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00057	0.00031	0.00031	0.00031	0.00028	5	0.00057	0.00036		
Hard-D	mg/L	69.4	71.9	69.6	71.4	70.8	5	71.9	70.6		
DOC	mg/L	2.9	2.9	2.7	2.9	2.6	5	2.9	2.8		
Fe-D	mg/L	0.0506	0.0529	0.0461	0.0437	0.0428	5	0.0529	0.0472		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	3.05	3.01	2.97	3.09	3.18	5	3.18	3.06		
Mn-D	mg/L	0.0022	0.0039	0.0015	0.0013	0.0020	5	0.0039	0.0022		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.269	0.251	0.256	0.255	0.243	5	0.269	0.255		
S-D	mg/L	18.7	18.0	17.8	17.4	17.7	5	18.7	17.9		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	7.27	7.01	6.75	6.87	7.21	5	7.27	7.02		
Sr-D	mg/L	0.162	0.159	0.153	0.151	0.153	5	0.162	0.156		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 39 Summer Q2- Lakes 9 Page(s)

EMS ID		E206619								Water Quality Guidelines	
StnName		Long Lake Middle 4 Metre									
StnCode		LLM4									
Date		9/Jul/20	15/Jul/20	22/Jul/20	29/Jul/20	5/Aug/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	56	58	64	60	71	5	71	61.8	128	
Turb	NTU	0.22	0.27	0.21	0.25	0.18	5	0.27	0.23		
Alk-T	mg/L	30	31	32	35	35	5	35	32.6		
P-T	mg/L	0.0034	0.0042	<0.0030	0.023	0.0032	5	0.0230	0.00706	0.007	
Al-T	mg/L	0.0107	0.0114	0.0094	0.0088	0.0085	5	0.0114	0.0098		
As-T	mg/L	0.00048	0.00049	0.00053	0.00049	0.00056	5	0.00056	0.00051		0.005
Ba-T	mg/L	0.0047	0.0054	0.0058	0.0056	0.0059	5	0.0059	0.0055	1	5
B-T	mg/L	0.052	0.057	0.055	0.062	0.056	5	0.062	0.056	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	21.7	24.7	25.9	26.5	26.5	5	26.5	25.1		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		0.05
Cu-T	mg/L	0.00057	<0.00050	<0.00050	<0.00050	<0.00050	5	0.00057	0.000314	0.002	0.007
Hard-T	mg/L	65.9	75.1	78.1	80.0	79.7	5	80.0	75.8		
Fe-T	mg/L	0.066	0.091	0.073	0.065	0.056	5	0.091	0.070		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.003	0.005
Mg-T	mg/L	2.83	3.25	3.28	3.38	3.27	5	3.38	3.20		
Mn-T	mg/L	0.0067	0.0096	0.0052	0.0059	0.0058	5	0.0096	0.0066	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.258	0.267	0.275	0.282	0.274	5	0.282	0.271		
S-T	mg/L	16.8	19.1	20.9	20.6	20.9	5	20.9	19.7		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	6.88	7.36	7.54	7.82	7.42	5	7.82	7.40		
Sr-T	mg/L	0.150	0.159	0.177	0.170	0.176	5	0.177	0.166		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0087	0.0081	0.0070	0.0070	0.0085	5	0.0087	0.0079	0.05	0.1
As-D	mg/L	0.00047	0.00048	0.00048	0.00051	0.00049	5	0.00051	0.00049		
Ba-D	mg/L	0.0051	0.0054	0.0052	0.0058	0.0053	5	0.0058	0.0054		
B-D	mg/L	0.057	0.054	0.057	0.059	0.057	5	0.059	0.057		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	23.4	24.3	24.7	26.0	25.3	5	26.0	24.7		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00039	0.00029	0.00029	0.00030	0.00030	5	0.00039	0.00031		
Hard-D	mg/L	70.5	73.5	75.0	79.2	77.9	5	79.2	75.2		
DOC	mg/L	2.8	2.9	3.0	2.8	2.8	5	3.0	2.9		
Fe-D	mg/L	0.0502	0.0604	0.0502	0.0494	0.0453	5	0.0604	0.0511		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	2.95	3.14	3.21	3.43	3.56	5	3.56	3.26		
Mn-D	mg/L	0.0019	0.0041	0.0014	0.0024	0.0035	5	0.0041	0.0027		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.263	0.259	0.264	0.291	0.267	5	0.291	0.269		
S-D	mg/L	18.1	19.3	20.1	21.0	20.6	5	21.0	19.8		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	7.05	7.26	7.34	7.71	8.02	5	8.02	7.48		
Sr-D	mg/L	0.162	0.167	0.164	0.178	0.179	5	0.179	0.170		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 39 Summer Q2- Lakes 9 Page(s)

EMS ID		E206619								Water Quality Guidelines	
StnName		Long Lake Middle 9 Metre									
StnCode		LLM9									
Date		9/Jul/20	15/Jul/20	22/Jul/20	29/Jul/20	5/Aug/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	130	130	120	84	130	5	130	118.8	128	
Turb	NTU	0.17	0.27	0.19	0.21	0.16	5	0.27	0.20		
Alk-T	mg/L	46	47	46	41	50	5	50	46.0		
P-T	mg/L	0.0055	<0.0030	<0.0030	<0.0030	<0.0030	5	0.0055	0.00230	0.007	
Al-T	mg/L	0.0109	0.0098	0.0089	0.0092	0.0094	5	0.0109	0.0096		
As-T	mg/L	0.00021	0.00022	0.00025	0.00044	0.00026	5	0.00044	0.00028		0.005
Ba-T	mg/L	0.0067	0.0070	0.0066	0.0060	0.0072	5	0.0072	0.0067	1	5
B-T	mg/L	0.104	0.108	0.095	0.079	0.110	5	0.110	0.099	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	42.4	45.2	44.2	34.0	48.4	5	48.4	42.8		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		0.05
Cu-T	mg/L	0.00064	<0.00050	<0.00050	<0.00050	<0.00050	5	0.00064	0.000328	0.002	0.007
Hard-T	mg/L	125	134	130	101	142	5	142	126.4		
Fe-T	mg/L	0.026	0.030	0.029	0.043	0.022	5	0.043	0.030		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.003	0.005
Mg-T	mg/L	4.69	4.99	4.67	4.03	5.00	5	5.00	4.68		
Mn-T	mg/L	0.0587	0.0695	0.0563	0.0306	0.0775	5	0.0775	0.0585	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.509	0.527	0.476	0.377	0.534	5	0.534	0.485		
S-T	mg/L	37.7	40.9	38.2	28.0	42.0	5	42.0	37.4		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	15.8	16.8	15.3	11.4	17.2	5	17.2	15.3		
Sr-T	mg/L	0.338	0.354	0.332	0.237	0.382	5	0.382	0.329		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0081	0.0076	0.0081	0.0078	0.0079	5	0.0081	0.0079	0.05	0.1
As-D	mg/L	0.00021	0.00019	0.00022	0.00041	0.00018	5	0.00041	0.00024		
Ba-D	mg/L	0.0071	0.0068	0.0067	0.0059	0.0066	5	0.0071	0.0066		
B-D	mg/L	0.113	0.104	0.105	0.076	0.105	5	0.113	0.101		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	45.5	44.6	44.0	33.4	45.3	5	45.5	42.6		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00040	0.00027	0.00031	0.00034	0.00027	5	0.00040	0.00032		
Hard-D	mg/L	134	131	130	99.6	134	5	134	125.7		
DOC	mg/L	2.5	2.3	2.0	2.5	2.1	5	2.5	2.3		
Fe-D	mg/L	0.0159	0.0168	0.0163	0.0313	0.0130	5	0.0313	0.0187		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	4.87	4.86	4.96	3.95	5.15	5	5.15	4.76		
Mn-D	mg/L	0.0601	0.0624	0.0566	0.0285	0.0737	5	0.0737	0.0563		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.527	0.501	0.495	0.376	0.490	5	0.527	0.478		
S-D	mg/L	40.8	41.5	40.8	28.1	40.0	5	41.5	38.2		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	16.4	16.2	16.4	11.2	17.0	5	17.0	15.4		
Sr-D	mg/L	0.358	0.359	0.340	0.242	0.350	5	0.359	0.330		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 39 Summer Q2- Lakes 9 Page(s)

EMS ID		E206619								Water Quality Guidelines	
StnName		Long Lake Middle 1 Metre from Bottom									
StnCode		LLMB									
Date		9/Jul/20	15/Jul/20	22/Jul/20	29/Jul/20	5/Aug/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	130	130	130	130	130	5	130	130.0	128	
Turb	NTU	2.1	2.1	1.5	2.5	1.9	5	2.5	2.0		
Alk-T	mg/L	50	49	47	52	51	5	52	49.8		
P-T	mg/L	0.0035	<0.0030	<0.0030	<0.0030	<0.0030	5	0.0035	0.00190	0.007	
Al-T	mg/L	0.0098	0.0087	0.0081	0.0074	0.0078	5	0.0098	0.0084		
As-T	mg/L	0.00027	0.00027	0.00031	0.00030	0.00031	5	0.00031	0.00029		0.005
Ba-T	mg/L	0.0106	0.0108	0.0109	0.0116	0.0114	5	0.0116	0.0111	1	5
B-T	mg/L	0.112	0.109	0.104	0.108	0.106	5	0.112	0.108	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	0.000023	5	0.000023	0.0000086		
Ca-T	mg/L	45.1	46.0	47.7	49.2	47.4	5	49.2	47.1		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		0.05
Cu-T	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	5	<0.00050	0.000250	0.002	0.007
Hard-T	mg/L	134	135	140	145	139	5	145	138.6		
Fe-T	mg/L	0.074	0.076	0.084	0.095	0.090	5	0.095	0.084		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.003	0.005
Mg-T	mg/L	5.12	4.99	5.04	5.29	4.92	5	5.29	5.07		
Mn-T	mg/L	0.316	0.337	0.383	0.549	0.553	5	0.553	0.428	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.564	0.536	0.545	0.552	0.543	5	0.564	0.548		
S-T	mg/L	40.9	40.5	41.5	42.0	41.6	5	42.0	41.3		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	17.4	16.9	17.1	17.7	16.9	5	17.7	17.2		
Sr-T	mg/L	0.367	0.366	0.370	0.363	0.374	5	0.374	0.368		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0048	0.0046	0.0042	0.0046	0.0039	5	0.0048	0.0044	0.05	0.1
As-D	mg/L	0.00020	0.00019	0.00018	0.00022	0.00019	5	0.00022	0.00020		
Ba-D	mg/L	0.0097	0.0097	0.0096	0.0105	0.0095	5	0.0105	0.0098		
B-D	mg/L	0.115	0.108	0.112	0.108	0.106	5	0.115	0.110		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	46.7	46.3	46.9	46.0	45.2	5	46.9	46.2		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00043	0.00029	0.00027	0.00031	0.00025	5	0.00043	0.00031		
Hard-D	mg/L	137	136	138	136	134	5	138	136.2		
DOC	mg/L	2.0	2.2	2.2	2.2	2.1	5	2.2	2.1		
Fe-D	mg/L	0.0125	0.0108	0.0110	0.0134	0.0107	5	0.0134	0.0117		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	4.99	4.93	5.03	5.04	5.12	5	5.12	5.02		
Mn-D	mg/L	0.0968	0.128	0.140	0.311	0.383	5	0.383	0.2118		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.551	0.523	0.539	0.530	0.499	5	0.551	0.528		
S-D	mg/L	41.3	40.7	41.6	40.0	39.1	5	41.6	40.5		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	16.8	16.7	17.3	16.6	17.1	5	17.3	16.9		
Sr-D	mg/L	0.369	0.363	0.360	0.371	0.354	5	0.371	0.363		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 39 Summer Q2- Lakes 9 Page(s)

EMS ID		E206618								Water Quality Guidelines	
StnName		Middle Quinsam Lake 1 Metre									
StnCode		MQL1									
Date		9/Jul/20	15/Jul/20	22/Jul/20	29/Jul/20	5/Aug/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	33	31	25	28	34	5	34	30.2	128	
Chlr-a	ug/L					<0.50	1	1		0.25	
Turb	NTU	0.27	0.26	0.25	0.24	0.25	5	0.27	0.25		
Alk-T	mg/L	36	35	31	36	37	5	37	35.0		
P-T	mg/L	<0.0030	0.0037	<0.0030	<0.0030	<0.0030	5	0.0037	0.00194	0.006	
Al-T	mg/L	0.0159	0.0151	0.0154	0.0147	0.0150	5	0.0159	0.0152		
As-T	mg/L	0.00018	0.00016	0.00018	0.00017	0.00019	5	0.00019	0.00018		0.005
Ba-T	mg/L	0.0019	0.0017	0.0014	0.0015	0.0016	5	0.0019	0.0016	1	5
B-T	mg/L	0.058	0.053	<0.050	<0.050	<0.050	5	0.058	0.0372	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	12.2	11.7	10.4	11.4	11.8	5	12.2	11.5		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		0.05
Cu-T	mg/L	0.00059	0.00055	0.00052	0.00073	0.00051	5	0.00073	0.00058	0.002	0.007
Hard-T	mg/L	36.8	35.7	31.3	34.5	35.6	5	36.8	34.8		
Fe-T	mg/L	0.040	0.039	0.041	0.051	0.050	5	0.051	0.044		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.003	0.005
Mg-T	mg/L	1.56	1.54	1.32	1.44	1.49	5	1.56	1.47		
Mn-T	mg/L	0.0075	0.0069	0.0063	0.0071	0.0060	5	0.0075	0.0068	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.275	0.254	0.196	0.220	0.242	5	0.275	0.237		
S-T	mg/L	12.2	11.5	8.1	9.1	11.1	5	12.2	10.4		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	17.8	16.1	11.8	13.9	14.9	5	17.8	14.9		
Sr-T	mg/L	0.0733	0.0648	0.0514	0.0568	0.0652	5	0.0733	0.0623		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0154	0.0117	0.0137	0.0126	0.0138	5	0.0154	0.0134	0.05	0.1
As-D	mg/L	0.00016	0.00014	0.00015	0.00018	0.00017	5	0.00018	0.00016		
Ba-D	mg/L	0.0018	0.0016	0.0014	0.0015	0.0015	5	0.0018	0.0016		
B-D	mg/L	0.054	0.052	<0.050	<0.050	<0.050	5	0.054	0.0362		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	12.1	11.7	10.4	11.2	11.6	5	12.1	11.4		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00049	0.00045	0.00047	0.00048	0.00055	5	0.00055	0.00049		
Hard-D	mg/L	36.4	35.4	31.4	33.6	35.3	5	36.4	34.4		
DOC	mg/L	1.9	1.7	1.9	1.5	1.8	5	1.9	1.8		
Fe-D	mg/L	0.0224	0.0225	0.0225	0.0266	0.0249	5	0.0266	0.0238		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	1.54	1.48	1.32	1.39	1.50	5	1.54	1.45		
Mn-D	mg/L	0.0028	0.0031	0.0018	0.0017	0.0013	5	0.0031	0.0021		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.277	0.253	0.198	0.215	0.215	5	0.277	0.232		
S-D	mg/L	12.9	11.8	8.3	9.1	9.7	5	12.9	10.4		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	17.1	16.0	11.8	13.3	14.9	5	17.1	14.6		
Sr-D	mg/L	0.0740	0.0640	0.0504	0.0588	0.0591	5	0.0740	0.0613		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 39 Summer Q2- Lakes 9 Page(s)

EMS ID		E206618								Water Quality Guidelines	
StnName		Middle Quinsam Lake 4 Metre									
StnCode		MQL4									
Date		9/Jul/20	15/Jul/20	22/Jul/20	29/Jul/20	5/Aug/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	35	35	27	30	33	5	35	32.0	128	
Turb	NTU	0.28	0.25	0.27	0.26	0.26	5	0.28	0.26		
Alk-T	mg/L	36	35	31	37	38	5	38	35.4		
P-T	mg/L	0.015	<0.0030	<0.0030	<0.0030	<0.0030	5	0.0150	0.00420	0.006	
Al-T	mg/L	0.0158	0.0148	0.0137	0.0140	0.0151	5	0.0158	0.0147		
As-T	mg/L	0.00017	0.00019	0.00018	0.00017	0.00020	5	0.00020	0.00018		0.005
Ba-T	mg/L	0.0018	0.0018	0.0014	0.0015	0.0017	5	0.0018	0.0016	1	5
B-T	mg/L	0.058	0.054	<0.050	<0.050	<0.050	5	0.058	0.0374	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	12.4	11.9	10.8	11.6	11.6	5	12.4	11.7		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		0.05
Cu-T	mg/L	0.00057	0.00055	0.00050	<0.00050	0.00051	5	0.00057	0.000476	0.002	0.007
Hard-T	mg/L	37.5	36.3	32.3	34.8	35.0	5	37.5	35.2		
Fe-T	mg/L	0.041	0.040	0.043	0.048	0.039	5	0.048	0.042		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.003	0.005
Mg-T	mg/L	1.59	1.57	1.29	1.44	1.46	5	1.59	1.47		
Mn-T	mg/L	0.0076	0.0075	0.0067	0.0073	0.0068	5	0.0076	0.0072	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.275	0.262	0.205	0.221	0.239	5	0.275	0.240		
S-T	mg/L	12.4	12.0	8.4	9.7	10.4	5	12.4	10.6		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	17.6	16.7	12.3	13.8	14.8	5	17.6	15.0		
Sr-T	mg/L	0.0733	0.0673	0.0544	0.0571	0.0648	5	0.0733	0.0634		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0126	0.0115	0.0118	0.0141	0.0115	5	0.0141	0.0123	0.05	0.1
As-D	mg/L	0.00016	0.00017	0.00015	0.00020	0.00017	5	0.00020	0.00017		
Ba-D	mg/L	0.0018	0.0018	0.0015	0.0016	0.0015	5	0.0018	0.0016		
B-D	mg/L	0.055	0.053	<0.050	<0.050	<0.050	5	0.055	0.0366		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	0.000011	<0.000010	5	0.000011	0.0000062	0.000087	0.00017
Ca-D	mg/L	11.9	11.7	10.7	11.0	11.5	5	11.9	11.4		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00050	0.00047	0.00049	0.00057	0.00043	5	0.00057	0.00049		
Hard-D	mg/L	35.9	35.4	32.2	33.5	34.7	5	35.9	34.3		
DOC	mg/L	1.7	1.7	1.7	1.7	1.8	5	1.8	1.7		
Fe-D	mg/L	0.0261	0.0209	0.0241	0.0268	0.0213	5	0.0268	0.0238		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	1.54	1.53	1.36	1.44	1.48	5	1.54	1.47		
Mn-D	mg/L	0.0029	0.0014	0.0013	0.0014	<0.0010	5	0.0029	0.00150		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.266	0.253	0.207	0.220	0.216	5	0.266	0.232		
S-D	mg/L	12.9	11.2	8.5	9.6	9.8	5	12.9	10.4		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	17.2	16.2	12.5	13.6	14.7	5	17.2	14.8		
Sr-D	mg/L	0.0734	0.0661	0.0541	0.0600	0.0594	5	0.0734	0.0626		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 39 Summer Q2- Lakes 9 Page(s)

EMS ID		E206618								Water Quality Guidelines	
StnName		Middle Quinsam Lake 9 metres from surface									
StnCode		MQL9									
Date		9/Jul/20	15/Jul/20	22/Jul/20	29/Jul/20	5/Aug/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	29	30	31	30	29	5	31	29.8	128	
Turb	NTU	0.20	0.21	0.22	0.31	0.31	5	0.31	0.25		
Alk-T	mg/L	30	31	31	35	32	5	35	31.8		
P-T	mg/L	0.035	<0.0030	<0.0030	0.0033	<0.0030	5	0.0350	0.00856	0.006	
Al-T	mg/L	0.0111	0.0109	0.0096	0.0095	0.0103	5	0.0111	0.0103		
As-T	mg/L	0.00014	0.00014	0.00013	0.00014	0.00016	5	0.00016	0.00014		0.005
Ba-T	mg/L	0.0016	0.0016	0.0016	0.0016	0.0016	5	0.0016	0.0016	1	5
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	11.9	12.1	12.2	12.1	12.1	5	12.2	12.1		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		0.05
Cu-T	mg/L	0.00055	0.00060	0.00054	0.00058	0.00053	5	0.00060	0.00056	0.002	0.007
Hard-T	mg/L	35.6	36.3	36.5	36.3	36.2	5	36.5	36.2		
Fe-T	mg/L	0.019	0.019	0.023	0.026	0.027	5	0.027	0.023		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.003	0.005
Mg-T	mg/L	1.44	1.49	1.47	1.47	1.45	5	1.49	1.46		
Mn-T	mg/L	0.0048	0.0051	0.0053	0.0059	0.0075	5	0.0075	0.0057	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.198	0.194	0.199	0.193	0.192	5	0.199	0.195		
S-T	mg/L	9.6	10.3	10.1	10.0	9.3	5	10.3	9.9		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	12.5	13.0	12.8	13.1	12.5	5	13.1	12.8		
Sr-T	mg/L	0.0602	0.0614	0.0603	0.0593	0.0621	5	0.0621	0.0607		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0087	0.0081	0.0083	0.0082	0.0200	5	0.0200	0.0107	0.05	0.1
As-D	mg/L	0.00012	0.00013	0.00013	0.00014	0.00012	5	0.00014	0.00013		
Ba-D	mg/L	0.0016	0.0016	0.0015	0.0016	0.0015	5	0.0016	0.0016		
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	11.5	11.8	11.5	11.8	11.9	5	11.9	11.7		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00049	0.00047	0.00047	0.00054	0.00049	5	0.00054	0.00049		
Hard-D	mg/L	34.6	35.5	34.8	35.6	35.7	5	35.7	35.2		
DOC	mg/L	1.5	2.2	1.8	1.8	1.8	5	2.2	1.8		
Fe-D	mg/L	0.0097	0.0086	0.0101	0.0119	0.0085	5	0.0119	0.0098		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	1.42	1.46	1.49	1.48	1.47	5	1.49	1.46		
Mn-D	mg/L	0.0019	<0.0010	0.0010	0.0015	0.0015	5	0.0019	0.00128		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	0.0017	5	0.0017	0.00074		
K-D	mg/L	0.194	0.189	0.201	0.201	0.173	5	0.201	0.192		
S-D	mg/L	9.7	9.9	10.6	11.2	9.1	5	11.2	10.1		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	12.1	12.6	13.2	13.0	12.7	5	13.2	12.7		
Sr-D	mg/L	0.0609	0.0594	0.0599	0.0621	0.0567	5	0.0621	0.0598		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 39 Summer Q2- Lakes 9 Page(s)

EMS ID		E206618								Water Quality Guidelines	
StnName		Middle Quinsam Lake 1 Metre from Bottom									
StnCode		MQLB									
Date		9/Jul/20	15/Jul/20	22/Jul/20	29/Jul/20	5/Aug/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	29	31	30	31	36	5	36	31.4	128	
Turb	NTU	0.18	0.20	0.20	0.25	0.25	5	0.25	0.22		
P-T	mg/L	0.0031	0.016	<0.0030	0.0042	0.0035	5	0.0160	0.00566	0.006	
Alk-T	mg/L	32	33	32	37	36	5	37	34.0		
Al-T	mg/L	0.0096	0.0089	0.0081	0.0075	0.0078	5	0.0096	0.0084		
As-T	mg/L	0.00011	0.00010	0.00013	0.00012	0.00014	5	0.00014	0.00012		0.005
Ba-T	mg/L	0.0019	0.0019	0.0019	0.0021	0.0024	5	0.0024	0.0020	1	5
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	12.9	12.6	12.6	13.4	12.8	5	13.4	12.9		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		0.05
Cu-T	mg/L	0.00070	0.00051	0.00055	0.00079	0.00057	5	0.00079	0.00062	0.002	0.007
Hard-T	mg/L	38.9	38.0	38.3	40.4	38.7	5	40.4	38.9		
Fe-T	mg/L	0.018	0.018	0.021	0.024	0.028	5	0.028	0.022		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.003	0.005
Mg-T	mg/L	1.63	1.62	1.65	1.71	1.65	5	1.71	1.65		
Mn-T	mg/L	0.0051	0.0055	0.0060	0.0069	0.0078	5	0.0078	0.0063	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.219	0.215	0.212	0.217	0.217	5	0.219	0.216		
S-T	mg/L	10.8	10.7	10.4	10.7	10.3	5	10.8	10.6		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	13.4	13.8	13.5	14.2	13.6	5	14.2	13.7		
Sr-T	mg/L	0.0647	0.0640	0.0648	0.0651	0.0670	5	0.0670	0.0651		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0069	0.0064	0.0064	0.0096	0.0050	5	0.0096	0.0069	0.05	0.1
As-D	mg/L	<0.00010	0.00010	0.00010	0.00010	<0.00010	5	0.00010	0.000080		
Ba-D	mg/L	0.0018	0.0018	0.0019	0.0021	0.0020	5	0.0021	0.0019		
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	12.5	12.4	12.3	12.3	12.2	5	12.5	12.3		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00050	0.00047	0.00050	0.00057	0.00046	5	0.00057	0.00050		
Hard-D	mg/L	37.5	37.3	37.2	37.5	37.4	5	37.5	37.4		
DOC	mg/L	1.8	2.1	1.7	1.7	1.5	5	2.1	1.8		
Fe-D	mg/L	0.0100	0.0107	0.0110	0.0148	0.0122	5	0.0148	0.0117		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	1.54	1.57	1.61	1.63	1.68	5	1.68	1.61		
Mn-D	mg/L	0.0036	0.0035	0.0037	0.0041	0.0042	5	0.0042	0.0038		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.205	0.209	0.209	0.213	0.200	5	0.213	0.207		
S-D	mg/L	10.9	10.2	10.8	10.3	9.9	5	10.9	10.4		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	12.7	13.1	13.6	13.5	13.8	5	13.8	13.3		
Sr-D	mg/L	0.0650	0.0625	0.0631	0.0644	0.0596	5	0.0650	0.0629		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 39 Summer Q2- Lakes 9 Page(s)

EMS ID										Water Quality Guidelines	
StnName		LLE Zone of Dilution 2- In Long lake where LLE enters near the outlet									
StnCode		LLEZ2									
Date		9/Jul/20	15/Jul/20	22/Jul/20	29/Jul/20	5/Aug/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	58	57	58	57	63	5	63	58.6	128	
Turb	NTU	0.29	0.24	0.25	0.29	0.18	5	0.29	0.25		
Alk-T	mg/L	29	31	31	34	34	5	34	31.8		
P-T	mg/L	<0.0030	0.039	<0.0030	0.016	<0.0030	5	0.0390	0.01190	0.007	
Al-T	mg/L	0.0133	0.0105	0.0120	0.0093	0.0119	5	0.0133	0.0114		
As-T	mg/L	0.00049	0.00050	0.00051	0.00057	0.00059	5	0.00059	0.00053		0.005
Ba-T	mg/L	0.0049	0.0052	0.0052	0.0054	0.0055	5	0.0055	0.0052	1	5
B-T	mg/L	0.053	0.057	0.052	0.056	0.055	5	0.057	0.055	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	0.000015	5	0.000015	0.0000070		
Ca-T	mg/L	21.7	23.6	23.2	25.4	24.6	5	25.4	23.7		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		0.05
Cu-T	mg/L	<0.00050	<0.00050	0.00053	<0.00050	<0.00050	5	0.00053	0.000306	0.002	0.007
Hard-T	mg/L	66.0	71.5	70.2	77.0	74.4	5	77.0	71.8		
Fe-T	mg/L	0.069	0.071	0.066	0.061	0.055	5	0.071	0.064		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.003	0.005
Mg-T	mg/L	2.90	3.09	2.99	3.32	3.16	5	3.32	3.09		
Mn-T	mg/L	0.0074	0.0079	0.0060	0.0050	0.0050	5	0.0079	0.0063	0.7	0.8
Hg-T	mg/L	<0.0000019	0.0000051	<0.0000019	<0.0000019	<0.0000019	5	0.0000051	0.00000178	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.262	0.261	0.256	0.273	0.269	5	0.273	0.264		
S-T	mg/L	17.2	18.3	17.4	19.1	19.2	5	19.2	18.2		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	7.03	7.10	6.85	7.44	7.12	5	7.44	7.11		
Sr-T	mg/L	0.151	0.156	0.153	0.162	0.166	5	0.166	0.158		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0125	0.0085	0.0084	0.0082	0.0069	5	0.0125	0.0089	0.05	0.1
As-D	mg/L	0.00050	0.00047	0.00051	0.00050	0.00052	5	0.00052	0.00050		
Ba-D	mg/L	0.0052	0.0050	0.0052	0.0052	0.0050	5	0.0052	0.0051		
B-D	mg/L	0.058	0.055	0.054	0.055	0.053	5	0.058	0.055		
Cd-D	mg/L	<0.000010	<0.000010	0.000017	<0.000010	<0.000010	5	0.000017	0.0000074	0.000087	0.00017
Ca-D	mg/L	23.1	23.5	23.0	23.1	23.7	5	23.7	23.3		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00064	0.00029	0.00042	0.00031	0.00028	5	0.00064	0.00039		
Hard-D	mg/L	69.9	71.4	70.1	70.4	72.3	5	72.3	70.8		
DOC	mg/L	2.6	2.7	3.1	2.6	3.0	5	3.1	2.8		
Fe-D	mg/L	0.0519	0.0542	0.0462	0.0450	0.0419	5	0.0542	0.0478		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	3.00	3.09	3.04	3.09	3.19	5	3.19	3.08		
Mn-D	mg/L	0.0027	0.0045	0.0026	0.0019	0.0025	5	0.0045	0.0028		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.266	0.256	0.269	0.277	0.238	5	0.277	0.261		
S-D	mg/L	18.4	18.0	18.1	18.1	17.5	5	18.4	18.0		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	7.10	7.08	6.92	6.97	7.22	5	7.22	7.06		
Sr-D	mg/L	0.160	0.160	0.148	0.150	0.154	5	0.160	0.154		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 40 Fall Q3- Lakes 9 Page(s)

EMS ID		E206619								Water Quality Guideline	
StnName		Long Lake Middle 1 Metre Depth									
StnCode		LLM1									
Date		7/Oct/20	15/Oct/20	21/Oct/20	28/Oct/20	5/Nov/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	77	79	69	65	30	5	79	64.0	128	
Turb	NTU	0.24	0.41	0.41	0.44	0.61	5	0.61	0.42	2.5	8.5
Chlr-a	ug/L	0.89					1	0.89	0.89		
P-T	mg/L	<0.0030		<0.0030	<0.0030	0.0034	4	0.0034	0.00198		
Alk-T	mg/L	40	39	37	35	22	5	40	34.6		
Al-T	mg/L	0.0058	0.0068	0.0120	0.0137	0.0236	5	0.0236	0.0124		
As-T	mg/L	0.00052	0.00049	0.00051	0.00051	0.00047	5	0.00052	0.00050		0.005
Ba-T	mg/L	0.0072	0.0065	0.0060	0.0059	0.0036	5	0.0072	0.0058	1	5
B-T	mg/L	0.071	0.073	0.062	0.060	<0.050	5	0.073	0.0582	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	29.3	31.6	27.3	25.3	14.2	5	31.6	25.5		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	5	<0.00050	0.000250	0.002	0.007
Hard-T	mg/L	88.8	95.4	83.1	77.3	43.8	5	95.4	77.7		
Fe-T	mg/L	0.026	0.041	0.068	0.071	0.107	5	0.107	0.063		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.003998	0.01763
Mg-T	mg/L	3.76	3.99	3.62	3.43	2.05	5	3.99	3.37		
Mn-T	mg/L	0.0039	0.0068	0.0078	0.0096	0.0073	5	0.0096	0.0071	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.336	0.347	0.334	0.324	0.214	5	0.347	0.311		
S-T	mg/L	24.4	24.6	22.5	21.3	9.2	5	24.6	20.4		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	9.19	9.72	8.44	8.00	4.22	5	9.72	7.91		
Sr-T	mg/L	0.200	0.203	0.178	0.177	0.0843	5	0.203	0.1685		
Zn-T	mg/L	0.0055	<0.0050	<0.0050	<0.0050	<0.0050	5	0.0055	0.00310	0.0075	0.033
Al-D	mg/L	<0.0030	0.0033	0.0061	0.0085	0.0168	5	0.0168	0.00724	0.05	0.1
As-D	mg/L	0.00053	0.00047	0.00047	0.00044	0.00044	5	0.00053	0.00047		
Ba-D	mg/L	0.0065	0.0064	0.0062	0.0057	0.0035	5	0.0065	0.0057		
B-D	mg/L	0.067	0.066	0.061	0.060	<0.050	5	0.067	0.0558		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	29.5	29.7	27.3	25.8	14.3	5	29.7	25.3		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00026	0.00035	0.00029	0.00034	0.00034	5	0.00035	0.000320		
Hard-D	mg/L	89.9	90.2	83.7	78.8	44.4	5	90.2	77.4		
DOC	mg/L	3.3	2.8	3.0	2.5	3.6	5	3.6	3.0		
Fe-D	mg/L	0.0116	0.0152	0.0326	0.0390	0.0656	5	0.0656	0.0328		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	3.92	3.88	3.77	3.48	2.11	5	3.92	3.43		
Mn-D	mg/L	<0.0010	<0.0010	0.0020	0.0024	0.0032	5	0.0032	0.00172		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.343	0.361	0.343	0.324	0.210	5	0.361	0.316		
S-D	mg/L	24.5	24.5	22.5	20.5	9.3	5	24.5	20.3		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	9.16	9.43	8.76	7.83	4.26	5	9.43	7.89		
Sr-D	mg/L	0.206	0.203	0.182	0.171	0.0843	5	0.206	0.1693		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 40 Fall Q3- Lakes 9 Page(s)

EMS ID		E206619								Water Quality Guideline	
StnName		Long Lake Middle 4 Metre Depth									
StnCode		LLM4									
Date		7/Oct/20	15/Oct/20	21/Oct/20	28/Oct/20	5/Nov/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	78	78	69	67	48	5	78	68.0	128	
Turb	NTU	0.28	0.32	0.41	0.39	0.40	5	0.41	0.36	2.5	8.5
Alk-T	mg/L	38	42	37	36	30	5	42	36.6		
P-T	mg/L	<0.0030		<0.0030	<0.0030	<0.0030	4	<0.0030	0.00150		
Al-T	mg/L	0.0048	0.0063	0.0075	0.0136	0.0181	5	0.0181	0.0101		
As-T	mg/L	0.00052	0.00053	0.00047	0.00049	0.00046	5	0.00053	0.00049		0.005
Ba-T	mg/L	0.0062	0.0065	0.0060	0.0059	0.0052	5	0.0065	0.0060	1	5
B-T	mg/L	0.069	0.074	0.062	0.057	0.052	5	0.074	0.063	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	29.1	31.1	26.7	26.1	22.3	5	31.1	27.1		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	5	<0.00050	0.000250	0.002	0.007
Hard-T	mg/L	87.7	93.7	81.3	79.3	68.4	5	93.7	82.1		
Fe-T	mg/L	0.029	0.043	0.032	0.072	0.088	5	0.088	0.053		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.003998	0.01763
Mg-T	mg/L	3.67	3.91	3.52	3.44	3.05	5	3.91	3.52		
Mn-T	mg/L	0.0038	0.0073	0.0019	0.0094	0.0084	5	0.0094	0.0062	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.323	0.341	0.328	0.332	0.287	5	0.341	0.322		
S-T	mg/L	24.7	24.2	22.0	21.7	16.5	5	24.7	21.8		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	8.94	9.56	8.21	8.23	6.89	5	9.56	8.37		
Sr-T	mg/L	0.198	0.209	0.174	0.176	0.139	5	0.209	0.179		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	<0.0030	0.0039	0.0113	0.0078	0.0111	5	0.0113	0.00712	0.05	0.1
As-D	mg/L	0.00050	0.00047	0.00048	0.00040	0.00043	5	0.00050	0.00046		
Ba-D	mg/L	0.0066	0.0065	0.0063	0.0056	0.0047	5	0.0066	0.0059		
B-D	mg/L	0.067	0.067	0.062	0.060	0.051	5	0.067	0.061		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	29.0	29.1	27.3	24.8	20.9	5	29.1	26.2		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00025	0.00027	0.00031	0.00033	0.00030	5	0.00033	0.00029		
Hard-D	mg/L	88.4	88.8	83.7	76.4	64.1	5	88.8	80.3		
DOC	mg/L	2.3	2.6	2.7	3.1	3.2	5	3.2	2.8		
Fe-D	mg/L	0.0101	0.0163	0.0679	0.0360	0.0443	5	0.0679	0.0349		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	3.89	3.90	3.75	3.49	2.90	5	3.90	3.59		
Mn-D	mg/L	<0.0010	0.0010	0.0080	0.0022	0.0018	5	0.0080	0.00270		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.341	0.362	0.345	0.311	0.271	5	0.362	0.326		
S-D	mg/L	24.2	24.8	22.2	22.8	16.4	5	24.8	22.1		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	8.97	9.47	8.71	7.91	6.45	5	9.47	8.30		
Sr-D	mg/L	0.206	0.206	0.182	0.170	0.142	5	0.206	0.181		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 40 Fall Q3- Lakes 9 Page(s)

EMS ID		E206619								Water Quality Guideline	
StnName		Long Lake Middle 9 Metre Depth									
StnCode		LLM9									
Date		7/Oct/20	15/Oct/20	21/Oct/20	28/Oct/20	5/Nov/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	120	120	130	120	72	5	130	112.4	128	
Turb	NTU	0.31	0.32	0.40	0.45	0.56	5	0.56	0.41	2.5	8.5
Alk-T	mg/L	48	58	51	48	34	5	58	47.8		
P-T	mg/L	<0.0030		<0.0030	<0.0030	<0.0030	4	<0.0030	0.00150		
Al-T	mg/L	0.0058	0.0068	0.0090	0.0103	0.0214	5	0.0214	0.0107		
As-T	mg/L	0.00029	0.00024	0.00022	0.00031	0.00048	5	0.00048	0.00031		0.005
Ba-T	mg/L	0.0070	0.0072	0.0073	0.0072	0.0064	5	0.0073	0.0070	1	5
B-T	mg/L	0.101	0.113	0.107	0.094	0.064	5	0.113	0.096	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	41.6	45.4	45.1	40.3	27.6	5	45.4	40.0		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	5	<0.00050	0.000250	0.002	0.007
Hard-T	mg/L	123	134	133	120	84.0	5	134	118.8		
Fe-T	mg/L	0.024	0.031	0.033	0.046	0.134	5	0.134	0.054		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.003998	0.01763
Mg-T	mg/L	4.57	4.93	5.01	4.79	3.66	5	5.01	4.59		
Mn-T	mg/L	0.0519	0.0770	0.0625	0.0414	0.0178	5	0.0770	0.0501	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.476	0.510	0.535	0.496	0.374	5	0.535	0.478		
S-T	mg/L	37.2	39.0	41.2	37.1	23.3	5	41.2	35.6		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	15.3	17.1	16.9	15.1	8.80	5	17.1	14.64		
Sr-T	mg/L	0.313	0.340	0.342	0.317	0.181	5	0.342	0.299		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0037	0.0058	0.0041	0.0057	0.0135	5	0.0135	0.0066	0.05	0.1
As-D	mg/L	0.00026	0.00019	0.00019	0.00027	0.00043	5	0.00043	0.00027		
Ba-D	mg/L	0.0072	0.0073	0.0072	0.0071	0.0063	5	0.0073	0.0070		
B-D	mg/L	0.099	0.104	0.107	0.099	0.062	5	0.107	0.094		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	41.7	43.2	44.5	40.6	28.0	5	44.5	39.6		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00028	0.00031	0.00032	0.00031	0.00031	5	0.00032	0.00031		
Hard-D	mg/L	124	128	133	121	85.1	5	133	118.2		
DOC	mg/L	2.5	2.0	1.9	2.0	3.3	5	3.3	2.3		
Fe-D	mg/L	0.0099	0.0104	0.0091	0.0217	0.0768	5	0.0768	0.0256		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	4.78	4.87	5.21	4.75	3.71	5	5.21	4.66		
Mn-D	mg/L	0.0361	0.0420	0.0301	0.0211	0.0103	5	0.0420	0.0279		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.485	0.519	0.541	0.483	0.352	5	0.541	0.476		
S-D	mg/L	36.6	38.3	40.5	35.7	22.7	5	40.5	34.8		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	15.0	16.3	17.4	14.5	8.56	5	17.4	14.35		
Sr-D	mg/L	0.328	0.345	0.349	0.297	0.186	5	0.349	0.301		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 40 Fall Q3- Lakes 9 Page(s)

EMS ID		E206619								Water Quality Guideline	
StnName		Long Lake Middle 1 Metre from Bottom Depth									
StnCode		LLMB									
Date		7/Oct/20	15/Oct/20	21/Oct/20	28/Oct/20	5/Nov/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	130	130	130	130	130	5	130	130.0	128	
Turb	NTU	1.2	1.6	1.5	1.8	1.2	5	1.8	1.5	2.5	8.5
Alk-T	mg/L	54	63	57	59	53	5	63	57.2		
P-T	mg/L	<0.0030		<0.0030	<0.0030	<0.0030	4	<0.0030	0.00150		
Al-T	mg/L	0.0053	0.0053	0.0054	0.0066	0.0051	5	0.0066	0.0055		
As-T	mg/L	0.00029	0.00034	0.00035	0.00037	0.00028	5	0.00037	0.00033		0.005
Ba-T	mg/L	0.0149	0.0157	0.0162	0.0195	0.0139	5	0.0195	0.0160	1	5
B-T	mg/L	0.112	0.112	0.109	0.111	0.103	5	0.112	0.109	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	45.7	46.9	45.1	46.8	45.6	5	46.9	46.0		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	0.00022	0.00023	0.00030	<0.00020	5	0.00030	0.000190	0.004	0.11
Cu-T	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	5	<0.00050	0.000250	0.002	0.007
Hard-T	mg/L	134	138	133	139	134	5	139	135.6		
Fe-T	mg/L	0.130	0.177	0.160	0.180	0.100	5	0.180	0.149		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.003998	0.01763
Mg-T	mg/L	4.85	4.96	4.94	5.38	4.90	5	5.38	5.01		
Mn-T	mg/L	1.95	2.20	2.19	3.10	1.97	5	3.10	2.28	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.541	0.528	0.548	0.584	0.544	5	0.584	0.549		
S-T	mg/L	40.5	38.0	40.5	43.0	40.5	5	43.0	40.5		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	17.1	17.0	16.8	18.3	17.4	5	18.3	17.3		
Sr-T	mg/L	0.352	0.349	0.356	0.378	0.348	5	0.378	0.357		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	<0.0030	<0.0030	<0.0030	0.0041	<0.0030	5	0.0041	0.00202	0.05	0.1
As-D	mg/L	0.00019	0.00020	0.00021	0.00017	0.00018	5	0.00021	0.00019		
Ba-D	mg/L	0.0143	0.0149	0.0164	0.0175	0.0123	5	0.0175	0.0151		
B-D	mg/L	0.108	0.103	0.108	0.113	0.110	5	0.113	0.108		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	45.6	44.1	45.6	44.6	46.3	5	46.3	45.2		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	0.00025	<0.00020	5	0.00025	0.000130		
Cu-D	mg/L	0.00028	0.00026	0.00027	0.00031	0.00025	5	0.00031	0.00027		
Hard-D	mg/L	135	130	136	133	136	5	136	134.0		
DOC	mg/L	2.5	2.1	1.9	2.1	1.6	5	2.5	2.0		
Fe-D	mg/L	0.0120	0.0160	0.0163	0.0179	0.0074	5	0.0179	0.0139		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	5.04	4.89	5.25	5.12	5.07	5	5.25	5.07		
Mn-D	mg/L	1.74	1.95	2.26	2.94	1.70	5	2.94	2.12		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.555	0.548	0.568	0.554	0.562	5	0.568	0.557		
S-D	mg/L	41.1	38.8	41.7	42.7	39.8	5	42.7	40.8		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	16.9	16.7	17.6	16.9	16.7	5	17.6	17.0		
Sr-D	mg/L	0.370	0.358	0.360	0.357	0.352	5	0.370	0.359		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 40 Fall Q3- Lakes 9 Page(s)

EMS ID		E206618								Water Quality Guideline	
StnName		Middle Quinsam Lake 1 Metre Depth									
StnCode		MQL1									
Date		7/Oct/20	15/Oct/20	21/Oct/20	28/Oct/20	5/Nov/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	27	31	31	31	29	5	31	29.8	128	
Chlr-a	ug/L	<0.50					1	<0.50	0.250		
Turb	NTU	0.19	0.46	1.6	0.36	0.28	5	1.6	0.58	2.5	8.5
Alk-T	mg/L	39	44	40	41	38	5	44	40.4		
P-T	mg/L	<0.0030		<0.0030	<0.0030	<0.0030	4	<0.0030	0.00150		
Al-T	mg/L	0.0089	0.0083	0.0093	0.0102	0.0106	5	0.0106	0.0095		
As-T	mg/L	0.00019	0.00015	0.00017	0.00019	0.00017	5	0.00019	0.00017		0.005
Ba-T	mg/L	0.0018	0.0019	0.0020	0.0021	0.0021	5	0.0021	0.0020	1	5
B-T	mg/L	0.050	0.054	0.053	0.054	0.060	5	0.060	0.054	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	11.2	11.2	11.1	11.2	12.1	5	12.1	11.4		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	5	<0.00050	0.000250	0.002	0.007
Hard-T	mg/L	33.8	34.0	33.9	33.8	36.8	5	36.8	34.5		
Fe-T	mg/L	0.036	0.042	0.046	0.048	0.047	5	0.048	0.044		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.01763
Mg-T	mg/L	1.44	1.48	1.50	1.42	1.62	5	1.62	1.49		
Mn-T	mg/L	0.0069	0.0107	0.0100	0.0106	0.0087	5	0.0107	0.0094	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.258	0.259	0.277	0.275	0.291	5	0.291	0.272		
S-T	mg/L	10.1	9.3	10.2	9.8	11.3	5	11.3	10.1		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	15.2	15.7	16.1	15.9	17.3	5	17.3	16.0		
Sr-T	mg/L	0.0620	0.0592	0.0608	0.0642	0.0670	5	0.0670	0.0626		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0069	0.0055	0.0081	0.0064	0.0067	5	0.0081	0.0067	0.05	0.1
As-D	mg/L	0.00016	0.00015	0.00016	0.00016	0.00014	5	0.00016	0.00015		
Ba-D	mg/L	0.0018	0.0019	0.0020	0.0022	0.0020	5	0.0022	0.0020		
B-D	mg/L	<0.050	0.050	0.053	0.054	<0.050	5	0.054	0.0414		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	11.2	10.8	11.4	12.4	11.3	5	12.4	11.4		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00037	0.00038	0.00043	0.00041	0.00040	5	0.00043	0.00040		
Hard-D	mg/L	33.8	32.9	35.0	37.3	34.4	5	37.3	34.7		
DOC	mg/L	1.6	1.6	1.4	1.4	2.0	5	2.0	1.6		
Fe-D	mg/L	0.0217	0.0235	0.0267	0.0276	0.0248	5	0.0276	0.0249		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	1.41	1.45	1.60	1.57	1.50	5	1.60	1.51		
Mn-D	mg/L	0.0011	<0.0010	0.0016	0.0013	<0.0010	5	0.0016	0.00100		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.256	0.271	0.287	0.298	0.259	5	0.298	0.274		
S-D	mg/L	9.3	9.7	10.2	10.7	10.0	5	10.7	10.0		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	14.5	15.9	16.8	17.0	16.2	5	17.0	16.1		
Sr-D	mg/L	0.0613	0.0598	0.0627	0.0712	0.0647	5	0.0712	0.0639		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 40 Fall Q3- Lakes 9 Page(s)

EMS ID		E206618								Water Quality Guideline	
StnName		Middle Quinsam Lake 4 Metre Depth									
StnCode		MQL4									
Date		7/Oct/20	15/Oct/20	21/Oct/20	28/Oct/20	5/Nov/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	30	32	29	32	30	5	32	30.6	128	
Turb	NTU	0.21	0.34	0.31	0.35	0.29	5	0.35	0.30	2.5	8.5
Alk-T	mg/L	38	42	40	41	38	5	42	39.8		
P-T	mg/L	<0.0030		<0.0030	<0.0030	<0.0030	4	<0.0030	0.00150		
Al-T	mg/L	0.0090	0.0087	0.0095	0.0097	0.0100	5	0.0100	0.0094		
As-T	mg/L	0.00016	0.00017	0.00017	0.00019	0.00017	5	0.00019	0.00017		0.005
Ba-T	mg/L	0.0017	0.0020	0.0020	0.0021	0.0021	5	0.0021	0.0020	1	5
B-T	mg/L	<0.050	0.055	0.054	0.053	0.060	5	0.060	0.0494	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	11.0	11.3	11.6	10.8	11.5	5	11.6	11.2		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	0.00050	<0.00050	<0.00050	<0.00050	<0.00050	5	0.00050	0.000300	0.002	0.007
Hard-T	mg/L	33.3	34.2	35.3	32.7	35.2	5	35.3	34.1		
Fe-T	mg/L	0.035	0.043	0.046	0.047	0.045	5	0.047	0.043		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.01763
Mg-T	mg/L	1.42	1.46	1.50	1.43	1.56	5	1.56	1.47		
Mn-T	mg/L	0.0065	0.0105	0.0100	0.0108	0.0081	5	0.0108	0.0092	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.256	0.263	0.285	0.275	0.275	5	0.285	0.271		
S-T	mg/L	9.3	10.2	10.2	10.2	10.3	5	10.3	10.0		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	15.1	16.0	16.1	16.2	16.2	5	16.2	15.9		
Sr-T	mg/L	0.0591	0.0591	0.0626	0.0648	0.0646	5	0.0648	0.0620		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0068	0.0054	0.0080	0.0065	0.0070	5	0.0080	0.0067	0.05	0.1
As-D	mg/L	0.00016	0.00015	0.00016	0.00016	0.00015	5	0.00016	0.00016		
Ba-D	mg/L	0.0017	0.0019	0.0020	0.0021	0.0019	5	0.0021	0.0019		
B-D	mg/L	<0.050	0.051	0.054	0.053	0.050	5	0.054	0.0466		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	11.1	10.8	11.4	12.1	11.4	5	12.1	11.4		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00039	0.00037	0.00044	0.00042	0.00046	5	0.00046	0.00042		
Hard-D	mg/L	33.8	32.9	35.0	36.7	34.8	5	36.7	34.6		
DOC	mg/L	1.6	1.7	1.5	1.9	2.4	5	2.4	1.8		
Fe-D	mg/L	0.0212	0.0240	0.0264	0.0277	0.0262	5	0.0277	0.0251		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	1.44	1.47	1.59	1.59	1.51	5	1.59	1.52		
Mn-D	mg/L	<0.0010	<0.0010	0.0015	0.0011	<0.0010	5	0.0015	0.00082		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.259	0.271	0.292	0.296	0.253	5	0.296	0.274		
S-D	mg/L	9.6	9.9	9.9	10.9	9.5	5	10.9	10.0		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	14.7	15.9	16.7	17.2	15.8	5	17.2	16.1		
Sr-D	mg/L	0.0606	0.0593	0.0632	0.0697	0.0599	5	0.0697	0.0625		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 40 Fall Q3- Lakes 9 Page(s)

EMS ID		E206618								Water Quality Guideline	
StnName		Middle Quinsam Lake 9 Metre Depth									
StnCode		MQL9									
Date		7/Oct/20	15/Oct/20	21/Oct/20	28/Oct/20	5/Nov/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	31	32	32	30	30	5	32	31.0	128	
Turb	NTU	0.25	0.30	0.32	0.39	0.28	5	0.39	0.31	2.5	8.5
Alk-T	mg/L	39	44	40	41	38	5	44	40.4		
P-T	mg/L	<0.0030		<0.0030	<0.0030	<0.0030	4	<0.0030	0.00150		
Al-T	mg/L	0.0086	0.0090	0.0097	0.0101	0.0100	5	0.0101	0.0095		
As-T	mg/L	0.00017	0.00015	0.00019	0.00018	0.00017	5	0.00019	0.00017		0.005
Ba-T	mg/L	0.0017	0.0018	0.0020	0.0021	0.0022	5	0.0022	0.0020	1	5
B-T	mg/L	<0.050	0.053	0.053	0.053	0.057	5	0.057	0.0482	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	11.1	10.9	11.3	11.3	11.5	5	11.5	11.2		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	5	<0.00050	0.000250	0.002	0.007
Hard-T	mg/L	33.6	32.9	34.3	34.3	35.0	5	35.0	34.0		
Fe-T	mg/L	0.033	0.042	0.047	0.050	0.046	5	0.050	0.044		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.003998	0.01763
Mg-T	mg/L	1.40	1.40	1.48	1.45	1.52	5	1.52	1.45		
Mn-T	mg/L	0.0083	0.0105	0.0103	0.0107	0.0081	5	0.0107	0.0096	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.251	0.248	0.271	0.284	0.272	5	0.284	0.265		
S-T	mg/L	10.0	9.7	9.3	10.3	10.4	5	10.4	9.9		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	14.8	15.3	16.1	16.3	16.3	5	16.3	15.8		
Sr-T	mg/L	0.0600	0.0568	0.0599	0.0669	0.0635	5	0.0669	0.0614		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0063	0.0066	0.0067	0.0068	0.0071	5	0.0071	0.0067	0.05	0.1
As-D	mg/L	0.00016	0.00017	0.00016	0.00016	0.00015	5	0.00017	0.00016		
Ba-D	mg/L	0.0017	0.0018	0.0020	0.0022	0.0020	5	0.0022	0.0019		
B-D	mg/L	<0.050	0.050	0.053	0.054	0.051	5	0.054	0.0466		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	11.2	10.7	11.5	12.2	11.5	5	12.2	11.4		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00048	0.00037	0.00042	0.00041	0.00048	5	0.00048	0.00043		
Hard-D	mg/L	33.8	32.7	35.4	37.1	34.9	5	37.1	34.8		
DOC	mg/L	2.1	1.8	1.4	2.1	1.7	5	2.1	1.8		
Fe-D	mg/L	0.0170	0.0240	0.0271	0.0302	0.0266	5	0.0302	0.0250		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	1.43	1.47	1.60	1.58	1.52	5	1.60	1.52		
Mn-D	mg/L	<0.0010	<0.0010	0.0017	0.0013	<0.0010	5	0.0017	0.00090		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.260	0.267	0.292	0.299	0.263	5	0.299	0.276		
S-D	mg/L	9.8	9.6	10.3	11.2	9.7	5	11.2	10.1		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	14.6	15.9	16.9	17.1	16.2	5	17.1	16.1		
Sr-D	mg/L	0.0618	0.0595	0.0623	0.0707	0.0605	5	0.0707	0.0630		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 40 Fall Q3- Lakes 9 Page(s)

EMS ID		E206618								Water Quality Guideline	
StnName		Middle Quinsam Lake 1 Metre from Bottom Depth									
StnCode		MQLB									
Date		7/Oct/20	15/Oct/20	21/Oct/20	28/Oct/20	5/Nov/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	30	29	30	32	33	5	33	30.8	128	
Turb	NTU	0.56	1.5	0.69	0.44	0.32	5	1.5	0.70	2.5	8.5
P-T	mg/L	0.0089		<0.0030	<0.0030	<0.0030	4	0.0089	0.0034		
Alk-T	mg/L	44	50	45	41	38	5	50	43.6		
Al-T	mg/L	0.0063	0.0066	0.0077	0.0108	0.0095	5	0.0108	0.0082		
As-T	mg/L	0.00012	0.00019	0.00018	0.00017	0.00017	5	0.00019	0.00017		0.005
Ba-T	mg/L	0.0026	0.0036	0.0028	0.0021	0.0023	5	0.0036	0.0027	1	5
B-T	mg/L	<0.050	0.051	0.051	0.053	0.058	5	0.058	0.0476	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	13.6	14.8	13.2	10.8	12.5	5	14.8	13.0		
Cr-T	mg/L	<0.0010	0.0024	<0.0010	<0.0010	<0.0010	5	0.0024	0.00088		
Co-T	mg/L	<0.00020	0.00024	<0.00020	<0.00020	<0.00020	5	0.00024	0.000128	0.004	0.11
Cu-T	mg/L	0.00058	0.00063	0.00053	<0.00050	<0.00050	5	0.00063	0.000448	0.002	0.007
Hard-T	mg/L	41.0	44.5	39.9	33.1	38.0	5	44.5	39.3		
Fe-T	mg/L	0.046	0.236	0.109	0.056	0.053	5	0.236	0.100		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.003998	0.01763
Mg-T	mg/L	1.70	1.85	1.69	1.48	1.68	5	1.85	1.68		
Mn-T	mg/L	0.293	0.820	0.407	0.0117	0.0093	5	0.820	0.3082	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	0.0012	<0.0010	<0.0010	<0.0010	5	0.0012	0.00064	0.025	0.025
K-T	mg/L	0.258	0.276	0.281	0.285	0.274	5	0.285	0.275		
S-T	mg/L	10.1	8.9	9.9	10.5	11.5	5	11.5	10.2		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	14.9	15.3	15.8	16.5	16.5	5	16.5	15.8		
Sr-T	mg/L	0.0738	0.0717	0.0708	0.0660	0.0667	5	0.0738	0.0698		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	<0.0030	<0.0030	0.0050	0.0070	0.0072	5	0.0072	0.00444	0.05	0.1
As-D	mg/L	0.00011	0.00016	0.00015	0.00016	0.00014	5	0.00016	0.00014		
Ba-D	mg/L	0.0025	0.0032	0.0026	0.0021	0.0022	5	0.0032	0.0025		
B-D	mg/L	<0.050	<0.050	0.051	0.054	0.050	5	0.054	0.0410		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	13.6	14.2	12.9	12.4	12.1	5	14.2	13.0		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00052	0.00052	0.00045	0.00043	0.00040	5	0.00052	0.00046		
Hard-D	mg/L	41.1	42.9	39.5	37.4	37.0	5	42.9	39.6		
DOC	mg/L	2.0	2.2	2.2	1.8	1.7	5	2.2	2.0		
Fe-D	mg/L	0.0117	0.0432	0.0304	0.0337	0.0269	5	0.0432	0.0292		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	1.76	1.80	1.76	1.58	1.68	5	1.80	1.72		
Mn-D	mg/L	0.272	0.750	0.366	0.0024	0.0017	5	0.750	0.2784		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.264	0.281	0.293	0.297	0.264	5	0.297	0.280		
S-D	mg/L	9.3	8.5	9.6	11.1	11.0	5	11.1	9.9		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	14.4	15.0	16.4	17.4	16.4	5	17.4	15.9		
Sr-D	mg/L	0.0720	0.0724	0.0688	0.0698	0.0673	5	0.0724	0.0701		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 40 Fall Q3- Lakes 9 Page(s)

EMS ID										Water Quality Guideline	
StnName		LLE Zone of Dilution 2- In Long lake near the outlet									
StnCode		LLEZ2									
Date		7/Oct/20	15/Oct/20	21/Oct/20	28/Oct/20	5/Nov/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	76	80	74	69	32	5	80	66.2	128	
Turb	NTU	0.31	0.33	0.53	0.95	0.58	5	0.95	0.54	2.5	8.5
Alk-T	mg/L	38	42	38	37	25	5	42	36		
P-T	mg/L	0.017		<0.0030	<0.0030	<0.0030	4	0.017	0.00538		
Al-T	mg/L	0.0123	0.0109	0.0327	0.0144	0.0232	5	0.0327	0.0187		
As-T	mg/L	0.00053	0.00050	0.00066	0.00052	0.00046	5	0.00066	0.00053		0.005
Ba-T	mg/L	0.0071	0.0067	0.0080	0.0061	0.0039	5	0.0080	0.0064	1	5
B-T	mg/L	0.069	0.073	0.068	0.057	<0.050	5	0.073	0.0584	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	29.8	30.9	32.2	25.9	15.7	5	32.2	26.9		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	0.00068	<0.00050	0.00051	<0.00050	<0.00050	5	0.00068	0.000388	0.002	0.007
Hard-T	mg/L	89.9	92.9	97.8	79.1	48.8	5	97.8	81.7		
Fe-T	mg/L	0.035	0.074	0.121	0.069	0.100	5	0.121	0.080		1
Pb-T	mg/L	0.00086	0.00023	<0.00020	<0.00020	<0.00020	5	0.00086	0.000278	0.003998	0.01763
Mg-T	mg/L	3.74	3.84	4.24	3.50	2.31	5	4.24	3.53		
Mn-T	mg/L	0.0043	0.0083	0.0112	0.0092	0.0072	5	0.0112	0.0080	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.338	0.345	0.397	0.329	0.238	5	0.397	0.329		
S-T	mg/L	24.5	23.9	26.7	21.4	11.1	5	26.7	21.5		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	9.13	9.29	9.61	8.26	4.85	5	9.61	8.23		
Sr-T	mg/L	0.202	0.199	0.207	0.178	0.0918	5	0.207	0.1756		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0031	0.0033	0.0065	0.0105	0.0162	5	0.0162	0.0079	0.05	0.1
As-D	mg/L	0.00048	0.00049	0.00048	0.00047	0.00041	5	0.00049	0.00047		
Ba-D	mg/L	0.0066	0.0064	0.0065	0.0065	0.0037	5	0.0066	0.0059		
B-D	mg/L	0.067	0.065	0.065	0.065	<0.050	5	0.067	0.0574		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	29.2	28.7	28.8	27.6	15.6	5	29.2	26.0		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00031	0.00024	0.00032	0.00041	0.00044	5	0.00044	0.00034		
Hard-D	mg/L	89.2	87.4	88.1	84.5	48.3	5	89.2	79.5		
DOC	mg/L	3.0	2.6	2.8	3.4	3.4	5	3.4	3.0		
Fe-D	mg/L	0.0113	0.0161	0.0286	0.0726	0.0632	5	0.0726	0.0384		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	3.96	3.84	3.95	3.78	2.25	5	3.96	3.56		
Mn-D	mg/L	<0.0010	<0.0010	0.0018	0.0064	0.0033	5	0.0064	0.00250		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.350	0.351	0.361	0.354	0.219	5	0.361	0.327		
S-D	mg/L	24.6	24.2	23.7	24.3	10.8	5	24.6	21.5		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	9.01	9.31	9.22	8.44	4.69	5	9.31	8.13		
Sr-D	mg/L	0.205	0.197	0.193	0.180	0.0949	5	0.205	0.1740		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 41 Spring Q1- Rivers 6 Page(s)

	EMS ID	E217017								Water Quailty Guidelines	
StnName		No Name Lake Outlet									
StnCode		NNO									
Date		14/Apr/20	20/Apr/20	27/Apr/20	5/May/20	11/May/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	2.5	2.5	3.1	2.8	2.9	5	3.1	2.8	128	
TSS	mg/L	2.4	1.6	<1.0	4.0	1.2	5	4.0	1.94	5	25
Alk-T	mg/L	11	10	11	11	10	5	11	10.6		
Al-T	mg/L	0.0311	0.0273	0.0274	0.0268	0.0256	5	0.0311	0.0276		
As-T	mg/L	0.00021	0.00022	0.00023	0.00024	0.00028	5	0.00028	0.00024		0.005
Ba-T	mg/L	0.0011	0.0011	0.00023	0.0011	0.0011	5	0.0011	0.0011	1	5
B-T	mg/L	<0.050	<0.050	0.00023	<0.050	<0.050	5	<0.050	0.0250	1.2	
Cd-T	mg/L	<0.000010	<0.000010	0.00023	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	3.89	4.03	4.18	4.20	4.09	5	4.20	4.08		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	5	<0.00050	0.000250		
Hard-T	mg/L	13.5	13.6	14.0	14.1	13.7	5	14.1	13.8		
Fe-T	mg/L	0.059	0.056	0.059	0.058	0.059	5	0.059	0.058		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.0039978	0.01763
Mg-T	mg/L	0.908	0.859	0.860	0.884	0.851	5	0.908	0.872		
Mn-T	mg/L	0.0045	0.0041	0.0048	0.0044	0.0051	5	0.0051	0.0046	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.067	0.069	0.066	0.071	0.069	5	0.071	0.068		
S-T	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	5	<3.0	1.50		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	1.10	1.10	1.05	1.10	1.12	5	1.12	1.09		
Sr-T	mg/L	0.0128	0.0133	0.0144	0.0146	0.0135	5	0.0146	0.0137		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0231	0.0223	0.0200	0.0201	0.0201	5	0.0231	0.0211	0.05	0.1
As-D	mg/L	0.00019	0.00020	0.00023	0.00023	0.00023	5	0.00023	0.00022		
Ba-D	mg/L	0.0011	0.0010	0.0011	0.0012	0.0011	5	0.0012	0.0011		
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	4.03	4.05	4.10	4.16	4.07	5	4.16	4.08		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00037	0.00036	0.00034	0.00038	0.00036	5	0.00038	**0.00036**	0.0003	0.002
Hard-D	mg/L	13.6	13.7	13.6	14.1	13.8	5	14.1	13.8		
DOC	mg/L		2.8	2.7	2.4	2.1	4	2.8	2.5		
Fe-D	mg/L	0.0346	0.0377	0.0368	0.0449	0.0455	5	0.0455	0.0399		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	0.860	0.870	0.823	0.904	0.882	5	0.904	0.868		
Mn-D	mg/L	0.0029	0.0032	0.0033	0.0036	0.0033	5	0.0036	0.0033		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.070	0.071	0.068	0.068	0.069	5	0.071	0.069		
S-D	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	5	<3.0	1.50		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	1.02	10.5	1.02	1.13	1.13	5	1.13	1.08		
Sr-D	mg/L	0.0127	0.0598	0.0141	0.0135	0.0135	5	0.0141	0.0134		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 41 Spring Q1- Rivers 6 Page(s)

	EMS ID	E219412								Water Quailty Guidelines	
StnName		Long Lake Outlet									
StnCode		LLO									
Date		14/Apr/20	20/Apr/20	27/Apr/20	5/May/20	11/May/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	45	14	64	65	64	5	65	58.0	128	
TSS	mg/L	<1.0	3.6	3.6	1.2	1.6	5	3.6	2.10	5	25
Alk-T	mg/L	25	28	29	30	30	5	30	28.2		
Al-T	mg/L	0.0271	0.0487	0.0230	0.0191	0.0192	5	0.0271	0.0227		
As-T	mg/L	0.00035	0.00060	0.00039	0.00036	0.00036	5	0.00039	0.00037		0.005
Ba-T	mg/L	0.0043	0.0030	0.0050	0.0051	0.0051	5	0.0051	0.0048	1	5
B-T	mg/L	<0.050	<0.050	0.053	0.060	0.059	5	0.060	0.0444	1.2	
Cd-T	mg/L	<0.000010	0.000016	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	19.4	10.8	23.4	26.3	25.7	5	26.3	23.3		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	<0.00050	0.00071	0.00068	<0.00050	<0.00050	5	0.00068	0.000336	0.002	0.007
Hard-T	mg/L	58.7	31.3	70.7	78.8	76.5	5	78.8	70.1		
Fe-T	mg/L	0.093	0.057	0.084	0.077	0.074	5	0.105	0.087		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.0039978	0.01763
Mg-T	mg/L	2.52	1.06	2.95	3.20	3.01	5	3.20	2.93		
Mn-T	mg/L	0.0106	0.0030	0.0140	0.0142	0.0140	5	0.0142	0.0134	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.232	0.191	0.282	0.304	0.294	5	0.304	0.277		
S-T	mg/L	14.8	4.6	19.8	21.8	22.0	5	22.0	19.3		
Se-T	mg/L	<0.00010	0.00011	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	6.14	5.69	7.56	8.68	8.69	5	8.69	7.63		
Sr-T	mg/L	0.127	0.0465	0.177	0.195	0.187	5	0.195	0.166		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0187	0.0358	0.0133	0.0122	0.0115	5	0.0187	0.0143	0.05	0.1
As-D	mg/L	0.00032	0.00057	0.00032	0.00032	0.00033	5	0.00033	0.00032		
Ba-D	mg/L	0.0042	0.0029	0.0047	0.0051	0.0050	5	0.0051	0.0047		
B-D	mg/L	<0.050	<0.050	<0.050	0.055	0.059	5	0.059	0.0378		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	19.3	10.6	22.8	25.5	25.3	5	25.5	22.8		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00036	0.00064	0.00031	0.00035	0.00029	5	0.00036	0.00033		
Hard-D	mg/L	58.5	30.8	68.4	77.1	76.2	5	77.1	69.0		
DOC	mg/L		2.2	2.4	3.0	2.5	4	3.0	2.6		
Fe-D	mg/L	0.0651	0.0292	0.0470	0.0536	0.0408	5	0.0651	0.0541		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	2.48	1.06	2.81	3.23	3.14	5	3.23	2.90		
Mn-D	mg/L	0.0072	0.0021	0.0080	0.0092	0.0068	5	0.0095	0.0081		
Hg-D	mg/L	<0.0000019	0.0000020	<0.0000019	<0.0000019	<0.0000019	5	0.0000019	0.00000114		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.233	0.188	0.274	0.308	0.302	5	0.308	0.278		
S-D	mg/L	15.8	4.3	18.7	21.3	21.0	5	21.3	18.9		
Se-D	mg/L	<0.00010	0.00012	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	5.91	5.65	7.08	8.86	8.89	5	8.89	7.54		
Sr-D	mg/L	0.128	0.0456	0.171	0.194	0.186	5	0.194	0.164		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 41 Spring Q1- Rivers 6 Page(s)

	EMS ID	E0126402								Water Quailty Guidelines	
StnName		Quinsam River at Argonaut Bridge									
StnCode		WA									
Date		14/Apr/20	20/Apr/20	27/Apr/20	5/May/20	11/May/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	1.1	1.1	1.7	1.3	1.5	5	1.7	1.3	128	
TSS	mg/L	<1.0	2.0	1.6	1.2	1.2	5	2.0	1.30	5	25
Alk-T	mg/L	17	17	20	17	16	5	20	17.4		
Al-T	mg/L	0.0217	0.0228	0.0213	0.0231	0.0220	5	0.0231	0.0222		
As-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		0.005
Ba-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	5
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	6.77	6.85	6.62	6.89	6.73	5	6.89	6.77		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	0.00073	0.00062	0.00077	0.00062	0.00337	5	0.00337	0.00122	0.002	0.007
Hard-T	mg/L	20.0	20.1	19.5	20.2	19.7	5	20.2	19.9		
Fe-T	mg/L	0.013	0.013	0.011	0.013	0.013	5	0.013	0.013		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.0039978	0.01763
Mg-T	mg/L	0.758	0.718	0.713	0.729	0.713	5	0.758	0.726		
Mn-T	mg/L	<0.0010	0.0012	<0.0010	0.0013	0.0013	5	0.0013	0.00096	0.7	0.8
Hg-T	mg/L	<0.0000019	0.0000021	<0.0000019	<0.0000019	0.0000026	5	0.0000026	0.00000151	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.058	0.061	0.057	0.091	0.057	5	0.091	0.065		
S-T	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	5	<3.0	1.50		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	0.658	0.647	0.569	0.596	0.606	5	0.658	0.615		
Sr-T	mg/L	0.0112	0.0113	0.0115	0.0120	0.0113	5	0.0120	0.0115		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0173	0.0182	0.0162	0.0166	0.0166	5	0.0182	0.0170	0.05	0.1
As-D	mg/L	<0.00010	<0.00010	<0.00010	0.00010	<0.00010	5	0.00010	0.000060		
Ba-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	6.71	6.73	6.61	6.81	6.90	5	6.90	6.75		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00053	0.00058	0.00050	0.00058	0.00055	5	0.00058	0.00055		
Hard-D	mg/L	19.8	19.8	19.3	20.0	20.3	5	20.3	19.8		
DOC	mg/L		2.2	2.4	1.7	2.7	4	2.7	2.2		
Fe-D	mg/L	0.0069	0.0077	0.0056	0.0088	0.0067	5	0.0088	0.0071		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	0.735	0.725	0.668	0.737	0.743	5	0.743	0.722		
Mn-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.057	0.063	0.059	0.058	0.059	5	0.063	0.059		
S-D	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	5	<3.0	1.50		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	0.614	0.616	0.538	0.617	0.616	5	0.617	0.600		
Sr-D	mg/L	0.0109	0.0113	0.0115	0.0115	0.0113	5	0.0115	0.0113		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 41 Spring Q1- Rivers 6 Page(s)

	EMS ID	E0900504								Water Quailty Guidelines	
StnName		Middle Quinsam Lake Outlet									
StnCode		WB									
Date		14/Apr/20	20/Apr/20	27/Apr/20	5/May/20	11/May/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	27	26	27	28	27	5	28	27.0	128	
TSS	mg/L	<1.0	3.2	<1.0	<1.0	1.2	5	3.2	1.18	5	25
Alk-T	mg/L	30	28	30	29	28	5	30	29.0		
Al-T	mg/L	0.0167	0.0181	0.0170	0.0158	0.0156	5	0.0181	0.0166		
As-T	mg/L	0.00012	0.00010	0.00012	0.00013	0.00013	5	0.00013	0.00012		0.005
Ba-T	mg/L	0.0017	0.0017	0.0017	0.0018	0.0017	5	0.0018	0.0017	1	5
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	11.4	11.3	10.9	12.2	10.8	5	12.2	11.3		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	0.00055	0.00090	0.00072	<0.00050	0.00055	5	0.00090	0.000594	0.002	0.007
Hard-T	mg/L	34.1	33.8	32.6	36.3	32.6	5	36.3	33.9		
Fe-T	mg/L	0.028	0.031	0.027	0.028	0.024	5	0.031	0.028		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.0039978	0.01763
Mg-T	mg/L	1.38	1.34	1.28	1.43	1.36	5	1.43	1.36		
Mn-T	mg/L	0.0039	0.0051	0.0050	0.0051	0.0051	5	0.0051	0.0048	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.191	0.188	0.188	0.206	0.186	5	0.206	0.192		
S-T	mg/L	8.1	8.2	8.4	9.3	8.2	5	9.3	8.4		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	10.3	9.45	9.35	10.1	9.86	5	10.3	9.81		
Sr-T	mg/L	0.0544	0.0559	0.0574	0.0650	0.0546	5	0.0650	0.0575		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0142	0.0144	0.0132	0.0126	0.0133	5	0.0144	0.0135	0.05	0.1
As-D	mg/L	0.00012	0.00011	0.00014	0.00014	0.00012	5	0.00014	0.00013		
Ba-D	mg/L	0.0017	0.0017	0.0017	0.0019	0.0016	5	0.0019	0.0017		
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	11.4	11.3	11.2	11.8	11.1	5	11.8	11.4		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00049	0.00053	0.00046	0.00050	0.00059	5	0.00059	0.00051		
Hard-D	mg/L	34.2	33.9	33.1	35.6	33.3	5	35.6	34.0		
DOC	mg/L		1.9	2.4	2.0	2.5	4	2.5	2.2		
Fe-D	mg/L	0.0185	0.0192	0.0158	0.0203	0.0190	5	0.0203	0.0186		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	1.39	1.35	1.26	1.47	1.37	5	1.47	1.37		
Mn-D	mg/L	0.0029	0.0038	0.0031	0.0035	0.0037	5	0.0038	0.0034		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.197	0.190	0.195	0.208	0.194	5	0.208	0.197		
S-D	mg/L	9.0	8.3	8.4	8.6	8.2	5	9.0	8.5		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	10.3	9.49	9.32	10.2	10.2	5	10.3	9.90		
Sr-D	mg/L	0.0550	0.0557	0.0595	0.0626	0.0544	5	0.0626	0.0574		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 41 Spring Q1- Rivers 6 Page(s)

	EMS ID	E292113								Water Quailty Guidelines	
StnName		7-South Quinsam River									
StnCode		7SQR									
Date		14/Apr/20	20/Apr/20	27/Apr/20	5/May/20	11/May/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	28	26	28	26	29	5	29	27.4	128	
TSS	mg/L	<1.0	1.6	1.6	<1.0	1.6	5	1.6	1.16	5	25
Alk-T	mg/L	33	30	32	34	31	5	34	32.0		
Al-T	mg/L	0.0245	0.0224	0.0222	0.0207	0.0239	5	0.0245	0.0227		
As-T	mg/L	0.00044	0.00047	0.00048	0.00044	0.00058	5	0.00058	0.00048		0.005
Ba-T	mg/L	0.0026	0.0025	0.0026	0.0025	0.0029	5	0.0029	0.0026	1	5
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	12.0	11.3	11.6	12.2	11.9	5	12.2	11.8		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	0.00057	0.00052	0.00052	<0.00050	0.00053	5	0.00057	0.000478	0.002	0.007
Hard-T	mg/L	36.1	34.1	34.8	36.6	35.9	5	36.6	35.5		
Fe-T	mg/L	0.070	0.069	0.068	0.069	0.078	5	0.078	0.071		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.0039978	0.01763
Mg-T	mg/L	1.51	1.43	1.45	1.48	1.48	5	1.51	1.47		
Mn-T	mg/L	0.0044	0.0049	0.0052	0.0051	0.0059	5	0.0059	0.0051	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.223	0.216	0.222	0.221	0.228	5	0.228	0.222		
S-T	mg/L	8.7	8.5	8.9	9.0	8.8	5	9.0	8.8		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	11.9	10.7	10.9	11.2	11.7	5	11.9	11.3		
Sr-T	mg/L	0.0609	0.0589	0.0638	0.0652	0.0633	5	0.0652	0.0624		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0122	0.0119	0.0125	0.0099	0.0095	5	0.0125	0.0112	0.05	0.1
As-D	mg/L	0.00045	0.00041	0.00042	0.00036	0.00050	5	0.00050	0.00043		
Ba-D	mg/L	0.0026	0.0024	0.0025	0.0024	0.0027	5	0.0027	0.0025		
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	11.8	11.4	12.0	11.5	11.5	5	12.0	11.6		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00050	0.00048	0.00044	0.00046	0.00046	5	0.00050	0.00047		
Hard-D	mg/L	35.6	34.2	36.0	34.8	34.8	5	36.0	35.1		
DOC	mg/L		1.8	2.8	1.9	2.3	4	2.8	2.2		
Fe-D	mg/L	0.0398	0.0377	0.0373	0.0411	0.0474	5	0.0474	0.0407		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	1.50	1.40	1.49	1.47	1.50	5	1.50	1.47		
Mn-D	mg/L	0.0034	0.0036	0.0039	0.0039	0.0051	5	0.0051	0.0040		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.234	0.215	0.224	0.215	0.224	5	0.234	0.222		
S-D	mg/L	9.2	8.1	9.1	8.1	8.6	5	9.2	8.6		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	11.6	10.5	11.7	10.9	11.4	5	11.7	11.2		
Sr-D	mg/L	0.0622	0.0598	0.0640	0.0616	0.0611	5	0.0640	0.0617		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 41 Spring Q1- Rivers 6 Page(s)

	EMS ID	E299256								Water Quailty Guidelines	
StnName		Iron River & Quinsam River									
StnCode		IRQR									
Date		14/Apr/20	20/Apr/20	1/May/20	5/May/20	11/May/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	18	14	14	15	12	5	18	14.6	128	
TSS	mg/L	3.2	3.6	4.0	1.2	1.2	5	4.0	2.6	5	25
Alk-T	mg/L	31	28	28	30	25	5	31	28.4		
Al-T	mg/L	0.0357	0.0487	0.0470	0.0440	0.0535	5	0.0535	0.0458		
As-T	mg/L	0.00065	0.00060	0.00052	0.00059	0.00061	5	0.00065	0.00059		0.005
Ba-T	mg/L	0.0033	0.0030	0.0030	0.0030	0.0028	5	0.0033	0.0030	1	5
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250	1.2	
Cd-T	mg/L	<0.000010	0.000016	<0.000010	<0.000010	0.000010	5	0.000016	0.0000082		
Ca-T	mg/L	11.4	10.8	10.5	10.3	8.96	5	11.4	10.39		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	0.00062	0.00071	0.00065	0.00067	0.00077	5	0.00077	0.00068		
Hard-T	mg/L	33.7	31.3	30.7	30.2	26.1	5	33.7	30.4		
Fe-T	mg/L	0.058	0.057	0.074	0.061	0.054	5	0.074	0.061		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.0039978	0.01763
Mg-T	mg/L	1.26	1.06	1.09	1.10	0.902	5	1.26	1.082		
Mn-T	mg/L	0.0031	0.0030	0.0034	0.0037	0.0031	5	0.0037	0.0033	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	0.0000029	5	0.0000029	0.00000134	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.200	0.191	0.190	0.183	0.165	5	0.200	0.186		
S-T	mg/L	5.6	4.6	4.7	4.6	4.0	5	5.6	4.7		
Se-T	mg/L	0.00013	0.00011	0.00010	0.00010	<0.00010	5	0.00013	0.000098	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	7.66	5.69	6.25	6.35	5.00	5	7.66	6.19		
Sr-T	mg/L	0.0516	0.0465	0.0445	0.0447	0.0389	5	0.0516	0.0452		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0221	0.0358	0.0311	0.0270	0.0432	5	0.0432	0.0318	0.05	0.1
As-D	mg/L	0.00062	0.00057	0.00047	0.00056	0.00060	5	0.00062	0.00056		
Ba-D	mg/L	0.0032	0.0029	0.0029	0.0029	0.0028	5	0.0032	0.0029		
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	0.000012	5	0.000012	0.0000064	0.000087	0.00017
Ca-D	mg/L	11.5	10.6	10.2	10.3	9.10	5	11.5	10.34		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00050	0.00064	0.00057	0.00055	0.00068	5	0.00068	**0.00059**	0.0003	0.002
Hard-D	mg/L	33.8	30.8	29.8	30.1	26.7	5	33.8	30.2		
DOC	mg/L		2.2	2.2	2.7	2.6	4	2.7	2.4		
Fe-D	mg/L	0.0295	0.0292	0.0318	0.0324	0.0337	5	0.0337	0.0313		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	1.24	1.06	1.05	1.09	0.953	5	1.24	1.079		
Mn-D	mg/L	0.0021	0.0021	0.0021	0.0028	0.0025	5	0.0028	0.0023		
Hg-D	mg/L	<0.0000019	0.0000020	<0.0000019	0.0000024	<0.0000019	5	0.0000024	0.00000145		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.198	0.188	0.180	0.187	0.176	5	0.198	0.186		
S-D	mg/L	6.1	4.3	4.4	4.6	3.7	5	6.1	4.6		
Se-D	mg/L	0.00013	0.00012	<0.00010	<0.00010	<0.00010	5	0.00013	0.000080		
Na-D	mg/L	7.49	5.65	5.88	6.29	5.23	5	7.49	6.11		
Sr-D	mg/L	0.0515	0.0456	0.0456	0.0464	0.0399	5	0.0515	0.0458		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 42 Summer Q2- Rivers 8 Page(s)

EMS ID		E217017								Water Quailty Guidelines	
StnName		No Name Lake Outlet									
StnCode		NNO									
Date		8/Jul/20	14/Jul/20	21/Jul/20	28/Jul/20	4/Aug/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	1.6	1.6	2.0	1.4	1.7	5	2.0	1.7	128	
TSS	mg/L	1.2	1.2	3.2	1.6	2.4	5	3.2	1.9	5	25
Alk-T	mg/L	14	15	17	17	17	5	17	16.0		
Al-T	mg/L	0.0247	0.0212	0.0235	0.0242	0.0215	5	0.0247	0.0230		
As-T	mg/L	0.00039	0.00042	0.00041	0.00044	0.00047	5	0.00047	0.00043		0.005
Ba-T	mg/L	0.0013	0.0012	0.0013	0.0013	0.0013	5	0.0013	0.0013	1	5
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	4.78	4.97	4.90	4.98	5.14	5	5.14	4.95		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	0.00082	<0.00050	0.00052	0.00203	<0.00050	5	0.00203	0.000774		
Hard-T	mg/L	16.3	17.0	16.8	16.9	17.5	5	17.5	16.9		
Fe-T	mg/L	0.135	0.139	0.141	0.147	0.152	5	0.152	0.143		1
P-T	mg/L	0.041	0.0040	0.048	<0.0030	0.0048	5	0.048	0.01986		
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.0039978	0.01763
Mg-T	mg/L	1.07	1.12	1.11	1.08	1.13	5	1.13	1.10		
Mn-T	mg/L	0.0092	0.0050	0.0093	0.0136	0.0116	5	0.0136	0.0097	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.081	0.065	0.076	0.064	0.068	5	0.081	0.071		
S-T	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	5	<3.0	1.50		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	1.23	1.26	1.28	1.29	1.27	5	1.29	1.27		
Sr-T	mg/L	0.0157	0.0163	0.0160	0.0167	0.0162	5	0.0167	0.0162		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0208	0.0173	0.0162	0.0137	0.0142	5	0.0208	0.0164	0.05	0.1
As-D	mg/L	0.00037	0.00038	0.00047	0.00039	0.00044	5	0.00047	0.00041		
Ba-D	mg/L	0.0011	0.0012	0.0012	0.0011	0.0011	5	0.0012	0.0011		
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250		
Cd-D	mg/L	<0.000010	<0.000010	0.000019	<0.000010	<0.000010	5	0.000019	0.0000078	0.000087	0.00017
Ca-D	mg/L	4.77	5.06	4.90	4.75	5.14	5	5.14	4.92		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00035	0.00036	0.00064	0.00039	0.00048	5	0.00064	0.00044	0.0003	0.002
Hard-D	mg/L	16.3	17.2	16.6	16.3	17.5	5	17.5	16.8		
DOC	mg/L	2.5	2.9	3.2	2.6	3.0	5	3.2	2.8		
Fe-D	mg/L	0.111	0.116	0.108	0.101	0.125	5	0.125	0.112		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	1.06	1.12	1.06	1.07	1.13	5	1.13	1.09		
Mn-D	mg/L	0.0030	0.0031	0.0054	0.0054	0.0074	5	0.0074	0.0049		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.078	0.069	0.072	0.064	0.068	5	0.078	0.070		
S-D	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	5	<3.0	1.50		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	1.22	1.21	1.27	1.21	1.32	5	1.32	1.25		
Sr-D	mg/L	0.0152	0.0168	0.0162	0.0153	0.0158	5	0.0168	0.0159		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 42 Summer Q2- Rivers 8 Page(s)

EMS ID		E219412								Water Quailty Guidelines	
StnName		Long Lake Outlet									
StnCode		LLO									
Date		8/Jul/20	14/Jul/20	21/Jul/20	28/Jul/20	4/Aug/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	56	55	52	54	62	5	62	55.8	128	
TSS	mg/L	1.6	1.2	1.2	1.6	1.6	5	1.6	1.4	5	25
Alk-T	mg/L	29	30	35	34	34	5	35	32.4		
Al-T	mg/L	0.0148	0.0140	0.0136	0.0116	0.0103	5	0.0148	0.0129		
As-T	mg/L	0.00048	0.00047	0.00056	0.00052	0.00048	5	0.00056	0.00050		0.005
Ba-T	mg/L	0.0050	0.0053	0.0058	0.0055	0.0056	5	0.0058	0.0054	1	5
B-T	mg/L	0.055	0.054	0.053	0.055	<0.050	5	0.055	0.0484	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	22.9	23.6	24.3	24.1	23.5	5	24.3	23.7		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		0.05
Cu-T	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	5	<0.00050	0.000250	0.002	0.007
Hard-T	mg/L	69.6	71.3	74.2	73.6	71.4	5	74.2	72.0		
Fe-T	mg/L	0.078	0.083	0.084	0.052	0.056	5	0.084	0.071		1
P-T	mg/L	0.0078	0.020	0.027	<0.0030	<0.0030	5	0.027	0.01156		
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.003	0.005
Mg-T	mg/L	3.01	3.01	3.26	3.26	3.06	5	3.26	3.12		
Mn-T	mg/L	0.0125	0.0128	0.0099	0.0090	0.0085	5	0.0128	0.0105	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.267	0.246	0.272	0.269	0.255	5	0.272	0.262		
S-T	mg/L	17.7	19.0	19.2	18.8	16.3	5	19.2	18.2		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	7.23	6.98	7.32	7.32	6.75	5	7.32	7.12		
Sr-T	mg/L	0.155	0.158	0.161	0.158	0.156	5	0.161	0.158		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0081	0.0074	0.0077	0.0059	0.0051	5	0.0081	0.0068	0.05	0.1
As-D	mg/L	0.00045	0.00048	0.00054	0.00045	0.00050	5	0.00054	0.00048		
Ba-D	mg/L	0.0051	0.0053	0.0056	0.0049	0.0053	5	0.0056	0.0052		
B-D	mg/L	0.054	0.054	0.057	<0.050	0.051	5	0.057	0.0482		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	22.4	23.7	24.8	22.7	24.4	5	24.8	23.6		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00030	0.00031	0.00029	0.00029	0.00026	5	0.00031	0.00029		
Hard-D	mg/L	68.3	71.5	75.2	68.7	73.6	5	75.2	71.5		
DOC	mg/L	2.6	2.7	2.7	2.2	2.4	5	2.7	2.5		
Fe-D	mg/L	0.0480	0.0540	0.0538	0.0325	0.0290	5	0.0540	0.0435		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	2.99	3.02	3.22	2.91	3.10	5	3.22	3.05		
Mn-D	mg/L	0.0027	0.0032	0.0027	0.0021	0.0023	5	0.0032	0.0026		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.266	0.264	0.267	0.256	0.260	5	0.267	0.263		
S-D	mg/L	17.3	18.4	19.5	16.7	18.9	5	19.5	18.2		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	7.14	6.97	7.10	6.70	6.83	5	7.14	6.95		
Sr-D	mg/L	0.156	0.160	0.167	0.147	0.173	5	0.173	0.161		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 42 Summer Q2- Rivers 8 Page(s)

EMS ID		E0126402								Water Quailty Guidelines	
StnName		Quinsam River at Argonaut Bridge									
StnCode		WA									
Date		8/Jul/20	14/Jul/20	21/Jul/20	28/Jul/20	4/Aug/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	1.0	1.1	<1.0	1.5	1.2	5	1.5	1.06	128	
TSS	mg/L	<1.0	1.2	2.0	2.4	<1.0	5	2.4	1.32	5	25
Alk-T	mg/L	18	18	23	23	22	5	23	20.8		
Al-T	mg/L	0.0236	0.0199	0.0225	0.0246	0.0193	5	0.0246	0.0220		
As-T	mg/L	0.00011	0.00011	0.00011	0.00014	0.00011	5	0.00014	0.00012		0.005
Ba-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	5
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	6.66	7.00	6.84	7.33	7.08	5	7.33	6.98		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		0.05
Cu-T	mg/L	0.00073	0.00057	0.00057	0.00072	0.00055	5	0.00073	0.00063	0.002	0.007
Hard-T	mg/L	19.8	20.6	20.3	21.6	20.8	5	21.6	20.6		
Fe-T	mg/L	0.022	0.018	0.022	0.023	0.018	5	0.023	0.021		1
P-T	mg/L	0.011	<0.0030	0.053	<0.0030	<0.0030	5	0.053	0.01370		
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.003	0.005
Mg-T	mg/L	0.758	0.747	0.788	0.810	0.747	5	0.810	0.770		
Mn-T	mg/L	0.0018	0.0016	0.0019	0.0020	0.0015	5	0.0020	0.0018	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.074	0.053	0.056	0.063	<0.050	5	0.074	0.0542		
S-T	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	5	<3.0	1.50		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	0.628	0.638	0.621	0.661	0.615	5	0.661	0.633		
Sr-T	mg/L	0.0113	0.0116	0.0116	0.0124	0.0115	5	0.0124	0.0117		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0154	0.0150	0.0164	0.0154	0.0180	5	0.0180	0.0160	0.05	0.1
As-D	mg/L	<0.00010	0.00011	0.00013	<0.00010	<0.00010	5	0.00013	0.000078		
Ba-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	6.64	7.04	6.91	6.66	7.09	5	7.09	6.87		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00053	0.00055	0.00054	0.00052	0.00074	5	0.00074	0.00058		
Hard-D	mg/L	19.6	20.7	20.3	19.8	21.0	5	21.0	20.3		
DOC	mg/L	1.5	1.5	1.8	1.2	1.4	5	1.8	1.5		
Fe-D	mg/L	0.0109	0.0127	0.0131	0.0132	0.0135	5	0.0135	0.0127		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	0.736	0.758	0.740	0.757	0.805	5	0.805	0.759		
Mn-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.067	0.055	0.055	0.051	0.051	5	0.067	0.056		
S-D	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	5	<3.0	1.50		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	0.624	0.607	0.577	0.604	0.612	5	0.624	0.605		
Sr-D	mg/L	0.0112	0.0121	0.0113	0.0108	0.0122	5	0.0122	0.0115		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 42 Summer Q2- Rivers 8 Page(s)

EMS ID		E0900504								Water Quailty Guidelines	
StnName		Middle Quinsam Lake Outlet									
StnCode		WB									
Date		8/Jul/20	14/Jul/20	21/Jul/20	28/Jul/20	4/Aug/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	37	37	27	29	32	5	37	32.4	128	
TSS	mg/L	2.0	1.2	2.4	1.6	1.6	5	2.4	1.8	5	25
Alk-T	mg/L	36	35	35	36	37	5	37	35.8		
Al-T	mg/L	0.0158	0.0146	0.0160	0.0182	0.0133	5	0.0182	0.0156		
As-T	mg/L	0.00020	0.00016	0.00017	0.00021	0.00018	5	0.00021	0.00018		0.005
Ba-T	mg/L	0.0020	0.0020	0.0016	0.0017	0.0016	5	0.0020	0.0018	1	5
B-T	mg/L	0.056	0.054	<0.050	<0.050	<0.050	5	0.056	0.0370	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	12.6	12.8	10.9	11.5	11.7	5	12.8	11.9		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		0.05
Cu-T	mg/L	0.00070	0.00053	0.00052	0.00116	0.00057	5	0.00116	0.00070	0.002	0.007
Hard-T	mg/L	38.1	38.6	32.9	34.9	35.3	5	38.6	36.0		
Fe-T	mg/L	0.044	0.042	0.044	0.047	0.026	5	0.047	0.041		1
P-T	mg/L	0.012	<0.0030	0.027	<0.0030	<0.0030	5	0.027	0.00870		
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.003	0.005
Mg-T	mg/L	1.63	1.63	1.38	1.48	1.48	5	1.63	1.52		
Mn-T	mg/L	0.0097	0.0085	0.0084	0.0090	0.0026	5	0.0097	0.0076	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.286	0.260	0.205	0.227	0.228	5	0.286	0.241		
S-T	mg/L	12.3	12.1	8.5	9.1	9.4	5	12.3	10.3		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	17.0	16.1	12.0	13.3	14.3	5	17.0	14.5		
Sr-T	mg/L	0.0751	0.0746	0.0553	0.0611	0.0629	5	0.0751	0.0658		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0116	0.0157	0.0126	0.0127	0.0136	5	0.0157	0.0132	0.05	0.1
As-D	mg/L	0.00017	0.00018	0.00019	0.00017	0.00018	5	0.00019	0.00018		
Ba-D	mg/L	0.0020	0.0020	0.0016	0.0014	0.0016	5	0.0020	0.0017		
B-D	mg/L	0.056	0.054	<0.050	<0.050	<0.050	5	0.056	0.0370		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	12.7	12.8	11.0	10.9	11.7	5	12.8	11.8		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00046	0.00070	0.00049	0.00046	0.00051	5	0.00070	0.00052		
Hard-D	mg/L	38.5	38.5	33.1	32.9	35.2	5	38.5	35.6		
DOC	mg/L	2.0	1.8	1.7	1.4	1.8	5	2.0	1.7		
Fe-D	mg/L	0.0288	0.0256	0.0260	0.0262	0.0387	5	0.0387	0.0291		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	1.67	1.60	1.38	1.36	1.46	5	1.67	1.49		
Mn-D	mg/L	0.0052	0.0031	0.0034	0.0030	0.0078	5	0.0078	0.0045		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.282	0.282	0.203	0.207	0.246	5	0.282	0.244		
S-D	mg/L	12.3	12.0	8.9	8.5	10.8	5	12.3	10.5		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	17.0	15.8	11.9	12.4	14.0	5	17.0	14.2		
Sr-D	mg/L	0.0756	0.0771	0.0572	0.0545	0.0664	5	0.0771	0.0662		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 42 Summer Q2- Rivers 8 Page(s)

EMS ID		E292113								Water Quailty Guidelines	
StnName		7 South Quinsam River									
StnCode		7SQR									
Date		8/Jul/20	14/Jul/20	21/Jul/20	28/Jul/20	4/Aug/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	37	39	26	27	34	5	39	32.6	128	
TSS	mg/L	<1.0	1.2	1.6	3.6	3.6	5	3.6	2.10	5	25
Alk-T	mg/L	38	37	37	38	40	5	40	38.0		
Al-T	mg/L	0.0220	0.0216	0.0261	0.0272	0.0230	5	0.0272	0.0240		
As-T	mg/L	0.00046	0.00048	0.00054	0.00049	0.00047	5	0.00054	0.00049		0.005
Ba-T	mg/L	0.0027	0.0029	0.0026	0.0026	0.0026	5	0.0029	0.0027	1	5
B-T	mg/L	0.060	0.060	<0.050	<0.050	<0.050	5	0.060	0.0390	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	12.5	13.0	11.5	11.3	11.9	5	13.0	12.0		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		0.05
Cu-T	mg/L	0.00052	0.00053	0.00050	0.00054	<0.00050	5	0.00054	0.000468	0.002	0.007
Hard-T	mg/L	37.9	39.6	34.8	34.3	36.2	5	39.6	36.6		
Fe-T	mg/L	0.095	0.109	0.108	0.107	0.100	5	0.109	0.104		1
P-T	mg/L	0.0048	<0.0030	0.064	0.0039	0.0034	5	0.064	0.01552		
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.003	0.005
Mg-T	mg/L	1.65	1.75	1.49	1.47	1.56	5	1.75	1.58		
Mn-T	mg/L	0.0065	0.0081	0.0079	0.0084	0.0075	5	0.0084	0.0077	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.299	0.273	0.232	0.236	0.240	5	0.299	0.256		
S-T	mg/L	12.0	12.7	9.1	9.0	9.3	5	12.7	10.4		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	17.6	17.2	13.3	13.7	14.8	5	17.6	15.3		
Sr-T	mg/L	0.0749	0.0762	0.0612	0.0620	0.0633	5	0.0762	0.0675		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0096	0.0089	0.0105	0.0096	0.0156	5	0.0156	0.0108	0.05	0.1
As-D	mg/L	0.00040	0.00044	0.00047	0.00043	0.00053	5	0.00053	0.00045		
Ba-D	mg/L	0.0026	0.0028	0.0024	0.0024	0.0030	5	0.0030	0.0026		
B-D	mg/L	0.060	0.058	<0.050	<0.050	<0.050	5	0.060	0.0386		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	12.5	13.0	11.0	10.9	12.0	5	13.0	11.9		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00043	0.00044	0.00045	0.00045	0.00085	5	0.00085	0.00052		
Hard-D	mg/L	38.1	39.4	33.3	33.0	36.3	5	39.4	36.0		
DOC	mg/L	2.2	1.9	1.7	1.5	1.6	5	2.2	1.8		
Fe-D	mg/L	0.0570	0.0585	0.0494	0.0506	0.0541	5	0.0585	0.0539		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	1.67	1.68	1.42	1.38	1.54	5	1.68	1.54		
Mn-D	mg/L	0.0044	0.0054	0.0049	0.0048	0.0055	5	0.0055	0.0050		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.299	0.283	0.225	0.236	0.249	5	0.299	0.258		
S-D	mg/L	12.1	12.0	9.4	8.0	10.3	5	12.1	10.4		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	18.0	16.5	12.8	12.9	14.6	5	18.0	15.0		
Sr-D	mg/L	0.0743	0.0787	0.0601	0.0565	0.0684	5	0.0787	0.0676		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 42 Summer Q2- Rivers 8 Page(s)

EMS ID		E299256								Water Quailty Guidelines	
StnName		Iron River & Quinsam River									
StnCode		IRQR									
Date		8/Jul/20	14/Jul/20	21/Jul/20	28/Jul/20	4/Aug/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	30	27	23	25	27	5	30	26.4	128	
TSS	mg/L	<1.0	1.2	1.2	2.4	2.0	5	2.4	1.46	5	25
Alk-T	mg/L	38	36	38	39	40	5	40	38.2		
Al-T	mg/L	0.0199	0.0219	0.0246	0.0214	0.0191	5	0.0246	0.0214		
As-T	mg/L	0.00064	0.00074	0.00063	0.00058	0.00050	5	0.00074	0.00062		0.005
Ba-T	mg/L	0.0035	0.0038	0.0033	0.0031	0.0034	5	0.0038	0.0034	1	5
B-T	mg/L	0.051	<0.050	<0.050	<0.050	<0.050	5	0.051	0.0302	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	12.8	13.1	11.8	12.0	12.8	5	13.1	12.5		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		0.05
Cu-T	mg/L	<0.00050	0.00054	0.00051	0.00052	<0.00050	5	0.00054	0.000414		
Hard-T	mg/L	38.6	39.0	35.5	36.1	38.4	5	39.0	37.5		
Fe-T	mg/L	0.083	0.088	0.096	0.094	0.091	5	0.096	0.090		1
P-T	mg/L	<0.0030	<0.0030	0.065	0.0086	<0.0030	5	0.065	0.01562		
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.003	0.005
Mg-T	mg/L	1.57	1.55	1.47	1.51	1.55	5	1.57	1.53		
Mn-T	mg/L	0.0054	0.0060	0.0071	0.0072	0.0069	5	0.0072	0.0065	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.284	0.245	0.237	0.233	0.245	5	0.284	0.249		
S-T	mg/L	9.6	9.7	7.4	8.2	8.4	5	9.7	8.7		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	14.0	12.5	11.2	12.4	13.1	5	14.0	12.6		
Sr-T	mg/L	0.0686	0.0676	0.0584	0.0619	0.0629	5	0.0686	0.0639		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0105	0.0115	0.0101	0.0093	0.0096	5	0.0115	0.0102	0.05	0.1
As-D	mg/L	0.00062	0.00068	0.00060	0.00050	0.00052	5	0.00068	0.00058		
Ba-D	mg/L	0.0035	0.0037	0.0032	0.0029	0.0033	5	0.0037	0.0033		
B-D	mg/L	0.053	<0.050	<0.050	<0.050	<0.050	5	0.053	0.0306		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	13.1	13.1	11.7	11.5	12.8	5	13.1	12.4		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00044	0.00049	0.00046	0.00042	0.00045	5	0.00049	0.00045	0.0003	0.002
Hard-D	mg/L	39.5	39.0	34.9	34.5	38.3	5	39.5	37.2		
DOC	mg/L	1.6	2.2	1.6	1.4	1.5	5	2.2	1.7		
Fe-D	mg/L	0.0460	0.0507	0.0476	0.0495	0.0484	5	0.0507	0.0484		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	1.62	1.54	1.40	1.41	1.54	5	1.62	1.50		
Mn-D	mg/L	0.0037	0.0043	0.0045	0.0046	0.0051	5	0.0051	0.0044		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.281	0.261	0.227	0.228	0.241	5	0.281	0.248		
S-D	mg/L	9.7	9.0	7.6	7.8	9.4	5	9.7	8.7		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	14.6	12.3	11.0	11.9	12.8	5	14.6	12.5		
Sr-D	mg/L	0.0700	0.0693	0.0591	0.0566	0.0662	5	0.0700	0.0642		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 42 Summer Q2- Rivers 8 Page(s)

EMS ID		E297231								Water Quailty Guidelines	
StnName		Iron River Site 6	Iron River Upstream of 7SA5 & Upstream of Reclaimed 242 Mine								
StnCode		IR6									
Date		8/Jul/20	14/Jul/20	21/Jul/20	28/Jul/20	4/Aug/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	4.8	3.6	4.9	6.3	8.2	5	8.2	5.6	128	
TSS	mg/L	2.0	1.2	<1.0	1.2	3.2	5	3.2	1.62	5	25
Alk-T	mg/L	39	32	46	53	58	5	58	45.6		
Al-T	mg/L	0.0248	0.0300	0.0238	0.0229	0.0205	5	0.0300	0.0244		
As-T	mg/L	0.00145	0.00108	0.00198	0.00304	0.00261	5	0.00304	0.00203		0.005
Ba-T	mg/L	0.0054	0.0049	0.0066	0.0081	0.0089	5	0.0089	0.0068	1	5
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250	1.2	
Cd-T	mg/L	0.000011	<0.000010	0.000014	0.000014	0.000012	5	0.000014	0.0000112		
Ca-T	mg/L	14.4	12.4	16.1	19.5	22.4	5	22.4	17.0		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	<0.00050	0.00057	0.00066	0.00054	0.00054	5	0.00066	0.000512		
Hard-T	mg/L	40.2	34.7	45.2	54.7	62.1	5	62.1	47.4		
Fe-T	mg/L	<0.010	0.018	<0.010	<0.010	<0.010	5	0.018	0.0076		1
P-T	mg/L	<0.0030	<0.0030	0.068	<0.0030	<0.0030	5	0.068	0.01480		
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.0039978	0.01763
Mg-T	mg/L	1.06	0.914	1.19	1.48	1.51	5	1.51	1.231		
Mn-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.204	0.168	0.226	0.243	0.241	5	0.243	0.216		
S-T	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	5	<3.0	1.50		
Se-T	mg/L	0.00022	0.00018	0.00024	0.00029	0.00029	5	0.00029	0.00024	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	1.35	1.32	1.57	1.88	1.92	5	1.92	1.61		
Sr-T	mg/L	0.0500	0.0433	0.0554	0.0682	0.0749	5	0.0749	0.0584		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0233	0.0272	0.0203	0.0172	0.0180	5	0.0272	0.0212	0.05	0.1
As-D	mg/L	0.00146	0.00111	0.00195	0.00275	0.00266	5	0.00275	0.00199		
Ba-D	mg/L	0.0055	0.0052	0.0065	0.0076	0.0082	5	0.0082	0.0066		
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250		
Cd-D	mg/L	0.000011	<0.000010	<0.000010	0.000010	<0.000010	5	0.000011	0.0000072	0.000087	0.00017
Ca-D	mg/L	14.5	12.7	16.0	19.2	21.4	5	21.4	16.8		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00049	0.00058	0.00072	0.00048	0.00076	5	0.00076	0.00061	0.0003	0.002
Hard-D	mg/L	40.6	35.5	44.6	53.5	60.0	5	60.0	46.8		
DOC	mg/L	2.0	2.6	2.0	1.3	1.3	5	2.6	1.8		
Fe-D	mg/L	0.0072	0.0127	<0.0050	<0.0050	<0.0050	5	0.0127	0.00548		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	1.07	0.949	1.13	1.37	1.55	5	1.55	1.214		
Mn-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.204	0.191	0.284	0.234	0.227	5	0.284	0.228		
S-D	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	5	<3.0	1.50		
Se-D	mg/L	0.00023	0.00020	0.00023	0.00026	0.00030	5	0.00030	0.00024		
Na-D	mg/L	1.36	1.28	1.66	1.74	1.96	5	1.96	1.60		
Sr-D	mg/L	0.0506	0.0456	0.0551	0.0626	0.0690	5	0.0690	0.0566		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 42 Summer Q2- Rivers 8 Page(s)

EMS ID		E297232								Water Quailty Guidelines	
StnName		Iron River Site 8	Iron River Downstream of 7 South Mine Operation								
StnCode		IR8									
Date		8/Jul/20	14/Jul/20	21/Jul/20	28/Jul/20	4/Aug/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	4.3	3.4	5.2	5.8	7.7	5	7.7	5.3	128	
TSS	mg/L	<1.0	<1.0	<1.0	1.2	3.6	5	3.6	1.26	5	25
Alk-T	mg/L	39	33	46	55	58	5	58	46.2		
Al-T	mg/L	0.0294	0.0279	0.0223	0.0218	0.0195	5	0.0294	0.0242		
As-T	mg/L	0.00295	0.00201	0.00401	0.00622	0.00561	5	0.00622	0.00416		0.005
Ba-T	mg/L	0.0061	0.0054	0.0073	0.0091	0.0101	5	0.0101	0.0076	1	5
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250	1.2	
Cd-T	mg/L	0.000010	0.000012	0.000010	0.000011	0.000010	5	0.000012	0.000011		
Ca-T	mg/L	15.0	12.4	16.1	19.4	21.8	5	21.8	16.9		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	0.00058	0.00087	0.00061	0.00080	0.00067	5	0.00087	0.00071		
Hard-T	mg/L	42.0	34.9	45.3	54.8	61.3	5	61.3	47.7		
Fe-T	mg/L	0.014	0.017	<0.010	0.012	<0.010	5	0.017	0.0106		1
P-T	mg/L	<0.0030	<0.0030	0.037	<0.0030	0.0036	5	0.037	0.00902		
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.0039978	0.01763
Mg-T	mg/L	1.14	0.947	1.26	1.52	1.64	5	1.64	1.301		
Mn-T	mg/L	0.0012	<0.0010	<0.0010	0.0012	<0.0010	5	0.0012	0.00078	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.219	0.182	0.233	0.258	0.258	5	0.258	0.230		
S-T	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	5	<3.0	1.50		
Se-T	mg/L	0.00021	0.00018	0.00022	0.00026	0.00025	5	0.00026	0.00022	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	1.60	1.45	1.83	2.32	2.38	5	2.38	1.92		
Sr-T	mg/L	0.0525	0.0439	0.0549	0.0699	0.0756	5	0.0756	0.0594		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0220	0.0242	0.0189	0.0165	0.0159	5	0.0242	0.0195	0.05	0.1
As-D	mg/L	0.00283	0.00196	0.00399	0.00568	0.00545	5	0.00568	0.00398		
Ba-D	mg/L	0.0060	0.0056	0.0072	0.0083	0.0089	5	0.0089	0.0072		
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	14.6	13.0	15.9	18.6	21.2	5	21.2	16.7		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00054	0.00068	0.00054	0.00052	0.00055	5	0.00068	0.00057	0.0003	0.002
Hard-D	mg/L	41.2	36.5	44.6	52.2	59.7	5	59.7	46.8		
DOC	mg/L	2.1	2.3	1.9	1.2	1.5	5	2.3	1.8		
Fe-D	mg/L	0.0081	0.0119	0.0064	0.0055	0.0061	5	0.0119	0.0076		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	1.15	0.985	1.21	1.42	1.63	5	1.63	1.279		
Mn-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	0.00000095		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.207	0.195	0.213	0.231	0.248	5	0.248	0.219		
S-D	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	5	<3.0	1.50		
Se-D	mg/L	0.00022	0.00017	0.00022	0.00023	0.00024	5	0.00024	0.00022		
Na-D	mg/L	1.53	1.43	1.80	2.16	2.37	5	2.37	1.86		
Sr-D	mg/L	0.0512	0.0455	0.0563	0.0637	0.0690	5	0.0690	0.0571		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Table 43 Fall Q3- Rivers 8 Page(s)

EMS ID		E217017								Water Quailty Guidelines	
StnName		No Name Lake Outlet									
StnCode		NNO									
Date		6/Oct/20	14/Oct/20	22/Oct/20	29/Oct/20	4/Nov/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	2.0	2.7	2.2	2.1	2.2	5	2.7	2.2	128	
TSS	mg/L	1.6	2.4	1.2	<1.0	<1.0	5	2.4	1.24	5	25
Alk-T	mg/L	16	17	16	16	16	5	17	16.2		
Al-T	mg/L	0.0105	0.0160	0.0305	0.0258	0.0279	5	0.0305	0.0221		
As-T	mg/L	0.00040	0.00038	0.00038	0.00039	0.00035	5	0.00040	0.00038		0.005
Ba-T	mg/L	0.0011	0.0013	0.0014	0.0015	0.0014	5	0.0015	0.0013	1	5
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	5.20	4.93	4.96	4.68	4.97	5	5.20	4.95		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	5	<0.00050	0.000250		
Hard-T	mg/L	17.7	16.7	16.9	16.2	16.9	5	17.7	16.9		
Fe-T	mg/L	0.090	0.115	0.144	0.105	0.124	5	0.144	0.116		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.0039978	0.01763
Mg-T	mg/L	1.15	1.06	1.09	1.10	1.10	5	1.15	1.10		
Mn-T	mg/L	0.0034	0.0060	0.0101	0.0062	0.0070	5	0.0101	0.0065	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	9.5E-07	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.070	0.080	0.093	0.100	0.104	5	0.104	0.089		
S-T	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	5	<3.0	1.50		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	1.37	1.25	1.25	1.33	1.31	5	1.37	1.30		
Sr-T	mg/L	0.0169	0.0156	0.0165	0.0174	0.0153	5	0.0174	0.0163		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0079	0.0111	0.0185	0.0207	0.0231	5	0.0231	0.0163	0.05	0.1
As-D	mg/L	0.00038	0.00036	0.00036	0.00034	0.00032	5	0.00038	0.00035		
Ba-D	mg/L	0.0011	0.0013	0.0014	0.0016	0.0013	5	0.0016	0.0013		
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	4.99	4.80	5.13	5.41	4.80	5	5.41	5.03		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00060	0.00034	0.00048	0.00041	0.00043	5	0.00060	**0.00045**	0.0003	0.002
Hard-D	mg/L	17.2	16.5	17.5	18.5	16.5	5	18.5	17.2		
DOC	mg/L	2.7	3.0	3.8	3.6	3.2	5	3.8	3.3		
Fe-D	mg/L	0.0773	0.0828	0.0896	0.0938	0.0856	5	0.0938	0.0858		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	1.15	1.10	1.13	1.21	1.10	5	1.21	1.14		
Mn-D	mg/L	0.0019	0.0028	0.0033	0.0042	0.0049	5	0.0049	0.0034		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	9.5E-07		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.071	0.086	0.106	0.110	0.103	5	0.110	0.095		
S-D	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	5	<3.0	1.50		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	1.34	1.31	1.33	1.40	1.29	5	1.40	1.33		
Sr-D	mg/L	0.0162	0.0158	0.0167	0.0174	0.0157	5	0.0174	0.0164		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 43 Fall Q3- Rivers 8 Page(s)

EMS ID		E219412								Water Quailty Guidelines	
StnName		Long Lake Outlet									
StnCode		LLO									
Date		6/Oct/20	14/Oct/20	22/Oct/20	29/Oct/20	4/Nov/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	77	85	74	53	39	5	85	65.6	128	
TSS	mg/L	<1.0	2.0	1.2	<1.0	<1.0	5	2.0	0.94	5	25
Alk-T	mg/L	34	40	35	35	27	5	40	34.2		
Al-T	mg/L	0.0065	0.0162	0.0112	0.0142	0.0265	5	0.0265	0.0149		
As-T	mg/L	0.00053	0.00054	0.00048	0.00046	0.00047	5	0.00054	0.00050		0.005
Ba-T	mg/L	0.0065	0.0073	0.0059	0.0050	0.0045	5	0.0073	0.0058	1	5
B-T	mg/L	0.070	0.077	0.066	0.050	<0.050	5	0.077	0.0576	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	29.8	32.5	26.9	20.4	17.2	5	32.5	25.4		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	<0.00050	0.00074	<0.00050	<0.00050	<0.00050	5	0.00074	0.000348	0.002	0.007
Hard-T	mg/L	90.5	97.9	82.0	63.9	53.2	5	97.9	77.5		
Fe-T	mg/L	0.022	0.108	0.052	0.066	0.125	5	0.125	0.075		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.0039978	0.01763
Mg-T	mg/L	3.91	4.07	3.63	3.12	2.49	5	4.07	3.44		
Mn-T	mg/L	0.0033	0.0158	0.0059	0.0071	0.0128	5	0.0158	0.0090	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	9.5E-07	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.352	0.397	0.326	0.288	0.266	5	0.397	0.326		
S-T	mg/L	25.8	26.6	23.2	17.8	12.9	5	26.6	21.3		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	9.72	9.78	8.32	7.06	5.32	5	9.78	8.04		
Sr-T	mg/L	0.216	0.216	0.177	0.150	0.105	5	0.216	0.173		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	<0.0030	0.0054	0.0060	0.0080	0.0173	5	0.0173	0.00764	0.05	0.1
As-D	mg/L	0.00047	0.00050	0.00047	0.00039	0.00042	5	0.00050	0.00045		
Ba-D	mg/L	0.0064	0.0072	0.0063	0.0051	0.0044	5	0.0072	0.0059		
B-D	mg/L	0.062	0.071	0.065	0.051	<0.050	5	0.071	0.0548		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	29.0	30.7	29.0	20.7	17.3	5	30.7	25.3		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00028	0.00027	0.00030	0.00027	0.00035	5	0.00035	0.00029		
Hard-D	mg/L	88.8	93.6	88.5	63.8	53.8	5	93.6	77.7		
DOC	mg/L	1.5	3.2	2.9	2.8	3.3	5	3.3	2.7		
Fe-D	mg/L	0.0096	0.0423	0.0317	0.0288	0.0759	5	0.0759	0.0377		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	3.96	4.13	3.89	2.96	2.57	5	4.13	3.50		
Mn-D	mg/L	0.0011	0.0078	0.0019	<0.0010	0.0045	5	0.0078	0.00316		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	9.5E-07		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.344	0.409	0.345	0.278	0.252	5	0.409	0.326		
S-D	mg/L	24.3	26.0	23.3	17.2	13.1	5	26.0	20.8		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	9.40	9.70	8.95	6.61	5.30	5	9.70	7.99		
Sr-D	mg/L	0.190	0.211	0.185	0.147	0.109	5	0.211	0.168		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 43 Fall Q3- Rivers 8 Page(s)

EMS ID		E0126402								Water Quailty Guidelines	
StnName		Quinsam River at Argonaut Road									
StnCode		WA									
Date		6/Oct/20	14/Oct/20	22/Oct/20	29/Oct/20	4/Nov/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	1.5	1.2	1.3	1.4	1.7	5	1.7	1.4	128	
TSS	mg/L	1.2	2.0	<1.0	<1.0	1.2	5	2.0	1.08	5	25
Alk-T	mg/L	21	21	21	22	16	5	22	20.2		
Al-T	mg/L	0.0177	0.0252	0.0178	0.0176	0.0397	5	0.0397	0.0236		
As-T	mg/L	0.00010	0.00018	0.00013	0.00012	0.00017	5	0.00018	0.00014		0.005
Ba-T	mg/L	<0.0010	0.0014	<0.0010	<0.0010	0.0015	5	0.0015	0.00088	1	5
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	6.94	6.13	6.51	6.56	6.08	5	6.94	6.44		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	0.00052	0.00072	0.00055	0.00060	0.00071	5	0.00072	0.00062	0.002	0.007
Hard-T	mg/L	20.5	18.2	19.4	19.6	18.4	5	20.5	19.2		
Fe-T	mg/L	0.019	0.036	0.018	0.016	0.031	5	0.036	0.024		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.0039978	0.01763
Mg-T	mg/L	0.764	0.704	0.765	0.772	0.776	5	0.776	0.756		
Mn-T	mg/L	0.0017	0.0021	0.0015	0.0012	0.0015	5	0.0021	0.0016	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	9.5E-07	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.058	0.081	0.063	0.061	0.096	5	0.096	0.072		
S-T	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	5	<3.0	1.50		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	0.662	0.840	0.684	0.669	0.882	5	0.882	0.747		
Sr-T	mg/L	0.0114	0.0110	0.0118	0.0127	0.0116	5	0.0127	0.0117		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0126	0.0207	0.0138	0.0128	0.0432	5	0.0432	0.0206	0.05	0.1
As-D	mg/L	0.00012	0.00017	0.00014	<0.00010	0.00017	5	0.00017	0.000130		
Ba-D	mg/L	<0.0010	0.0014	<0.0010	<0.0010	0.0015	5	0.0015	0.00088		
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	6.67	5.84	6.66	7.25	5.88	5	7.25	6.46		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00055	0.00067	0.00049	0.00051	0.00069	5	0.00069	0.00058		
Hard-D	mg/L	19.9	17.7	19.8	21.5	17.8	5	21.5	19.3		
DOC	mg/L	1.2	2.4	2.0	1.5	2.7	5	2.7	2.0		
Fe-D	mg/L	0.0101	0.0245	0.0096	0.0096	0.0204	5	0.0245	0.0148		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	0.782	0.742	0.759	0.830	0.758	5	0.830	0.774		
Mn-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	9.5E-07		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.065	0.104	0.063	0.063	0.095	5	0.104	0.078		
S-D	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	5	<3.0	1.50		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	0.659	0.877	0.682	0.715	0.843	5	0.877	0.755		
Sr-D	mg/L	0.0118	0.0113	0.0117	0.0124	0.0119	5	0.0124	0.0118		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		
Notes:											
Factor applied to less-than results when calculating statistics: 0.5											

Table 43 Fall Q3- Rivers 8 Page(s)

EMS ID		E0900504								Water Quailty Guidelines	
StnName		Outflow from Middle Quinsam Lake									
StnCode		WB									
Date		6/Oct/20	14/Oct/20	22/Oct/20	29/Oct/20	4/Nov/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	31	43	35	38	37	5	43	36.8	128	
TSS	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	5	<1.0	0.50	5	25
Alk-T	mg/L	33	42	36	40	31	5	42	36.4		
Al-T	mg/L	0.0096	0.0101	0.0136	0.0115	0.0221	5	0.0221	0.0134		
As-T	mg/L	0.00015	0.00023	0.00018	0.00027	0.00033	5	0.00033	0.00023		0.005
Ba-T	mg/L	0.0021	0.0030	0.0025	0.0034	0.0035	5	0.0035	0.0029	1	5
B-T	mg/L	0.051	0.055	0.058	0.056	<0.050	5	0.058	0.0490	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	11.5	14.7	13.0	15.3	15.3	5	15.3	14.0		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	<0.00050	<0.00050	0.00051	<0.00050	<0.00050	5	0.00051	0.000302	0.002	0.007
Hard-T	mg/L	35.0	44.7	39.4	46.7	47.0	5	47.0	42.6		
Fe-T	mg/L	0.037	0.045	0.042	0.051	0.099	5	0.099	0.055		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.0039978	0.01763
Mg-T	mg/L	1.51	1.92	1.70	2.08	2.12	5	2.12	1.87		
Mn-T	mg/L	0.0077	0.0102	0.0090	0.0095	0.0112	5	0.0112	0.0095	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	9.5E-07	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.261	0.263	0.290	0.310	0.278	5	0.310	0.280		
S-T	mg/L	10.4	12.5	11.4	13.9	11.4	5	13.9	11.9		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	15.0	13.6	15.1	14.6	9.84	5	15.1	13.63		
Sr-T	mg/L	0.0631	0.0879	0.0760	0.100	0.0923	5	0.100	0.0839		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0062	0.0065	0.0100	0.0082	0.0113	5	0.0113	0.0084	0.05	0.1
As-D	mg/L	0.00017	0.00023	0.00020	0.00021	0.00030	5	0.00030	0.00022		
Ba-D	mg/L	0.0018	0.0031	0.0025	0.0045	0.0034	5	0.0045	0.0031		
B-D	mg/L	<0.050	0.053	0.055	0.057	<0.050	5	0.057	0.0430		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	11.0	14.8	13.6	16.2	15.4	5	16.2	14.2		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00045	0.00048	0.00049	0.00044	0.00040	5	0.00049	0.00045		
Hard-D	mg/L	33.5	45.1	41.1	49.0	47.1	5	49.0	43.2		
DOC	mg/L	3.2	1.9	2.7	1.8	2.4	5	3.2	2.4		
Fe-D	mg/L	0.0222	0.0255	0.0272	0.0350	0.0563	5	0.0563	0.0332		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	1.46	1.99	1.73	2.06	2.09	5	2.09	1.87		
Mn-D	mg/L	0.0016	0.0041	0.0029	0.0027	0.0052	5	0.0052	0.0033		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	9.5E-07		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.251	0.295	0.287	0.310	0.267	5	0.310	0.282		
S-D	mg/L	9.4	13.1	11.5	14.3	11.9	5	14.3	12.0		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	14.5	14.4	15.6	15.3	9.78	5	15.6	13.92		
Sr-D	mg/L	0.0593	0.0873	0.0771	0.0993	0.0961	5	0.0993	0.0838		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 43 Fall Q3- Rivers 8 Page(s)

EMS ID		E292113								Water Quailty Guidelines	
StnName		Quinsam River Downstream of 7 South Mine Operation									
StnCode		7SQR									
Date		6/Oct/20	14/Oct/20	22/Oct/20	29/Oct/20	4/Nov/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	32	36	36	34	26	5	36	32.8	128	
TSS	mg/L	1.2	2.0	<1.0	<1.0	2.0	5	2.0	1.24	5	25
Alk-T	mg/L	36	42	35	41	30	5	42	36.8		
Al-T	mg/L	0.0155	0.0251	0.0175	0.0227	0.0782	5	0.0782	0.0318		
As-T	mg/L	0.00039	0.00042	0.00033	0.00042	0.00060	5	0.00060	0.00043		0.005
Ba-T	mg/L	0.0025	0.0028	0.0030	0.0032	0.0034	5	0.0034	0.0030	1	5
B-T	mg/L	0.056	0.055	0.062	0.057	<0.050	5	0.062	0.0510	1.2	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050		
Ca-T	mg/L	11.9	13.0	14.0	12.9	11.3	5	14.0	12.6		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	<0.00050	0.00053	0.00051	0.00063	0.00089	5	0.00089	0.000562	0.002	0.007
Hard-T	mg/L	36.2	39.9	42.8	39.6	35.3	5	42.8	38.8		
Fe-T	mg/L	0.085	0.134	0.097	0.105	0.229	5	0.229	0.130		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.0039978	0.01763
Mg-T	mg/L	1.56	1.80	1.92	1.78	1.74	5	1.92	1.76		
Mn-T	mg/L	0.0061	0.0073	0.0074	0.0079	0.0096	5	0.0096	0.0077	0.7	0.8
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	9.5E-07	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.266	0.289	0.305	0.298	0.359	5	0.359	0.303		
S-T	mg/L	10.1	11.2	12.5	11.5	8.3	5	12.5	10.7		
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	15.2	14.0	15.5	15.0	10.5	5	15.5	14.0		
Sr-T	mg/L	0.0680	0.0690	0.0804	0.0804	0.0606	5	0.0804	0.0717		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0056	0.0104	0.0089	0.0086	0.0397	5	0.0397	0.0146	0.05	0.1
As-D	mg/L	0.00036	0.00036	0.00033	0.00035	0.00048	5	0.00048	0.00038		
Ba-D	mg/L	0.0024	0.0028	0.0029	0.0031	0.0033	5	0.0033	0.0029		
B-D	mg/L	<0.050	0.052	0.056	0.058	<0.050	5	0.058	0.0432		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	11.5	12.4	13.9	14.3	11.1	5	14.3	12.6		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00043	0.00042	0.00045	0.00060	0.00068	5	0.00068	0.00052		
Hard-D	mg/L	35.3	38.4	42.4	43.5	34.8	5	43.5	38.9		
DOC	mg/L	1.7	2.3	2.0	1.9	4.5	5	4.5	2.5		
Fe-D	mg/L	0.0524	0.0708	0.0647	0.0723	0.137	5	0.137	0.0794		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	1.59	1.79	1.87	1.88	1.72	5	1.88	1.77		
Mn-D	mg/L	0.0051	0.0053	0.0055	0.0059	0.0063	5	0.0063	0.0056		
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	5	<0.0000019	9.5E-07		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.271	0.294	0.290	0.311	0.334	5	0.334	0.300		
S-D	mg/L	9.9	10.2	11.6	12.4	8.6	5	12.4	10.5		
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	5	<0.00010	0.000050		
Na-D	mg/L	15.2	14.1	15.0	15.7	10.0	5	15.7	14.0		
Sr-D	mg/L	0.0631	0.0685	0.0795	0.0850	0.0614	5	0.0850	0.0715		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 43 Fall Q3- Rivers 8 Page(s)

EMS ID		E299256								Water Quailty Guidelines	
StnName		Quinsam River Downstream of the Confluence with Iron River									
StnCode		IRQR									
Date		6/Oct/20	14/Oct/20	22/Oct/20	29/Oct/20	5/Nov/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	25	16	25	23	20	5	25	21.8	128	
TSS	mg/L	1.6	<1.0	<1.0	1.2	2.0	5	2.0	1.16	5	25
Alk-T	mg/L	35	32	33	38	34	5	38	34.4		
Al-T	mg/L	0.0145	0.0696	0.0260	0.0250	0.0465	5	0.0696	0.0363		
As-T	mg/L	0.00055	0.00064	0.00065	0.00062	0.00064	5	0.00065	0.00062		0.005
Ba-T	mg/L	0.0036	0.0040	0.0038	0.0038	0.0040	5	0.0040	0.0038	1	5
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250	1.2	
Cd-T	mg/L	<0.000010	0.000010	<0.000010	<0.000010	<0.000010	5	0.000010	0.0000060		
Ca-T	mg/L	13.0	10.8	13.0	12.0	12.8	5	13.0	12.3		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	<0.00050	0.00090	0.00056	0.00062	0.00078	5	0.00090	0.000622		
Hard-T	mg/L	38.8	31.9	39.1	36.1	38.5	5	39.1	36.9		
Fe-T	mg/L	0.076	0.114	0.076	0.076	0.086	5	0.114	0.086		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.0039978	0.01763
Mg-T	mg/L	1.55	1.22	1.60	1.47	1.62	5	1.62	1.49		
Mn-T	mg/L	0.0053	0.0044	0.0049	0.0048	0.0047	5	0.0053	0.0048	0.7	0.8
Hg-T	mg/L	<0.0000019	0.0000021	<0.0000019	<0.0000019	<0.0000019	5	0.0000021	1.18E-06	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.260	0.228	0.262	0.250	0.236	5	0.262	0.247		
S-T	mg/L	8.3	4.6	8.3	7.5	6.5	5	8.3	7.0		
Se-T	mg/L	<0.00010	0.00010	<0.00010	<0.00010	0.00011	5	0.00011	0.000072	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	12.1	5.98	10.4	9.71	7.35	5	12.1	9.11		
Sr-T	mg/L	0.0618	0.0456	0.0664	0.0658	0.0619	5	0.0664	0.0603		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0060	0.0487	0.0175	0.0174	0.0343	5	0.0487	0.0248	0.05	0.1
As-D	mg/L	0.00054	0.00057	0.00061	0.00066	0.00062	5	0.00066	0.00060		
Ba-D	mg/L	0.0035	0.0040	0.0036	0.0041	0.0039	5	0.0041	0.0038		
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	5	<0.000010	0.0000050	0.000087	0.00017
Ca-D	mg/L	12.4	10.1	12.6	13.5	11.8	5	13.5	12.1		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00046	0.00078	0.00053	0.00063	0.00057	5	0.00078	0.00059	0.0003	0.002
Hard-D	mg/L	37.4	30.0	37.7	40.3	35.9	5	40.3	36.3		
DOC	mg/L	1.9	4.9	1.6	2.5	4.5	5	4.9	3.1		
Fe-D	mg/L	0.0497	0.0651	0.0468	0.0582	0.0588	5	0.0651	0.0557		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	1.55	1.18	1.52	1.62	1.58	5	1.62	1.49		
Mn-D	mg/L	0.0045	0.0029	0.0038	0.0041	0.0035	5	0.0045	0.0038		
Hg-D	mg/L	<0.0000019	0.0000023	<0.0000019	<0.0000019	<0.0000019	5	0.0000023	1.22E-06		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.260	0.230	0.245	0.273	0.250	5	0.273	0.252		
S-D	mg/L	7.7	4.3	7.3	8.4	6.7	5	8.4	6.9		
Se-D	mg/L	<0.00010	0.00011	<0.00010	<0.00010	0.00010	5	0.00011	0.000072		
Na-D	mg/L	12.0	5.96	9.74	10.5	7.11	5	12.0	9.06		
Sr-D	mg/L	0.0597	0.0442	0.0631	0.0701	0.0634	5	0.0701	0.0601		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 43 Fall Q3- Rivers 8 Page(s)

EMS ID		E297231								Water Quailty Guidelines	
StnName		Iron River Upstream of 7S Mine Operation & Reclaimed 242 Mine									
StnCode		IR6									
Date		6/Oct/20	14/Oct/20	22/Oct/20	29/Oct/20	4/Nov/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	5.9	1.6	3.3	3.4	<1.0	5	5.9	2.94	128	
TSS	mg/L	1.6	<1.0	<1.0	<1.0	2.4	5	2.4	1.10	5	25
Alk-T	mg/L	44	25	28	33	21	5	44	30.2		
Al-T	mg/L	0.0238	0.102	0.0506	0.0476	0.145	5	0.145	0.0738		
As-T	mg/L	0.00160	0.00053	0.00072	0.00081	0.00055	5	0.00160	0.00084		0.005
Ba-T	mg/L	0.0068	0.0045	0.0045	0.0048	0.0046	5	0.0068	0.0050	1	5
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250	1.2	
Cd-T	mg/L	<0.000010	0.000016	0.000013	0.000011	0.000018	5	0.000018	0.0000126		
Ca-T	mg/L	17.3	8.97	10.9	10.9	7.57	5	17.3	11.13		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	0.00059	0.00099	0.00062	0.00067	0.00108	5	0.00108	0.00079		
Hard-T	mg/L	48.2	25.6	30.9	31.0	22.1	5	48.2	31.6		
Fe-T	mg/L	0.010	0.087	0.032	0.029	0.134	5	0.134	0.058		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.0039978	0.01763
Mg-T	mg/L	1.24	0.769	0.900	0.883	0.774	5	1.24	0.913		
Mn-T	mg/L	<0.0010	0.0024	<0.0010	<0.0010	0.0040	5	0.0040	0.00158	0.7	0.8
Hg-T	mg/L	<0.0000019	0.0000019	0.0000019	<0.0000019	0.0000042	5	0.0000042	1.98E-06	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.226	0.185	0.170	0.179	0.208	5	0.226	0.194		
S-T	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	5	<3.0	1.50		
Se-T	mg/L	0.00030	0.00013	0.00024	0.00023	0.00011	5	0.00030	0.00020	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	1.65	1.08	1.15	1.27	1.01	5	1.65	1.23		
Sr-T	mg/L	0.0576	0.0298	0.0383	0.0423	0.0259	5	0.0576	0.0388		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0196	0.0814	0.0505	0.0433	0.106	5	0.106	0.0602	0.05	0.1
As-D	mg/L	0.00153	0.00052	0.00079	0.00082	0.00046	5	0.00153	0.00082		
Ba-D	mg/L	0.0068	0.0044	0.0047	0.0049	0.0045	5	0.0068	0.0051		
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250		
Cd-D	mg/L	<0.000010	<0.000010	0.000011	0.000013	0.000014	5	0.000014	0.0000096	0.000087	0.00017
Ca-D	mg/L	15.9	8.52	11.4	12.1	7.80	5	15.9	11.14		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00061	0.00093	0.00067	0.00066	0.00095	5	0.00095	0.00076	0.0003	0.002
Hard-D	mg/L	44.5	24.5	32.4	34.3	22.8	5	44.5	31.7		
DOC	mg/L	2.6	5.2	3.7	3.4	7.0	5	7.0	4.4		
Fe-D	mg/L	0.0077	0.0551	0.0278	0.0250	0.0621	5	0.0621	0.0355		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	1.18	0.787	0.941	0.975	0.809	5	1.18	0.938		
Mn-D	mg/L	<0.0010	0.0012	<0.0010	<0.0010	0.0014	5	0.0014	0.00082		
Hg-D	mg/L	<0.0000019	0.0000034	0.0000019	<0.0000019	0.0000039	5	0.0000039	2.22E-06		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.220	0.190	0.177	0.192	0.199	5	0.220	0.196		
S-D	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	5	<3.0	1.50		
Se-D	mg/L	0.00030	0.00015	0.00024	0.00022	0.00013	5	0.00030	0.00021		
Na-D	mg/L	1.60	1.06	1.21	1.29	1.02	5	1.60	1.24		
Sr-D	mg/L	0.0553	0.0293	0.0400	0.0407	0.0266	5	0.0553	0.0384		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 43 Fall Q3- Rivers 8 Page(s)

EMS ID		E297232								Water Quailty Guidelines	
StnName		Iron River Downstream of 7S Mine Operation & Reclaimed 242 Mine									
StnCode		IR8									
Date		6/Oct/20	14/Oct/20	22/Oct/20	29/Oct/20	4/Nov/20	Count	Maximum	5 in 30 Ave	Average	Max
Parameter	Unit										
SO4-D	mg/L	5.4	1.7	3.6	3.8	<1.0	5	5.4	3.00	128	
TSS	mg/L	<1.0	<1.0	<1.0	<1.0	2.0	5	2.0	0.80	5	25
Alk-T	mg/L	42	26	29	33	22	5	42	30.4		
Al-T	mg/L	0.0229	0.0985	0.0521	0.0466	0.169	5	0.169	0.0778		
As-T	mg/L	0.00328	0.00077	0.00133	0.00142	0.00083	5	0.00328	0.00153		0.005
Ba-T	mg/L	0.0071	0.0048	0.0051	0.0053	0.0051	5	0.0071	0.0055	1	5
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250	1.2	
Cd-T	mg/L	<0.000010	0.000015	<0.000010	0.000012	0.000020	5	0.000020	0.0000114		
Ca-T	mg/L	15.7	8.95	11.1	11.0	8.20	5	15.7	10.99		
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.004	0.11
Cu-T	mg/L	0.00064	0.00109	0.00076	0.00070	0.00128	5	0.00128	0.00089		
Hard-T	mg/L	44.4	25.6	31.9	31.4	24.0	5	44.4	31.5		
Fe-T	mg/L	0.012	0.090	0.031	0.028	0.204	5	0.204	0.073		1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100	0.0039978	0.01763
Mg-T	mg/L	1.24	0.787	0.986	0.976	0.867	5	1.24	0.971		
Mn-T	mg/L	<0.0010	0.0023	<0.0010	<0.0010	0.0064	5	0.0064	0.00204	0.7	0.8
Hg-T	mg/L	<0.0000019	0.0000019	<0.0000019	<0.0000019	0.0000040	5	0.0000040	1.75E-06	0.00002	0.00001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050	0.025	0.025
K-T	mg/L	0.228	0.186	0.176	0.183	0.219	5	0.228	0.198		
S-T	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	5	<3.0	1.50		
Se-T	mg/L	0.00028	0.00013	0.00021	0.00023	0.00012	5	0.00028	0.00019	0.002	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	5	<0.000020	0.0000100	0.00005	0.0001
Na-T	mg/L	1.78	1.08	1.30	1.38	1.13	5	1.78	1.33		
Sr-T	mg/L	0.0550	0.0295	0.0398	0.0431	0.0270	5	0.0550	0.0389		
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250	0.0075	0.033
Al-D	mg/L	0.0194	0.0799	0.0417	0.0428	0.0905	5	0.0905	**0.0549**	0.05	0.1
As-D	mg/L	0.00343	0.00069	0.00127	0.00137	0.00061	5	0.00343	0.00147		
Ba-D	mg/L	0.0077	0.0047	0.0049	0.0056	0.0047	5	0.0077	0.0055		
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	5	<0.050	0.0250		
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	0.000010	0.000014	5	0.000014	0.0000078	0.000087	0.00017
Ca-D	mg/L	16.2	8.45	11.0	12.3	8.08	5	16.2	11.21		
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Cu-D	mg/L	0.00070	0.00095	0.00073	0.00071	0.00098	5	0.00098	**0.00081**	0.0003	0.002
Hard-D	mg/L	45.8	24.4	31.4	35.2	23.7	5	45.8	32.1		
DOC	mg/L	2.6	5.8	2.8	3.4	5.5	5	5.8	4.0		
Fe-D	mg/L	0.0098	0.0559	0.0262	0.0263	0.0651	5	0.0651	0.0367		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	5	<0.00020	0.000100		
Mg-D	mg/L	1.28	0.799	0.941	1.06	0.866	5	1.28	0.989		
Mn-D	mg/L	<0.0010	0.0012	<0.0010	<0.0010	0.0016	5	0.0016	0.00086		
Hg-D	mg/L	<0.0000019	0.0000037	<0.0000019	<0.0000019	0.0000036	5	0.0000037	2.03E-06		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.00050		
K-D	mg/L	0.233	0.191	0.170	0.194	0.204	5	0.233	0.198		
S-D	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	5	<3.0	1.50		
Se-D	mg/L	0.00028	0.00014	0.00021	0.00024	0.00012	5	0.00028	0.00020		
Na-D	mg/L	1.88	1.10	1.25	1.45	1.07	5	1.88	1.35		
Sr-D	mg/L	0.0565	0.0298	0.0391	0.0416	0.0283	5	0.0565	0.0391		
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	5	<0.0050	0.00250		

Notes:

Factor applied to less-than results when calculating statistics: 0.5

Table 44 Spring Q1- Zooplankton 1 Page(s)

Spring Taxa and Abundance of Zooplankton Samples					
level of id. : lowest/lowest					
Site Name		LLM	MQL	NNL	LQL
FES Sample Number		**200018**	**200019**	**200020**	**200021**
Sampling Date(s)		May 12, 2020	May 12, 2020	May 12, 2020	May 13, 2020
units = total organisms/sample					
	stage				
Sub-class : Copepoda					
Order : Cyclopoida					
Cryptocyclops bicolor	adult	25	6		54
Diacyclops thomasi	adult	102	25		27
Microcyclops varicans	adult	101	12		54
Orthocyclops modestus	adult				27
Tropocyclops prasinus	adult			75	
UID	copepodid	280	31	118	459
Order : Calanoida					
Family : Diaptomidae					
Hesperodiaptomus novemde	adult		6	14	
Skistodiaptomus oregonensis	adult	9	6	102	15
UID	copepodid		14	333	16
UID Calanoida / Cyclopoida	nauplii	1,208	925	389	817
Order : Cladocera					
Bosmina longirostris	adult	404	14	225	26
Bosmina longirostris	juvenile	232	29	118	47
Daphnia ambigua	adult	39	2	261	3
Daphnia longiremis	adult			26	5
Daphnia rosea	adult		356	58	22
Daphnia sp.	juvenile		136	138	21
Holopedium gibberum	adult			461	12
Holopedium gibberum	juvenile			128	17
Polyphemus pediculus	adult		5		
Phylum : Rotifera					
Asplanchna sp.		542	2		22
Conochilus sp.	colonies	4		51	88
Kellicottia longispina		619	57	348	17
Keratella cochlearis		6,880	72	10	127
Keratella quadrata		88	5		
Polyarthra sp.		4,558		210	127
UID					
TOTAL		**15,091**	**1,703**	**3,065**	**2,003**
UID = unidentified due to lack of size and/or missing morphological characters.					

Table 45 Summer Q2- Zooplankton 1 Page(s)

Summer Taxa and Abundance of Zooplankton Samples Summer 2020				
level of id. : lowest/lowest				
Site Name		LLM	MQL	MQL Replicate
FES Sample Number		**200024**	**200025**	**200026**
Sampling Date(s)		August 5, 2020	August 5, 2020	August 5, 2020
units = total organisms/sample				
	stage			
Sub-class : Copepoda				
Order : Cyclopoida				
Cryptocyclops bicolor	adult	16	41	46
Diacyclops thomasi	adult	62	8	7
Microcyclops varicans	adult	31		
UID	copepodid	244	55	41
Order : Calanoida				
Family : Diaptomidae				
Hesperodiaptomus novemdecimus	adult		10	15
Skistodiaptomus oregonensis	adult	104	178	144
UID	copepodid	40	29	26
UID Calanoida / Cyclopoida	nauplii	1,458	486	278
Order : Cladocera				
Bosmina longirostris	adult	45	10	5
Bosmina longirostris	juvenile	5		
Daphnia ambigua	adult	60	133	139
Daphnia longiremis	adult	253		
Daphnia rosea	adult	1,204	964	1,189
Daphnia sp.	juvenile	20	94	67
Diaphanosoma brachyurum	adult	60	16	10
Holopedium gibberum	adult		6	10
Polyphemus pediculus	adult	15		
Sida crystallina	adult	5		
Phylum : Rotifera				
Asplanchna sp.		288		
Conochilus sp. [1]	cells		509	211
Kellicottia longispina		96	19	36
Keratella cochlearis		787	6	31
Keratella quadrata		96		
Polyarthra sp.		19	175	191
UID		19	3	
Benthic				
Group : Hydracarina			3	5
TOTAL		4,927	2,745	2,451
UID = unidentified due to lack of size and/or missing morphological characters.				
[1] : Note : The solitary *Conochilus* (individual counts) versus colony counts				
distort the total counts per sample.				
The number of individual *Conochilus* in a colony can average between 25-90 individuals.				

Table 46 Fall Q3- Zooplankton 1 Page(s)

Fall 2020 Taxa and Abundance of Zooplankton Samples

level of id. : lowest/lowest

EMS ID:		**E206619**	**E206619**	**E206618**
Site Name		**Long Lake**	**Long Lake Replicate**	**Middle Quinsam Lake**
FES Sample Number		200029	200030	200031
Sampling Date(s)		Oct. 7,2020-M	Oct. 7,2020-R	Oct. 7,2020-M
units = total organisms/sample				
	stage			
Sub-class : Copepoda				
Order : Cyclopoida				
Cryptocyclops bicolor	adult		28	11
Microcyclops varicans	adult	`	9	
UID	copepodid	35	29	
Order : Calanoida				
Family : Diaptomidae				
Skistodiaptomus oregonensis	adult	37	37	42
UID	copepodid	2		18
UID Calanoida / Cyclopoida	nauplii	57	66	60
Order : Cladocera				
Bosmina longirostris	adult		2	32
Daphnia longiremis	adult	68	66	5
Daphnia rosea	adult	37	33	103
Daphnia sp.	juvenile			39
Diaphanosoma brachyurum	adult	4		42
Polyphemus pediculus	adult			3
Phylum : Rotifera				
Asplanchna sp.		25	37	
Conochilus sp.	colonies			3
Conochilus sp.	solitary			55
Kellicottia longispina		343	211	97
Keratella cochlearis		365	440	5
Keratella quadrata		169	42	32
Polyarthra sp.		22	22	132
UID		7	4	16
TOTAL		**1,219**	**1,026**	**695**

UID = unidentified due to lack of size and/or missing morphological characters.

Table 47 Groundwater Description 1 Page(s)

Groundwater Wells - Description				
Area	**Groundwater ID**	**In-situ / Ex-situ**	**Screened Interval**	**Comment**
2-North	1 Mains 2-North (1M2N)	In-situ	No. 1 Seam	Flooded Underground Workings Dewatering well
	5 Mains#2 (5M#2)	In-situ	No. 1 Seam	Flooded Underground Workings Dewatering well
	QU08-21GD	Ex-situ	No. 1 Seam	Down gradient of u/g tailings disposal, measure water quality and hydraulic gradients downstream of forjan fault
	QU08-21GS	Ex-situ	No. 4 Coal Seam and	
	QU10-10D	Ex-situ	No. 1 Seam / mudstone	Down gradient of u/g tailings disposal, measure water quality and hydraulic head downstream of 2 North workings
	QU10-10S	Ex-situ	No. 4 Seam /	
	QU10-11S	Ex-situ	Fractured Sandstone	Measure water quality and hydraulic gradient in Forjan Fault
	QU10-11D	Ex-situ	No.1 Seam	Down gradient of u/g tailings disposal, measure water quality and hydraulic head downstream of 2 North workings
	QU10-13D	In-situ	Caved Zone	Down gradient of u/g tailings disposal, measure water quality and hydraulic head downstream of 2 North workings
5-South Mine Pool	5SMW	In-situ	Mine Pool (1 Seam)	Down gradient of u/g tailings disposal, measure water quality and hydraulic head downstream of 2 North workings
River Barrier Pillar (RBP)	QU11-05S	Ex-situ	Sandstone	Down gradient of u/g tailings disposal, measure water quality and hydraulic head downstream of 2 North workings
	QU11-05D	Ex-situ	Sandstone	Monitoring water quality and vertical gradients downstream of the RBP and 2-North mine.
	QU11-09S	Ex-situ	Sandstone	Monitor water quality & gradients downstream of the RBP and 2-North workings. Mine pool – CCR backfill in River Barrier Pillar
	QU11-09M	In-situ	RBP Mine Pool	Monitor water quality & gradients downstream of the RBP and 2-North workings. Mine pool – CCR backfill in River Barrier Pillar.
2-North Plant Site	MW-00-1S	Ex-situ	Till	Seepage to MQL
	MW-00-1D	Ex-situ	1-Seam	Seepage to MQL
	MW-00-6D	Ex-situ	Till	Seepage to MQL
	MW-00-6S	Ex-situ	Till	Seepage to MQL
4-South	QU10-08D	Ex-situ	No. 3 Seam	4 South (just outside mine pool) up gradient of existing workings
	QU11-01		Foot print area of 4 South GOB	Assess 4 South Mine Pool water quality
	QU10-09S	Ex-situ	Down gradient of existing workings	Access vertical gradients and water quality adjacent to Long Lake.
	QU10-09D	Ex-situ	Down gradient of existing workings	Access vertical gradients and water quality adjacent to Long Lake.
2-South & 3-South	MW002	Ex-situ	1 Seam	3S seepage to Long Lake
	MW004	In-Situ	Mine Pool (1 Seam)	2-South Mine Pool Gob depillared area
	MW1223	Ex-situ	Silt Stone	2-South seepage to No Name Lake
	MW1224	Ex-situ	Silt Stone	2-South seepage to No Name Lake
	QU11-11 (INF)	In-Situ	Mine Pool (1 Seam)	2-South mine pool dewatering well for Passive Treatment System
7-South	1M7S	In-Situ	No. 4 Coal Seam	Underground Sump
	QU08-10	Ex-situ	No. 4 Coal Seam	Downgradient of 7S -screened No. 3 Coal -Southern margin of workings
	QU08-13A	Ex-situ	No. 4 Coal Seam	Down Gradient of the CCR backfill towards QR
	QU08-13B	Ex-situ	Till & SST contact	Down Gradient of the CCR backfill towards QR
	QU14-10	In-Situ	Mine Void	PAG Storage Mine Void
7- South Area 5	7SA5	In-Situ	Mine Void	Groundwater draining into mine void
	QU1128	Ex-situ	N0. 4 Seam and 4L	Upgradiernt of 7SA5. Background 7 South Area 5
	QU1118S	Ex-situ	Till	Down Gradient of 7SA5 - Background info for 7S A5 Subcrop
	QU1118D	Ex-situ	Sandstone	Down Gradient of 7SA5 - Background info for 7S A5 Subcrop
	QU1206S	Ex-situ	Faulted sandstone near No. 4 Seam	Upgradient of 7SA5 along margine with proposed 4S expansion
	QU11-35	Ex-situ	Sandstone above No. 4 Seam	South end of 7SA5 footprint at 100280m N (mine grid)
242 AREA	QU11-36S	Ex-situ	Sandstone below No. 5 seam	Downgradient of 7SA5. Background (Between 242 and IR).
	QU11-36D	Ex-situ	Sandstone below No. 5 seam	Downgradient of 7SA5. Background (Between 242 and IR).
	242MW	In-situ	No. 4 Seam	Mine pool
	242PS	Ex-situ	Shallow groundwater/ rain water	Old Portal Sump

Table 48 In-Situ Groundwater Wells 9 Page(s)

In-situ Groundwater		1-Mains 2-North								2 North Mine Pool		
	Well ID	1M2N	1M2N	1M2N	1M2N	1M2N	1M2N	1M2N	1M2N	QU10-13D	QU10-13D	QU10-13D
Date		23/Apr/20	21/May/20	18/Jun/20	20/Jul/20	24/Aug/20	29/Sep/20	9/Nov/20	9/Nov/20	10/Aug/20	21/Dec/20	16/Mar/21
	Repicates								R			
Parameter	Units											
SO4-D	mg/L	700	670	710	700	560	470	350	360	520	320	1400
H2SEquiv	mg/L					0.0223	0.0500			0.213	0.0319	0.0776
Cond-F	uS/cm	2008	2300	2200	1468	2240	1854	1776	1776	1143	2621.6	2672.1
pH-F	pH Units	7.85	8.18	8.21	7.62	7.42	8.01	7.56	7.56	7.09	6.45	6.45
Turb	NTU	42	51	47	28	52	30	21	21	5.3	26	67
Alk-T	mg/L	500	500	510	540	540	550	550	560	610	550	490
Acidity83	mg/L	14.0	10.5	510	8.6	33.0	12.1	8.9	11.7	9.1	13.3	44.3
N-D	mg/L	0.402	0.344	510	0.263	0.648	0.283			0.236	0.367	0.420
DOC	mg/L	0.80	0.90	510	0.79	<0.50	1.1			0.63	0.64	0.82
Hydrox	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bicarb	mg/L	610	610	620	660	660	670	670	680	750	670	600
Carb	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cl-D	mg/L	11	11	12	13	19	26	27	27	33	13	13
F-D	mg/L	0.10	0.12	0.11	0.12	0.13	0.14	0.14	0.14	0.10	0.13	0.077
Br-D	mg/L	0.16	0.15	0.16	0.16	0.13	0.15	0.064	0.067	0.16	0.055	0.17
P-D	mg/L	<0.0030	<0.0030	<0.0010	0.035	<0.0010	<0.0030			0.011	0.0083	0.0048
TSS	mg/L											
Al-D	mg/L	<0.0030	<0.0030	<0.0030	<0.0060	<0.0030	<0.0030	<0.0060	<0.0030	<0.0060	<0.0030	<0.0060
Ag-D	mg/L	<0.000020	<0.000020	<0.000020	<0.000040	<0.000020	<0.000020	<0.000040	<0.000020	<0.000040	<0.000020	<0.000040
As-D	mg/L	0.00341	0.00853	0.00842	0.00879	0.0102	0.0102	0.00942	0.00984	0.00111	0.00305	0.00633
Ba-D	mg/L	0.0275	0.0292	0.0269	0.0246	0.0233	0.0212	0.0236	0.0242	0.0432	0.0634	0.0527
B-D	mg/L	1.05	1.04	1.08	1.04	0.985	1.01	1.08	1.03	1.24	0.990	1.06
Be-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00020	<0.00010	<0.00010	<0.00020	<0.00010	<0.00020	<0.00010	<0.00020
Bi-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000020	<0.000010	<0.000010	<0.000020	<0.000010	<0.000020	<0.000010	<0.000020
Ca-D	mg/L	145	132	128	126	125	102	74.8	75.4	56.3	70.5	297
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00040	<0.00020	<0.00020	<0.00040	<0.00020	<0.00040	<0.00020	<0.00040
Cu-D	mg/L	<0.00020	0.00046	0.00043	<0.00040	0.00020	<0.00020	<0.00040	<0.00020	<0.00040	<0.00020	<0.00040
Fe-D	mg/L	0.0155	4.13	4.19	4.07	3.88	3.15	2.27	2.29	0.760	2.34	11.9
Hard-D	mg/L	421	382	369	364	362	292	217	219	154	201	856
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00040	<0.00020	<0.00020	<0.00040	<0.00020	<0.00040	<0.00020	<0.00040
Mg-D	mg/L	14.1	12.7	12.2	12.4	12.2	9.17	7.46	7.59	3.19	6.07	27.5
Mn-D	mg/L	0.491	0.441	0.437	0.451	0.430	0.332	0.243	0.248	0.163	0.343	1.36
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019
Na-D	mg/L	391	389	380	371	365	334	299	316	460	317	438
Mo-D	mg/L	0.0414	<0.0010	<0.0010	<0.0020	<0.0010	<0.0010	<0.0020	0.0016	<0.0020	<0.0010	<0.0020
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020
K-D	mg/L	5.54	5.22	5.20	5.09	5.14	4.52	4.04	4.18	4.03	3.96	6.73
S-D	mg/L	260	239	228	225	217	173	122	124	176	126	447
Sb-D	mg/L	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.0010	<0.00050	<0.0010	<0.00050	<0.0010
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00020	<0.00010	<0.00010	<0.00020	<0.00010	0.00161	<0.00010	<0.00020
Si-D	mg/L	3.65	3.80	3.79	3.86	3.90	3.77	3.58	3.39	4.44	4.14	4.54
Sr-D	mg/L	1.61	1.49	1.38	1.35	1.37	1.10	0.829	0.839	0.650	0.838	3.10
Tl-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000020	<0.000010	<0.000010	<0.000020	<0.000010	<0.000020	<0.000010	<0.000020
Ti-D	mg/L	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.010	<0.0050	<0.010	<0.0050	<0.010
U-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00020	<0.00010	<0.00010	<0.00020	<0.00010	<0.00020	<0.00010	<0.00020
V-D	mg/L	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.010	<0.0050	<0.010	<0.0050	<0.010
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.010	<0.0050	<0.010	<0.0050	<0.010

Table 48 In-Situ Groundwater Wells 9 Page(s)

In-situ Groundwater		5-Mains 2-North	3-Mains 2-North										
	Well ID	5M#2	3M2N	3M2N	3M2N	3M2N	3M2N	3M2N	3M2N	3M2N	3M2N	3M2N	3M2N
Date		25/Mar/21	23/Apr/20	21/May/20	18/Jun/20	20/Jul/20	24/Aug/20	29/Sep/20	5/Nov/20	8/Dec/20	9/Feb/21	15/Mar/21	24/Mar/21
	Repicates												
Parameter	Units												
SO4-D	mg/L	230	700	710	940	460	1000	790	830	750	690	1200	840
H2SEquiv	mg/L	0.0255					0.000957	0.000957				0.00393	
Cond-F	uS/cm	1586	1428	2100	2100	1011	2240	1657	422	2008	2003	2071	1401
pH-F	pH Units	7.48	7.23	8.11	8.06	6.94	8.17	7.41	7.81	7.26	7.28	6.85	7.15
Turb	NTU	4.9	3.2	5.4	8.0	13	0.19	11	5.6	2.1	1.6	180	110
Alk-T	mg/L	600	380	400	290	440	280	440	420	400	430	430	380
Acidity83	mg/L	7.3	15.1	11.5	12.7	15.8	2.5	15.4	10.7	11.8	<1.0	32.8	12.6
N-D	mg/L		0.233	0.189	0.116	0.277	0.070	0.188		0.202			
DOC	mg/L	0.70	1.0	0.69	0.57	1.1	<0.50	0.88		<0.50	0.76		
Hydrox	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bicarb	mg/L	740	470	490	360	530	340	530	510	480	530	520	470
Carb	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cl-D	mg/L		5.6	5.8	10	6.3	8.7	7.1	6.1	4.9	3.6	6.2	
F-D	mg/L		0.13	0.15	0.11	0.14	0.10	0.14	0.12	0.13	0.15	0.12	
Br-D	mg/L		0.14	0.15	0.20	0.19	<0.050	0.10	0.10	0.080	0.069	0.12	
P-D	mg/L	<0.0030	<0.0030	<0.0030	<0.0010	0.059	<0.0010	<0.0030		<0.0030	<0.0030		
TSS	mg/L	1.2											27
Al-D	mg/L	<0.0060	0.0039	<0.0030	<0.0030	<0.0060	<0.0060	<0.0030	<0.0060	<0.0030	<0.0030	0.0093	<0.0060
Ag-D	mg/L	<0.000040	<0.000020	<0.000020	<0.000020	<0.000040	<0.000040	<0.000020	<0.000040	<0.000020	<0.000020	<0.000040	<0.000040
As-D	mg/L	0.00861	0.00038	0.00026	0.00212	<0.00020	<0.00020	0.00019	0.00045	0.00035	0.00044	0.00167	0.00094
Ba-D	mg/L	0.0379	0.0140	0.0144	0.0112	0.0134	0.0111	0.0137	0.0162	0.0136	0.0140	0.0165	0.0155
B-D	mg/L	1.16	0.776	0.775	0.808	0.80	0.78	0.780	0.81	0.740	0.730	1.17	1.04
Be-D	mg/L	<0.00020	<0.00010	<0.00010	<0.00010	<0.00020	<0.00020	<0.00010	<0.00020	<0.00010	<0.00010	<0.00020	<0.00020
Bi-D	mg/L	<0.0020	<0.0010	<0.0010	<0.0010	<0.0020	<0.0020	<0.0010	<0.0020	<0.0010	<0.0010	<0.0020	<0.0020
Cd-D	mg/L	<0.000020	0.000038	<0.000010	<0.000010	<0.000020	<0.000020	<0.000010	<0.000020	<0.000010	0.000024	<0.000020	<0.000020
Ca-D	mg/L	61.8	126	127	239	131	268	141	144	123	110	201	164
Cr-D	mg/L	<0.0020	<0.0010	<0.0010	<0.0010	<0.0020	<0.0020	<0.0010	<0.0020	<0.0010	<0.0010	<0.0020	<0.0020
Co-D	mg/L	<0.00040	0.00100	0.00123	0.00142	0.00230	<0.00040	0.00134	0.00069	0.00025	0.00063	0.122	0.0773
Cu-D	mg/L	<0.00040	0.00073	<0.00020	<0.00020	0.00146	0.00045	<0.00020	<0.00040	<0.00020	0.00160	0.00197	0.00253
Fe-D	mg/L	0.709	0.0325	0.0652	0.656	0.227	<0.010	0.0054	0.331	0.131	0.0730	22.9	13.3
Hard-D	mg/L	177	388	390	703	403	772	431	440	376	340	612	505
Pb-D	mg/L	<0.00040	<0.00020	<0.00020	<0.00020	<0.00040	<0.00040	<0.00020	<0.00040	<0.00020	<0.00020	<0.00040	<0.00040
Mg-D	mg/L	5.37	17.7	17.8	26.0	18.4	25.2	19.0	19.5	16.9	15.6	27.0	22.9
Mn-D	mg/L	0.103	0.201	0.230	0.454	0.241	0.0080	0.238	0.197	0.110	0.133	2.03	1.35
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	0.0000043	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019
Na-D	mg/L	282	321	333	231	339	210	344	363	299	301	445	357
Mo-D	mg/L	<0.0020	<0.0010	<0.0010	<0.0010	<0.0020	<0.0020	<0.0010	<0.0020	<0.0010	<0.0010	<0.0020	<0.0020
Ni-D	mg/L	<0.0020	0.0014	0.0013	0.0020	0.0040	0.0020	0.0018	<0.0020	0.0012	0.0014	0.150	0.0975
K-D	mg/L	2.77	3.53	3.65	3.52	3.87	3.98	3.68	3.77	3.49	3.43	4.40	3.86
S-D	mg/L	74.9	239	243	307	246	326	273	283	226	223	398	320
Sb-D	mg/L	<0.0010	<0.00050	<0.00050	<0.00050	<0.0010	<0.0010	<0.00050	<0.0010	<0.00050	<0.00050	<0.0010	<0.0010
Se-D	mg/L	<0.00020	<0.00010	<0.00010	<0.00010	<0.00020	<0.00020	<0.00010	<0.00020	<0.00010	<0.00010	<0.00020	<0.00020
Si-D	mg/L	3.41	3.25	3.20	3.06	3.08	2.91	3.33	3.21	3.07	2.94	3.62	3.57
Sr-D	mg/L	0.731	1.36	1.38	1.88	1.40	1.86	1.51	1.50	1.28	1.36	1.89	1.58
Tl-D	mg/L	<0.000020	<0.000010	<0.000010	<0.000010	<0.000020	<0.000020	<0.000010	<0.000020	<0.000010	<0.000010	<0.000020	<0.000020
Ti-D	mg/L	<0.010	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050	<0.010	<0.0050	<0.0050	<0.010	<0.010
U-D	mg/L	<0.00020	<0.00010	<0.00010	0.00016	<0.00020	<0.00020	<0.00010	<0.00020	<0.00010	<0.00010	<0.00020	<0.00020
V-D	mg/L	<0.010	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050	<0.010	<0.0050	<0.0050	<0.010	<0.010
Zn-D	mg/L	0.093	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.0050	<0.010	<0.0050	<0.0050	0.023	0.016

Table 48 In-Situ Groundwater Wells 9 Page(s)

In-situ Groundwater		2-South Mine Pool Well Pump										
	Well ID	INF	INF	INF	INF	INF	INF	INF	INF	INF	INF	INF
Date		20/May/20	2/Jun/20	6/Jul/20	6/Aug/20	8/Sep/20	5/Oct/20	2/Nov/20	7/Dec/20	4/Jan/21	1/Feb/21	1/Mar/21
	Repicates											
Parameter	Units											
SO4-D	mg/L	630	610	690	590	630	640	620	650	600	570	630
H2SEquiv	mg/L			0.000957	0.00670	0.00574	0.0149			0.00287	0.000957	0.00446
Cond-F	uS/cm	1092	1214	1640	1415	1570	1674	1437	1633	1656	1228.6	1612
pH-F	pH Units	7.68	7.50	7.16	7.11	7.17	7.47	7.13	7.38	7.20	6.53	7.19
Turb	NTU											
Alk-T	mg/L	250		260	270	280	270	280	270	250	310	310
Acidity83	mg/L	20.1		16.8	9.7	17.5	17.5	18.7	16.5	19.5	9.5	17.6
N-D	mg/L											
DOC	mg/L			1.1								
Hydrox	mg/L	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bicarb	mg/L	310		310	340	340	330	340	330	300	370	380
Carb	mg/L	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cl-D	mg/L											
F-D	mg/L											
Br-D	mg/L											
P-D	mg/L											
TSS	mg/L	11		10	12	10	8.4		11	9.2	6.4	7.2
Al-D	mg/L	<0.0030	<0.0030	<0.0060	<0.0060	<0.0060	<0.0030	<0.0030	<0.0030	0.0041	0.0033	<0.0030
Ag-D	mg/L	<0.000020	<0.000020	<0.000040	<0.000040	<0.000040	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
As-D	mg/L	0.00410	0.00384	0.00416	0.00444	0.00489	0.00525	0.00494	0.00561	0.00462	0.00348	0.00393
Ba-D	mg/L	0.0220	0.0233	0.0216	0.0227	0.0209	0.0206	0.0209	0.0226	0.0214	0.0219	0.0222
B-D	mg/L	0.682	0.699	0.73	0.75	0.77	0.735	0.714	0.673	0.587	0.666	0.586
Be-D	mg/L	<0.00010	<0.00010	<0.00020	<0.00020	<0.00020	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bi-D	mg/L	<0.0010	<0.0010	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cd-D	mg/L	<0.000010	<0.000010	<0.000020	<0.000020	<0.000020	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Ca-D	mg/L	245	239	239	249	241	239	227	225	220	225	226
Cr-D	mg/L	<0.0010	<0.0010	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Co-D	mg/L	0.00069	0.00057	0.00048	0.00050	0.00045	0.00037	0.00030	0.00091	0.00169	0.00099	0.00060
Cu-D	mg/L	<0.00020	<0.00020	<0.00040	<0.00040	<0.00040	<0.00020	<0.00020	<0.00020	<0.00020	0.00036	<0.00020
Fe-D	mg/L	4.16	4.03	4.03	4.32	4.50	4.26	3.96	4.44	3.99	3.20	3.28
Hard-D	mg/L	677	660	662	689	666	659	626	622	606	619	617
Pb-D	mg/L	<0.00020	<0.00020	<0.00040	<0.00040	<0.00040	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Mg-D	mg/L	15.5	15.4	15.7	16.3	15.6	15.1	14.7	14.5	13.5	13.6	12.9
Mn-D	mg/L	0.406	0.416	0.442	0.453	0.422	0.417	0.407	0.485	0.429	0.360	0.356
Hg-D	mg/L	<0.0000019		<0.0000019	<0.0000019	<0.0000019	<0.0000019		<0.0000019	<0.0000019	<0.0000019	<0.0000019
Na-D	mg/L	126	120	118	119	114	113	108	110	99.6	114	101
Mo-D	mg/L	<0.0010	<0.0010	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Ni-D	mg/L	0.0011	0.0010	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	0.0015	0.0025	0.0016	0.0011
K-D	mg/L	1.97	2.04	1.98	2.04	1.90	1.93	1.92	1.90	1.71	1.85	1.77
S-D	mg/L	227	213	218	216	212	212	206	215	199	212	202
Sb-D	mg/L	<0.00050	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Se-D	mg/L	<0.00010	<0.00010	<0.00020	<0.00020	<0.00020	<0.00010	<0.00010	<0.00010	0.00069	<0.00010	<0.00010
Si-D	mg/L	2.97	2.97	3.28	3.49	3.40	3.46	3.39	3.59	3.54	3.56	3.46
Sr-D	mg/L	2.34	2.29	2.12	2.30	2.34	2.28	2.12	2.24	2.04	2.22	2.30
Tl-D	mg/L	<0.000010	<0.000010	<0.000020	<0.000020	<0.000020	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Ti-D	mg/L	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
U-D	mg/L	<0.00010	<0.00010	<0.00020	<0.00020	<0.00020	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
V-D	mg/L	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Zn-D	mg/L	<0.0050	0.0052	<0.010	<0.010	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	0.0054	<0.0050

Table 48 In-Situ Groundwater Wells 9 Page(s)

In-situ Groundwater		3-South Mine Pool				5-South Mine Water			
	Well ID	MW004	MW004	MW004	MW004	5SMW	5SMW	5SMW	5SMW
Date		3/Jun/20	26/Aug/20	10/Dec/20	3/Feb/21	26/Aug/20	7/Dec/20	18/Feb/21	23/Mar/21
	Repicates								
Parameter	Units								
SO4-D	mg/L	370	320	290	340	290	270	410	390
H2SEquiv	mg/L	0.000957	0.000957	0.000957	0.000957	0.0340	0.0298	0.0223	0.0393
Cond-F	uS/cm	812.6	771.2	702	591.9	2240	1268	1427	1353
pH-F	pH Units	7.08	7.16	6.94	6.39	7.24	7.54	7.4	6.87
Turb	NTU	0.42	0.97	0.35	1.8	160	20	260	
Alk-T	mg/L	140	160	110	91	320	360	240	260
Acidity83	mg/L	4.1	4.4	3.3	2.0	13.0	7.5	14.2	10.9
N-D	mg/L	0.099	0.458	0.129	0.219	0.288	0.406		0.398
DOC	mg/L	1.7	3.9	2.1	2.0	0.86	2.4		1.5
Hydrox	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bicarb	mg/L	170	200	140	110	390	440	290	320
Carb	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cl-D	mg/L	1.3	1.1	<1.0	<1.0	6.5	5.5	4.6	3.4
F-D	mg/L	0.086	0.092	0.079	0.064	0.19	0.17	0.15	0.16
Br-D	mg/L	0.075	0.070	0.029	0.074	0.045	0.029	0.047	0.047
P-D	mg/L	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030		0.0043
TSS	mg/L								49
Al-D	mg/L	0.0033	<0.0030	0.0048	0.0055	0.0057	0.0086	0.0230	0.0180
Ag-D	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
As-D	mg/L	0.00020	0.00045	0.00027	0.00030	0.00148	0.00897	0.00322	0.00414
Ba-D	mg/L	0.0286	0.0295	0.0216	0.0209	0.0357	0.0332	0.0350	0.0344
B-D	mg/L	0.225	0.270	0.201	0.181	0.901	0.858	0.867	0.782
Be-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bi-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Ca-D	mg/L	152	154	122	131	57.7	59.9	77.1	78.0
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Co-D	mg/L	<0.00020	<0.00020	<0.00020	0.00023	0.00759	0.00156	0.0430	0.0323
Cu-D	mg/L	0.00053	0.00076	0.00174	0.00162	<0.00020	0.00038	0.00067	0.00050
Fe-D	mg/L	0.0056	<0.0050	0.0069	0.0090	17.8	6.03	22.6	21.3
Hard-D	mg/L	451	455	362	391	178	188	250	249
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Mg-D	mg/L	17.4	16.9	13.8	15.7	8.22	9.39	13.9	13.2
Mn-D	mg/L	0.0114	0.0325	0.0046	0.0253	0.345	0.216	0.561	0.535
Hg-D	mg/L	<0.0000019	0.0000044	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019
Na-D	mg/L	38.4	40.8	31.8	26.4	197	199	184	170
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	0.0018	0.0023	<0.0010	<0.0010
Ni-D	mg/L	<0.0010	0.0010	<0.0010	0.0019	0.0113	0.0026	0.0686	0.0502
K-D	mg/L	1.78	1.67	1.52	1.33	4.47	5.20	5.05	5.02
S-D	mg/L	128	129	111	120	104	96.7	141	132
Sb-D	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00017	<0.00010	<0.00010
Si-D	mg/L	2.59	2.98	3.08	3.63	3.36	3.15	3.23	3.29
Sr-D	mg/L	1.28	1.24	0.959	1.00	0.763	0.884	0.882	0.962
Tl-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Ti-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
U-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
V-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Zn-D	mg/L	<0.0050	<0.0050	0.0131	0.0188	<0.0050	<0.0050	0.0109	<0.0050

Table 48 In-Situ Groundwater Wells 9 Page(s)

In-situ Groundwater		4-South Mine Pool				River Barrier Pillar					
	Well ID	QU11-01	QU11-01	QU11-01	QU11-01	QU11-09M	QU11-09M	QU11-09M	QU11-09M	QU11-09M	QU11-09M
Date		17/Aug/20	17/Aug/20	28/Jan/21	28/Jan/21	26/May/20	27/Aug/20	27/Aug/20	19/Nov/20	17/Mar/21	17/Mar/21
	Repicates		R		R			R			R
Parameter	Units										
SO4-D	mg/L	1400	1400	1600	1600	580	550	560	540	1300	1300
H2SEquiv	mg/L	0.0648	0.0446	0.0234	0.0234	0.0553	0.00531	0.0106	0.00978	0.0914	0.0298
Cond-F	uS/cm	1997	1997	1943	1943	1578	2203	2203	1571.8	2666	2666
pH-F	pH Units	6.49	6.49	6.45	6.45	7.36	7.27	7.27	7.12	6.74	6.74
Turb	NTU	770	860	650	660	110	73	78	76	330	280
Alk-T	mg/L	91	110	73	74	440	490	490	490	460	460
Acidity83	mg/L	124	147	108	111	<1.0	11.8	12.3	<1.0	49.0	47.8
N-D	mg/L	0.570	0.402	0.425	0.463	0.383	0.396	0.346	0.327	0.302	0.312
DOC	mg/L	2.8	1.9	2.0	2.1	1.4	0.64	0.67	0.68	1.4	0.82
Hydrox	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bicarb	mg/L	110	130	89	91	540	600	600	590	560	560
Carb	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	6.2	<1.0	<1.0
Cl-D	mg/L	2.5	2.5	3.3	2.9	38	42	42	44	30	30
F-D	mg/L	0.46	0.47	0.41	0.41	0.11	0.12	0.12	0.11	0.094	0.093
Br-D	mg/L	0.30	0.27	0.11	0.12	0.17	0.14	0.13	0.10	0.17	0.19
P-D	mg/L	0.0096	0.0098	0.0081	0.0081	0.032	0.0034	0.0015	<0.0030	0.0040	0.0014
TSS	mg/L										
Al-D	mg/L	<0.015	<0.015	<0.015	0.035	<0.0060	<0.0030	<0.0030	<0.0060	<0.0060	0.0061
Ag-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.000040	<0.000020	<0.000020	<0.000040	<0.000040	<0.000040
As-D	mg/L	0.107	0.0977	0.116	0.114	0.00365	0.00311	0.00314	0.00232	0.00449	0.00487
Ba-D	mg/L	0.0123	0.0114	0.0117	0.0114	0.0162	0.0181	0.0182	0.0160	0.0189	0.0210
B-D	mg/L	1.19	1.09	1.12	1.05	0.87	0.827	0.827	0.85	1.13	1.11
Be-D	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00020	<0.00010	<0.00010	<0.00020	<0.00020	<0.00020
Bi-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0010	<0.0010	<0.0020	<0.0020	<0.0020
Cd-D	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000020	<0.000010	<0.000010	<0.000020	<0.000020	<0.000020
Ca-D	mg/L	379	342	379	371	82.0	90.6	88.0	79.1	219	229
Cr-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0010	<0.0010	<0.0020	<0.0020	<0.0020
Co-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.00040	<0.00020	<0.00020	<0.00040	0.0128	0.0138
Cu-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.00040	<0.00020	<0.00020	<0.00040	<0.00040	0.00052
Fe-D	mg/L	170	157	176	175	7.34	6.95	6.69	5.87	32.3	34.2
Hard-D	mg/L	1190	1060	1180	1160	243	267	260	235	658	682
Pb-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.00040	<0.00020	<0.00020	<0.00040	<0.00040	<0.00040
Mg-D	mg/L	58.5	51.2	56.6	55.8	9.34	9.84	9.88	9.05	26.8	26.7
Mn-D	mg/L	2.83	2.61	2.52	2.52	0.239	0.262	0.271	0.221	1.67	1.83
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	0.0000025	0.0000022	<0.0000019	<0.0000019	<0.0000019
Na-D	mg/L	139	125	138	137	354	374	374	367	470	470
Mo-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	0.0012	0.0012	<0.0020	<0.0020	<0.0020
Ni-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0010	<0.0010	<0.0020	0.0080	0.0086
K-D	mg/L	6.53	5.70	6.33	6.38	5.05	5.26	5.30	5.03	6.69	6.97
S-D	mg/L	533	487	508	501	196	191	190	183	419	422
Sb-D	mg/L	<0.0025	<0.0025	<0.0025	<0.0025	<0.0010	<0.00050	<0.00050	<0.0010	<0.0010	<0.0010
Se-D	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	0.00070	<0.00010	<0.00010	<0.00020	<0.00020	<0.00020
Si-D	mg/L	5.46	4.96	5.90	5.70	3.33	3.60	3.49	3.40	3.94	4.19
Sr-D	mg/L	2.26	2.01	1.93	1.89	1.00	1.16	1.16	1.02	2.34	2.61
Tl-D	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000020	<0.000010	<0.000010	<0.000020	<0.000020	<0.000020
Ti-D	mg/L	<0.025	<0.025	<0.025	<0.025	<0.010	<0.0050	<0.0050	<0.010	<0.010	<0.010
U-D	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00020	<0.00010	<0.00010	<0.00020	<0.00020	<0.00020
V-D	mg/L	<0.025	<0.025	<0.025	<0.025	<0.010	<0.0050	<0.0050	<0.010	<0.010	<0.010
Zn-D	mg/L	<0.025	<0.025	<0.025	<0.025	<0.010	<0.0050	<0.0050	<0.010	<0.010	<0.010

Table 48 In-Situ Groundwater Wells 9 Page(s)

In-situ Groundwater		7-South Water Cover over PAG-CCR												
	Well ID	QU14-10	QU14-10	QU14-10	QU14-10	QU14-10	QU14-10	QU14-10	QU14-10	QU14-10	QU14-10	QU14-10	QU14-10	QU14-10
Date		28/Apr/20	20/May/20	17/Jun/20	30/Jul/20	30/Jul/20	27/Aug/20	27/Aug/20	19/Nov/20	16/Dec/20	16/Dec/20	19/Jan/21	24/Feb/21	24/Feb/21
	Repicates					R		R			R			R
Parameter	Units													
SO4-D	mg/L	1900	1800	1800	1900	1500	1800	1900	1900	1900	1900	1900	1900	1800
H2SEquiv	mg/L	0.000957	0.000957	0.000957	0.000957	0.00287	0.000957	0.000957	0.000957	0.00478	0.00478	0.000957	0.000957	0.000957
Cond-F	uS/cm	2306.9	1004	2557	2186	2186	7.296	7.296	2204	2231.3	2231.3	2241.8	2247	2247
pH-F	pH Units	6.55	6.79	6.64	6.7	6.7	7.296	7.296	6.42	6.33	6.33	6.65	5.94	5.94
Turb	NTU	2.5	18	25	21	18	9.4	8.5	15	21	23	21	12	23
Alk-T	mg/L	300	290	290	310	310	310	310	310	310	310	300	300	290
Acidity83	mg/L	31.7	22.4	20.6	20.1	13.3	30.9	32.6	22.6	30.4	34.8	<1.0	16.5	18.6
N-D	mg/L	0.204	0.389	0.402	0.263	0.238	0.219	0.223	0.411	0.290	0.218	0.367	0.276	0.247
DOC	mg/L	1.1	1.9	1.4	1.4	1.6	0.99	1.1	1.8	1.3	1.3	1.8	1.2	1.1
Hydrox	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bicarb	mg/L	360	360	360	380	380	370	370	380	380	380	370	370	360
Carb	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cl-D	mg/L	5.7	5.5	6.3	5.6	5.5	5.8	5.9	5.7	5.9	6.4	5.1	5.5	5.7
F-D	mg/L	0.18	0.19	0.17	0.17	0.18	0.18	0.18	0.16	0.17	0.17	0.15	0.17	0.17
Br-D	mg/L	0.30	0.34	0.42	0.51	0.36	0.18	0.19	0.19	0.30	0.18	0.22	0.20	0.21
P-D	mg/L	0.011	0.016	0.013	0.0035	<0.0030	0.0049	0.0049	0.0041	0.0040	0.0038	0.0031	0.0045	0.0052
TSS	mg/L													
Al-D	mg/L	<0.015	<0.0060	<0.015	<0.030	<0.030	<0.015	<0.015	<0.0060	<0.015	<0.015	<0.015	<0.015	<0.015
Ag-D	mg/L	<0.00010	<0.000040	<0.00010	<0.00020	<0.00020	<0.00010	<0.00010	<0.000040	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
As-D	mg/L	0.0929	0.0986	0.0905	0.104	0.0997	0.0855	0.0994	0.0998	0.0919	0.0981	0.102	0.0893	0.0880
Ba-D	mg/L	0.0158	0.0163	0.0175	0.017	0.017	0.0141	0.0164	0.0155	0.0141	0.0157	0.0151	0.0145	0.0148
B-D	mg/L	1.08	1.13	1.28	1.08	1.08	1.04	1.19	1.18	1.01	1.09	1.01	1.10	1.10
Be-D	mg/L	<0.00050	<0.00020	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.00020	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bi-D	mg/L	<0.0050	<0.0020	<0.0050	<0.010	<0.010	<0.0050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cd-D	mg/L	<0.000050	<0.000020	<0.000050	<0.00010	0.00031	<0.000050	<0.000050	<0.000020	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Ca-D	mg/L	514	515	517	540	533	480	570	500	463	505	526	494	495
Cr-D	mg/L	<0.0050	<0.0020	<0.0050	<0.010	<0.010	<0.0050	<0.0050	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Co-D	mg/L	<0.0010	0.00052	<0.0010	<0.0020	<0.0020	<0.0010	<0.0010	0.00042	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cu-D	mg/L	<0.0010	0.00164	0.0021	<0.0020	<0.0020	<0.0010	<0.0010	<0.00040	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Fe-D	mg/L	1.71	1.73	1.80	1.77	1.88	1.64	1.92	1.73	1.66	1.83	1.91	1.75	1.75
Hard-D	mg/L	2020	1970	2020	2100	2070	1850	2180	1910	1780	1940	2010	1900	1880
Pb-D	mg/L	<0.0010	<0.00040	<0.0010	<0.0020	<0.0020	<0.0010	<0.0010	<0.00040	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Mg-D	mg/L	179	167	178	182	179	159	185	161	151	166	169	161	158
Mn-D	mg/L	1.45	1.37	1.47	1.48	1.44	1.33	1.55	1.38	1.34	1.46	1.50	1.30	1.28
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	0.0000025	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019
Na-D	mg/L	53.4	53.1	54.8	54.9	54.2	47.6	56.1	50.1	48.4	53.0	56.6	53.5	52.7
Mo-D	mg/L	<0.0050	<0.0020	<0.0050	<0.010	<0.010	<0.0050	<0.0050	<0.0020	<0.0050	<0.0050	0.0093	<0.0050	<0.0050
Ni-D	mg/L	<0.0050	0.0043	<0.0050	<0.010	<0.010	<0.0050	<0.0050	0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
K-D	mg/L	7.85	7.30	7.03	7.56	7.45	6.66	7.70	7.12	6.31	6.96	7.75	6.90	6.75
S-D	mg/L	623	608	626	664	637	558	642	613	558	590	613	586	576
Sb-D	mg/L	<0.0025	<0.0010	<0.0025	<0.0050	<0.0050	<0.0025	<0.0025	<0.0010	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Se-D	mg/L	<0.00050	<0.00020	<0.00050	<0.0010	<0.0010	<0.00050	<0.00050	<0.00020	0.00168	0.00132	<0.00050	<0.00050	<0.00050
Si-D	mg/L	3.14	3.11	3.09	3.5	3.4	2.93	3.47	3.28	2.84	3.10	3.19	3.07	3.06
Sr-D	mg/L	4.61	4.83	4.52	4.99	4.91	4.17	4.88	4.60	4.20	4.56	4.52	4.46	4.29
Tl-D	mg/L	<0.000050	<0.000020	<0.000050	<0.00010	<0.00010	<0.000050	<0.000050	<0.000020	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Ti-D	mg/L	<0.025	<0.010	<0.025	<0.050	<0.050	<0.025	<0.025	<0.010	<0.025	<0.025	<0.025	<0.025	<0.025
U-D	mg/L	0.00093	0.00093	0.00083	<0.0010	0.0012	0.00077	0.00090	0.00086	0.00074	0.00084	0.00082	0.00089	0.00089
V-D	mg/L	<0.025	<0.010	<0.025	<0.050	<0.050	<0.025	<0.025	<0.010	<0.025	<0.025	<0.025	<0.025	<0.025
Zn-D	mg/L	<0.025	<0.010	<0.025	<0.050	<0.050	<0.025	<0.025	<0.010	<0.025	<0.025	<0.025	<0.025	<0.025

Table 48 In-Situ Groundwater Wells 9 Page(s)

In-situ Groundwater		242 Mine Pool Water					1 Mains 7S and Area 5						
	Well ID	242MW	242MW	242MW	242MW	242MW	1M7SA5	1M7SA5	1M7SA5	1M7SA5	1M7SA5	1M7SA5	1M7SA5
Date		10/Jun/20	22/Sep/20	22/Sep/20	16/Dec/20	23/Feb/21	23/Apr/20	23/Apr/20	21/May/20	18/Jun/20	25/Aug/20	30/Sep/20	9/Nov/20
	Repicates			R				R					
Parameter	Units												
SO4-D	mg/L	38	39	37	43	41	220	280	280	190	350	470	450
H2SEquiv	mg/L	0.0117	0.0138	0.0159	0.00967	0.000957					0.000957	0.000957	
Cond-F	uS/cm	244	204.9	204.9	227.9	205.2	347	347	730	685	1022	890	972
pH-F	pH Units	6.64	6.28	6.28	6.19	6.16	7.51	7.51	8.06	7.88	7.82	7.8	6.96
Turb	NTU	51	120	120	130	85	2.9	3.6	27	5.2	72	170	110
Alk-T	mg/L	90	94	94	93	120	160	160	120	140	140	29	2.6
Acidity83	mg/L	12.4	3.4	4.3	12.8	8.0	1.3	1.6	1.6	<1.0	2.0	5.6	57.2
N-D	mg/L	0.095	0.215	0.141	0.254	0.146	0.257	0.263	0.151	0.220	0.191	0.138	
DOC	mg/L	0.53	<0.50	<0.50	1.5	<0.50	0.93	0.83	1.9	0.89	1.4	0.60	
Hydrox	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bicarb	mg/L	110	110	110	110	150	200	190	150	180	170	36	3.2
Carb	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cl-D	mg/L	<1.0	1.3	<1.0	<1.0	<1.0	2.0	2.0	1.9	2.0	2.8	1.7	1.0
F-D	mg/L	0.090	0.091	0.088	0.077	0.077	0.36	0.36	0.18	0.40	0.29	0.18	0.067
Br-D	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.053	0.052	0.095	0.032	0.078	0.076	0.064
P-D	mg/L	<0.0030	<0.0030	<0.0030	0.0063	<0.0030	0.0060	0.0044	<0.0030	0.0037	<0.0010	<0.0030	
TSS	mg/L												
Al-D	mg/L	<0.0030	<0.0030	<0.0030	0.0040	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.0057	0.176
Ag-D	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
As-D	mg/L	0.0747	0.0797	0.0791	0.0790	0.0680	0.0517	0.0528	0.00643	0.00998	0.00070	0.00024	0.00081
Ba-D	mg/L	0.0730	0.0676	0.0671	0.0684	0.0697	0.154	0.156	0.0769	0.143	0.0824	0.0999	0.0208
B-D	mg/L	0.067	0.063	0.064	0.079	0.057	0.451	0.446	0.255	0.469	0.458	0.353	0.099
Be-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00012
Bi-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000089	0.000167
Ca-D	mg/L	44.1	43.7	44.4	43.2	38.8	127	127	106	86.6	134	138	113
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Co-D	mg/L	0.00224	0.00197	0.00197	0.00176	0.00184	0.00073	0.00075	0.00096	0.00048	0.00099	0.0149	0.0252
Cu-D	mg/L	0.00105	<0.00020	<0.00020	<0.00020	0.00159	0.00033	0.00028	0.00061	0.00039	0.00099	0.00357	0.0292
Fe-D	mg/L	12.5	14.3	14.3	15.7	11.9	0.0263	0.0323	0.127	0.121	0.284	9.45	33.2
Hard-D	mg/L	125	124	125	122	111	414	416	351	288	453	467	410
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00021	<0.00020	<0.00020
Mg-D	mg/L	3.51	3.50	3.47	3.53	3.32	23.8	24.0	21.0	17.5	28.6	30.0	31.2
Mn-D	mg/L	0.760	0.791	0.817	0.779	0.657	0.0761	0.0776	0.0902	0.0377	0.158	0.490	0.697
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019
Na-D	mg/L	2.81	2.71	2.68	2.53	2.26	21.3	21.3	14.0	20.1	19.8	13.6	6.77
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Ni-D	mg/L	0.0016	0.0014	0.0014	0.0013	0.0012	0.0037	0.0037	0.0032	0.0022	0.0044	0.0256	0.0439
K-D	mg/L	0.485	0.516	0.511	0.481	0.454	2.53	2.58	1.85	2.45	2.91	2.29	1.17
S-D	mg/L	12.8	12.3	12.0	12.5	12.0	101	103	89.1	61.9	125	149	152
Sb-D	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Se-D	mg/L	<0.00010	<0.00010	<0.00010	0.00017	<0.00010	<0.00010	<0.00010	0.00012	<0.00010	<0.00010	0.00013	<0.00010
Si-D	mg/L	3.86	3.71	3.75	3.65	3.41	3.67	3.65	4.26	3.91	3.59	4.91	6.77
Sr-D	mg/L	0.0761	0.0737	0.0730	0.0723	0.0663	1.02	0.993	0.606	0.699	0.936	0.802	0.438
Tl-D	mg/L	0.000022	0.000014	0.000013	0.000026	0.000023	<0.000010	<0.000010	<0.000010	<0.000010	0.000013	0.000029	0.000016
Ti-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
U-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00016	0.00017	0.00024	0.00012	0.00017	0.00012	0.00018
V-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0072	0.0441	0.102

Table 48 In-Situ Groundwater Wells 9 Page(s)

In-situ Groundwater		7-South Area 5						
	Well ID	7SA5	7SA5	7SA5	7SA5	7SA5	7SA5	7SA5
Date		20/Jul/20	24/Aug/20	29/Sep/20	5/Nov/20	8/Dec/20	5/Jan/21	23/Mar/21
	Repicates							
Parameter	Units							
SO4-D	mg/L	52	47	78	31	11	27	37
H2SEquiv	mg/L		0.000957	0.000957				0.000957
Cond-F	uS/cm	328	416	520	370	449	393	436
pH-F	pH Units	7.7	8.09	7.47	7.94	8.15	7.95	7.94
Turb	NTU	0.68	1.5	0.80	1.2	1.2	1.4	
Alk-T	mg/L	160	170	150	170	180	170	160
Acidity83	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
N-D	mg/L	0.160	0.230	0.175		0.384		0.264
DOC	mg/L	0.98	<0.50	0.53		1.2		0.67
Hydrox	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bicarb	mg/L	200	200	190	210	210	200	200
Carb	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cl-D	mg/L	1.7	2.0	2.5	1.3	1.0	1.5	1.8
F-D	mg/L	0.61	0.51	0.61	0.50	0.47	0.52	0.56
Br-D	mg/L	0.013	<0.010	<0.010	<0.010	<0.010	<0.010	0.011
P-D	mg/L	0.086	0.011	0.012		0.011		0.0087
TSS	mg/L							7.2
Al-D	mg/L	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030
Ag-D	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
As-D	mg/L	0.258	0.242	0.247	0.245	0.248	0.233	0.255
Ba-D	mg/L	0.177	0.363	0.163	0.391	0.553	0.153	0.165
B-D	mg/L	0.547	0.487	0.560	0.507	0.461	0.505	0.519
Be-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bi-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Ca-D	mg/L	46.4	45.9	48.9	44.3	41.1	41.2	41.9
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Co-D	mg/L	0.00027	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Cu-D	mg/L	<0.00020	<0.00020	<0.00020	0.00022	<0.00020	<0.00020	<0.00020
Fe-D	mg/L	0.0108	0.0082	0.0075	0.0116	0.0069	<0.0050	<0.0050
Hard-D	mg/L	158	155	170	148	134	140	141
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Mg-D	mg/L	10.1	9.86	11.7	8.97	7.57	8.95	8.86
Mn-D	mg/L	0.0117	0.0155	0.0067	0.0141	0.0236	0.0086	0.0097
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019
Na-D	mg/L	24.9	22.1	24.7	22.3	19.5	23.1	23.5
Mo-D	mg/L	0.0016	<0.0010	0.0015	<0.0010	<0.0010	0.0012	0.0011
Ni-D	mg/L	0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
K-D	mg/L	2.19	2.32	2.24	2.16	2.23	2.05	2.10
S-D	mg/L	18.0	15.4	25.8	10.7	3.1	12.4	11.0
Sb-D	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	0.00016	<0.00010	<0.00010
Si-D	mg/L	5.07	4.87	4.90	4.80	4.38	4.85	5.34
Sr-D	mg/L	0.565	0.569	0.621	0.524	0.468	0.526	0.551
Tl-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Ti-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
U-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
V-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050

Table 48 In-Situ Groundwater Wells 9 Page(s)

In-situ Groundwater		7-South Portal Sump											
	Well ID	7SPS	7SPS	7SPS	7SPS	7SPS	7SPS	7SPS	7SPS	7SPS	7SPS	7SPS	7SPS
Date		7/Apr/20	4/May/20	2/Jun/20	6/Jul/20	6/Aug/20	8/Sep/20	5/Oct/20	2/Nov/20	7/Dec/20	4/Jan/21	1/Feb/21	1/Mar/21
	Repicates												
Parameter	Units												
SO4-D	mg/L	270	250	260	350	370	260	570	190	200	86	140	190
H2SEquiv	mg/L												
Cond-F	uS/cm	602	519	874	1085	1052	875	1183	437	519	526.0	875	620
pH-F	pH Units	7.51	7.35	7.01	7.47	7.45	7.31	5.78	6.95	7.17	6.27	7.31	6.87
Turb	NTU												
Alk-T	mg/L	110	140	120	120	110	140	<1.0	39	47	16	66	110
Acidity83	mg/L	5.5	3.2	5.2	4.7	1.4	3.2	73.9	4.2	7.7	4.6	2.7	4.1
N-D	mg/L												
DOC	mg/L									1.6			
Hydrox	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bicarb	mg/L	140	170	150	150	130	170	<1.0	48	57	19	81	130
Carb	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cl-D	mg/L												
F-D	mg/L												
Br-D	mg/L												
P-D	mg/L									<0.0030			
TSS	mg/L	13	10	14	5.2	15	6.8	8.4	35	130	150	18	12
Al-D	mg/L	<0.0030	<0.0030	<0.0030	<0.0030	0.0050	0.0035	0.115	0.0109	0.0059	0.0085	0.0153	0.0056
Ag-D	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
As-D	mg/L	0.00056	0.00034	0.00027	0.00027	0.00036	0.00046	0.00022	0.00029	0.00054	0.00012	0.00077	0.00078
Ba-D	mg/L	0.0148	0.0178	0.0189	0.0176	0.0241	0.0658	0.0310	0.0154	0.0149	0.0085	0.0108	0.0131
B-D	mg/L	0.052	0.056	0.091	0.092	0.115	0.246	0.174	0.099	0.068	<0.050	<0.050	0.056
Be-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00017	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bi-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	0.000014	<0.000010	0.000230	0.000046	0.000039	0.000024	0.000027	0.000022
Ca-D	mg/L	101	106	119	143	148	122	148	59.7	65.6	26.2	54.6	64.5
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Co-D	mg/L	0.00269	0.00107	0.00218	0.00328	0.00359	0.00130	0.0307	0.00587	0.00560	0.00377	0.00382	0.00336
Cu-D	mg/L	0.00038	0.00049	0.00038	0.00025	0.00068	0.00055	0.0304	0.00241	0.00117	0.00172	0.00182	0.00107
Fe-D	mg/L	1.41	0.200	0.273	0.0196	0.0290	0.356	35.3	4.04	5.56	0.262	1.75	1.67
Hard-D	mg/L	352	367	417	502	509	413	508	209	236	92.1	189	223
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Mg-D	mg/L	24.0	24.8	29.0	35.5	34.0	26.1	33.8	14.6	17.5	6.46	12.9	15.0
Mn-D	mg/L	0.323	0.181	0.243	0.319	0.341	0.0955	0.813	0.200	0.250	0.122	0.162	0.150
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	0.0000034	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019
Na-D	mg/L	10.1	13.8	13.1	15.2	15.4	20.0	9.35	4.14	4.95	1.56	3.58	4.55
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Ni-D	mg/L	0.0059	0.0029	0.0049	0.0073	0.0079	0.0042	0.0481	0.0109	0.0108	0.0072	0.0077	0.0066
K-D	mg/L	1.06	1.24	1.56	1.59	1.99	2.15	1.88	1.14	0.867	0.431	0.658	0.793
S-D	mg/L	84.4	83.3	103	136	141	105	192	64.4	71.8	26.2	48.4	55.7
Sb-D	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	0.00014	<0.00010	0.00019	0.00010	<0.00010	0.00018	<0.00010	<0.00010
Si-D	mg/L	4.82	5.14	4.77	5.65	5.60	5.61	6.87	3.59	4.08	2.45	4.54	4.19
Sr-D	mg/L	0.376	0.421	0.476	0.540	0.586	0.708	0.565	0.227	0.255	0.0884	0.203	0.255
Tl-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000023	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Ti-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
U-D	mg/L	0.00030	0.00041	0.00038	0.00041	0.00034	0.00029	0.00032	0.00011	0.00011	<0.00010	<0.00010	0.00013
V-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Zn-D	mg/L	0.0070	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0892	0.0194	0.0227	0.0109	0.0137	0.0123

Table 49 Ex-Situ Groundwater Wells 6 Page(s)

Ex-situ Groundwater			2-North											
	Well ID		QU08-21GS	QU08-21GS	QU08-21GS	QU08-21GS	QU08-21GS	QU08-21GS	QU08-21GS	QU08-21GD	QU08-21GD	QU08-21GD	QU08-21GD	QU08-21GD
Date			1/Jun/20	1/Jun/20	13/Aug/20	13/Aug/20	10/Nov/20	9/Feb/21	9/Feb/21	1/Jun/20	13/Aug/20	10/Nov/20	10/Nov/20	9/Feb/21
	Replicate	Freshwater Aquatic		R		R			R				R	
Parameter	Units	Life (C)												
SO4-D	mg/L	1280	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
H2SEquiv	mg/L	0.02	0.0138	0.0308	0.0415	0.0319	0.0436	0.159	0.106	0.117	0.0159	0.191	0.191	0.0797
Cond-F	uS/cm		473.4	473.4	950	950	607.3	482	482	2714.3	337.8	7.43	453.2	1897
pH-F	pH Units		8.08	8.08	7.94	7.94	7.85	8.75	8.75	7.41	7.56	7.43	7.43	7.1
Turb	NTU		0.78	1.4	4.3	3.4	5.3	0.65	0.58	10	13	12	11	5.8
Alk-T	mg/L		190	190	200	200	200	190	190	200	210	210	210	200
Acidity83	mg/L		<1.0	190	<1.0	<1.0	<1.0	<1.0	<1.0	4.4	2.4	4.8	5.5	<1.0
N-D	mg/L		0.181	190	0.249	0.265	0.387	0.289	0.189	0.644	0.504	4.16	3.95	0.386
DOC	mg/L		<0.50	190	<1.0	1.0	0.87	1.4	0.68	23	10	19	18	3.2
Hydrox	mg/L		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bicarb	mg/L		230	230	240	240	240	230	220	250	260	260	260	250
Carb	mg/L		<1.0	<1.0	<1.0	<1.0	2.9	3.1	2.1	<1.0	<1.0	<1.0	<1.0	<1.0
Cl-D	mg/L	1500	70	72	190	200	160	53	56	1000	1200	1300	1300	680
F-D	mg/L	2	1.7	1.6	1.8	1.8	1.8	1.7	1.7	1.2	1.1	0.93	0.92	1.4
Br-D	mg/L		0.092	0.094	0.28	0.29	0.19	0.076	0.077	1.3	1.6	1.7	1.7	0.94
P-D	mg/L		0.059	0.058	0.052	0.055	0.11	0.024	0.022	0.021	0.017	0.45	0.45	0.014
TSS	mg/L													
Al-D	mg/L		<0.0060	0.0030	<0.0060	<0.0030	<0.0060	0.0041	0.0037	<0.015	<0.015	<0.015	<0.015	<0.015
Ag-D	mg/L	0.0005	<0.000040	<0.000020	<0.000040	<0.000020	<0.000040	<0.000020	<0.000020	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
As-D	mg/L	0.05	0.208	0.213	0.206	0.210	0.414	0.227	0.219	0.164	0.152	0.175	0.175	0.186
Ba-D	mg/L	10	0.304	0.312	0.623	0.619	0.548	0.286	0.277	2.59	2.87	2.73	2.78	1.74
B-D	mg/L	12	1.95	1.95	2.16	2.07	2.00	1.87	1.85	3.49	3.42	2.94	3.05	2.89
Be-D	mg/L	0.053	<0.00020	<0.00010	<0.00020	<0.00010	<0.00020	<0.00010	<0.00010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bi-D	mg/L		<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cd-D	mg/L	0.0005	<0.000020	<0.000010	<0.000020	<0.000010	<0.000020	<0.000010	<0.000010	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Ca-D	mg/L		15.1	15.1	27.5	28.0	22.4	13.3	12.9	113	129	142	140	70.5
Cr-D	mg/L	0.01	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Co-D	mg/L	0.04	<0.00040	<0.00020	<0.00040	<0.00020	<0.00040	<0.00020	<0.00020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cu-D	mg/L	0.02	<0.00040	<0.00020	<0.00040	<0.00020	<0.00040	<0.00020	<0.00020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Fe-D	mg/L		0.337	0.319	0.386	0.351	1.19	0.246	0.234	0.835	1.27	1.62	1.65	0.610
Hard-D	mg/L		53.1	52.8	92.6	93.4	76.7	48.3	46.5	348	402	428	424	228
Pb-D	mg/L	0.04	<0.00040	<0.00020	<0.00040	<0.00020	<0.00040	<0.00020	<0.00020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Mg-D	mg/L		3.75	3.69	5.78	5.70	5.07	3.69	3.50	16.3	19.1	18.0	18.2	12.6
Mn-D	mg/L		0.0532	0.0533	0.0656	0.0635	0.0619	0.0299	0.0286	0.0628	0.112	0.132	0.132	0.0624
Hg-D	mg/L	0.00025	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019
Na-D	mg/L		104	104	172	168	144	100	95.3	563	635	647	634	414
Mo-D	mg/L	10	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Ni-D	mg/L	0.25	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
K-D	mg/L		3.82	3.83	4.80	4.73	4.52	3.87	3.69	9.79	10.8	11.4	11.4	7.84
S-D	mg/L		<6.0	<3.0	<6.0	<3.0	<6.0	<3.0	<3.0	<15	<15	<15	<15	<15
Sb-D	mg/L	0.09	<0.0010	<0.00050	<0.0010	<0.00050	<0.0010	<0.00050	<0.00050	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Se-D	mg/L	0.02	<0.00020	<0.00010	<0.00020	<0.00010	<0.00020	<0.00010	<0.00010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Si-D	mg/L		3.59	3.56	3.37	3.36	3.27	3.56	3.37	4.33	4.38	4.65	4.57	3.95
Sr-D	mg/L		0.412	0.426	0.705	0.703	0.579	0.405	0.399	2.35	2.76	2.75	2.75	1.66
Tl-D	mg/L	0.003	<0.000020	<0.000010	<0.000020	<0.000010	<0.000020	<0.000010	<0.000010	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Ti-D	mg/L	1	<0.010	<0.0050	<0.010	<0.0050	<0.010	<0.0050	<0.0050	<0.025	<0.025	<0.025	<0.025	<0.025
U-D	mg/L	0.085	<0.00020	<0.00010	<0.00020	<0.00010	<0.00020	<0.00010	<0.00010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
V-D	mg/L		<0.010	<0.0050	<0.010	<0.0050	<0.010	<0.0050	<0.0050	<0.025	<0.025	<0.025	<0.025	<0.025
Zn-D	mg/L	0.075	<0.010	<0.0050	<0.010	<0.0050	<0.010	<0.0050	<0.0050	<0.025	<0.025	<0.025	<0.025	<0.025
			<0.010											

Table 49 Ex-Situ Groundwater Wells 6 Page(s)

Ex-situ Groundwater		2-North								
	Well ID	QU10-10S	QU10-10S	QU10-10S	QU10-10S	QU10-10D	QU10-10D	QU10-11S	QU10-11S	QU10-11D
Date		4/Jun/20	4/Jun/20	8/Dec/20	8/Dec/20	4/Jun/20	8/Dec/20	11/Jun/20	11/Jun/20	11/Jun/20
	Replicate		R		R				R	
Parameter	Units									
SO4-D	mg/L	1.1	1.9	3.4	3.5	<1.0	<1.0	5.3	6.2	<1.0
H2SEquiv	mg/L	0.0840	0.0946	0.723	0.755	0.00957	0.0957	0.000957	0.000957	0.0532
Cond-F	uS/cm	300.1	300.1	232.7	232.7	7489	10611.8	255.4	255.4	1607.8
pH-F	pH Units	7.93	7.93	7.94	7.94	7.31	7.11	7.05	7.05	7.31
Turb	NTU	14	14	10	9.3	240	140	2.6	2.7	71
Alk-T	mg/L	170	170	150	150	110	100	160	160	340
Acidity83	mg/L	<1.0	<1.0	<1.0	<1.0	8.9	9.6	3.6	5.0	8.5
N-D	mg/L	0.278	0.266	0.312	0.301	0.750	0.798	0.112	0.105	0.398
DOC	mg/L	0.73	<0.50	0.90	<0.50	17	6.1	0.83	0.92	8.0
Hydrox	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bicarb	mg/L	210	200	190	190	140	130	200	190	420
Carb	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cl-D	mg/L	26	25	4.9	5.0	2600	3000	5.4	5.4	470
F-D	mg/L	0.71	0.74	0.67	0.66	<0.050	<0.050	0.14	0.14	0.38
Br-D	mg/L	0.036	0.035	<0.010	<0.010	3.4	4.5	0.010	0.011	0.79
P-D	mg/L	0.028	0.033	0.022	0.024	0.10	0.065	0.016	0.018	0.082
TSS	mg/L									
Al-D	mg/L	<0.0030	<0.0030	0.0033	<0.0030	<0.015	<0.015	<0.0030	<0.0030	<0.0060
Ag-D	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.00010	<0.00010	<0.000020	<0.000020	<0.000040
As-D	mg/L	0.103	0.103	0.108	0.104	0.0150	0.0157	0.00213	0.00218	0.0127
Ba-D	mg/L	0.349	0.354	0.318	0.318	1.02	1.19	0.255	0.260	0.348
B-D	mg/L	0.842	0.867	0.597	0.608	0.37	0.34	0.299	0.301	1.85
Be-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00050	<0.00050	<0.00010	<0.00010	<0.00020
Bi-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0050	<0.0050	<0.0010	<0.0010	<0.0020
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000050	<0.000050	<0.000010	<0.000010	<0.000020
Ca-D	mg/L	24.8	24.5	22.4	22.6	500	562	35.2	36.5	56.5
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0050	<0.0050	<0.0010	<0.0010	<0.0020
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.0010	<0.0010	<0.00020	<0.00020	<0.00040
Cu-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.0010	<0.0010	<0.00020	<0.00020	<0.00040
Fe-D	mg/L	0.193	0.196	0.168	0.173	8.94	8.72	1.03	1.04	2.67
Hard-D	mg/L	84.3	84.3	76.8	77.3	1290	1450	121	124	164
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.0010	<0.0010	<0.00020	<0.00020	<0.00040
Mg-D	mg/L	5.43	5.63	5.09	5.08	10.3	10.7	7.92	7.92	5.67
Mn-D	mg/L	0.0343	0.0354	0.0296	0.0297	0.385	0.344	0.112	0.109	0.279
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019
Na-D	mg/L	52.4	53.6	34.5	34.8	1170	1280	24.1	24.0	370
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0050	<0.0050	<0.0010	<0.0010	<0.0020
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0050	<0.0050	<0.0010	<0.0010	<0.0020
K-D	mg/L	3.34	3.45	3.24	3.26	7.70	7.98	1.90	1.91	5.02
S-D	mg/L	<3.0	<3.0	<3.0	<3.0	<15	<15	<3.0	<3.0	<6.0
Sb-D	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.0025	<0.0025	<0.00050	<0.00050	<0.0010
Se-D	mg/L	0.00061	0.00044	0.00711	0.00724	<0.00050	0.00142	<0.00010	<0.00010	<0.00020
Si-D	mg/L	4.16	4.22	4.30	4.34	3.84	3.59	3.56	3.58	5.55
Sr-D	mg/L	0.427	0.416	0.376	0.376	4.92	5.69	0.420	0.421	0.843
Tl-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000050	<0.000050	<0.000010	<0.000010	<0.000020
Ti-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	<0.025	<0.0050	<0.0050	<0.010
U-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00050	<0.00050	<0.00010	<0.00010	<0.00020
V-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	<0.025	<0.0050	<0.0050	<0.010
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	<0.025	0.0185	0.0072	<0.010

Table 49 Ex-Situ Groundwater Wells 6 Page(s)

Ex-situ Groundwater		River Barrier Pillar											
	Well ID	QU11- 05S	QU11-05S	QU11-05S	QU11-05S	QU11-05S	QU11-05D	QU11-05D	QU11-05D	QU11-05D	QU11-09S	QU11-09S	QU11-09S
Date		28/May/20	23/Sep/20	17/Dec/20	17/Dec/20	16/Mar/21	28/May/20	23/Sep/20	17/Dec/20	16/Mar/21	26/May/20	27/Aug/20	19/Nov/20
	Replicate				R								
Parameter	Units												
SO4-D	mg/L	100	44	180	180	510	280	140	170	430	180	160	160
H2SEquiv	mg/L	0.0404	0.0755	0.308	0.308	0.0404	69.1	43.6	26.6	13.8	0.255	0.0383	0.372
Cond-F	uS/cm	424	198	505	505	1675.8	3968.9	3824	3772.8	4439.2	1090.7	1248.1	8945
pH-F	pH Units	7.12	7.39	6.93	6.93	7.06	7.6	7.77	7.6	7.14	8.1	8.05	7.83
Turb	NTU	6.5	2.9	10	9.0	27	120	130	69	55	20	3.8	7.8
Alk-T	mg/L	180	84	270	260	470	310	400	420	270	460	430	440
Acidity83	mg/L	<1.0	<1.0	9.4	7.3	7.7	<1.0	<1.0	<1.0	3.6	<1.0	<1.0	<1.0
N-D	mg/L	0.205	0.247	0.187	0.196	0.386	0.428	0.482	0.560	0.454	0.392	0.328	0.307
DOC	mg/L	1.3	1.2	2.3	1.9	0.96	<50	10	8.7	<2.0	0.73	1.1	1.1
Hydrox	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bicarb	mg/L	220	100	330	320	580	380	460	480	330	550	520	500
Carb	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	8.9	16	<1.0	6.7	3.1	16
Cl-D	mg/L	2.8	1.9	2.2	2.1	23	1400	1500	1400	1300	44	29	27
F-D	mg/L	0.27	0.16	0.21	0.21	0.37	<0.050	<0.050	0.059	<0.050	0.77	0.66	0.62
Br-D	mg/L	0.024	<0.010	<0.010	<0.010	0.085	2.1	2.1	1.9	2.1	0.090	<0.010	0.039
P-D	mg/L	0.011	0.0033	0.013	0.012	0.0075	0.19	0.48	0.52	0.046	<0.0030	0.060	0.054
TSS	mg/L												
Al-D	mg/L	<0.0030	0.0462	<0.0030	<0.0030	<0.0030	<0.015	0.0113	0.0102	<0.015	<0.0060	<0.0030	<0.0030
Ag-D	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.00010	<0.000040	<0.000040	<0.00010	<0.000040	<0.000020	<0.000020
As-D	mg/L	0.0881	0.0489	0.0701	0.0708	0.115	0.00441	0.00716	0.0120	0.00100	0.0945	0.140	0.147
Ba-D	mg/L	0.0928	0.0409	0.171	0.174	0.112	0.168	0.265	0.247	0.119	0.0486	0.0490	0.0465
B-D	mg/L	0.678	0.244	0.830	0.849	1.28	0.43	0.42	0.39	0.43	1.94	1.76	1.79
Be-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00050	<0.00020	<0.00020	<0.00050	<0.00020	<0.00010	<0.00010
Bi-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0050	<0.0020	<0.0020	<0.0050	<0.0020	<0.0010	<0.0010
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000050	<0.000020	<0.000020	<0.000050	<0.000020	<0.000010	<0.000010
Ca-D	mg/L	27.6	17.0	50.6	50.5	99.3	156	160	142	161	22.2	26.3	25.2
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0050	<0.0020	<0.0020	<0.0050	<0.0020	<0.0010	<0.0010
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.0010	<0.00040	<0.00040	<0.0010	<0.00040	<0.00020	<0.00020
Cu-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.0010	<0.00040	<0.00040	<0.0010	<0.00040	<0.00020	<0.00020
Fe-D	mg/L	1.02	0.472	1.50	1.48	2.23	<0.025	<0.010	<0.010	<0.025	0.263	0.107	0.247
Hard-D	mg/L	92.5	54.1	170	171	311	411	418	373	423	78.2	94.6	89.3
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.0010	<0.00040	<0.00040	<0.0010	<0.00040	<0.00020	<0.00020
Mg-D	mg/L	5.72	2.85	10.7	10.8	15.2	5.19	4.81	4.68	5.25	5.53	7.05	6.39
Mn-D	mg/L	0.110	0.0548	0.205	0.211	0.218	0.0727	0.121	0.158	0.0656	0.0199	0.0225	0.0275
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.000038	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019
Na-D	mg/L	82.9	30.7	109	111	321	897	911	864	900	286	236	245
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0050	<0.0020	<0.0020	<0.0050	<0.0020	<0.0010	<0.0010
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0050	<0.0020	<0.0020	<0.0050	<0.0020	<0.0010	<0.0010
K-D	mg/L	2.75	1.28	3.25	3.33	6.62	4.90	5.19	5.00	4.84	3.57	3.16	3.15
S-D	mg/L	32.9	13.1	52.3	54.9	186	168	55.4	257	155	69.1	53.8	57.6
Sb-D	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0025	<0.0010	<0.0010	<0.0025	<0.0010	<0.00050	<0.00050
Se-D	mg/L	0.00026	<0.00010	0.00161	0.00191	<0.00010	0.0637	0.00835	0.0522	<0.00050	0.00468	0.00137	0.00250
Si-D	mg/L	3.38	2.33	3.29	3.18	5.01	4.57	4.55	4.84	4.00	5.29	6.61	6.54
Sr-D	mg/L	0.387	0.170	0.643	0.645	1.69	1.91	1.84	1.82	2.01	0.371	0.354	0.360
Tl-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000050	<0.000020	<0.000020	<0.000050	<0.000020	<0.000010	<0.000010
Ti-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	<0.010	<0.010	<0.025	<0.010	<0.0050	<0.0050
U-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00050	0.00037	0.00028	<0.00050	<0.00020	<0.00010	<0.00010
V-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	<0.010	<0.010	<0.025	<0.010	<0.0050	<0.0050
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	<0.010	<0.010	<0.025	<0.010	<0.0050	<0.0050

Table 49 Ex-Situ Groundwater Wells 6 Page(s)

Ex-situ Groundwater		2-North Plant Site							242 Area	
	Well ID	MW00-1S	MW00-1S	MW00-1D	MW00-1D	MW00-6S	MW00-6D	MW00-6D	QU11-36D	QU11-36D
Date		12/Nov/20	15/Dec/20	12/Nov/20	15/Dec/20	14/Dec/20	14/Dec/20	14/Dec/20	16/Dec/20	16/Dec/20
	Replicate							R		R
Parameter	Units									
SO4-D	mg/L	730	600	700	580	580	11	11	15	15
H2SEquiv	mg/L	0.0159	0.000957	0.000957	0.000957	0.000957	0.000957	0.000957	0.00755	0.000957
Cond-F	uS/cm	1264.7	1341	1161.1	1383	1046	150	150	309.7	309.7
pH-F	pH Units	6.17	6.52	6.35	6.68	7.41	7.94	7.94	7.29	7.29
Turb	NTU	1.2	1.6	22	31	0.82	1.5	0.94	34	36
Alk-T	mg/L	310	320	340	340	150	77	78	150	150
Acidity83	mg/L	22.7	21.2	25.8	16.4	<1.0	<1.0	<1.0	1.7	1.6
N-D	mg/L	0.294	0.134	0.101	0.137	0.367	0.081	0.081	0.249	0.128
DOC	mg/L	2.7	1.7	2.1	1.8	1.3	<0.50	<0.50	0.59	<0.50
Hydrox	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bicarb	mg/L	370	390	420	420	190	94	95	180	180
Carb	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cl-D	mg/L	3.6	2.5	3.7	30	3.6	<1.0	<1.0	1.1	1.0
F-D	mg/L	<0.050	<0.050	<0.050	<0.050	0.064	0.10	0.10	0.66	0.67
Br-D	mg/L	0.066	0.082	0.059	0.082	0.077	<0.010	<0.010	<0.010	<0.010
P-D	mg/L	0.0065	<0.0030	0.0091	<0.0030	0.040	0.11	0.11	0.044	0.049
TSS	mg/L									
Al-D	mg/L	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.0100	0.0098	<0.0060	<0.0060
Ag-D	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000040	<0.000040
As-D	mg/L	0.00077	0.00100	0.00289	0.00274	0.00171	0.0264	0.0264	0.764	0.828
Ba-D	mg/L	0.0257	0.0224	0.0565	0.0549	0.0327	0.0094	0.0094	0.0985	0.106
B-D	mg/L	0.365	0.390	0.376	0.381	0.174	<0.050	<0.050	0.56	0.64
Be-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	<0.00020
Bi-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020	<0.0020
Cd-D	mg/L	0.000063	0.000059	0.000021	0.000066	0.000035	<0.000010	<0.000010	<0.000020	<0.000020
Ca-D	mg/L	257	216	264	232	147	16.4	16.8	38.8	41.3
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020	<0.0020
Co-D	mg/L	0.00212	0.00196	0.00327	0.00337	<0.00020	<0.00020	<0.00020	<0.00040	<0.00040
Cu-D	mg/L	0.00039	0.00051	<0.00020	0.00040	0.00072	0.00064	0.00064	<0.00040	<0.00040
Fe-D	mg/L	0.594	0.660	4.09	3.39	<0.0050	<0.0050	<0.0050	0.531	0.558
Hard-D	mg/L	811	694	822	728	422	43.0	44.0	128	138
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00040	<0.00040
Mg-D	mg/L	41.0	37.3	39.6	36.3	13.5	0.521	0.525	7.68	8.37
Mn-D	mg/L	4.05	2.06	2.58	2.20	0.0493	0.0151	0.0153	0.0394	0.0432
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019
Na-D	mg/L	91.8	84.4	96.4	89.9	140	19.0	19.0	10.9	11.9
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	0.0011	0.0297	0.0030	0.0029	0.0024	0.0026
Ni-D	mg/L	0.0021	0.0011	0.0032	0.0035	<0.0010	<0.0010	<0.0010	<0.0020	<0.0020
K-D	mg/L	2.12	1.92	2.07	1.98	2.22	0.911	0.949	0.71	0.79
S-D	mg/L	226	196	225	206	202	3.9	3.4	<6.0	<6.0
Sb-D	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0010	<0.0010
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	0.00035	<0.00010	<0.00010	0.00034	0.00033
Si-D	mg/L	8.06	8.70	8.33	8.47	4.89	3.49	3.49	4.25	4.63
Sr-D	mg/L	1.51	1.37	1.46	1.34	0.857	0.0748	0.0759	0.361	0.401
Tl-D	mg/L	<0.000010	<0.000010	<0.000010	0.000018	<0.000010	<0.000010	<0.000010	<0.000020	<0.000020
Ti-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010
U-D	mg/L	0.00199	0.00176	0.00260	0.00230	0.00637	0.00051	0.00049	<0.00020	<0.00020
V-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010

Table 49 Ex-Situ Groundwater Wells 6 Page(s)

Ex-situ Groundwater		7-South											
	Well ID	QU08-10	QU08-10	QU08-13A	QU08-13A	QU08-13A	QU08-13A	QU08-13A	QU08-13A	QU08-13B	QU08-13B	QU08-13B	QU08-13B
Date		9/Dec/20	26/Jan/21	27/May/20	27/May/20	25/Aug/20	25/Aug/20	30/Nov/20	10/Feb/21	27/May/20	25/Aug/20	30/Nov/20	10/Feb/21
	Replicate				R		R						
Parameter	Units												
SO4-D	mg/L	23	530	29	29	32	33	42	42	44	35	31	50
H2SEquiv	mg/L	0.0223	0.000957	0.159	0.159	0.0287	0.0638	0.181	0.223	0.0457	0.0191	0.0213	0.0521
Cond-F	uS/cm	290	856	317.7	317.7	426.7	426.7	330.1	373.8	303.1	294.5	224.7	420
pH-F	pH Units	7.53	7.23	7.82	7.82	7.67	7.67	7.72	7.37	7.93	7.85	7.97	7.47
Turb	NTU	53	9.6	4.1	7.5	2.2	2.2	4.3	2.0	5.2	13	180	35
Alk-T	mg/L	170	210	170	170	190	200	190	190	150	120	120	210
Acidity83	mg/L	<1.0	5.1	<1.0	<1.0	2.7	2.8	<1.0	<1.0	<1.0	1.1	<1.0	<1.0
N-D	mg/L	0.282	0.235	0.218	0.201	0.234	0.208	1.26	0.324	0.164	0.144	0.190	0.206
DOC	mg/L	0.55	1.4	<0.50	0.80	1.0	<0.50	<0.50	0.92	<0.50	<0.50	1.0	0.56
Hydrox	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bicarb	mg/L	210	260	200	200	230	240	230	230	180	150	150	250
Carb	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.5
Cl-D	mg/L	<1.0	1.9	13	12	11	12	9.7	20	10	1.4	<1.0	24
F-D	mg/L	0.74	0.34	0.69	0.69	0.79	0.79	0.72	0.77	0.51	0.40	0.37	0.61
Br-D	mg/L	<0.010	0.064	0.020	0.021	<0.010	<0.010	0.019	0.033	0.020	<0.010	<0.010	0.034
P-D	mg/L	0.014	0.0062	0.058	0.060	0.030	0.027	0.032	0.030	0.059	0.072	0.060	0.030
TSS	mg/L												
Al-D	mg/L	<0.0030	<0.0060	0.0068	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.0039	0.0040	0.0041
Ag-D	mg/L	<0.000020	<0.000040	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
As-D	mg/L	0.00056	0.00082	0.443	0.443	0.386	0.392	0.383	0.417	0.499	0.511	0.442	0.459
Ba-D	mg/L	0.111	0.0611	0.234	0.236	0.244	0.244	0.264	0.277	0.0819	0.0540	0.0384	0.110
B-D	mg/L	0.169	0.27	0.619	0.601	0.712	0.724	0.774	0.773	0.529	0.271	0.280	1.00
Be-D	mg/L	<0.00010	<0.00020	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bi-D	mg/L	<0.0010	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cd-D	mg/L	<0.000010	0.000086	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Ca-D	mg/L	51.2	225	34.9	34.9	34.6	34.1	36.5	37.4	37.6	31.2	29.7	37.8
Cr-D	mg/L	<0.0010	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Co-D	mg/L	<0.00020	0.00578	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Cu-D	mg/L	0.00126	0.00209	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Fe-D	mg/L	<0.0050	0.199	0.273	0.269	0.167	0.164	0.242	0.236	0.240	0.152	0.0437	0.220
Hard-D	mg/L	171	753	122	122	121	120	128	132	123	100	95.2	126
Pb-D	mg/L	<0.00020	<0.00040	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Mg-D	mg/L	10.6	46.3	8.39	8.34	8.31	8.52	9.06	9.26	6.96	5.47	5.09	7.71
Mn-D	mg/L	0.0087	0.583	0.0506	0.0508	0.0347	0.0351	0.0430	0.0425	0.0637	0.0703	0.0780	0.0743
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	0.0000098	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019
Na-D	mg/L	3.48	14.0	40.3	40.4	48.3	48.4	51.0	55.3	34.4	24.1	25.1	71.7
Mo-D	mg/L	0.0011	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0016	0.0024	0.0027	0.0012
Ni-D	mg/L	0.0011	0.0115	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
K-D	mg/L	2.47	4.90	2.14	2.15	2.25	2.21	2.29	2.30	1.67	1.42	1.39	2.11
S-D	mg/L	7.1	197	10.5	10.3	12.0	11.9	15.2	13.2	14.2	12.1	11.1	15.1
Sb-D	mg/L	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Se-D	mg/L	0.00012	<0.00020	0.00078	0.00063	0.00051	0.00039	<0.00010	0.00105	<0.00010	<0.00010	<0.00010	<0.00010
Si-D	mg/L	3.73	3.62	3.90	3.89	3.97	3.92	3.67	3.95	4.23	4.41	4.16	4.24
Sr-D	mg/L	0.441	1.88	0.472	0.471	0.497	0.515	0.500	0.568	0.369	0.276	0.230	0.459
Tl-D	mg/L	0.000021	0.000050	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Ti-D	mg/L	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
U-D	mg/L	0.00081	0.00325	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
V-D	mg/L	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Zn-D	mg/L	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050

Table 49 Ex-Situ Groundwater Wells 6 Page(s)

Ex-situ Groundwater		4-South						2-South & 3-South					7-South Area 5
	Well ID	QU10-08D	QU10-09S	QU1009S	QU10-09D	QU10-09D	QU10-09D	MW002	MW002	MW002	MW002	MW002	QU1206S
Date		21/Jan/21	15/Jun/20	10/Dec/20	15/Jun/20	10/Dec/20	10/Dec/20	3/Jun/20	24/Aug/20	10/Dec/20	10/Dec/20	3/Feb/21	4/Mar/21
	Replicate						R				R		
Parameter	Units												
SO4-D	mg/L	2.0	120	100	82	78	78	1300	1300	1300	1300	1300	1.5
H2SEquiv	mg/L	0.0404	0.00223	0.0191	0.0861	0.106	0.104	0.000957	0.000957	0.000957	0.0106	0.000957	0.298
Cond-F	uS/cm	370	362.6	377.6	347	357.5	357.5	1901.1	2387	2282	2282	1939.3	392.3
pH-F	pH Units	8.27	6.89	6.63	7.46	7.14	7.14	6.78	6.89	7.24	7.24	6.41	8.23
Turb	NTU	30	50	25	5.2	7.0	6.9	45	31	16	20	44	1.0
Alk-T	mg/L	300	140	160	170	180	180	270	280	290	290	280	280
Acidity83	mg/L	<1.0	4.1	7.8	<1.0	1.5	1.5	21.9	28.2	21.3	21.1	8.5	<1.0
N-D	mg/L	0.263	0.085	0.108	0.145	0.162	0.156	0.194	0.230	0.223	0.206	0.283	0.242
DOC	mg/L	3.9	0.88	1.1	0.82	0.70	0.75	0.89	1.2	0.79	0.76	1.1	2.5
Hydrox	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bicarb	mg/L	350	170	200	210	220	220	330	340	350	360	340	320
Carb	mg/L	6.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	8.9
Cl-D	mg/L	4.4	<1.0	<1.0	1.4	1.5	1.3	1.9	2.0	1.7	1.6	2.2	4.4
F-D	mg/L	2.0	0.063	0.061	0.26	0.24	0.24	0.13	0.13	0.13	0.14	0.13	2.0
Br-D	mg/L	<0.010	0.037	0.033	0.025	0.020	0.020	0.24	<0.050	0.16	0.15	0.17	<0.010
P-D	mg/L	0.17	0.0065	<0.0030	0.0095	0.0054	0.0080	0.0077	<0.0010	<0.0030	<0.0030	<0.0030	0.15
TSS	mg/L												
Al-D	mg/L	0.0044	0.0035	<0.0030	<0.0030	<0.0030	<0.0030	<0.0060	<0.0060	<0.0060	<0.0060	<0.015	0.0062
Ag-D	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000040	<0.000040	<0.000040	<0.000040	<0.00010	<0.000020
As-D	mg/L	0.151	0.0825	0.0821	0.104	0.103	0.105	0.00166	0.00179	0.00205	0.00205	0.00220	0.391
Ba-D	mg/L	0.0260	0.127	0.130	0.111	0.112	0.113	0.0141	0.0147	0.0144	0.0143	0.0144	0.0630
B-D	mg/L	2.14	0.052	0.054	0.470	0.426	0.401	0.72	0.74	0.71	0.73	0.85	1.72
Be-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	<0.00020	<0.00020	<0.00020	<0.00050	<0.00010
Bi-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0050	<0.0010
Cd-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000020	<0.000020	<0.000020	<0.000020	<0.000050	<0.000010
Ca-D	mg/L	2.56	69.2	75.4	50.3	53.3	53.2	458	459	459	474	484	3.49
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0050	<0.0010
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00359	0.00332	0.00303	0.00301	0.0032	<0.00020
Cu-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00040	<0.00040	<0.00040	<0.00040	<0.0010	<0.00020
Fe-D	mg/L	0.117	4.54	4.59	0.534	0.654	0.617	4.32	3.95	4.17	4.22	4.24	0.0314
Hard-D	mg/L	7.42	215	234	167	177	176	1340	1350	1350	1380	1410	11.1
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00040	<0.00040	<0.00040	<0.00040	<0.0010	<0.00020
Mg-D	mg/L	0.250	10.3	11.0	10.0	10.6	10.5	47.8	48.4	48.7	47.8	48.7	0.576
Mn-D	mg/L	0.156	0.360	0.367	0.0485	0.0557	0.0558	1.57	1.51	1.35	1.38	1.47	0.0950
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019
Na-D	mg/L	124	8.51	8.60	33.3	29.7	30.2	68.2	67.1	65.2	65.7	62.6	125
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0050	<0.0010
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0024	0.0024	0.0029	0.0023	<0.0050	<0.0010
K-D	mg/L	0.659	0.662	0.709	1.64	1.55	1.55	5.12	5.16	5.22	5.23	5.21	1.14
S-D	mg/L	<3.0	33.0	31.2	22.9	24.1	24.3	387	417	420	423	433	<3.0
Sb-D	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.00050
Se-D	mg/L	0.00247	<0.00010	<0.00010	0.00010	<0.00010	<0.00010	<0.00020	<0.00020	<0.00020	<0.00020	<0.00050	0.00036
Si-D	mg/L	5.23	8.45	8.73	9.39	9.08	9.51	3.32	3.81	3.69	3.75	3.95	3.74
Sr-D	mg/L	0.0676	0.259	0.265	0.888	0.869	0.877	4.06	4.25	4.08	4.18	4.30	0.146
Tl-D	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000020	<0.000020	<0.000020	<0.000020	<0.000050	<0.000010
Ti-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.010	<0.025	<0.0050
U-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00042	0.00043	0.00043	0.00044	<0.00050	<0.00010
V-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.010	<0.025	<0.0050
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.010	<0.025	<0.0050

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
1M2N	9/Nov/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
1M2N	9/Nov/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
1M2N	9/Nov/20	Alk-PP	mg/L	1	1	1	1	0	1.00
1M2N	9/Nov/20	As-T	mg/L	0.0001	0.0001	0.0105	0.0105	0	1.00
1M2N	9/Nov/20	Ba-T	mg/L	0.001	0.001	0.0252	0.0252	0	1.00
1M2N	9/Nov/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
1M2N	9/Nov/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
1M2N	9/Nov/20	Carbonate	mg/L	1	1	1	1	0	1.00
1M2N	9/Nov/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
1M2N	9/Nov/20	Cl-D	mg/L	0.00001	1	27	27	0	1.00
1M2N	9/Nov/20	Co-T	mg/L	0.00001	0.0002	0.0002	0.0002	0	1.00
1M2N	9/Nov/20	Cr-T	mg/L	0.00001	0.001	0.001	0.001	0	1.00
1M2N	9/Nov/20	Fluoride	mg/L	0.05	0.05	0.14	0.14	0	1.00
1M2N	9/Nov/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
1M2N	9/Nov/20	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
1M2N	9/Nov/20	Hydroxide	mg/L	1	1	1	1	0	1.00
1M2N	9/Nov/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
1M2N	9/Nov/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
1M2N	9/Nov/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
1M2N	9/Nov/20	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
1M2N	9/Nov/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
1M2N	9/Nov/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
1M2N	9/Nov/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
1M2N	9/Nov/20	Turb	NTU	0.1	0.1	21	21	0	1.00
1M2N	9/Nov/20	U-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
1M2N	9/Nov/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
1M2N	9/Nov/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
1M2N	9/Nov/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
242MW	22/Sep/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
242MW	22/Sep/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
242MW	22/Sep/20	Al-D	mg/L	0.003	0.003	0.003	0.003	0	1.00
242MW	22/Sep/20	Alk-PP	mg/L	1	1	1	1	0	1.00
242MW	22/Sep/20	Alkalinity Total as Ca	mg/L	1	1	94	94	0	1.00
242MW	22/Sep/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
242MW	22/Sep/20	Bicarbonate	mg/L	1	1	110	110	0	1.00
242MW	22/Sep/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
242MW	22/Sep/20	Bromide	mg/L	0.01	0.01	0.01	0.01	0	1.00
242MW	22/Sep/20	Carbonate	mg/L	1	1	1	1	0	1.00
242MW	22/Sep/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
242MW	22/Sep/20	Co-D	mg/L	0.0002	0.0002	0.00197	0.00197	0	1.00
242MW	22/Sep/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
242MW	22/Sep/20	Cu-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
242MW	22/Sep/20	C-D	mg/L	0.5	0.5	0.5	0.5	0	1.00
242MW	22/Sep/20	Fe-D	mg/L	0.005	0.005	14.3	14.3	0	1.00
242MW	22/Sep/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
242MW	22/Sep/20	Hydroxide	mg/L	1	1	1	1	0	1.00
242MW	22/Sep/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
242MW	22/Sep/20	Ni-D	mg/L	0.001	0.001	0.0014	0.0014	0	1.00
242MW	22/Sep/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
242MW	22/Sep/20	P-D	mg/L	0.003	0.003	0.003	0.003	0	1.00
242MW	22/Sep/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
242MW	22/Sep/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
242MW	22/Sep/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
242MW	22/Sep/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
242MW	22/Sep/20	Turb	mg/L	0.1	0.1	120	120	0	1.00
242MW	22/Sep/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
242MW	22/Sep/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
242MW	22/Sep/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
242MW	22/Sep/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
2S	1/Mar/21	Acidity 4.5	mg/L	1	1	1	1	0	1.00
2S	1/Mar/21	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
2S	1/Mar/21	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
2S	1/Mar/21	Alk-PP	mg/L	1	1	1	1	0	1.00
2S	1/Mar/21	Alkalinity Total as Ca	mg/L	1	1	160	160	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference									
Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
2S	1/Mar/21	As-T	mg/L	0.0001	0.0001	0.00231	0.00231	0	1.00
2S	1/Mar/21	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
2S	1/Mar/21	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
2S	1/Mar/21	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
2S	1/Mar/21	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
2S	1/Mar/21	Carbonate	mg/L	1	1	1	1	0	1.00
2S	1/Mar/21	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
2S	1/Mar/21	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
2S	1/Mar/21	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
2S	1/Mar/21	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
2S	1/Mar/21	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
2S	1/Mar/21	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
2S	1/Mar/21	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
2S	1/Mar/21	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
2S	1/Mar/21	Hydroxide	mg/L	1	1	1	1	0	1.00
2S	1/Mar/21	Mg-D	mg/L	0.05	0.05	10.8	10.8	0	1.00
2S	1/Mar/21	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
2S	1/Mar/21	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
2S	1/Mar/21	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
2S	1/Mar/21	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
2S	1/Mar/21	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
2S	1/Mar/21	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
2S	1/Mar/21	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
2S	1/Mar/21	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
2S	1/Mar/21	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
2S	1/Mar/21	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
2S	1/Mar/21	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
2S	1/Mar/21	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
2S	1/Mar/21	SO4-D	mg/L	2	2	270	270	0	1.00
2S	1/Mar/21	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
2S	1/Mar/21	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
2S	1/Mar/21	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
2S	1/Mar/21	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
2S	1/Mar/21	U-D	mg/L	0.0001	0.0001	0.00022	0.00022	0	1.00
2S	1/Mar/21	U-T	mg/L	0.0001	0.0001	0.00022	0.00022	0	1.00
2S	1/Mar/21	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
2S	1/Mar/21	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
2S	1/Mar/21	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
2S	1/Mar/21	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
2S	1/Mar/21	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
2S	1/Mar/21	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
2SC	2/Jun/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
2SC	2/Jun/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
2SC	2/Jun/20	Al-D	mg/L	0.003	0.003	0.003	0.003	0	1.00
2SC	2/Jun/20	Al-T	mg/L	0.003	0.003	0.003	0.0030	0	1.00
2SC	2/Jun/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
2SC	2/Jun/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
2SC	2/Jun/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
2SC	2/Jun/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
2SC	2/Jun/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
2SC	2/Jun/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
2SC	2/Jun/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
2SC	2/Jun/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
2SC	2/Jun/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
2SC	2/Jun/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
2SC	2/Jun/20	Cu-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
2SC	2/Jun/20	Cu-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
2SC	2/Jun/20	Fe-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
2SC	2/Jun/20	Fe-T	mg/L	0.01	0.01	0.020	0.020	0	1.00
2SC	2/Jun/20	Li-T	mg/L	0.002	0.002	0.0092	0.0092	0	1.00
2SC	2/Jun/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
2SC	2/Jun/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
2SC	2/Jun/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
2SC	2/Jun/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
2SC	2/Jun/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
2SC	2/Jun/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
2SC	2/Jun/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
2SC	2/Jun/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
2SC	2/Jun/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
2SC	2/Jun/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
2SC	2/Jun/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
2SC	2/Jun/20	Sr-T	mg/L	0.001	0.001	1.21	1.21	0	1.00
2SC	2/Jun/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
2SC	2/Jun/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
2SC	2/Jun/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
2SC	2/Jun/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
2SC	2/Jun/20	U-D	mg/L	0.0001	0.0001	0.00018	0.00018	0	1.00
2SC	2/Jun/20	U-T	mg/L	0.0001	0.0001	0.00017	0.00017	0	1.00
2SC	2/Jun/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
2SC	2/Jun/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
2SC	2/Jun/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
2SC	2/Jun/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
2SC	2/Jun/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
2SC	2/Jun/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
2SC	5/Oct/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
2SC	5/Oct/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
2SC	5/Oct/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
2SC	5/Oct/20	Al-D	mg/L	0.003	0.003	0.003	0.003	0	1.00
2SC	5/Oct/20	Alk-PP	mg/L	1	1	1	1	0	1.00
2SC	5/Oct/20	Alkalinity Total as Ca	mg/L	1	1	230	230	0	1.00
2SC	5/Oct/20	Al-T	mg/L	0.003	0.003	0.003	0.003	0	1.00
2SC	5/Oct/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
2SC	5/Oct/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
2SC	5/Oct/20	Bicarbonate	mg/L	1	1	280	280	0	1.00
2SC	5/Oct/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
2SC	5/Oct/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
2SC	5/Oct/20	Carbonate	mg/L	1	1	1	1	0	1.00
2SC	5/Oct/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
2SC	5/Oct/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
2SC	5/Oct/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
2SC	5/Oct/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
2SC	5/Oct/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
2SC	5/Oct/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
2SC	5/Oct/20	Cu-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
2SC	5/Oct/20	Cu-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
2SC	5/Oct/20	Fe-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
2SC	5/Oct/20	Fe-T	mg/L	0.01	0.01	0.01	0.01	0	1.00
2SC	5/Oct/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
2SC	5/Oct/20	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
2SC	5/Oct/20	Hydroxide	mg/L	1	1	1	1	0	1.00
2SC	5/Oct/20	K-D	mg/L	0.05	0.05	2.64	2.64	0	1.00
2SC	5/Oct/20	Mn-D	mg/L	0.001	0.001	0.0024	0.0024	0	1.00
2SC	5/Oct/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
2SC	5/Oct/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
2SC	5/Oct/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
2SC	5/Oct/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
2SC	5/Oct/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
2SC	5/Oct/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
2SC	5/Oct/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
2SC	5/Oct/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
2SC	5/Oct/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
2SC	5/Oct/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
2SC	5/Oct/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
2SC	5/Oct/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
2SC	5/Oct/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
2SC	5/Oct/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
2SC	5/Oct/20	U-D	mg/L	0.0001	0.0001	0.00023	0.00023	0	1.00
2SC	5/Oct/20	U-T	mg/L	0.0001	0.0001	0.00023	0.00023	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
2SC	5/Oct/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
2SC	5/Oct/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
2SC	5/Oct/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
2SC	5/Oct/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
2SC	5/Oct/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
2SC	5/Oct/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
2SC	7/Dec/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
2SC	7/Dec/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
2SC	7/Dec/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
2SC	7/Dec/20	Al-D	mg/L	0.003	0.003	0.003	0.003	0	1.00
2SC	7/Dec/20	Alk-PP	mg/L	1	1	1	1	0	1.00
2SC	7/Dec/20	Alkalinity Total as Ca	mg/L	1	1	180	180	0	1.00
2SC	7/Dec/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
2SC	7/Dec/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
2SC	7/Dec/20	Bicarbonate	mg/L	1	1	220	220	0	1.00
2SC	7/Dec/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
2SC	7/Dec/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
2SC	7/Dec/20	Carbonate	mg/L	1	1	1	1	0	1.00
2SC	7/Dec/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
2SC	7/Dec/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
2SC	7/Dec/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
2SC	7/Dec/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
2SC	7/Dec/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
2SC	7/Dec/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
2SC	7/Dec/20	Cu-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
2SC	7/Dec/20	Cu-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
2SC	7/Dec/20	Hydroxide	mg/L	1	1	1	1	0	1.00
2SC	7/Dec/20	Li-D	mg/L	0.002	0.002	0.0105	0.0105	0	1.00
2SC	7/Dec/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
2SC	7/Dec/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
2SC	7/Dec/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
2SC	7/Dec/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
2SC	7/Dec/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
2SC	7/Dec/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
2SC	7/Dec/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
2SC	7/Dec/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
2SC	7/Dec/20	Se-D	mg/L	0.0001	0.0001	0.00017	0.00017	0	1.00
2SC	7/Dec/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
2SC	7/Dec/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
2SC	7/Dec/20	SO4-D	mg/L	10	10	600	600	0	1.00
2SC	7/Dec/20	Sr-D	mg/L	0.001	0.001	1.40	1.40	0	1.00
2SC	7/Dec/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
2SC	7/Dec/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
2SC	7/Dec/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
2SC	7/Dec/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
2SC	7/Dec/20	U-D	mg/L	0.0001	0.0001	0.00022	0.00022	0	1.00
2SC	7/Dec/20	U-T	mg/L	0.0001	0.0001	0.00022	0.00022	0	1.00
2SC	7/Dec/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
2SC	7/Dec/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
2SC	7/Dec/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
2SC	7/Dec/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
2SC	7/Dec/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
2SC	7/Dec/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
2SI	30/Jun/20	SO4-D	mg/L	10	10	430	430	0	1.00
2SI	26/Oct/20	SO4-D	mg/L	10	10	220	220	0	1.00
2SI	2/Dec/20	SO4-D	mg/L	10	10	340	340	0	1.00
3S	8/Sep/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
3S	8/Sep/20	Acidity 8.3	mg/L	1	1	2.4	2.4	0	1.00
3S	8/Sep/20	Alk-PP	mg/L	1	1	1	1	0	1.00
3S	8/Sep/20	Alkalinity Total as Ca	mg/L	1	1	150	150	0	1.00
3S	8/Sep/20	Bicarbonate	mg/L	1	1	180	180	0	1.00
3S	8/Sep/20	Carbonate	mg/L	1	1	1	1	0	1.00
3S	8/Sep/20	Hydroxide	mg/L	1	1	1	1	0	1.00
3S	1/Feb/21	Acidity 4.5	mg/L	1	1	1	1	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference									
Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
3S	1/Feb/21	Acidity 8.3	mg/L	1	1	1	1	0	1.00
3S	1/Feb/21	Alk-PP	mg/L	1	1	1	1	0	1.00
3S	1/Feb/21	Alkalinity Total as Ca	mg/L	1	1	230	230	0	1.00
3S	1/Feb/21	Carbonate	mg/L	1	1	1	1	0	1.00
3S	1/Feb/21	Hydroxide	mg/L	1	1	1	1	0	1.00
3S	1/Feb/21	SO4-D	mg/L	5	5	630	630	0	1.00
7S	4/May/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
7S	4/May/20	Acidity 8.3	mg/L	1	1	1	1	0	1.00
7S	4/May/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
7S	4/May/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
7S	4/May/20	Alk-PP	mg/L	1	1	1	1	0	1.00
7S	4/May/20	As-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
7S	4/May/20	As-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
7S	4/May/20	Ba-D	mg/L	0.001	0.001	0.0017	0.0017	0	1.00
7S	4/May/20	Ba-T	mg/L	0.001	0.001	0.0018	0.0018	0	1.00
7S	4/May/20	B-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
7S	4/May/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
7S	4/May/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
7S	4/May/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
7S	4/May/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
7S	4/May/20	B-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
7S	4/May/20	Carbonate	mg/L	1	1	1	1	0	1.00
7S	4/May/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
7S	4/May/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
7S	4/May/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
7S	4/May/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
7S	4/May/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
7S	4/May/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
7S	4/May/20	Cu-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
7S	4/May/20	Fe-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
7S	4/May/20	Fe-T	mg/L	0.01	0.01	0.01	0.01	0	1.00
7S	4/May/20	Hardness (as CaCO3	mg/L	0.5	0.5	20.2	20.2	0	1.00
7S	4/May/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
7S	4/May/20	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
7S	4/May/20	Hydroxide	mg/L	1	1	1	1	0	1.00
7S	4/May/20	Li-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
7S	4/May/20	Li-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
7S	4/May/20	Mg-D	mg/L	0.05	0.05	1.41	1.41	0	1.00
7S	4/May/20	Mn-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
7S	4/May/20	Mn-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
7S	4/May/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
7S	4/May/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
7S	4/May/20	Na-T	mg/L	0.05	0.05	1.76	1.76	0	1.00
7S	4/May/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
7S	4/May/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
7S	4/May/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
7S	4/May/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
7S	4/May/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
7S	4/May/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
7S	4/May/20	S-D	mg/L	3	3	3	3	0	1.00
7S	4/May/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
7S	4/May/20	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
7S	4/May/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
7S	4/May/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
7S	4/May/20	Sr-T	mg/L	0.001	0.001	0.0261	0.0261	0	1.00
7S	4/May/20	S-T	mg/L	3	3	3	3	0	1.00
7S	4/May/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
7S	4/May/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
7S	4/May/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
7S	4/May/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
7S	4/May/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
7S	4/May/20	U-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
7S	4/May/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
7S	4/May/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
7S	4/May/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
7S	4/May/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
7S	4/May/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
7S	4/May/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
7SQR	11/May/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
7SQR	11/May/20	Acidity 8.3	mg/L	1	1	1	1	0	1.00
7SQR	11/May/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
7SQR	11/May/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
7SQR	11/May/20	Alk-PP	mg/L	1	1	1	1	0	1.00
7SQR	11/May/20	Alkalinity Total as Ca	mg/L	1	1	31	31	0	1.00
7SQR	11/May/20	B-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
7SQR	11/May/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
7SQR	11/May/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
7SQR	11/May/20	Bicarbonate	mg/L	1	1	38	38	0	1.00
7SQR	11/May/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
7SQR	11/May/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
7SQR	11/May/20	B-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
7SQR	11/May/20	Carbonate	mg/L	1	1	1	1	0	1.00
7SQR	11/May/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
7SQR	11/May/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
7SQR	11/May/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
7SQR	11/May/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
7SQR	11/May/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
7SQR	11/May/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
7SQR	11/May/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
7SQR	11/May/20	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
7SQR	11/May/20	Hydroxide	mg/L	1	1	1	1	0	1.00
7SQR	11/May/20	Li-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
7SQR	11/May/20	Li-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
7SQR	11/May/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
7SQR	11/May/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
7SQR	11/May/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
7SQR	11/May/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
7SQR	11/May/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
7SQR	11/May/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
7SQR	11/May/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
7SQR	11/May/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
7SQR	11/May/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
7SQR	11/May/20	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
7SQR	11/May/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
7SQR	11/May/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
7SQR	11/May/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
7SQR	11/May/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
7SQR	11/May/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
7SQR	11/May/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
7SQR	11/May/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
7SQR	11/May/20	U-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
7SQR	11/May/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
7SQR	11/May/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
7SQR	11/May/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
7SQR	11/May/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
7SQR	11/May/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
7SQR	11/May/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
7SQR	14/Jul/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
7SQR	14/Jul/20	Acidity 8.3	mg/L	1	1	1	1	0	1.00
7SQR	14/Jul/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
7SQR	14/Jul/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
7SQR	14/Jul/20	Alk-PP	mg/L	1	1	1	1	0	1.00
7SQR	14/Jul/20	Ba-D	mg/L	0.001	0.001	0.0028	0.0028	0	1.00
7SQR	14/Jul/20	B-D	mg/L	0.05	0.05	0.058	0.058	0	1.00
7SQR	14/Jul/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
7SQR	14/Jul/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
7SQR	14/Jul/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
7SQR	14/Jul/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference									
Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
7SQR	14/Jul/20	Carbonate	mg/L	1	1	1	1	0	1.00
7SQR	14/Jul/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
7SQR	14/Jul/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
7SQR	14/Jul/20	Cl-D	mg/L	1	1	1	1	0	1.00
7SQR	14/Jul/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
7SQR	14/Jul/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
7SQR	14/Jul/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
7SQR	14/Jul/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
7SQR	14/Jul/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
7SQR	14/Jul/20	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
7SQR	14/Jul/20	Hydroxide	mg/L	1	1	1	1	0	1.00
7SQR	14/Jul/20	Li-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
7SQR	14/Jul/20	Li-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
7SQR	14/Jul/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
7SQR	14/Jul/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
7SQR	14/Jul/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
7SQR	14/Jul/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
7SQR	14/Jul/20	N-NH3	mg/L	0.015	0.015	0.015	0.015	0	1.00
7SQR	14/Jul/20	N-NO2	mg/L	0.005	0.005	0.005	0.005	0	1.00
7SQR	14/Jul/20	NO2+NO3	mg/L	0.02	0.02	0.02	0.02	0	1.00
7SQR	14/Jul/20	N-NO3	mg/L	0.02	0.02	0.02	0.02	0	1.00
7SQR	14/Jul/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
7SQR	14/Jul/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
7SQR	14/Jul/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
7SQR	14/Jul/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
7SQR	14/Jul/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
7SQR	14/Jul/20	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
7SQR	14/Jul/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
7SQR	14/Jul/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
7SQR	14/Jul/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
7SQR	14/Jul/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
7SQR	14/Jul/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
7SQR	14/Jul/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
7SQR	14/Jul/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
7SQR	14/Jul/20	U-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
7SQR	14/Jul/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
7SQR	14/Jul/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
7SQR	14/Jul/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
7SQR	14/Jul/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
7SQR	14/Jul/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
7SQR	14/Jul/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
7SQR	4/Nov/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
7SQR	4/Nov/20	Acidity 8.3	mg/L	1	1	1	1	0	1.00
7SQR	4/Nov/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
7SQR	4/Nov/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
7SQR	4/Nov/20	Alk-PP	mg/L	1	1	1	1	0	1.00
7SQR	4/Nov/20	Ba-D	mg/L	0.001	0.001	0.0033	0.0033	0	1.00
7SQR	4/Nov/20	B-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
7SQR	4/Nov/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
7SQR	4/Nov/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
7SQR	4/Nov/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
7SQR	4/Nov/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
7SQR	4/Nov/20	B-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
7SQR	4/Nov/20	Carbonate	mg/L	1	1	1	1	0	1.00
7SQR	4/Nov/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
7SQR	4/Nov/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
7SQR	4/Nov/20	Cl-D	mg/L	1	1	1.5	1.5	0	1.00
7SQR	4/Nov/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
7SQR	4/Nov/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
7SQR	4/Nov/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
7SQR	4/Nov/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
7SQR	4/Nov/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
7SQR	4/Nov/20	Hydroxide	mg/L	1	1	1	1	0	1.00
7SQR	4/Nov/20	Li-D	mg/L	0.002	0.002	0.002	0.002	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference									
Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
7SQR	4/Nov/20	Li-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
7SQR	4/Nov/20	Mn-T	mg/L	0.001	0.001	0.0096	0.0096	0	1.00
7SQR	4/Nov/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
7SQR	4/Nov/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
7SQR	4/Nov/20	Na-D	mg/L	0.05	0.05	10.0	10.0	0	1.00
7SQR	4/Nov/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
7SQR	4/Nov/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
7SQR	4/Nov/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
7SQR	4/Nov/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
7SQR	4/Nov/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
7SQR	4/Nov/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
7SQR	4/Nov/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
7SQR	4/Nov/20	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
7SQR	4/Nov/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
7SQR	4/Nov/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
7SQR	4/Nov/20	SO4-D	mg/L	1	1	26	26	0	1.00
7SQR	4/Nov/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
7SQR	4/Nov/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
7SQR	4/Nov/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
7SQR	4/Nov/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
7SQR	4/Nov/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
7SQR	4/Nov/20	U-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
7SQR	4/Nov/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
7SQR	4/Nov/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
7SQR	4/Nov/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
7SQR	4/Nov/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
7SQR	4/Nov/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
7SQR	4/Nov/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
FB	5/Aug/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
FB	5/Aug/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
FB	5/Aug/20	Al-D	mg/L	0.003	0.003	0.003	0.003	0	1.00
FB	5/Aug/20	Alk-PP	mg/L	1	1	1	1	0	1.00
FB	5/Aug/20	Alkalinity Total as Ca	mg/L	1	1	1	1	0	1.00
FB	5/Aug/20	Al-T	mg/L	0.003	0.003	0.003	0.003	0	1.00
FB	5/Aug/20	As-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
FB	5/Aug/20	As-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
FB	5/Aug/20	Ba-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
FB	5/Aug/20	Ba-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
FB	5/Aug/20	B-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
FB	5/Aug/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
FB	5/Aug/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
FB	5/Aug/20	Bicarbonate	mg/L	1	1	1	1	0	1.00
FB	5/Aug/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
FB	5/Aug/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
FB	5/Aug/20	B-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
FB	5/Aug/20	Ca-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
FB	5/Aug/20	Carbonate	mg/L	1	1	1	1	0	1.00
FB	5/Aug/20	Ca-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
FB	5/Aug/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
FB	5/Aug/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
FB	5/Aug/20	Cl-D	mg/L	1	1	1	1	0	1.00
FB	5/Aug/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
FB	5/Aug/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
FB	5/Aug/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
FB	5/Aug/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
FB	5/Aug/20	Cu-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
FB	5/Aug/20	Cu-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
FB	5/Aug/20	Fe-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
FB	5/Aug/20	Fe-T	mg/L	0.01	0.01	0.01	0.01	0	1.00
FB	5/Aug/20	Hard-D	mg/L	0.5	0.5	0.5	0.5	0	1.00
FB	5/Aug/20	Hardness (as CaCO3	mg/L	0.5	0.5	0.5	0.5	0	1.00
FB	5/Aug/20	Hydroxide	mg/L	1	1	1	1	0	1.00
FB	5/Aug/20	K-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
FB	5/Aug/20	K-T	mg/L	0.05	0.05	0.05	0.05	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference									
Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
FB	5/Aug/20	Li-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
FB	5/Aug/20	Li-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
FB	5/Aug/20	Mg-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
FB	5/Aug/20	Mg-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
FB	5/Aug/20	Mn-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
FB	5/Aug/20	Mn-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
FB	5/Aug/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
FB	5/Aug/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
FB	5/Aug/20	Na-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
FB	5/Aug/20	Na-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
FB	5/Aug/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
FB	5/Aug/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
FB	5/Aug/20	N-NO2	mg/L	0.005	0.005	0.005	0.005	0	1.00
FB	5/Aug/20	NO2+NO3	mg/L	0.02	0.02	0.02	0.02	0	1.00
FB	5/Aug/20	N-NO3	mg/L	0.02	0.02	0.02	0.02	0	1.00
FB	5/Aug/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
FB	5/Aug/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
FB	5/Aug/20	P-D	mg/L	0.01	0.01	0.01	0.01	0	1.00
FB	5/Aug/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
FB	5/Aug/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
FB	5/Aug/20	S-D	mg/L	3	3	3	3	0	1.00
FB	5/Aug/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
FB	5/Aug/20	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
FB	5/Aug/20	Si-D	mg/L	0.1	0.1	0.1	0.1	0	1.00
FB	5/Aug/20	Si-T	mg/L	0.1	0.1	0.1	0.1	0	1.00
FB	5/Aug/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
FB	5/Aug/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
FB	5/Aug/20	SO4-D	mg/L	1	1	1	1	0	1.00
FB	5/Aug/20	Sr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
FB	5/Aug/20	Sr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
FB	5/Aug/20	S-T	mg/L	3	3	3	3	0	1.00
FB	5/Aug/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
FB	5/Aug/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
FB	5/Aug/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
FB	5/Aug/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
FB	5/Aug/20	Turb	NTU	0.1	0.1	0.1	0.1	0	1.00
FB	5/Aug/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
FB	5/Aug/20	U-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
FB	5/Aug/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
FB	5/Aug/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
FB	5/Aug/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
FB	5/Aug/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
FB	5/Aug/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
FB	5/Aug/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
FB	1/Sep/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
FB	1/Sep/20	Acidity 8.3	mg/L	1	1	1	1	0	1.00
FB	1/Sep/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
FB	1/Sep/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
FB	1/Sep/20	Al-D	mg/L	0.003	0.003	0.003	0.003	0	1.00
FB	1/Sep/20	Alk-PP	mg/L	1	1	1	1	0	1.00
FB	1/Sep/20	Alkalinity Total as Ca	mg/L	1	1	1	1	0	1.00
FB	1/Sep/20	Al-T	mg/L	0.003	0.003	0.003	0.003	0	1.00
FB	1/Sep/20	As-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
FB	1/Sep/20	As-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
FB	1/Sep/20	Ba-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
FB	1/Sep/20	Ba-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
FB	1/Sep/20	B-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
FB	1/Sep/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
FB	1/Sep/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
FB	1/Sep/20	Bicarbonate	mg/L	1	1	1	1	0	1.00
FB	1/Sep/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
FB	1/Sep/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
FB	1/Sep/20	B-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
FB	1/Sep/20	Ca-D	mg/L	0.05	0.05	0.05	0.05	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
FB	1/Sep/20	Carbonate	mg/L	1	1	1	1	0	1.00
FB	1/Sep/20	Ca-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
FB	1/Sep/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
FB	1/Sep/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
FB	1/Sep/20	Cl-D	mg/L	1	1	1	1	0	1.00
FB	1/Sep/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
FB	1/Sep/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
FB	1/Sep/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
FB	1/Sep/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
FB	1/Sep/20	Cu-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
FB	1/Sep/20	Cu-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
FB	1/Sep/20	Fe-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
FB	1/Sep/20	Fe-T	mg/L	0.01	0.01	0.01	0.01	0	1.00
FB	1/Sep/20	Hard-D	mg/L	0.5	0.5	0.5	0.5	0	1.00
FB	1/Sep/20	Hardness (as CaCO3	mg/L	0.5	0.5	0.5	0.5	0	1.00
FB	1/Sep/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
FB	1/Sep/20	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
FB	1/Sep/20	Hydroxide	mg/L	1	1	1	1	0	1.00
FB	1/Sep/20	K-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
FB	1/Sep/20	K-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
FB	1/Sep/20	Li-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
FB	1/Sep/20	Li-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
FB	1/Sep/20	Mg-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
FB	1/Sep/20	Mg-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
FB	1/Sep/20	Mn-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
FB	1/Sep/20	Mn-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
FB	1/Sep/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
FB	1/Sep/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
FB	1/Sep/20	Na-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
FB	1/Sep/20	Na-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
FB	1/Sep/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
FB	1/Sep/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
FB	1/Sep/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
FB	1/Sep/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
FB	1/Sep/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
FB	1/Sep/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
FB	1/Sep/20	S-D	mg/L	3	3	3	3	0	1.00
FB	1/Sep/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
FB	1/Sep/20	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
FB	1/Sep/20	Si-D	mg/L	0.1	0.1	0.1	0.1	0	1.00
FB	1/Sep/20	Si-T	mg/L	0.1	0.1	0.1	0.1	0	1.00
FB	1/Sep/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
FB	1/Sep/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
FB	1/Sep/20	SO4-D	mg/L	1	1	1	1	0	1.00
FB	1/Sep/20	Sr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
FB	1/Sep/20	Sr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
FB	1/Sep/20	S-T	mg/L	3	3	3	3	0	1.00
FB	1/Sep/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
FB	1/Sep/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
FB	1/Sep/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
FB	1/Sep/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
FB	1/Sep/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
FB	1/Sep/20	U-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
FB	1/Sep/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
FB	1/Sep/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
FB	1/Sep/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
FB	1/Sep/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
FB	1/Sep/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
FB	1/Sep/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
INF	22/Jun/20	SO4-D	mg/L	10	10	670	670	0	1.00
INF	25/Jan/21	SO4-D	mg/L	5	5	560	560	0	1.00
IR6	2/Sep/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
IR6	2/Sep/20	Acidity 8.3	mg/L	1	1	1	1	0	1.00
IR6	2/Sep/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference									
Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
IR6	2/Sep/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
IR6	2/Sep/20	Alk-PP	mg/L	1	1	1	1	0	1.00
IR6	2/Sep/20	B-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
IR6	2/Sep/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
IR6	2/Sep/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
IR6	2/Sep/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
IR6	2/Sep/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
IR6	2/Sep/20	B-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
IR6	2/Sep/20	Carbonate	mg/L	1	1	1	1	0	1.00
IR6	2/Sep/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
IR6	2/Sep/20	Cl-D	mg/L	1	1	1	1	0	1.00
IR6	2/Sep/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
IR6	2/Sep/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
IR6	2/Sep/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
IR6	2/Sep/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
IR6	2/Sep/20	Cu-D	mg/L	0.0002	0.0002	0.00045	0.00045	0	1.00
IR6	2/Sep/20	Cu-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
IR6	2/Sep/20	Fe-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
IR6	2/Sep/20	Fe-T	mg/L	0.01	0.01	0.01	0.01	0	1.00
IR6	2/Sep/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
IR6	2/Sep/20	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
IR6	2/Sep/20	Hydroxide	mg/L	1	1	1	1	0	1.00
IR6	2/Sep/20	Li-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
IR6	2/Sep/20	Li-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
IR6	2/Sep/20	Mg-T	mg/L	0.05	0.05	1.78	1.78	0	1.00
IR6	2/Sep/20	Mn-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
IR6	2/Sep/20	Mn-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
IR6	2/Sep/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
IR6	2/Sep/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
IR6	2/Sep/20	Na-T	mg/L	0.05	0.05	2.39	2.39	0	1.00
IR6	2/Sep/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
IR6	2/Sep/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
IR6	2/Sep/20	N-NO2	mg/L	0.005	0.005	0.005	0.005	0	1.00
IR6	2/Sep/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
IR6	2/Sep/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
IR6	2/Sep/20	P-D	mg/L	0.003	0.003	0.003	0.003	0	1.00
IR6	2/Sep/20	P-T	mg/L	0.003	0.003	0.003	0.003	0	1.00
IR6	2/Sep/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
IR6	2/Sep/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
IR6	2/Sep/20	S-D	mg/L	3	3	3	3	0	1.00
IR6	2/Sep/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
IR6	2/Sep/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
IR6	2/Sep/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
IR6	2/Sep/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
IR6	2/Sep/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
IR6	2/Sep/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
IR6	2/Sep/20	TSS	mg/L	1	1	1	1	0	1.00
IR6	2/Sep/20	U-D	mg/L	0.0001	0.0001	0.00010	0.00010	0	1.00
IR6	2/Sep/20	U-T	mg/L	0.0001	0.0001	0.00010	0.00010	0	1.00
IR6	2/Sep/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
IR6	2/Sep/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
IR6	2/Sep/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
IR6	2/Sep/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
IR6	2/Sep/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
IR6	2/Sep/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLE	20/Apr/20	SO4-D	mg/L	1	1	160	160	0	1.00
LLE	14/Dec/20	SO4-D	mg/L	1	1	140	140	0	1.00
LLE	22/Feb/21	SO4-D	mg/L	1	1	110	110	0	1.00
LLM1	22/Apr/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
LLM1	22/Apr/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
LLM1	22/Apr/20	Alk-PP	mg/L	1	1	1	1	0	1.00
LLM1	22/Apr/20	B-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
LLM1	22/Apr/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM1	22/Apr/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference									
Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
LLM1	22/Apr/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM1	22/Apr/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM1	22/Apr/20	B-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
LLM1	22/Apr/20	Ca-D	mg/L	0.05	0.05	20.2	20.2	0	1.00
LLM1	22/Apr/20	Carbonate	mg/L	1	1	1	1	0	1.00
LLM1	22/Apr/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLM1	22/Apr/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLM1	22/Apr/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLM1	22/Apr/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLM1	22/Apr/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM1	22/Apr/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM1	22/Apr/20	Cu-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
LLM1	22/Apr/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
LLM1	22/Apr/20	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
LLM1	22/Apr/20	Hydroxide	mg/L	1	1	1	1	0	1.00
LLM1	22/Apr/20	Li-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
LLM1	22/Apr/20	Li-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
LLM1	22/Apr/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM1	22/Apr/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM1	22/Apr/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM1	22/Apr/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM1	22/Apr/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLM1	22/Apr/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLM1	22/Apr/20	P-D	mg/L	0.01	0.01	0.01	0.01	0	1.00
LLM1	22/Apr/20	P-T	mg/L	0.003	0.003	0.003	0.003	0	1.00
LLM1	22/Apr/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
LLM1	22/Apr/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
LLM1	22/Apr/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM1	22/Apr/20	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM1	22/Apr/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM1	22/Apr/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM1	22/Apr/20	SO4-D	mg/L	1	1	52	52	0	1.00
LLM1	22/Apr/20	Sr-D	mg/L	0.001	0.001	0.145	0.145	0	1.00
LLM1	22/Apr/20	Sr-T	mg/L	0.001	0.001	0.140	0.140	0	1.00
LLM1	22/Apr/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM1	22/Apr/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM1	22/Apr/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLM1	22/Apr/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLM1	22/Apr/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM1	22/Apr/20	U-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM1	22/Apr/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM1	22/Apr/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM1	22/Apr/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM1	22/Apr/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM1	22/Apr/20	Zr-D	mg/L	0.0001	0.0001	0.00014	0.00014	0	1.00
LLM1	22/Apr/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM1	29/Apr/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
LLM1	29/Apr/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
LLM1	29/Apr/20	Alk-PP	mg/L	1	1	1	1	0	1.00
LLM1	29/Apr/20	B-D	mg/L	0.05	0.05	0.051	0.051	0	1.00
LLM1	29/Apr/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM1	29/Apr/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM1	29/Apr/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM1	29/Apr/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM1	29/Apr/20	Carbonate	mg/L	1	1	1	1	0	1.00
LLM1	29/Apr/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLM1	29/Apr/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLM1	29/Apr/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLM1	29/Apr/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLM1	29/Apr/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM1	29/Apr/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM1	29/Apr/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
LLM1	29/Apr/20	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
LLM1	29/Apr/20	Hydroxide	mg/L	1	1	1	1	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference									
Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
LLM1	29/Apr/20	Li-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
LLM1	29/Apr/20	Li-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
LLM1	29/Apr/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM1	29/Apr/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM1	29/Apr/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM1	29/Apr/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM1	29/Apr/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLM1	29/Apr/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLM1	29/Apr/20	P-D	mg/L	0.01	0.01	0.01	0.01	0	1.00
LLM1	29/Apr/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
LLM1	29/Apr/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
LLM1	29/Apr/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM1	29/Apr/20	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM1	29/Apr/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM1	29/Apr/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM1	29/Apr/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM1	29/Apr/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM1	29/Apr/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLM1	29/Apr/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLM1	29/Apr/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM1	29/Apr/20	U-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM1	29/Apr/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM1	29/Apr/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM1	29/Apr/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM1	29/Apr/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM1	29/Apr/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM1	29/Apr/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM1	15/Jul/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
LLM1	15/Jul/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
LLM1	15/Jul/20	Al-D	mg/L	0.003	0.003	0.0081	0.0081	0	1.00
LLM1	15/Jul/20	Alk-PP	mg/L	1	1	1	1	0	1.00
LLM1	15/Jul/20	Ba-D	mg/L	0.001	0.001	0.0052	0.0052	0	1.00
LLM1	15/Jul/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM1	15/Jul/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM1	15/Jul/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM1	15/Jul/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM1	15/Jul/20	B-T	mg/L	0.05	0.05	0.057	0.057	0	1.00
LLM1	15/Jul/20	Carbonate	mg/L	1	1	1	1	0	1.00
LLM1	15/Jul/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLM1	15/Jul/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLM1	15/Jul/20	Cl-D	mg/L	1	1	1	1	0	1.00
LLM1	15/Jul/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLM1	15/Jul/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLM1	15/Jul/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM1	15/Jul/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM1	15/Jul/20	Cu-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
LLM1	15/Jul/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
LLM1	15/Jul/20	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
LLM1	15/Jul/20	Hydroxide	mg/L	1	1	1	1	0	1.00
LLM1	15/Jul/20	Li-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
LLM1	15/Jul/20	Li-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
LLM1	15/Jul/20	Mg-D	mg/L	0.05	0.05	3.01	3.01	0	1.00
LLM1	15/Jul/20	Mn-T	mg/L	0.001	0.001	0.0074	0.0074	0	1.00
LLM1	15/Jul/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM1	15/Jul/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM1	15/Jul/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM1	15/Jul/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM1	15/Jul/20	N-NH3	mg/L	0.015	0.015	0.015	0.015	0	1.00
LLM1	15/Jul/20	NO2+NO3	mg/L	0.02	0.02	0.02	0.02	0	1.00
LLM1	15/Jul/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLM1	15/Jul/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLM1	15/Jul/20	P-D	mg/L	0.01	0.01	0.01	0.01	0	1.00
LLM1	15/Jul/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
LLM1	15/Jul/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference									
Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
LLM1	15/Jul/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM1	15/Jul/20	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM1	15/Jul/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM1	15/Jul/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM1	15/Jul/20	Sr-T	mg/L	0.001	0.001	0.154	0.154	0	1.00
LLM1	15/Jul/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM1	15/Jul/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM1	15/Jul/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLM1	15/Jul/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLM1	15/Jul/20	Turb	NTU	0.1	0.1	0.23	0.23	0	1.00
LLM1	15/Jul/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM1	15/Jul/20	U-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM1	15/Jul/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM1	15/Jul/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM1	15/Jul/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM1	15/Jul/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM1	15/Jul/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM1	15/Jul/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM1	22/Jul/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
LLM1	22/Jul/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
LLM1	22/Jul/20	Al-D	mg/L	0.003	0.003	0.0081	0.0081	0	1.00
LLM1	22/Jul/20	Alk-PP	mg/L	1	1	1	1	0	1.00
LLM1	22/Jul/20	Alkalinity Total as Ca	mg/L	1	1	31	31	0	1.00
LLM1	22/Jul/20	As-D	mg/L	0.0001	0.0001	0.00050	0.00050	0	1.00
LLM1	22/Jul/20	As-T	mg/L	0.0001	0.0001	0.00052	0.00052	0	1.00
LLM1	22/Jul/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM1	22/Jul/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM1	22/Jul/20	Bicarbonate	mg/L	1	1	37	37	0	1.00
LLM1	22/Jul/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM1	22/Jul/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM1	22/Jul/20	Carbonate	mg/L	1	1	1	1	0	1.00
LLM1	22/Jul/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLM1	22/Jul/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLM1	22/Jul/20	Cl-D	mg/L	1	1	1	1	0	1.00
LLM1	22/Jul/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLM1	22/Jul/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLM1	22/Jul/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM1	22/Jul/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM1	22/Jul/20	Cu-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
LLM1	22/Jul/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
LLM1	22/Jul/20	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
LLM1	22/Jul/20	Hydroxide	mg/L	1	1	1	1	0	1.00
LLM1	22/Jul/20	Li-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
LLM1	22/Jul/20	Li-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
LLM1	22/Jul/20	Mn-D	mg/L	0.001	0.001	0.0015	0.0015	0	1.00
LLM1	22/Jul/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM1	22/Jul/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM1	22/Jul/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM1	22/Jul/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM1	22/Jul/20	N-NO2	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM1	22/Jul/20	NO2+NO3	mg/L	0.02	0.02	0.02	0.02	0	1.00
LLM1	22/Jul/20	N-NO3	mg/L	0.02	0.02	0.02	0.02	0	1.00
LLM1	22/Jul/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLM1	22/Jul/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLM1	22/Jul/20	P-D	mg/L	0.01	0.01	0.01	0.01	0	1.00
LLM1	22/Jul/20	P-T	mg/L	0.003	0.003	0.003	0.003	0	1.00
LLM1	22/Jul/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
LLM1	22/Jul/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
LLM1	22/Jul/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM1	22/Jul/20	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM1	22/Jul/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM1	22/Jul/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM1	22/Jul/20	Sr-D	mg/L	0.001	0.001	0.153	0.153	0	1.00
LLM1	22/Jul/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
LLM1	22/Jul/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM1	22/Jul/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLM1	22/Jul/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLM1	22/Jul/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM1	22/Jul/20	U-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM1	22/Jul/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM1	22/Jul/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM1	22/Jul/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM1	22/Jul/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM1	22/Jul/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM1	22/Jul/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM4	28/Oct/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
LLM4	28/Oct/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
LLM4	28/Oct/20	Alk-PP	mg/L	1	1	1	1	0	1.00
LLM4	28/Oct/20	Alkalinity Total as Ca	mg/L	1	1	36	36	0	1.00
LLM4	28/Oct/20	As-T	mg/L	0.0001	0.0001	0.00049	0.00049	0	1.00
LLM4	28/Oct/20	Ba-D	mg/L	0.001	0.001	0.0056	0.0056	0	1.00
LLM4	28/Oct/20	Ba-T	mg/L	0.001	0.001	0.0059	0.0059	0	1.00
LLM4	28/Oct/20	B-D	mg/L	0.05	0.05	0.060	0.060	0	1.00
LLM4	28/Oct/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM4	28/Oct/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM4	28/Oct/20	Bicarbonate	mg/L	1	1	44	44	0	1.00
LLM4	28/Oct/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM4	28/Oct/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM4	28/Oct/20	Carbonate	mg/L	1	1	1	1	0	1.00
LLM4	28/Oct/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLM4	28/Oct/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLM4	28/Oct/20	Cl-D	mg/L	1	1	1	1	0	1.00
LLM4	28/Oct/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLM4	28/Oct/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLM4	28/Oct/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM4	28/Oct/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM4	28/Oct/20	Cu-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
LLM4	28/Oct/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
LLM4	28/Oct/20	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
LLM4	28/Oct/20	Hydroxide	mg/L	1	1	1	1	0	1.00
LLM4	28/Oct/20	Li-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
LLM4	28/Oct/20	Li-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
LLM4	28/Oct/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM4	28/Oct/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM4	28/Oct/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM4	28/Oct/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM4	28/Oct/20	N-NO2	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM4	28/Oct/20	NO2+NO3	mg/L	0.02	0.02	0.02	0.02	0	1.00
LLM4	28/Oct/20	N-NO3	mg/L	0.02	0.02	0.02	0.02	0	1.00
LLM4	28/Oct/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLM4	28/Oct/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLM4	28/Oct/20	P-D	mg/L	0.01	0.01	0.01	0.01	0	1.00
LLM4	28/Oct/20	P-T	mg/L	0.003	0.003	0.003	0.003	0	1.00
LLM4	28/Oct/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
LLM4	28/Oct/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
LLM4	28/Oct/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM4	28/Oct/20	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM4	28/Oct/20	Si-T	mg/L	0.1	0.1	2.95	2.95	0	1.00
LLM4	28/Oct/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM4	28/Oct/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM4	28/Oct/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM4	28/Oct/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM4	28/Oct/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLM4	28/Oct/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLM4	28/Oct/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM4	28/Oct/20	U-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM4	28/Oct/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM4	28/Oct/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
LLM4	28/Oct/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM4	28/Oct/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM4	28/Oct/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM4	28/Oct/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM9	5/Aug/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
LLM9	5/Aug/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
LLM9	5/Aug/20	Alk-PP	mg/L	1	1	1	1	0	1.00
LLM9	5/Aug/20	Alkalinity Total as Ca	mg/L	1	1	50	50	0	1.00
LLM9	5/Aug/20	As-D	mg/L	0.0001	0.0001	0.00018	0.00018	0	1.00
LLM9	5/Aug/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM9	5/Aug/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM9	5/Aug/20	Bicarbonate	mg/L	1	1	61	61	0	1.00
LLM9	5/Aug/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM9	5/Aug/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM9	5/Aug/20	Carbonate	mg/L	1	1	1	1	0	1.00
LLM9	5/Aug/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLM9	5/Aug/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLM9	5/Aug/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLM9	5/Aug/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLM9	5/Aug/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM9	5/Aug/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM9	5/Aug/20	Cu-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
LLM9	5/Aug/20	C-D	mg/L	0.5	0.5	2.1	2.1	0	1.00
LLM9	5/Aug/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
LLM9	5/Aug/20	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
LLM9	5/Aug/20	Hydroxide	mg/L	1	1	1	1	0	1.00
LLM9	5/Aug/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM9	5/Aug/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM9	5/Aug/20	Na-D	mg/L	0.05	0.05	17.0	17.0	0	1.00
LLM9	5/Aug/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM9	5/Aug/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM9	5/Aug/20	N-NH3	mg/L	0.015	0.015	0.015	0.015	0	1.00
LLM9	5/Aug/20	N-NO2	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM9	5/Aug/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLM9	5/Aug/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLM9	5/Aug/20	P-D	mg/L	0.01	0.01	0.01	0.01	0	1.00
LLM9	5/Aug/20	P-T	mg/L	0.003	0.003	0.003	0.003	0	1.00
LLM9	5/Aug/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
LLM9	5/Aug/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
LLM9	5/Aug/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM9	5/Aug/20	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM9	5/Aug/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM9	5/Aug/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM9	5/Aug/20	SO4-D	mg/L	1	1	130	130	0	1.00
LLM9	5/Aug/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM9	5/Aug/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM9	5/Aug/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLM9	5/Aug/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLM9	5/Aug/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM9	5/Aug/20	U-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM9	5/Aug/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM9	5/Aug/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM9	5/Aug/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM9	5/Aug/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM9	5/Aug/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM9	5/Aug/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM9	7/Oct/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
LLM9	7/Oct/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
LLM9	7/Oct/20	Al-D	mg/L	0.003	0.003	0.0037	0.0037	0	1.00
LLM9	7/Oct/20	Alk-PP	mg/L	1	1	1	1	0	1.00
LLM9	7/Oct/20	Ba-D	mg/L	0.001	0.001	0.0072	0.0072	0	1.00
LLM9	7/Oct/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM9	7/Oct/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM9	7/Oct/20	Bicarbonate	mg/L	1	1	59	59	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference									
Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
LLM9	7/Oct/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM9	7/Oct/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM9	7/Oct/20	Carbonate	mg/L	1	1	1	1	0	1.00
LLM9	7/Oct/20	Ca-T	mg/L	0.05	0.05	41.6	41.6	0	1.00
LLM9	7/Oct/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLM9	7/Oct/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLM9	7/Oct/20	Cl-D	mg/L	1	1	1	1	0	1.00
LLM9	7/Oct/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLM9	7/Oct/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLM9	7/Oct/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM9	7/Oct/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM9	7/Oct/20	Cu-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
LLM9	7/Oct/20	Hardness (as CaCO3	mg/L	0.5	0.5	123	123	0	1.00
LLM9	7/Oct/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
LLM9	7/Oct/20	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
LLM9	7/Oct/20	Hydroxide	mg/L	1	1	1	1	0	1.00
LLM9	7/Oct/20	Li-T	mg/L	0.002	0.002	0.0023	0.0023	0	1.00
LLM9	7/Oct/20	Mg-T	mg/L	0.05	0.05	4.57	4.57	0	1.00
LLM9	7/Oct/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM9	7/Oct/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM9	7/Oct/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM9	7/Oct/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLM9	7/Oct/20	NO2+NO3	mg/L	0.02	0.02	0.02	0.02	0	1.00
LLM9	7/Oct/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLM9	7/Oct/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLM9	7/Oct/20	P-D	mg/L	0.01	0.01	0.01	0.01	0	1.00
LLM9	7/Oct/20	P-T	mg/L	0.003	0.003	0.003	0.003	0	1.00
LLM9	7/Oct/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
LLM9	7/Oct/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
LLM9	7/Oct/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM9	7/Oct/20	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM9	7/Oct/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM9	7/Oct/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM9	7/Oct/20	SO4-D	mg/L	1	1	120	120	0	1.00
LLM9	7/Oct/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM9	7/Oct/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM9	7/Oct/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLM9	7/Oct/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLM9	7/Oct/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM9	7/Oct/20	U-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM9	7/Oct/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM9	7/Oct/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM9	7/Oct/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM9	7/Oct/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLM9	7/Oct/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLM9	7/Oct/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLO	27/Apr/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
LLO	27/Apr/20	Acidity 8.3	mg/L	1	1	1	1	0	1.00
LLO	27/Apr/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
LLO	27/Apr/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
LLO	27/Apr/20	Alk-PP	mg/L	1	1	1	1	0	1.00
LLO	27/Apr/20	B-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
LLO	27/Apr/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLO	27/Apr/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLO	27/Apr/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLO	27/Apr/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLO	27/Apr/20	Carbonate	mg/L	1	1	1	1	0	1.00
LLO	27/Apr/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLO	27/Apr/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLO	27/Apr/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLO	27/Apr/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLO	27/Apr/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLO	27/Apr/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLO	27/Apr/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference									
Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
LLO	27/Apr/20	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
LLO	27/Apr/20	Hydroxide	mg/L	1	1	1	1	0	1.00
LLO	27/Apr/20	Li-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
LLO	27/Apr/20	Li-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
LLO	27/Apr/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLO	27/Apr/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLO	27/Apr/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLO	27/Apr/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLO	27/Apr/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLO	27/Apr/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLO	27/Apr/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
LLO	27/Apr/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
LLO	27/Apr/20	S-D	mg/L	3	3	18.7	18.7	0	1.00
LLO	27/Apr/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLO	27/Apr/20	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLO	27/Apr/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLO	27/Apr/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLO	27/Apr/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLO	27/Apr/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLO	27/Apr/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLO	27/Apr/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLO	27/Apr/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLO	27/Apr/20	U-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLO	27/Apr/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLO	27/Apr/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLO	27/Apr/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLO	27/Apr/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLO	27/Apr/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLO	27/Apr/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLO	28/Jul/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
LLO	28/Jul/20	Acidity 8.3	mg/L	1	1	1	1	0	1.00
LLO	28/Jul/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
LLO	28/Jul/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
LLO	28/Jul/20	Alk-PP	mg/L	1	1	1	1	0	1.00
LLO	28/Jul/20	Alkalinity Total as Ca	mg/L	1	1	34	34	0	1.00
LLO	28/Jul/20	Al-T	mg/L	0.003	0.003	0.0116	0.0116	0	1.00
LLO	28/Jul/20	B-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
LLO	28/Jul/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLO	28/Jul/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLO	28/Jul/20	Bicarbonate	mg/L	1	1	41	41	0	1.00
LLO	28/Jul/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLO	28/Jul/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLO	28/Jul/20	Carbonate	mg/L	1	1	1	1	0	1.00
LLO	28/Jul/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLO	28/Jul/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLO	28/Jul/20	Cl-D	mg/L	1	1	1	1	0	1.00
LLO	28/Jul/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLO	28/Jul/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLO	28/Jul/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLO	28/Jul/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLO	28/Jul/20	Cu-D	mg/L	0.0002	0.0002	0.00029	0.00029	0	1.00
LLO	28/Jul/20	Cu-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
LLO	28/Jul/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
LLO	28/Jul/20	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
LLO	28/Jul/20	Hydroxide	mg/L	1	1	1	1	0	1.00
LLO	28/Jul/20	Li-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
LLO	28/Jul/20	Li-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
LLO	28/Jul/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLO	28/Jul/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLO	28/Jul/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLO	28/Jul/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLO	28/Jul/20	N-NH3	mg/L	0.015	0.015	0.015	0.015	0	1.00
LLO	28/Jul/20	NO2+NO3	mg/L	0.02	0.02	0.02	0.02	0	1.00
LLO	28/Jul/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference									
Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
LLO	28/Jul/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLO	28/Jul/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
LLO	28/Jul/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
LLO	28/Jul/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLO	28/Jul/20	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLO	28/Jul/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLO	28/Jul/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLO	28/Jul/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLO	28/Jul/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLO	28/Jul/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLO	28/Jul/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLO	28/Jul/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLO	28/Jul/20	U-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLO	28/Jul/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLO	28/Jul/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLO	28/Jul/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLO	28/Jul/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLO	28/Jul/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLO	28/Jul/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLO	29/Oct/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
LLO	29/Oct/20	Acidity 8.3	mg/L	1	1	1	1	0	1.00
LLO	29/Oct/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
LLO	29/Oct/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
LLO	29/Oct/20	Alk-PP	mg/L	1	1	1	1	0	1.00
LLO	29/Oct/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLO	29/Oct/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLO	29/Oct/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLO	29/Oct/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLO	29/Oct/20	B-T	mg/L	0.05	0.05	0.05	0.050	0	1.00
LLO	29/Oct/20	Carbonate	mg/L	1	1	1	1	0	1.00
LLO	29/Oct/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLO	29/Oct/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLO	29/Oct/20	Cl-D	mg/L	1	1	1	1	0	1.00
LLO	29/Oct/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLO	29/Oct/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLO	29/Oct/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLO	29/Oct/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLO	29/Oct/20	Cu-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
LLO	29/Oct/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
LLO	29/Oct/20	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
LLO	29/Oct/20	Hydroxide	mg/L	1	1	1	1	0	1.00
LLO	29/Oct/20	Li-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
LLO	29/Oct/20	Li-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
LLO	29/Oct/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLO	29/Oct/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLO	29/Oct/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLO	29/Oct/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
LLO	29/Oct/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLO	29/Oct/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
LLO	29/Oct/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
LLO	29/Oct/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
LLO	29/Oct/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLO	29/Oct/20	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLO	29/Oct/20	Si-T	mg/L	0.1	0.1	2.91	2.91	0	1.00
LLO	29/Oct/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLO	29/Oct/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLO	29/Oct/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLO	29/Oct/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLO	29/Oct/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLO	29/Oct/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
LLO	29/Oct/20	TSS	mg/L	1	1	1	1	0	1.00
LLO	29/Oct/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLO	29/Oct/20	U-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLO	29/Oct/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
LLO	29/Oct/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLO	29/Oct/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLO	29/Oct/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
LLO	29/Oct/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
LLO	29/Oct/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MP	26/May/20	O&G	mg/L	1	1	1	1	0	1.00
MP	16/Jul/20	O&G	mg/L	1	1	1	1	0	1.00
MP	16/Jul/20	TSS	mg/L	1	1	1.6	1.6	0	1.00
MP	6/Oct/20	O&G	mg/L	1	1	1	1	0	1.00
MP	6/Oct/20	TSS	mg/L	1	1	2.4	2.4	0	1.00
MP	29/Jan/21	O&G	mg/L	1	1	1	1	0	1.00
MP	29/Jan/21	TSS	mg/L	1	1	1	1	0	1.00
MP	16/Feb/21	O&G	mg/L	1	1	1	1	0	1.00
MQL1	16/Apr/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
MQL1	16/Apr/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
MQL1	16/Apr/20	Al-D	mg/L	0.003	0.003	0.0147	0.0147	0	1.00
MQL1	16/Apr/20	Alk-PP	mg/L	1	1	1	1	0	1.00
MQL1	16/Apr/20	Alkalinity Total as Ca	mg/L	1	1	29	29	0	1.00
MQL1	16/Apr/20	As-D	mg/L	0.0001	0.0001	0.00012	0.00012	0	1.00
MQL1	16/Apr/20	As-T	mg/L	0.0001	0.0001	0.00011	0.00011	0	1.00
MQL1	16/Apr/20	Ba-T	mg/L	0.001	0.001	0.0015	0.0015	0	1.00
MQL1	16/Apr/20	B-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
MQL1	16/Apr/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL1	16/Apr/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL1	16/Apr/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL1	16/Apr/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL1	16/Apr/20	B-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
MQL1	16/Apr/20	Ca-D	mg/L	0.05	0.05	10.8	10.8	0	1.00
MQL1	16/Apr/20	Carbonate	mg/L	1	1	1	1	0	1.00
MQL1	16/Apr/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
MQL1	16/Apr/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
MQL1	16/Apr/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
MQL1	16/Apr/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
MQL1	16/Apr/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL1	16/Apr/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL1	16/Apr/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
MQL1	16/Apr/20	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
MQL1	16/Apr/20	Hydroxide	mg/L	1	1	1	1	0	1.00
MQL1	16/Apr/20	K-D	mg/L	0.05	0.05	0.185	0.185	0	1.00
MQL1	16/Apr/20	Li-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
MQL1	16/Apr/20	Li-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
MQL1	16/Apr/20	Mg-D	mg/L	0.05	0.05	1.28	1.28	0	1.00
MQL1	16/Apr/20	Mg-T	mg/L	0.05	0.05	1.33	1.33	0	1.00
MQL1	16/Apr/20	Mn-D	mg/L	0.001	0.001	0.0028	0.0028	0	1.00
MQL1	16/Apr/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL1	16/Apr/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL1	16/Apr/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL1	16/Apr/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL1	16/Apr/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
MQL1	16/Apr/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
MQL1	16/Apr/20	P-D	mg/L	0.01	0.01	0.01	0.01	0	1.00
MQL1	16/Apr/20	P-T	mg/L	0.003	0.003	0.003	0.003	0	1.00
MQL1	16/Apr/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
MQL1	16/Apr/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
MQL1	16/Apr/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL1	16/Apr/20	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL1	16/Apr/20	Si-D	mg/L	0.1	0.1	2.04	2.04	0	1.00
MQL1	16/Apr/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL1	16/Apr/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL1	16/Apr/20	SO4-D	mg/L	1	1	23	23	0	1.00
MQL1	16/Apr/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL1	16/Apr/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL1	16/Apr/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
MQL1	16/Apr/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference									
Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
MQL1	16/Apr/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL1	16/Apr/20	U-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL1	16/Apr/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL1	16/Apr/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL1	16/Apr/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL1	16/Apr/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL1	16/Apr/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL1	16/Apr/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL1	9/Jul/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
MQL1	9/Jul/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
MQL1	9/Jul/20	Alk-PP	mg/L	1	1	1	1	0	1.00
MQL1	9/Jul/20	Alkalinity Total as Ca	mg/L	1	1	36	36	0	1.00
MQL1	9/Jul/20	As-D	mg/L	0.0001	0.0001	0.00016	0.00016	0	1.00
MQL1	9/Jul/20	Ba-D	mg/L	0.001	0.001	0.0018	0.0018	0	1.00
MQL1	9/Jul/20	Ba-T	mg/L	0.001	0.001	0.0019	0.0019	0	1.00
MQL1	9/Jul/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL1	9/Jul/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL1	9/Jul/20	Bicarbonate	mg/L	1	1	44	44	0	1.00
MQL1	9/Jul/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL1	9/Jul/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL1	9/Jul/20	Carbonate	mg/L	1	1	1	1	0	1.00
MQL1	9/Jul/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
MQL1	9/Jul/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
MQL1	9/Jul/20	Cl-D	mg/L	1	1	1	1	0	1.00
MQL1	9/Jul/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
MQL1	9/Jul/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
MQL1	9/Jul/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL1	9/Jul/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL1	9/Jul/20	Cu-D	mg/L	0.0002	0.0002	0.00049	0.00049	0	1.00
MQL1	9/Jul/20	C-D	mg/L	0.5	0.5	1.9	1.9	0	1.00
MQL1	9/Jul/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
MQL1	9/Jul/20	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
MQL1	9/Jul/20	Hydroxide	mg/L	1	1	1	1	0	1.00
MQL1	9/Jul/20	Li-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
MQL1	9/Jul/20	Li-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
MQL1	9/Jul/20	Mn-D	mg/L	0.001	0.001	0.0028	0.0028	0	1.00
MQL1	9/Jul/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL1	9/Jul/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL1	9/Jul/20	Na-D	mg/L	0.05	0.05	17.1	17.1	0	1.00
MQL1	9/Jul/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL1	9/Jul/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL1	9/Jul/20	N-NH3	mg/L	0.015	0.015	0.015	0.015	0	1.00
MQL1	9/Jul/20	N-NO2	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL1	9/Jul/20	NO2+NO3	mg/L	0.02	0.02	0.02	0.02	0	1.00
MQL1	9/Jul/20	N-NO3	mg/L	0.02	0.02	0.02	0.02	0	1.00
MQL1	9/Jul/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
MQL1	9/Jul/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
MQL1	9/Jul/20	P-D	mg/L	0.01	0.01	0.01	0.01	0	1.00
MQL1	9/Jul/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
MQL1	9/Jul/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
MQL1	9/Jul/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL1	9/Jul/20	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL1	9/Jul/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL1	9/Jul/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL1	9/Jul/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL1	9/Jul/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL1	9/Jul/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
MQL1	9/Jul/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
MQL1	9/Jul/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL1	9/Jul/20	U-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL1	9/Jul/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL1	9/Jul/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL1	9/Jul/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL1	9/Jul/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference									
Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
MQL1	9/Jul/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL1	9/Jul/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL1	5/Aug/20	Chlorophyll a	ug/L	0.5	0.5	0.5	0.5	0	1.00
MQL1	15/Oct/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
MQL1	15/Oct/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
MQL1	15/Oct/20	Alk-PP	mg/L	1	1	1	1	0	1.00
MQL1	15/Oct/20	As-D	mg/L	0.0001	0.0001	0.00015	0.00015	0	1.00
MQL1	15/Oct/20	As-T	mg/L	0.0001	0.0001	0.00015	0.00015	0	1.00
MQL1	15/Oct/20	Ba-D	mg/L	0.001	0.001	0.0019	0.0019	0	1.00
MQL1	15/Oct/20	Ba-T	mg/L	0.001	0.001	0.0019	0.0019	0	1.00
MQL1	15/Oct/20	B-D	mg/L	0.05	0.05	0.050	0.050	0	1.00
MQL1	15/Oct/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL1	15/Oct/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL1	15/Oct/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL1	15/Oct/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL1	15/Oct/20	B-T	mg/L	0.05	0.05	0.054	0.054	0	1.00
MQL1	15/Oct/20	Carbonate	mg/L	1	1	1	1	0	1.00
MQL1	15/Oct/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
MQL1	15/Oct/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
MQL1	15/Oct/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
MQL1	15/Oct/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
MQL1	15/Oct/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL1	15/Oct/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL1	15/Oct/20	Cu-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
MQL1	15/Oct/20	C-D	mg/L	0.5	0.5	1.6	1.6	0	1.00
MQL1	15/Oct/20	Fe-T	mg/L	0.01	0.01	0.042	0.042	0	1.00
MQL1	15/Oct/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
MQL1	15/Oct/20	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
MQL1	15/Oct/20	Hydroxide	mg/L	1	1	1	1	0	1.00
MQL1	15/Oct/20	Li-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
MQL1	15/Oct/20	Li-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
MQL1	15/Oct/20	Mn-T	mg/L	0.001	0.001	0.0107	0.0107	0	1.00
MQL1	15/Oct/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL1	15/Oct/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL1	15/Oct/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL1	15/Oct/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL1	15/Oct/20	N-NO2	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL1	15/Oct/20	NO2+NO3	mg/L	0.02	0.02	0.02	0.02	0	1.00
MQL1	15/Oct/20	N-NO3	mg/L	0.02	0.02	0.02	0.02	0	1.00
MQL1	15/Oct/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
MQL1	15/Oct/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
MQL1	15/Oct/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
MQL1	15/Oct/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
MQL1	15/Oct/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL1	15/Oct/20	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL1	15/Oct/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL1	15/Oct/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL1	15/Oct/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL1	15/Oct/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL1	15/Oct/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
MQL1	15/Oct/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
MQL1	15/Oct/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL1	15/Oct/20	U-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL1	15/Oct/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL1	15/Oct/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL1	15/Oct/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL1	15/Oct/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL1	15/Oct/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL1	15/Oct/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL4	29/Jul/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
MQL4	29/Jul/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
MQL4	29/Jul/20	Alk-PP	mg/L	1	1	1	1	0	1.00
MQL4	29/Jul/20	As-T	mg/L	0.0001	0.0001	0.00017	0.00017	0	1.00
MQL4	29/Jul/20	B-D	mg/L	0.05	0.05	0.05	0.05	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference									
Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
MQL4	29/Jul/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL4	29/Jul/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL4	29/Jul/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL4	29/Jul/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL4	29/Jul/20	B-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
MQL4	29/Jul/20	Carbonate	mg/L	1	1	1	1	0	1.00
MQL4	29/Jul/20	Ca-T	mg/L	0.05	0.05	11.6	11.6	0	1.00
MQL4	29/Jul/20	Cd-D	mg/L	0.00001	0.00001	0.000011	0.000011	0	1.00
MQL4	29/Jul/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
MQL4	29/Jul/20	Cl-D	mg/L	1	1	1	1	0	1.00
MQL4	29/Jul/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
MQL4	29/Jul/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
MQL4	29/Jul/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL4	29/Jul/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL4	29/Jul/20	Fe-T	mg/L	0.01	0.01	0.048	0.048	0	1.00
MQL4	29/Jul/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
MQL4	29/Jul/20	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
MQL4	29/Jul/20	Hydroxide	mg/L	1	1	1	1	0	1.00
MQL4	29/Jul/20	Li-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
MQL4	29/Jul/20	Li-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
MQL4	29/Jul/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL4	29/Jul/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL4	29/Jul/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL4	29/Jul/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL4	29/Jul/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
MQL4	29/Jul/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
MQL4	29/Jul/20	P-D	mg/L	0.01	0.01	0.01	0.01	0	1.00
MQL4	29/Jul/20	P-T	mg/L	0.003	0.003	0.003	0.003	0	1.00
MQL4	29/Jul/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
MQL4	29/Jul/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
MQL4	29/Jul/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL4	29/Jul/20	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL4	29/Jul/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL4	29/Jul/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL4	29/Jul/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL4	29/Jul/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL4	29/Jul/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
MQL4	29/Jul/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
MQL4	29/Jul/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL4	29/Jul/20	U-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL4	29/Jul/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL4	29/Jul/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL4	29/Jul/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL4	29/Jul/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL4	29/Jul/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL4	29/Jul/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL9	5/Nov/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
MQL9	5/Nov/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
MQL9	5/Nov/20	Al-D	mg/L	0.003	0.003	0.0071	0.0071	0	1.00
MQL9	5/Nov/20	Alk-PP	mg/L	1	1	1	1	0	1.00
MQL9	5/Nov/20	Alkalinity Total as Ca	mg/L	1	1	38	38	0	1.00
MQL9	5/Nov/20	As-D	mg/L	0.0001	0.0001	0.00015	0.00015	0	1.00
MQL9	5/Nov/20	Ba-D	mg/L	0.001	0.001	0.0020	0.0020	0	1.00
MQL9	5/Nov/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL9	5/Nov/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL9	5/Nov/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL9	5/Nov/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL9	5/Nov/20	Carbonate	mg/L	1	1	1	1	0	1.00
MQL9	5/Nov/20	Ca-T	mg/L	0.05	0.05	11.5	11.5	0	1.00
MQL9	5/Nov/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
MQL9	5/Nov/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
MQL9	5/Nov/20	Cl-D	mg/L	1	1	1.5	1.5	0	1.00
MQL9	5/Nov/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
MQL9	5/Nov/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference									
Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
MQL9	5/Nov/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL9	5/Nov/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL9	5/Nov/20	Cu-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
MQL9	5/Nov/20	Fe-T	mg/L	0.01	0.01	0.046	0.046	0	1.00
MQL9	5/Nov/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
MQL9	5/Nov/20	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
MQL9	5/Nov/20	Hydroxide	mg/L	1	1	1	1	0	1.00
MQL9	5/Nov/20	K-T	mg/L	0.05	0.05	0.272	0.272	0	1.00
MQL9	5/Nov/20	Li-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
MQL9	5/Nov/20	Li-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
MQL9	5/Nov/20	Mn-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL9	5/Nov/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL9	5/Nov/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL9	5/Nov/20	Na-D	mg/L	0.05	0.05	16.2	16.2	0	1.00
MQL9	5/Nov/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL9	5/Nov/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
MQL9	5/Nov/20	N-NO2	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL9	5/Nov/20	NO2+NO3	mg/L	0.02	0.02	0.02	0.02	0	1.00
MQL9	5/Nov/20	N-NO3	mg/L	0.02	0.02	0.02	0.02	0	1.00
MQL9	5/Nov/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
MQL9	5/Nov/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
MQL9	5/Nov/20	P-D	mg/L	0.01	0.01	0.01	0.01	0	1.00
MQL9	5/Nov/20	P-T	mg/L	0.003	0.003	0.003	0.003	0	1.00
MQL9	5/Nov/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
MQL9	5/Nov/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
MQL9	5/Nov/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL9	5/Nov/20	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL9	5/Nov/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL9	5/Nov/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL9	5/Nov/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL9	5/Nov/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL9	5/Nov/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
MQL9	5/Nov/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
MQL9	5/Nov/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL9	5/Nov/20	U-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL9	5/Nov/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL9	5/Nov/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL9	5/Nov/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL9	5/Nov/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
MQL9	5/Nov/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MQL9	5/Nov/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MW002	10/Dec/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
MW002	10/Dec/20	Ag-D	mg/L	0.00004	0.00004	0.00004	0.00004	0	1.00
MW002	10/Dec/20	Al-D	mg/L	0.006	0.006	0.006	0.006	0	1.00
MW002	10/Dec/20	Alk-PP	mg/L	1	1	1	1	0	1.00
MW002	10/Dec/20	Alkalinity Total as Ca	mg/L	1	1	290	290	0	1.00
MW002	10/Dec/20	As-D	mg/L	0.0002	0.0002	0.00205	0.00205	0	1.00
MW002	10/Dec/20	Be-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
MW002	10/Dec/20	Bi-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
MW002	10/Dec/20	Carbonate	mg/L	1	1	1	1	0	1.00
MW002	10/Dec/20	Cd-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
MW002	10/Dec/20	Cr-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
MW002	10/Dec/20	Cu-D	mg/L	0.0004	0.0004	0.0004	0.0004	0	1.00
MW002	10/Dec/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
MW002	10/Dec/20	Hydroxide	mg/L	1	1	1	1	0	1.00
MW002	10/Dec/20	Mo-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
MW002	10/Dec/20	Pb-D	mg/L	0.0004	0.0004	0.0004	0.0004	0	1.00
MW002	10/Dec/20	P-D	mg/L	0.003	0.003	0.003	0.003	0	1.00
MW002	10/Dec/20	Sb-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
MW002	10/Dec/20	Se-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
MW002	10/Dec/20	Sn-D	mg/L	0.01	0.01	0.01	0.01	0	1.00
MW002	10/Dec/20	SO4-D	mg/L	10	10	1300	1300	0	1.00
MW002	10/Dec/20	Ti-D	mg/L	0.01	0.01	0.01	0.01	0	1.00
MW002	10/Dec/20	Tl-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference									
Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
MW002	10/Dec/20	V-D	mg/L	0.01	0.01	0.01	0.01	0	1.00
MW002	10/Dec/20	Zn-D	mg/L	0.01	0.01	0.01	0.01	0	1.00
MW002	10/Dec/20	Zr-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
MW006D	14/Dec/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
MW006D	14/Dec/20	Acidity 8.3	mg/L	1	1	1	1	0	1.00
MW006D	14/Dec/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
MW006D	14/Dec/20	Alk-PP	mg/L	1	1	1	1	0	1.00
MW006D	14/Dec/20	As-D	mg/L	0.0001	0.0001	0.0264	0.0264	0	1.00
MW006D	14/Dec/20	Ba-D	mg/L	0.001	0.001	0.0094	0.0094	0	1.00
MW006D	14/Dec/20	B-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
MW006D	14/Dec/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MW006D	14/Dec/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
MW006D	14/Dec/20	Bromide	mg/L	0.01	0.01	0.01	0.01	0	1.00
MW006D	14/Dec/20	Carbonate	mg/L	1	1	1	1	0	1.00
MW006D	14/Dec/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
MW006D	14/Dec/20	Cl-D	mg/L	1	1	1	1	0	1.00
MW006D	14/Dec/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
MW006D	14/Dec/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
MW006D	14/Dec/20	Cu-D	mg/L	0.0002	0.0002	0.00064	0.00064	0	1.00
MW006D	14/Dec/20	C-D	mg/L	0.5	0.5	0.5	0.5	0	1.00
MW006D	14/Dec/20	Fluoride	mg/L	0.05	0.05	0.10	0.10	0	1.00
MW006D	14/Dec/20	Fe-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
MW006D	14/Dec/20	Hydrogen Sulphide (	mg/L	0.002	0.002	0.002	0.002	0	1.00
MW006D	14/Dec/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
MW006D	14/Dec/20	Hydroxide	mg/L	1	1	1	1	0	1.00
MW006D	14/Dec/20	Li-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
MW006D	14/Dec/20	Na-D	mg/L	0.05	0.05	19.0	19.0	0	1.00
MW006D	14/Dec/20	N-D	mg/L	0.02	0.02	0.081	0.081	0	1.00
MW006D	14/Dec/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
MW006D	14/Dec/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
MW006D	14/Dec/20	P-D	mg/L	0.003	0.003	0.11	0.11	0	1.00
MW006D	14/Dec/20	S2-T	mg/L	0.0018	0.0018	0.0018	0.0018	0	1.00
MW006D	14/Dec/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
MW006D	14/Dec/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
MW006D	14/Dec/20	Si-D	mg/L	0.1	0.1	3.49	3.49	0	1.00
MW006D	14/Dec/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
MW006D	14/Dec/20	SO4-D	mg/L	1	1	11	11	0	1.00
MW006D	14/Dec/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
MW006D	14/Dec/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
MW006D	14/Dec/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
MW006D	14/Dec/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
MW006D	14/Dec/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
NNL4	12/May/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
NNL4	12/May/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
NNL4	12/May/20	Ba-D	mg/L	0.001	0.001	0.0011	0.0011	0	1.00
NNL4	12/May/20	B-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
NNL4	12/May/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
NNL4	12/May/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
NNL4	12/May/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
NNL4	12/May/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
NNL4	12/May/20	B-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
NNL4	12/May/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
NNL4	12/May/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
NNL4	12/May/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
NNL4	12/May/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
NNL4	12/May/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
NNL4	12/May/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
NNL4	12/May/20	Cu-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
NNL4	12/May/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
NNL4	12/May/20	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
NNL4	12/May/20	Li-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
NNL4	12/May/20	Li-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
NNL4	12/May/20	Mn-T	mg/L	0.001	0.001	0.0049	0.0049	0	1.00
NNL4	12/May/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference									
Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
NNL4	12/May/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
NNL4	12/May/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
NNL4	12/May/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
NNL4	12/May/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
NNL4	12/May/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
NNL4	12/May/20	P-D	mg/L	0.01	0.01	0.01	0.01	0	1.00
NNL4	12/May/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
NNL4	12/May/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
NNL4	12/May/20	S-D	mg/L	3	3	3	3	0	1.00
NNL4	12/May/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
NNL4	12/May/20	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
NNL4	12/May/20	Si-D	mg/L	0.1	0.1	3.04	3.04	0	1.00
NNL4	12/May/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
NNL4	12/May/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
NNL4	12/May/20	S-T	mg/L	3	3	3	3	0	1.00
NNL4	12/May/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
NNL4	12/May/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
NNL4	12/May/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
NNL4	12/May/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
NNL4	12/May/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
NNL4	12/May/20	U-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
NNL4	12/May/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
NNL4	12/May/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
NNL4	12/May/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
NNL4	12/May/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
NNL4	12/May/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
NNL4	12/May/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
NNO	20/Apr/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
NNO	20/Apr/20	Acidity 8.3	mg/L	1	1	1	1	0	1.00
NNO	20/Apr/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
NNO	20/Apr/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
NNO	20/Apr/20	Alk-PP	mg/L	1	1	1	1	0	1.00
NNO	20/Apr/20	As-D	mg/L	0.0001	0.0001	0.00020	0.00020	0	1.00
NNO	20/Apr/20	Ba-D	mg/L	0.001	0.001	0.0010	0.0010	0	1.00
NNO	20/Apr/20	Ba-T	mg/L	0.001	0.001	0.0011	0.0011	0	1.00
NNO	20/Apr/20	B-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
NNO	20/Apr/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
NNO	20/Apr/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
NNO	20/Apr/20	Bicarbonate	mg/L	1	1	13	13	0	1.00
NNO	20/Apr/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
NNO	20/Apr/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
NNO	20/Apr/20	B-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
NNO	20/Apr/20	Carbonate	mg/L	1	1	1	1	0	1.00
NNO	20/Apr/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
NNO	20/Apr/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
NNO	20/Apr/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
NNO	20/Apr/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
NNO	20/Apr/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
NNO	20/Apr/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
NNO	20/Apr/20	Cu-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
NNO	20/Apr/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
NNO	20/Apr/20	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
NNO	20/Apr/20	Hydroxide	mg/L	1	1	1	1	0	1.00
NNO	20/Apr/20	K-D	mg/L	0.05	0.05	0.071	0.071	0	1.00
NNO	20/Apr/20	Li-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
NNO	20/Apr/20	Li-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
NNO	20/Apr/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
NNO	20/Apr/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
NNO	20/Apr/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
NNO	20/Apr/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
NNO	20/Apr/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
NNO	20/Apr/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
NNO	20/Apr/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
NNO	20/Apr/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
NNO	20/Apr/20	S-D	mg/L	3	3	3	3	0	1.00
NNO	20/Apr/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
NNO	20/Apr/20	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
NNO	20/Apr/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
NNO	20/Apr/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
NNO	20/Apr/20	SO4-D	mg/L	1	1	2.5	2.5	0	1.00
NNO	20/Apr/20	S-T	mg/L	3	3	3	3	0	1.00
NNO	20/Apr/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
NNO	20/Apr/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
NNO	20/Apr/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
NNO	20/Apr/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
NNO	20/Apr/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
NNO	20/Apr/20	U-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
NNO	20/Apr/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
NNO	20/Apr/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
NNO	20/Apr/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
NNO	20/Apr/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
NNO	20/Apr/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
NNO	20/Apr/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
NNO	4/Aug/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
NNO	4/Aug/20	Acidity 8.3	mg/L	1	1	1	1	0	1.00
NNO	4/Aug/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
NNO	4/Aug/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
NNO	4/Aug/20	Al-D	mg/L	0.003	0.003	0.0142	0.0142	0	1.00
NNO	4/Aug/20	Alk-PP	mg/L	1	1	1	1	0	1.00
NNO	4/Aug/20	Alkalinity Total as Ca	mg/L	1	1	17	17	0	1.00
NNO	4/Aug/20	Ba-T	mg/L	0.001	0.001	0.0013	0.0013	0	1.00
NNO	4/Aug/20	B-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
NNO	4/Aug/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
NNO	4/Aug/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
NNO	4/Aug/20	Bicarbonate	mg/L	1	1	20	20	0	1.00
NNO	4/Aug/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
NNO	4/Aug/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
NNO	4/Aug/20	B-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
NNO	4/Aug/20	Carbonate	mg/L	1	1	1	1	0	1.00
NNO	4/Aug/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
NNO	4/Aug/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
NNO	4/Aug/20	Cl-D	mg/L	1	1	1	1	0	1.00
NNO	4/Aug/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
NNO	4/Aug/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
NNO	4/Aug/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
NNO	4/Aug/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
NNO	4/Aug/20	Cu-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
NNO	4/Aug/20	C-D	mg/L	0.5	0.5	3.0	3.0	0	1.00
NNO	4/Aug/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
NNO	4/Aug/20	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
NNO	4/Aug/20	Hydroxide	mg/L	1	1	1	1	0	1.00
NNO	4/Aug/20	Li-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
NNO	4/Aug/20	Li-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
NNO	4/Aug/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
NNO	4/Aug/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
NNO	4/Aug/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
NNO	4/Aug/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
NNO	4/Aug/20	N-NH3	mg/L	0.015	0.015	0.015	0.015	0	1.00
NNO	4/Aug/20	N-NO2	mg/L	0.005	0.005	0.005	0.005	0	1.00
NNO	4/Aug/20	NO2+NO3	mg/L	0.02	0.02	0.02	0.02	0	1.00
NNO	4/Aug/20	N-NO3	mg/L	0.02	0.02	0.02	0.02	0	1.00
NNO	4/Aug/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
NNO	4/Aug/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
NNO	4/Aug/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
NNO	4/Aug/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
NNO	4/Aug/20	S-D	mg/L	3	3	3	3	0	1.00
NNO	4/Aug/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
NNO	4/Aug/20	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference									
Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
NNO	4/Aug/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
NNO	4/Aug/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
NNO	4/Aug/20	S-T	mg/L	3	3	3	3	0	1.00
NNO	4/Aug/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
NNO	4/Aug/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
NNO	4/Aug/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
NNO	4/Aug/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
NNO	4/Aug/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
NNO	4/Aug/20	U-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
NNO	4/Aug/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
NNO	4/Aug/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
NNO	4/Aug/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
NNO	4/Aug/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
NNO	4/Aug/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
NNO	4/Aug/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
NNO	22/Oct/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
NNO	22/Oct/20	Acidity 8.3	mg/L	1	1	1	1	0	1.00
NNO	22/Oct/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
NNO	22/Oct/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
NNO	22/Oct/20	Alk-PP	mg/L	1	1	1	1	0	1.00
NNO	22/Oct/20	Ba-D	mg/L	0.001	0.001	0.0014	0.0014	0	1.00
NNO	22/Oct/20	Ba-T	mg/L	0.001	0.001	0.0014	0.0014	0	1.00
NNO	22/Oct/20	B-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
NNO	22/Oct/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
NNO	22/Oct/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
NNO	22/Oct/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
NNO	22/Oct/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
NNO	22/Oct/20	B-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
NNO	22/Oct/20	Carbonate	mg/L	1	1	1	1	0	1.00
NNO	22/Oct/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
NNO	22/Oct/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
NNO	22/Oct/20	Cl-D	mg/L	1	1	1	1	0	1.00
NNO	22/Oct/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
NNO	22/Oct/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
NNO	22/Oct/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
NNO	22/Oct/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
NNO	22/Oct/20	Cu-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
NNO	22/Oct/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
NNO	22/Oct/20	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
NNO	22/Oct/20	Hydroxide	mg/L	1	1	1	1	0	1.00
NNO	22/Oct/20	Li-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
NNO	22/Oct/20	Li-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
NNO	22/Oct/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
NNO	22/Oct/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
NNO	22/Oct/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
NNO	22/Oct/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
NNO	22/Oct/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
NNO	22/Oct/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
NNO	22/Oct/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
NNO	22/Oct/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
NNO	22/Oct/20	S-D	mg/L	3	3	3	3	0	1.00
NNO	22/Oct/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
NNO	22/Oct/20	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
NNO	22/Oct/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
NNO	22/Oct/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
NNO	22/Oct/20	Sr-D	mg/L	0.001	0.001	0.0167	0.0167	0	1.00
NNO	22/Oct/20	S-T	mg/L	3	3	3	3	0	1.00
NNO	22/Oct/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
NNO	22/Oct/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
NNO	22/Oct/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
NNO	22/Oct/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
NNO	22/Oct/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
NNO	22/Oct/20	U-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
NNO	22/Oct/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
NNO	22/Oct/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
NNO	22/Oct/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
NNO	22/Oct/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
NNO	22/Oct/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
NNO	22/Oct/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU0813A	27/May/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
QU0813A	27/May/20	Acidity 8.3	mg/L	1	1	1	1	0	1.00
QU0813A	27/May/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
QU0813A	27/May/20	Alk-PP	mg/L	1	1	1	1	0	1.00
QU0813A	27/May/20	Alkalinity Total as Ca	mg/L	1	1	170	170	0	1.00
QU0813A	27/May/20	As-D	mg/L	0.0001	0.0001	0.443	0.443	0	1.00
QU0813A	27/May/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU0813A	27/May/20	Bicarbonate	mg/L	1	1	200	200	0	1.00
QU0813A	27/May/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU0813A	27/May/20	Ca-D	mg/L	0.05	0.05	34.9	34.9	0	1.00
QU0813A	27/May/20	Carbonate	mg/L	1	1	1	1	0	1.00
QU0813A	27/May/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
QU0813A	27/May/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU0813A	27/May/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU0813A	27/May/20	Cu-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU0813A	27/May/20	Fluoride	mg/L	0.05	0.05	0.69	0.69	0	1.00
QU0813A	27/May/20	Hydrogen Sulphide (	mg/L	0.002	0.002	0.16	0.16	0	1.00
QU0813A	27/May/20	Hard-D	mg/L	0.5	0.5	122	122	0	1.00
QU0813A	27/May/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
QU0813A	27/May/20	Hydroxide	mg/L	1	1	1	1	0	1.00
QU0813A	27/May/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU0813A	27/May/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU0813A	27/May/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU0813A	27/May/20	S2-T	mg/L	0.0018	0.0018	0.15	0.15	0	1.00
QU0813A	27/May/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
QU0813A	27/May/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU0813A	27/May/20	SO4-D	mg/L	1	1	29	29	0	1.00
QU0813A	27/May/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU0813A	27/May/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
QU0813A	27/May/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU0813A	27/May/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU0813A	27/May/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU0813A	27/May/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU0813A	25/Aug/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
QU0813A	25/Aug/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
QU0813A	25/Aug/20	Al-D	mg/L	0.003	0.003	0.003	0.003	0	1.00
QU0813A	25/Aug/20	Alk-PP	mg/L	1	1	1	1	0	1.00
QU0813A	25/Aug/20	Ba-D	mg/L	0.001	0.001	0.244	0.244	0	1.00
QU0813A	25/Aug/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU0813A	25/Aug/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU0813A	25/Aug/20	Bromide	mg/L	0.01	0.01	0.01	0.01	0	1.00
QU0813A	25/Aug/20	Carbonate	mg/L	1	1	1	1	0	1.00
QU0813A	25/Aug/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
QU0813A	25/Aug/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU0813A	25/Aug/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU0813A	25/Aug/20	Cu-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU0813A	25/Aug/20	Fluoride	mg/L	0.05	0.05	0.79	0.79	0	1.00
QU0813A	25/Aug/20	Hydroxide	mg/L	1	1	1	1	0	1.00
QU0813A	25/Aug/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU0813A	25/Aug/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU0813A	25/Aug/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU0813A	25/Aug/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
QU0813A	25/Aug/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU0813A	25/Aug/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU0813A	25/Aug/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
QU0813A	25/Aug/20	Turb	NTU	0.1	0.1	2.2	2.2	0	1.00
QU0813A	25/Aug/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU0813A	25/Aug/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU0813A	25/Aug/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
QU0813A	25/Aug/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU0821GD	10/Nov/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
QU0821GD	10/Nov/20	Ag-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU0821GD	10/Nov/20	Al-D	mg/L	0.015	0.015	0.015	0.015	0	1.00
QU0821GD	10/Nov/20	Alk-PP	mg/L	1	1	1	1	0	1.00
QU0821GD	10/Nov/20	Alkalinity Total as Ca	mg/L	1	1	210	210	0	1.00
QU0821GD	10/Nov/20	As-D	mg/L	0.0005	0.0005	0.175	0.175	0	1.00
QU0821GD	10/Nov/20	Be-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
QU0821GD	10/Nov/20	Bicarbonate	mg/L	1	1	260	260	0	1.00
QU0821GD	10/Nov/20	Bi-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU0821GD	10/Nov/20	Bromide	mg/L	0.01	0.01	1.7	1.7	0	1.00
QU0821GD	10/Nov/20	Carbonate	mg/L	1	1	1	1	0	1.00
QU0821GD	10/Nov/20	Cd-D	mg/L	0.00005	0.00005	0.00005	0.00005	0	1.00
QU0821GD	10/Nov/20	Cl-D	mg/L	10	10	1300	1300	0	1.00
QU0821GD	10/Nov/20	Co-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU0821GD	10/Nov/20	Cr-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU0821GD	10/Nov/20	Cu-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU0821GD	10/Nov/20	Hydrogen Sulphide (	mg/L	0.002	0.002	0.19	0.19	0	1.00
QU0821GD	10/Nov/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
QU0821GD	10/Nov/20	Hydroxide	mg/L	1	1	1	1	0	1.00
QU0821GD	10/Nov/20	K-D	mg/L	0.25	0.25	11.4	11.4	0	1.00
QU0821GD	10/Nov/20	Mn-D	mg/L	0.005	0.005	0.132	0.132	0	1.00
QU0821GD	10/Nov/20	Mo-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU0821GD	10/Nov/20	Ni-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU0821GD	10/Nov/20	Pb-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU0821GD	10/Nov/20	P-D	mg/L	0.003	0.003	0.45	0.45	0	1.00
QU0821GD	10/Nov/20	S2-T	mg/L	0.0018	0.0018	0.18	0.18	0	1.00
QU0821GD	10/Nov/20	Sb-D	mg/L	0.0025	0.0025	0.0025	0.0025	0	1.00
QU0821GD	10/Nov/20	S-D	mg/L	15	15	15	15	0	1.00
QU0821GD	10/Nov/20	Se-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
QU0821GD	10/Nov/20	Sn-D	mg/L	0.025	0.025	0.025	0.025	0	1.00
QU0821GD	10/Nov/20	SO4-D	mg/L	1	1	1	1	0	1.00
QU0821GD	10/Nov/20	Sr-D	mg/L	0.005	0.005	2.75	2.75	0	1.00
QU0821GD	10/Nov/20	Ti-D	mg/L	0.025	0.025	0.025	0.025	0	1.00
QU0821GD	10/Nov/20	Tl-D	mg/L	0.00005	0.00005	0.00005	0.00005	0	1.00
QU0821GD	10/Nov/20	U-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
QU0821GD	10/Nov/20	V-D	mg/L	0.025	0.025	0.025	0.025	0	1.00
QU0821GD	10/Nov/20	Zn-D	mg/L	0.025	0.025	0.025	0.025	0	1.00
QU0821GD	10/Nov/20	Zr-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
QU0821GS	1/Jun/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
QU0821GS	1/Jun/20	Acidity 8.3	mg/L	1	1	1	1	0	1.00
QU0821GS	1/Jun/20	Alk-PP	mg/L	1	1	1	1	0	1.00
QU0821GS	1/Jun/20	Alkalinity Total as Ca	mg/L	1	1	190	190	0	1.00
QU0821GS	1/Jun/20	B-D	mg/L	0.05	0.1	1.95	1.95	0	1.00
QU0821GS	1/Jun/20	Bicarbonate	mg/L	1	1	230	230	0	1.00
QU0821GS	1/Jun/20	Ca-D	mg/L	0.05	0.1	15.1	15.1	0	1.00
QU0821GS	1/Jun/20	Carbonate	mg/L	1	1	1	1	0	1.00
QU0821GS	1/Jun/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
QU0821GS	1/Jun/20	Hydroxide	mg/L	1	1	1	1	0	1.00
QU0821GS	1/Jun/20	Na-D	mg/L	0.05	0.1	104	104	0	1.00
QU0821GS	1/Jun/20	SO4-D	mg/L	1	1	1	1	0	1.00
QU0821GS	13/Aug/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
QU0821GS	13/Aug/20	Acidity 8.3	mg/L	1	1	1	1	0	1.00
QU0821GS	13/Aug/20	Alk-PP	mg/L	1	1	1	1	0	1.00
QU0821GS	13/Aug/20	Alkalinity Total as Ca	mg/L	1	1	200	200	0	1.00
QU0821GS	13/Aug/20	Bicarbonate	mg/L	1	1	240	240	0	1.00
QU0821GS	13/Aug/20	Carbonate	mg/L	1	1	1	1	0	1.00
QU0821GS	13/Aug/20	C-D	mg/L	1	1	1.0	1	0	1.00
QU0821GS	13/Aug/20	Fluoride	mg/L	0.05	0.05	1.8	1.8	0	1.00
QU0821GS	13/Aug/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
QU0821GS	13/Aug/20	Hydroxide	mg/L	1	1	1	1	0	1.00
QU0821GS	13/Aug/20	SO4-D	mg/L	1	1	1	1	0	1.00
QU0821GS	9/Feb/21	Acidity 4.5	mg/L	1	1	1	1	0	1.00
QU0821GS	9/Feb/21	Acidity 8.3	mg/L	1	1	1	1	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
QU0821GS	9/Feb/21	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
QU0821GS	9/Feb/21	Alkalinity Total as Ca	mg/L	1	1	190	190	0	1.00
QU0821GS	9/Feb/21	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU0821GS	9/Feb/21	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU0821GS	9/Feb/21	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
QU0821GS	9/Feb/21	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU0821GS	9/Feb/21	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU0821GS	9/Feb/21	Cu-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU0821GS	9/Feb/21	Fluoride	mg/L	0.05	0.05	1.7	1.7	0	1.00
QU0821GS	9/Feb/21	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
QU0821GS	9/Feb/21	Hydroxide	mg/L	1	1	1	1	0	1.00
QU0821GS	9/Feb/21	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU0821GS	9/Feb/21	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU0821GS	9/Feb/21	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU0821GS	9/Feb/21	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
QU0821GS	9/Feb/21	S-D	mg/L	3	3	3	3	0	1.00
QU0821GS	9/Feb/21	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU0821GS	9/Feb/21	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU0821GS	9/Feb/21	SO4-D	mg/L	1	1	1	1	0	1.00
QU0821GS	9/Feb/21	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU0821GS	9/Feb/21	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
QU0821GS	9/Feb/21	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU0821GS	9/Feb/21	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU0821GS	9/Feb/21	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU0821GS	9/Feb/21	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU1009D	10/Dec/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
QU1009D	10/Dec/20	Acidity 8.3	mg/L	1	1	1.5	1.5	0	1.00
QU1009D	10/Dec/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
QU1009D	10/Dec/20	Al-D	mg/L	0.003	0.003	0.003	0.003	0	1.00
QU1009D	10/Dec/20	Alk-PP	mg/L	1	1	1	1	0	1.00
QU1009D	10/Dec/20	Alkalinity Total as Ca	mg/L	1	1	180	180	0	1.00
QU1009D	10/Dec/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU1009D	10/Dec/20	Bicarbonate	mg/L	1	1	220	220	0	1.00
QU1009D	10/Dec/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1009D	10/Dec/20	Bromide	mg/L	0.01	0.01	0.020	0.020	0	1.00
QU1009D	10/Dec/20	Carbonate	mg/L	1	1	1	1	0	1.00
QU1009D	10/Dec/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
QU1009D	10/Dec/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU1009D	10/Dec/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1009D	10/Dec/20	Cu-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU1009D	10/Dec/20	Fluoride	mg/L	0.05	0.05	0.24	0.24	0	1.00
QU1009D	10/Dec/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
QU1009D	10/Dec/20	Hydroxide	mg/L	1	1	1	1	0	1.00
QU1009D	10/Dec/20	K-D	mg/L	0.05	0.05	1.55	1.55	0	1.00
QU1009D	10/Dec/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1009D	10/Dec/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1009D	10/Dec/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU1009D	10/Dec/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
QU1009D	10/Dec/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU1009D	10/Dec/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1009D	10/Dec/20	SO4-D	mg/L	1	1	78	78	0	1.00
QU1009D	10/Dec/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1009D	10/Dec/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
QU1009D	10/Dec/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU1009D	10/Dec/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1009D	10/Dec/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1009D	10/Dec/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU1010S	4/Jun/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
QU1010S	4/Jun/20	Acidity 8.3	mg/L	1	1	1	1	0	1.00
QU1010S	4/Jun/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
QU1010S	4/Jun/20	Al-D	mg/L	0.003	0.003	0.003	0.003	0	1.00
QU1010S	4/Jun/20	Alk-PP	mg/L	1	1	1	1	0	1.00
QU1010S	4/Jun/20	Alkalinity Total as Ca	mg/L	1	1	170	170	0	1.00
QU1010S	4/Jun/20	As-D	mg/L	0.0001	0.0001	0.103	0.103	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
QU1010S	4/Jun/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU1010S	4/Jun/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1010S	4/Jun/20	Carbonate	mg/L	1	1	1	1	0	1.00
QU1010S	4/Jun/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
QU1010S	4/Jun/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU1010S	4/Jun/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1010S	4/Jun/20	Cu-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU1010S	4/Jun/20	Hard-D	mg/L	0.5	0.5	84.3	84.3	0	1.00
QU1010S	4/Jun/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
QU1010S	4/Jun/20	Hydroxide	mg/L	1	1	1	1	0	1.00
QU1010S	4/Jun/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1010S	4/Jun/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1010S	4/Jun/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU1010S	4/Jun/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
QU1010S	4/Jun/20	S-D	mg/L	3	3	3	3	0	1.00
QU1010S	4/Jun/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1010S	4/Jun/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1010S	4/Jun/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
QU1010S	4/Jun/20	Turb	NTU	0.1	0.1	14	14	0	1.00
QU1010S	4/Jun/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU1010S	4/Jun/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1010S	4/Jun/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1010S	4/Jun/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU1010S	8/Dec/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
QU1010S	8/Dec/20	Acidity 8.3	mg/L	1	1	1	1	0	1.00
QU1010S	8/Dec/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
QU1010S	8/Dec/20	Alk-PP	mg/L	1	1	1	1	0	1.00
QU1010S	8/Dec/20	Alkalinity Total as Ca	mg/L	1	1	150	150	0	1.00
QU1010S	8/Dec/20	Ba-D	mg/L	0.001	0.001	0.318	0.318	0	1.00
QU1010S	8/Dec/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU1010S	8/Dec/20	Bicarbonate	mg/L	1	1	190	190	0	1.00
QU1010S	8/Dec/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1010S	8/Dec/20	Bromide	mg/L	0.01	0.01	0.01	0.01	0	1.00
QU1010S	8/Dec/20	Carbonate	mg/L	1	1	1	1	0	1.00
QU1010S	8/Dec/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
QU1010S	8/Dec/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU1010S	8/Dec/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1010S	8/Dec/20	Cu-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU1010S	8/Dec/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
QU1010S	8/Dec/20	Hydroxide	mg/L	1	1	1	1	0	1.00
QU1010S	8/Dec/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1010S	8/Dec/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1010S	8/Dec/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU1010S	8/Dec/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
QU1010S	8/Dec/20	S-D	mg/L	3	3	3	3	0	1.00
QU1010S	8/Dec/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1010S	8/Dec/20	Sr-D	mg/L	0.001	0.001	0.376	0.376	0	1.00
QU1010S	8/Dec/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1010S	8/Dec/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
QU1010S	8/Dec/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU1010S	8/Dec/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1010S	8/Dec/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1010S	8/Dec/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU1011S	11/Jun/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
QU1011S	11/Jun/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
QU1011S	11/Jun/20	Al-D	mg/L	0.003	0.003	0.003	0.003	0	1.00
QU1011S	11/Jun/20	Alk-PP	mg/L	1	1	1	1	0	1.00
QU1011S	11/Jun/20	Alkalinity Total as Ca	mg/L	1	1	160	160	0	1.00
QU1011S	11/Jun/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU1011S	11/Jun/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1011S	11/Jun/20	Carbonate	mg/L	1	1	1	1	0	1.00
QU1011S	11/Jun/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
QU1011S	11/Jun/20	Cl-D	mg/L	1	1	5.4	5.4	0	1.00
QU1011S	11/Jun/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
QU1011S	11/Jun/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1011S	11/Jun/20	Cu-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU1011S	11/Jun/20	Fluoride	mg/L	0.05	0.05	0.14	0.14	0	1.00
QU1011S	11/Jun/20	Hydrogen Sulphide (	mg/L	0.002	0.002	0.002	0.002	0	1.00
QU1011S	11/Jun/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
QU1011S	11/Jun/20	Hydroxide	mg/L	1	1	1	1	0	1.00
QU1011S	11/Jun/20	Mg-D	mg/L	0.05	0.05	7.92	7.92	0	1.00
QU1011S	11/Jun/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1011S	11/Jun/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1011S	11/Jun/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU1011S	11/Jun/20	S2-T	mg/L	0.0018	0.0018	0.0018	0.0018	0	1.00
QU1011S	11/Jun/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
QU1011S	11/Jun/20	S-D	mg/L	3	3	3	3	0	1.00
QU1011S	11/Jun/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU1011S	11/Jun/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1011S	11/Jun/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1011S	11/Jun/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
QU1011S	11/Jun/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU1011S	11/Jun/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1011S	11/Jun/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU1101	17/Aug/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
QU1101	17/Aug/20	Ag-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU1101	17/Aug/20	Al-D	mg/L	0.015	0.015	0.015	0.015	0	1.00
QU1101	17/Aug/20	Alk-PP	mg/L	1	1	1	1	0	1.00
QU1101	17/Aug/20	Be-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
QU1101	17/Aug/20	Bi-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1101	17/Aug/20	Carbonate	mg/L	1	1	1	1	0	1.00
QU1101	17/Aug/20	Cd-D	mg/L	0.00005	0.00005	0.00005	0.00005	0	1.00
QU1101	17/Aug/20	Cl-D	mg/L	1	1	2.5	2.5	0	1.00
QU1101	17/Aug/20	Co-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1101	17/Aug/20	Cr-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1101	17/Aug/20	Cu-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1101	17/Aug/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
QU1101	17/Aug/20	Hydroxide	mg/L	1	1	1	1	0	1.00
QU1101	17/Aug/20	Mo-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1101	17/Aug/20	Ni-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1101	17/Aug/20	Pb-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1101	17/Aug/20	Sb-D	mg/L	0.0025	0.0025	0.0025	0.0025	0	1.00
QU1101	17/Aug/20	Se-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
QU1101	17/Aug/20	Sn-D	mg/L	0.025	0.025	0.025	0.025	0	1.00
QU1101	17/Aug/20	SO4-D	mg/L	10	10	1400	1400	0	1.00
QU1101	17/Aug/20	Ti-D	mg/L	0.025	0.025	0.025	0.025	0	1.00
QU1101	17/Aug/20	Tl-D	mg/L	0.00005	0.00005	0.00005	0.00005	0	1.00
QU1101	17/Aug/20	U-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
QU1101	17/Aug/20	V-D	mg/L	0.025	0.025	0.025	0.025	0	1.00
QU1101	17/Aug/20	Zn-D	mg/L	0.025	0.025	0.025	0.025	0	1.00
QU1101	17/Aug/20	Zr-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
QU1101	28/Jan/21	Acidity 4.5	mg/L	1	1	1	1	0	1.00
QU1101	28/Jan/21	Ag-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU1101	28/Jan/21	Alk-PP	mg/L	1	1	1	1	0	1.00
QU1101	28/Jan/21	Be-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
QU1101	28/Jan/21	Bi-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1101	28/Jan/21	Carbonate	mg/L	1	1	1	1	0	1.00
QU1101	28/Jan/21	Cd-D	mg/L	0.00005	0.00005	0.00005	0.00005	0	1.00
QU1101	28/Jan/21	Co-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1101	28/Jan/21	Cr-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1101	28/Jan/21	Cu-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1101	28/Jan/21	Fluoride	mg/L	0.05	0.05	0.41	0.41	0	1.00
QU1101	28/Jan/21	Hydrogen Sulphide (	mg/L	0.002	0.002	0.024	0.024	0	1.00
QU1101	28/Jan/21	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
QU1101	28/Jan/21	Hydroxide	mg/L	1	1	1	1	0	1.00
QU1101	28/Jan/21	Li-D	mg/L	0.01	0.01	0.058	0.058	0	1.00
QU1101	28/Jan/21	Mn-D	mg/L	0.005	0.005	2.52	2.52	0	1.00
QU1101	28/Jan/21	Mo-D	mg/L	0.005	0.005	0.005	0.005	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
QU1101	28/Jan/21	Ni-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1101	28/Jan/21	Pb-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1101	28/Jan/21	P-D	mg/L	0.003	0.003	0.0081	0.0081	0	1.00
QU1101	28/Jan/21	S2-T	mg/L	0.0018	0.0018	0.022	0.022	0	1.00
QU1101	28/Jan/21	Sb-D	mg/L	0.0025	0.0025	0.0025	0.0025	0	1.00
QU1101	28/Jan/21	Se-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
QU1101	28/Jan/21	Sn-D	mg/L	0.025	0.025	0.025	0.025	0	1.00
QU1101	28/Jan/21	SO4-D	mg/L	10	10	1600	1600	0	1.00
QU1101	28/Jan/21	Ti-D	mg/L	0.025	0.025	0.025	0.025	0	1.00
QU1101	28/Jan/21	Tl-D	mg/L	0.00005	0.00005	0.00005	0.00005	0	1.00
QU1101	28/Jan/21	U-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
QU1101	28/Jan/21	V-D	mg/L	0.025	0.025	0.025	0.025	0	1.00
QU1101	28/Jan/21	Zn-D	mg/L	0.025	0.025	0.025	0.025	0	1.00
QU1101	28/Jan/21	Zr-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
QU1105S	17/Dec/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
QU1105S	17/Dec/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
QU1105S	17/Dec/20	Al-D	mg/L	0.003	0.003	0.003	0.003	0	1.00
QU1105S	17/Dec/20	Alk-PP	mg/L	1	1	1	1	0	1.00
QU1105S	17/Dec/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU1105S	17/Dec/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1105S	17/Dec/20	Bromide	mg/L	0.01	0.01	0.01	0.01	0	1.00
QU1105S	17/Dec/20	Carbonate	mg/L	1	1	1	1	0	1.00
QU1105S	17/Dec/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
QU1105S	17/Dec/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU1105S	17/Dec/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1105S	17/Dec/20	Cu-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU1105S	17/Dec/20	Fluoride	mg/L	0.05	0.05	0.21	0.21	0	1.00
QU1105S	17/Dec/20	Hydrogen Sulphide (	mg/L	0.002	0.002	0.31	0.31	0	1.00
QU1105S	17/Dec/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
QU1105S	17/Dec/20	Hydroxide	mg/L	1	1	1	1	0	1.00
QU1105S	17/Dec/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1105S	17/Dec/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1105S	17/Dec/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU1105S	17/Dec/20	S2-T	mg/L	0.0018	0.0018	0.29	0.29	0	1.00
QU1105S	17/Dec/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
QU1105S	17/Dec/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1105S	17/Dec/20	SO4-D	mg/L	1	1	180	180	0	1.00
QU1105S	17/Dec/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1105S	17/Dec/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
QU1105S	17/Dec/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU1105S	17/Dec/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1105S	17/Dec/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1105S	17/Dec/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU1109M	27/Aug/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
QU1109M	27/Aug/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
QU1109M	27/Aug/20	Al-D	mg/L	0.003	0.003	0.003	0.003	0	1.00
QU1109M	27/Aug/20	Alk-PP	mg/L	1	1	1	1	0	1.00
QU1109M	27/Aug/20	Alkalinity Total as Ca	mg/L	1	1	490	490	0	1.00
QU1109M	27/Aug/20	B-D	mg/L	0.05	0.05	0.827	0.827	0	1.00
QU1109M	27/Aug/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU1109M	27/Aug/20	Bicarbonate	mg/L	1	1	600	600	0	1.00
QU1109M	27/Aug/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1109M	27/Aug/20	Carbonate	mg/L	1	1	1	1	0	1.00
QU1109M	27/Aug/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
QU1109M	27/Aug/20	Cl-D	mg/L	1	1	42	42	0	1.00
QU1109M	27/Aug/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU1109M	27/Aug/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1109M	27/Aug/20	Cu-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU1109M	27/Aug/20	Fluoride	mg/L	0.05	0.05	0.12	0.12	0	1.00
QU1109M	27/Aug/20	Hydroxide	mg/L	1	1	1	1	0	1.00
QU1109M	27/Aug/20	Mo-D	mg/L	0.001	0.001	0.0012	0.0012	0	1.00
QU1109M	27/Aug/20	Na-D	mg/L	0.05	0.05	374	374	0	1.00
QU1109M	27/Aug/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1109M	27/Aug/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
QU1109M	27/Aug/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
QU1109M	27/Aug/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU1109M	27/Aug/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1109M	27/Aug/20	Sr-D	mg/L	0.001	0.001	1.16	1.16	0	1.00
QU1109M	27/Aug/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1109M	27/Aug/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
QU1109M	27/Aug/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU1109M	27/Aug/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1109M	27/Aug/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1109M	27/Aug/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU1109M	17/Mar/21	Acidity 4.5	mg/L	1	1	1	1	0	1.00
QU1109M	17/Mar/21	Ag-D	mg/L	0.00004	0.00004	0.00004	0.00004	0	1.00
QU1109M	17/Mar/21	Ag-T	mg/L	0.00004	0.00004	0.00004	0.00004	0	1.00
QU1109M	17/Mar/21	Alk-PP	mg/L	1	1	1	1	0	1.00
QU1109M	17/Mar/21	Alkalinity Total as Ca	mg/L	1	1	460	460	0	1.00
QU1109M	17/Mar/21	Be-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU1109M	17/Mar/21	Be-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU1109M	17/Mar/21	Bicarbonate	mg/L	1	1	560	560	0	1.00
QU1109M	17/Mar/21	Bi-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
QU1109M	17/Mar/21	Bi-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
QU1109M	17/Mar/21	Carbonate	mg/L	1	1	1	1	0	1.00
QU1109M	17/Mar/21	Cd-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
QU1109M	17/Mar/21	Cl-D	mg/L	1	1	30	30	0	1.00
QU1109M	17/Mar/21	Co-T	mg/L	0.0004	0.0004	0.0139	0.0139	0	1.00
QU1109M	17/Mar/21	Cr-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
QU1109M	17/Mar/21	Cr-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
QU1109M	17/Mar/21	Fe-T	mg/L	0.02	0.02	34.8	34.8	0	1.00
QU1109M	17/Mar/21	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
QU1109M	17/Mar/21	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
QU1109M	17/Mar/21	Hydroxide	mg/L	1	1	1	1	0	1.00
QU1109M	17/Mar/21	Mo-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
QU1109M	17/Mar/21	Mo-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
QU1109M	17/Mar/21	Na-D	mg/L	0.1	0.1	470	470	0	1.00
QU1109M	17/Mar/21	Pb-D	mg/L	0.0004	0.0004	0.0004	0.0004	0	1.00
QU1109M	17/Mar/21	Pb-T	mg/L	0.0004	0.0004	0.0004	0.0004	0	1.00
QU1109M	17/Mar/21	Sb-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1109M	17/Mar/21	Sb-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1109M	17/Mar/21	Se-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU1109M	17/Mar/21	Se-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU1109M	17/Mar/21	Sn-D	mg/L	0.01	0.01	0.01	0.01	0	1.00
QU1109M	17/Mar/21	Sn-T	mg/L	0.01	0.01	0.01	0.01	0	1.00
QU1109M	17/Mar/21	SO4-D	mg/L	10	10	1300	1300	0	1.00
QU1109M	17/Mar/21	Ti-D	mg/L	0.01	0.01	0.01	0.01	0	1.00
QU1109M	17/Mar/21	Ti-T	mg/L	0.01	0.01	0.01	0.01	0	1.00
QU1109M	17/Mar/21	Tl-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
QU1109M	17/Mar/21	Tl-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
QU1109M	17/Mar/21	U-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU1109M	17/Mar/21	U-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU1109M	17/Mar/21	V-D	mg/L	0.01	0.01	0.01	0.01	0	1.00
QU1109M	17/Mar/21	V-T	mg/L	0.01	0.01	0.01	0.01	0	1.00
QU1109M	17/Mar/21	Zn-D	mg/L	0.01	0.01	0.01	0.01	0	1.00
QU1109M	17/Mar/21	Zn-T	mg/L	0.01	0.01	0.01	0.01	0	1.00
QU1109M	17/Mar/21	Zr-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU1109M	17/Mar/21	Zr-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU1136D	16/Dec/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
QU1136D	16/Dec/20	Ag-D	mg/L	0.00004	0.00004	0.00004	0.00004	0	1.00
QU1136D	16/Dec/20	Al-D	mg/L	0.006	0.006	0.006	0.006	0	1.00
QU1136D	16/Dec/20	Alk-PP	mg/L	1	1	1	1	0	1.00
QU1136D	16/Dec/20	Alkalinity Total as Ca	mg/L	1	1	150	150	0	1.00
QU1136D	16/Dec/20	Be-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU1136D	16/Dec/20	Bicarbonate	mg/L	1	1	180	180	0	1.00
QU1136D	16/Dec/20	Bi-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
QU1136D	16/Dec/20	Bromide	mg/L	0.01	0.01	0.01	0.01	0	1.00
QU1136D	16/Dec/20	Carbonate	mg/L	1	1	1	1	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
QU1136D	16/Dec/20	Cd-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
QU1136D	16/Dec/20	Co-D	mg/L	0.0004	0.0004	0.0004	0.0004	0	1.00
QU1136D	16/Dec/20	Cr-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
QU1136D	16/Dec/20	Cu-D	mg/L	0.0004	0.0004	0.0004	0.0004	0	1.00
QU1136D	16/Dec/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
QU1136D	16/Dec/20	Hydroxide	mg/L	1	1	1	1	0	1.00
QU1136D	16/Dec/20	Ni-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
QU1136D	16/Dec/20	Pb-D	mg/L	0.0004	0.0004	0.0004	0.0004	0	1.00
QU1136D	16/Dec/20	Sb-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1136D	16/Dec/20	S-D	mg/L	6	6	6	6	0	1.00
QU1136D	16/Dec/20	Sn-D	mg/L	0.01	0.01	0.01	0.01	0	1.00
QU1136D	16/Dec/20	SO4-D	mg/L	1	1	15	15	0	1.00
QU1136D	16/Dec/20	Ti-D	mg/L	0.01	0.01	0.01	0.01	0	1.00
QU1136D	16/Dec/20	Tl-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
QU1136D	16/Dec/20	U-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU1136D	16/Dec/20	V-D	mg/L	0.01	0.01	0.01	0.01	0	1.00
QU1136D	16/Dec/20	Zn-D	mg/L	0.01	0.01	0.01	0.01	0	1.00
QU1136D	16/Dec/20	Zr-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU1410	30/Jul/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
QU1410	30/Jul/20	Ag-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
QU1410	30/Jul/20	Al-D	mg/L	0.03	0.03	0.03	0.03	0	1.00
QU1410	30/Jul/20	Alk-PP	mg/L	1	1	1	1	0	1.00
QU1410	30/Jul/20	Alkalinity Total as Ca	mg/L	1	1	310	310	0	1.00
QU1410	30/Jul/20	Ba-D	mg/L	0.01	0.01	0.017	0.017	0	1.00
QU1410	30/Jul/20	B-D	mg/L	0.5	0.5	1.08	1.08	0	1.00
QU1410	30/Jul/20	Be-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1410	30/Jul/20	Bicarbonate	mg/L	1	1	380	380	0	1.00
QU1410	30/Jul/20	Bi-D	mg/L	0.01	0.01	0.01	0.01	0	1.00
QU1410	30/Jul/20	Carbonate	mg/L	1	1	1	1	0	1.00
QU1410	30/Jul/20	Co-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
QU1410	30/Jul/20	Cr-D	mg/L	0.01	0.01	0.01	0.01	0	1.00
QU1410	30/Jul/20	Cu-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
QU1410	30/Jul/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
QU1410	30/Jul/20	Hydroxide	mg/L	1	1	1	1	0	1.00
QU1410	30/Jul/20	Mo-D	mg/L	0.01	0.01	0.01	0.01	0	1.00
QU1410	30/Jul/20	Ni-D	mg/L	0.01	0.01	0.01	0.01	0	1.00
QU1410	30/Jul/20	Pb-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
QU1410	30/Jul/20	Sb-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1410	30/Jul/20	Se-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1410	30/Jul/20	Sn-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
QU1410	30/Jul/20	Ti-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
QU1410	30/Jul/20	Tl-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU1410	30/Jul/20	V-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
QU1410	30/Jul/20	Zn-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
QU1410	30/Jul/20	Zr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1410	27/Aug/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
QU1410	27/Aug/20	Ag-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU1410	27/Aug/20	Al-D	mg/L	0.015	0.015	0.015	0.015	0	1.00
QU1410	27/Aug/20	Alk-PP	mg/L	1	1	1	1	0	1.00
QU1410	27/Aug/20	Alkalinity Total as Ca	mg/L	1	1	310	310	0	1.00
QU1410	27/Aug/20	Be-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
QU1410	27/Aug/20	Bicarbonate	mg/L	1	1	370	370	0	1.00
QU1410	27/Aug/20	Bi-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1410	27/Aug/20	Carbonate	mg/L	1	1	1	1	0	1.00
QU1410	27/Aug/20	Cd-D	mg/L	0.00005	0.00005	0.00005	0.00005	0	1.00
QU1410	27/Aug/20	Co-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1410	27/Aug/20	Cr-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1410	27/Aug/20	Cu-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1410	27/Aug/20	Fluoride	mg/L	0.05	0.05	0.18	0.18	0	1.00
QU1410	27/Aug/20	Hydrogen Sulphide (	mg/L	0.0019	0.0019	0.0019	0.0019	0	1.00
QU1410	27/Aug/20	Hydroxide	mg/L	1	1	1	1	0	1.00
QU1410	27/Aug/20	Mo-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1410	27/Aug/20	Ni-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1410	27/Aug/20	Pb-D	mg/L	0.001	0.001	0.001	0.001	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
QU1410	27/Aug/20	P-D	mg/L	0.001	0.001	0.0049	0.0049	0	1.00
QU1410	27/Aug/20	S2-T	mg/L	0.0018	0.0018	0.0018	0.0018	0	1.00
QU1410	27/Aug/20	Sb-D	mg/L	0.0025	0.0025	0.0025	0.0025	0	1.00
QU1410	27/Aug/20	Se-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
QU1410	27/Aug/20	Sn-D	mg/L	0.025	0.025	0.025	0.025	0	1.00
QU1410	27/Aug/20	Ti-D	mg/L	0.025	0.025	0.025	0.025	0	1.00
QU1410	27/Aug/20	Tl-D	mg/L	0.00005	0.00005	0.00005	0.00005	0	1.00
QU1410	27/Aug/20	V-D	mg/L	0.025	0.025	0.025	0.025	0	1.00
QU1410	27/Aug/20	Zn-D	mg/L	0.025	0.025	0.025	0.025	0	1.00
QU1410	27/Aug/20	Zr-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
QU1410	16/Dec/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
QU1410	16/Dec/20	Ag-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU1410	16/Dec/20	Al-D	mg/L	0.015	0.015	0.015	0.015	0	1.00
QU1410	16/Dec/20	Alk-PP	mg/L	1	1	1	1	0	1.00
QU1410	16/Dec/20	Alkalinity Total as Ca	mg/L	1	1	310	310	0	1.00
QU1410	16/Dec/20	Be-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
QU1410	16/Dec/20	Bicarbonate	mg/L	1	1	380	380	0	1.00
QU1410	16/Dec/20	Bi-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1410	16/Dec/20	Carbonate	mg/L	1	1	1	1	0	1.00
QU1410	16/Dec/20	Cd-D	mg/L	0.00005	0.00005	0.00005	0.00005	0	1.00
QU1410	16/Dec/20	Co-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1410	16/Dec/20	Cr-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1410	16/Dec/20	Cu-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1410	16/Dec/20	C-D	mg/L	0.5	0.5	1.3	1.3	0	1.00
QU1410	16/Dec/20	Fluoride	mg/L	0.05	0.05	0.17	0.17	0	1.00
QU1410	16/Dec/20	Hydrogen Sulphide (	mg/L	0.01	0.01	0.01	0.01	0	1.00
QU1410	16/Dec/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
QU1410	16/Dec/20	Hydroxide	mg/L	1	1	1	1	0	1.00
QU1410	16/Dec/20	Mo-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1410	16/Dec/20	Ni-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1410	16/Dec/20	Pb-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1410	16/Dec/20	S2-T	mg/L	0.009	0.009	0.009	0.009	0	1.00
QU1410	16/Dec/20	Sb-D	mg/L	0.0025	0.0025	0.0025	0.0025	0	1.00
QU1410	16/Dec/20	Sn-D	mg/L	0.025	0.025	0.025	0.025	0	1.00
QU1410	16/Dec/20	SO4-D	mg/L	10	10	1900	1900	0	1.00
QU1410	16/Dec/20	Ti-D	mg/L	0.025	0.025	0.025	0.025	0	1.00
QU1410	16/Dec/20	Tl-D	mg/L	0.00005	0.00005	0.00005	0.00005	0	1.00
QU1410	16/Dec/20	V-D	mg/L	0.025	0.025	0.025	0.025	0	1.00
QU1410	16/Dec/20	Zn-D	mg/L	0.025	0.025	0.025	0.025	0	1.00
QU1410	16/Dec/20	Zr-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
QU1410	24/Feb/21	Acidity 4.5	mg/L	1	1	1	1	0	1.00
QU1410	24/Feb/21	Acidity 8.3	mg/L	1	1	18.6	18.6	0	1.00
QU1410	24/Feb/21	Ag-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
QU1410	24/Feb/21	Al-D	mg/L	0.015	0.015	0.015	0.015	0	1.00
QU1410	24/Feb/21	Alk-PP	mg/L	1	1	1	1	0	1.00
QU1410	24/Feb/21	Alkalinity Total as Ca	mg/L	1	1	290	290	0	1.00
QU1410	24/Feb/21	As-D	mg/L	0.0005	0.0005	0.0880	0.0880	0	1.00
QU1410	24/Feb/21	Ba-D	mg/L	0.005	0.005	0.0148	0.0148	0	1.00
QU1410	24/Feb/21	B-D	mg/L	0.25	0.25	1.10	1.10	0	1.00
QU1410	24/Feb/21	Be-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
QU1410	24/Feb/21	Bicarbonate	mg/L	1	1	360	360	0	1.00
QU1410	24/Feb/21	Bi-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1410	24/Feb/21	Bromide	mg/L	0.01	0.01	0.21	0.21	0	1.00
QU1410	24/Feb/21	Ca-D	mg/L	0.25	0.25	495	495	0	1.00
QU1410	24/Feb/21	Carbonate	mg/L	1	1	1	1	0	1.00
QU1410	24/Feb/21	Cd-D	mg/L	0.00005	0.00005	0.00005	0.00005	0	1.00
QU1410	24/Feb/21	Cl-D	mg/L	1	1	5.7	5.7	0	1.00
QU1410	24/Feb/21	Co-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1410	24/Feb/21	Cr-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1410	24/Feb/21	Cu-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1410	24/Feb/21	C-D	mg/L	0.5	0.5	1.1	1.1	0	1.00
QU1410	24/Feb/21	Fluoride	mg/L	0.05	0.05	0.17	0.17	0	1.00
QU1410	24/Feb/21	Fe-D	mg/L	0.025	0.025	1.75	1.75	0	1.00
QU1410	24/Feb/21	Hydrogen Sulphide (	mg/L	0.002	0.002	0.002	0.002	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference									
Site Code	**Date**	**Parameter**	**Units**	**Lab MDL 1**	**Lab MDL 2**	**Result 1**	**Result 2**	**Rel.% Diff.**	**Ratio**
QU1410	24/Feb/21	Hard-D	mg/L	0.5	0.5	1880	1880	0	1.00
QU1410	24/Feb/21	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
QU1410	24/Feb/21	Hydroxide	mg/L	1	1	1	1	0	1.00
QU1410	24/Feb/21	K-D	mg/L	0.25	0.25	6.75	6.75	0	1.00
QU1410	24/Feb/21	Li-D	mg/L	0.01	0.01	0.125	0.125	0	1.00
QU1410	24/Feb/21	Mg-D	mg/L	0.25	0.25	158	158	0	1.00
QU1410	24/Feb/21	Mn-D	mg/L	0.005	0.005	1.28	1.28	0	1.00
QU1410	24/Feb/21	Mo-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1410	24/Feb/21	Na-D	mg/L	0.25	0.25	52.7	52.7	0	1.00
QU1410	24/Feb/21	N-D	mg/L	0.02	0.02	0.247	0.247	0	1.00
QU1410	24/Feb/21	Ni-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
QU1410	24/Feb/21	Pb-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
QU1410	24/Feb/21	P-D	mg/L	0.003	0.003	0.0052	0.0052	0	1.00
QU1410	24/Feb/21	S2-T	mg/L	0.0018	0.0018	0.0018	0.0018	0	1.00
QU1410	24/Feb/21	Sb-D	mg/L	0.0025	0.0025	0.0025	0.0025	0	1.00
QU1410	24/Feb/21	S-D	mg/L	15	15	576	576	0	1.00
QU1410	24/Feb/21	Se-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
QU1410	24/Feb/21	Si-D	mg/L	0.5	0.5	3.06	3.06	0	1.00
QU1410	24/Feb/21	Sn-D	mg/L	0.025	0.025	0.025	0.025	0	1.00
QU1410	24/Feb/21	SO4-D	mg/L	20	20	1800	1800	0	1.00
QU1410	24/Feb/21	Sr-D	mg/L	0.005	0.005	4.29	4.29	0	1.00
QU1410	24/Feb/21	Ti-D	mg/L	0.025	0.025	0.025	0.025	0	1.00
QU1410	24/Feb/21	Tl-D	mg/L	0.00005	0.00005	0.00005	0.00005	0	1.00
QU1410	24/Feb/21	Turb	NTU	0.1	0.1	23	23	0	1.00
QU1410	24/Feb/21	U-D	mg/L	0.0005	0.0005	0.00089	0.00089	0	1.00
QU1410	24/Feb/21	V-D	mg/L	0.025	0.025	0.025	0.025	0	1.00
QU1410	24/Feb/21	Zn-D	mg/L	0.025	0.025	0.025	0.025	0	1.00
QU1410	24/Feb/21	Zr-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
SPD	20/May/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
SPD	20/May/20	Alk-PP	mg/L	1	1	1	1	0	1.00
SPD	20/May/20	Carbonate	mg/L	1	1	1	1	0	1.00
SPD	20/May/20	Hydroxide	mg/L	1	1	1	1	0	1.00
TB	20/May/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
TB	20/May/20	Al-T	mg/L	0.003	0.003	0.003	0.003	0	1.00
TB	20/May/20	As-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
TB	20/May/20	Ba-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
TB	20/May/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
TB	20/May/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
TB	20/May/20	B-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
TB	20/May/20	Ca-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
TB	20/May/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
TB	20/May/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
TB	20/May/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
TB	20/May/20	Cu-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
TB	20/May/20	Fe-T	mg/L	0.01	0.01	0.01	0.01	0	1.00
TB	20/May/20	Hardness (as CaCO3	mg/L	0.5	0.5	0.5	0.5	0	1.00
TB	20/May/20	K-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
TB	20/May/20	Li-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
TB	20/May/20	Mg-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
TB	20/May/20	Mn-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
TB	20/May/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
TB	20/May/20	Na-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
TB	20/May/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
TB	20/May/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
TB	20/May/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
TB	20/May/20	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
TB	20/May/20	Si-T	mg/L	0.1	0.1	0.1	0.1	0	1.00
TB	20/May/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
TB	20/May/20	SO4-D	mg/L	1	1	1	1	0	1.00
TB	20/May/20	Sr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
TB	20/May/20	S-T	mg/L	3	3	3	3	0	1.00
TB	20/May/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
TB	20/May/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
TB	20/May/20	U-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference									
Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
TB	20/May/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
TB	20/May/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
TB	20/May/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
TB	22/Jul/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
TB	22/Jul/20	Acidity 8.3	mg/L	1	1	1	1	0	1.00
TB	22/Jul/20	Alk-PP	mg/L	1	1	1	1	0	1.00
TB	22/Jul/20	Alkalinity Total as Ca	mg/L	1	1	1	1	0	1.00
TB	22/Jul/20	Bicarbonate	mg/L	1	1	1	1	0	1.00
TB	22/Jul/20	Carbonate	mg/L	1	1	1	1	0	1.00
TB	22/Jul/20	Cl-D	mg/L	1	1	1	1	0	1.00
TB	22/Jul/20	Hydroxide	mg/L	1	1	1	1	0	1.00
TB	22/Jul/20	SO4-D	mg/L	1	1	1	1	0	1.00
TB	2/Sep/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
TB	2/Sep/20	Acidity 8.3	mg/L	1	1	1	1	0	1.00
TB	2/Sep/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
TB	2/Sep/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
TB	2/Sep/20	Al-D	mg/L	0.003	0.003	0.003	0.003	0	1.00
TB	2/Sep/20	Alk-PP	mg/L	1	1	1	1	0	1.00
TB	2/Sep/20	Alkalinity Total as Ca	mg/L	1	1	1	1	0	1.00
TB	2/Sep/20	Al-T	mg/L	0.003	0.003	0.003	0.003	0	1.00
TB	2/Sep/20	As-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
TB	2/Sep/20	As-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
TB	2/Sep/20	Ba-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
TB	2/Sep/20	Ba-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
TB	2/Sep/20	B-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
TB	2/Sep/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
TB	2/Sep/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
TB	2/Sep/20	Bicarbonate	mg/L	1	1	1	1	0	1.00
TB	2/Sep/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
TB	2/Sep/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
TB	2/Sep/20	B-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
TB	2/Sep/20	Ca-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
TB	2/Sep/20	Carbonate	mg/L	1	1	1	1	0	1.00
TB	2/Sep/20	Ca-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
TB	2/Sep/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
TB	2/Sep/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
TB	2/Sep/20	Cl-D	mg/L	1	1	1	1	0	1.00
TB	2/Sep/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
TB	2/Sep/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
TB	2/Sep/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
TB	2/Sep/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
TB	2/Sep/20	Cu-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
TB	2/Sep/20	Cu-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
TB	2/Sep/20	Fe-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
TB	2/Sep/20	Fe-T	mg/L	0.01	0.01	0.01	0.01	0	1.00
TB	2/Sep/20	Hard-D	mg/L	0.5	0.5	0.5	0.5	0	1.00
TB	2/Sep/20	Hardness (as CaCO3	mg/L	0.5	0.5	0.5	0.5	0	1.00
TB	2/Sep/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
TB	2/Sep/20	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
TB	2/Sep/20	Hydroxide	mg/L	1	1	1	1	0	1.00
TB	2/Sep/20	K-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
TB	2/Sep/20	K-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
TB	2/Sep/20	Li-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
TB	2/Sep/20	Li-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
TB	2/Sep/20	Mg-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
TB	2/Sep/20	Mg-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
TB	2/Sep/20	Mn-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
TB	2/Sep/20	Mn-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
TB	2/Sep/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
TB	2/Sep/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
TB	2/Sep/20	Na-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
TB	2/Sep/20	Na-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
TB	2/Sep/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
TB	2/Sep/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference									
Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
TB	2/Sep/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
TB	2/Sep/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
TB	2/Sep/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
TB	2/Sep/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
TB	2/Sep/20	S-D	mg/L	3	3	3	3	0	1.00
TB	2/Sep/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
TB	2/Sep/20	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
TB	2/Sep/20	Si-D	mg/L	0.1	0.1	0.1	0.1	0	1.00
TB	2/Sep/20	Si-T	mg/L	0.1	0.1	0.1	0.1	0	1.00
TB	2/Sep/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
TB	2/Sep/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
TB	2/Sep/20	SO4-D	mg/L	1	1	1	1	0	1.00
TB	2/Sep/20	Sr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
TB	2/Sep/20	Sr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
TB	2/Sep/20	S-T	mg/L	3	3	3	3	0	1.00
TB	2/Sep/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
TB	2/Sep/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
TB	2/Sep/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
TB	2/Sep/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
TB	2/Sep/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
TB	2/Sep/20	U-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
TB	2/Sep/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
TB	2/Sep/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
TB	2/Sep/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
TB	2/Sep/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
TB	2/Sep/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
TB	2/Sep/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
TB	8/Feb/21	Acidity 4.5	mg/L	1	1	1	1	0	1.00
TB	8/Feb/21	Acidity 8.3	mg/L	1	1	1	1	0	1.00
TB	8/Feb/21	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
TB	8/Feb/21	Alk-PP	mg/L	1	1	1	1	0	1.00
TB	8/Feb/21	Alkalinity Total as Ca	mg/L	1	1	1	1	0	1.00
TB	8/Feb/21	Al-T	mg/L	0.003	0.003	0.003	0.003	0	1.00
TB	8/Feb/21	As-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
TB	8/Feb/21	Ba-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
TB	8/Feb/21	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
TB	8/Feb/21	Bicarbonate	mg/L	1	1	1	1	0	1.00
TB	8/Feb/21	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
TB	8/Feb/21	B-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
TB	8/Feb/21	Carbonate	mg/L	1	1	1	1	0	1.00
TB	8/Feb/21	Ca-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
TB	8/Feb/21	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
TB	8/Feb/21	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
TB	8/Feb/21	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
TB	8/Feb/21	Cu-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
TB	8/Feb/21	Fe-T	mg/L	0.01	0.01	0.01	0.01	0	1.00
TB	8/Feb/21	Hardness (as CaCO3	mg/L	0.5	0.5	0.5	0.5	0	1.00
TB	8/Feb/21	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
TB	8/Feb/21	Hydroxide	mg/L	1	1	1	1	0	1.00
TB	8/Feb/21	K-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
TB	8/Feb/21	Li-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
TB	8/Feb/21	Mg-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
TB	8/Feb/21	Mn-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
TB	8/Feb/21	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
TB	8/Feb/21	Na-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
TB	8/Feb/21	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
TB	8/Feb/21	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
TB	8/Feb/21	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
TB	8/Feb/21	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
TB	8/Feb/21	Si-T	mg/L	0.1	0.1	0.1	0.1	0	1.00
TB	8/Feb/21	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
TB	8/Feb/21	SO4-D	mg/L	1	1	1	1	0	1.00
TB	8/Feb/21	Sr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
TB	8/Feb/21	S-T	mg/L	3	3	3	3	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
TB	8/Feb/21	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
TB	8/Feb/21	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
TB	8/Feb/21	U-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
TB	8/Feb/21	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
TB	8/Feb/21	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
TB	8/Feb/21	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WA	14/Apr/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
WA	14/Apr/20	Acidity 8.3	mg/L	1	1	1	1	0	1.00
WA	14/Apr/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
WA	14/Apr/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
WA	14/Apr/20	Alk-PP	mg/L	1	1	1	1	0	1.00
WA	14/Apr/20	Alkalinity Total as Ca	mg/L	1	1	17	17	0	1.00
WA	14/Apr/20	As-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WA	14/Apr/20	As-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WA	14/Apr/20	Ba-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WA	14/Apr/20	Ba-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
WA	14/Apr/20	B-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
WA	14/Apr/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WA	14/Apr/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WA	14/Apr/20	Bicarbonate	mg/L	1	1	21	21	0	1.00
WA	14/Apr/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WA	14/Apr/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
WA	14/Apr/20	B-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
WA	14/Apr/20	Carbonate	mg/L	1	1	1	1	0	1.00
WA	14/Apr/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
WA	14/Apr/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
WA	14/Apr/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
WA	14/Apr/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
WA	14/Apr/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WA	14/Apr/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
WA	14/Apr/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
WA	14/Apr/20	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
WA	14/Apr/20	Hydroxide	mg/L	1	1	1	1	0	1.00
WA	14/Apr/20	K-T	mg/L	0.05	0.05	0.058	0.058	0	1.00
WA	14/Apr/20	Li-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
WA	14/Apr/20	Li-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
WA	14/Apr/20	Mn-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WA	14/Apr/20	Mn-T	mg/L	0.001	0.001	0.0010	0.001	0	1.00
WA	14/Apr/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WA	14/Apr/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
WA	14/Apr/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WA	14/Apr/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
WA	14/Apr/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
WA	14/Apr/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
WA	14/Apr/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
WA	14/Apr/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
WA	14/Apr/20	S-D	mg/L	3	3	3	3	0	1.00
WA	14/Apr/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WA	14/Apr/20	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WA	14/Apr/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
WA	14/Apr/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
WA	14/Apr/20	Sr-T	mg/L	0.001	0.001	0.0112	0.0112	0	1.00
WA	14/Apr/20	S-T	mg/L	3	3	3	3	0	1.00
WA	14/Apr/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
WA	14/Apr/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
WA	14/Apr/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
WA	14/Apr/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
WA	14/Apr/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WA	14/Apr/20	U-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WA	14/Apr/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
WA	14/Apr/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
WA	14/Apr/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
WA	14/Apr/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
WA	14/Apr/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference									
Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
WA	14/Apr/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WA	8/Jul/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
WA	8/Jul/20	Acidity 8.3	mg/L	1	1	1	1	0	1.00
WA	8/Jul/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
WA	8/Jul/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
WA	8/Jul/20	Alk-PP	mg/L	1	1	1	1	0	1.00
WA	8/Jul/20	Alkalinity Total as Ca	mg/L	1	1	18	18	0	1.00
WA	8/Jul/20	As-D	mg/L	0.0001	0.0001	0.00010	0.0001	0	1.00
WA	8/Jul/20	Ba-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WA	8/Jul/20	B-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
WA	8/Jul/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WA	8/Jul/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WA	8/Jul/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WA	8/Jul/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
WA	8/Jul/20	B-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
WA	8/Jul/20	Carbonate	mg/L	1	1	1	1	0	1.00
WA	8/Jul/20	Ca-T	mg/L	0.05	0.05	6.66	6.66	0	1.00
WA	8/Jul/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
WA	8/Jul/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
WA	8/Jul/20	Cl-D	mg/L	1	1	1	1	0	1.00
WA	8/Jul/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
WA	8/Jul/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
WA	8/Jul/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WA	8/Jul/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
WA	8/Jul/20	C-D	mg/L	0.5	0.5	1.5	1.5	0	1.00
WA	8/Jul/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
WA	8/Jul/20	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
WA	8/Jul/20	Hydroxide	mg/L	1	1	1	1	0	1.00
WA	8/Jul/20	Li-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
WA	8/Jul/20	Li-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
WA	8/Jul/20	Mn-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WA	8/Jul/20	Mn-T	mg/L	0.001	0.001	0.0018	0.0018	0	1.00
WA	8/Jul/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WA	8/Jul/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
WA	8/Jul/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WA	8/Jul/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
WA	8/Jul/20	N-NH3	mg/L	0.015	0.015	0.015	0.015	0	1.00
WA	8/Jul/20	N-NO2	mg/L	0.005	0.005	0.005	0.005	0	1.00
WA	8/Jul/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
WA	8/Jul/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
WA	8/Jul/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
WA	8/Jul/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
WA	8/Jul/20	S-D	mg/L	3	3	3	3	0	1.00
WA	8/Jul/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WA	8/Jul/20	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WA	8/Jul/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
WA	8/Jul/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
WA	8/Jul/20	S-T	mg/L	3	3	3	3	0	1.00
WA	8/Jul/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
WA	8/Jul/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
WA	8/Jul/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
WA	8/Jul/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
WA	8/Jul/20	TSS	mg/L	1	1	1	1	0	1.00
WA	8/Jul/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WA	8/Jul/20	U-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WA	8/Jul/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
WA	8/Jul/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
WA	8/Jul/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
WA	8/Jul/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
WA	8/Jul/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WA	8/Jul/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WA	14/Oct/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
WA	14/Oct/20	Acidity 8.3	mg/L	1	1	1	1	0	1.00
WA	14/Oct/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference									
Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
WA	14/Oct/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
WA	14/Oct/20	Al-D	mg/L	0.003	0.003	0.0207	0.0207	0	1.00
WA	14/Oct/20	Alk-PP	mg/L	1	1	1	1	0	1.00
WA	14/Oct/20	Alkalinity Total as Ca	mg/L	1	1	21	21	0	1.00
WA	14/Oct/20	Ba-T	mg/L	0.001	0.001	0.0014	0.0014	0	1.00
WA	14/Oct/20	B-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
WA	14/Oct/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WA	14/Oct/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WA	14/Oct/20	Bicarbonate	mg/L	1	1	25	25	0	1.00
WA	14/Oct/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WA	14/Oct/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
WA	14/Oct/20	B-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
WA	14/Oct/20	Carbonate	mg/L	1	1	1	1	0	1.00
WA	14/Oct/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
WA	14/Oct/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
WA	14/Oct/20	Cl-D	mg/L	1	1	1	1	0	1.00
WA	14/Oct/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
WA	14/Oct/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
WA	14/Oct/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WA	14/Oct/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
WA	14/Oct/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
WA	14/Oct/20	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
WA	14/Oct/20	Hydroxide	mg/L	1	1	1	1	0	1.00
WA	14/Oct/20	Li-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
WA	14/Oct/20	Li-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
WA	14/Oct/20	Mn-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WA	14/Oct/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WA	14/Oct/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
WA	14/Oct/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WA	14/Oct/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
WA	14/Oct/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
WA	14/Oct/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
WA	14/Oct/20	P-D	mg/L	0.01	0.01	0.01	0.01	0	1.00
WA	14/Oct/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
WA	14/Oct/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
WA	14/Oct/20	S-D	mg/L	3	3	3	3	0	1.00
WA	14/Oct/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WA	14/Oct/20	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WA	14/Oct/20	Si-D	mg/L	0.1	0.1	2.12	2.12	0	1.00
WA	14/Oct/20	Si-T	mg/L	0.1	0.1	2.28	2.28	0	1.00
WA	14/Oct/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
WA	14/Oct/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
WA	14/Oct/20	S-T	mg/L	3	3	3	3	0	1.00
WA	14/Oct/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
WA	14/Oct/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
WA	14/Oct/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
WA	14/Oct/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
WA	14/Oct/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WA	14/Oct/20	U-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WA	14/Oct/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
WA	14/Oct/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
WA	14/Oct/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
WA	14/Oct/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
WA	14/Oct/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WA	14/Oct/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WB	5/May/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
WB	5/May/20	Acidity 8.3	mg/L	1	1	1	1	0	1.00
WB	5/May/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
WB	5/May/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
WB	5/May/20	Alk-PP	mg/L	1	1	1	1	0	1.00
WB	5/May/20	Alkalinity Total as Ca	mg/L	1	1	29	29	0	1.00
WB	5/May/20	Ba-T	mg/L	0.001	0.001	0.0018	0.0018	0	1.00
WB	5/May/20	B-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
WB	5/May/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
WB	5/May/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WB	5/May/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WB	5/May/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
WB	5/May/20	B-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
WB	5/May/20	Ca-D	mg/L	0.05	0.05	11.8	11.8	0	1.00
WB	5/May/20	Carbonate	mg/L	1	1	1	1	0	1.00
WB	5/May/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
WB	5/May/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
WB	5/May/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
WB	5/May/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
WB	5/May/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WB	5/May/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
WB	5/May/20	Fe-T	mg/L	0.01	0.01	0.028	0.028	0	1.00
WB	5/May/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
WB	5/May/20	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
WB	5/May/20	Hydroxide	mg/L	1	1	1	1	0	1.00
WB	5/May/20	Li-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
WB	5/May/20	Li-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
WB	5/May/20	Mn-D	mg/L	0.001	0.001	0.0035	0.0035	0	1.00
WB	5/May/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WB	5/May/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
WB	5/May/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WB	5/May/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
WB	5/May/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
WB	5/May/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
WB	5/May/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
WB	5/May/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
WB	5/May/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WB	5/May/20	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WB	5/May/20	Si-T	mg/L	0.1	0.1	2.13	2.13	0	1.00
WB	5/May/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
WB	5/May/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
WB	5/May/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
WB	5/May/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
WB	5/May/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
WB	5/May/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
WB	5/May/20	TSS	mg/L	1	1	1	1	0	1.00
WB	5/May/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WB	5/May/20	U-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WB	5/May/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
WB	5/May/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
WB	5/May/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
WB	5/May/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
WB	5/May/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WB	5/May/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WB	21/Jul/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
WB	21/Jul/20	Acidity 8.3	mg/L	1	1	1	1	0	1.00
WB	21/Jul/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
WB	21/Jul/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
WB	21/Jul/20	Alk-PP	mg/L	1	1	1	1	0	1.00
WB	21/Jul/20	Alkalinity Total as Ca	mg/L	1	1	35	35	0	1.00
WB	21/Jul/20	As-D	mg/L	0.0001	0.0001	0.00019	0.00019	0	1.00
WB	21/Jul/20	Ba-D	mg/L	0.001	0.001	0.0016	0.0016	0	1.00
WB	21/Jul/20	B-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
WB	21/Jul/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WB	21/Jul/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WB	21/Jul/20	Bicarbonate	mg/L	1	1	43	43	0	1.00
WB	21/Jul/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WB	21/Jul/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
WB	21/Jul/20	B-T	mg/L	0.05	0.05	0.05	0.05	0	1.00
WB	21/Jul/20	Carbonate	mg/L	1	1	1	1	0	1.00
WB	21/Jul/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
WB	21/Jul/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
WB	21/Jul/20	Cl-D	mg/L	1	1	1	1	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference									
Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
WB	21/Jul/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
WB	21/Jul/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
WB	21/Jul/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WB	21/Jul/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
WB	21/Jul/20	Hard-D	mg/L	0.5	0.5	33.1	33.1	0	1.00
WB	21/Jul/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
WB	21/Jul/20	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
WB	21/Jul/20	Hydroxide	mg/L	1	1	1	1	0	1.00
WB	21/Jul/20	Li-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
WB	21/Jul/20	Li-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
WB	21/Jul/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WB	21/Jul/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
WB	21/Jul/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WB	21/Jul/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
WB	21/Jul/20	N-NO2	mg/L	0.005	0.005	0.005	0.005	0	1.00
WB	21/Jul/20	NO2+NO3	mg/L	0.02	0.02	0.02	0.02	0	1.00
WB	21/Jul/20	N-NO3	mg/L	0.02	0.02	0.02	0.02	0	1.00
WB	21/Jul/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
WB	21/Jul/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
WB	21/Jul/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
WB	21/Jul/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
WB	21/Jul/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WB	21/Jul/20	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WB	21/Jul/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
WB	21/Jul/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
WB	21/Jul/20	S-T	mg/L	3	3	8.5	8.5	0	1.00
WB	21/Jul/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
WB	21/Jul/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
WB	21/Jul/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
WB	21/Jul/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
WB	21/Jul/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WB	21/Jul/20	U-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WB	21/Jul/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
WB	21/Jul/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
WB	21/Jul/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
WB	21/Jul/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
WB	21/Jul/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WB	21/Jul/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WB	6/Oct/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
WB	6/Oct/20	Acidity 8.3	mg/L	1	1	1	1	0	1.00
WB	6/Oct/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
WB	6/Oct/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
WB	6/Oct/20	Alk-PP	mg/L	1	1	1	1	0	1.00
WB	6/Oct/20	B-D	mg/L	0.05	0.05	0.05	0.05	0	1.00
WB	6/Oct/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WB	6/Oct/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WB	6/Oct/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WB	6/Oct/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
WB	6/Oct/20	Carbonate	mg/L	1	1	1	1	0	1.00
WB	6/Oct/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
WB	6/Oct/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
WB	6/Oct/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
WB	6/Oct/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
WB	6/Oct/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WB	6/Oct/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
WB	6/Oct/20	Cu-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
WB	6/Oct/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
WB	6/Oct/20	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
WB	6/Oct/20	Hydroxide	mg/L	1	1	1	1	0	1.00
WB	6/Oct/20	Li-D	mg/L	0.002	0.002	0.002	0.002	0	1.00
WB	6/Oct/20	Li-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
WB	6/Oct/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WB	6/Oct/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
WB	6/Oct/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference									
Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
WB	6/Oct/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
WB	6/Oct/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
WB	6/Oct/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
WB	6/Oct/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
WB	6/Oct/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
WB	6/Oct/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WB	6/Oct/20	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WB	6/Oct/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
WB	6/Oct/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
WB	6/Oct/20	SO4-D	mg/L	1	1	31	31	0	1.00
WB	6/Oct/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
WB	6/Oct/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
WB	6/Oct/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
WB	6/Oct/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
WB	6/Oct/20	TSS	mg/L	1	1	1	1	0	1.00
WB	6/Oct/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WB	6/Oct/20	U-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WB	6/Oct/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
WB	6/Oct/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
WB	6/Oct/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
WB	6/Oct/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
WB	6/Oct/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WB	6/Oct/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WC	7/Apr/20	Acidity 4.5	mg/L	1	1	1	1	0	1.00
WC	7/Apr/20	Acidity 8.3	mg/L	1	1	1	1	0	1.00
WC	7/Apr/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
WC	7/Apr/20	Ag-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
WC	7/Apr/20	B-D	mg/L	0.05	0.05	0.737	0.737	0	1.00
WC	7/Apr/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WC	7/Apr/20	Be-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WC	7/Apr/20	Bicarbonate	mg/L	1	1	390	390	0	1.00
WC	7/Apr/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WC	7/Apr/20	Bi-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
WC	7/Apr/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
WC	7/Apr/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
WC	7/Apr/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
WC	7/Apr/20	Co-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
WC	7/Apr/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WC	7/Apr/20	Cr-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
WC	7/Apr/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
WC	7/Apr/20	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
WC	7/Apr/20	Hydroxide	mg/L	1	1	1	1	0	1.00
WC	7/Apr/20	Mg-T	mg/L	0.05	0.05	16.0	16.0	0	1.00
WC	7/Apr/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WC	7/Apr/20	Mo-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
WC	7/Apr/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WC	7/Apr/20	Ni-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
WC	7/Apr/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
WC	7/Apr/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
WC	7/Apr/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
WC	7/Apr/20	Sb-T	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
WC	7/Apr/20	S-D	mg/L	3	3	230	230	0	1.00
WC	7/Apr/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WC	7/Apr/20	Se-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WC	7/Apr/20	Si-D	mg/L	0.1	0.1	2.51	2.51	0	1.00
WC	7/Apr/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
WC	7/Apr/20	Sn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
WC	7/Apr/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
WC	7/Apr/20	Ti-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
WC	7/Apr/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
WC	7/Apr/20	Tl-T	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
WC	7/Apr/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WC	7/Apr/20	U-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WC	7/Apr/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference									
Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
WC	7/Apr/20	V-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
WC	7/Apr/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
WC	7/Apr/20	Zn-T	mg/L	0.005	0.005	0.005	0.005	0	1.00
WC	7/Apr/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WC	7/Apr/20	Zr-T	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WC	6/Aug/20	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
WC	6/Aug/20	Ag-T	mg/L	0.00004	0.00004	0.00004	0.00004	0	1.00
WC	6/Aug/20	Al-D	mg/L	0.003	0.003	0.003	0.003	0	1.00
WC	6/Aug/20	Al-T	mg/L	0.006	0.006	0.006	0.006	0	1.00
WC	6/Aug/20	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WC	6/Aug/20	Be-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
WC	6/Aug/20	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WC	6/Aug/20	Bi-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
WC	6/Aug/20	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
WC	6/Aug/20	Cd-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
WC	6/Aug/20	Co-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
WC	6/Aug/20	Co-T	mg/L	0.0004	0.0004	0.0004	0.0004	0	1.00
WC	6/Aug/20	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WC	6/Aug/20	Cr-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
WC	6/Aug/20	Cu-D	mg/L	0.0002	0.0002	0.0002	0.00020	0	1.00
WC	6/Aug/20	Cu-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
WC	6/Aug/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
WC	6/Aug/20	Hg-T	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
WC	6/Aug/20	Li-D	mg/L	0.002	0.002	0.0109	0.0109	0	1.00
WC	6/Aug/20	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WC	6/Aug/20	Mo-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
WC	6/Aug/20	Ni-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WC	6/Aug/20	Ni-T	mg/L	0.002	0.002	0.002	0.002	0	1.00
WC	6/Aug/20	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
WC	6/Aug/20	Pb-T	mg/L	0.0004	0.0004	0.0004	0.0004	0	1.00
WC	6/Aug/20	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
WC	6/Aug/20	Sb-T	mg/L	0.001	0.001	0.001	0.001	0	1.00
WC	6/Aug/20	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WC	6/Aug/20	Se-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
WC	6/Aug/20	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
WC	6/Aug/20	Sn-T	mg/L	0.01	0.01	0.01	0.01	0	1.00
WC	6/Aug/20	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
WC	6/Aug/20	Ti-T	mg/L	0.01	0.01	0.01	0.01	0	1.00
WC	6/Aug/20	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
WC	6/Aug/20	Tl-T	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
WC	6/Aug/20	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WC	6/Aug/20	U-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
WC	6/Aug/20	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
WC	6/Aug/20	V-T	mg/L	0.01	0.01	0.01	0.01	0	1.00
WC	6/Aug/20	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
WC	6/Aug/20	Zn-T	mg/L	0.01	0.01	0.01	0.01	0	1.00
WC	6/Aug/20	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WC	6/Aug/20	Zr-T	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00
WC	2/Nov/20	TSS	mg/L	1	1	1	1	0	1.00
WD	4/Jan/21	Acidity 4.5	mg/L	1	1	1	1	0	1.00
WD	4/Jan/21	Acidity 8.3	mg/L	1	1	3.4	3.4	0	1.00
WD	4/Jan/21	Ag-D	mg/L	0.00002	0.00002	0.00002	0.00002	0	1.00
WD	4/Jan/21	Alk-PP	mg/L	1	1	1	1	0	1.00
WD	4/Jan/21	Alkalinity Total as Ca	mg/L	1	1	140	140	0	1.00
WD	4/Jan/21	Be-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WD	4/Jan/21	Bi-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WD	4/Jan/21	Ca-D	mg/L	0.05	0.05	125	125	0	1.00
WD	4/Jan/21	Carbonate	mg/L	1	1	1	1	0	1.00
WD	4/Jan/21	Cd-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
WD	4/Jan/21	Cr-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WD	4/Jan/21	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000019	0	1.00
WD	4/Jan/21	Hydroxide	mg/L	1	1	1	1	0	1.00
WD	4/Jan/21	Mo-D	mg/L	0.001	0.001	0.001	0.001	0	1.00
WD	4/Jan/21	Pb-D	mg/L	0.0002	0.0002	0.0002	0.0002	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
WD	4/Jan/21	Sb-D	mg/L	0.0005	0.0005	0.0005	0.0005	0	1.00
WD	4/Jan/21	Se-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WD	4/Jan/21	Sn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
WD	4/Jan/21	Ti-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
WD	4/Jan/21	Tl-D	mg/L	0.00001	0.00001	0.00001	0.00001	0	1.00
WD	4/Jan/21	U-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
WD	4/Jan/21	V-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
WD	4/Jan/21	Zn-D	mg/L	0.005	0.005	0.005	0.005	0	1.00
WD	4/Jan/21	Zr-D	mg/L	0.0001	0.0001	0.0001	0.0001	0	1.00
IR6	2/Sep/20	Sr-D	mg/L	0.001	0.001	0.0817	0.0816	0	1.00
LLM1	29/Apr/20	Hard-D	mg/L	0.5	0.5	70.8	70.9	0	1.00
LLO	28/Jul/20	Na-D	mg/L	0.05	0.05	6.69	6.70	0	1.00
MQL1	16/Apr/20	Na-D	mg/L	0.05	0.05	9.46	9.45	0	1.00
WD	4/Jan/21	Mn-D	mg/L	0.001	0.001	0.0994	0.0993	0	1.00
2S	1/Mar/21	S-D	mg/L	3	3	93.2	93.4	0	1.00
2SC	2/Jun/20	Na-D	mg/L	0.05	0.05	42.1	42.0	0	1.00
2SC	7/Dec/20	Na-D	mg/L	0.05	0.05	45.6	45.5	0	1.00
7S	4/May/20	Ca-T	mg/L	0.05	0.05	5.90	5.91	0	1.00
7SQR	4/Nov/20	Sr-T	mg/L	0.001	0.001	0.0607	0.0606	0	1.00
LLM1	22/Apr/20	Hard-D	mg/L	0.5	0.5	61.1	61.2	0	1.00
LLM9	5/Aug/20	K-D	mg/L	0.05	0.05	0.491	0.490	0	1.00
LLM9	7/Oct/20	K-T	mg/L	0.05	0.05	0.475	0.476	0	1.00
MQL4	29/Jul/20	Sr-T	mg/L	0.001	0.001	0.0570	0.0571	0	1.00
MW002	10/Dec/20	K-D	mg/L	0.1	0.1	5.23	5.22	0	1.00
QU0813A	27/May/20	Na-D	mg/L	0.05	0.05	40.4	40.3	0	1.00
QU0813A	27/May/20	Sr-D	mg/L	0.001	0.001	0.471	0.472	0	1.00
QU0813A	25/Aug/20	Na-D	mg/L	0.05	0.05	48.4	48.3	0	1.00
QU0821GS	1/Jun/20	Mn-D	mg/L	0.001	0.002	0.0533	0.0532	0	1.00
QU1009D	10/Dec/20	Ca-D	mg/L	0.05	0.05	53.2	53.3	0	1.00
QU1009D	10/Dec/20	Mn-D	mg/L	0.001	0.001	0.0558	0.0557	0	1.00
QU1010S	8/Dec/20	Mg-D	mg/L	0.05	0.05	5.08	5.09	0	1.00
QU1011S	11/Jun/20	Sr-D	mg/L	0.001	0.001	0.421	0.420	0	1.00
QU1105S	17/Dec/20	Ca-D	mg/L	0.05	0.05	50.5	50.6	0	1.00
QU1109M	17/Mar/21	S-T	mg/L	6	6	441	442	0	1.00
7SQR	14/Jul/20	Hardness (as CaCO3	mg/L	0.5	0.5	39.5	39.6	0	1.00
LLM1	22/Apr/20	Si-T	mg/L	0.1	0.1	3.14	3.13	0	1.00
LLM1	29/Apr/20	K-D	mg/L	0.05	0.05	0.293	0.292	0	1.00
LLM1	29/Apr/20	Mg-T	mg/L	0.05	0.05	2.94	2.93	0	1.00
LLM1	15/Jul/20	Na-D	mg/L	0.05	0.05	6.99	7.01	0	1.00
LLM4	28/Oct/20	Mg-T	mg/L	0.05	0.05	3.43	3.44	0	1.00
LLM9	7/Oct/20	Sr-T	mg/L	0.001	0.001	0.314	0.313	0	1.00
LLO	27/Apr/20	Na-D	mg/L	0.05	0.05	7.10	7.08	0	1.00
LLO	28/Jul/20	Hard-D	mg/L	0.5	0.5	68.9	68.7	0	1.00
LLO	28/Jul/20	Mg-T	mg/L	0.05	0.05	3.27	3.26	0	1.00
MQL1	16/Apr/20	Hard-D	mg/L	0.5	0.5	32.2	32.3	0	1.00
MQL1	15/Oct/20	Sr-D	mg/L	0.001	0.001	0.0596	0.0598	0	1.00
MQL4	29/Jul/20	Hardness (as CaCO3	mg/L	0.5	0.5	34.7	34.8	0	1.00
NNL4	12/May/20	Si-T	mg/L	0.1	0.1	3.17	3.16	0	1.00
QU0813A	27/May/20	Si-D	mg/L	0.1	0.1	3.89	3.90	0	1.00
QU0821GS	1/Jun/20	K-D	mg/L	0.05	0.1	3.83	3.82	0	1.00
QU0821GS	13/Aug/20	Si-D	mg/L	0.1	0.2	3.36	3.37	0	1.00
QU0821GS	13/Aug/20	Sr-D	mg/L	0.001	0.002	0.703	0.705	0	1.00
QU1010S	8/Dec/20	Mn-D	mg/L	0.001	0.001	0.0297	0.0296	0	1.00
QU1105S	17/Dec/20	Sr-D	mg/L	0.001	0.001	0.645	0.643	0	1.00
WA	14/Apr/20	Na-T	mg/L	0.05	0.05	0.660	0.658	0	1.00
WC	7/Apr/20	Na-D	mg/L	0.05	0.05	312	311	0	1.00
WD	4/Jan/21	Hard-D	mg/L	0.5	0.5	370	371	0	1.00
1M2N	9/Nov/20	Fe-T	mg/L	0.01	0.01	2.46	2.45	0	1.00
2SC	2/Jun/20	K-D	mg/L	0.05	0.05	2.43	2.44	0	1.00
2SC	2/Jun/20	Si-T	mg/L	0.1	0.1	2.33	2.32	0	1.00
2SC	7/Dec/20	Mg-T	mg/L	0.05	0.05	25.5	25.6	0	1.00
2SC	7/Dec/20	Si-T	mg/L	0.1	0.1	2.38	2.37	0	1.00
7S	4/May/20	Sr-D	mg/L	0.001	0.001	0.0240	0.0241	0	1.00
7SQR	14/Jul/20	K-D	mg/L	0.05	0.05	0.284	0.283	0	1.00

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference									
Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
7SQR	4/Nov/20	Fe-T	mg/L	0.01	0.01	0.228	0.229	0	1.00
IR6	2/Sep/20	K-T	mg/L	0.05	0.05	0.277	0.276	0	1.00
LLM1	29/Apr/20	Ca-D	mg/L	0.05	0.05	23.5	23.6	0	1.00
LLM1	29/Apr/20	Na-D	mg/L	0.05	0.05	7.93	7.90	0	1.00
LLM1	29/Apr/20	Na-T	mg/L	0.05	0.05	8.04	8.01	0	1.00
LLM1	15/Jul/20	Ca-D	mg/L	0.05	0.05	23.7	23.8	0	1.00
LLM1	15/Jul/20	Ca-T	mg/L	0.05	0.05	23.6	23.5	0	1.00
LLM1	15/Jul/20	Fe-D	mg/L	0.005	0.005	0.0527	0.0529	0	1.00
LLM1	15/Jul/20	Hard-D	mg/L	0.5	0.5	71.6	71.9	0	1.00
LLM9	5/Aug/20	Mg-T	mg/L	0.05	0.05	4.98	5.00	0	1.00
LLM9	5/Aug/20	Mn-D	mg/L	0.001	0.001	0.0740	0.0737	0	1.00
LLO	27/Apr/20	Ca-D	mg/L	0.05	0.05	22.7	22.8	0	1.00
LLO	27/Apr/20	Hard-D	mg/L	0.5	0.5	68.1	68.4	0	1.00
LLO	28/Jul/20	Ca-D	mg/L	0.05	0.05	22.8	22.7	0	1.00
MQL1	16/Apr/20	Sr-D	mg/L	0.001	0.001	0.0487	0.0489	0	1.00
MQL1	9/Jul/20	Sr-D	mg/L	0.001	0.001	0.0743	0.0740	0	1.00
MQL1	15/Oct/20	Fe-D	mg/L	0.005	0.005	0.0234	0.0235	0	1.00
MQL1	15/Oct/20	K-T	mg/L	0.05	0.05	0.260	0.259	0	1.00
MQL9	5/Nov/20	K-D	mg/L	0.05	0.05	0.262	0.263	0	1.00
NNL4	12/May/20	Al-T	mg/L	0.003	0.003	0.0256	0.0257	0	1.00
NNO	20/Apr/20	Al-D	mg/L	0.003	0.003	0.0224	0.0223	0	1.00
NNO	4/Aug/20	Ca-D	mg/L	0.05	0.05	5.16	5.14	0	1.00
QU0813A	27/May/20	Mn-D	mg/L	0.001	0.001	0.0508	0.0506	0	1.00
QU1011S	11/Jun/20	Na-D	mg/L	0.05	0.05	24.0	24.1	0	1.00
QU1109M	27/Aug/20	Mg-D	mg/L	0.05	0.05	9.88	9.84	0	1.00
QU1109M	17/Mar/21	Li-D	mg/L	0.004	0.004	0.0233	0.0234	0	1.00
QU1109M	17/Mar/21	Mg-D	mg/L	0.1	0.1	26.7	26.8	0	1.00
WC	7/Apr/20	S-T	mg/L	3	3	243	242	0	1.00
WC	6/Aug/20	K-D	mg/L	0.05	0.05	4.80	4.82	0	1.00
2S	1/Mar/21	Sr-T	mg/L	0.001	0.001	0.808	0.804	1	1.00
2SC	2/Jun/20	Ca-T	mg/L	0.05	0.05	210	209	1	1.00
2SC	5/Oct/20	S-D	mg/L	3	3	207	206	1	1.00
2SC	7/Dec/20	K-T	mg/L	0.05	0.05	2.18	2.17	1	1.00
2SC	7/Dec/20	S-T	mg/L	3	3	205	204	1	1.00
7S	4/May/20	Si-D	mg/L	0.1	0.1	4.34	4.36	1	1.00
7SQR	14/Jul/20	Al-T	mg/L	0.003	0.003	0.0217	0.0216	1	1.00
7SQR	14/Jul/20	Si-D	mg/L	0.1	0.1	2.08	2.07	1	1.00
IR6	2/Sep/20	As-T	mg/L	0.0001	0.0001	0.00428	0.00430	1	1.00
IR6	2/Sep/20	Hard-D	mg/L	0.5	0.5	66.0	65.7	1	1.00
LLM1	29/Apr/20	S-D	mg/L	3	3	19.4	19.5	1	0.99
LLM9	5/Aug/20	S-T	mg/L	3	3	41.8	42.0	1	1.00
NNL4	12/May/20	Ca-D	mg/L	0.05	0.05	4.17	4.15	1	1.00
QU0813A	27/May/20	K-D	mg/L	0.05	0.05	2.15	2.14	1	1.00
QU1011S	11/Jun/20	K-D	mg/L	0.05	0.05	1.91	1.90	1	1.01
QU1109M	27/Aug/20	S-D	mg/L	3	3	190	191	1	0.99
QU1109M	17/Mar/21	Mn-T	mg/L	0.002	0.002	1.83	1.82	1	1.01
WA	14/Apr/20	Mg-T	mg/L	0.05	0.05	0.754	0.758	1	0.99
WA	14/Apr/20	Na-D	mg/L	0.05	0.05	0.611	0.614	1	1.00
WB	5/May/20	Fe-D	mg/L	0.005	0.005	0.0204	0.0203	1	1.00
WB	5/May/20	K-D	mg/L	0.05	0.05	0.209	0.208	1	1.00
WC	7/Apr/20	Ba-D	mg/L	0.001	0.001	0.0191	0.0192	1	0.99
WC	7/Apr/20	Ba-T	mg/L	0.001	0.001	0.0202	0.0203	1	1.00
WC	7/Apr/20	K-D	mg/L	0.05	0.05	4.13	4.15	1	1.00
WC	7/Apr/20	K-T	mg/L	0.05	0.05	4.35	4.33	1	1.00
WC	7/Apr/20	Mn-T	mg/L	0.001	0.001	0.0212	0.0213	1	1.00
WC	6/Aug/20	Fe-D	mg/L	0.005	0.005	0.0182	0.0183	1	0.99
WD	4/Jan/21	Na-D	mg/L	0.05	0.05	88.3	88.7	1	1.00
1M2N	9/Nov/20	Sr-T	mg/L	0.001	0.001	0.906	0.901	1	1.01
2SC	2/Jun/20	Hardness (as CaCO3	mg/L	0.5	0.5	625	621	1	1.01
2SC	2/Jun/20	S-D	mg/L	3	3	159	158	1	1.01
2SC	2/Jun/20	S-T	mg/L	3	3	158	157	1	1.01
7SQR	14/Jul/20	Mg-D	mg/L	0.05	0.05	1.67	1.68	1	0.99
7SQR	14/Jul/20	Mg-T	mg/L	0.05	0.05	1.76	1.75	1	1.01
7SQR	4/Nov/20	Mg-D	mg/L	0.05	0.05	1.73	1.72	1	1.01

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
7SQR	4/Nov/20	Si-T	mg/L	0.1	0.1	3.09	3.07	1	1.01
IR6	2/Sep/20	Hardness (as CaCO3	mg/L	0.5	0.5	67.6	68.0	1	0.99
IR6	2/Sep/20	Mg-D	mg/L	0.05	0.05	1.70	1.69	1	1.01
LLM1	29/Apr/20	Sr-D	mg/L	0.001	0.001	0.172	0.173	1	0.99
LLM4	28/Oct/20	Sr-D	mg/L	0.001	0.001	0.171	0.170	1	1.01
LLM4	28/Oct/20	Sr-T	mg/L	0.001	0.001	0.175	0.176	1	0.99
LLM9	5/Aug/20	K-T	mg/L	0.05	0.05	0.531	0.534	1	0.99
LLM9	5/Aug/20	Mg-D	mg/L	0.05	0.05	5.12	5.15	1	0.99
LLM9	7/Oct/20	Si-T	mg/L	0.1	0.1	3.31	3.29	1	1.01
MQL1	16/Apr/20	Fe-D	mg/L	0.005	0.005	0.0169	0.0170	1	0.99
MQL1	9/Jul/20	Al-T	mg/L	0.003	0.003	0.0158	0.0159	1	0.99
MQL1	9/Jul/20	Hard-D	mg/L	0.5	0.5	36.2	36.4	1	0.99
MQL1	15/Oct/20	Na-T	mg/L	0.05	0.05	15.8	15.7	1	1.01
MQL9	5/Nov/20	Na-T	mg/L	0.05	0.05	16.4	16.3	1	1.01
NNO	4/Aug/20	Hard-D	mg/L	0.5	0.5	17.6	17.5	1	1.01
NNO	22/Oct/20	Hardness (as CaCO3	mg/L	0.5	0.5	16.8	16.9	1	0.99
QU0813A	27/May/20	Mg-D	mg/L	0.05	0.05	8.34	8.39	1	0.99
QU0821GS	1/Jun/20	Hard-D	mg/L	0.5	0.5	52.8	53.1	1	0.99
QU0821GS	13/Aug/20	Ba-D	mg/L	0.001	0.002	0.619	0.623	1	0.99
QU1009D	10/Dec/20	Hard-D	mg/L	0.5	0.5	176	177	1	0.99
QU1010S	8/Dec/20	Hard-D	mg/L	0.5	0.5	77.3	76.8	1	1.01
QU1010S	8/Dec/20	K-D	mg/L	0.05	0.05	3.26	3.24	1	1.01
QU1011S	11/Jun/20	Si-D	mg/L	0.1	0.1	3.58	3.56	1	1.01
QU1101	28/Jan/21	Fe-D	mg/L	0.025	0.025	175	176	1	0.99
QU1105S	17/Dec/20	Hard-D	mg/L	0.5	0.5	171	170	1	1.01
QU1109M	27/Aug/20	Ba-D	mg/L	0.001	0.001	0.0182	0.0181	1	1.01
WB	5/May/20	Hard-D	mg/L	0.5	0.5	35.4	35.6	1	0.99
WB	21/Jul/20	Al-T	mg/L	0.003	0.003	0.0159	0.0160	1	0.99
WC	7/Apr/20	Mg-D	mg/L	0.05	0.05	15.5	15.4	1	1.01
WC	7/Apr/20	Na-T	mg/L	0.05	0.05	316	318	1	0.99
242MW	22/Sep/20	Ba-D	mg/L	0.001	0.001	0.0671	0.0676	1	0.99
2S	1/Mar/21	Si-T	mg/L	0.1	0.1	1.42	1.41	1	1.01
2SC	2/Jun/20	Ba-T	mg/L	0.001	0.001	0.0142	0.0143	1	0.99
2SC	5/Oct/20	Si-T	mg/L	0.1	0.1	2.71	2.69	1	1.01
2SC	7/Dec/20	Ba-D	mg/L	0.001	0.001	0.0148	0.0149	1	0.99
7S	4/May/20	Al-D	mg/L	0.003	0.003	0.0149	0.0150	1	0.99
7SQR	11/May/20	Mg-T	mg/L	0.05	0.05	1.47	1.48	1	0.99
IR6	2/Sep/20	As-D	mg/L	0.0001	0.0001	0.00411	0.00408	1	1.01
IR6	2/Sep/20	Si-D	mg/L	0.1	0.1	2.75	2.73	1	1.01
LLM1	29/Apr/20	Mg-D	mg/L	0.05	0.05	2.92	2.90	1	1.01
LLM1	22/Jul/20	Si-D	mg/L	0.1	0.1	2.92	2.94	1	0.99
LLM9	7/Oct/20	Na-T	mg/L	0.05	0.05	15.4	15.3	1	1.01
LLO	27/Apr/20	K-D	mg/L	0.05	0.05	0.272	0.274	1	0.99
MQL9	5/Nov/20	Mg-D	mg/L	0.05	0.05	1.53	1.52	1	1.01
MW002	10/Dec/20	Ba-D	mg/L	0.002	0.002	0.0143	0.0144	1	0.99
MW002	10/Dec/20	Co-D	mg/L	0.0004	0.0004	0.00301	0.00303	1	0.99
MW002	10/Dec/20	S-D	mg/L	6	6	423	420	1	1.01
NNL4	12/May/20	Hard-D	mg/L	0.5	0.5	14.1	14.0	1	1.01
NNO	20/Apr/20	Sr-T	mg/L	0.001	0.001	0.0134	0.0133	1	1.01
NNO	4/Aug/20	Fe-T	mg/L	0.01	0.01	0.151	0.152	1	0.99
QU1011S	11/Jun/20	B-D	mg/L	0.05	0.05	0.301	0.299	1	1.01
QU1101	28/Jan/21	Na-D	mg/L	0.25	0.25	137	138	1	0.99
QU1109M	17/Mar/21	S-D	mg/L	6	6	422	419	1	1.01
WB	5/May/20	Mg-D	mg/L	0.05	0.05	1.48	1.47	1	1.01
WB	21/Jul/20	Sr-D	mg/L	0.001	0.001	0.0568	0.0572	1	0.99
WC	7/Apr/20	Sr-T	mg/L	0.001	0.001	1.37	1.36	1	1.01
WC	6/Aug/20	Sr-D	mg/L	0.001	0.001	1.43	1.42	1	1.01
WD	4/Jan/21	S-D	mg/L	3	3	143	144	1	0.99
1M2N	9/Nov/20	Ca-D	mg/L	0.05	0.1	75.4	74.8	1	1.01
1M2N	9/Nov/20	Ca-T	mg/L	0.05	0.05	80.2	79.6	1	1.01
1M2N	9/Nov/20	Si-T	mg/L	0.1	0.1	3.78	3.81	1	0.99
242MW	22/Sep/20	As-D	mg/L	0.0001	0.0001	0.0791	0.0797	1	0.99
242MW	22/Sep/20	Hard-D	mg/L	0.5	0.5	125	124	1	1.01
2S	1/Mar/21	Ba-D	mg/L	0.001	0.001	0.0129	0.0128	1	1.01

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
2S	1/Mar/21	K-D	mg/L	0.05	0.05	1.20	1.21	1	0.99
2S	1/Mar/21	Na-D	mg/L	0.05	0.05	38.6	38.3	1	1.01
7S	4/May/20	Mg-T	mg/L	0.05	0.05	1.32	1.33	1	0.99
7S	4/May/20	Si-T	mg/L	0.1	0.1	4.79	4.83	1	0.99
7SQR	14/Jul/20	Ca-D	mg/L	0.05	0.05	13.1	13.0	1	1.01
7SQR	14/Jul/20	Ca-T	mg/L	0.05	0.05	12.9	13.0	1	0.99
7SQR	14/Jul/20	Hard-D	mg/L	0.5	0.5	39.7	39.4	1	1.01
7SQR	14/Jul/20	S-D	mg/L	3	3	11.9	12.0	1	0.99
7SQR	4/Nov/20	K-T	mg/L	0.05	0.05	0.362	0.359	1	1.01
IR6	2/Sep/20	Al-D	mg/L	0.003	0.003	0.0130	0.0131	1	0.99
IR6	2/Sep/20	Ca-D	mg/L	0.05	0.05	23.7	23.5	1	1.01
IR6	2/Sep/20	Ca-T	mg/L	0.05	0.05	24.1	24.3	1	0.99
LLM1	22/Apr/20	Mg-D	mg/L	0.05	0.05	2.58	2.60	1	0.99
LLM1	15/Jul/20	Hardness (as CaCO3	mg/L	0.5	0.5	72.2	71.6	1	1.01
LLM4	28/Oct/20	Ca-T	mg/L	0.05	0.05	25.9	26.1	1	0.99
LLM4	28/Oct/20	Hardness (as CaCO3	mg/L	0.5	0.5	78.7	79.3	1	0.99
LLM9	7/Oct/20	Mn-T	mg/L	0.001	0.001	0.0515	0.0519	1	0.99
MQL1	9/Jul/20	Ca-D	mg/L	0.05	0.05	12.0	12.1	1	0.99
MQL9	5/Nov/20	Fe-D	mg/L	0.005	0.005	0.0264	0.0266	1	0.99
MW002	10/Dec/20	Na-D	mg/L	0.1	0.1	65.7	65.2	1	1.01
MW006D	14/Dec/20	Mg-D	mg/L	0.05	0.05	0.525	0.521	1	1.01
QU0813A	27/May/20	Li-D	mg/L	0.002	0.002	0.0473	0.0469	1	1.01
QU0813A	25/Aug/20	Hard-D	mg/L	0.5	0.5	120	121	1	0.99
QU0813A	25/Aug/20	S-D	mg/L	3	3	11.9	12.0	1	0.99
QU0821GS	1/Jun/20	Si-D	mg/L	0.1	0.2	3.56	3.59	1	0.99
QU1009D	10/Dec/20	S-D	mg/L	3	3	24.3	24.1	1	1.01
QU1101	28/Jan/21	K-D	mg/L	0.25	0.25	6.38	6.33	1	1.01
QU1109M	27/Aug/20	K-D	mg/L	0.05	0.05	5.30	5.26	1	1.01
WA	8/Jul/20	Al-T	mg/L	0.003	0.003	0.0238	0.0236	1	1.01
WB	5/May/20	Ca-T	mg/L	0.05	0.05	12.1	12.2	1	0.99
WB	5/May/20	Hardness (as CaCO3	mg/L	0.5	0.5	36.0	36.3	1	0.99
WB	21/Jul/20	Na-D	mg/L	0.05	0.05	12.0	11.9	1	1.01
WC	6/Aug/20	S-D	mg/L	3	3	238	240	1	0.99
1M2N	9/Nov/20	Fe-D	mg/L	0.005	0.01	2.29	2.27	1	1.01
1M2N	9/Nov/20	Hard-D	mg/L	0.5	0.5	219	217	1	1.01
1M2N	9/Nov/20	Hardness (as CaCO3	mg/L	0.5	0.5	233	231	1	1.01
242MW	22/Sep/20	Mg-D	mg/L	0.05	0.05	3.47	3.50	1	0.99
2S	1/Mar/21	B-D	mg/L	0.05	0.05	0.233	0.235	1	0.99
2SC	5/Oct/20	B-T	mg/L	0.05	0.05	0.442	0.438	1	1.01
2SC	7/Dec/20	Ca-T	mg/L	0.05	0.05	220	222	1	0.99
2SC	7/Dec/20	Hardness (as CaCO3	mg/L	0.5	0.5	654	660	1	0.99
2SC	7/Dec/20	Li-T	mg/L	0.002	0.002	0.0113	0.0112	1	1.01
7SQR	11/May/20	Ca-D	mg/L	0.05	0.05	11.6	11.5	1	1.01
7SQR	4/Nov/20	Na-T	mg/L	0.05	0.05	10.6	10.5	1	1.01
LLM1	22/Jul/20	Ca-D	mg/L	0.05	0.05	23.2	23.0	1	1.01
LLM4	28/Oct/20	Mg-D	mg/L	0.05	0.05	3.46	3.49	1	0.99
LLM9	5/Aug/20	B-D	mg/L	0.05	0.05	0.106	0.105	1	1.01
LLO	28/Jul/20	Fe-D	mg/L	0.005	0.005	0.0328	0.0325	1	1.01
MQL1	15/Oct/20	Ca-D	mg/L	0.05	0.05	10.7	10.8	1	0.99
MQL1	15/Oct/20	Hard-D	mg/L	0.5	0.5	32.6	32.9	1	0.99
MQL4	29/Jul/20	K-T	mg/L	0.05	0.05	0.223	0.221	1	1.01
MQL9	5/Nov/20	Hard-D	mg/L	0.5	0.5	34.6	34.9	1	0.99
MQL9	5/Nov/20	Hardness (as CaCO3	mg/L	0.5	0.5	35.3	35.0	1	1.01
MQL9	5/Nov/20	Si-D	mg/L	0.1	0.1	2.11	2.13	1	0.99
MW002	10/Dec/20	Acidity 8.3	mg/L	1	1	21.1	21.3	1	0.99
MW002	10/Dec/20	Li-D	mg/L	0.004	0.004	0.0110	0.0111	1	0.99
NNL4	12/May/20	Na-T	mg/L	0.05	0.05	1.12	1.11	1	1.01
NNO	20/Apr/20	Na-T	mg/L	0.05	0.05	1.09	1.10	1	0.99
NNO	20/Apr/20	Si-D	mg/L	0.1	0.1	3.20	3.23	1	0.99
NNO	20/Apr/20	Si-T	mg/L	0.1	0.1	3.18	3.21	1	0.99
QU0813A	27/May/20	Ba-D	mg/L	0.001	0.001	0.236	0.234	1	1.01
QU0821GD	10/Nov/20	Hard-D	mg/L	0.5	0.5	424	428	1	0.99
QU0821GS	13/Aug/20	Hard-D	mg/L	0.5	0.5	93.4	92.6	1	1.01
QU1009D	10/Dec/20	Ba-D	mg/L	0.001	0.001	0.113	0.112	1	1.01

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
QU1009D	10/Dec/20	Mg-D	mg/L	0.05	0.05	10.5	10.6	1	0.99
QU1009D	10/Dec/20	Sr-D	mg/L	0.001	0.001	0.877	0.869	1	1.01
QU1010S	8/Dec/20	Ca-D	mg/L	0.05	0.05	22.6	22.4	1	1.01
QU1010S	8/Dec/20	Li-D	mg/L	0.002	0.002	0.0437	0.0433	1	1.01
QU1010S	8/Dec/20	Na-D	mg/L	0.05	0.05	34.8	34.5	1	1.01
QU1010S	8/Dec/20	Si-D	mg/L	0.1	0.1	4.34	4.30	1	1.01
QU1105S	17/Dec/20	Li-D	mg/L	0.002	0.002	0.0571	0.0566	1	1.01
QU1105S	17/Dec/20	Mg-D	mg/L	0.05	0.05	10.8	10.7	1	1.01
WA	14/Apr/20	Ca-T	mg/L	0.05	0.05	6.83	6.77	1	1.01
WA	14/Apr/20	Sr-D	mg/L	0.001	0.001	0.0110	0.0109	1	1.01
WB	21/Jul/20	Ca-D	mg/L	0.05	0.05	10.9	11.0	1	0.99
WC	7/Apr/20	B-T	mg/L	0.05	0.05	0.787	0.780	1	1.01
242MW	22/Sep/20	K-D	mg/L	0.05	0.05	0.511	0.516	1	0.99
242MW	22/Sep/20	Sr-D	mg/L	0.001	0.001	0.0730	0.0737	1	0.99
2S	1/Mar/21	Ca-D	mg/L	0.05	0.05	101	102	1	0.99
2S	1/Mar/21	Hard-D	mg/L	0.5	0.5	296	299	1	0.99
IR6	2/Sep/20	Ba-T	mg/L	0.001	0.001	0.0104	0.0105	1	0.99
LLM1	22/Apr/20	Ca-T	mg/L	0.05	0.05	20.5	20.3	1	1.01
LLM1	22/Apr/20	Hardness (as CaCO3	mg/L	0.5	0.5	62.3	61.7	1	1.01
LLM1	22/Apr/20	Si-D	mg/L	0.1	0.1	3.03	3.06	1	0.99
LLM1	15/Jul/20	Al-T	mg/L	0.003	0.003	0.0100	0.0101	1	0.99
LLM9	5/Aug/20	S-D	mg/L	3	3	39.6	40.0	1	0.99
LLM9	7/Oct/20	B-T	mg/L	0.05	0.05	0.102	0.101	1	1.01
LLO	27/Apr/20	Si-D	mg/L	0.1	0.1	3.04	3.01	1	1.01
LLO	28/Jul/20	Mg-D	mg/L	0.05	0.05	2.94	2.91	1	1.01
MQL1	15/Oct/20	S-D	mg/L	3	3	9.6	9.7	1	0.99
MQL4	29/Jul/20	S-D	mg/L	3	3	9.7	9.6	1	1.01
MQL9	5/Nov/20	S-T	mg/L	3	3	10.5	10.4	1	1.01
NNO	22/Oct/20	Ca-D	mg/L	0.05	0.05	5.08	5.13	1	0.99
QU1011S	11/Jun/20	Fe-D	mg/L	0.005	0.005	1.04	1.03	1	1.01
QU1105S	17/Dec/20	As-D	mg/L	0.0001	0.0001	0.0708	0.0701	1	1.01
QU1109M	27/Aug/20	As-D	mg/L	0.0001	0.0001	0.00314	0.00311	1	1.01
QU1109M	17/Mar/21	Ba-T	mg/L	0.002	0.002	0.0204	0.0202	1	1.01
WA	14/Apr/20	Hardness (as CaCO3	mg/L	0.5	0.5	20.2	20.0	1	1.01
WA	14/Apr/20	Si-T	mg/L	0.1	0.1	2.07	2.05	1	1.01
WA	8/Jul/20	Hardness (as CaCO3	mg/L	0.5	0.5	19.6	19.8	1	0.99
WA	8/Jul/20	Si-T	mg/L	0.1	0.1	1.90	1.92	1	0.99
WA	14/Oct/20	Ca-D	mg/L	0.05	0.05	5.78	5.84	1	0.99
WA	14/Oct/20	Ca-T	mg/L	0.05	0.05	6.19	6.13	1	1.01
WB	5/May/20	Na-D	mg/L	0.05	0.05	10.1	10.2	1	0.99
WB	5/May/20	Si-D	mg/L	0.1	0.1	2.00	1.98	1	1.01
WB	21/Jul/20	K-D	mg/L	0.05	0.05	0.205	0.203	1	1.01
WC	7/Apr/20	Hard-D	mg/L	0.5	0.5	381	385	1	0.99
WC	7/Apr/20	Mn-D	mg/L	0.001	0.001	0.0196	0.0198	1	0.99
242MW	22/Sep/20	Na-D	mg/L	0.05	0.05	2.68	2.71	1	0.99
242MW	22/Sep/20	Si-D	mg/L	0.1	0.1	3.75	3.71	1	1.01
2SC	2/Jun/20	Li-D	mg/L	0.002	0.002	0.0089	0.0088	1	1.01
2SC	7/Dec/20	Mn-D	mg/L	0.001	0.001	0.0178	0.0176	1	1.01
2SC	7/Dec/20	Na-T	mg/L	0.05	0.05	46.2	46.7	1	0.99
7SQR	4/Nov/20	Mg-T	mg/L	0.05	0.05	1.76	1.74	1	1.01
LLM4	28/Oct/20	Fe-D	mg/L	0.005	0.005	0.0364	0.0360	1	1.01
LLM9	5/Aug/20	Si-T	mg/L	0.1	0.1	3.82	3.78	1	1.01
LLO	28/Jul/20	S-T	mg/L	3	3	19.0	18.8	1	1.01
LLO	29/Oct/20	Na-T	mg/L	0.05	0.05	6.98	7.06	1	0.99
MQL1	9/Jul/20	Na-T	mg/L	0.05	0.05	18.0	17.8	1	1.01
MQL1	9/Jul/20	Si-D	mg/L	0.1	0.1	1.88	1.90	1	0.99
MQL1	9/Jul/20	Sr-T	mg/L	0.001	0.001	0.0741	0.0733	1	1.01
MQL1	15/Oct/20	Si-D	mg/L	0.1	0.1	1.75	1.77	1	0.99
MW006D	14/Dec/20	Bicarbonate	mg/L	1	1	95	94	1	1.01
NNO	20/Apr/20	Fe-D	mg/L	0.005	0.005	0.0373	0.0377	1	0.99
QU0813A	25/Aug/20	Li-D	mg/L	0.002	0.002	0.0476	0.0471	1	1.01
QU0813A	25/Aug/20	Mn-D	mg/L	0.001	0.001	0.0351	0.0347	1	1.01
QU0821GD	10/Nov/20	Fluoride	mg/L	0.05	0.05	0.92	0.93	1	0.99
QU0821GD	10/Nov/20	Mg-D	mg/L	0.25	0.25	18.2	18.0	1	1.01

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
QU0821GS	9/Feb/21	B-D	mg/L	0.05	0.05	1.85	1.87	1	0.99
QU1109M	17/Mar/21	Fluoride	mg/L	0.05	0.05	0.093	0.094	1	0.99
QU1109M	17/Mar/21	K-T	mg/L	0.1	0.1	6.95	7.03	1	0.99
WA	8/Jul/20	Na-T	mg/L	0.05	0.05	0.621	0.628	1	0.99
WA	14/Oct/20	Hard-D	mg/L	0.5	0.5	17.5	17.7	1	0.99
WA	14/Oct/20	Mg-D	mg/L	0.05	0.05	0.750	0.742	1	1.01
WB	5/May/20	Sr-D	mg/L	0.001	0.001	0.0619	0.0626	1	0.99
WB	5/May/20	Sr-T	mg/L	0.001	0.001	0.0643	0.0650	1	0.99
WB	21/Jul/20	Si-D	mg/L	0.1	0.1	1.83	1.85	1	0.99
1M2N	9/Nov/20	Sr-D	mg/L	0.001	0.002	0.839	0.829	1	1.01
2SC	2/Jun/20	Mn-T	mg/L	0.001	0.001	0.0084	0.0083	1	1.01
2SC	2/Jun/20	Na-T	mg/L	0.05	0.05	43.2	42.7	1	1.01
2SC	5/Oct/20	Ca-T	mg/L	0.05	0.05	260	257	1	1.01
2SC	5/Oct/20	Hardness (as CaCO3	mg/L	0.5	0.5	764	755	1	1.01
2SC	5/Oct/20	Si-D	mg/L	0.1	0.1	2.56	2.53	1	1.01
2SC	7/Dec/20	Mg-D	mg/L	0.05	0.05	24.9	25.2	1	0.99
7SQR	11/May/20	S-D	mg/L	3	3	8.7	8.6	1	1.01
7SQR	14/Jul/20	Na-D	mg/L	0.05	0.05	16.3	16.5	1	0.99
7SQR	14/Jul/20	Sr-T	mg/L	0.001	0.001	0.0753	0.0762	1	0.99
IR6	2/Sep/20	SO4-D	mg/L	1	1	8.6	8.7	1	0.99
LLM1	15/Jul/20	K-D	mg/L	0.05	0.05	0.254	0.251	1	1.01
LLM1	15/Jul/20	Sr-D	mg/L	0.001	0.001	0.161	0.159	1	1.01
LLM1	22/Jul/20	K-D	mg/L	0.05	0.05	0.253	0.256	1	0.99
LLM9	5/Aug/20	Ca-T	mg/L	0.05	0.05	47.8	48.4	1	0.99
LLO	27/Apr/20	Mn-D	mg/L	0.001	0.001	0.0081	0.0080	1	1.01
LLO	27/Apr/20	Sr-D	mg/L	0.001	0.001	0.173	0.171	1	1.01
MQL1	15/Oct/20	Si-T	mg/L	0.1	0.1	1.66	1.68	1	0.99
MQL9	5/Nov/20	Mn-T	mg/L	0.001	0.001	0.0082	0.0081	1	1.01
MW002	10/Dec/20	Fe-D	mg/L	0.01	0.01	4.22	4.17	1	1.01
NNL4	12/May/20	Ca-T	mg/L	0.05	0.05	4.21	4.16	1	1.01
NNO	20/Apr/20	Ca-D	mg/L	0.05	0.05	4.00	4.05	1	0.99
NNO	22/Oct/20	Ca-T	mg/L	0.05	0.05	4.90	4.96	1	0.99
NNO	22/Oct/20	Sr-T	mg/L	0.001	0.001	0.0163	0.0165	1	0.99
QU0821GS	9/Feb/21	Li-D	mg/L	0.002	0.002	0.0691	0.0699	1	0.99
QU1010S	4/Jun/20	Ca-D	mg/L	0.05	0.05	24.5	24.8	1	0.99
QU1109M	27/Aug/20	Li-D	mg/L	0.002	0.002	0.0081	0.0082	1	0.99
QU1109M	17/Mar/21	Ni-T	mg/L	0.002	0.002	0.0086	0.0087	1	0.99
SPD	20/May/20	Alkalinity Total as Ca	mg/L	1	1	87	86	1	1.01
WB	5/May/20	S-D	mg/L	3	3	8.7	8.6	1	1.01
WB	6/Oct/20	Si-D	mg/L	0.1	0.1	1.70	1.68	1	1.01
2S	1/Mar/21	Mn-D	mg/L	0.001	0.001	0.0153	0.0155	1	0.99
2SC	2/Jun/20	K-T	mg/L	0.05	0.05	2.34	2.31	1	1.01
2SC	2/Jun/20	Mn-D	mg/L	0.001	0.001	0.0075	0.0076	1	0.99
2SC	5/Oct/20	Sr-D	mg/L	0.001	0.001	1.52	1.54	1	0.99
7SQR	11/May/20	Mg-D	mg/L	0.05	0.05	1.52	1.50	1	1.01
IR6	2/Sep/20	Sr-T	mg/L	0.001	0.001	0.0838	0.0849	1	0.99
LLM1	22/Jul/20	Hard-D	mg/L	0.5	0.5	70.5	69.6	1	1.01
LLM9	5/Aug/20	Ca-D	mg/L	0.05	0.05	45.9	45.3	1	1.01
LLM9	7/Oct/20	S-T	mg/L	3	3	37.7	37.2	1	1.01
MQL1	9/Jul/20	Fe-D	mg/L	0.005	0.005	0.0227	0.0224	1	1.01
MQL1	9/Jul/20	Mg-D	mg/L	0.05	0.05	1.52	1.54	1	0.99
MW006D	14/Dec/20	Alkalinity Total as Ca	mg/L	1	1	78	77	1	1.01
MW006D	14/Dec/20	Mn-D	mg/L	0.001	0.001	0.0153	0.0151	1	1.01
NNO	4/Aug/20	Mn-D	mg/L	0.001	0.001	0.0075	0.0074	1	1.01
QU0813A	25/Aug/20	Si-D	mg/L	0.1	0.1	3.92	3.97	1	0.99
QU0821GS	9/Feb/21	Bromide	mg/L	0.01	0.01	0.077	0.076	1	1.01
QU1105S	17/Dec/20	Fe-D	mg/L	0.005	0.005	1.48	1.50	1	0.99
QU1109M	17/Mar/21	Ca-T	mg/L	0.1	0.1	231	234	1	0.99
QU1109M	17/Mar/21	N-T	mg/L	0.02	0.02	0.315	0.319	1	0.99
QU1410	30/Jul/20	Ca-D	mg/L	0.5	0.5	533	540	1	0.99
QU1410	30/Jul/20	Na-D	mg/L	0.5	0.5	54.2	54.9	1	0.99
WA	8/Jul/20	Mg-D	mg/L	0.05	0.05	0.746	0.736	1	1.01
WC	6/Aug/20	Mn-D	mg/L	0.001	0.001	0.0155	0.0157	1	0.99
2S	1/Mar/21	Si-D	mg/L	0.1	0.1	1.42	1.44	1	0.99

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
2SC	2/Jun/20	Ba-D	mg/L	0.001	0.001	0.0149	0.0147	1	1.01
7SQR	11/May/20	Hard-D	mg/L	0.5	0.5	35.3	34.8	1	1.01
7SQR	14/Jul/20	Si-T	mg/L	0.1	0.1	2.15	2.12	1	1.01
LLM1	29/Apr/20	Si-D	mg/L	0.1	0.1	2.88	2.92	1	0.99
LLM9	5/Aug/20	Ba-T	mg/L	0.001	0.001	0.0073	0.0072	1	1.01
LLM9	5/Aug/20	Hardness (as CaCO3	mg/L	0.5	0.5	140	142	1	0.99
LLM9	5/Aug/20	Sr-D	mg/L	0.001	0.001	0.345	0.350	1	0.99
LLM9	7/Oct/20	Ba-T	mg/L	0.001	0.001	0.0069	0.0070	1	0.99
LLO	28/Jul/20	Sr-D	mg/L	0.001	0.001	0.145	0.147	1	0.99
LLO	29/Oct/20	K-T	mg/L	0.05	0.05	0.284	0.288	1	0.99
MQL1	16/Apr/20	Na-T	mg/L	0.05	0.05	9.77	9.91	1	0.99
MQL1	15/Oct/20	Mg-T	mg/L	0.05	0.05	1.46	1.48	1	0.99
MQL1	15/Oct/20	Sr-T	mg/L	0.001	0.001	0.0584	0.0592	1	0.99
MQL4	29/Jul/20	Al-D	mg/L	0.003	0.003	0.0143	0.0141	1	1.01
MQL4	29/Jul/20	Al-T	mg/L	0.003	0.003	0.0138	0.0140	1	0.99
MQL4	29/Jul/20	Mg-D	mg/L	0.05	0.05	1.46	1.44	1	1.01
MQL4	29/Jul/20	Na-T	mg/L	0.05	0.05	14.0	13.8	1	1.01
NNL4	12/May/20	Hardness (as CaCO3	mg/L	0.5	0.5	14.1	13.9	1	1.01
NNL4	12/May/20	Sr-T	mg/L	0.001	0.001	0.0139	0.0137	1	1.01
NNO	22/Oct/20	Si-D	mg/L	0.1	0.1	2.90	2.94	1	0.99
QU0821GD	10/Nov/20	Ca-D	mg/L	0.25	0.25	140	142	1	0.99
QU0821GS	13/Aug/20	Mg-D	mg/L	0.05	0.1	5.70	5.78	1	0.99
QU1009D	10/Dec/20	Turb	NTU	0.1	0.1	6.9	7.0	1	0.99
QU1010S	4/Jun/20	Ba-D	mg/L	0.001	0.001	0.354	0.349	1	1.01
QU1010S	4/Jun/20	Si-D	mg/L	0.1	0.1	4.22	4.16	1	1.01
QU1101	28/Jan/21	Alkalinity Total as Ca	mg/L	1	1	74	73	1	1.01
QU1101	28/Jan/21	Mg-D	mg/L	0.25	0.25	55.8	56.6	1	0.99
QU1101	28/Jan/21	S-D	mg/L	15	15	501	508	1	0.99
QU1410	30/Jul/20	Hard-D	mg/L	0.5	0.5	2070	2100	1	0.99
WA	14/Apr/20	Fe-D	mg/L	0.005	0.005	0.0070	0.0069	1	1.01
WC	6/Aug/20	As-T	mg/L	0.0002	0.0002	0.00071	0.00072	1	0.99
WD	18/Aug/20	SO4-D	mg/L	10	10	710	700	1	1.01
WD	4/Jan/21	Si-D	mg/L	0.1	0.1	2.84	2.80	1	1.01
WD	4/Jan/21	Sr-D	mg/L	0.001	0.001	0.868	0.856	1	1.01
1M2N	9/Nov/20	Bicarbonate	mg/L	1	1	680	670	2	1.01
1M2N	9/Nov/20	Mn-T	mg/L	0.001	0.001	0.272	0.268	2	1.01
2S	1/Mar/21	Ba-T	mg/L	0.001	0.001	0.0132	0.0130	2	1.02
2SC	5/Oct/20	Hard-D	mg/L	0.5	0.5	738	727	2	1.02
7S	4/May/20	Hard-D	mg/L	0.5	0.5	19.9	20.2	2	0.99
7SQR	4/Nov/20	K-D	mg/L	0.05	0.05	0.339	0.334	2	1.01
IR6	2/Sep/20	K-D	mg/L	0.05	0.05	0.265	0.269	2	0.99
LLM1	22/Apr/20	Na-T	mg/L	0.05	0.05	6.88	6.78	2	1.01
LLM1	15/Jul/20	Fe-T	mg/L	0.01	0.01	0.067	0.068	2	0.99
LLM1	15/Jul/20	K-T	mg/L	0.05	0.05	0.264	0.260	2	1.02
LLM9	5/Aug/20	Ba-D	mg/L	0.001	0.001	0.0067	0.0066	2	1.02
LLM9	5/Aug/20	Hard-D	mg/L	0.5	0.5	136	134	2	1.01
LLO	27/Apr/20	Al-D	mg/L	0.003	0.003	0.0135	0.0133	2	1.02
MQL1	15/Oct/20	Hardness (as CaCO3	mg/L	0.5	0.5	33.5	34.0	2	0.99
MW006D	14/Dec/20	Sr-D	mg/L	0.001	0.001	0.0759	0.0748	2	1.01
NNL4	12/May/20	K-T	mg/L	0.05	0.05	0.068	0.069	2	0.99
NNO	20/Apr/20	Hard-D	mg/L	0.5	0.5	13.5	13.7	2	0.99
QU0813A	27/May/20	Fe-D	mg/L	0.005	0.005	0.269	0.273	2	0.99
QU0813A	25/Aug/20	As-D	mg/L	0.0001	0.0001	0.392	0.386	2	1.02
QU0813A	25/Aug/20	Ca-D	mg/L	0.05	0.05	34.1	34.6	2	0.99
QU0821GS	13/Aug/20	K-D	mg/L	0.05	0.1	4.73	4.80	2	0.99
QU0821GS	9/Feb/21	Sr-D	mg/L	0.001	0.001	0.399	0.405	2	0.99
QU1010S	4/Jun/20	Fe-D	mg/L	0.005	0.005	0.196	0.193	2	1.02
QU1010S	8/Dec/20	Fluoride	mg/L	0.05	0.05	0.66	0.67	2	0.99
QU1101	28/Jan/21	Turb	NTU	0.1	0.1	660	650	2	1.02
QU1136D	16/Dec/20	Fluoride	mg/L	0.05	0.05	0.67	0.66	2	1.02
QU1410	30/Jul/20	K-D	mg/L	0.5	0.5	7.45	7.56	2	0.99
WA	14/Apr/20	Hard-D	mg/L	0.5	0.5	19.5	19.8	2	0.98
WA	8/Jul/20	Hard-D	mg/L	0.5	0.5	19.9	19.6	2	1.02
WA	14/Oct/20	Na-D	mg/L	0.05	0.05	0.864	0.877	2	0.99

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
WC	6/Aug/20	SO4-D	mg/L	10	10	670	660	2	1.02
1M2N	9/Nov/20	Li-T	mg/L	0.002	0.002	0.0125	0.0123	2	1.02
1M2N	9/Nov/20	S-D	mg/L	3	6	124	122	2	1.02
242MW	22/Sep/20	B-D	mg/L	0.05	0.05	0.064	0.063	2	1.02
242MW	22/Sep/20	Ca-D	mg/L	0.05	0.05	44.4	43.7	2	1.02
2SC	2/Jun/20	Mg-T	mg/L	0.05	0.05	24.5	24.1	2	1.02
2SC	2/Jun/20	Sr-D	mg/L	0.001	0.001	1.27	1.29	2	0.98
2SC	5/Oct/20	B-D	mg/L	0.05	0.05	0.440	0.433	2	1.02
2SC	5/Oct/20	SO4-D	mg/L	10	10	620	630	2	0.98
2SC	7/Dec/20	B-D	mg/L	0.05	0.05	0.311	0.316	2	0.98
2SC	7/Dec/20	Mn-T	mg/L	0.001	0.001	0.0188	0.0185	2	1.02
7SQR	14/Jul/20	S-T	mg/L	3	3	12.9	12.7	2	1.02
7SQR	4/Nov/20	Mn-D	mg/L	0.001	0.001	0.0064	0.0063	2	1.02
LLM1	29/Apr/20	S-T	mg/L	3	3	19.5	19.2	2	1.02
LLO	27/Apr/20	SO4-D	mg/L	1	1	63	64	2	0.98
LLO	29/Oct/20	Mg-T	mg/L	0.05	0.05	3.07	3.12	2	0.98
MQL1	9/Jul/20	S-D	mg/L	3	3	12.7	12.9	2	0.98
MQL4	29/Jul/20	Si-D	mg/L	0.1	0.1	1.84	1.81	2	1.02
MW002	10/Dec/20	Si-D	mg/L	0.2	0.2	3.75	3.69	2	1.02
NNL4	12/May/20	Fe-T	mg/L	0.01	0.01	0.065	0.064	2	1.02
QU0821GS	1/Jun/20	Mg-D	mg/L	0.05	0.1	3.69	3.75	2	0.98
QU1410	30/Jul/20	Sr-D	mg/L	0.01	0.01	4.91	4.99	2	0.98
WA	8/Jul/20	Ca-D	mg/L	0.05	0.05	6.75	6.64	2	1.02
WA	8/Jul/20	Si-D	mg/L	0.1	0.1	1.88	1.85	2	1.02
WA	14/Oct/20	Hardness (as CaCO3	mg/L	0.5	0.5	18.5	18.2	2	1.02
WB	21/Jul/20	Al-D	mg/L	0.003	0.003	0.0128	0.0126	2	1.02
WC	7/Apr/20	Ca-D	mg/L	0.05	0.05	127	129	2	0.98
WC	7/Apr/20	Sr-D	mg/L	0.001	0.001	1.26	1.28	2	0.98
1M2N	9/Nov/20	Mg-D	mg/L	0.05	0.1	7.59	7.46	2	1.02
242MW	22/Sep/20	Li-D	mg/L	0.002	0.002	0.0058	0.0057	2	1.02
2SC	7/Dec/20	Hard-D	mg/L	0.5	0.5	627	638	2	0.98
7S	4/May/20	K-T	mg/L	0.05	0.05	0.120	0.122	2	0.98
7SQR	11/May/20	Mn-T	mg/L	0.001	0.001	0.0058	0.0059	2	0.98
7SQR	11/May/20	Na-D	mg/L	0.05	0.05	11.6	11.4	2	1.02
7SQR	14/Jul/20	B-T	mg/L	0.05	0.05	0.061	0.060	2	1.02
7SQR	4/Nov/20	Hardness (as CaCO3	mg/L	0.5	0.5	35.9	35.3	2	1.02
INF	9/Mar/21	SO4-D	mg/L	5	5	600	610	2	0.98
IR6	2/Sep/20	Na-D	mg/L	0.05	0.05	2.40	2.44	2	0.98
LLM1	22/Apr/20	Al-T	mg/L	0.003	0.003	0.0234	0.0238	2	0.98
LLM1	29/Apr/20	K-T	mg/L	0.05	0.05	0.297	0.292	2	1.02
LLM9	5/Aug/20	Mn-T	mg/L	0.001	0.001	0.0762	0.0775	2	0.98
MQL1	16/Apr/20	K-T	mg/L	0.05	0.05	0.179	0.182	2	0.98
MQL1	9/Jul/20	B-T	mg/L	0.05	0.05	0.059	0.058	2	1.02
MQL1	9/Jul/20	Cu-T	mg/L	0.0005	0.0005	0.00060	0.00059	2	1.02
QU0813A	25/Aug/20	B-D	mg/L	0.05	0.05	0.724	0.712	2	1.02
QU0821GD	10/Nov/20	Si-D	mg/L	0.5	0.5	4.57	4.65	2	0.98
QU0821GS	1/Jun/20	P-D	mg/L	0.003	0.003	0.058	0.059	2	0.98
QU1009D	10/Dec/20	Na-D	mg/L	0.05	0.05	30.2	29.7	2	1.02
QU1101	28/Jan/21	As-D	mg/L	0.0005	0.0005	0.114	0.116	2	0.98
QU1101	28/Jan/21	Hard-D	mg/L	0.5	0.5	1160	1180	2	0.98
QU1105S	17/Dec/20	Ba-D	mg/L	0.001	0.001	0.174	0.171	2	1.02
QU1109M	17/Mar/21	Al-D	mg/L	0.006	0.006	0.0061	0.006	2	1.02
QU1410	30/Jul/20	Mg-D	mg/L	0.5	0.5	179	182	2	0.98
QU1410	27/Aug/20	Cl-D	mg/L	1	1	5.9	5.8	2	1.02
WC	6/Aug/20	Ba-D	mg/L	0.001	0.001	0.0177	0.0180	2	0.98
WC	6/Aug/20	B-D	mg/L	0.05	0.05	0.915	0.900	2	1.02
1M2N	9/Nov/20	Alkalinity Total as Ca	mg/L	1	1	560	550	2	1.02
2S	1/Mar/21	K-T	mg/L	0.05	0.05	1.15	1.13	2	1.02
2S	1/Mar/21	Mg-T	mg/L	0.05	0.05	11.3	11.1	2	1.02
7S	4/May/20	Ca-D	mg/L	0.05	0.05	5.65	5.75	2	0.98
7SQR	14/Jul/20	Mn-D	mg/L	0.001	0.001	0.0055	0.0054	2	1.02
7SQR	14/Jul/20	Na-T	mg/L	0.05	0.05	16.9	17.2	2	0.98
7SQR	14/Jul/20	Sr-D	mg/L	0.001	0.001	0.0801	0.0787	2	1.02
7SQR	4/Nov/20	Ca-T	mg/L	0.05	0.05	11.5	11.3	2	1.02

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
BCR	15/Mar/21	SO4-D	mg/L	10	10	560	570	2	0.98
LLM1	22/Apr/20	S-T	mg/L	3	3	16.9	16.6	2	1.02
LLM1	22/Jul/20	B-D	mg/L	0.05	0.05	0.055	0.054	2	1.02
LLM4	28/Oct/20	Na-T	mg/L	0.05	0.05	8.08	8.23	2	0.98
LLM9	5/Aug/20	B-T	mg/L	0.05	0.05	0.108	0.110	2	0.98
LLM9	5/Aug/20	Na-T	mg/L	0.05	0.05	16.9	17.2	2	0.98
LLM9	5/Aug/20	Sr-T	mg/L	0.001	0.001	0.375	0.382	2	0.98
LLO	27/Apr/20	Mg-D	mg/L	0.05	0.05	2.76	2.81	2	0.98
MQL1	9/Jul/20	K-D	mg/L	0.05	0.05	0.272	0.277	2	0.98
MQL1	15/Oct/20	Ca-T	mg/L	0.05	0.05	11.0	11.2	2	0.98
MQL9	5/Nov/20	Ca-D	mg/L	0.05	0.05	11.3	11.5	2	0.98
NNO	20/Apr/20	Al-T	mg/L	0.003	0.003	0.0278	0.0273	2	1.02
NNO	4/Aug/20	Mg-D	mg/L	0.05	0.05	1.15	1.13	2	1.02
NNO	4/Aug/20	Mg-T	mg/L	0.05	0.05	1.15	1.13	2	1.02
NNO	4/Aug/20	Si-T	mg/L	0.1	0.1	2.81	2.76	2	1.02
NNO	4/Aug/20	Sr-T	mg/L	0.001	0.001	0.0165	0.0162	2	1.02
NNO	22/Oct/20	Mg-T	mg/L	0.05	0.05	1.11	1.09	2	1.02
QU0813A	25/Aug/20	Fe-D	mg/L	0.005	0.005	0.164	0.167	2	0.98
QU0813A	25/Aug/20	K-D	mg/L	0.05	0.05	2.21	2.25	2	0.98
QU0821GD	10/Nov/20	Ba-D	mg/L	0.005	0.005	2.78	2.73	2	1.02
QU0821GD	10/Nov/20	Fe-D	mg/L	0.025	0.025	1.65	1.62	2	1.02
QU0821GS	13/Aug/20	Ca-D	mg/L	0.05	0.1	28.0	27.5	2	1.02
QU1010S	8/Dec/20	B-D	mg/L	0.05	0.05	0.608	0.597	2	1.02
QU1010S	8/Dec/20	Se-D	mg/L	0.0001	0.0001	0.00724	0.00711	2	1.02
QU1011S	11/Jun/20	Li-D	mg/L	0.002	0.002	0.0332	0.0338	2	0.98
QU1105S	17/Dec/20	Na-D	mg/L	0.05	0.05	111	109	2	1.02
QU1109M	27/Aug/20	SO4-D	mg/L	10	10	560	550	2	1.02
QU1109M	17/Mar/21	B-D	mg/L	0.1	0.1	1.11	1.13	2	0.98
QU1410	30/Jul/20	Cl-D	mg/L	1	1	5.5	5.6	2	0.98
QU1410	27/Aug/20	N-D	mg/L	0.02	0.02	0.223	0.219	2	1.02
WA	8/Jul/20	Sr-D	mg/L	0.001	0.001	0.0110	0.0112	2	0.98
WA	8/Jul/20	Sr-T	mg/L	0.001	0.001	0.0111	0.0113	2	0.98
WC	6/Aug/20	As-D	mg/L	0.0001	0.0001	0.00056	0.00057	2	0.98
WC	6/Aug/20	Na-D	mg/L	0.05	0.05	324	330	2	0.98
1M2N	9/Nov/20	Na-T	mg/L	0.05	0.05	326	320	2	1.02
2S	1/Mar/21	Ca-T	mg/L	0.05	0.05	104	102	2	1.02
2S	1/Mar/21	Li-D	mg/L	0.002	0.002	0.0103	0.0105	2	0.98
2SC	5/Oct/20	Mg-D	mg/L	0.05	0.05	26.4	26.9	2	0.98
2SC	5/Oct/20	S-T	mg/L	3	3	213	209	2	1.02
2SC	7/Dec/20	Ca-D	mg/L	0.05	0.05	210	214	2	0.98
2SC	7/Dec/20	K-D	mg/L	0.05	0.05	2.15	2.11	2	1.02
7SQR	11/May/20	Mn-D	mg/L	0.001	0.001	0.0052	0.0051	2	1.02
7SQR	14/Jul/20	Fe-T	mg/L	0.01	0.01	0.107	0.109	2	0.98
LLM1	22/Apr/20	Mg-T	mg/L	0.05	0.05	2.70	2.65	2	1.02
LLM1	29/Apr/20	B-T	mg/L	0.05	0.05	0.053	0.052	2	1.02
LLO	28/Jul/20	Fe-T	mg/L	0.01	0.01	0.053	0.052	2	1.02
LLO	29/Oct/20	Ba-D	mg/L	0.001	0.001	0.0052	0.0051	2	1.02
LLO	29/Oct/20	Hardness (as CaCO3	mg/L	0.5	0.5	65.1	63.9	2	1.02
LLO	29/Oct/20	SO4-D	mg/L	1	1	54	53	2	1.02
MQL1	16/Apr/20	Cu-D	mg/L	0.0002	0.0002	0.00053	0.00052	2	1.02
MQL1	16/Apr/20	Sr-T	mg/L	0.001	0.001	0.0468	0.0477	2	0.98
MQL1	9/Jul/20	B-D	mg/L	0.05	0.05	0.053	0.054	2	0.98
MQL1	15/Oct/20	Bicarbonate	mg/L	1	1	52	53	2	0.98
MQL1	15/Oct/20	K-D	mg/L	0.05	0.05	0.266	0.271	2	0.98
MQL1	15/Oct/20	Na-D	mg/L	0.05	0.05	15.6	15.9	2	0.98
MW002	10/Dec/20	Mg-D	mg/L	0.1	0.1	47.8	48.7	2	0.98
QU0813A	27/May/20	S-D	mg/L	3	3	10.3	10.5	2	0.98
QU0821GS	13/Aug/20	As-D	mg/L	0.0001	0.0002	0.210	0.206	2	1.02
QU1009D	10/Dec/20	As-D	mg/L	0.0001	0.0001	0.105	0.103	2	1.02
QU1009D	10/Dec/20	Li-D	mg/L	0.002	0.002	0.0264	0.0259	2	1.02
QU1011S	11/Jun/20	Ba-D	mg/L	0.001	0.001	0.260	0.255	2	1.02
QU1109M	17/Mar/21	Hardness (as CaCO3	mg/L	0.5	0.5	689	702	2	0.98
WA	8/Jul/20	Al-D	mg/L	0.003	0.003	0.0157	0.0154	2	1.02
WC	7/Apr/20	Li-T	mg/L	0.002	0.002	0.0106	0.0108	2	0.98

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
WC	6/Aug/20	Mg-D	mg/L	0.05	0.05	15.5	15.8	2	0.98
WD	19/Oct/20	SO4-D	mg/L	10	10	510	520	2	0.98
1M2N	9/Nov/20	Mn-D	mg/L	0.001	0.002	0.248	0.243	2	1.02
2S	1/Mar/21	Hardness (as CaCO3	mg/L	0.5	0.5	306	300	2	1.02
2SC	2/Jun/20	Mg-D	mg/L	0.05	0.05	24.4	24.9	2	0.98
2SC	5/Oct/20	As-D	mg/L	0.0001	0.0001	0.00050	0.00049	2	1.02
2SC	5/Oct/20	Ca-D	mg/L	0.05	0.05	252	247	2	1.02
7SQR	11/May/20	Si-D	mg/L	0.1	0.1	2.06	2.02	2	1.02
IR6	2/Sep/20	Ba-D	mg/L	0.001	0.001	0.0098	0.0100	2	0.98
LLM1	15/Jul/20	As-T	mg/L	0.0001	0.0001	0.00051	0.00050	2	1.02
LLM1	15/Jul/20	Si-T	mg/L	0.1	0.1	2.90	2.96	2	0.98
LLM1	22/Jul/20	Ba-D	mg/L	0.001	0.001	0.0051	0.0050	2	1.02
LLM1	22/Jul/20	Ba-T	mg/L	0.001	0.001	0.0051	0.0050	2	1.02
LLM1	22/Jul/20	B-T	mg/L	0.05	0.05	0.051	0.05	2	1.02
LLM4	28/Oct/20	Na-D	mg/L	0.05	0.05	8.07	7.91	2	1.02
LLM9	7/Oct/20	Fe-D	mg/L	0.005	0.005	0.0101	0.0099	2	1.02
LLO	28/Jul/20	Si-D	mg/L	0.1	0.1	2.56	2.51	2	1.02
LLO	29/Oct/20	Ba-T	mg/L	0.001	0.001	0.0049	0.0050	2	0.98
MQL4	29/Jul/20	Cu-T	mg/L	0.0005	0.0005	0.00051	0.0005	2	1.02
MW006D	14/Dec/20	Al-D	mg/L	0.003	0.003	0.0098	0.0100	2	0.98
NNO	20/Apr/20	Ca-T	mg/L	0.05	0.05	3.95	4.03	2	0.98
QU0821GD	10/Nov/20	Na-D	mg/L	0.25	0.25	634	647	2	0.98
QU1009D	10/Dec/20	S2-T	mg/L	0.0018	0.0018	0.098	0.10	2	0.98
QU1010S	8/Dec/20	Cl-D	mg/L	1	1	5.0	4.9	2	1.02
WA	14/Apr/20	Si-D	mg/L	0.1	0.1	2.02	2.06	2	0.98
WB	5/May/20	Cu-D	mg/L	0.0002	0.0002	0.00049	0.00050	2	0.98
WB	5/May/20	Mn-T	mg/L	0.001	0.001	0.0050	0.0051	2	0.98
WB	6/Oct/20	B-T	mg/L	0.05	0.05	0.05	0.051	2	0.98
WB	6/Oct/20	Na-T	mg/L	0.05	0.05	14.7	15.0	2	0.98
WC	7/Apr/20	Hardness (as CaCO3	mg/L	0.5	0.5	401	393	2	1.02
WC	7/Apr/20	Li-D	mg/L	0.002	0.002	0.0099	0.0101	2	0.98
WC	2/Nov/20	SO4-D	mg/L	10	10	510	500	2	1.02
LLM4	28/Oct/20	K-T	mg/L	0.05	0.05	0.325	0.332	2	0.98
LLM9	7/Oct/20	Alkalinity Total as Ca	mg/L	1	1	49	48	2	1.02
MQL1	16/Apr/20	Hardness (as CaCO3	mg/L	0.5	0.5	32.3	33.0	2	0.98
MQL4	29/Jul/20	Mg-T	mg/L	0.05	0.05	1.41	1.44	2	0.98
MQL4	29/Jul/20	S-T	mg/L	3	3	9.5	9.7	2	0.98
MQL9	5/Nov/20	Cu-D	mg/L	0.0002	0.0002	0.00049	0.00048	2	1.02
NNL4	12/May/20	Mg-D	mg/L	0.05	0.05	0.898	0.879	2	1.02
NNL4	12/May/20	Mg-T	mg/L	0.05	0.05	0.874	0.856	2	1.02
QU1101	17/Aug/20	P-D	mg/L	0.003	0.003	0.0098	0.0096	2	1.02
QU1101	28/Jan/21	Ca-D	mg/L	0.25	0.25	371	379	2	0.98
QU1101	28/Jan/21	Sr-D	mg/L	0.005	0.005	1.89	1.93	2	0.98
WA	8/Jul/20	Na-D	mg/L	0.05	0.05	0.637	0.624	2	1.02
WB	5/May/20	Mg-T	mg/L	0.05	0.05	1.40	1.43	2	0.98
WD	4/Jan/21	Mg-D	mg/L	0.05	0.05	14.2	14.5	2	0.98
2S	1/Mar/21	Sr-D	mg/L	0.001	0.001	0.797	0.815	2	0.98
2SC	2/Jun/20	B-T	mg/L	0.05	0.05	0.361	0.353	2	1.02
2SC	5/Oct/20	Ba-D	mg/L	0.001	0.001	0.0178	0.0182	2	0.98
2SC	5/Oct/20	Ba-T	mg/L	0.001	0.001	0.0188	0.0184	2	1.02
2SC	5/Oct/20	K-T	mg/L	0.05	0.05	2.75	2.69	2	1.02
2SC	7/Dec/20	Si-D	mg/L	0.1	0.1	2.28	2.33	2	0.98
7SQR	14/Jul/20	Bicarbonate	mg/L	1	1	46	45	2	1.02
7SQR	4/Nov/20	C-D	mg/L	0.5	0.5	4.6	4.5	2	1.02
LLM1	22/Apr/20	Ba-D	mg/L	0.001	0.001	0.0044	0.0045	2	0.98
LLM1	22/Apr/20	Mn-D	mg/L	0.001	0.001	0.0135	0.0138	2	0.98
LLM1	15/Jul/20	As-D	mg/L	0.0001	0.0001	0.00044	0.00045	2	0.98
LLM1	22/Jul/20	Al-T	mg/L	0.003	0.003	0.0093	0.0091	2	1.02
LLO	27/Apr/20	Ba-D	mg/L	0.001	0.001	0.0046	0.0047	2	0.98
LLO	27/Apr/20	K-T	mg/L	0.05	0.05	0.276	0.282	2	0.98
LLO	28/Jul/20	As-D	mg/L	0.0001	0.0001	0.00044	0.00045	2	0.98
LLO	28/Jul/20	Na-T	mg/L	0.05	0.05	7.48	7.32	2	1.02
LLO	29/Oct/20	As-T	mg/L	0.0001	0.0001	0.00045	0.00046	2	0.98
MQL4	29/Jul/20	Bicarbonate	mg/L	1	1	44	45	2	0.98

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
MQL9	5/Nov/20	Bicarbonate	mg/L	1	1	46	47	2	0.98
MQL9	5/Nov/20	Sr-T	mg/L	0.001	0.001	0.0649	0.0635	2	1.02
MW002	10/Dec/20	Hard-D	mg/L	0.5	0.5	1380	1350	2	1.02
MW002	10/Dec/20	Mn-D	mg/L	0.002	0.002	1.38	1.35	2	1.02
NNO	20/Apr/20	Hardness (as CaCO3	mg/L	0.5	0.5	13.3	13.6	2	0.98
NNO	4/Aug/20	As-D	mg/L	0.0001	0.0001	0.00045	0.00044	2	1.02
QU0821GS	1/Jun/20	Bromide	mg/L	0.01	0.01	0.094	0.092	2	1.02
QU1101	17/Aug/20	Fluoride	mg/L	0.05	0.05	0.47	0.46	2	1.02
QU1101	28/Jan/21	Bicarbonate	mg/L	1	1	91	89	2	1.02
WB	5/May/20	Na-T	mg/L	0.05	0.05	9.88	10.1	2	0.98
WB	5/May/20	S-T	mg/L	3	3	9.1	9.3	2	0.98
WB	21/Jul/20	Mg-D	mg/L	0.05	0.05	1.41	1.38	2	1.02
WB	6/Oct/20	Cu-D	mg/L	0.0002	0.0002	0.00046	0.00045	2	1.02
WB	6/Oct/20	Sr-D	mg/L	0.001	0.001	0.0606	0.0593	2	1.02
WC	7/Apr/20	Fe-T	mg/L	0.01	0.01	0.180	0.176	2	1.02
WC	6/Aug/20	B-T	mg/L	0.1	0.1	0.88	0.90	2	0.98
2S	1/Mar/21	Al-T	mg/L	0.003	0.003	0.0267	0.0261	2	1.02
2SC	5/Oct/20	As-T	mg/L	0.0001	0.0001	0.00044	0.00043	2	1.02
7SQR	11/May/20	S-T	mg/L	3	3	8.6	8.8	2	0.98
7SQR	4/Nov/20	Hard-D	mg/L	0.5	0.5	35.6	34.8	2	1.02
IR6	2/Sep/20	Si-T	mg/L	0.1	0.1	2.97	3.04	2	0.98
LLM1	22/Apr/20	Fe-T	mg/L	0.01	0.01	0.089	0.087	2	1.02
LLM1	15/Jul/20	Si-D	mg/L	0.1	0.1	3.04	3.11	2	0.98
LLM9	5/Aug/20	Fe-D	mg/L	0.005	0.005	0.0133	0.0130	2	1.02
MW002	10/Dec/20	U-D	mg/L	0.0002	0.0002	0.00044	0.00043	2	1.02
MW006D	14/Dec/20	Hard-D	mg/L	0.5	0.5	44.0	43.0	2	1.02
NNO	4/Aug/20	Hardness (as CaCO3	mg/L	0.5	0.5	17.9	17.5	2	1.02
NNO	22/Oct/20	Hard-D	mg/L	0.5	0.5	17.1	17.5	2	0.98
QU1010S	4/Jun/20	Na-D	mg/L	0.05	0.05	53.6	52.4	2	1.02
QU1011S	11/Jun/20	As-D	mg/L	0.0001	0.0001	0.00218	0.00213	2	1.02
QU1105S	17/Dec/20	B-D	mg/L	0.05	0.05	0.849	0.830	2	1.02
WB	21/Jul/20	Fe-D	mg/L	0.005	0.005	0.0254	0.0260	2	0.98
WB	21/Jul/20	S-D	mg/L	3	3	8.7	8.9	2	0.98
WB	6/Oct/20	Fe-D	mg/L	0.005	0.005	0.0217	0.0222	2	0.98
WB	6/Oct/20	K-T	mg/L	0.05	0.05	0.255	0.261	2	0.98
WC	7/Apr/20	Ca-T	mg/L	0.05	0.05	134	131	2	1.02
WC	7/Apr/20	Si-T	mg/L	0.1	0.1	2.68	2.62	2	1.02
1M2N	9/Nov/20	Mg-T	mg/L	0.05	0.05	7.90	7.71	2	1.02
1M2N	9/Nov/20	S-T	mg/L	3	3	127	124	2	1.02
2S	1/Mar/21	B-T	mg/L	0.05	0.05	0.253	0.247	2	1.02
2SC	2/Jun/20	B-D	mg/L	0.05	0.05	0.337	0.329	2	1.02
2SC	5/Oct/20	Na-D	mg/L	0.05	0.05	49.0	50.2	2	0.98
7SQR	11/May/20	Si-T	mg/L	0.1	0.1	2.06	2.11	2	0.98
7SQR	4/Nov/20	S-T	mg/L	3	3	8.5	8.3	2	1.02
LLM1	22/Apr/20	Ba-T	mg/L	0.001	0.001	0.0042	0.0043	2	0.98
LLM1	29/Apr/20	Si-T	mg/L	0.1	0.1	2.97	2.90	2	1.02
LLM1	29/Apr/20	Sr-T	mg/L	0.001	0.001	0.172	0.168	2	1.02
LLO	27/Apr/20	Fe-T	mg/L	0.01	0.01	0.082	0.084	2	0.98
LLO	28/Jul/20	K-D	mg/L	0.05	0.05	0.250	0.256	2	0.98
LLO	29/Oct/20	Bicarbonate	mg/L	1	1	41	42	2	0.98
MQL1	16/Apr/20	Si-T	mg/L	0.1	0.1	2.05	2.10	2	0.98
MQL1	9/Jul/20	S-T	mg/L	3	3	12.5	12.2	2	1.02
MW002	10/Dec/20	Sr-D	mg/L	0.002	0.002	4.18	4.08	2	1.02
MW006D	14/Dec/20	Ca-D	mg/L	0.05	0.05	16.8	16.4	2	1.02
NNO	20/Apr/20	Mn-T	mg/L	0.001	0.001	0.0042	0.0041	2	1.02
NNO	4/Aug/20	Fe-D	mg/L	0.005	0.005	0.128	0.125	2	1.02
QU0821GS	1/Jun/20	As-D	mg/L	0.0001	0.0002	0.213	0.208	2	1.02
QU0821GS	13/Aug/20	Na-D	mg/L	0.05	0.1	168	172	2	0.98
QU1011S	11/Jun/20	Hard-D	mg/L	0.5	0.5	124	121	2	1.02
QU1105S	17/Dec/20	K-D	mg/L	0.05	0.05	3.33	3.25	2	1.02
WA	14/Apr/20	Ca-D	mg/L	0.05	0.05	6.55	6.71	2	0.98
WB	5/May/20	Al-D	mg/L	0.003	0.003	0.0123	0.0126	2	0.98
WB	21/Jul/20	K-T	mg/L	0.05	0.05	0.210	0.205	2	1.02
WB	6/Oct/20	Bicarbonate	mg/L	1	1	42	41	2	1.02

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
WD	4/Jan/21	SO4-D	mg/L	10	10	410	420	2	0.98
1M2N	9/Nov/20	Ba-D	mg/L	0.001	0.002	0.0242	0.0236	3	1.03
242MW	22/Sep/20	S-D	mg/L	3	3	12.0	12.3	3	0.98
2SC	7/Dec/20	S-D	mg/L	3	3	198	203	3	0.98
7SQR	14/Jul/20	Mn-T	mg/L	0.001	0.001	0.0079	0.0081	3	0.98
LLM1	15/Jul/20	Mn-D	mg/L	0.001	0.001	0.0040	0.0039	3	1.03
LLM9	7/Oct/20	Mg-D	mg/L	0.05	0.05	4.90	4.78	3	1.03
MQL1	9/Jul/20	Fe-T	mg/L	0.01	0.01	0.041	0.040	3	1.02
MQL1	9/Jul/20	Mg-T	mg/L	0.05	0.05	1.60	1.56	3	1.03
QU0813A	25/Aug/20	Mg-D	mg/L	0.05	0.05	8.52	8.31	3	1.03
QU1109M	17/Mar/21	Acidity 8.3	mg/L	1	1	47.8	49.0	3	0.98
QU1109M	17/Mar/21	Li-T	mg/L	0.004	0.004	0.0247	0.0241	3	1.02
WB	5/May/20	K-T	mg/L	0.05	0.05	0.201	0.206	3	0.98
WC	6/Aug/20	Hard-D	mg/L	0.5	0.5	368	359	3	1.03
1M2N	9/Nov/20	K-T	mg/L	0.05	0.05	4.36	4.25	3	1.03
7SQR	14/Jul/20	K-T	mg/L	0.05	0.05	0.266	0.273	3	0.97
LLM1	22/Jul/20	Fe-D	mg/L	0.005	0.005	0.0473	0.0461	3	1.03
LLM4	28/Oct/20	Al-D	mg/L	0.003	0.003	0.0076	0.0078	3	0.97
LLO	27/Apr/20	S-T	mg/L	3	3	19.3	19.8	3	0.97
LLO	28/Jul/20	K-T	mg/L	0.05	0.05	0.276	0.269	3	1.03
MQL1	9/Jul/20	Mn-T	mg/L	0.001	0.001	0.0077	0.0075	3	1.03
MQL9	5/Nov/20	Mg-T	mg/L	0.05	0.05	1.56	1.52	3	1.03
MQL9	5/Nov/20	Sr-D	mg/L	0.001	0.001	0.0621	0.0605	3	1.03
NNO	20/Apr/20	Mg-T	mg/L	0.05	0.05	0.837	0.859	3	0.97
NNO	22/Oct/20	As-T	mg/L	0.0001	0.0001	0.00039	0.00038	3	1.03
QU0821GS	1/Jun/20	Ba-D	mg/L	0.001	0.002	0.312	0.304	3	1.03
QU1010S	4/Jun/20	Sr-D	mg/L	0.001	0.001	0.416	0.427	3	0.97
QU1101	28/Jan/21	Ba-D	mg/L	0.005	0.005	0.0114	0.0117	3	0.97
QU1410	30/Jul/20	Li-D	mg/L	0.02	0.02	0.150	0.154	3	0.97
WA	14/Oct/20	Sr-D	mg/L	0.001	0.001	0.0116	0.0113	3	1.03
WB	5/May/20	Al-T	mg/L	0.003	0.003	0.0154	0.0158	3	0.97
WB	6/Oct/20	Ca-T	mg/L	0.05	0.05	11.2	11.5	3	0.97
1M2N	9/Nov/20	B-T	mg/L	0.05	0.05	1.13	1.10	3	1.03
2SC	2/Jun/20	As-D	mg/L	0.0001	0.0001	0.00036	0.00037	3	0.97
2SC	2/Jun/20	As-T	mg/L	0.0001	0.0001	0.00038	0.00037	3	1.03
7S	4/May/20	Na-D	mg/L	0.05	0.05	1.81	1.86	3	0.97
7SQR	14/Jul/20	Alkalinity Total as Ca	mg/L	1	1	38	37	3	1.03
7SQR	4/Nov/20	Bicarbonate	mg/L	1	1	38	37	3	1.03
7SQR	4/Nov/20	Ca-D	mg/L	0.05	0.05	11.4	11.1	3	1.03
LLM1	29/Apr/20	Hardness (as CaCO3	mg/L	0.5	0.5	71.8	69.9	3	1.03
LLM1	15/Jul/20	Bicarbonate	mg/L	1	1	37	36	3	1.03
LLM1	22/Jul/20	Mg-T	mg/L	0.05	0.05	3.01	2.93	3	1.03
LLO	29/Oct/20	Sr-T	mg/L	0.001	0.001	0.146	0.150	3	0.97
MQL1	16/Apr/20	S-T	mg/L	3	3	7.2	7.4	3	0.97
MQL4	29/Jul/20	Alkalinity Total as Ca	mg/L	1	1	36	37	3	0.97
MQL4	29/Jul/20	Ca-D	mg/L	0.05	0.05	11.3	11.0	3	1.03
MQL4	29/Jul/20	Hard-D	mg/L	0.5	0.5	34.4	33.5	3	1.03
NNL4	12/May/20	Mn-D	mg/L	0.001	0.001	0.0038	0.0037	3	1.03
NNL4	12/May/20	Na-D	mg/L	0.05	0.05	1.14	1.11	3	1.03
NNO	20/Apr/20	Na-D	mg/L	0.05	0.05	1.09	1.12	3	0.97
NNO	4/Aug/20	Ca-T	mg/L	0.05	0.05	5.28	5.14	3	1.03
NNO	22/Oct/20	Al-D	mg/L	0.003	0.003	0.0180	0.0185	3	0.97
QU0821GD	10/Nov/20	Li-D	mg/L	0.01	0.01	0.187	0.182	3	1.03
QU1011S	11/Jun/20	Mn-D	mg/L	0.001	0.001	0.109	0.112	3	0.97
QU1101	28/Jan/21	Acidity 8.3	mg/L	1	1	111	108	3	1.03
QU1109M	27/Aug/20	Hard-D	mg/L	0.5	0.5	260	267	3	0.97
QU1410	30/Jul/20	Mn-D	mg/L	0.01	0.01	1.44	1.48	3	0.97
WA	14/Apr/20	Al-T	mg/L	0.003	0.003	0.0223	0.0217	3	1.03
WB	6/Oct/20	Ca-D	mg/L	0.05	0.05	11.3	11.0	3	1.03
1M2N	9/Nov/20	SO4-D	mg/L	10	10	360	350	3	1.03
LLM1	22/Apr/20	Al-D	mg/L	0.003	0.003	0.0174	0.0179	3	0.97
LLM4	28/Oct/20	Fe-T	mg/L	0.01	0.01	0.070	0.072	3	0.97
LLO	29/Oct/20	S-T	mg/L	3	3	17.3	17.8	3	0.97
MQL1	16/Apr/20	Bicarbonate	mg/L	1	1	36	35	3	1.03

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
MQL1	16/Apr/20	Ca-T	mg/L	0.05	0.05	10.7	11.0	3	0.97
MQL1	15/Oct/20	Mg-D	mg/L	0.05	0.05	1.41	1.45	3	0.97
MW002	10/Dec/20	B-D	mg/L	0.1	0.1	0.73	0.71	3	1.03
MW002	10/Dec/20	Bicarbonate	mg/L	1	1	360	350	3	1.03
QU0821GS	1/Jun/20	Cl-D	mg/L	1	1	72	70	3	1.03
QU1010S	4/Jun/20	Bromide	mg/L	0.01	0.01	0.035	0.036	3	0.97
WA	14/Oct/20	Fe-T	mg/L	0.01	0.01	0.035	0.036	3	0.97
WB	5/May/20	Bicarbonate	mg/L	1	1	36	35	3	1.03
WC	7/Apr/20	Al-D	mg/L	0.003	0.003	0.0035	0.0036	3	0.97
WD	4/Jan/21	Ni-D	mg/L	0.001	0.001	0.0035	0.0036	3	0.97
2SC	5/Oct/20	Mg-T	mg/L	0.05	0.05	28.2	27.4	3	1.03
2SC	7/Dec/20	Sr-T	mg/L	0.001	0.001	1.42	1.38	3	1.03
7SQR	11/May/20	Fe-D	mg/L	0.005	0.005	0.0488	0.0474	3	1.03
7SQR	11/May/20	Sr-D	mg/L	0.001	0.001	0.0629	0.0611	3	1.03
7SQR	4/Nov/20	Ba-T	mg/L	0.001	0.001	0.0035	0.0034	3	1.03
7SQR	4/Nov/20	Fe-D	mg/L	0.005	0.005	0.141	0.137	3	1.03
LLM1	22/Apr/20	K-T	mg/L	0.05	0.05	0.249	0.242	3	1.03
LLM1	29/Apr/20	As-D	mg/L	0.0001	0.0001	0.00034	0.00035	3	0.97
LLM1	29/Apr/20	Bicarbonate	mg/L	1	1	34	35	3	0.97
LLM1	22/Jul/20	Na-D	mg/L	0.05	0.05	6.95	6.75	3	1.03
LLO	27/Apr/20	Mn-T	mg/L	0.001	0.001	0.0136	0.0140	3	0.97
LLO	29/Oct/20	Alkalinity Total as Ca	mg/L	1	1	34	35	3	0.97
LLO	29/Oct/20	Ca-T	mg/L	0.05	0.05	21.0	20.4	3	1.03
MQL1	9/Jul/20	K-T	mg/L	0.05	0.05	0.283	0.275	3	1.03
NNO	20/Apr/20	K-T	mg/L	0.05	0.05	0.071	0.069	3	1.03
QU1010S	4/Jun/20	B-D	mg/L	0.05	0.05	0.867	0.842	3	1.03
QU1010S	8/Dec/20	Fe-D	mg/L	0.005	0.005	0.173	0.168	3	1.03
QU1010S	8/Dec/20	SO4-D	mg/L	1	1	3.5	3.4	3	1.03
QU1105S	17/Dec/20	Mn-D	mg/L	0.001	0.001	0.211	0.205	3	1.03
QU1109M	27/Aug/20	Ca-D	mg/L	0.05	0.05	88.0	90.6	3	0.97
QU1410	30/Jul/20	Si-D	mg/L	1	1	3.4	3.5	3	0.97
WA	14/Oct/20	Fe-D	mg/L	0.005	0.005	0.0238	0.0245	3	0.97
WB	21/Jul/20	Mn-D	mg/L	0.001	0.001	0.0035	0.0034	3	1.03
WB	6/Oct/20	Hard-D	mg/L	0.5	0.5	34.5	33.5	3	1.03
WB	6/Oct/20	Hardness (as CaCO3	mg/L	0.5	0.5	34.0	35.0	3	0.97
2S	1/Mar/21	Na-T	mg/L	0.05	0.05	40.5	39.3	3	1.03
LLM4	28/Oct/20	Al-T	mg/L	0.003	0.003	0.0132	0.0136	3	0.97
LLM4	28/Oct/20	SO4-D	mg/L	1	1	65	67	3	0.97
MQL9	5/Nov/20	Al-T	mg/L	0.003	0.003	0.0097	0.0100	3	0.97
NNL4	12/May/20	Sr-D	mg/L	0.001	0.001	0.0135	0.0131	3	1.03
NNO	4/Aug/20	K-T	mg/L	0.05	0.05	0.066	0.068	3	0.97
QU0813A	27/May/20	B-D	mg/L	0.05	0.05	0.601	0.619	3	0.97
QU1010S	4/Jun/20	Li-D	mg/L	0.002	0.002	0.0506	0.0491	3	1.03
QU1109M	17/Mar/21	As-T	mg/L	0.0002	0.0002	0.00512	0.00497	3	1.03
QU1136D	16/Dec/20	Se-D	mg/L	0.0002	0.0002	0.00033	0.00034	3	0.97
SPD	24/Aug/20	SO4-D	mg/L	10	10	330	340	3	0.97
WD	4/Jan/21	Ba-D	mg/L	0.001	0.001	0.0098	0.0101	3	0.97
2SI	16/Nov/20	SO4-D	mg/L	10	10	330	320	3	1.03
7SQR	4/Nov/20	Si-D	mg/L	0.1	0.1	3.26	3.16	3	1.03
LLM1	22/Apr/20	Bicarbonate	mg/L	1	1	32	33	3	0.97
NNL4	12/May/20	Turb	NTU	0.1	0.1	0.33	0.32	3	1.03
NNO	22/Oct/20	Na-T	mg/L	0.05	0.05	1.29	1.25	3	1.03
QU0813A	25/Aug/20	SO4-D	mg/L	1	1	33	32	3	1.03
QU0821GS	9/Feb/21	Ca-D	mg/L	0.05	0.05	12.9	13.3	3	0.97
QU1105S	17/Dec/20	Bicarbonate	mg/L	1	1	320	330	3	0.97
QU1109M	27/Aug/20	Si-D	mg/L	0.1	0.1	3.49	3.60	3	0.97
WC	7/Apr/20	Alkalinity Total as Ca	mg/L	1	1	330	320	3	1.03
WC	7/Apr/20	As-T	mg/L	0.0001	0.0001	0.00066	0.00064	3	1.03
WC	6/Aug/20	Na-T	mg/L	0.1	0.1	314	324	3	0.97
242MW	22/Sep/20	Mn-D	mg/L	0.001	0.001	0.817	0.791	3	1.03
2S	1/Mar/21	Li-T	mg/L	0.002	0.002	0.0096	0.0093	3	1.03
7SQR	4/Nov/20	Al-T	mg/L	0.003	0.003	0.0757	0.0782	3	0.97
INF	13/Oct/20	SO4-D	mg/L	10	10	620	640	3	0.97
LLM1	22/Apr/20	As-D	mg/L	0.0001	0.0001	0.00031	0.00032	3	0.97

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
LLM1	29/Apr/20	SO4-D	mg/L	1	1	64	62	3	1.03
LLM1	15/Jul/20	Na-T	mg/L	0.05	0.05	7.38	7.15	3	1.03
LLM1	15/Jul/20	S-T	mg/L	3	3	19.1	18.5	3	1.03
LLM1	22/Jul/20	K-T	mg/L	0.05	0.05	0.251	0.243	3	1.03
LLM4	28/Oct/20	Mn-T	mg/L	0.001	0.001	0.0091	0.0094	3	0.97
LLM9	5/Aug/20	Al-T	mg/L	0.003	0.003	0.0091	0.0094	3	0.97
LLM9	7/Oct/20	Hard-D	mg/L	0.5	0.5	128	124	3	1.03
LLO	27/Apr/20	Cu-D	mg/L	0.0002	0.0002	0.00032	0.00031	3	1.03
MQL1	9/Jul/20	Ca-T	mg/L	0.05	0.05	12.6	12.2	3	1.03
MW002	10/Dec/20	Ca-D	mg/L	0.1	0.1	474	459	3	1.03
NNO	20/Apr/20	Mg-D	mg/L	0.05	0.05	0.843	0.870	3	0.97
NNO	20/Apr/20	Mn-D	mg/L	0.001	0.001	0.0031	0.0032	3	0.97
QU0821GS	9/Feb/21	Ba-D	mg/L	0.001	0.001	0.277	0.286	3	0.97
QU1010S	4/Jun/20	K-D	mg/L	0.05	0.05	3.45	3.34	3	1.03
QU1010S	4/Jun/20	Mn-D	mg/L	0.001	0.001	0.0354	0.0343	3	1.03
2S	1/Mar/21	As-D	mg/L	0.0001	0.0001	0.00209	0.00216	3	0.97
7SQR	14/Jul/20	Al-D	mg/L	0.003	0.003	0.0092	0.0089	3	1.03
7SQR	4/Nov/20	Alkalinity Total as Ca	mg/L	1	1	31	30	3	1.03
LLM1	15/Jul/20	Alkalinity Total as Ca	mg/L	1	1	31	30	3	1.03
LLM1	15/Jul/20	Cu-D	mg/L	0.0002	0.0002	0.00030	0.00031	3	0.97
LLM1	22/Jul/20	Hardness (as CaCO3	mg/L	0.5	0.5	70.7	68.4	3	1.03
LLM1	22/Jul/20	Mg-D	mg/L	0.05	0.05	3.07	2.97	3	1.03
LLM1	22/Jul/20	Sr-T	mg/L	0.001	0.001	0.154	0.149	3	1.03
LLM9	7/Oct/20	Ca-D	mg/L	0.05	0.05	43.1	41.7	3	1.03
LLO	28/Jul/20	Al-D	mg/L	0.003	0.003	0.0061	0.0059	3	1.03
LLO	28/Jul/20	Hardness (as CaCO3	mg/L	0.5	0.5	76.1	73.6	3	1.03
QU0821GS	1/Jun/20	Sr-D	mg/L	0.001	0.002	0.426	0.412	3	1.03
QU0821GS	13/Aug/20	Mn-D	mg/L	0.001	0.002	0.0635	0.0656	3	0.97
QU1109M	17/Mar/21	B-T	mg/L	0.1	0.1	1.19	1.23	3	0.97
QU1109M	17/Mar/21	N-D	mg/L	0.02	0.02	0.312	0.302	3	1.03
WB	21/Jul/20	Na-T	mg/L	0.05	0.05	12.4	12.0	3	1.03
WC	6/Aug/20	Ca-D	mg/L	0.05	0.05	122	118	3	1.03
1M2N	9/Nov/20	K-D	mg/L	0.05	0.1	4.18	4.04	3	1.03
242MW	22/Sep/20	Fluoride	mg/L	0.05	0.05	0.088	0.091	3	0.97
2S	1/Mar/21	Mn-T	mg/L	0.001	0.001	0.0272	0.0263	3	1.03
7SQR	4/Nov/20	As-T	mg/L	0.0001	0.0001	0.00058	0.00060	3	0.97
LLM1	29/Apr/20	Ca-T	mg/L	0.05	0.05	23.9	23.1	3	1.03
LLM4	28/Oct/20	B-T	mg/L	0.05	0.05	0.059	0.057	3	1.04
LLM9	7/Oct/20	As-T	mg/L	0.0001	0.0001	0.00030	0.00029	3	1.03
LLO	28/Jul/20	Mn-T	mg/L	0.001	0.001	0.0087	0.0090	3	0.97
MQL4	29/Jul/20	Si-T	mg/L	0.1	0.1	1.74	1.80	3	0.97
MQL9	5/Nov/20	B-T	mg/L	0.05	0.05	0.059	0.057	3	1.04
MQL9	5/Nov/20	SO4-D	mg/L	1	1	29	30	3	0.97
MW006D	14/Dec/20	Mo-D	mg/L	0.001	0.001	0.0029	0.0030	3	0.97
QU0813A	27/May/20	P-D	mg/L	0.003	0.003	0.060	0.058	3	1.03
QU1101	28/Jan/21	Si-D	mg/L	0.5	0.5	5.70	5.90	3	0.97
QU1105S	17/Dec/20	Si-D	mg/L	0.1	0.1	3.18	3.29	3	0.97
QU1109M	27/Aug/20	Mn-D	mg/L	0.001	0.001	0.271	0.262	3	1.03
WA	14/Apr/20	Al-D	mg/L	0.003	0.003	0.0179	0.0173	3	1.03
WA	14/Apr/20	K-D	mg/L	0.05	0.05	0.059	0.057	3	1.04
WB	6/Oct/20	Na-D	mg/L	0.05	0.05	15.0	14.5	3	1.03
WC	6/Aug/20	Li-T	mg/L	0.004	0.004	0.0117	0.0121	3	0.97
WC	6/Aug/20	Mg-T	mg/L	0.1	0.1	14.3	14.8	3	0.97
WD	4/Jan/21	K-D	mg/L	0.05	0.05	1.80	1.74	3	1.03
2SC	5/Oct/20	Li-D	mg/L	0.002	0.002	0.0113	0.0117	4	0.97
3S	1/Feb/21	Bicarbonate	mg/L	1	1	280	290	4	0.97
7S	4/May/20	Cu-D	mg/L	0.0002	0.0002	0.00028	0.00029	4	0.97
7SQR	11/May/20	As-T	mg/L	0.0001	0.0001	0.00056	0.00058	4	0.97
7SQR	11/May/20	Ba-T	mg/L	0.001	0.001	0.0028	0.0029	4	0.97
7SQR	11/May/20	Na-T	mg/L	0.05	0.05	11.3	11.7	4	0.97
7SQR	11/May/20	SO4-D	mg/L	1	1	28	29	4	0.97
7SQR	14/Jul/20	Ba-T	mg/L	0.001	0.001	0.0028	0.0029	4	0.97
7SQR	4/Nov/20	Al-D	mg/L	0.003	0.003	0.0411	0.0397	4	1.04
LLM1	15/Jul/20	C-D	mg/L	0.5	0.5	2.8	2.9	4	0.97

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
LLM4	28/Oct/20	K-D	mg/L	0.05	0.05	0.322	0.311	4	1.04
LLM9	7/Oct/20	Si-D	mg/L	0.1	0.1	3.47	3.35	4	1.04
LLO	27/Apr/20	Al-T	mg/L	0.003	0.003	0.0222	0.0230	4	0.97
MQL1	9/Jul/20	Hardness (as CaCO3	mg/L	0.5	0.5	38.1	36.8	4	1.04
QU0821GS	13/Aug/20	Bromide	mg/L	0.01	0.01	0.29	0.28	4	1.04
WA	14/Apr/20	Mg-D	mg/L	0.05	0.05	0.761	0.735	4	1.04
WC	6/Aug/20	S-T	mg/L	6	6	226	234	4	0.97
7SQR	11/May/20	Ba-D	mg/L	0.001	0.001	0.0028	0.0027	4	1.04
LLM1	15/Jul/20	SO4-D	mg/L	1	1	56	54	4	1.04
LLO	27/Apr/20	Si-T	mg/L	0.1	0.1	3.00	3.11	4	0.96
LLO	28/Jul/20	Ba-T	mg/L	0.001	0.001	0.0057	0.0055	4	1.04
LLO	28/Jul/20	B-T	mg/L	0.05	0.05	0.057	0.055	4	1.04
MQL9	5/Nov/20	Si-T	mg/L	0.1	0.1	2.28	2.20	4	1.04
QU0813A	25/Aug/20	Acidity 8.3	mg/L	1	1	2.8	2.7	4	1.04
QU0813A	25/Aug/20	Sr-D	mg/L	0.001	0.001	0.515	0.497	4	1.04
QU0821GS	13/Aug/20	Li-D	mg/L	0.002	0.004	0.0945	0.0980	4	0.96
QU0821GS	9/Feb/21	As-D	mg/L	0.0001	0.0001	0.219	0.227	4	0.96
QU1010S	4/Jun/20	Mg-D	mg/L	0.05	0.05	5.63	5.43	4	1.04
QU1010S	8/Dec/20	N-D	mg/L	0.02	0.02	0.301	0.312	4	0.96
QU1011S	11/Jun/20	Ca-D	mg/L	0.05	0.05	36.5	35.2	4	1.04
QU1109M	17/Mar/21	Hard-D	mg/L	0.5	0.5	682	658	4	1.04
WB	5/May/20	SO4-D	mg/L	1	1	27	28	4	0.96
WB	21/Jul/20	Si-T	mg/L	0.1	0.1	1.96	1.89	4	1.04
LLM1	22/Jul/20	Na-T	mg/L	0.05	0.05	6.86	6.61	4	1.04
LLM1	22/Jul/20	SO4-D	mg/L	1	1	55	53	4	1.04
LLO	28/Jul/20	Si-T	mg/L	0.1	0.1	3.27	3.15	4	1.04
MQL1	15/Oct/20	Al-D	mg/L	0.003	0.003	0.0053	0.0055	4	0.96
QU0821GD	10/Nov/20	B-D	mg/L	0.25	0.25	3.05	2.94	4	1.04
WC	6/Aug/20	Sr-T	mg/L	0.002	0.002	1.33	1.38	4	0.96
LLM1	22/Apr/20	Alkalinity Total as Ca	mg/L	1	1	26	27	4	0.96
LLM1	22/Apr/20	Mn-T	mg/L	0.001	0.001	0.0161	0.0155	4	1.04
LLM1	29/Apr/20	C-D	mg/L	0.5	0.5	2.7	2.6	4	1.04
LLM1	15/Jul/20	B-D	mg/L	0.05	0.05	0.054	0.052	4	1.04
LLM1	22/Jul/20	C-D	mg/L	0.5	0.5	2.6	2.7	4	0.96
LLM4	28/Oct/20	S-T	mg/L	3	3	20.9	21.7	4	0.96
LLM9	5/Aug/20	Cu-D	mg/L	0.0002	0.0002	0.00026	0.00027	4	0.96
LLM9	5/Aug/20	Li-T	mg/L	0.002	0.002	0.0026	0.0027	4	0.96
LLO	29/Oct/20	B-D	mg/L	0.05	0.05	0.053	0.051	4	1.04
MQL1	9/Jul/20	Turb	NTU	0.1	0.1	0.26	0.27	4	0.96
MQL9	5/Nov/20	B-D	mg/L	0.05	0.05	0.053	0.051	4	1.04
QU0821GS	9/Feb/21	Hard-D	mg/L	0.5	0.5	46.5	48.3	4	0.96
QU1009D	10/Dec/20	N-D	mg/L	0.02	0.02	0.156	0.162	4	0.96
QU1010S	8/Dec/20	As-D	mg/L	0.0001	0.0001	0.104	0.108	4	0.96
QU1011S	11/Jun/20	Turb	NTU	0.1	0.1	2.7	2.6	4	1.04
QU1105S	17/Dec/20	Alkalinity Total as Ca	mg/L	1	1	260	270	4	0.96
QU1109M	27/Aug/20	Fe-D	mg/L	0.005	0.005	6.69	6.95	4	0.96
WB	21/Jul/20	Cu-T	mg/L	0.0005	0.0005	0.00054	0.00052	4	1.04
WB	21/Jul/20	SO4-D	mg/L	1	1	26	27	4	0.96
2SC	5/Oct/20	Mn-T	mg/L	0.001	0.001	0.0026	0.0025	4	1.04
7SQR	11/May/20	As-D	mg/L	0.0001	0.0001	0.00052	0.00050	4	1.04
7SQR	11/May/20	Fe-T	mg/L	0.01	0.01	0.075	0.078	4	0.96
7SQR	11/May/20	K-D	mg/L	0.05	0.05	0.233	0.224	4	1.04
LLM1	22/Apr/20	C-D	mg/L	0.5	0.5	2.5	2.6	4	0.96
LLM1	15/Jul/20	Ba-T	mg/L	0.001	0.001	0.0052	0.0050	4	1.04
LLM1	22/Jul/20	Ca-T	mg/L	0.05	0.05	23.4	22.5	4	1.04
LLM9	5/Aug/20	Li-D	mg/L	0.002	0.002	0.0025	0.0026	4	0.96
MQL1	16/Apr/20	Fe-T	mg/L	0.01	0.01	0.025	0.026	4	0.96
MQL4	29/Jul/20	Sr-D	mg/L	0.001	0.001	0.0624	0.0600	4	1.04
MW002	10/Dec/20	C-D	mg/L	0.5	0.5	0.76	0.79	4	0.96
NNO	4/Aug/20	Na-T	mg/L	0.05	0.05	1.32	1.27	4	1.04
QU1010S	4/Jun/20	Cl-D	mg/L	1	1	25	26	4	0.96
WA	14/Oct/20	Na-T	mg/L	0.05	0.05	0.873	0.840	4	1.04
WB	6/Oct/20	S-T	mg/L	3	3	10.0	10.4	4	0.96
WC	6/Aug/20	Si-D	mg/L	0.1	0.1	3.36	3.23	4	1.04

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
7SQR	11/May/20	Hardness (as CaCO3	mg/L	0.5	0.5	34.5	35.9	4	0.96
7SQR	11/May/20	K-T	mg/L	0.05	0.05	0.219	0.228	4	0.96
LLM1	22/Apr/20	Fe-D	mg/L	0.005	0.005	0.0590	0.0567	4	1.04
LLM1	22/Apr/20	K-D	mg/L	0.05	0.05	0.244	0.254	4	0.96
LLM9	5/Aug/20	Si-D	mg/L	0.1	0.1	3.59	3.45	4	1.04
LLO	27/Apr/20	Sr-T	mg/L	0.001	0.001	0.170	0.177	4	0.96
MW006D	14/Dec/20	U-D	mg/L	0.0001	0.0001	0.00049	0.00051	4	0.96
WA	8/Jul/20	Mg-T	mg/L	0.05	0.05	0.728	0.758	4	0.96
WB	6/Oct/20	Mg-D	mg/L	0.05	0.05	1.52	1.46	4	1.04
2SC	5/Oct/20	Na-T	mg/L	0.05	0.05	52.6	50.5	4	1.04
7SQR	4/Nov/20	As-D	mg/L	0.0001	0.0001	0.00050	0.00048	4	1.04
LLM1	22/Jul/20	S-T	mg/L	3	3	17.6	16.9	4	1.04
LLM9	7/Oct/20	C-D	mg/L	0.5	0.5	2.4	2.5	4	0.96
LLO	27/Apr/20	Ba-T	mg/L	0.001	0.001	0.0048	0.0050	4	0.96
LLO	28/Jul/20	Ca-T	mg/L	0.05	0.05	25.1	24.1	4	1.04
MW006D	14/Dec/20	K-D	mg/L	0.05	0.05	0.949	0.911	4	1.04
QU1010S	4/Jun/20	Fluoride	mg/L	0.05	0.05	0.74	0.71	4	1.04
QU1109M	27/Aug/20	Acidity 8.3	mg/L	1	1	12.3	11.8	4	1.04
QU1109M	17/Mar/21	K-D	mg/L	0.1	0.1	6.97	6.69	4	1.04
WA	14/Oct/20	Cu-T	mg/L	0.0005	0.0005	0.00075	0.00072	4	1.04
LLO	27/Apr/20	Na-T	mg/L	0.05	0.05	7.25	7.56	4	0.96
QU1410	30/Jul/20	As-D	mg/L	0.001	0.001	0.0997	0.104	4	0.96
QU1410	30/Jul/20	S-D	mg/L	30	30	637	664	4	0.96
WB	21/Jul/20	Cu-D	mg/L	0.0002	0.0002	0.00047	0.00049	4	0.96
WB	21/Jul/20	Sr-T	mg/L	0.001	0.001	0.0577	0.0553	4	1.04
7SQR	11/May/20	Al-T	mg/L	0.003	0.003	0.0229	0.0239	4	0.96
7SQR	11/May/20	Ca-T	mg/L	0.05	0.05	11.4	11.9	4	0.96
7SQR	14/Jul/20	As-T	mg/L	0.0001	0.0001	0.00046	0.00048	4	0.96
LLM1	22/Apr/20	Na-D	mg/L	0.05	0.05	6.41	6.69	4	0.96
LLM4	28/Oct/20	Si-D	mg/L	0.1	0.1	3.12	2.99	4	1.04
LLM9	7/Oct/20	Fe-T	mg/L	0.01	0.01	0.023	0.024	4	0.96
LLO	29/Oct/20	Si-D	mg/L	0.1	0.1	3.06	2.93	4	1.04
MQL4	29/Jul/20	Na-D	mg/L	0.05	0.05	14.2	13.6	4	1.04
NNL4	12/May/20	As-D	mg/L	0.0001	0.0001	0.00024	0.00023	4	1.04
QU0813A	25/Aug/20	Bicarbonate	mg/L	1	1	240	230	4	1.04
QU0821GS	13/Aug/20	B-D	mg/L	0.05	0.1	2.07	2.16	4	0.96
QU1010S	8/Dec/20	S2-T	mg/L	0.009	0.009	0.71	0.68	4	1.04
WA	14/Oct/20	C-D	mg/L	0.5	0.5	2.3	2.4	4	0.96
WA	14/Oct/20	Mg-T	mg/L	0.05	0.05	0.735	0.704	4	1.04
WC	7/Apr/20	As-D	mg/L	0.0001	0.0001	0.00046	0.00048	4	0.96
WC	6/Aug/20	K-T	mg/L	0.1	0.1	4.57	4.77	4	0.96
1M2N	9/Nov/20	As-D	mg/L	0.0001	0.0002	0.00984	0.00942	4	1.04
LLM1	15/Jul/20	Mg-T	mg/L	0.05	0.05	3.24	3.10	4	1.05
LLM1	22/Jul/20	S-D	mg/L	3	3	18.6	17.8	4	1.04
LLM4	28/Oct/20	Mn-D	mg/L	0.001	0.001	0.0023	0.0022	4	1.05
LLO	27/Apr/20	Ca-T	mg/L	0.05	0.05	22.4	23.4	4	0.96
QU0821GS	9/Feb/21	Bicarbonate	mg/L	1	1	220	230	4	0.96
QU0821GS	9/Feb/21	Mn-D	mg/L	0.001	0.001	0.0286	0.0299	4	0.96
QU1010S	4/Jun/20	N-D	mg/L	0.02	0.02	0.266	0.278	4	0.96
7SQR	14/Jul/20	Fe-D	mg/L	0.005	0.005	0.0612	0.0585	5	1.05
NNO	22/Oct/20	Mg-D	mg/L	0.05	0.05	1.08	1.13	5	0.96
QU1109M	17/Mar/21	Ca-D	mg/L	0.1	0.1	229	219	5	1.05
QU1109M	17/Mar/21	Na-T	mg/L	0.1	0.1	482	504	5	0.96
WA	8/Jul/20	Fe-D	mg/L	0.005	0.005	0.0114	0.0109	5	1.05
WB	21/Jul/20	Ca-T	mg/L	0.05	0.05	11.4	10.9	5	1.05
WB	21/Jul/20	Hardness (as CaCO3	mg/L	0.5	0.5	34.4	32.9	5	1.05
1M2N	9/Nov/20	Bromide	mg/L	0.01	0.01	0.067	0.064	5	1.05
2SC	7/Dec/20	Ba-T	mg/L	0.001	0.001	0.0156	0.0149	5	1.05
LLO	27/Apr/20	Hardness (as CaCO3	mg/L	0.5	0.5	67.5	70.7	5	0.95
QU1009D	10/Dec/20	Si-D	mg/L	0.1	0.1	9.51	9.08	5	1.05
QU1109M	27/Aug/20	C-D	mg/L	0.5	0.5	0.67	0.64	5	1.05
WC	6/Aug/20	Mn-T	mg/L	0.002	0.002	0.0149	0.0156	5	0.96
1M2N	9/Nov/20	B-D	mg/L	0.05	0.1	1.03	1.08	5	0.95
7SQR	14/Jul/20	As-D	mg/L	0.0001	0.0001	0.00042	0.00044	5	0.95

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
INF	28/Sep/20	SO4-D	mg/L	10	10	620	650	5	0.95
LLO	28/Jul/20	Mn-D	mg/L	0.001	0.001	0.0022	0.0021	5	1.05
LLO	28/Jul/20	S-D	mg/L	3	3	17.5	16.7	5	1.05
LLO	29/Oct/20	Sr-D	mg/L	0.001	0.001	0.154	0.147	5	1.05
MQL1	16/Apr/20	Turb	NTU	0.1	0.1	0.21	0.22	5	0.95
MQL1	15/Oct/20	Alkalinity Total as Ca	mg/L	1	1	42	44	5	0.95
MQL1	15/Oct/20	Al-T	mg/L	0.003	0.003	0.0087	0.0083	5	1.05
MQL9	5/Nov/20	Ba-T	mg/L	0.001	0.001	0.0021	0.0022	5	0.95
NNO	4/Aug/20	Na-D	mg/L	0.05	0.05	1.26	1.32	5	0.95
NNO	22/Oct/20	Si-T	mg/L	0.1	0.1	2.94	3.08	5	0.95
QU1105S	17/Dec/20	Cl-D	mg/L	1	1	2.1	2.2	5	0.95
QU1105S	17/Dec/20	N-D	mg/L	0.02	0.02	0.196	0.187	5	1.05
QU1109M	17/Mar/21	Mg-T	mg/L	0.1	0.1	27.3	28.6	5	0.95
WA	8/Jul/20	Bicarbonate	mg/L	1	1	21	22	5	0.95
WA	8/Jul/20	Fe-T	mg/L	0.01	0.01	0.021	0.022	5	0.95
WB	6/Oct/20	Al-D	mg/L	0.003	0.003	0.0065	0.0062	5	1.05
WB	6/Oct/20	Mg-T	mg/L	0.05	0.05	1.44	1.51	5	0.95
NNO	22/Oct/20	Al-T	mg/L	0.003	0.003	0.0320	0.0305	5	1.05
QU0821GS	9/Feb/21	K-D	mg/L	0.05	0.05	3.69	3.87	5	0.95
QU0821GS	9/Feb/21	Na-D	mg/L	0.05	0.05	95.3	100	5	0.95
WC	6/Aug/20	Si-T	mg/L	0.2	0.2	3.05	3.20	5	0.95
2SC	5/Oct/20	Se-D	mg/L	0.0001	0.0001	0.00020	0.00021	5	0.95
2SC	7/Dec/20	As-T	mg/L	0.0001	0.0001	0.00063	0.00060	5	1.05
LLM1	22/Apr/20	S-D	mg/L	3	3	15.9	16.7	5	0.95
LLM4	28/Oct/20	As-D	mg/L	0.0001	0.0001	0.00042	0.00040	5	1.05
LLO	27/Apr/20	Mg-T	mg/L	0.05	0.05	2.81	2.95	5	0.95
QU0813A	27/May/20	Bromide	mg/L	0.01	0.01	0.021	0.020	5	1.05
QU0821GS	1/Jun/20	Li-D	mg/L	0.002	0.004	0.0697	0.0732	5	0.95
QU1010S	4/Jun/20	Bicarbonate	mg/L	1	1	200	210	5	0.95
QU1101	28/Jan/21	C-D	mg/L	0.5	0.5	2.1	2.0	5	1.05
QU1105S	17/Dec/20	S-D	mg/L	3	3	54.9	52.3	5	1.05
QU1109M	17/Mar/21	Si-T	mg/L	0.2	0.2	4.35	4.14	5	1.05
WA	14/Oct/20	Mn-T	mg/L	0.001	0.001	0.0020	0.0021	5	0.95
WB	21/Jul/20	Mg-T	mg/L	0.05	0.05	1.45	1.38	5	1.05
INF	9/Nov/20	SO4-D	mg/L	10	10	590	620	5	0.95
LLM9	7/Oct/20	Al-T	mg/L	0.003	0.003	0.0061	0.0058	5	1.05
MQL9	5/Nov/20	S-D	mg/L	3	3	10.2	9.7	5	1.05
NNL4	12/May/20	Al-D	mg/L	0.003	0.003	0.0206	0.0196	5	1.05
NNO	22/Oct/20	Fe-D	mg/L	0.005	0.005	0.0852	0.0896	5	0.95
QU0821GS	9/Feb/21	Fe-D	mg/L	0.005	0.005	0.234	0.246	5	0.95
QU1136D	16/Dec/20	Fe-D	mg/L	0.01	0.01	0.558	0.531	5	1.05
WB	6/Oct/20	K-D	mg/L	0.05	0.05	0.264	0.251	5	1.05
WD	4/Jan/21	Al-D	mg/L	0.003	0.003	0.0214	0.0225	5	0.95
2S	1/Mar/21	Bicarbonate	mg/L	1	1	200	190	5	1.05
2SC	5/Oct/20	Acidity 8.3	mg/L	1	1	3.8	4.0	5	0.95
2SC	5/Oct/20	Li-T	mg/L	0.002	0.002	0.0121	0.0115	5	1.05
2SC	5/Oct/20	Sr-T	mg/L	0.001	0.001	1.60	1.52	5	1.05
LLM9	5/Aug/20	N-T	mg/L	0.02	0.02	0.101	0.096	5	1.05
QU0813A	25/Aug/20	Alkalinity Total as Ca	mg/L	1	1	200	190	5	1.05
QU0821GS	13/Aug/20	Cl-D	mg/L	1	1	200	190	5	1.05
QU1011S	11/Jun/20	Bicarbonate	mg/L	1	1	190	200	5	0.95
QU1109M	17/Mar/21	Sr-T	mg/L	0.002	0.002	2.63	2.50	5	1.05
QU1410	16/Dec/20	P-D	mg/L	0.001	0.001	0.0038	0.0040	5	0.95
WC	6/Aug/20	Hardness (as CaCO3)	mg/L	0.5	0.5	327	344	5	0.95
2S	1/Mar/21	Fe-T	mg/L	0.01	0.01	0.059	0.056	5	1.05
LLM4	28/Oct/20	Hard-D	mg/L	0.5	0.5	80.5	76.4	5	1.05
NNO	20/Apr/20	Fe-T	mg/L	0.01	0.01	0.059	0.056	5	1.05
QU0821GD	10/Nov/20	N-D	mg/L	0.1	0.1	3.95	4.16	5	0.95
WB	6/Oct/20	S-D	mg/L	3	3	9.9	9.4	5	1.05
242MW	22/Sep/20	SO4-D	mg/L	1	1	37	39	5	0.95
LLM1	22/Jul/20	Si-T	mg/L	0.1	0.1	2.93	2.78	5	1.05
MQL1	16/Apr/20	Mn-T	mg/L	0.001	0.001	0.0039	0.0037	5	1.05
NNO	4/Aug/20	Mn-T	mg/L	0.001	0.001	0.0110	0.0116	5	0.95
QU0821GS	9/Feb/21	Mg-D	mg/L	0.05	0.05	3.50	3.69	5	0.95

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
WB	6/Oct/20	Al-T	mg/L	0.003	0.003	0.0091	0.0096	5	0.95
WB	6/Oct/20	Mn-T	mg/L	0.001	0.001	0.0073	0.0077	5	0.95
2SC	5/Oct/20	Se-T	mg/L	0.0001	0.0001	0.00019	0.00018	5	1.06
2SI	21/Sep/20	SO4-D	mg/L	10	10	570	540	5	1.06
2SI	11/Jan/21	SO4-D	mg/L	1	2	180	190	5	0.95
7SQR	11/May/20	Sr-T	mg/L	0.001	0.001	0.0600	0.0633	5	0.95
LLM1	22/Jul/20	Turb	NTU	0.1	0.1	0.18	0.19	5	0.95
LLM4	28/Oct/20	S-D	mg/L	3	3	21.6	22.8	5	0.95
LLM9	7/Oct/20	K-D	mg/L	0.05	0.05	0.512	0.485	5	1.06
NNO	22/Oct/20	Bicarbonate	mg/L	1	1	18	19	5	0.95
QU0821GD	10/Nov/20	C-D	mg/L	0.5	0.5	18	19	5	0.95
QU1010S	8/Dec/20	Hydrogen Sulphide (	mg/L	0.01	0.01	0.76	0.72	5	1.06
QU1410	27/Aug/20	Acidity 8.3	mg/L	1	1	32.6	30.9	5	1.06
QU1410	27/Aug/20	Bromide	mg/L	0.05	0.05	0.19	0.18	5	1.06
QU1410	27/Aug/20	SO4-D	mg/L	10	10	1900	1800	5	1.06
WA	14/Oct/20	As-T	mg/L	0.0001	0.0001	0.00019	0.00018	5	1.06
WB	5/May/20	Ba-D	mg/L	0.001	0.001	0.0018	0.0019	5	0.95
WB	6/Oct/20	Ba-D	mg/L	0.001	0.001	0.0019	0.0018	5	1.06
1M2N	9/Nov/20	Na-D	mg/L	0.05	0.1	316	299	6	1.06
1M2N	9/Nov/20	Si-D	mg/L	0.1	0.2	3.39	3.58	6	0.95
LLO	28/Jul/20	Sr-T	mg/L	0.001	0.001	0.167	0.158	6	1.06
NNL4	12/May/20	Fe-D	mg/L	0.005	0.005	0.0519	0.0491	6	1.06
QU0821GS	1/Jun/20	Fe-D	mg/L	0.005	0.01	0.319	0.337	6	0.95
QU0821GS	9/Feb/21	Cl-D	mg/L	1	1	56	53	6	1.06
QU0821GS	9/Feb/21	Si-D	mg/L	0.1	0.1	3.37	3.56	6	0.95
WA	14/Apr/20	Cu-D	mg/L	0.0002	0.0002	0.00056	0.00053	6	1.06
WC	6/Aug/20	Ca-T	mg/L	0.1	0.1	107	113	6	0.95
WD	23/Nov/20	SO4-D	mg/L	10	10	560	530	6	1.06
LLO	28/Jul/20	As-T	mg/L	0.0001	0.0001	0.00055	0.00052	6	1.06
QU0821GS	13/Aug/20	P-D	mg/L	0.003	0.003	0.055	0.052	6	1.06
QU1410	16/Dec/20	S-D	mg/L	15	15	590	558	6	1.06
WB	6/Oct/20	Fe-T	mg/L	0.01	0.01	0.035	0.037	6	0.95
WB	6/Oct/20	Si-T	mg/L	0.1	0.1	1.73	1.83	6	0.95
WD	4/Jan/21	Co-D	mg/L	0.0002	0.0002	0.00104	0.00110	6	0.95
2SC	7/Dec/20	As-D	mg/L	0.0001	0.0001	0.00054	0.00051	6	1.06
2SC	7/Dec/20	Se-T	mg/L	0.0001	0.0001	0.00017	0.00018	6	0.94
IR6	2/Sep/20	Se-T	mg/L	0.0001	0.0001	0.00034	0.00036	6	0.94
MQL1	9/Jul/20	As-T	mg/L	0.0001	0.0001	0.00017	0.00018	6	0.94
QU1109M	17/Mar/21	Fe-D	mg/L	0.01	0.01	34.2	32.3	6	1.06
QU1136D	16/Dec/20	Turb	NTU	0.1	0.1	36	34	6	1.06
QU1410	30/Jul/20	Fluoride	mg/L	0.05	0.05	0.18	0.17	6	1.06
WA	14/Oct/20	As-D	mg/L	0.0001	0.0001	0.00018	0.00017	6	1.06
WB	6/Oct/20	As-D	mg/L	0.0001	0.0001	0.00018	0.00017	6	1.06
WD	4/Jan/21	Bicarbonate	mg/L	1	1	170	180	6	0.94
2S	1/Mar/21	Cu-T	mg/L	0.0005	0.0005	0.0005	0.00053	6	0.94
7SQR	11/May/20	Cu-T	mg/L	0.0005	0.0005	0.0005	0.00053	6	0.94
LLM1	22/Jul/20	Mn-T	mg/L	0.001	0.001	0.0053	0.0050	6	1.06
LLO	27/Apr/20	B-T	mg/L	0.05	0.05	0.05	0.053	6	0.94
QU1009D	10/Dec/20	Fe-D	mg/L	0.005	0.005	0.617	0.654	6	0.94
WA	14/Oct/20	Al-T	mg/L	0.003	0.003	0.0267	0.0252	6	1.06
WC	6/Aug/20	Ba-T	mg/L	0.002	0.002	0.0166	0.0176	6	0.94
2SC	7/Dec/20	B-T	mg/L	0.05	0.05	0.333	0.314	6	1.06
3S	8/Sep/20	SO4-D	mg/L	10	10	520	490	6	1.06
LLM1	29/Apr/20	As-T	mg/L	0.0001	0.0001	0.00035	0.00033	6	1.06
LLM9	7/Oct/20	B-D	mg/L	0.05	0.05	0.105	0.099	6	1.06
LLM9	7/Oct/20	Sr-D	mg/L	0.001	0.001	0.348	0.328	6	1.06
LLO	28/Jul/20	Ba-D	mg/L	0.001	0.001	0.0052	0.0049	6	1.06
WB	6/Oct/20	Alkalinity Total as Ca	mg/L	1	1	35	33	6	1.06
WB	6/Oct/20	Sr-T	mg/L	0.001	0.001	0.0595	0.0631	6	0.94
WD	4/Jan/21	As-D	mg/L	0.0001	0.0001	0.00033	0.00035	6	0.94
QU1009D	10/Dec/20	B-D	mg/L	0.05	0.05	0.401	0.426	6	0.94
QU1410	30/Jul/20	Fe-D	mg/L	0.05	0.05	1.88	1.77	6	1.06
WC	7/Apr/20	Al-T	mg/L	0.003	0.003	0.0065	0.0069	6	0.94
7SQR	11/May/20	Al-D	mg/L	0.003	0.003	0.0101	0.0095	6	1.06

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
7SQR	4/Nov/20	Cu-D	mg/L	0.0002	0.0002	0.00064	0.00068	6	0.94
LLM9	5/Aug/20	Turb	NTU	0.1	0.1	0.17	0.16	6	1.06
LLM9	7/Oct/20	S-D	mg/L	3	3	38.9	36.6	6	1.06
LLO	27/Apr/20	As-D	mg/L	0.0001	0.0001	0.00034	0.00032	6	1.06
MQL4	29/Jul/20	Ba-D	mg/L	0.001	0.001	0.0017	0.0016	6	1.06
MQL9	5/Nov/20	As-T	mg/L	0.0001	0.0001	0.00016	0.00017	6	0.94
MQL9	5/Nov/20	C-D	mg/L	0.5	0.5	1.6	1.7	6	0.94
MW002	10/Dec/20	Cl-D	mg/L	1	1	1.6	1.7	6	0.94
NNO	4/Aug/20	SO4-D	mg/L	1	1	1.6	1.7	6	0.94
QU0821GS	1/Jun/20	Fluoride	mg/L	0.05	0.05	1.6	1.7	6	0.94
QU1136D	16/Dec/20	Acidity 8.3	mg/L	1	1	1.6	1.7	6	0.94
WB	21/Jul/20	Ba-T	mg/L	0.001	0.001	0.0017	0.0016	6	1.06
IR6	2/Sep/20	Alkalinity Total as Ca	mg/L	1	1	66	62	6	1.06
LLM4	28/Oct/20	Cu-D	mg/L	0.0002	0.0002	0.00031	0.00033	6	0.94
LLM4	28/Oct/20	C-D	mg/L	0.5	0.5	3.3	3.1	6	1.06
MQL1	15/Oct/20	SO4-D	mg/L	1	1	33	31	6	1.06
MQL4	29/Jul/20	K-D	mg/L	0.05	0.05	0.234	0.220	6	1.06
NNO	20/Apr/20	Sr-D	mg/L	0.001	0.001	0.0126	0.0134	6	0.94
NNO	22/Oct/20	Na-D	mg/L	0.05	0.05	1.25	1.33	6	0.94
QU0821GS	13/Aug/20	N-D	mg/L	0.02	0.02	0.265	0.249	6	1.06
QU1109M	17/Mar/21	Si-D	mg/L	0.2	0.2	4.19	3.94	6	1.06
QU1136D	16/Dec/20	Ca-D	mg/L	0.1	0.1	41.3	38.8	6	1.06
WA	14/Oct/20	Sr-T	mg/L	0.001	0.001	0.0117	0.0110	6	1.06
WC	7/Apr/20	Cu-D	mg/L	0.0002	0.0002	0.00031	0.00033	6	0.94
WD	4/Jan/21	Cu-D	mg/L	0.0002	0.0002	0.00063	0.00067	6	0.94
7S	4/May/20	K-D	mg/L	0.05	0.05	0.106	0.113	6	0.94
IR6	2/Sep/20	Bicarbonate	mg/L	1	1	81	76	6	1.07
LLM9	7/Oct/20	Na-D	mg/L	0.05	0.05	16.0	15.0	7	1.07
LLO	28/Jul/20	P-T	mg/L	0.003	0.003	0.0032	0.003	7	1.07
MQL1	16/Apr/20	Ba-D	mg/L	0.001	0.001	0.0016	0.0015	7	1.07
MQL1	9/Jul/20	Si-T	mg/L	0.1	0.1	1.91	1.79	7	1.07
MQL4	29/Jul/20	Ba-T	mg/L	0.001	0.001	0.0016	0.0015	7	1.07
MW002	10/Dec/20	Bromide	mg/L	0.01	0.01	0.15	0.16	7	0.94
NNO	22/Oct/20	Alkalinity Total as Ca	mg/L	1	1	15	16	7	0.94
QU1011S	11/Jun/20	N-D	mg/L	0.02	0.02	0.105	0.112	7	0.94
QU1101	28/Jan/21	B-D	mg/L	0.25	0.25	1.05	1.12	7	0.94
QU1410	16/Dec/20	As-D	mg/L	0.0005	0.0005	0.0981	0.0919	7	1.07
WB	6/Oct/20	As-T	mg/L	0.0001	0.0001	0.00016	0.00015	7	1.07
7S	4/May/20	Al-T	mg/L	0.003	0.003	0.0187	0.0175	7	1.07
LLM1	22/Jul/20	Fe-T	mg/L	0.01	0.01	0.063	0.059	7	1.07
LLM4	28/Oct/20	Ca-D	mg/L	0.05	0.05	26.5	24.8	7	1.07
MQL4	29/Jul/20	Mn-T	mg/L	0.001	0.001	0.0078	0.0073	7	1.07
NNO	4/Aug/20	As-T	mg/L	0.0001	0.0001	0.00044	0.00047	7	0.94
QU1109M	27/Aug/20	Turb	NTU	0.1	0.1	78	73	7	1.07
WB	21/Jul/20	Fe-T	mg/L	0.01	0.01	0.047	0.044	7	1.07
LLO	27/Apr/20	Alkalinity Total as Ca	mg/L	1	1	31	29	7	1.07
LLO	27/Apr/20	Fe-D	mg/L	0.005	0.005	0.0503	0.0470	7	1.07
MQL4	29/Jul/20	Mn-D	mg/L	0.001	0.001	0.0015	0.0014	7	1.07
QU0821GS	1/Jun/20	N-D	mg/L	0.02	0.02	0.194	0.181	7	1.07
QU1009D	10/Dec/20	C-D	mg/L	0.5	0.5	0.75	0.70	7	1.07
SPD	13/Jul/20	SO4-D	mg/L	10	10	280	300	7	0.93
NNL4	12/May/20	K-D	mg/L	0.05	0.05	0.074	0.069	7	1.07
LLM1	29/Apr/20	Alkalinity Total as Ca	mg/L	1	1	27	29	7	0.93
LLO	28/Jul/20	SO4-D	mg/L	1	1	58	54	7	1.07
2S	1/Mar/21	S-T	mg/L	3	3	96.8	90.1	7	1.07
LLO	29/Oct/20	Mg-D	mg/L	0.05	0.05	3.18	2.96	7	1.07
QU1109M	17/Mar/21	Ni-D	mg/L	0.002	0.002	0.0086	0.0080	7	1.08
MQL1	15/Oct/20	S-T	mg/L	3	3	10.0	9.3	7	1.08
NNO	22/Oct/20	K-T	mg/L	0.05	0.05	0.100	0.093	7	1.08
QU1010S	8/Dec/20	Turb	NTU	0.1	0.1	9.3	10	7	0.93
QU1136D	16/Dec/20	Ba-D	mg/L	0.002	0.002	0.106	0.0985	7	1.08
WD	4/Jan/21	Li-D	mg/L	0.002	0.002	0.0053	0.0057	7	0.93
242MW	22/Sep/20	Tl-D	mg/L	0.00001	0.00001	0.000013	0.000014	7	0.93
IR6	2/Sep/20	C-D	mg/L	0.5	0.5	1.3	1.4	7	0.93

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
LLM4	28/Oct/20	Turb	NTU	0.1	0.1	0.42	0.39	7	1.08
LLM9	7/Oct/20	Cu-D	mg/L	0.0002	0.0002	0.00026	0.00028	7	0.93
LLO	29/Oct/20	As-D	mg/L	0.0001	0.0001	0.00042	0.00039	7	1.08
MQL1	15/Oct/20	Cl-D	mg/L	1	1	1.3	1.4	7	0.93
MW002	10/Dec/20	Fluoride	mg/L	0.05	0.05	0.14	0.13	7	1.08
NNL4	12/May/20	SO4-D	mg/L	1	1	2.8	2.6	7	1.08
QU1109M	27/Aug/20	Bromide	mg/L	0.01	0.01	0.13	0.14	7	0.93
QU1109M	17/Mar/21	Cu-T	mg/L	0.001	0.001	0.0039	0.0042	7	0.93
WA	14/Oct/20	Ba-D	mg/L	0.001	0.001	0.0013	0.0014	7	0.93
WB	5/May/20	As-D	mg/L	0.0001	0.0001	0.00013	0.00014	7	0.93
WB	5/May/20	As-T	mg/L	0.0001	0.0001	0.00014	0.00013	7	1.08
WC	7/Apr/20	Fe-D	mg/L	0.005	0.005	0.0130	0.0140	7	0.93
7SQR	4/Nov/20	Sr-D	mg/L	0.001	0.001	0.0662	0.0614	8	1.08
QU1109M	17/Mar/21	Co-D	mg/L	0.0004	0.0004	0.0138	0.0128	8	1.08
QU1136D	16/Dec/20	Hard-D	mg/L	0.5	0.5	138	128	8	1.08
QU1101	17/Aug/20	Ba-D	mg/L	0.005	0.005	0.0114	0.0123	8	0.93
QU1410	16/Dec/20	B-D	mg/L	0.25	0.25	1.09	1.01	8	1.08
WD	3/Sep/20	SO4-D	mg/L	10	10	680	630	8	1.08
WD	29/Dec/20	SO4-D	mg/L	10	10	630	680	8	0.93
WA	8/Jul/20	K-T	mg/L	0.05	0.05	0.080	0.074	8	1.08
MQL1	16/Apr/20	S-D	mg/L	3	3	7.3	7.9	8	0.92
MW002	10/Dec/20	N-D	mg/L	0.02	0.02	0.206	0.223	8	0.92
7SQR	14/Jul/20	SO4-D	mg/L	1	1	36	39	8	0.92
IR6	2/Sep/20	NO2+NO3	mg/L	0.02	0.02	0.024	0.026	8	0.92
IR6	2/Sep/20	N-NO3	mg/L	0.02	0.02	0.024	0.026	8	0.92
LLM9	7/Oct/20	Li-D	mg/L	0.002	0.002	0.0026	0.0024	8	1.08
NNL4	12/May/20	As-T	mg/L	0.0001	0.0001	0.00024	0.00026	8	0.92
NNO	22/Oct/20	As-D	mg/L	0.0001	0.0001	0.00039	0.00036	8	1.08
QU0813A	27/May/20	Cl-D	mg/L	1	1	12	13	8	0.92
QU1101	17/Aug/20	Fe-D	mg/L	0.025	0.025	157	170	8	0.92
QU1105S	17/Dec/20	P-D	mg/L	0.003	0.003	0.012	0.013	8	0.92
QU1136D	16/Dec/20	As-D	mg/L	0.0002	0.0002	0.828	0.764	8	1.08
QU1136D	16/Dec/20	Mo-D	mg/L	0.002	0.002	0.0026	0.0024	8	1.08
SPD	15/Jun/20	SO4-D	mg/L	10	10	240	260	8	0.92
WA	14/Apr/20	Fe-T	mg/L	0.01	0.01	0.012	0.013	8	0.92
WD	15/Apr/20	SO4-D	mg/L	10	10	650	600	8	1.08
QU0813A	27/May/20	N-D	mg/L	0.02	0.02	0.201	0.218	8	0.92
QU1101	17/Aug/20	Mn-D	mg/L	0.005	0.005	2.61	2.83	8	0.92
QU1109M	17/Mar/21	As-D	mg/L	0.0002	0.0002	0.00487	0.00449	8	1.08
QU1410	16/Dec/20	Cl-D	mg/L	1	1	6.4	5.9	8	1.08
WC	7/Apr/20	SO4-D	mg/L	10	10	640	590	8	1.08
LLM1	29/Apr/20	Turb	NTU	0.1	0.1	0.47	0.51	8	0.92
LLO	27/Apr/20	Bicarbonate	mg/L	1	1	38	35	8	1.09
MQL1	15/Oct/20	Cu-D	mg/L	0.0002	0.0002	0.00035	0.00038	8	0.92
QU1410	16/Dec/20	Sr-D	mg/L	0.005	0.005	4.56	4.20	8	1.09
7SQR	11/May/20	Cu-D	mg/L	0.0002	0.0002	0.00050	0.00046	8	1.09
7SQR	11/May/20	C-D	mg/L	0.5	0.5	2.5	2.3	8	1.09
LLM1	29/Apr/20	Ba-T	mg/L	0.001	0.001	0.0050	0.0046	8	1.09
WA	14/Oct/20	K-T	mg/L	0.05	0.05	0.088	0.081	8	1.09
LLM1	15/Jul/20	S-D	mg/L	3	3	19.6	18.0	9	1.09
SPD	20/May/20	SO4-D	mg/L	10	10	340	370	9	0.92
LLO	29/Oct/20	K-D	mg/L	0.05	0.05	0.303	0.278	9	1.09
QU1101	28/Jan/21	N-D	mg/L	0.02	0.02	0.463	0.425	9	1.09
QU1136D	16/Dec/20	Mg-D	mg/L	0.1	0.1	8.37	7.68	9	1.09
QU1136D	16/Dec/20	Si-D	mg/L	0.2	0.2	4.63	4.25	9	1.09
QU1410	16/Dec/20	Hard-D	mg/L	0.5	0.5	1940	1780	9	1.09
QU1410	16/Dec/20	Mn-D	mg/L	0.005	0.005	1.46	1.34	9	1.09
2S	1/Mar/21	Acidity 8.3	mg/L	1	1	1.1	1.2	9	0.92
2SC	2/Jun/20	Hard-D	mg/L	0.5	0.5	635	582	9	1.09
2SI	9/Jun/20	SO4-D	mg/L	10	10	360	330	9	1.09
IR6	2/Sep/20	Se-D	mg/L	0.0001	0.0001	0.00036	0.00033	9	1.09
NNL4	12/May/20	Ba-T	mg/L	0.001	0.001	0.0012	0.0011	9	1.09
NNO	22/Oct/20	SO4-D	mg/L	1	1	2.4	2.2	9	1.09
QU0813A	25/Aug/20	Cl-D	mg/L	1	1	12	11	9	1.09

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
QU0821GD	10/Nov/20	Turb	NTU	0.1	0.1	11	12	9	0.92
QU0821GS	9/Feb/21	P-D	mg/L	0.003	0.003	0.022	0.024	9	0.92
QU1010S	8/Dec/20	P-D	mg/L	0.003	0.003	0.024	0.022	9	1.09
QU1101	28/Jan/21	Bromide	mg/L	0.05	0.05	0.12	0.11	9	1.09
QU1410	16/Dec/20	Ca-D	mg/L	0.25	0.25	505	463	9	1.09
WA	14/Oct/20	SO4-D	mg/L	1	1	1.1	1.2	9	0.92
LLM1	15/Jul/20	N-T	mg/L	0.02	0.02	0.130	0.119	9	1.09
LLM1	15/Jul/20	N-TKN	mg/L	0.02	0.02	0.130	0.119	9	1.09
MQL1	9/Jul/20	Al-D	mg/L	0.003	0.003	0.0141	0.0154	9	0.92
QU1101	17/Aug/20	B-D	mg/L	0.25	0.25	1.09	1.19	9	0.92
QU1136D	16/Dec/20	Na-D	mg/L	0.1	0.1	11.9	10.9	9	1.09
QU1410	16/Dec/20	Si-D	mg/L	0.5	0.5	3.10	2.84	9	1.09
LLM1	22/Apr/20	As-T	mg/L	0.0001	0.0001	0.00032	0.00035	9	0.91
MQL1	16/Apr/20	Al-T	mg/L	0.003	0.003	0.0180	0.0197	9	0.91
QU1101	17/Aug/20	S-D	mg/L	15	15	487	533	9	0.91
LLM1	29/Apr/20	Cu-T	mg/L	0.0005	0.0005	0.00138	0.00126	9	1.10
QU1101	17/Aug/20	As-D	mg/L	0.0005	0.0005	0.0977	0.107	9	0.91
QU1109M	17/Mar/21	Mn-D	mg/L	0.002	0.002	1.83	1.67	9	1.10
QU1410	16/Dec/20	Na-D	mg/L	0.25	0.25	53.0	48.4	9	1.10
QU1410	16/Dec/20	Turb	NTU	0.1	0.1	23	21	9	1.10
WB	21/Jul/20	Mn-T	mg/L	0.001	0.001	0.0092	0.0084	9	1.10
INF	27/Jul/20	SO4-D	mg/L	10	10	620	680	9	0.91
LLM1	22/Jul/20	Cu-D	mg/L	0.0002	0.0002	0.00034	0.00031	9	1.10
MQL4	29/Jul/20	Cu-D	mg/L	0.0002	0.0002	0.00052	0.00057	9	0.91
QU1136D	16/Dec/20	Mn-D	mg/L	0.002	0.002	0.0432	0.0394	9	1.10
LLM9	5/Aug/20	Al-D	mg/L	0.003	0.003	0.0072	0.0079	9	0.91
7SQR	4/Nov/20	Cu-T	mg/L	0.0005	0.0005	0.00081	0.00089	9	0.91
2SC	2/Jun/20	Se-T	mg/L	0.0001	0.0001	0.00011	0.00010	10	1.10
NNO	20/Apr/20	Alkalinity Total as Ca	mg/L	1	1	11	10	10	1.10
NNO	20/Apr/20	As-T	mg/L	0.0001	0.0001	0.00020	0.00022	10	0.91
NNO	22/Oct/20	Mn-D	mg/L	0.001	0.001	0.0030	0.0033	10	0.91
QU0821GS	13/Aug/20	Fe-D	mg/L	0.005	0.01	0.351	0.386	10	0.91
QU1009D	10/Dec/20	Hydrogen Sulphide (	mg/L	0.002	0.002	0.10	0.11	10	0.91
QU1010S	8/Dec/20	Al-D	mg/L	0.003	0.003	0.003	0.0033	10	0.91
QU1011S	11/Jun/20	Bromide	mg/L	0.01	0.01	0.011	0.010	10	1.10
QU1136D	16/Dec/20	Cl-D	mg/L	1	1	1.0	1.1	10	0.91
QU1136D	16/Dec/20	Li-D	mg/L	0.004	0.004	0.0495	0.0450	10	1.10
QU1410	16/Dec/20	Mg-D	mg/L	0.25	0.25	166	151	10	1.10
SPD	20/May/20	Bicarbonate	mg/L	1	1	110	100	10	1.10
WA	14/Apr/20	SO4-D	mg/L	1	1	1	1.1	10	0.91
WA	8/Jul/20	As-T	mg/L	0.0001	0.0001	0.00010	0.00011	10	0.91
WA	8/Jul/20	NO2+NO3	mg/L	0.02	0.02	0.022	0.02	10	1.10
WA	8/Jul/20	N-NO3	mg/L	0.02	0.02	0.022	0.02	10	1.10
WB	5/May/20	C-D	mg/L	0.5	0.5	2.2	2.0	10	1.10
QU1101	17/Aug/20	Si-D	mg/L	0.5	0.5	4.96	5.46	10	0.91
QU1410	16/Dec/20	Fe-D	mg/L	0.025	0.025	1.83	1.66	10	1.10
NNO	4/Aug/20	K-D	mg/L	0.05	0.05	0.075	0.068	10	1.10
NNO	4/Aug/20	Si-D	mg/L	0.1	0.1	3.09	2.80	10	1.10
QU1101	17/Aug/20	Li-D	mg/L	0.01	0.01	0.058	0.064	10	0.91
QU1410	16/Dec/20	K-D	mg/L	0.25	0.25	6.96	6.31	10	1.10
NNO	22/Oct/20	K-D	mg/L	0.05	0.05	0.096	0.106	10	0.91
QU1410	30/Jul/20	N-D	mg/L	0.02	0.02	0.238	0.263	10	0.90
QU1410	27/Aug/20	Turb	NTU	0.1	0.1	8.5	9.4	10	0.90
NNO	4/Aug/20	Sr-D	mg/L	0.001	0.001	0.0175	0.0158	10	1.11
NNO	22/Oct/20	Mn-T	mg/L	0.001	0.001	0.0112	0.0101	10	1.11
QU0821GS	9/Feb/21	Al-D	mg/L	0.003	0.003	0.0037	0.0041	10	0.90
QU1011S	11/Jun/20	C-D	mg/L	0.5	0.5	0.92	0.83	10	1.11
QU1101	17/Aug/20	Ca-D	mg/L	0.25	0.25	342	379	10	0.90
WD	4/Jan/21	B-D	mg/L	0.05	0.05	0.331	0.367	10	0.90
LLO	29/Oct/20	Na-D	mg/L	0.05	0.05	7.34	6.61	11	1.11
LLO	29/Oct/20	S-D	mg/L	3	3	19.1	17.2	11	1.11
MQL4	29/Jul/20	As-D	mg/L	0.0001	0.0001	0.00018	0.00020	11	0.90
MQL4	29/Jul/20	SO4-D	mg/L	1	1	27	30	11	0.90
NNO	20/Apr/20	Cu-D	mg/L	0.0002	0.0002	0.00040	0.00036	11	1.11

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
QU0813A	25/Aug/20	P-D	mg/L	0.001	0.001	0.027	0.030	11	0.90
QU1101	17/Aug/20	Bromide	mg/L	0.05	0.05	0.27	0.30	11	0.90
QU1105S	17/Dec/20	Turb	NTU	0.1	0.1	9.0	10	11	0.90
QU1109M	17/Mar/21	Ba-D	mg/L	0.002	0.002	0.0210	0.0189	11	1.11
QU1136D	16/Dec/20	Sr-D	mg/L	0.002	0.002	0.401	0.361	11	1.11
QU1410	27/Aug/20	C-D	mg/L	0.5	0.5	1.1	0.99	11	1.11
QU1101	17/Aug/20	Na-D	mg/L	0.25	0.25	125	139	11	0.90
7SQR	14/Jul/20	Cu-T	mg/L	0.0005	0.0005	0.00059	0.00053	11	1.11
QU1136D	16/Dec/20	K-D	mg/L	0.1	0.1	0.79	0.71	11	1.11
QU1410	16/Dec/20	Ba-D	mg/L	0.005	0.005	0.0157	0.0141	11	1.11
2SC	2/Jun/20	Ca-D	mg/L	0.05	0.05	214	192	11	1.11
QU1136D	16/Dec/20	P-D	mg/L	0.001	0.001	0.049	0.044	11	1.11
QU1109M	17/Mar/21	Sr-D	mg/L	0.002	0.002	2.61	2.34	11	1.12
NNO	4/Aug/20	Cu-D	mg/L	0.0002	0.0002	0.00043	0.00048	11	0.90
NNO	22/Oct/20	Fe-T	mg/L	0.01	0.01	0.129	0.144	11	0.90
QU1101	17/Aug/20	Turb	NTU	0.1	0.1	860	770	11	1.12
LLE	8/Feb/21	SO4-D	mg/L	1	1	85	95	11	0.89
QU1109M	17/Mar/21	Bromide	mg/L	0.01	0.02	0.19	0.17	11	1.12
WB	21/Jul/20	C-D	mg/L	0.5	0.5	1.9	1.7	11	1.12
1M2N	9/Nov/20	Li-D	mg/L	0.002	0.004	0.0101	0.0113	11	0.89
MQL4	29/Jul/20	Fe-D	mg/L	0.005	0.005	0.0300	0.0268	11	1.12
MQL1	9/Jul/20	SO4-D	mg/L	1	1	37	33	11	1.12
QU0821GS	9/Feb/21	Turb	NTU	0.1	0.1	0.58	0.65	11	0.89
QU1101	17/Aug/20	Hard-D	mg/L	0.5	0.5	1060	1190	12	0.89
QU1101	17/Aug/20	Sr-D	mg/L	0.005	0.005	2.01	2.26	12	0.89
QU0813A	25/Aug/20	N-D	mg/L	0.02	0.02	0.208	0.234	12	0.89
QU1011S	11/Jun/20	P-D	mg/L	0.003	0.003	0.018	0.016	12	1.12
WB	6/Oct/20	Mn-D	mg/L	0.001	0.001	0.0018	0.0016	12	1.12
QU1010S	4/Jun/20	S2-T	mg/L	0.0018	0.0018	0.089	0.079	12	1.13
LLM9	5/Aug/20	As-T	mg/L	0.0001	0.0001	0.00023	0.00026	12	0.88
7SQR	4/Nov/20	S-D	mg/L	3	3	7.6	8.6	12	0.88
LLM1	22/Jul/20	N-NH3	mg/L	0.015	0.015	0.015	0.017	13	0.88
MQL4	29/Jul/20	C-D	mg/L	0.5	0.5	1.5	1.7	13	0.88
MQL4	29/Jul/20	N-NH3	mg/L	0.015	0.015	0.015	0.017	13	0.88
2SC	2/Jun/20	Si-D	mg/L	0.1	0.1	2.36	2.08	13	1.13
QU1410	16/Dec/20	U-D	mg/L	0.0005	0.0005	0.00084	0.00074	13	1.14
QU1109M	27/Aug/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000022	0.0000025	13	0.88
QU1101	28/Jan/21	Cl-D	mg/L	1	1	2.9	3.3	13	0.88
2S	1/Mar/21	Cu-D	mg/L	0.0002	0.0002	0.00114	0.00100	13	1.14
MQL1	16/Apr/20	Cu-T	mg/L	0.0005	0.0005	0.00057	0.00065	13	0.88
242MW	22/Sep/20	Hydrogen Sulphide (	mg/L	0.002	0.002	0.016	0.014	13	1.14
NNL4	12/May/20	Cu-D	mg/L	0.0002	0.0002	0.00040	0.00035	13	1.14
NNO	22/Oct/20	Cu-D	mg/L	0.0002	0.0002	0.00042	0.00048	13	0.88
QU1101	17/Aug/20	Mg-D	mg/L	0.25	0.25	51.2	58.5	13	0.88
QU1136D	16/Dec/20	B-D	mg/L	0.1	0.1	0.64	0.56	13	1.14
QU1410	30/Jul/20	C-D	mg/L	0.5	0.5	1.6	1.4	13	1.14
WA	14/Oct/20	K-D	mg/L	0.05	0.05	0.091	0.104	13	0.88
MQL4	29/Jul/20	N-T	mg/L	0.02	0.02	0.087	0.076	14	1.14
QU1010S	4/Jun/20	Hydrogen Sulphide (	mg/L	0.002	0.002	0.095	0.083	14	1.14
QU1109M	27/Aug/20	N-D	mg/L	0.02	0.02	0.346	0.396	14	0.87
QU1410	27/Aug/20	B-D	mg/L	0.25	0.25	1.19	1.04	14	1.14
QU1410	16/Dec/20	Acidity 8.3	mg/L	1	1	34.8	30.4	14	1.14
QU1410	16/Dec/20	Li-D	mg/L	0.01	0.01	0.134	0.117	14	1.15
QU0821GD	10/Nov/20	Acidity 8.3	mg/L	1	1	5.5	4.8	14	1.15
QU1101	17/Aug/20	K-D	mg/L	0.25	0.25	5.70	6.53	14	0.87
LLO	27/Apr/20	As-T	mg/L	0.0001	0.0001	0.00034	0.00039	14	0.87
MW006D	14/Dec/20	S-D	mg/L	3	3	3.4	3.9	14	0.87
WA	8/Jul/20	K-D	mg/L	0.05	0.05	0.077	0.067	14	1.15
LLO	29/Oct/20	Al-D	mg/L	0.003	0.003	0.0092	0.0080	14	1.15
QU1410	27/Aug/20	S-D	mg/L	15	15	642	558	14	1.15
242MW	22/Sep/20	S2-T	mg/L	0.0018	0.0018	0.015	0.013	14	1.15
QU1009D	10/Dec/20	Cl-D	mg/L	1	1	1.3	1.5	14	0.87
2SC	2/Jun/20	SO4-D	mg/L	10	10	450	520	14	0.87
7S	4/May/20	SO4-D	mg/L	1	1	3.2	3.7	15	0.86

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
LLM1	7/Oct/20	Chlorophyll a	ug/L	0.5	0.5	0.89	0.77	15	1.16
QU1410	27/Aug/20	K-D	mg/L	0.25	0.25	7.70	6.66	15	1.16
QU1109M	17/Mar/21	Cd-T	mg/L	0.00002	0.00002	0.000076	0.000088	15	0.86
WC	6/Aug/20	Fe-T	mg/L	0.02	0.02	0.076	0.088	15	0.86
LLO	29/Oct/20	Hard-D	mg/L	0.5	0.5	74.0	63.8	15	1.16
QU1410	27/Aug/20	As-D	mg/L	0.0005	0.0005	0.0994	0.0855	15	1.16
QU1410	27/Aug/20	Ba-D	mg/L	0.005	0.005	0.0164	0.0141	15	1.16
QU1410	27/Aug/20	Mg-D	mg/L	0.25	0.25	185	159	15	1.16
QU1410	27/Aug/20	Mn-D	mg/L	0.005	0.005	1.55	1.33	15	1.17
NNO	4/Aug/20	TSS	mg/L	1	1	2.8	2.4	15	1.17
QU1410	30/Jul/20	P-D	mg/L	0.003	0.003	0.003	0.0035	15	0.86
QU1410	30/Jul/20	Turb	NTU	0.1	0.1	18	21	15	0.86
WB	6/Oct/20	Ba-T	mg/L	0.001	0.001	0.0018	0.0021	15	0.86
WD	23/Nov/20	TSS	mg/L	1	1	2.4	2.8	15	0.86
WD	4/Jan/21	Fe-D	mg/L	0.005	0.005	0.0293	0.0251	15	1.17
NNO	4/Aug/20	Al-T	mg/L	0.003	0.003	0.0184	0.0215	16	0.86
QU1410	27/Aug/20	U-D	mg/L	0.0005	0.0005	0.00090	0.00077	16	1.17
LLM1	29/Apr/20	Ba-D	mg/L	0.001	0.001	0.0047	0.0055	16	0.85
QU1011S	11/Jun/20	SO4-D	mg/L	1	1	6.2	5.3	16	1.17
QU1410	27/Aug/20	Fe-D	mg/L	0.025	0.025	1.92	1.64	16	1.17
QU1410	27/Aug/20	Sr-D	mg/L	0.005	0.005	4.88	4.17	16	1.17
QU1410	27/Aug/20	Li-D	mg/L	0.01	0.01	0.150	0.128	16	1.17
LLM1	29/Apr/20	Mn-D	mg/L	0.001	0.001	0.0161	0.0189	16	0.85
7S	4/May/20	Alkalinity Total as Ca	mg/L	1	1	17	20	16	0.85
LLO	29/Oct/20	Ca-D	mg/L	0.05	0.05	24.4	20.7	16	1.18
QU1010S	4/Jun/20	P-D	mg/L	0.003	0.003	0.033	0.028	16	1.18
QU1109M	17/Mar/21	Turb	NTU	0.1	0.1	280	330	16	0.85
QU1410	27/Aug/20	Hard-D	mg/L	0.5	0.5	2180	1850	16	1.18
QU1410	27/Aug/20	Na-D	mg/L	0.25	0.25	56.1	47.6	16	1.18
QU1136D	16/Dec/20	C-D	mg/L	0.5	0.5	0.5	0.59	17	0.85
LLM9	7/Oct/20	As-D	mg/L	0.0001	0.0001	0.00022	0.00026	17	0.85
NNO	4/Aug/20	Ba-D	mg/L	0.001	0.001	0.0013	0.0011	17	1.18
QU1101	17/Aug/20	Bicarbonate	mg/L	1	1	130	110	17	1.18
QU1410	27/Aug/20	Si-D	mg/L	0.5	0.5	3.47	2.93	17	1.18
QU1101	17/Aug/20	Acidity 8.3	mg/L	1	1	147	124	17	1.19
QU1105S	17/Dec/20	Se-D	mg/L	0.0001	0.0001	0.00191	0.00161	17	1.19
7SQR	14/Jul/20	C-D	mg/L	0.5	0.5	1.6	1.9	17	0.84
QU1410	27/Aug/20	Ca-D	mg/L	0.25	0.25	570	480	17	1.19
7S	4/May/20	Bicarbonate	mg/L	1	1	21	25	17	0.84
MQL4	29/Jul/20	Turb	NTU	0.1	0.1	0.31	0.26	18	1.19
LLM9	7/Oct/20	Turb	NTU	0.1	0.1	0.37	0.31	18	1.19
WA	14/Oct/20	Cu-D	mg/L	0.0002	0.0002	0.00056	0.00067	18	0.84
2S	1/Mar/21	Al-D	mg/L	0.003	0.003	0.003	0.0036	18	0.83
MP	16/Feb/21	TSS	mg/L	1	1	1	1.2	18	0.83
NNO	22/Oct/20	TSS	mg/L	1	1	1	1.2	18	0.83
QU1410	30/Jul/20	U-D	mg/L	0.001	0.001	0.0012	0.001	18	1.20
SPD	24/Aug/20	TSS	mg/L	1	1	1.2	1	18	1.20
WC	7/Apr/20	TSS	mg/L	1	1	1.2	1	18	1.20
WD	18/Aug/20	TSS	mg/L	1	1	4.0	4.8	18	0.83
WA	8/Jul/20	Cu-D	mg/L	0.0002	0.0002	0.00064	0.00053	19	1.21
QU1101	17/Aug/20	Alkalinity Total as Ca	mg/L	1	1	110	91	19	1.21
QU1105S	17/Dec/20	C-D	mg/L	0.5	0.5	1.9	2.3	19	0.83
LLM1	29/Apr/20	Mn-T	mg/L	0.001	0.001	0.0193	0.0159	19	1.21
QU1109M	17/Mar/21	Al-T	mg/L	0.006	0.006	0.0073	0.006	20	1.22
WA	14/Apr/20	Cu-T	mg/L	0.0005	0.0005	0.00060	0.00073	20	0.82
LLM1	22/Jul/20	N-T	mg/L	0.02	0.02	0.096	0.117	20	0.82
LLM1	22/Jul/20	N-TKN	mg/L	0.02	0.02	0.096	0.117	20	0.82
1M2N	9/Nov/20	Cu-T	mg/L	0.0005	0.0005	0.0005	0.00061	20	0.82
2SC	7/Dec/20	Fe-D	mg/L	0.005	0.005	0.0100	0.0082	20	1.22
WB	5/May/20	Cu-T	mg/L	0.0005	0.0005	0.00061	0.0005	20	1.22
LLO	28/Jul/20	C-D	mg/L	0.5	0.5	2.7	2.2	20	1.23
WA	8/Jul/20	Cu-T	mg/L	0.0005	0.0005	0.00090	0.00073	21	1.23
WB	21/Jul/20	As-T	mg/L	0.0001	0.0001	0.00021	0.00017	21	1.24
QU0813A	27/May/20	Se-D	mg/L	0.0001	0.0001	0.00063	0.00078	21	0.81

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
NNL4	12/May/20	C-D	mg/L	0.5	0.5	3.1	2.5	21	1.24
1M2N	9/Nov/20	Mo-D	mg/L	0.001	0.002	0.0016	0.002	22	0.80
7SQR	11/May/20	TSS	mg/L	1	1	2.0	1.6	22	1.25
LLO	29/Oct/20	C-D	mg/L	0.5	0.5	3.5	2.8	22	1.25
MW002	10/Dec/20	Turb	NTU	0.1	0.1	20	16	22	1.25
QU1109M	17/Mar/21	P-T	mg/L	0.003	0.003	0.0040	0.0050	22	0.80
SPD	20/May/20	Acidity 8.3	mg/L	1	1	1.2	1.5	22	0.80
SPD	13/Jul/20	TSS	mg/L	1	1	2.0	1.6	22	1.25
2S	1/Mar/21	Fe-D	mg/L	0.005	0.005	0.005	0.0063	23	0.79
MW002	10/Dec/20	Ni-D	mg/L	0.002	0.002	0.0023	0.0029	23	0.79
7SQR	4/Nov/20	Hg-T	mg/L	0.0000019	0.0000019	0.0000024	0.0000019	23	1.26
242MW	22/Sep/20	Acidity 8.3	mg/L	1	1	4.3	3.4	23	1.26
QU0821GS	13/Aug/20	Turb	NTU	0.1	0.1	3.4	4.3	23	0.79
IR6	2/Sep/20	S-T	mg/L	3	3	3.8	3	24	1.27
QU1410	30/Jul/20	SO4-D	mg/L	10	10	1500	1900	24	0.79
IR6	2/Sep/20	Al-T	mg/L	0.003	0.003	0.0162	0.0206	24	0.79
7SQR	14/Jul/20	Cu-D	mg/L	0.0002	0.0002	0.00056	0.00044	24	1.27
QU1410	16/Dec/20	Se-D	mg/L	0.0005	0.0005	0.00132	0.00168	24	0.79
WB	6/Oct/20	Cl-D	mg/L	1	1	1.4	1.1	24	1.27
WD	4/Jan/21	TSS	mg/L	1	1	4.4	5.6	24	0.79
QU0821GS	13/Aug/20	Hydrogen Sulphide (	mg/L	0.002	0.002	0.032	0.041	25	0.78
MQL9	5/Nov/20	Turb	NTU	0.1	0.1	0.36	0.28	25	1.29
QU1105S	17/Dec/20	Acidity 8.3	mg/L	1	1	7.3	9.4	25	0.78
LLO	29/Oct/20	Cu-D	mg/L	0.0002	0.0002	0.00035	0.00027	26	1.30
1M2N	9/Nov/20	Al-T	mg/L	0.003	0.003	0.003	0.0039	26	0.77
242MW	22/Sep/20	Cl-D	mg/L	1	1	1	1.3	26	0.77
IR6	2/Sep/20	Cd-T	mg/L	0.00001	0.00001	0.00001	0.000013	26	0.77
MQL1	15/Oct/20	Mn-D	mg/L	0.001	0.001	0.0013	0.001	26	1.30
QU0821GS	13/Aug/20	S2-T	mg/L	0.0018	0.0018	0.030	0.039	26	0.77
QU1109M	17/Mar/21	Cu-D	mg/L	0.0004	0.0004	0.00052	0.0004	26	1.30
WA	8/Jul/20	Ba-T	mg/L	0.001	0.001	0.0013	0.001	26	1.30
WA	8/Jul/20	SO4-D	mg/L	1	1	1.3	1.0	26	1.30
QU1109M	17/Mar/21	Total Organic Carbo	mg/L	0.5	0.5	0.77	0.59	27	1.31
QU0813A	25/Aug/20	Se-D	mg/L	0.0001	0.0001	0.00039	0.00051	27	0.76
LLM9	7/Oct/20	Mn-D	mg/L	0.001	0.001	0.0473	0.0361	27	1.31
NNO	22/Oct/20	C-D	mg/L	0.5	0.5	2.9	3.8	27	0.76
1M2N	9/Nov/20	Acidity 8.3	mg/L	1	1	11.7	8.9	27	1.31
QU1410	27/Aug/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000025	27	0.76
QU1410	16/Dec/20	N-D	mg/L	0.02	0.02	0.218	0.290	28	0.75
2SC	7/Dec/20	Fe-T	mg/L	0.01	0.01	0.040	0.030	29	1.33
7SQR	14/Jul/20	TSS	mg/L	1	1	1.6	1.2	29	1.33
LLO	27/Apr/20	C-D	mg/L	0.5	0.5	1.8	2.4	29	0.75
NNO	4/Aug/20	P-T	mg/L	0.003	0.003	0.0036	0.0048	29	0.75
WD	19/Oct/20	TSS	mg/L	1	1	1.2	1.6	29	0.75
LLO	27/Apr/20	Cu-T	mg/L	0.0005	0.0005	0.0005	0.00068	31	0.74
LLM1	29/Apr/20	P-T	mg/L	0.003	0.003	0.0065	0.0047	32	1.38
QU1010S	4/Jun/20	Se-D	mg/L	0.0001	0.0001	0.00044	0.00061	32	0.72
QU1011S	11/Jun/20	Acidity 8.3	mg/L	1	1	5.0	3.6	33	1.39
MQL1	9/Jul/20	N-T	mg/L	0.02	0.02	0.076	0.106	33	0.72
MQL1	9/Jul/20	N-TKN	mg/L	0.02	0.02	0.076	0.106	33	0.72
WB	21/Jul/20	N-NH3	mg/L	0.015	0.015	0.021	0.015	33	1.40
WC	7/Apr/20	Alk-PP	mg/L	1	1	1.4	1	33	1.40
WC	6/Aug/20	TSS	mg/L	1	1	2.8	2.0	33	1.40
QU1410	30/Jul/20	Bromide	mg/L	0.05	0.01	0.36	0.51	35	0.71
QU1101	17/Aug/20	N-D	mg/L	0.02	0.02	0.402	0.570	35	0.71
LLM1	29/Apr/20	Al-T	mg/L	0.003	0.003	0.0211	0.0148	35	1.43
LLM9	5/Aug/20	N-TKN	mg/L	0.02	0.02	0.067	0.047	35	1.43
MQL1	15/Oct/20	Turb	NTU	0.1	0.1	0.32	0.46	36	0.70
LLM9	5/Aug/20	NO2+NO3	mg/L	0.02	0.02	0.034	0.049	36	0.69
LLM9	5/Aug/20	N-NO3	mg/L	0.02	0.02	0.034	0.049	36	0.69
QU0821GS	9/Feb/21	Alk-PP	mg/L	1	1	1.8	2.6	36	0.69
QU1101	17/Aug/20	Hydrogen Sulphide (	mg/L	0.002	0.01	0.045	0.065	36	0.69
QU1410	30/Jul/20	Hydrogen Sulphide (	mg/L	0.002	0.002	0.0029	0.002	37	1.45
QU1101	17/Aug/20	S2-T	mg/L	0.0018	0.009	0.042	0.061	37	0.69

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
LLM1	22/Apr/20	Turb	NTU	0.1	0.1	0.33	0.48	37	0.69
QU0821GS	9/Feb/21	Hydrogen Sulphide (	mg/L	0.002	0.002	0.11	0.16	37	0.69
QU1109M	17/Mar/21	N-NH3	mg/L	0.015	0.015	0.35	0.24	37	1.46
QU1010S	4/Jun/20	C-D	mg/L	0.5	0.5	0.5	0.73	37	0.68
NNO	20/Apr/20	C-D	mg/L	0.5	0.5	1.9	2.8	38	0.68
QU1101	17/Aug/20	C-D	mg/L	0.5	0.5	1.9	2.8	38	0.68
QU0821GS	9/Feb/21	Carbonate	mg/L	1	1	2.1	3.1	39	0.68
QU1009D	10/Dec/20	P-D	mg/L	0.003	0.003	0.0080	0.0054	39	1.48
LLM1	22/Apr/20	Cu-D	mg/L	0.0002	0.0002	0.00051	0.00034	40	1.50
LLO	28/Jul/20	TSS	mg/L	1	1	2.4	1.6	40	1.50
QU0821GS	9/Feb/21	S2-T	mg/L	0.0018	0.0018	0.10	0.15	40	0.67
QU1410	30/Jul/20	S2-T	mg/L	0.0018	0.0018	0.0027	0.0018	40	1.50
QU1410	30/Jul/20	Acidity 8.3	mg/L	1	1	13.3	20.1	41	0.66
7S	4/May/20	C-D	mg/L	0.5	0.5	0.56	0.85	41	0.66
242MW	22/Sep/20	N-D	mg/L	0.02	0.02	0.141	0.215	42	0.66
IR6	2/Sep/20	N-NH3	mg/L	0.015	0.015	0.029	0.019	42	1.53
QU0821GS	9/Feb/21	N-D	mg/L	0.02	0.02	0.189	0.289	42	0.65
LLM1	15/Jul/20	P-T	mg/L	0.003	0.003	0.003	0.0046	42	0.65
LLO	29/Oct/20	Al-T	mg/L	0.003	0.003	0.0092	0.0142	43	0.65
LLO	29/Oct/20	Fe-T	mg/L	0.01	0.01	0.042	0.066	44	0.64
LLM1	29/Apr/20	Al-D	mg/L	0.003	0.003	0.0144	0.0227	45	0.63
MW006D	14/Dec/20	Turb	NTU	0.1	0.1	0.94	1.5	46	0.63
1M2N	9/Nov/20	Pb-T	mg/L	0.0002	0.0002	0.0002	0.00032	46	0.62
7S	4/May/20	TSS	mg/L	1	1	1	1.6	46	0.62
NNO	20/Apr/20	TSS	mg/L	1	1	1	1.6	46	0.62
QU0813A	27/May/20	C-D	mg/L	0.5	0.5	0.80	0.5	46	1.60
LLM1	29/Apr/20	Fe-T	mg/L	0.01	0.01	0.081	0.050	47	1.62
QU1410	16/Dec/20	Bromide	mg/L	0.05	0.05	0.18	0.30	50	0.60
LLM1	29/Apr/20	Fe-D	mg/L	0.005	0.005	0.0496	0.0833	51	0.60
2SC	7/Dec/20	Acidity 8.3	mg/L	1	1	2.3	3.9	52	0.59
WC	7/Apr/20	Carbonate	mg/L	1	1	1.7	1	52	1.70
QU1109M	17/Mar/21	C-D	mg/L	0.5	0.5	0.82	1.4	52	0.59
WD	3/Sep/20	TSS	mg/L	1	1	2.8	4.8	53	0.58
QU1010S	4/Jun/20	SO4-D	mg/L	1	1	1.9	1.1	53	1.73
LLO	29/Oct/20	Fe-D	mg/L	0.005	0.005	0.0504	0.0288	55	1.75
QU0821GS	1/Jun/20	Turb	NTU	0.1	0.1	1.4	0.78	57	1.79
QU1010S	8/Dec/20	C-D	mg/L	0.5	0.5	0.5	0.90	57	0.56
QU0813A	27/May/20	Turb	NTU	0.1	0.1	7.5	4.1	59	1.83
2SC	7/Dec/20	Al-T	mg/L	0.003	0.003	0.0119	0.0065	59	1.83
QU1136D	16/Dec/20	N-D	mg/L	0.02	0.02	0.128	0.249	64	0.51
QU0821GS	1/Jun/20	C-D	mg/L	0.5	0.5	0.98	0.5	65	1.96
1M2N	9/Nov/20	Ag-D	mg/L	0.00002	0.00004	0.00002	0.00004	67	0.50
1M2N	9/Nov/20	Al-D	mg/L	0.003	0.006	0.003	0.006	67	0.50
1M2N	9/Nov/20	Be-D	mg/L	0.0001	0.0002	0.0001	0.0002	67	0.50
1M2N	9/Nov/20	Bi-D	mg/L	0.001	0.002	0.001	0.002	67	0.50
1M2N	9/Nov/20	Cd-D	mg/L	0.00001	0.00002	0.00001	0.00002	67	0.50
1M2N	9/Nov/20	Co-D	mg/L	0.0002	0.0004	0.0002	0.0004	67	0.50
1M2N	9/Nov/20	Cr-D	mg/L	0.001	0.002	0.001	0.002	67	0.50
1M2N	9/Nov/20	Cu-D	mg/L	0.0002	0.0004	0.0002	0.0004	67	0.50
1M2N	9/Nov/20	Ni-D	mg/L	0.001	0.002	0.001	0.002	67	0.50
1M2N	9/Nov/20	Pb-D	mg/L	0.0002	0.0004	0.0002	0.0004	67	0.50
1M2N	9/Nov/20	Sb-D	mg/L	0.0005	0.001	0.0005	0.001	67	0.50
1M2N	9/Nov/20	Se-D	mg/L	0.0001	0.0002	0.0001	0.0002	67	0.50
1M2N	9/Nov/20	Sn-D	mg/L	0.005	0.01	0.005	0.01	67	0.50
1M2N	9/Nov/20	Ti-D	mg/L	0.005	0.01	0.005	0.01	67	0.50
1M2N	9/Nov/20	Tl-D	mg/L	0.00001	0.00002	0.00001	0.00002	67	0.50
1M2N	9/Nov/20	U-D	mg/L	0.0001	0.0002	0.0001	0.0002	67	0.50
1M2N	9/Nov/20	V-D	mg/L	0.005	0.01	0.005	0.01	67	0.50
1M2N	9/Nov/20	Zn-D	mg/L	0.005	0.01	0.005	0.01	67	0.50
1M2N	9/Nov/20	Zr-D	mg/L	0.0001	0.0002	0.0001	0.0002	67	0.50
7SQR	4/Nov/20	TSS	mg/L	1	1	1	2.0	67	0.50
QU0813A	25/Aug/20	C-D	mg/L	0.5	0.5	0.5	1.0	67	0.50
QU0821GS	1/Jun/20	Ag-D	mg/L	0.00002	0.00004	0.00002	0.00004	67	0.50
QU0821GS	1/Jun/20	Al-D	mg/L	0.003	0.006	0.0030	0.006	67	0.50

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference

Site Code	Date	Parameter	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio
QU0821GS	1/Jun/20	Be-D	mg/L	0.0001	0.0002	0.0001	0.0002	67	0.50
QU0821GS	1/Jun/20	Bi-D	mg/L	0.001	0.002	0.001	0.002	67	0.50
QU0821GS	1/Jun/20	Cd-D	mg/L	0.00001	0.00002	0.00001	0.00002	67	0.50
QU0821GS	1/Jun/20	Co-D	mg/L	0.0002	0.0004	0.0002	0.0004	67	0.50
QU0821GS	1/Jun/20	Cr-D	mg/L	0.001	0.002	0.001	0.002	67	0.50
QU0821GS	1/Jun/20	Cu-D	mg/L	0.0002	0.0004	0.0002	0.0004	67	0.50
QU0821GS	1/Jun/20	Mo-D	mg/L	0.001	0.002	0.001	0.002	67	0.50
QU0821GS	1/Jun/20	Ni-D	mg/L	0.001	0.002	0.001	0.002	67	0.50
QU0821GS	1/Jun/20	Pb-D	mg/L	0.0002	0.0004	0.0002	0.0004	67	0.50
QU0821GS	1/Jun/20	Sb-D	mg/L	0.0005	0.001	0.0005	0.001	67	0.50
QU0821GS	1/Jun/20	S-D	mg/L	3	6	3	6	67	0.50
QU0821GS	1/Jun/20	Se-D	mg/L	0.0001	0.0002	0.0001	0.0002	67	0.50
QU0821GS	1/Jun/20	Sn-D	mg/L	0.005	0.01	0.005	0.01	67	0.50
QU0821GS	1/Jun/20	Ti-D	mg/L	0.005	0.01	0.005	0.01	67	0.50
QU0821GS	1/Jun/20	Tl-D	mg/L	0.00001	0.00002	0.00001	0.00002	67	0.50
QU0821GS	1/Jun/20	U-D	mg/L	0.0001	0.0002	0.0001	0.0002	67	0.50
QU0821GS	1/Jun/20	V-D	mg/L	0.005	0.01	0.005	0.01	67	0.50
QU0821GS	1/Jun/20	Zn-D	mg/L	0.005	0.01	0.005	0.01	67	0.50
QU0821GS	1/Jun/20	Zr-D	mg/L	0.0001	0.0002	0.0001	0.0002	67	0.50
QU0821GS	13/Aug/20	Ag-D	mg/L	0.00002	0.00004	0.00002	0.00004	67	0.50
QU0821GS	13/Aug/20	Al-D	mg/L	0.003	0.006	0.003	0.006	67	0.50
QU0821GS	13/Aug/20	Be-D	mg/L	0.0001	0.0002	0.0001	0.0002	67	0.50
QU0821GS	13/Aug/20	Bi-D	mg/L	0.001	0.002	0.001	0.002	67	0.50
QU0821GS	13/Aug/20	Cd-D	mg/L	0.00001	0.00002	0.00001	0.00002	67	0.50
QU0821GS	13/Aug/20	Co-D	mg/L	0.0002	0.0004	0.0002	0.0004	67	0.50
QU0821GS	13/Aug/20	Cr-D	mg/L	0.001	0.002	0.001	0.002	67	0.50
QU0821GS	13/Aug/20	Cu-D	mg/L	0.0002	0.0004	0.0002	0.0004	67	0.50
QU0821GS	13/Aug/20	Mo-D	mg/L	0.001	0.002	0.001	0.002	67	0.50
QU0821GS	13/Aug/20	Ni-D	mg/L	0.001	0.002	0.001	0.002	67	0.50
QU0821GS	13/Aug/20	Pb-D	mg/L	0.0002	0.0004	0.0002	0.0004	67	0.50
QU0821GS	13/Aug/20	Sb-D	mg/L	0.0005	0.001	0.0005	0.001	67	0.50
QU0821GS	13/Aug/20	S-D	mg/L	3	6	3	6	67	0.50
QU0821GS	13/Aug/20	Se-D	mg/L	0.0001	0.0002	0.0001	0.0002	67	0.50
QU0821GS	13/Aug/20	Sn-D	mg/L	0.005	0.01	0.005	0.01	67	0.50
QU0821GS	13/Aug/20	Ti-D	mg/L	0.005	0.01	0.005	0.01	67	0.50
QU0821GS	13/Aug/20	Tl-D	mg/L	0.00001	0.00002	0.00001	0.00002	67	0.50
QU0821GS	13/Aug/20	U-D	mg/L	0.0001	0.0002	0.0001	0.0002	67	0.50
QU0821GS	13/Aug/20	V-D	mg/L	0.005	0.01	0.005	0.01	67	0.50
QU0821GS	13/Aug/20	Zn-D	mg/L	0.005	0.01	0.005	0.01	67	0.50
QU0821GS	13/Aug/20	Zr-D	mg/L	0.0001	0.0002	0.0001	0.0002	67	0.50
QU1109M	27/Aug/20	S2-T	mg/L	0.0018	0.0018	0.010	0.0050	67	2.00
WA	14/Oct/20	TSS	mg/L	1	1	1	2.0	67	0.50
WB	21/Jul/20	TSS	mg/L	1	1	1.2	2.4	67	0.50
WD	15/Apr/20	TSS	mg/L	1	1	1	2.0	67	0.50
QU0821GS	9/Feb/21	C-D	mg/L	0.5	0.5	0.68	1.4	69	0.49
QU1109M	27/Aug/20	Hydrogen Sulphide (	mg/L	0.0019	0.0019	0.011	0.0053	70	2.08
SPD	20/May/20	TSS	mg/L	1	1	2.1	1	71	2.10
WB	21/Jul/20	P-T	mg/L	0.003	0.003	0.058	0.027	73	2.15
QU0813A	25/Aug/20	Hydrogen Sulphide (	mg/L	0.0018	0.0018	0.063	0.029	74	2.17
QU0821GS	1/Jun/20	Hydrogen Sulphide (	mg/L	0.002	0.002	0.031	0.014	76	2.21
QU0813A	25/Aug/20	S2-T	mg/L	0.0018	0.0018	0.060	0.027	76	2.22
QU0821GS	1/Jun/20	S2-T	mg/L	0.0018	0.0018	0.029	0.013	76	2.23
QU0813A	27/May/20	Al-D	mg/L	0.003	0.003	0.003	0.0068	78	0.44
QU1109M	27/Aug/20	P-D	mg/L	0.001	0.001	0.0015	0.0034	78	0.44
LLO	29/Oct/20	Mn-D	mg/L	0.001	0.001	0.0023	0.001	79	2.30
QU1101	28/Jan/21	Al-D	mg/L	0.015	0.015	0.035	0.015	80	2.33
SPD	15/Jun/20	TSS	mg/L	1	1	1	2.4	82	0.42
WA	14/Apr/20	TSS	mg/L	1	1	2.4	1	82	2.40
7SQR	14/Jul/20	P-T	mg/L	0.003	0.003	0.0076	0.003	87	2.53
QU1011S	11/Jun/20	Zn-D	mg/L	0.005	0.005	0.0072	0.0185	88	0.39
MP	26/May/20	TSS	mg/L	1	1	5.2	2.0	89	2.60
QU1109M	17/Mar/21	P-D	mg/L	0.001	0.001	0.0014	0.0040	96	0.35
LLM9	5/Aug/20	Fe-T	mg/L	0.01	0.01	0.063	0.022	97	2.86
WB	6/Oct/20	C-D	mg/L	0.5	0.5	1.1	3.2	98	0.34

Table 50 Relative Percent Differences 74 Page(s)

Relative Percent Difference									
Site Code	**Date**	**Parameter**	**Units**	**Lab MDL 1**	**Lab MDL 2**	**Result 1**	**Result 2**	**Rel.% Diff.**	**Ratio**
QU1109M	17/Mar/21	Hydrogen Sulphide (	mg/L	0.002	0.002	0.030	0.092	102	0.33
QU1109M	17/Mar/21	S2-T	mg/L	0.0018	0.0018	0.028	0.086	102	0.33
QU1410	30/Jul/20	Cd-D	mg/L	0.0001	0.0001	0.00031	0.0001	102	3.10
LLO	29/Oct/20	Mn-T	mg/L	0.001	0.001	0.0022	0.0071	105	0.31
LLO	27/Apr/20	TSS	mg/L	1	1	1	3.6	113	0.28
WA	8/Jul/20	P-T	mg/L	0.003	0.003	0.003	0.011	114	0.27
MQL4	29/Jul/20	N-TKN	mg/L	0.02	0.02	0.02	0.076	117	0.26
QU1136D	16/Dec/20	Hydrogen Sulphide (	mg/L	0.002	0.002	0.002	0.0076	117	0.26
QU1136D	16/Dec/20	S2-T	mg/L	0.0018	0.0018	0.0018	0.0071	119	0.25
LLM1	29/Apr/20	Cu-D	mg/L	0.0002	0.0002	0.00063	0.00250	120	0.25
WD	29/Dec/20	TSS	mg/L	1	1	1	4.4	126	0.23
QU0813A	25/Aug/20	Hg-D	mg/L	0.0000019	0.0000019	0.0000019	0.0000098	135	0.19
MW002	10/Dec/20	Hydrogen Sulphide (	mg/L	0.002	0.002	0.011	0.002	139	5.50
MW002	10/Dec/20	S2-T	mg/L	0.0018	0.0018	0.010	0.0018	139	5.56
MQL1	9/Jul/20	P-T	mg/L	0.003	0.003	0.017	0.003	140	5.67
MQL4	29/Jul/20	NO2+NO3	mg/L	0.02	0.02	0.180	0.02	160	9.00
LLM9	5/Aug/20	Cl-D	mg/L	1	1	1	20	181	0.05
WC	7/Apr/20	Cu-T	mg/L	0.0005	0.0005	0.00065	0.0141	182	0.05

Table 51 Results of Different Lab MDL 1 Page(s)

Results of Different Labortory Mean Dectection Limits (Lab MDL)									
Stn.Code	Date	Parameter	Units	**Lab MDL 1**	**Lab MDL 2**	Result 1	Result 2	Rel.% Diff.	Ratio
QU1101	17/Aug/20	S2-T	mg/L	0.0018	0.009	0.042	0.061	37	0.69
1M2N	9/Nov/20	Mo-D	mg/L	0.001	0.002	0.0016	0.002	22	0.80
1M2N	9/Nov/20	Ag-D	mg/L	0.00002	0.00004	0.00002	0.00004	67	0.50
1M2N	9/Nov/20	Al-D	mg/L	0.003	0.006	0.003	0.006	67	0.50
1M2N	9/Nov/20	Be-D	mg/L	0.0001	0.0002	0.0001	0.0002	67	0.50
1M2N	9/Nov/20	Bi-D	mg/L	0.001	0.002	0.001	0.002	67	0.50
1M2N	9/Nov/20	Cd-D	mg/L	0.00001	0.00002	0.00001	0.00002	67	0.50
1M2N	9/Nov/20	Co-D	mg/L	0.0002	0.0004	0.0002	0.0004	67	0.50
1M2N	9/Nov/20	Cr-D	mg/L	0.001	0.002	0.001	0.002	67	0.50
1M2N	9/Nov/20	Cu-D	mg/L	0.001	0.0004	0.0002	0.0004	67	0.50
1M2N	9/Nov/20	Ni-D	mg/L	0.001	0.002	0.001	0.002	67	0.50
1M2N	9/Nov/20	Pb-D	mg/L	0.001	0.0004	0.0002	0.0004	67	0.50
1M2N	9/Nov/20	Sb-D	mg/L	0.0005	0.001	0.0005	0.001	67	0.50
1M2N	9/Nov/20	Se-D	mg/L	0.0001	0.0002	0.0001	0.0002	67	0.50
1M2N	9/Nov/20	Sn-D	mg/L	0.005	0.01	0.005	0.01	67	0.50
1M2N	9/Nov/20	Ti-D	mg/L	0.005	0.01	0.005	0.01	67	0.50
1M2N	9/Nov/20	Tl-D	mg/L	0.00001	0.00002	0.00001	0.00002	67	0.50
1M2N	9/Nov/20	U-D	mg/L	0.0001	0.0002	0.0001	0.0002	67	0.50
1M2N	9/Nov/20	V-D	mg/L	0.005	0.01	0.005	0.01	67	0.50
1M2N	9/Nov/20	Zn-D	mg/L	0.005	0.01	0.005	0.01	67	0.50
1M2N	9/Nov/20	Zr-D	mg/L	0.0001	0.0002	0.0001	0.0002	67	0.50
QU0821GS	1/Jun/20	Ag-D	mg/L	0.00002	0.00004	0.00002	0.00004	67	0.50
QU0821GS	1/Jun/20	Al-D	mg/L	0.003	0.006	0.0030	0.006	67	0.50
QU0821GS	1/Jun/20	Be-D	mg/L	0.0001	0.0002	0.0001	0.0002	67	0.50
QU0821GS	1/Jun/20	Bi-D	mg/L	0.001	0.002	0.001	0.002	67	0.50
QU0821GS	1/Jun/20	Cd-D	mg/L	0.00001	0.00002	0.00001	0.00002	67	0.50
QU0821GS	1/Jun/20	Co-D	mg/L	0.0002	0.0004	0.0002	0.0004	67	0.50
QU0821GS	1/Jun/20	Cr-D	mg/L	0.001	0.002	0.001	0.002	67	0.50
QU0821GS	1/Jun/20	Cu-D	mg/L	0.0002	0.0004	0.0002	0.0004	67	0.50
QU0821GS	1/Jun/20	Mo-D	mg/L	0.001	0.002	0.001	0.002	67	0.50
QU0821GS	1/Jun/20	Ni-D	mg/L	0.001	0.002	0.001	0.002	67	0.50
QU0821GS	1/Jun/20	Pb-D	mg/L	0.0002	0.0004	0.0002	0.0004	67	0.50
QU0821GS	1/Jun/20	Sb-D	mg/L	0.0005	0.001	0.0005	0.001	67	0.50
QU0821GS	1/Jun/20	S-D	mg/L	3	6	3	6	67	0.50
QU0821GS	1/Jun/20	Se-D	mg/L	0.0001	0.0002	0.0001	0.0002	67	0.50
QU0821GS	1/Jun/20	Sn-D	mg/L	0.005	0.01	0.005	0.01	67	0.50
QU0821GS	1/Jun/20	Ti-D	mg/L	0.005	0.01	0.005	0.01	67	0.50
QU0821GS	1/Jun/20	Tl-D	mg/L	0.00001	0.00002	0.00001	0.00002	67	0.50
QU0821GS	1/Jun/20	U-D	mg/L	0.0001	0.0002	0.0001	0.0002	67	0.50
QU0821GS	1/Jun/20	V-D	mg/L	0.005	0.01	0.005	0.01	67	0.50
QU0821GS	1/Jun/20	Zn-D	mg/L	0.005	0.01	0.005	0.01	67	0.50
QU0821GS	1/Jun/20	Zr-D	mg/L	0.0001	0.0002	0.0001	0.0002	67	0.50
QU0821GS	13/Aug/20	Ag-D	mg/L	0.00002	0.00004	0.00002	0.00004	67	0.50
QU0821GS	13/Aug/20	Al-D	mg/L	0.003	0.006	0.003	0.006	67	0.50
QU0821GS	13/Aug/20	Be-D	mg/L	0.0001	0.0002	0.0001	0.0002	67	0.50
QU0821GS	13/Aug/20	Bi-D	mg/L	0.001	0.002	0.001	0.002	67	0.50
QU0821GS	13/Aug/20	Cd-D	mg/L	0.00001	0.00002	0.00001	0.00002	67	0.50
QU0821GS	13/Aug/20	Co-D	mg/L	0.0002	0.0004	0.0002	0.0004	67	0.50
QU0821GS	13/Aug/20	Cr-D	mg/L	0.001	0.002	0.001	0.002	67	0.50
QU0821GS	13/Aug/20	Cu-D	mg/L	0.0002	0.0004	0.0002	0.0004	67	0.50
QU0821GS	13/Aug/20	Mo-D	mg/L	0.001	0.002	0.001	0.002	67	0.50
QU0821GS	13/Aug/20	Ni-D	mg/L	0.001	0.002	0.001	0.002	67	0.50
QU0821GS	13/Aug/20	Pb-D	mg/L	0.0002	0.0004	0.0002	0.0004	67	0.50
QU0821GS	13/Aug/20	Sb-D	mg/L	0.0005	0.001	0.0005	0.001	67	0.50
QU0821GS	13/Aug/20	S-D	mg/L	3	6	3	6	67	0.50
QU0821GS	13/Aug/20	Se-D	mg/L	0.0001	0.0002	0.0001	0.0002	67	0.50
QU0821GS	13/Aug/20	Sn-D	mg/L	0.005	0.01	0.005	0.01	67	0.50
QU0821GS	13/Aug/20	Ti-D	mg/L	0.005	0.01	0.005	0.01	67	0.50
QU0821GS	13/Aug/20	Tl-D	mg/L	0.00001	0.00002	0.00001	0.00002	67	0.50
QU0821GS	13/Aug/20	U-D	mg/L	0.0001	0.0002	0.0001	0.0002	67	0.50
QU0821GS	13/Aug/20	V-D	mg/L	0.005	0.01	0.005	0.01	67	0.50
QU0821GS	13/Aug/20	Zn-D	mg/L	0.005	0.01	0.005	0.01	67	0.50
QU0821GS	13/Aug/20	Zr-D	mg/L	0.0001	0.0002	0.0001	0.0002	67	0.50

Table 52 RPD Greater than 20% 1 Page(s)

Relative Percent Difference Greater than 20%

Site Name	Date	Parameter Name	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio	5 X Lab MDL
1M2N	9/Nov/20	Acidity 8.3	mg/L	1	1	11.7	8.9	27	1.31	5
242MW	22/Sep/20	N-D	mg/L	0.02	0.02	0.141	0.215	42	0.66	0.1
IR6	2/Sep/20	Al-T	mg/L	0.003	0.003	0.0162	0.0206	24	0.79	0.015
LLM1	22/Jul/20	N-T	mg/L	0.02	0.02	0.096	0.117	20	0.82	0.1
LLM1	22/Jul/20	N-TKN	mg/L	0.02	0.02	0.096	0.117	20	0.82	0.1
LLM1	29/Apr/20	Al-T	mg/L	0.003	0.003	0.0211	0.0148	35	1.43	0.015
LLM1	29/Apr/20	Al-D	mg/L	0.003	0.003	0.0144	0.0227	45	0.63	0.015
LLM1	29/Apr/20	Fe-T	mg/L	0.01	0.01	0.081	0.050	47	1.62	0.05
LLM9	7/Oct/20	Mn-D	mg/L	0.001	0.001	0.0473	0.0361	27	1.31	0.005
LLO	28/Jul/20	C-D	mg/L	0.001	0.5	2.7	2.2	20	1.23	2.5
LLO	29/Oct/20	C-D	mg/L	0.001	0.5	3.5	2.8	22	1.25	2.5
LLO	29/Oct/20	Fe-T	mg/L	0.001	0.01	0.042	0.066	44	0.64	0.05
MQL1	9/Jul/20	N-T	mg/L	0.02	0.02	0.076	0.106	33	0.72	0.1
MQL1	9/Jul/20	N-TKN	mg/L	0.02	0.02	0.076	0.106	33	0.72	0.1
MW002	10/Dec/20	Turb	NTU	0.1	0.1	20	16	22	1.25	0.5
MW006D	14/Dec/20	Turb	NTU	0.1	0.1	0.94	1.5	46	0.63	0.5
NNL4	12/May/20	C-D	mg/L	0.5	0.5	3.1	2.5	21	1.24	2.5
NNO	22/Oct/20	C-D	mg/L	0.5	0.5	2.9	3.8	27	0.76	2.5
NNO	20/Apr/20	C-D	mg/L	0.5	0.5	1.9	2.8	38	0.68	2.5
QU0813A	27/May/20	Se-D	mg/L	0.0001	0.0001	0.00063	0.00078	21	0.81	0.0005
QU0821GS	13/Aug/20	Turb	NTU	0.1	0.1	3.4	4.3	23	0.79	0.5
QU0821GS	13/Aug/20	Hydrogen Sulphide (H2S)	mg/L	0.002	0.002	0.032	0.041	25	0.78	0.01
QU0821GS	13/Aug/20	S2-T	mg/L	0.0018	0.0018	0.030	0.039	26	0.77	0.009
QU0821GS	9/Feb/21	Hydrogen Sulphide (H2S)	mg/L	0.002	0.002	0.11	0.16	37	0.69	0.01
QU0821GS	9/Feb/21	S2-T	mg/L	0.0018	0.0018	0.10	0.15	40	0.67	0.009
QU0821GS	9/Feb/21	N-D	mg/L	0.02	0.02	0.189	0.289	42	0.65	0.1
QU1010S	4/Jun/20	Se-D	mg/L	0.0001	0.0001	0.00044	0.00061	32	0.72	0.0005
QU1101	17/Aug/20	N-D	mg/L	0.02	0.02	0.402	0.570	35	0.71	0.1
QU1101	17/Aug/20	C-D	mg/L	0.5	0.5	1.9	2.8	38	0.68	2.5
QU1105S	17/Dec/20	Acidity 8.3	mg/L	1	1	7.3	9.4	25	0.78	5
QU1109M	17/Mar/21	N-NH3	mg/L	0.015	0.015	0.35	0.24	37	1.46	0.075
QU1410	30/Jul/20	SO4-D	mg/L	10	10	1500	1900	24	0.79	50
QU1410	16/Dec/20	N-D	mg/L	0.02	0.02	0.218	0.290	28	0.75	0.1
QU1410	30/Jul/20	Bromide	mg/L	0.05	0.01	0.36	0.51	35	0.71	0.05
QU1410	30/Jul/20	Acidity 8.3	mg/L	1	1	13.3	20.1	41	0.66	5
QU1410	16/Dec/20	Bromide	mg/L	0.05	0.05	0.18	0.30	50	0.60	0.25
WD	4/Jan/21	TSS	mg/L	1	1	4.4	5.6	24	0.79	5

Table 53 RPD Greater Than 50% 1 Page(s)

Relative Percent Difference Greater than 50%

Site Name	Date	Parameter Name	Units	Lab MDL 1	Lab MDL 2	Result 1	Result 2	Rel.% Diff.	Ratio	5 X Lab MDL
LLM1	29/Apr/20	Fe-D	mg/L	0.005	0.005	0.0496	0.0833	51	0.60	0.025
LLM1	29/Apr/20	Cu-D	mg/L	0.0002	0.0002	0.00063	0.00250	120	0.25	0.001
LLM9	5/Aug/20	Fe-T	mg/L	0.01	0.01	0.063	0.022	97	2.86	0.05
LLM9	5/Aug/20	Cl-D	mg/L	1	1	1	20	181	0.05	5
LLO	29/Oct/20	Fe-D	mg/L	0.005	0.005	0.0504	0.0288	55	1.75	0.025
LLO	29/Oct/20	Mn-T	mg/L	0.001	0.001	0.0022	0.0071	105	0.31	0.005
MP	26/May/20	TSS	mg/L	1	1	5.2	2.0	89	2.60	5
MQL1	9/Jul/20	P-T	mg/L	0.003	0.003	0.017	0.003	140	5.67	0.015
MQL4	29/Jul/20	NO2+NO3	mg/L	0.02	0.02	0.180	0.02	160	9.00	0.1
MW002	10/Dec/20	Hydrogen Sulphide (H2S)	mg/L	0.02	0.002	0.011	0.002	139	5.50	0.01
MW002	10/Dec/20	S2-T	mg/L	0.02	0.0018	0.010	0.0018	139	5.56	0.009
QU0813A	27/May/20	Turb	NTU	0.02	0.1	7.5	4.1	59	1.83	0.5
QU0813A	25/Aug/20	Hydrogen Sulphide (H2S)	mg/L	0.0018	0.0018	0.063	0.029	74	2.17	0.009
QU0813A	25/Aug/20	S2-T	mg/L	0.0018	0.0018	0.060	0.027	76	2.22	0.009
QU0821GS	1/Jun/20	Turb	NTU	0.1	0.1	1.4	0.78	57	1.79	0.5
QU0821GS	1/Jun/20	Hydrogen Sulphide (H2S)	mg/L	0.002	0.002	0.031	0.014	76	2.21	0.01
QU0821GS	1/Jun/20	S2-T	mg/L	0.0018	0.0018	0.029	0.013	76	2.23	0.009
QU1109M	27/Aug/20	S2-T	mg/L	0.0018	0.0018	0.010	0.0050	67	2.00	0.009
QU1109M	27/Aug/20	Hydrogen Sulphide (H2S)	mg/L	0.0019	0.0019	0.011	0.0053	70	2.08	0.0095
QU1136D	16/Dec/20	N-D	mg/L	0.02	0.02	0.128	0.249	64	0.51	0.1
WB	21/Jul/20	P-T	mg/L	0.003	0.003	0.058	0.027	73	2.15	0.015
WC	7/Apr/20	Cu-T	mg/L	0.0005	0.0005	0.00065	0.0141	182	0.05	0.0025

Appendix II

Appendix II Graphs

Graph 1 Hardness Settling Pond 4

Graph 2 Average Monthly Dissolved Sulphate Settling Pond 4

Graph 3 Weekly pH Settling Pond 4

Graph 4 Total Suspended Solids Settling Pond 4 & WC

Graph 5 Dissolved Arsenic Settling Pond 4

Graph 6 Dissolved Iron Settling Pond 4

Graph 7 Total Iron Settling Pond 4

Graph 8 Total Manganese Settling Pond 4

Graph 9 Dissolved Copper Settling Pond 4

Graph 10 Hardness Settling Pond 1

Graph 11 Average Monthly Dissolved Sulphate Settling Pond 1

Graph 12 Weekly Field pH Settling Pond 1

Graph 13 Dissolved Iron Settling Pond 1

Graph 14 Total Manganese Settling Pond 1

Graph 15 Average Dissolved Sulphate vs. Discharge LLE

Graph 16 Dissolved Iron vs. Discharge LLE

Graph 17 Total Iron vs. Discharge LLE

Graph 18 Total Manganese vs. Discharge LLE

Graph 19 Dissolved Sulphate Seeps Into Long Lake

Graph 20 Total Arsenic Seeps Into Long Lake

Graph 21 Total Manganese Seeps Into Long Lake

Graph 22 Dissolved Iron Seeps Into Long Lake & Total Iron Seeps into Long Lake

Graph 23 5 in 30 pH No Name Lake & Average pH No Name Lake

Graph 24 5 in 30 Dissolved Copper No Name Lake & Average Dissolved Copper No Name Lake

Graph 25 5 in 30 Dissolved Sulphate No Name Lake & Average Dissolved Sulphate No Name Lake

Graph 26 5 in 30 Average Hardness Long Lake

Graph 27 5 in 30 Average pH Long Lake

Graph 28 5 in 30 Average Total Manganese vs Dissolved Oxygen Long Lake 1 metre from Bottom

Graph 29 5 in 30 Total Manganese Long Lake & 5 in 30 Average Total Manganese Long Lake

Graph 30 5 in 30 Average Dissolved Sulphate Long Lake

Graph 31 5 in 30 Average Total Copper Long Lake & 5 in 30 Total Copper Long Lake

Graph 32 5 in 30 Average Hardness Middle Quinsam Lake

Graph 33 5 in 30 Average Dissolved Sulphate Middle Quinsam Lake

Graph 34 5 in 30 Average pH Middle Quinsam Lake

Graph 35 5 in 30 Total Manganese Middle Quinsam Lake & 5 in 30 Average Total Manganese Middle Quinsam Lake

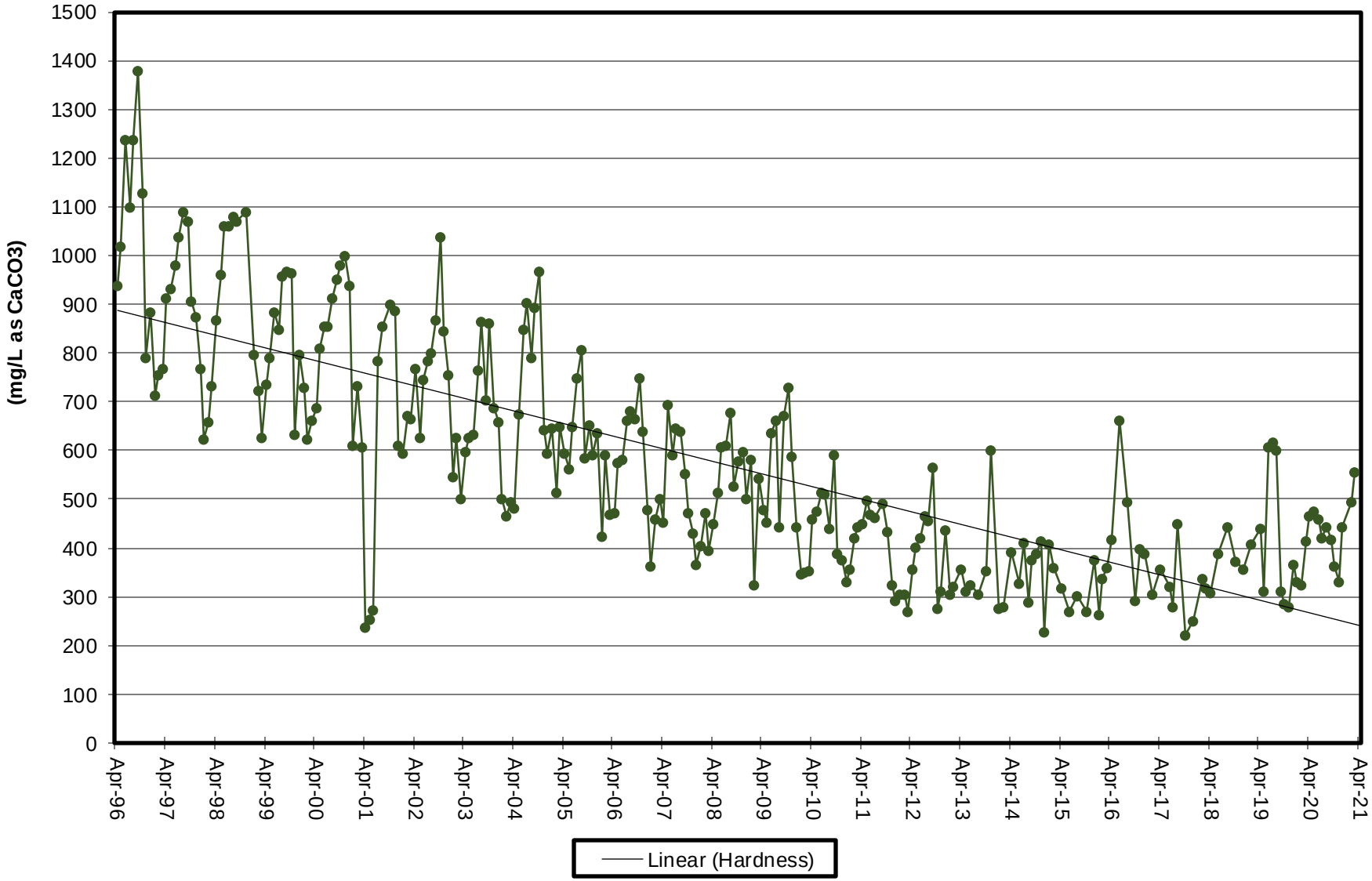
Graph 36 5 in 30 Total Copper Middle Quinsam Lake & 5 in 30 Average Total Copper Middle Quinsam Lake

Graph 37 5 in 30 Total Arsenic Middle Quinsam Lake

Graph 38 5 in 30 Total Iron Middle Quinsam Lake & 5 in 30 Dissolved Iron Middle Quinsam Lake
Graph 39 5 in 30 Average Hardness Lower Quinsam lake
Graph 40 5 in 30 pH Lower Quinsam Lake
Graph 41 5 in 30 Average Dissolved Sulpate Lower Quinsam Lake
Graph 42 5 in 30 Dissolved Iron Lower Quinsam Lake & 5 in 30 Total Iron Lower Quinsam Lake
Graph 43 5 in 30 Dissolved Copper Lower Quinsam Lake & Average Dissolved Copper Lower Quinsam Lake
Graph 44 5 in 30 Average Total Iron vs Dissolved Oxygen Lower Quinsam Lake 1 metre from Bottom
Graph 45 5 in 30 Average Dissolved Iron vs Dissolved Oxygen Lower Quinsam Lake 1 metre from Bottom
Graph 46 5 in 30 Average Dissolved Sulphate Quinsam Sub Basin: Rivers and Streams
Graph 47 5 in 30 Dissolved Sulphate Quinsam Sub Basin: Rivers and Streams
Graph 48 5 in 30 Total Arsenic Quinsam River
Graph 49 5 in 30 Total Iron Quinam River
Graph 50 5 in 30 Dissolved Iron Quinsam River
Graph 51 5 in 30 Total Manganese Quinsam River
Graph 52 5 in 30 Total Copper Quinsam River
Graph 53 5 in 30 Average Total Copper Quinsam Sub Basin: Rivers and Streams
Graph 54 Dissolved Aluminum vs. Flow Iron River
Graph 55 5 in 30 Average Dissolved Aluminum vs. Flow Iron River
Graph 56 Total Arsenic vs. Flow Iron River
Graph 57 Flow vs. Precipitation Quinsam River @ Argonaut Bridge (WA)
Graph 58 Flow vs. Precipitation Middle Quinsam Lake Outlet (WB)
Graph 59 Discharge vs. Precipitation Long Lake Seep Middle (LLSM)
Graph 60 Discharge vs. Precipitation Long Lake Entry (LLE)
Graph 61 Flow vs. Precipitation Long Lake Outlet (LLO)
Graph 62 Water Level 7S Stream 1 (7S)
Graph 63 Flow vs. Precipitation Iron River (IR8)
Graph 64 Cumulative & Daily Discharge Rates Settling Pond 1 (SPD)
Graph 65 Comparison of Cumulative Annual Discharges Settling Pond 4 (WD)
Graph 66 Cumulative & Daily Discharge Rates Settling Pond 4 (SP4/WD)
Graph 67 Daily Precipitation Accumulation (mm) 2-South Pit Area
Graph 68 Flow Rate (L/s) @ 90° V-notch Weir vs. Precipitation (mm) 2-South Inflow
Graph 69 Flow Rate (L/s) vs. Precipitation (mm) Culvert Entering 3-South (2SC)

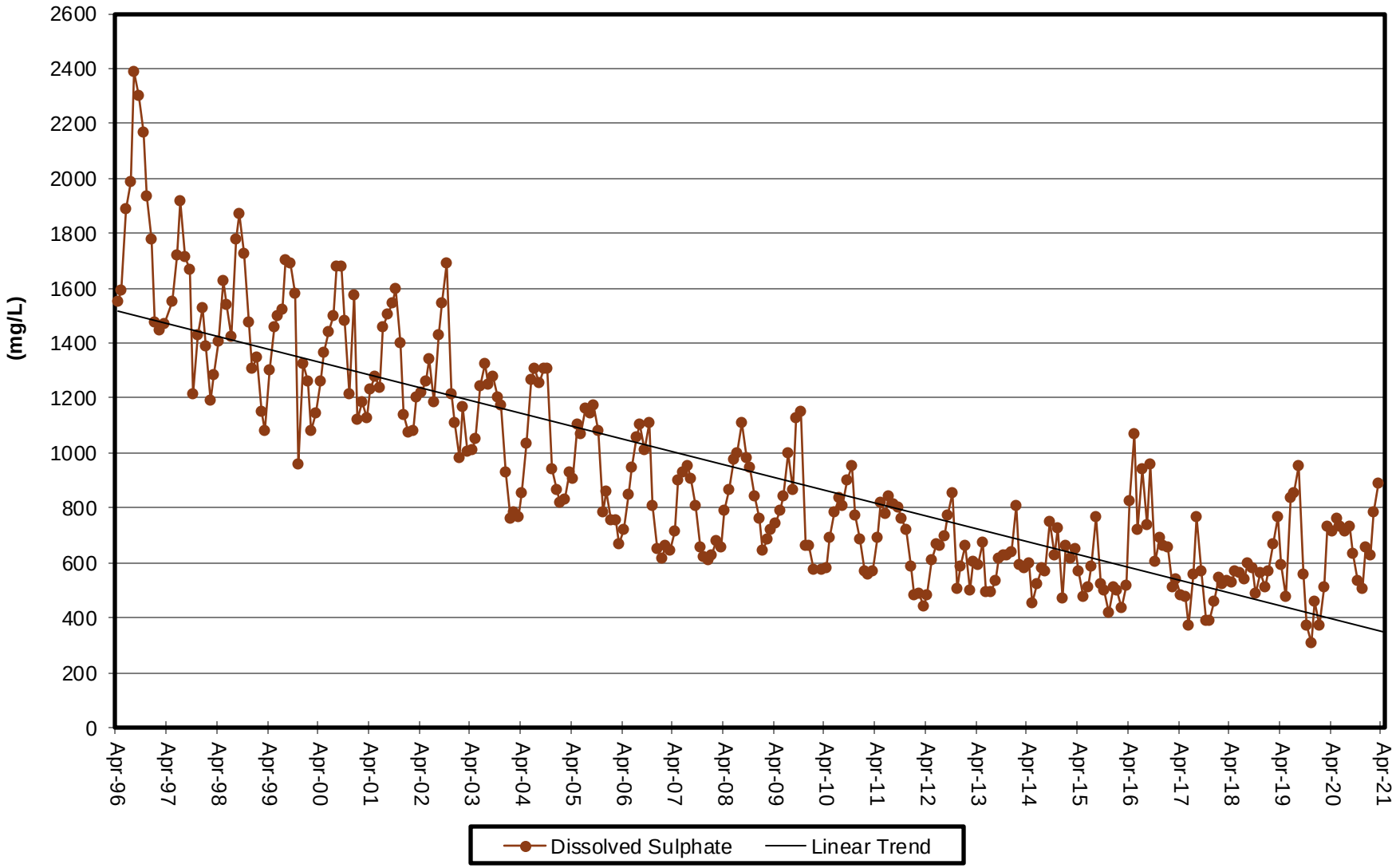
QUINSAM COAL

GRAPH 1
Hardness
Settling Pong 4



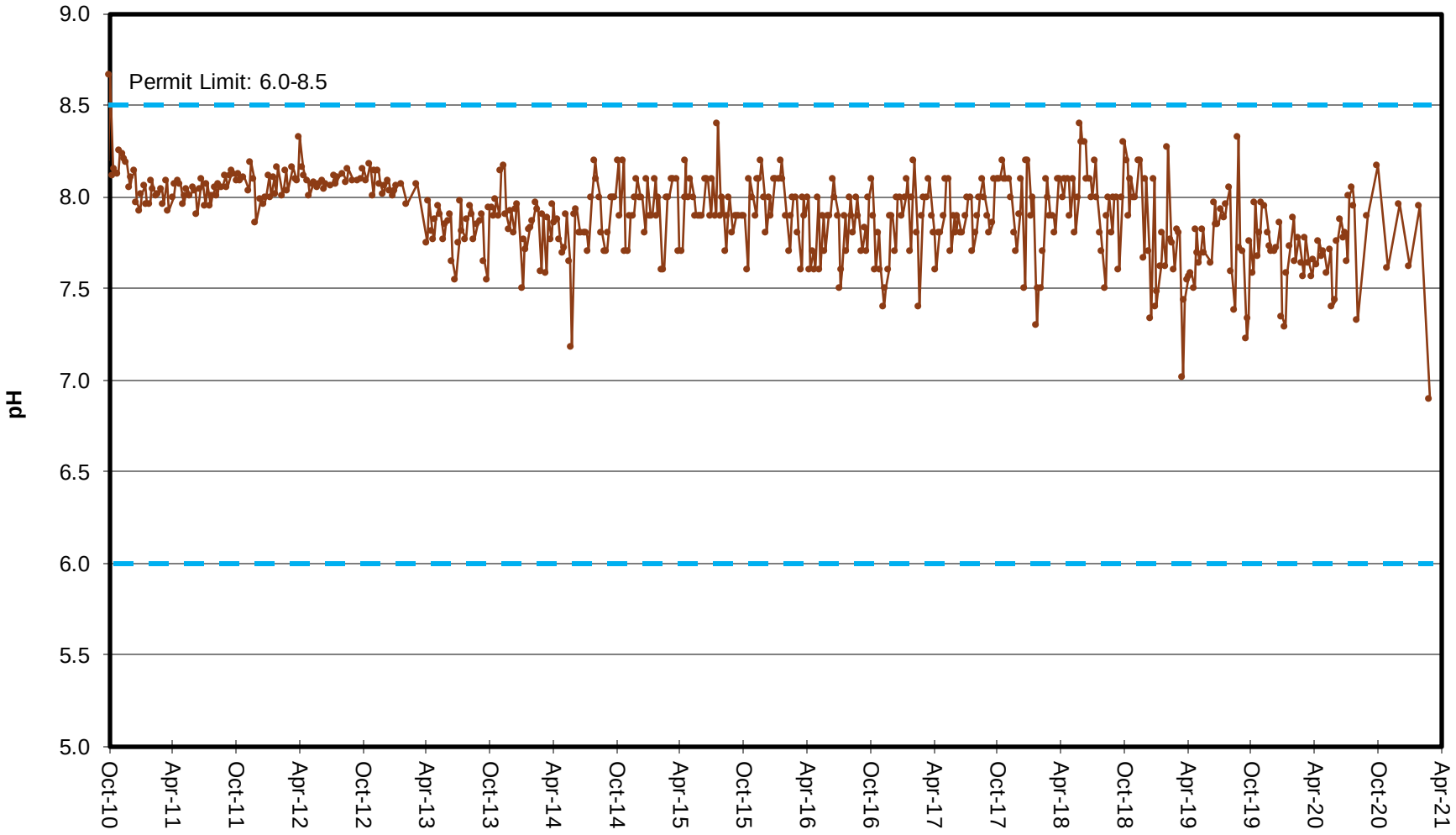
QUINSAM COAL

GRAPH 2
Average Monthly Dissolved Sulphate
Settling Pond 4

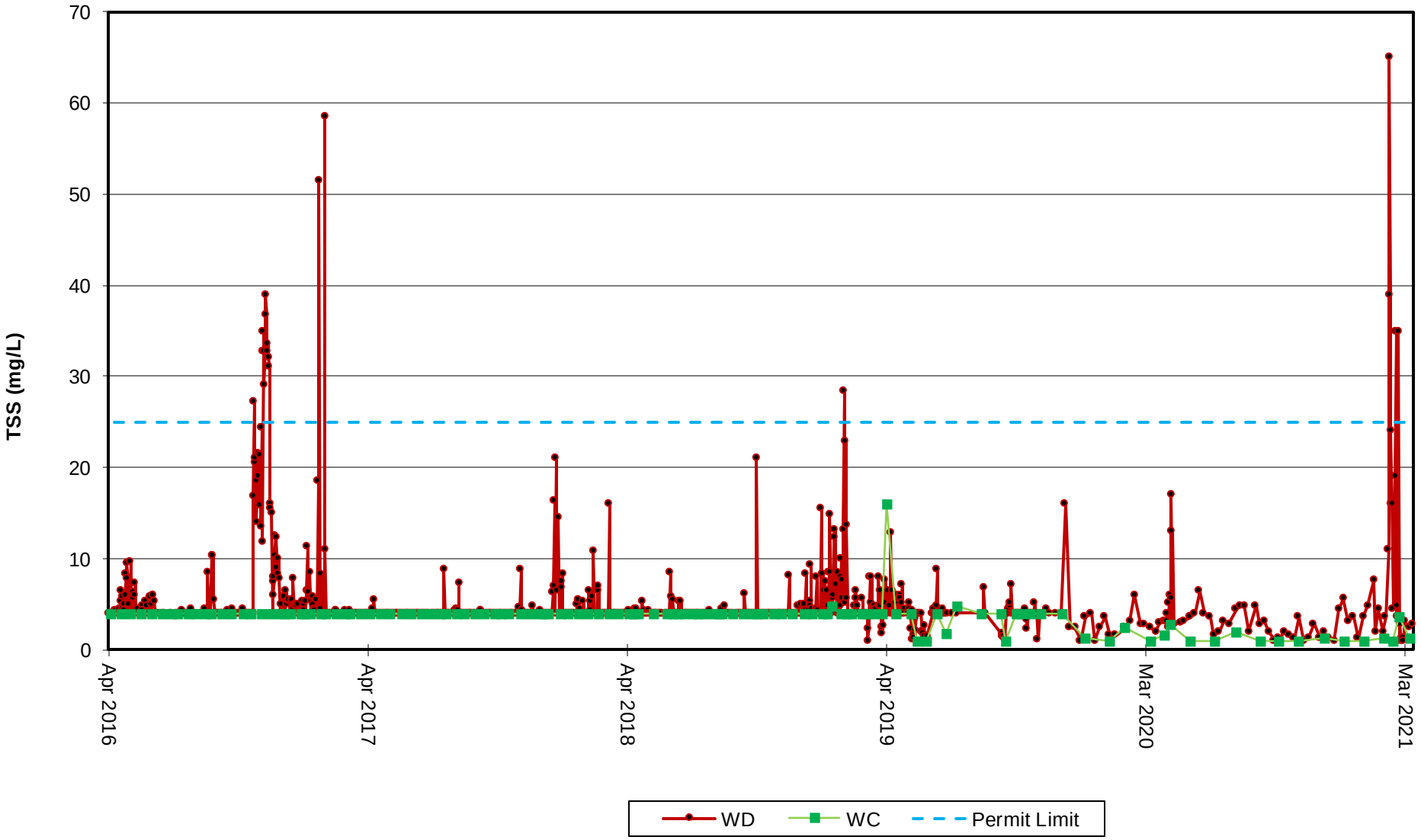


QUINSAM COAL

GRAPH 3
Weekly pH
Settling Pond 4

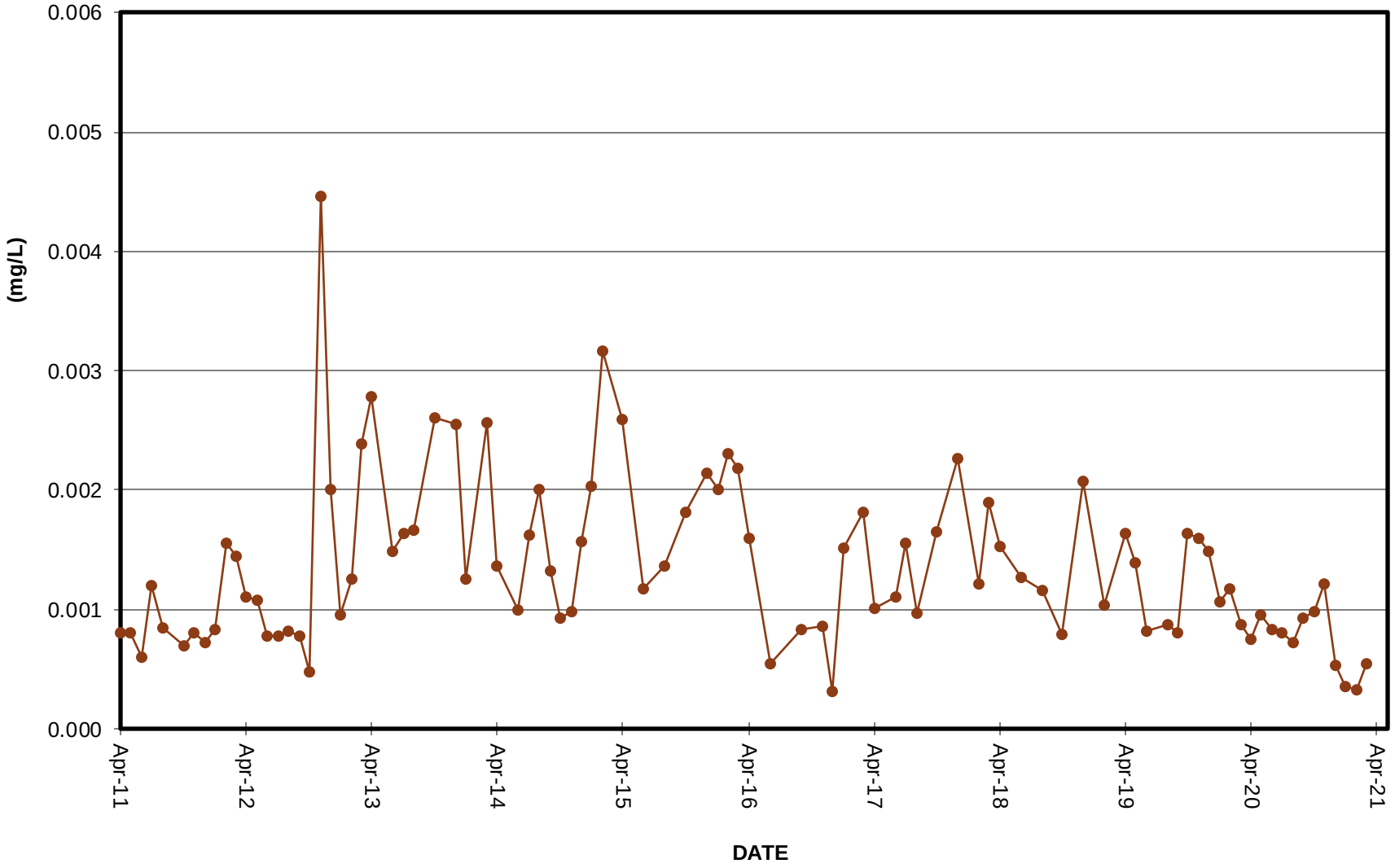


GRAPH 4
Total Suspended Solids
Settling Pond 4 & WC



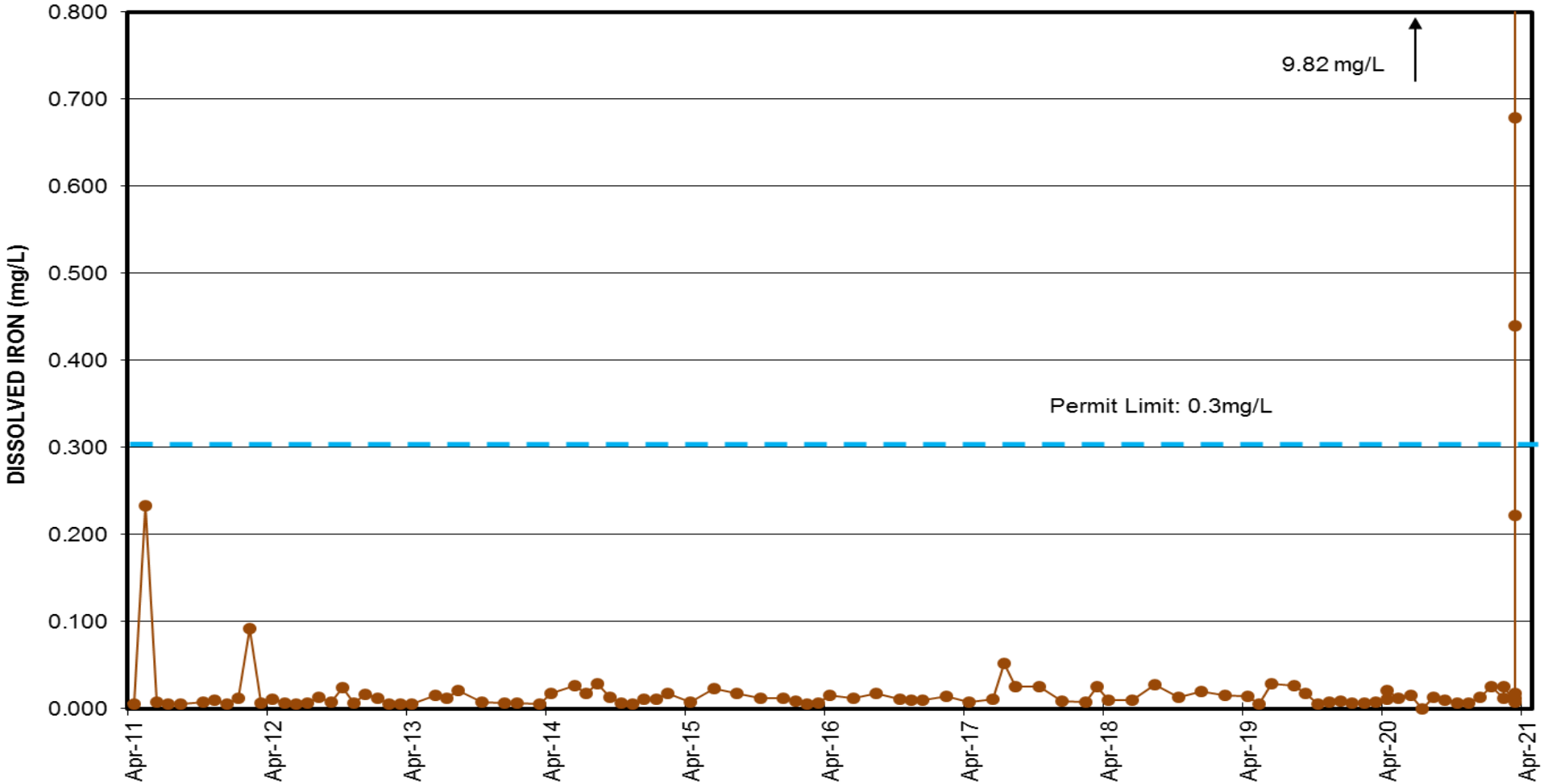
QUINSAM COAL

GRAPH 5
Dissolved Arsenic
Settling Pond 4



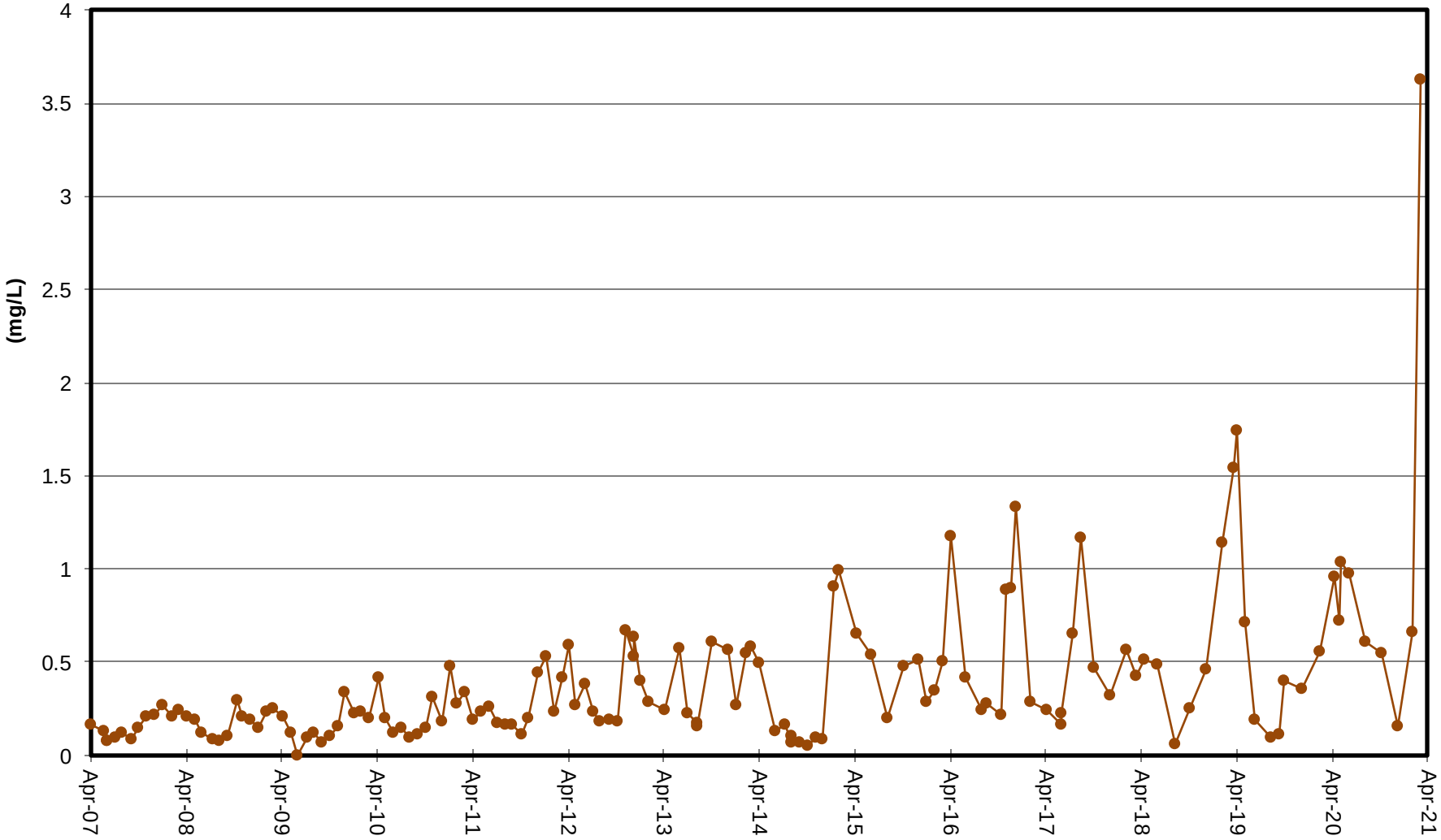
QUINSAM COAL

GRAPH 6
DISSOLVED IRON
SETTLING POND 4



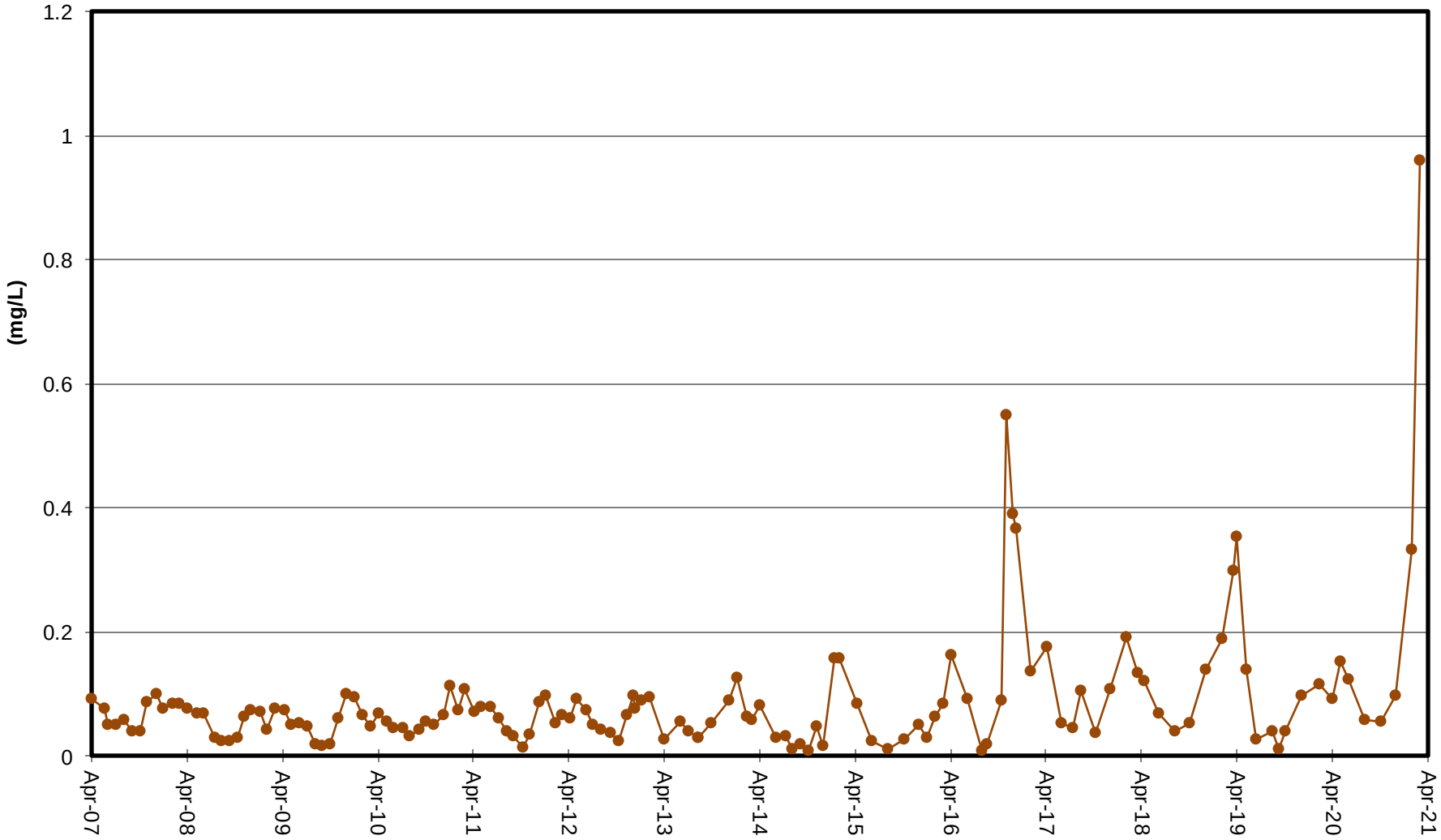
QUINSAM COAL

GRAPH 7
Total Iron
Settling Pond 4

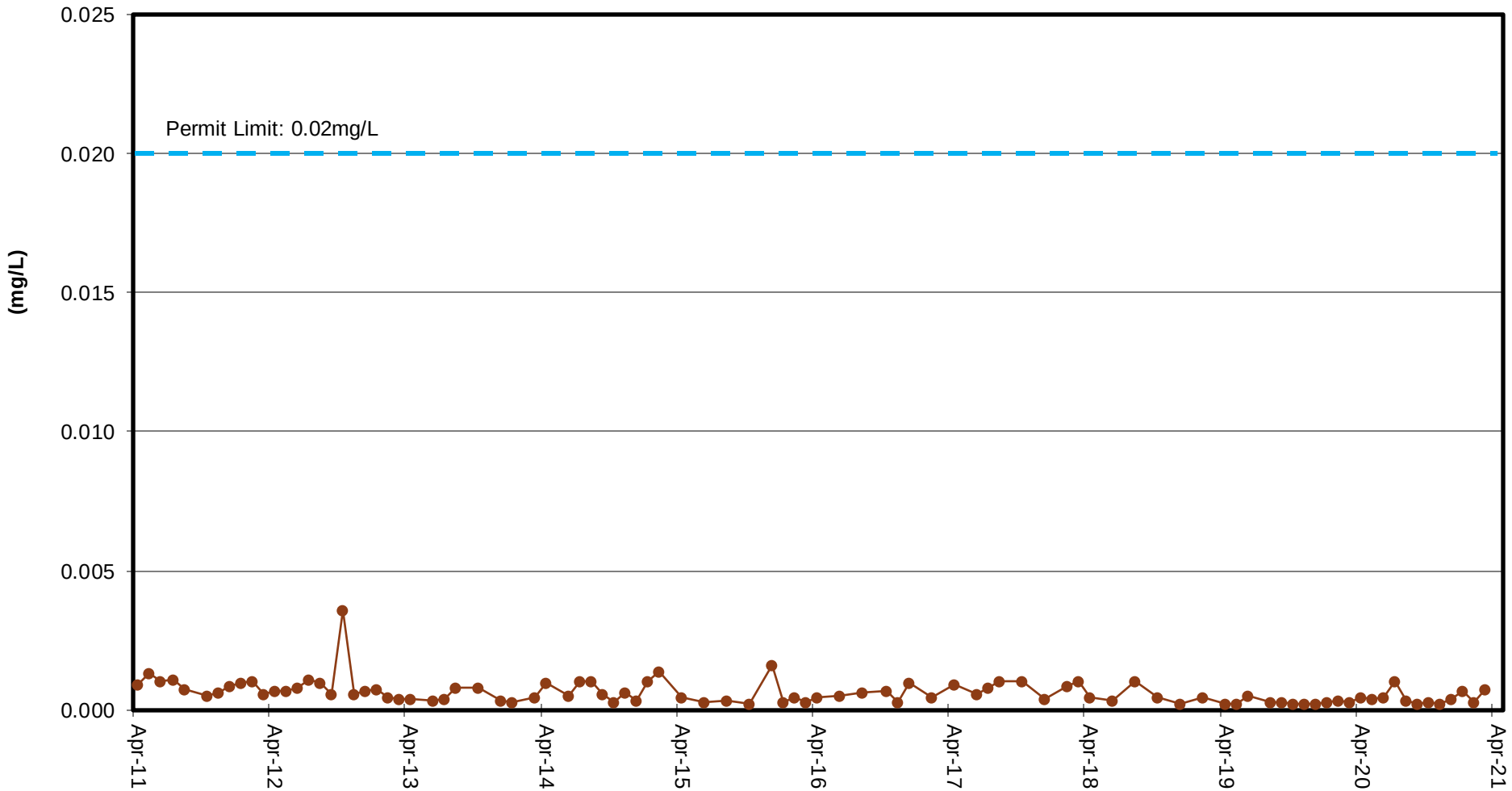


QUINSAM COAL

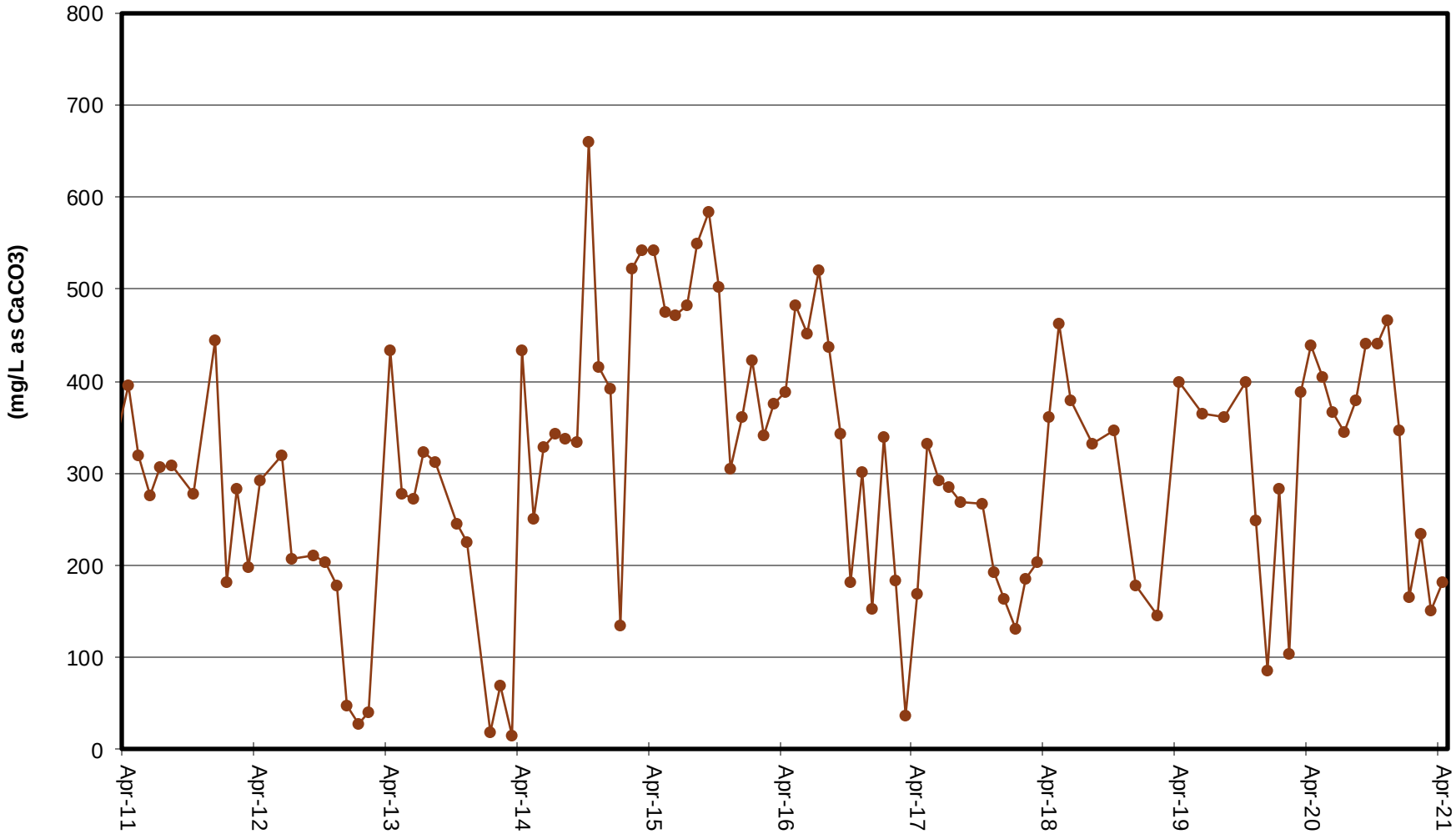
GRAPH 8
Total Manganese
Settling Pond 4



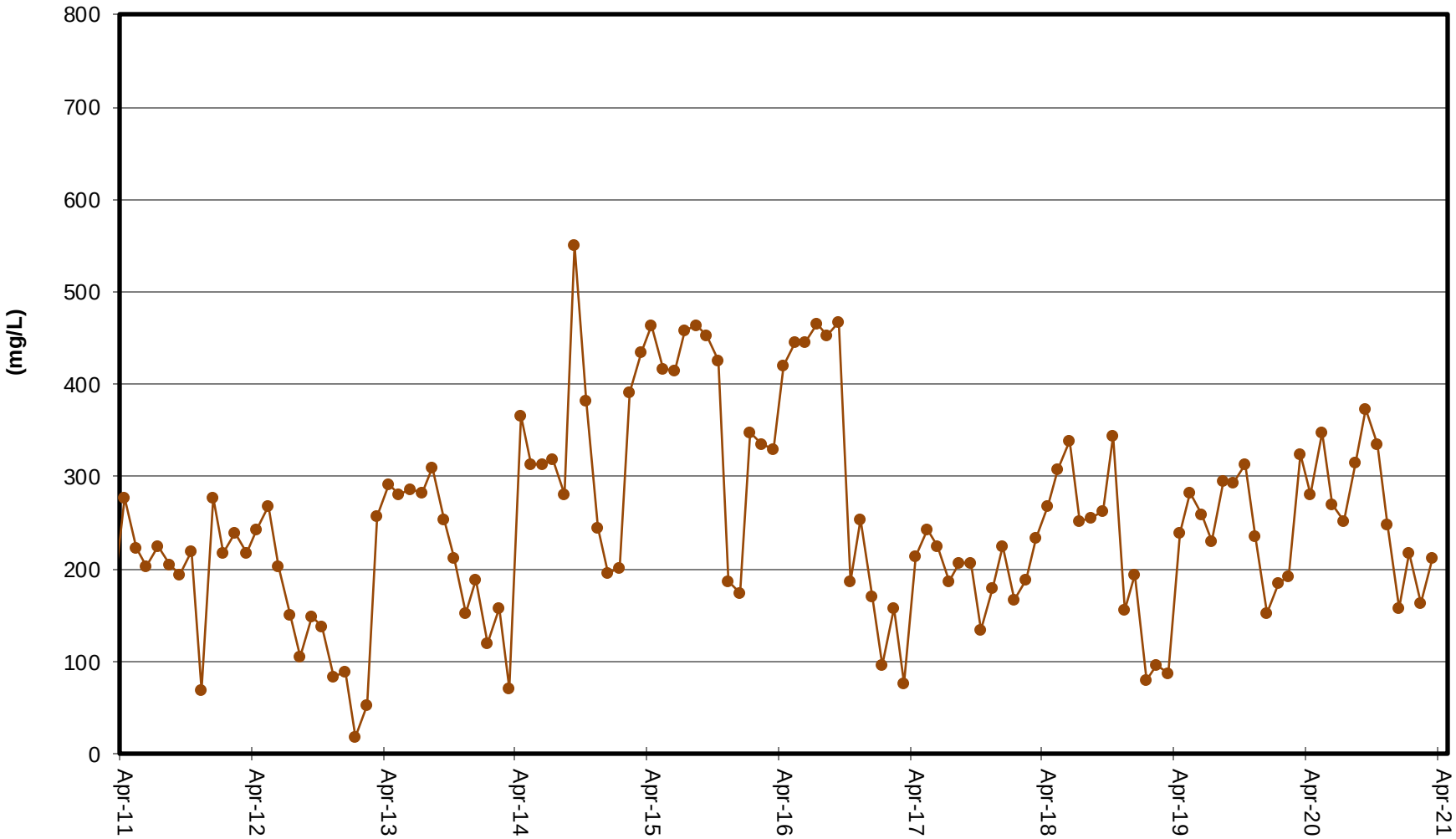
GRAPH 9
Dissolved Copper
Settling Pond 4



GRAPH 10
Hardness
Settling Pond 1

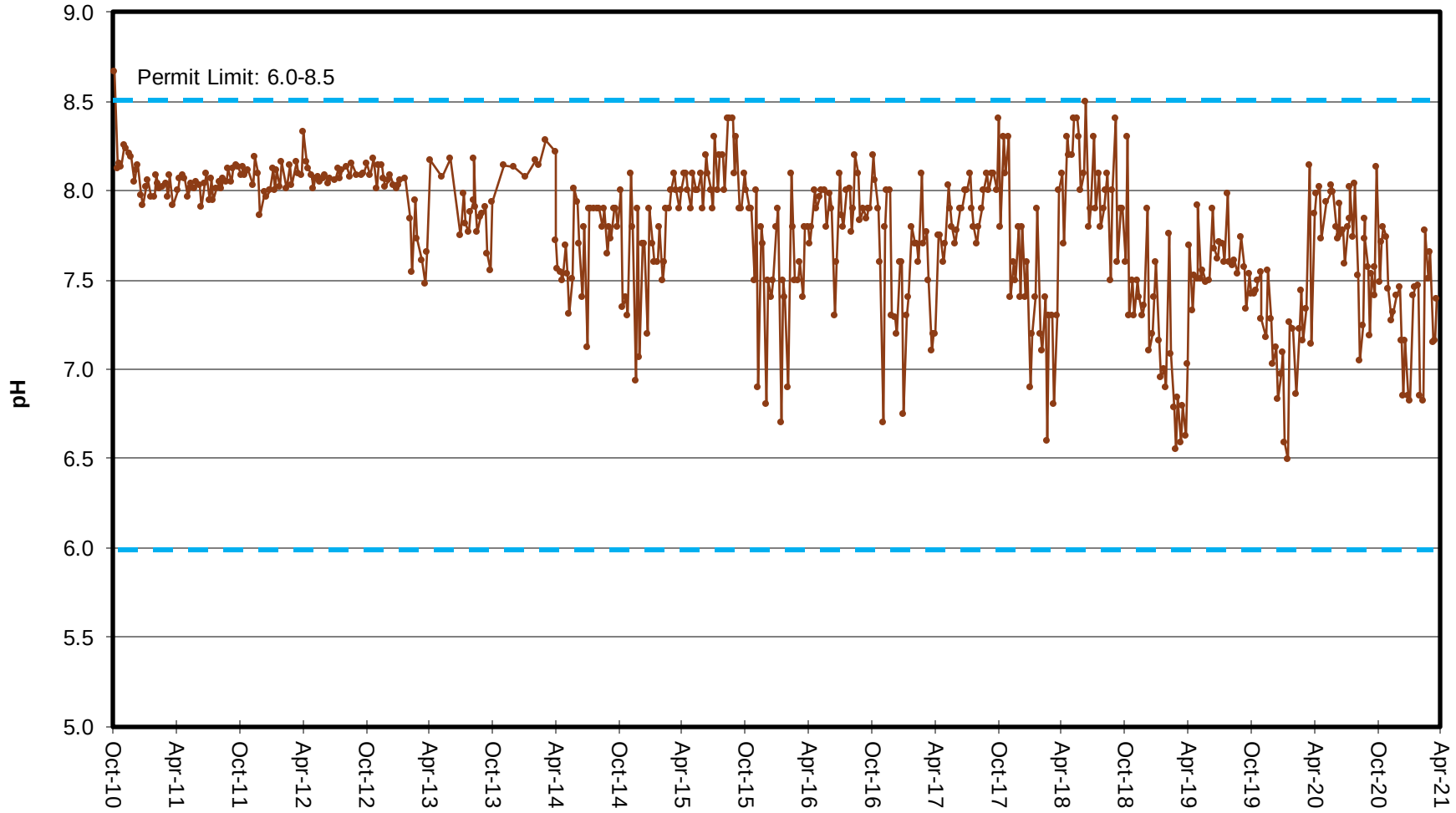


GRAPH 11
Average Monthly Dissolved Sulphate
Settling Pond 1

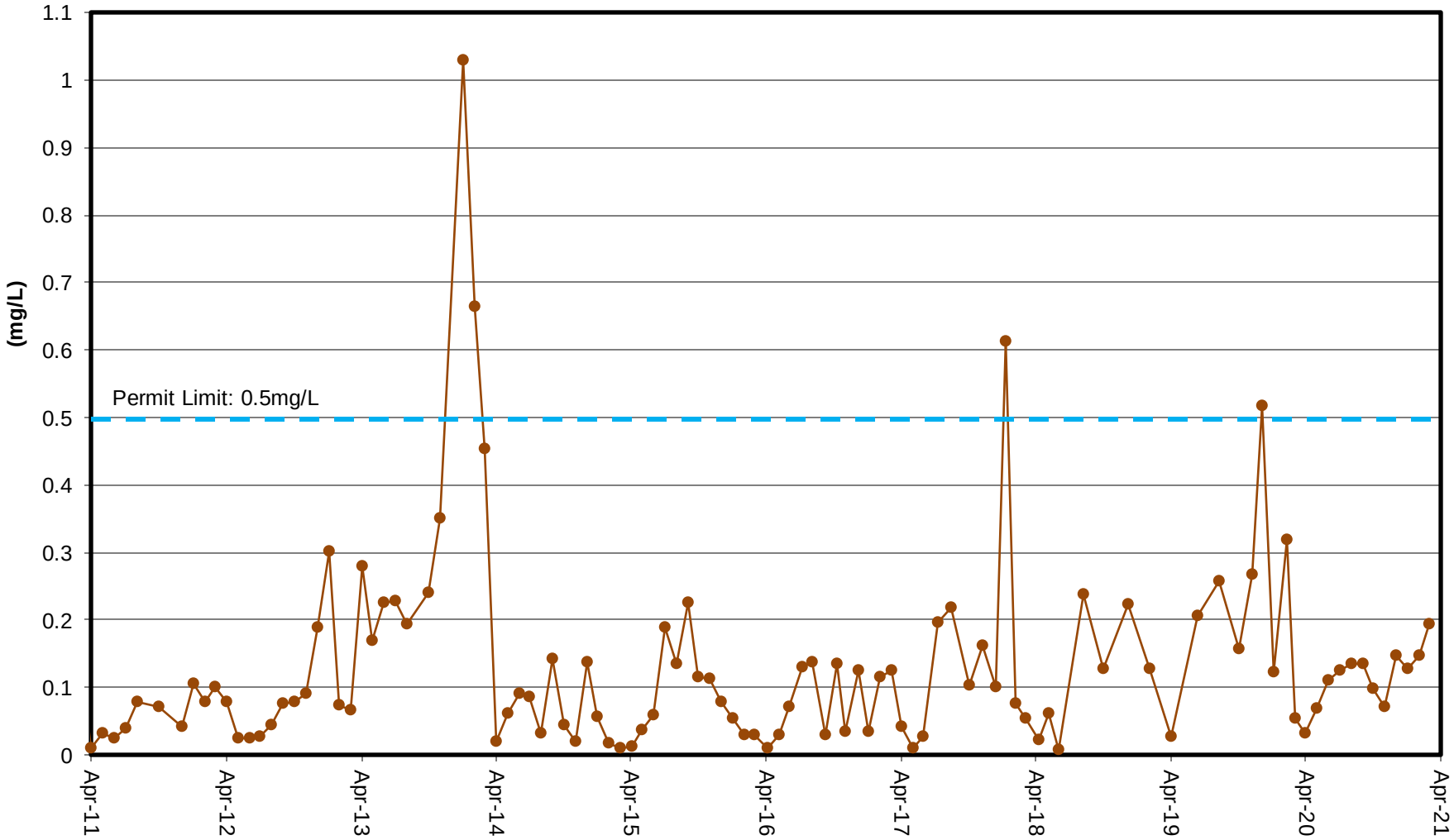


QUINSAM COAL

GRAPH 12
Weekly Field pH
Settling Pond 1

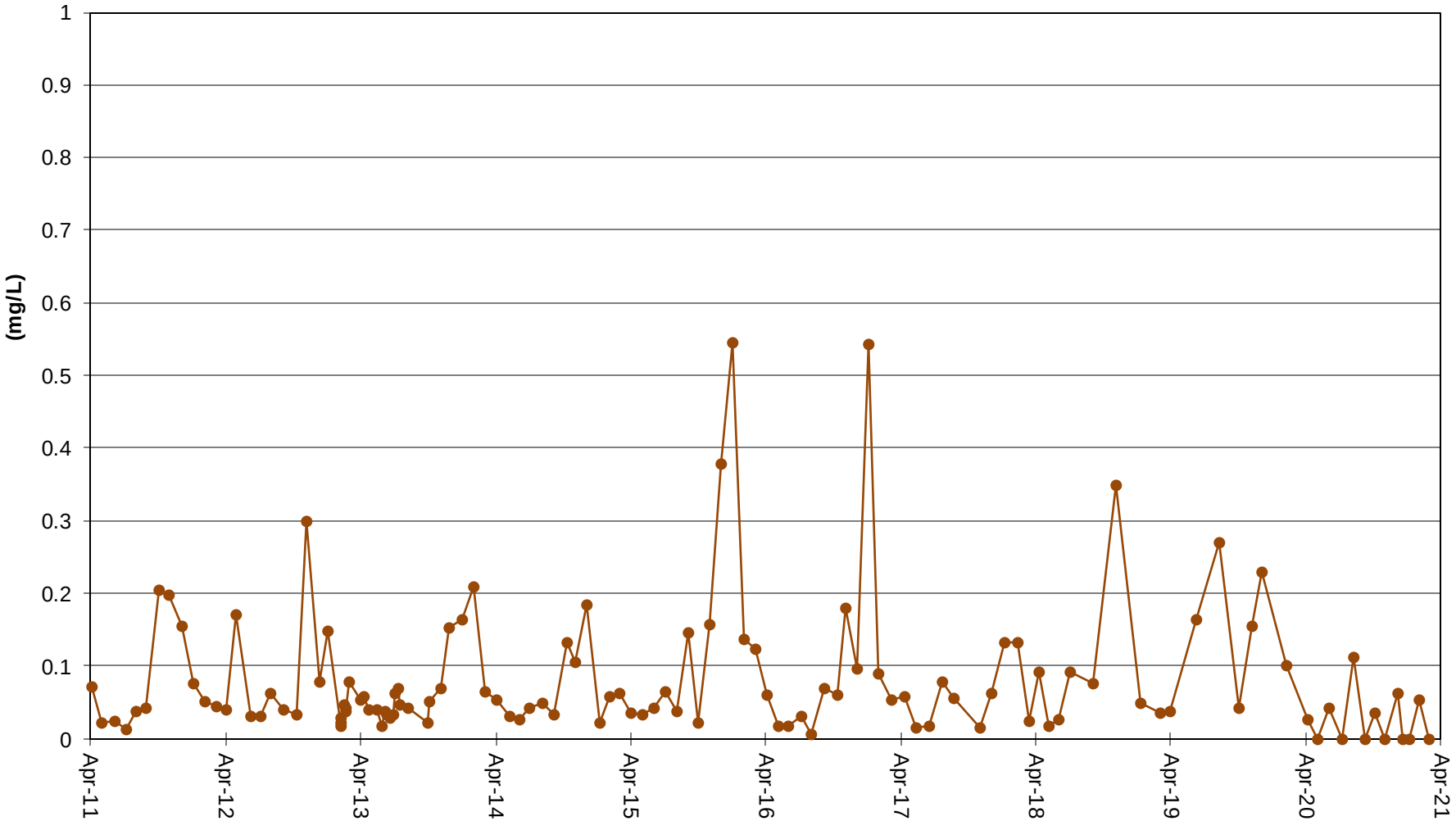


GRAPH 13
Dissolved Iron
Settling Pond 1

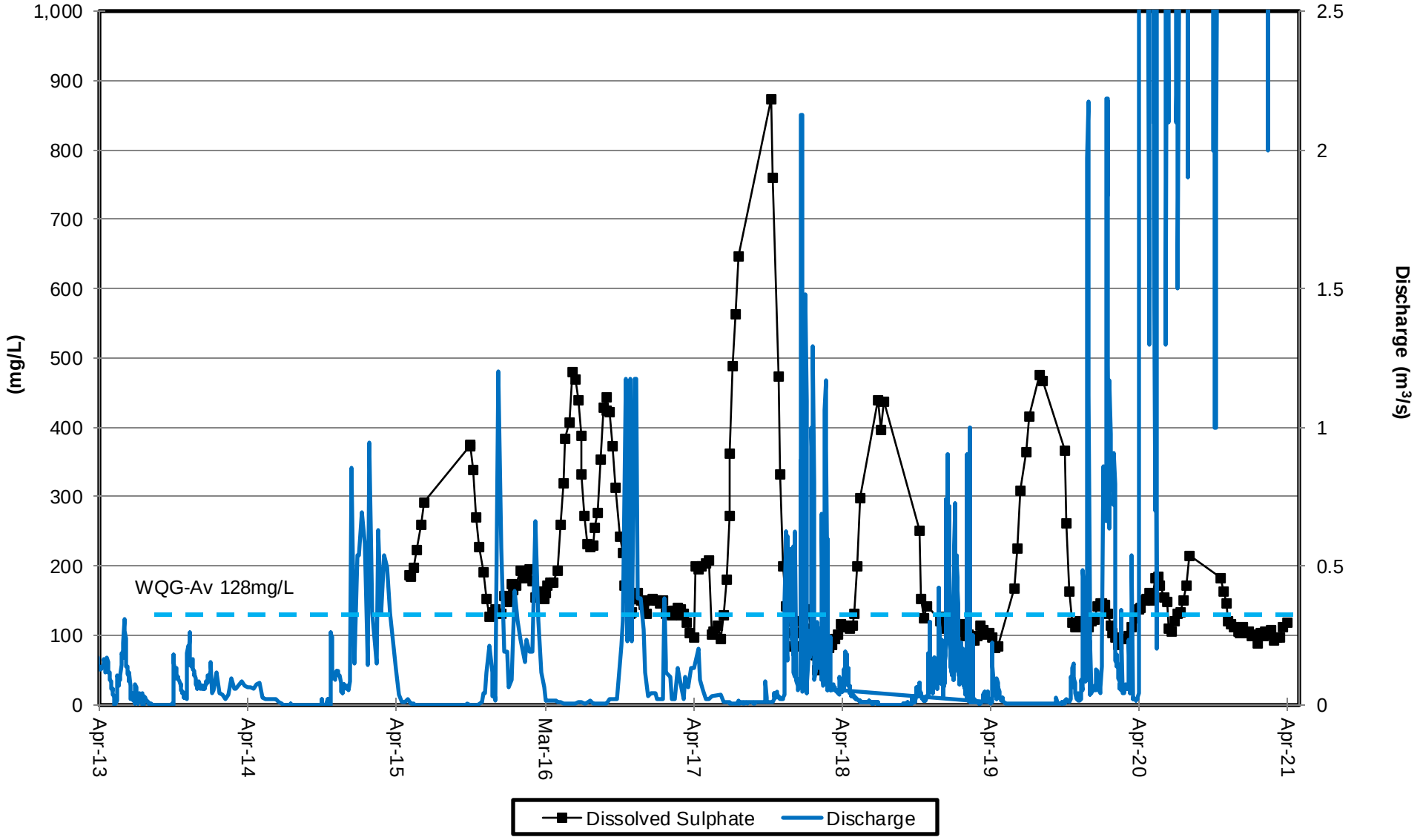


QUINSAM COAL

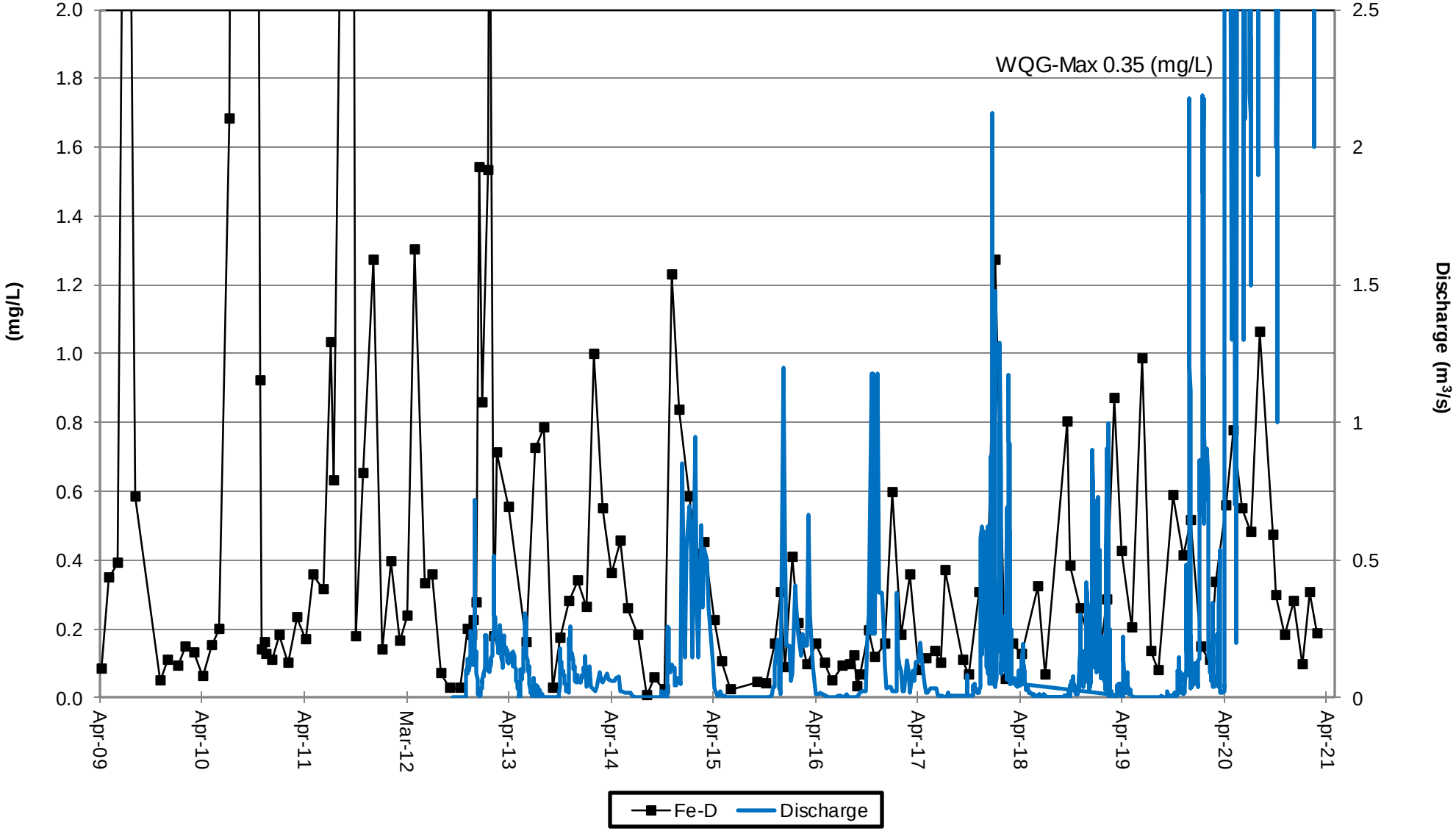
GRAPH 14
Total Manganese
Settling Pond 1



GRAPH 15
Average Dissolved Sulphate vs. Discharge
LLE

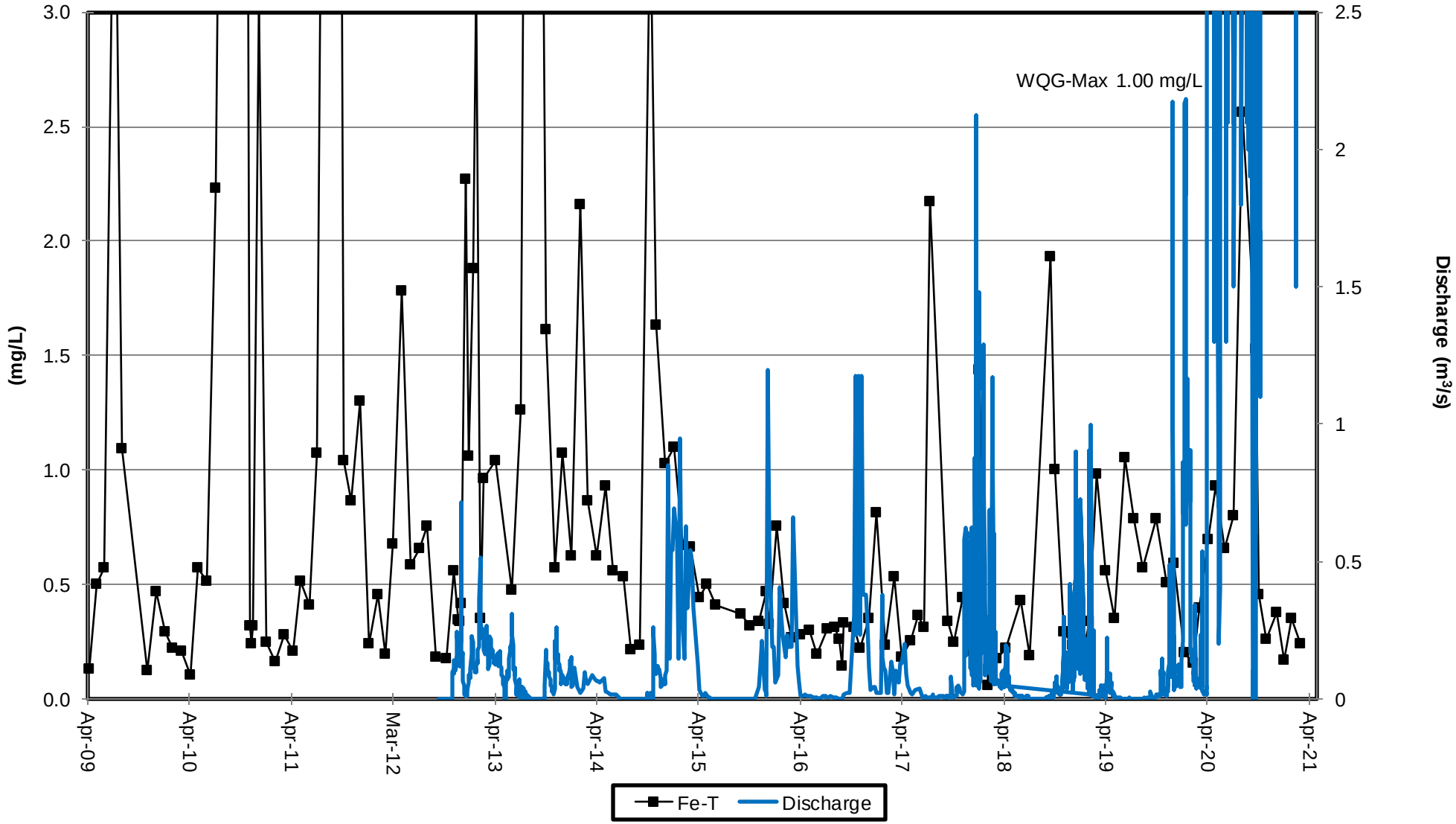


GRAPH 16
Dissolved Iron vs. Discharge
LLE



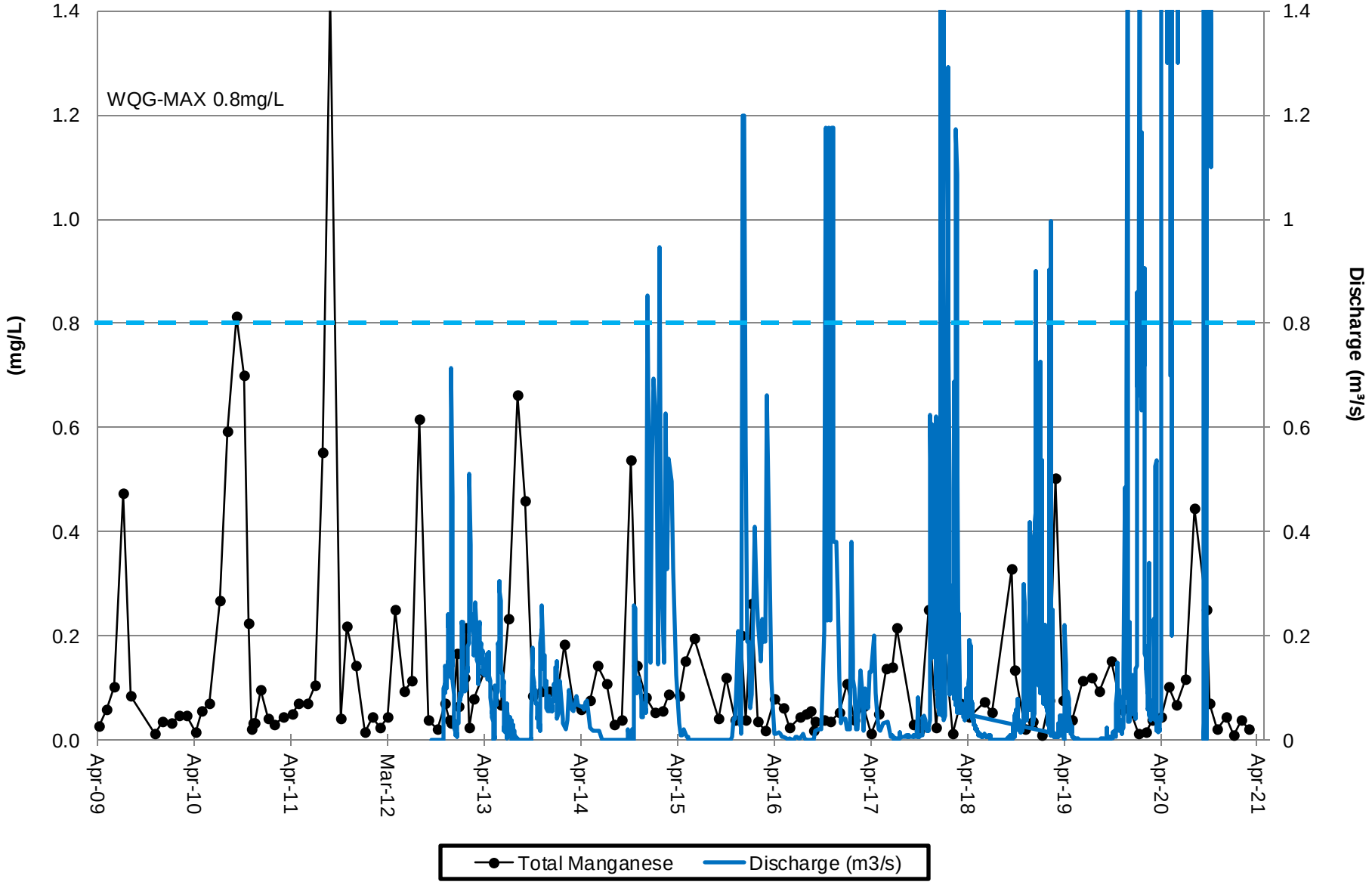
QUINSAM COAL

GRAPH 17
Total Iron vs. Discharge
LLE

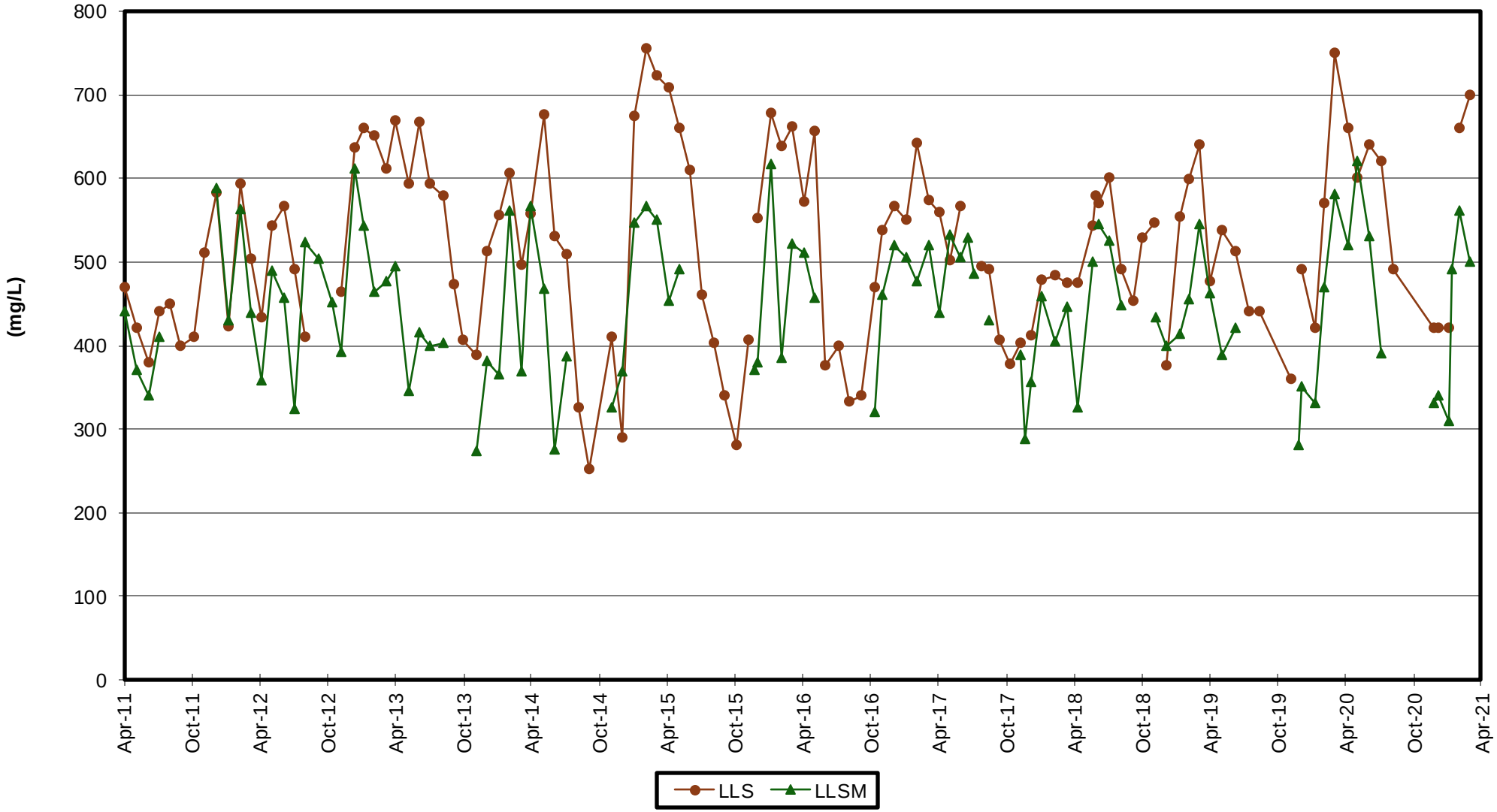


QUINSAM COAL

GRAPH 18
Total Manganese vs. Discharge
LLE

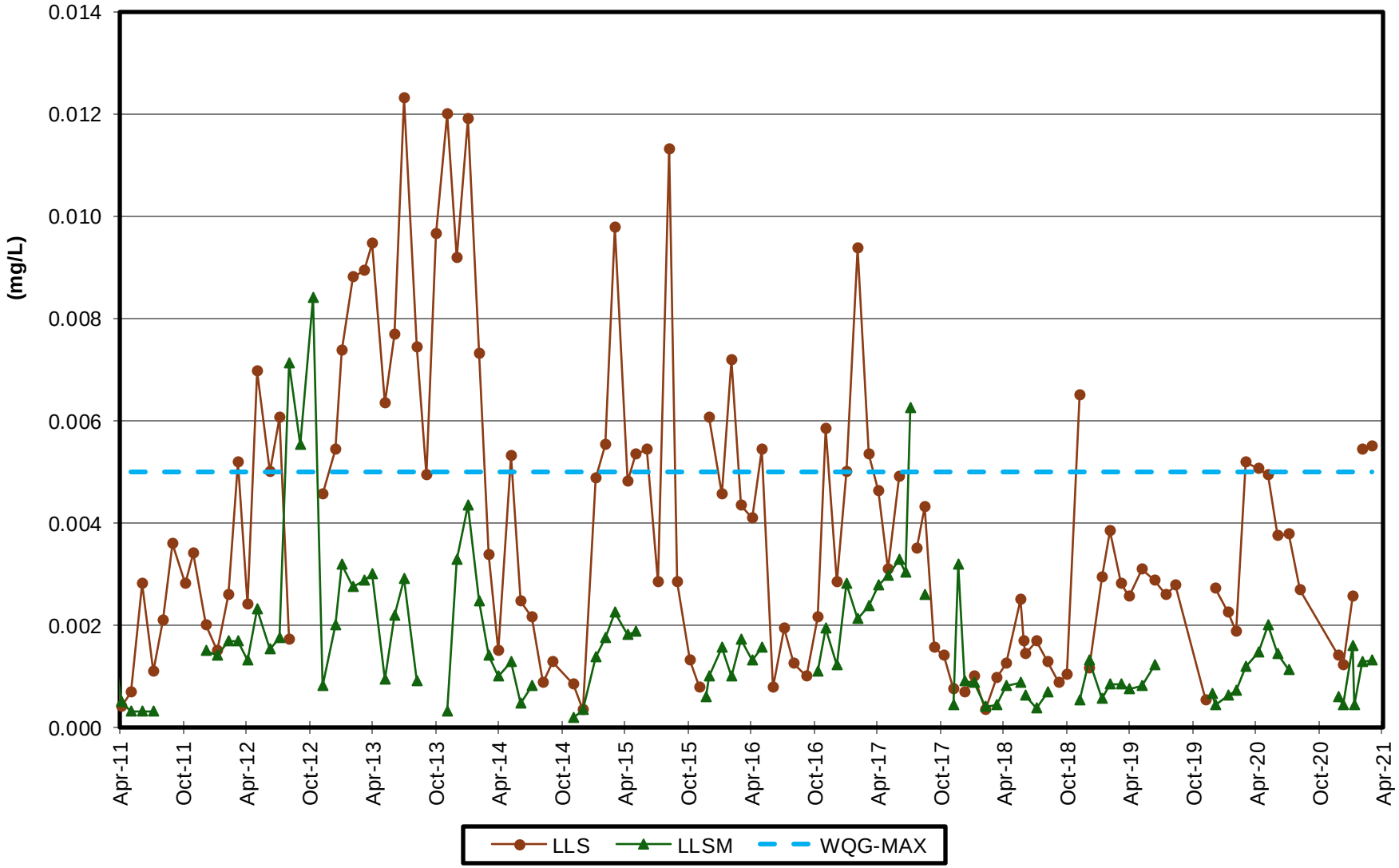


GRAPH 19
Dissolved Sulphate
Seeps Into Long Lake



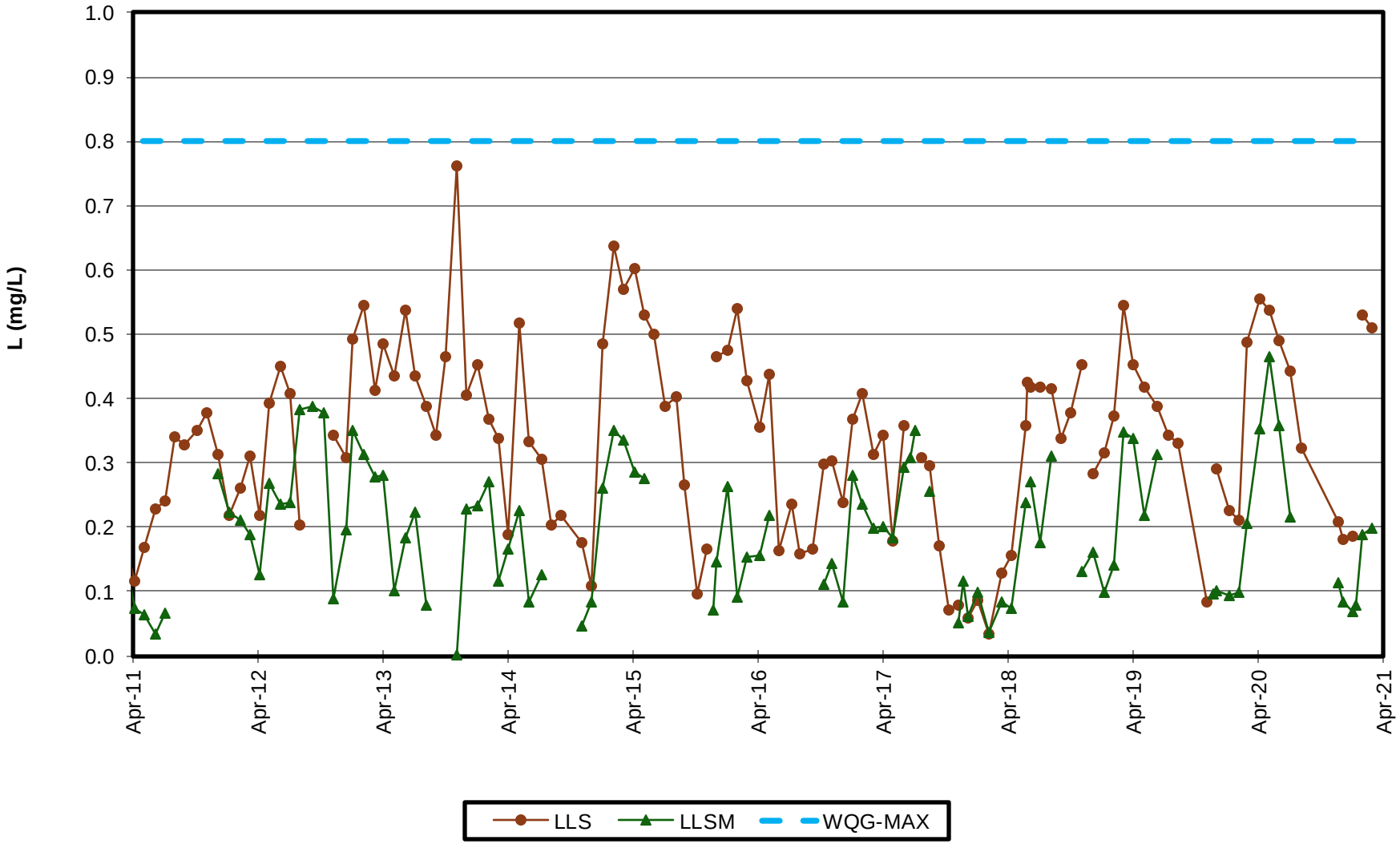
QUINSAM COAL

GRAPH 20
Total Arsenic
Seeps Into Long Lake

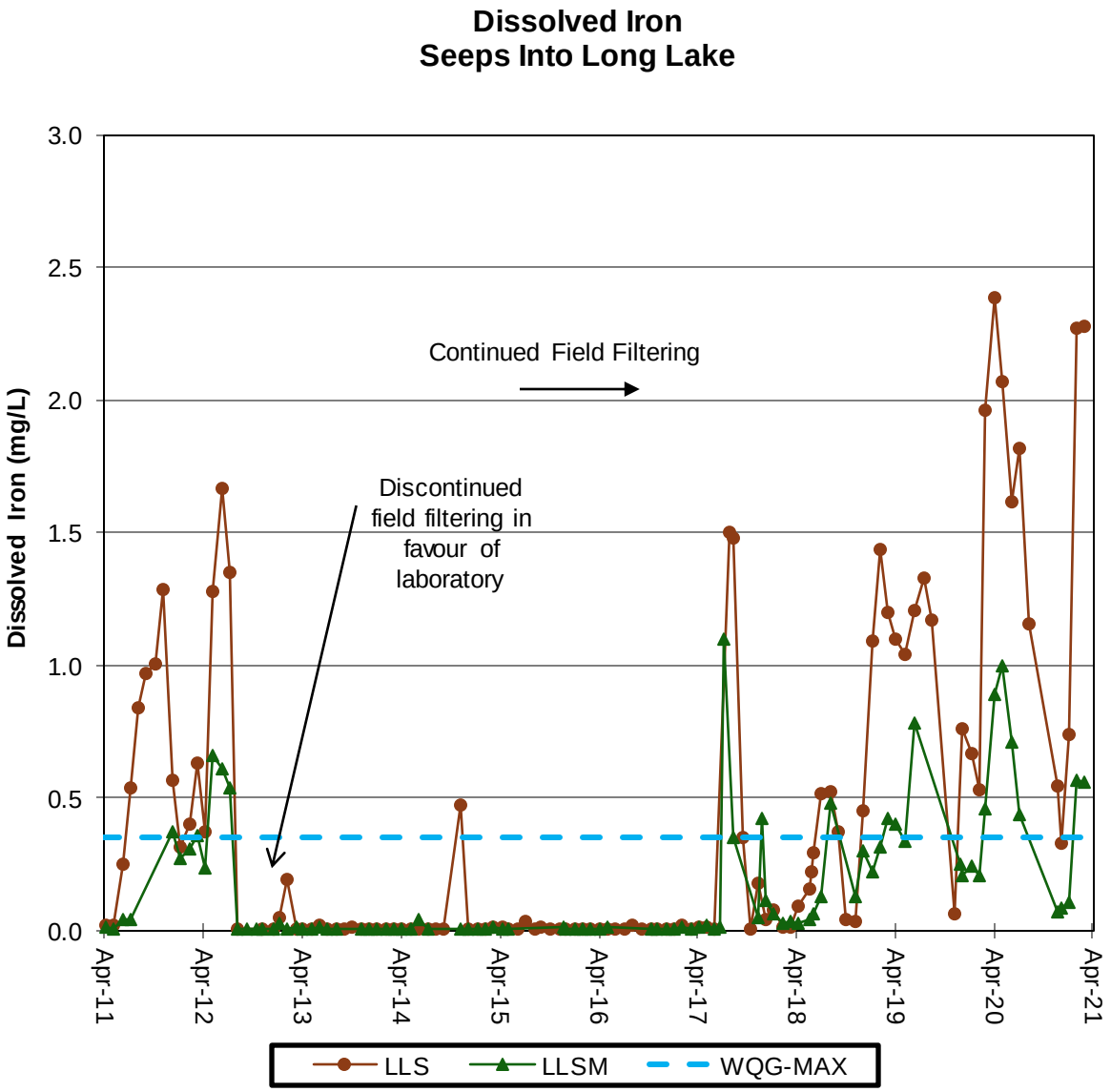


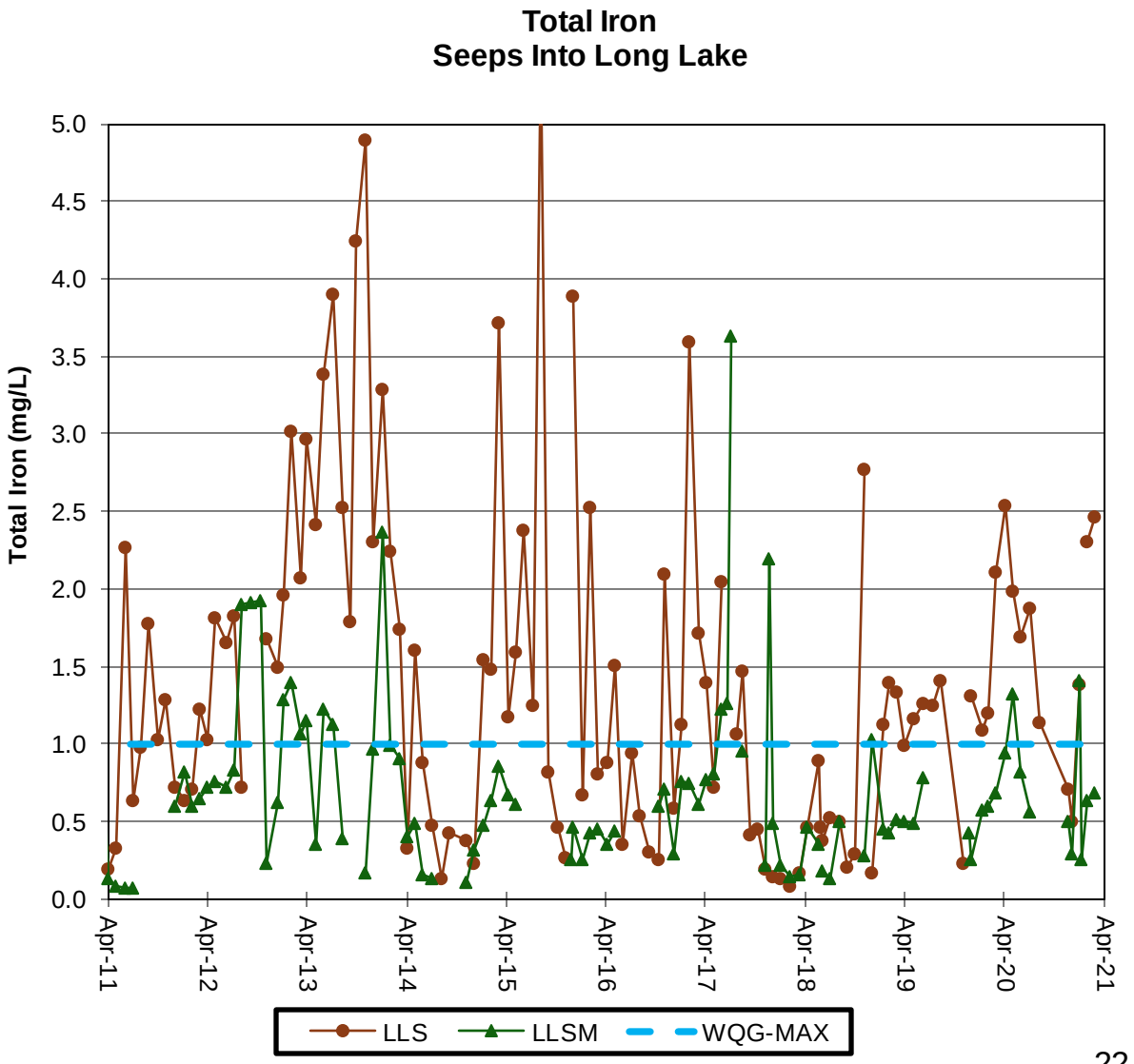
QUINSAM COAL

GRAPH 21
Total Manganese
Seeps Into Long Lake

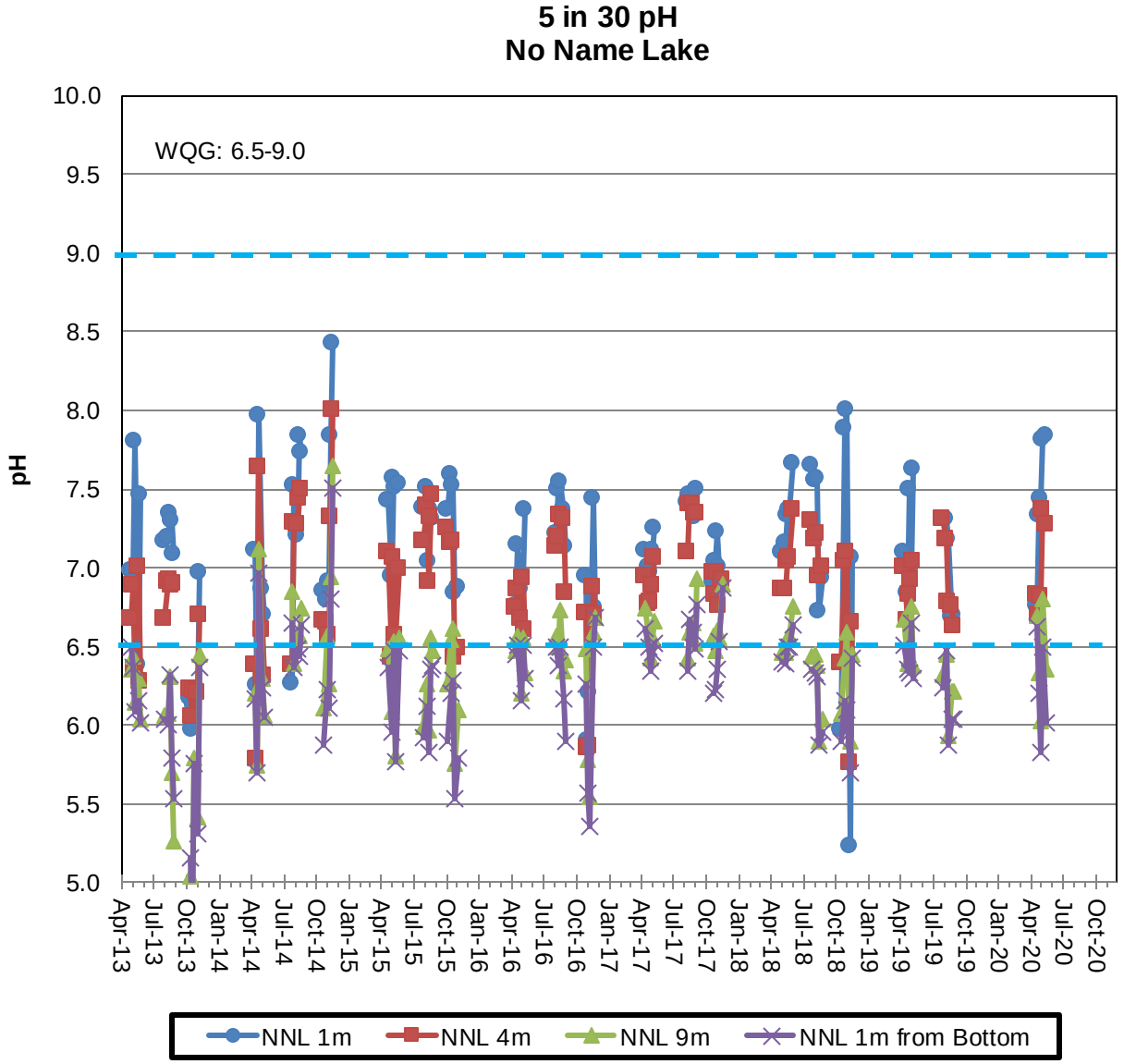


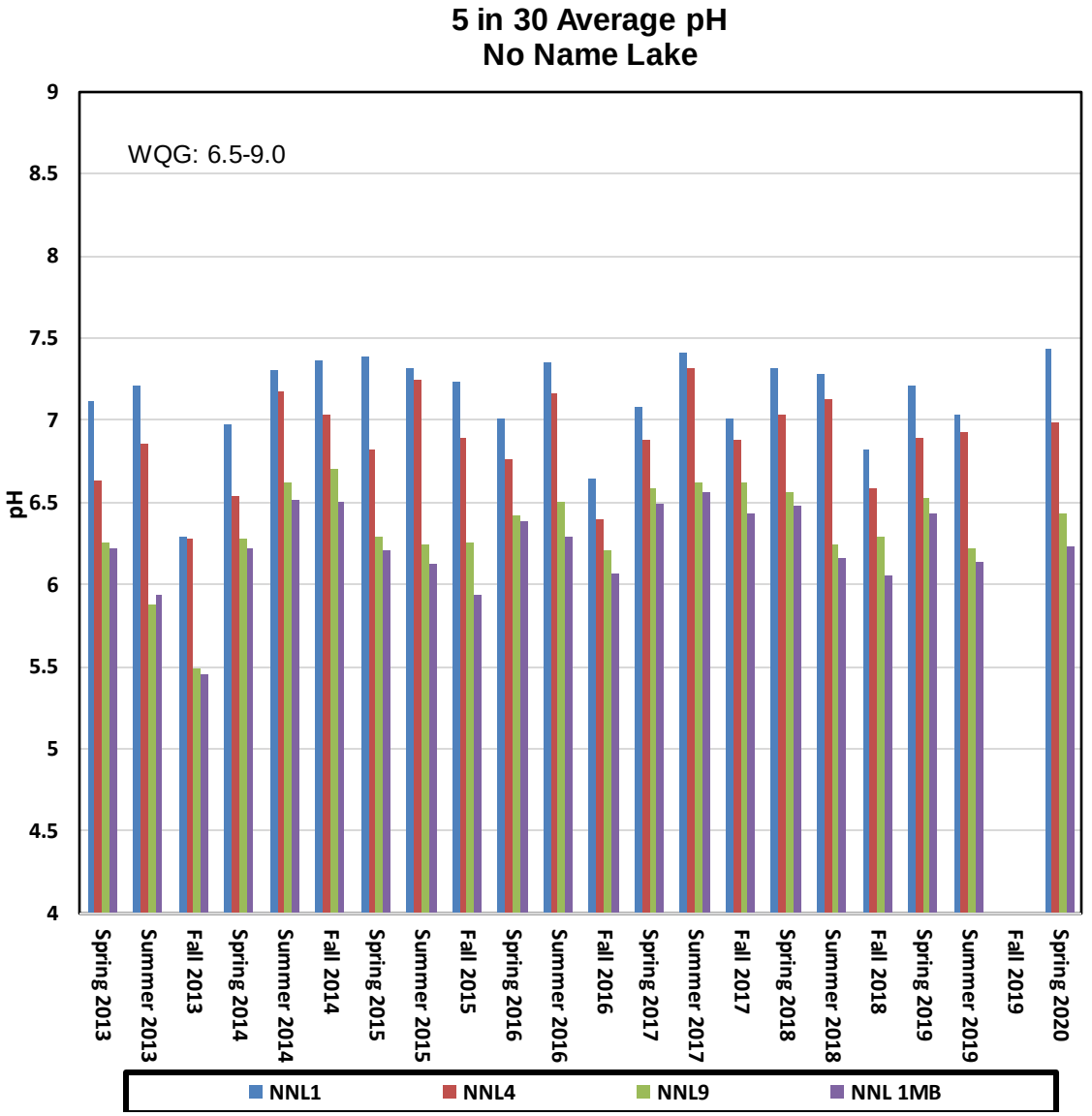
GRAPH 22


Dissolved Iron
Seeps Into Long Lake
Dissolved Iron (mg/L)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Continued Field Filtering
Discontinued field filtering in favour of laboratory
Apr-11
Apr-12
Apr-13
Apr-14
Apr-15
Apr-16
Apr-17
Apr-18
Apr-19
Apr-20
Apr-21
LLS
LLSM
WQG-MAX

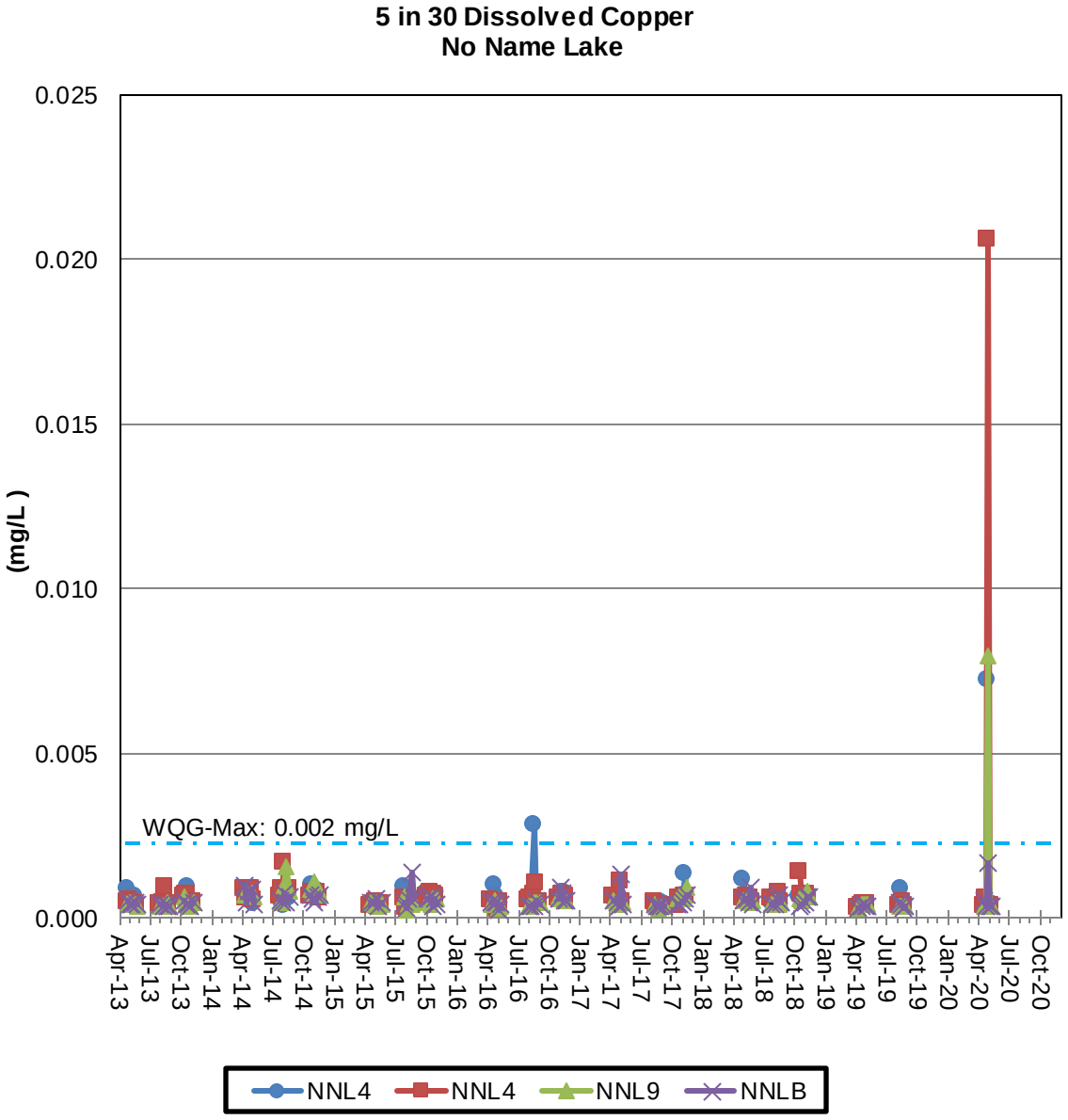

Total Iron
Seeps Into Long Lake
Total Iron (mg/L)
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Apr-11
Apr-12
Apr-13
Apr-14
Apr-15
Apr-16
Apr-17
Apr-18
Apr-19
Apr-20
Apr-21
LLS
LLSM
WQG-MAX

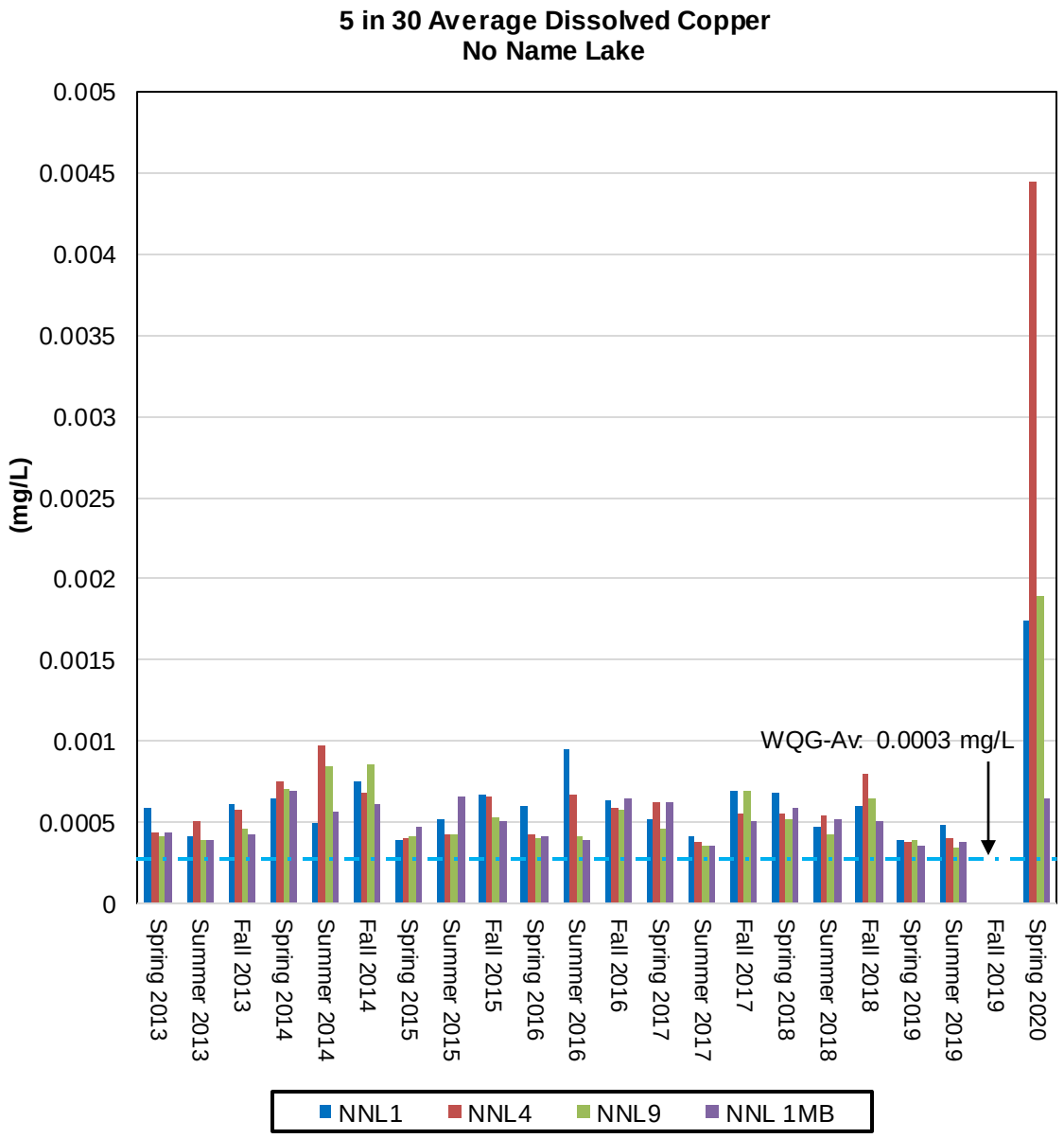
GRAPH 23


5 in 30 pH
No Name Lake
WQG: 6.5-9.0
pH
10.0
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
Apr-13
Jul-13
Oct-13
Jan-14
Apr-14
Jul-14
Oct-14
Jan-15
Apr-15
Jul-15
Oct-15
Jan-16
Apr-16
Jul-16
Oct-16
Jan-17
Apr-17
Jul-17
Oct-17
Jan-18
Apr-18
Jul-18
Oct-18
Jan-19
Apr-19
Jul-19
Oct-19
Jan-20
Apr-20
Jul-20
Oct-20
NNL 1m
NNL 4m
NNL 9m
NNL 1m from Bottom

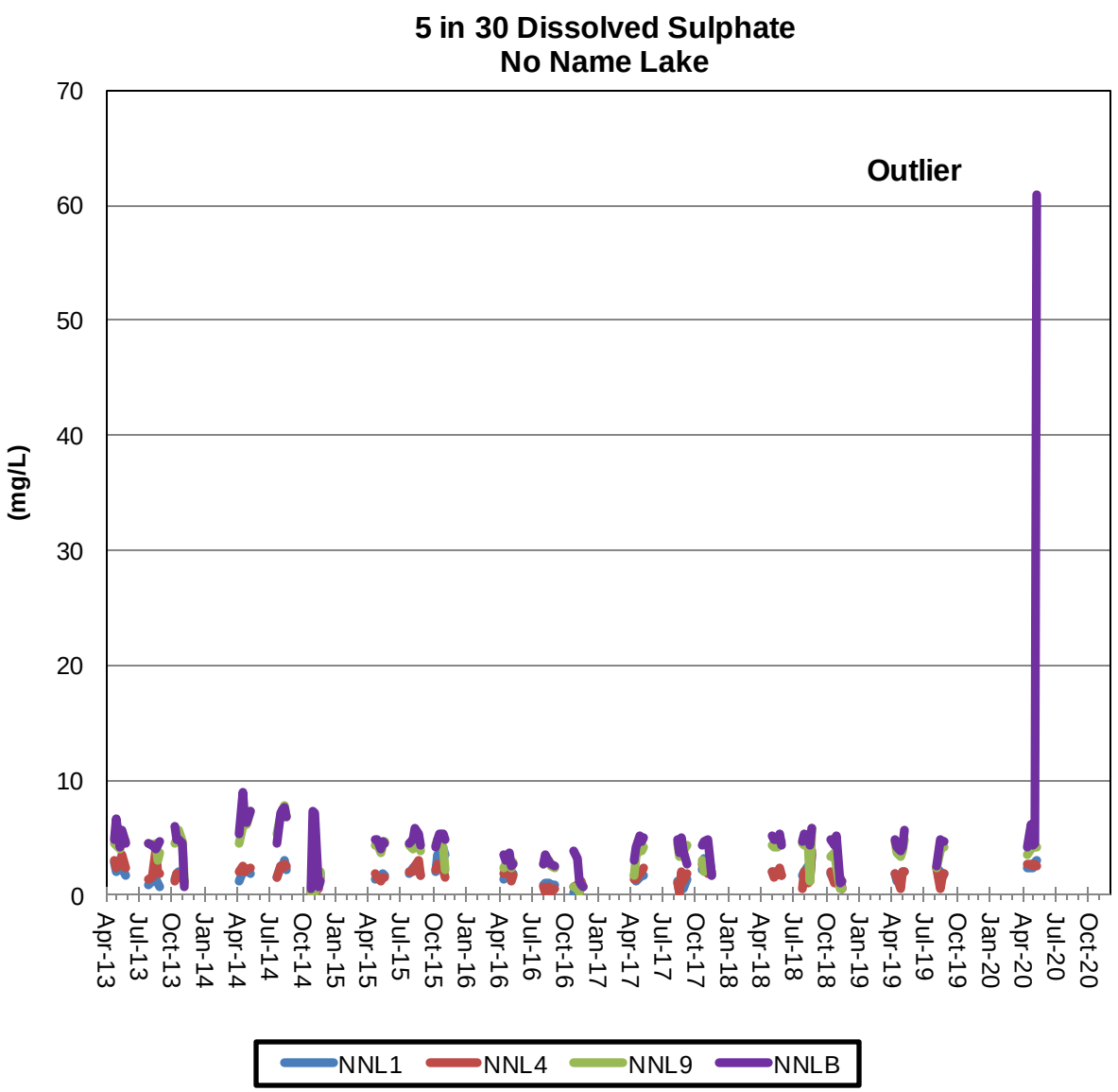

5 in 30 Average pH
No Name Lake
WQG: 6.5-9.0
pH
9
8.5
8
7.5
7
6.5
6
5.5
5
4.5
4
Spring 2013
Summer 2013
Fall 2013
Spring 2014
Summer 2014
Fall 2014
Spring 2015
Summer 2015
Fall 2015
Spring 2016
Summer 2016
Fall 2016
Spring 2017
Summer 2017
Fall 2017
Spring 2018
Summer 2018
Fall 2018
Spring 2019
Summer 2019
Fall 2019
Spring 2020
NNL1
NNL4
NNL9
NNL 1MB

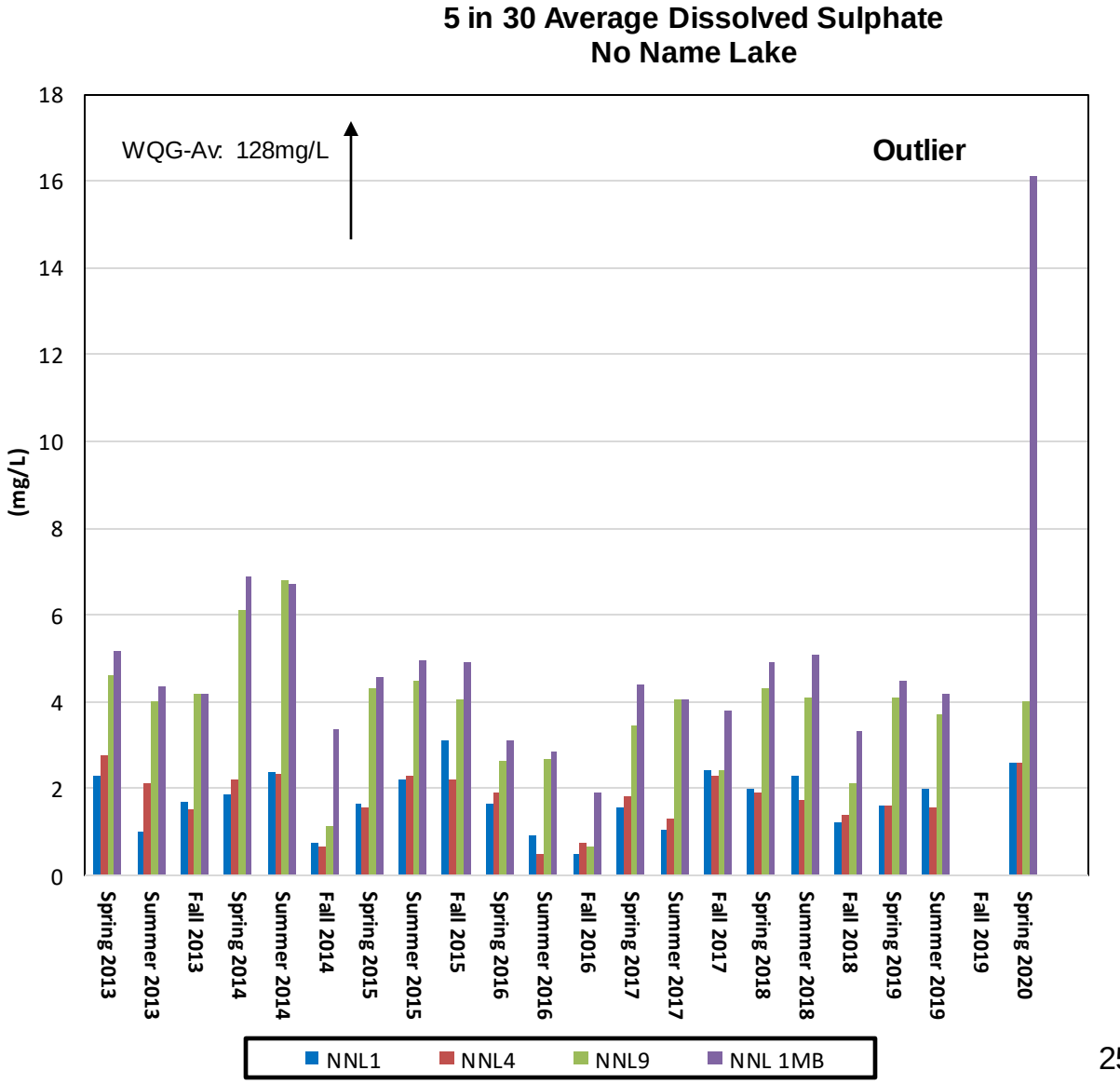
GRAPH 24


5 in 30 Dissolved Copper
No Name Lake
(mg/L)
0.025
0.020
0.015
0.010
0.005
0.000
WQG-Max: 0.002 mg/L
Apr-13
Jul-13
Oct-13
Jan-14
Apr-14
Jul-14
Oct-14
Jan-15
Apr-15
Jul-15
Oct-15
Jan-16
Apr-16
Jul-16
Oct-16
Jan-17
Apr-17
Jul-17
Oct-17
Jan-18
Apr-18
Jul-18
Oct-18
Jan-19
Apr-19
Jul-19
Oct-19
Jan-20
Apr-20
Jul-20
Oct-20
NNL4
NNL4
NNL9
NNLB


5 in 30 Average Dissolved Copper
No Name Lake
(mg/L)
0.005
0.0045
0.004
0.0035
0.003
0.0025
0.002
0.0015
0.001
0.0005
0
WQG-Av: 0.0003 mg/L
Spring 2013
Summer 2013
Fall 2013
Spring 2014
Summer 2014
Fall 2014
Spring 2015
Summer 2015
Fall 2015
Spring 2016
Summer 2016
Fall 2016
Spring 2017
Summer 2017
Fall 2017
Spring 2018
Summer 2018
Fall 2018
Spring 2019
Summer 2019
Fall 2019
Spring 2020
NNL1
NNL4
NNL9
NNL 1MB

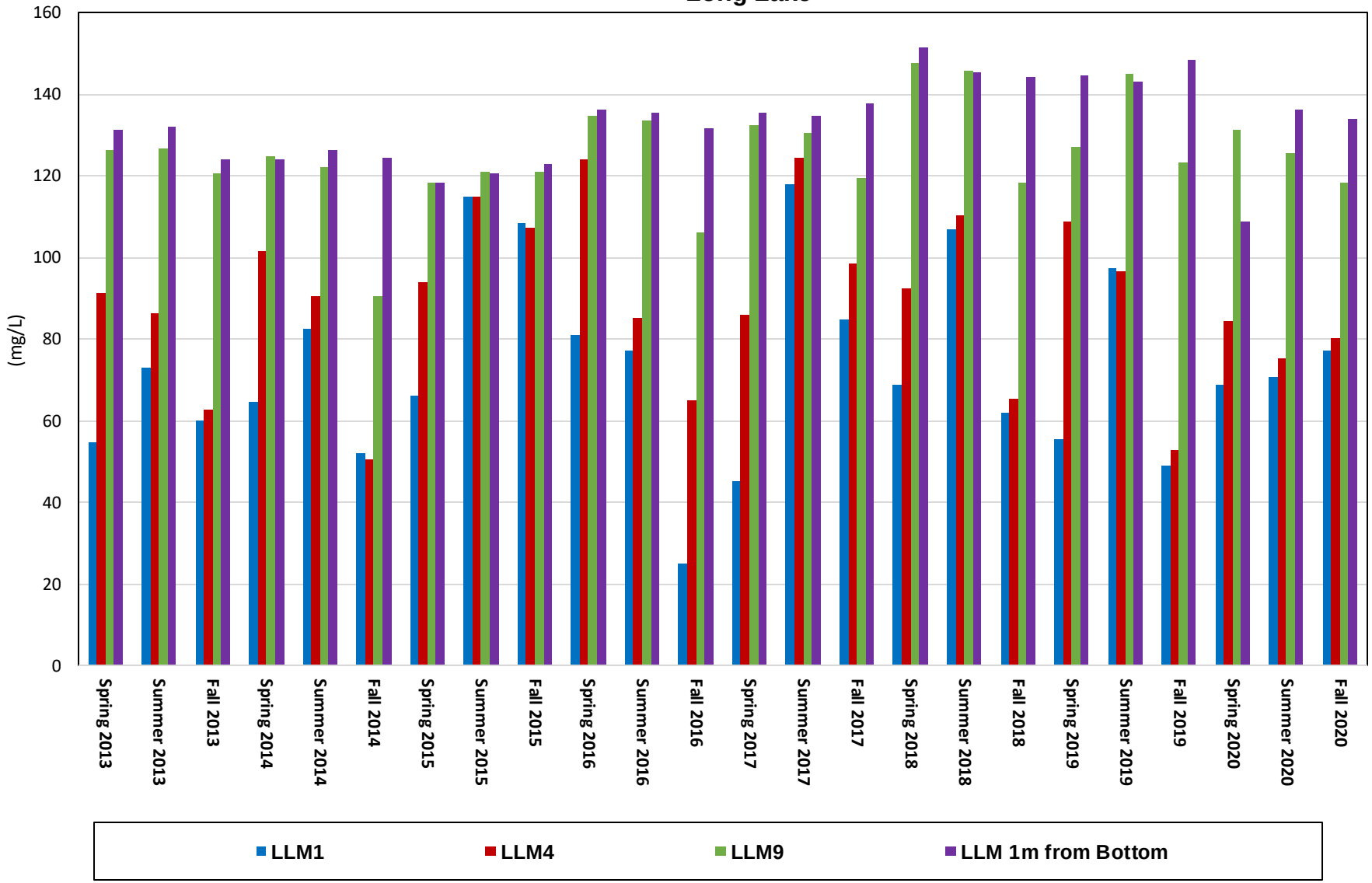
GRAPH 25


5 in 30 Dissolved Sulphate
No Name Lake
Outlier
(mg/L)
70
60
50
40
30
20
10
0
Apr-13
Jul-13
Oct-13
Jan-14
Apr-14
Jul-14
Oct-14
Jan-15
Apr-15
Jul-15
Oct-15
Jan-16
Apr-16
Jul-16
Oct-16
Jan-17
Apr-17
Jul-17
Oct-17
Jan-18
Apr-18
Jul-18
Oct-18
Jan-19
Apr-19
Jul-19
Oct-19
Jan-20
Apr-20
Jul-20
Oct-20
NNL1
NNL4
NNL9
NNLB


5 in 30 Average Dissolved Sulphate
No Name Lake
WQG-Av. 128mg/L
Outlier
(mg/L)
18
16
14
12
10
8
6
4
2
0
Spring 2013
Summer 2013
Fall 2013
Spring 2014
Summer 2014
Fall 2014
Spring 2015
Summer 2015
Fall 2015
Spring 2016
Summer 2016
Fall 2016
Spring 2017
Summer 2017
Fall 2017
Spring 2018
Summer 2018
Fall 2018
Spring 2019
Summer 2019
Fall 2019
Spring 2020
NNL1
NNL4
NNL9
NNL 1MB

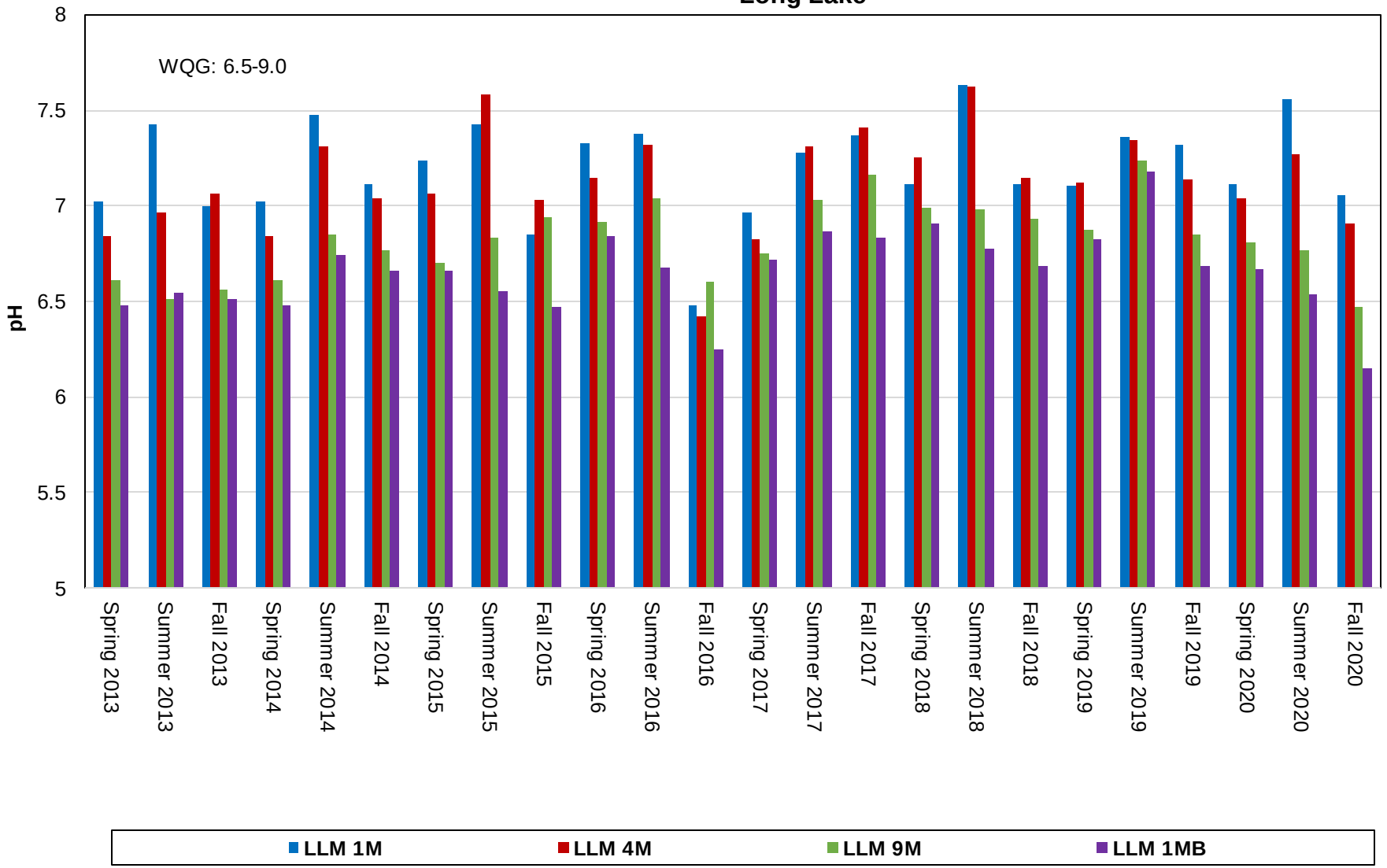
QUINSAM COAL

GRAPH 26
5 in 30 Average Hardness
Long Lake



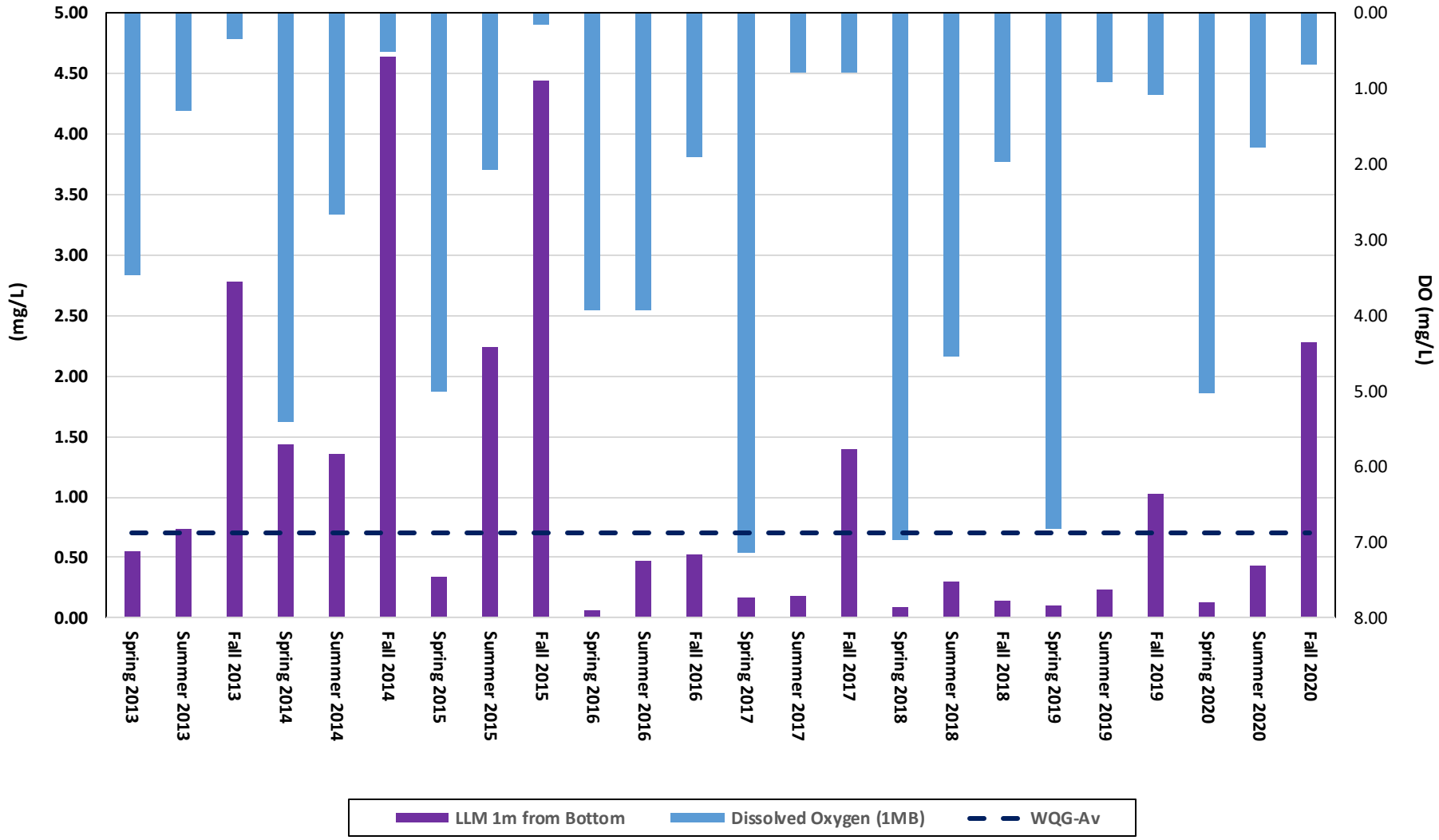
QUINSAM COAL

GRAPH 27
5 in 30 Average pH
Long Lake

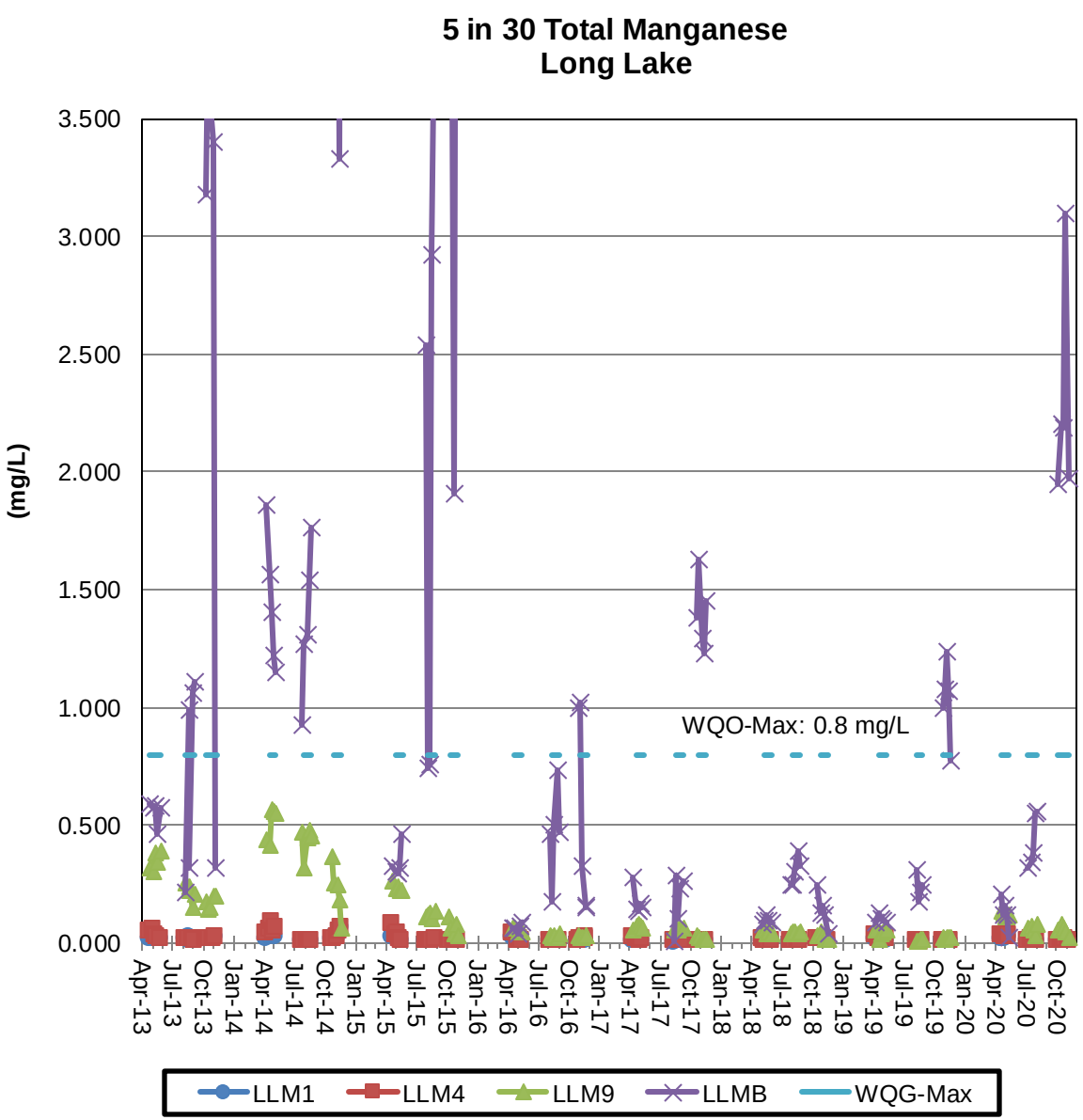


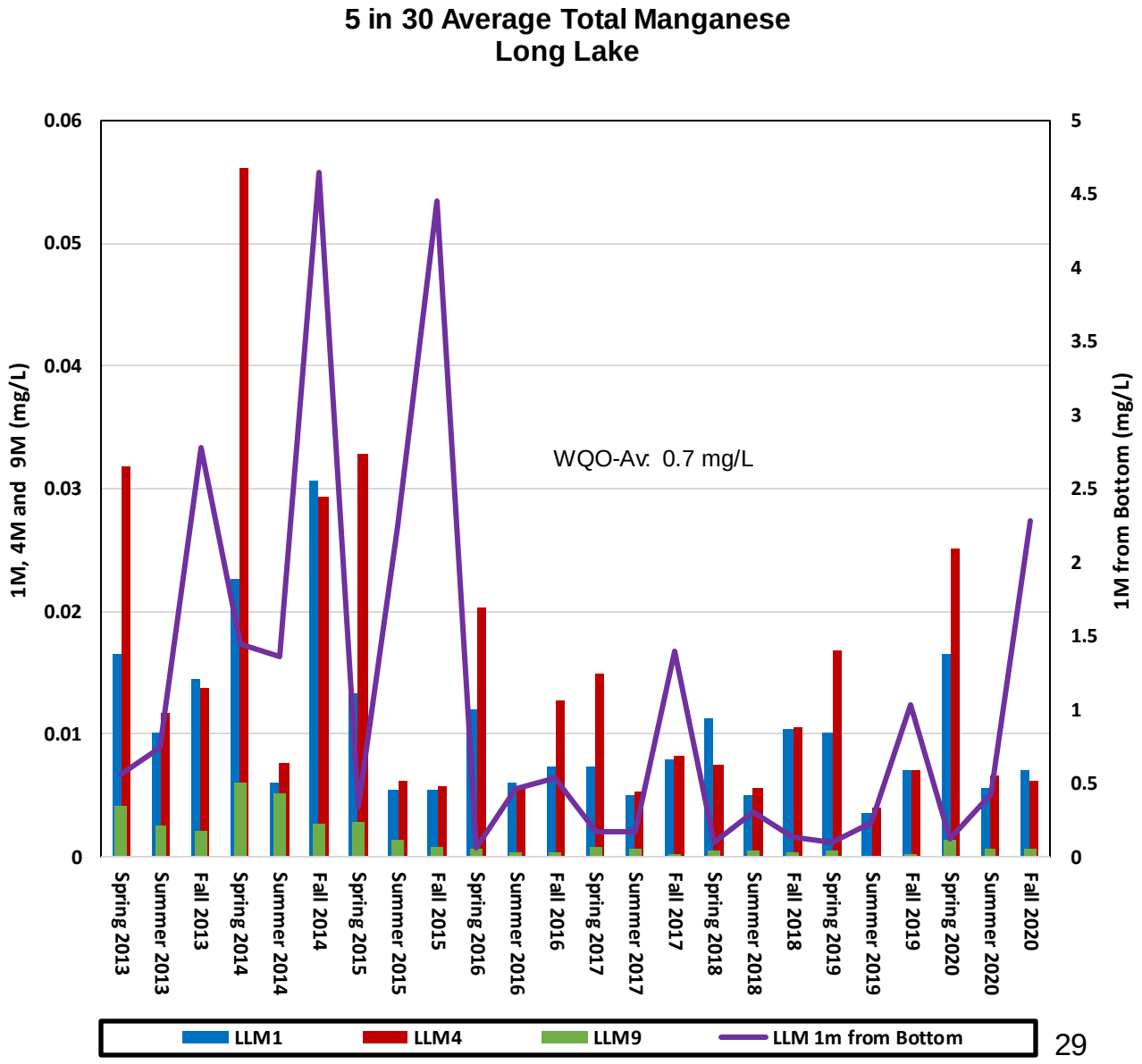
QUINSAM COAL

GRAPH 28
5 in 30 Average Total Manganese vs Dissolved Oxygen
Long Lake 1 metre from Bottom



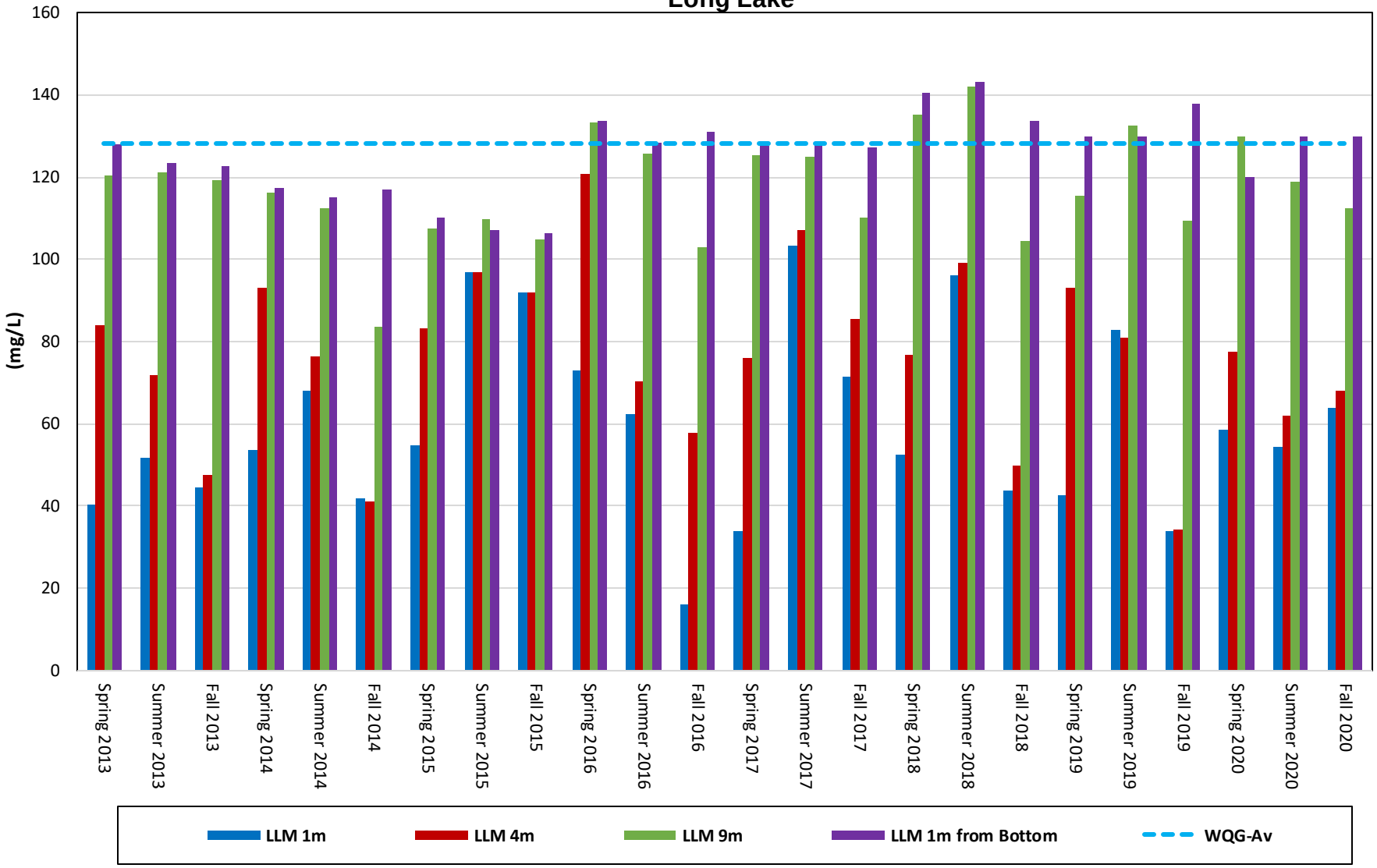
GRAPH 29


5 in 30 Total Manganese
Long Lake
(mg/L)
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
WQO-Max: 0.8 mg/L
Apr-13
Jul-13
Oct-13
Jan-14
Apr-14
Jul-14
Oct-14
Jan-15
Apr-15
Jul-15
Oct-15
Jan-16
Apr-16
Jul-16
Oct-16
Jan-17
Apr-17
Jul-17
Oct-17
Jan-18
Apr-18
Jul-18
Oct-18
Jan-19
Apr-19
Jul-19
Oct-19
Jan-20
Apr-20
Jul-20
Oct-20
LLM1
LLM4
LLM9
LLMB
WQG-Max

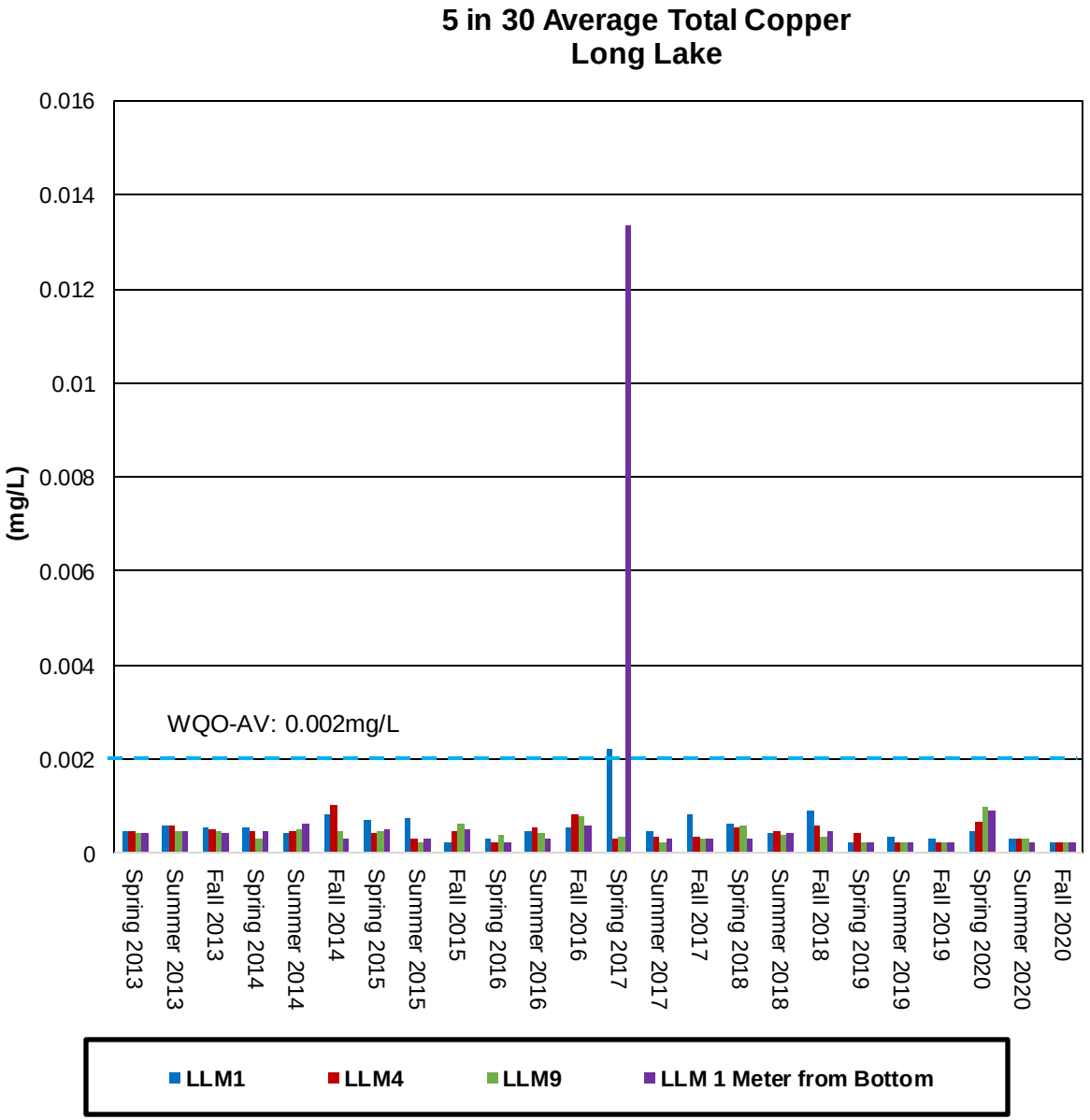

5 in 30 Average Total Manganese
Long Lake
1M, 4M and 9M (mg/L)
0.06
0.05
0.04
0.03
0.02
0.01
0
1M from Bottom (mg/L)
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
WQO-Av: 0.7 mg/L
Spring 2013
Summer 2013
Fall 2013
Spring 2014
Summer 2014
Fall 2014
Spring 2015
Summer 2015
Fall 2015
Spring 2016
Summer 2016
Fall 2016
Spring 2017
Summer 2017
Fall 2017
Spring 2018
Summer 2018
Fall 2018
Spring 2019
Summer 2019
Fall 2019
Spring 2020
Summer 2020
Fall 2020
LLM1
LLM4
LLM9
LLM 1m from Bottom

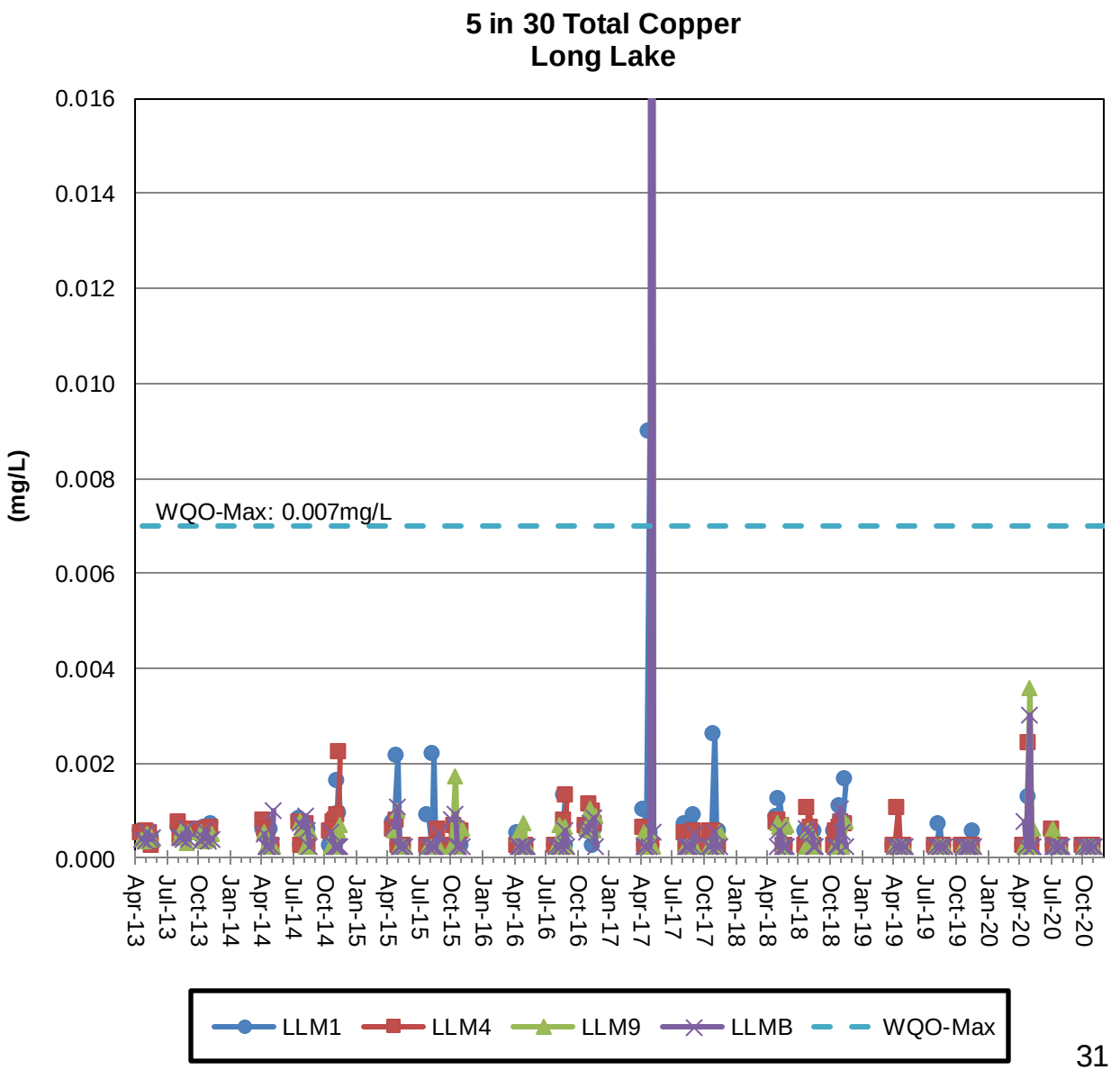
QUINSAM COAL

GRAPH 30
5 in 30 Average Dissolved Sulphate
Long Lake



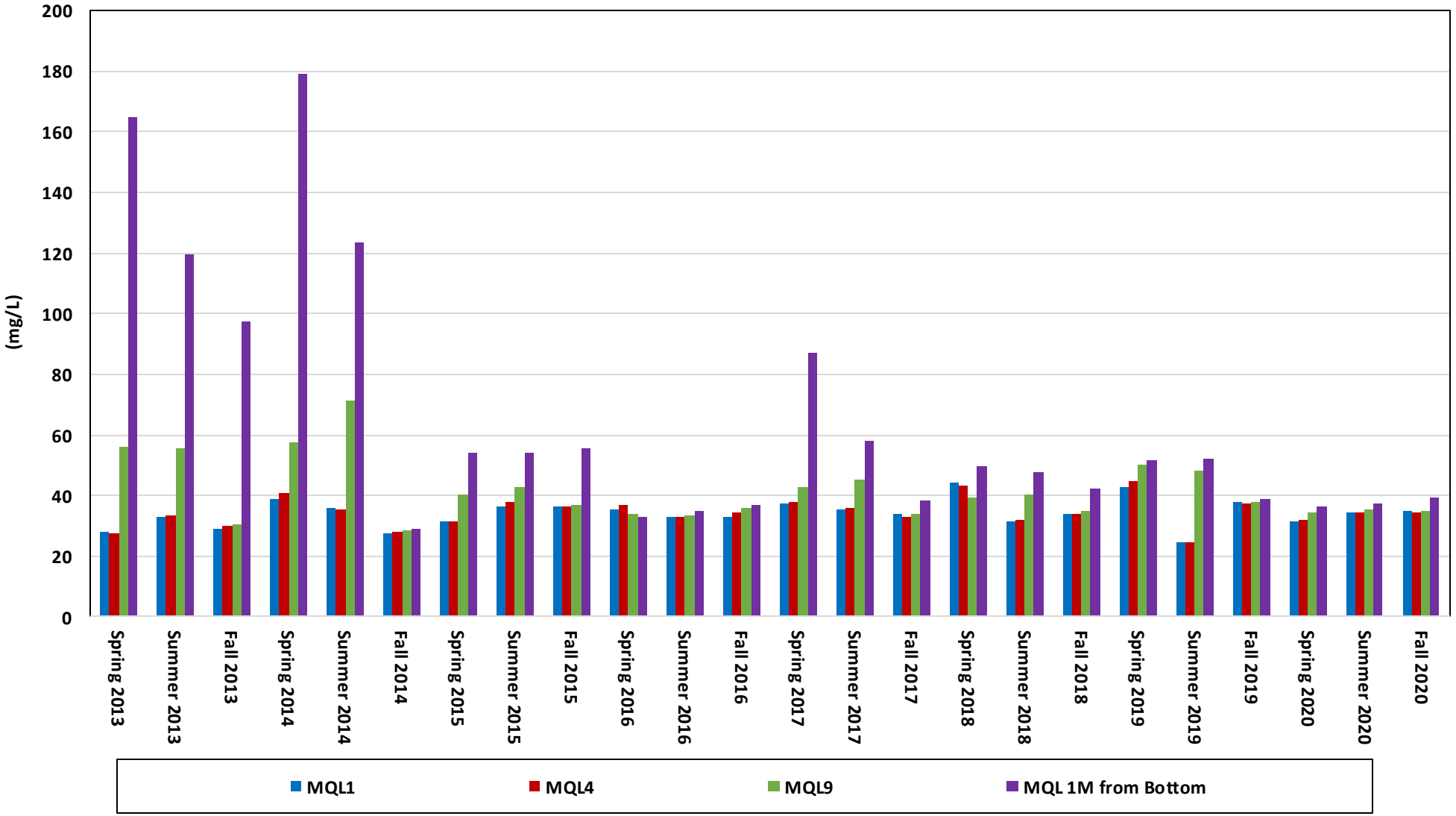
GRAPH 31


5 in 30 Average Total Copper
Long Lake
(mg/L)
0.016
0.014
0.012
0.01
0.008
0.006
0.004
0.002
0
WQO-AV: 0.002mg/L
Spring 2013
Summer 2013
Fall 2013
Spring 2014
Summer 2014
Fall 2014
Spring 2015
Summer 2015
Fall 2015
Spring 2016
Summer 2016
Fall 2016
Spring 2017
Summer 2017
Fall 2017
Spring 2018
Summer 2018
Fall 2018
Spring 2019
Summer 2019
Fall 2019
Spring 2020
Summer 2020
Fall 2020
LLM1
LLM4
LLM9
LLM 1 Meter from Bottom

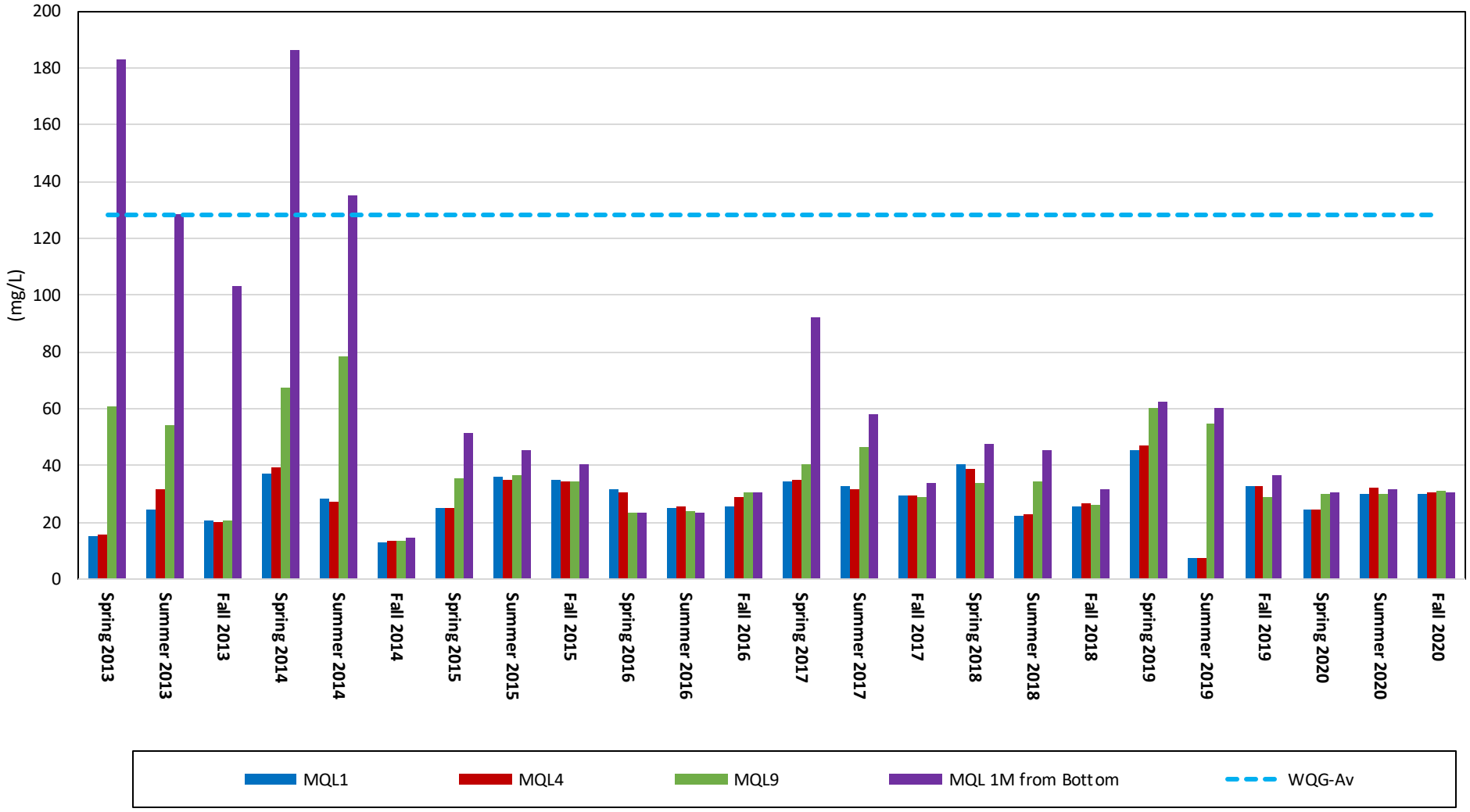

5 in 30 Total Copper
Long Lake
(mg/L)
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000
WQO-Max: 0.007mg/L
Apr-13
Jul-13
Oct-13
Jan-14
Apr-14
Jul-14
Oct-14
Jan-15
Apr-15
Jul-15
Oct-15
Jan-16
Apr-16
Jul-16
Oct-16
Jan-17
Apr-17
Jul-17
Oct-17
Jan-18
Apr-18
Jul-18
Oct-18
Jan-19
Apr-19
Jul-19
Oct-19
Jan-20
Apr-20
Jul-20
Oct-20
LLM1
LLM4
LLM9
LLMB
WQO-Max

QUINSAM COAL

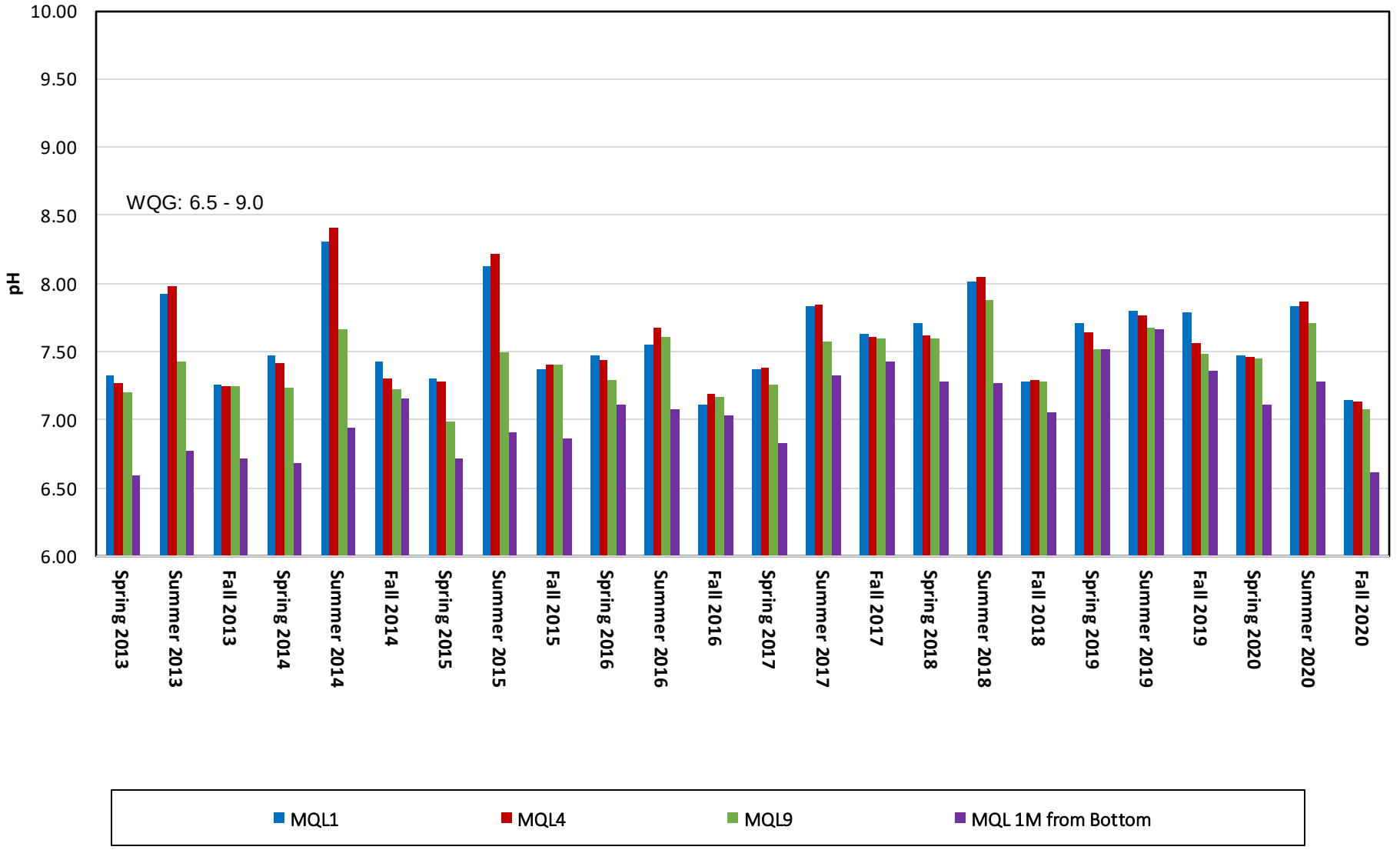
GRAPH 32
5 in 30 Average Hardness
Middle Quinsam Lake



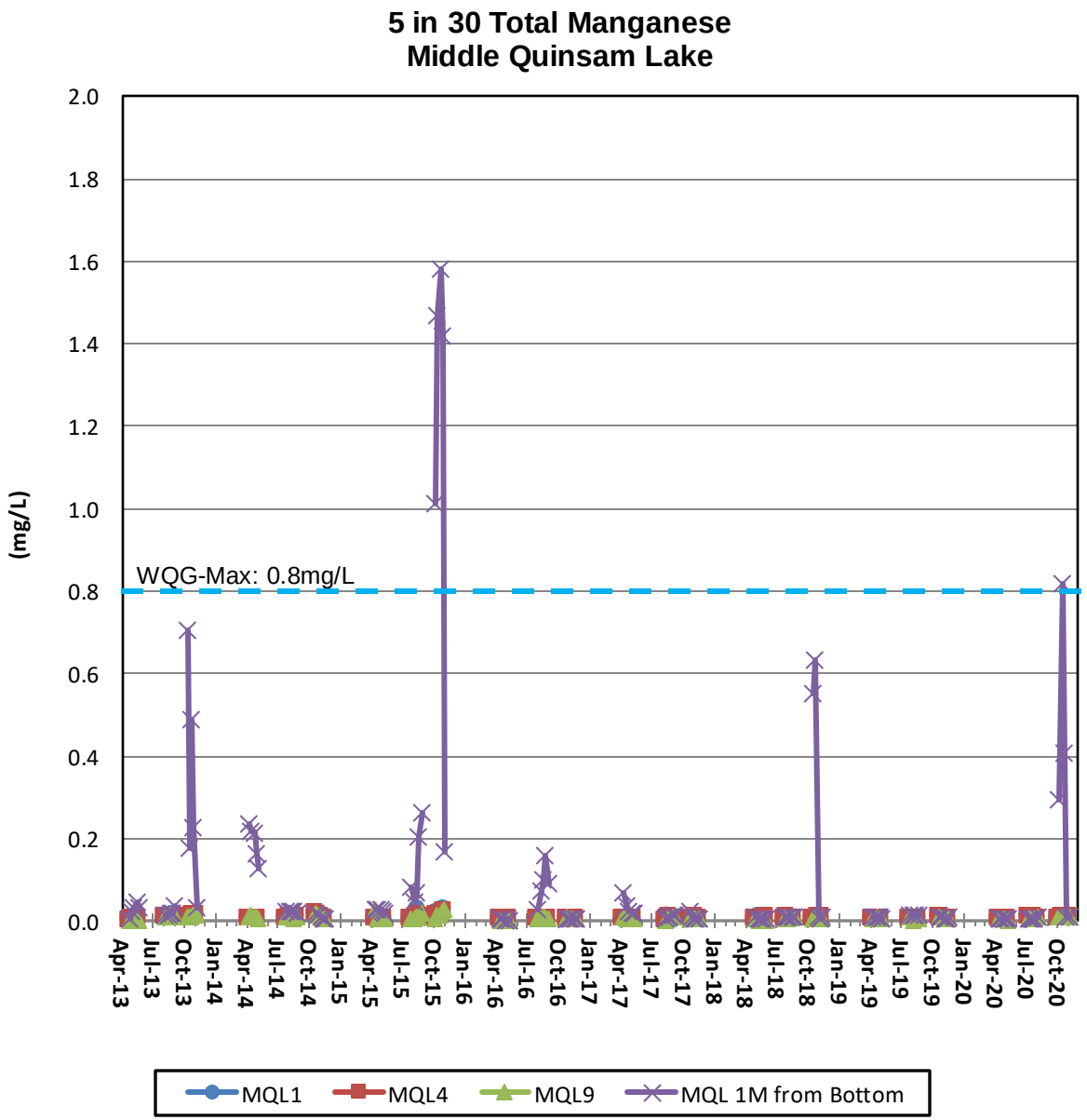
GRAPH 33
5 in 30 Average Dissolved Sulphate
Middle Quinsam Lake

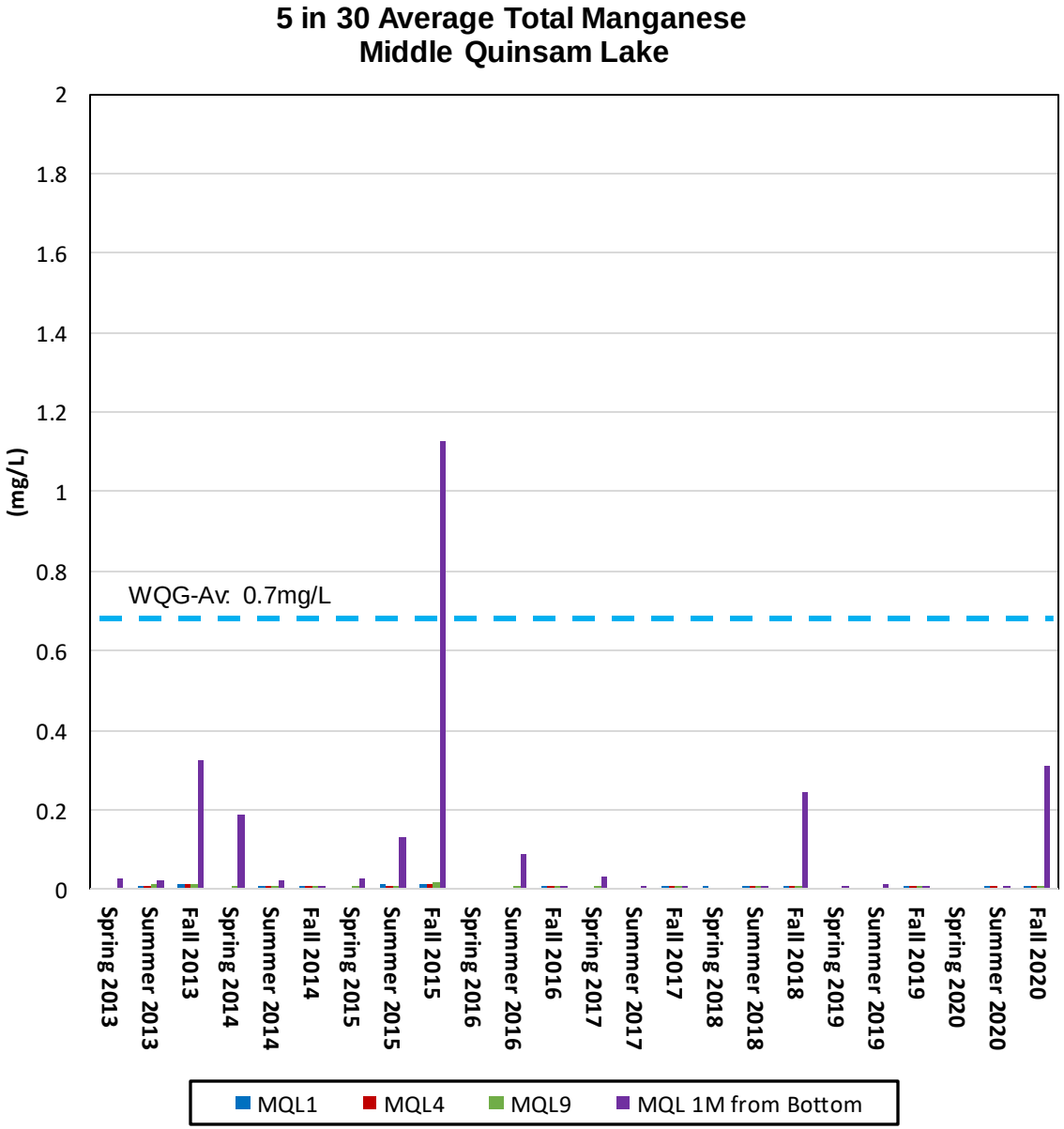


GRAPH 34
5 in 30 Average pH
Middle Quinsam Lake

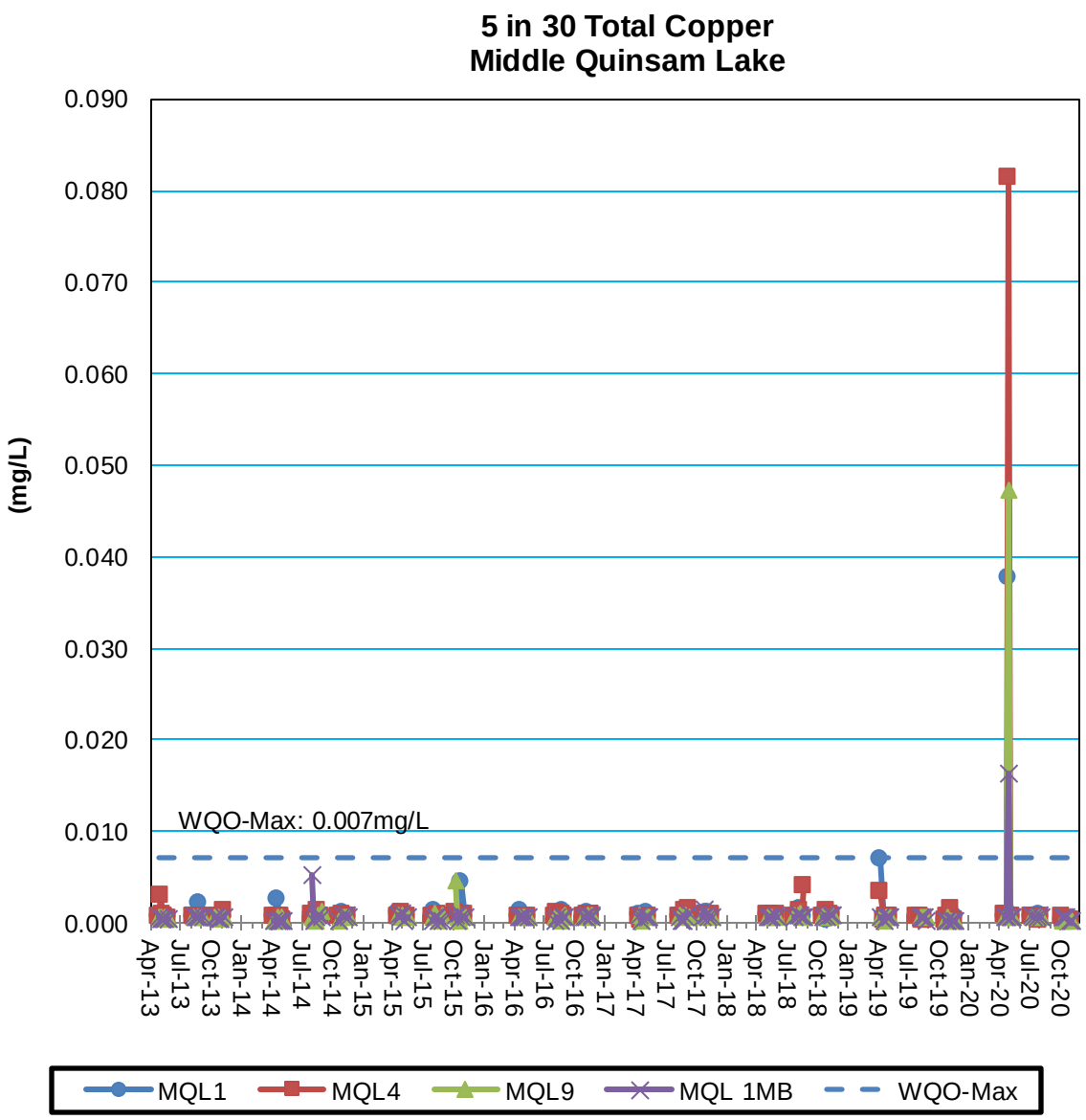


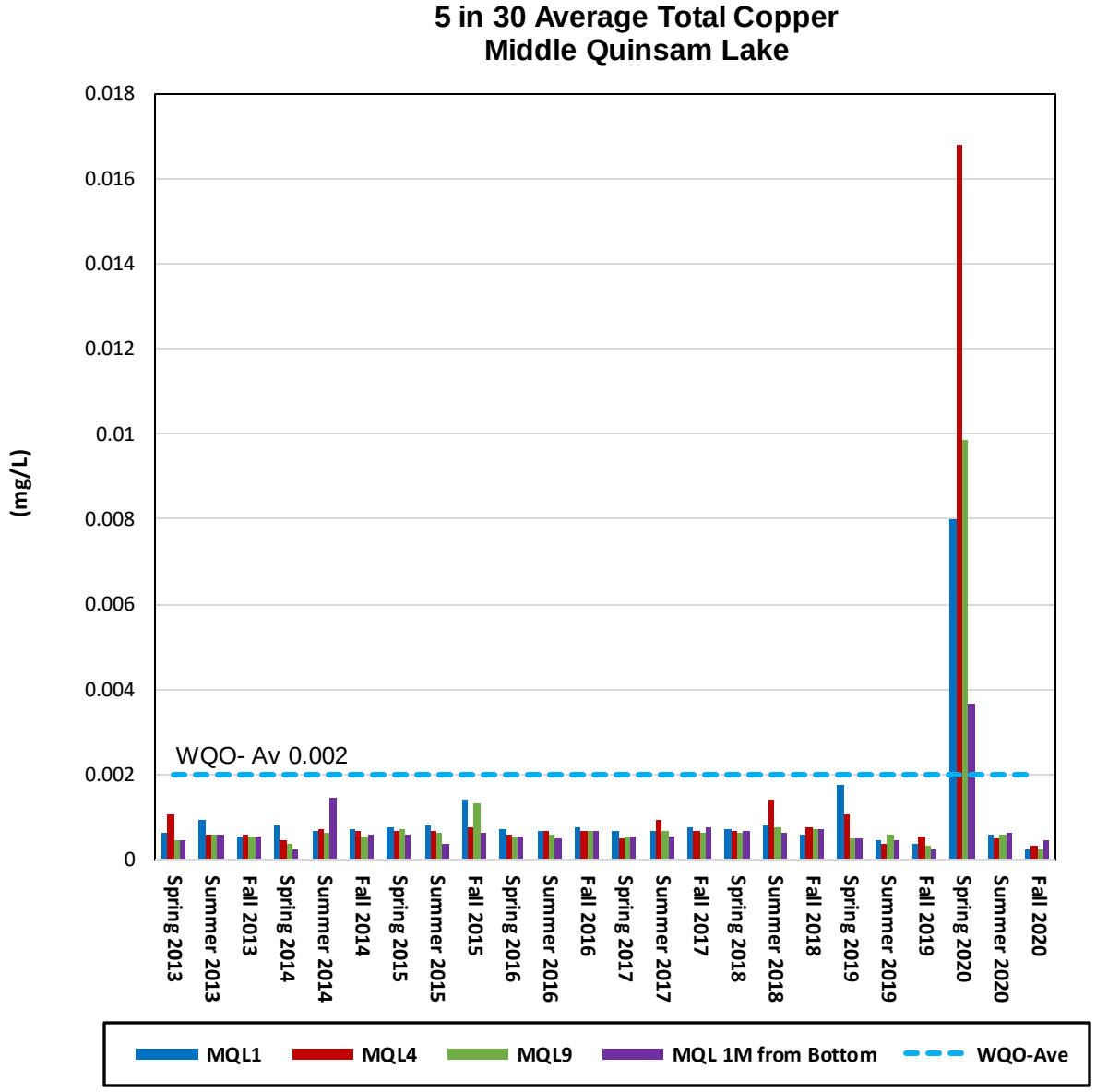
GRAPH 35


5 in 30 Total Manganese
Middle Quinsam Lake
(mg/L)
WQG-Max: 0.8mg/L
MQL1
MQL4
MQL9
MQL 1M from Bottom


5 in 30 Average Total Manganese
Middle Quinsam Lake
(mg/L)
WQG-Av: 0.7mg/L
MQL1
MQL4
MQL9
MQL 1M from Bottom

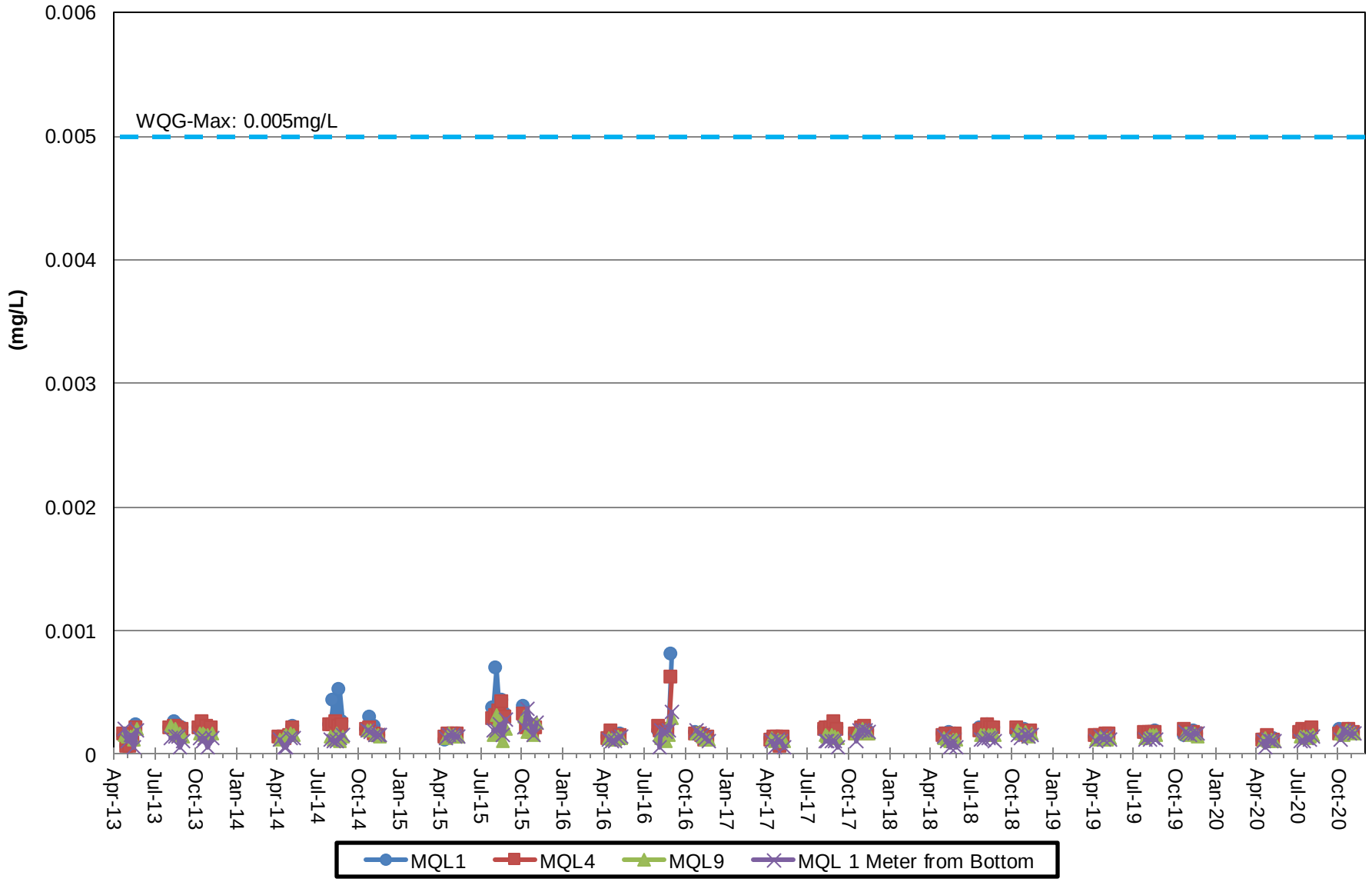
GRAPH 36


5 in 30 Total Copper
Middle Quinsam Lake
(mg/L)
0.090
0.080
0.070
0.060
0.050
0.040
0.030
0.020
0.010
0.000
WQO-Max: 0.007mg/L
Apr-13
Jul-13
Oct-13
Jan-14
Apr-14
Jul-14
Oct-14
Jan-15
Apr-15
Jul-15
Oct-15
Jan-16
Apr-16
Jul-16
Oct-16
Jan-17
Apr-17
Jul-17
Oct-17
Jan-18
Apr-18
Jul-18
Oct-18
Jan-19
Apr-19
Jul-19
Oct-19
Jan-20
Apr-20
Jul-20
Oct-20
MQL1
MQL4
MQL9
MQL 1MB
WQO-Max

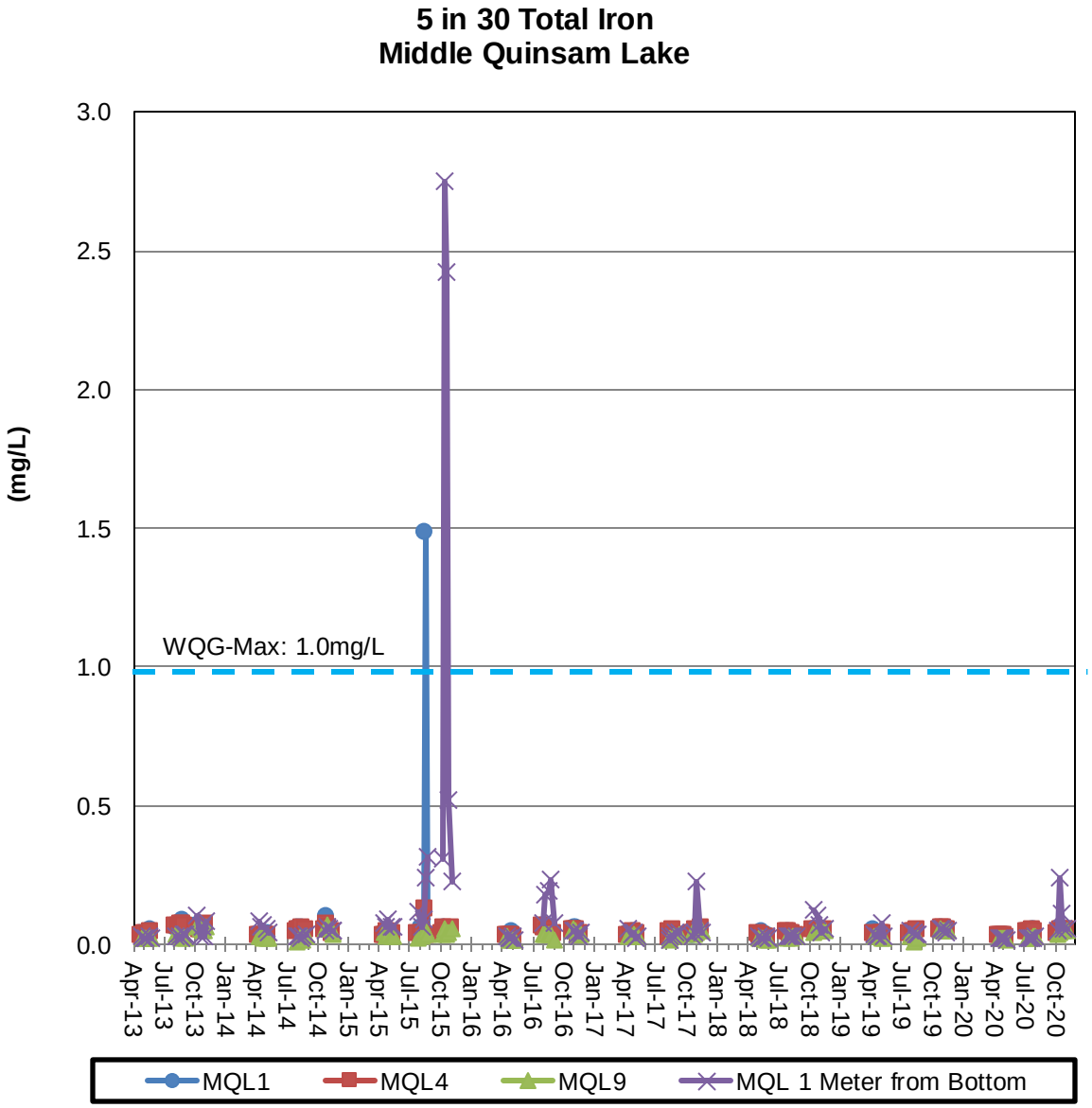

5 in 30 Average Total Copper
Middle Quinsam Lake
(mg/L)
0.018
0.016
0.014
0.012
0.01
0.008
0.006
0.004
0.002
0
WQO- Av 0.002
Spring 2013
Summer 2013
Fall 2013
Spring 2014
Summer 2014
Fall 2014
Spring 2015
Summer 2015
Fall 2015
Spring 2016
Summer 2016
Fall 2016
Spring 2017
Summer 2017
Fall 2017
Spring 2018
Summer 2018
Fall 2018
Spring 2019
Summer 2019
Fall 2019
Spring 2020
Summer 2020
Fall 2020
MQL1
MQL4
MQL9
MQL 1M from Bottom
WQO-Ave

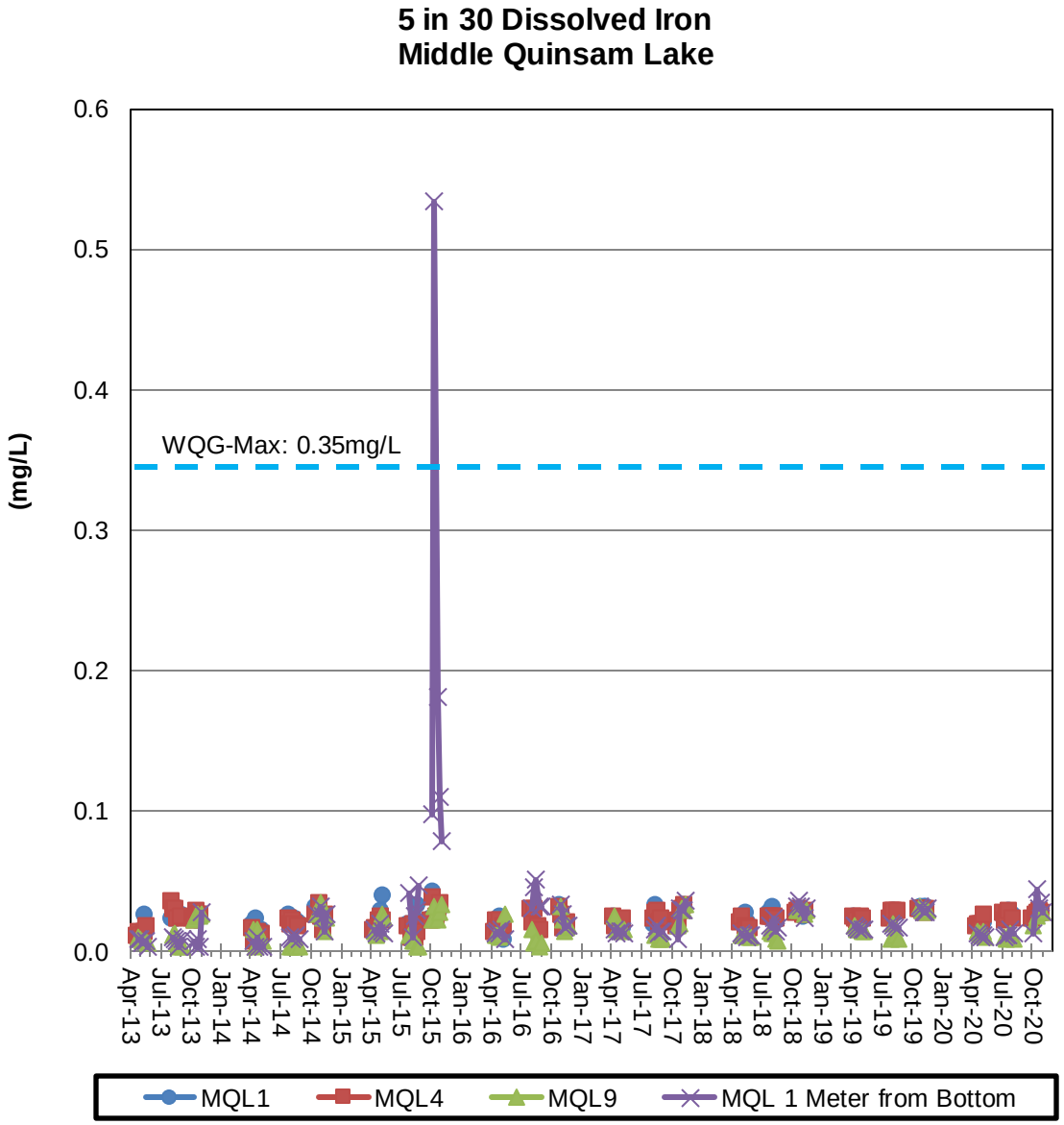
QUINSAM COAL

GRAPH 37
5 in 30 Total Arsenic
Middle Quinsam Lake



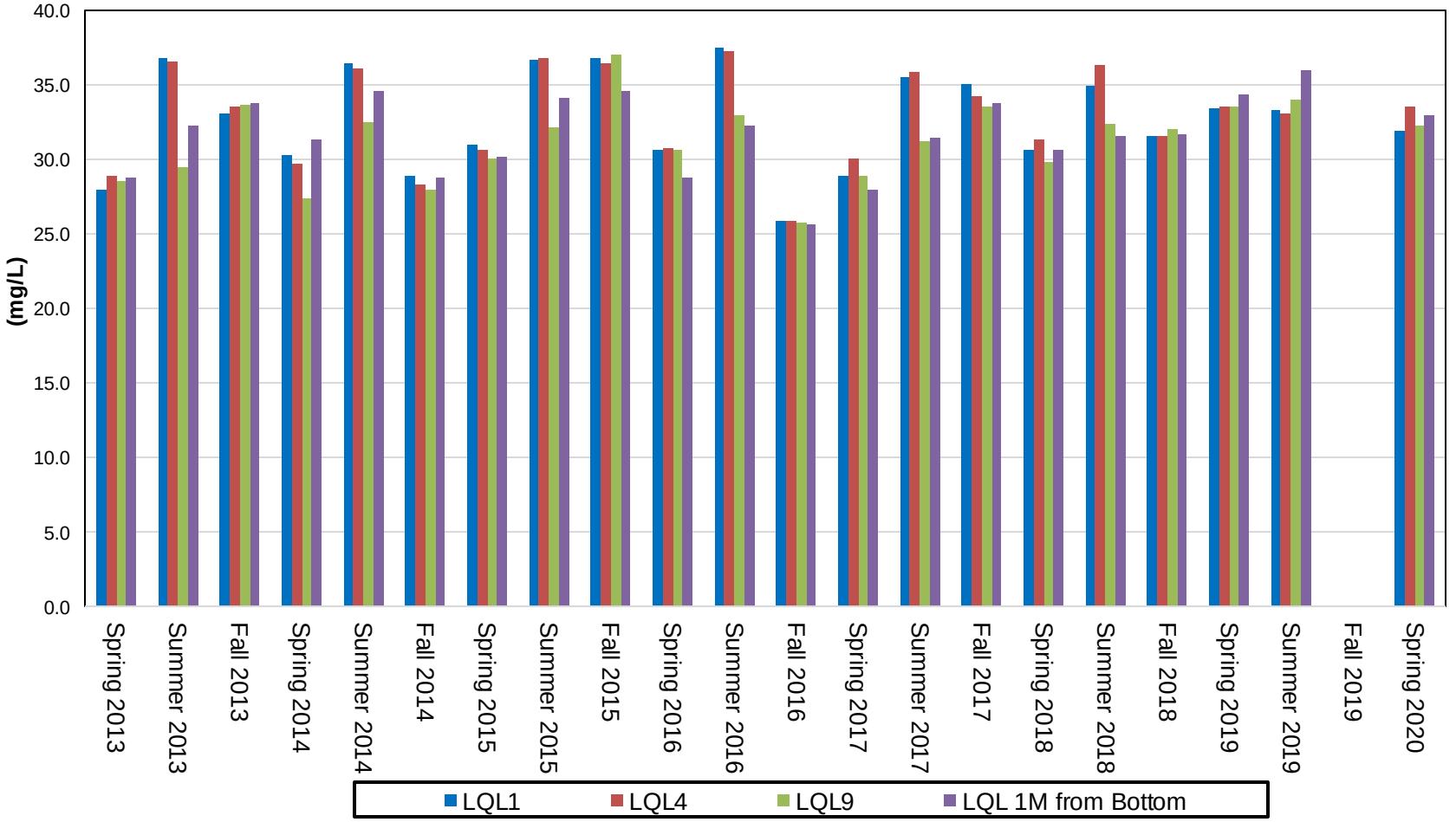
GRAPH 38


5 in 30 Total Iron
Middle Quinsam Lake
(mg/L)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
WQG-Max: 1.0mg/L
Apr-13
Jul-13
Oct-13
Jan-14
Apr-14
Jul-14
Oct-14
Jan-15
Apr-15
Jul-15
Oct-15
Jan-16
Apr-16
Jul-16
Oct-16
Jan-17
Apr-17
Jul-17
Oct-17
Jan-18
Apr-18
Jul-18
Oct-18
Jan-19
Apr-19
Jul-19
Oct-19
Jan-20
Apr-20
Jul-20
Oct-20
MQL1
MQL4
MQL9
MQL 1 Meter from Bottom

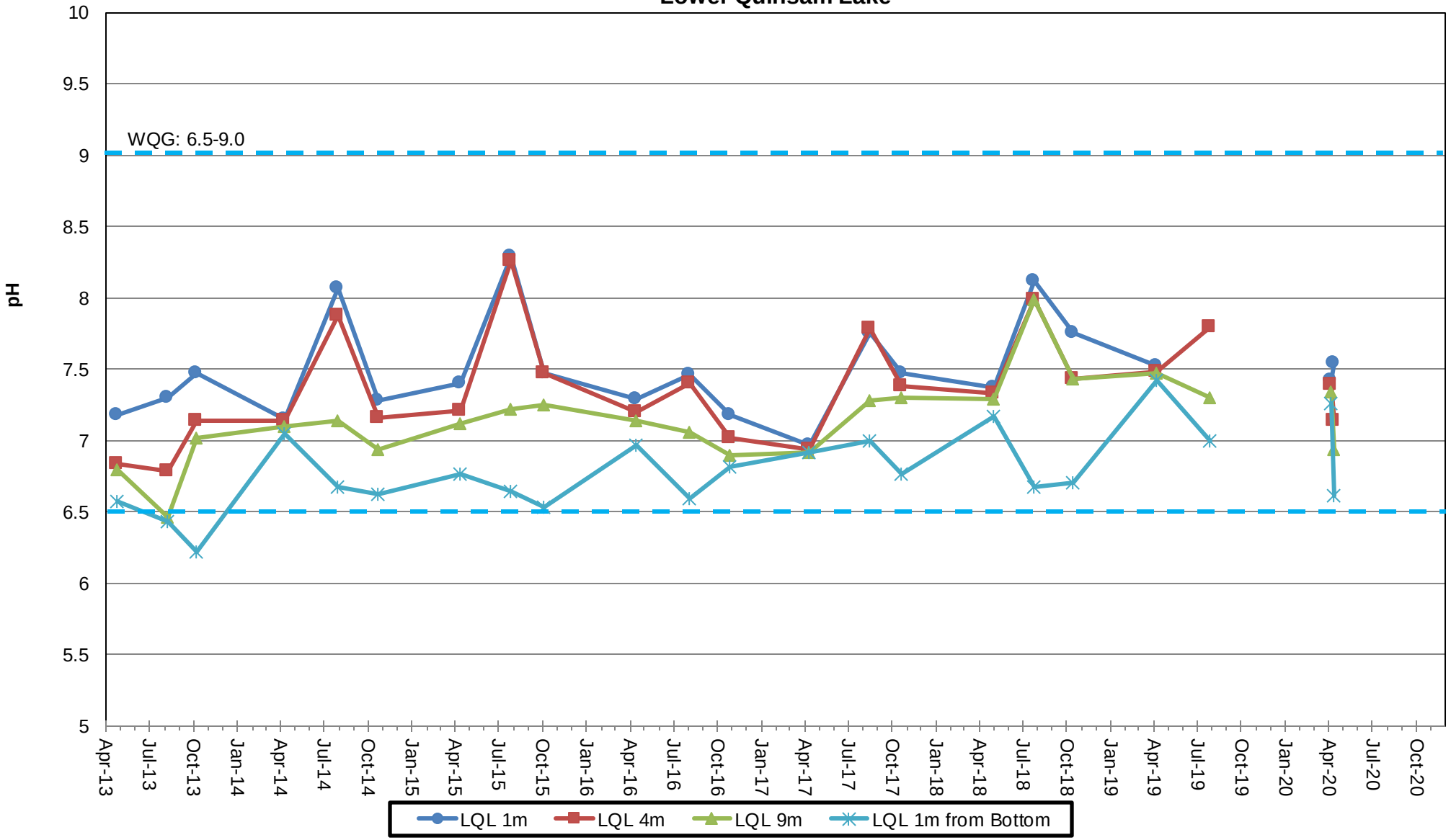

5 in 30 Dissolved Iron
Middle Quinsam Lake
(mg/L)
0.6
0.5
0.4
0.3
0.2
0.1
0.0
WQG-Max: 0.35mg/L
Apr-13
Jul-13
Oct-13
Jan-14
Apr-14
Jul-14
Oct-14
Jan-15
Apr-15
Jul-15
Oct-15
Jan-16
Apr-16
Jul-16
Oct-16
Jan-17
Apr-17
Jul-17
Oct-17
Jan-18
Apr-18
Jul-18
Oct-18
Jan-19
Apr-19
Jul-19
Oct-19
Jan-20
Apr-20
Jul-20
Oct-20
MQL1
MQL4
MQL9
MQL 1 Meter from Bottom

QUINSAM COAL

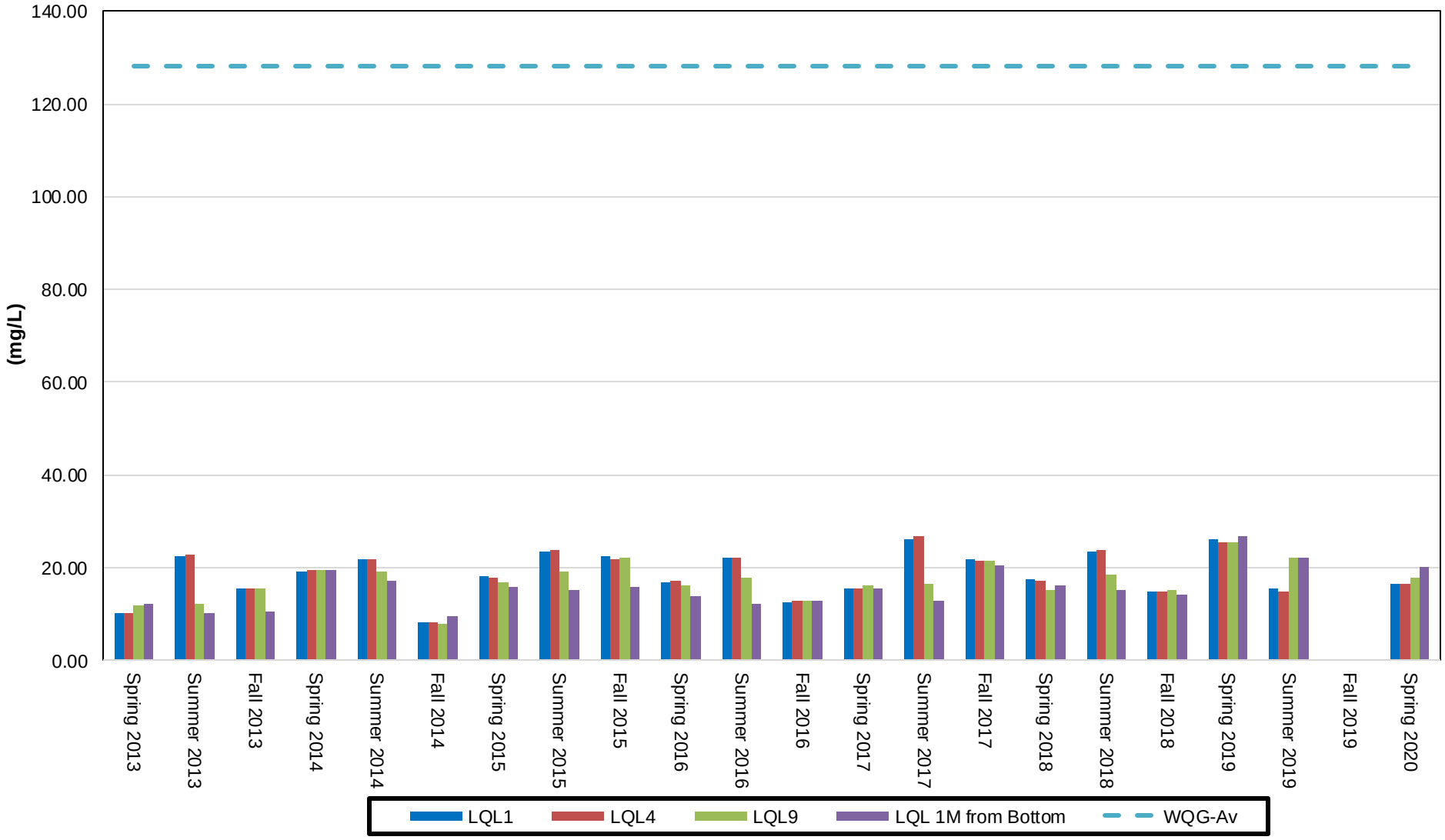
GRAPH 39
5 in 30 Average Hardness
Lower Quinsam Lake



GRAPH 40
5 in 30 pH
Lower Quinsam Lake

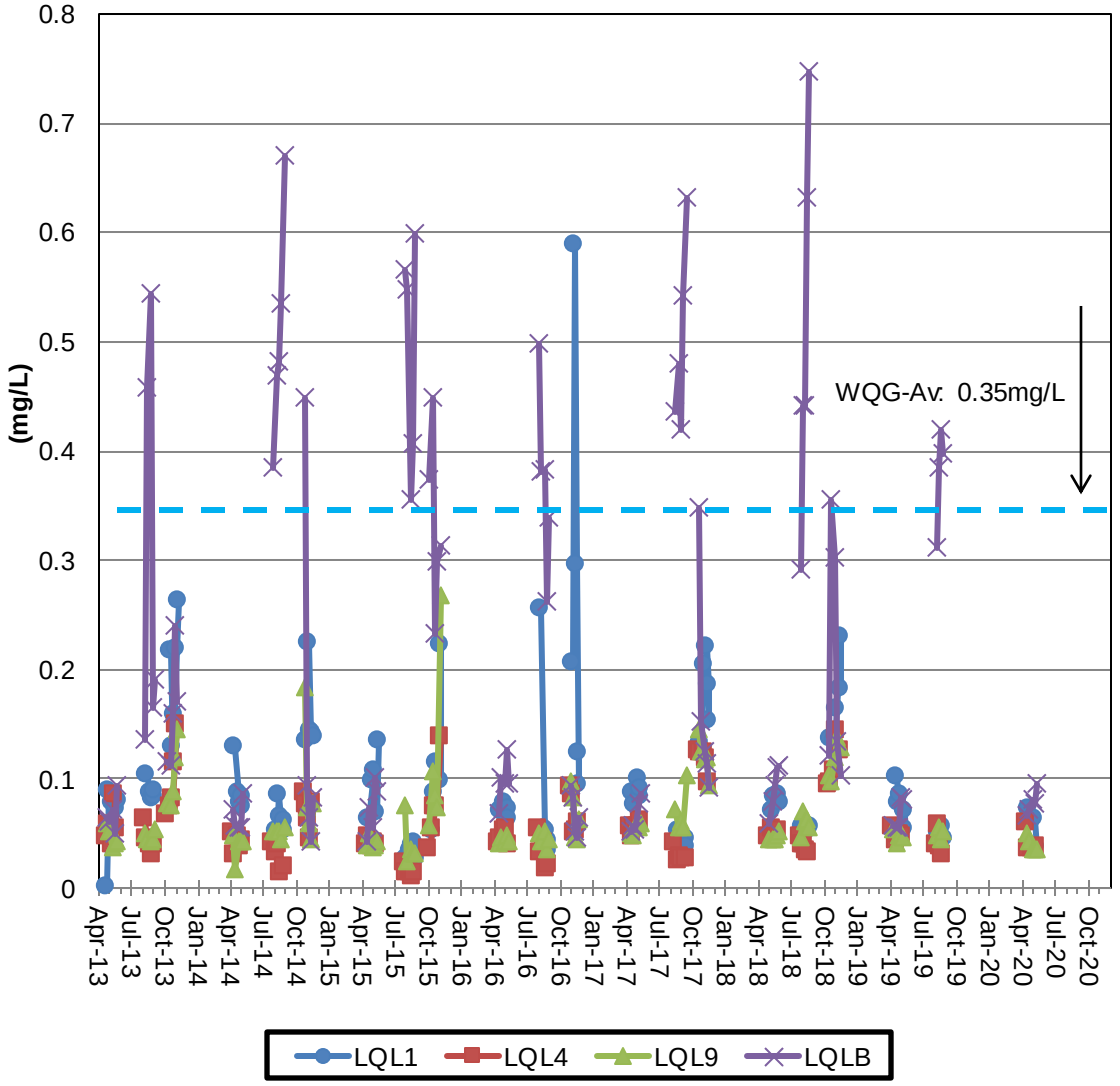


GRAPH 41
5 in 30 Average Dissolved Sulphate
Lower Quinsam Lake

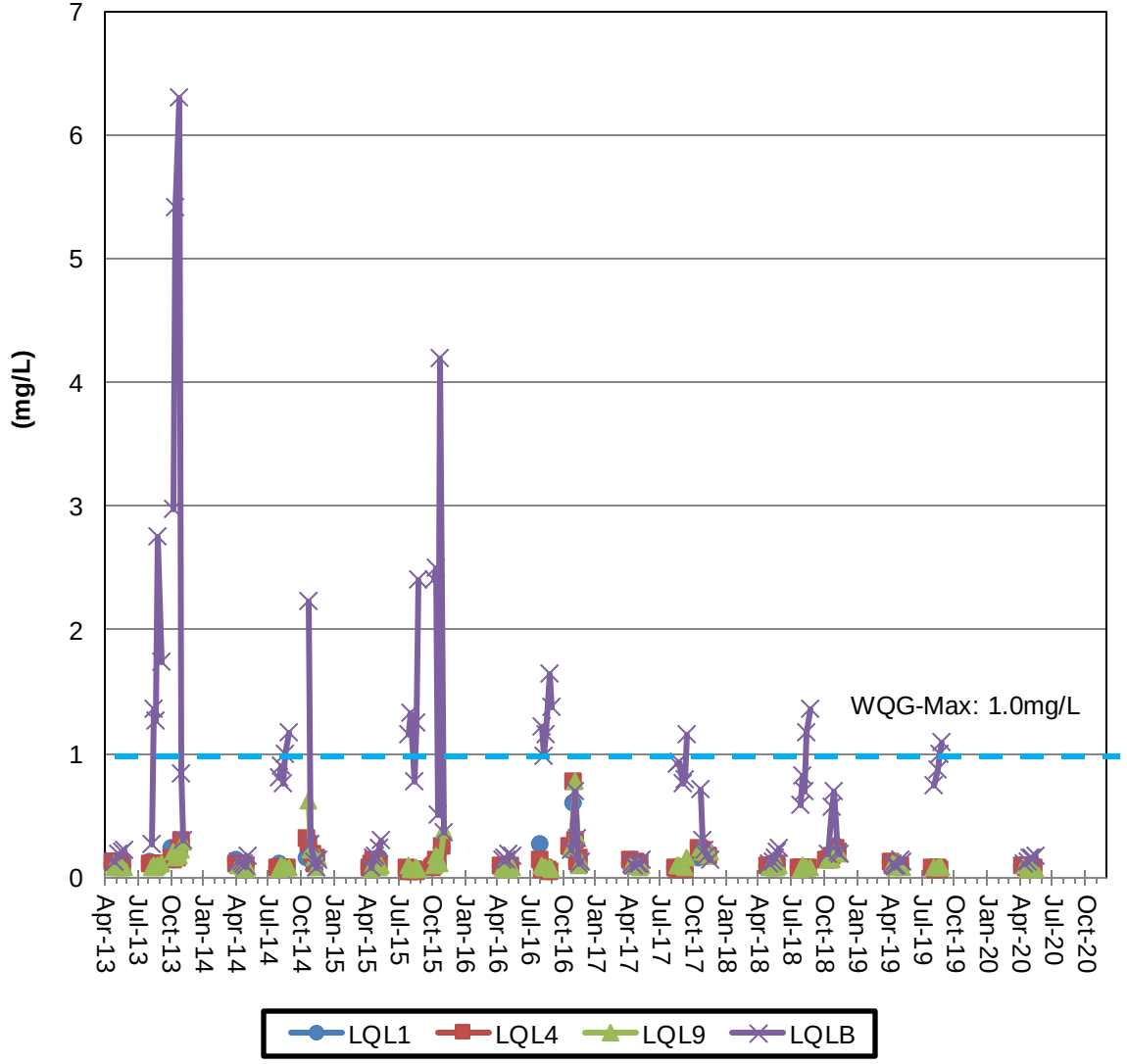


QUINSAM COAL

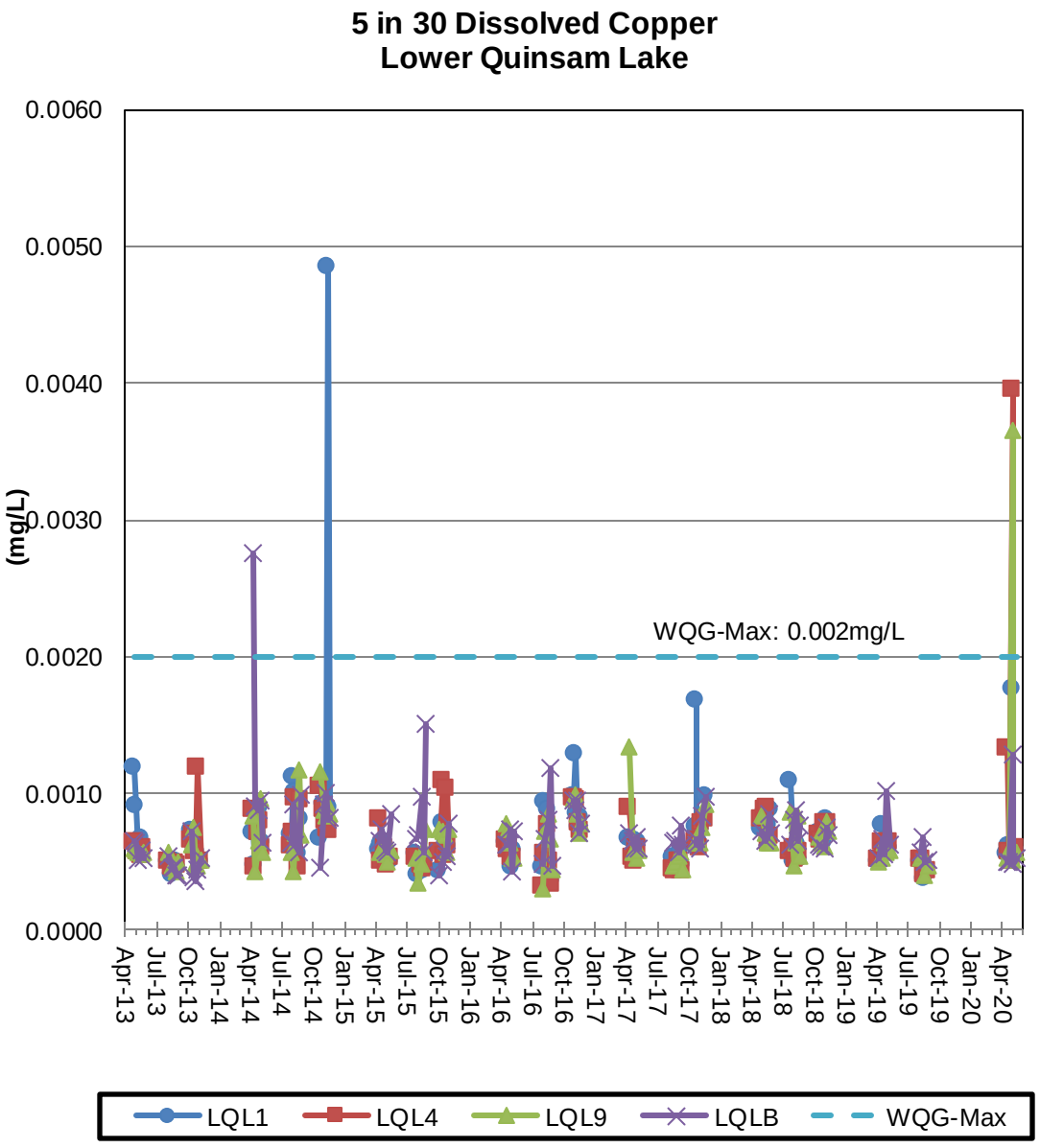
5 in 30 Dissolved Iron
Lower Quinsam Lake

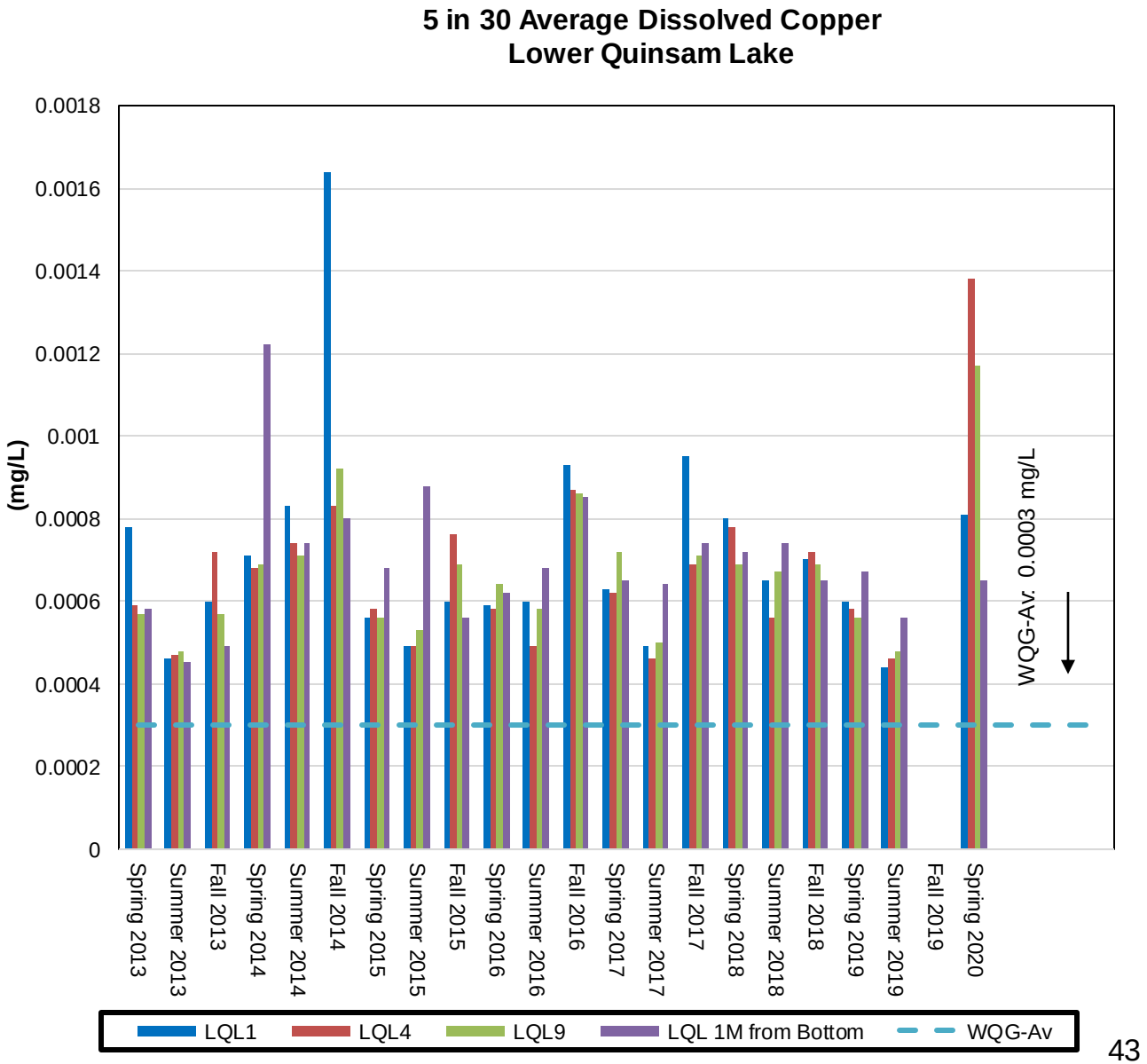


5 in 30 Total Iron
Lower Quinsam Lake

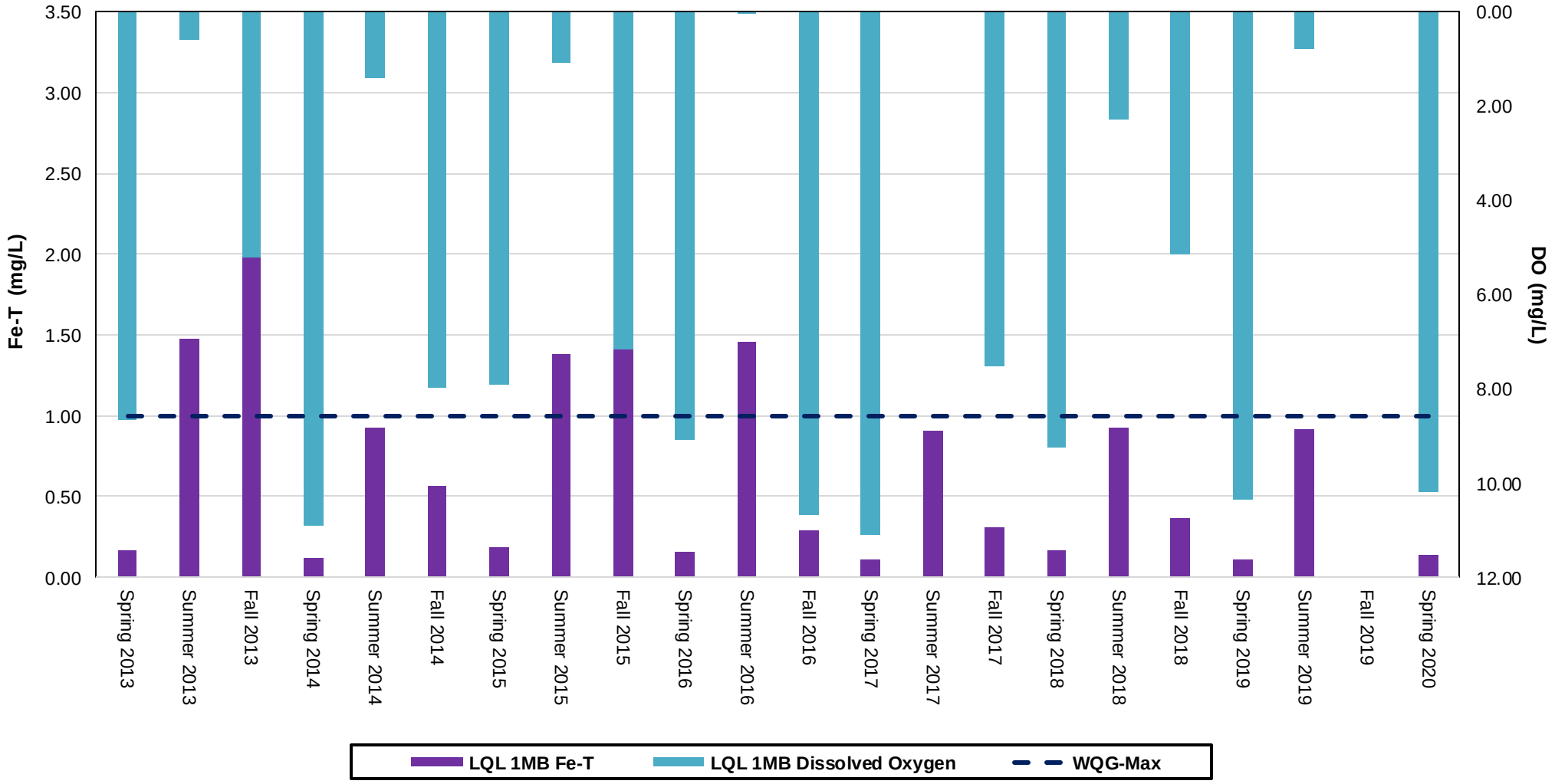


GRAPH 43


5 in 30 Dissolved Copper
Lower Quinsam Lake
(mg/L)
0.0060
0.0050
0.0040
0.0030
0.0020
0.0010
0.0000
WQG-Max: 0.002mg/L
Apr-13
Jul-13
Oct-13
Jan-14
Apr-14
Jul-14
Oct-14
Jan-15
Apr-15
Jul-15
Oct-15
Jan-16
Apr-16
Jul-16
Oct-16
Jan-17
Apr-17
Jul-17
Oct-17
Jan-18
Apr-18
Jul-18
Oct-18
Jan-19
Apr-19
Jul-19
Oct-19
Jan-20
Apr-20
LQL1
LQL4
LQL9
LQLB
WQG-Max

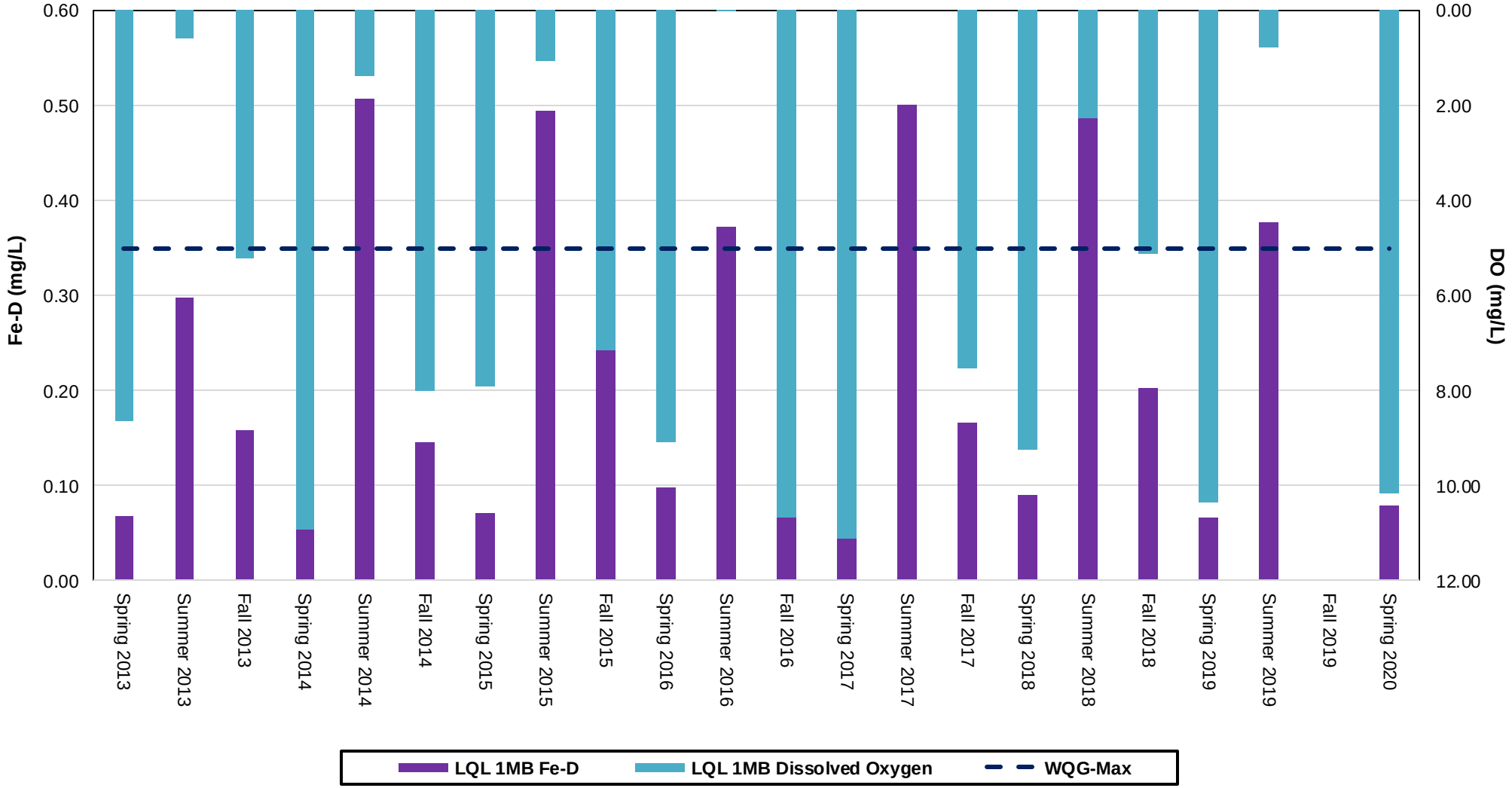

5 in 30 Average Dissolved Copper
Lower Quinsam Lake
(mg/L)
0.0018
0.0016
0.0014
0.0012
0.001
0.0008
0.0006
0.0004
0.0002
0
WQG-Av: 0.0003 mg/L
Spring 2013
Summer 2013
Fall 2013
Spring 2014
Summer 2014
Fall 2014
Spring 2015
Summer 2015
Fall 2015
Spring 2016
Summer 2016
Fall 2016
Spring 2017
Summer 2017
Fall 2017
Spring 2018
Summer 2018
Fall 2018
Spring 2019
Summer 2019
Fall 2019
Spring 2020
LQL1
LQL4
LQL9
LQL 1M from Bottom
WQG-Av

GRAPH 44
5 in 30 Average Total Iron vs Dissolved Oxygen
Lower Quinsam Lake 1 metre from Bottom

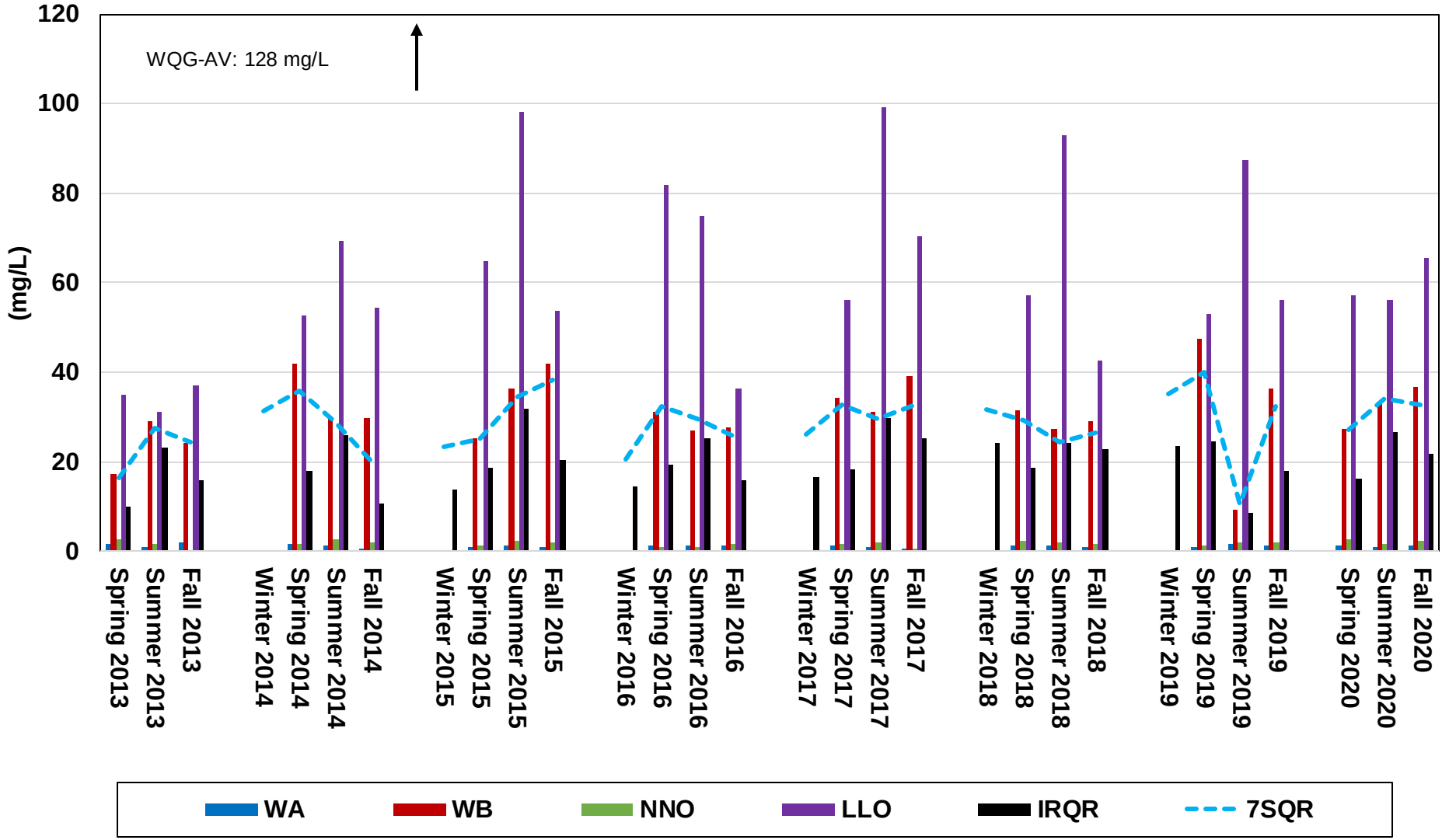


QUINSAM COAL

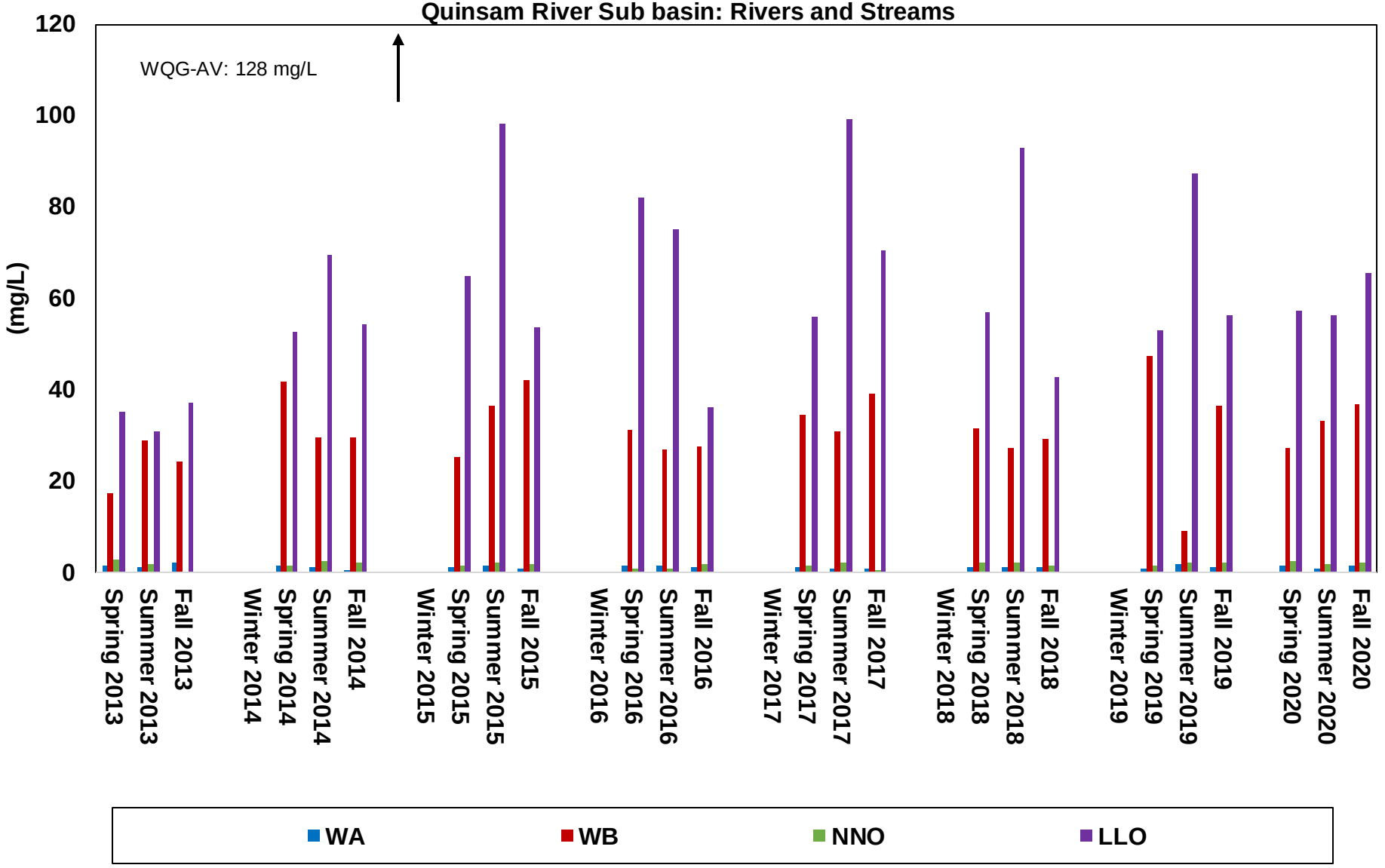
GRAPH 45
5 in 30 Average Dissolved Iron vs Dissolved Oxygen
Lower Quinsam Lake 1 metre from Bottom



GRAPH 46
5 in 30 Average Dissolved Sulphate
Quinsam River Sub basin: Rivers and Streams

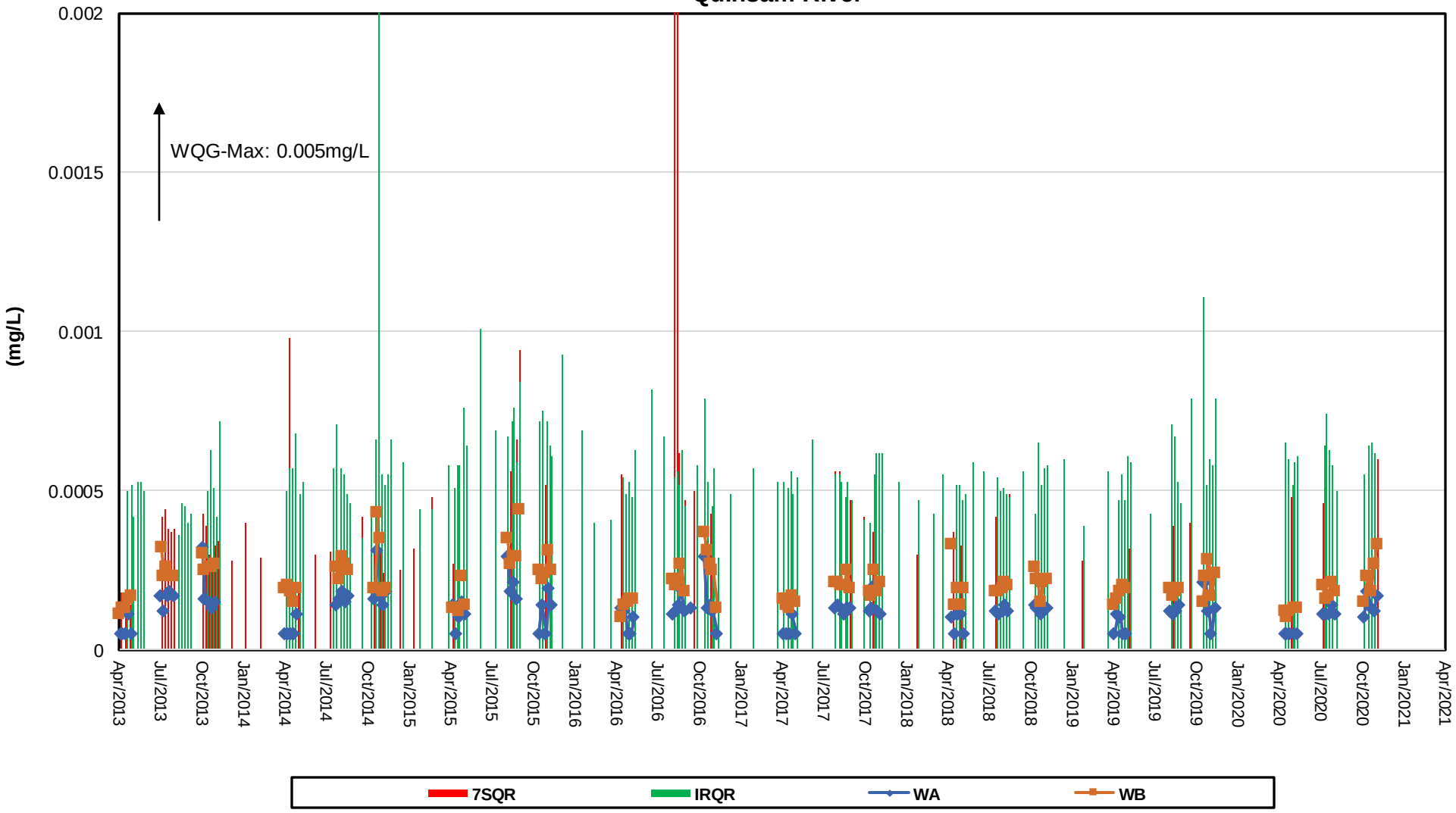


GRAPH 47
5 in 30 Average Dissolved Sulphate
Quinsam River Sub basin: Rivers and Streams



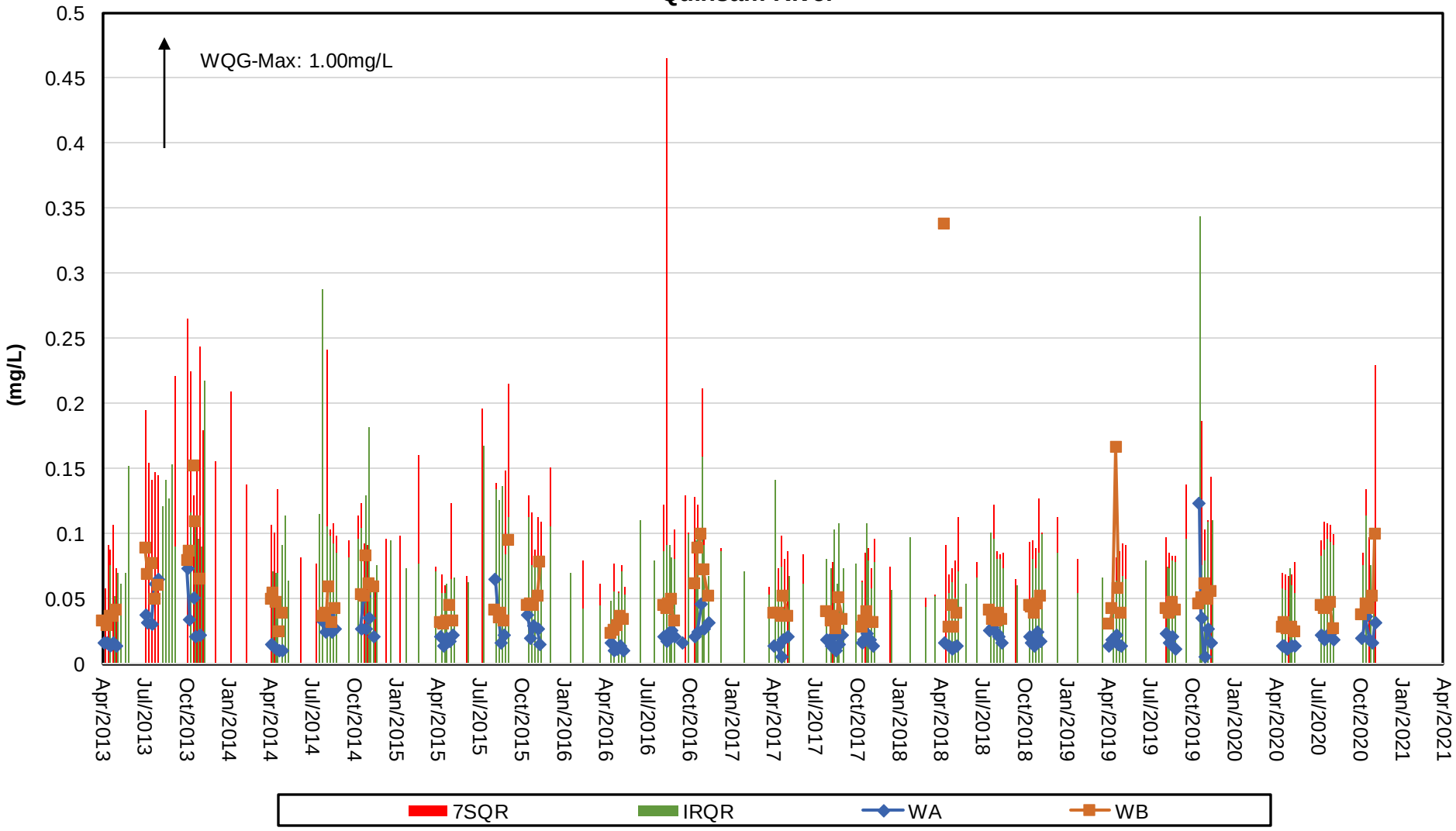
QUINSAM COAL

GRAPH 48
5 in 30 Total Arsenic
Quinsam River



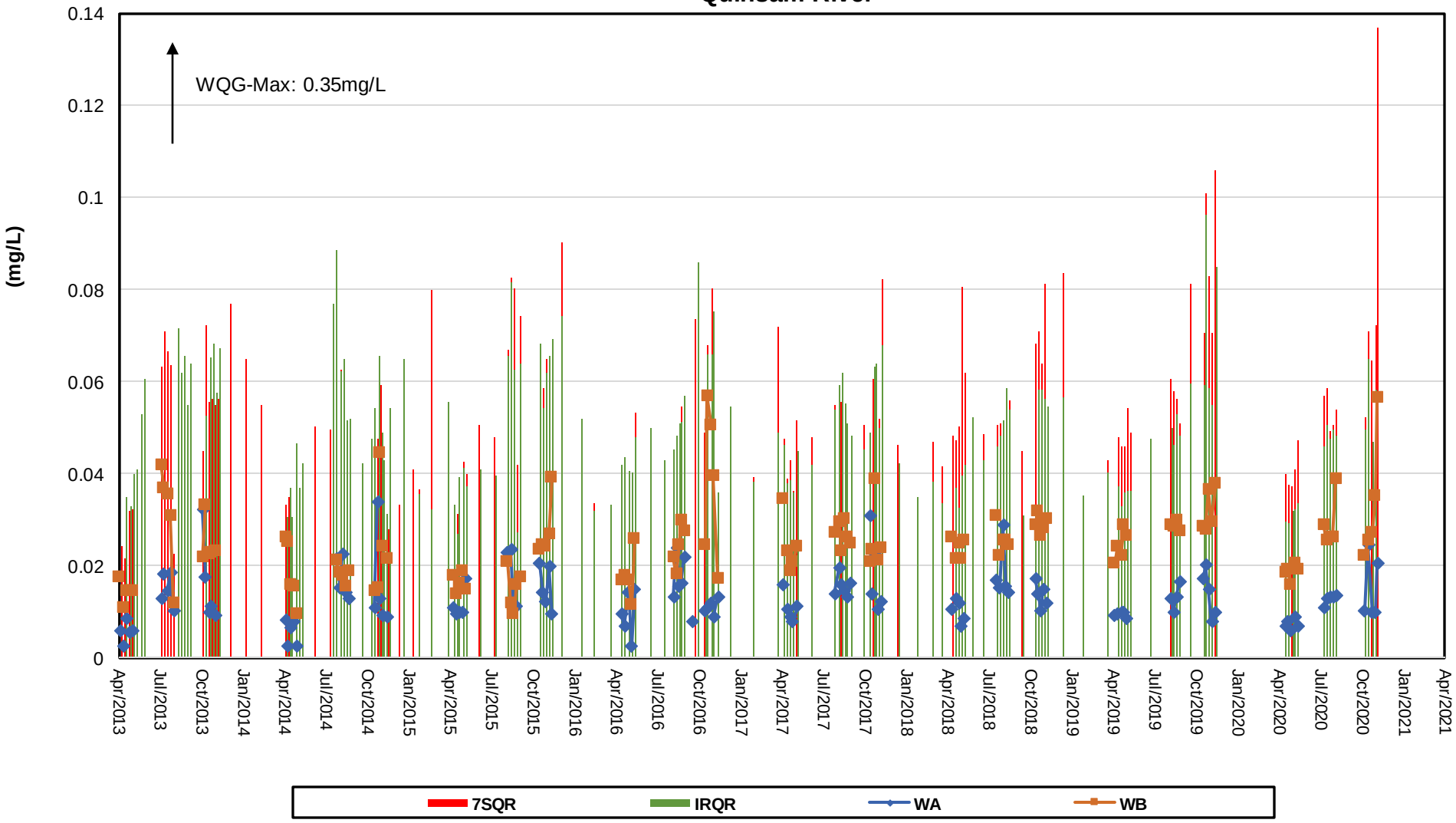
QUINSAM COAL

GRAPH 49
5 in 30 Total Iron
Quinsam River



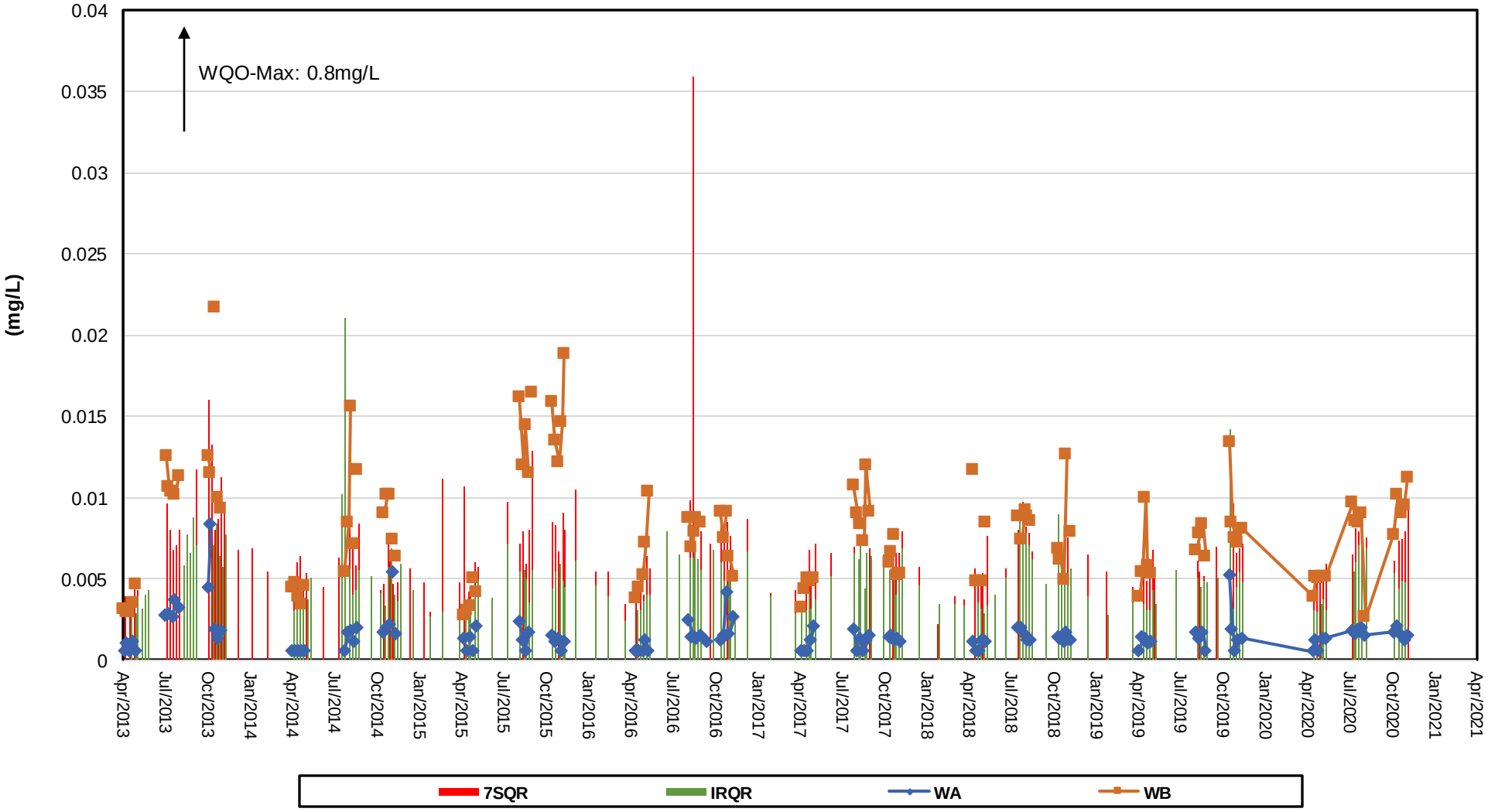
QUINSAM COAL

GRAPH 50
5 in 30 Dissolved Iron
Quinsam River



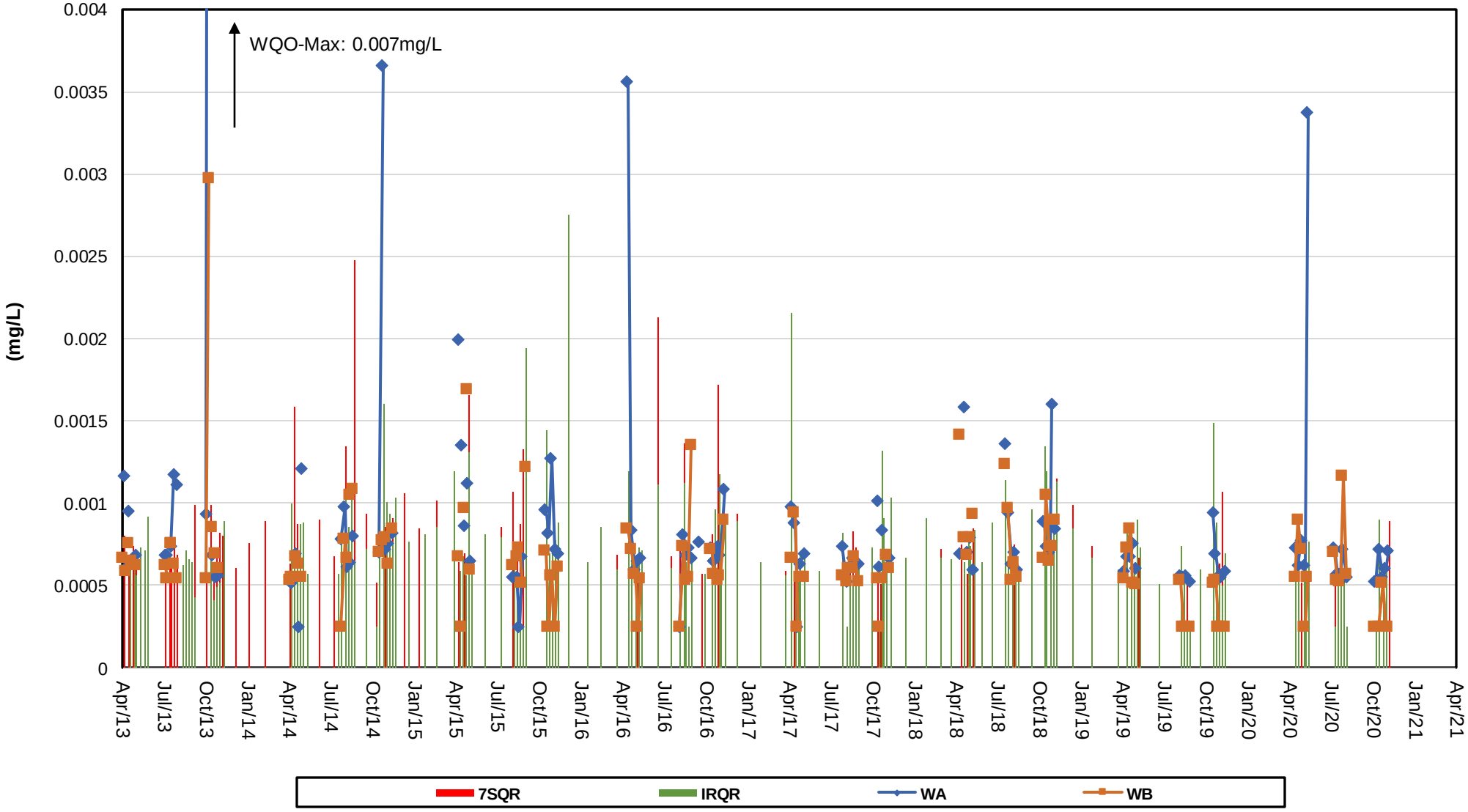
QUINSAM COAL

GRAPH 51
5 in 30 Total Manganese
Quinsam River



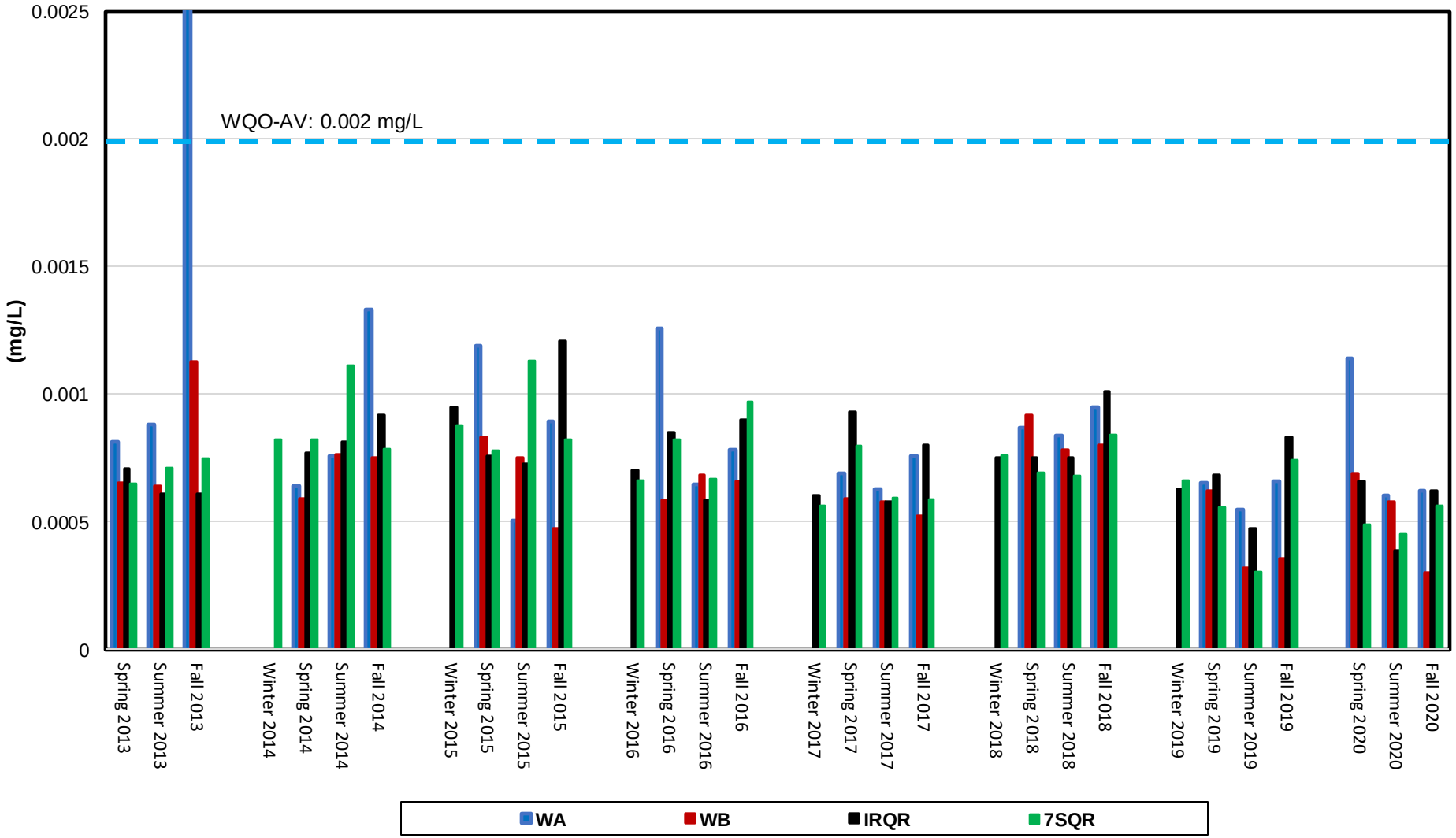
QUINSAM COAL

GRAPH 52
5 in 30 Total Copper
Quinsam River



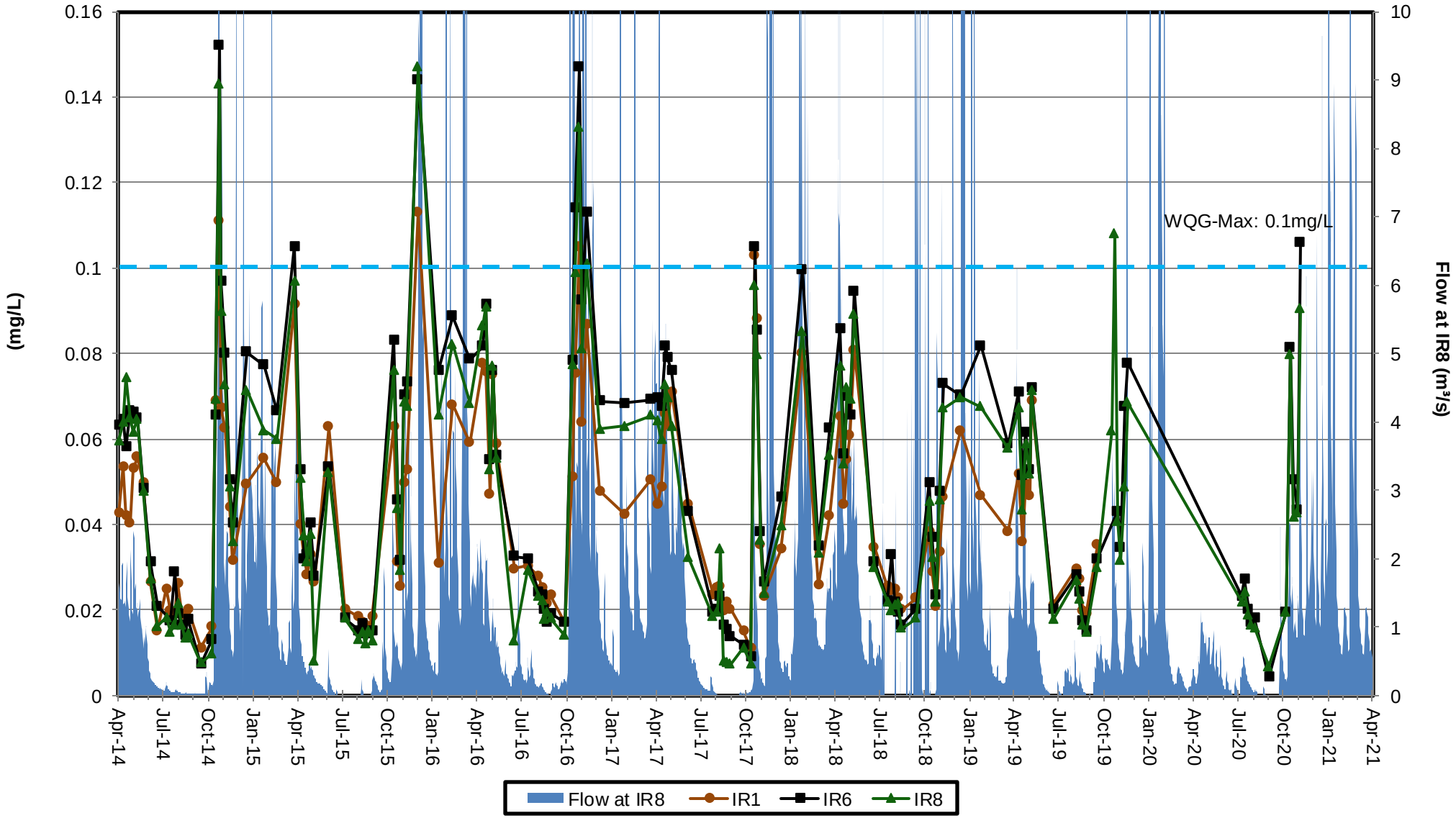
QUINSAM COAL

GRAPH 53
5 in 30 Average Total Copper
Quinsam River Sub Basin: Rivers and Streams

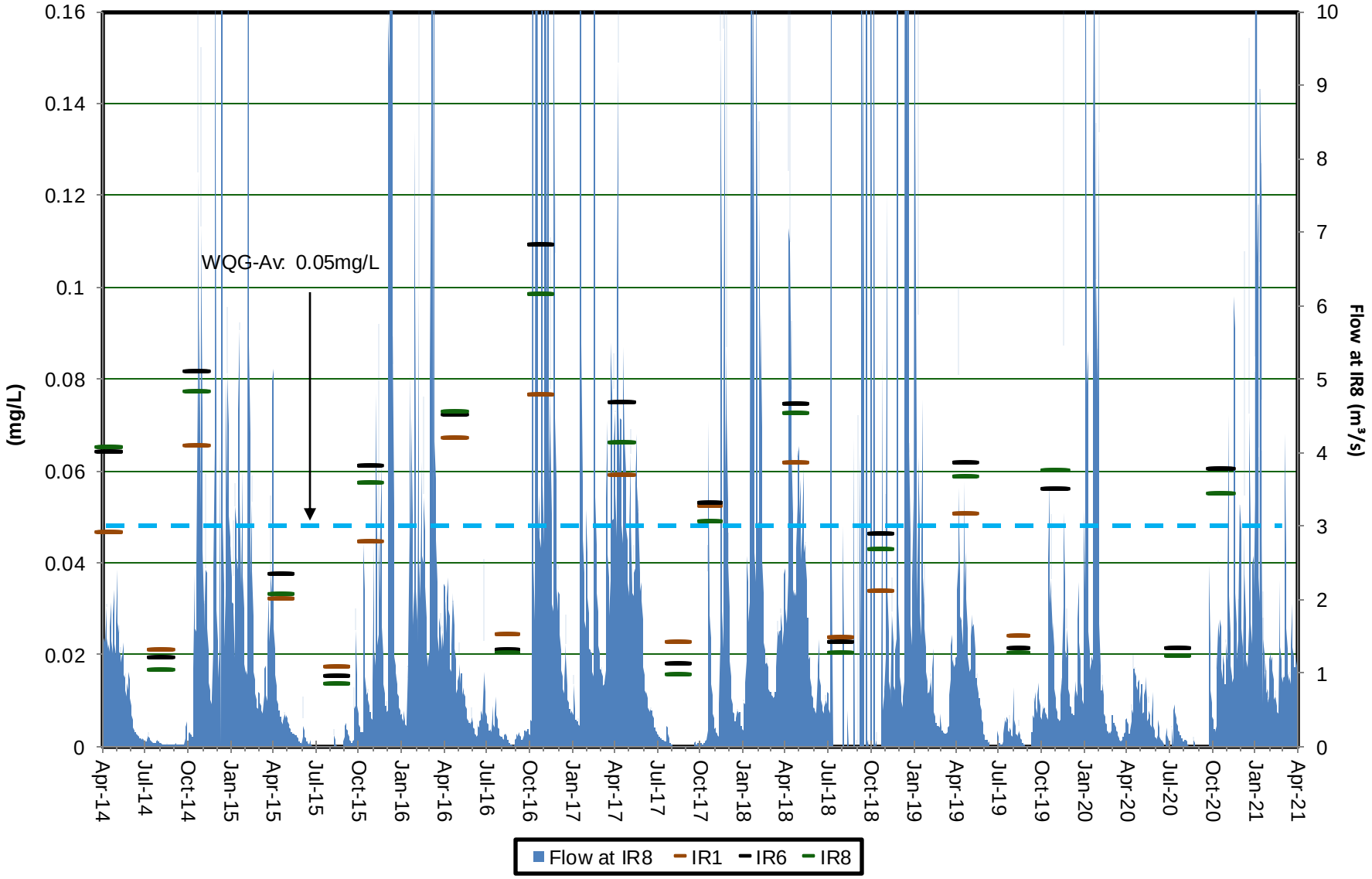


QUINSAM COAL

GRAPH 54
Dissolved Aluminum vs. Flow
Iron River

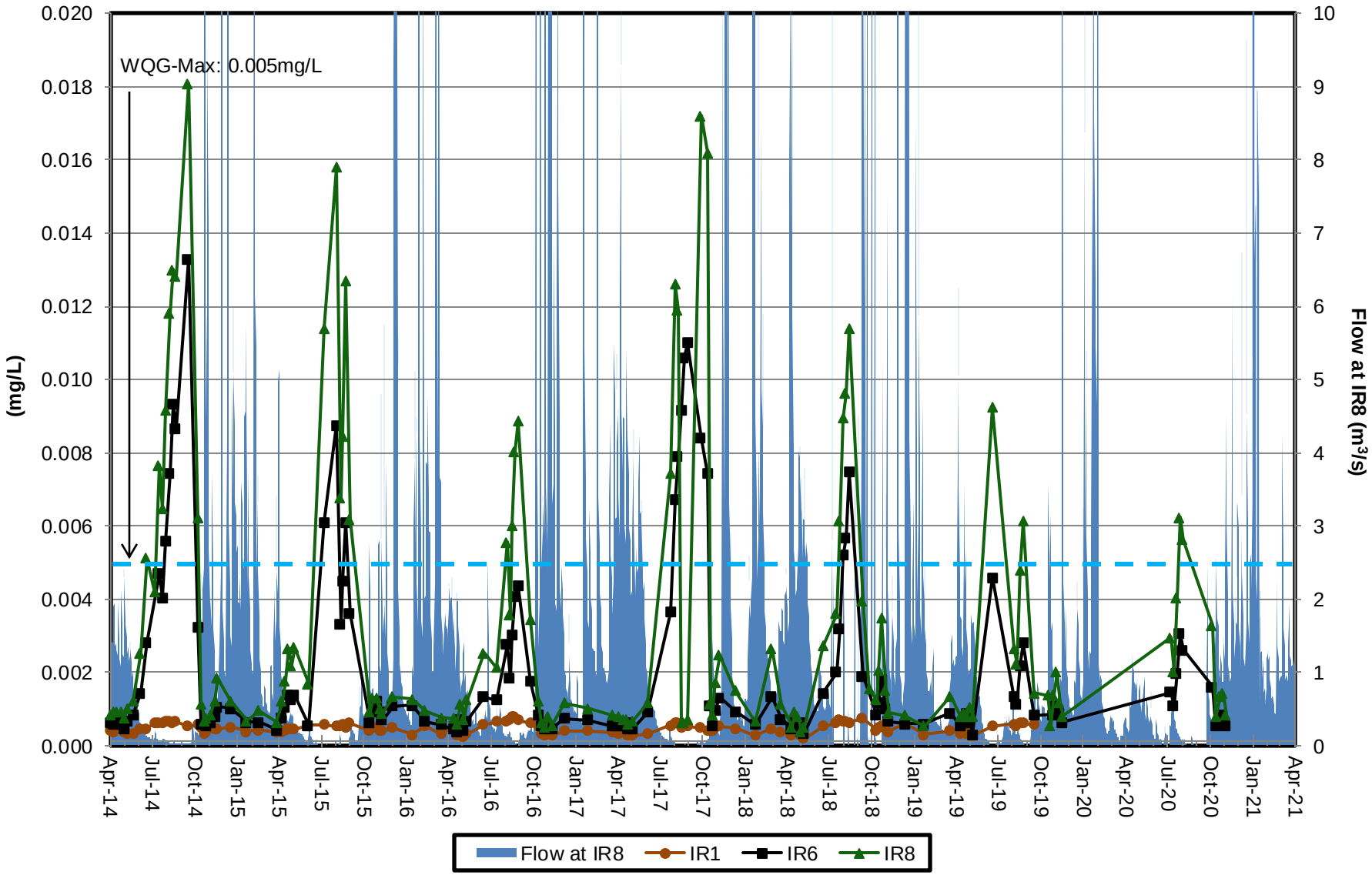


GRAPH 55
5 in 30 Average Dissolved Aluminum vs. Flow
Iron River



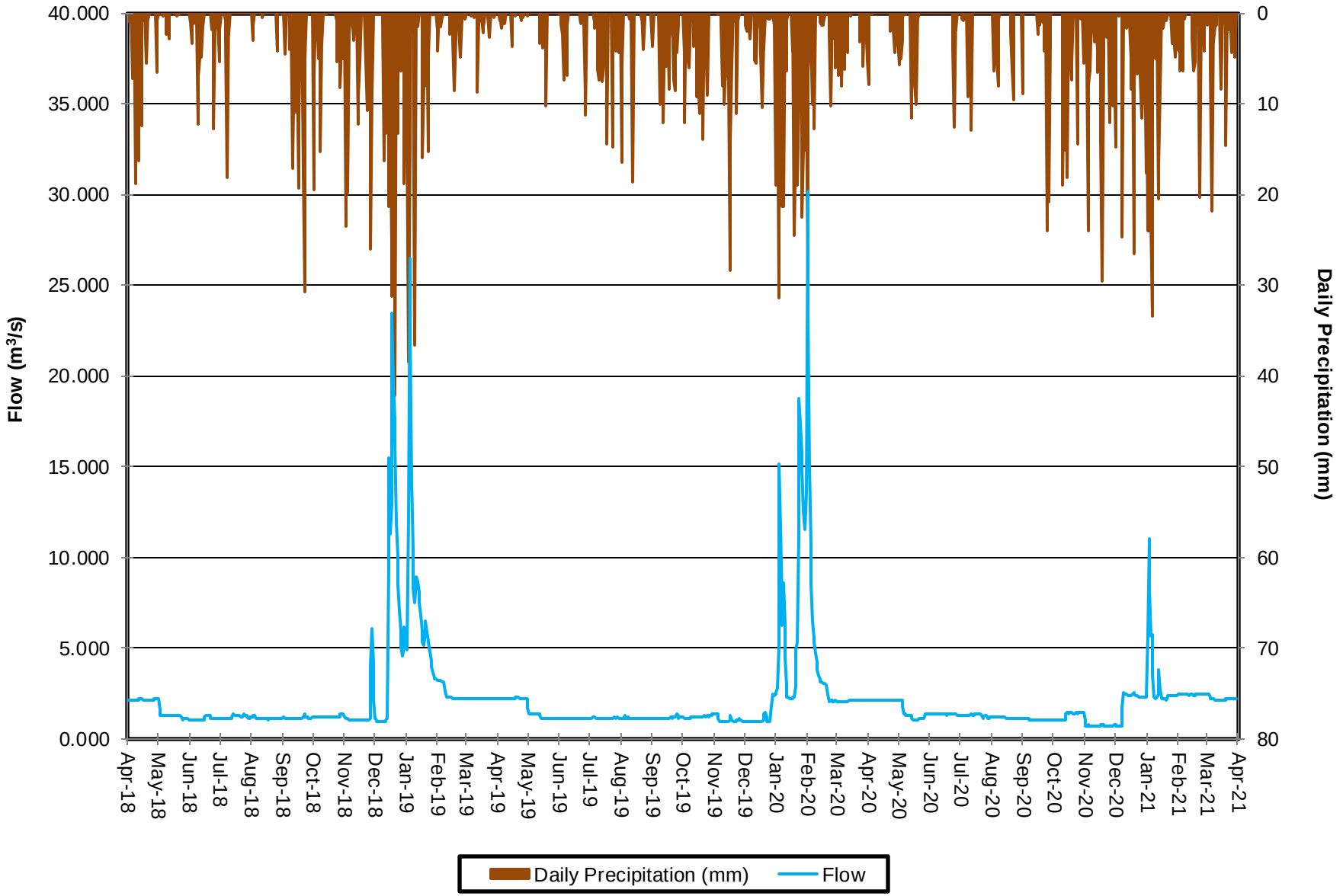
QUINSAM COAL

GRAPH 56
Total Arsenic vs. Flow
Iron River



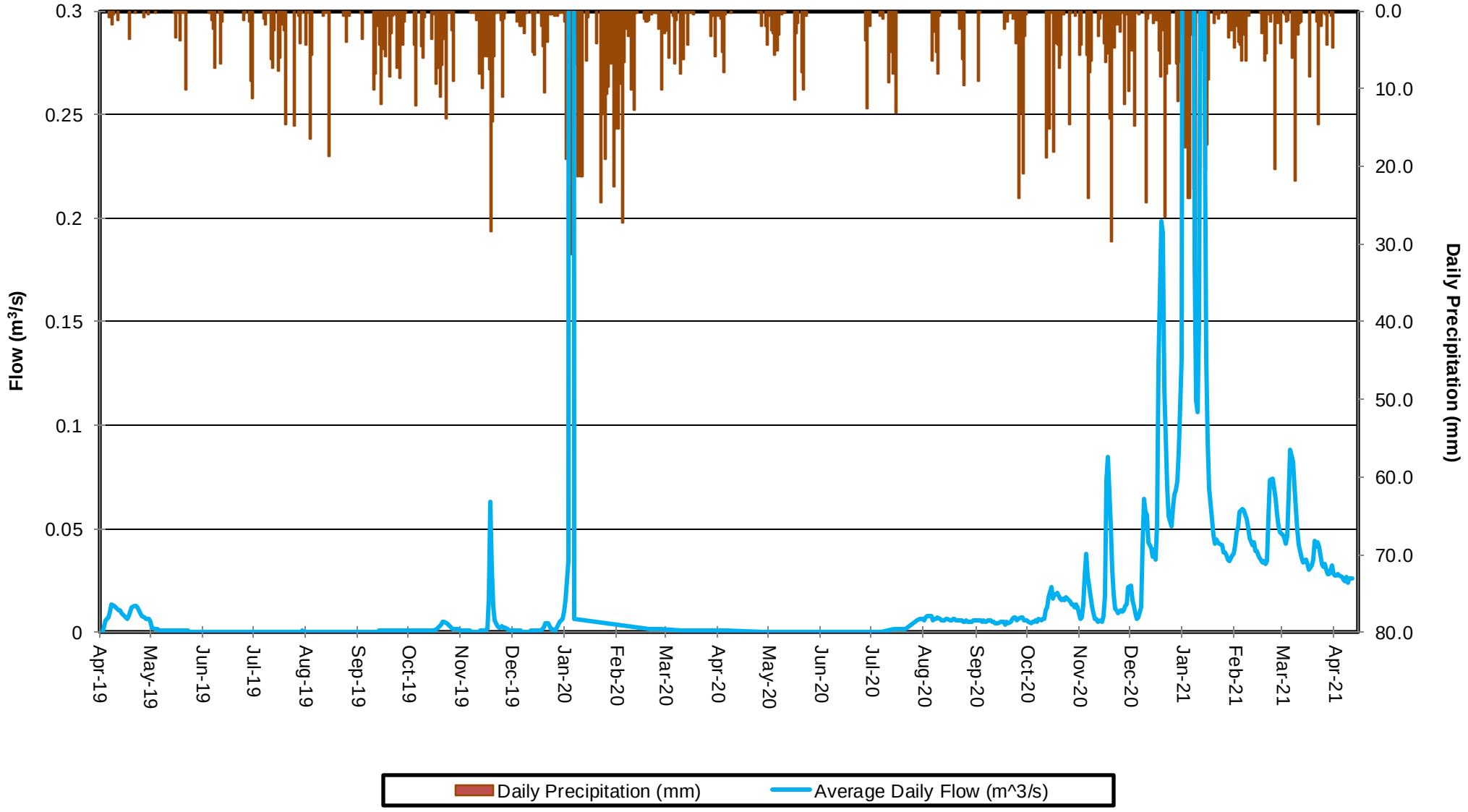
QUINSAM COAL

GRAPH 57
Flow & Precipitation
Quinsam River at Argonaut Bridge (WA)



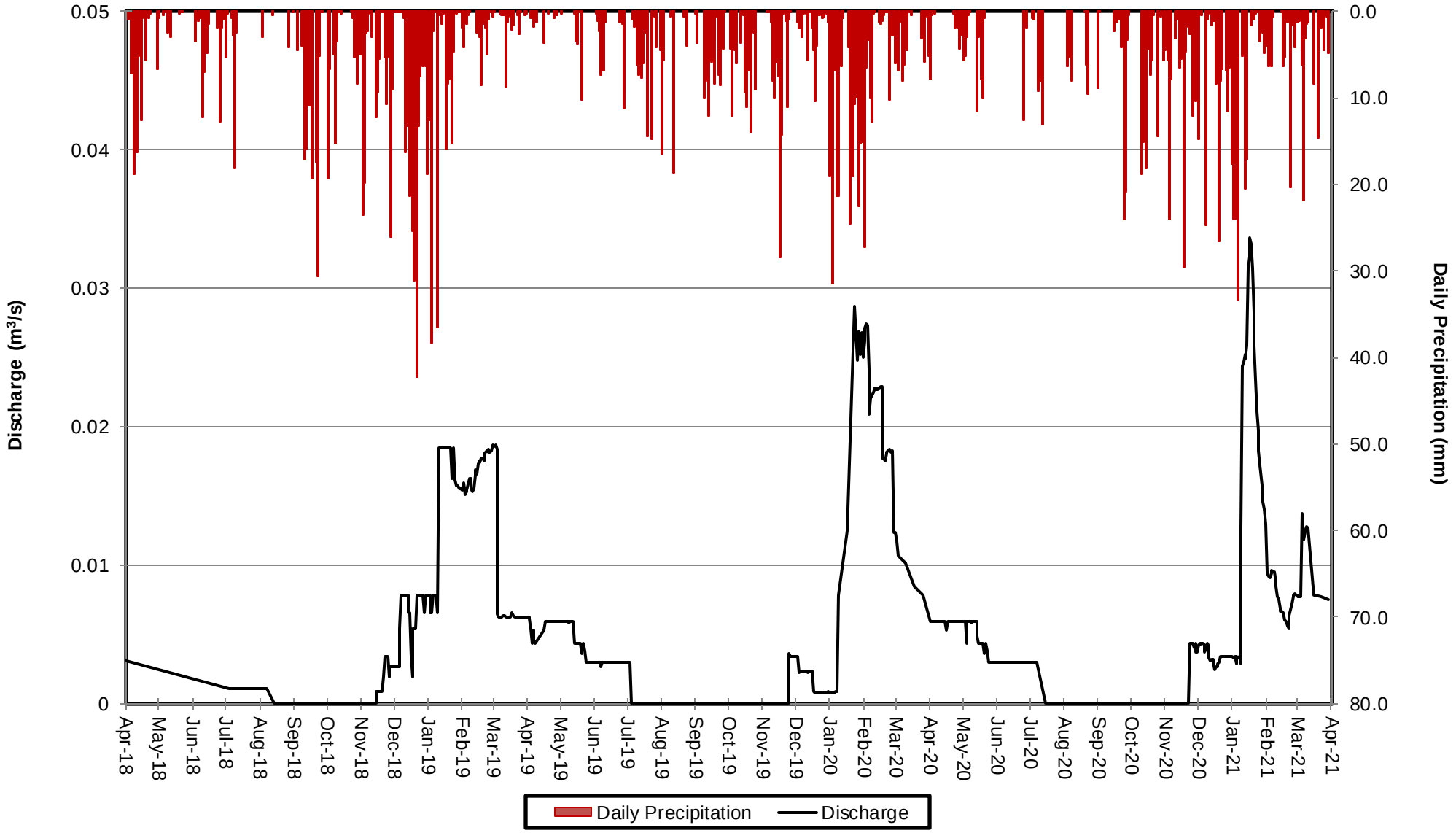
QUINSAM COAL

GRAPH 58
Flow vs. Precipitation
Middle Quinsam Lake Outlet (WB)



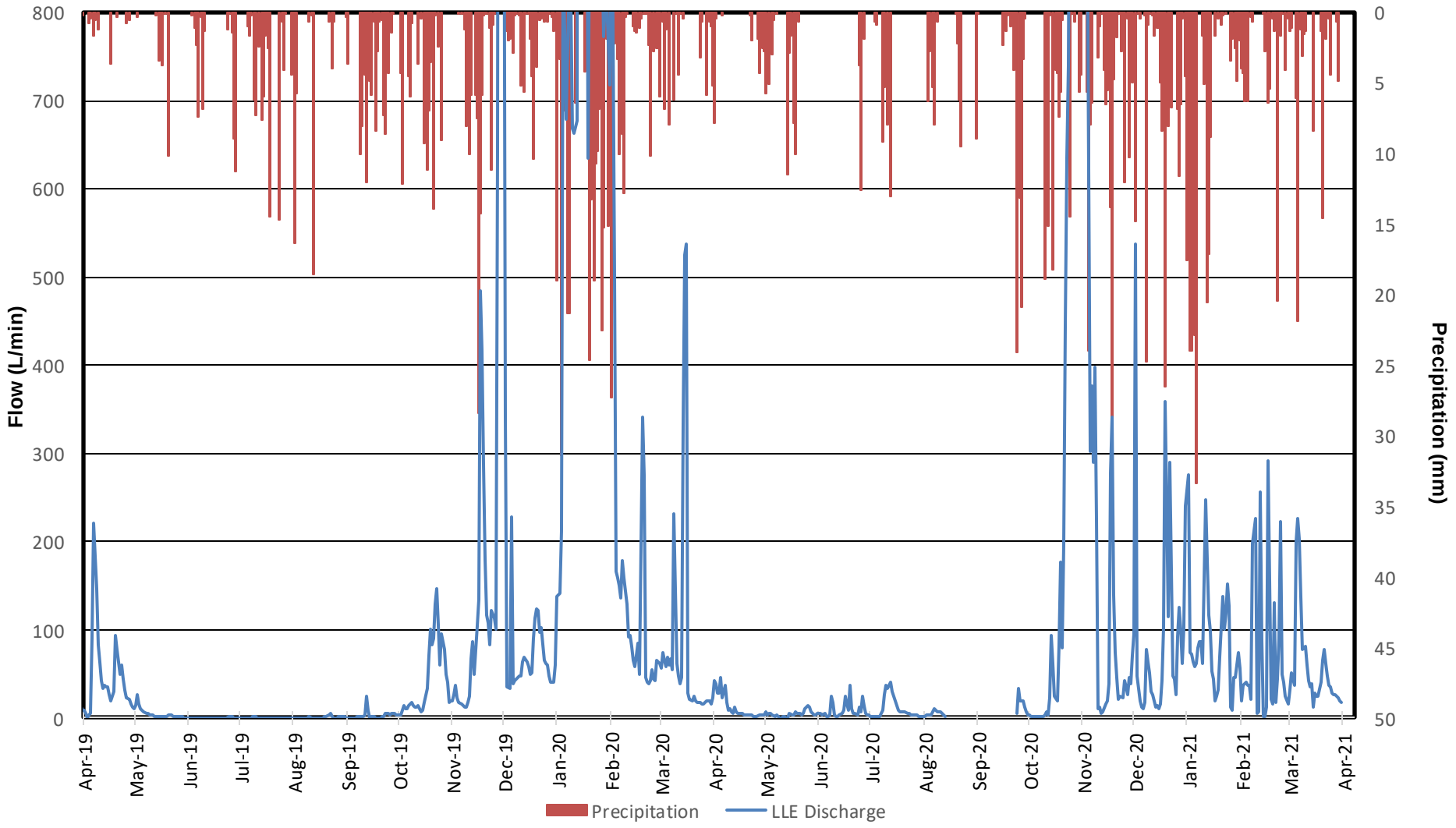
QUINSAM COAL

GRAPH 59
Discharge vs. Precipitation
Long Lake Seep Middle (LLSM)



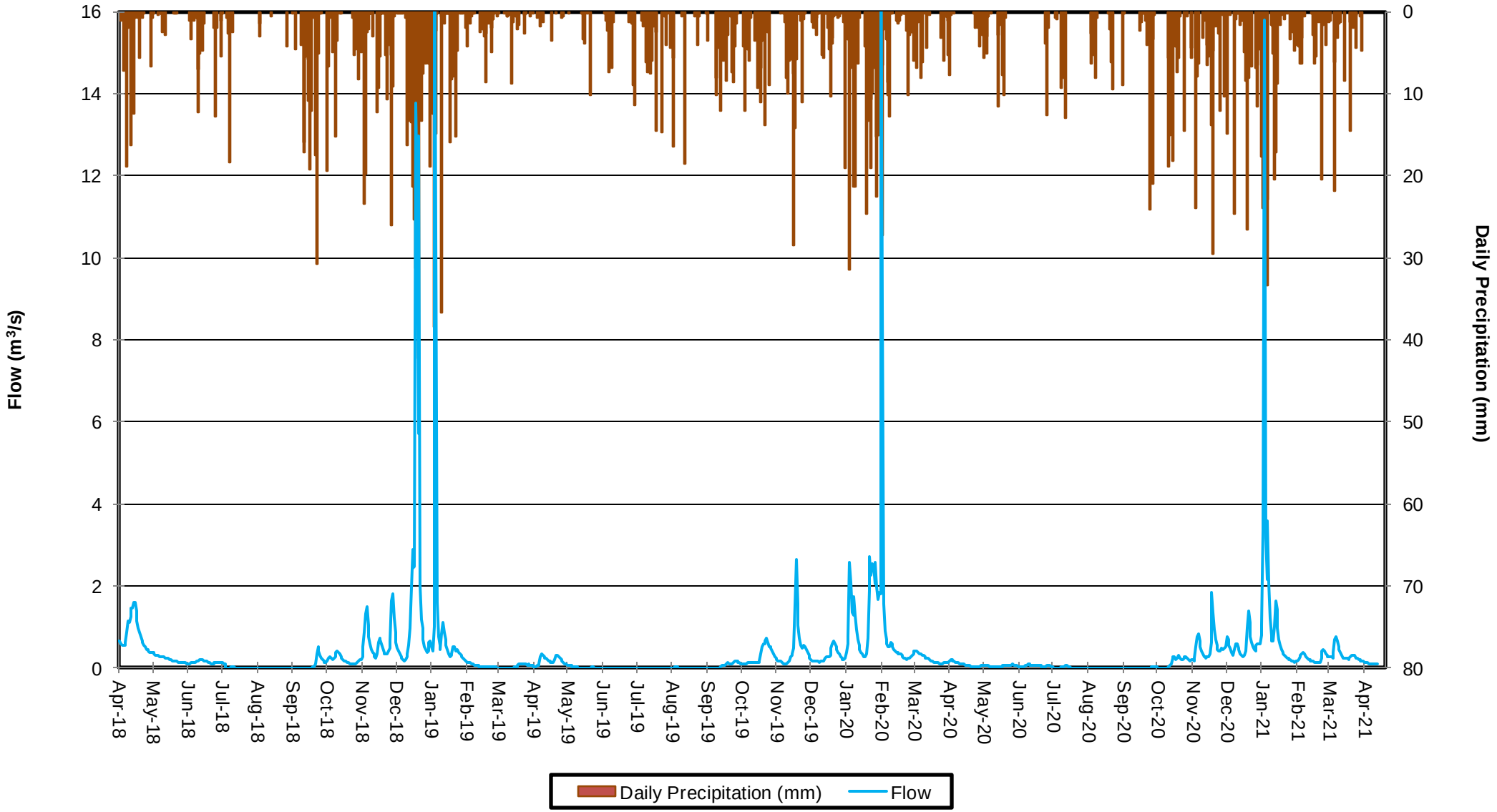
QUINSAM COAL

GRAPH 60
Discharge vs Precipitation
Long Lake Entry - LLE

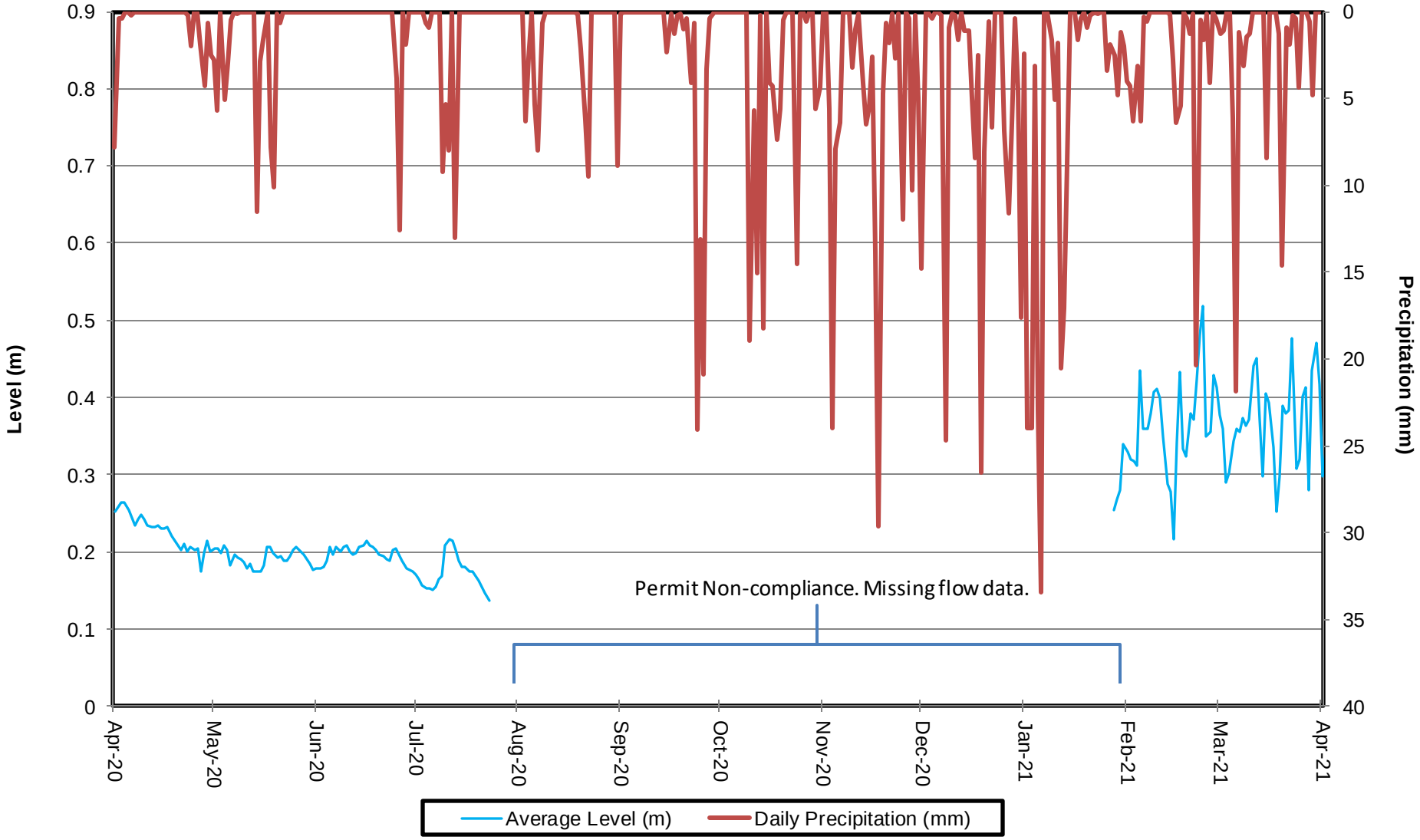


QUINSAM COAL

GRAPH 61
Flow vs. Precipitation
Long Lake Outlet (LLO)

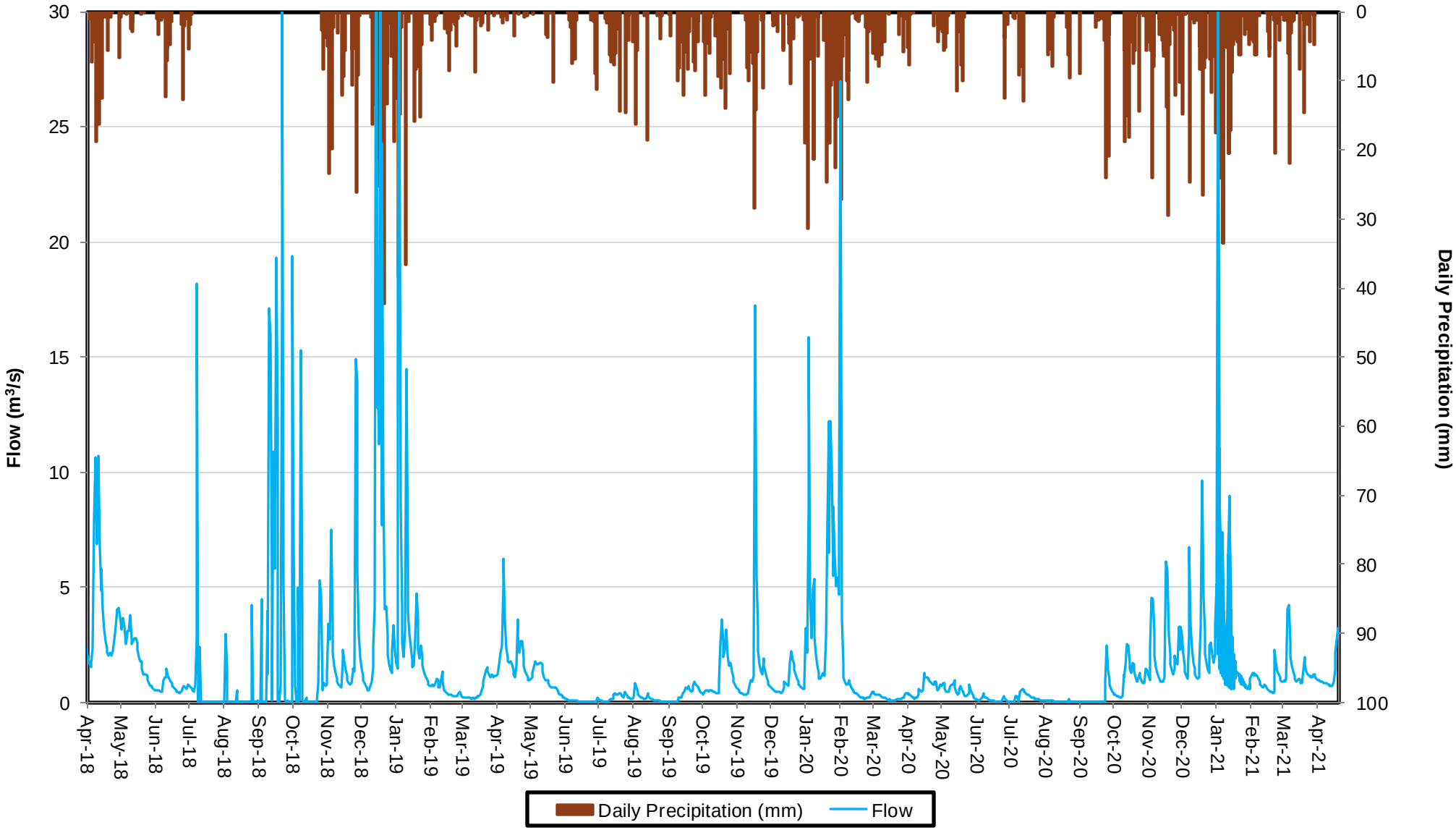


GRAPH 62
Water Level
7S Stream 1 (7S)

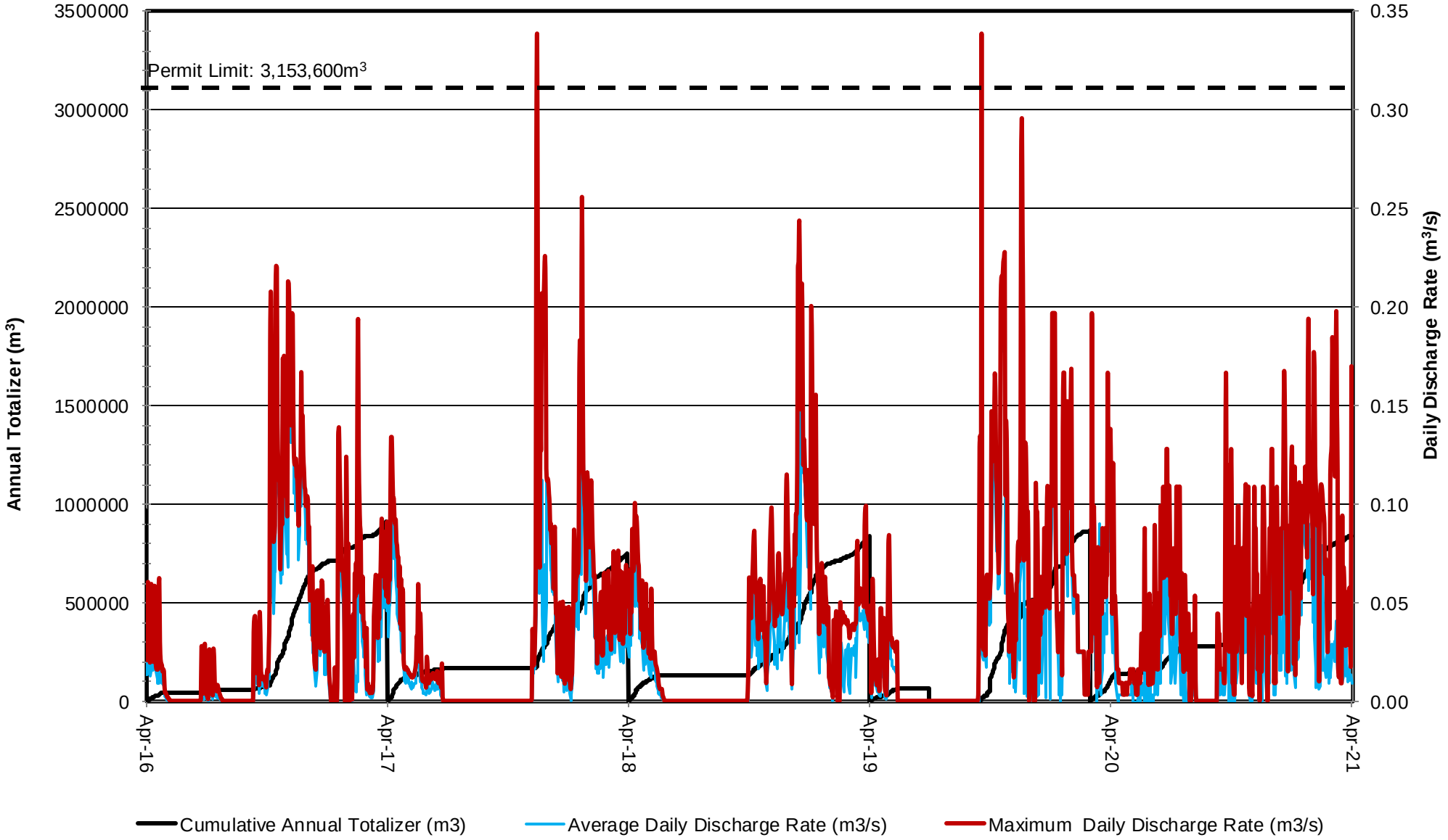


QUINSAM COAL

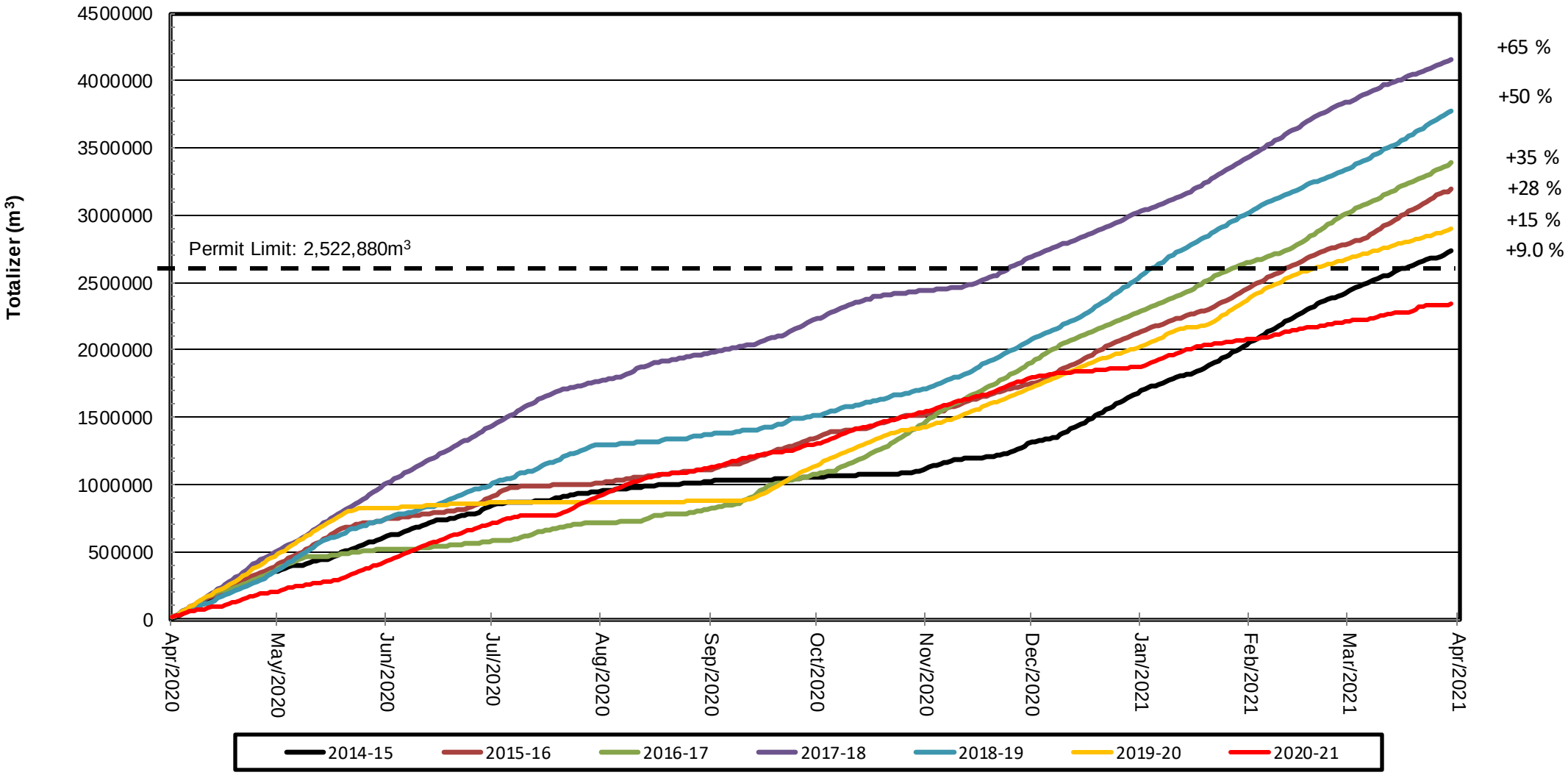
GRAPH 63
Flow vs. Precipitation
Iron River (IR8)



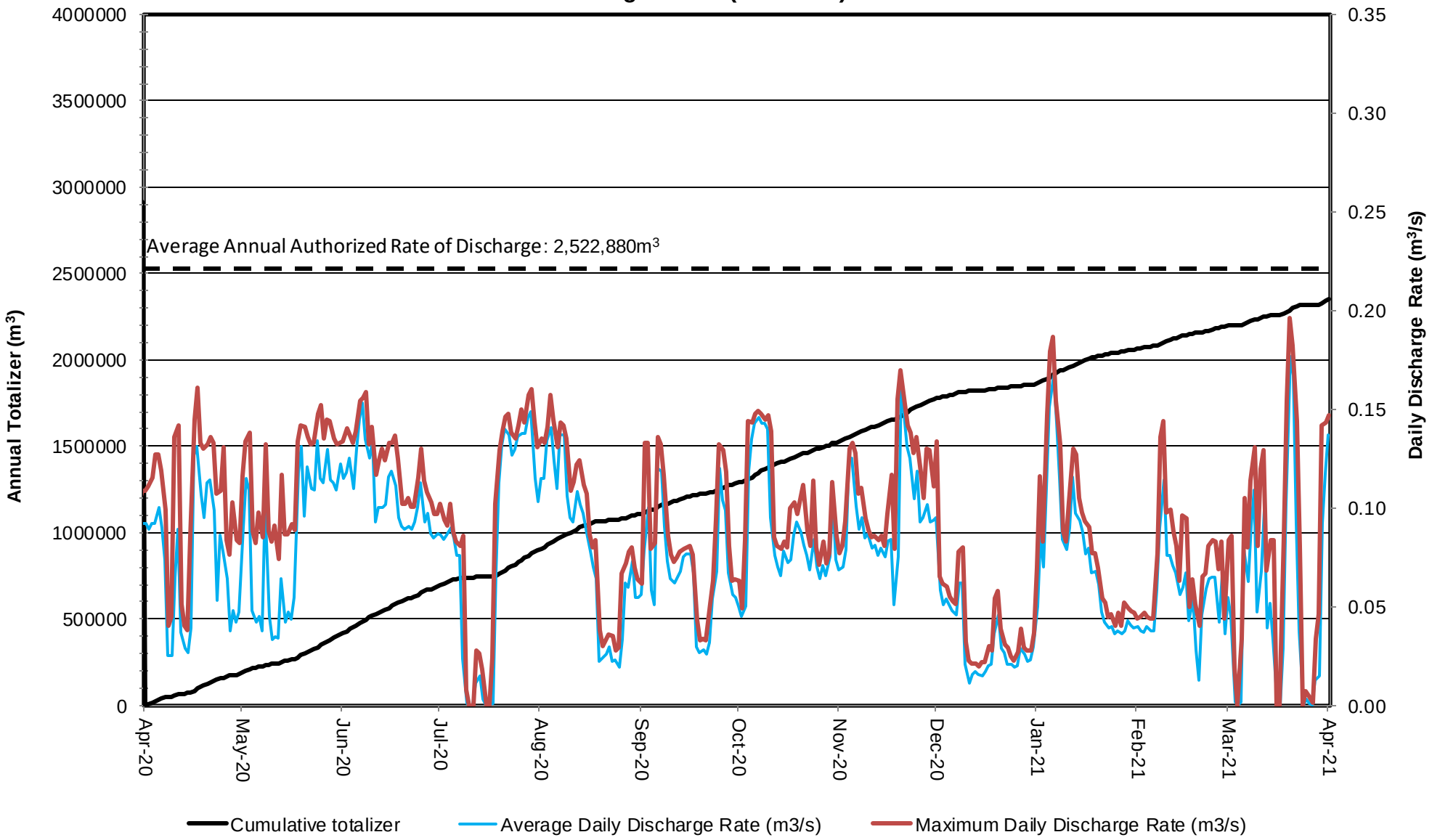
GRAPH 64
Cumulative & Daily Discharge Rates
Settling Pond 1 (SPD)



GRAPH 65
Comparison of Cumulative Annual Discharges
Settling Pond 4 (WD)

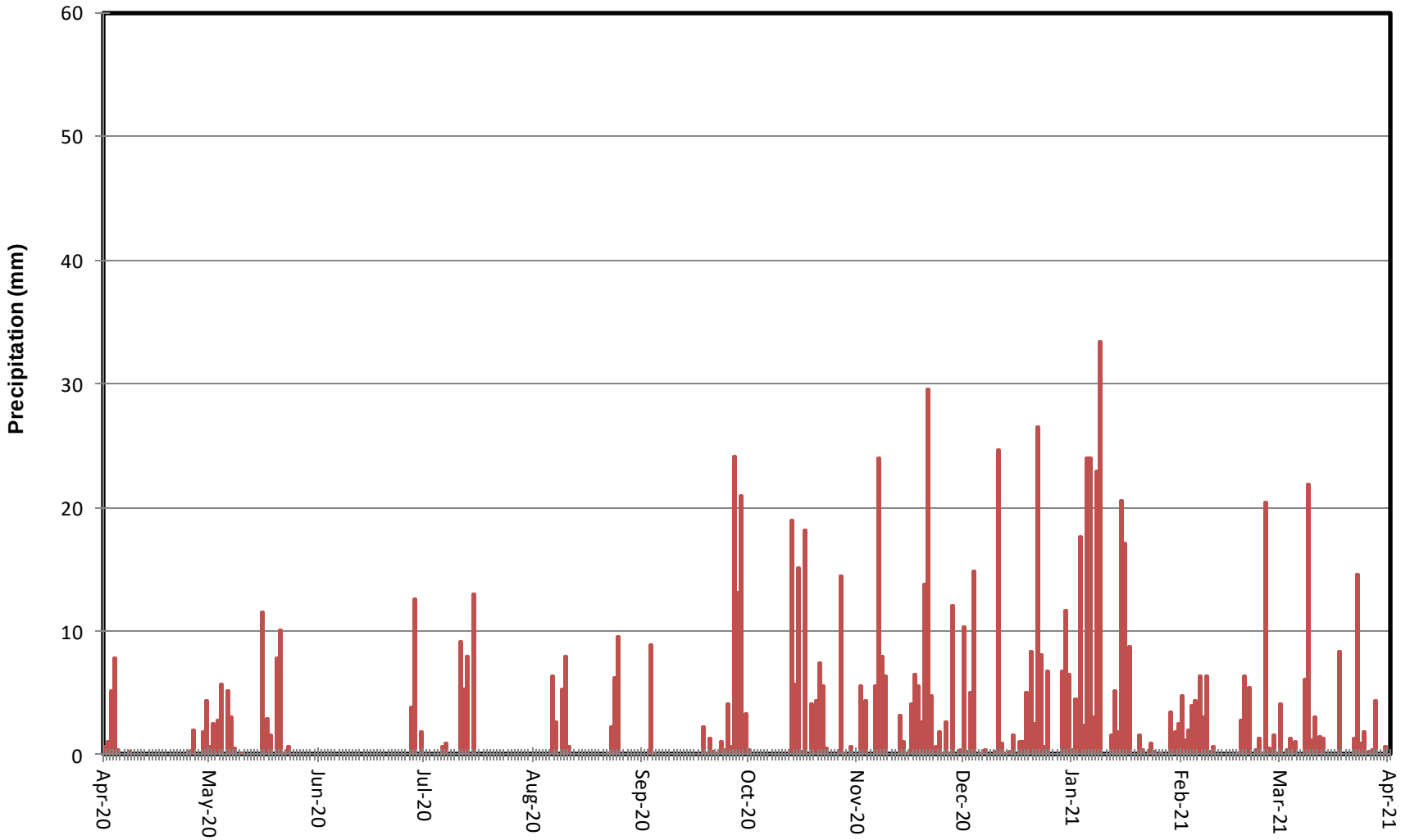


GRAPH 66
Cumulative & Daily Discharge Rates
Settling Pond 4 (SP4 / WD)



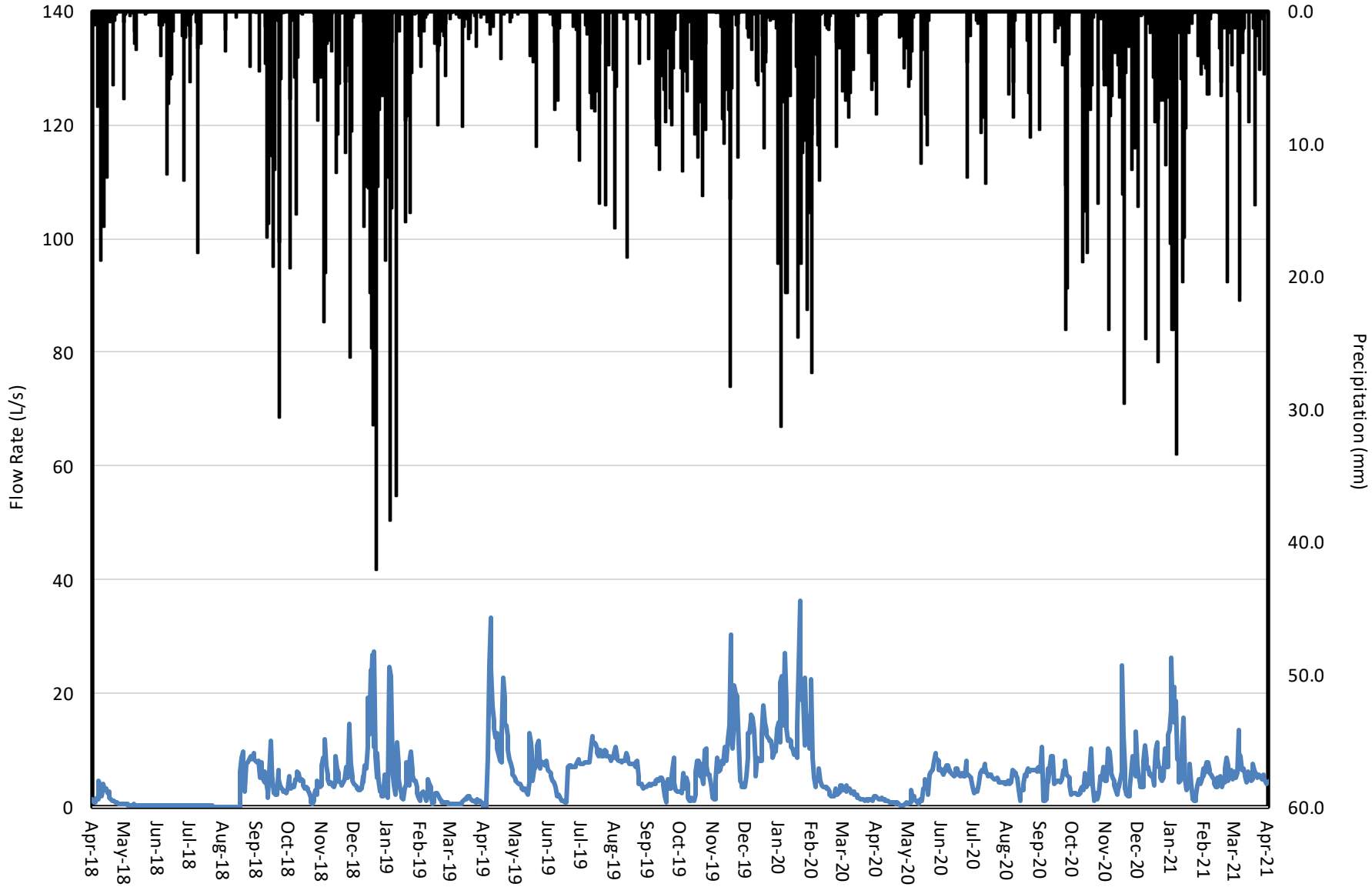
QUINSAM COAL

GRAPH 67
Daily Precipitation (mm)
2-South Area

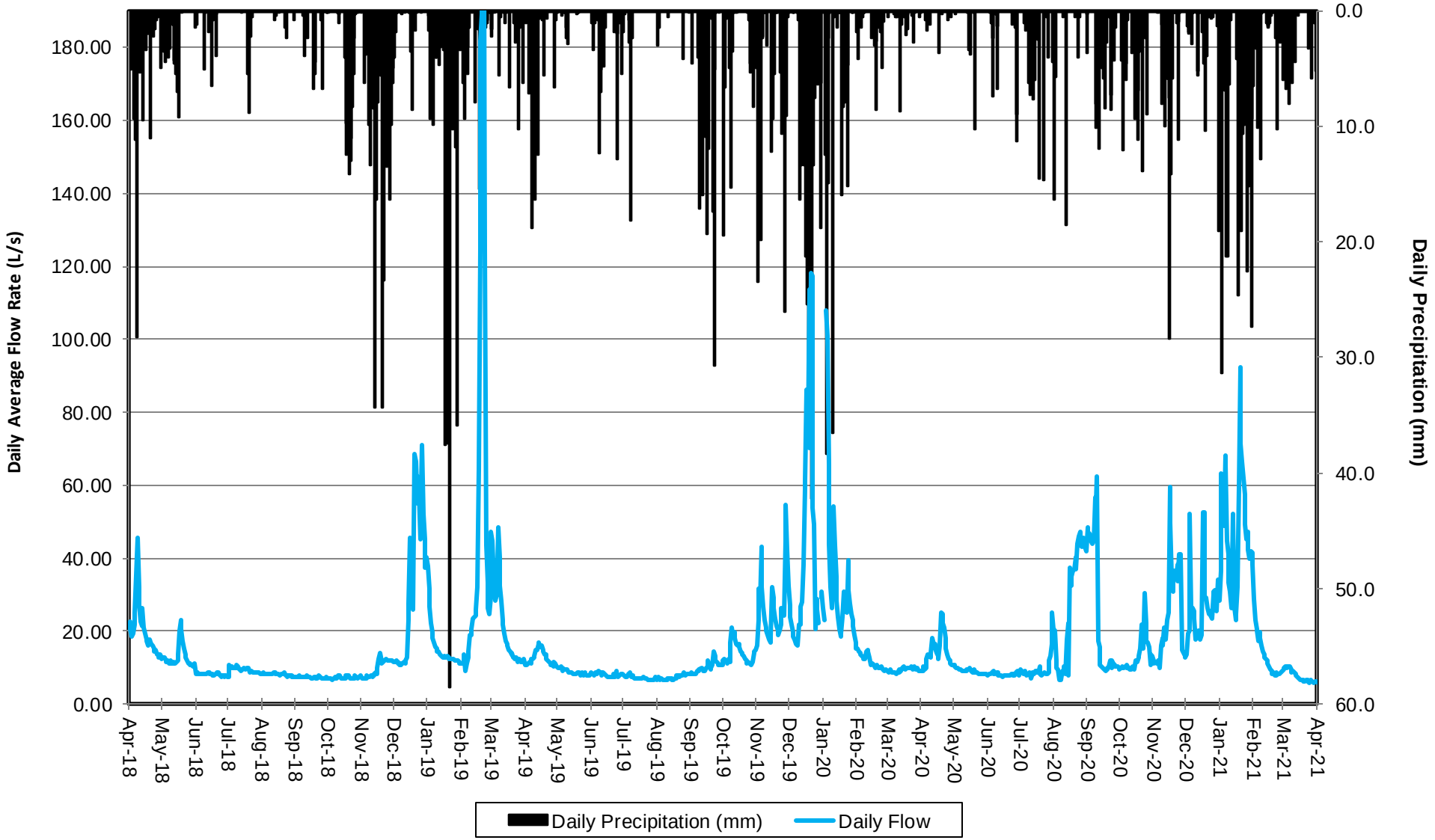


QUINSAM COAL

GRAPH 68
Flow Rate (L/s) @ 90° V-notch Weir vs. Precipitation (mm)
2-South Inflow



GRAPH 69
Flow Rate (L/s) vs. Precipitation (mm)
Culvert Entering 3-South (2SC)



Appendix III

RESULTS OF RAINBOW TROUT SINGLE CONCENTRATION-100%

Client : 13210 The Bowra Group Inc., Contractor for Province of BC as MEMPR Representative, **COD** Job Number: C071123

Client Project Name & Number: - QCC TOX SAMPLES

Test Result:

96 hrs Mortality % 0 Statistical Method: Visual

Sample Name : WD-29SEP20-P

Description:	Light brown and clear			Sample Number:	YN9649-01
Sample Collected:	Sep 29, 2020 04:00 PM	Sampling Method :	AEP Type 3	Site Collection:	N/A
Sample Collected By:	BH	Volume Received:	21 x 1LP	Temp.Upon Arrival: grab °	Storage: 2-6°C
Sample Received:	Sep 30, 2020 12:30 PM	pH:	7.9	Dissolved Oxygen:	103.0 %
Analysis Start :	Oct 02, 2020 02:15 PM	Temperature :	15 °C	Sample Conductance:	1951 µS/cm

Concentration	Temperature (°C)	Temperature (°C)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (mg/L)	pH	pH	Conductivity (uS/cm)	Mortality (#)	Mortality (%)	Atypical Behaviour (#)
% vol/vol	Initial	96 hrs	Initial	96 hrs	Initial	96 hrs	Initial	96 hrs	96 hrs	96 hrs
0	15	15	10.2	9.9	7.4	7.3	42	0	0	0
100	15	15	10.2	9.8	8.1	8.1	1948	0	0	0

Comments : All fish appeared and behaved normally during the test.
The LC50 of the reference toxicant was outside of 2 standard deviations, but within 3, of the Historic Geometric Mean LC50. The Historic Geometric Mean LC50's Lower Warning Limit (-3 values of S.D.) is 0.04 and the Upper Warning Limit (+3 values of S.D.) is 0.25. There were no issues with the test or culture health, therefore the reference toxicant test is valid and has been included in the control chart.

Culture/Control/Dilution Water Burnaby Municipal Dechlorinated Water

Hardness: 21 mg/L $CaCO_3$ Other parameters available on request.

Test Conditions Test concentration : 0,100 (% vol/vol)

Organisms per Vessel :	10	Test Temperature :	15 ± 1 °C	Solution Depth :	>15 cm
Total # of Organisms Used :	20	Pre-aeration Time :	60 min.	Rate of Aeration	6.5±1 mL/min/L
Test Volume :	18 L	Vessel Volume :	20L	Test pH Adjusted:	No
Loading Density :	0.4 g/L	Photoperiod :	16:8 (light: dark)		

Test Organism : Rainbow Trout Source : Lyndon Fish Hatcheries Inc.

Culture Temperature :	15 ± 2 °C	Weight (Mean) +- SD :	0.6 ± 0.1 g	Length (Mean) +- SD :	4.23 ± 0.16 cm
Culture Water Renewal :	≥ 1L/min/kg fish	Weight (Range) :	0.6 – 0.7 g	Length (Range) :	4.00 – 4.50 cm
Culture Photoperiod :	16:8 (light: dark)			% Mortality within 7 days :	0%
Feeding rate and frequency :	daily: 1-5% biomass of trout.			Acclimation Time:	>14 days

Reference chemical: Zinc Test Date: Sep 30, 2020

Test Endpoint 96 hrs LC50 (95% confidence interval) : 0.19 (0.14, 0.25)mg/L Statistical Method : Probit

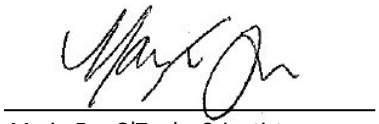
Historical Mean LC50 (warning limits) : 0.10 (0.05, 0.18) mg/L Concentration : 0,0.04,0.08,0.16,0.32,0.64 mg/L

Test Method BV Labs' BBY2SOP-00004 is based on the latest versions of EPS 1/RM/9, EPS 1/RM/13, and EPS 1/RM/50.

Method Deviations : None.

Note: The results contained in this report refer only to the testing of the sample submitted. This report may not be reproduced, except in its entirety, without the written approval of the laboratory.

Analyst : Michael Brassil



Verified By : Marie-Eve O'Toole, Scientist Date: Oct 15, 2020 03:37 PM

RESULTS OF RAINBOW TROUT SINGLE CONCENTRATION-100%

Client : 13210 The Bowra Group Inc., Contractor for Province of BC as MEMPR Representative, **COD** Job Number: C071123

Client Project Name & Number: - QCC TOX SAMPLES

Test Result:

96 hrs Mortality % 0 Statistical Method: Visual

Sample Name : SPD-29SEP20-P

Description:	Light brown and clear			Sample Number:	YN9650-01
Sample Collected:	Sep 29, 2020 04:00 PM	Sampling Method :	AEP Type 3	Site Collection:	N/A
Sample Collected By:	BH	Volume Received:	20 x 1LP	Temp.Upon Arrival: grab °	Storage: 2-6°C
Sample Received:	Sep 30, 2020 12:30 PM	pH:	7.8	Dissolved Oxygen:	99.5 %
Analysis Start :	Oct 02, 2020 02:55 PM	Temperature :	15 °C	Sample Conductance:	1044 µS/cm

Concentration	Temperature (°C)	Temperature (°C)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (mg/L)	pH	pH	Conductivity (uS/cm)	Mortality (#)	Mortality (%)	Atypical Behaviour (#)
% vol/vol	Initial	96 hrs	Initial	96 hrs	Initial	96 hrs	Initial	96 hrs	96 hrs	96 hrs
0	15	15	10.2	9.8	7.4	7.4	43	0	0	0
100	15	15	10.0	9.8	7.8	8.1	1043	0	0	0

Comments : All fish appeared and behaved normally during the test.
The LC50 of the reference toxicant was outside of 2 standard deviations, but within 3, of the Historic Geometric Mean LC50. The Historic Geometric Mean LC50's Lower Warning Limit (-3 values of S.D.) is 0.04 and the Upper Warning Limit (+3 values of S.D.) is 0.25. There were no issues with the test or culture health, therefore the reference toxicant test is valid and has been included in the control chart.

Culture/Control/Dilution Water Burnaby Municipal Dechlorinated Water

Hardness: 21 mg/L $CaCO_3$ Other parameters available on request.

Test Conditions Test concentration : 0,100 (% vol/vol)

Organisms per Vessel :	10	Test Temperature :	15 ± 1 °C	Solution Depth :	>15 cm
Total # of Organisms Used :	20	Pre-aeration Time :	30 min.	Rate of Aeration	6.5±1 mL/min/L
Test Volume :	18 L	Vessel Volume :	20L	Test pH Adjusted:	No
Loading Density :	0.4 g/L	Photoperiod :	16:8 (light: dark)		

Test Organism : Rainbow Trout Source : Lyndon Fish Hatcheries Inc.

Culture Temperature :	15 ± 2 °C	Weight (Mean) +- SD :	0.7 ± 0.3 g	Length (Mean) +- SD :	4.20 ± 0.50 cm
Culture Water Renewal :	≥ 1L/min/kg fish	Weight (Range) :	0.4 – 1.3 g	Length (Range) :	3.70 – 5.30 cm
Culture Photoperiod :	16:8 (light: dark)			% Mortality within 7 days :	0%
Feeding rate and frequency :	daily: 1-5% biomass of trout.			Acclimation Time:	>14 days

Reference chemical: Zinc Test Date: Sep 30, 2020

Test Endpoint 96 hrs LC50 (95% confidence interval) : 0.19 (0.14, 0.25)mg/L Statistical Method : Probit

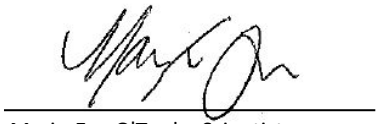
Historical Mean LC50 (warning limits) : 0.10 (0.05, 0.18) mg/L Concentration : 0,0.04,0.08,0.16,0.32,0.64 mg/L

Test Method BV Labs' BBY2SOP-00004 is based on the latest versions of EPS 1/RM/9, EPS 1/RM/13, and EPS 1/RM/50.

Method Deviations : None.

Note: The results contained in this report refer only to the testing of the sample submitted. This report may not be reproduced, except in its entirety, without the written approval of the laboratory.

Analyst : Michael Brassil



Verified By : Marie-Eve O'Toole, Scientist Date: Oct 15, 2020 03:40 PM

RESULTS OF RAINBOW TROUT SINGLE CONCENTRATION-100%

Client : 13210 The Bowra Group Inc., Contractor for Province of BC as MEMPR Representative, **COD** Job Number: C116938

Client Project Name & Number: SP4 RAINBOW TROUT

Test Result:

96 hrs Mortality % 0 Statistical Method: Visual

Sample Name : WD-15MAR21-P

Description:	Brown and cloudy			Sample Number:	ZM3611-01
Sample Collected:	Mar 15, 2021 04:00 PM	Sampling Method :	Regular	Site Collection:	N/A
Sample Collected By:	KR	Volume Received:	20 x 1LP	Avg Temp Arrival:	2 °C Storage: 2-6°C
Sample Received:	Mar 16, 2021 02:00 PM	pH:	7.4	Dissolved Oxygen:	10.0 mg/L
Analysis Start :	Mar 17, 2021 09:50 AM	Temperature :	14 °C	Sample Conductance:	2508 µS/cm

Concentration	Temperature (°C)	Temperature (°C)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (mg/L)	pH	pH	Conductivity (uS/cm)	Mortality (#)	Mortality (%)	Atypical Behaviour (#)
% vol/vol	Initial	96 hrs	Initial	96 hrs	Initial	96 hrs	Initial	96 hrs	96 hrs	96 hrs
0	14	15	10.2	10.2	7.4	7.7	38	0	0	0
100	14	15	10.1	10.0	7.5	8.2	2510	0	0	0

Comments : All fish appeared and behaved normally during the test.

Culture/Control/Dilution Water Burnaby Municipal Dechlorinated Water

Hardness: 14 mg/L $CaCO_3$ Other parameters available on request.

Test Conditions Test concentration : 0,100 (% vol/vol)

Organisms per Vessel :	10	Test Temperature :	15 ± 1 °C	Solution Depth :	>15 cm
Total # of Organisms Used :	20	Pre-aeration Time :	30 min.	Rate of Aeration	6.5±1 mL/min/L
Test Volume :	18 L	Vessel Volume :	20L	Test pH Adjusted:	No
Loading Density :	0.2 g/L	Photoperiod :	16:8 (light: dark)		

Test Organism : Rainbow Trout Source : Aqua Farm

Culture Temperature :	15 ± 2 °C	Weight (Mean) +- SD :	0.4 ± 0.1 g	Length (Mean) +- SD :	3.75 ± 0.17 cm
Culture Water Renewal :	≥ 1L/min/kg fish	Weight (Range) :	0.3 – 0.5 g	Length (Range) :	3.50 – 4.00 cm
Culture Photoperiod :	16:8 (light: dark)			% Mortality within 7 days :	0.08%
Feeding rate and frequency :	daily: 1-5% biomass of trout.			Acclimation Time:	>14 days

Reference chemical: Zinc Test Date: Mar 14, 2021

Test Endpoint 96 hrs LC50 (95% confidence interval) : 0.05 (0.04, 0.07)mg/L Statistical Method : Probit

Historical Mean LC50 (warning limits) : 0.09 (0.04, 0.22) mg/L Concentration : 0,0.04,0.08,0.16,0.32,0.64 mg/L

Test Method BV Labs' BBY2SOP-00004 is based on the latest versions of EPS 1/RM/9, EPS 1/RM/13, and EPS 1/RM/50.

Method Deviations : None.

Note: The results contained in this report refer only to the testing of the sample submitted. This report may not be reproduced, except in its entirety, without the written approval of the laboratory.

Analyst : Michael Brassil, Navpreet Shergill

Verified By : Kimberly Tamaki, Scientist, Ecotoxicology Date: Mar 29, 2021 09:33 AM

Appendix IV

Stantec

Stantec Consulting Ltd.
500-4730 Kingsway, Burnaby, BC V5H 0C6

June 16, 2020
File: 123210406

Attention: Morgan Melnychuk
Maxxam Analytics Laboratory
4606 Canada Way
Burnaby, BC V5G 1K5

Dear Morgan,

Reference: Quinsam Lakes Phytoplankton, May 2020 (Sample Reference XT5598, XT5923, XT5591 and XT9798; Job Numbers C032218, C032271, C032217 and C033098)

Introduction

Quinsam Coal Ltd. collects water samples from the Quinsam Lakes system during the growing season to meet long-term water quality monitoring requirements as per the effluent discharge permit issued by the Ministry of Environment and Climate Change Strategy. From 1994 through 2012, the permit required sampling at 1, 4 and 9 m in April through September for Long Lake and Middle Quinsam Lake, with No Name Lake added to the program in June 2012 and Lower Quinsam Lake added in 2013. In 2014 the permit was revised to include surface water sampling (1.0 m depth) three times a year (spring, late summer, fall overturn). The long-term dataset is included in Attachment 1.

Samples are collected by Quinsam Coal and submitted to Stantec Consulting Ltd. for phytoplankton taxonomic analysis, as part of ongoing monitoring requirements. Some months, an additional sample is taken as a field replicate for quality assurance/quality control. This brief report provides information about samples from Long Lake, Middle Quinsam Lake, No Name Lake, and Lower Quinsam Lake collected in May 2020.

Methods

Sub-samples (27 mL) of preserved lake water were settled and examined at 100 X, 400 X and 1,000 X magnifications using a Zeiss inverted microscope. Counting effort is defined as at least 100 organisms of the predominant species at 400 X, up to 200 fields at 1,000 X and a half or whole sub-sample at 100 X.

Results

Abundance

Abundance data for 1993 to 2019 are summarized in Attachment 1 and detailed taxonomic results for May 2020 are presented in Attachment 2.

Reference: **Quinsam Lakes Phytoplankton, May 2020 (Sample Reference XT5598, XT5923, XT5591 and XT9798; Job Numbers C032218, C032271, C032217 and C033098)**

Total abundance in the May samples is shown in Table 1. Total abundance was 3,400 cells/mL for Long Lake, 1,200 cells/mL for Middle Quinsam Lake, 4,100 cells/mL for No Name Lake, and 4,000 cells/mL for Lower Quinsam Lake.

Table 1 Phytoplankton Abundance (cells/mL) in the Quinsam Lake System, 2020

Lake	Date	Abundance (cells/mL) at 1 m depth			
		Total	< 5 µm (1,000 X)	5 to 25 µm (400 X)	> 25 µm (100 X)
Long	May 12	3,400	2,800	330	275
Middle Quinsam	May 12	1,200	1,150	65	4.2
No Name[1]	May 12	4,100	1,600	2,500	0.4
Lower Quinsam	May 13	4,000	3,500	360	95

NOTE:
1 *Dinobryon* spp. counted at 400X rather than 100X due to high abundance

Species Composition

Species composition data for the May 2020 samples are contained in Attachment 2. The most abundant phytoplankton in Long, Middle Quinsam, and Lower Quinsam lakes were the very small (less than or equal to 5 µm) chrysoflagellates (*Ochromonas* spp. and *Chromulina* spp.). They were also common in No Name Lake. Although these ultra-nanoplankton species were very abundant numerically, they usually contribute little to algal biomass.

In Long Lake, No Name Lake, and Lower Quinsam Lake, there were blooms of various *Dinobryon* species (colonial chyrsophyte), which were the predominant species. The most abundant of the larger algae were as follows:

- In Long Lake, *Dinobryon bavaricum* and larger *Ochromonas* spp. were predominant, with *DInobryon cylindricum* common.
- In Middle Quinsam Lake, larger *Ochromonas* spp. were predominant, with no obvious common species.
- In No Name Lake, *Dinobryon cylindricum* was predominant, and very small chrysophytes were common.
- In Lower Quinsam Lake, *Dinobryon sociale* and larger *Ochromonas* spp. were predominant, with *Cryptomonas* spp. common.

May 2019 samples showed a similar trend to May 2020 samples, with lower phytoplankton abundance in the sample from Middle Quinsam Lake (320 to 1,000 cells/mL) than in samples from the other three lakes (600 to 2,700 cells/mL). Given the variability in timing of the spring samples, it is not clear whether this difference between lakes is related to changes in water quality of the lakes or natural variability.

Reference: **Quinsam Lakes Phytoplankton, May 2020 (Sample Reference XT5598, XT5923, XT5591 and XT9798; Job Numbers C032218, C032271, C032217 and C033098)**

Closure

We trust this information meets your present requirements. Should you have any questions or require additional information, please contact the undersigned.

Regards,

Stantec Consulting Ltd.

Karen Munro M.Sc., R.P.Bio.
Principal, Senior Aquatic Scientist
Phone: 604-436-3014
Karen.Munro@stantec.com

Sandra Webster Ph.D., R.P.Bio.
Principal
Phone: 604-412-2986
Sandra.Webster@stantec.com

Attachment: 1: Historical Abundance Data: Quinsam Lakes System, 1993–2019
2: Species Composition Data: May, 2020

Stantec

Stantec Consulting Ltd.
500-4730 Kingsway, Burnaby, BC V5H 0C6

September 8, 2020
File: 123221643

Attention: Morgan Melnychuk
Maxxam Analytics Laboratory
4606 Canada Way
Burnaby, BC V5G 1K5

Dear Morgan,

Reference: Quinsam Lakes Phytoplankton, August 2020 (Sample Reference YF1143-02, YF1076-09, and YF1074-02; Job Numbers CO55058 and CO55047)

Introduction

Quinsam Coal Ltd. collects water samples from the Quinsam Lakes system during the growing season to meet long-term water quality monitoring requirements as per the effluent discharge permit issued by the Ministry of Environment and Climate Change Strategy. From 1994 through 2012, the permit required sampling at 1, 4 and 9 m in April through September for Long Lake and Middle Quinsam Lake, with No Name Lake added to the program in June 2012 and Lower Quinsam Lake added in 2013. In 2014 the permit was revised to include surface water sampling (1.0 m depth) three times a year (spring, late summer, fall overturn). Attachment 1 contains the long-term dataset.

Samples are collected by Quinsam Coal and submitted to Stantec Consulting Ltd. for phytoplankton taxonomic analysis, as part of ongoing monitoring requirements. Some months, an additional sample is taken as a field replicate for quality assurance/quality control. This brief report provides information about samples from Long Lake and Middle Quinsam Lake collected in August 2020.

Methods

Sub-samples (27 mL) of preserved lake water were settled and examined at 100 X, 400 X and 1,000 X magnifications using a Zeiss inverted microscope. Counting effort is defined as at least 100 organisms of the predominant species at 400 X, up to 200 fields at 1,000 X and a half or whole sub-sample at 100 X.

Reference: **Quinsam Lakes Phytoplankton, August 2020 (Sample Reference YF1143-02, YF1076-09, and YF1074-02; Job Numbers CO55058 and CO55047)**

Results

Abundance

Abundance data for 1993 to 2019 are summarized in Attachment 1 and detailed taxonomic results for August 2020 are presented in Attachment 2.

Total abundance in the May and August samples is shown in Table 1. Total abundance for August was 2,600 cells/mL for the Long Lake sample and 1,500 cells/mL and 1,400 cells/mL for the two Middle Quinsam Lake samples.

Table 1 Phytoplankton Abundance (cells/mL) in the Quinsam Lake System, 2020

Lake	Date	Abundance (cells/mL) at 1 m depth			
		Total	<5 µm (1,000 X)	5 to 25 µm (400 X)	>25 µm (100 X)
Long	May 12	3,400	2,800	330	275
Middle Quinsam		1,200	1,150	65	4.2
No Name[1]		4,100	1,600	2,500	0.4
Lower Quinsam	May 13	4,000	3,500	360	95
Long	August 5	2,600	2,400	160	13
Middle Quinsam		1,500	1,300	190	0.4
Middle Quinsam replicate		1,400	1,200	200	0.5

NOTE:
1 *Dinobryon* spp. counted at 400X rather than 100X due to high abundance

Species Composition

Species composition data for the August 2020 samples are contained in Attachment 2. The most abundant phytoplankton in Long and Middle Quinsam lakes were the very small (less than or equal to 5 µm) chrysoflagellates (*Ochromonas* spp. and *Chromulina* spp.). Although these ultra-nanoplankton species were very abundant numerically, they usually contribute little to algal biomass.

The most abundant of the larger algae were as follows:

- In Long Lake, larger *Ochromonas* spp. were predominant, with the cryptophyte *Rhodomonas minuta* and colonial cyanophyte *Chroococcus Prescottii* common.
- In Middle Quinsam Lake (both samples), larger *Ochromonas* spp. were predominant, with cryptophytes *Rhodomonas minuta* and *Cryptomonas* spp. common.

Reference: **Quinsam Lakes Phytoplankton, August 2020 (Sample Reference YF1143-02, YF1076-09, and YF1074-02; Job Numbers CO55058 and CO55047)**

The August 2020 samples were similar in composition and abundance to samples collected during the summer in recent years.

Comparison of Replicate Samples

Two replicates were collected from 1 m depth in Middle Quinsam Lake. Percent difference in the duplicate samples was calculated. A difference of up to 10% can be expected for a total cell count of 400 organisms, for repeat sampling from the same bottle; higher percent difference can be expected when separate grabs are used for the replicates, as was done here.

The replicate samples were similar in species composition and in abundance (1,500 cells/mL in one sample and 1,400 cells/mL in the other); this difference of ± 7% indicates good inter-sample reproducibility.

Closure

We trust this information meets your present requirements. Should you have any questions or require additional information, please contact the undersigned.

Regards,

Stantec Consulting Ltd.

Karen Munro M.Sc., R.P.Bio.
Principal, Senior Aquatic Scientist
Phone: 604-436-3014
Karen.Munro@stantec.com

Sandra Webster Ph.D., R.P.Bio.
Principal
Phone: 604-412-2986
Sandra.Webster@stantec.com

Attachments: Attachment 1: Historical Abundance Data: Quinsam Lakes System, 1993–2019
Attachment 2: Species Composition Data: August, 2020

Stantec

Stantec Consulting Ltd.
500-4730 Kingsway, Burnaby, BC V5H 0C6

November 2, 2020
File: 123221643

Attention: Morgan Melnychuk
Maxxam Analytics Laboratory
4606 Canada Way
Burnaby, BC V5G 1K5

Dear Morgan,

Reference: Quinsam Lakes Phytoplankton, October 2020 (Sample Reference YP8160-08, YP8161-02, and Yp8152-08; Job Numbers C074150 and C074148)

Introduction

Quinsam Coal Ltd. collects water samples from the Quinsam Lakes system during the growing season to meet long-term water quality monitoring requirements as per the effluent discharge permit issued by the Ministry of Environment and Climate Change Strategy. From 1994 through 2012, the permit required sampling at depths of 1, 4 and 9 m in April through September for Long Lake and Middle Quinsam Lake, with No Name Lake added to the program in June 2012 and Lower Quinsam Lake added in 2013. In 2014 the permit was revised to include surface water sampling (1.0 m depth) three times a year (spring, late summer, fall overturn). Attachment 1 contains the long-term dataset.

Samples are collected by Quinsam Coal and submitted to Stantec Consulting Ltd. for phytoplankton taxonomic analysis, as part of ongoing monitoring requirements. Some months, an additional sample is taken as a field replicate for quality assurance/quality control. This brief report provides information about samples collected in October 2020 from Long Lake and Middle Quinsam Lake.

Methods

Sub-samples (27 mL) of preserved lake water were settled and examined at 100 X, 400 X and 1,000 X magnifications using a Zeiss inverted microscope. Counting effort is defined as at least 100 organisms of the predominant species at 400 X, up to 200 fields at 1,000 X and a half or whole sub-sample at 100 X.

Reference: **Quinsam Lakes Phytoplankton, October 2020 (Sample Reference YP8160-08, YP8161-02, and Yp8152-08; Job Numbers C074150 and C074148)**

Results

Abundance

Abundance data for 1993 to 2019 are summarized in Attachment 1 and detailed taxonomic results for October 2020 are presented in Attachment 2.

Total abundance in the May, August, and October samples is shown in Table 1. Total abundance for October was 3,000 and 3,200 cells/mL for the two Long Lake sample and 4,000 cells/mL for the Middle Quinsam Lake sample.

Table 1 Phytoplankton Abundance (cells/mL) in the Quinsam Lake System, 2020

Lake	Date	Abundance (cells/mL) at 1 m depth			
		Total	<5 µm (1,000 X)	5 to 25 µm (400 X)	>25 µm (100 X)
Long	May 12	3,400	2,800	330	275
Middle Quinsam		1,200	1,150	65	4.2
No Name[1]		4,100	1,600	2,500	0.4
Lower Quinsam	May 13	4,000	3,500	360	95
Long	August 5	2,600	2,400	160	13
Middle Quinsam		1,500	1,300	190	0.4
Middle Quinsam replicate		1,400	1,200	200	0.5
Long	October 7	3,200	3,000	200	2.6
Long replicate		3,000	2,800	200	1.6
Middle Quinsam		3,000	2,700	250	2.2

NOTE:
1. *Dinobryon* spp. counted at 400X rather than 100X due to high abundance

Species Composition

Species composition data for the October 2020 samples are contained in Attachment 2. The most abundant phytoplankton in Long and Middle Quinsam lakes were the very small (less than or equal to 5 µm) chrysoflagellates (*Ochromonas* spp. and *Chromulina* spp.). Although these ultra-nanoplankton species were very abundant numerically, they usually contribute little to algal biomass.

Reference: **Quinsam Lakes Phytoplankton, October 2020 (Sample Reference YP8160-08, YP8161-02, and Yp8152-08; Job Numbers C074150 and C074148)**

The most abundant of the larger algae were as follows:

- In Long Lake (both samples), larger *Ochromonas* spp. were predominant, with the cryptophytes *Rhodomonas minuta* and *Cryptomonas* spp. and large dinoflagellate *Ceratium hirudinella* common.
- In Middle Quinsam Lake, larger *Ochromonas* spp. were predominant, with cryptophytes *Rhodomonas minuta* and *Cryptomonas* spp. common.

The October 2020 samples were similar in composition and abundance to samples collected during the autumn in recent years.

Comparison of Replicate Samples

Two replicates were collected from 1 m depth in Long Lake. Percent difference in the duplicate samples was calculated. A difference of up to 10% can be expected for a total cell count of 400 organisms, for repeat sampling from the same bottle; higher percent difference can be expected when separate grabs are used for the replicates, as was done here.

The replicate samples were similar in species composition and in abundance (3,200 cells/mL in one sample and 3,000 cells/mL in the other); this difference of ± 6% indicates good inter-sample reproducibility.

Closure

We trust this information meets your present requirements. Should you have any questions or require additional information, please contact the undersigned.

Regards,

Stantec Consulting Ltd.

Karen Munro M.Sc., R.P.Bio.
Principal, Senior Aquatic Scientist
Phone: 604-436-3014
Karen.Munro@stantec.com

Sandra Webster Ph.D., R.P.Bio.
Principal
Phone: 604-412-2986
Sandra.Webster@stantec.com

Attachments: Attachment 1: Historical Abundance Data: Quinsam Lakes System, 1993–2019
Attachment 2: Species Composition Data: October, 2020

ATTACHMENT 1

Historical Abundance Data:
Quinsam Lakes System, 1993–2019

Attachment 1 Historical Abundance Data: Quinsam Lakes System, 1993–2019
June 16, 2020

Table 1-1 Phytoplankton Abundance (cells/mL) in the Quinsam Lakes System, 1993 and 1994

Date	Sampling Site	Total Abundance	< 5mm (1,000X)	5 to 25 mm (400X)	> 25 mm (100X)
1993 October	LLM1	2,300	1,800	530	
	LLM3	3,000	2,400	550	
	LLMB	610	420	190	
1994 May	LL1R	10,000	8,800	1,200	
	LL3R	5,000	3,800	1,200	
	LL9R	4,000	3,200	800	
1994 June	LL0	1,400	1,200	250	
	LL1	1,000	790	220	
	LL4	1,500	1,200	320	
	LL9	2,500	1,900	580	
	LLB	830	440	390	
1994 July	LL1	2,100	1,900	180	
	LL4	1900	1700	250	
	LL9	1,500	1,100	400	
1994 August	LL1	1,700	1,400	290	
	LL4	1,000	850	200	
	LL9	900	780	150	
1994 September	LL1	900	620	250	
	LL4	2,300	2,000	260	
	LL9	2,100	1,700	350	

Table 1-2 Phytoplankton Abundance (cells/mL) in the Quinsam Lakes System, 1995

Date	Sampling Site	Total Abundance	< 5mm (1,000X)	5 to 25 mm (400X)	> 25 mm (100X)
April	LL1	3,100	2,700	340	
	LL4	3,300	2,900	350	
	LL9	1,300	1,100	280	
May	LL1	5,400	4,900	570	
	LL4	4,800	4,100	700	
	LL9	1,500	1,000	500	
June	LL1	2,100	1,800	300	
	LL4	2,600	2,100	500	
	LL9	7,400	6,600	850	
July	LL1	2,000	1,700	300	
	LL4	1,900	1,650	350	
	LL9	1,500	1,200	300	
August	LL1	1,100	960	180	
	LL4	1,300	1,100	240	
	LL9	1,900	1,700	210	
September	LL1	2,900	2,800	170	
	LL4	3,400	3,100	330	
	LL9	1,900	1,600	280	

Table 1-3 Phytoplankton Abundance (cells/mL) in the Quinsam Lakes System, 1996

Date	Sampling Site	Total Abundance	< 5mm (1,000X)	5 to 25 mm (400X)	> 25 mm (100X)
April	LL1	4,600	4,200	340	
	LL4	6,000	5,600	380	
	LL9	1,100	960	160	
May	LL1	2,200	1,600	600	31
	LL4	2,200	1,700	540	16
	LL9	1,700	1,400	290	26
June	LL1	2,100	1,600	440	4
	LL4	1,600	1,300	340	2
	LL9	1,600	1,100	500	9
July	LL1	2,400	2,300	140	1
	LL4	3,200	3,000	200	3
	LL9	No sample			
August	LL1	2,100	1,900	160	1
	LL4	2,200	1,800	390	37
	LL9	1,700	1,500	200	10
September	LL1	1,900	1,600	230	82
	LL4	2,200	1,800	300	145
	LL9	2,100	1,800	220	38
April	MQ1	No sample			
	MQ4	No sample			
	MQ9	No sample			
May	MQ1	2,000	1,700	230	11
	MQ4	1,100	930	180	7
	MQ9	2,200	1,800	430	1
June	MQ1	2,700	2,500	150	3
	MQ4	2,600	2,400	210	7
	MQ9	1,200	1,000	190	1
July	MQ1	2,400	2,100	335	24
	MQ4	1,900	1,400	380	130
	MQ9	1,200	860	320	29
August	MQ1	2,800	2,500	280	17
	MQ4	1,800	1,500	310	18
	MQ9	2,300	1,900	390	21
September	MQ1	1,700	1,300	270	5
	MQ4	900	560	350	0.6
	MQ9	1,200	1,100	190	0.7

Table 1-4 Phytoplankton Abundance (cells/mL) in the Quinsam Lakes System, 1997

Date	Sampling Site	Total Abundance	< 5mm (1,000X)	5 to 25 mm (400X)	> 25 mm (100X)
early May	LL1	3,200	2,800	340	12
	LL4	4,300	4,000	300	32
	LL9	1,700	1,600	140	5
late May[1]	LL1	3,000	2,600	370	61
	LL4	4,900	4,200	620	100
	LL9	4,700	4,000	730	44
June[2]	LL1	1,500	1,100	340	2
	LL4	1,200	1,000	240	1
	LL9	3,900	2,700	1,200	50
July	LL1	2,400	2,300	110	0
	LL4	1,700	1,500	170	0.1
	LL9	480	390	80	2
August	LL1	1,900	1,700	230	0.2
	LL4	880	740	140	0.6
	LL9	1,000	870	93	1.4
September	LL1	1,000	870	140	0.6
	LL4	2,000	1,800	270	0.3
	LL9	700	490	210	0.8
early May	MQ1	1,700	1,400	270	2
	MQ4	1,600	1,400	240	2
	MQ9	2,500	2,300	240	2
late May	MQ1	1,200	1,000	150	0.4
	MQ4	1,600	1,300	280	1
	MQ9	1,200	1,000	190	0.2
June	MQ1	1,900	1,700	140	1
	MQ4	2,500	2,400	130	1
	MQ9	1,400	1,200	200	1
July	MQ1	2,400	2,300	130	0.3
	MQ4	1,500	1,400	110	0.1
	MQ9	890	640	260	0.6
August	MQ1	2,100	1,900	220	0.8
	MQ4	1,500	1,300	190	1.4
	MQ9	1,000	760	240	1.6
September	MQ1	800	640	170	1.3
	MQ4	900	620	280	6.4
	MQ9	650	370	280	1.5

NOTES:
1. Recalculated counting *Synedra radians* at 400X rather than 100X
2. Recalculated counting *Synedra radians* at 400X rather than 100X & *Cyclotella glomerata* at 1,000X rather than 400X

Table 1-5 Phytoplankton Abundance (cells/mL) in the Quinsam Lakes System, 1998

Date	Sampling Site	Total Abundance	< 5mm (1,000X)	5 to 25 mm (400X)	> 25 mm (100X)
April	LL1	2,800	2,600	210	12
	LL4	4,100	3,700	390	12
	LL9	1,600	1,100	500	10
May[1]	LL1	2,000	1,500	430	76
	LL4	1,600	1,100	480	85
	LL9	2,100	1,500	630	20
June	LL1	5,700	5,600	140	0.3
	LL4	7,100	6,900	210	0.3
	LL9	3,300	1,700	1,600	4
July	LL1	1,200	1,100	130	10
	LL4	740	560	170	8
	LL9	760	130	630	5
August	LL1	1,900	1,700	190	2
	LL4	2,200	2,000	230	2
	LL9	1,900	1,600	220	5
September	LL1	5,000	4,900	130	2
	LL4	3,500	3,300	150	2
	LL9	2,200	2,000	220	5
April	MQ1	2,200	1,900	250	3
	MQ4	1,900	1,600	260	3
	MQ9	3,100	2,700	460	2
May	MQ1	2,500	2,300	210	1
	MQ4	2,600	2,400	180	2
	MQ9	2,100	1,700	480	0.4
June	MQ1	1,900	1,700	180	1
	MQ4	1,600	1,400	200	1
	MQ9	1,300	1,000	310	0.4
July	MQ1	1,500	1,400	120	19
	MQ4	1,800	1,600	150	35
	MQ9	1,300	1,100	190	25
August	MQ1	1,900	1,700	250	12
	MQ4	1,300	950	350	10
	MQ9	1,400	890	490	12
September	MQ1	2,000	1,800	200	11
	MQ4	2,700	2,500	220	7
	MQ9	2,100	1,900	230	10

NOTE:
1. Recalculated for counting *Synedra radians* at 400X rather than 100X

Table 1-6 Phytoplankton Abundance (cells/mL) in the Quinsam Lakes System, 1999

Date	Sampling Site	Total Abundance	< 5mm (1,000X)	5 to 25 mm (400X)	> 25 mm (100X)
April	LL1	3,800	3,500	310	9
	LL4	6,800	6,200	560	17
	LL9	3,000	2,600	410	10
May	LL1	No sample			
	LL4	No sample			
	LL9	No sample			
early July	LL1	1,100	910	150	2
	LL4	1,400	1,200	150	1
	LL9	1,300	1,200	100	1
late July	LL1	1,100	870	200	1
	LL4	2,000	1,800	280	1
	LL9	1,000	860	130	1
August	LL1	2,700	2,500	180	2
	LL4	2,800	2,600	170	6
	LL9	3,000	2,800	170	4
September	LL1	3,700	3,500	230	12
	LL4	5,000	4,700	290	17
	LL9	4,000	3,700	290	3
April	MQ1	2,300	1,600	220	430
	MQ4	2,200	1,800	200	230
	MQ9	2,700	1,900	600	190
May	MQ1	No sample			
	MQ4	No sample			
	MQ9	No sample			
early July	MQ1	790	700	90	0.4
	MQ4	770	620	150	0.5
	MQ9	1,100	1,000	130	0.3
late July	MQ1	2,700	2,600	110	0.2
	MQ4	2,100	1,900	220	0.8
	MQ9	620	420	190	0.3
August	MQ1	2,100	2,000	140	6
	MQ4	1,100	980	110	4
	MQ9	1,100	1,000	120	9
September	MQ1	1,300	1,100	190	14
	MQ4	1,500	1,300	190	9
	MQ9	760	540	210	10

Table 1-7 Phytoplankton Abundance (cells/mL) in the Quinsam Lakes System, 2000

Date	Sampling Site	Total Abundance	< 5mm (1,000X)	5 to 25 mm (400X)	> 25 mm (100X)
April	LL1	2,100	1,600	450	33
	LL4	2,500	1,800	700	68
	LL9	1,300	590	740	6.8
May	LL1	3,300	2,800	530	17
	LL4	3,000	2,600	320	15
	LL9	2,000	1,500	490	15
June	LL1	2,900	2,500	390	9.1
	LL4	2,900	2,400	400	19
	LL9	6,400	5,700	730	19
July	LL1	1,600	1,400	130	2.1
	LL4	1,400	1,200	250	1.6
	LL9	1,200	990	250	3.6
August	LL1	1,800	1,600	170	12
	LL4	1,100	940	190	8.2
	LL9	1,500	1,400	130	1.9
September	LL1	2,200	1,900	360	11
	LL4	2,000	1,800	200	9.2
	LL9	1,300	1,100	200	7.2
April	MQ1	1,800	1,300	450	5.9
	MQ4	1,700	1,300	420	1.6
	MQ9	1,500	1,200	280	1.7
May	MQ1	1,800	1,500	290	3
	MQ4	1,600	1,300	290	4.4
	MQ9	1,900	1,600	270	7.6
June	MQ1	2,100	1,900	250	1.4
	MQ4	2,400	2,200	200	2.1
	MQ9	1,800	1,500	380	1.1
July	MQ1	1,300	1,100	210	7.4
	MQ4	2,100	1,800	250	9.6
	MQ9	2,100	1,300	800	22
August	MQ1	1,500	1,200	290	5.8
	MQ4	2,200	1,900	310	7.2
	MQ9	2,400	1,900	500	7.5
September	MQ1	1,800	1,600	200	14
	MQ4	2,100	1,900	250	14
	MQ9	2,000	1,700	220	28

Table 1-8 Phytoplankton Abundance (cells/mL) in the Quinsam Lakes System, 2001

Date	Sampling Site	Total Abundance	< 5mm (1,000X)	5 to 25 mm (400X)	> 25 mm (100X)
April	LL1	3,300	2,600	670	19
	LL4	4,400	3,900	830	13
	LL9	1,400	860	490	5
May	LL1	7,700	6,200	1,100	310
	LL4	11,000	10,000	980	100
	LL9	4,600	3,600	670	22
June	LL1	7,800	6,600	1,000	170
	LL4	6,800	5,100	1,500	210
	LL9	3,000	2,400	680	25
July	LL1	3,300	3,100	170	1
	LL4	3,200	3,000	180	1
	LL9	1,600	1,400	160	2
August	LL1	1,300	1,100	180	1
	LL4	1,700	1,500	200	2
	LL9	720	540	170	1
September	LL1	8,200	8,000	270	13
	LL4	8,800	8,600	260	13
	LL9	4,800	4,600	190	1
April	MQ1	3,600	3,200	400	10
	MQ4	3,500	3,200	310	11
	MQ9	5,700	4,900	830	24
May	MQ1	1,900	1,500	360	17
	MQ4	1,800	1,400	370	14
	MQ9	3,800	3,200	600	13
June	MQ1	2,200	1,900	240	2
	MQ4	3,700	3,400	310	2
	MQ9	4,000	3,600	390	4
July	MQ1	2,500	2,300	230	8
	MQ4	2,700	2,400	260	6
	MQ9	1,500	1,200	240	8
August	MQ1	1,800	1,600	190	17
	MQ4	1,900	1,700	180	15
	MQ9	1,800	1,600	160	16
September	MQ1	1,900	1,700	180	24
	MQ4	3,200	2,900	230	37
	MQ9	1,800	1,600	190	43

Table 1-9 Phytoplankton Abundance (cells/mL) in the Quinsam Lakes System, 2002

Date	Sampling Site	Total Abundance	< 5mm (1,000X)	5 to 25 mm (400X)	> 25 mm (100X)
April	LL1	5,600	5,100	460	57
	LL4	5,600	5,100	490	40
	LL9	1,300	1,100	220	12
May	LL1	2,600	1,900	710	29
	LL4	2,700	2,000	690	41
	LL9	1,800	1,300	460	37
June	LL1	5,800	5,300	340	140
	LL4	9,200	8,600	450	96
	LL9	3,700	3,000	620	27
July	LL1	2,900	2,700	180	0.3
	LL4	2,400	2,200	160	0.6
	LL9	3,900	3,300	560	41.2
August	LL1	2,900	2,800	140	7.2
	LL4	2,300	2,200	150	3.2
	LL9	1,500	1,400	130	0.6
September	LL1	3,900	3,700	220	27
	LL4	3,500	3,200	260	31
	LL9	2,500	2,300	210	2.2
April	MQ1	2,000	1,700	360	8.2
	MQ4	1,900	1,600	300	3.6
	MQ9	1,500	1,200	260	4
May	MQ1	1,400	1,100	270	1.1
	MQ4	1,400	1,200	230	1.7
	MQ9	1,400	1,100	330	1.4
June	MQ1	1,000	940	110	1
	MQ4	800	680	120	0.3
	MQ9	60	50	7	0
July	MQ1	1,700	1,300	330	50
	MQ4	1,500	1,100	360	34
	MQ9	940	700	240	5.5
August*	MQ1	1,400	1,200	140	42
	MQ4	1,200	940	180	76
	MQ9	2,600	200	300	275
September	MQ1	1,400	1,200	160	33
	MQ4	2,100	1,900	220	28
	MQ9	1,100	920	160	28

NOTE:
* Recalculated for counting *Cyclotella bodanica* at 400X rather than 100X

Table 1-10 Phytoplankton Abundance (cells/mL) in the Quinsam Lakes System, 2003

Date	Sampling Site	Total Abundance	< 5mm (1,000X)	5 to 25 mm (400X)	> 25 mm (100X)
April	LL1	4,800	4,200	560	36
	LL4	3,600	2,900	640	8.6
	LL9	640	450	190	6.9
May	LL1	4,200	3,500	620	25
	LL4	4,600	3,800	800	23
	LL9	1,400	1,100	280	16
June	LL1	2,300	1,600	630	37
	LL4	6,800	6,100	600	43
	LL9	4,500	3,800	680	42
July	LL1	1,600	1,400	240	1
	LL4	2,400	2,100	270	0.5
	LL9	2,900	2,700	250	9.8
August	LL1	2,000	1,800	240	0.8
	LL4	2,200	1,900	250	0.5
	LL9	1,900	1,600	260	0.6
September	LL1	2,600	2,400	290	0.2
	LL4	3,700	3,400	340	1.8
	LL9	1,900	1,600	250	1.9
April	MQ1	3,500	2,900	570	28
	MQ4	3,000	2,400	510	17
	MQ9	2,000	1,600	310	17
May	MQ1	2,900	2,400	350	99
	MQ4	3,000	2,400	480	43
	MQ9	3,000	2,500	560	16
June	MQ1	1,300	1,100	180	6
	MQ4	1,900	1,500	420	21
	MQ9	3,000	2,700	350	16
July	MQ1	2,700	2,600	170	0.5
	MQ4	2,000	1,600	380	1.5
	MQ9	1,400	1,100	240	79
August	MQ1	1,300	1,000	280	43
	MQ4	1,500	1,200	240	44
	MQ9	3,500	2,500	620	338
September	MQ1	2,100	1,900	260	6.5
	MQ4	2,300	2,000	290	23
	MQ9	Not available			

Table 1-11 Phytoplankton Abundance (cells/mL) in the Quinsam Lakes System, 2004

Date	Sampling Site	Total Abundance	< 5mm (1,000X)	5 to 25 mm (400X)	> 25 mm (100X)
April	LL1	5,300	4,100	1,200	20
	LL4	3,500	2,600	860	13
	LL9	3,300	2,600	730	9.1
May	LL1	8,000	7,100	860	34
	LL4	6,600	5,300	1,200	36
	LL9	2,800	2,000	770	22
June	LL1	2,900	2,600	270	3.1
	LL4	2,900	2,600	310	5
	LL9	4,900	4,100	730	39
July	LL1	1,600	1,300	280	2.7
	LL4	1,200	1,100	170	2.2
	LL9	1,700	1,400	270	1
August	LL1	1,300	960	350	18
	LL4	1,400	1,000	300	38
	LL9	1,700	1,600	110	27
September	LL1	3,800	3,400	370	27
	LL4	4,300	3,900	350	25
	LL4 - duplicate	3,100	2,800	320	19
	LL9	3,000	2,700	280	12
April	MQ1	1,500	1,120	400	2.2
	MQ4	1,400	1,030	370	5.2
	MQ9	1,500	1,200	340	4.2
May	MQ1	2,300	2,000	310	2.4
	MQ4	1,500	1,200	300	3.6
	MQ9	2,600	2,100	470	2.4
June	MQ1	1,900	1,700	190	34
	MQ4	3,000	2,700	250	48
	MQ9	2,200	1,900	210	123
July*	MQ1	1,200	960	260	6.2
	MQ4	1,700	1,400	260	9.9
	MQ9	1,300	840	340	82
August**	MQ1	2,900	2,600	260	53
	MQ4	3,800	3,500	250	51
	MQ4 - duplicate	2,500	2,200	210	53
September	MQ9	3,900	3,600	260	44
	MQ1	2,300	1,700	550	25
	MQ4	2,100	1,600	420	26
	MQ9	2,500	2,000	520	19

NOTES:
* MQ9 recalculated for counting *Cyclotella bodanica* at 400X rather than 100X
** MQ1, MQ4, MQ9 recalculated for counting *Elakatothrix gelatinosa* colonies at 400X rather than

Table 1-12 Phytoplankton Abundance (cells/mL) in the Quinsam Lakes System, 2005

Date	Sampling Site	Total Abundance	< 5mm (1,000X)	5 to 25 mm (400X)	> 25 mm (100X)
April	LL1	2,700	2,100	550	24
	LL4	3,500	2,800	610	29
	LL9	670	460	200	8.5
May	LL1	7,200	6,600	670	55
	LL4	5,700	4,900	850	20
	LL9	1,300	850	440	20
June	LL1	2,700	2,400	300	2.4*
	LL4	2,800	2,500	330	8.3*
	LL9	990	850	130	8.9
July	LL1	1,200	800	400	44*
	LL4	1,700	1,200	460	33*
	LL9	692	540	150	3.5*
August	LL1	1,400	1,100	290	26
	LL4	1,100	810	220	64
	LL9	2,400	1,900	360	73
September	LL1	1,400	1,100	170	170
	LL4	2,300	1,900	220	170
	LL9	1,800	1,200	590	31*
April	MQ1	1,400	1,100	370	8.8
	MQ4	1,900	1,500	400	3.6
	MQ9	1,700	1,300	400	6.6
May	MQ1	1,300	1,000	300	3.4
	MQ4	1,500	1,200	330	3.2
	MQ9	1,300	1,000	340	3.7
June	MQ1	1,700	1,600	150	4.6
	MQ4	1,000	710	270	2.1
	MQ9	1,100	900	200	1.1
July[1]	MQ1	1,100	860	220	14.6
	MQ4	1,100	920	200	11.2
	MQ9	1,400	700	170	489
August[2]	MQ1	1,100	950	170	0.5
	MQ4	1,900	1,600	250	7.1
	MQ9	2,100	1,700	330	89*
September	MQ1	870	710	140	10.7
	MQ4	1,200	1,100	170	20.2
	MQ9	1,400	1,100	180	146

NOTE:
* = Cyclotella bodanica counted at 400X rather than 100X

Table 1-13 Phytoplankton Abundance (cells/mL) in the Quinsam Lakes System, 2006

Date	Sampling Site	Total Abundance	< 5mm (1,000X)	5 to 25 mm (400X)	> 25 mm (100X)
April	LL1	1,800	1,100	610	1.9*
	LL4	3,200	2,700	520	14.7
	LL9	690	550	135	2.2
May	LL1	2,600	2,000	620	19.7
	LL4	4,900	4,200	640	12.9
	LL9	540	380	160	4.8
June	LL1	860	610	200	39.5
	LL4	2,000	1,800	190	22.2
	LL4 (rep)	1,100	940	190	23.2
	LL9	1,700	1,400	220	17.7
July	LL1	1,300	1,100	160	54.8
	LL4	2,700	2,200	370	165
	LL9	1,700	1,300	350	19.1
August	LL1	2,700	2,500	200	14.3
	LL4	2,600	2,300	220	34.6
	LL9	2,800	2,300	470	23.8
September	LL1	3,800	3,600	160	0.4
	LL4	1,300	1,200	120	2
	LL9	1,800	1,700	130	3.6
April	MQ1	2,200	16,00	240	9.4
	MQ4	2,400	1,900	550	8.6
	MQ9	1,600	1,400	180	8.2
May	MQ1	1,700	1,500	240	10.8
	MQ4	1,700	1,400	320	7.4
	MQ4 (rep)	2,100	1,800	310	11.8
	MQ9	1,900	1,600	280	4.1
June	MQ1	1,900	1,800	130	0.9
	MQ4	1,400	1,200	200	4.4
	MQ9	950	840	110	0.6
July	MQ1	1,100	870	220	42.8
	MQ4	2,000	1,700	260	16.6
	MQ9	2,300	2,100	180	18.8*
August	MQ1	1,500	1,200	280	6.5
	MQ4	2,100	1,800	290	13.3
	MQ9	1,300	880	400	17.0*
September	MQ1	2,500	2,300	200	1.9
	MQ4	2,100	1,800	260	11.8
	MQ9	3,400	2,400	970	1.8*

NOTE:
* *Cyclotella bodanica* (diatom) counted at 400X rather than 100X

Table 1-14 Phytoplankton Abundance (cells/mL) in the Quinsam Lakes System, 2007

Date	Sampling Site	Total Abundance	< 5mm (1,000X)	5 to 25 mm (400X)
April	LL1	3,100	2,800	240
	LL4	3,000	2,200	620
	LL9	1,200	910	240
May	LL1	2,600	2,000	540
	LL4	3,300	2,600	670
	LL9	1,300	890	430
June	LL1	2,100	1,600	420
	LL4	2,500	2,000	520
	LL9	1,100	750	300
July	LL1	2,300	2,000	240
	LL4	2,400	2,100	270
	LL9	3,100	3,000	180
August	LL1	1,100	900	240
	LL4	2,300	2,100	150
	LL4 (rep)	2,600	2,400	150
	LL9	570	480	90
September	LL1	2,500	2,200	280
	LL4	1,700	1,400	240
	LL9	420	350	68
April	MQ1	1,700	1,500	230
	MQ4	1,900	1,602	300
	MQ9	1,100	900	200
May	MQ1	1,500	1,300	250
	MQ4	1,800	1,500	320
	MQ9	2,600	2,300	310
June	MQ1	1,500	1,200	300
	MQ4	1,800	1,600	200
	MQ9	1,500	1,200	290
July	MQ1	1,500	1,100	220
	MQ4	1,900	1,500	440*
	MQ9	1,000	860	150
	MQ9 (rep)	1,600	1,400	150
August	MQ1	2,300	2,100	200
	MQ4	1,100	970	160
	MQ9	710	590	120
September	MQ1	1,400	1,100	270
	MQ4	1,500	1,200	290
	MQ9	1,000	690	300

Table 1-15
Phytoplankton Abundance (cells/mL) in the Quinsam Lakes System, 2008

Date	Sampling Site	Total Abundance	< 5mm (1,000X)	5 to 25 mm (400X)	>25 mm (100X)	> 25 µm (100X)
April	LL1	2,500	2,070	360	13	30
	LL4	3,100	2,500	540	22	50
	LL9	1,300	1,030	240	6.4	20
May	LL1	3,100	2,840	220	36	20
	LL4	5,300	4,820	430	37	25
	LL9	1,300	1,030	260	11	20
June	LL1	1,000	880	110	40	1
	LL4	960	730	220		8
	LL9 (rep)	1,500	1,060	380*	40	16*
	LL9	1,200	780	380*	10	7*
July	LL1	1,000	970	80	2.1	1
	LL4	1,400	1,300	110	7.8	17
	LL9	2,000	1,500	370	4.2	110
August	LL1	1,100	1,000	50	5.6	1
	LL4	1,400	1,300	50	5.8	11
	LL9	1,100	1,060	40	2.8	9
September	LL1	2,100	1,730	420**	16	2**
	LL4	2,300	1,780	490**	13	3**
	LL9	2,900	2,250	690**	4.4	6**
April	MQ1	2,100	1,850	200	2.8	1
	MQ4	1,700	1,530	200	5.8	3
	MQ9	2,800	2410	400	5	4
May	MQ1	1,000	870	130	2.1	1
	MQ4	1,700	1460	230	1.2	2
	MQ9	1,200	1,000	180	2.7	2
June	MQ1	840	700	140	2.9	0.4
	MQ4	1,300	1,040	240	2.1	1
	MQ9	870	580	280	5.8	0.5
July	MQ1	620	520	90	180	8
	MQ4	500	370	130	7.4	8
	MQ9	870	680	180	3.3	0.5
	MQ9 (rep)	1,000	760	260	0.8	9
August	MQ1	750	660	100	5.8	1
	MQ4	980	860	110	14	6
	MQ9	1,300	990	290		5
September	MQ1	1,500	1,310	160		14
	MQ4	1,100	980	150		3
	MQ9	2,800	2,680	130		10

NOTES:
* *Synedra radians* (diatom) counted at 400X rather than 100X, due to high numbers
** *Asterionella formosa* (diatom) counted at 400X rather than 100X, due to high numbers

Table 1-16 Phytoplankton Abundance (cells/mL) in the Quinsam Lakes System, 2009

Date	Sampling Site	Total Abundance	< 5mm (1,000X)	5 to 25 µm (400X)	> 25 µm (100X)
April	LL1	780	480	300	6
	LL4	1,600	1,220	340	4
	LL9	90	60	30	1
May	LL1	6,000	5,150	820	19
	LL4	4,900	4,100	760	10
	LL9	430	290	140	5
June	LL1	1,700	1,370	370	5
	LL4	1,400	1,030	360	12
	LL9	680	340	330	6
July	LL1	2,100	1,900	270	3
	LL4	2,700	2,400	330	4
	LL9	700	340	350	4
August	LL1	3,100	2,900	170	3
	LL4	2,400	2,200	190	15
	LL9	1,700	1,300	370	10
September	LL1	3,700	3,500	220	5
	LL4	2,300	2,100	180	3
	LL9	1,100	950	170	1
April	MQ1	1,400	1,130	250	33
	MQ4	1,300	1,170	160	12
	MQ9	2,300	2,730	520	13
May	MQ1	1,700	1,440	260	3
	MQ4	2,100	1,750	340	5
	MQ9	3,800	3,060	720	18
June	MQ1	1,500	1,360	160	0.1
	MQ4	1,100	990	150	0.2
	MQ9	1,100	940	200	0.8
July	MQ1	1,000	790	190	4
	MQ4	1,300	1,100	220	8
	MQ9	1,200	940	240	5
August	MQ1	610	450	160	0.3
	MQ4	1,300	1,170	170	3
	MQ9	1,600	1,200	390	0.4
September	MQ1	830	670	160	5
	MQ4	1,200	970	170	6
	MQ9	1,400	1,200	240	1

Table 1-17 Phytoplankton Abundance (cells/mL) in the Quinsam Lakes System, 2010

Date	Sampling Site	Total Abundance	< 5mm (1,000X)	5 to 25 µm (400X)	> 25 µm (100X)
April	LL1	630	490	140	1.6
	LL4	1,900	1,500	390	3
	LL9	170	100	70	0.4
May	LL1	1,200	940	270	13.4
	LL4	4,500	3,800	650	17
	LL9	530	390	140	0.9
June	LL1	2,400	1,900	500	5.2
	LL4	3,600	3,000	610	11
	LL9	1,500	1,100	400	10.6
July	LL1	2,100	1,900	170	8.7
	LL1 (rep)	1,900	1,700	180	5
	LL4	3,000	2,800	250	2
	LL9	1,900	1,700	210*	0
August	LL1	1,200	990	180	1.5
	LL4	1,600	1,400	190	1
	LL4 (rep)	1,600	1,400	180	2
	LL9	1,800	1,600	170	0
September	LL1	2,100	1,800	260	15.1
	LL4	4,400	4,200	200	5
	LL9	1,200	1,100	130	0.4
April	MQ1	1,700	1,600	100	0.4
	MQ4	1,200	1,100	120	1
	MQ9	800	710	90	2.4
May	MQ1	1,100	990	120	0.9
	MQ4	1,100	960	150	1
	MQ9	1,600	1,330	240	2.9
June	MQ1	2,000	1,700	270	0.9
	MQ4	1,400	1,100	240	1
	MQ9	1,000	850	200	1.1
July	MQ1	1,800	1,500	250	8.7
	MQ1 (rep)	1,400	1,300	170	6
	MQ4	1,500	1,300	180	10
	MQ9	1,600	1,400	180	4
August	MQ1	1,400	1,200	140	7.2
	MQ4	1,000	870	160	5
	MQ4 (rep)	1,100	900	150	5
	MQ9	1,200	1,000	150	8
September	MQ1	1,300	1,000	260	1.3
	MQ4	1,300	1,040	220	3
	MQ9	1,100	900	190	1.7

Table 1-18 Phytoplankton Abundance (cells/mL) in the Quinsam Lakes System, 2011

Date	Sampling Site	Total Abundance	< 5mm (1,000X)	5 to 25 µm (400X)	> 25 µm (100X)
April	LL1	1,700	1,400	220	52
	LL4	3,900	3,260	540	80
	LL9	2,200	1,820	340	9
May	LL1	3,600	2,880	720	6
	LL1 (rep)	3,500	2,790	690	6
	LL4	4,900	4,160	700	6
	LL9	1,300	900	350	5
June	LL1	2,100	1,750	330	36
	LL4	2,300	2,050	290	3
	LL9	1,500	1,060	450	4
July	LL1	1,400	1,150	270	3
	LL4	1,800	1,440	350	1
	LL4 (rep)	1,900	1,600	300	0.1
	LL9	1,900	1,550	320	2
August	LL1	2,900	2,500	360	15
	LL4	1,800	1,400	320	27
	LL9	1,500	1,200	280	0.9
September	LL1	1,300	940	380	2.2
	LL4	1,800	1,500	380	0.4
	LL9	960	770	190	0.3
April	MQ1	1,600	1,370	270	7
	MQ4	1,400	1,160	270	6
	MQ9	1,900	1,400	490	3
May	MQ1	1,200	1,050	190	2
	MQ1 (rep)	1,200	1,040	170	3
	MQ4	1,800	1,370	410	4
	MQ9	1,600	670	920	4
June	MQ1	2,000	1,840	150	1
	MQ4	1,500	1,300	200	1
	MQ9	1,700	1,200	520	10
July	MQ1	2,200	2,100	110	0.4
	MQ4	1,600	1,330	230	3
	MQ9	1,000	770	200	1
	MQ9(rep)	1,100	860	200	1
August	MQ1	1,400	1,200	210	4
	MQ4	3,300	3,000	280	0.6
	MQ9	1,200	1,000	200	0.1
September	MQ1	2,300	2,100	190	17.2
	MQ4	2,600	2,400	190	0.2
	MQ9	1,600	1,400	240	9.6

Table 1-19 Phytoplankton Abundance (cells/mL) in the Quinsam Lakes System, 2012

Date	Sampling Site	Total Abundance	< 5mm (1,000X)	5 to 25 µm (400X)	> 25 µm (100X)
April	LL1	2,300	1,980	330	5
	LL4	3,200	2,570	590	6
	LL9	1,000	800	190	6
May	LL1	3,000	2,470	470	15
	LL4	2,200	1,640	600	7
	LL9	2,300	2,050	280	7
June	LL1	1,400	1,080	310	3
	LL4	1,700	1,400	320	2
	LL9	980	810	170	2
	LL9 (rep)	1,200	1,020	140	1
July	LL1	1,600	1,390	170	3
	LL4	Sample lost in transit (broken bottle)			
	LL9	880	730	150	2
August	LL1	970	740	210	19
	LL1 (rep)	940	760	170	14
	LL4	1,300	990	250	35
	LL9	380	250	130	0.5
September	LL1	Sample unpreserved – no analysis done			
	LL4	2,800	2,350	480	1
	LL9	Sample unpreserved – no analysis done			
April	MQ1	2,200	2,010	200	3
	MQ4	1,700	1,440	220	3
	MQ9	1,600	1,420	180	5
May	MQ1	1,100	990	140	1
	MQ4	830	680	140	0
	MQ9	1,200	1,000	150	0.2
June	MQ1	2,100	1,920	170	0.4
	MQ4	890	740	150	0.3
	MQ9	1,100	910	200	0.4
	MQ9 (rep)	1,100	920	200	0.5
July	MQ1	1,300	1,210	100	0.4
	MQ4	1,100	1,010	90	10
	MQ9	740	640	100	1
August	MQ1	1,030	860	180	0.8
	MQ1 (rep)	920	720	200	0.2
	MQ4	810	660	140	10
	MQ9	430	340	90	1.6
September	MQ1	900	730	170	0.5
	MQ4	760	650	115	2
	MQ9	580	430	160	0.5
June	NNL1	1,600	1,240	320	0.5
	NNL4	1,000	670	370	0.2
	NNL9	840	700	140	1

Table 1-19 Phytoplankton Abundance (cells/mL) in the Quinsam Lakes System, 2012

Date	Sampling Site	Total Abundance	< 5mm (1,000X)	5 to 25 µm (400X)	> 25 µm (100X)
	NNL9 (rep)	880	730	160	0.8

Table 1-19 Phytoplankton Abundance (cells/mL) in the Quinsam Lakes System, 2012

Date	Sampling Site	Total Abundance	< 5mm (1,000X)	5 to 25 µm (400X)	> 25 µm (100X)
July	NNL1	1,300	1,000	260	1.2
	NNL4	1,700	1,390	310	1
	NNL9	820	540	280	0.2
August	NNL1	810	660	150	1.6
	NNL1 (rep)	790	590	200	1
	NNL4	1,800	1,350	440	0.8
	NNL9	730	530	195	0.04
September	NNL1	1,530	1,170	360	1.2
	NNL4	1,260	970	290	2
	NNL9	1,740	1530	220	0.2

Table 1-20 Phytoplankton Abundance (cells/mL) in the Quinsam Lakes System, 2013

Sampling Site	Date	Depth	< 5mm (1,000X)	< 5 µm (1,000X)	5 to 25 µm (400X)	> 25 µm (100X)
Long Lake	April	0.5 m	2,300	1,750	530	10
		1 m	3,000	2,470	570	15
	August	0.5 m	1,300	880	455	2
		1.0 m	1,700	1,170	470	15
	October	0.5 m	1,500	1,150	340	12
		1.0 m	1,900	1440	400	14
Middle Quinsam Lake	April	0.5 m	1,350	1,080	270	2
		1.0 m	1,400	1,150	250	2
	August	0.5 m	1,300	1,045	235	7
		1.0 m	1,300	1,010	325	6
		1.0 m (rep)	1,200	990	230	9
	October	0.5 m	1,800	1,440	350	2
		1.0 m	1,900	1,570	290	2
		1.0 m (rep)	1,600	1,310	300	3
No Name Lake	April	0.5 m	1,300	900	370	45
		1.0 m	1,600	1,150	380	36
	August	0.5 m	1,200	880	440	5
		1.0 m	1,500	1,060	455	6
		1.0 m (rep)	1,700	1,315	470	8
	October	0.5 m	1,800	1,310	460	1
		1.0 m	1,600	1,060	540	1
Lower Quinsam Lake	April	0.5 m	1,800	1,420	406	2
		1 m	950	700	245	2
	August	0.5 m	960	810	150	2
		1.0 m	620	460	160	3
	October	0.5 m	1,300	1,040	200	12
		1.0 m	1,300	1,060	230	4

Table 1-21 Phytoplankton Abundance (cells/mL) in the Quinsam Lakes System, 2014

Sampling Site	Date	Depth	< 5mm (1,000X)	< 5 µm (1,000X)	5 to 25 µm (400X)	> 25 µm (100X)
Long Lake	April	1 m	3100	2665	330	86.6
	July	1 m	1700	1170	490	0.9
	October	1 m	1500	1200	290	18.6
Middle Quinsam Lake	April	1 m	1000	840	155	11.4
		1 m replicate	590	480	100	11.7
	July	1 m	3200	2950	240	0.5
	October	1 m	1700	1400	310	3.2
No Name Lake	April	1 m	1600	1260	290	83
	July	1 m	1300	970	310	2.5
		1 m replicate	1200	830	250	3.1
	October	1 m	1600	1400	200	1.7
		1 m replicate	1500	1200	230	2.2
Lower Quinsam Lake	April	1 m	1600	1400	225	7.6
	July	1 m	1200	1010	210	1.8
	October	1 m	2400	2000	350	66

Table 1-22 Phytoplankton Abundance (cells/mL) in the Quinsam Lakes System, 2015

Lake	Month	Depth (m)	< 5mm (1,000X)	< 5 µm (1,000X)	5 to 25 µm (400X)	> 25 µm (100X)
Long	April	1	3700	3300	400	15
	July	1	1300	1030	260	6.6
	October	1	2100	1800	230	14.6
Middle Quinsam	April	1	1600	1300	300	2.4
	July	1	2900	1060	1850	2.8
	October	1	1150	920	230	0.3
No Name	April	1	1200	870	350	1.1
	July	1	880	610	260	6.6
	October	1	1350	1000	300	4.3
	October replicate	1	1200	920	280	4.5
Lower Quinsam	April	1	2200	1800	350	28
	April replicate	1	2300	1800	520	18
	July	1	3200	580	2630	3.3
	October	1	1500	1100	330	71

Table 1-23 Phytoplankton Abundance (cells/mL) in the Quinsam Lakes System, 2016

Lake	Month	Abundance (cells/mL) at 1 m depth			
		Total	< 5 µm (1,000 X)	5 to 25 µm (400 X)	> 25 µm (100 X)
Long	April	1,500	1,300	240	5.5
Middle Quinsam		1,100	882	240	2.8
No Name		1,100	864	240	1.8
No Name (replicate)		970	792	180	1.8
Lower Quinsam		1,500	1,200	260	5.4
Long	August	1,200	990	140	22
Middle Quinsam		930	810	116	1.5
No Name		1,800	1,200	500	42
No Name (replicate)		1,900	1,280	595	46
Lower Quinsam		2,400	1,850	578	1.4
Long	November	780	640	140	0.5
Middle Quinsam		610	520	90	3
No Name		650	600	50	0.4
Lower Quinsam		300	250	50	0

Table 1-24 Phytoplankton Abundance (cells/mL) in the Quinsam Lakes System, 2017

Lake	Month	Abundance (cells/mL) at 1 m depth			
		Total	< 5 µm (1,000 X)	5 to 25 µm (400 X)	> 25 µm (100 X)
Long	May	2,700	2,400	340	16.2
Middle Quinsam		1,900	1,500	370	15.4
No Name		1,300	1,000	320	7.9
Lower Quinsam		1,700	1,300	390	1.2
Long	Sept.	1,100	940	200	1.5
Middle Quinsam		980	760	220	0.9
No Name		1,400	860	480	29.8
No Name Replicate		1,500	1,000	450	28.1
Lower Quinsam		1,700	990	600	86.6
Long	Oct.	2,000	1,800	190	0.4
Middle Quinsam		860	770	80	7.5
No Name		1,600	1,370	260	1
No Name Replicate		1,800	1,400	390	4.2
Lower Quinsam		1,300	770	530	14.8

Table 1-25 Phytoplankton Abundance (cells/mL) in the Quinsam Lakes System, 2018

Lake	Month	Abundance (cells/mL) at 1 m depth			
		Total	<5 µm (1,000 X)	5 to 25 µm (400 X)	>25 µm (100 X)
Long	May	1,500	1,300	150	3.4
Long—duplicate		1,300	1,100	140	4.8
Middle Quinsam		1,000	920	110	0.4
No Name		1,800	1,500	250	0.1
Lower Quinsam		2,700	2,400	320	0.5
Long	August	1,200	1,100	110	1.7
Middle Quinsam		1,600	1,500	180	0.2
No Name		1,400	1,200	270	2
Lower Quinsam		2,300	680	1,600	13
Lower Quinsam—replicate		3,400	1,100	2,300	6.6
Long	November	9,200	2,500	210	6,500
Middle Quinsam		2,100	1,700	360	0.04
No Name		1,600	1,300	300	0.7
Lower Quinsam		1,800	1,500	230	96

Table 1-26 Phytoplankton Abundance (cells/mL) in the Quinsam Lakes System, 2019

Lake	Month	Abundance (cells/mL) at 1 m depth			
		Total	<5 µm (1,000 X)	5 to 25 µm (400 X)	>25 µm (100 X)
Long	1-May	2,400	1,900	430	1
Long (duplicate)		2,100	1,700	420	1.7
Middle Quinsam	2-May	320	260	60	1.2
No Name	1-May	740	440	300	0.1
Lower Quinsam	2-May	600	500	99	1.2
Long	8-May	2,000	1,700	300	0.5
Middle Quinsam		1,000	920	80	0.4
No Name		2,700	2,100	570	0.03
Lower Quinsam		2,100	1,800	310	11.9
Long	30-Jul	2,600	2,300	220	1.3
Middle Quinsam		1,800	1,600	220	0.7
No Name		2,400	2,100	350	4.9
No Name (duplicate)		2,200	1,800	370	9
Lower Quinsam		1,900	1,500	320	1
Long	Oct. 24	2,400	1,900	450	0.7
Middle Quinsam		1,300	1,100	210	0.04

ATTACHMENT 2

Species Composition Data: May, 2020

Quinsam Lake Phytoplankton - 12 May 2020
Long Lake 1 m (XT5598-06, Job CO32218)
27 ml sample settled

Total Cells Counted	**3,705**
Total Cells Per mL	**3,411**

	Number Counted	Cells per mL
1000X magnification - 25 fields		
CHRYSOPHYCEAE		
Ochromonas/Chromulina spp. (2-3 um)	47	1692
Ochromonas/Chromulina spp. (4-5 um)	15	540
Ochromonas/Chromulina spp. (6-7 um)	1	36
Pseudokephyrion sp.	15	540
TOTAL	**78**	**2,808**
400X magnification - 1 strip		
CHRYSOPHYCEAE		
Dinobryon sp. (cysts)	14	24
Ochromonas spp. (12-15 um)	6	10
Ochromonas spp. (8-10 um)	114	194
BACILLARIOPHYCEAE		
Cyclotella stelligera/ocellata	14	24
CHLOROPHYCEAE		
Gloeocystis sp. (cells + cols)	2	3
Oocystis sp. (cells + cols)	1	2
Nephrocytium sp. (cells)	2	3
CRYPTOPHYCEAE		
Cryptomonas spp.	18	31
Rhodomonas minuta	20	34
CYANOPHYCEAE		
Dactylococcopsis acicularis (cols)	2	3
TOTAL	**193**	**328**
100X magnification - half sample		
CHRYSOPHYCEAE		
Dinobryon bavaricum (575 col, 2820 cells)	2820	225.6
Dinobryon cylindricum (65 cols, 495 cells)	495	39.6
Dinobryon sociale (22 col, 115 cells)	115	9.2
BACILLARIOPHYCEAE		
Synedra radians	3	0.2
CHLOROPHYCEAE		
Elakatothrix gelatinosa (cols)	1	0.1
TOTAL	**3434**	**275**

Quinsam Lake Phytoplankton - 12 May 2020
Middle Quinsam Lake 1 m (5923-02, Job C032271)
27 ml sample settled

Total Cells Counted	**322**
Total Cells Per mL	**1,200**

	Number Counted	Cells per mL
1000X magnification - 50 fields		
CHRYSOPHYCEAE		
Ochromonas/Chromulina spp. (2-3 um)	39	702
Ochromonas/Chromulina spp. (4-5 um)	18	324
Ochromonas/Chromulina spp. (6-7 um)	4	72
Pseudokephyrion sp.	3	54
TOTAL	**64**	**1,152**
400X magnification - 4 strips		
CHRYSOPHYCEAE		
Mallomonas sp.	10	4
Ochromonas spp. (8-10 um)	102	43
BACILLARIOPHYCEAE		
Cyclotella ocellata/stelligera	10	4
CHLOROPHYCEAE		
Oocystis sp. (cells + cols)	3	1
CRYPTOPHYCEAE		
Rhodomonas minuta	14	6
CYANOPHYCEAE		
Dactylococcopsis aciciularis (cols)	14	6
TOTAL	**153**	**65**
100X magnification - whole sample		
CHRYSOPHYCEAE		
Dinobryon bavaricum (10 col, 36 cells)	36	1.4
Dinobryon cylindricum (16 col, 58 cells)	58	2.3
BACILLARIOPHYCEAE		
Cyclotella bodanica	3	0.1
Navicula sp.	1	0.04
Synedra radians	5	0.2
CHLOROPHYCEA		
Mougeotia sp. (1 fil, 2 cells)	2	0.08
TOTAL	**105**	**4.2**

Quinsam Lake Phytoplankton - 12 May 2020
No Name Lake 1 m (XT5591-06, Job C032217)
27 ml sample settled

Total Cells Counted	**836**
Total Cells Per mL	**4,100**

	Number Counted	Cells per mL
1000X magnification - 50 fields		
CHRYSOPHYCEAE		
Ochromonas/Chromulina spp. (2-3 um)	44	792
Ochromonas/Chromulina spp. (4-5 um)	9	162
Ochromonas/Chromulina spp. (6-7 um)	4	72
Pseudokephyrion sp.	3	54
CHLOROPHYCEAE		
Oocystis sp. (5x3 um, cells)	23	414
CYANOPHYCEAE		
Chroococcus sp. (3-5 um)	6	108
TOTAL	**89**	**1602**
400X magnification - half strip		
CHRYSOPHYCEAE		
Dinobryon sp. (cysts)	13	44
Dinobryon bavaricum (1 col, 2 cells)	2	7
Dinobryon cylindricum (214 cols, 661 cells)	661	2247
Mallomonas sp.	2	7
Ochromonas spp. (8-10 um)	23	78
BACILLARIOPHYCEAE		
Melosira italica (cells + fils)	1	3
CHLOROPHYCEAE		
Gloeocystis sp. (cells + cols)	1	3
Nephrocytium sp. (cells+cols)	1	3
CRYPTOPHYCEAE		
Cryptomonas spp.	16	54
Rhodomonas minuta	13	44
CYANOPHYCEAE		
Dactylococcopsis acicularis (cols)	4	14
TOTAL	**737**	**2506**
NOTE DINOBRYON COUNTED AT 400X		
100X magnification - whole sample		
BACILLARIOPHYCEAE		
Asterionella formosa (2 col, 10 cells	10	0.4
TOTAL	**10**	**0.4**

Quinsam Lake Phytoplankton - 13 May 2020
Lower Quinsam Lake 1 m (XT9798-06, Job C033098)
27 ml sample settled

Total Cells Counted	**1490**
Total Cells Per mL	**4,000**

	Number Counted	Cells per mL
1000X magnification - 25 fields		
CHRYSOPHYCEAE		
Ochromonas/Chromulina spp. (2-3 um)	71	2556
Ochromonas/Chromulina spp. (4-5 um)	18	648
Ochromonas/Chromulina spp. (6-7 um)	6	216
Chrysochromulina parva	3	108
TOTAL	**98**	**3528**
400X magnification - 1 strip		
CHRYSOPHYCEAE		
Diceras chodati	1	2
Dinobryon sp. (cells)	5	9
Mallomonas spp.	1	2
Ochromonas spp. (8-10 um)	133	226
BACILLARIOPHYCEAE		
Cyclotella glomerata (cells + cols)	1	2
Rhizosolenia longiseta	1	2
CHLOROPHYCEAE		
Gloeocystis sp. (cells+cols)	2	3
Nephrocytium sp. (cells)	1	2
Tetraedron minimum	2	3
DINOPHYCEAE		
Gymnodinium sp.	1	2
Peridinium sp.	3	5
CRYPTOPHYCEAE		
Cryptomonas spp.	43	73
Rhodomonas minuta	16	27
TOTAL	**210**	**357**
100X magnification - half sample		
CHRYSOPHYCEAE		
Dinobryon bavaricum (10 col, 14 cells)	14	1.1
Dinobryon cylindricum (3 cols, 9 cells)	9	0.7
Dinobryon sociale (46 col, 1145 cells)	1145	91.6
BACILLARIOPHYCEAE		
Asterionella formosa (2 col, 11 cells)	11	0.9
Cyclotella bodanica	1	0.1
Synedra radians	16	1.3
Synedra ulna	1	0.1
Tabellaria fenestrata (1 col, 8 cells)	8	0.6
TOTAL	**1182**	**94.6**

ATTACHMENT 2

Species Composition Data: August, 2020

Quinsam Lake Phytoplankton - 5 August
Long Lake 1 m (YF1143-02, Job CO55058)
27 ml sample settled

Total Cells Counted	**425**
Total Cells Per mL	**2,600**

	Number Counted	Cells per mL
1000X magnification - 25 fields		
CHRYSOPHYCEAE		
Ochromonas/Chromulina spp. (2-3 um)	40	1440
Ochromonas/Chromulina spp. (4-5 um)	21	756
Ochromonas/Chromulina spp. (6-7 um)	2	72
Chrysochromulina parva	4	144
Pseudokephyrion sp.	1	36
TOTAL	**68**	**2,448**
400X magnification - 2 strips		
CHRYSOPHYCEAE		
Diceras chodatii	1	1
Mallomonas spp.	1	1
Ochromonas spp. (8-10 um)	101	86
BACILLARIOPHYCEAE		
Melosira italica	3	3
CHLOROPHYCEAE		
Gloeocystis sp. (cells + cols)	10	9
Oocystis sp. (cells + cols)	2	2
Nephrocytium sp. (cells)	1	1
Tetraedron sp.	1	1
CRYPTOPHYCEAE		
Cryptomonas spp.	14	12
Rhodomonas minuta	58	49
TOTAL	**192**	**163**
100X magnification - half sample		
CHRYSOPHYCEAE		
Dinobryon bavaricum (7 col, 13 cells)	13	1.0
Dinobryon cylindricum (1 col, 5 cells)	5	0.4
BACILLARIOPHYCEAE		
Asterionella formosa (4 col, 21 cells)	21	1.7
Synedra radians	2	0.2
Synedra ulna	2	0.2
CHLOROPHYCEAE		
Elakatothrix gelatinosa (cols)	1	0.1
DINOPHYCEAE		
Ceratium hirudinella	1	0.1
CYANOPHYCEAE		
Chroococcus Prescottii (cols)	120	9.6
TOTAL	**165**	**13**

Quinsam Lake Phytoplankton - 5 August
Middle Quinsam Lake 1 m (YF1076-09, Job CO55047)
27 ml sample settled

Total Cells Counted	**301**
Total Cells Per mL	**1,500**

	Number Counted	Cells per mL
1000X magnification - 50 fields		
CHRYSOPHYCEAE		
Ochromonas/Chromulina spp. (2-3 um)	46	828
Ochromonas/Chromulina spp. (4-5 um)	17	306
Ochromonas/Chromulina spp. (6-7 um)	7	126
Chrysochromulina parva	1	18
Pseudokephyrion sp.	1	18
CHLOROPHYCEAE		
Oocystis sp. (3 X 5 um, cells)	2	36
TOTAL	**72**	**1,296**
400X magnification - 2 strips		
CHRYSOPHYCEAE		
Diceras chodatii	20	17
Dinobryon sp. (cells)	1	1
Mallomonas spp.	2	2
Ochromonas spp. (8-10 um)	91	77
CHLOROPHYCEAE		
Dictyosphaerium pulchellum (cols)	16	14
Nephrocytium sp. (cells)	2	2
Oocystis sp. (cells + cols)	6	5
Tetraedron minimum	1	1
CRYPTOPHYCEAE		
Cryptomonas spp.	39	33
Rhodomonas minuta	41	35
TOTAL	**219**	**186**
100X magnification - whole sample		
BACILLARIOPHYCEAE		
Cyclotella bodanica	1	0.04
Synedra radians	2	0.1
CHLOROPHYCEA		
Botryococcus braunii (cols)	1	0.04
Cosmarium sp.	2	0.1
CYANOPHYCEAE		
Aphanocapsa sp. (cols)	2	0.1
Chroococcus Prescottii (cols)	1	0.04
Oscillatoria sp. (5 um x 100 um filament)	1	0.04
TOTAL	**10**	**0.4**

Quinsam Lake Phytoplankton - 5 August
Middle Quinsam Lake 1 m (YF1074-02, Job CO55047)
27 ml sample settled

Total Cells Counted	**314**
Total Cells Per mL	**1,400**

	Number Counted	Cells per mL
1000X magnification - 50 fields		
CHRYSOPHYCEAE		
Ochromonas/Chromulina spp. (2-3 um)	39	702
Ochromonas/Chromulina spp. (4-5 um)	23	414
Ochromonas/Chromulina spp. (6-7 um)	5	90
Chrysochromulina parva	1	18
CHLOROPHYCEAE		
Oocystis sp. (3 X 5 um, cells)	4	72
TOTAL	**68**	**1,224**
400X magnification - 2 strips		
CHRYSOPHYCEAE		
Diceras chodatii	11	9
Ochromonas spp. (8-10 um)	101	86
BACILLARIOPHYCEAE		
Cyclotella stelligera/ocellata	4	3
CHLOROPHYCEAE		
Crucigenia sp. (col)	1	1
Dictyosphaerium pulchellum (cols)	22	19
Gloeocystis sp. (cols)	1	1
Nephrocytium sp. (cells)	2	2
Oocystis sp. (cells + cols)	4	3
DINOPHYCEAE		0
Peridinium sp.	2	2
CRYPTOPHYCEAE		
Cryptomonas spp.	51	43
Rhodomonas minuta	33	28
CYANOPHYCEAE		
Dactylococcus acicularis (cols)	2	2
TOTAL	**234**	**199**
100X magnification - whole sample		
CHRYSOPHYCEAE		
Dinobryon cylindricum (1 col, 3 cells)	3	0.12
BACILLARIOPHYCEAE		
Synedra radians	3	0.1
Synedra ulna	1	0.04
CHLOROPHYCEA		
Cosmarium sp.	2	0.1
CYANOPHYCEAE		
Aphanocapsa sp. (cols)	1	0.04
Chroococcus Prescottii (cols)	2	0.08
TOTAL	**12**	**0.5**

ATTACHMENT 2

Species Composition Data: October, 2020

Quinsam Lake Phytoplankton - 7 October, 2020
Long Lake 1 m (YP8160-08, Job C074150)
27 ml sample settled

Total Cells Counted	**381**
Total Cells Per mL	**3,200**

	Number Counted	Cells per mL
1000X magnification - 25 fields		
CHRYSOPHYCEAE		
Ochromonas/Chromulina spp. (2-A13 um)	40	1440
Ochromonas/Chromulina spp. (4-5 um)	24	864
Ochromonas/Chromulina spp. (6-7 um)	8	288
Chrysochromulina parva	10	360
TOTAL	**82**	**2,952**
400X magnification - 2 strips		
CHRYSOPHYCEAE		
Ochromonas spp. (8-10 um)	155	132
CHLOROPHYCEAE		
Gloeocystis sp. (cells + cols)	7	6
Oocystis sp. (cells + cols)	2	2
Nephrocytium sp. (cells)	2	2
Scenedesmus sp. (cols)	1	1
DINOPHYCEAE		
Peridinium sp.	4	3
CRYPTOPHYCEAE		
Cryptomonas spp.	27	23
Rhodomonas minuta	34	29
CYANOPHYCEAE		
Dactylococcus acicularis (cols)	2	2
TOTAL	**234**	**199**
100X magnification - whole sample		
CHRYSOPHYCEAE		
Dinobryon cylindricum (1 col, 9 cells)	9	0.4
BACILLARIOPHYCEAE		
Asterionella formosa (6 col, 25 cells)	25	1.0
DINOPHYCEAE		
Ceratium hirudinella	31	1.2
TOTAL	**65**	**2.6**

Quinsam Lake Phytoplankton - 7 October, 2020
Long Lake 1 m Replicate (YP8161-02, Job C074150)
27 ml sample settled

Total Cells Counted	**356**
Total Cells Per mL	**3,000**

	Number Counted	Cells per mL
1000X magnification - 25 fields		
CHRYSOPHYCEAE		
Ochromonas/Chromulina spp. (2-3 um)	41	1476
Ochromonas/Chromulina spp. (4-5 um)	20	720
Ochromonas/Chromulina spp. (6-7 um)	7	252
Chrysochromulina parva	9	324
TOTAL	**77**	**2,772**
400X magnification - 2 strips		
CHRYSOPHYCEAE		
Ochromonas spp. (8-10 um)	152	129
CHLOROPHYCEAE		
Crucigenia sp. (cols)	1	1
Gloeocystis sp. (cells + cols)	7	6
Oocystis sp. (cells + cols)	4	3
Nephrocytium sp. (cells)	3	3
Scenedesmus sp. (cols)	1	1
DINOPHYCEAE		
Peridinium sp.	3	3
CRYPTOPHYCEAE		
Cryptomonas spp.	12	10
Rhodomonas minuta	51	43
CYANOPHYCEAE		
Dactylococcus acicularis (cols)	4	3
TOTAL	**238**	**202**
100X magnification - whole sample		
CHRYSOPHYCEAE		
Dinobryon cylindricum (1 col, 6 cells)	6	0.2
BACILLARIOPHYCEAE		
Asterionella formosa (5 col, 14 cells)	14	0.6
CHLOROPHYCEAE		
Mougeotia sp. (1 fil, 3 cells)	3	0.1
DINOPHYCEAE		
Ceratium hirudinella	18	0.7
TOTAL	**41**	**1.6**

Quinsam Lake Phytoplankton - 7 October, 2020
Middle Quinsam Lake 1 m (YP8152-08, Job C074148)
27 ml sample settled

Total Cells Counted	**417**
Total Cells Per mL	**3,000**

	Number Counted	Cells per mL
1000X magnification - 25 fields		
CHRYSOPHYCEAE		
Ochromonas/Chromulina spp. (2-3 um)	47	1692
Ochromonas/Chromulina spp. (4-5 um)	22	792
Ochromonas/Chromulina spp. (6-7 um)	5	180
Chrysochromulina parva	1	36
Pseudokephyrion sp.	1	36
TOTAL	**76**	**2,736**
400X magnification - 2 strips		
CHRYSOPHYCEAE		
Diceras chodatii	1	1
Mallomonas spp.	8	7
Ochromonas spp. (8-10 um)	147	125
CHLOROPHYCEAE		
Gloeocystis sp. (cols + cells)	21	18
DINOPHYCEAE		
Gymnodinium sp.	1	3
Peridinium sp.	5	3
CRYPTOPHYCEAE		
Cryptomonas spp.	41	35
Rhodomonas minuta	62	53
CYANOPHYCEAE		
Dactylococcus acicularis (cols)	1	1
TOTAL	**287**	**245**
100X magnification - whole sample		
CHRYSOPHYCEAE		
Dinobryon cylindricum (3 col, 51 cells)	51	2.0
BACILLARIOPHYCEAE		
Synedra radians	1	0.04
CHLOROPHYCEA		
Botryococcus braunii (cols)	1	0.04
Staurastrum sp	1	0.04
TOTAL	**54**	**2.2**

Spring 2020 Taxa and Abundance of Zooplankton Samples					
level of id. : lowest/lowest					
Site Name		LLM	MQL	NNL	LQL
FES Sample Number		**200018**	**200019**	**200020**	**200021**
Sampling Date(s)		May 12, 2020	May 12, 2020	May 12, 2020	May 13, 2020
units = total organisms/sample					
	stage				
Sub-class : Copepoda					
Order : Cyclopoida					
Cryptocyclops bicolor	adult	25	6		54
Diacyclops thomasi	adult	102	25	75	27
Microcyclops varicans	adult	101	12	336	54
Orthocyclops modestus	adult				27
Tropocyclops prasinus	adult			75	
UID	copepodid	280	31	118	459
Order : Calanoida					
Family : Diaptomidae					
Hesperodiaptomus novemde	adult		6	14	
Skistodiaptomus oregonensis	adult	9	6	102	15
UID	copepodid		14	333	16
UID Calanoida / Cyclopoida	nauplii	1,208	925	389	817
Order : Cladocera					
Bosmina longirostris	adult	404	14	225	26
Bosmina longirostris	juvenile	232	29	118	47
Daphnia ambigua	adult	39	2	261	3
Daphnia longiremis	adult			26	5
Daphnia rosea	adult		356	58	22
Daphnia sp.	juvenile		136	138	21
Holopedium gibberum	adult			461	12
Holopedium gibberum	juvenile			128	17
Polyphemus pediculus	adult		5		
Phylum : Rotifera					
Asplanchna sp.		542	2		22
Conochilus sp.	colonies	4		51	88
Kellicottia longispina		619	57	348	17
Keratella cochlearis		6,880	72	10	127
Keratella quadrata		88	5		
Polyarthra sp.		4,558		210	127
UID					
TOTAL		**15,091**	**1,703**	**3,476**	**2,003**
UID = unidentified due to lack of size and/or missing morphological characters.					

Summer 2020 Taxa and Abundance of Zooplankton Samples

level of id. : lowest/lowest				
Site Name		LLM	MQL	MQL Replicate
FES Sample Number		**200024**	**200025**	**200026**
Sampling Date(s)		August 5, 2020	August 5, 2020	August 5, 2020
units = total organisms/sample				
	stage			
Sub-class : Copepoda				
Order : Cyclopoida				
Cryptocyclops bicolor	adult	16	41	46
Diacyclops thomasi	adult	62	8	7
Microcyclops varicans	adult	31		
UID	copepodid	244	55	41
Order : Calanoida				
Family : Diaptomidae				
Hesperodiaptomus novemdecimus	adult		10	15
Skistodiaptomus oregonensis	adult	104	178	144
UID	copepodid	40	29	26
UID Calanoida / Cyclopoida	nauplii	1,458	486	278
Order : Cladocera				
Bosmina longirostris	adult	45	10	5
Bosmina longirostris	juvenile	5		
Daphnia ambigua	adult	60	133	139
Daphnia longiremis	adult	253		
Daphnia rosea	adult	1,204	964	1,189
Daphnia sp.	juvenile	20	94	67
Diaphanosoma brachyurum	adult	60	16	10
Holopedium gibberum	adult		6	10
Polyphemus pediculus	adult	15		
Sida crystallina	adult	5		
Phylum : Rotifera				
Asplanchna sp.		288		
Conochilus sp. [1]	cells		509	211
Kellicottia longispina		96	19	36
Keratella cochlearis		787	6	31
Keratella quadrata		96		
Polyarthra sp.		19	175	191
UID		19	3	
Benthic				
Group : Hydracarina			3	5
TOTAL		4,927	2,745	2,451

UID = unidentified due to lack of size and/or missing morphological characters.

[1] : Note : The solitary *Conochilus* (individual counts) versus colony counts distort the total counts per sample. The number of individual *Conochilus* in a colony can average between 25-90 individuals.

Fall 2020 Taxa and Abundance of Zooplankton Samples

level of id. : lowest/lowest

EMS ID:		**E206619**	**E206619**	**E206618**
Site Name		**Long Lake**	**Long Lake Replicate**	**Middle Quinsam Lake**
FES Sample Number		200029	200030	200031
Sampling Date(s)		Oct. 7,2020-M	Oct. 7,2020-R	Oct. 7,2020-M
units = total organisms/sample				
	stage			
Sub-class : Copepoda				
Order : Cyclopoida				
Cryptocyclops bicolor	adult		28	11
Microcyclops varicans	adult	`	9	
UID	copepodid	35	29	
Order : Calanoida				
Family : Diaptomidae				
Skistodiaptomus oregonensis	adult	37	37	42
UID	copepodid	2		18
UID Calanoida / Cyclopoida	nauplii	57	66	60
Order : Cladocera				
Bosmina longirostris	adult		2	32
Daphnia longiremis	adult	68	66	5
Daphnia rosea	adult	37	33	103
Daphnia sp.	juvenile			39
Diaphanosoma brachyurum	adult	4		42
Polyphemus pediculus	adult			3
Phylum : Rotifera				
Asplanchna sp.		25	37	
Conochilus sp.	colonies			3
Conochilus sp.	solitary			55
Kellicottia longispina		343	211	97
Keratella cochlearis		365	440	5
Keratella quadrata		169	42	32
Polyarthra sp.		22	22	132
UID		7	4	16
TOTAL		**1,219**	**1,026**	**695**

UID = unidentified due to lack of size and/or missing morphological characters.

Appendix V

Report Date:January 12, 2021 File:UA#71895

Report Number:163034

REGISTERED MAIL

Quinsam Coal Corporation

PO Box 5000
Campbell River, BC V9W 5C5

Dear Quinsam Coal Corporation

Re: Notice Letter, Permit 7008, UA#71895, Underground Coal Mining Coal Mine, Near Quinsam BC

On December 23, 2020, Ministry of Environment and Climate Change Strategy, Environmental Protection Division staff conducted an inspection of your facility, Quinsam Coal Corporation located at 5800 Argounaut Main, CR, BC, (West on Hwy 28) Underground Coal Mining Coal Mine with authorization number UA#71895 under the *Environmental Management Act*.

Inspection Details:

On December 23, 2020 Ministry of Environment and Climate Change Strategy (Ministry) Officer Jason Lasuik completed a file review of the Quinsam Coal Mine site located at 5800 Argonaut Main, Campbell River, BC, to verify compliance with the *Environmental Management Ac*t. This inspection was conducted in follow-up to Inspection Report (IR) 71895, which resulted in a warning for an unauthorized discharge. This inspection included a review of the following documents:

- Quinsam Coal Annual Water Quality Report 2019 - 2020;
- 2020 Q4 (January - March) Water Quality Monitoring Report;
- Quinsam Coal Corporation Quarterly Report (April -June 2020);
- Quinsam Coal Corporation Quarterly Report (July -September 2020);
- Letter dated December 1, 2010 Re Mitigation of the Long Lake Seep;
- Request for Authorization to Bypass Works - Section 3.1 of PE-7008, dated 2014-07-21; 2014-08-26; 2015-08-25; 2016-08-24; 2017-08-25;
- Inspection Report 106411 issued on November 05, 2018 and Inspection Report 39588 issued on September 19, 2019;
- Long Lake Seep as an Authorized Discharge Point & Long Lake Seep Passive Treatment System Overview;
- Long Term Plan, dated November 30, 2017;and
- all correspondence on file for 2019 to 2020.

Requirement Description:	**Environmental Management Act, Environmental Management Act** 6 (2): Subject to subsection (5), a person must not introduce or cause or allow waste to be introduced into the environment in the course of conducting a prescribed industry, trade or business.

Ministry of Environment and Climate Change Strategy

Compliance
Environmental Protection Division

Mailing Address:
102 Industrial Pl
Penticton BC V2A 7C8

Telephone: 250 490 8200
Facsimile: 250 490 2231
Website: www.gov.bc.ca/env

Details/Findings:	On September 17, 2018 Inspection Report (IR) 71895 determined that the Long Lake Seep (LLS) and Long Lake Middle Seep (LLMS), associated with the 2-South underground workings, were discharging untreated effluent to Long Lake, and that this was an unauthorized discharge. Upon review of the current and historical site activities including previous inspection reports, the Ministry determined that the discharge of untreated effluent from the LLS and LLMS to Long Lake is an unauthorized bypass of the Long Lake Seep Treatment. As a result, this non-compliance has been addressed under section 3.10 (Bypasses) of Quinsam Coal Permit 7008 in IR 159669.
Compliance:	Not Applicable
Actions to be taken:	Refer to section 3.10 in IR 159669.

Compliance History:
Other UA#71895 2017-09-19 IR 71895 Warning Unauthorized 6(2): Environmental Management Act 6 (2)

The Ministry of Environment Compliance and Enforcement Policy and Procedure (C&E Policy) prescribes common requirements and procedures for all Ministry staff to ensure consistent and risk-based assessment and response to non-compliance. Using the Non-Compliance Decision Matrix, the compliance determination for this inspection has been assessed as Level 0, Category 0, Notice.

More information about Environmental Compliance, the Non-Compliance Decision Matrix, and reporting and data submission requirements can be found at the links below:
General compliance information:
www.gov.bc.ca/environmentalcompliance
Non-Compliance Decision Matrix information:
www.gov.bc.ca/environment/how-compliance-is-assessed
Reporting and data submission requirements (to be sent to EnvAuthorizationsReporting@gov.bc.ca):
www.gov.bc.ca/submit-waste-authorization-reports

Please be advised that this inspection report may be published on the provincial government website within 7 days.

If you have any questions about this letter, please contact the undersigned.

Yours truly,

Jason Lasuik
Environmental Protection Officer

cc:

Attachments:

Deliver via:

Email: [X] **Fax:** [ ] **Mail:** [ ]
Registered Mail: [X] **Hand Delivery:** [ ]

Ministry of Environment and Climate Change Strategy

Compliance
Environmental Protection Division

Mailing Address:
102 Industrial Pl
Penticton BC V2A 7C8

Telephone: 250 490 8200
Facsimile: 250 490 2231
Website: www.gov.bc.ca/env

DISCLAIMER:
Please note that sections of the permit, regulation or code of practice referenced in this inspection record are for guidance and are not the official version. Please refer to the original permit, regulation or code of practice.

To see the most up to date version of the regulations and codes of practices please visit
http://www.bclaws.ca

If you require a copy of the original permit, please contact the inspector noted on this inspection record.

It is also important to note that this inspection record does not necessarily reflect each requirement or condition of the authorization therefore compliance is noted only for the requirements or conditions listed in the inspection record.

Report Date:January 18, 2021 File:7008

Report Number:159669R

REGISTERED MAIL

QUINSAM COAL CORPORATION

950-1090 West Georgia Street
Vancouver BC V6E 3V7

Dear QUINSAM COAL CORPORATION

Re: Warning Letter, Permit 7008

On October 20, 2020, Ministry of Environment, Environmental Protection Division staff conducted an inspection under *Environmental Management Act (EMA)*, 7008. The inspection determined that QUINSAM COAL CORPORATION is out of compliance with its Permit 7008, and the section(s) listed below. This Warning Letter lists the compliance verification information contained below.

Failure to comply with the requirements set out in your Permit is an offence under the *Environmental Management Act (EMA)*. Section 120(6) of *EMA* states as follows:

> *120(6) A person who, holding a permit or approval issued to the person under this Act to introduce waste into the environment, introduces waste into the environment without having complied with the requirements of the permit or approval commits an offence and is liable on conviction to a fine not exceeding $1 000 000 or imprisonment for not more than 6 months, or both.*

It should also be noted that, as an alternative to prosecution of the offence referenced above, the Ministry may initiate action to impose an administrative penalty against QUINSAM COAL CORPORATION. *The Administrative Penalties Regulation (EMA)* (B.C. Reg. 133/2014) (APR) was brought into force in 2014. The APR describes the prescribed provisions of the EMA as well as that of specified regulations under which administrative penalties can be assigned. Section 12(5) of the APR states as follows:

> *12(5) A person who fails to comply with a requirement of a permit or approval issued or given under the Act is liable to an administrative penalty not exceeding $40 000, unless the requirement the person failed to comply with is also a prescribed provision of the EMA or the regulations that is subject to a different maximum administrative penalty.*

I request that QUINSAM COAL CORPORATION immediately implement the necessary changes or modifications to correct the non-compliance(s) listed above with the *Environmental Management Act*. Further, I request that QUINSAM COAL CORPORATION notify this office in writing, by email or letter within 30 days of this letter, advising what corrective measures have been taken, and what else is being done, to prevent similar non-compliances in the future.

Please submit your response to the Ministry's Compliance Mailbox at EnvironmentalCompliance@gov.bc.ca.

As a result of this Warning, this authorization will be prioritized for follow-up inspection. The corrective measures will be reviewed by an Officer as part of the next inspection.

Finally, if you fail to take the necessary actions to restore compliance, you may be subject to escalating enforcement action. This Warning Letter and the alleged violations and circumstances to which it refers, will form part of the compliance history of QUINSAM COAL CORPORATION and will be taken into account in the event of future violations.

Inspection Details:

Ministry of Environment and Climate Change Strategy

Compliance
Environmental Protection Division

Mailing Address:
102 Industrial Pl
Penticton BC V2A 7C8

Telephone: 250 490 8200
Facsimile: 250 490 2231
Website: www.gov.bc.ca/env

On October 20, 2020 Ministry of Environment and Climate Change Strategy (Ministry) Officer Jason Lasuik conducted an onsite inspection of the Quinsam Coal Mine site located at 5800 Argonaut Main, Campbell River, BC to verify compliance with Environmental Management Act, Permit 7008 (Permit). The Permit authorizes the discharge of effluent to the environment, subject to the terms and conditions of the Permit. The Permit was issued on December 23,1987 and most recently amended on November 1, 2019. The period for this inspection is September 20, 2019 to October 20, 2020 (inspection period). It is acknowledged that part of this inspection period precedes the most recent Permit amendment, any changes have been addressed in findings for each Permit section, and all data has been reviewed against the Permit version relevant for the inspection period. This inspection included a review of the following documents:

- Quinsam Coal Annual Water Quality Report 2019 - 2020;
- 2020 Q4 (January - March) Water Quality Monitoring Report (2019 Q4 Report);
- Quinsam Coal Corporation Quarterly Report (April -June 2020) (2020 Q1 Report);
- Quinsam Coal Corporation Quarterly Report (July -September 2020) (2020 Q2 Report); 2019 Environmental Procedures Manual, dated March 31 2020 (EPM);
- Request for Authorization to Bypass Works - Section 3.1 of PE-7008, dated 2014-07-21; 2014-08-26; 2015-08-25; 2016-08-24; 2017-08-25;Long Lake Seep as an Authorized Discharge Point & Long Lake Seep Passive Treatment System Overview and Long Term Plan, dated November 30, 2017
- Request for Authorization to Bypass Works - Section 3.1 of PE-7008, dated 2014-07-21; 2014-08-26; 2015-08-25; 2016-08-24; 2017-08-25;Long Lake Seep as an Authorized Discharge Point & Long Lake Seep Passive Treatment
- System Overview and Long-Term Plan, dated November 30, 2017;
- all correspondence on file for 2019 to 2020.

Requirement Description:	**1. AUTHORISED DISCHARGES, 1.1, 1.1.1** 1.1.1: This subsection applies to the discharge of effluent from the NORTH COAL MINING OPERATION AND COAL PREPARATION PLANT as shown on attached Site Plan A. The site reference number for this discharge is E207409. 1.1.1 The maximum and average authorised rates of discharge are 0.32 m3/s and 0.08 m3/s respectively. The authorised discharge period is 365 d/a.

Details/Findings:	In the Annual Report Table 27 and Table 28 in the 2019-2020 Annual Report present the peak flow as 0.2380 m3/s on February 01, 2019. A review of Q1 2020 (Table 24) and Q2 2020 (Table 21) reports the discharge is below 0.32 m3/s for this inspection period. As reported in the executive summary of the 2019 -2020 Annual Report, and in Section 6.1.1 the annual average rate of discharge for E207409 (settling pond #4) was 0.09209 m3/s. The following is reported in Section 6.1.1: " The annual average flow rate exceeded the permissible value due to elevated discharge rates at SP4 during spring, fall, and winter coinciding with increased (seasonal) precipitation events and continuous pumping to maintain water levels underground in 2-North mine in preparation for mining"... The following monthly averages are reported to be out of compliance with the limit 0.08 m3/s for this inspection period: September 2019- 0.0996 m3/s October 2019 - 0.1077 m3/s November 2019 - 0.1104 m3/s December 2019 - 0.1167 m3/s January 2020 - 0.1304 m3/s February 2020 - 0.1246 m3/s June 2020- 0.1080 m3/s

Compliance:	Out
Requirement Description:	**1. AUTHORISED DISCHARGES, 1.1, 1.1.2** 1.1.2: This subsection applies to the discharge of effluent from the NORTH COAL MINING OPERATION AND COAL PREPARATION PLANT as shown on attached Site Plan A. The site reference number for this discharge is E207409. 1.1.2 The characteristics of the discharge shall not exceed: Parameters: Total Suspended Solids (daily composite), Limit: 25, Unit: mg/L; Total Suspended Solids (hourly composite), Limit: 35, Unit: mg/L; pH, Limit: 6.0 - 8.5, Unit: - ; Ammonia (as N) , Limit: 1.0, Unit: mg/L; Phosphorus (as P) (asterisk - see NOTE 1), Limit: 0.03, Unit: mg/L; NOTE 1: Dissolved; Oil and Grease (total), Limit: 5, Unit: mg/L; Aluminum (asterisk - see NOTE 1), Limit: 0.5, Unit: mg/L; NOTE 1: Dissolved; Copper (asterisk - see NOTE 1), Limit: 0.02, Unit: mg/L; NOTE 1: Dissolved; Iron (asterisk - see NOTE 1), Limit: 0.3, Unit: mg/L; NOTE 1: Dissolved; Lead (asterisk - see NOTE 1), Limit: 0.05, Unit: mg/L; NOTE 1: Dissolved; Zinc (asterisk - see NOTE 1), Limit: 0.1, Unit: mg/L; NOTE 1: Dissolved; Rainbow Trout Bioassay (Oncorhynchus mykiss), Limit: (double asterisk - see NOTE 2), Unit: - ; NOTE 2: No mortalities at 100 percent effluent concentration after 96 hours.
Details/Findings:	Section 8.1.1 of the Annual Report presents all parameters are found within the limits required by this section. The sampling results presented in Appendix I of the 2019 Annual Report, as well as Table 4 of the Q1 2020 Report, and Table 5 of the Q2 2020 Report indicate all samples taken are within the parameters limits.
Compliance:	In
Requirement Description:	**1. AUTHORISED DISCHARGES, 1.2, 1.2.1** 1.2.1: This subsection applies to the discharge of effluent from the SOUTH COAL MINING OPERATION as shown on attached Site Plan B. The site reference number for this discharge is E218582. 1.2.1 The maximum and average authorised rates of discharge are 0.46 m3/s and 0.10 m3/s respectively. The authorised discharge period is 365 d/a.
Details/Findings:	In Table 29 and and Table 30 in the 2019-2020 Annual Report, the largest a maximum flow is reported as 0.3390 m3/s on September 18, 2019 and the largest monthly average as 0.103 m3/s for October 2019. It is also reported in section 6.2.1 of the 2019-2020 Annual Report that the annual maximum flow is .339 m3/s and the annual average flow is .0312 m3/s. A review of the maximum daily flow readings provided in Table 25 of 2020 Q1 and Table 22 of the 2020 Q2 determined that maximum rate of .46 m3/s was not exceeded during this inspection period. Compliance could not be determined for December 6-9, 2019 due to a sensor failure in the continuous flow meter.

Compliance:	Not Determined
Requirement Description:	**1. AUTHORISED DISCHARGES, 1.2, 1.2.2** 1.2.2: This subsection applies to the discharge of effluent from the SOUTH COAL MINING OPERATION as shown on attached Site Plan B. The site reference number for this discharge is E218582. 1.2.2 The characteristics of the discharge shall not exceed: Parameters: Total Suspended Solids (daily composite), Limit: 25, Unit: mg/L; Total Suspended Solids (hourly composite), Limit: 35, Unit: mg/L ; pH, Limit: 6.0 - 8.5, Unit: - ; Ammonia (as N) , Limit: 1.0, Unit: mg/L; Phosphorus (as P) (asterisk - see NOTE 1), Limit: 0.03, Unit: mg/L; NOTE 1: Dissolved; Oil and Grease (total), Limit: less than DL (3 asterisk - See NOTE 3), Unit: mg/L; NOTE 3: less than Detection Limit; Aluminum (asterisk - see NOTE 1), Limit: 0.5, Unit: mg/L; NOTE 1: Dissolved; Copper (asterisk - see NOTE 1), Limit: 0.02, Unit: mg/L; NOTE 1: Dissolved; Iron (asterisk - see NOTE 1), Limit: 0.5, Unit: mg/L; NOTE 1: Dissolved; Lead (asterisk - see NOTE 1), Limit: 0.05, Unit: mg/L; NOTE 1: Dissolved; Zinc (asterisk - see NOTE 1), Limit: 0.2, Unit: mg/L; NOTE 1: Dissolved; Rainbow Trout Bioassay (Oncorhynchus mykiss), Limit: (double asterisk - see NOTE 2), Unit: - ; NOTE 2: No mortalities at 100 percent effluent concentration after 96 hours.
Details/Findings:	As per Table 10 of the 2019-2020 Annual Report the sample for December 04, 2019 has a dissolved iron concentration of 0.517 mg/L. The executive summary of the 2019 -2020 Annual Report and non-compliance report dated January 20, 2020 states the exceedance was "thought to be attributed to a beaver dam obstructing the decant and once the water was released high flow rates and suction around decant caused rapid release of water and turbidity due to the mixing of bottom, iron rich sediment." Also as reported in Section 8.2.1 of the 2019 Annual Report on September 25. 2020 TSS resulted in 27.6 mg/L for the decant -SPD (EMS 218582). This is in exceedance of 25 mg/L and purported to also be due to a beaver dam. The following exceedances occurred during this inspection period: Date Parameter Result 2019-12-04 Dissolved iron 0.517 mg/L 2020-09-25 TSS 27.6 mg/L A review of the 2020 Q1 and 2020 Q2 reports found no further exceedances.
Compliance:	Out
Actions to be taken:	Take appropriate action to mitigate the discharge in order to meet the characteristics outlined in this section.

Requirement Description:	**1. AUTHORISED DISCHARGES, 1.3, 1.3.1** 1.3.1: This subsection applies to the discharge of effluent from the BLOCK 242 COAL MINING OPERATION as shown on attached Site Plan C. The site reference number for this discharge is E225796. 1.3.1 Subject to Subsection 4.4.3 the maximum authorised rate of discharge is 0.0082 m3/s. The authorised discharge period is 365 d/a.
Details/Findings:	There continues to be no mine activity observed in this area. As reported in the 2019 Annual Status Form provided in the 2019-2020 Annual Report no discharge occurred from this site in 2019. An amendment in November 1, 2019 has removed the authorized discharge.
Compliance:	Not Applicable
Requirement Description:	**1. AUTHORISED DISCHARGES, 1.4, 1.4.1** 1.4.1: This subsection applies to the discharge of effluent from the 7 SOUTH MINING OPERATION as shown on attached Site Plan D and E. The site reference number for this discharge is E292069. 1.4.1 The maximum authorized rate of discharge is 0.005 m3/s. The authorized discharge period is 365 d/a.
Details/Findings:	Table 21 in the 2019-2020 Annual Report as well as Table 26 and Table 23 respectively in the 2020 Q1 and 2020 Q2 reports claim there is no discharge during this inspection period. No discharge was observed while on site. Therefore, compliance is not applicable.
Compliance:	Not Applicable
Requirement Description:	**1. AUTHORISED DISCHARGES, 1.4, 1.4.2** 1.4.2: This subsection applies to the discharge of effluent from the 7 SOUTH MINING OPERATION as shown on attached Site Plan D and E. The site reference number for this discharge is E292069. 1.4.2 The characteristics of the discharge shall not exceed: Parameter: Total Suspended Solids (daily composite), Limit: 25, Unit: mg/L; Total Suspended Solids (hourly composite), Limit: 35, Unit: mg/L; pH, Limit: 6.0 - 8.0, Unit: - ; Sulphate (asterisk - see NOTE 1) , Limit: 500, Unit: mg/L; NOTE 1: Dissolved; Aluminum (asterisk - see NOTE 1), Limit: 0.1, Unit: mg/L; NOTE 1: Dissolved; Cadmium (asterisk - see NOTE 1), Limit: 0.000045, Unit: mg/L; NOTE 1: Dissolved; Copper (asterisk - see NOTE 1), Limit: 0.014, Unit: mg/L; NOTE 1: Dissolved; Iron (asterisk - see NOTE 1), Limit: 0.35, Unit: mg/L; NOTE 1: Dissolved; Selenium (asterisk - see NOTE 1), Limit: 0.016, Unit: mg/L; NOTE 1: Dissolved; Rainbow Trout Bioassay (Oncorhynchus mykiss), Limit: (double asterisk - see NOTE 2), Unit: - ; NOTE 2: No mortalities at 100 percent effluent concentration after 96 hours.

Details/Findings:	There is no discharge reported in the 2019 Annual Report, as well as the 2020 Quarter 1 and Quarter 2 reports.
Compliance:	Not Applicable
Requirement Description:	**2. SPECIFIC REQUIREMENTS, 2.1 North Coal Mining and Coal Preparation Plant Operation (Settling Pond #4), 2.1.2 Pumping Rate** 2.1.2: The combined rate at which effluent may be pumped from the 2-North portal sump, 2-North underground workings and the tailings facility to the settling pond shall not exceed 0.32 m3/s unless authorisation has been obtained from the Director. Pumping rates shall be decreased as necessary to accommodate flows as defined in Subsection 2.1.1(a).
Details/Findings:	The combined pumping rates from the 2-North portal sump, 2-North underground workings, and the tailings facility during the inspection period cannot be determined with the information provided.
Compliance:	Not Determined
Requirement Description:	**2. SPECIFIC REQUIREMENTS, 2.1 North Coal Mining and Coal Preparation Plant Operation (Settling Pond #4), 2.1.4 Wash Plant Effluent** 2.1.4: Wash plant effluent shall not be conveyed to the 2-North pit sump via the wash plant ditch. The Permittee shall keep records of the date, duration and estimated volume of any overflow of the wash plant effluent sump. Subject to review of this data, the Director may request changes to the works.

Details/Findings:	It is reported in the 2019 Annual Status Form that all fine tailings are directed to the tailings impoundment or underground 2-North Mine. Upon email communication with Ms. Russel, Environmental Coordinator dated December 17, 2020 it is reported the final coal processing occurred in October 2019 and all tailings were pumped underground 2-north mine. As well, "all PAG-CCR generated from processing this coal was stockpiled on the coal pad and disposed of sub-aqueously underground in 2-Mains, 7-South during November, 2019." Also as communicated by MS. Russell by email on January 13, 2020 "...no wash plant effluent from the processing of raw coal is conveyed down the plant site ditch". Furthermore Ms. Russell claims "The only time the wash plant ditch (plant site collection ditch) is used to convey water is to capture runoff from rain on the coal pad that is directed into the 2-North Portal and WP or when water levels were low in WP for PAG-CCR water cover. The water is pumped from Settling Pond #4 into the freshwater holding tank and conveyed down the plant site collection ditch to WP. Ms. Russel confirms there was no overflow from the plant effluent sump.
Compliance:	In
Requirement Description:	**2. SPECIFIC REQUIREMENTS, 2.1 North Coal Mining and Coal Preparation Plant Operation (Settling Pond #4), 2.1.5 Settling Pond Solids and Storage Volume** 2.1.5: Settled solids which have accumulated in the settling pond shall be removed as required to maintain a minimum water depth below the pond decant of 1.0 m and a minimum water storage volume of 2 300 m3. The removed solids shall be disposed of in a manner approved by the Director.
Details/Findings:	The Annual Status Form states "Settled solids have not accumulated to a point that requires them to be removed at this time." Measurements of water depth and volumes are not provided, therefore this cannot be determined.
Compliance:	Not Determined
Actions to be taken:	Provide measurements of water depth and calculation for water storage volume including any bathymetric surveys for determination if settle solids are required to be removed.

Requirement Description:	**2. SPECIFIC REQUIREMENTS, 2.1 North Coal Mining and Coal Preparation Plant Operation (Settling Pond #4), 2.1.7 Effluent Characteristics (for Total Suspended Solids)** 2.1.7: The characteristics of the effluent with respect to total suspended solids shall be equivalent to or less than the levels specified in Subsection 1.1.2 for discharge rates up to 0.32 m3/s (or as may be redefined by the Director according to Subsection 2.1.1). Variances may be allowed by the Director for higher discharge rates. The Director may as well, in the future, establish a maximum level for total suspended solids during extreme storm events.
Details/Findings:	The Total Suspended Solid results presented in the 2019-2020 Annual Report, 2020 Q1 Report, and 2020 Q2 Report were below the level specified in Subsection 1.1.2: 25 mg/L.
Compliance:	In
Requirement Description:	**2. SPECIFIC REQUIREMENTS, 2.2 South Coal Mining Operation (Settling Pond #1), 2.2.3 Settling Pond Solids and Storage Volume** 2.2.3: Settled solids which have accumulated in the settling pond shall be removed as required to maintain a minimum water depth below the pond decant of 1.0 m and a minimum water storage volume of 1400 m3. The removed solids shall be disposed of in a manner approved by the Director.
Details/Findings:	The Annual Status Form provided in the 2019-2020 Annual Report states "Settled solids have not accumulated to a point that requires them to be removed at this time." Measurements of water depth and volumes are not provided, therefore this cannot be determined.
Compliance:	Not Determined
Actions to be taken:	Provide measurements of water depth and calculation for water storage volume including any bathymetric surveys for determination if settle solids are required to be removed.
Requirement Description:	**2. SPECIFIC REQUIREMENTS, 2.2 South Coal Mining Operation (Settling Pond #1), 2.2.5 Effluent Characteristics (for Total Suspended Solids** 2.2.5: The characteristics of the effluent with respect to total suspended solids shall be equivalent to or less than the levels specified in Subsection 1.2.2 for discharge rates up to 0.46 m3/s (or as may be redefined by the Director according to Section 2.2.1). Variances may be allowed by the Director for higher discharge rates. The Director may as well, in the future, establish a maximum level for total suspended solids during extreme storm events.

Details/Findings:	Table 26 of the 2019-2020 Annual Report presents the daily Total Suspended Solid Results. On September 25, 2019 the TSS concentration was determined to be 27.6 mg/ L. The maximum discharge rate on this day was 0.0610; therefore, the TSS limit was applicable. It is reported in the Annual Status Form of the 2019-2020 Annual Report that this exceedance was due to beaver activity.
Compliance:	Out
Actions to be taken:	Mitigate discharge in order to meet the permit requirements.
Requirement Description:	**2. SPECIFIC REQUIREMENTS, 2.3 Block 242 Coal Mining Operation, 2.3.1 Pumping Rate** 2.3.1: Subject to Subsection 4.4.3 the rate at which effluent may be pumped from the underground sump(s) to the primary settling pond and from the primary settling pond to the secondary settling pond shall not exceed 0.043 m3/s (up to a maximum of 400 m3/d) and 0.0082 m3/s respectively.
Details/Findings:	As reported in the Annual Status Form provided in the 2019-2020 Annual Report, “No discharge occurred from this site during 2019-2020. Site is non-operational and reclaimed.” No discharged was observed during the onsite inspection; therefore, compliance with this requirement was not applicable.
Compliance:	Not Applicable
Requirement Description:	**2. SPECIFIC REQUIREMENTS, 2.4 7 South Mining Operation Settling Pond, 2.4.1 Rate of Discharge** 2.4.1: The maximum flow of 0.005 m3/s is the peak routed outflow from the settling pond resulting from an assumed response of the maximum equivalent catchment area as defined in subsection 2.4.3 to a design 1 in 10-year return period of 24 hour duration. Additional flow from the 7S adit sump pump must not cause the settling pond to overflow or exceed the maximum flow. The Director may from time to time redefine the maximum routed outflow based upon actual on-site measurements.
Details/Findings:	As per section 6.3 and Appendix I, Table 31 and the Q1 Report 2020, and Q2 Report 2020 no discharge occurred during the inspection period for 7 SSD EMS # E29069.

Compliance:	Not Applicable
Requirement Description:	**2. SPECIFIC REQUIREMENTS, 2.4 7 South Mining Operation Settling Pond, 2.4.4 Settling Pond Solids and Storage Volume** 2.4.4: Settled solids which have accumulated in the settling pond shall be removed as required to maintain a minimum water depth below the pond decant of 1.0 m and a minimum water storage volume of 340 m3. The removed solids shall be disposed of in a manner approved by the Director.
Details/Findings:	The Annual Status Form in the 2019-2020 Annual Report states the following: "Settled solids have not accumulated to a point that requires them to be removed at this time." Measurement of water depth and volumes are not provided; therefore this cannot be determined. It is also stated in the Annual Status Form in the 2019-2020 Annual Report “Minimum water cover of 1.0 m is not sustained at all times as water management practices have changed to have minimal water discharged from the pond. Based on experience, it is difficult to maintain a 1.0m cover and discharge at appropriate levels. There has been far less TSS exceedances with the new practice."
Compliance:	Out
Actions to be taken:	Any different practice must meet permit requirements to maintain a water cover of 1.0 m at all times, take action to meet permit requirements prescribed by this section.
Requirement Description:	**2. SPECIFIC REQUIREMENTS, 2.4 7 South Mining Operation Settling Pond, 2.4.5 Discharge Routing** 2.4.5: The discharge from the settling pond shall be conveyed to the Quinsam River via an ephemeral stream (Stream 1) and a wetland (Lower Wetland) adjacent the Quinsam River in a manner acceptable to the Director.
Details/Findings:	As per Table 31 in the 2019-2020 Annual Report and the 2020 Q1 and 2020 Q2 reports no discharge occurred during this inspection period.
Compliance:	Not Applicable

Requirement Description:	**2. SPECIFIC REQUIREMENTS, 2.4 7 South Mining Operation Settling Pond, 2.4.6 Settling Pond Discharge Dilution Rate** 2.4.6: The 7-South settling pond must not discharge unless a minimum flow is measured in Stream 1 (7S monitoring site). The minimum Stream 1 to discharge ratio shall be documented to the satisfaction of the Director in the Environmental Procedures Manual required in Section 3.2.
Details/Findings:	As per Table 31 in the 2019-2020 Annual Report and the 2020 Q1 and 2020 Q2 reports no discharge occurred during this inspection period.
Compliance:	Not Applicable
Requirement Description:	**2. SPECIFIC REQUIREMENTS, 2.4 7 South Mining Operation Settling Pond, 2.4.9 Toxicity Failure Monitoring and Reporting Procedures** 2.4.9.i: In the event of a toxicity test failure, the Permittee must implement the following in addition to the requirements stated in Subsection 3.9.2: i) Failure of the Rainbow Trout Bioassay: the settling pond discharge shall be immediately diverted to the underground workings until such time as a dilution series is completed to determine the dilution ratio which will reduce mortality to less than 50 percent of the test organisms. Upon the determination of an acceptable dilution ratio, the discharge rate may be appropriately adjusted. Failure is defined as the mortality of a minimum of one test organism compared to the test control.
Details/Findings:	As per Table 31 in the 2019-2020 Annual Report and the 2020 Quarter 1 & 2 reports no discharge occurred during this inspection period.
Compliance:	Not Applicable
Requirement Description:	**2. SPECIFIC REQUIREMENTS, 2.4 7 South Mining Operation Settling Pond, 2.4.9 Toxicity Failure Monitoring and Reporting Procedures** 2.4.9.iii: In the event of a toxicity test failure, the Permittee must implement the following in addition to the requirements stated in Subsection 3.9.2: iii) Failure of all toxicity tests: no further discharge would be approved until a plan is approved by the Director.
Details/Findings:	As per Table 31 in the 2019-2020 Annual Report and the 2020 Q1 & Q2 reports no discharge occurred during this inspection period.

Compliance:	Not Applicable
Requirement Description:	**3. GENERAL REQUIREMENTS, 3.2 Environmental Procedures Manual** 3.2: An Environmental Procedures Manual shall be maintained by the Permittee as a working document for use by supervisory personnel and a guide to field staff during various stages of the project. The manual should cover all aspects of onsite environmental management applicable to mine construction and operation including but not limited to, the following items: 1) Land clearing, topsoil stripping and road construction; 2) Construction of water diversion and water collection ditches; 3) Flocculation; 4) Macrophyte growth and harvesting in the ponds, drainage ditches and discharge channels; 5) Acid-base accounting and materials handling; 6) Reclamation activities; 7) Construction of waste dumps; 8) Contingency planning for effluent liming, lake aeration and forest fertilization. 9) Settling pond operation under various flow/discharge conditions for the Block 242 coal mining operation as detailed in the Block 242 Mine Water Management Quinsam Coal Mine, AGRA Earth and Environmental Limited, February 1997; 10) Underground pump operation during extreme rainfall events; 11) Settling pond operation for the 7-South mining operation, including details on the contingency measures. The Permittee shall review the Environmental Procedures Manual at least on an annual basis to determine if any changes are required and submit any revisions to the Director for approval. Annual reviews and submission of revisions are due on March 31 of each year.
Details/Findings:	An updated manual was received on March 24, 2020 and included items required by this section.
Compliance:	In
Requirement Description:	**3. GENERAL REQUIREMENTS, 3.3 Acid Generation Control** 3.3: In order to prevent generation of acid rock drainage and associated environmental problems it is necessary that potentially acid generating materials be identified and be subject to special handling techniques. The frequency of sampling and analysis shall be according to procedures outlined in Mines Act Permit C-172 and the Environmental Procedures Manual. If in the opinion of the Director acid rock generation is developing, the Permittee shall undertake corrective action as outlined in the appropriate section of the Environmental Procedures Manual or take any additional steps which are considered necessary to resolve the problem.
Details/Findings:	It is reported by Ms. Kathleen Russell, Environmental Coordinator in an email date 2019-11-26, that the PAG-CCR stockpile on the local coal pad identified with Inspection Report 139588 issued on October 10, 2019 has been disposed of sub-aqueously underground in 2-Mains, 7-South. Further potential of acid generation materials was not specifically reviewed during the onsite visit and therefore not determined for this inspection period.

Compliance:	Not Determined
Requirement Description:	**3. GENERAL REQUIREMENTS, 3.5 Nutrient Control** 3.5: The mine and coal preparation plant shall be operated such that the discharge of nutrients will not result in excessive algal growth or biomass accumulation which, in turn, could have a negative impact on water quality, fish production, and aesthetic values of Quinsam and Iron River systems. If in the opinion of the Director there is evidence of deterioration in the water quality, which can be attributed to the significant discharge of nutrients from the mine operation, the Permittee may be required to implement any of the mitigative measures outlined in the Environmental Procedures Manual (lake aeration/forest fertilization) or other methods as approved by the Director.
Details/Findings:	No excessive algal growth or biomass accumulation was observed during the onsite inspection.
Compliance:	In
Requirement Description:	**3. GENERAL REQUIREMENTS, 3.9 Maintenance of Works, Non-Compliances and Emergency Procedures** 3.9.1: The Permittee shall inspect the authorized works regularly and maintain them in good working order. In the event of an emergency or condition beyond the control of the Permittee which prevents continuing effective operation of the authorized works, the Permittee shall take appropriate remedial action and immediately notify the Regional Waste Manager or a designated Officer.
Details/Findings:	Pump failure occurred in February after it being shut down at the long lake treatment system allowing a continued bypass of operations. As well it is reported a beaver dam plugged the decant from Settling Pond #1 from early spring to around December possible causing iron rich sediment to be stirred up and released. Therefore out of compliance.
Compliance:	Out

Requirement Description:	**3. GENERAL REQUIREMENTS, 3.9 Maintenance of Works, Non-Compliances and Emergency Procedures, 3.9.2** 3.9.2: In the event of commissioning of the works, operational system modifications, equipment failure, operator error, spill, permit non-compliances or any other condition which may affect the quantity or quality of the discharge such that permit limits may be exceeded, the Permittee shall: take appropriate action to prevent or mitigate pollution, immediately notify the Provincial Emergency Program (PEP) 1-800-663-3456, as soon as possible, conduct sampling and analysis of discharges which may cause non-compliance with the characteristics of the discharge as specified in Section 1 of this permit and provide the results to the Regional Waste Manager or a designated Officer, as soon as practicable (but not later than 30-days after the Permittee became aware of the event), investigate the event and provide a report including results of sampling and analysis, permit non-compliance, corrections to the operational system, root cause of the event and decisions for corrective and preventive action.
Details/Findings:	A non-compliance report for dissolved iron exceedance dated January 20, 2020 and for possible TSS exceedance dated April 28, 2020 is on file. Although not initially found on file Ms. Russell provided a copy of the email with notification date February 27, 2020 in regards to the bypass of the Long Lake Treatment System and associated pump failure. Therefore, this is in compliance.
Compliance:	In.
Actions to be taken:	Report all non-compliance event with required characterization and information regarding the quantity or quality of the discharge.
Requirement Description:	**3. GENERAL REQUIREMENTS, 3.10 Bypasses** 3.10: The Permittee shall ensure that no effluent is discharged without being processed through the authorised works unless prior written approval is received from the Director.

Details/Findings:	Discharge of mine-impacted effluent has occurred without being processed through authorized works during this inspection period. These discharges enter Long Lake from the 2-South underground workings and are described as the Long Lake Seep (LLS) and Long Lake Middle Seep (LLSM). LLS is described as the lesser seep with a reported constant flow while LLSM is described as the main seep with a more variable and significant flow. A Ministry letter dated December 2, 2010 required that Quinsam Coal "install and operate a mitigation system to collect and treat the flow of effluent currently entering Long Lake via the seep, such that iron levels are reduced below the permit limits for settling pond 1." In response, Quinsam Coal installed a Long Lake Treatment System (LLTS) to treat some of these discharges through a series of cells. A permit amendment occurred on June 23, 2015 which maintained the required monitoring of the Long Lake Seep as per Permit section 4.2.2. On August 24, 2016 and August 25, 2017, in response to requests from Quinsam Coal, the Ministry issued temporary bypass authorizations of the LLTS, recognizing that the LLTS is part of the authorized works as defined in subsection 1.2.3 of the Permit. As reported in 2.3.3 of the 2019-2020 Annual Report “Since the 2-South Mine pool pump replacement in August 2018, the treatment system has been operating with all discharge directed to the 2-South Pit. The system has been operating normally except for a few interruptions in January and February 2020 when it was shut down to reduce the amount of water entering 2S and 3S. The pump failed upon restart in February...the pump was replaced with the treatment system re initiated at 4.5 L/s in May 2020." Upon further inquiry Ms. Russell reported via email on December 17, 2020, that the pump was turned off on January 22, 2020 and treatment of the LLS and LLSM discharge did not resume until May 12th, 2020. Ms. Russel reported that the estimated cumulative discharge of additional untreated effluent into Long Lake from the LLS and LLSM from January 22, 2020, to May 12th, 2020 was 119,000 m3. The Director has not authorized any bypass of the LLTS during this inspection period. As a result, Quinsam Coal conducted an unauthorized bypass of the LLTS during the period January 22, 2010 and May 12, 2020.
Compliance:	Out
Actions to be taken:	Take appropriate mitigation measures such that no effluent is discharged without being processed through the authorized works.
Requirement Description:	**4. MONITORING AND REPORTING REQUIREMENTS, 4.1 Effluent and In-Mine Releases, 4.1.1 North Coal Mining and Coal Preparation Plant Operation (i) Decent - WD (EMS # E207409)** 4.1.1 (i): See Attached Document for Section 4.1.1 (i) Table

Details/Findings:	The November 1, 2019 Permit amendment changed the required sampling frequency for TSS from daily to weekly and dissolved metals to from once every two months to once per month. A review of 2019-2020 Annual Report and 2020 Q1 and 2020 Q2 reports determined that each monitoring event has been undertaken in accordance with the Permit version relevant at the time during the inspection period.
Compliance:	In
Actions to be taken:	Monitor and report as stipulated in the authorization.
Requirement Description:	**4. MONITORING AND REPORTING REQUIREMENTS, 4.1 Effluent and In-Mine Releases, 4.1.1 North Coal Mining and Coal Preparation Plant Operation (ii) Culvert, at Middle Quinsam Lake Road - WC (EMS # E207411)** 4.1.1 (ii): See Attached Document for Section 4.1.1 (ii) Table
Details/Findings:	The November 1, 2019 Permit amendment changed the required sampling frequency for conductivity and pH to monthly. A review of 2019-2020 Annual Report and 2020 Q1 and 2020 Q2 reports determined that each monitoring event has been undertaken in accordance with the Permit version relevant at the time during the inspection period.
Compliance:	In
Requirement Description:	**4. MONITORING AND REPORTING REQUIREMENTS, 4.1 Effluent and In-Mine Releases, 4.1.1 North Coal Mining and Coal Preparation Plant Operation (iii) 2-North Portal Sump Effluent - SN-P-Sump (EMS # E283433)** 4.1.1 (iii): See Attached Document for Section 4.1.1 (iii) Table
Details/Findings:	The November 1, 2019 Permit amendment changed the required sampling frequency for conductivity and pH to monthly. A review of 2019-2020 Annual Report and 2020 Q1 and 2020 Q2 reports determined that each monitoring event has been undertaken in accordance with the Permit version relevant at the time during the inspection period.
Compliance:	In

Requirement Description:	**4. MONITORING AND REPORTING REQUIREMENTS, 4.1 Effluent and In-Mine Releases, 4.1.1 North Coal Mining and Coal Preparation Plant Operation (iv) Additional Sites Monitoring Schedule** 4.1.1 (iv): See Attached Document for Section 4.1.1 (iv) Table
Details/Findings:	The November 1, 2019 Permit amendment changed the required sampling frequency for conductivity and pH at the 2-North Pit Sump CCR Cover (E207412) to monthly and removed the South Dyke Sump Site (E292126) from the monitoring program. A review of 2019-2020 Annual Report and 2020 Q1 and 2020 Q2 reports determined that each monitoring event has been undertaken in accordance with the Permit version relevant at the time during the inspection period.
Compliance:	In
Requirement Description:	**4. MONITORING AND REPORTING REQUIREMENTS, 4.1 Effluent and In-Mine Releases, 4.1.2 South Coal Mining Operation (i) Decant - SPD (EMS # E218582)** 4.1.2 (i): See Attached Document for Section 4.1.2 (i) Table
Details/Findings:	The November 1, 2019 Permit amendment changed the required sampling frequency for TSS from daily to weekly and dissolved metals to from once every two months to once per month. A review of section 6.2.1 and Table 30 determined 2019-2020 that a sensor failure in the continuous flow meter resulted in no continuous flow monitoring for the period December 6-9, 2019. Therefore, out of compliance. Otherwise in compliance with information provide in the 2020 Q1 and 2020 Q2 reports.
Compliance:	Out
Actions to be taken:	Monitor for parameters at the specified frequency outline by this section of the permit.
Requirement Description:	**4. MONITORING AND REPORTING REQUIREMENTS, 4.1 Effluent and In-Mine Releases, 4.1.2 South Coal Mining Operation (ii) Culvert, Downstream End at Access Road - SPC (EMS #E217014)** 4.1.2 (ii): See Attached Document for Section 4.1.2 (ii) Table

Details/Findings:	The November 1, 2019 Permit amendment changed the required sampling frequency for conductivity and pH to monthly, and removed bi-weekly TSS monitoring. A review of 2019-2020 Annual Report and 2020 Q1 and 2020 Q2 reports determined that each monitoring event has been undertaken in accordance with the Permit version relevant at the time during the inspection period.
Compliance:	In
Requirement Description:	**4. MONITORING AND REPORTING REQUIREMENTS, 4.1 Effluent and In-Mine Releases, 4.1.2 South Coal Mining Operation (iii) South Pit Main Sump Water - 3S (EMS # E217015)** 4.1.2 (iii): See Attached Document for Section 4.1.2 (iii) Table
Details/Findings:	The November 1, 2019 Permit amendment changed the required sampling frequency for conductivity and pH to monthly. A review of 2019-2020 Annual Report and 2020 Q1 and 2020 Q2 reports determined that each monitoring event has been undertaken in accordance with the Permit version relevant at the time during the inspection period.
Compliance:	In
Requirement Description:	**4. MONITORING AND REPORTING REQUIREMENTS, 4.1 Effluent and In-Mine Releases, 4.1.2 South Coal Mining Operation (iv) Additional Monitoring Sites Schedule (2S, 3S77, 4S-Lo)** 4.1.2 (iv): See Attached Document for Section 4.1.2 (iv) Table
Details/Findings:	The November 1, 2019 Permit amendment changed the required sampling frequency for conductivity and pH to monthly for E292127 and removed sampling requirements for E292128 and E292129. A review of 2019-2020 Annual Report and 2020 Q1 and 2020 Q2 reports notes the following is out of compliance: E292127: It is reported in the 2019-2020 Annual Report that a flow meter failure occurred and there is no flow data January 24-26 2020, and February 1-3 and 6, 2020.
Compliance:	Out

Requirement Description:	**4. MONITORING AND REPORTING REQUIREMENTS, 4.1 Effluent and In-Mine Releases, 4.1.3 Block 242 Coal Mining Operation (i) Decant (EMS # E225796)** 4.1.3 (i): See Attached Document for Section 4.1.3 (i) Table
Details/Findings:	It is reported that in the 2019-2020 Annual Report that Block 242 Coal Mining Operation Area is non-operational, reclaimed and does not discharge mine impacted water. The November 1, 2019 Permit amendment removed this sample location from the Permit.
Compliance:	Not Applicable
Requirement Description:	**4. MONITORING AND REPORTING REQUIREMENTS, 4.1 Effluent and In-Mine Releases, 4.1.3 Block 242 Coal Mining Operation (ii) Underground Settling Pond Effluent (EMS # E225797)** 4.1.3 (ii): See Attached Document for Section 4.1.3 (ii) Table
Details/Findings:	It is reported that in the 2019-2020 Annual Report that Block 242 Coal Mining Operation Area is non-operational, reclaimed and does not discharge mine impacted water. The November 1, 2019 Permit amendment removed this sample location from the Permit.
Compliance:	Not Applicable
Requirement Description:	**4. MONITORING AND REPORTING REQUIREMENTS, 4.1 Effluent and In-Mine Releases, 4.1.4 7 South Mining Operation (i) Decant - 7SSD (EMS # E292069)** 4.1.4 (i): See Attached Document for Section 4.1.4 (i) Table
Details/Findings:	The November 1, 2019 Permit amendment reduced the required monitoring frequency at this location is from monthly to quarterly when no discharge is occurring. A review of 2019-2020 Annual Report and 2020 Q1 and 2020 Q2 reports determined that each monitoring event has been undertaken in accordance with the Permit version relevant at the time during the inspection period.

Compliance:	In
Requirement Description:	**4. MONITORING AND REPORTING REQUIREMENTS, 4.1 Effluent and In-Mine Releases, 4.1.4 7 South Mining Operation (ii) 7 South Adit Sump - 7S-Sump (EMS # E292110)** 4.1.4 (ii): See Attached Document for Section 4.1.4 (ii) Table
Details/Findings:	Upon review of the Annual Status Form in the 2019-2020 Annual Report for E292110 there is no pumping to 7S settling pond. Upon request for further information Ms. Russel explained by email on January 14, 2021 the following "The 7-South Adit sump has poor water quality and is pumped / conveyed via pipeline with 7-South mine pool water into the 5-South mine pool. The Adit sump has a pump that operates on a float system. All water from the 7-South footprint i.e. coal pad runoff and mine impacted water is conveyed into the adit sump." However this is not determined within the 2020 Q1 and 2020 Q2 reports.
Compliance:	Not Determined
Actions to be taken:	Have a permit amendment to reflect and authorize the operational status of the 7 South Adit Sump.
Requirement Description:	**4. MONITORING AND REPORTING REQUIREMENTS, 4.2 Receiving Environment Monitoring Sites and Monitoring Requirements, 4.2.1 Initial Dilution Zone Monitoring Sites (i) Long Lake Entrance - LLE** 4.2.1 (i): See Attached Document for Section 4.2.1 (i) Table
Details/Findings:	Upon review of Table 20 in the 2019-2020 Annual Report samples were not complete for September 2019 due to a beaver clogging the culvert. Therefore, this is out of compliance. It is also noted that although hydrographs are provided in the report, weekly flow data is not provided in the annual or quarterly reports.
Compliance:	Out

Actions to be taken:	Monitor for parameters and frequency as required by this section and report on all parameters including weekly flow.
Requirement Description:	**4. MONITORING AND REPORTING REQUIREMENTS, 4.2 Receiving Environment Monitoring Sites and Monitoring Requirements, 4.2.2 Seep Monitoring Sites (i) Long Lake Seeps (LLS)** 4.2.2 (i): See Attached Document for Section 4.2.2 (i) Table
Details/Findings:	Weekly flows are not provided in quarterly or annual reports reviewed during for this inspection period. It's noted no flow is indicated for July- October in the annual report on Table 21 and Table 22 and there is a hydrograph indicating flows.
Compliance:	Not Determined
Actions to be taken:	Report on weekly flow as required by this section.
Requirement Description:	**4. MONITORING AND REPORTING REQUIREMENTS, 4.2 Receiving Environment Monitoring Sites and Monitoring Requirements, 4.2.5 Stream Monitoring Requirements** 4.2.5: See Attached Document for Section 4.2.5
Details/Findings:	This section details the monitoring requirements for Receiving Water (Streams) Sites listed in subsection 4.2.3 encompassing 13 distinct locations. The November 1, 2019 Permit amendment reduced monitoring requirements at a number of locations, this has been taken into account during the compliance assessment. Review of 2019-2020 Annual Report determined that Quinsam Coal is out of compliance by failing to monitor as required for the following locations during this inspection period: E297231 (IR6): for a 5 in 30 sample set at this location during week1 (July 29, 2019) for the summer of 2019 as well as week 1 (Oct, 22 2019) for the fall sample set. Also did not obtain monitoring results for the 5 in 30 sample set during week1 (July 29, 2019) for the summer of 2019 for all the following locations: E0900504,E0900504,E219412,E217017,E286930,E292113,E297230,E297232,E299256. As well, upon review of the appendices and as indicated in Table 1 of the 2019-2020 Annual Report there is no monitoring as required by this section for: E225798 and E225808.

Compliance:	Out
Actions to be taken:	Complete all monitoring at location and frequency for the parameters required by this section.
Requirement Description:	**4. MONITORING AND REPORTING REQUIREMENTS, 4.2 Receiving Environment Monitoring Sites and Monitoring Requirements, 4.2.6 Lake Monitoring Requirements** 4.2.6: See Attached Document for Section 4.2.6 Table
Details/Findings:	This section details the monitoring requirements for Receiving Water (Lakes) Sites listed in subsection 4.2.3 encompassing 6 distinct locations and includes water parameters and biological monitoring. Review of 2019-2020 Annual Report determined the following is considered to be non-compliant with the stream monitoring requirements: Biological monitoring requirements was not complete during the spring and summer for E206619, E206618, E292118, E217018.
Compliance:	Out
Actions to be taken:	Complete all monitoring at location and frequency for the parameters required by this section.
Requirement Description:	**4. MONITORING AND REPORTING REQUIREMENTS, 4.2 Receiving Environment Monitoring Sites and Monitoring Requirements, 4.2.7 Sediment and Benthic Monitoring** 4.2.7: See Attached Document for Section 4.2.7
Details/Findings:	As per the previous IR 139588 it is understood Quinsam last conducted sediment and benthic monitoring in August through October 2016. The frequency requirement is every 3 - 5 years and is to occur in 2020-2021.
Compliance:	Not Applicable

Actions to be taken:	Inspection Report 139588 determined that the last conducted sediment and benthic monitoring was in August through October 2016. As the required frequency of this monitoring is every 3 to 5 years, compliance with this requirement was not applicable during this inspection period.
Requirement Description:	**4. MONITORING AND REPORTING REQUIREMENTS, 4.3 Additional Monitoring Requirements, 4.3.1 Composite Sampling** 4.3.1: The Permittee shall install suitable sampling facilities and obtain 24 hour composite samples of effluent for total suspended solids. Each daily composite sample shall consist of 8 samples taken at three hour intervals. Sampling shall be performed at frequencies specified in Subsections 4.1.1, 4.1.2., 4.1.3 and 4.1.4. The Permittee may also be required to collect hourly composite samples in order to verify compliance with the total suspended solids criteria of 35 mg/l specified in Subsections 1.1.2, 1.2.2, 1.3.2 and 1.4.2. Each hourly composite sample shall consist of 4 samples taken at 15 minute intervals. Proper care should be taken in sampling, storing, and transporting the samples to adequately control temperature and avoid contamination or breakage. The Permittee shall collect a grab sample instead of a composite sample when weather conditions result in freezing conditions, rendering collection of composite samples not feasible.
Details/Findings:	Composite samplers were observed during the onsite inspection, and Quisam Coal staff reported that the samplers are routinely inspected. Ms Russel confirm by email on January 13, 20201 that " composite sampler was set for 80 ml over 2 hours to collect 0.960 L /day. " This does not conform to 8 samples taken at three-hour intervals, therefore out of compliance. As well it is reported that the are several composite samples missing. If samples are missing due to no flow then the tables should indicate this. Submitted data confirms that no samples exceeded the total suspended solids criteria of 35 mg/L; therefore, the requirement to collect hourly composite samples was not applicable during this inspection period.
Compliance:	Out
Actions to be taken:	Complete composite sampling as authorized by the permit. Clearly indicate in report tables if sampling has not occurred due to no flow.

Requirement Description:	**4. MONITORING AND REPORTING REQUIREMENTS, 4.3 Additional Monitoring Requirements, 4.3.2 Continuous Flow Recording** 4.3.2: The Permittee shall provide and maintain suitable flow measuring devices and maintain a continuous record of the rate at which the effluent is discharged from the settling ponds authorised in Subsections 1.1.3, 1.2.3, 1.4.3 and from the secondary settling pond authorised in Subsection 1.3.3.
Details/Findings:	As per Table 2 of the 2019-2020 Annual Report from the flow meter failed at location E218582 (SP1) from December 6 to 8, 2019. In addition, the flow meter at location E292127 (2S) failed during January 24-26 2020, and February 1-3 and 6, 2020. Continuous flow monitoring in both these locations is required in accordance with Subsections 1.2.2 and 1.3.3; therefore, Quinsam Coal is out of compliance.
Compliance:	Out
Actions to be taken:	Maintain suitable flow measuring devices and report the measured flows as well as if there is no flow.
Requirement Description:	**4. MONITORING AND REPORTING REQUIREMENTS, 4.3 Additional Monitoring Requirements, 4.3.3 Iron River Flow Monitoring** 4.3.3: The Permittee shall conduct a study to establish a flow calibration curve on the Iron River at a point selected by Environment Canada. The flow calibration curve shall be completed prior to the re-commencement of mining. Based on the results of this study and/or other information obtained in connection with this discharge the Director may increase the flow monitoring frequency in Iron River specified in Subsection 4.3.2 and/or limit the rate of discharge from the Block 242 mining operation during periods of low flow in Iron River.
Details/Findings:	Appendix II, Graphs (56, 57, 60, 61 and 62), of the 2019-2020 Annual Report display flows compared to water level measurements and precipitation for the receiving environment hydrometric stations (WA, WB, LLO, 7S and IR8). As per IR 139588 Ms. Russel informs that the flow calibration curve was established by Lorax in 2012.
Compliance:	In

Requirement Description:	**4. MONITORING AND REPORTING REQUIREMENTS, 4.3 Additional Monitoring Requirements, 4.3.7 Monitoring of Drainage Ditches and Water Channels** 4.3.7: Visual inspection of drainage ditches and water channels within the mining operational areas shall be carried out by Environmental Protection staff as part of the regular inspections for the entire mine operation. Based on these monitoring results the Permittee may be required to take measures to minimize soil erosion.
Details/Findings:	It was confirmed during the onsite inspection and by Ms. Russel that operations are checked daily by either the environmental technician or shift bosses. With a visual inspection of the drainage ditches and water channels it appears the water channels are maintained and acting as intended.
Compliance:	In
Requirement Description:	**4. MONITORING AND REPORTING REQUIREMENTS, 4.3 Additional Monitoring Requirements, 4.3.8 Precipitation Monitoring** 4.3.8: The Permittee shall maintain a suitable rain gauge at a location approved by the Director and measure and record the daily accumulated precipitation.
Details/Findings:	Results for precipitation monitoring conducted at the 2-south weather station are reported in Table 40 of the 2019-2020 Annual Report. A review of this information determined that the daily accumulated precipitation has been recorded during this inspection period.
Compliance:	In
Requirement Description:	**4. MONITORING AND REPORTING REQUIREMENTS, 4.3 Additional Monitoring Requirements, 4.3.9 Block 242 Monitoring** 4.3.9: Monitoring relating to the Block 242 Mining Operation required by Subsections 4.1.3 and 4.2.3 shall commence at the start of mine-influenced discharge from the Block 242 secondary settling pond.
Details/Findings:	It is reported in Table 1 and in the Annual Status Form in the 2019-2020 Annual Report that Block 242 is non-operational and been reclaimed. During the onsite visit no recent mining activity was observed and the area was shown to be overgrown and wooded with no discharge occurring related to mining activities.

Compliance:	Not Applicable
Requirement Description:	**4. MONITORING AND REPORTING REQUIREMENTS, 4.4 Monitoring Procedures, 4.4.1 Sampling and Analytical Procedures** 4.4.1: Sampling shall be carried out in accordance with the procedures described in the latest version of "British Columbia Field Sampling Manual for Continuous Monitoring and the Collection of Air, Air-Emission, Water, Wastewater, Soil, Sediment, and Biological Samples (Permittee)", or by suitable alternative procedures as authorised by the Director. Analyses are to be carried out in accordance with procedures described in the latest version of "British Columbia Environmental Laboratory Manual for the Analysis of Water, Wastewater, Sediment and Biological Materials", or by suitable alternative procedures as authorised by the Director. Copies of the above manuals may be purchased from Queen's Printer Publications Centre, P.O. Box 9452, Stn. Prov. Gov't. Victoria, British Columbia, V8W 9V7 (1-800-663-6105 or 250 387-6409 or via the internet at www.crownpub.bc.ca. The manuals are also available for review at all Environmental Protection offices.
Details/Findings:	The following is reported in section 5 of the 2019 Annual Report: "All water samples were collected in accordance with methods described in "The British Columbia Field Sampling Manual for Continuous Monitoring of Air- Emissions, Water, Soil, Sediment, and Biological Samples" (MOE 2013)2. This includes following of specified field protocols: use of field duplicates, split samples, and method blanks and checking for transcription errors.Bureau Veritas Laboratories (BV labs) located in Burnaby B.C., a Canadian Association for Laboratory Accreditation (CALA) designated laboratory, conducted the analysis of surface, groundwater, and sediment samples. Phytoplankton samples were analyzed by Stantec Consulting Ltd. (Burnaby B.C.). Zooplankton samples were analyzed by Fraser Environmental (Surrey, B.C.)." Bureau Veritas Laboratories whom also conducted the toxicity samples is certified by CALA and their member # is 3932.
Compliance:	In

Requirement Description:	**4. MONITORING AND REPORTING REQUIREMENTS, 4.5 Reporting** 4.5.1 (i): The Permittee shall submit the results of the monitoring program to the Director on a quarterly basis within thirty days following the previous quarter of monitoring. Based on these results, the monitoring program may be increased or decreased at the discretion of the Director. The format and content of the quarterly report is subject to the approval the Director. An annual review and interpretative report shall be prepared and submitted by the Permittee by June 30 of each year. The report will include, but is not necessarily limited to, the following items: 1) A summary of monitoring results for the previous twelve months. 2) Spills or other unusual events. 3) Changes in the environment resulting from mining activity. 4) Summary of completed, in progress activities or studies relevant to the permitted discharges, associated authorized works and the receiving environment relevant to the reporting period. 5) Projected activities for the coming year which may have an impact on the environment. The format and content of the annual report is subject to the approval of the Environmental Technical Review Committee and the Director. 4.5.1 Through the duration of mining in 7-South Area 5, quarterly and annual reports shall include a summary of: i. Quality and quantity of water pumped from the 7-South Area 5 development with potential to reach Settling Pond 4.
Details/Findings:	The Q4 report for Jan to April 2019 was received 2020-05-01. The 2019 Annual Report April 2019 to March 31, 2020 was received on 2020-06-30. Q1 report for April 1 to June 30, 2020 was received on 2020-07-31. Q2 report from July 1 2020 to September 30, 2020 was received on 2020-10-30. The reports failed to include all flow monitoring required for E393130 and E202131.
Compliance:	Out
Actions to be taken:	Have reports contain all monitoring information required by the permit.
Requirement Description:	**4. MONITORING AND REPORTING REQUIREMENTS, 4.5 Reporting** 4.5.1 (i): The Permittee shall submit the results of the monitoring program to the Director on a quarterly basis within thirty days following the previous quarter of monitoring. Based on these results, the monitoring program may be increased or decreased at the discretion of the Director. The format and content of the quarterly report is subject to the approval the Director. An annual review and interpretative report shall be prepared and submitted by the Permittee by June 30 of each year. The report will include, but is not necessarily limited to, the following items: 1) A summary of monitoring results for the previous twelve months. 2) Spills or other unusual events. 3) Changes in the environment resulting from mining activity. 4) Summary of completed, in progress activities or studies relevant to the permitted discharges, associated authorized works and the receiving environment relevant to the reporting period. 5) Projected activities for the coming year which may have an impact on the environment. The format and content of the annual report is subject to the approval of the Environmental Technical Review Committee and the Director. 4.5.1 Through the duration of mining in 7-South Area 5, quarterly and annual reports shall include a summary of: i. Quality and quantity of water pumped from the 7-South Area 5 development with potential to reach Settling Pond 4.

Details/Findings:	It was confirmed while onsite by MS. Russell that mining in 7- South Area cease in May 2019. A review of the 2019-2020 Annual Report, as well as the 2019 Q4, 2020 Q1, 2020 Q2, reports determined they contained the information required by this section.
Compliance:	In

Compliance History:
2019-09-19 IR 139588 Advisory: Acid Generation Control 3.3, AUTHORISED DISCHARGES 1.1.1; 1.1.2, Bypasses 3.10, Composite Sampling 4.3.1, Environmental Procedures Manual 3.2, Initial Dilution Zone Monitoring Sites (i) Long Lake Entrance - LLE 4.2.1 (i), North Coal Mining and Coal Preparation Plant Operation (i) Decent - WD (EMS # E207409) 4.1.1 (i), Reporting 4.5.1 (i), South Coal Mining Operation (i) Decant - SPD (EMS # E218582) 4.1.2 (i), Stream Monitoring Requirements 4.2.5
2018-10-11 IR 106411 Advisory: AUTHORISED DISCHARGES 1.1.1; 1.1.4; 1.2.2; 1.2.4; 1.4.3, Bypasses 3.10, Composite Sampling 4.3.1, Initial Dilution Zone Monitoring Sites (i) Long Lake Entrance - LLE 4.2.1 (i), Initial Dilution Zone Monitoring Sites (ii) Road Crossing-etc 4.2.1 (ii), Lake Monitoring Requirements 4.2.6, North Coal Mining and Coal Preparation Plant Operation (i) Decent - WD (EMS # E207409) 4.1.1 (i), North Coal Mining and Coal Preparation Plant Operation (ii) Culvert, at Middle Quinsam Lake Road - WC (EMS # E207411) 4.1.1 (ii), Reporting 4.5.1 (i), South Coal Mining Operation (i) Decant - SPD (EMS # E218582) 4.1.2 (i), South Coal Mining Operation (iv) Additional Monitoring Sites Schedule (2S, 3S77, 4S-Lo) 4.1.2 (iv), Stream Monitoring Requirements 4.2.5
2017-09-19 IR 70993 Warning 120(6): AUTHORISED DISCHARGES 1.1.1; 1.1.2; 1.1.3; 1.1.4; 1.2.2; 1.2.3; 1.2.4; 1.4.2; 1.4.3; 1.4.4, Composite Sampling 4.3.1, Continuous Flow Recording 4.3.2

The Ministry of Environment Compliance and Enforcement Policy and Procedure (C&E Policy) prescribes common requirements and procedures for all Ministry staff to ensure consistent and risk-based assessment and response to non-compliance. Using the Non-Compliance Decision Matrix, the compliance determination for this inspection has not been assessed.

More information about Environmental Compliance, the Non-Compliance Decision Matrix, and reporting and data submission requirements can be found at the links below:
General compliance information:
www.gov.bc.ca/environmentalcompliance
Non-Compliance Decision Matrix information:
www.gov.bc.ca/environment/how-compliance-is-assessed
Reporting and data submission requirements (to be sent to EnvAuthorizationsReporting@gov.bc.ca):
www.gov.bc.ca/submit-waste-authorization-reports

Please be advised that this inspection report may be published on the provincial government website within 7 days.

If you have any questions about this warning, please contact the undersigned.

Yours truly,

Jason Lasuik
Environmental Protection Officer

cc:

Attachments:

Deliver via:

Email: [X] **Fax:** [ ] **Mail:** [ ]
Registered Mail: [X] **Hand Delivery:** [ ]

Ministry of Environment and Climate Change Strategy
Compliance
Environmental Protection Division
Mailing Address:
102 Industrial Pl
Penticton BC V2A 7C8
Telephone: 250 490 8200
Facsimile: 250 490 2231
Website: www.gov.bc.ca/env

Ministry of Environment and Climate Change Strategy

Compliance
Environmental Protection Division

Mailing Address:
102 Industrial Pl
Penticton BC V2A 7C8

Telephone: 250 490 8200
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DISCLAIMER:
Please note that sections of the permit, regulation or code of practice referenced in this inspection record are for guidance and are not the official version. Please refer to the original permit, regulation or code of practice.

To see the most up to date version of the regulations and codes of practices please visit
http://www.bclaws.ca

If you require a copy of the original permit, please contact the inspector noted on this inspection record.

It is also important to note that this inspection record does not necessarily reflect each requirement or condition of the authorization therefore compliance is noted only for the requirements or conditions listed in the inspection record.

Appendix VI

To: EnvironmentalNonCompliance@gov.bc.ca

Date: April 29, 2021

Subject: Permit non-compliance report for authorization number PE:07008, EMS # E207409, Settling Pond #4 (WD), issued under Section 14 of the *Environmental Management Act*.

Attention: Permit limit non-compliance for iron - dissolved (Fe-D) and Total Suspended Solids (TSS) collected from the authorized discharge location WD. Permit limits applied to the discharge for Fe-D and TSS are 0.30 mg/L and 25 mg/L, respectively. Provincial Emergency Program (PEP) was informed with spill report numbers generated (DGIR: 204693, 204694, 204545, 204695 and 204752). See Table 1 and 2 below for details of the non-compliance events and attached water quality results.

Date of Non-compliance: March 4, 9, 10, 11, 15, 19 and 22, 2021

Location of Non-compliance: [5800 Argonaut Main, Quinsam Coal Mine Site]

Nature of Non-compliance:

Dewatering 5-South mine pool into 3-Mains 2-North and elevated water levels in 2-North mine resulted in high concentrations of iron and TSS. The 5-Mains and 1-Mains 2-North well pumps were not operable at the time, resulting in limited dilution at WD. Water quality improved once the 5-Mains 2-North well pump was replaced on March 24, 2021. Results of samples collected at WD from March 25 for Fe-D were 0.012 mg/L and on April 6, 0.0169 mg/L with corresponding downstream at WC from April 6, resulting in 0.0153 mg/L.

Initial Response/Actions Taken & Monitoring Conducted:

The table below summarizes the events when TSS and Fe-D were elevated above permit limits at WD. This was related to limited dilution normally derived from dewatering 5-Mains 2-North. Poor water quality was associated with an elevated 2-North mine pool and dewatering the 5-South mine pool in to 3-Mains 2-North, where it is discharged into Brinco brook flowing to WD. Limited vegetation growth and uptake may also have contributed to the water not having enough retention time in the wetland prior to entering WD.

On March 15th a 96-hour, 100 % concentration, Rainbow trout toxicity test was collected from WD. The test passed with 100 % survival rates. Downstream water quality collected at EMS ID: E207411, site WC resulted in water quality meeting permit limits and acute B.C. Water Quality Guidelines for Protection of Aquatic Life (WQG-Max).

Water entering WD was directed to the 2-North PAG-Pond (WP) in order to reduce discharge. This occurred periodically throughout March with discharged completely ceased on March 4, 16, 17 and 24 until results were received from the analytical laboratory. There was limited holding capacity within WP, therefore; it was not a permanent solution and water had to be released.

There were 5 reported events where water quality was above permit limits of which 4 events discharge occurred. On March 4 (DGI 204693) Fe-D sample was collected from a composite sample for experimental purposes to see how elevated the iron would be in the composite sample. There was zero discharge occurring on March 4.

Altogether 4 iron and 4 TSS exceedances were reported on March 4, 9, 10, 11, 15, 19 and 22 with the following DGIR numbers generated: 204693, 204694, 204695, 204545, and 204752, respectively. Table 1 below displays the details of each event compared to daily maximum and average flow rates.

Table 2 displays the results of the water quality collected at WD compared to WC. As displayed, all results downstream at WC remained below permit limits and WQG-Max indicating limited adverse effects for aquatic receptors.

Table 1: Exceedance Summary Table

Exceedance Summary Table for EMS ID: E207409 Settling Pond #4
Results

EMS ID - Site Name	DGIR #	Daily Max. Flow (m3/s)	Daily Average Flow (m3/s)	Date	Sample ID	BV Labs Sample ID	BV Labs Job ID	Parameter	Permit Limit	Result	DL	Units
E207409 - SP4 / WD	204693 **(no discharge occurred)**	0	0	04-Mar-21	WDCOMP-4MAR21-P	ZL1971	C114768	Dissolved Iron (Fe)	0.3	1.48	0.005	mg/L
	204694	0.131	0.109	09-Mar-21	WD-9MAR21-P	ZL5595	C115472	Dissolved Iron (Fe)	0.3	0.679	0.01	mg/L
	204545	0.084	0.033	15-Mar-21	WD-15MAR21-P	ZM3645	C116949	Dissolved Iron (Fe)	0.3	0.44	0.01	mg/L
	204695	0.081	0.047	10-Mar-21	WDCOMP-10MAR21-P	ZM3621	C116941	Total Suspended Solids (TSS)	25	65	1.0	mg/L
		0.12	0.068	11-Mar-21	WDCOMP-11MAR21-P	ZM3622	C116941	Total Suspended Solids (TSS)	25	39	1.0	mg/L
	204752	0.154	0.102	19-Mar-21	WDCOMP-19MAR21-P	ZN5782-01	C119472	Total Suspended Solids (TSS)	25	35	1.0	mg/L
	204752	0.144	0.093	22-Mar-21	WD-22MAR21-P	ZN3527-03	C118890	Dissolved Iron (Fe)	0.3	9.82	0.01	mg/L
		0.144	0.093	22-Mar-21	WD-22MAR21-P	ZN3527-01	C118890	Total Suspended Solids (TSS)	25	35	1.0	mg/L

**Dangerous Goods Information Reference Number*

Table 2: Comparison of TSS and Fe-D at WD and downstream WC site.

REPORT	WD vs WC TSS and Fe
Sampled Date From	2021/03/01
Sampled Date To	2021/04/29
Criteria 1	BC Approved WQG - 2019 - MAX
Criteria 2	Permit: 7008 - EMS ID:

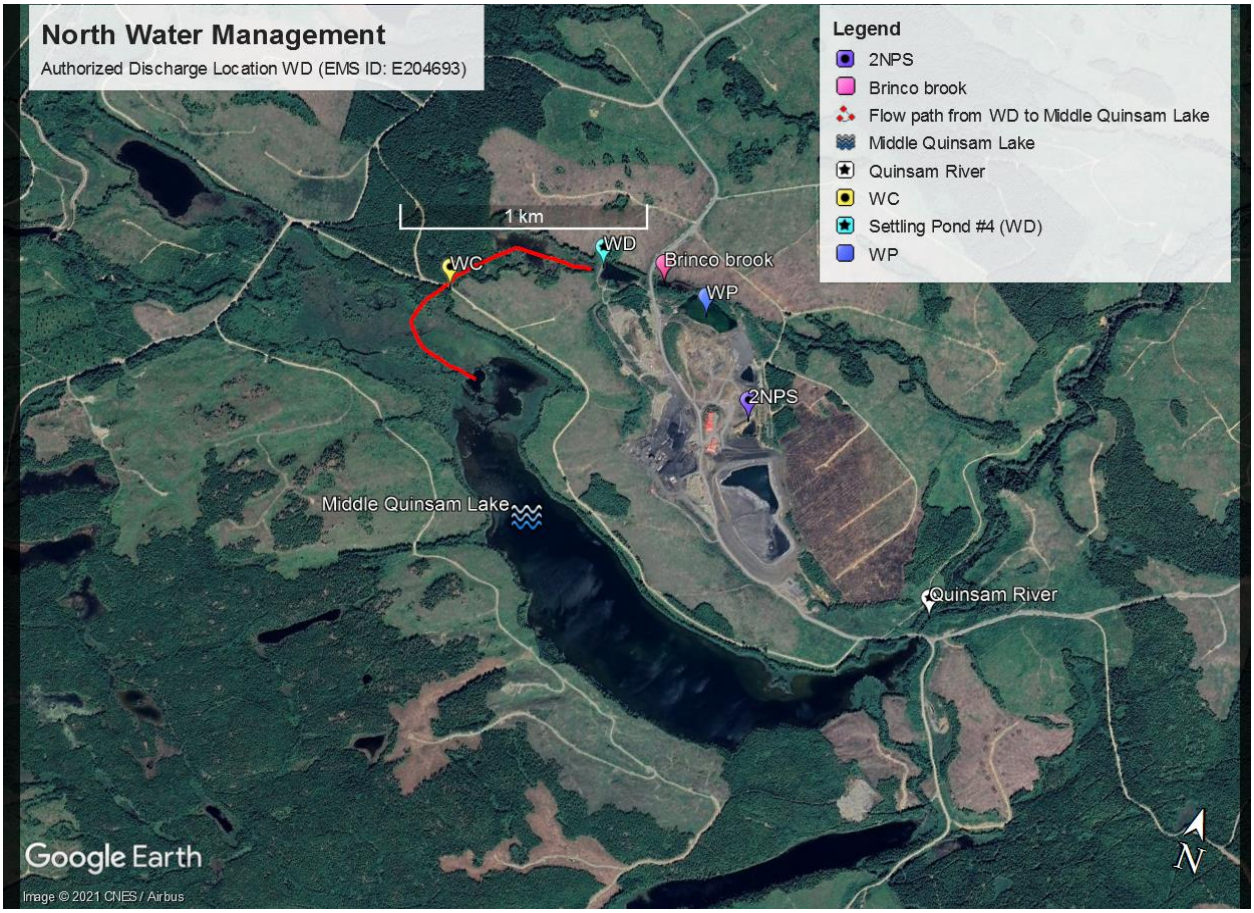
			Total Suspended Solids		Dissolved Iron (Fe)		Total Iron (Fe)			
		Criteria 1			0.35		1			
		Criteria 2			0.3					
		Units	mg/L		mg/L		mg/L			
Site Name	*SampleNumber*	*Sample Date*	*Result*	*DL*	*Result*	*DL*	*Result*	*DL*	*BV Labs Job #*	*BV Labs Sample ID*
WD	WD-1MAR21-P	2021-03-01	2	1	0.008	0.005	0.857	0.01	C113684	ZK4947
WC	WC-1MAR21-M	2021-03-01	1.2	1	0.0109	0.005	0.093	0.01	C113684	ZK4948
WD	WD-4MAR21-P	2021-03-04			0.0171	0.005	**2.09**	0.02	C114768	ZL1967
WDCOMP	WDCOMP-4MAR21-P	2021-03-04	3.6	1	**1.48**	0.005	<0.020	0.02	C114768	ZL1971
WD	WD-9MAR21-P	2021-03-09	11	1	**0.679**	0.01	**3.72**	0.02	C115472	ZL5595
WDCOMP	WDCOMP-10MAR21-P	2021-03-10	65	1					C116941	ZM3621
WDCOMP	WDCOMP-11MAR21-P	2021-03-11	39	1					C116941	ZM3622
WDCOMP	WDCOMP-12MAR21-P	2021-03-12	24	1					C116941	ZM3623
WDCOMP	WDCOMP-13MAR21-P	2021-03-13	16	1					C116941	ZM3624
WDCOMP	WDCOMP-14MAR21-P	2021-03-14	16	1					C116941	ZM3625
WD	WD-15MAR21-P	2021-03-15	4.4	1	**0.44**	0.01	**3.21**	0.02	C116949	ZM3645
WC	WC-15MAR21-M	2021-03-15	<1.0	1	0.011	0.01	0.113	0.02	C116949	ZM3646
WDCOMP	WDCOMP-18MAR21-P	2021-03-19	19	1					C119472	ZN5781
WDCOMP	WDCOMP-19MAR21-P	2021-03-19	35	1					C119472	ZN5782
WDCOMP	WDCOMP-20MAR21-P	2021-03-20	3.6	1					C119472	ZN5783
WDCOMP	WDCOMP-21MAR21-P	2021-03-21	4.8	1					C119472	ZN5784
WD	WD-22MAR21-P	2021-03-22	35	1	**9.82**	0.01	**14.6**	0.02	C118890	ZN3527
WC	WC-22MAR21-M	2021-03-22	3.6	1	0.082	0.01	0.677	0.02	C118890	ZN3528
WDCOMP	WDCOMP-22MAR21-P	2021-03-22	9.6	1					C119472	ZN5785
WDCOMP	WDCOMP-23MAR21-P	2021-03-23	<1.0	1					C119472	ZN5786
WD	WD-25MAR21-P	2021-03-25	2.8	1	0.012	0.01	0.921	0.02	C119472	ZN5787
WDCOMP	WDCOMP-27MAR21-P	2021-03-27	1.2	1					C121334	ZO5373
WDCOMP	WDCOMP-28MAR21-P	2021-03-28	<1.0	1					C121334	ZO5374
WDCOMP	WDCOMP-29MAR21-P	2021-03-29	1.2	1					C121334	ZO5375
WDCOMP	WDCOMP-30MAR21-P	2021-03-30	<1.0	1					C121334	ZO5376
WD	WD-31MAR21-P	2021-03-31	3.2	1	0.222	0.005	0.022	0.01	C121334	ZO5377
WD	WD-6APR21-P	2021-04-06	2.4	1	0.0169	0.005	0.187	0.01	C122385	ZP0021
WC	WC-6APR21-M	2021-04-06	1.2	1	0.0153	0.005	0.061	0.01	C122385	ZP0022
WC	WC-6APR21-R	2021-04-06	<1.0	1	0.0136	0.005	0.06	0.01	C122385	ZP0023
WD	WD-12APR21-P	2021-04-12	2.8	1	<0.010	0.01	**1.95**	0.02	C123763	ZP6620
WD	WD-19APR21-P	2021-04-19	<1.0	1	0.01	0.01	**1.95**	0.02	C125276	ZQ4274

LEGEND	
"N/A"	Not Applicable
Bold & Red	Exceedance
Red with White Text	Exceeds Both Criteria
Highlighted	DL > Criteria

Disclaimer: This is not an official certficate of analysis. For QC data and comments, please refer to the original reports issued by BV Labs.

The settling pond discharge flows through a serious of wetlands to the downstream monitoring station WC and then continues through another small wetland prior to entering Middle Quinsam Lake near the inlet. As displayed in the Google earth image Figure 1 below, the flow path from WD to Middle Quinsam Lake is approximately 1.23 km.

Figure 1: North Water Management Flow Path from WD to Middle Quinsam Lake



Future Action Items: Further observations with respect to metal concentrations, pond turbidity and mine water levels will be recorded and used to develop and employ best practices. Mine water levels and quality continue to be monitored with water directed to WP when suspect water quality is observed. The well pumps are an important feature in order to maintain water levels in the mine pool at manageable levels and reduce the risk of developing poor water quality that requires discharging. If poor water quality continues additional measures may need to be considered to manage the exceedances.

Quinsam Environmental Department makes every attempt to lower the risk to aquatic receptors in the receiving environment from mine water and will continue to employ best practices to ensure compliance in the future. If there are any further inquiries into these events, please contact me at the below contact information.

Contact information:

Kathleen Russell BSc.
Environmental Coordinator
QUINSAM COAL
Quinsam Coal
Ph: (250) 286-3224 ext. 225
E-mail: kathleen.russell@quinsam.com

RESULTS OF RAINBOW TROUT SINGLE CONCENTRATION-100%

Client : 13210 The Bowra Group Inc., Contractor for Province of BC as MEMPR Representative, **COD** Job Number: C116938

Client Project Name & Number: SP4 RAINBOW TROUT

Test Result:

96 hrs Mortality % 0 Statistical Method: Visual

Sample Name : WD-15MAR21-P

Description:	Brown and cloudy			Sample Number:	ZM3611-01
Sample Collected:	Mar 15, 2021 04:00 PM	Sampling Method :	Regular	Site Collection:	N/A
Sample Collected By:	KR	Volume Received:	20 x 1LP	Avg Temp Arrival:	2 °C Storage: 2-6°C
Sample Received:	Mar 16, 2021 02:00 PM	pH:	7.4	Dissolved Oxygen:	10.0 mg/L
Analysis Start :	Mar 17, 2021 09:50 AM	Temperature :	14 °C	Sample Conductance:	2508 µS/cm

Concentration	Temperature (°C)	Temperature (°C)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (mg/L)	pH	pH	Conductivity (uS/cm)	Mortality (#)	Mortality (%)	Atypical Behaviour (#)
% vol/vol	Initial	96 hrs	Initial	96 hrs	Initial	96 hrs	Initial	96 hrs	96 hrs	96 hrs
0	14	15	10.2	10.2	7.4	7.7	38	0	0	0
100	14	15	10.1	10.0	7.5	8.2	2510	0	0	0

Comments : All fish appeared and behaved normally during the test.

Culture/Control/Dilution Water Burnaby Municipal Dechlorinated Water

Hardness: 14 mg/L $CaCO_3$ Other parameters available on request.

Test Conditions Test concentration : 0,100 (% vol/vol)

Organisms per Vessel :	10	Test Temperature :	15 ± 1 °C	Solution Depth :	>15 cm
Total # of Organisms Used :	20	Pre-aeration Time :	30 min.	Rate of Aeration	6.5±1 mL/min/L
Test Volume :	18 L	Vessel Volume :	20L	Test pH Adjusted:	No
Loading Density :	0.2 g/L	Photoperiod :	16:8 (light: dark)		

Test Organism : Rainbow Trout Source : Aqua Farm

Culture Temperature :	15 ± 2 °C	Weight (Mean) +- SD :	0.4 ± 0.1 g	Length (Mean) +- SD :	3.75 ± 0.17 cm
Culture Water Renewal :	≥ 1L/min/kg fish	Weight (Range) :	0.3 – 0.5 g	Length (Range) :	3.50 – 4.00 cm
Culture Photoperiod :	16:8 (light: dark)			% Mortality within 7 days :	0.08%
Feeding rate and frequency :	daily: 1-5% biomass of trout.			Acclimation Time:	>14 days

Reference chemical: Zinc Test Date: Mar 14, 2021

Test Endpoint 96 hrs LC50 (95% confidence interval) : 0.05 (0.04, 0.07)mg/L Statistical Method : Probit

Historical Mean LC50 (warning limits) : 0.09 (0.04, 0.22) mg/L Concentration : 0,0.04,0.08,0.16,0.32,0.64 mg/L

Test Method BV Labs' BBY2SOP-00004 is based on the latest versions of EPS 1/RM/9, EPS 1/RM/13, and EPS 1/RM/50.

Method Deviations : None.

Note: The results contained in this report refer only to the testing of the sample submitted. This report may not be reproduced, except in its entirety, without the written approval of the laboratory.

Analyst : Michael Brassil, Navpreet Shergill

Verified By : Kimberly Tamaki, Scientist, Ecotoxicology Date: Mar 29, 2021 09:33 AM

PE:7008 Unauthorized Discharge for Quinsam Coal Mine DGIR 204584

To: EnvironmentalCompliance@gov.bc.ca

Subject: 2021-03-17. Authorization # 7008. Unauthorized discharge to the receiving environment. Groundwater well accessing mine pool water has been discharging to the Quinsam river. This report is an initial summary of the unauthorized discharge at Quinsam Mine Site. A follow up report will be sent once more information is available.

Attention: Unauthorized Discharge Report for Authorization # 7008.

Date of Non-compliance: 2021-03-17 to 2021-03-19 (number of days is under investigation).

Location of Non-compliance [5800 Argonaut Main, 49.938460, -125.462778: Quinsam Coal Mine Site

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Nature of Non-compliance: Groundwater well (QU11-09) accessing the mine pool, is artesian and discharging to the Quinsam river. The flow path from the well to the river is 157 m. The iron is dropping out along that flow path. Once it enters the river it is diluted with iron deposited on the riverbed for about 5m. Sampling was conducted at the well head, 87 m downstream on the Quinsam river where the water entered the river and 80 m upstream of the well. The amount of time the well has been discharging is still under investigation. Water quality was analyzed for metals, anions, cations, nutrients and turbidity and total suspended solids. QU11-09 is a nested well that accesses three zones, shallow groundwater, water cover over course coal refuse (CCR) in 1 seam and water quality below the 1 seam located in the River Barrier Pillar between the 2 North and 5-South Mine.

The deep well is not used for sampling. The medium well has a dedicated bladder pump with tubing deployed to assess water quality in the mine pool. The other shallow well has hydro lift tubing. Both wells have expelled the tubing and pump. The elevation of the well head is 226 masl. The medium well diameter is a 2-inch pvc pipe with a depth 82 m or 142 masl below top of casing (mBTOC). The elevation of the CCR is 153.5 masl. The shallow well diameter is 1.25 inches with a depth of 24.8 mBTOC or 201 masl. Figure 1 below displays the cross section of the 2-North Mine, QU1109, the Quinsam river and the 5-South Mine.

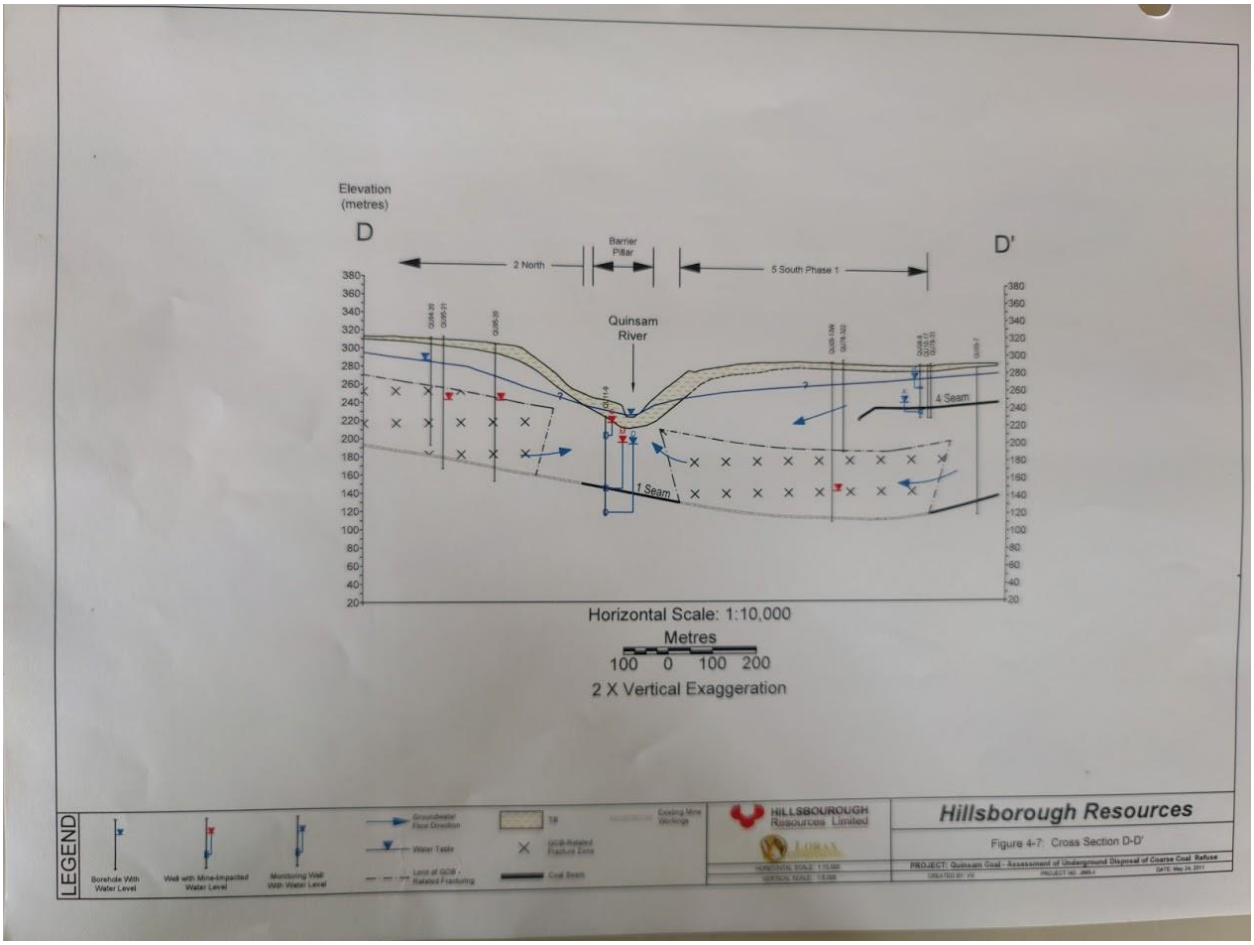

Figure 1: Cross section of 2North Mine, River Barrier Pillar (QU1109) and 5South Mine

Initial Response/Actions taken: The site was investigated and immediately sampled and reported to Provincial Emergency Response Program (PEP). An investigation was conducted and a plan to stop the flow and lower the mine pool was developed. **Spill report number DGIR 204584** was generated. On March 18, 2021 the water was redirected to a sump next to the well and is currently being contained in this area. The underground pumps located in the 3Mains 2North Mine area have been lowered in efforts to reduce the elevation of the mine pool. The 5South mine pool pump has been turned on.

The mine well pumps in the areas of 1Mains and 5Mains in the 2-North Mine pool have been on order since January. These well pumps operate to dewater the mine pool. The well pump at 5Mains is currently being installed with the other 1Mains to follow. March 19, 2021 the well head was plugged with a tight-fitted cap that has reduced discharge to 1L/s until the mine pool is reduced (Figure 3 below).

Monitoring conducted: Water quality was analyzed for metals, anions, cations, nutrients and turbidity and total suspended solids. A rush analysis was requested on all samples. Field parameters indicated neutral pH and elevated conductivity. The water quality is elevated in iron and sulphate. It

is not expected to be toxic to the receiving environment. The discharge was originally estimated at 12 L/s but was later measured at 3L/s.

Future action items: The elevation of the mine pool will be reduced to below elevation of the groundwater well approximately 226 masl. Water has been directed into a low-lying sump area where it is currently being retained. On March 19, 2021 the well has been capped (Figure 3) and discharge reduced to about 1 L/s. Reducing the potential for any further adverse impacts.

Contact information: Kathleen Russell 250-286-3224 EXT 225

Attachments: Monitoring data will be sent once available. Figure 2 displays the well draining to the sump as initial efforts to contain the discharge. Figure 3 displays the capped well. Figures 4 and 5 display the location of the mine, underground workings and QU1109.

Figure 2: March 18, 2021 discharge contained and directed into a low-lying sump area next to the well away from the river.

Figure 3: March 19, 2021 well capped and discharge reduced to about 1 L/s. Discharge still directed to the sump area. No surface expression to the river.

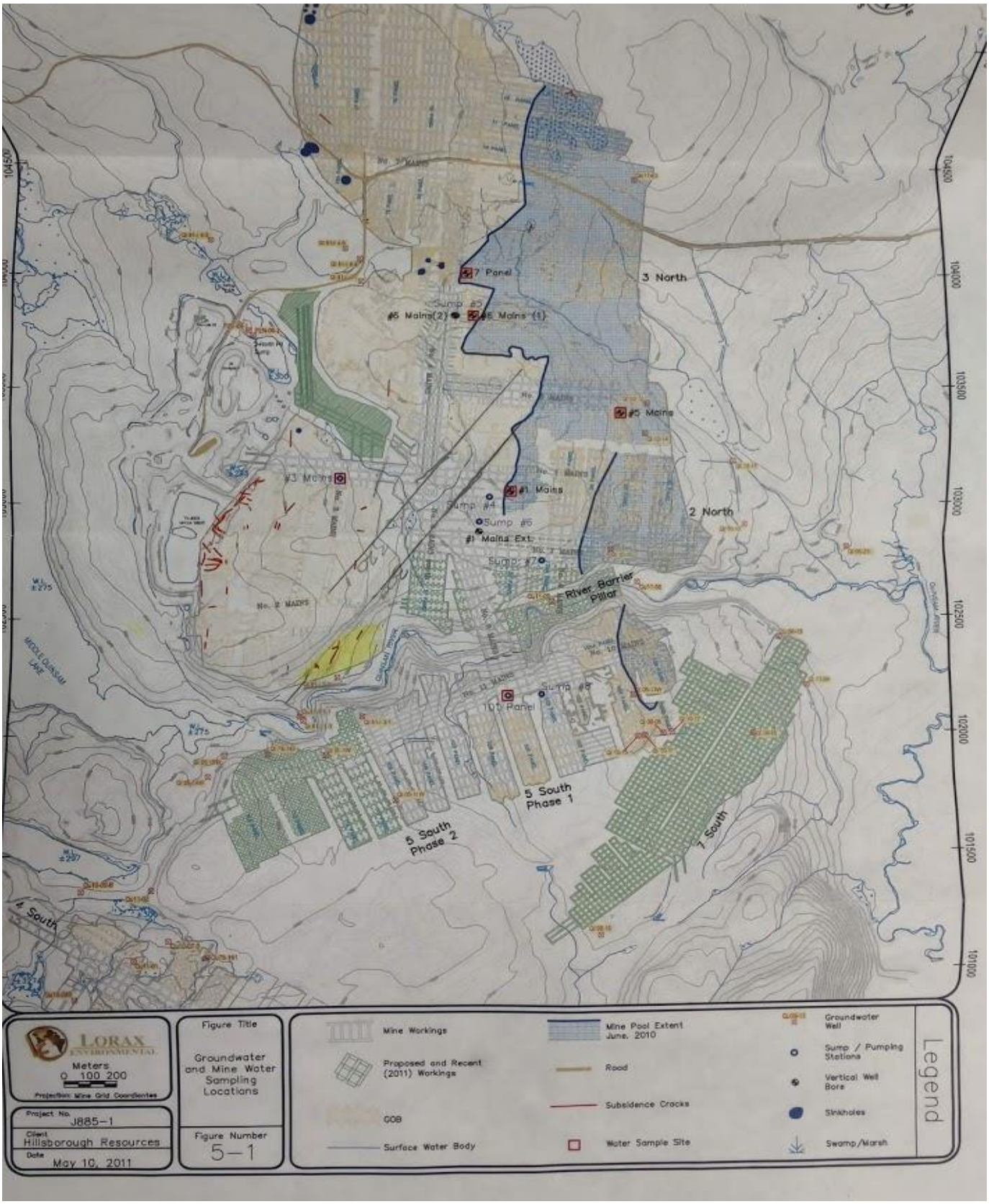

Figure 4: Underground workings and groundwater locations of the Quinsam Mine Site. QU11-09 River Barrier Pillar is the location of the artisan well.

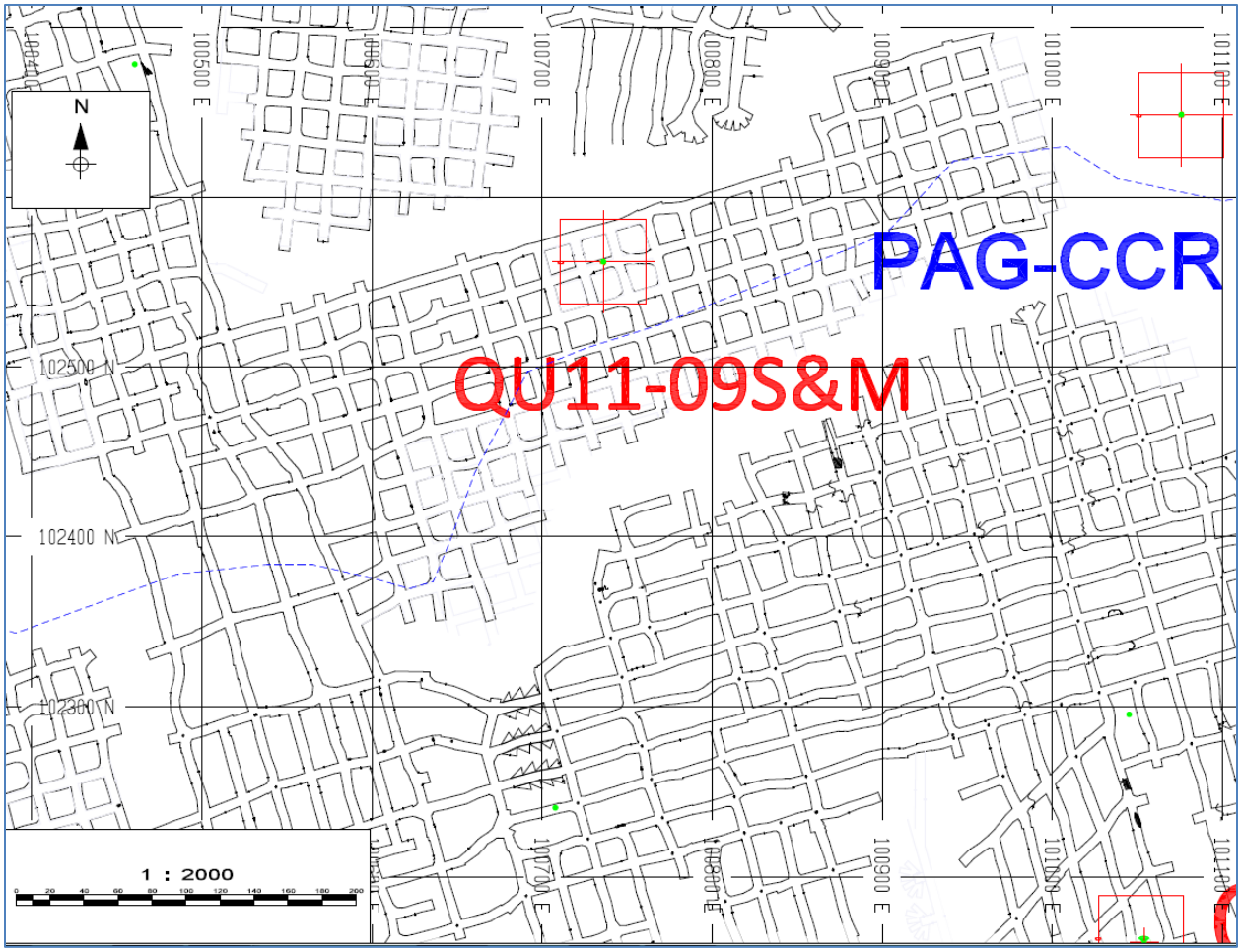

Figure 5: QU11-09 S&M blue dotted line represents the Quinsam River

Appendix VII

Annual Status

AUTHORIZATION NUMBER: 7008
AUTHORIZATION TYPE: Effluent, Permit
LEGAL AUTHORIZATION HOLDER NAME: Quinsam Coal Corporation

AUTHORIZED PERSON NAME: Kathleen Russell

AUTHORIZED PERSON SIGNAT: KR
SIGNATURE DATE: June 30, 2021

I understand that it is an offense to mislead a government official, and I declare that all of the information presented is accurate and true.
I have been given the authority by the authorization holder to sign this form.

CONDITION NUMBER	CONDITION DESCRIPTION	COMPLIANT? (Yes/No/ND)	ACTION TAKEN
Section 1	AUTHORISED DISCHARGES		
Section 1.1	This subsection applies to the discharge of effluent from the NORTH COAL MINING OPERATION AND COAL PREPARATION PLANT. The site reference number for this discharge is E207409		
Section 1.1.1	The maximum and average authorized rates of discharge are 0.32 m^3/s and 0.08 m^3/s respectively. The authorized discharge period is 365 d/a.	Yes	The maximum flow rate observed was 0.1960 m3/s. The average annual flow rate was 0.074 m3/s. Refer to the Annual Report, Section (6.1.1), page 30, Figure 4. Average calculated as an "annual average" over 365 d/a. Appendix I, Table 28.
Section 1.1.2	The characteristics of the discharge shall not exceed the specified permit limits (See 1.1.2 of PE7008).	No	There were 3 dissolved iron and 4 Total suspended solids results in excess of permit limits. All other results remained within permit limits. Refer to the Annual Report, Section 4.0 and Appendix I, Tables 2 and 3 and Appendix VII of Annual report.
Section 1.1.5	The location of the facilities from which the discharge originates is Block 26, Block 120 and Block 148, Comox Land District.	Yes	N/A
Section 1.1.6	The location of the point of discharge is Block 120, Comox Land District.	Yes	N/A
Section 1.2	This subsection applies to the discharge of effluent from the SOUTH COAL MINING OPERATION. The site reference number for this discharge is E218582.		
Section 1.2.1	The maximum and average authorized rates of discharge are 0.46 m^3/s and 0.10 m^3/s, respectively. The authorized discharge period is 365 d/a.	Yes	Both annual maximum flow (0.198 m3/s) and annual average flow (0.023 m3/s) were well below the permitted rates. Refer to the Annual Report, Section (6.2), page 31, Figure 7.
Section 1.2.2	Discharge from the South Mining Operation shall not exceed the specified permit limits.	Yes	Discharge remained within permit limits.
Section 1.2.3	The authorized works are surface runoff collection and diversion ditches, flocculation facilities, settling pond, 3 pit sumps (1S, 2S and 3S Pits), an adit sump (4S Adit), pumping facilities, and related appurtenances approximately located.	ND	Permit amendment needs to occur to remove 1S , 4S audit sump. The flocculation facilities include the treatment system cells Aeration lagoon and Settling pond.
Section 1.2.5	The location of the facilities from which the discharge originates is Block 98 and Block 149, Comox Land District.	Yes	N/A
Section 1.2.6	The location of the point of discharge is Block 149,Comox Land District.	Yes	N/A
Section 1.3-1.3.6	This subsection applies to the discharge of effluent from the BLOCK 242 COAL MINING OPERATION as shown on attached Site Plan C. The site reference number for this discharge is E225796.	Yes	No discharge occurred from this site during 2020-2021. Site is non-operational and reclaimed. November 1, 2019 permit amendment authorized removing monitoring from the permit.
Section 1.4	This subsection applies to the discharge of effluent from the 7 SOUTH MINING OPERATION. The site reference number for this discharge is E292069.	Yes	N/A
Section 1.4.1	The maximum authorized rate of discharge is 0.005 m^3/s. The authorized discharge period is 365 d/a.	Yes	Discharge did not occur in 2020 /2021
Section 1.4.2	The characteristics of the discharge from the 7 South Mining Operation shall not exceed the specified permit limits.	Yes	Discharge did not occur in 2020 /2021
Section 1.4.5	The location of the facilities and point of discharge is Block 120, Comox Land District, except part in plan 12164, 13574, 13641, VIP53617 and VIP64817.	Yes	N/A
Section 2	Specific Requirements		
Section 2.1	North Coal Mining and Coal Preparation Plant Operation (Settling Pond #4)		
Section 2.1.1	Rate of Discharge: The maximum flow of 0.32 m^3/s is the peak routed outflow from the settling pond resulting from the following inputs: a) The assumed response of the gravity fed catchment area defined in Subsection 2.1.3 up to a 1 in 10 year return period rainfall of 24 hour duration; and b) The maximum combined pumping rate from the 2-North portal sump, 2-North underground workings, and the tailings facility, as specified in Subsection 2.1.2. The Director may from time to time redefine the maximum outflow based upon actual on-site measurements.	Yes	Combined pumping rates from all of 2-North mine are, including catchment of precipitation is measured continuously at Settling Pond #4.
Section 2.1.2	Pumping Rate: The combined rate at which effluent may be pumped from the 2-North portal sump, 2-North underground workings and the tailings facility to the settling pond shall not exceed 0.32 m^3/s unless authorization has been obtained from the Director. Pumping rates shall be decreased as necessary to accommodate flows as defined in Subsection 2.1.1 (a).	Yes	Combined pumping rates from all of 2-North mine are, including catchment of precipitation is measured continuously at Settling Pond #4.
Section 2.1.3	Catchment Area: The gravity drained settling pond catchment area shall not exceed 4 hectares unless authorization has been obtained from the Director.	Yes	N/A
Section 2.1.4	Wash Plant Effluent: Wash plant effluent shall not be conveyed to the 2-North pit sump via the wash plant ditch. The Permittee shall keep records of the date, duration and estimated volume of any overflow from the wash plant effluent sump. Subject to review of this data, the Director may request changes to the works.	Yes	All fine tailing are directed to the tailings impoundment or underground 2-North Mine.
Section 2.1.5	Settling Pond Solids and Storage Volume: Settled solids which have accumulated in the settling pond shall be removed as required to maintain a minimum water depth below the pond decant of 1.0 m and a minimum water storage volume of 2,300 m^3. The removed solids shall be disposed of in a manner approved by the Director.	Yes	Settled solids have not accumulated to a point that requires them to be removed at this time. A bathometric survey will be performed in summer of 2021.
Section 2.1.6	Discharge Routing: The discharge from the settling pond shall be conveyed to Middle Quinsam Lake in a manner acceptable to the Director.	Yes	N/A
Section 2.1.7	Effluent Characteristics (for Total Suspended Solids): The characteristics of the effluent with respect to total suspended solids shall be equivalent to or less than the levels specified in Subsection 1.1.2 for discharge rates of up to 0.32 m^3/s (or as may be redefined by the Director according to Subsection 2.1.1). Variances may be allowed by the Director for higher discharge rates. The Director may as well, in the future, establish a maximum level for total suspended solids during extreme storm events.	No	There were 4 Total suspended solid results above permit limits. See Appendix 1, Table 3.
Section 2.2	South Coal Mining Operation (Settling Pond #1)		
Section 2.2.1	Rate of Discharge: The maximum flow of 0.46 m^3/s is the peak routed outflow from the settling pond resulting from an assumed response of the maximum equivalent catchment area as defined in Subsection 2.2.2 to a design 1 in 10 year return period rainfall of 24 hour duration. The Director may from time to time redefine the maximum routed outflow based upon actual on-site measurements.	Yes	N/A
Section 2.2.2	Catchment Area: The maximum equivalent settling pond catchment area shall not exceed 68.4 hectares as defined in the South Pit Water Management. Settling Pond 1, Quinsam Coal Project. Ker, Priestman and Associates Limited, March 1990 unless authorization has been obtained from the Director.	Yes	N/A

Authorized Person Initial:_____ Date:_____

CONDITION NUMBER	CONDITION DESCRIPTION	COMPLIANT? (Yes/No/ND)	ACTION TAKEN
Section 2.2.3	Settling Pond Solids and Storage Volume: Settled solids which have accumulated in the settling pond shall be removed as required to maintain a minimum water depth below the pond decant of 1.0 m and a minimum water storage volume of 1400 m^3. The removed solids shall be disposed of in a manner approved by the Director.	Yes	Settled solids have not accumulated to a point that requires them to be removed at this time. A bathometric survey will be performed in summer of 2021.
Section 2.2.4	Discharge Routing: The discharge from the settling pond shall be conveyed to Long Lake through the adjacent wetlands as specified in Figure 1, South Pit Water Management. Settling Pond 1, Quinsam Coal Project, Ker, Priestman and Associates Limited, March 1990.	Yes	N/A
Section 2.2.5	Effluent Characteristics (for Total Suspended Solids): The characteristics of the effluent with respect to total suspended solids shall be equivalent to or less than the levels specified in Subsection 1.2.2 for discharge rates up to 0.46 m^3/s (or as may be redefined by the Director according to Section 2.2.1). Variances may be allowed by the Director for higher discharge rates. The Director may as well, in the future, establish a maximum level for total suspended solids during extreme storm events.	Yes	N/A
Section 2.3 - 2.3.4	Block 242 Coal Mining Operation		This site is non-operational and reclamation efforts are establishing.
Section 2.4	7-South Mining Operation Settling Pond		
Section 2.4.1	Rate of Discharge : The maximum flow of 0.005 m^3/s is the peak routed outflow from the settling pond resulting from an assumed response of the maximum equivalent catchment area as defined in subsection 2.4.3 to a design I in 10 year return period of 24 hour duration. Additional flow from the 7S adit sump pump must not cause the settling pond to overflow or exceed the maximum flow. The Director may from time to time redefine the maximum routed outflow based upon actual on-site measurements.	Yes	No discharge occurred in 2020-2021
Section 2.4.2	Pumping Rate: The Permittee shall keep records of the date, duration and estimated volume when water from the 7 South Adit Sump (7S Portal Sump) is pumped to the settling pond and submit the records to the Regional Waste Manager upon request.	Yes	To date, no water has ever been routed or pumped or flow from the 7-South (Adit) Portal Sump to 7SSD. Therefore no records exist. All water from 7-South (Adit) Portal Sump (7SPS) is pumped underground to 5S mine pool.
Section 2.4.3	Catchment Area: The maximum settling pond catchment area shall not exceed 3.14 hectares as defined in the Surface Water Management Plan -7 South Development Quinsam Mine, Golder Associates, April 12, 2012 (Appendix B) unless authorization has been obtained from the Director.	Yes	N/A
Section 2.4.4	Settling Pond Solids and Storage Volume: Settled solids which have accumulated in the settling pond shall be removed as required to maintain a minimum water depth below the pond decant of 1.0 m and a minimum water storage volume of 340 m^3. The removed solids shall be disposed of in a manner approved by the Director.	ND	Settled solids have not accumulated to a point that requires them to be removed at this time. A minimum water cover of 1.0m is not sustained at all times as water management practices have changed to have minimal water discharged from the pond. Based on experience, it is difficult to maintain a 1.0m cover and discharge at appropriate levels. There has been far less TSS exceedances with the new practice.
Section 2.4.5	Discharge Routing: The discharge from the settling pond shall be conveyed to the Quinsam River via an ephemeral stream (Stream I) and a wetland (Lower Wetland) adjacent the Quinsam River in a manner acceptable to the Director.	Yes	Refer to the Annual Report, Appendix I, Table 30 (No discharge occurred).
Section 2.4.6	Settling Pond Discharge Dilution Ratio: The 7-South settling pond must not discharge unless a minimum flow is measured in Stream 1 (7S monitoring site). The minimum Stream 1 to discharge ratio shall be documented to the satisfaction of the Director in the Environmental Procedures Manual required in Section 3.2.	Yes	Refer to the Annual Report, Section 6.3 and Appendix I, Table 30 (No discharge occurred). Previous Annual reports (where discharge occurred) validated the model.
Section 2.4.7	Settling Pond Discharge Effluent Quality Model Validation: The Permittee shall report on the settling pond performance in the annual report. The purpose of the report is to validate the effluent water quality prediction model using actual flow and water quality data. The Director may amend the permit, if required, or request an amendment of the permit for environmental protection based on the report findings.	Yes	Refer to the Annual Report, Section 6.3 and Appendix I, Table 30 (No discharge occurred). Previous Annual reports (where discharge occurred) validated the model.
Section 2.4.8	Contingency Measures: In the event of a 7-South settling pond discharge permit limit exceedance, the settling pond discharge valve must be closed immediately and the effluent must temporarily be diverted to the 5S mine or 7S mine underground workings, or to another area acceptable to the Director. Details of the contingency measures shall be documented in the Environmental Procedures Manual required under Section 3.2. Additionally, the Permittee shall follow Section 3.9 requirements.	Yes	The 7-South settling pond water is directed to 7-S Sump via pumping. Refer to the Annual Report Section 2.1.3 and Figure 4. Details of the contingency measures are documented in the Environmental Procedures Manual (EPM).
Section 2.4.9	Toxicity Failure Monitoring and Reporting Procedures	Yes	There have been no toxicity failures in the past. Toxicity samples were not collected due to zero discharge.
Section 3.2	Environmental Procedures Manual (EPM)	Yes	The EPM was submitted on March 31, 2021 to the ENV compliance review website.
Section 3.3	Acid Generation Control	Yes	N/A
Section 3.4	Water Quality Objectives	Yes	N/A
Section 3.5	Nutrient Control	Yes	N/A
Section 3.6	Chemical Storage Containment Works	Yes	N/A
Section 3.7	Spill Reporting	Yes	See Annual Report (Appendix VII).
Section 3.8	Additional Works	Yes	Passive Treatment System cells BCR-EFF, SPC-EFF, AL-EFF, SP-EFF, 7-South Containment Pond (7SCP) and 2-North PAG CCR Pond (WP) are additional works that can be used as facilities for the removal of nutrients and metals from the effluent or the provision of additional settling pond capacity as well as flocculation facilities, if required.
Section 3.9 (3.9.1-3.9.2)	Maintenance of Works, Non-Compliances and Emergency Procedures	No	Refer to Annual Report, Section 2, Figures 1 - 4, and Section 4, Appendix I (Table 2) and Appendix VII.
Section 3.10	Bypasses	No	Unauthorized discharge - DGIR 204584. All mine impacted discharge must pass through authorized works.
Section 3.11	Environmental Review Procedure - An Environmental Technical Review Committee of six members has been formed. This Committee is composed of technical representatives from the Department of Fisheries and Oceans; Environment Canada; the Ministry of Environment; the Ministry of Energy, Mines and Natural Gas; the City of Campbell River; and the Permittee for the purpose of coordinating and reviewing the construction and operational monitoring results. **Based on the recommendations of the Committee, the Director may revise the monitoring requirements in Section 4.**	Yes	
Section 3.12	**Future Monitoring** **Based on the results** of the Effluent and In Mine Releases monitoring program specified in Subsection 4.1 **and / or** data obtained from the Receiving Environment monitoring program specified in Subsection 4.2, **the Director may revise the monitoring requirements in Section 4.**	Yes	
Section 4.0	MONITORING AND REPORTING REQUIREMENTS	Yes	
Section 4.1.1	Effluent and In-Mine Release	Yes	

Authorized Person Initial:_____ Date:_____

CONDITION NUMBER	CONDITION DESCRIPTION	COMPLIANT? (Yes/No/ND)	ACTION TAKEN
Section 4.1.1	North Coal Mining and Coal Preparation Plant Operation	Yes	
Section 4.1.1 i)	Decant WD (EMS # E207409).	No	Refer to Annual report, Appendix 1, Table 2 for permit non-compliance results.
Section 4.1.1 ii)	Culvert, at Middle Quinsam Lake Road - WC (EMS # E207411)	Yes	
Section 4.1.1 iii)	2-North Portal Sump Effluent - 2N-P-Sump (EMS # E283433).	Yes	
Section 4.1.1 iv)	Additional Sites Monitoring Schedule : 2-North Pit Sump CCR Cover (WP) EMS # E207412	Yes	
Section 4.1.2	South Coal Mining Operation		
Section 4.1.2 (i)	Decant - SPD (EMS # E218582)	No	Refer to Annual Report, Appendix 1, Table 2 for list of permit non-compliances. One day of missing continuous data was not recorded from the flow meter. Flow was derived from a staff gauge reading.
Section 4.1.2 (ii)	Culvert, Downstream End of Access Road - SPC (EMS # E217014)	Yes	
Section 4.1.2 (iii)	South Pit Main Sump Water- 3S (EMS # E217015) Missing weekly pH/Conductivity.	Yes	
Section 4.1.2 (iv)	Additional Monitoring Sites Schedule: 2-South Pit In Pit Water Cover (2S) EMS # E292127	No	Missing 1 day of continuous data.
Section 4.3	Block 242 Coal Mining Operation	Yes	NA - Area is non-operational and reclaimed.
Section 4.1.4	7 South Mining Operation		
Section 4.1.4 (i)	Decant - 7SSD (EMS # E292069)	Yes	
Section 4.1.4 (ii)	7-South Adit Sump EMS # E292110	Yes	NA - This pond is never pumped to 7S Settling Pond.
Section 4.2	Receiving Environment Monitoring Sites and Monitoring Requirements		
Section 4.2.1 (i)	Initial Dilution Zone Monitoring Sites - Long Lake Entrance- LLE (EMS # E292130)	Yes	
Section 4.2.1 (ii)	Road Crossing bridge on Stream 1 above the Lower Wetland -7S (EMS # E292109).	No	Refer to the Annual Report, Appendix I, Table 2. Missing continuous flow data for site for 69 days.
Section 4.2.2	Seep Monitoring Sites		N/A
Section 4.2.2 (i)	Long Lake Seep- LLS / LLSM (EMS # E292131)	Yes	
Section 4.2.3	Receiving Water (Stream and Lakes) Monitoring Sites. As per Table 4.2.3 **North Mining Operation:** Quinsam River at Argonaut Road (WA) (EMS # 0126402), Outflow from Middle Quinsam Lake (WB) (EMS # 0900504), South Mining Operation: Long Lake Outlet (LLO) (EMS # E219412), No Name Lake Outlet (NNO)(EMS # E217017). (EMS # E217017) **7-South Mining Operation (Areas 1 to 4):** Quinsam River downstream of 7 South Mining Operation (7SQR) (EMS # E292113), **7-South Area 5 Mining Operation:** Iron River upstream of 7SA5 (IR6) (EMS # E297231), Iron River downstream of 7SA5 and 242 inputs (IR8) (EMS # E297232), Quinsam River downstream of confluence with Iron River (IRQR) (EMS # E299256).	No	No monitoring occurred at Block 242 Mining Operation: Iron River upstream of 242 influence (EMS #E225798) Iron River downstream of 242 influence (EMS # E225808). These sites are captured at IR6 and IR8.
Section 4.2.4	Sediment and Benthic Monitoring Sites	NA	N/A
Section 4.2.4 (i)	7-South Area 5 sediment proposal	Yes	Proposed the sediment and benthic site in 2020. Performed sampling in 2020.
Section 4.2.5	Stream Monitoring Requirements		
Section 4.2.5 (i)	General Requirements Applicable to All Sites Defined Under Section 4.2.3 (E292112)- Lower Wetland Outlet (LWO).	Yes	N/A
Section 4.2.6	Lake Monitoring Requirements		
Section 4.2.6 (i)	General Requirements Applicable to All Sites Defined Under Section 4.2.3.	Yes	All samples were obtained in accordance with the permit. Permit amendment November 1st, 2019.
Section 4.2.7	Sediment Benthic Monitoring Requirements	N/A	N/A
Section 4.2.7 (i)	General Requirements Applicable to All Sites Defined Under Section 4.2.4	N/A	N/A
Section 4.3	Additional Monitoring Requirements		
Section 4.3.1	Composite sampling	Yes	N/A
Section 4.3.2	Continuous Flow Recording	No	SP1 and 2S missing 1 day of continuous flow at both sites.
Section 4.3.3	Iron River Flow Monitoring	Yes	Annual Report, Appendix II, Graph 63
Section 4.3.4	pH and Conductivity Monitoring	Yes	Annual Report, Appendix I, Tables 27
Section 4.3.5	Monitoring of Seeps	Yes	Annual Report Appendix I , Tables 9, 21 and 23 and 32
Section 4.3.6	Groundwater Observation Wells	Yes	Groundwater results and discussion is integrated into the Annual Report, Refer to Appendix I, Tables 48 and 49. Appendix VI.
Section 4.3.7	Monitoring of Drainage Ditches and Water Channels	Yes	Operations are checked daily by either the environmental technician or shift bosses.
Section 4.3.8	Precipitation Monitoring	Yes	Annual Report, Appendix I, Table 33
Section 4.3.9	Block 242 Monitoring	Yes	Not operational, area has been reclaimed
Section 4.4	Monitoring Procedures	Yes	N/A
Section 4.4.1	Sampling and Analytical Procedures	Yes	N/A
Section 4.5	Reporting	Yes	N/A
Section 4.5.1	7 South Area 5 Reporting	Yes	Refer to Annual Report Section 8.1.1 to 8.1.3. No mining has occurred since 2019.

Authorized Person Initial:_____ Date:_____

Appendix VIII

2020-2021 Annual Groundwater Monitoring Report

Pertaining to the Mines Act Permit C-172 & Effluent Permit PE: 7008

Submitted to: Ministry of Energy and Mines & Ministry of Environment and Climate Change Strategy

Prepared by:
Quinsam Coal Corporation
Kathleen Russell BSc. Environmental Coordinator

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Appendix A: Borehole Development Logs

1 Introduction

Quinsam Coal Corporation, as part of the requirements under Mines Act Permit C-172 (administered by the Ministry of Energy and Mines) and Effluent Permit PE-7008 (administered by the Ministry of Environment), conducts a comprehensive groundwater monitoring program to characterize water quality associated with mining development. This edition covers a 12-month period and interprets the results from April 1, 2020 to March 31, 2021 to synchronize with the surface water monitoring report and relate to the effluent permit.

Prior to 2012, the groundwater monitoring program was executed by external consultants. In 2012, in an effort to reduce costs and improve the logistics of the program, Quinsam Coal internalized the groundwater monitoring program. Methodology of sampling followed the procedures developed in the Lorax Hydrogeological Assessment and the *British Columbia Field Sampling Manual for Continuous Monitoring and the Collection of Air, Air-Emissions, Water, Wastewater, Soil Sediment, and Biological Field Sampling 2013 Edition.* The groundwater program has been defined through work performed by Quinsam Coal and Lorax Environmental on the hydrogeology of the respective mining areas, which governs the sampling locations, methods and frequency with consideration of their relationship to mining.

As in previous reports, groundwater wells have been categorized as either ‘in-situ’ or ‘ex-situ’; the definition for each is as follows:

- In-situ: groundwater wells located within the mine workings (disturbance footprint) and therefore represent water accumulated within the mining void. In the absence of groundwater well samples, underground sump samples are used for comparison.
- Ex-situ: groundwater wells located outside the mine workings (disturbance footprint) which reflect water quality flowing from the mine void towards the receiving environment. This also includes baseline and background (up-gradient of workings) groundwater wells.

The groundwater wells outside the mine footprint (ex-situ) are compared to the British Columbia Contaminated Site Regulation (CSR) (BC reg.37/96. O.C. 1480/96), including the amendments (343/2008 January 1, 2009) describing water quality standards for freshwater Aquatic Life (AW). The aquatic life standard assumes that a minimum 1:10 dilution is available for groundwater discharged to a freshwater system; together, they are referred to as CSR-AW.

The parameters of interest (POI) captured under the CSR-AW and applied to Quinsam include: arsenic (As), cobalt (Co), copper (Cu), fluoride (F), iron (Fe), sulphate (SO_4), sulphide (as H_2S) and zinc (Zn). Section 4.1 compares sampling results performed during this program to the CSR-AW standards (by development area).

Derived from numerous studies, POI source terms have been developed by Lorax Environmental for various areas, including: geochemical characterization of the 4-South mine pool, laboratory kinetic testing conducted on the 7-South coarse coal reject, 7-South formation water and 2-North, 3-North and 5-South mine water and formation water samples collected from underground mine dewatering. It is therefore important to consider water captured and stored within the mine workings (in-situ) to ascertain potential discharge (through existing water management structures) and seepage water quality. Accordingly, groundwater wells that are located within a mine void are sampled as part of the monitoring program with results being compared to source terms developed for each respective area.

2 Groundwater Monitoring Regime

Throughout the 2020-2021 monitoring period, Quinsam Coal monitored 36 groundwater sites within the vicinity of the mine footprint. These sites consisted of 22 ex-situ wells, 10 in-situ wells and 4 in-situ underground sumps, as illustrated in Table 1 below.

Table 1: Groundwater Wells & Sumps Monitored in 2020-2021

Area	In-Situ Sumps	In-Situ Wells	Ex-Situ Wells	
2-North	3M2N	1M2N 5M#2 QU10-13 D	QU08-21G S QU10-10 S QU10-11 S	QU08-21G D QU10-10 D QU10-11 D
River Barrier Pillar		QU11-09 M	QU11-05 S QU11-09 S	QU11-05 D
2-North Coal Processing Plant			MW00-1 S MW00-6 S	MW00-1 D MW00-6 D
7-South	7SPS 1M7S 1M7SA5	QU14-10	QU08-13 A QU12-06 S QU11-36 D	QU08-13 B QU08-10
242		242MW		
4-South		QU11-01	QU10-09 S QU10-09 D	QU10-08 D
5-South		5SMW		
2/3 South		QU11-11 (INF) MW00-4	MW00-2	

The groundwater areas and wells description are listed in the Table 46 in the Appendix I of Annual Water Quality Monitoring Report (AWQMR) for 2020-2021, Appendix IX of AWQMR for 2020-2021, Site Plan, Groundwater Monitoring Locations, presents a map of the groundwater sampling sites with respect to underground workings, groundwater and pumped mine water flow paths and disturbed areas. These wells are regularly evaluated and modified in order to best monitor groundwater and potential impacts from mining.

The monitoring wells have been selected as they relate to:

- hydrogeology of the area
- groundwater regime
- stratigraphy and geologic structure

- formation groundwater
- mine pool water
- past and present mining conditions
- underground PAG–CCR storage
- fine tailings storage

Appendix I of Annual Ground Water Monitoring Report, Tables 4, 47-49 display the groundwater analytical results for the 2020-21 monitoring year. Completion logs for the well installations can be found in Appendix A, and a further discussion of these wells can be found in Mine Permit (C-172) Amendment: 7-South Development Volume 3: Appendix I through J and Volume 4: Appendix K. Lorax Environmental Services was retained by Quinsam Coal to perform a hydrogeological investigation in these areas. The wells are a combination of nested wells, single wells and boreholes. The nested wells include a deep well and a shallow well that are screened in zones of interest. The deeper wells are generally drilled into the lowest coal seam and the shallower wells represent other zones of interest which may include shallower coal seams, or areas of increased permeability (Lorax, 2011).

With a change of ownership and recommencement of mining at Quinsam Coal in 2017, mining in 7-South Area 5 commenced in February 2019 after blasting through the Long lake fault zone from July 2018 through mid-January 2019 with mining occurring until May 1st, 2019 when the mine shut down. There has been no mining since the end of May 2019 in any areas of the mine. Mining into 7-South Area 5 required the need to resume monitoring of groundwater in the area prior to mining to ensure more recent baseline data. Monitoring of the 7-South Area 5 wells will continue following the continuation of mining operations to determine any impacts on in-situ or ex-situ groundwater. Currently only underground sump at 1Mains of 7S Area 5 (1M7S) and ex-situ wells, QU11-36 D and QU12-06 S have been monitored in 7-South Area 5 for 2020-2021.

2.1 Hydrogeological and Stratigraphic Setting

Groundwater wells relating to mining voids or defined as 'down gradient' from mine development zones have been established to characterize water quality for each respective area. The water chemistry is compared to source terms for parameters of interest established through:

- Sulphur distribution in the proposed workings
- Solid phase and leaching characteristics of CCR and tailings from the 7-South areas and disposed in mined out workings
- Geochemical characterization of the hanging wall strata over the mine area
- Formation groundwater characteristics

The information pertaining to column leach testing and derivation of source terms can be found in the application for 7-South Development Mine Permit Amendment (C-172) Volume 3: Appendix J and Volume 4, Appendix K (Lorax[(1)], 2011).

Figure 1 below displays the stratigraphic column at the Quinsam mine.

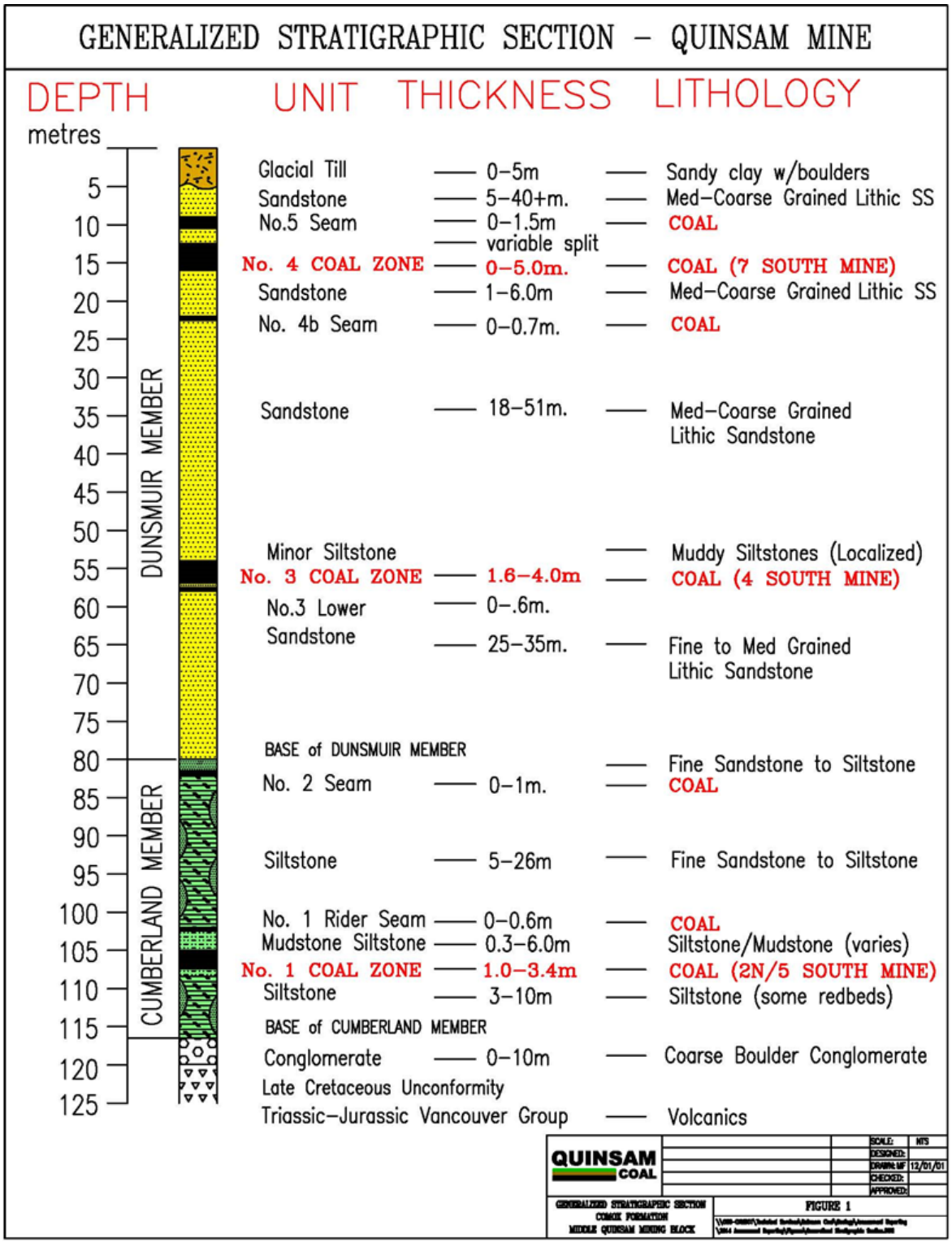


Figure 1: General Stratigraphic Column - Quinsam Mine

2.1.1 Underground PAG-CCR Storage in the River Barrier Pillar

Coarse coal reject (CCR) material produced from the processing of raw No. 1 seam coal is defined as potentially acid generating material (PAG) when the sulphur content exceeds 1.3 %. As development of the 5-South mine progressed, inherent sulphur levels found in the #1 coal zone progressively increased above 1.3% sulphur. The run of mine coal processed through the Coal Preparation Plant and the resultant waste materials (fine tailings and CCR) were therefore classified as PAG. To mitigate potential metal leaching/acid rock drainage, Quinsam Coal established a sub-aqueous PAG-CCR disposal facility within the mine workings known as 87 Panel River Barrier Pillar (RBP). This disposal method was used as a pilot project for future PAG-CCR storage of material from the then proposed 7-South mine. Accordingly, groundwater monitoring at this facility has been a crucial part of Quinsam's past and current groundwater monitoring program. Wells used to monitor the seepage of groundwater are QU11-05 (S and D) and QU11-09 S while in-situ waters are monitored using well QU11-09 M.

2.1.2 Down Gradient of Subaqueous Disposal of PAG Tailings in 2-North and 3-North

The 2-North mine has been a subaqueous disposal site of fine tailings from processing of the 7-South coal since 2012. 1Mains 2-North (1M2N) is an area within the 2-North Mine that was mined, depillared and subsequently used as a sub-aqueous storage facility for fine tailings from the processing of 7-South coal. Prior to the injection of tailings into this area, this part of the naturally flooded workings was dewatered. The fine tailings were then pumped into the mine voids, allowing for the tailings to settle out throughout 1 Mains until it was necessary to relocate the tailings line in early 2015 to accommodate underground operations. The 7-South fine tailings were then pumped into another area of the 2-North Mine, called 5 Mains. At the end of 2018 (December) the tailings line was redirected back to 1M2N.

The wells installed in these areas initially supported a hydrogeological investigation performed by Lorax. The 2-North, 3-North and 5-South mine waters and formation waters have been defined as: mine water, No.1 coal seam groundwater, and Dunsmuir sandstone groundwater. In these areas, the mine water is classified as circum-neutral pH, elevated alkalinity and conductivity, with the

elevated conductivity directly related to elevated sulphate concentrations. All mine pool water (2N, 3N, 2S, 3S, 4S, 5S and 7S) has a distinct sulphate geochemical signature that can be used to trace the flow paths of mine water (Lorax [(1)], 2011). The in-situ waters in the 2-North mine pool are monitored at well locations 1Mains 2-North (1M2N), 3Mains 2-North (3M2N), 5Mains #2 (5M#2), and QU10-13 D. This well measures the hydraulic head above the 2-North mine (1 Mains) and fine tailings disposal.

Ex-situ groundwater wells QU10-10 (S and D), and QU10-11 (D) have been installed down gradient of the 2-North subaqueous disposal areas and measure formation water quality and hydraulic head downstream of the 2-North mine workings. Quinsam originally drilled QU08-21G in the 2-North area as a geotechnical hole but was later converted into nested monitoring wells QU08-21G S and QU08-21G D. These wells were used to characterize water quality on the opposite side of the Forjan Fault in both the No. 1 coal zone (deep well) and the overlying Dunsmuir Sandstones in the No. 4 coal zone (shallow well). QU10-11 S monitors groundwater in the overlying Dunsmuir sandstones in a fracture zone.

Water quality in the formation groundwater of the Dunsmuir sandstone is defined as being circum-neutral pH with low alkalinity and conductivity levels. The No. 1 coal seam groundwater is defined as having circum-neutral pH, elevated conductivity and moderate alkalinity. Conductivity and chloride concentrations in the No. 1 seam at QU08-21G D and QU10-10D are significantly higher than those found within the 2-North mine pool due to elevated sodium and chloride, not sulphate.

2.1.3 2-North Coal Processing Plant and Coal Pad

The coal processing plant is located east of Middle Quinsam Lake and lies at an elevation approximately 40 metres above the lake surface. Two nested groundwater wells MW00-6 (S and D) and MW00-1 (S and D) have been installed at the peripheries of a surface collection ditch to intercept groundwater and surface runoff from the coal processing plant and coal stockpile pad. The depth of the shallow wells MW00-1 S and MW00-6 S are 8.1 and 8.7 metres respectively, while the deeper wells MW00-1 D and MW00-6 D measure 29.8 and 18.0 metres respectively. These wells monitor groundwater quality at different depths in the glacial till overburden layered overtop of the bedrock.

2.1.4 4-South Water Chemistry

The 4-South mine is developed in the #3 coal zone. The #3 coal zone lies within the Dunsmuir Member of the Comox Formation. The Dunsmuir Member consists of thick-bedded medium to coarse grained arkosic sandstones containing localized silty interbeds. Lorax classified the groundwater in this area into two groups; formation groundwater with lower overall dissolved ion concentrations and mine pool water with higher dissolved ion levels. The mine pool water is elevated in sulphate and iron; this signature is used to assess the mine pool seepage rates and groundwater flow path.

Lorax's assessment of the area found that formation groundwater wells had water quality with a geochemical signature that suggested mine pool influence in the down gradient wells of the flooded 4–South Mine. In Volume 3, Appendix I, Section 4 of the 4-South Mine Groundwater Evaluation, Lorax concludes that "*The component of seepage from the shallow westernmost portion of the 4-South mine inferred to flow to Long Lake represent about 10% (0.14 m^3/day) of the 1.4 m^3/day, estimated to represent the total seepage from 4-South. All seepage is ultimately directed to the Quinsam River"* (Lorax[(2)], 2011).

The monitoring wells established in this area were situated to intercept any groundwater transport that may occur from the 4-South mine pool. These wells include QU10-09 (S and D) and QU10-08 D (Lorax. 2011). QU10-08 is located up gradient of the 4-South mine and displays minimal influence from the 4-South mine pool.

The monitoring wells dedicated to monitoring in-situ water of the flooded workings are wells QU11-01 and QU78-161. QU11-01 is situated in the depillared area of the mine while QU78-161 is located in open mine workings east of a large fault. In past monitoring years, both of these wells were sampled due to their distance apart. It has been deemed that only one of these wells are necessary to determine mine-pool water chemistry as they have both exhibited similar characteristics when assessing historic data. Monitoring at QU78-161 has been ceased until further notice.

2.1.5 2-South – 3-South Area

The 2-South – 3-South area consists of naturally flooded mine workings, the 2-South subaqueous PAG-CCR storage pit, the 3-South subaqueous PAG-CCR storage pit and other surface disturbances. Wells established in this location are used to determine if parameters of interest are emanating from the mine workings or the PAG-CCR storage pits towards the receiving environment.

The 2-South open pit area was engineered to contain PAG-CCR material and included a sand-bentonite liner to minimize seepage and to retain water necessary for cover. Backfilling of PAG-CCR was completed in summer 2015 and water cover has been maintained since late 2015 (subaqueous disposal). It was projected that approximately $50m^3$ of water will seep from the facility daily with 10% of the water reporting to No Name Lake. The wells MW12-23 and MW12-24 were intended to intercept any water transporting from the 2-South PAG-CCR storage towards the lake. However, these two wells have been extremely difficult to monitor due to refill rates. As a result, only one sample set was collected from MW12-23 in 2019-20. The 3-South open pit development has been backfilled with PAG-CCR and was flooded to provide a full water cover; similar to the requirements of 2-South. Groundwater well MW00-2 was installed down gradient of this facility in shallow bedrock approximately 5 metres from the northeast corner to characterize seepage from 3-South. It is inferred that MW00-2 is hydraulically connected with the 3-South pit based on proximity and reported water quality (Golder Associates, 2006). This well is considered an ex-situ well.

Groundwater wells MW00-4 and QU11-11 (INF) are used to monitor the 2-South mine pool and depillared areas. MW00-4 is located on the north-eastern margin of the 2-South mine in the depillared workings near Long Lake. QU11-11 (INF) is located at the deepest portion of the 2-South mine pool. Mine water is pumped from the underground mine pool and discharged through the Passive Treatment System (PTS). This well is monitored weekly for sulphate, pH and conductivity and monthly for metals and nutrients in order to assess mine pool chemistry and to assess the performance of sulphate reduction through the PTS. Historically, MW00-3 and MW00-5 were also monitored in this location but are presently only used to monitor the water elevation

in the mine pool. The underground workings in the 3-South pit area were developed and accessed by two portals located in the 2-South pit, with the 3-South Pit separated from the underground workings by intact bedrock. It is expected that the hydraulic connection between the flooded 3-South pit and the former 2-South underground workings are a result of bedrock fractures within the intact bedrock (Golder Associates. 2007).

2.1.6 7-South Down Gradient of Subaqueous Disposal of PAG-CCR in 7-South

The nested groundwater well QU08-13 (A & B) is situated topographically down gradient of the 7-South mine workings to intercept groundwater flow from the workings towards the Quinsam River. The well is located to monitor water quality and detect any seepage from the 7-South PAG-CCR underground disposal area in the 7-South mine at the stratigraphic level of the No. 4 coal zone (QU08-13 A) or as it rises through the stratigraphic column towards the Quinsam River (QU08-13 B). Source terms derived specifically for this development will be used as a comparison of water quality. Other groundwater wells within the 7-South area are used to monitor groundwater quality in relation to the seepage from the run of mine stockpile (QU08-10). At present, monitoring well QU14-10 is being used to measure water quality of the in-situ underground PAG-CCR subaqueous disposal area. When the storage of PAG-CCR commences in 7SA5, drillholes QU08-07 and / or QU09-01 will be developed into monitoring wells to measure in-situ underground water quality within the PAG-CCR storage facility.

2.1.7 Baseline/Background

Groundwater monitoring wells within areas without mine related impact or up gradient of the perceived flow path are established to identify baseline/background information on water quality for modeling purposes and when comparing/identifying sites encountering mining influence. Two primary areas of focus for collecting baseline groundwater quality in the near future are 7-South Area 5 and the 4-South / 6-South areas. Wells in 7-South Area 5 were monitored in the past (2013-2015) with additional monitoring performed in 2018. If mining operations continue some wells will be required to be drilled and completed as monitoring wells in 7S Area 5. These include QU11-21S and QU14-A. The shallow well QU11-21S will be designated to intercept the potential seepage from the northerly portions of 7SA5. On the south side of 7SA5 another well QU14-A will be required to intercept the potential for peripheral pathways between 7SA5 and the Iron river.

The C-172 permit has an important stipulation for this area, south of the northing 100280 m. This northing is significant in that it represents the southernmost influence of the 7SA5 pump test performed by Lorax, in support of the 7-South Area 5 mine permit amendment. Section A3, of the amended C-172 permit received for 7SA5, approves mining up to northing 100280 m with stipulations for further progression south of this point. The development of these wells will provide further information to support the structural and hydrogeological conditions of the mine beyond this point.

2.1.8 Mine Pools and Underground Sumps

A mine pool is a flooded mine void or previously mined out area which may or may not be backfilled with waste material. Mine pools often exhibit elevated concentrations of metals and sulphate associated with developed coal seams. Concentrations become increasingly elevated if mine pools have waste deposits present as constituents tend to dissolve and accumulate at depth. A chemical stratification occurs when there is limited mixing of the mine water and the heavily mineralized waters settle on the bottom of the water column while the lighter, less mineralized waters, concentrate in the upper portion.

In-situ mine pool monitoring locations include: 1M2N, 5M#2, 3M2N, and QU10-13 D in 2-North; 5SMW in 5-South; QU11-09 M in the RBP; QU14-10 in 7-South; QU11-01 in 4-South; MW00-4 and QU11-11 in 2-South; and 242MW for the 242 mine. In addition to mine pool monitoring sites that are not accessible to monitoring personnel, underground sumps are used to characterize in-situ locations including: 1 Mains 7-South (1M7S), (7SA5) and combined 1 Mains 7-South Area 5 (1M7SA5).

3 Methods and Procedures for Monitoring Groundwater

During groundwater sampling, water is directed through a flow cell connected to a water quality sonde to instantaneously measure parameters such as pH, conductivity, temperature, oxidation reduction potential and dissolved oxygen. These parameters are used to identify when intercepted groundwater entering the column is steady and representative of the targeted water based on the well design. Water samples are obtained for laboratory analysis when the appropriate volume of water has been purged, water levels have stabilized, and the physical parameters listed above stabilize. Ultimately, the objective is to collect a sample that represents the 'active' groundwater in an area as opposed to stagnant water within a well.

3.1 Sampling Techniques

Generally, four methods/systems (dependent on groundwater setting) are employed for monitoring groundwater. These methods include:

- Inertial lift
- Peristaltic pumping
- Portable bladder pump
- Dedicated bladder pump

The most suitable sampling device is selected based on:

- Parameters being monitored
- Maximum efficiency
- Purging rate compared to well yield
- Well diameter
- Depth of well
- Sample collection point
- Ease of use of the sampling device

3.1.1 Inertial Lift Sampling

This method of sampling uses HDPE tubing fitted with an inert foot valve placed down the well casing at the desired depth. Oscillation of this tubing forces water up to surface while the foot valve prevents backflow on the downswing. This constant oscillation is achieved using a mechanical actuator known as a hydrolift. The hydrolift is attached to the tubing end on surface and cycles up and down to provide the motion needed to lift water. Flow rate is directly proportional to the speed of oscillation, well design and water level. Inertial lift sampling is appropriate in wells in which a high purge rate is required as flow rates can range from 0.5 to over 4 L/min.

3.1.2 Peristaltic Sampling

This method employs a peristaltic pump connected to tubing that is placed within the well casing at a desired depth. Peristalsis is a cyclic compression and decompression on the tubing to create a negative pressure point in which the water is drawn up the tubing. This method is employed at very shallow wells that can potentially have poor recharge rates.

3.1.3 Bladder Pumps

Bladder pumps are submerged to an appropriate level and operate by filling and discharging a bladder system inside a housing unit. Compressed gas (N_2) is supplied at surface and is pumped down the tubing to provide the compression and release of water within the bladder housing. Flow rate is controlled via timing cycles of recharge and discharge, air pressure and depth of water. Bladder pumps are used in deeper wells in which inertial lift and peristaltic pumping capabilities and efficiencies are not possible.

3.2 Parameters Monitored

The total metals suite was removed from the analytical requests in 2014 to eliminate the potential artifacts (associated with higher total suspended sediment) in sampling results. Since then, analytical results have included dissolved metals, turbidity or Total Suspended Solids (TSS), dissolved anions (i.e. bromide (Br^-), chloride (Cl^-), fluoride (F^-), sulphide (S^{2-}), sulphide as (H_2S), sulphate (SO_4), total dissolved nitrogen (TDN), dissolved organic carbon (DOC), total-alkalinity (Alk) and acidity. Furthermore, field measurements for pH, temperature, conductivity, oxidation reduction potential and dissolved oxygen continue to be part of the monitoring program.

Results for hydrogen sulphide are calculated using a gravimetric conversion factor (sulphide result multiplied by 1.063) as the laboratory only provides results as sulphide. This calculation is necessary to compare results to the CSR-AW standards as the standard is measured as H_2S (0.02 mg/L). In the past, sulphide results that were expressed as <MDL were calculated using the MDL value which was often 0.02 mg/L. For all previous results and results included in this reporting year that were <MDL, a value of half the MDL was used for calculation. This may eliminate past issues of false positive bias when the gravimetric conversion factor is applied.

In 2013 the Ambient Water Quality Guideline for dissolved sulphate was updated from an acute guideline of 100 mg/L to a chronic guideline based on a 30-day average. The new guideline is relative to background water hardness concentrations. As a result, sulphate water quality guidelines for the protection of aquatic life were developed for different categories of water hardness as displayed in Table 2 below.

Table 2: Sulphate Water Quality Guideline (mg/L) - Based on Water Hardness (mg/L) Categories

Water Hardness* (mg/L)	Sulphate Guideline (mg/L)
Very Soft (0-30)	128
Soft to moderately soft (31-75)	218
Moderately soft/hard to hard (76-180)	309
Very hard (181-250)	429

*Water hardness categories adapted from the CCME.

** Toxicity tests on the early stage rainbow trout were only conducted up to a water hardness of 250 mg/L.

The BC Land Remediation Section develops the Contaminated Sites Regulations standards. As it is a regulation, standards do not change when a water quality guideline change. As a result, the CSR-AW for some updated parameters was not updated when the BC Water Quality Guideline was revised.

Currently, the CSR-AW standards are subject to revision, with the first step of the process being to review the policy (e.g. developing a CSR standard) and the second step applying the newly derived standard. These new guidelines derived from the Water Quality Guidelines are often a factor of the guideline (e.g. 10 times higher).

Starting March 2015, in an effort to reduce costs, all water samples were analyzed by Maxxam Analytics in favor of ALS Environmental (ALS). While both labs provided analyses of water with similar detection limits, not all analysis methods were the same. Results have been consistent for all parameters except Sulphide as H_2S at low ranges.

3.3 Quality Assurance/Quality Control

Quality Assurance / Quality Control (QA/QC) for the Quinsam groundwater sampling program is conducted in accordance with *"The British Columbia Field Sampling Manual, For Continuous Monitoring and Collection of Air, Air-Emissions, Water, Wastewater, Soil, Sediment, and Biological Samples, 2013 Edition"* (MOE, 2013).

Quality control measures that have been applied since last year's monitoring period includes an increased attention to cleanliness of sampling equipment and tubing installed in groundwater wells. Tubing assemblies installed within the wells are re-used as it is unfeasible to replace tubing assembly wells every sampling event. An in-depth review of the integrity of the assemblies will occur immediately to evaluate the need for replacement. For tubing assemblies not installed in the well (portable bladder pump and surface sampling tubing), increased cleaning and proper storage methods will be applied.

Relative Percent Difference (RPD) values were calculated for the analytical results from the sample and its respective replicate. In accordance with the British Columbia Field-Sampling Manual, the calculation was applied as stated below:

$$RPD = Absolute \frac{(Sample\ Concentration - Replicate\ Concentration)}{\left(\frac{Sample\ Concentration + Replicate\ Concentration}{2}\right)}\ x\ 100\%$$

RPD calculations were only practical for results where concentrations were found at or greater than five times the reported detection limit (RDL) as there is considerable uncertainty at low levels. In addition, mathematical calculations for RPD appear exaggerated with low values where absolute differences may be relatively low.

3.3.1 Results of Field Replicates

It is expected to see variation between a sample and its respective field replicate for a number of reasons. Some considerations include inconsistent sample stream at sampling locations; heterogeneity of water at sampling location; the possibility of minor contaminations; laboratory sample preparation and accuracy of analytical instrument to name a few. Taking these possibilities into consideration, RPD values less than 20% are deemed "acceptable" and indicate proper sampling methodology with representative results. It has been acknowledged that RPD values greater than 20% indicate a potential problem with sampling integrity whereas values greater than 50% indicate a definite problem. When taking a groundwater replicate during a sampling event, approximately 60 parameters are analyzed from the same set of samples. It is common to have one or a select few of these parameters exceed an acceptable RPD threshold while the rest do not. Concerns over sampling integrity or methodology are raised when numerous results have high RPD values within the same sample or if certain parameters have repeated failures throughout the year. Appendix I, Tables 50 to 53 display the results of the RPD calculations. Refer to Section 5.3 of the AWQMR for a discussion of field replicates.

4 Results and Discussion

4.1 References for Water Quality Data

Geochemical source terms have been developed by Lorax as a conceptual model that represents the progression of mine pool geochemistry for all mine pool areas on the Quinsam Mine Site. This model is explained in detail in the 7-South Development Mine Permit Amendment Volume 3, Appendix I and Volume 4, Appendix K.

Geochemical source terms were developed for the anticipated mine plan in 2-North, 3-North and 5-South mine areas where 7-South tailings will be stored, as well as 2/3North, 4-South and 5-South flooded mine voids without PAG-CCR or fine tailings. Source terms provide an overview developed for each respective mine area compared to the measured water quality.

The source terms have been developed using a set of empirical data including the following:

- Water chemistry collected from underground mine dewatering and mine void,
- Kinetic saturated column leach tests performed on 7-South CCR and tailings,
- Sulphur distribution in the proposed workings.

Comparison of water quality data to source terms can be found in tables within each respective area in the discussion of results.

All water quality results for groundwater wells located between mine working(s) and the receiving environment have been compared to Contaminated Sites Regulations for Aquatic Life (CSR-AW). Numerical standards used for CSR-AW are described in Table 3 below. A groundwater map displaying the location of each well in relationship to the underground mine area can be found in Appendix IX of AWQMR for 2020-2021, Site Plan Groundwater Monitoring. Tables 48-49 included in the Appendix I of the AWQMR for 2020-2021 display the analytical ground water quality results for 2020-2021.

Table 3: CSR-AW Lowest Level for Dissolved Metals and Total Sulphide as H_2S

Parameter	CSR-AW (mg/L)	Parameter	CRS-AW (mg/L)
Dissolved Sulphate*	1280	Dissolved Lead*	0.04
Dissolved Chloride	1500	Dissolved Mercury	0.00025
Dissolved Fluoride*	2-3	Dissolved Molybdenum	10
Dissolved Silver	0.0005 - 0.015	Dissolved Nickel*	0.25
Dissolved Arsenic	0.05	Dissolved Antimony	0.09
Dissolved Barium	10	Dissolved Selenium	0.02
Dissolved Boron	12	Dissolved Thallium	0.003
Dissolved Beryllium	0.0015	Dissolved Titanium	1
Dissolved Cadmium*	0.0005	Dissolved Uranium	0.085
Dissolved Chromium*	0.01	Dissolved Zinc*	0.075
Dissolved Cobalt	0.04	Sulphide as H_2S*	0.02
Dissolved Copper*	0.02		
***Indicates the CSR-AW is a calculated parameter**			

Table 4 below displays a summary of exceedances noted during the 2020-21 sampling program at the ex-situ wells compared to the CSR-AW.

Table 4: Parameters Above the CSR-AW Standards found in Ex-Situ Groundwater Wells

Parameter	Site with Failures	CSR-AW	Results Program
As-D	QU08-13 (A and B), QU08-21G (S and D), QU10-09 (S and D), QU10-10 S, QU11-05 S, , QU11-36 D, QU12-06 S	0.05	0.0701 to 0.828
Se-D	QU10-05 D	0.02	0.0522 and 0.0637
Sulphide as H2S	QU08-10, QU08-13 (A and B), QU08-21G (S and D), QU11-05 (S and D), QU11-09S, QU10-09 D, QU10-08 D, QU10-10 (S and D), QU10-11 D	0.02	0.0213 to 69.1
SO4-D	MW002	1280	1300
Cl-D	QU10-10D	1500	2600 and 3000
F-D	QU10-08D, QU12-06 S	2	2

4.2 Key Observations and Conclusions

4.2.1 North Mining Area

The North mining area represents the largest operation on the mine-site and has been the longest project at Quinsam Coal spanning nearly 30 years of mining. The North mining area is divided into 3 sections based on source terms: 2/3 North Mine Void, 2 North Mine Water with 7-South tailings, and North Mining Area Ex-Situ groundwater.

4.2.1.1 2/3 North Mine Void

Much of the mined out 2/3-North mine is allowed to naturally flood and mine pool water has been found to be circum-neutral pH, elevated alkalinity and conductivity with a unique sulphate geochemical characteristic. Water is found to be oxic to strongly reducing in various locations in the mine. Source terms as established by Lorax (2011) are displayed in Table 7. Due to retreat and depillaring mining occurring in the 2-North mine the 6-Mains 2N pump was removed. This location is used as a comparison to the area that does not contain tailings storage and has no influence from tailings storage in other areas of the mine. Previous monitoring years used samples from a well named QU11-03 in the 3-North mine (10 Panel) to represent the 2/3-North mine void. Sampling at this well was discontinued as water samples were difficult to obtain and a local fault was thought to influence water in this area and give potentially unrepresentative results. There has been no replacement for this area to use as a comparison in 2020-2021.

The location 3Mains 2-North (3M2N) site has been included in this program in 2019-2021. The location 3M2N is the area of the mine where combined 5-South and 7-South mine water enters the 2-North mine and is diluted with water in flooded 2-North mine pool, 3-Mains. Table 5 compares the expected and worst-case scenarios for the flooded mine void in 2 / 3 North with the 11 sets of results from 2020/2021.

Copper and zinc were at expected source terms values. Those that were averaging slightly higher than the expected case include sulphate and manganese. Cobalt, iron, and nickel were above worst case. Further monitoring on a more frequent basis has been included in the monitoring program to

accurately represent this location and ensure consistency and overall representation of this area. However, the mine water is influenced by pumping periodically from 5-South mine pool mixed with 7-South water.

Table 5: Source Terms Comparison for 2/3 North Mine Void 2020/2021

2N Mine Void - 3M2N (N=11)				
Parameters	**Expected**	**Worst Case**	**Annual Average**	**Comparison to Source Terms**
Alkalinity (CaCO3)	450	-	390	Below Expected
Fluoride (F)	0.29	0.3	0.13	Below Expected
Sulphate (SO4)	278	1280	810	**Above Expected**
Dissolved Metals				
Aluminum (Al)	0.013	0.027	0.003	Below Expected
Arsenic (As)	0.036	0.040	0.001	Below Expected
Boron (B)	1.1	1.2	0.8	Below Expected
Cadmium (Cd)	0.00002	0.00008	0.00001	Below Expected
Cobalt (Co)	0.001	0.004	0.019	**Above Worst Case**
Copper (Cu)	0.001	0.004	0.001	**At Expected**
Iron (Fe)	0.49	2.45	3.43	**Above Worst Case**
Manganese (Mn)	0.36	0.95	0.47	**Above Expected**
Nickel (Ni)	0.001	0.008	0.024	**Above Worst Case**
Selenium (Se)	0.0002	0.001	0.0001	Below Expected
Zinc (Zn)	0.006	0.007	0.006	**At Expected**

All units in mg/L

Factor applied to less-than results when calculating statistics: 0.5

4.2.1.2 2-North Mine Water with 7-South Tailings

Both 1M2N and 5M#2 are compared to geochemical source terms and are expected to reflect those terms very closely. On February 23rd, 2019 the 5-Mains dewatering pump (5M#2 / 5M2N) located in 5-Mains 2-North faulted on restart. It was not replaced until March 25th, 2021, as a result only 1 sample was collected. The 1M2N was the only pump operating to dewater the 2-North 1 Mains area from February 23rd, 2019 until November 30th, 2020. November 30th, 2020 1M2N pump also faulted and was not operating until April 13th, 2021. 3M2N pumping system was operating to maintain the mine pool at a higher elevation than normal. This is depicted in the figure below.

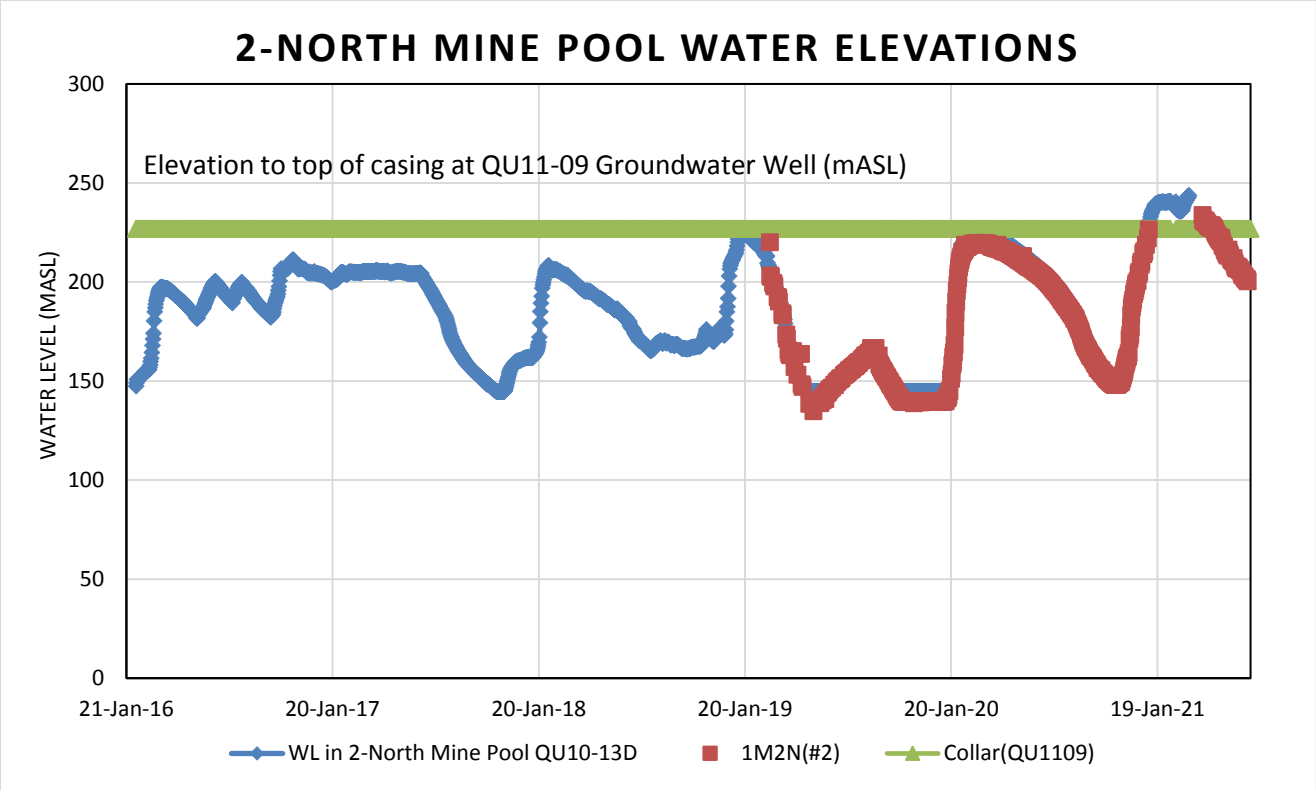


Figure 2: 2-North Mine Pool Elevations (mASL)

The POI results from sampling events were averaged using half the detection limits to an annual average are displayed in Table 6 and 7, below. As shown, most of the parameters were below the expected values, with the exception of 1M2N average nickel remained at the expected case, alkalinity, sulphate and manganese were above expected, and iron was above the worst case. Certain anoxic, redox reactive metals were observed to be suspiciously low in past monitoring and field filtering/preservation was implemented to improve representation. Redox processes require one chemical species that donates electrons and another chemical species that accepts those electrons. As a chemical species donates electrons it is "oxidized," and as the other species accepts electrons it is "reduced."

If dissolved oxygen is present in the water, it is the preferred electron acceptor, and the water is "oxic." The atmosphere is the source of the dissolved oxygen in water, so the redox conditions in an aquifer near where recharge occurs usually are oxic. If no dissolved oxygen is present, the water is "anoxic", but there are other chemical species such as nitrate, manganese, iron, sulfate,

and carbon dioxide, that can accept electrons in oxygen's place. Redox processes typically are enabled by bacteria, which use the energy produced by the processes.

Water quality at 5M#2 is normally lower in concentrations of most parameters compared to 1M2N due to this location being higher in elevation with less accumulated tailings stored here. The 2-North mine pool is moderately to strongly reducing (for parameters that lose electrons) indicated by the elevated concentrations of dissolved iron and sulphide in the mine pool. These are redox indicator species. These parameters are present in the 2-North, No. 1 Seam and Dunsmuir sandstone groundwater.

Table 6: Source Terms Comparison for 2-North Mine Water with 7-South Tailings 2020/2021

2N with 7S Tailings - 1M2N (N=8)				
Parameters	**Expected**	**Worst Case**	**Annual Average**	**Comparison to Source Terms**
Alkalinity (CaCO3)	450	-	531	**Above Expected**
Fluoride (F)	1.1	1.2	0.1	Below Expected
Sulphate (SO4)	278	1280	565	**Above Expected**
Dissolved Metals				
Aluminum (Al)	0.013	0.027	0.002	Below Expected
Arsenic (As)	0.036	0.125	0.009	Below Expected
Boron (B)	1.1	1.2	1.0	Below Expected
Cadmium (Cd)	0.00002	0.00008	0.00001	Below Expected
Cobalt (Co)	0.001	0.023	0.0001	Below Expected
Copper (Cu)	0.001	0.004	0.0002	Below Expected
Iron (Fe)	0.49	2.902	2.9994	**Above Worst Case**
Manganese (Mn)	0.36	0.95	0.38	**Above Expected**
Nickel (Ni)	0.001	0.033	0.001	**At Expected**
Selenium (Se)	0.0002	0.007	0.0001	Below Expected
Zinc (Zn)	0.006	0.019	0.003	Below Expected

All units in mg/L

Factor applied to less-than results when calculating statistics: 0.5

Table 7: Source Terms Comparison for 2-North Mine Water with 7-South Tailings 2020/2021

2N with 7S Tailings - 5M#2 (N=1)				
Parameters	**Expected**	**Worst Case**	**Max**	**Comparison to Source Terms**
Alkalinity (CaCO3)	450	-	600	**Above Expected**
Fluoride (F)	1.1	1.2	-	Below Expected
Sulphate (SO4)	278	1280	230	Below Expected
Dissolved Metals				
Aluminum (Al)	0.013	0.027	0.003	Below Expected
Arsenic (As)	0.113	0.125	0.009	Below Expected
Boron (B)	1.1	1.2	1.2	**At Worst Case**
Cadmium (Cd)	0.00002	0.00008	0.00001	Below Expected
Cobalt (Co)	0.001	0.023	0.0002	Below Expected
Copper (Cu)	0.001	0.004	0.0002	Below Expected
Iron (Fe)	0.49	2.902	0.71	**Above Expected**
Manganese (Mn)	0.36	0.95	0.10	Below Expected
Nickel (Ni)	0.001	0.033	0.001	**At Expected**
Selenium (Se)	0.0002	0.007	0.0001	Below Expected
Zinc (Zn)	0.006	0.019	0.093	**Above Worst Case**

All units in mg/L

Factor applied to less-than results when calculating statistics: 0.5

Figure 3 below displays arsenic, sulphate and iron concentrations in the 2-North mine pool compared to those developed as the expected and worst-case scenario predictions derived by Lorax. The results indicate that 1M2N, QU1013D and 3M2N have remained between the expected and worst case for sulphate nearing the worst-case scenarios in winter with peak concentrations occurring when the mine pool was full after being dewatered during summer. 5M#2 has remained at or below the expected case since April 2016. This area is situated higher in the mine pool with more dilution and influence from groundwater. Concentrations are on an upward trend in spring of 2021 at 3M2N and QU10-13D as the mine pool was elevated. QU10-13D follows a similar trend as 1M2N as they are situated in the same area and are influenced by fluctuating water elevations controlled by pumping rates and groundwater infiltration.

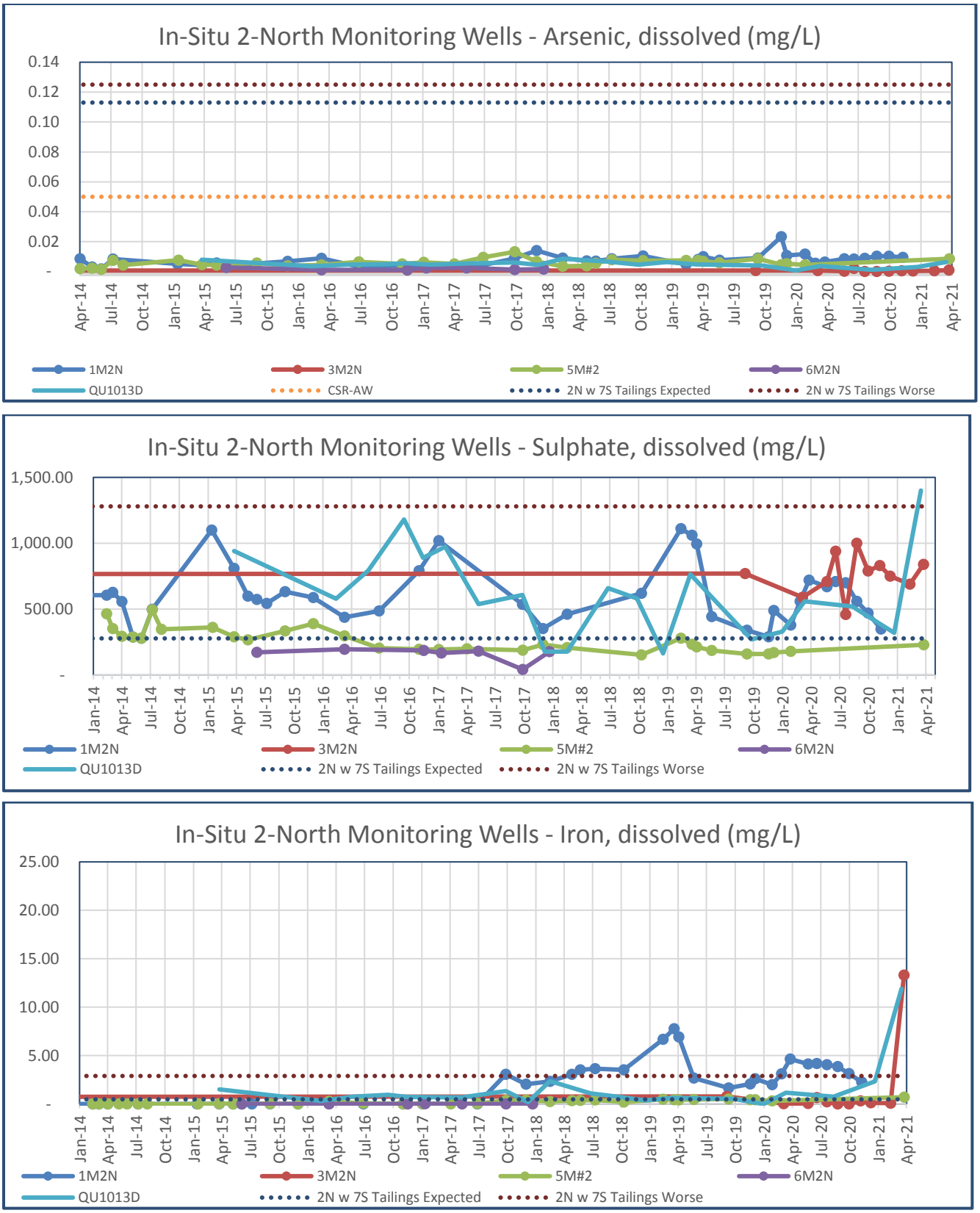


Figure 3: In-Situ 2N Monitoring Wells - Dissolved Arsenic, Sulphate and Iron

4.2.1.3 North Mining Area Ex-Situ Groundwater

The parameters of interest in the in-situ 2-North mining area were previously identified by Lorax in the 2-North/3-North and 5-South groundwater evaluation and include: fluoride, sulphate, aluminum, arsenic, boron, cadmium, cobalt, copper, iron, manganese, nickel, selenium, and zinc (Lorax 2011). These parameters may be found within ex-situ formation groundwater based on the geology the well is intercepting. Seepage from the 2-North area is expected to transport outside the mine void through the geological features surrounding and encompassing the 2-North mine. Migration and transportation rates are considerably slower in groundwater compared to surface waters; therefore, incremental increases are observed over many years.

Parameters that were observed to be naturally elevated in 2-North / 3-North include arsenic, sodium, chloride, sulphide as H_2S and iron. Those parameters that displayed exceedances against the CSR-AW were graphed along with sodium and dissolved iron. Parameters above the CSR-AW included arsenic, chloride, and sulphide (as H_2S). Arsenic and sulphide (as H_2S) were observed elevated in groundwater wells QU10-10 S, QU08-21G (S and D) with chloride elevated above the CSR-AW in QU10-10 D. Sodium and chloride is elevated in all deep groundwater wells in the No. 1 seam of 2-North area as formation groundwater is defined as sodium - chloride type waters. QU08-21GD and QU10-10D are not strongly influenced by mine water. Elevated chloride in formation groundwater is an indication of older formation groundwater. Appendix I, Table 49, and Figures 4 below, represent the water quality results for these areas.

Notable observations for this area include:

- Most parameters remained consistent with previous monitoring years with no major changes
- 2-North ex-situ deep formation groundwater wells intersecting the No. 1 seam have elevated chloride, sodium, conductivity and dissolved iron
- All POI were below the CSR-AW standards except dissolved arsenic, sulphide as H2S and chloride
- Dissolved arsenic concentrations exceeded the CSR-AW standard (0.05 mg/L) in all sampling events at Q08-21G (S and D) and QU10-10 S since monitoring began

- H_2S concentrations at QU08-21G (S and D) and QU10-10 S and QU10-11 D were found near or in excess of the CSR-AW standards (0.02 mg/L) on all sampling events
- Dissolved iron was found in highest concentration in the No. 1 coal seam (QU10-10 D) consistent with previous years
- Sodium concentrations found within the Ex-Situ wells have shown similar profiles to that of chloride evolving to sodium chloride type water as its ages in the formation flow path
- Sulphate is observed in low concentrations in all ex-situ groundwater in 2-North. QU10-10 S continues to trend down from the peak in Oct 2016

Throughout the 2-North, 3-North, and RBP areas, wells located in the 'deep' Cumberland Member of the stratigraphic column, particularly No.1 coal seam, have consistently reported low dissolved arsenic during all sampling events. Wells in 'shallower' Dunsmuir Member sandstones, particularly nested in the area of the #4 coal zone, reported arsenic values that were consistently elevated. The Dunsmuir sandstone member contains higher levels of arsenic and has been verified during drilling programs conducted by Quinsam Coal. These observations are consistent with the findings of Lorax (Lorax[(2)], 2011), who determined that elevated arsenic concentrations are found in formation waters of the Dunsmuir Formation including sandstone and the #3 and #4 coal zones. These results are in contrast of those found from formation waters of the #1 coal zone of the Cumberland Member. An exception to this observation is the monitoring well QU08-21G S and D. QU08-21G is fault separated from the other 2 North and 5 South wells in the No. 1 coal seam (Lorax[(2)], 2011). This well is nested within the Cumberland Member on the Eastern side of the Forjan Fault, and while lower than those found in the Dunsmuir Member Sandstones and coal measures, all sampling events during this reporting period exceeded the CSR-AW standards. The groundwater in this location follows a different flow path than other No. 1 coal seam wells in 2-North (Lorax[(2)], 2011).

Concentrations of dissolved sulphate in the 2-North mine area outside of mine workings are low and frequently below detection levels (0.5 mg/L). A notably higher sulphate result was reported at the well QU 10-10S during October 2016 that may be considered an outlier. Additional sampling information has not shown a persisting trend with dissolved sulphate to date but will be monitored closely in the future with relation to water levels in the mine pool. There is little trending or concerns with sulphate for the remainder of the 2-North ex-situ wells.

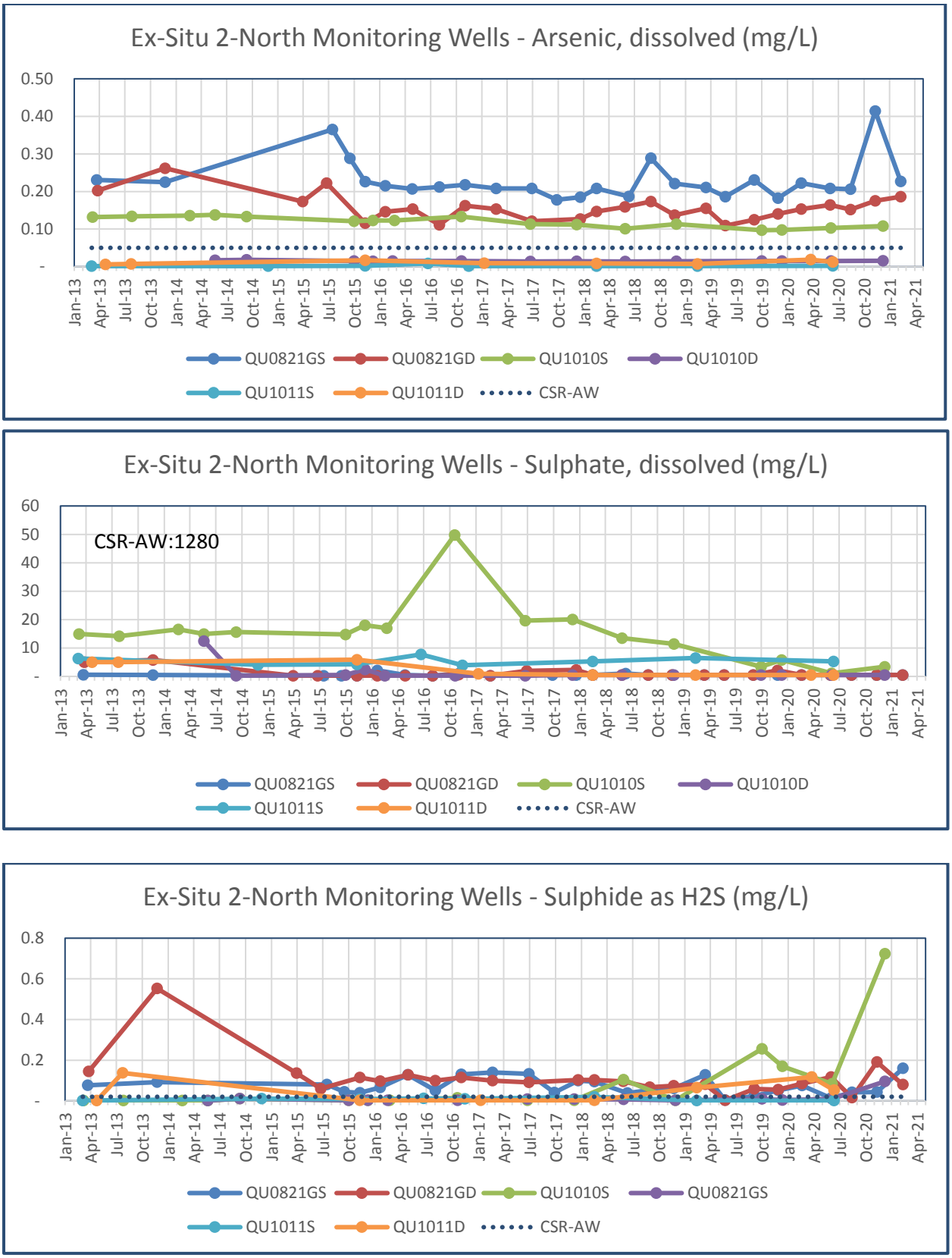


Figure 4: Ex-Situ 2N Monitoring Wells – Dissolved Arsenic, Sulphate and Sulphide as Hydrogen Sulphide (mg/L)

Sulphide has been found in elevated concentrations in many monitoring wells near the mine site. Sulphur is present in local geologic formations (particularly coal seams) and has been extensively documented by Quinsam Coal. As water interacts with sulphur bearing rock, leaching of the sulphur occurs and it can take many different forms dissolved into the water. Sulphide (as H_2S) occurs in groundwater with low dissolved oxygen and negative redox potentials. In the presence of oxygen, sulphur typically takes the form of sulphate. Figure 4 displays sulphide (as H_2S) concentrations found with ex-situ 2-North wells, sulphide displays a stable trend in all wells except in QU10-10S elevated in December 2020. Field results displayed negative redox potential in the water. These wells intercept groundwater from the #1 and #4 coal seams, respectively and have been found to have low dissolved oxygen and negative redox potentials.

4.2.2 River Barrier Pillar Area

4.2.2.1 River Barrier Pillar with 5-South CCR

Groundwater well QU11-09 M represents water in the underground PAG-CCR disposal location at 87 Panel RBP. Disposing of PAG-CCR was completed in the RBP in September of 2012 with the PAG-CCR elevation at 153.5 m. The water level in QU11-09 M increased since 2012 from 145 m to 180 - 210 m dependent on groundwater influx and dewatering efforts in 2-North. In February 2021, an unauthorized discharge occurred at the well QU11-09 when the well became artesian, discovered on March 17, 2021. QU11-09 is a nested well that accesses three zones, shallow groundwater, water cover over course coal refuse (CCR) in 1 seam and water quality below the 1 seam. The water table in 2-North Mine (aquifer recharge zone) increased to an elevation of 243.7 mASL from around February. The ground elevation at QU11-09 is 226.3 MASL. This caused the well to become artesian and discharge mine water into the Quinsam river. This occurred from February till March 19th when the well was capped, and discharge was reduced but did not completely stop until May 13, 2021. The well pumps (1M2N and 5M2N) were both replaced by the beginning of April 2021. Water levels decreased daily and by April 30, 2021 the mine pool was reduced to 227 MASL from 243.7 MASL, the surface discharge was reduced but seepage continued in the area as the ground elevation is 226.3 MASL. Groundwater elevations continue to be monitored to better understand the dynamics within the RBP with respect to mine pool closure options. This provided an opportunity to assess the seepage areas and impacts on the Quinsam river.

Source terms for the River Barrier Pillar (RBP) with PAG-CCR were originally developed using 7-South CCR quality data. As mining operations progressed, a storage area for the existing 5-South PAG-CCR was needed prior to mining 7-South. The RBP location was deemed suitable and excess 5-South PAG-CCR was backfilled in that location. In previous reports, the generated source terms (using 7-South PAG-CCR) were used for comparing and evaluating water quality results. As these source terms aren't necessarily applicable for water quality in this storage area, additional information including annual averages were used to help evaluate water quality.

Table 8 and Figure 5 compares source terms derived from 7-South PAG-CCR compared to annual averages from 2012 to 2021and includes a cumulative averages of all years. Observations for each parameter in QU11-09 M are as follows:

- Alkalinity displayed an increase since initial flooding of the PAG-CCR with a relatively stable trend since
- Fluoride saw an increase after initial flooding in 2014 but has since declined to well below expected cases
- Average sulphate concentrations were observed as 2210 mg/L during initial flooding in 2012-2013 with a steep decline since 2014 (after flooding) to 742 mg/L observed in 2020-2021. Average concentrations remain above expected case but below worst case.
- Arsenic has remained below expected case of 0.128 mg/L with averages in 2020-2021 at 0.0034 mg/L. The shallow groundwater well (QU1109S) displays the greatest concentrations as arsenic will migrate upward towards oxygen.
- Boron remained relatively stable after initial flooding and has remained just above expect case.
- Cadmium has been observed in low levels throughout monitoring below expected in 2020-2021
- Cobalt saw an increase after initial flooding and declined until 2020-2021 with averages approaching expected case.
- Average copper has been above the expected case with 2015-2016 experiencing the greatest increase above the worst-case predictions
- Iron and manganese remain elevated above expected case with 2020-2021 having the greatest concentrations for iron since 2016-2017, both parameters remain below worst case
- Nickel has remained in low concentrations

- Selenium peaks have been observed in the past above expected case with initial flooding and through 2017-2018. In 2020-2021 concentrations increased above the expected case again with a maximum value above worst case in March 2019. Selenium was also present in shallow groundwater at QU11-09 S and QU11-05 S and elevated in the deep groundwater at QU11-05 D in May and December 2020.
- Zinc has slight fluctuations but remains stable and below the expected case.

Table 8: Source Terms Comparison for RBP with 7-South CCR and Averages

RBP (QU-11-09 M) w / 7S CCR			2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-19	2019-20	2020-21	Average of all years
Parameter	Expected Case	Worst Case	n=1	n=5	n=7	n=12	n=11	n=12	n=5	n=2	N=4	
Alk-T	282			387.8	412.9	508	508.6	513	496	470	470	482
F-D	0.71	1	0.2	0.248	0.35	0.118	0.114	0.108	0.108	0.12	0.11	0.135
SO4-D	396	1990	2210	1540	1031	1220	1206	915	786	665	742	1089
Al-D	0.02	0.05	0.0075	0.001	0.0059	0.00847	0.00631	0.00676	0.0054	0.004	0.003	0.006
As-D	0.128	0.19	0.00335	0.00332	0.00479	0.00709	0.00523	0.00258	0.00258	0.0027	0.0034	0.004
B-D	0.71	1.88	1.9	1.51	1.114	1.34	1.09	1.074	1.061	0.91	0.92	1.170
Cd-D	0.000017	0.000175	0.000025	0.00001	0.0000089	4.17E-06	2.224E-05	1.038E-05	0.000009	0.0000075	0.0000088	0.0000111
Co-D	0.005	0.148	0.0129	0.00496	0.01237	0.000485	0.000274	0.0004	0.00036	0.0002	0.0033	0.003
Cu-D	0.0001	0.001	0.00125	0.0002	0.000471	0.002193	0.000183	0.0004	0.00036	0.0002	0.0002	0.001
Fe-D	0.805	33.5	0.499	7.72	16.19	16.6	19.3	13.7042	10.28	6.420	13.110	14.325
Mn-D	0.14	2.89	0.424	0.314	0.5	0.4	0.427	0.2955	0.248	0.165	0.598	0.382
Ni-D	0.007	0.213	0.0299	0.007	0.0141	0.0006	0.00058	0.002	0.0018	0.0008	0.0026	0.0038
Se-D	0.0002	0.0004	0.00025	0.0001	0.000093	0.00005	0.000055	0.0002	0.000258	0.00008	0.00024	0.000125
Zn-D	0.008	0.088	0.0075	0.001	0.00186	0.00755	0.00279	0.01	0.009	0.0038	0.0044	0.006

Figure 5: River Barrier Pillar

4.2.2.2 RBP Ex-Situ Groundwater

Concentrations of dissolved sulphate measured in the ex-situ wells of the River Barrier Pillar area are lower than CSR-AW but are displaying the mine signature for sulphate and are elevated enough to assist with analysis of the groundwater paths exiting from the in-situ mine waters (Figure 7). Storage of the PAG-CCR and subsequent flooding of the workings have contributed to these elevated sulphate concentrations in shallow groundwater. Sulphate on a low stable trend until 2021 when a sharp increase was observed associated with the increased mine pool displayed in QU1105 (S and D). Increased sulphate and in deeper wells sulphide as H_2S indicate mine contact water influence. Fluctuating sulphide results have been observed in QU11-05 D since 2019. With peaks at 70 mg/L coinciding with lower dissolved sulphate. Sulphate follows the same trend as groundwater levels recorded at QU1109 M as it relates to 2-North mine pool elevation. The nested well QU1105 S/D is down dip/gradient from the RBP in the #1 coal seam. Both deep and shallow groundwater contain dissolved sulphate that has steadily increased with the deeper well having the highest concentration of sulphide levels. The depth of this well along with low dissolved oxygen indicates a favourable location to have high sulphide concentrations. This trend for high sulphide decreased considerably in 2020-21 from May 2020, 69.09 mg/L to 13.81 mg/L in March 2021 as displayed in Figure 7 displaying an inverse relationship with increased sulphate and increasing mine pool water levels.

QU11-05 S, nested stratigraphically above, but down gradient/dip from the RBP, report sulphate concentrations that are elevated compared to other ex-situ 2-North wells. The increase in sulphate concentrations occur as autumn precipitation bring large quantities of water to the mine site and water levels underground rise. The fluctuations are completely proportionate to underground water levels in the RBP or 2-North mine pool and they provide some evidence that there is hydraulic conductivity or migration of groundwater across the stratigraphy.

QU11-09 S is a well nested in the stratigraphy directly above the RBP in-situ monitoring well, QU11-09 M. Prior to 2015, sulphate concentrations at this well have ranged from approximately 20-50 mg/L when water levels were low in the PAG-CCR storage area below. Since early 2015, sulphate concentrations have fluctuated in both shallow groundwater wells (QU11-09S and QU11-05 S), with decreasing concentrations observed in QU11-09 S since 2018 with a stable trend until Mach 2021 in QU11-05 S. Groundwater levels increased in the mine pool in 2021.

As displayed in Figure 6, sulphate concentrations at all wells appeared to be directly correlated to groundwater elevations in the 2-North Mine Pool and the RBP. These increases indicate migrating in-situ waters rise vertically, likely via the natural hydraulic conductivity of the geology, as well as structural conduits (fault and joint planes) encountered during mining. Based on observations, these increases occur when groundwater elevation in the well below rise above 181-185 MASL, the elevation at which the lithology transitions into the sandstone that hosts QU11-09 S. Water migrating to this well is sourced from above the 5-South mine and direct infiltration from the 2-North mine. See Figure 7 for groundwater migration paths (Lorax, 2011).

Dissolved Selenium was elevated above the CSR-AW (0.01 mg/L) in the deep groundwater of QU11-05 D and found in lower concentrations in the shallow groundwater of QU11-05 S and QU11-09 S. Selenium has displayed highs and lows possibly related to fluctuating groundwater elevations since March 2019 with results ranging from 0.045 mg/L to 0.064 mg/L in the deep groundwater since March 2019 to December 2020.

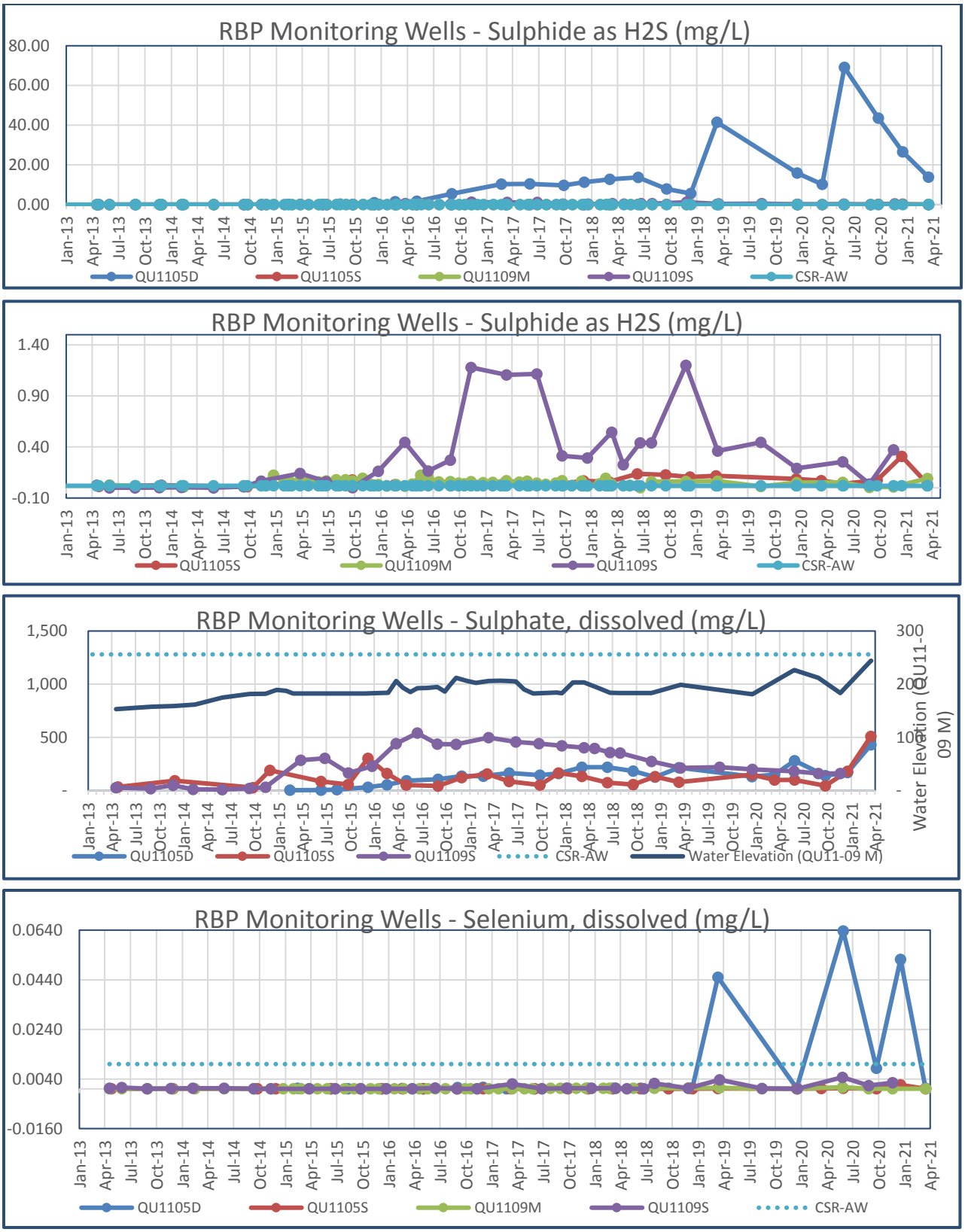


Figure 6: Ex-Situ River Barrier Pillar Monitoring - Sulphide as H_2S, Dissolved Sulphate vs Water Elevation and Selenium

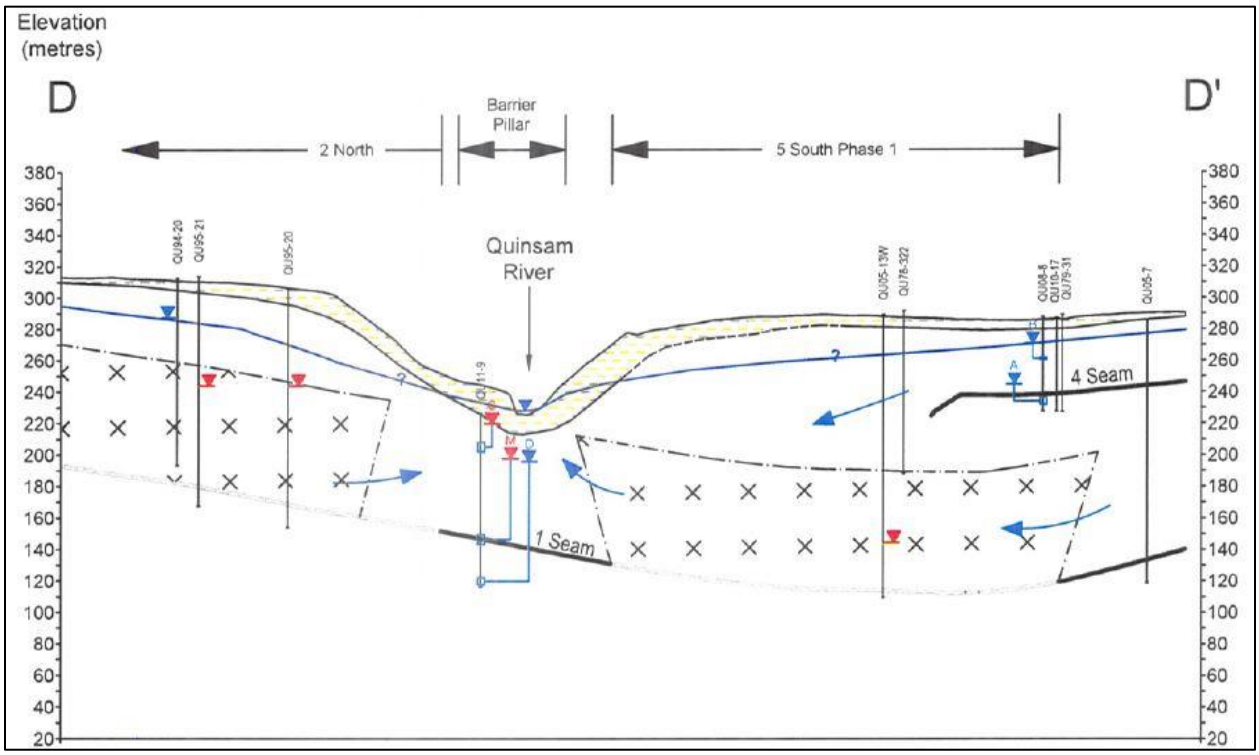


Figure 7: Groundwater Transport in RBP and Vicinity

Following the completion of the 8-Mains plugs (engineering control established to eliminate unnatural mixing of groundwater accumulated in the 5-South side of the mine, and the 2-North side of the mine) in February of 2018 and in February to March 2021, the water levels in 5-South and 2-North mine began to rise, increasing the hydraulic head pressure on the groundwater stored in 5-South, and RBP of 2-North. It is assumed that as the water level rose, the pressure on the groundwater flow path was increased, as shown by the increase in sulphate in the wells.

4.2.3 North Mining Area Plant Monitoring Wells

Two nested monitoring wells (MW00-6 and MW00-1) are in the peripheries of a catchment drainage ditch located below the coal processing plant (CPP) and the clean coal pad. Both wells contain a "shallow" and "deep" groundwater intercept nested at different depths of the overburden till layer as shown in Appendix C.

Noted in the well installation completion log for MW00-1 (D&S), the ‘Shallow’ well was nested in a layer of the till that contained a larger percentage of cobbles and coarse gravels compared to the finer grained gravelly sands and clay materials are surrounding the ‘Deep’ well. This is important to note, as observations made in the shallow groundwater wells compared to the deep wells include more conductive water that is higher in alkalinity and exhibits elevated concentrations of dissolved sulphate. This leads to the assumption that the shallow wells are getting direct communication from the CPP and clean coal pad via the catchment drainage ditch while the deeper wells are isolated from that groundwater due to some other control, possibly based on grain size differences in the till. However, while the differences between the groundwater results from the shallow and deep wells are obvious, any difference between the host till of the shallow and deep well located at MW00-6 were not noted in the completion log and therefore cannot be easily explained by geologic control. MW00-1 D is nested significantly deeper in the till at 28 metres than MW00-6 D at 14 metres. Interestingly, MW00-6 is geographically closer (while only 15 metres) to the plant ditch and coal pad where iron and sulphate should be observed in higher concentrations.

Historically, MW00-1 S displayed slightly acidic conditions, with the pH falling just below 6.4 on most occasions, while MW00-6 S was generally neutral. The deeper wells are more alkaline with pH ranging from 8.3 - 9.5. MW00-1 S displayed the highest concentrations of dissolved sulphate, hardness, iron, manganese and other constituents. The deeper wells (MW00-1 D and MW00-6 D) have low concentrations of metals and sulphate with alkaline pH and low conductivity. Since January of 2013, regardless of the variation of precipitation throughout the year, the groundwater maintains its natural path through the coal pad and its surroundings, into the ditch, and through the till substrates.

Consistent with past years, dissolved arsenic (Figure 8), aluminum and zinc are found in greater concentrations in the deeper wells than the shallow wells but remain at moderate concentrations and below CSR-AW standards. In 2020 the deeper well MW001 D displayed a sharp decrease in arsenic. The well was resampled and confirmed the results. The main concern and objective of these wells is to intercept plant stockpile water to trace effects the coal pad may have on groundwater flowing toward Middle Quinsam Lake.

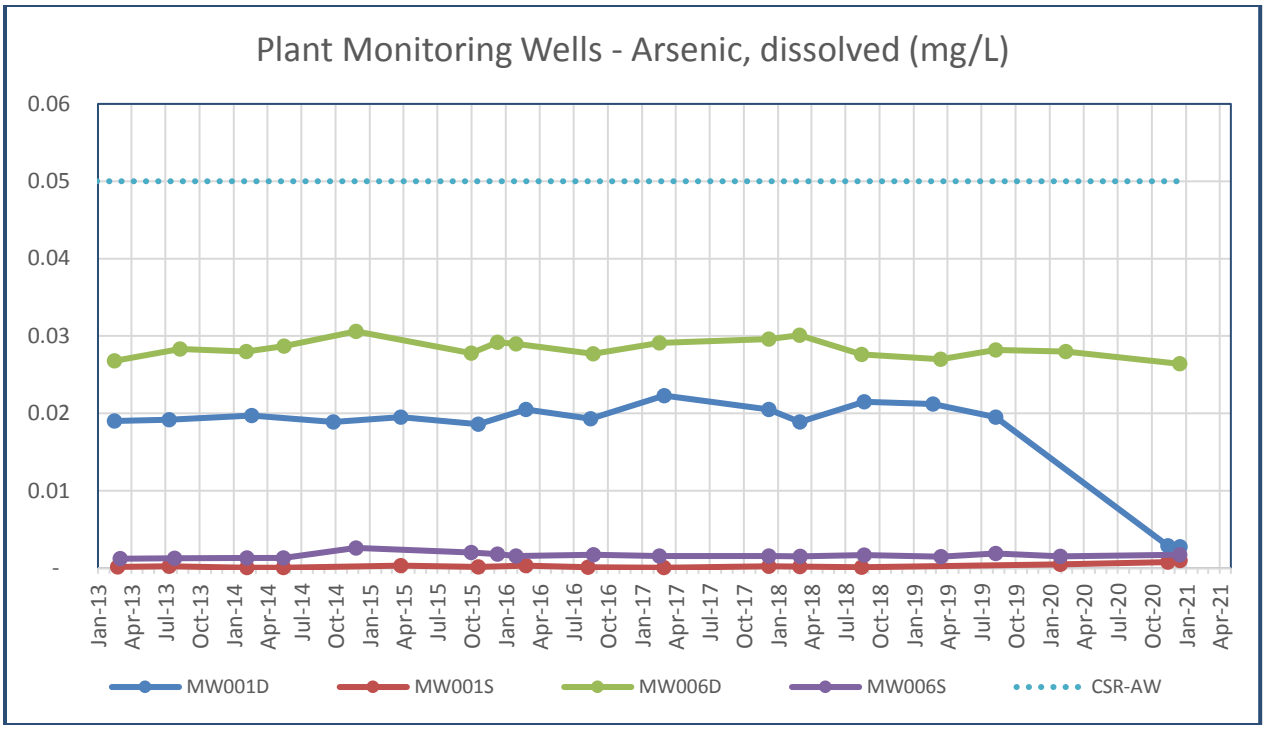


Figure 8: Plant Monitoring Wells - Dissolved Arsenic

Dissolved sulphate levels (Figure 9) in both shallow wells exhibit a decreasing trend with some apparent seasonal variation showing higher concentrations of sulphate throughout the drier season and lower concentrations through the rainy season. Dissolved sulphate concentrations at MW00-6 S have shown stable trends with little seasonal variation since 2015. Sulphate is the main parameter of interest as it indicates any changes or improvement on water management practices implemented and those effects on local groundwater from the coal pad and plant site collection ditch.

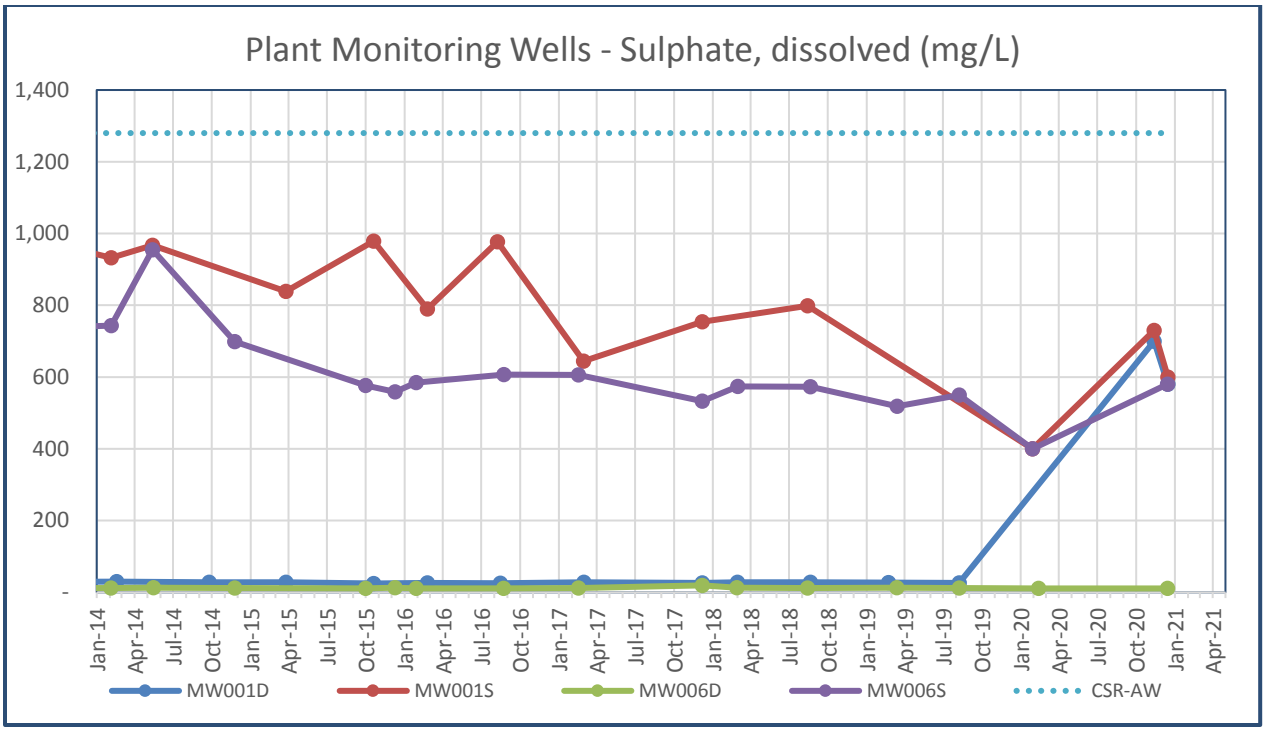


Figure 9: Plant Monitoring Wells - Dissolved Sulphate

The Quinsam Coal Environmental Department is currently assessing this area of groundwater monitoring, considering the possibility of eliminating one of these monitoring wells (due to similar parameter trends) and re-establishing a groundwater monitoring site closer to the southern drainage of the CPP and the clean coal pad. In 2019-20 the deeper well MW001 D was unable to be sampled and possibly the reason for the elevated sulphate result when the line was replaced. The well was thought to have collapsed and could not be monitored in 2019-2020. In 2020 results of sampling displayed a sharp increase in sulphate in the deeper well. Results were confirmed with resampling in December 2020. The deeper groundwater well (MW001D) is suspected to be influenced from the shallower groundwater as the well was compromised. The deep groundwater well MW006 D does not display the same sulphate concentrations and is within 20 m of MW001 D. Further monitoring will confirm the results.

4.2.4 7-South

4.2.4.1 7-South Mine with PAG-CCR

Area 2 of the 7-South mine is being used as a sub-aqueous PAG-CCR storage facility for waste material produced by the mechanical processing (crushing and floatation) of the 7-South raw coal

product. Storage of this PAG-CCR commenced March 12, 2015 and has subsequently flooded due to natural groundwater infiltration. The in-situ flooded water in this area has been monitored using well QU14-10, with 9 sampling events taking place during this monitoring period. The 7-South mine void water will continue to be monitored following completion of mining and subsequent subaqueous disposal of PAG-CCR.

Lorax predicted Source Term concentrations, which are provided in Mine Permit (C-172) Amendment; 7-South Development Volume 3 Appendix J. Lorax outlined three scenarios in which results would vary, which are, in summary:

> Scenario 1: Water quality based on the CCR that is being stored, having been given enough time on surface (greater than 2 years) to become acidic, prior to being flooded.
> Scenario 2: Water quality based on the CCR being stored less than 2 years since being produced, which would not be acidic.
> Scenario 3: Expected long term water quality concentrations following the complete dissolution of stored oxidation products and the influenced mine water being completely discharged from the mine or re-stabilized as metal sulphides within the flooded workings.

Table 9 displays the Source Term expectations for Scenario 2 for 7-South mine containing saturated CCR. The average results for the sampling events of 2020-21 were derived using half the detection limits for those results reported as less than detection limits. Average concentrations calculated are then compared to scenario 2 as they are most applicable. Although not a parameter of interest, the water in the flooded 7-South workings is very hard, higher than any other well on site. Hardness levels averaged 1972 mg/L, indicating a strong influence from calcium and magnesium carbonates, likely found interstitially in the sandstone that is a large constituent in the 7-South coarse coal reject (Figure 11).

Table 9: Source Terms Comparison for 7-South with PAG-CCR

Parameters	Source Terms for 7 South Mine Containing Saturated CCR [1]	2020-2021 results (N=13)		
		Minimum	Maximum	*Average
				>Expected
pH	6.48	5.94	7.29	6.58
Acidity (as $CaCO_3$)		13.3	34.8	24.5
Alkalinity (as $CaCO_3$)		290	310	303
Fluoride (F)	0.6	0.15	0.19	0.17
Sulphate (SO_4)	1260	1500	1900	1838
Aluminum (Al)	0.009	0.003	0.015	0.008
Arsenic (As)	0.19	0.09	0.10	0.10
Boron (B)	0.98	1.01	1.28	1.11
Cadmium (Cd)	0.0002	0.0000	0.0003	0.00005
Cobalt (Co)	0.062	0.0004	0.001	0.001
Copper (Cu)	0.001	0.0002	0.002	0.001
Iron (Fe)	6.705	1.64	1.92	1.780
Manganese (Mn)	2.885	1.28	1.55	1.410
Nickle (Ni)	0.122	0.002	0.005	0.003
Selenium (Se)	0.004	0.0001	0.00168	0.0005
Zinc (Zn)	0.088	0.005	0.025	0.013

All units are in mg/L except pH

***When a result was less than the detection level (ie. <0.5), half detection level value was used for averaging (ie. <0.5 = 0.25)**

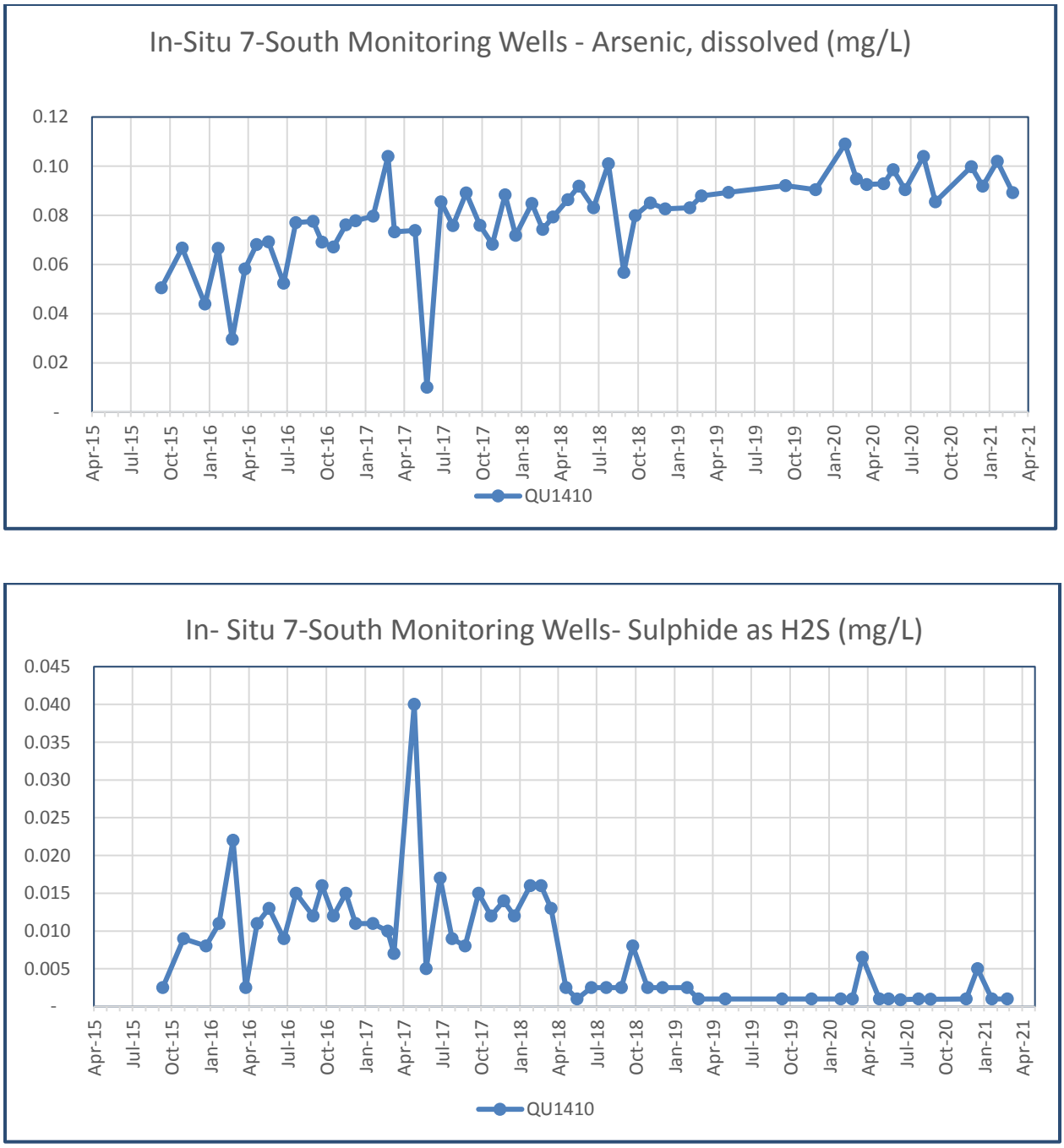


Figure 10: 7-South In-Situ Monitoring Wells - Dissolved Arsenic and Sulphide as H2S

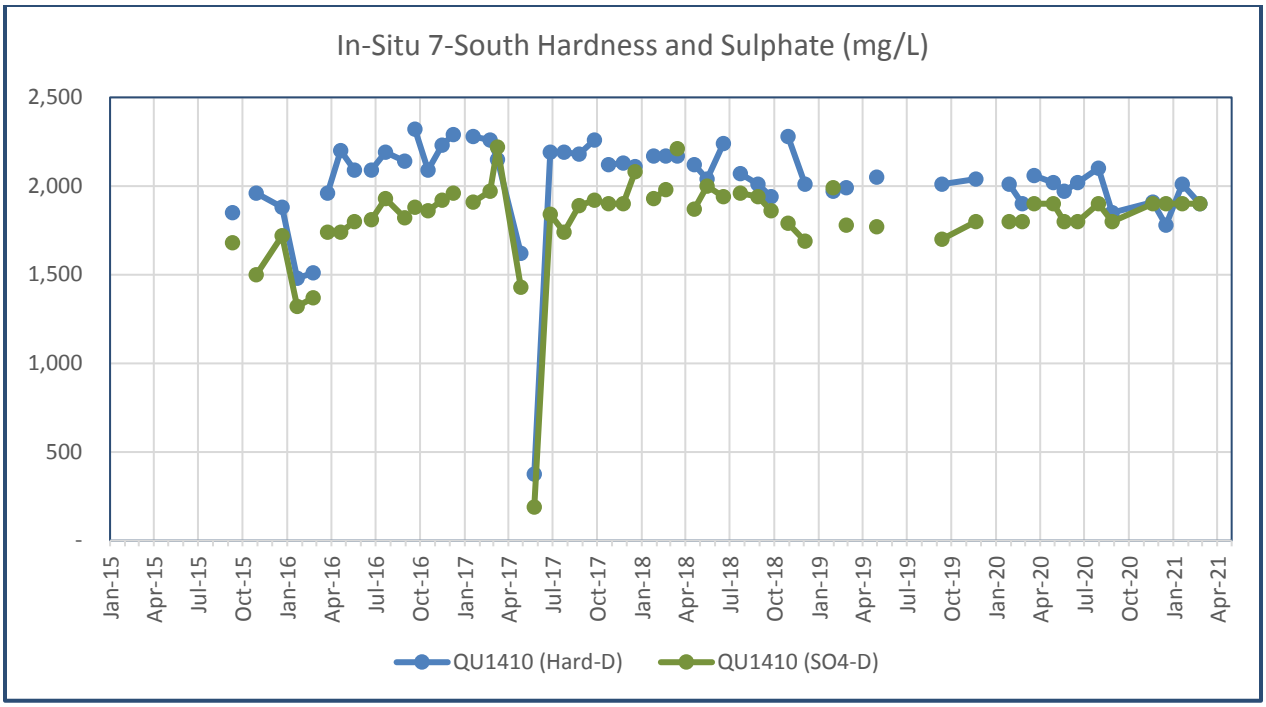


Figure 11: 7-South In-Situ – Dissolved Hardness and Sulphate

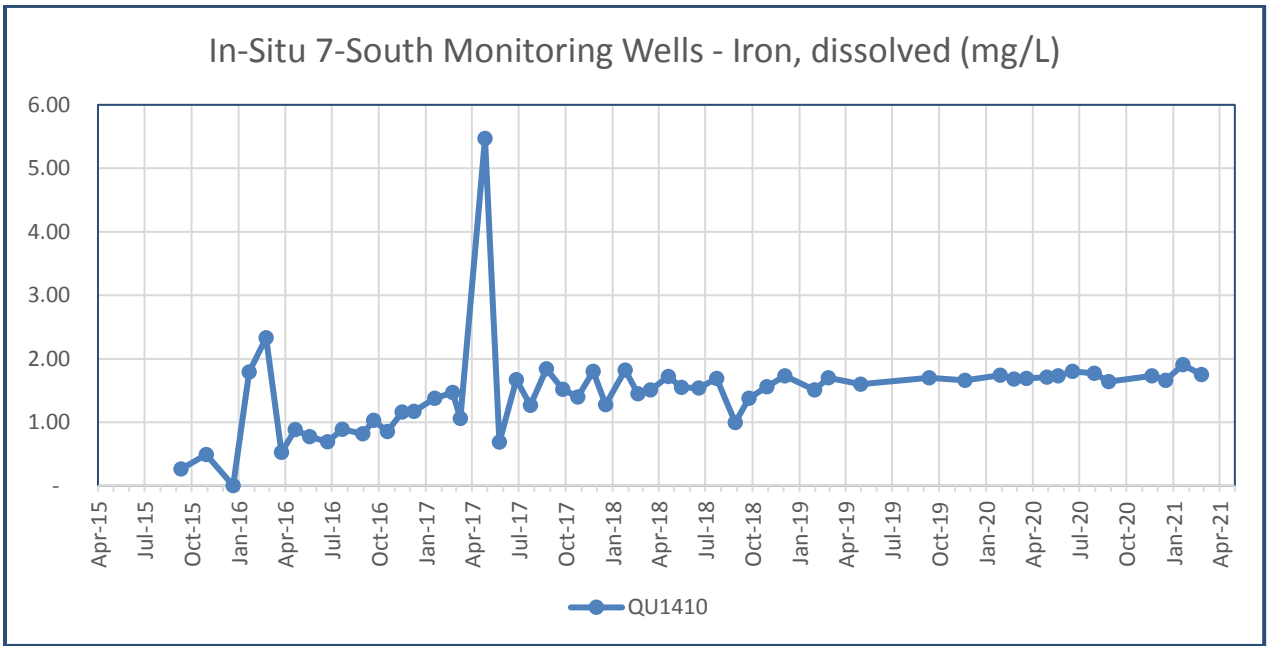


Figure 12: 7-South In-Situ Monitoring Wells - Dissolved Iron

4.2.4.2 7-South Underground Sump

Water chemistry in the 7-South mine pool has been monitored via sump sampling in 1 Mains (1M7S). In 2019 this sump also included 7-South Area 5 where the sump was renamed 1M7SA5

in order to differentiate and characterize the water chemistry. The 7-South Area 5 sump (7SA5) is sampled separately in order to characterize the water quality coming from that location. Samples from 1M7S / 1M7SA5 exhibit moderate levels of dissolved sulphate with 7SA5 having low levels (Figure 13). Dissolved arsenic, however, has shown fluctuations since monitoring has been established, with the higher concentrations observed throughout the winter, likely attributed to high groundwater infiltration through sandstone. These inconsistent arsenic values may also be attributed to variable amounts of water either pumped into or out of this sump for mining purposes.

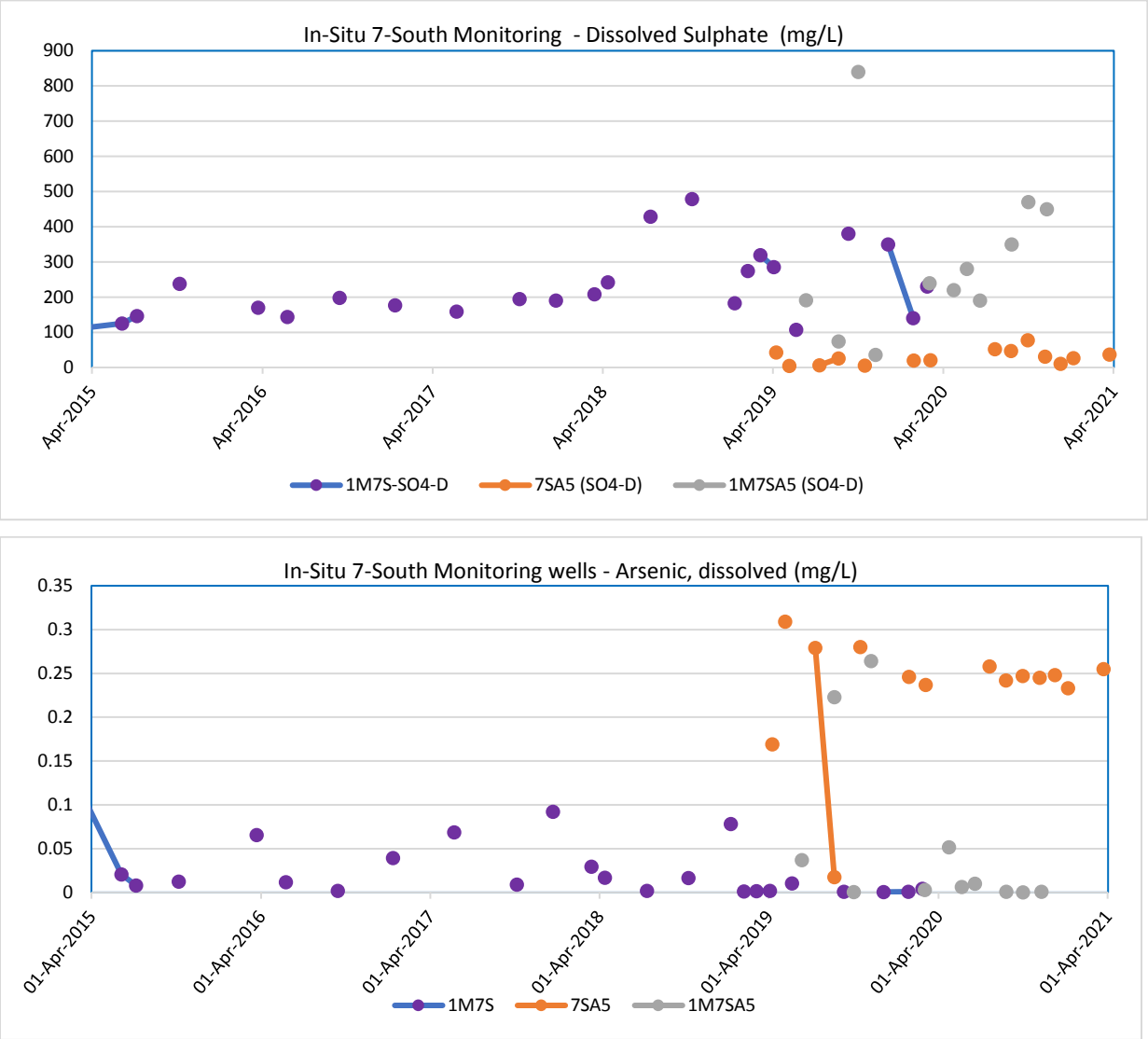


Figure 13: Dissolved Sulphate and Arsenic (mg/L)

4.2.4.3 7-South Ex-Situ

The primary focus of the 7-South ex-situ groundwater monitoring is to evaluate water flowing from Area 2 (permanent PAG CCR storage location) towards the Quinsam River; monitoring wells QU08-13 A and B satisfy this consideration. In addition to monitoring seepages from Area 2, monitoring well QU08-10 is situated to monitor groundwater transport from permitted mining reserves in 7-South (areas 4 & 5) towards the Iron river. This well is located adjacent to the Area 4 development on the North side of the Long Lake fault and is nested in the #4 coal zone.

The No. 4 coal zone at 7-South is hosted within the Dunsmuir Member sandstones of the Comox Formation, which is naturally elevated in arsenic and fluoride. On average, the highest concentration of arsenic in the current Quinsam Coal monitoring regime is found in the 7-South area. The northern limit of the 7-South underground mine workings is limited by the location of a normal fault called the Overlook Fault, which displaces the #4 coal zone vertically by 14 metres. The Overlook Fault defines the groundwater flow path between the 7-South mine, and the monitoring wells QU08-13 A and B. Well QU08-13 A monitor's groundwater traveling down-gradient from the 7-South workings within the #4 coal zone at 52 metres deep. QU08-13 B monitors groundwater higher up in the stratigraphic column at the glacial till overburden/sandstone contact at 26 metres deep, effectively monitoring groundwater that would be migrating up through the stratigraphy towards the Quinsam River. This groundwater is suspected to follow a different flow path at the down gradient northern extent of the 7-South mine than other groundwater in the area (Lorax, 2011). Lorax has described this well as significantly sodium enriched with circum-neutral pH. The groundwater is anoxic with mild to moderate reducing conditions.

Starting March 2015 PAG-CCR from the processing of 7-South raw coal was transported from the Quinsam Coal Preparation Plant to the 7-South Disposal Bin, which delivers PAG-CCR directly onto the underground belt structure for transport into Area 2. Since that date, material has been backfilled, and allowed to naturally flood. The in-situ flooded water in this area has been monitored using well QU14-10, while the ex-situ groundwater has been monitored using QU08-13 A & B. Data acquired prior to March 2015 has provided information about baseline conditions and will be used for comparison when analyzing future monitoring.

The most notable and relevant observation was the low, stable sulphate concentrations throughout the years with a distinctive increase in dissolved iron and sulphate in February 2018. This increase

was concurrent with advance mining in the northern extent of 3-Mains. With expansion of mining boundaries in this area, it is believed that mobilization of materials and "shrinkage" of the effective barrier between the mine and monitoring well has contributed to the increase in these parameters. Further monitoring has displayed a decreasing trend in these parameters where they have not persisted at elevated levels. In both QU08-13 A & B arsenic and sulphide as hydrogen sulphide exceeded the CSW-AW. QU08-10 displayed an increase in sulphate and iron in recent monitoring, the sulphate result is suspicious, further monitoring will confirm the results. Most results are following a tend based on season and groundwater fluctuation.

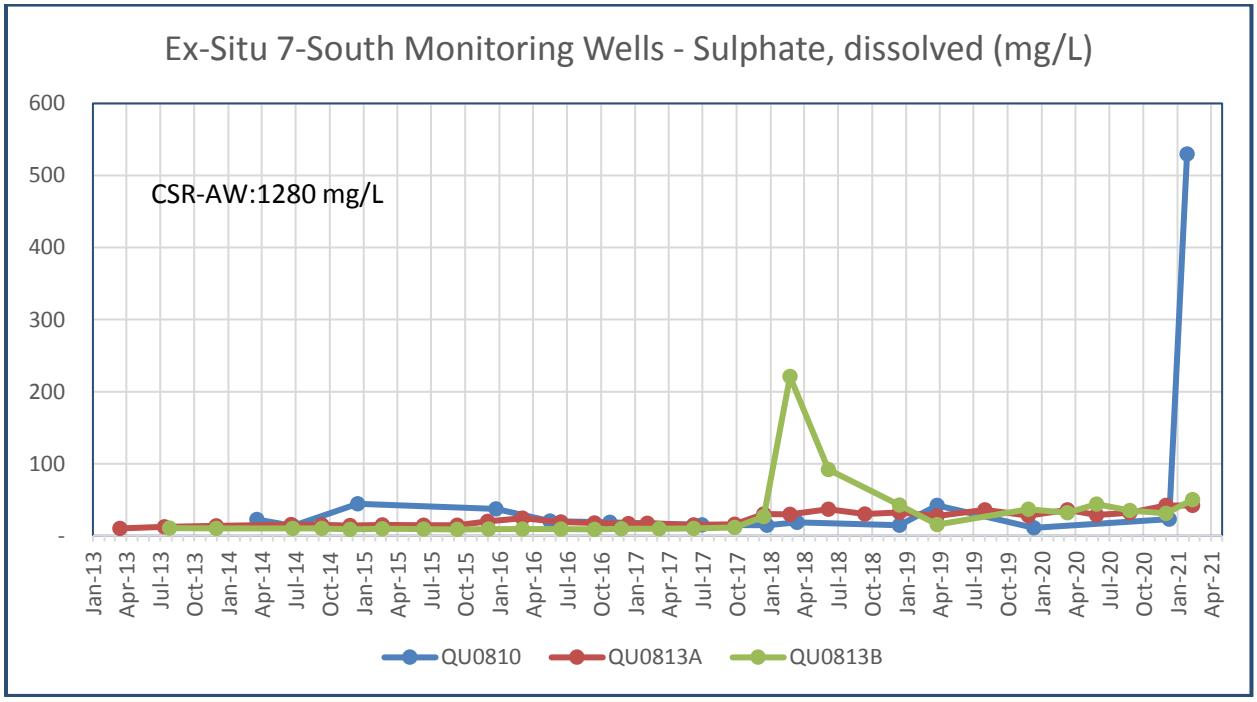


Figure 14: 7-South Ex-Situ Monitoring Wells - Dissolved Sulphate

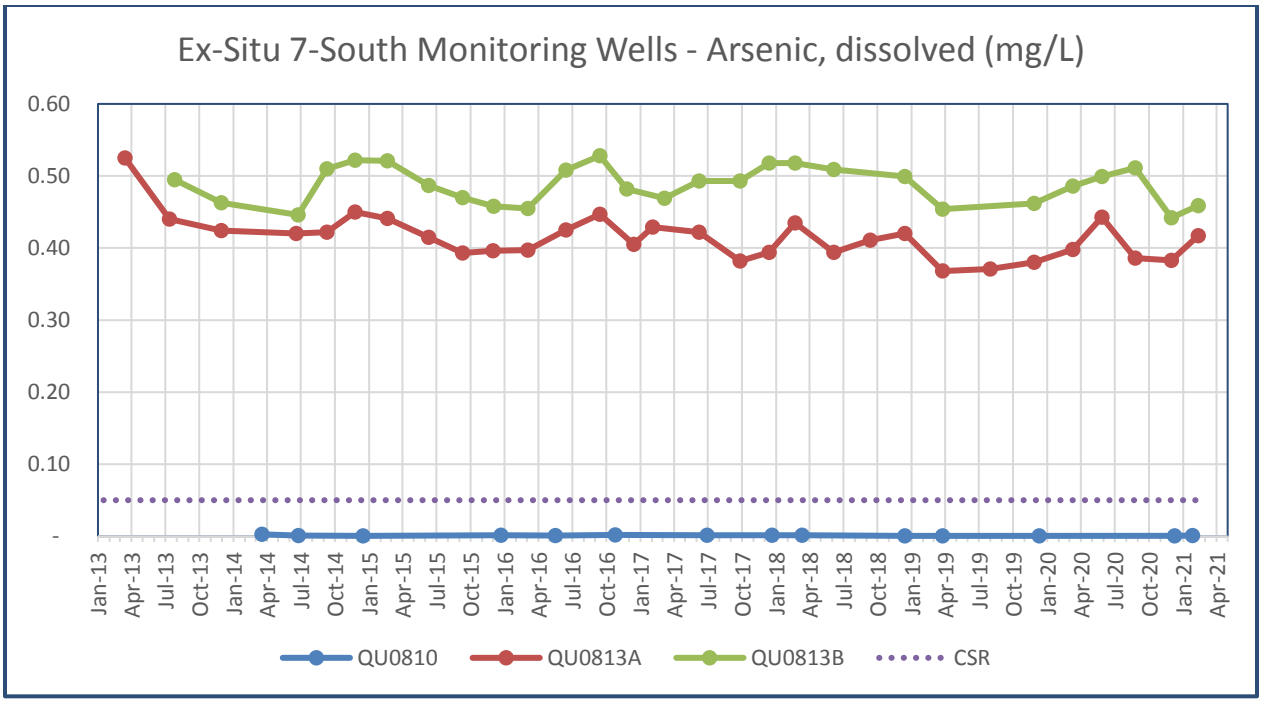


Figure 15: 7-South Ex-Situ Monitoring Wells - Dissolved Arsenic

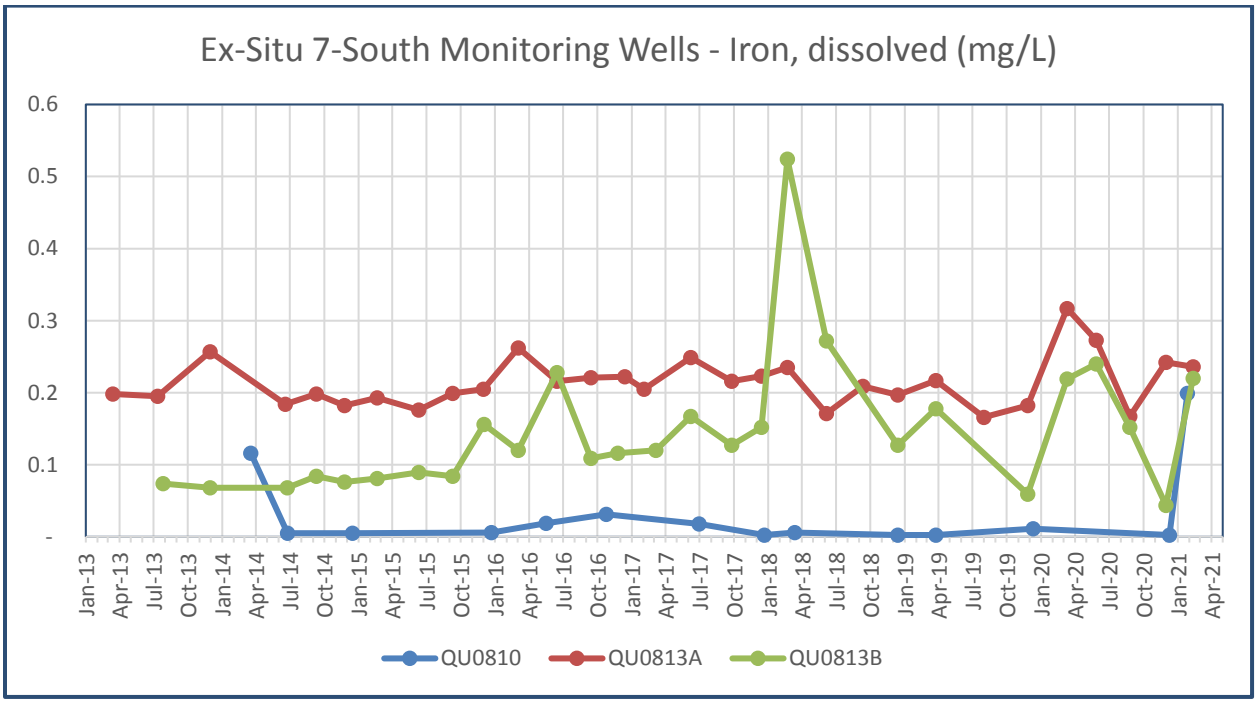


Figure 16: 7S Ex-Situ Monitoring Wells - Dissolved Iron

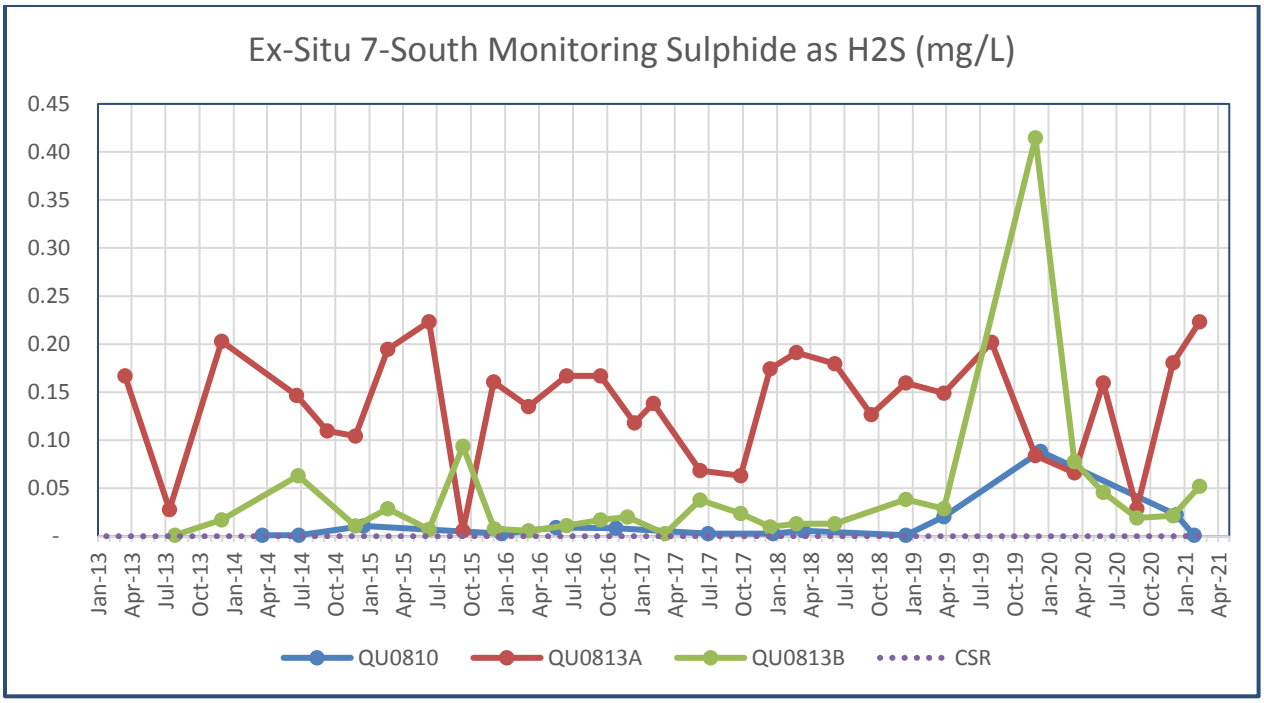


Figure 17: 7S Ex-Situ Monitoring Wells – Sulphide as Hydrogen Sulphide (H_2S)

4.2.5 2/3 South Monitoring Wells

4.2.5.1 2/3 South Mine Pool

Monitoring wells MW00-4 and QU11-11 were established for monitoring the 2-South mine pool water quality while QU11-11 is also used for reference for the treatment system influent. 2-South mine pool water enters Long Lake via the Long Lake Seep and discharges are closely related to water levels monitored at MW00-4. These wells exhibit moderate concentrations of sulphate ranging from 290 mg/L to 370 mg/L (MW00-4) and 701 mg/L to 550 mg/L (QU11-11) in this monitoring period. It is noted that both wells are relatively stable for sulphate concentrations. Concentrations of dissolved metals are relatively low in these wells and exhibit neutral pH. Dissolved arsenic and iron concentrations display a periodic spike in well QU11-11 (INF) and are typically related to rising mine pool water elevations as flushing of the mine walls encourages a gradational increase in dissolved metals. The distinct increase of dissolved arsenic and iron in mid-2017 at QU11-11 is a direct result of changing to field filtering and preservation on site.

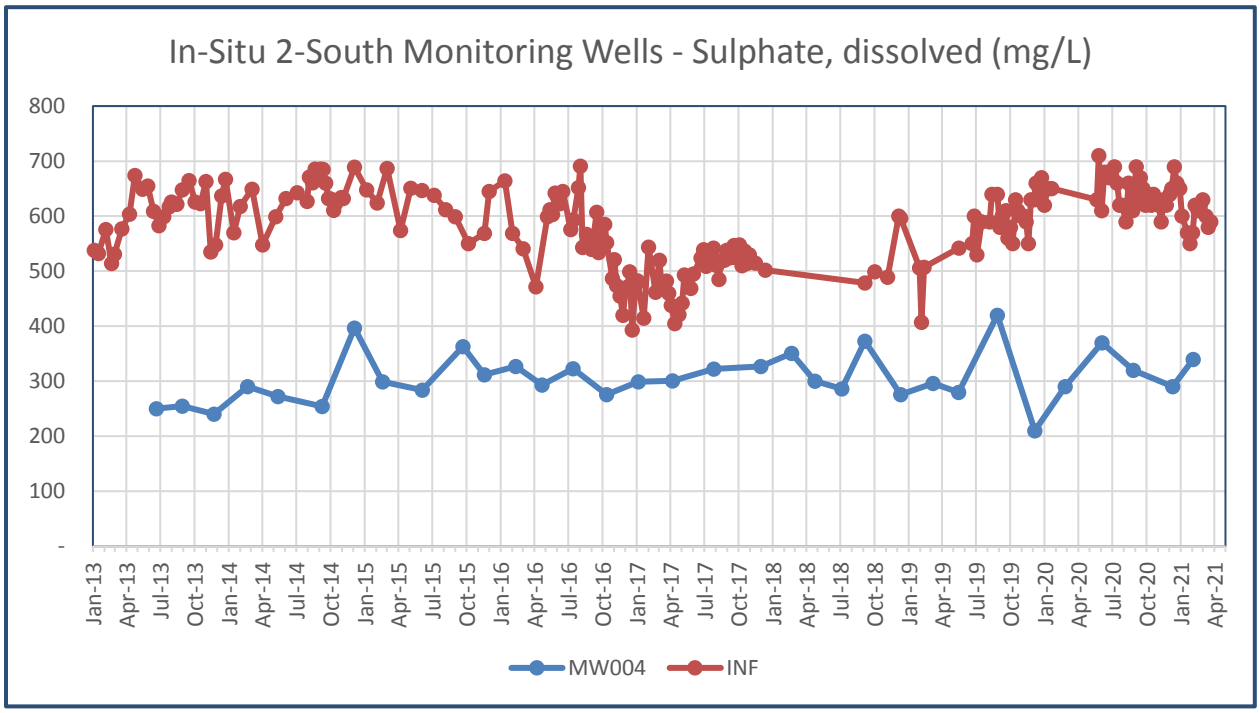


Figure 18: In-Situ 2S Monitoring Wells - Dissolved Sulphate

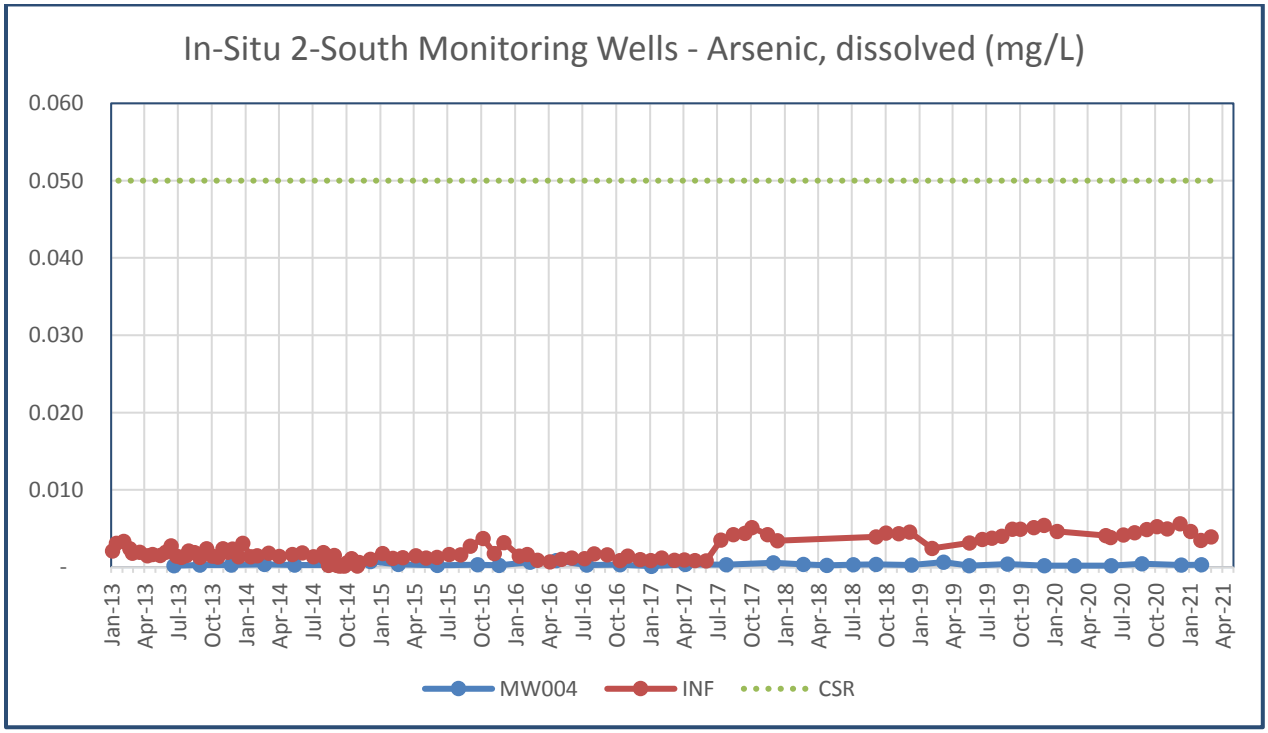


Figure 19: In-Situ 2-South Monitoring Wells - Dissolved Arsenic

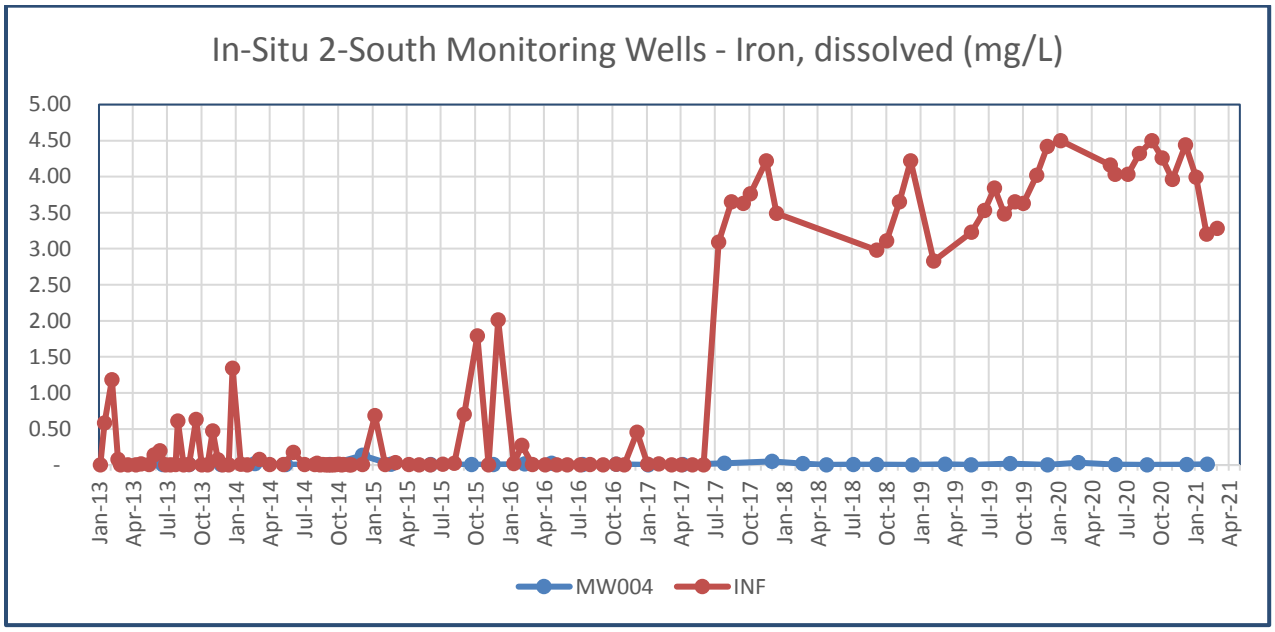


Figure 20: In-Situ 2-South Monitoring Wells - Dissolved Iron

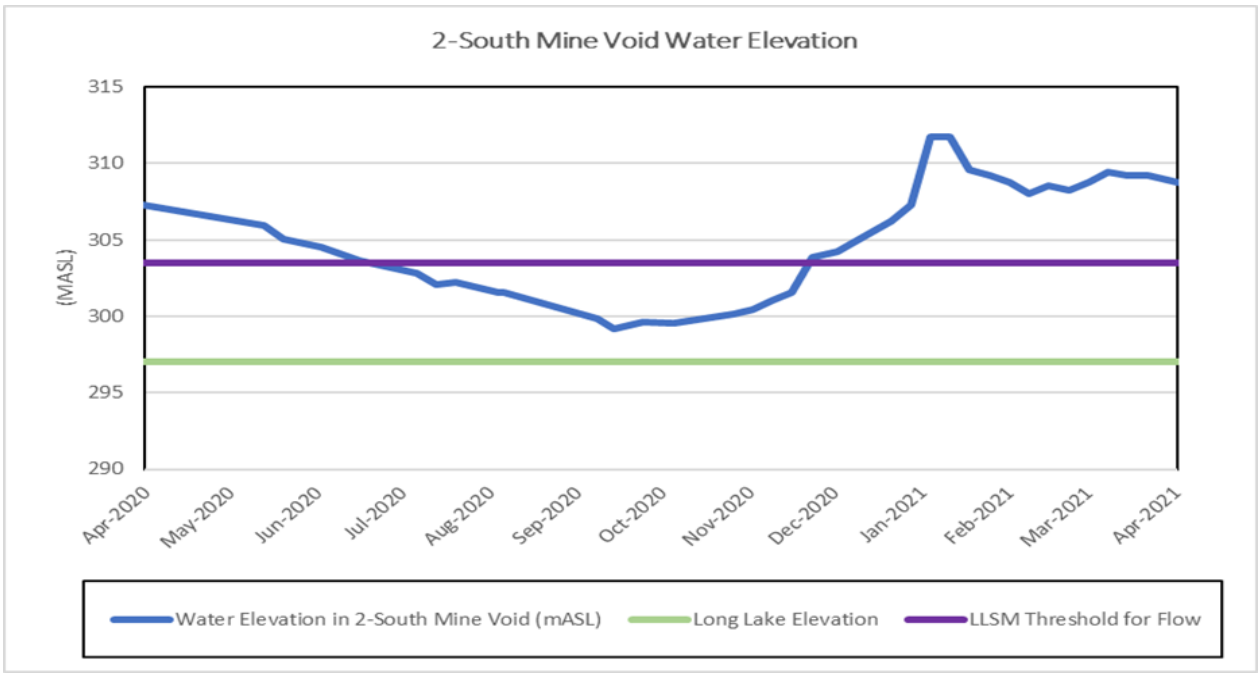


Figure 21: 2-South Mine Pool Water Elevations

In February 2020 the underground dewatering pump at QU11-11 faulted on restart and was replaced in May 2020. The relationship between the mine pool elevation and flow at the Long lake seeps continues to be established. The threshold level for seep flow is 301.5 mASL for LLS and 303.5 mASL for LLSM measured at QU11-11.

4.2.5.2 2 & 3 South In-situ and Ex-Situ Wells

Monitoring wells in the 2 and 3-South areas exhibit elevated concentrations of sulphate and some metals based on their proximity to the 2-South and 3-South PAG-CCR storage facilities and past surface disturbances; both open pit and underground mining activities. These wells include MW00-2 (in-situ) located next to the 3-South flooded PAG-CCR Storage Facility as well as MW12-23 and MW12-24 (ex-situ) established as wells between the 2-South flooded PAG-CCR Storage Facility and No Name Lake. Dissolved iron, manganese and other dissolved materials are elevated at MW00-2 as it is situated about 5 metres from the 3-South PAG-CCR pond and intercepts the water that flows through the hydraulically conductive till.

While MW00-2 is located to monitor the drainage from the 3-South pit, MW12-23 and 24 are designed to intercept seepage from the reclaimed 1-South pit, the 1-South sump, and the 2-South pit. As evidence by the dissolved sulphate levels found in these wells, the shallower well MW12-24, intercepts a perched water table, potentially attributed to the reclaimed 1-South pit up gradient, but independent of 2-South groundwater, whereas the deeper well MW12-23, intercepts 2-South seepage groundwater at an elevation approximately 3 metres below the surface water elevation in No Name Lake. Lorax suggests that No Name Lake is a ‘losing’ lake (i.e., recharging the aquifer at its downstream end). According to initial drill logs during the installation of these monitoring wells, the siltstone bedrock appears very tight in this area with no water bearing features intercepted.

Monitoring wells MW12-23 and MW12-24 (particularly MW12-23) have slow recharging rates, making proper sampling very difficult and often, not feasible. Sampling at MW12-23 occurs over two days; day one involves purging the well and day two involves a low flow sampling technique to obtain water that has formed over a 24-hour period using a portable bladder. While quarterly sampling is required, MW12-23 is often found to be dry, (especially during the summer) and sampling is not possible. Most of the time the groundwater has been found to oxidize and remain stagnant rather than have any freshwater infiltration. These wells were not monitored in 2020-21 due to unrealistic results of groundwater.

Notable observations in for MW002 include:

- Dissolved arsenic and iron concentrations at MW-002 are displaying a stable trend since 2019
- Conductivity was found to be very high in MW00-2 related to the 3-South PAG-CCR
- Dissolved manganese is elevated in MW00-2 indicating influence from PAG-CCR storage, but the trend is declining
- Sulphate is displaying an elevated but stable trend

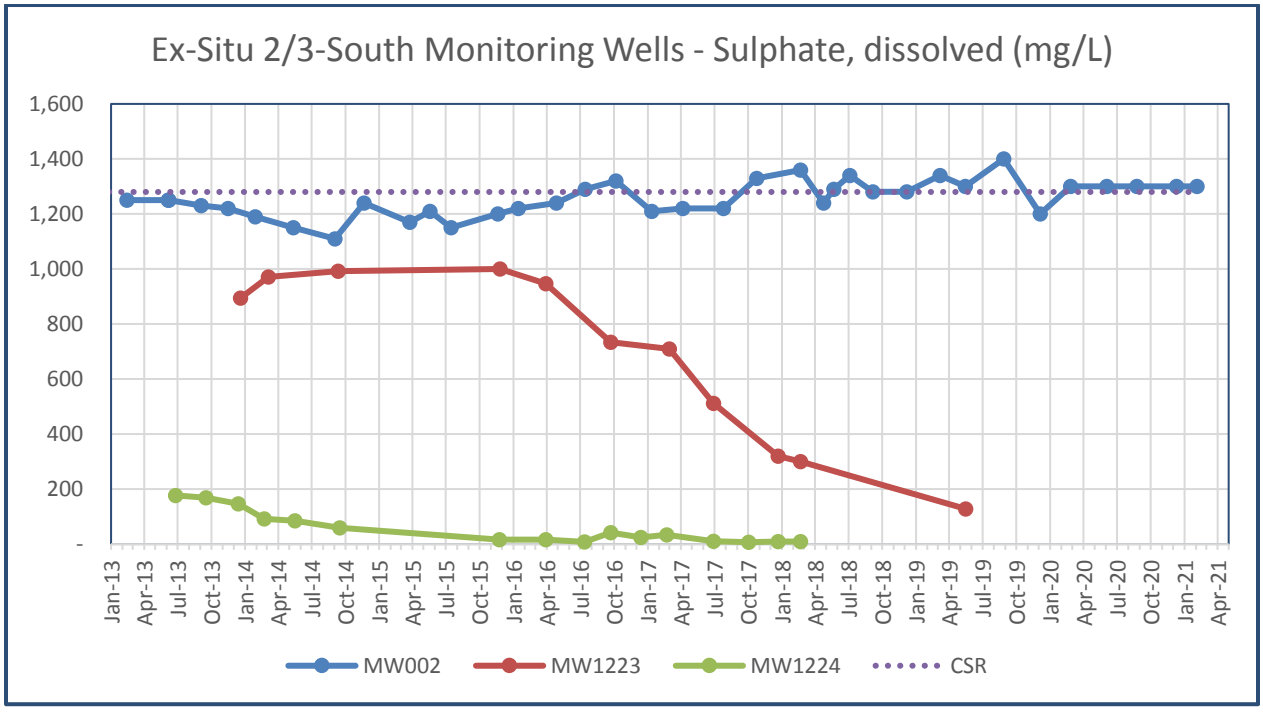


Figure 22: Ex-Situ/ In-Situ 2/3 South Monitoring Wells - Dissolved Sulphate

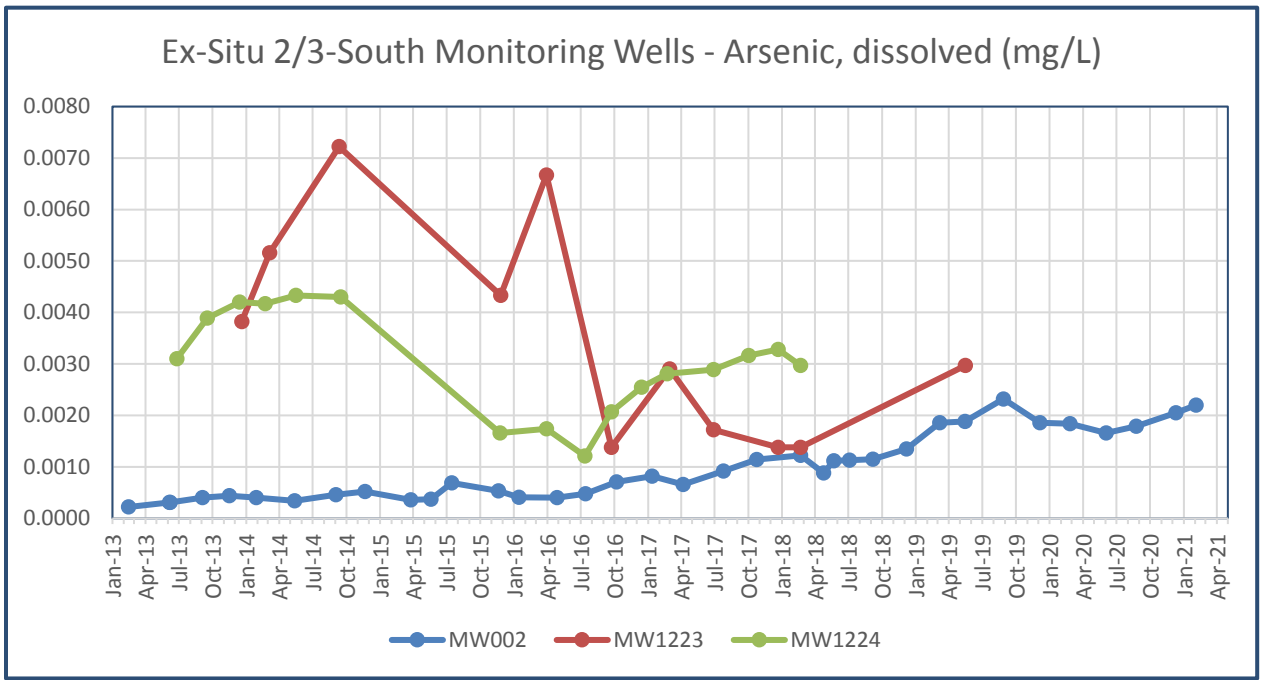


Figure 23: Ex-Situ/ In-Situ 2/3 South Monitoring Wells - Dissolved Arsenic

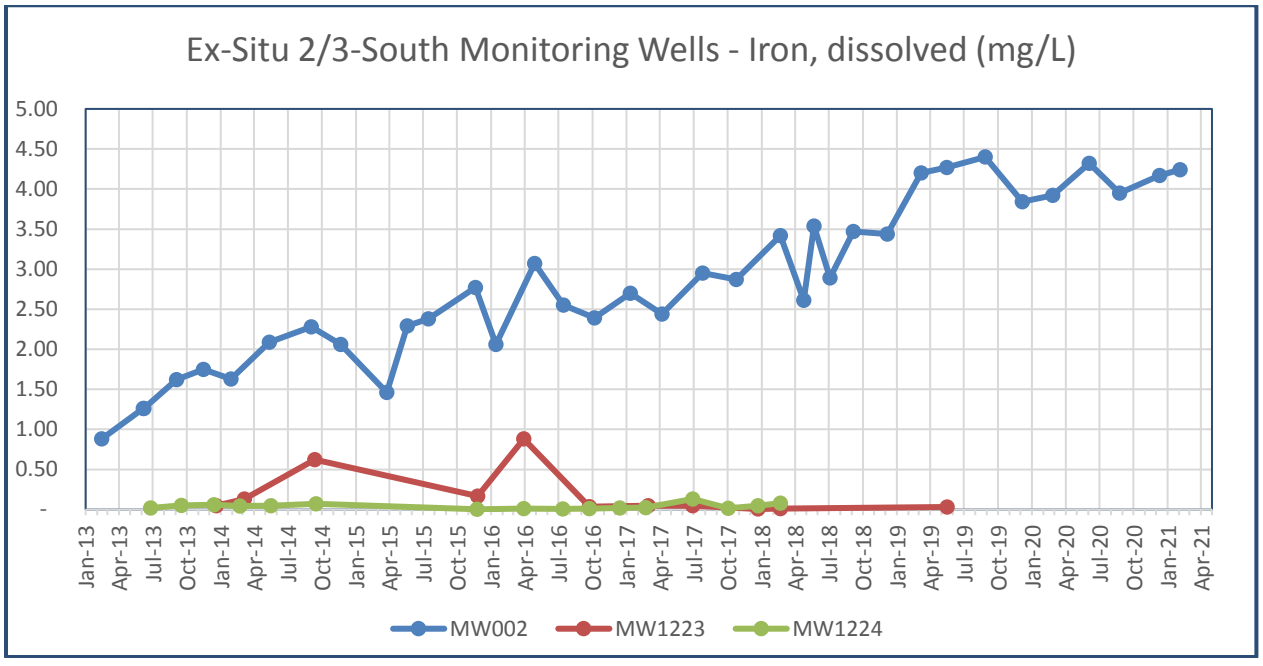


Figure 24: Ex-Situ/ In-Situ 2/3 South Monitoring Wells - Dissolved Iron

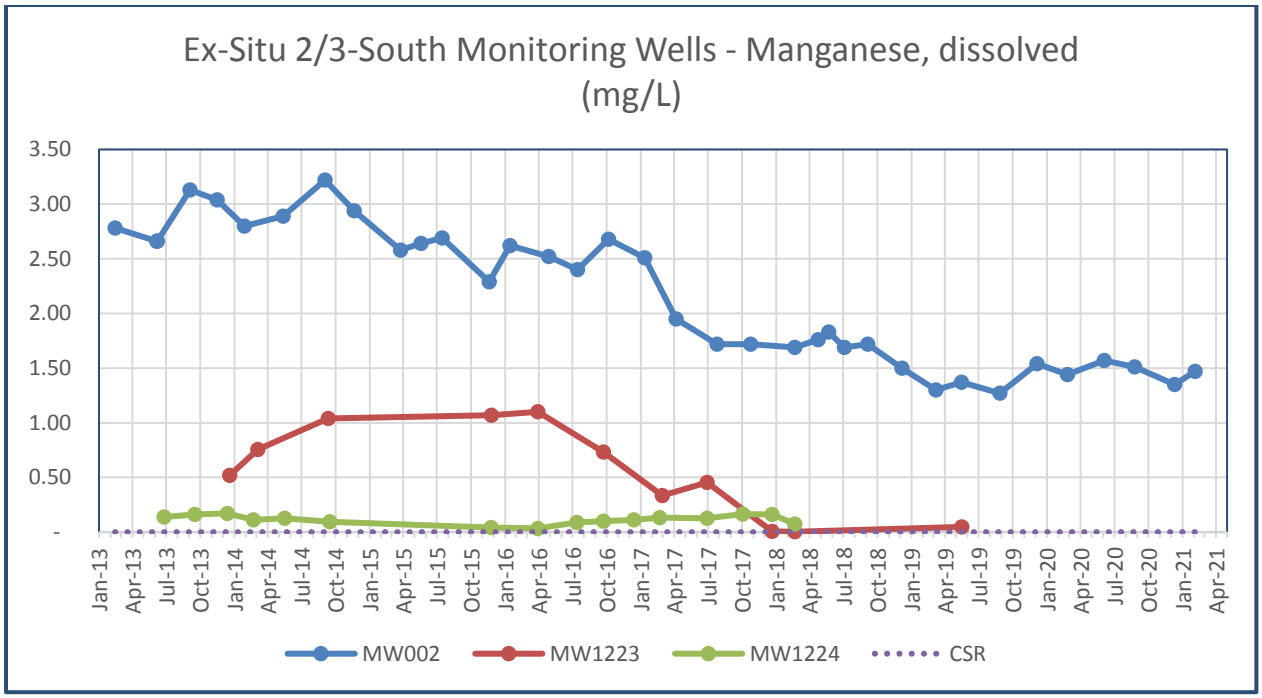


Figure 25: Ex-Situ/ In-Situ 2/3 South Monitoring Wells - Dissolved Manganese

4.2.6 4-South Mine Area

4.2.6.1 4-South Mine Pool

Predicted mature mine pool source terms were developed for the flooded 4-South mine and are quantified using maximum concentrations measured in QU78-161 and QU11-01. The 4-South mine pool chemistry indicates that the mine water has evolved into a mature state and can be used to estimate long term water chemistry. The mine water is expected to be anoxic and contain elevated sulphate, reduced iron and traces of dissolved sulphide, although eventually the mine waters are predicted to display higher pH, alkalinity and lower metal concentrations as iron and other metals are sequestered into sulphide minerals. The monitoring well 78-161 was eliminated from the monitoring program due to difficult access and chemical similarities to QU11-01. POI concentrations seen this monitoring period are lower to previous monitoring years and continue to demonstrate a decline in iron, manganese and sulphate.

Table 10 below displays the comparison between predicted to observed water quality during this monitoring period. Results from 1 sampling set were used for QU11-01 from the only sampling

event completed in 2020-21. The only parameters that were above the predicted concentration levels were arsenic and boron.

Table 10: Source Terms Comparison of Flooded 4-South Mine Void Mature Mine Pool

Parameters	Predicted Max. Values	2020-21 QU11 -01 (N=1)	Results obtained
Alkalinity (as $CaCO_3$)	450	110	Below Predicted
Aluminum (Al)	0.024	0.035	Below Predicted
Arsenic (As)	0.0924	0.116	**Above Predicted**
Boron (B)	0.637	1.19	**Above Predicted**
Cadmium (Cd)	0.000085	0.000025	Below Predicted
Cobalt (Co)	0.063	0.0005	Below Predicted
Copper (Cu)	0.0564	0.0005	Below Predicted
Fluoride (F)	1	0.47	Below Predicted
Iron (Fe)	257	176	Below Predicted
Manganese (Mn)	5.97	2.83	Below Predicted
Selenium (Se)	0.0004	0.0025	Below Predicted
Sulphate (SO_4)	2060	0.00025	Below Predicted
Zinc (Zn)	0.0712	0.0125	Below Predicted

All units in mg/L

According to Lorax, chemical stratification is apparent in this mine pool as the heavily mineralized water remains on the bottom of the water column and the less mineralized water remains in the upper portion due to limited mixing of the water column. Lorax described the groundwater in this area as having an age affected signature of fluoride and arsenic, directly related to the increased residence time in the groundwater system.

The mine void is “flooded” and water levels in the mine pool show little change as there are no dewatering efforts or active operations in this mine. The water level measuring device (*pressure transducer*) installed at QU11-01 failed in May 2018 and was reinstalled in September 2019 until April 2020 as noted in Figure 26. Currently there is no pressure transduce in this mine pool. Further investigation is warranted to re-establish and confirm the mine pool elevation.

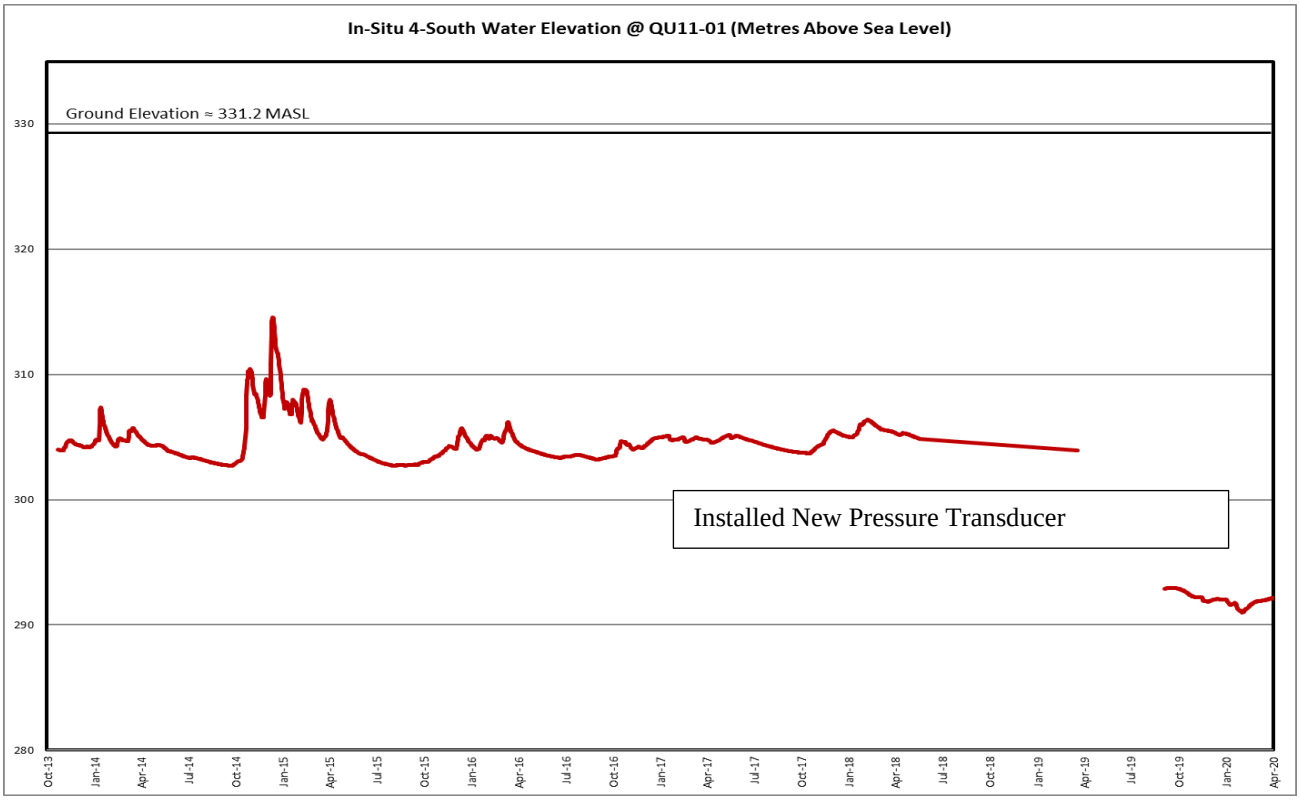


Figure 26: 4-South Mine Pool Water Elevation at QU11-01

POI are generally elevated with slight decrease observed with the redox reactive parameters between 2018 to present due to the maturity and flooded status of the mine. Dissolved selenium has fluctuating results since 2017 with results below detection limits of 0.0005 mg/L in 2021. This detection limit is higher than the flooded mine pool source terms.

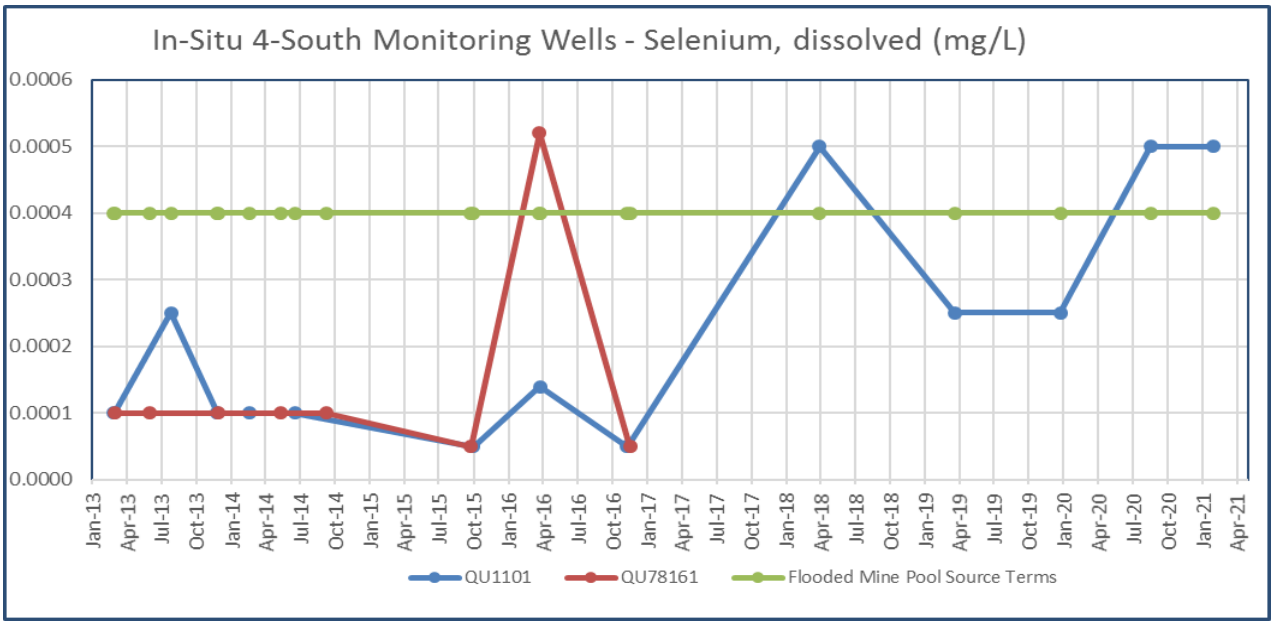


Figure 27: In-Situ 4-South Monitoring Wells - Dissolved Selenium

The mine pool has remained flooded at a steady elevation limiting exposure and oxidation of mine walls from fluctuating mine pools. Most redox reactive POI concentrations have trended downward and are stabilizing (iron, manganese and sulphate and arsenic). Arsenic displayed a steady increase with a spike observed in April 2018, and a steep decline stabilizing just above predicted mine pool source terms (Figures 28-31).

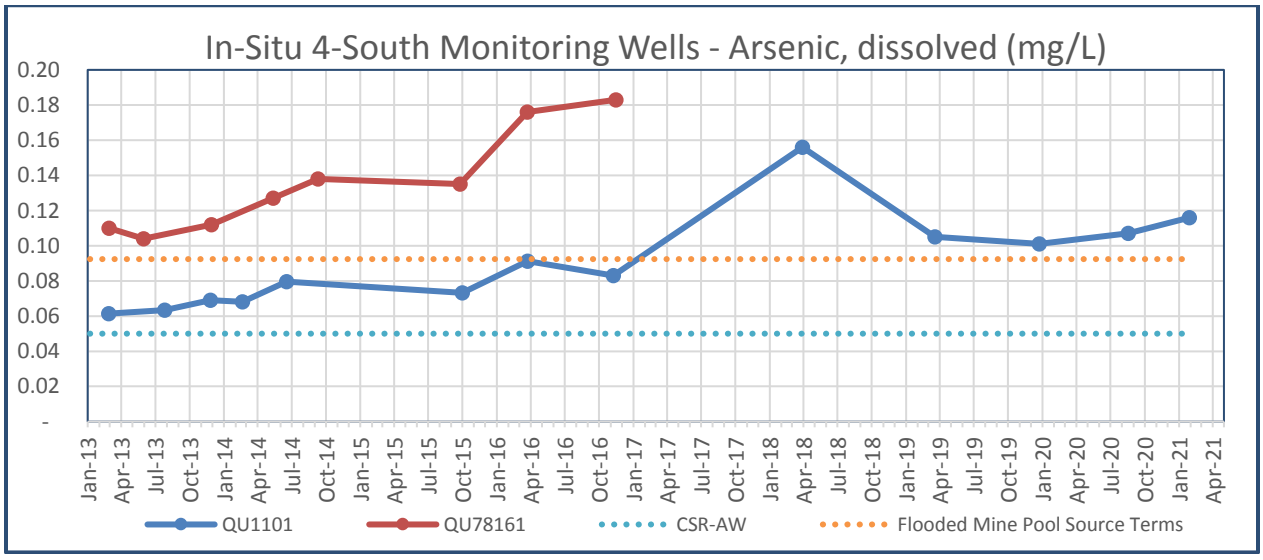


Figure 28: In-Situ 4-South Monitoring Wells - Dissolved Arsenic

The 4-South mine pool is dominated by iron reducing conditions with elevated concentrations of iron and sulphate. The chemical stratification is characterized by the high concentrations of iron and sulphate found at depth in the mine pool. The mine pool water quality has the highest concentration of dissolved iron on the mine site, having exhibiting concentrations greater than 200 mg/L at QU11-01.

Lorax observed that sulphate has an opposite trend to fluoride; sulphate is found in lowest concentrations in the formation water and highest in the mine pool. Sulphate concentrations are elevated and follow a similar profile to dissolved iron where concentrations have been generally decreasing since 2013 to below the predicted values of the flooded mine pool. Fluoride is developing an increasing tend in QU11-11 indicting the mine pool in being influenced by younger formation waters.

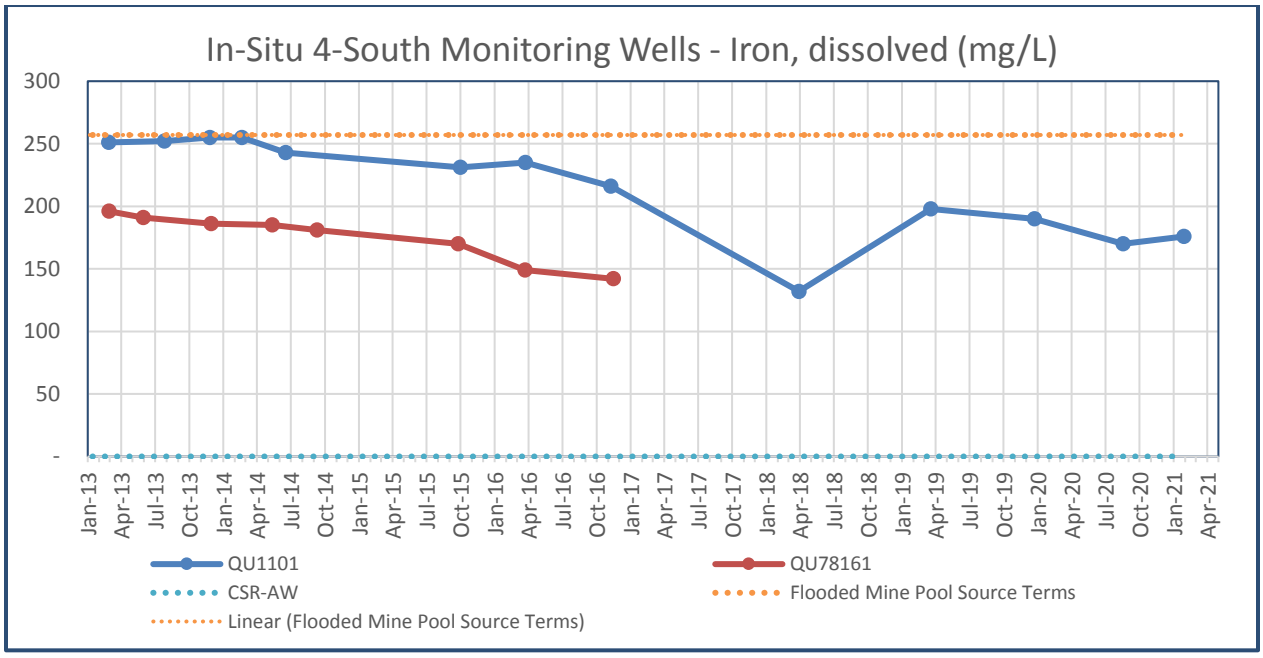


Figure 29: In-Situ 4-South Monitoring Wells - Dissolved Iron

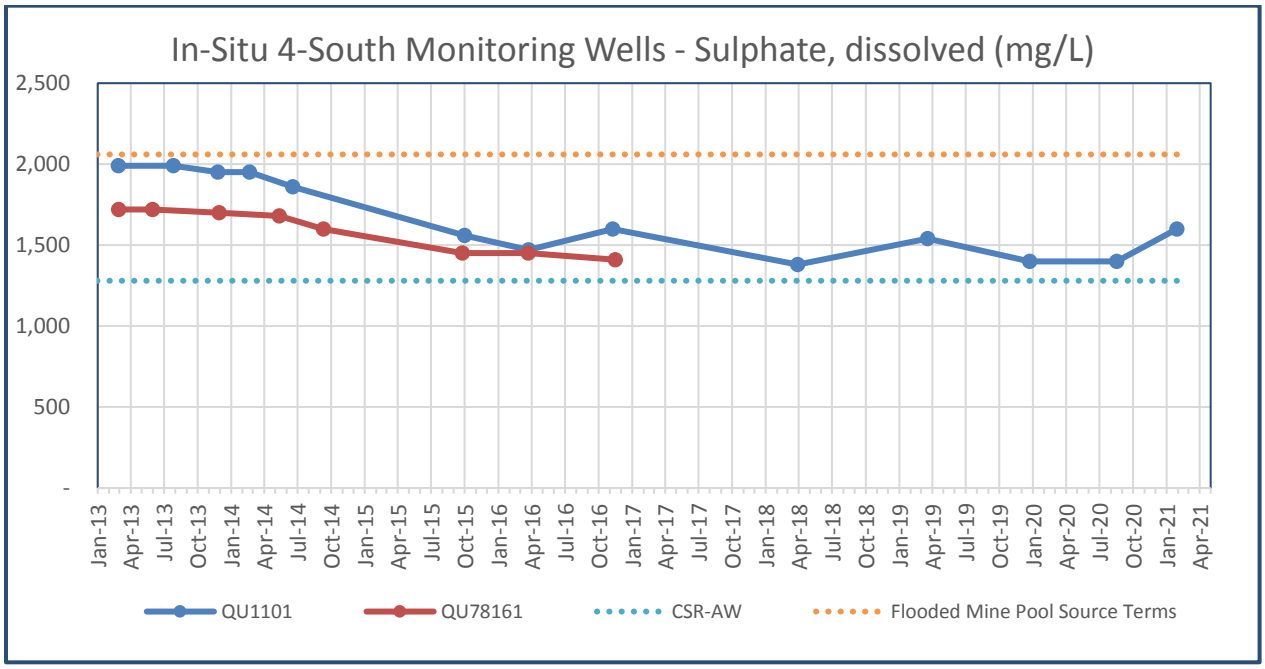


Figure 30: In-Situ 4-South Monitoring Wells - Dissolved Sulphate

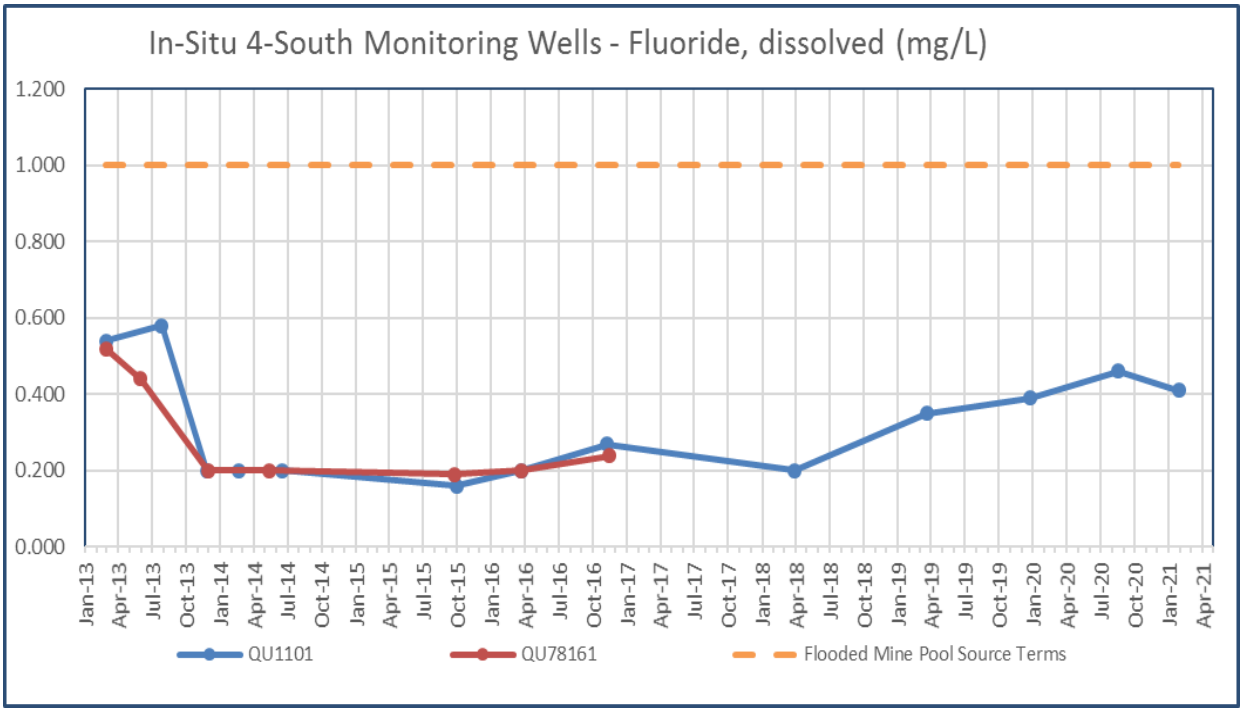


Figure 31: In-Situ 4-South Monitoring Wells - Dissolved Fluoride

4.2.6.2 4-South Ex-Situ Wells

Observations made of formation water down-gradient of the 4-South mine indicate mine and age-affected groundwater signatures suggesting a hydraulic connection between the 4-South mine pool and the down gradient monitoring wells. The hydraulic connection is most obvious at QU10-09 S, and less obvious at QU10-07 D and QU10-08 D. The strong mine signature in QU10-09 indicates that it is along the flow path of the juvenile mine waters discharging from the upper portion of the 4-South mine workings (Lorax, 2011).

Monitoring wells in this area are focused on four types of water quality:

- QU10-09 (S & D) ex-situ formation waters, outside of existing workings, assess vertical gradients and water quality adjacent to Long Lake
- QU10-07 D ex-situ formation waters; down gradient of existing workings next to the Long Lake Entrance wetland (LLE)
- QU10-08 D ex-situ up gradient of the existing workings; assess water quality immediately up gradient of existing workings

Generally, major ion concentrations are highest in the mine pool waters and lowest in the formation groundwater. POI concentrations in and outside the 4-South mine pool are relatively stable, showing some minor trending.

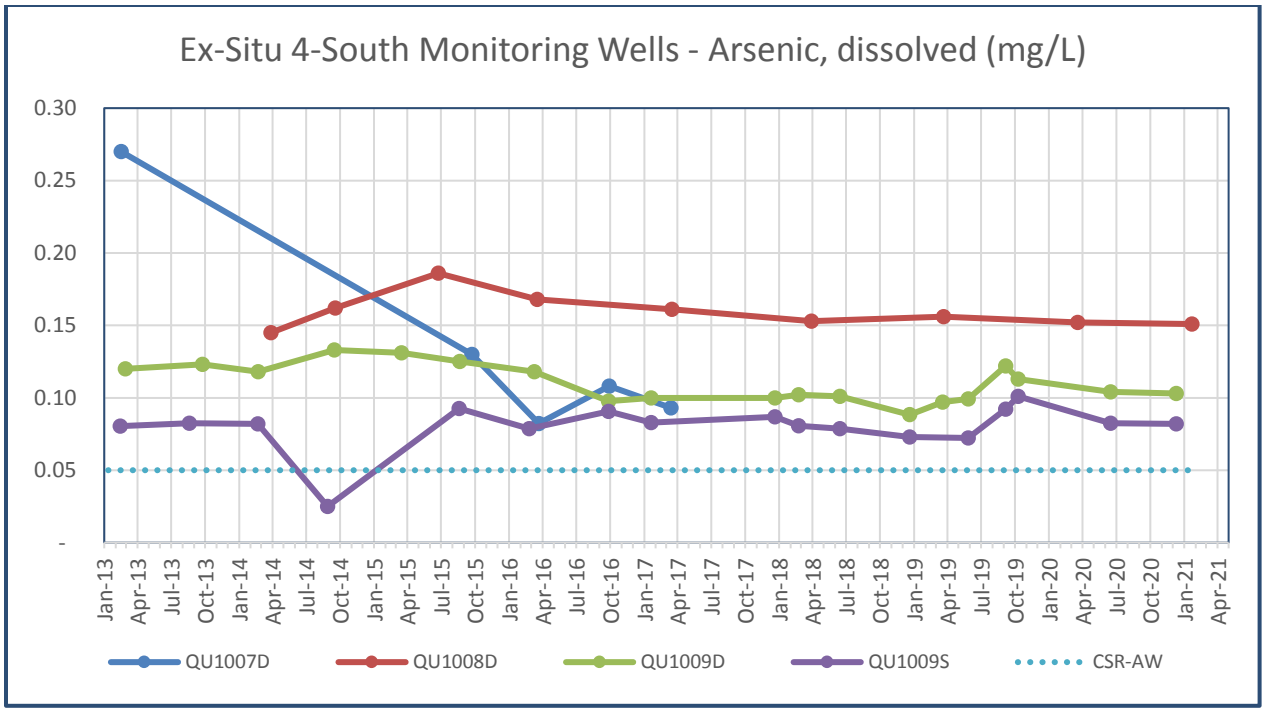


Figure 32: Ex-Situ 4-South Monitoring Wells - Dissolved Arsenic

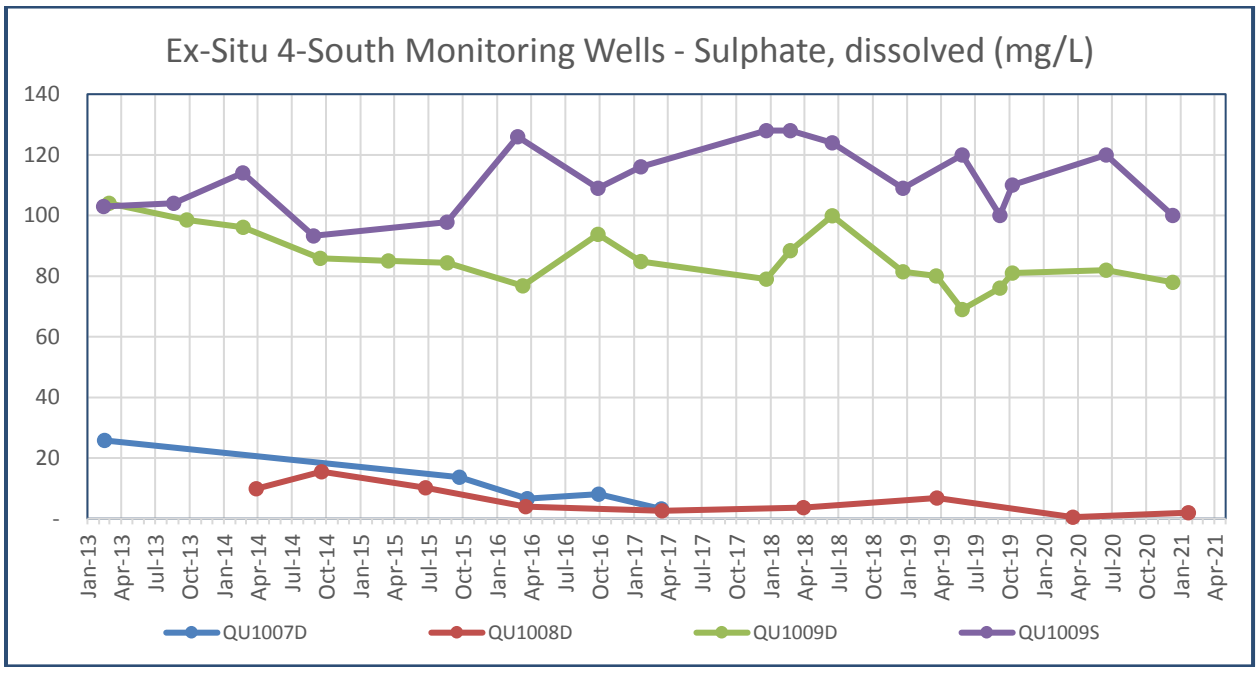


Figure 33: Ex-Situ 4S Monitoring Wells - Dissolved Sulphate

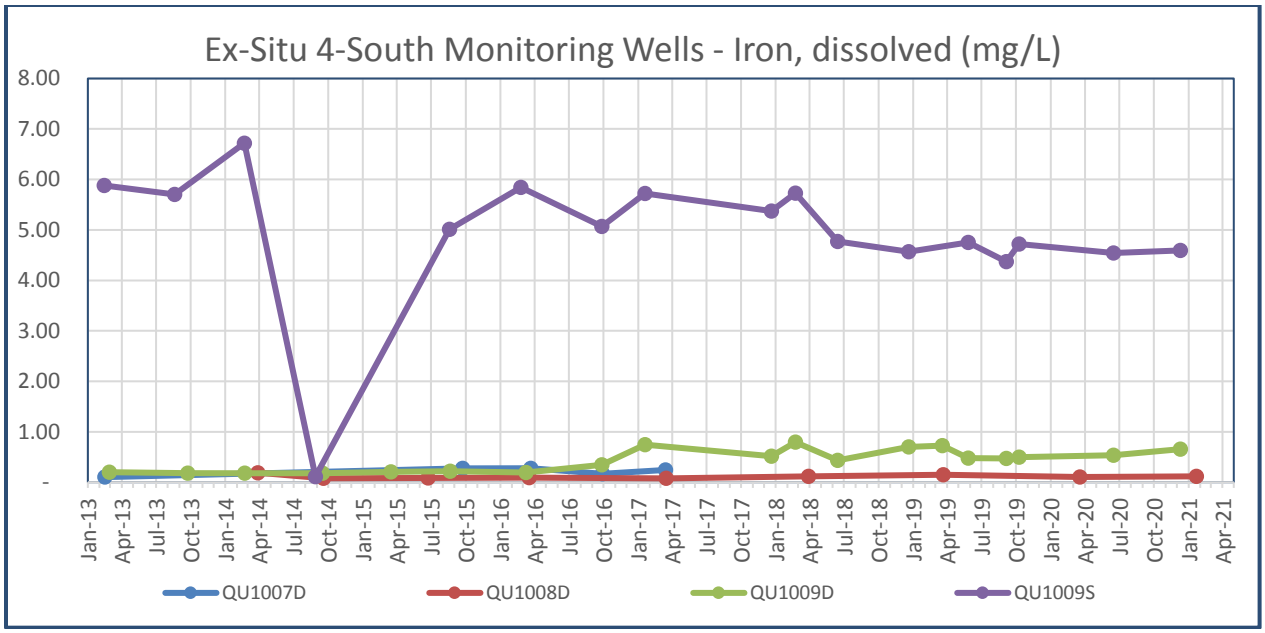


Figure 34: Ex-situ 4S Monitoring Wells - Iron dissolved

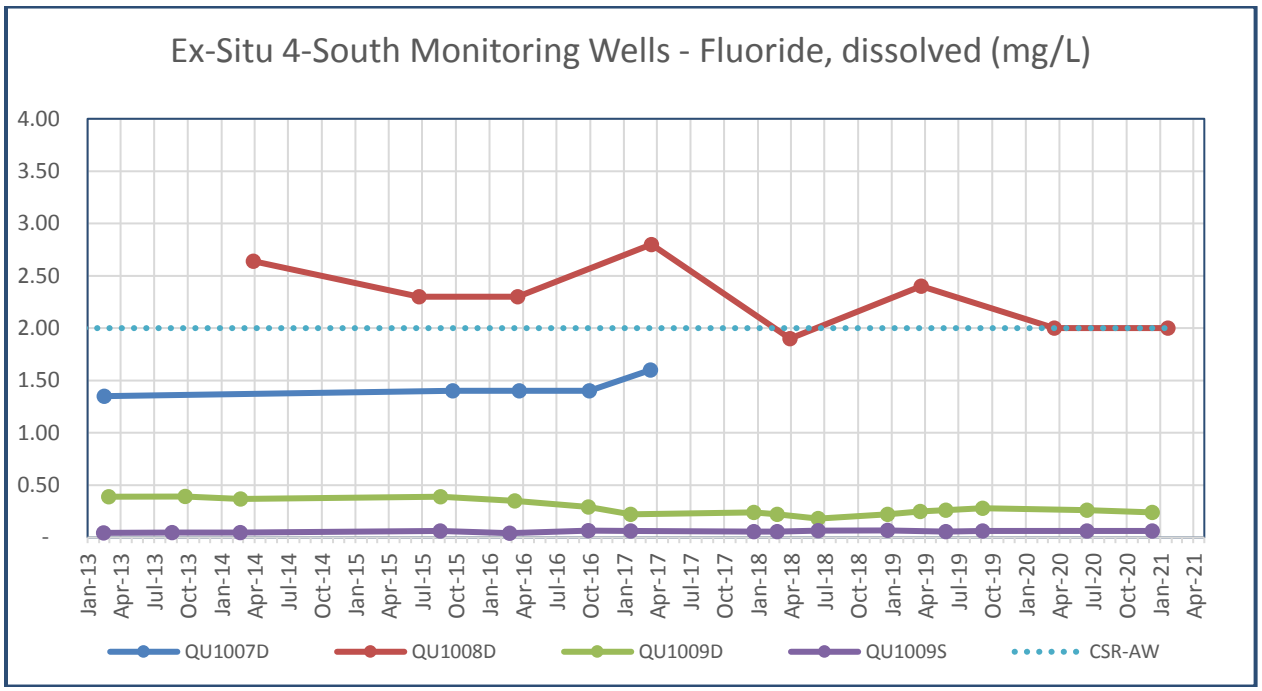


Figure 35: Ex-situ 4S Monitoring Wells – Fluoride dissolved

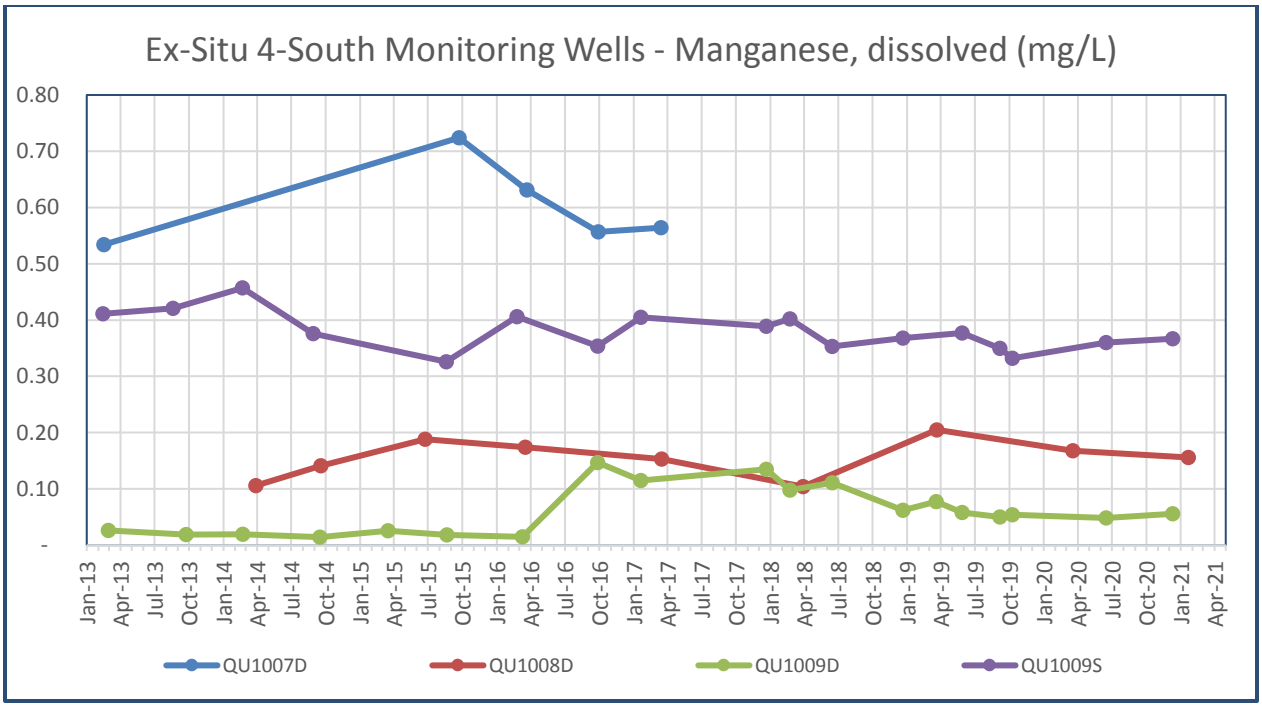


Figure 36: Ex-situ 4S Monitoring Wells –Manganese dissolved

Notable observations include:

- Dissolved arsenic concentrations were elevated above CSR-AW standards (0.05mg/L) at each well for all sampling events, reflecting historic results
- Dissolved sulphate levels were generally low (as observed in the past), highest in the QU10-09 S & D and lowest at QU10-08 D
- Dissolved iron was below 1.0 mg/L in all wells except in QU10-09 S, where results persisted just below 5 mg/L
- Fluoride was at CSR-AW standards in well QU10-08 D during the lone sampling event resulting in 2.0 mg/L. Fluoride is an indication of younger groundwater influencing the water in this well.
- Manganese is highest in wells QU10-09 S and QU10-08 D

4.2.7 242 Mine

The 242 Portal site was reclaimed in Spring, 2016 with backfilling of the portal, permanent slope creation, topsoil cover and subsequent revegetation. A new sampling site (242MW) was created in 2017 with the drilling and installation of an additional groundwater well.

The pH of the flooded waters of the historic 242 mine has been consistently circum-neutral this year averaging 6.82 and low conductivity averaging 227. The water exhibits low concentrations of alkalinity, sulphate and metals, consistent with past monitoring events since 2014. Water quality is expected to contain low levels of sulphate and metals due to the limited impact from mining in this area that occurred prior to 1996. After mining was completed the mine flooded immediately, with no additional disturbances.

Dissolved arsenic has an inconsistent pattern related to seasonal highs and lows, although mostly elevated in fall and winter. Both arsenic and iron are trending upwards since monitoring began. Dissolved fluoride remains in low concentrations indicating limited influence of younger formation water.

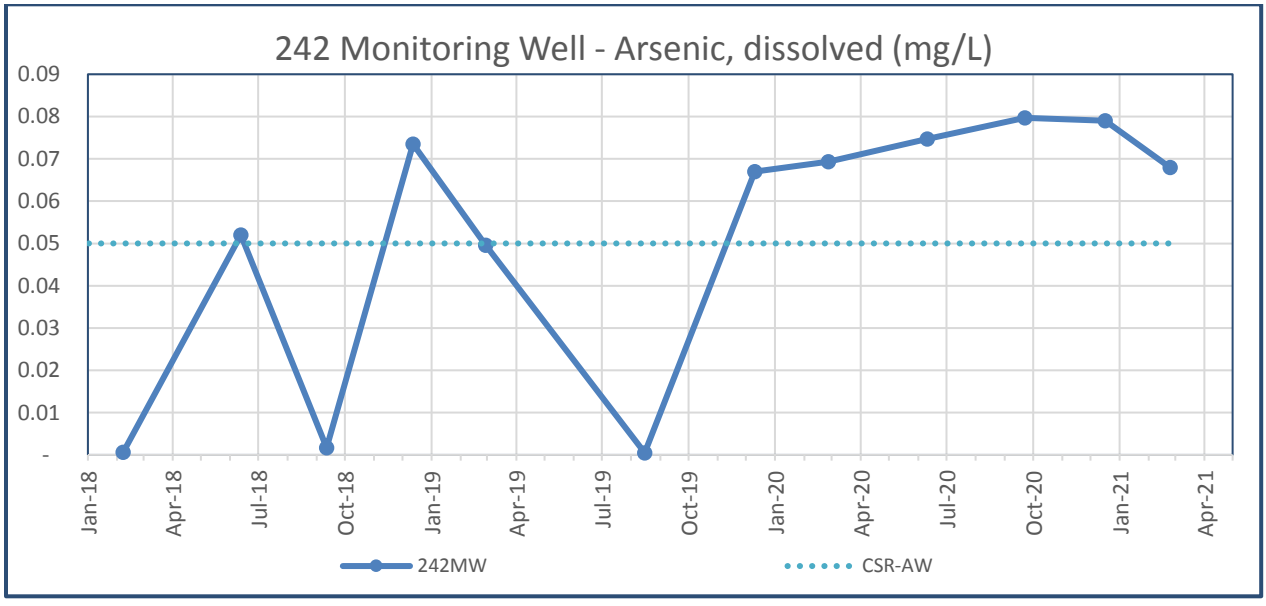


Figure 37: In-situ 242 Mine Pool – Arsenic, dissolved

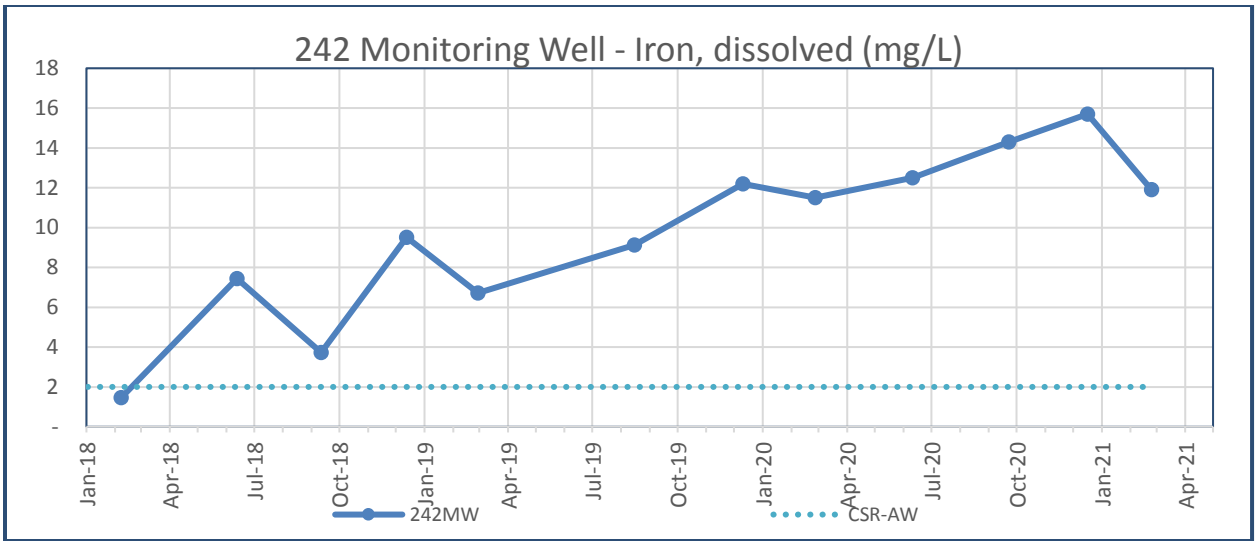


Figure 38: In-situ 242 Mine Pool – Iron, dissolved

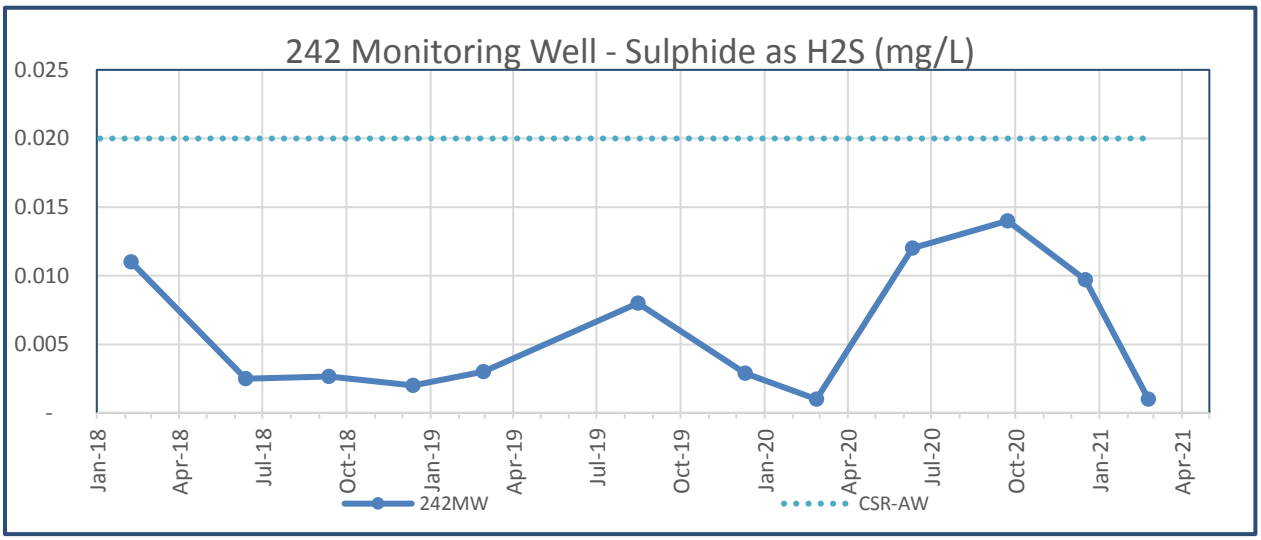


Figure 39: In-situ 242 Mine Pool – Sulphide as H_2S

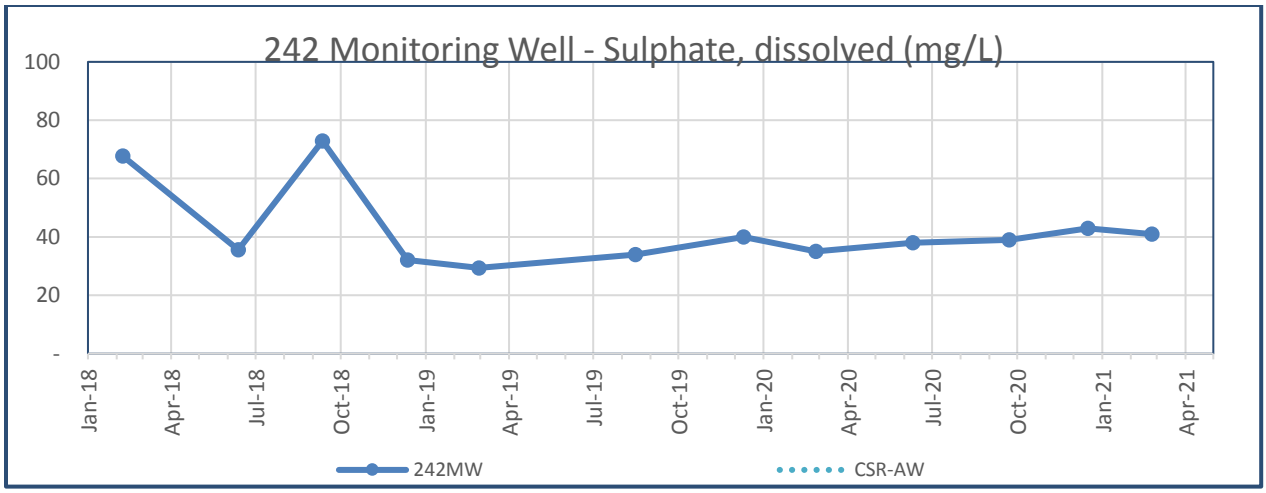


Figure 40: In-situ 242 Mine Pool – Sulphate, dissolved

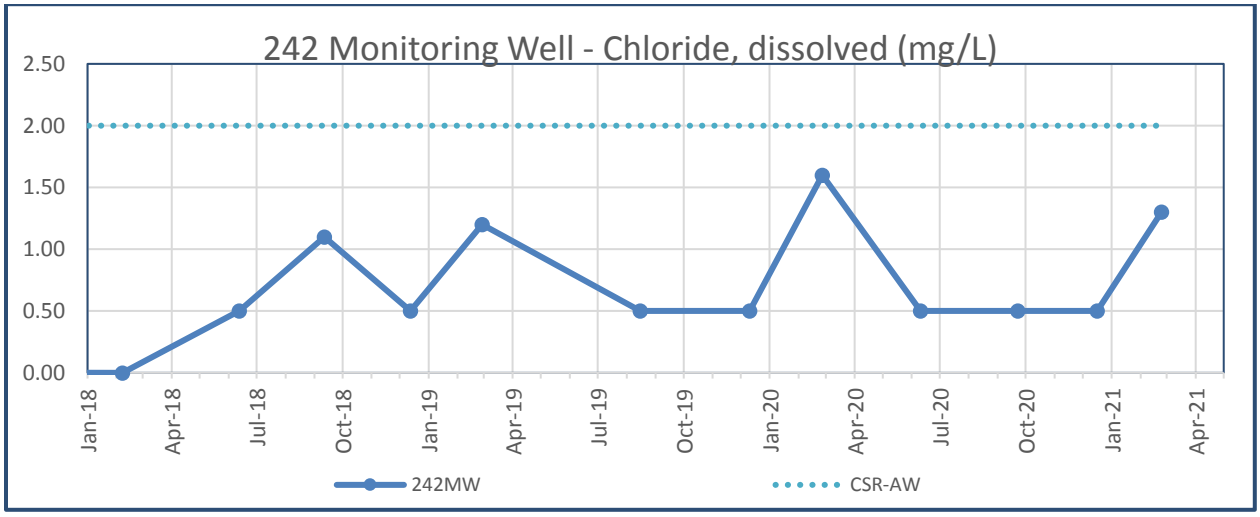


Figure 41: In-situ 242 Mine Pool –Chloride, dissolved

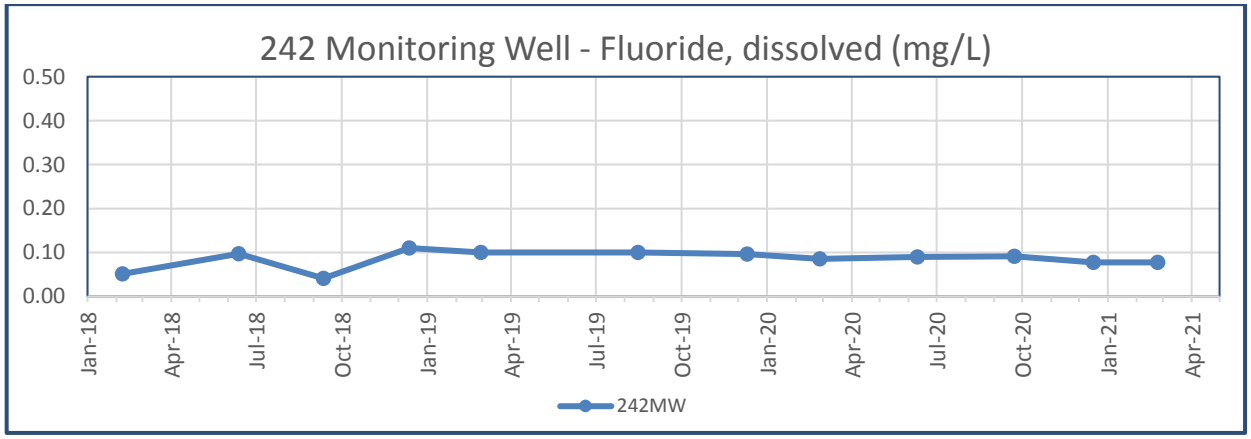


Figure 42: In-situ 242 Mine Pool –Fluoride, dissolved

4.2.8 7-South Area 5 Background

In July 2018 blasting through the Long Lake Fault Zone commenced in order to gain access to 7-South Area 5 No. 4 seam coal. Mining did not occur until late January to early February 2019. A full set of groundwater wells were monitored. Those include QU11-36 S/D, QU12-06 S, QU11-18 S/D and QU11-28. The groundwater in this area is characterized as being elevated in arsenic with some wells exhibiting elevated concentrations of sulfide as H_2S. Figures 43 and 45 display these results since monitoring began in 2013. Currently the groundwater in this area is non-mine impacted and all monitoring results contribute to baseline conditions. This year only QU11-36 D and QU12-06 S were monitored. QU12 06 S displayed elevated H_2S as sulphide during the most recent monitoring session.

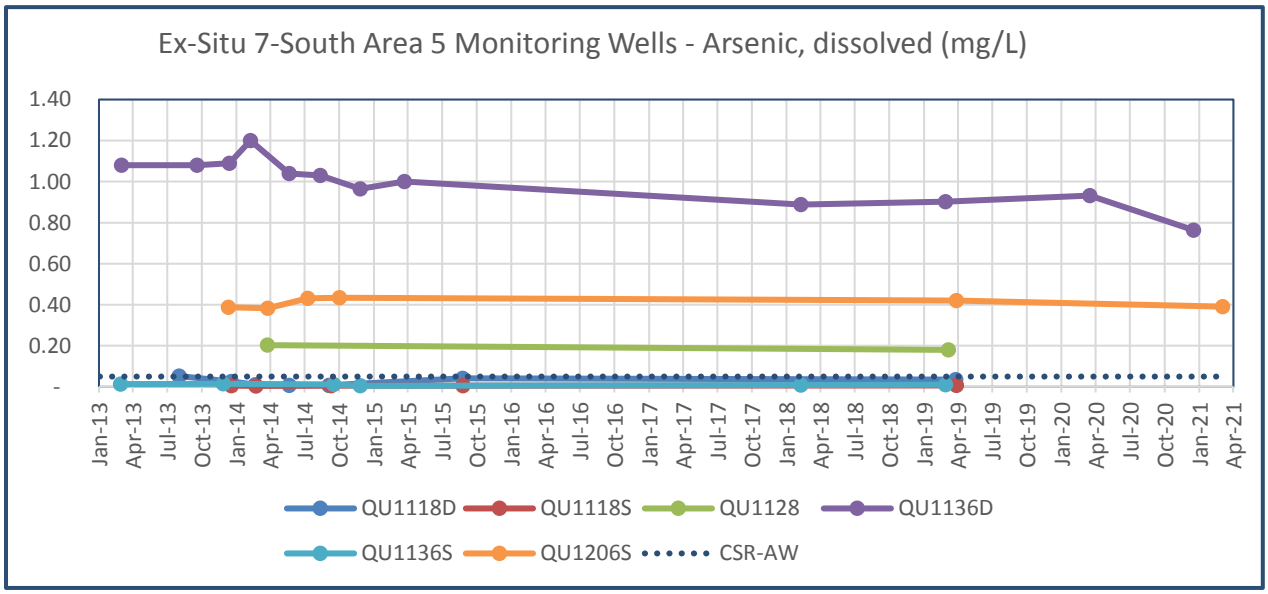


Figure 43: Dissolved Arsenic in 7SA5

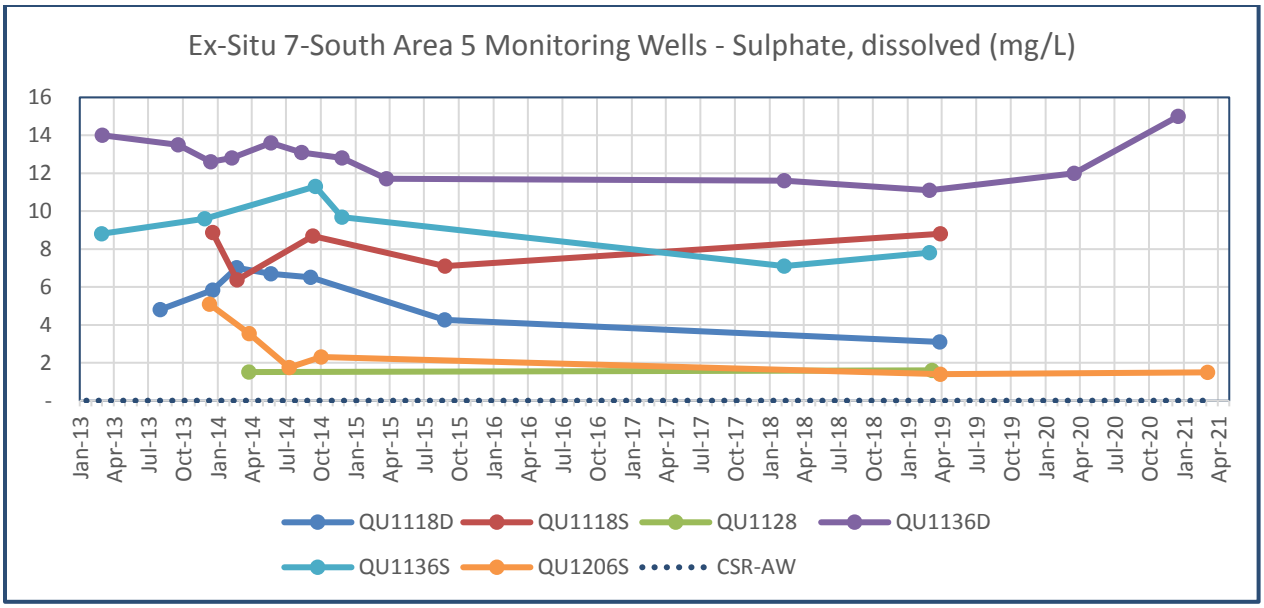


Figure 44: Dissolved Sulphate in 7SA5

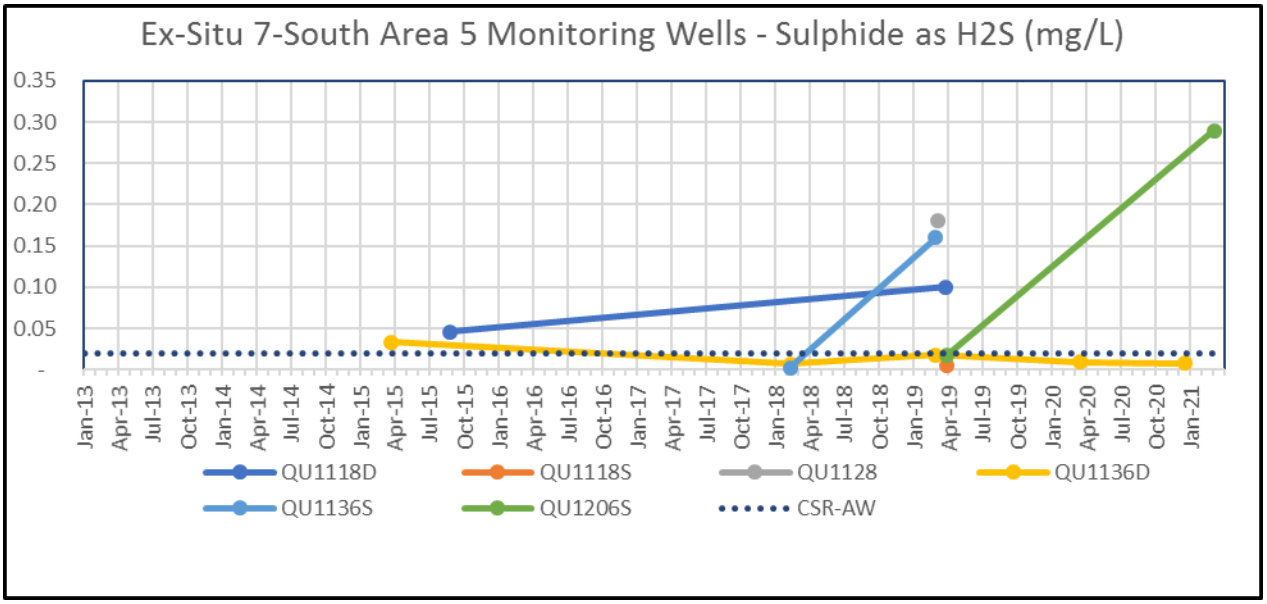


Figure 45: Sulphide as H_2S in 7SA5

5 Summary

The groundwater monitoring program at Quinsam Coal has been established to capture the interaction between mine related surface and underground disturbance areas (contact water) with the receiving environment. The comprehensive nature of this program allows Quinsam to generate water quality predictions, strategically manage surplus water generated as a result of mining activities and create management plans with a focus on mitigating potential receiving environment impacts.

During the mine operations phase, the groundwater program provides critical information to ensure that plans and targets are being achieved. For example, in-situ wells provide the necessary information to validate water quality predictions (source terms) within a mining area. The program also provides opportunity to monitor water quality associated with three key operational waste management practices:

1) Subaqueous PAG-CCR disposal
2) Fine Tailings underground storage in 2 North mine void(s)
3) Backfilled and flooded underground PAG-CCR

The information attained from monitoring these unique and innovative disposal methods will inform future waste management plans and opportunities for Quinsam Coal.

Overall, in-situ groundwater at Quinsam Coal is generally within the water quality prediction scenarios and ex-situ groundwater typically trends below the CSR-AW standards. The two exceptions to the aforementioned is groundwater influenced by host geological formations (e.g. Dunsmuir Member sandstones, Cumberland Member No.1 Coal seam and mudstones) with naturally elevated concentrations of parameters of interest and by weathering processes (i.e. mine wall oxidation and flushing) of disturbed materials within the mine footprint.

The long-term groundwater quality trend(s) demonstrate that deeper formation groundwater systems are not substantially influenced by contact water at most locations (i.e. 2-North/5-South and 7-South), as moderate concentrations of dissolved metals and low concentrations of sulphate

are typical. In contrast, the underground mine voids, flooded open pit mining areas, and those areas used for subaqueous PAG-CCR and tailings stowage have, in some cases, elevated concentrations of certain parameters. Sulphate and sulphide as H_2S are the primary parameters of interest within these mining areas, due to the fact that sulphate and sulphide have a distinctive geochemical signature and the contact water flow path can be tracked.

The groundwater program will continue to evolve as mining advances into new areas, or retreats from existing areas, and information on existing mine developments is evaluated. Furthermore, the program will be adapted to encompass the progression of our waste management strategy and any well or area with specific trending.

References

1. Lorax Environmental and Enterprise Geoscience Services Ltd. (2011). Appendix I 4 South Mine Groundwater Evaluation. In *Mine Permit (C-172) Amendment Appendices I-J* (Vol. Volume 3, pp. 3-1, 4-1, 4-10, 4-11, 4-16, 5-1,6-1-7-12, 5-1). Burnaby, B.C.

2. Lorax Environmental and Enterprise Geoscience Services Ltd. (2011). Appendix I 4 South Mine Groundwater Evaluation. In *Mine Permit (C-172) Amendment Appendices K-N* (Vol. Volume 4, pp. 4-1, 4-12, 4-13, 4-13, 4-35, 5.3,6-47, 6-55). Burnaby, B.C.

3. Lorax Environmental Ltd. (2013) *Quinsam Coal Corporation Groundwater Quality Sampling Guide, (*pp. 1-1 to 4-4). Burnaby, B.C.

4. Golder Associates Ltd. (2006) *Quarterly Groundwater Monitoring Assessment Fall (2006) Quinsam Mine*, (pp. 9-12). Victoria, B.C.

5. Ministry of Environment Province of British Columbia. (2013) *Ambient Water Quality Guidelines for Sulphate. Technical Appendix*. (pp. 7). Victoria, B.C.

6. Ministry of Environment (MOE). (2013) *The British Columbia Field Sampling Manual, For Continuous Monitoring and Collection of Air, Air-Emissions, Water, Wastewater, Soil, Sediment, and Biological Samples, 2013 Edition".* Victoria, B.C.

Enterprise Geoscience Services Ltd.

Borehole Log of QU-78-161 (4 South)

Date Started	: 1978	Drilled By	: n/a
Date Completed	: 1978	Northing Coord.	: 101068.3
Hole Diameter	: 140 mm assumed	Easting Coord.	: 99409.0
Drilling Method	: n/a	Survey By	: n/a
Sampling Method	: n/a	Logged By	: n/a

Water Levels

QU-78-161: 305.14 m (12-Jan-2011)

Well: QU-78-161
Elev. m: 318.5

Depth (m)	Elev. m 318.5	USCS	Graphic Symbol	Material Description
50	268.5	SP		
55	263.5	SS		
60	258.5	SM		
65	253.5	SS		
70	248.5			
75				

4" PVC

Screen

EOH @ 71.7 m

Notes:

Borehole terminated to drift at 86.4 m.

Quinsam Coal
Assessment of Underground Disposal
of Coarse Coal Refuse

Campbell River, B.C.

03-09-2011 C:\Users\John Balfour\Documents\PROJECTS\2009 Projects\09010 Lorax\2010 Work\Borehole logs\QU-78-161.bor

PROJECT No.: 002-1065

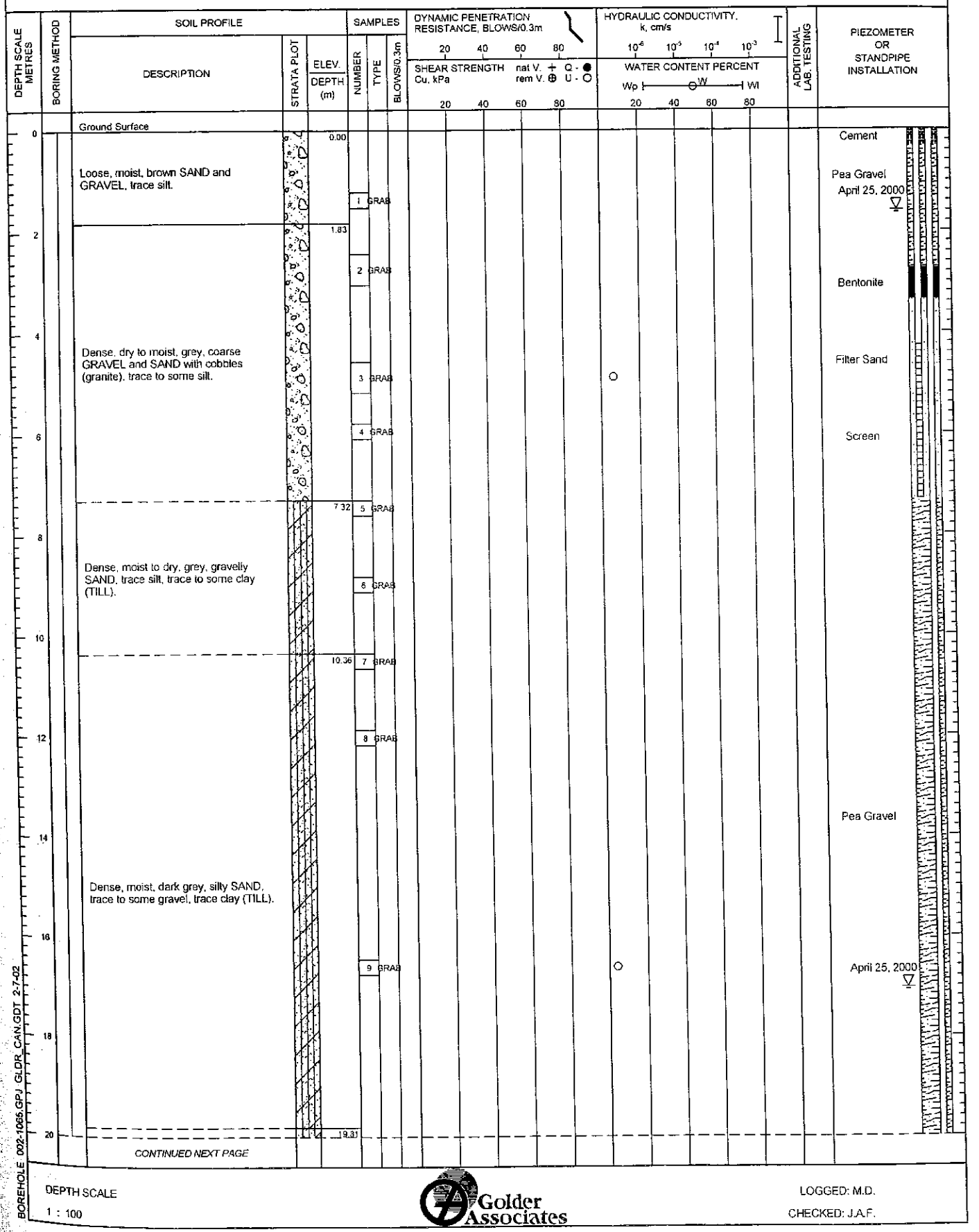
RECORD OF MONITORING WELL: MW00-1(D&S)

SHEET 1 OF 2

LOCATION: Washplant Ditch, Quinsam Mine

BORING DATE: April 17-18, 2000

DATUM: Local



BOREHOLE 002-1065.GPJ GLDR_CAN.GDT 2-7-02

DEPTH SCALE
1 : 100

Golder Associates

LOGGED: M.D.

CHECKED: J.A.F.

PROJECT No.: 002-1065

RECORD OF MONITORING WELL: MW00-1(D&S)

SHEET 2 OF 2

LOCATION: Washplant Ditch, Quinsam Mine

BORING DATE: April 17-18, 2000

DATUM: Local

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. + Q - ● rem V. ⊕ U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp — W — Wl) (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
20											
22		Dense, dry, grey, gravelly SAND and GRAVEL, trace to some silt (TILL). *(continued)*									Pea Gravel
24				24.38							Bentonite
26		Dense, dry, gravelly SAND, some clay, trace silt (TILL).			10	GRAB					Screen / Filter Sand
28											
30											Drill Cuttings
32		End of MONITORING WELL.		30.48							
34											
36											
38											
40											

BOREHOLE 002-1065.GPJ GLDR_CAN.GDT 2-7-02

DEPTH SCALE
1 : 100

Golder Associates

LOGGED: M.D

CHECKED: J.A.F.

PROJECT No.: 002-1065

RECORD OF MONITORING WELL: MW00-2

SHEET 1 OF 1

LOCATION: Washplant Ditch, Quinsam Mine

BORING DATE: April 17-18, 2000

DATUM: Local

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. +, rem V ⊕, Q - ●, U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp, W, Wl) (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0		Ground Surface									
		Dry, grey SAND and GRAVEL (shale rock fragments) (Rock Fill).		0.00							Cement; Bentonite; April 19, 2000; April 25, 2000
2		SHALE (bedrock).		1.52							Filter Sand
4		Coal and Shale.		3.96	1	GRAB					
		SHALE		4.88	2	GRAB					Screen
		Coal Seam.		5.49	3	GRAB					
6		SHALE		6.10							
		End of MONITORING WELL.		6.31							
8											
10											
12											
14											
16											
18											
20											

BOREHOLE 002-1065.GPJ GLOR_CAN.GDT 2-7-02

DEPTH SCALE 1 : 100

Golder Associates

LOGGED: M.D.

CHECKED: J.A.F.

PROJECT No.. 002-1065

RECORD OF MONITORING WELL: MW00-4

SHEET 1 OF 3

LOCATION: 3S Pit, Quinsam Coal Mine

BORING DATE: Nov. 20,22&23, 2000

DATUM: Local

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80)	SHEAR STRENGTH Cu, kPa (nat V. +, rem V ⊕, Q -●, U -○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3})	WATER CONTENT PERCENT (Wp, W, Wl) (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0		Ground Surface		0.00									
		Loose, moist, grey and brown ROCK FILL, some sand and silt.											Bentonite and Concrete
2													
				3.35	1	CS							
4		Dense, moist, light brown, silty SAND, some gravel (sub-angular). (Till).											
6				5.79									
8					2	CS							
10													
12		Medium strong, grey SANDSTONE. - grades to lighter grey @ 15.24m - trace black coal @ 24.38m											
14													
16					3	CS							
18													
20					4	CS							

CONTINUED NEXT PAGE

BOREHOLE 002-1065.GPJ GLDR.CAN.GDT 2-7-02

DEPTH SCALE 1 : 100

Golder Associates

LOGGED: W.H.

CHECKED: J.A.F.

PROJECT No.: 002-1065

RECORD OF MONITORING WELL: MW00-4

SHEET 2 OF 3

LOCATION: 3S Pit, Quinsam Coal Mine

BORING DATE: Nov. 20,22&23, 2000

DATUM: Local

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80)	SHEAR STRENGTH Cu, kPa (20 40 60 80); nat V. +, rem V ⊕; Q - ●, U - ○	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3})	WATER CONTENT PERCENT (Wp, W, Wl; 20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
20					4	CS							
22													
24													
26		Medium strong, grey SANDSTONE. - grades to lighter grey @ 15.24m - trace black coal @ 24.38m *(continued)*			5	CS							
28													
30													
32					6	CS							
34				34.14									
		VOID - likely old mine workings, broken and caved in bedrock.											
36				35.66									
38		SANDSTONE.											
40		*CONTINUED NEXT PAGE*											

BOREHOLE 002-1065.GPJ GLDR_CAN.GDT 2-7-02

DEPTH SCALE

1 : 100

Golder Associates

LOGGED: W.H.

CHECKED: J.A.F.

PROJECT No.: 002-1065

RECORD OF MONITORING WELL: MW00-4

SHEET 3 OF 3

LOCATION: 3S Pit, Quinsam Coal Mine

BORING DATE: Nov. 20,22&23, 2000

DATUM: Local

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. +, rem V. ⊕, Q - ●, U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-5} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp, W, Wl) (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
40											
42		SANDSTONE. *(continued)*									Nov. 24/00 ▽
44		VOID - likely old mine workings, broken and caved in bedrock.		44.51							
46		SANDSTONE.		45.72							50mm PVC Slotted Pipe
48		VOID - likely old mine workings, broken and caved in bedrock.		48.77							
50		End of MONITORING WELL.		49.68							
52											
54											
56											
58											
60											

BOREHOLE 002-1065.GPJ GLDR_CAN.GDT 2-7-02

DEPTH SCALE
1 : 100

Golder Associates

LOGGED: W.H.

CHECKED: J.A.F.

PROJECT No.. 002-1065

RECORD OF MONITORING WELL: MW00-6

SHEET 1 OF 1

LOCATION: 3S Pit, Quinsam Coal Mine

BORING DATE: Nov. 21-22, 2000

DATUM: Local

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80)	SHEAR STRENGTH Cu, kPa (nat V. + Q - ● / rem V. ⊕ U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3})	WATER CONTENT PERCENT (Wp — W — Wl) (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0		Ground Surface		0.00									
2		Compact, moist, light brown TILL (FILL) (boulders, cobbles, sandy silt).			1	CS							Slough MW 6D Nov. 24/00 ▽
4					2	CS							Bentonite Seal Silica Sand
6				5.79	3	CS							MW 6S Nov. 24/00 ▽ 50mm Slotted PVC Pipe
8													
10													Bentonite Seal
12		Dense, moist to wet, dark grey, sandy SILT (Native), some gravel, cobbles and boulders. (TILL).											
14													
16													50mm Slotted PVC Pipe Silica Sand
18													Slough
20		End of MONITORING WELL.		18.59									

BOREHOLE 002-1065.GPJ GLDR_CAN.GDT 2-7-02

DEPTH SCALE
1 : 100

Golder Associates

LOGGED: W.H.

CHECKED: J.A.F.

Lorax Environmental Services Ltd.
2289 Burrard Street
Vancouver, BC, Canada, V6J 3H9
Phone: +1 (604) 688-7173
Fax: +1 (604) 688-7175
www.lorax.ca

Borehole ID: QU08-10

Project #: 885-1
Project: Quinsam Coal Groundwater Monitoring
Client: Quinsam Coal/Hillsborough Resources
Location: 7 South

Northing: 5533856.79
Easting: 324464.06
Ground Elevation: 295.02m
Steel Casing: 6 inch

Depth	Symbol	Description	Depth/Elev.	Well	Observations
ft / m		Ground Surface			
0 / 0		Overburden/ Glacial Till	0.0	Pea Gravel 0.0m-3.0m	
2 / 6				Cement Grout 3.0m-17.37m	
20 / 6		Sandstone	21.3		
58 / 16				Bentonite Pellets 17.37m-18.29m	

Drilled By: Drillwell
Drill Method: Downhole Hammer
Geologists: M. Storey
Drill Date: March 10, 2008

Hole Size: 7 in (0-6.5m), 6 in (6.5m-30.9m)
PVC Casing: 2 inch
Well Installation Date: April 20, 2010
Sheet: 1 of 2

Lorax Environmental Services Ltd.
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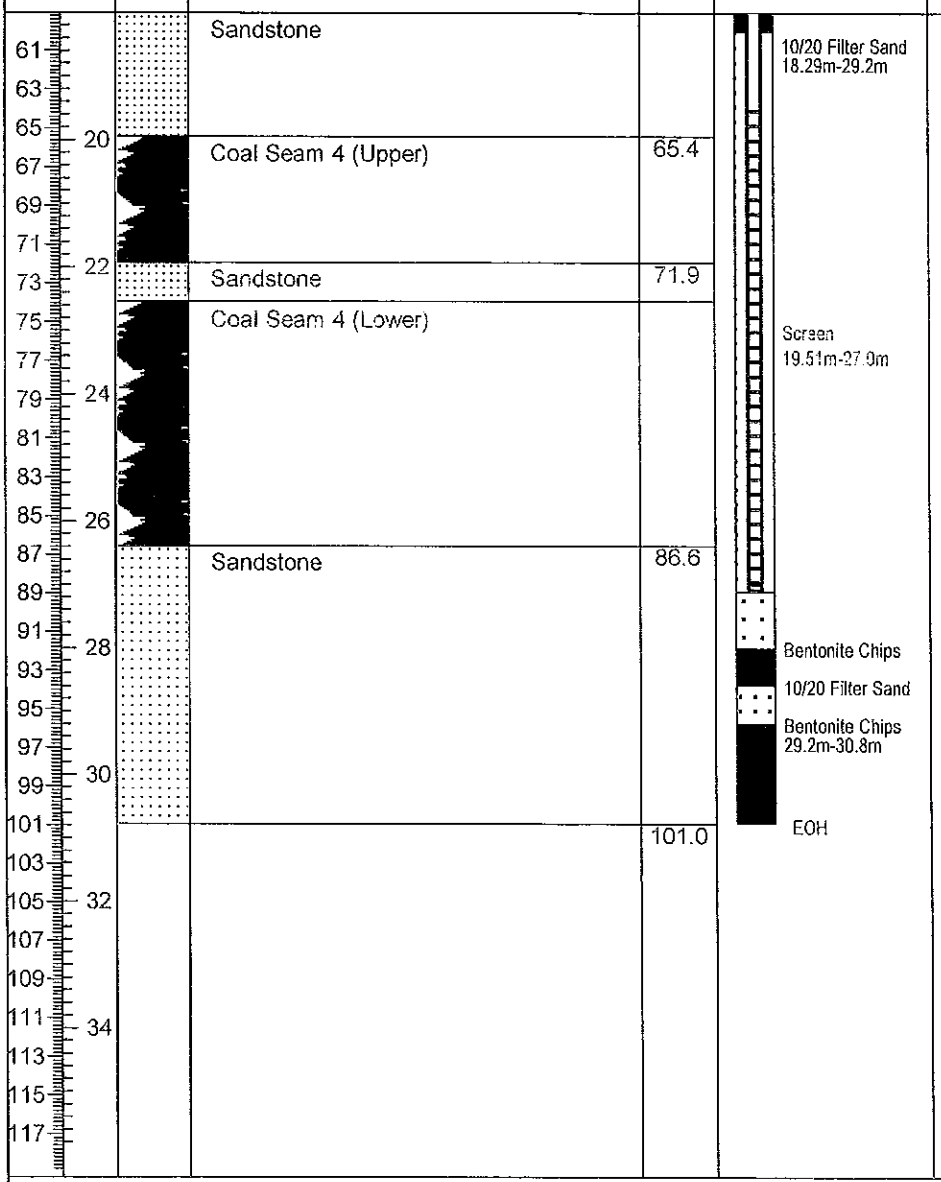
Client: Quinsam Coal/Hillsborough Resources
Location: 7 South

Northing: 5533856.79
Easting: 324464.06
Ground Elevation: 295.02m
Steel Casing: 6 inch



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Drill Method: Downhole Hammer
Geologists: M. Storey
Drill Date: March 10, 2008

Hole Size: 7 in (0-6.5m), 6 in (6.5m-30.9m)
PVC Casing: 2 inch
Well Installation Date: April 20, 2010
Sheet: 2 of 2

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2289 Burrard Street
Vancouver, BC, Canada, V6J 3H9
Phone: +1 (604) 688-7173
Fax: +1 (604) 688-7175
www.lorax.ca

Borehole ID: P08-13

Project #: 885-1
Project: Quinsam Coal Groundwater Monitoring
Client: Quinsam Coal/ Hillsborough Resources
Location: 7 South

Northing: 5535188
Easting: 323887
Ground Elevation: 220.40m
Steel Casing: 6 inch

Depth (ft / m)	Symbol	Description	Depth/Elev.	Well A	Well B	Observations
0 / 0		Ground Surface				
		Overburden Glacial Till			Pea Gravel 0-2.0m	
6 / 2					Cement Grout 2.0m-4.0m	
12 / 4					Pea Gravel 4.0m-6.9m	
20 / 6					Bentonite chips 6.9m-7.93m	
26 / 8					Pea Gravel 8.6m-13.72m	GW Elevation: 212.41m Well B (April 27, 2010)
32 / 10						
40 / 12						
46 / 14					Bentonite Pellets 13.72m-14.94m	GW Elevation: 207.21m Well A (April 27, 2010)
					Pea Gravel 14.94m-21.03m	
52 / 16						
58 / 18						
66 / 20						

Drilled By: Drillwell Enterprises
Drill Method: Downhole Hammer
Geologists: M. Storey
Drill Date: March 3, 2008

Hole Size: 7 in (0-25.5m), 5.5 in (25.5m-EOH)
PVC Casing: Well A: 2 inch,Well B: 1-1/4inch
Well Installation Date: April 20, 2010
Sheet: 1 of 3

Lorax Environmental Services Ltd.
2289 Burrard Street
Vancouver, BC, Canada, V6J 3H9
Phone: +1 (604) 688-7173
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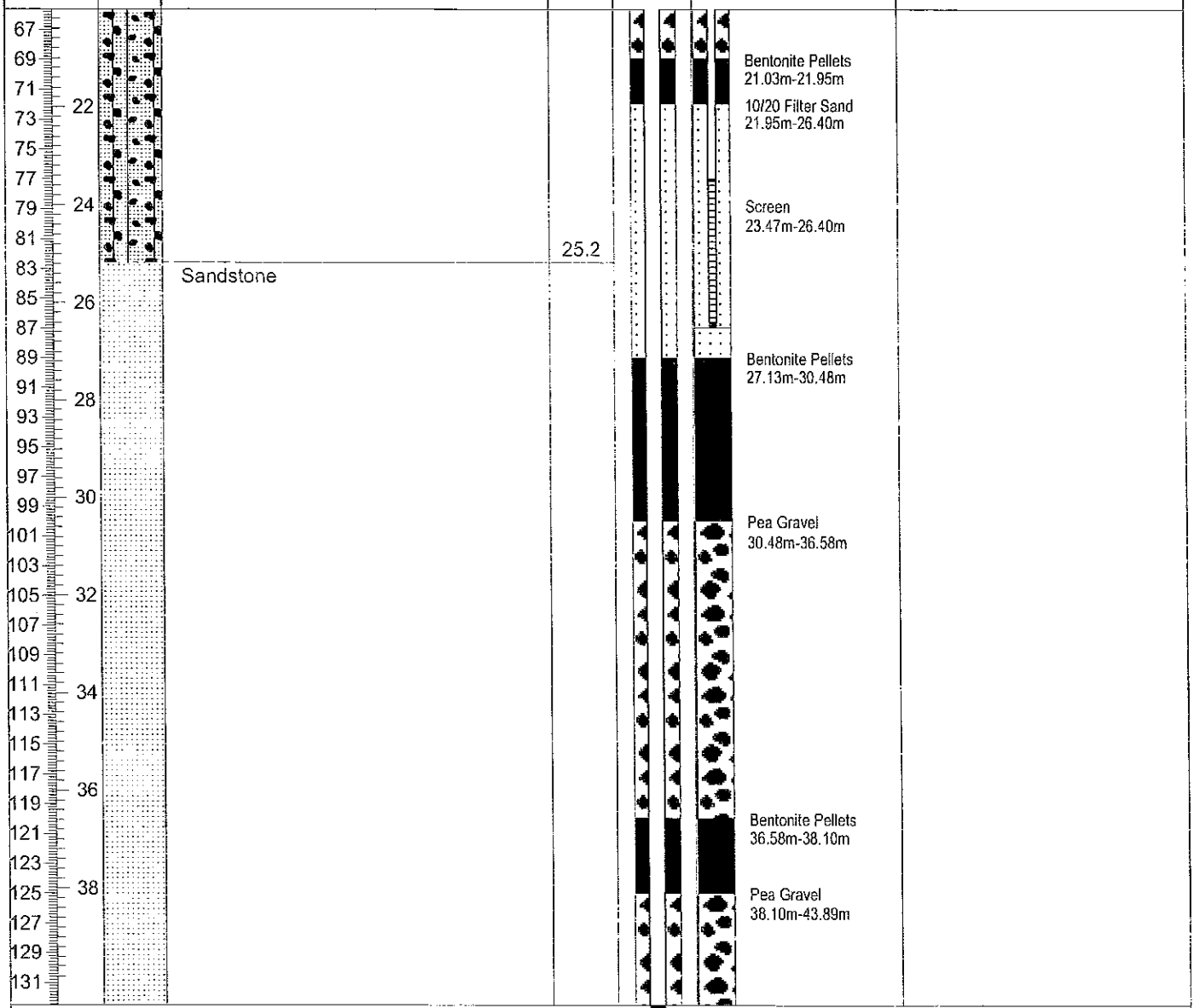
www.lorax.ca

Borehole ID: P08-13

Project #: 885-1
Project: Quinsam Coal Groundwater Monitoring
Client: Quinsam Coal/ Hillsborough Resources
Location: 7 South

Northing: 5535188
Easting: 323887
Ground Elevation: 220.40m
Steel Casing: 6 inch



Drilled By: Drillwell Enterprises
Drill Method: Downhole Hammer
Geologists: M. Storey
Drill Date: March 3, 2008

Hole Size: 7 in (0-25.5m), 5.5 in (25.5m-EOH)
PVC Casing: Well A: 2 inch,Well B: 1-1/4inch
Well Installation Date: April 20, 2010
Sheet: 2 of 3

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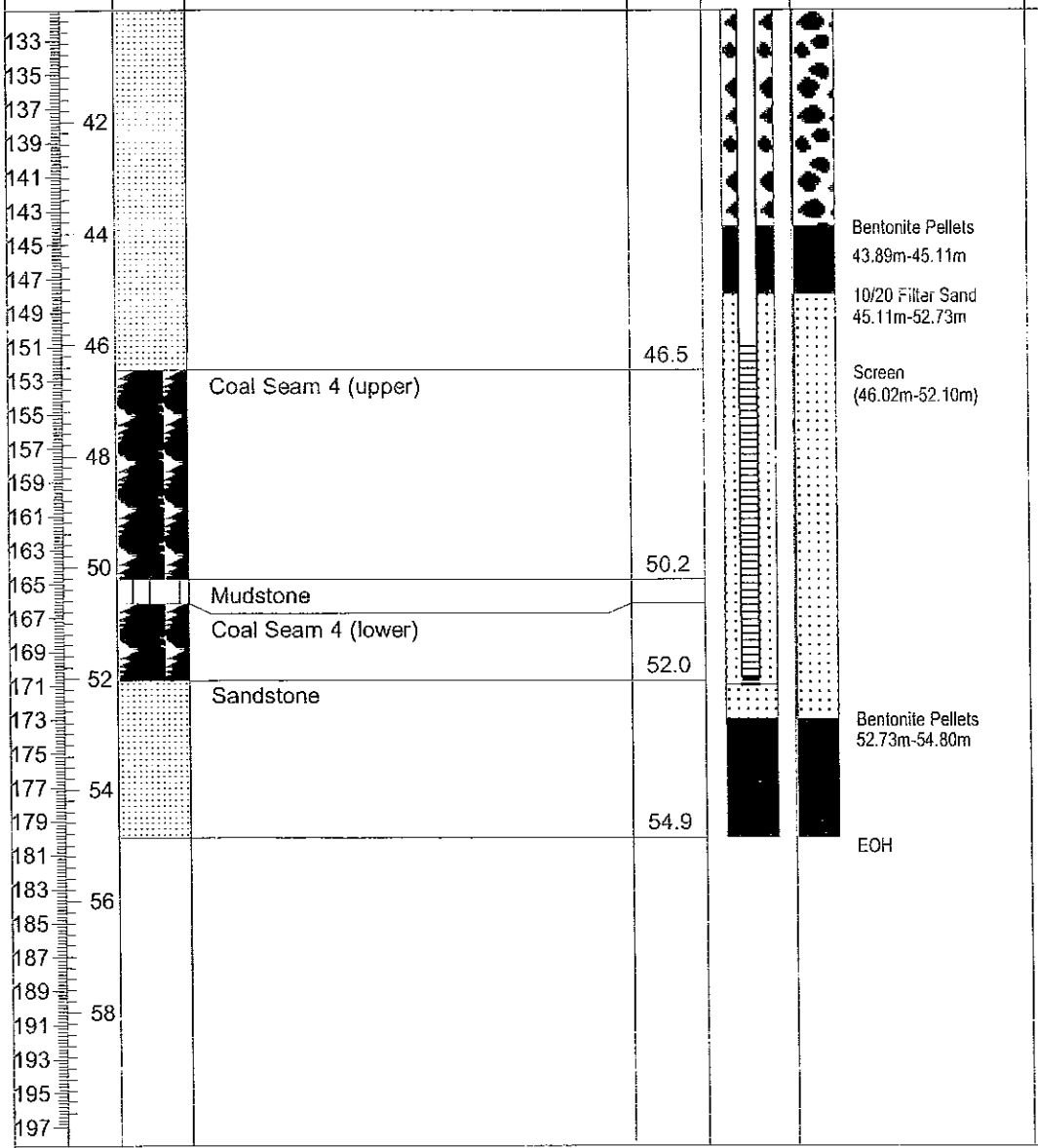
Project #: 885-1
Project: Quinsam Coal Groundwater Monitoring
Client: Quinsam Coal/ Hillsborough Resources
Location: 7 South

Northing: 5535188
Easting: 323887
Ground Elevation: 220.40m
Steel Casing: 6 inch



Drilled By: Drillwell Enterprises
Drill Method: Downhole Hammer
Geologists: M. Storey
Drill Date: March 3, 2008

Hole Size: 7 in (0-25.5m), 5.5 in (25.5m-EOH)
PVC Casing: Well A: 2 inch,Well B: 1-1/4inch
Well Installation Date: April 20, 2010
Sheet: 3 of 3

Enterprise Geoscience Services Ltd.

Borehole Log of QU-08-21G

Date Started	: May 20, 2008	Drilled by	: Drillwell Enterprises
Date Completed	: May 21, 2008	Northing Coord.	: 102802
Hole Diameter	: 140 mm	Easting Coord.	: 101917
Drilling Method	: Air Rotary with wireline coring	Survey By	: McElhanney
Sampling Method	: Core	Logged By	: C.G. Cathyl-Bickford

Water Levels
- QU-08-21G-S 213.14 m (10-Nov-10)
- QU-08-21G-D 212.86 m (10-Nov-10)

Well1: QU-08-21G-S
Well2: QU-08-21G-D
Elev. m: 213.66

Depth (m)	Elev. m	USCS	Material Description
0	213.66		NOT CORED
20	193	SS	SANDSTONE - light grey to dark brown, medium to coarse grained, non-calcareous
		SL	COAL SEAM 6- dull to bright, with siltstone/mudstone lenses
			SILTSTONE & MUDSTONE interbeds - medium brown to black, carbonaceous
30	183	SS	SANDSTONE - 26.7-34m: light to medium grey, medium to coarse grained, with conglomerate lenses. 34-52m: light to dark grey, fine to coarse grained. Top of Dunsmuir 'E' Sandstone at 34m
50	163		

Pea gravel
Bentonite chips
Pea gravel
PVC 2"/Schedule 40
Bentonite chips
PVC 1.25"/Schedule 40
Pea gravel
Bentonite chips
Pea gravel
Bentonite chips
Pea gravel
Bentonite chips
Pea gravel

Quinsam Coal
Assessment of Underground Disposal
of Coarse Coal Refuse

Campbell River, B.C.

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Enterprise Geoscience Services Ltd.

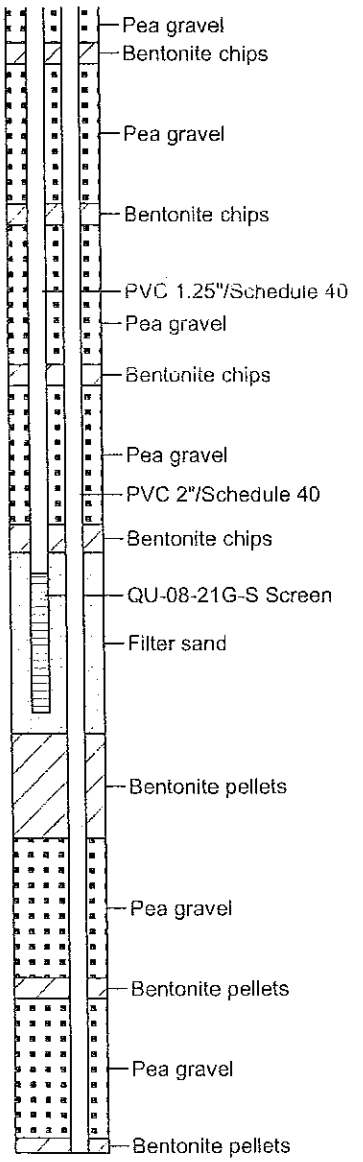
Borehole Log of QU-08-21G

Date Started	: May 20, 2008	Drilled by	: Drillwell Enterprises
Date Completed	: May 21, 2008	Northing Coord.	: 102802
Hole Diameter	: 140 mm	Easting Coord.	: 101917
Drilling Method	: Air Rotary with wireline coring	Survey By	: McElhanney
Sampling Method	: Core	Logged By	: C.G. Cathyl-Bickford

Water Levels
- QU-08-21G-S 213.14 m (10-Nov-10)
- QU-08-21G-D 212.86 m (10-Nov-10)

Well1: QU-08-21G-S
Well2: QU-08-21G-D
Elev. m: 213.66

Depth (m)	Elev. m 213.66	USCS	Material Description
50	163	SS	
			COAL SEAM 5 - 52-53.3m: bright to dull, minor sandstone lensing; 53.3-55.1m: bright ot dull, with pyrite and mudstone lenses.
55	158		SANDSTONE - light grey to brown, fine to coarse grained
60	153		
65	148	SS	
70	143		
75	138	SL	COAL SEAM 4R - dull to bright. Top of Dunsmuir member middle division
			SILTSTONE - dark grey, with mudstone lenses
			COAL SEAM 4/4L - 76.9-8m: dull to bright, with mudstone beds; 79-80.4m: dull to bright, with sandstone and mudstone beds.
80	133		SANDSTONE - 80.4-92.1m: light grey to black, fine to coarse grained; Top of Dunsmuir 'C' sandstone at 81.7m; Minor siltstone/mudstone interbeds at 86m, 92m depths
85	128	SS	
90	123		
			COAL SEAM 4B- bright to dull with sandstone interbeds
95	118	SS	SANDSTONE - light grey to black, fine to coarse grained, carbonaceous
100			



Quinsam Coal
Assessment of Underground Disposal of Coarse Coal Refuse

Campbell River, B.C.

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Enterprise Geoscience Services Ltd.

Borehole Log of QU-08-21G

Date Started	: May 20, 2008	Drilled by	: Drillwell Enterprises
Date Completed	: May 21, 2008	Northing Coord.	: 102802
Hole Diameter	: 140 mm	Easting Coord.	: 101917
Drilling Method	: Air Rotary with wireline coring	Survey By	: McElhanney
Sampling Method	: Core	Logged By	: C.G. Cathyl-Bickford

Water Levels
- QU-08-21G-S 213.14 m (10-Nov-10)
- QU-08-21G-D 212.86 m (10-Nov-10)

Well1: QU-08-21G-S
Well2: QU-08-21G-D
Elev. m: 213.66

Depth (m)	Elev. m 213.66	USCS	Material Description
100	113		
		SS	SANDSTONE - light grey to black, fine to coarse grained, carbonaceous
105	108		
110	103		
115	98		
120	93		
125	88	SL	COAL SEAM 3R - bright, with carbonaceous mudstone interbeds/at top of sequence.
		SL	SILTSTONE & MUDSTONE - dark brown to grey, interbedded
130	83	SL	COAL SEAM 3 - bright to dull, with mudstone lenses at top and bottom of sequence.
			SILTSTONE - medium to dark brown, with mudstone interbeds
135	78		COAL SEAM 3L - dull to bright, interlaminated with mudstone at top of sequence.
			SILTSTONE - 130-133m: dark brown, with dark brown mudstone beds - minor coal lenses at 131m and between 132.7 and 133m
140	73	SS	SANDSTONE - 133-154.6m: light to dark grey, fine to coarse grained, top of Dunsmuir 'A' sandstone at 133m.
145	68		147-149m: dark brown mudstone lenses
150			

Well1: QU-08-21G-S / Well2: QU-08-21G-D

- Pea Gravel
- Bentonite Pellets
- Pea Gravel
- Bentonite Pellets
- Pea Gravel
- Bentonite Pellets
- Pea Gravel
- PVC 2"/Schedule 40
- Bentonite Pellets
- Pea Gravel
- Bentonite Pellets
- Pea Gravel
- Bentonite Pellets
- Pea Gravel

Quinsam Coal
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Campbell River, B.C.

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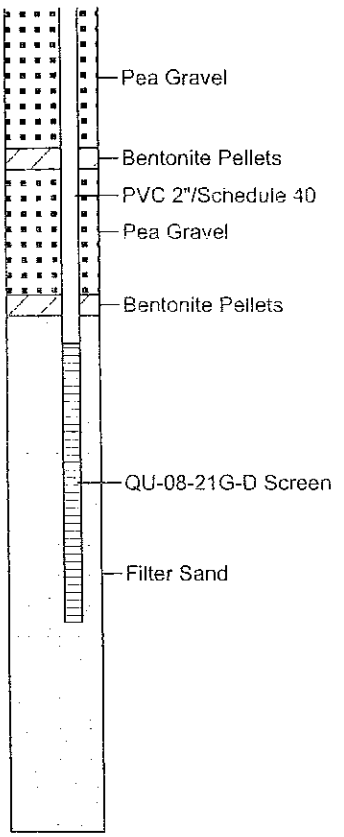
Borehole Log of QU-08-21G

Date Started	: May 20, 2008	Drilled by	: Drillwell Enterprises
Date Completed	. May 21, 2008	Northing Coord.	: 102802
Hole Diameter	: 140 mm	Easting Coord.	: 101917
Drilling Method	: Air Rotary with wireline coring	Survey By	: McElhanney
Sampling Method	: Core	Logged By	: C.G. Cathyl-Bickford

Water Levels
- QU-08-21G-S 213.14 m (10-Nov-10)
- QU-08-21G-D 212.86 m (10-Nov-10)

Well1: QU-08-21G-S
Well2: QU-08-21G-D
Elev. m: 213.66

Depth (m)	Elev. m 213.66	USCS	Material Description
150	63	SS	
155	58	MS / SL	MUDSTONE - grey brown, with siltstone lenses, medium brown, carbonaceous COAL SEAM 2 - bright to dull, dirty at base (155 0-156.1m)
160	53	SS	SILTSTONE - 156-157.3m: dark grey, with dark brown mudstopbe interbeds SANDSTONE, IRONSTONE and SILTSTONE interbeds - dark grey to brown. Possible fault at 157.3m
165	48		
170	43	MS / SL	COAL SEAM 1 - 171.6-172.7m: dull to bright, dirty, with mudstone lensese at top and bottom of sequence (Quinsam No. 1 coal bed)
175	38	SL	MUDSTONE - 172.7-173.6m: medium brown with siltstone lense at top of sequence -floor of upper bench/top of main parting at 172.9m -interlaminated coal and mudstone between 173.4m and 173.6m -base of main parting at 173.5m
180	33		
185	28		IRONSTONE, SILTSTONE and MUDSTONE - dark grey to brown SANDY SILT, COALY ROCK (Coal Seam 1L). SILTSTONE, IRONSTONE, SANDSTONE and MUDSTONE interbeds - 176.9-177.8m: bright coal bands 176.9-184m: dark grey to dark brown conglomerate with sandstone bed at base, dark green, coarse grained EOH @ 185.8m
190	23		
195	18		
200			



Quinsam Coal
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Campbell River, B.C.

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Enterprise Geoscience Services Ltd.

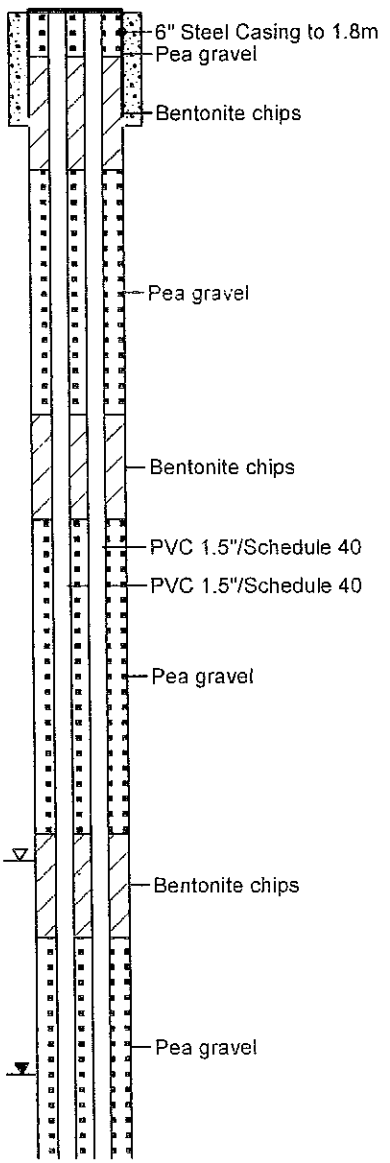
Borehole Log of QU-10-07

Date Started	: Sept 28, 2010	Drilled by	: Drillwell Enterpirses
Date Completed	: Sept 29, 2010	Northing Coord.	: 101137
Hole Diameter	: 150mm/85mm core	Easting Coord.	: 99263
Drilling Method	: Air Rotary with wireline coring	Survey By	: McElhanney
Sampling Method	: Grab sample/core log	Logged By	: O. Quinn

Water Levels
- QU-10-07-S 18.538m (11/19/2010)
- QU-10-07-D 14.805m (11/19/2010)

Well1: QU-10-07-S
Well2: QU-10-07-D
Elev. m: 317.61

Depth (m)	Elev. m 317.61	USCS	Material Description
0	317		SANDY SILT (TILL) - red-brown, loose, moist.
			SANDSTONE -
			0.1-3.1m light grey, weathered, fine to medium grained.
			3.1-6.1m light grey, medium grained.
5	312		No water at 6.0m.
			6.1-9.1m medium grey, coarse-grained, moderately weathered with dark grey siltstone lens.
			9.1-12.2m medium grey, medium-coarse grained, fresh.
10	307	SS	No water at 12.2m.
			12.2-21.3m medium grey, fresh.
15	302		
20			



Quinsam Coal
Assessment of Underground Disposal
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Campbell River, B.C.

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Enterprise Geoscience Services Ltd.

Borehole Log of QU-10-07

Date Started	: Sept 28, 2010	Drilled by	: Drillwell Enterpirses
Date Completed	: Sept 29, 2010	Northing Coord.	: 101137
Hole Diameter	: 150mm/85mm core	Easting Coord.	: 99263
Drilling Method	: Air Rotary with wireline coring	Survey By	: McElhanney
Sampling Method	: Grab sample/core log	Logged By	: O. Quinn

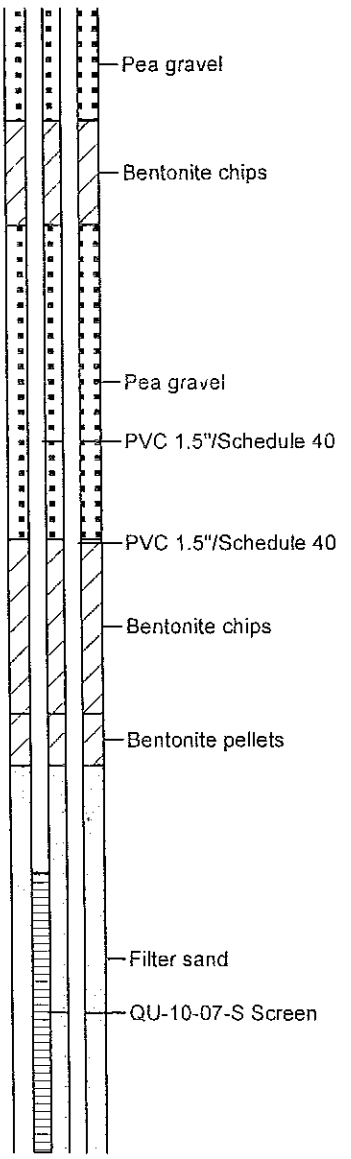
Water Levels

▼ QU-10-07-S 18.538m (11/19/2010)

▽ QU-10-07-D 14.805m (11/19/2010)

Well1: QU-10-07-S
Well2: QU-10-07-D
Elev. m: 317.61

Depth (m)	Elev. m 317.61	USCS	Graphic Symbol	Material Description
20	297			No water at 21.3m. 21.3-24.4m light grey, fine-medium grained, moderately weathered.
				24.4-30.5m light grey, fine-medium grained, fresh.
25	292			
30	287	SS		30.5-36.6m very light grey, fine-grained, fresh, siltstone lens.
35	282			36.6-39.6m very light grey, fine-medium grained, moderately weathered.
40				39.6-48.8m very light grey, fine-medium grained, fresh.



Quinsam Coal
Assessment of Underground Disposal
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Campbell River, B.C.

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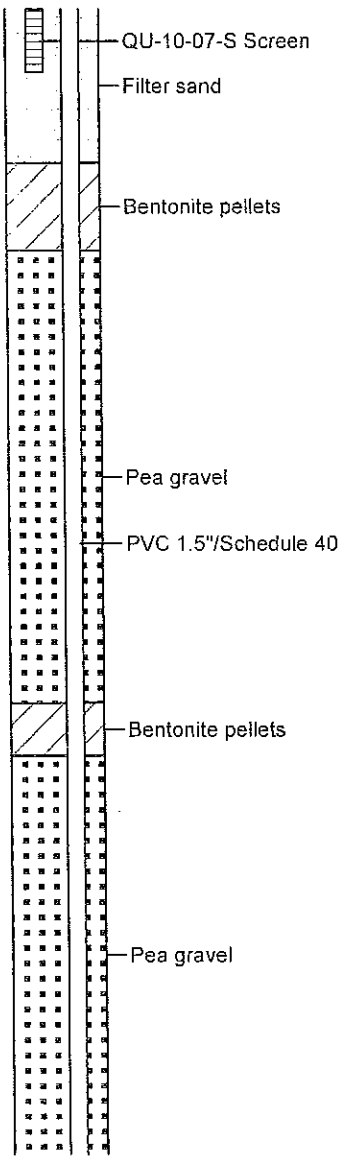
Borehole Log of QU-10-07

Date Started	: Sept 28, 2010	Drilled by	: Drillwell Enterpirses
Date Completed	: Sept 29, 2010	Northing Coord.	: 101137
Hole Diameter	: 150mm/85mm core	Easting Coord.	: 99263
Drilling Method	: Air Rotary with wireline coring	Survey By	: McElhanney
Sampling Method	: Grab sample/core log	Logged By	: O. Quinn

Water Levels
- QU-10-07-S 18.538m (11/19/2010)
- QU-10-07-D 14.805m (11/19/2010)

Well1: QU-10-07-S
Well2: QU-10-07-D
Elev. m: 317.61

Depth (m)	Elev. m 317.61	USCS	Graphic Symbol	Material Description
40	277			
45	272			
50	267	SS		48.8-54.9m medium grey, fine to medium grained, fresh.
55	262			No water at 54.9m. 54.9-57.9m medium grey, fine to medium grained, moderately weathered.
60				57.9-61.0m fine grained, dark grey, fresh.



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Campbell River, B.C.

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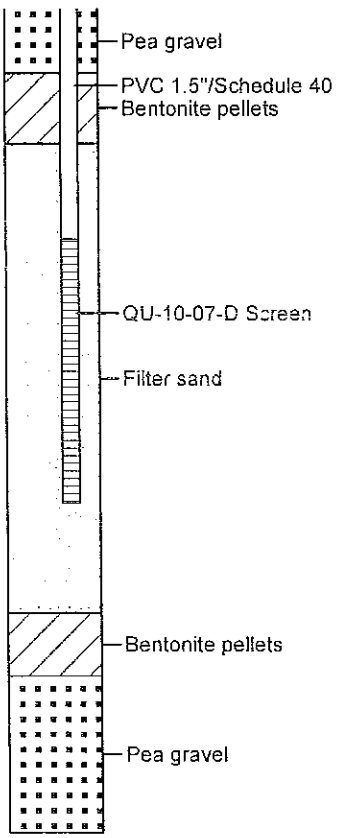
Borehole Log of QU-10-07

Date Started	: Sept 28, 2010	Drilled by	: Drillwell Enterpirses
Date Completed	: Sept 29, 2010	Northing Coord.	: 101137
Hole Diameter	: 150mm/85mm core	Easting Coord.	: 99263
Drilling Method	: Air Rotary with wireline coring	Survey By	: McElhanney
Sampling Method	: Grab sample/core log	Logged By	: O. Quinn

Water Levels
- QU-10-07-S 18.538m (11/19/2010)
- QU-10-07-D 14.805m (11/19/2010)

Well1: QU-10-07-S
Well2: QU-10-07-D
Elev. m: 317.61

Depth (m)	Elev. m 317.61	USCS	Graphic Symbol	Material Description
60	257	SS		61.0-64.9m medium-dark grey, fine-medium grained, fresh.
65	252			COAL - Rapid drill penetration. Water in coal seam ~0.5 US GPM.
		MS		COAL/MUDSTONE. Borehole cored from 67.7m to 74.4m (5.5inch diameter)
		SS		Heavily fractured 67.7-69.8m: (2.1m/ 0.6m rec'y). Lost remainder of core run to 69.8m.
70	247	SL		SANDSTONE, medium grey.
				SILTSTONE,
				69.8-70.4m fine grained, dark grey, fresh, heavily fractured 69.8-70.3m, then massive.
				69.8-71.3m: (1.52m/1.4m rec'y).
		SS		heavily fractured 71.3-72.5m.
				71.3-72.7m: (1.37m/1.2m rec'y).
				70.4-71.9m SILTSTONE/SANDSTONE, fine grained, dark grey, fresh.
75	242			grey, SANDSTONE, light grey, medium-coarse grained, fresh. -72.5
				minor fractures 72.5-73.9m.
				Heavily fractured 73.9-74.4m.
				72.7-74.4m: (1.7m/1.75m rec'y).
				Flow 0.75 GPM at 74.4m.
				EOH @ 74.4m
80				



Quinsam Coal
Assessment of Underground Disposal of Coarse Coal Refuse

Campbell River, B.C.

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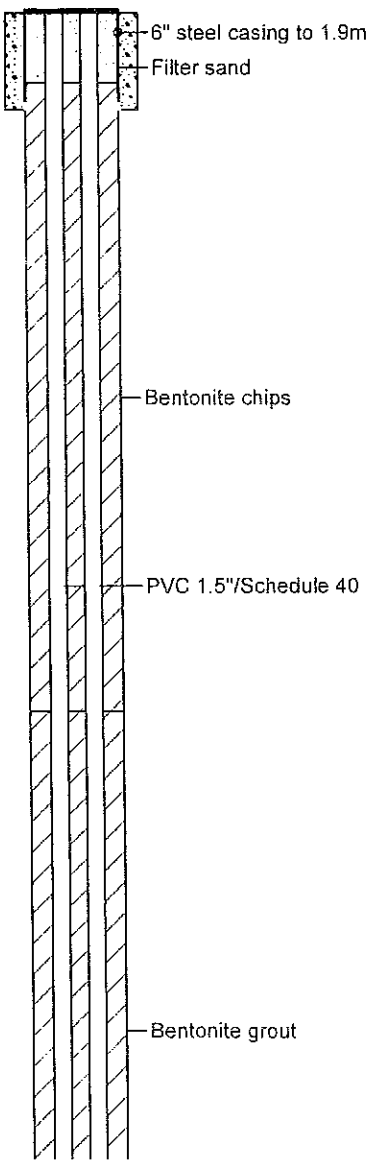
Borehole Log of QU-10-08

Date Started	: Sept 29, 2010	Drilling Company	: Drillwell Enterpirses
Date Completed	: Sept 30, 2010	Northing Coord.	: 100893
Hole Diameter	: 150 mm/85 mm core	Easting Coord.	: 98905
Drilling Method	: Air Rotary with wireline coring	Survey By	: McElhanney
Sampling Method	: Grab sample/core log	Logged By	: O. Quinn

Water Levels
- QU-10-08-S: 307.50m (11/19/2010)
- QU-10-08-D: 306.54m (11/19/2010)

Well1: QU-10-08-S
Well2: QU-10-08-D
Elev. m: 339.17

Depth (m)	Elev. m 339.17	USCS	Graphic Symbol	Material Description
0	339			SANDSTONE - 0-1.8m: green-grey, medium-coarse, fresh
				1.8-7.3m: medium-grey, fine grained, moderately weathered, non-carbonaceous
5	334			
				7.3-18.9m: dark grey, fine grained, fresh, non-carbonaceous
10	329	SS		
15	324			
				18.9-21.3m: dark grey, fine-grained, slightly weathered, non-carbonaceous
20	319			
				21.3-37.2m: medium: grey, fine-medium: grained, fresh, non-carbonaceous
25				



Quinsam Coal
Assessment of Underground Disposal
of Coarse Coal Refuse

Campbell River, B.C.

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Enterprise Geoscience Services Ltd.

Borehole Log of QU-10-08

Date Started	: Sept 29, 2010	Drilling Company	: Drillwell Enterpirses
Date Completed	: Sept 30, 2010	Northing Coord.	: 100893
Hole Diameter	: 150 mm/85 mm core	Easting Coord.	: 98905
Drilling Method	: Air Rotary with wireline coring	Survey By	: McElhanney
Sampling Method	: Grab sample/core log	Logged By	: O. Quinn

Water Levels

▼ QU-10-08-S: 307.50m (11/19/2010)

▽ QU-10-08-D: 306.54m (11/19/2010)

Well1: QU-10-08-S
Well2: QU-10-08-D
Elev. m: 339.17

Depth (m)	Elev. m 339.17	USCS	Graphic Symbol	Material Description
25	314			
30	309			
35	304	SS		37.2-64.0m: light grey, coarse-grained, fresh, slightly carbonaceous. Hole dry at resumption of drilling next day (Sept 30/10)
40	299			
45	294			
50				

PVC 1.5"/Schedule 40

Bentonite grout

Quinsam Coal
Assessment of Underground Disposal
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Campbell River, B.C.

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Borehole Log of QU-10-08

Date Started	: Sept 29, 2010	Drilling Company	: Drillweil Enterpirses
Date Completed	: Sept 30, 2010	Northing Coord.	: 100893
Hole Diameter	: 150 mm/85 mm core	Easting Coord.	: 98905
Drilling Method	: Air Rotary with wireline coring	Survey By	: McElhanney
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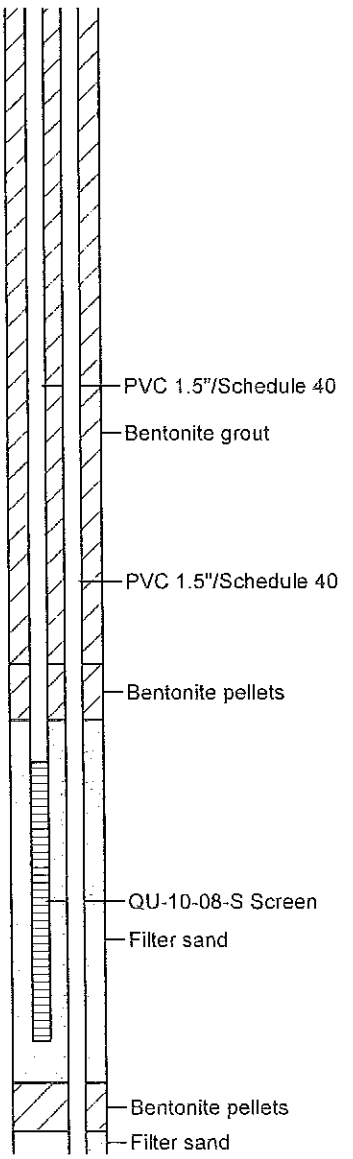
Water Levels
- QU-10-08-S: 307.50m (11/19/2010)
- QU-10-08-D: 306.54m (11/19/2010)

Well1: QU-10-08-S
Well2: QU-10-08-D
Elev. m: 339.17

Depth (m)	Elev. m 339.17	USCS	Graphic Symbol	Material Description
50	289			
55	284			
60	279	SS		64.0-66.4m: light grey, coarse-grained, fresh, not carbonaceous
65	274			66.4-71.5m: medium: grey, coarse grained, fresh, non-carbonaceous
70	269			Dry hole at 71.3m. Borehole cored from 71.3m to EOH 71.5-73.6m: light grey, coarse grained, fresh, non-carbonaceous, moderately fractured. (2.13 m/2.06 rec'y) 73.6-75.7m: light grey, coarse grained, fresh, non-carbonaceous, massive fracture
75				



Quinsam Coal
Assessment of Underground Disposal of Coarse Coal Refuse

Campbell River, B.C.

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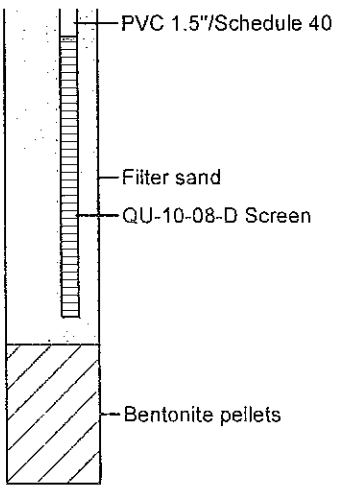
Borehole Log of QU-10-08

Date Started	: Sept 29, 2010	Drilling Company	: Drillwell Enterpirses
Date Completed	: Sept 30, 2010	Northing Coord.	: 100893
Hole Diameter	: 150 mm/85 mm core	Easting Coord.	: 98905
Drilling Method	: Air Rotary with wireline coring	Survey By	: McElhanney
Sampling Method	: Grab sample/core log	Logged By	: O. Quinn

Water Levels
- QU-10-08-S: 307.50m (11/19/2010)
- QU-10-08-D: 306.54m (11/19/2010)

Well1: QU-10-08-S
Well2: QU-10-08-D
Elev. m: 339.17

Depth (m)	Elev. m 339.17	USCS	Graphic Symbol	Material Description
75	264	SS		
		SL		SILTSTONE/COAL Interface
				COAL SEAM 3- heavily fractured
		MS		COAL SEAM 3 and MUDSTONE lenses - heavily fractured 76.4-79.1m: (2.74 m/2.74 rec'y)
80	259			COAL Seam 3 - minor pyrite, heavily fractured 79.1-81.1m: (1.98 m/0.71 rec'y)
		SS		SANDSTONE - 81.1-82.6m: (1.52 m/1.52 rec'y) 81.4-82.6m: dark grey, fine to medium: grained with thin coal stringers (1/8 to 1/2 inch), heavily fractured 82.6-82.9m: light grey, very coarse grained, fresh, minor fractures 82.6-84.1m: (1.52 m/1.42 rec'y) 82.9-85.3m: light-medium: grey, med-coarse grained, massive, fresh 84.1-85.6m: (1.52 m/1.52 rec'y)
85	254			EOH @ 85.3m
90	249			
95	244			
100				



Quinsam Coal
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Campbell River, B.C.

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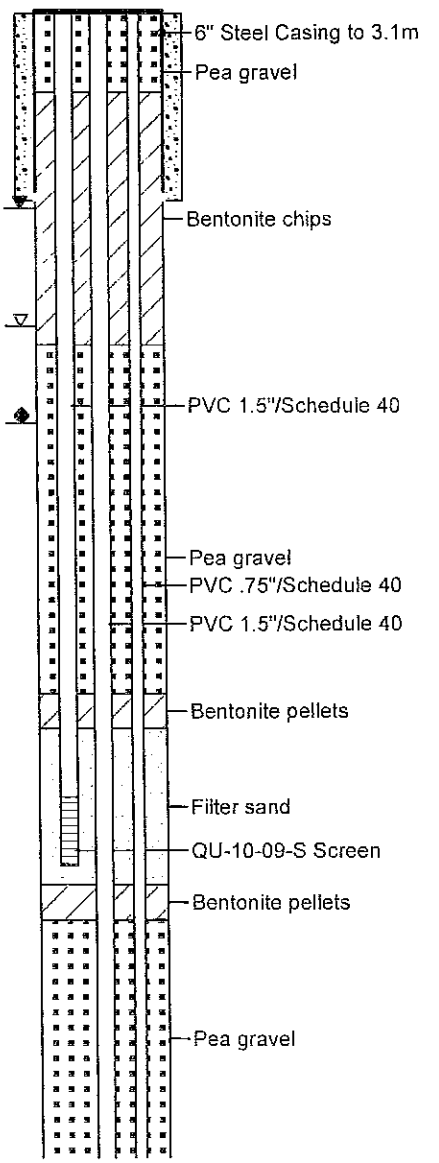
Borehole Log of QU-10-09

Date Started	: Oct 1, 2010	Drilled By	: Drillwell Enterprises
Date Completed	: Oct 5, 2010	Northing Coord.	: 101346
Hole Diameter	: 150 mm	Easting Coord.	: 98931
Drilling Method	: Air Rotary with wireline coring	Survey By	: McElhanney
Sampling Method	: Grab sample/core log	Logged By	: O. Quinn

Water Levels
- QU-10-09-S: 300.91m
- QU-10-09-D: 298.84m
- QU-10-09-P: 291.48m

Well1: QU-10-09-S
Well2: QU-10-09-D
Well3: QU-10-09-P
Elev. m: 304.31

Depth (m)	Elev. m 304.31	USCS	Graphic Symbol	Material Description
0	304	f42		Sandy SILT (TILL) - with boulders, red-brown
		ss		SANDSTONE -
				3.05-6.1m: light to dark grey, medium grained, fresh, non-carbonaceous
5	299			6.1-9.14m: light to dark grey, medium-coarse grained
				8 thin coal stringers (3.18mm) between 6.55-6.71m in weathered siltstone lens
				quartz vein at 7.3m
				9.1-12.2m: light grey, coarse grained
10	294			iron-stained quartz vein fracture zones at 11.1-11.6m
				conglomerate inclusions between 11.7-11.9m
				12.2-15.2m: light grey, coarse grained
				15.2-18.3m:
				interval.
				conglomerate inclusions 13.3-14.0m and 14.5-14.8m
				weathered zone at 14.3m
15	289			18.3-22.6m: light grey, medium coarse grained
				conglomerate lense at 17.7m
				22.6-23.5m: light grey, medium coarse grained
20				



Quinsam Coal
Assessment of Underground Disposal
of Coarse Coal Refuse

Campbell River, B.C.

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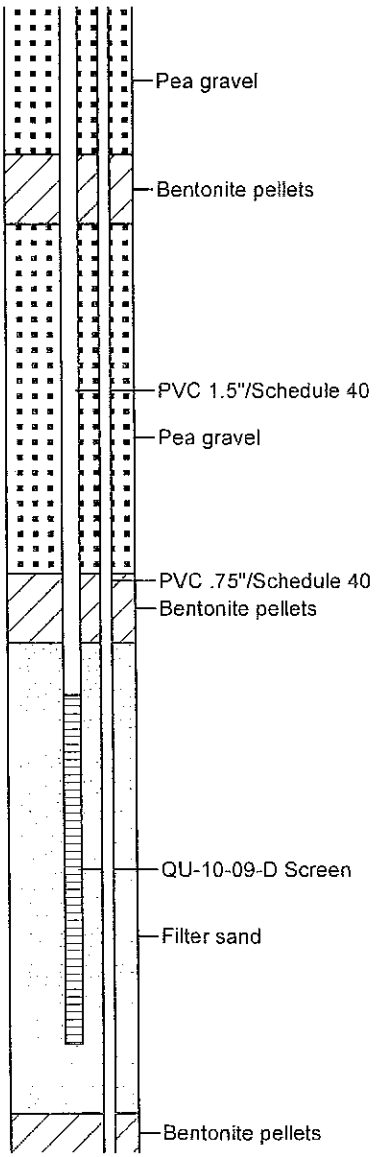
Borehole Log of QU-10-09

Date Started	: Oct 1, 2010	Drilled By	: Drillwell Enterprises
Date Completed	: Oct 5, 2010	Northing Coord.	: 101346
Hole Diameter	: 150 mm	Easting Coord.	: 98931
Drilling Method	: Air Rotary with wireline coring	Survey By	: McElhanney
Sampling Method	: Grab sample/core log	Logged By	: O. Quinn

Water Levels
- QU-10-09-S: 300.91m
- QU-10-09-D: 298.84m
- QU-10-09-P: 291.48m

Well1: QU-10-09-S
Well2: QU-10-09-D
Well3: QU-10-09-P
Elev. m: 304.31

Depth (m)	Elev. m 304.31	USCS	Material Description
20	284	SS	conglomerate lense 20.3-20.4m
			23.5-27.4m: weathered
			27.4-29.6m: medium grey, fine-medium grained, with thin shale stingers
25	279		minor conglomerate inclusions @ 25.3m
			29.6-32m: light to medium grey, fine to medium grained
30	274		32-33.5m: medium grey, medium grained with disseminated shale stringers
			33.5-38.1m: light to medium grey, medium-coarse grained, fractures 32-33.2m COAL seam (1" thick) at 32.2m
			38.1-39.3m: light to medium grey, weathered mudstone lense @ 112 to 112.5 ft, fractures from 117.5 to 124
35	269		flow 9 GPM at 37.8m
		MS	MUDSTONE - dark brown, multiple fractures
40		SS	SANDSTONE - 39.3-42.7m: light to medium grey, medium grained



Quinsam Coal
Assessment of Underground Disposal
of Coarse Coal Refuse

Campbell River, B.C.

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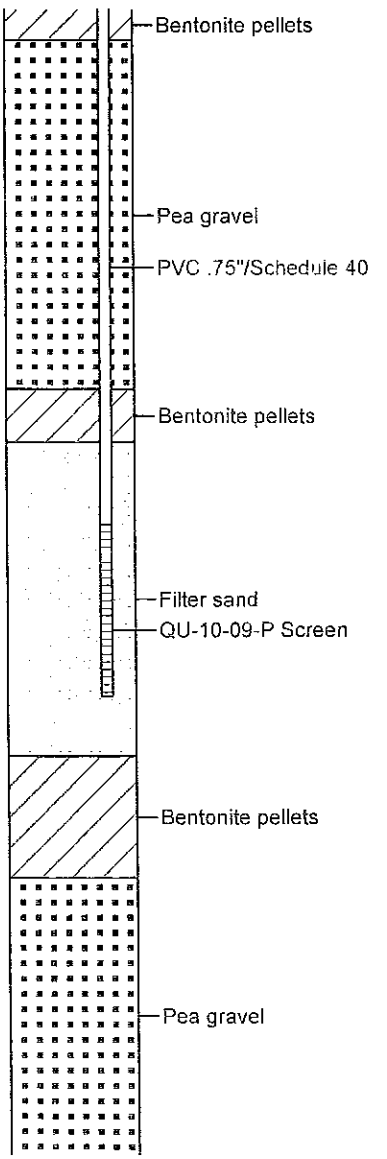
Borehole Log of QU-10-09

Date Started	: Oct 1, 2010	Drilled By	: Drillwell Enterprises
Date Completed	: Oct 5, 2010	Northing Coord.	: 101346
Hole Diameter	: 150 mm	Easting Coord.	: 98931
Drilling Method	: Air Rotary with wireline coring	Survey By	: McElhanney
Sampling Method	: Grab sample/core log	Logged By	: O. Quinn

Water Levels
- QU-10-09-S: 300.91m
- QU-10-09-D: 298.84m
- QU-10-09-P: 291.48m

Well1: QU-10-09-S
Well2: QU-10-09-D
Well3: QU-10-09-P
Elev. m: 304.31

Depth (m)	Elev. m 304.31	USCS	Material Description
40	264		fractured at 40.2m
		SS	42.7-45.7m: light to medium grey, medium grained, heavily fractured, MUDSTONE bed (20 cm thick, dark brown) thin COAL stringer @43.1m
45	259		45.7-49.2m: light grey, coarse grained, heavily fractured
			47.6-47.8m: mudstone bed (dark brown)
50	254		COAL SEAM 2, heavily fractured with mudstone and coal stringers at base flow 12 GPM at 49.4m
		MS	MUDSTONE - dark brown, heavily fractured, with coal stringers over 6" interval. Flow 16 GPM at 50.3m
55	249	SL	SILTSTONE - 54.9-57.3m: dark brown, heavily fractured. 6 inches of light grey unweathered SILTSTONE at base coal stringers at 55.2m. Thin coal stringers in weathered mudstone between 55.2-56.1m
		MS	MUDSTONE - dark brown, fractured on 15.24cm spacing, disseminated COAL stringers (1 ft interval) at base of 91.4m moderately fractured mudstone sequence, mudstone heavily fractured at base. Flow 28 GPM at 57.3m
60		SL	



Quinsam Coal
Assessment of Underground Disposal
of Coarse Coal Refuse

Campbell River, B.C.

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Enterprise Geoscience Services Ltd.

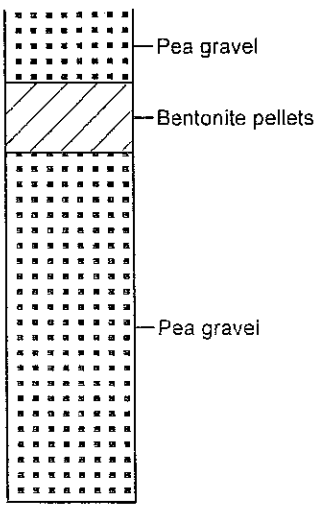
Borehole Log of QU-10-09

Date Started	: Oct 1, 2010	Drilled By	: Drillwell Enterprises
Date Completed	: Oct 5, 2010	Northing Coord.	: 101346
Hole Diameter	: 150 mm	Easting Coord.	: 98931
Drilling Method	: Air Rotary with wireline coring	Survey By	: McElhanney
Sampling Method	: Grab sample/core log	Logged By	: O. Quinn

Water Levels
- QU-10-09-S: 300.91m
- QU-10-09-D: 298.84m
- QU-10-09-P: 291.48m

Well1: QU-10-09-S
Well2: QU-10-09-D
Well3: QU-10-09-P
Elev. m: 304.31

Depth (m)	Elev. m 304.31	USCS	Material Description
60	244		SILTSTONE -
			59.7-61.6m: grey-brown, heavily fractured. Flow 24 GPM at 196m
			fractured 60.3-60.5m
			coal lenses (61.0-91.4cm) between 60.8-61.6m
			61.6-64.3m: light to dark brown
			moderately fractured between 61.7-62.6m with thin coal stringers in fracture zones
		SL	heavily fractured to base at 64.3m
65	239		64.3-68.6m: grey-brown
			moderately fractured between 64.3-65.4m
			heavily fractured 65.4-65.7m
			moderately fractured 65.7-66.3m
			highly fractured 66.3-66.5m
			moderately fractured 66.5-67.1m
70	234		EOH @ 68.6m. Flow 30 GPM at 68.6m.
75	229		
80			



Quinsam Coal
Assessment of Underground Disposal of Coarse Coal Refuse

Campbell River, B.C.

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Enterprise Geoscience Services Ltd.

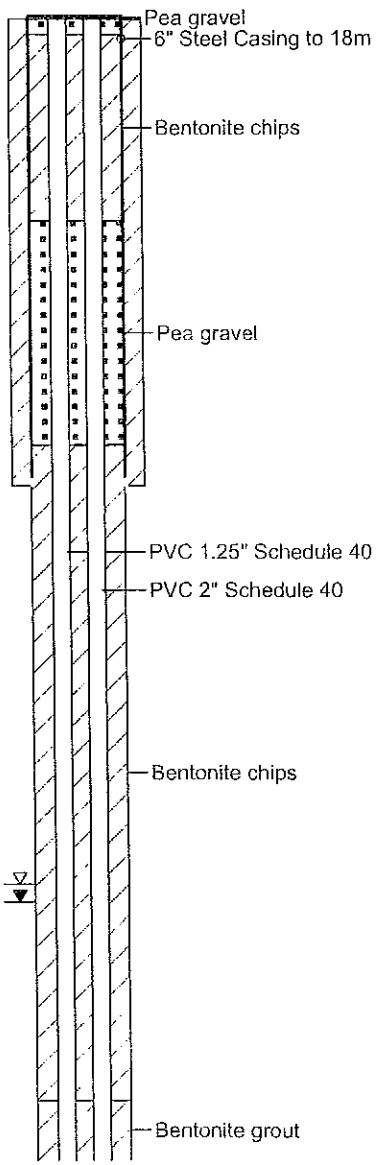
Borehole Log of QU-10-10

Date Started	: Oct 6, 2010	Drilled by	: Drillwell Enterprises
Date Completed	: Oct 7, 2010	Northing Coord.	: 102903
Hole Diameter	: 150 mm	Easting Coord.	: 101506
Drilling Method	: Air Rotary	Survey By	: McElhanney
Sampling Method	: Grab sample	Logged By	: O. Quinn

Water Levels
- QU-10-10-S: 210.55M (11/19, 2010)
- QU-10-10-D: 210.44M (11/18/2010)

Well1: QU-10-10-S
Well2: QU-10-10-D
Elev. m: 244.26

Depth (m)	Elev. m 244.26	USCS	Material Description
0	244		Silty, sandy TILL - with boulders, red-brown
5	239		TILL - grey, with boulders
10	234		
15	229		
20	224	SS	SANDSTONE - 17.7-24.4m: light grey, fine-medium grained, slightly weathered, slighily carbonaceous to 21.3m
25	219	SS	24.4-29.3m: medium grey, fined grained, fresh
30	214	SL	SILTSTONE - dark grey, fresh
35	209	SS	SANDSTONE - 31.1-34.8m: dark grey, fine grained, fresh; 34.8-38.1m: light grey, fine-medium grained, moderately weathered; flow 0.25 US GPM at 36.6m
40	204	SS	COAL SEAM 5 - shiny, with light grey/brown, coarse-grained sandstone; SANDSTONE - 38.4-42.7m: medium grey, fine-med grained, fresh; 42.7-57.9m: grey, medium-coarse grained, fresh; Flow 7.5 US GPM at 42.7m
45			



Quinsam Coal
Assessment of Underground Disposal
of Coarse Coal Refuse

Campbell River, B.C.

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Enterprise Geoscience Services Ltd.

Borehole Log of QU-10-10

Date Started	: Oct 6, 2010	Drilled by	: Drillwell Enterprises
Date Completed	: Oct 7, 2010	Northing Coord.	: 102903
Hole Diameter	: 150 mm	Easting Coord.	: 101506
Drilling Method	: Air Rotary	Survey By	: McElhanney
Sampling Method	: Grab sample	Logged By	: O. Quinn

Water Levels
- QU-10-10-S: 210.55M (11/19, 2010)
- QU-10-10-D: 210.44M (11/18/2010)

Well1: QU-10-10-S
Well2: QU-10-10-D
Elev. m: 244.26

Depth (m)	Elev. m 244.26	USCS	Material Description
45	199		
50	194	SS	Flow 10 US GPM at 48.8m
55	189		
			COAL (No. 4 Seam). Flow 10 US GPM at 57.91m
60	184		SANDSTONE - 58.2-63.1m: grey, fine-medium grained, fresh
			63.1-80.8m: light grey, medium-coarse grained, fresh
65	179		Flow 10 US GPM at 67.1m
70	174	SS	
75	169		
80	164	MS	MUDSTONE - dark brown, weathered
			COAL (No. 4 B) - shiny, interbedded with dark grey MUDSTONE
		MS	MUDSTONE - dark grey, fresh
85	159		SANDSTONE - 84.73-105.77m: light grey, coarse grained, fresh
		SS	
90			

Bentonite grout
PVC 1.25" Schedule 40
Bentonite chips
Bentonite pellets
Filter sand
QU-10-10-S Screen
Bentonite pellets
PVC 2" Schedule 40
Pea gravel
Bentonite pellets
Pea gravel
Bentonite pellets
Pea gravel
Bentonite pellets
Pea gravel

Quinsam Coal
Assessment of Underground Disposal of Coarse Coal Refuse

Campbell River, B.C.

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Enterprise Geoscience Services Ltd.

Borehole Log of QU-10-10

Date Started	: Oct 6, 2010	Drilled by	: Drillwell Enterprises
Date Completed	: Oct 7, 2010	Northing Coord.	: 102903
Hole Diameter	: 150 mm	Easting Coord.	: 101506
Drilling Method	: Air Rotary	Survey By	: McElhanney
Sampling Method	: Grab sample	Logged By	: O. Quinn

Water Levels
- QU-10-10-S: 210.55m (11/19, 2010)
- QU-10-10-D: 210.44m (11/18/2010)

Well1: QU-10-10-S
Well2: QU-10-10-D
Elev. m: 244.26

Depth (m)	Elev. m 244.26	USCS	Material Description
90	154	SS	SANDSTONE (cont'd)
95	149	SS	
100	144	SS	
105	139	SS	
			COAL - shiny, interbedded with dark brown MUDSTONE
110	134	SL	SILTSTONE - dark brown, fresh
			COAL SEAM 3R - dull to shiny with light brown, weathered mudstone
		SL	SILTSTONE - dark brown, fresh
115	129		COAL SEAM 3 - shiny
		MS	MUDSTONE - dark brown, fresh
120	124	SS	SANDSTONE - 118.3-118.9m: light grey, coarse grained with dull COAL SEAM 3L.
		MS	118.9-120.1m: light grey, fine-medium grained, fresh
			MUDSTONE - dark brown, fresh
125	119	SS	SANDSTONE - 121.9-132.9m: light grey, medium grained, fresh, with interbedded dark brown, fresh, carbonaceous MUDSTONE
			Flow 10 US GPM at 128.0m
130	114	SS	132.9-141.1m: light to medium grey. fine-coarse grained, fresh
135			

Pea Gravel
Bentonite pellets
Pea Gravel
Bentonite pellets
Pea Gravel
Bentonite pellets
PVC 2" Schedule 40
Pea Gravel
Bentontie pellets
Pea Gravel
Bentonite pellets
Pea Gravel
Bentonite pellets
Pea Gravel
Bentonite pellets

Quinsam Coal
Assessment of Underground Disposal of Coarse Coal Refuse

Campbell River, B.C.

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Enterprise Geoscience Services Ltd.

Borehole Log of QU-10-10

Date Started	: Oct 6, 2010	Drilled by	: Drillwell Enterprises
Date Completed	: Oct 7, 2010	Northing Coord.	: 102903
Hole Diameter	: 150 mm	Easting Coord.	: 101506
Drilling Method	: Air Rotary	Survey By	: McElhanney
Sampling Method	: Grab sample	Logged By	: O. Quinn

Water Levels
- QU-10-10-S: 210.55m (11/19, 2010)
- QU-10-10-D: 210.44m (11/18/2010)

Well1: QU-10-10-S
Well2: QU-10-10-D
Elev. m: 244.26

Depth (m)	Elev. m 244.26	USCS	Material Description	Well
135	109	SS		Bentonite pellets
				Pea Gravel
140	104		Flow 12 US GPM at 140.2m	
		MS	MUDSTONE - dark brown, fresh	Bentonite pellets
			COAL SEAM 2 - shiny, with dark brown, fresh MUDSTONE	
145	99		MUDSTONE -	Pea Gravel
			144.3-148.7m: medium brown, fresh	PVC 2" Schedule 40
			148.7-149.0m: COAL lens	Bentonite pellets
			148.7-150.3m: dark brown	
150	94	MS	150.3-156.7m: dark brown, with grey-green, fine-medium grained SILTSTONE, fresh	Pea Gravel
155	89		156.7-160.9m: dark brown, fresh	Bentonite pellets
			Flow 12 US GPM at 158.5m	
160	84		COAL SEAM 2L/1R - shiny, with light brown, fresh MUDSTONE	Pea Gravel
		MS	MUDSTONE -	Bentonite pellets
			162.5-165.4m: light brown, fresh	
165	79		Flow 12 US GPM at 164.6m	
		MS	COAL SEAM 1- shiny	QU-10-10-D Screen
			MUDSTONE - grey-brown, fresh	Sand Pack
		MS	COAL SEAM 1 - shiny, with medium-brown, fresh, MUDSTONE	
170	74	MS	MUDSTONE - dark brown-grey, fresh	
			COAL - shiny, with medium-brown, fresh, MUDSTONE	
			MUDSTONE - dark brown-grey, fresh	
175	69	SL	COAL SEAM 1L - shiny with medium-brown. fresh MUDSTONE	Bentonite pellets
			SILTSTONE -	Pea Gravel.
			173.1-177.7m: green-grey, fresh	
180			EOH @ 179.83m (Flow 12 US GPM)	

Quinsam Coal
Assessment of Underground Disposal
of Coarse Coal Refuse

Campbell River, B.C.

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Enterprise Geoscience Services Ltd.

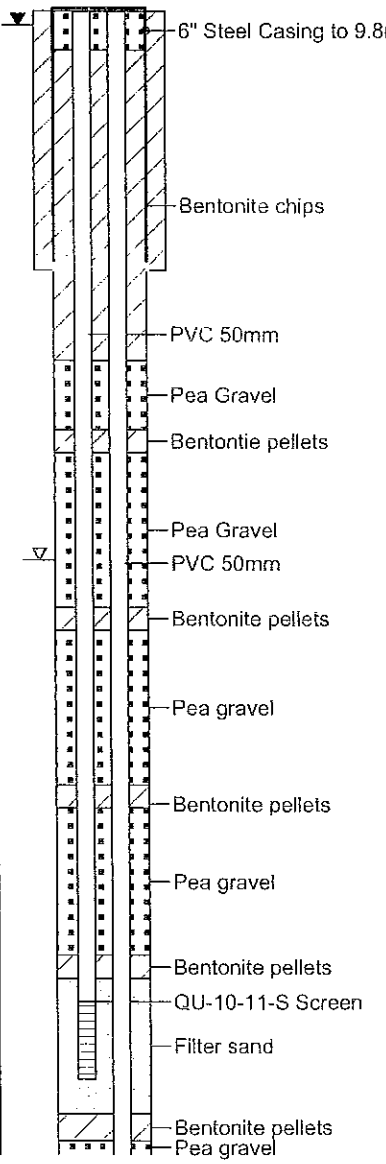
Borehole Log of QU-10-11

Date Started	: Oct 8, 2010	Drilled by	: Drillwell Enterprises
Date Completed	: Oct 13, 2010	Northing Coord.	: 103177
Hole Diameter	: 150 mm	Easting Coord.	: 101451
Drilling Method	: Air Rotary	Survey By	: McElhanney
Sampling Method	: Grab sample	Logged By	: O. Quinn

Water Levels
- QU-10-11-S 248.939 m (21/01/2011)
- QU-10-11-D 227.892 m (08/02/2011)

Well1: QU-10-11-S
Well2: QU-10-11-D
Elev. m: 249.5

Depth (m)	Elev. m 249.5	USCS	Graphic Symbol	Material Description
0	249	f42		sandy SILT TILL - with boulders 0-3.7m red brown 3.7-9.1m grey-brown
5	244			
10	239	ss		SANDSTONE - 9.1-17.4m light grey, coarse-grained, highly weathered
15	234			17.4-18.9m greenish grey, medium grained
20	229			18.9-25.9m light grey, medium grained
25	224			25.9-34.4m light grey, medium grained, moderately weathered
30	219			Hole dry at 33.5m
35	214			34.1-45.7m light-medium grey, medium to coarse grained, fresh
40	209			flow at fracture (40.8m) 30 US GPM
45				



Quinsam Coal
Assessment of Underground Disposal
of Coarse Coal Refuse

Campbell River, B.C.

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Enterprise Geoscience Services Ltd.

Borehole Log of QU-10-11

Date Started	: Oct 8, 2010	Drilled by	: Drillwell Enterprises
Date Completed	: Oct 13, 2010	Northing Coord.	: 103177
Hole Diameter	: 150 mm	Easting Coord.	: 101451
Drilling Method	: Air Rotary	Survey By	: McElhanney
Sampling Method	: Grab sample	Logged By	: O. Quinn

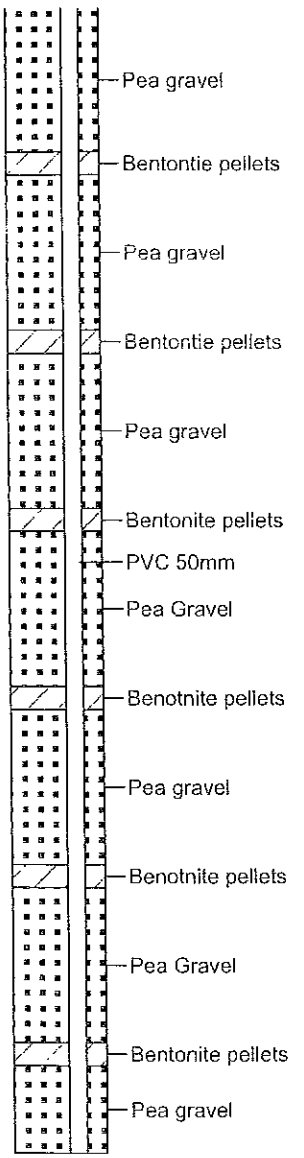
Water Levels

▼ QU-10-11-S 248.939 m (21/01/2011)

▽ QU-10-11-D 227.892 m (08/02/2011)

Well1: QU-10-11-S
Well2: QU-10-11-D
Elev. m: 249.5

Depth (m)	Elev. m 249.5	USCS	Material Description
45	204	SS	45.7-47.5m dark grey, fine-medium grained, fresh, carbonaceous
			COAL SEAM - dirty
50	199		SANDSTONE - 47.8-71.3m grey to grey-brown, medium-coarse to medium grained, fresh flow 30 US GPM at 48.8m
55	194		flow 30 US GPM at 54.9m
60	189	SS	
65	184		flow 20 US GPM at 67.1m (water was flowing out of adjacent exploration hole, QU-05-10 during this measurement)
70	179	MS	COAL SEAM 4B- with SILTSTONE/MUDSTONE
			MUDSTONE - dark brown, fresh
			COAL (No. 4 B Seam) - with SILTSTONE/MUDSTONE
75	174		SANDSTONE - 72.85-86.26m grey brown to grey, medium to coarse grained, fresh
80	169	SS	flow 15 US GPM at 79.25m
85	164		86.26-91.44m dark brown, fine grained, fresh
90			



Quinsam Coal
Assessment of Underground Disposal
of Coarse Coal Refuse

Campbell River, B.C.

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Enterprise Geoscience Services Ltd.

Borehole Log of QU-10-11

Date Started	: Oct 8, 2010	Drilled by	: Drillwell Enterprises
Date Completed	: Oct 13, 2010	Northing Coord.	: 103177
Hole Diameter	: 150 mm	Easting Coord.	: 101451
Drilling Method	: Air Rotary	Survey By	: McElhanney
Sampling Method	: Grab sample	Logged By	: O. Quinn

Water Levels

▼ QU-10-11-S 248.939 m (21/01/2011)

▽ QU-10-11-D 227.892 m (08/02/2011)

Well1: QU-10-11-S
Well2: QU-10-11-D
Elev. m: 249.5

Depth (m)	Elev. m 249.5	USCS	Material Description
90	159	SS	SANDSTONE (cont'd) - 91.44-94.49m dark grey, medium grained, fresh. flow 12 US GPM at 91.44m. (QU-10-05 flowing during measurement).
95	154	SS	COAL SEAM 3R - shiny, with dark brown, fresh MUDSTONE
			SANDSTONE - medium grey
		MS	MUDSTONE - 96.93-102.11m dark brown, fresh
100	149		flow 30 US GPM at 97.54m (QU-10-05 flowing during measurement).
			COAL SEAM 3L - shiny, with dark brown, fresh MUDSTONE
		MS	MUDSTONE - 103.02-106.07m dark brown, fresh
105	144	SS	flow 18 US GPM at 103.63m (QU-10-05 flowing during measurement).
		MS	SANDSTONE - light grey, fine-medium grained with dark brown mudstone
110	139		MUDSTONE - 108.21-109.73m dark brown, fresh, with minor COAL seams
			flow 30 US GPM at 109.73m (QU-10-05 flowing during measurement).
115	134		SANDSTONE - 109.73-115.21m grey, fine to medium grey, with dark brown MUDSTONE lenses
			115.21-130.45m grey, fine to medium grained, fresh
120	129	SS	flow 12 US GPM at 115.82m (QU-10-05 flowing during measurement).
			COAL stringers at 118.87m and 121.62-121.92m
			flow 7 US GPM at 121.92m (QU-10-05 flowing during measurement).
125	124		flow 9 US GPM at 128.02m (QU-10-05 flowing during measurement).
130	119	SL	SILTSTONE - 130.45-132.89m dark brown, fresh
			flow 6 US GPM at 132.59m (QU-10-05 flowing during measurement).
		MS	MUDSTONE - dark brown
135			

Pea gravel
Bentonite pellets
Pea gravel
Bentonite pellets
Pea gravel
Bentonite pellets
PVC 2"/Schedule 40
Pea gravel
Bentonite pellets
Pea gravel
Bentonite pellets
Pea gravel
Bentonite pellets
Pea gravel
Bentonite pellets

Quinsam Coal
Assessment of Underground Disposal
of Coarse Coal Refuse

Campbell River, B.C.

05-19-201 ers\John Balfour\Documents\PROJECTS\2009 Projects\09010 Lorax\2010 Work\Borehole logs\QU-10-11b.

Enterprise Geoscience Services Ltd

Borehole Log of QU-10-11

Date Started	: Oct 8, 2010	Drilled by	: Drillwell Enterprises
Date Completed	: Oct 13, 2010	Northing Coord.	: 103177
Hole Diameter	: 150 mm	Easting Coord.	: 101451
Drilling Method	: Air Rotary	Survey By	: McElhanney
Sampling Method	: Grab sample	Logged By	. O. Quinn

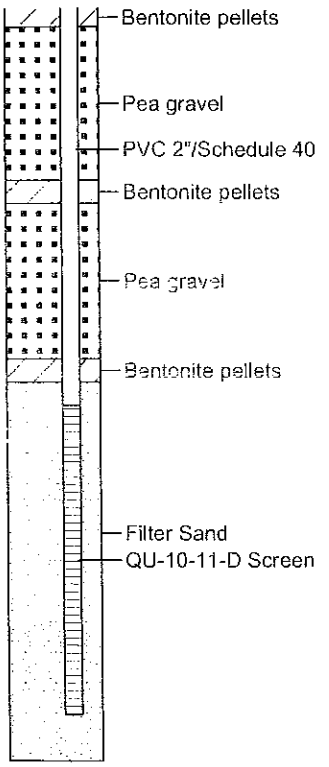
Water Levels

▼ QU-10-11-S 248.939 m (21/01/2011)

▽ QU-10-11-D 227.892 m (08/02/2011)

Well1: QU-10-11-S
Well2: QU-10-11-D
Elev. m: 249.5

Depth (m)	Elev. m 249.5	USCS	Material Description
135	114	MS	coal beds at 134.11, 136.25 and 138.07m
140	109	MS	COAL SEAM 2 - shiny, with MUDSTONE
			MUDSTONE - flow 4 US GPM at 140.21m (QU-10-05 flowing during measurement).
		MS	COAL SEAM 2- shiny, with MUDSTONE
145	104		MUDSTONE - fresh
			COAL SEAM 2L/1U
		MS	MUDSTONE - medium grey-brown, with shiny COAL stringers
150	99		flow 16 US GPM at 146.3m (QU-10-05 flowing during measurement).
			COAL SEAM 1 - shiny with MUDSTONE flow 4 US GPM at 152.4m (QU-10-05 flowing during measurement).
155	94	MS	MUDSTONE - light brown to green/grey
			COAL SEAM 1L - shiny with MUDSTONE
160	89	SS	SANDSTONE - greenish grey, fine-medium grained, fresh
			flow 11 GPM at 158.5m (QU-10-05 flowing during measurement).
		SH	SHALE - red-brown, fresh
165	84		EOH @ 164.59m, flow 11 GPM
170	79		
175	74		
180			



Quinsam Coal
Assessment of Underground Disposal
of Coarse Coal Refuse

Campbell River, B.C.

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LOG FOR DRILLHOLE #: Qu10-13 Page: 1 of 5

Client: Hillsborough Resources
Project: 7S Permit
Drilling Method: Rotary
Drilling Contractor: DrillWell
Engineer: M Cullen, L Fletcher
Date Started: Nov 5, 2011

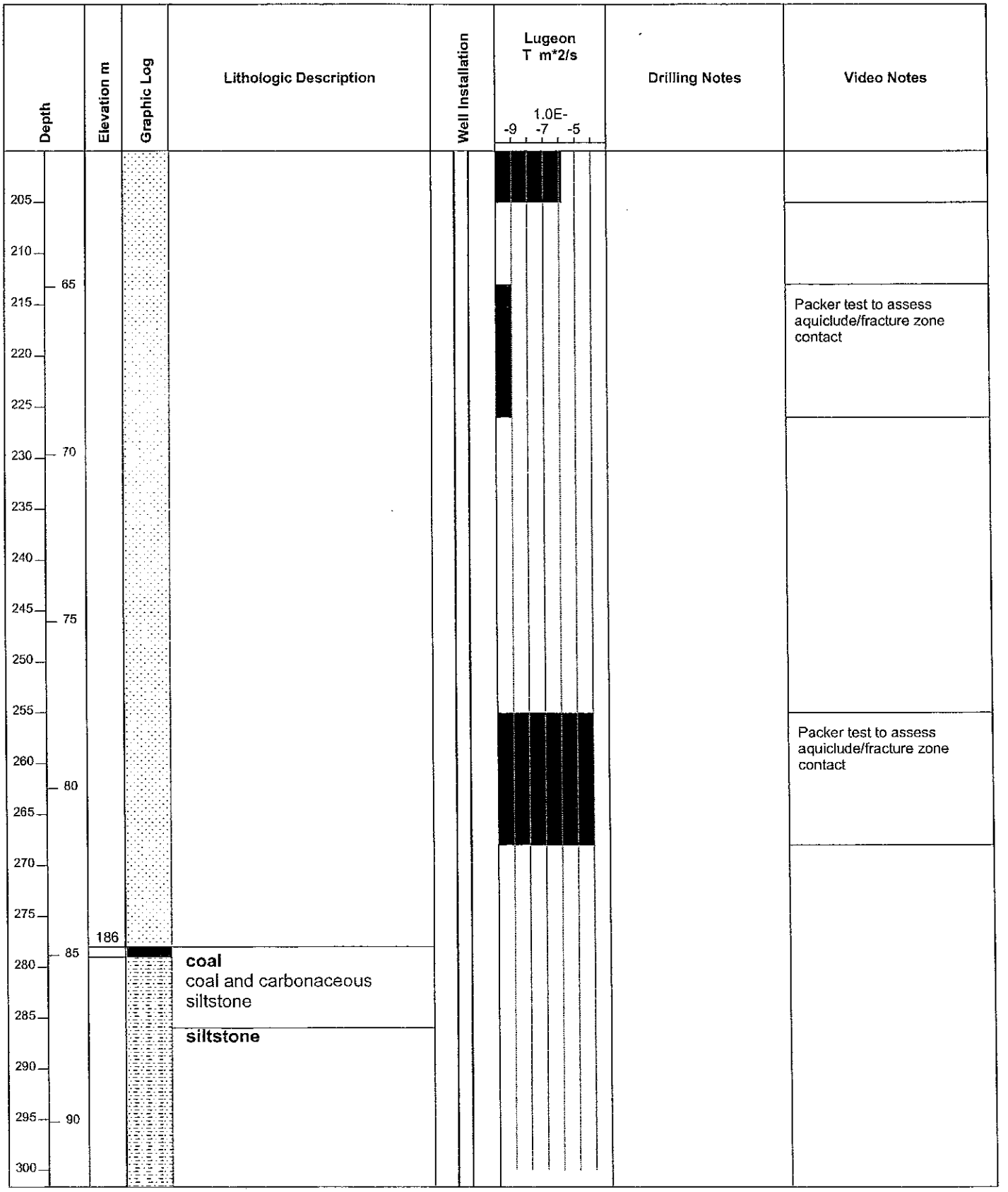
Co-ordinates:
Collar Elev.: 270.68
Dip/Dip direction: vert
Total Depth: 483
Casing Depth: 5
Hole dia:

Depth (ft / m)	Elevation m	Graphic Log	Lithologic Description	Well Installation	Lugeon T m*2/s (1.0E-9 … 1.0E-5)	Drilling Notes	Video Notes
0 ft / 0 m	271		Ground Surface				
			overburden				
5	269		**sedimentary sequence** Dunsmuir Formation				
10							
15 / 5							
20							
25							
30 / 10							
35							
40							horiz fractures: staining, pre-existing, possible open
45							
50 / 15							
55							
60							
65 / 20							
70							
75							
80 / 25							
85							
90							, no fractures evident
95							
100 / 30							

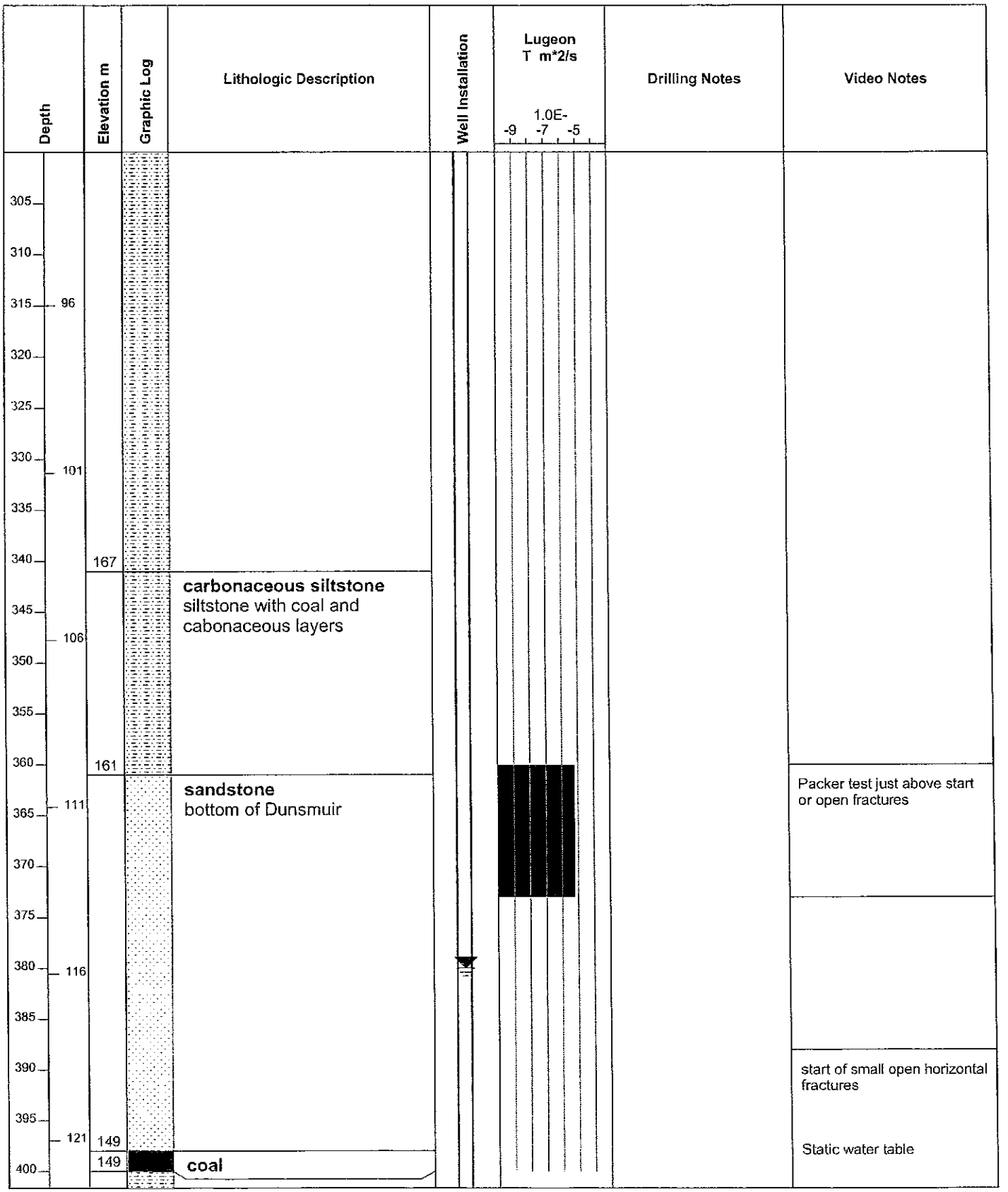
LOG FOR DRILLHOLE #: Qu10-13 **Page: 2 of 5**

Depth	Elevation m	Graphic Log	Lithologic Description	Well Installation	Lugeon T m*2/s (1.0E-9 -7 -5)	Drilling Notes	Video Notes
105							
110							
115 — 35							
120							sections of rough drill hole wall from 120 to 234 ft
125							
130 — 40							
135							
140							
145							
150 — 45							Packer testing over sections of rough DH wall to test for aquiclude
155							
160							
165 — 50							
170							Packer testing over piezometer location and dilated zone
175							
180 — 55							small open fractures; possible new
185							
190							
195							Packer testing over dilated zone
200 — 60							

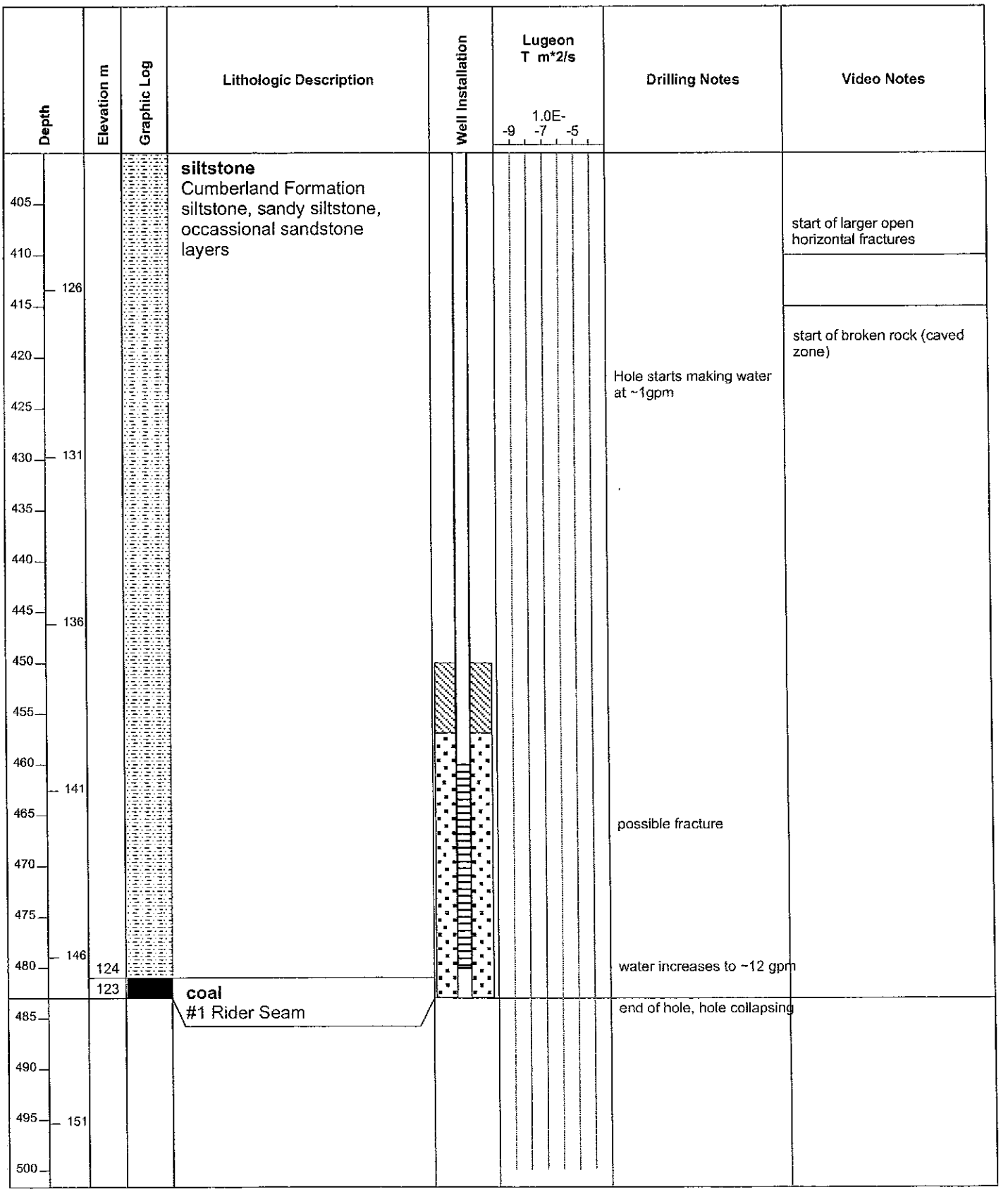
LOG FOR DRILLHOLE #: Qu10-13 **Page: 3 of 5**



LOG FOR DRILLHOLE #: Qu10-13 **Page: 4 of 5**



LOG FOR DRILLHOLE #: Qu10-13 **Page: 5 of 5**



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Borehole Log of QU-11-01 (4 South)

Date Started	: 4 Jan 2011	Drilled By	: Dirtiwell Enterprises
Date Completed	: 6 Jan 2011	Northing Coord.	: 101056.7
Hole Diameter	: 140 mm	Easting Coord.	: 99134.6
Drilling Method	: Air rotary with wireline coring	Survey By	: Quinsam
Sampling Method	: Core	Logged By	: N. Bazowski

Water Levels

▼ QU-11-01: 290 01 m (19-Feb-11)

▽

Well: QU-11-01
Elev. m: 316.368

Depth (m)	Elev. m 316.368	USCS	Graphic Symbol	Material Description	Remarks
65	251.37				
		SP			
70	246.37				
		SS			+ Shale traps at 73 m.
75	241.37				+ Shale traps at 76 m.
80	236.37	SM			
		SS			+ Hole intersects minedrift at 85.2 m.
85	231.37			EOH @ 85.2 m	
90					

4" PVC

Screen

Quinsam Coal
Assessment of Underground Disposal
of Coarse Coal Refuse

Campbell River, B.C.

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Enterprise Geoscience Services Ltd.

Borehole Log of QU-11-03 (2 North)

Date Started	: Jan 12, 2011	Drilled By	: Drillwell Enterprises
Date Completed	:	Northing Coord.	: n/a
Hole Diameter	: 150 mm / 140 mm core	Easting Coord.	: n/a
Drilling Method	: Air rotary with wireline coring	Survey By	:
Sampling Method	: Grab sample / Core	Logged By	: N. Bazowski

Water Levels

▼ QU-11-03: 42.21 m bTOC (18-Jan-2011)

▽

Well: QU-11-03
Elev. m: xxx

Depth (m)	Elev. m 304	USCS	Graphic Symbol	Material Description	Remarks
65	239				
				From 0 - 69.34 m not logged SANDSTONE, zone of silty sandstone, from: 71.52 - 73.64 m and 74.18 - 75.44 m Conglomerate at base from: 81.58 - 81.75 m	+ Completion details to follow.
70	234				
		SP			
75	229				
					4" PVC
80	224				
		SS		SILTSTONE	
85	219				
		SM		SILTSTONE, Coaly siltstone and coal, Coal layers from: 86.48-86.54 m 86.66-87.57 m 87.67-87.98 m 89.71-90.08 m	
90					

Quinsam Coal
Assessment of Underground Disposal of Coarse Coal Refuse

Campbell River, B.C.

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03-09-201

Enterprise Geoscience Services Ltd

Borehole Log of QU-11-03 (2 North)

Date Started	: Jan 12, 2011	Drilled By	: Drillwell Enterprises
Date Completed	.	Northing Coord.	: n/a
Hole Diameter	: 150 mm / 140 mm core	Easting Coord.	: n/a
Drilling Method	: Air rotary with wireline coring	Survey By	:
Sampling Method	: Grab sample / Core	Logged By	: N. Bazowski

Water Levels

▼ QU-11-03: 42.21 m bTOC (18-Jan-2011)

▽

Well: QU-11-03
Elev. m: xxx

Depth (m)	Elev. m 304	USCS	Graphic Symbol	Material Description	Remarks
90	214	SM		SILTSTONE, Sandstone and Conglomerate	
95	209				
100	204	SS			
105	199				
110	194	CO		Coaly siltstone	+ Hole intersetcs mine void.
115				EOH @ 110.64 m	

4" PVC

Screen

Quinsam Coal
Assessment of Underground Disposal
of Coarse Coal Refuse

Campbell River, B.C.

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Enterprise Geoscience Services Ltd

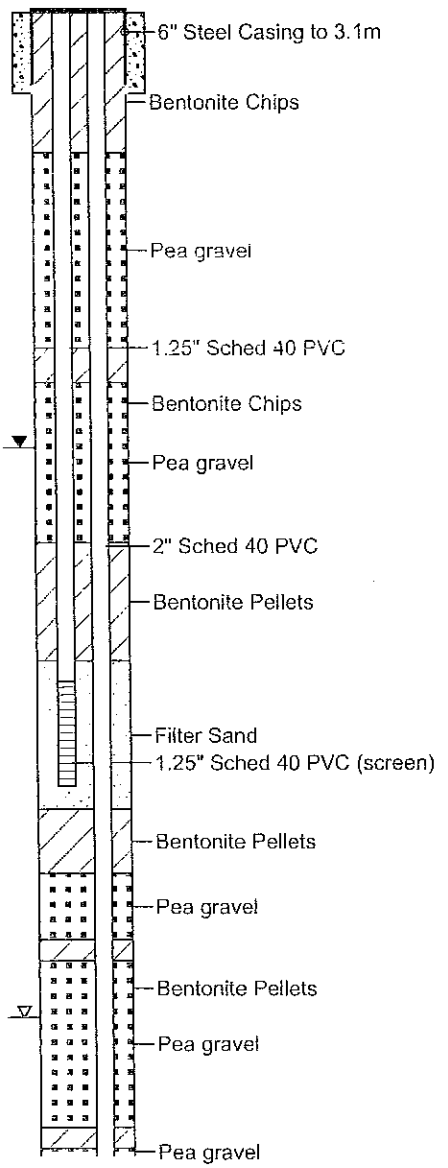
Borehole Log of QU-11-05

Date Started	: Feb 15, 2011	Drilled By	: Drillwell Enterprise
Date Completed	: Feb 18, 2011	Northing Coord.	: 102648.3
Hole Diameter	: 140 mm	Easting Coord.	: 101075.9
Drilling Method	: Air rotary with wireline coring	Survey By	: QCC
Sampling Method	: Core	Logged By	: N. Bazowski

Water Levels
- QU-11-05-S: 19.00 m (8-Mar-11)
- QU-11-05-D: 43.95 m (8-Mar-11)

Well1: QU-11-05-S
Well2: QU-11-05-D
Elev. m: 228.39

Depth (m)	Elev. m 228.39	USCS	Material Description
0	228		NOT CORED
5	223	SW	SANDSTONE
10	218		10-10.06 m: Coaly Siltstone
			10.14-10.31m: Coaly Siltstone
15	213		10.31-10.57m: Siltstone
20	208		
25	203		23.55-23.72m: Conglomerate
			24.54-24.73m: Conglomerate
			24.9-24.97m: Conglomerate
30	198		25.47-25.55m: Conglomerate
		SW	30.45-30.51m: Coaly Siltstone (fractured)
			COAL
35	193		SANDSTONE
			COAL - 4B Coal Seam
			SANDSTONE
40	188	SW	32.75-33.04 m: Silty Coaly Sandstone
45	183		
50			



Quinsam Coal
Assessment of Underground Disposal
of Coarse Coal Refuse

Campbell River, B.C.

Bentonite Pellets

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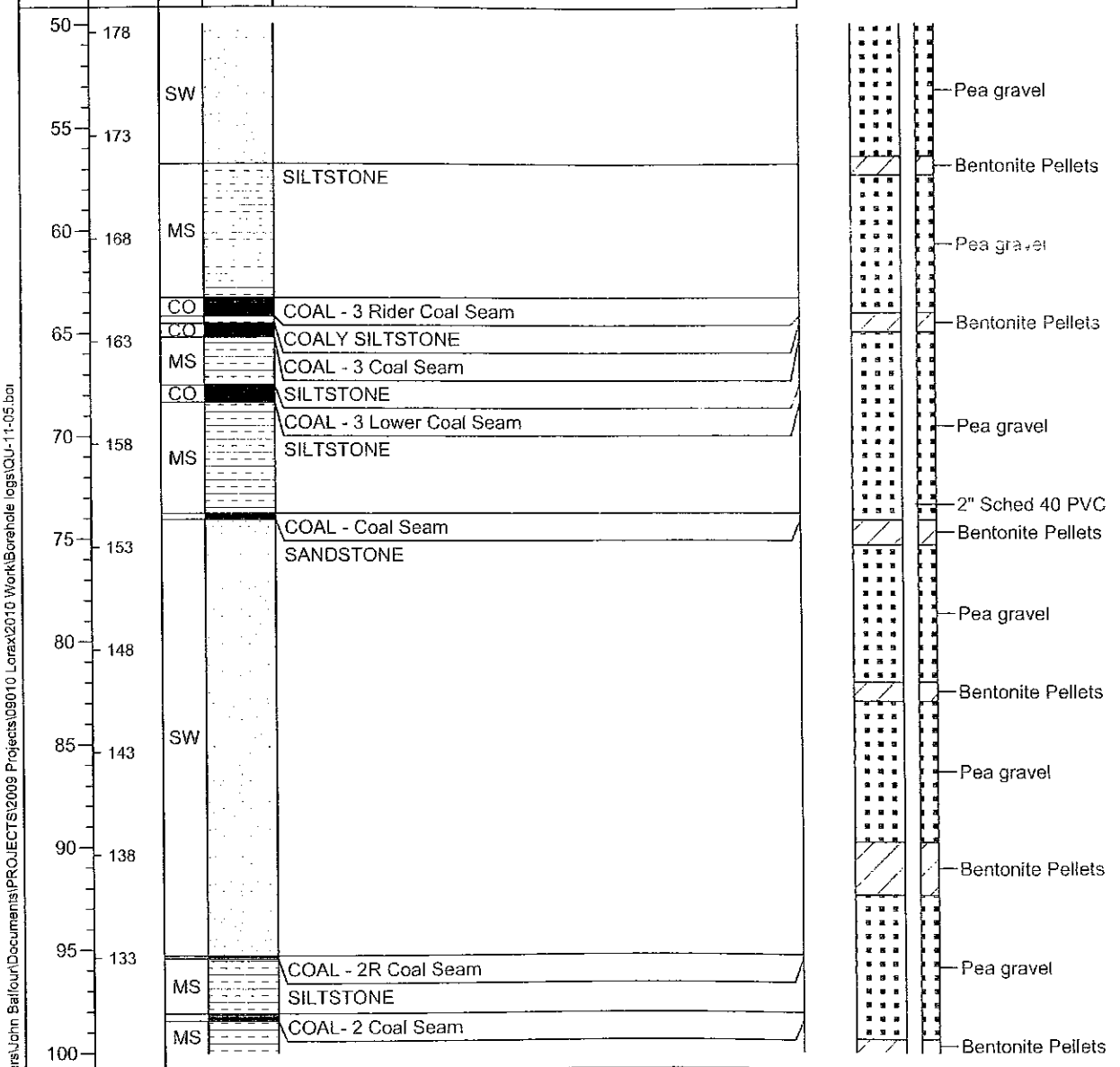
Enterprise Geoscience Services Ltd.

Borehole Log of QU-11-05

Date Started	: Feb 15, 2011	Drilled By	: Drillwell Enterprise
Date Completed	: Feb 18, 2011	Northing Coord.	: 102648.3
Hole Diameter	: 140 mm	Easting Coord.	: 101075.9
Drilling Method	: Air rotary with wireline coring	Survey By	: QCC
Sampling Method	: Core	Logged By	: N. Bazowski

Water Levels
- QU-11-05-S: 19.00 m (8-Mar-11)
- QU-11-05-D: 43.95 m (8-Mar-11)

Well1: QU-11-05-S
Well2: QU-11-05-D
Elev. m: 228.39



Quinsam Coal
Assessment of Underground Disposal
of Coarse Coal Refuse

Campbell River, B.C.

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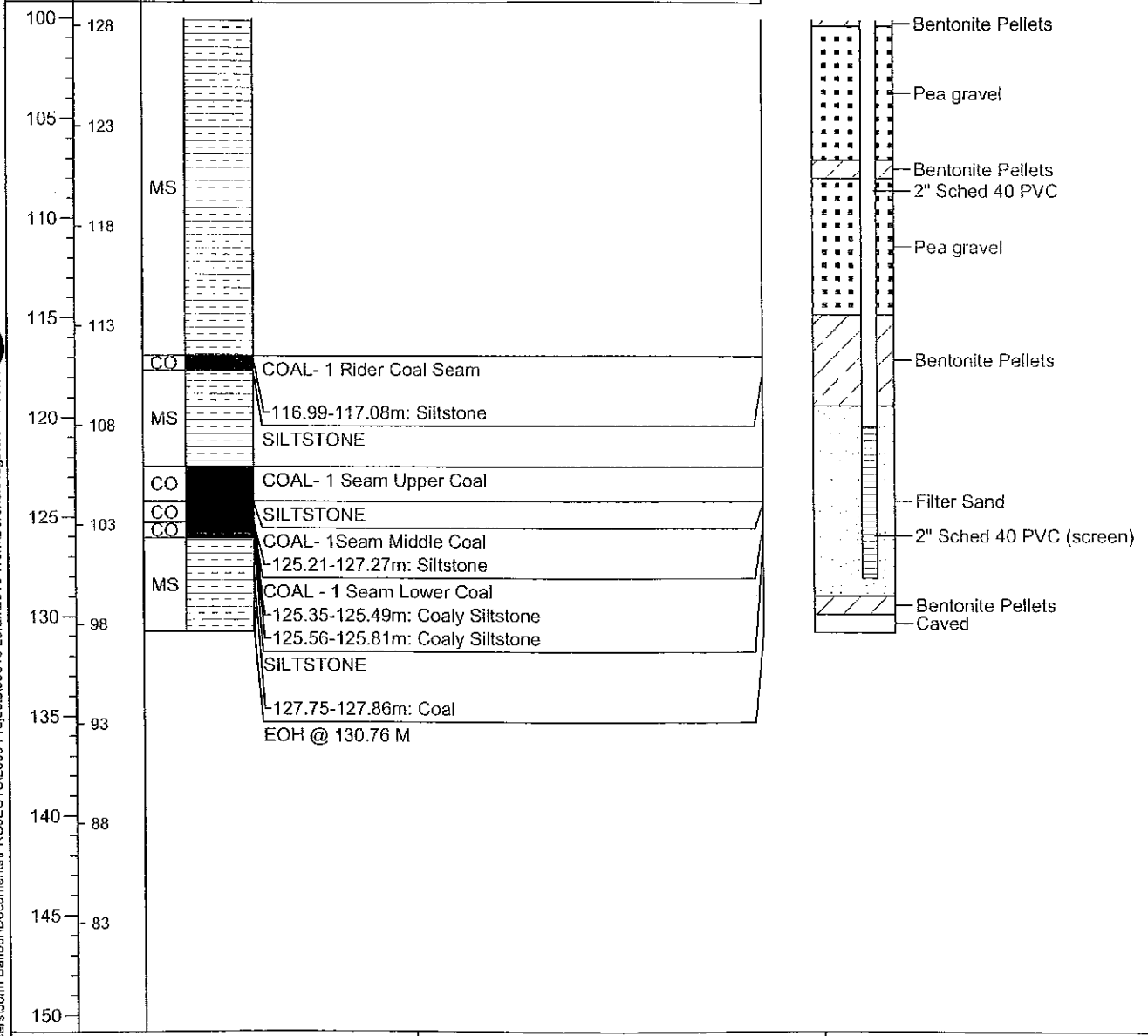
Enterprise Geoscience Services Ltd.

Borehole Log of QU-11-05

Date Started	: Feb 15, 2011	Drilled By	: Drillwell Enterprise
Date Completed	: Feb 18, 2011	Northing Coord.	: 102648.3
Hole Diameter	: 140 mm	Easting Coord.	: 101075.9
Drilling Method	: Air rotary with wireline coring	Survey By	: QCC
Sampling Method	: Core	Logged By	: N. Bazowski

Water Levels
- QU-11-05-S: 19.00 m (8-Mar-11)
- QU-11-05-D: 43.95 m (8-Mar-11)

Well1: QU-11-05-S
Well2: QU-11-05-D
Elev. m: 228.39



Quinsam Coal
Assessment of Underground Disposal
of Coarse Coal Refuse

Campbell River, B.C.

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Enterprise Geoscience Services Ltd.

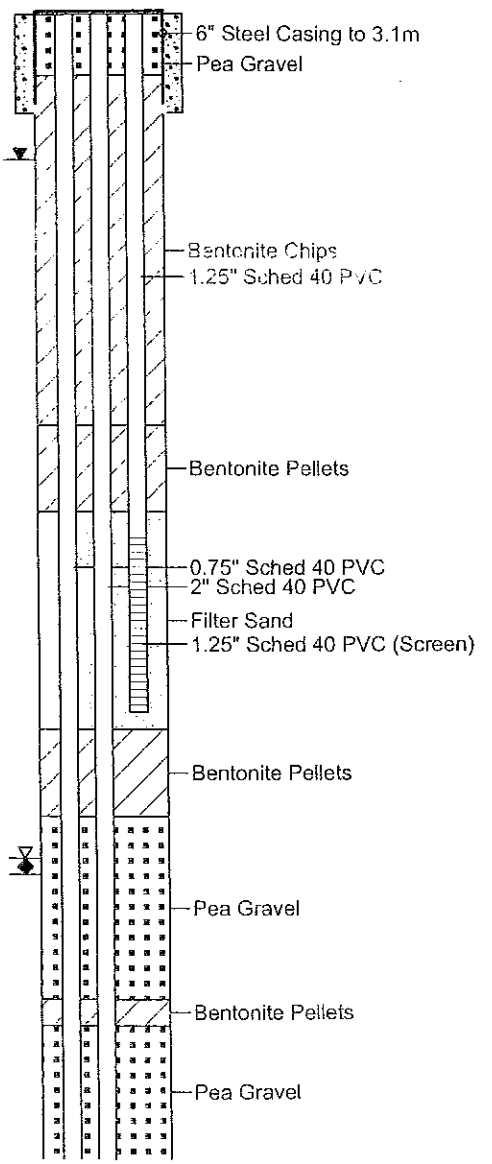
Borehole Log of QU-11-09

Date Started	:	Drilled By	: Drillwell Enterprise
Date Completed	: March 8, 2011	Northing Coord.	: 102561.8
Hole Diameter	: 152 mm / 140 mm	Easting Coord.	: 100736
Drilling Method	: Air rotary with wireline coring	Survey By	: QCC
Sampling Method	: Grab sample and core	Logged By	: N. Bazowski

Water Levels
- QU-10-09-S: 5.05 m
- QU-10-09-D: 29.52 m
- QU-10-09-P: 30.08 m

Well1: QU-10-09-S
Well2: QU-10-09-D
Well3: QU-10-09-P
Elev. m: 226.297

Depth (m)	Elev. m	USCS	Material Description
0	226		OVERBURDEN
5	221		
10	216		
15	211	MS	SILTSTONE
			SANDSTONE
20	206		
25	201	SW	
30	196		
35	191		
40			



Quinsam Coal
Assessment of Underground Disposal
of Coarse Coal Refuse

Campbell River, B.C.

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Enterprise Geoscience Services Ltd

Borehole Log of QU-11-09

Date Started	:	Drilled By	: Drillwell Enterprise
Date Completed	: March 8, 2011	Northing Coord.	: 102561.8
Hole Diameter	: 152 mm / 140 mm	Easting Coord.	: 100736
Drilling Method	: Air rotary with wireline coring	Survey By	: QCC
Sampling Method	: Grab sample and core	Logged By	: N. Bazowski

Water Levels
- QU-10-09-S: 5.05 m
- QU-10-09-D: 29.52 m
- QU-10-09-P: 30.08 m

Well1: QU-10-09-S
Well2: QU-10-09-D
Well3: QU-10-09-P
Elev. m: 226.297

Depth (m)	Elev. m 226.297	USCS	Material Description
40	186	SW	
45	181	MS	SILTSTONE
50	176	SW	SANDSTONE
55	171		
60	166		
65	161		at 67.16 m coring starts
70	156		
75	151	MS	SILTSTONE
		CO	COAL - 1 RiderSeam
		MS	SILTSTONE
80		CO	COAL - 1 Seam Upper

Pea Gravel
Bentonite Pellets
Pea Gravel
Bentonite Pellets
Pea Gravel
Bentonite Pellets
2" Sched 40 PVC
0.75" Sched 40 PVC
Pea Gravel
Bentonite Pellets
Pea Gravel
Bentonite Pellets
Filter Sand
2" Sched 40 PVC (Screen)

Quinsam Coal
Assessment of Underground Disposal
of Coarse Coal Refuse

Campbell River, B.C.

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Enterprise Geoscience Services Ltd.

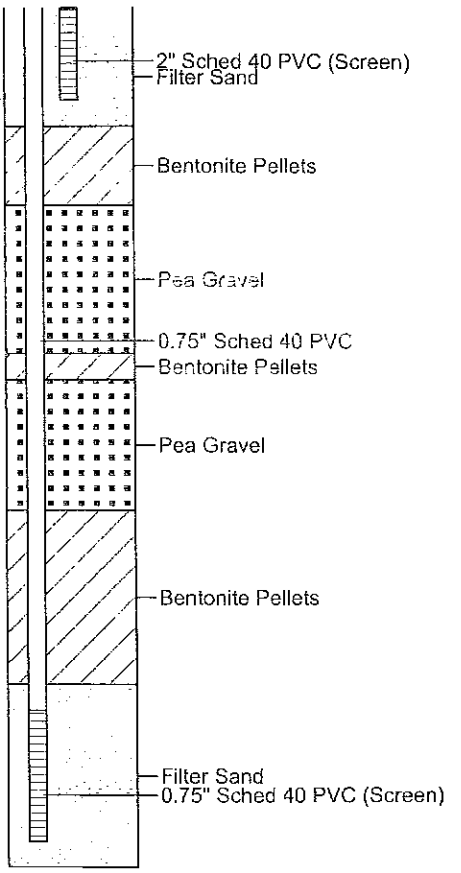
Borehole Log of QU-11-09

Date Started	:	Drilled By	: Drillwell Enterprise
Date Completed	: March 8, 2011	Northing Coord.	: 102561.8
Hole Diameter	: 152 mm / 140 mm	Easting Coord.	: 100736
Drilling Method	: Air rotary with wireline coring	Survey By	: QCC
Sampling Method	: Grab sample and core	Logged By	: N. Bazowski

Water Levels
- QU-10-09-S: 5.05 m
- QU-10-09-D: 29.52 m
- QU-10-09-P: 30.08 m

Well1: QU-10-09-S
Well2: QU-10-09-D
Well3: QU-10-09-P
Elev. m: 226.297

Depth (m)	Elev. m 226.297	USCS	Material Description
80	146	CO	
		MS	SILTSTONE
			COAL- 1 Seam Lower
			SILTSTONE
85	141		
		MS	
90	136		
95	131		
		GC	CONGLOGERATE 96.2-96.64 m: Very Coarse Grained Sandstone 97.08-967.45 m: Very Coarse Grained Sandstone
100	126	MS	SILTSTONE
		SW	SANDSTONE
105	121	GC	COGLOMERATE
110	116		EOH @ 110.19
115	111		
120			



Quinsam Coal
Assessment of Underground Disposal
of Coarse Coal Refuse

Campbell River, B.C.

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Borehole Log of QU11-18

HILLSBOROUGH Resources Limited

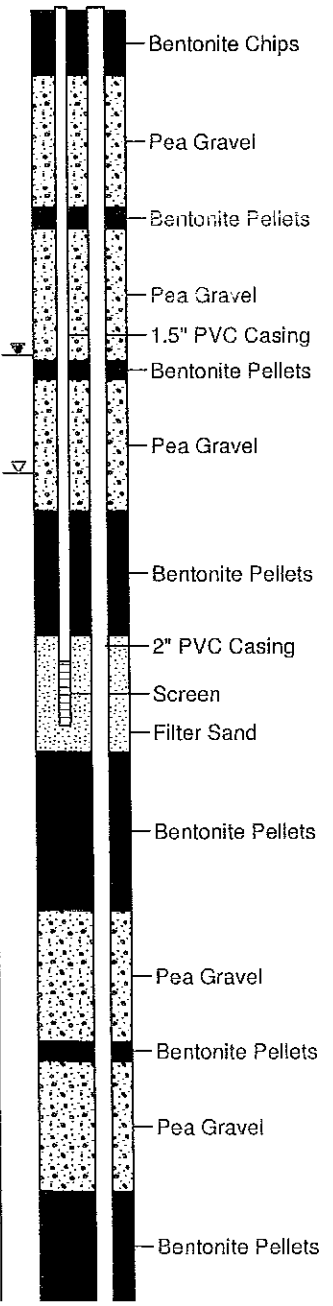
Quinsam Coal Corporation
Project #: J885-7

Date Drilled	: August 2011	Mine Grid Northing (m)	: 100690.81
Date Installed	: Dec 12, 2011	Mine Grid Easting (m)	: 100542.84
Hole Diameter	: 150 mm/ 85 mm core	Logged By	: N. Bazowski (QCC)
Drilling Method	: Air Rotary w/ wireline coring	Surveyed By	: QCC
Drilling Company	: Drillwell Enterprises	Installed By	: M. Storey (Lorax)

Water Levels
- QU11-18S: 283.59 m (Mar 19, 2012)
- QU11-18D: 278.09 m (Mar 19, 2012)

Well1: MW11-18S PVC Stickup 0.16m
Well2: MW11-18D PVC Stickup 0.16m
Elev.: 299.71 m (ground surface)

Depth (m)	Elev. (m asl) 299.71	Cored Interval	GRAPHIC	DESCRIPTION
0	299			TILL (not logged)
5	294			
10	289			
15	284			
20	279			
25	274			
30	269			
35	264			Drilled with casing, not logged
40	259			SANDSTONE, grey, fine to medium grained Fault zone 37.2-37.7 m with fractures infilled with rusty clays, little water flow inferred
45	254			Coal (4 Seam) with some calcite, few surfaces display powdery orange mineral (realgar) in minor amounts SILTSTONE COAL (4L Seam), dirty dull to bright clean, pyrite noted in limited intervals SILTSTONE, medium grey
50	249			
55	244			COAL (4B Seam) SILTSTONE, medium grey
60				



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Borehole Log of QU11-18

HILLSBOROUGH Resources Limited

Quinsam Coal Corporation
Project #: J885-7

Date Drilled	: August 2011	Mine Grid Northing (m)	: 100690.81
Date Installed	: Dec 12, 2011	Mine Grid Easting (m)	: 100542.84
Hole Diameter	: 150 mm/ 85 mm core	Logged By	: N. Bazowski (QCC)
Drilling Method	: Air Rotary w/ wireline coring	Surveyed By	: QCC
Drilling Company	: Drillwell Enterprises	Installed By	: M. Storey (Lorax)

Water Levels
- QU11-18S: 283.59 m (Mar 19, 2012)
- QU11-18D: 278.09 m (Mar 19, 2012)

Well1: MW11-18S PVC Stickup 0.16m
Well2: MW11-18D PVC Stickup 0.16m
Elev.: 299.71 m (ground surface)

Depth (m)	Elev. (m asl) 299.71	Cored Interval	GRAPHIC	DESCRIPTION
60	239			
				SANDSTONE, medium grey, fine grained, tight
65	234			SILSTONE, medium to dark grey, trace coal
				Airlift yield increased 12 GPM at 66.8 m
70	229			COAL (3 Zone)
75	224			Discrepancy between geophysical log and chip log
80	219			SILTSTONE, mostly grey interbedded with some brown, 5% calcite, 5% coal, fault zone
85	214			SILTSTONE, fractures noted 88-88.5 m and 94.3 m
90	209			
95	204			
100	199			SANDSTONE, greenish grey, fine to medium grained
				CONGLOMERATE
105	194			SILSTONE, with minor mudstone, some fractures
				BENSON CONGLOMERATE, both clast and matrix supported
110	189			SILSTONE, hematitic and dark green, 20 cm fault zone at 111.7 m
				CONGLOMERATE
115	184			EOH 115.2 m.
120				

Bentonite Pellets
PVC Casing
Screen
Filter Sand
Bentonite Pellets
Pea Gravel
Bentonite Pellets
Pea Gravel
Bentonite Pellets
Pea Gravel
Bentonite Pellets
Pea Gravel
Bentonite Pellets
Pea Gravel

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Borehole Log of QU11-36D

HILLSBOROUGH Resources Limited

Quinsam Coal Corporation
Project #: J885-7

Date Drilled	: December 2011	Mine Grid Northing (m)	: 100111.42
Date Installed	: Dec 20, 2011	Mine Grid Easting (m)	: 100322.46
Hole Diameter	: 150 mm/ 85 mm core	Logged By	: N. Bazowski (QCC)
Drilling Method	: Air Rotary w/ wireline coring	Surveyed By	: QCC
Drilling Company	: Drillwell Enterprises	Installed By	: M. Storey (Lorax)

Water Levels
▼ QU11-36D: Water level 260.86 m (Mar 19, 2012)
▽

Well: MW11-36D PVC Stickup 0.22 m
Elev.: 285.89 m (ground surface)

Depth (m)	Elev. (m asl) 285.89	Cored Interval	GRAPHIC	DESCRIPTION
0	285			TILL (not logged)
5	280			
10	275			BR (drilled)
15	270			
20	265			
				COAL (5 Seam)
25	260			BR
30	255			SANDSTONE, medium to coarse grained, fractured with oxidation surfaces throughout Possible fault at ~33.6 m
35	250			
40	245			
				SANDSTONE, fine to medium grained, with overlying pyritic SILSTONE (top 5 cm)
45				

Bentonite Chips
Pea Gravel
Bentonite Pellets
Pea Gravel
Bentonite Pellets
Pea Gravel
Bentonite Pellets
Pea Gravel
2" PVC Casing
Bentonite Pellets
Pea Gravel
Bentonite Pellets
Pea Gravel
Bentonite Pellets
Pea Gravel

08-20-2012 P:\J885 Hillsborough Resources\885-7 242 Mine\Borehole Logs\2011 DH and Installs\Installation Logs\QU11-36D.pc

Borehole Log of QU11-36D

HILLSBOROUGH Resources Limited

Quinsam Coal Corporation
Project #: J885-7

Date Drilled	: December 2011	Mine Grid Northing (m)	: 100111.42
Date Installed	: Dec 20, 2011	Mine Grid Easting (m)	: 100322.46
Hole Diameter	: 150 mm/ 85 mm core	Logged By	: N. Bazowski (QCC)
Drilling Method	: Air Rotary w/ wireline coring	Surveyed By	: QCC
Drilling Company	: Drillwell Enterprises	Installed By	: M. Storey (Lorax)

Water Levels
▼ QU11-36D: Water level 260.86 m (Mar 19, 2012)
▽

Well: MW11-36D PVC Stickup 0.22 m
Elev.: 285.89 m (ground surface)

Depth (m)	Elev. (m asl) 285.89	Cored Interval	GRAPHIC	DESCRIPTION
45	240			
50	235			SANDSTONE
				COAL (4L Seam)
55	230			BR (drilled)
60	225			COAL (4B Seam)
				BR (drilled)
65	220			
70	215			
75	210			
80	205			BENSON CONGLOMERATE
				EOH 80.0 m
85	200			
90				

Pea Gravel
Bentonite Pellets
Pea Gravel
2" PVC Casing
Bentonite Pellets
filter sand
Screen
Bentonite Pellets
Pea Gravel

08-20-2012 r:\J885 Hillsborough Resources\885-7 242 Mine\Borehole Logs\2011 DH and Installs\Installation Logs\QU11-36D.doc

LORAX ENVIRONMENTAL

Borehole Log of MW12-23

HILLSBOROUGH Resources Limited

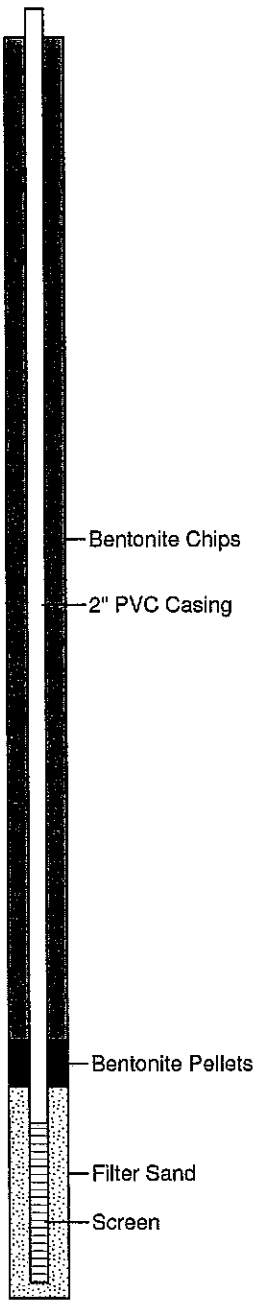
Quinsam Coal Corporation
Project #: A305-3

Date Drilled	: Oct 3, 2012	Mine Grid Northing (m)	: 101584.912
Date Installed	: Oct 4, 2012	Mine Grid Easting (m)	: 97205.970
Hole Diameter	: 150 mm	Logged By	: L.Findlater
Drilling Method	: Air rotary	Surveyed By	: QCC
Drilling Company	: Drillwell Enterprises	Installed By	: L. Findlater

Water Levels
▼ MW12-23: dry (Oct 23, 2012)
▽

Well: MW12-23 PVC Stickup 0.55 m
Elev.: 334.299 m (ground surface).

Depth (m)	Elev. (m asl) 334.299	GRAPHIC	DESCRIPTION
0	334		FILL and OVERBURDEN (not logged)
			SILTSTONE, brownish grey, slightly weathered
			SILTSTONE, as above, fresh
5	329		SILTSTONE, dark grey, fresh
			SILTSTONE, medium grey with pink flecks, sandy
			SILTSTONE, medium grey, interbedded with light grey, fine SANDSTONE
			SILTSTONE, medium brownish grey
10	324		SILTSTONE, interbedded tan-grey, fine sandy and dark grey
			SILTSTONE, interbedded reddish brown and greenish grey fine sandy siltstone layers, greenish grey layer trending to silty fine sandstone
15	319		
20	314		Hole drilled with water; no noticeable fractures or water bearing zones encountered during drilling. Drilling dusty throughout.
25			EOH at 24.4 m



11-08-2012 P:\A305 (Quinsam Coal)\A305-3 Monitoring Well Installations\MW12-23.bo

LORAX ENVIRONMENTAL

Borehole Log of MW12-24

HILLSBOROUGH Resources Limited

Quinsam Coal Corporation
Project #: A305-3

Date Drilled	: Oct 3, 2012	Mine Grid Northing (m)	: 101583.676
Date Installed	: Oct 4, 2012	Mine Grid Easting (m)	: 97207.129
Hole Diameter	: 150 mm	Logged By	: L.Findlater
Drilling Method	: Air rotary	Surveyed By	: QCC
Drilling Company	: Drillwell Enterprises	Installed By	: L. Findlater

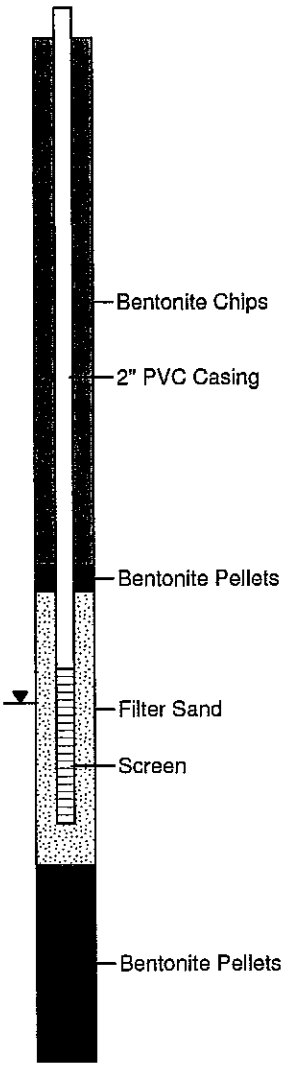
Water Levels

▼ MW12-24: 13.448 m bTOC (Oct 23, 2012).

▽

Well: MW12-24 PVC Stickup 0.58 m
Elev.: 334.354 m (ground surface).

Depth (m)	Elev. (m asl) 334.354	GRAPHIC	DESCRIPTION
0	334		FILL and OVERBURDEN (not logged)
			SILTSTONE, dark brown-grey, slightly weathered
5	329		SILTSTONE, dark grey, fresh
			SILTSTONE, light tan-grey, fine sandy
			SILTSTONE, as above, with pink flecks and trending towards silty fine sandstone
			SILTSTONE, grey
10	324		SILTSTONE, greenish grey, fine sandy
			SILTSTONE, interbedded reddish brown and greenish grey fine sandy siltstone layers, greenish grey layer somewhat trending to silty fine sandstone
15	319		Hole drilled with air only, dusty drilling throughout with no noticeable fractures. Some water dripping at collar at 60 ft rod change,however no water at end of discharge pipe
20	314		EOH at 19.8 m
25			



Appendix IX

MINE GRID NORTH

TRUE NORTH

53°

106,000N

104,000N

102,000N

100,000N

98,000N

96,000E

98,000E

100,000E

102,000E

104,000E

106,000E

QUINSAM RIVER

E0126402,WA

E207411,WC

Settling Pond #4

E207409,WD

E207412,WP

Brinco Incline

PDSR

5M#2

(Dewatering Well)

2-North

E283433,2NPS

3M2N

Tailings Disposal Facility

Middle Quinsam Lake

1M2N

(Dewatering Well)

E286930,QRDS1

QUINSAM RIVER

Quinsam Syncline

Overlook Fault

Roadway Fault

QUINSAM RIVER

077-78

MW2010

E292126,SDS

E206618,MQL

QUINSAM RIVER

E0900504,WB

5SMW

(Dewatering Well)

5-South

7-South

Q05-13

No-Name Lake

Long Lake

E217018,NNL

E217017,NNO

3-South Pit

E292131,LLS & LLSM

E217015,3S

2SC

E206619,LLM

E219412,LLO

2-South Pit

2-South Underground

E292127,2S

2SI

NF (QU11-11)

E292129,4S-Lo

E292130,LLE

E217014,SPC

E292128,3S77

E218582,SPD

BCR-EFF

SPC-EFF

Long Lake Seep Treatment System

Settling Pond #1 (SPD)

4-South

Long Lake Fault

E292110,7SPS

E292069,7SSD

7-South Portal

E292109,7S

E292112,LWO

E292113,7SQR

7-South Area 5

Future Mining Area

Unnamed Fault 1

Unnamed Fault 2

E297232,IR8

E297231,IR6

E299256,IRQR

QUINSAM RIVER

E297230,IR1

QUINSAM RIVER

E292118,LQL

Lower Quinsam Lake

METERS

0 20 40 60 80 100

Underground PAG-CCR Disposal

Underground Tailings Disposal

EMS ID #, Station Code

Surface Water Flow

Pumped Water Flow

QUINSAM COAL

Updated Water Monitoring Map	15/03/21	SCALE:	1:10,000
		DESIGNED:	
		UPDATED:	SS
		CHECKED:	
		APPROVED:	

2020-2021 SITE PLAN
SURFACE WATER MONITORING

2020-2021 Annual Water Quality Report

\\QCC-CAMDC1\Environmental\Annual Reports\2019-2020\Map\Environmental_Surface_Overview.dwg

MINE GRID NORTH

TRUE NORTH

53°

106,000N

104,000N

102,000N

100,000N

98,000N

96,000E

98,000E

100,000E

102,000E

104,000E

106,000E

QUINSAM RIVER

Settling Pond #4

MW00-1S & 1D
MW00-6S & 6D

Brinco Brook

5M#2
(Dewatering Well)

2-North

3M2N

QU-10-11S & 11D

QU-10-10S &10D

Tailings
Disposal
Facility

Middle
Quinsam
Lake

QU-10-13D

1M2N
(Dewatering Well)

Quinsam Syncline

QU-08-21GS & 21GD

QU-11-05S & 05D

QU-11-09S & 09M

QUINSAM RIVER

QU-08-13A & 13B

Overlook Fault

QU-14-10

QU-05-13A

No-Name Lake

Long Lake

MW12-23
MW12-24

MW00-2

3-South Pit

MW00-4

2-South Underground

INF (QU11-11)

2-South Pit

5SDUV
(Dewatering Well)

5-South

7-South

1M7S(sump)

Quinsam Syncline

Ridgeway Fault

Long Lake Fault

Overlook Fault

7-South Portal

QU-10-09S & 09D

QU-10-07D

QU-78-161

QU-11-01

4-South

QU-10-08D

QU-11-28

QU-08-10

7SA5

QU-11-21

7-South
Area 5

Future Mining Area

QU-11-18S & 18D

QU-12-06

242NW

QU-11-36D

Unnamed Fault 1

Unnamed Fault 2

Long Lake Seep
Treatment System

Settling Pond #1

QUINSAM RIVER

QUINSAM RIVER

QUINSAM RIVER

Lower
Quinsam
Lake

METERS

0 20 40 60 80 100

Groundwater Monitoring Well

Groundwater Flow (mine impacted water)

Groundwater Flow (non-mine impacted water)

Pumping (mine impacted water)

Underground PAG-CCR Disposal

Underground Tailings Disposal

QUINSAM COAL

Updated Water Monitoring Map		15/03/20	SCALE:	1:10,000
			DESIGNED:	
			UPDATED:	SS
			CHECKED:	
			APPROVED:	

2020-2021 SITE PLAN
GROUND WATER MONITORING

2020-2021 Annual Water Quality Report

\\QCC-CAMDC1\Environmental\Annual Reports\2019-2020\Map\Environmental_Groundwater_Overview.dwg