



PE:7008 QUARTER 3 REPORT

Oct- Dec 2020

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SUMMARY OF EVENTS FOR THE THIRD QUARTER

During the 3rd Quarter (Q3) October 1st through December 31st, Quinsam Mine maintained the environmental obligations for permits PE: 7008 held with the Ministry of Environment and Climate Change Strategy and the Mines Act permit, C-172. The mine continues to be operated in a “*care and maintenance*” mode with The Bowra Group Inc. as the receiver.

The receiving environment monitoring program for both lakes and river/stream stations was completed along with other necessary environmental sampling pertaining to permit PE-7008. The receiving environment monitoring program followed the 5 samples in 30 days schedule with sampling events spanning October 6th through November 5th. These events were completed during the “fall flush” period with 142.7 mm of accumulated precipitation.

In addition to the aforementioned monitoring, the Quinsam Environmental Department sampled 17 ex-situ groundwater wells, 11 in-situ groundwater (mine pool) areas and 2 underground sumps. Routine inspections were conducted, and any required maintenance of the water management structures was completed.

With the exception of some (i.e. pH, Al, Mn, Cu and SO₄) parameters of interest concentrations were not elevated above water quality guideline levels in the receiving environment throughout the ‘5 in 30’ sampling period.

1.0 NON-COMPLIANCE EVENTS

1.1 PERMIT LIMIT EXCEEDANCE

There were no parameters above permit limits this quarter.

1.2 COMPLIANCE WITH PERMIT

The following represents a summary of permit non-compliance(s) (PNC) specific to missed samples / parameter analysis and continuous flow requirements. This information is also summarized in Appendix I, Table 2.

At site Stream 1, 7S (EMS ID E292109) continuous flow was not recorded from November 2nd through January 27th. The pressure transducer in the stilling well could not be retrieved, resulting in missing data. This was replaced on January 27th, 2021. Flow on the stream was not observed until November 2nd when monthly samples were collected.

At site 2SC (EMS ID E292127) where outflow from 2S is required to be continuously recorded, flow was not recorded on December 19th due to battery failure.

2.0 WATER MANAGEMENT SYSTEMS

2.1 NORTH WATER MANAGEMENT – SETTLING POND 4 (WD / SP4)

Discharge at Settling Pond 4 (SP4) occurred for all 92 days during this quarter with an average daily flow rate of 0.072 m³/s and a quarterly maximum flow rate of 0.1700 m³/s. Appendix I, Table 25 and Graph 11 display the results for flow at SP4.

Dewatering of the underground 2-North mine continued throughout this quarter with pumping from 1 Mains 2-North (1M2N) and 3 Mains 2-North (3M2N) dewatering wells to surface at Brinco Brook and the 2N PAG-CCR facility. Brinco Brook mixes with water pumped from 2-North Portal Sump and flows into SP4 where it is either released to the receiving environment, used to maintain cover over the 2N PAG-CCR (WP) or used for coal processing activities (when operating). The 1M2N dewatering pump failed on November 30th leaving only 3M2N operating to dewater the 2-Noth mine.

All permitted parameters applied to discharge at SP4 were found in compliance with permit limits. Sulphate concentrations averaged 572 mg/L, TSS remained below 4 mg/L averaging 1.67 mg/L, and pH remained neutral ranging from 7.61 to 8.27. Complete results for Settling Pond 4 are displayed in Appendix I, Table 5.

2.2 SOUTH WATER MANAGEMENT - SETTLING POND 1 (SPD / SP1)

Discharge at Settling Pond 1 (SP1) occurred for 92 days during this quarter with an average daily flow rate of 0.072 m³/s and quarterly maximum of 0.0308 m³/s. Appendix I, Table 26 and Graph 10 display the results for flow at SP1.

Water from 3S PAG-CCR storage facility was routinely pumped into SP1 throughout the quarter. Dewatering of the 2S mine pool at QU11-11 (INF) continued with all water directed through the Passive Treatment System (PTS) at cells Biochemical Reactor (BCREFF) and Sulphide Polishing Cell (SPCEFF). The discharge from the PTS is directed into the 2-South pit where it overflows into the 3-South pit and is pumped to SP1.

All permitted parameters applied to SP1 discharge were found in compliance with permit limits. Sulphate concentrations averaged 240 mg/L, TSS averaged 1.62 mg/L and pH remained neutral ranging from 6.85 to 7.80. Complete results for Settling Pond 1 are displayed in Appendix I, Table 10.

2.3 96-HOUR RAINBOW TROUT BIOASSAYS

Discharge from Settling Pond 1 and 4 were collected for 96-hour rainbow trout bioassays on September 29, 2020 after a significant rain event. Each test passed with 100 % survival rates.

2.4 7-SOUTH (7SSD) WATER MANAGEMENT

No discharge occurred from the 7-South Surface Decant Pond (7SSD). All water is directed into the 7-South portal sump (7SPS) where it is pumped into the 5-South Mine Pool. The supernatant from 7SSD was sampled on October 5th this quarter as required by the amended permit. Complete results for 7SSD are displayed in Tables 22 and 27.

Water quality at 7S Stream 1 remained within water quality guidelines during November and December monthly sampling events.

3.0 WATER QUANTITIES & FLOW RATES

Flow data is presented graphically (hydrographs) in Appendix I with comparison to precipitation for Middle Quinsam Lake Outlet (WB), Long Lake Seep (LLSM), Long Lake Outlet (LLO) and Iron River (IR8). Flow data for Middle Quinsam Lake Inlet (WA) has been obtained from the Environment Canada weather monitoring station for the period October 1st to December 31st, 2020.

Appendix I, Table 55 display flow requirements for EMS ID E292127 2S inflow and outflow also available in hydrographs 7 and 8. Weekly flow for EMS ID's E292130 and E292130 LLE and LLSM are available in Appendix I, Table 56 and Graph 3.

The Quinsam environmental department has established flow curves for all sites required under the effluent permit. Flows were observed to increase during October and through early December in the rivers with peaks observed during the last two weeks of December correlating with heavy rains.

Precipitation data for the site during this reporting period is included in Appendix I, Table 54 and displayed in Graph 9. Total precipitation was 404 mm during Q3 with the greatest accumulation observed in the month of December (150 mm). Isolated events of heavy rain contributed significantly to that amount (i.e. on December 19th the site experienced 27.00 mm of precipitation).

The fall flush was experienced through the months of October, November and December with monthly accumulations of 105 mm, 148 mm and 150 mm of precipitation, respectively.

4.0 RECEIVING ENVIRONMENT WATER QUALITY

Preamble – Water Hardness and Copper

For the purposes of this report, the water quality guideline(s) (WQG) for hardness dependent parameters has been derived using background (i.e. monitoring location WA) hardness (~30mg/L) at all stations. Quinsam Coal has adopted this approach for the Iron River to provide a conservative comparison of receiving environment water quality except for dissolved copper.

Dissolved copper is compared to acute and chronic Aquatic Life Water Quality Guidelines at sites outside of the Middle Quinsam Lake Sub-Basin such as No Name Lake, No Name Lake Outlet (NNO) and the Iron River (IR6 and IR8). Water quality from these sites has been uploaded into the British Columbia Copper Biotic Ligand Model Database and guidelines have been applied to those applicable sites (Appendix I, Table 3). Below is the aquatic life chronic guideline derived for copper at IR6, IR8 and NNO.

Aquatic Life Dissolved Copper Chronic Water Quality Guideline:

Site Name	Sample Name	Copper Concentration (mg/L)	Chronic Guideline (mg/L)
Iron River	IR6	0.000764	0.0011
Iron River	IR8	0.000814	0.0001
No Name Lake Outlet	NNO	0.000452	0.0004

4.1 LAKES

Lake sampling commenced on October 7th following the 5 samples in 30 days approach “5 in 30” and completed on November 5th. This program included Long Lake (LLM) and Middle Quinsam Lake (MQL). Tables 4 and 28 through 37 display the physical and chemical water quality results compared to guidelines.

Fall monitoring is meant to capture the fall turn over event so the deeper portions (hypolimnion) have been replenished with dissolved oxygen. This was evident in Middle Quinsam Lake (MQL) as it is a long, shallow lake (14m to 15m) with inputs controlled by the upstream dam on the Quinsam River. Long lake (LL) 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 lake monitoring program include:

- 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 the guideline 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 fairly consistent per depth.
- Stratification was still apparent during the first three weeks in LLM, again observed through temperature gradients. Turn over was starting to occur during the last two weeks.
- Dissolved oxygen (DO) was below 3 mg/L in Long lake in the hypolimnion zone resulting in anoxic conditions at depth where Mn-T was observed to be elevated. Low DO is correlated with lake stratification depleting DO where manganese is released at the sediment / water interface.
- Mn-T was elevated above the chronic (0.737 mg/L) and acute (0.87 mg/L) WQG's during fall.
- LL displayed slightly acidic conditions throughout fall sampling program.
- 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.

4.2 STREAMS AND RIVERS

The '5 in 30' receiving environment program at river and stream sites commenced October 6th and concluded November 5th.

Appendix I, Tables 3, 38 through 45 display water quality results for this program compared to Water quality objectives for the Middle Quinsam Lake Sub-basin and BC Water Quality Guidelines for Protection of Aquatic Life for the Iron River stations and No Name Lake Outlet.

Noteworthy observations resulting from the river/stream Q3 monitoring program include:

- The water quality in the Quinsam River remained below Middle Quinsam Lake Sub basin Water Quality Objectives and applicable Water Quality Guidelines during the Q3 sampling event.
- Dissolved aluminum exceeded the acute and chronic guidelines of 0.1 mg/L and 0.05 mg/L, respectively at Iron River location IR6 and at IR8 the chronic guideline was exceeded.
- Aluminum increases with increased flow on the Iron River.
- Arsenic was not elevated in the Iron River during the Q3 monitoring period.
- NNO was observed to have elevated chronic dissolved copper above the derived guideline of 0.0004 mg/L.

While monitoring location LLE is considered the initial dilution zone (for water quality evaluation purposes) it is important to note that this location is a wetland and represents the uppermost extent of an initial dilution zone for the South water management system discharge into Long Lake. The Long Lake Seeps (LLSM and LLS) are not considered receiving environment sites with results compared to WQG for assessment purposes only.

LLE and Long Lake Seep Observations:

- Dissolved iron was elevated above the acute guideline at on two occasions at LLE.
- Average sulphate was elevated above the WQG (128 mg/L) at LLE for (3/11) weekly rolling averages.
- The smaller seep (LLS) displayed slightly elevated dissolved iron on both monthly sampling events.
- No parameters were observed to be elevated above the acute WQG at the larger seep (LLSM).
- The seeps did not start flowing until late November this year.

A summary of receiving environment guideline observations for river/stream stations is provided in Table 3.

5.0 BIOLOGICAL MONITORING

Chlorophyll “a”, phytoplankton and zooplankton samples were collected during one sampling event concurrent to the “5 in 30” fall turnover period. Samples for zooplankton were collected using a zooplankton net that was deployed to 10 metres and vertically towed to surface. These samples were

analyzed for zooplankton count and identification of species. Chlorophyll “a” and phytoplankton were collected at one metre below surface and analyzed for count, total abundance and identification. During Q3, Long Lake displayed the greatest total abundance for zooplankton compared to Middle Quinsam Lake (Appendix I, Table 46).

6.0 GROUNDWATER

This quarter, 17 ex-situ groundwater wells, and 11 in-situ wells were monitored and 2 underground sumps. Appendix I, Table 47 provides details on the well and sump designations and locations. Ex-situ groundwater is compared to the British Columbia Contaminated Site Regulation (CSR) (BC reg.375/96. O.C. 1480/96), Schedule 6, Aquatic life (CSR-AW). Certain parameters found in ex-situ groundwater repeatedly exceed the CSR-AW. Those include the following dissolved parameters: arsenic, chloride and sulphide as H₂S and occasionally selenium. Selenium is observed periodically in the ex-situ deep groundwater of QU1105D in the River Barrier Pillar of the 5-South mine. Appendix I, Table 4 displays those parameters in ex-situ groundwater above the CSR-AW. These parameters are naturally elevated within the groundwater due to the regional geology of the area. Quinsam monitors trends for arsenic, sulphate and H₂S in ex-situ wells and compares them to models used and source terms developed for certain areas. This is discussed in detail in the annual report due to the frequency of monitoring for groundwater wells and expected travel time of groundwater movement.

7.0 PASSIVE TREATMENT SYSTEM (PTS)

The PTS was operational from May 12th to present. The treatment system was operating at 4.0 to 5.8 L/s, averaging 4.5 L/s. Average amount of treated mine water pumped over the quarter (92 days) was approximately 46000 m³. The mine pool water level was measured at 6.3m above the pump on October 6th, 2020 and increased to 18.5 m by early January. Long lake Middle Seep stops flowing when the mine pool water level is 8.20 m above the pump with the smaller seep stopping at 7.80 m. The seeps started flowing at about 7.80 m to 8.5 m above the pump this quarter in late November.

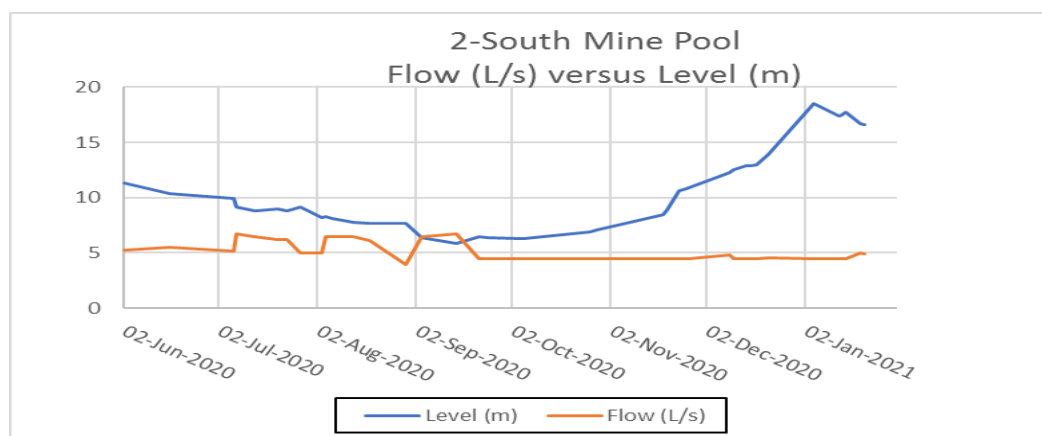


Figure 1: 2-South Mine Pool at INF Flow versus Level.

Table 1: Flow and level table at 2-South QU11-11 (INF)

Date	Level (m)	Flow (L/s)
05-Oct-2020	6.30	4.50
26-Oct-2020	6.90	4.50
28-Oct-2020	7.10	4.50
18-Nov-2020	8.5	4.5
19-Nov-2020	8.9	4.5
23-Nov-2020	10.6	4.5
25-Nov-2020	10.8	4.5
26-Nov-2020	10.9	4.5
09-Dec-2020	12.3	4.8
10-Dec-2020	12.5	4.5
14-Dec-2020	12.9	4.5
15-Dec-2020	12.9	4.5
17-Dec-2020	13	4.5
21-Dec-2020	13.9	4.6
04-Jan-2021	18.5	4.5
Min	6.30	4.50
Max	18.50	4.80
Avg	11.07	4.53

Table 2 Summary of Sites Sulphate Concentrations and Reduction Rates

	INF	BCREFF	SPCEFF	2SI	SPD	2S	3S
Average	633	554	503	314	232	375	502
Count	16	15	13	17	14	4	4
Minimum	590	490	410	180	75	230	450
Maximum	690	600	550	490	380	450	570
	INF to BCR	INF to SPC	BCR to SPC	INF to 2SI	INF to SPD		
Sulphate	79	130	51	319	401		

Average concentrations of dissolved sulphate have been entering the system from the 2-South mine pool measured at INF resulting in 633 mg/L and leaving the system at the Sulphide Polishing Cell (SPCEFF) resulting in 503 mg/L. Refer to Table 2 above and Figures 4 and 5 below. This has led to a reduction in average sulphate concentrations of 130 mg/L. Sulphate reduction between INF and Biochemical Reactor (BCR) averaged 79 mg/L. The station, 2-South Inflow (2SI), receives discharge from the PTS, had an average sulphate concentration of 314 mg/L and SPD averaged 232 mg/L for Q3.

Overall, the greatest average sulphate reduction exists between INF to SPD resulting in 401 mg/L. 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 could indicate that the substrate requires replacement in the BCR or the cooler ambient temperatures decreased microbial activities. Overall, a sulphate reduction of 401 mg/L was attained between INF and SPD. The original reduction goal for the PTS was to reduce sulphate concentrations to 300 mg/L and has been achieved.

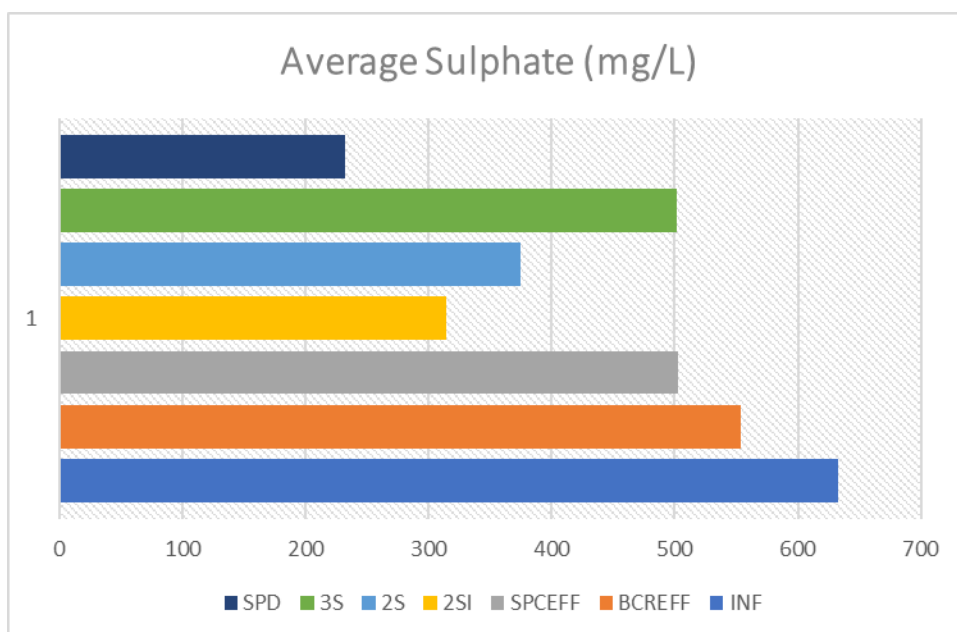


Figure 2: Average Sulphate Concentrations in 2-South Area

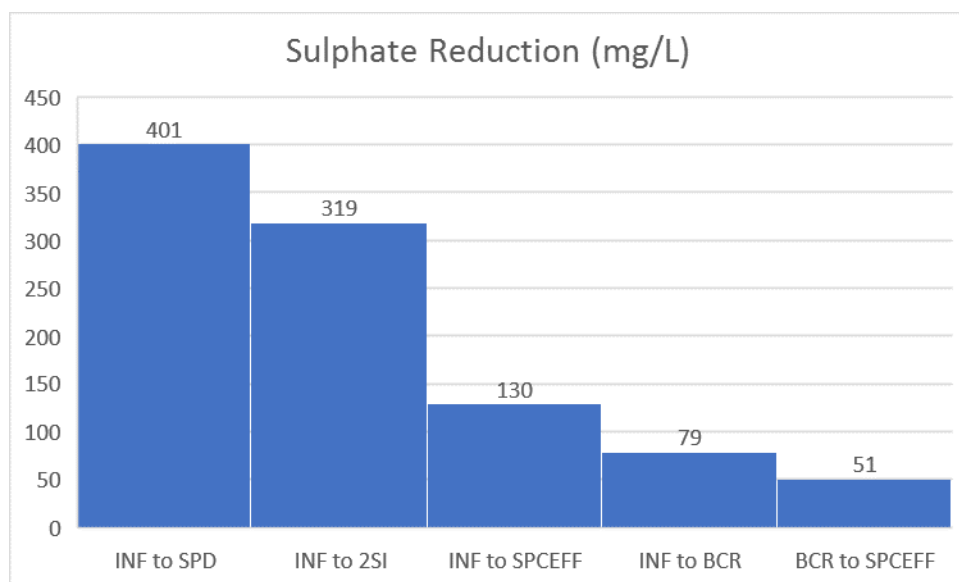


Figure 3: Sulphate Reduction through the Water Management System.

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 well MW004. A relationship between MW004, Seep flow and the elevation of the mine pool at the INF location continues to be developed with observations noted every quarter.

8.0 QUALITY ASSURANCE QUALITY CONTROL

All replicate sampling was performed in compliance with the *British Columbia Field Sampling Manual for Continuous Monitoring and the Collection of Air, Air Emission, Water, Wastewater, Soil, Sediment, and Biological Samples, 2013 Edition*.

As per these guidelines and in accordance with the Quinsam Coal Quality Assurance/Quality Control (QA/QC) program, one field replicate sample was collected per sampling event. Relative Percent Difference, RPD values were calculated in accordance with the B.C. field sampling manual.

9.0 CONCLUSION

The surface monitoring program at Quinsam Coal has been established to capture the effects of 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.

It is important to keep in mind that the full fall flush was late this year and did not truly occur until the first two weeks of December (at the end of fall), with receiving environment sampling taking place from October through early November, when Long Lake was still stratified and dissolved oxygen levels were low. This may have increased concentrations of certain parameters such as manganese, as it increases with low DO at depth. In order to capture the true “fall flush” period, sampling may take place later in November in order to capture this fall turnover event more accurately, demonstrating a true representation of the fall flush in rivers and lake turnover. Due to the dry conditions on site during early fall this may not have been captured and may be misleading when it comes to trending and data interpretation. Possibly further depth profiling and sulphate sampling in Long lake during winter will provide a snapshot at DO and sulphate concentrations at depth in Long lake during high flow conditions.

As demonstrated by the Q3 monitoring program results, water quality in the Middle Quinsam Lake sub basin remains favorable with few exceedances of WQG’s. Many parameters exhibit stable concentrations with some (e.g. sulphate) decreasing in concentration within the lakes. Quinsam is committed to limit impacts placed on the environment through operational procedures and Quinsam strives to prevent adverse environmental impacts and is dedicated to internally investigate those parameters displaying an increasing trend.

In closing, we trust the information presented in this report satisfies the conditions under Effluent Permit PE-7008. Please contact the Quinsam Coal Environmental Department if you have any questions or comments.

Sincerely,

Quinsam Coal Environmental Department



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Appendix I

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Table 1
Q3 Oct. 1st to Dec. 31st

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
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)
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	MW
	Small seep near the plant (PDS) & groundwater surface near road entering MQL (PDSR)	PDS & PDSR	GW & MW
Receiving Environment Monitoring Sites - Initial Zone of Dilution (IDZ)			
Initial Dilution Zone (IDZ) Monitoring Sites			
E292130	Long Lake Entrance (South end water entering Long Lake)	LLE	IDZ
E292109	Road Crossing Bridge on Stream 1 above the Lower Wetland (Downstream of 7SSD).The site name is Stream 1, 7S.	7S	IDZ
Receiving Water (Streams & 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			
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	Captured at IR6	FW
E225808	Iron River downstream of the 242 influence	Captured at IR8	FW
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	2-South Culvert (Outflow)	2SC	MW
* MW= Mine Water, FW= Freshwater, GW =Groundwater IDZ = Intial Dilution Zone			

Table 2
Q3 Oct. 1st to Dec. 31st

SUMMARY OF PERMIT LIMIT EXCEEDANCES & PERMIT NON-COMPLIANCES							
EMS ID & Site Name	Permit Limit Exceedance (P) or Non-Compliance (PNC)	Parameter Exceeded / Other	Result (mg/L)	Requirement	Date	Non-Compliance Reason	Number of events or period for PNC, P or spill event.
Permitted parameters remained below permit limits throughout Q3							
E292109 - 7S	PNC	Flow	None	Continuous	Nov. 20th - Dec. 31st	Level logger could not be retrieved from well.	Q3 - 2 months (Flow did not start until November as per field observation)
E292127 - 2S Outflow	PNC	Flow	None	Continuous	Dec.19th	Battery Died on Flow Meter	1 day

Table 3
Q3 Oct. 1st to Dec. 31st

SUMMARY OF WATER QUALITY GUIDELINE OBSERVATIONS AT RECEIVING MONITORING LOCATIONS									
EMS ID & Station Code	Date	Parameter	Water Quality Guidelines			Results above Guidelines			Notes
			Acute WQG- Max	WQG-Min	Chronic WQG- Ave	Max	Min	Fall 5 in 30 Average	
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
E206619-LLM (7m-21.5m depths)	Fall 5 in 30	pH	9.00	6.50			5.78		pH resulted in <6.5 in 52/110 results at 7m to 21m depths.
E206619 -LLMB	Fall 5 in 30	Mn-T	0.87		0.737	1.95, 2.20, 2.19, 3.10 & 1.97		2.28	Results were above guidelines due to low DO in the lake.
	Fall 5 in 30	SO-4			128			130	Most conservative approach is used to derive guideline
E206618 - MQL (7m-21.5m depths)	5 in 30	pH	9.00	6.50			6.28		pH resulted in <6.5 in 2/72 results at 7m to 14.5m depths.
E217017 - NNO	5 in 30	Cu-D			0.0004			0.000452	New dissolved copper WQG-guideline
E297231 - IR6	5 in 30	Al-D	0.1		0.05	0.106		0.0602	Al-D increases with increased flow rates
E297232 -IR8	5 in 30	Al-D	0.1		0.05			0.0549	Al-D increases with increased flow rates
E292131 - LLS	Nov and Dec	Fe-D	0.35			0.545 & 0.330			2/2 monthly sampling events
E292130 - LLE	Oct and Nov	Fe-D	0.35			0.297 & 0.182			2 / 3 monthly samples
	Q3	SO-4			128			184, 164 & 146	3/11 rolling averages
Acute Aquatic Life Water Quality Guideline for Dissolved Copper (Applies to Iron River, No Name Lake and No Name Lake Outlet)									
EMS ID & Station Code	Fall 5 in 30	Result (mg/L)	WQG-Acute Cu-D (mg/L)	Above Guideline (Yes/No)					
E297231 - IR6	Week 1	0.00061	0.0041	No					
E297231 - IR6	Week 2	0.00093	0.0064	No					
E297231 - IR6	Week 3	0.00067	0.0056	No					
E297231 - IR6	Week 4	0.00066	0.0076	No					
E297231 - IR6	Week 5	0.00095	0.009	No					
E297232 - IR8	Week 1	0.0007	0.0033	No					
E297232 - IR8	Week 2	0.00095	0.0062	No					
E297232 - IR8	Week 3	0.00073	0.0048	No					
E297232 - IR8	Week 4	0.00071	0.0075	No					
E297232 - IR8	Week 5	0.00098	0.0076	No					
E217017 - NNO	Week 1	0.0006	0.002	No					
E217017 - NNO	Week 2	0.00034	0.0024	No					
E217017 - NNO	Week 3	0.00048	0.0028	No					
E217017 - NNO	Week 4	0.00041	0.0029	No					
E217017 - NNO	Week 5	0.00043	0.0023	No					

Table 4
Q3 Oct. 1st to Dec. 31st

BC CSR Aquatic Life 2019 - Lowest Level Exceedances for Ex-situ Groundwater								
Ex-Situ Groundwater			3-North Area					
Area	Freshwater Aquatic Life							
Well ID	(C)		QU0821GS	QU0821GD	QU0821GD	QU1010S	QU1010S	QU1010D
Date			10-Nov-20	10-Nov-20	10-Nov-20	8-Dec-20	8-Dec-20	8-Dec-20
QA/QC			Repicate			Repicate		
H2SEquiv	mg/L	0.02	0.0436	0.191	0.191	0.723	0.755	0.0957
Cl-D	mg/L	1500						3000
As-D	mg/L	0.05	0.414	0.175	0.175	0.108	0.104	
Area			River Barrier Pillar				7-South Area 5	
Well ID			QU1105S	QU1105S	QU1105D	QU1109S	QU1136D	QU1136D
Date			17-Dec-20	17-Dec-20	17-Dec-20	19-Nov-20	16-Dec-20	16-Dec-20
QA/QC			Repicate				Repicate	
H2SEquiv	mg/L	0.02	0.308	0.308				
As-D	mg/L	0.05	0.0701	0.0708		0.147	0.764	0.828
Se-D	mg/L	0.01			0.0522			
Area			7-South Mine Area			4-South Mine Area		
Well ID			QU0810	QU0813A	QU0813B	QU1009S	QU1009D	QU1009D
Date			9-Dec-20	30-Nov-20	30-Nov-20	10-Dec-20	10-Dec-20	10-Dec-20
QA/QC						Repicate		
H2SEquiv	mg/L	0.02	0.0223	0.181	0.0213		0.106	0.104
As-D	mg/L	0.05		0.383	0.442	0.0821	0.103	0.105

Table 5
Q3 Oct. 1st to Dec. 31st

EMS ID		E207409		Sta Std		PL-N															
Site Description				Settling Pond # 4 - Authorized Discharge Location for North Mine Water																	
Site Name	WD	Std Val		WD-5OCT20-P	WD-13OCT20-P	WD-19OCT20-P	WD-19OCT20-R	WD-26OCT20-P	WD-2NOV20-P	WD-9NOV20-P	WD-16NOV20-P	WD-23NOV20-P	WD-23NOV20-R	WD-2DEC20-P	WD-7DEC20-P	WD-14DEC20-P	WD-22DEC20-P	WD-29DEC20-M	WD-29DEC20-R		
Date		Max	Min	05-10-2020	13-10-2020	19-10-2020	19-10-2020	26-10-2020	02-11-2020	09-11-2020	16-11-2020	23-11-2020	23-11-2020	02-12-2020	07-12-2020	14-12-2020	22-12-2020	29-12-2020	29-12-2020		
pH-F	pH Units			8.17	7.7	7.68		7.94	7.61	8.18	8.27	7.87		7.96	7.97	8.16	7.75	7.83			
Cond-F	uS/cm			2001	1903	1905		1837	1522	1608	1341	1548		1776	1995	1860	1376	1670			
pH-L	pH Units	8.5	6.0		8.32	8.34	8.32	8.32		8.24		8.18	8.25	8.27		8.25	8.13	8.25	8.27		
Cond-L	uS/cm				1800	1800	1800	1800		1600		1800	1800	1700		1800	1400	1700	1600		
SO4-D	mg/L			580	530	520	510	500	500	480	500	530	560	600	740	720	550	680	630		
TSS	mg/L	25	0	1.2	2.0	1.6	1.2	1.2	3.6	<1.0	1.2	2.8	2.4	1.2	2.0	1.2	<1.0	4.4	<1.0		
Alk-T	mg/L			450					470						340						
Acidity83	mg/L			7.9					5.3						3.5						
Al-T	mg/L			0.0098											0.0068						
As-T	mg/L			0.00165											0.00069						
Ba-T	mg/L			0.0157											0.0162						
B-T	mg/L			1.04											0.727						
Cd-T	mg/L			<0.000010											0.000022						
Ca-T	mg/L			130											154						
Cr-T	mg/L			<0.0010											<0.0010						
Co-T	mg/L			<0.00020											0.00030						
Cu-T	mg/L			<0.00050											<0.00050						
Hard-T	mg/L			382											464						
Fe-T	mg/L			0.547											0.154						
Pb-T	mg/L			<0.00020											<0.00020						
Mg-T	mg/L			13.9											19.2						
Mn-T	mg/L			0.0570											0.0988						
Hg-T	mg/L			<0.0000019											<0.0000019						
Mo-T	mg/L			<0.0010											<0.0010						
Ni-T	mg/L			<0.0010											0.0013						
K-T	mg/L			4.41											3.47						
S-T	mg/L			206											247						
Se-T	mg/L			<0.00010											<0.00010						
Si-T	mg/L			2.97											3.07						
Ag-T	mg/L			<0.000020											<0.000020						
Na-T	mg/L			323											262						
Sr-T	mg/L			1.22											1.40						
Zn-T	mg/L			<0.0050											<0.0050						
Al-D	mg/L	0.5	0	0.0035					<0.0030						<0.0030						
As-D	mg/L			0.00098					0.00121						0.00053						
Ba-D	mg/L			0.0153					0.0149						0.0157						
B-D	mg/L			0.984					0.981						0.699						
Be-D	mg/L			<0.00010					<0.00010						<0.00010						
Cd-D	mg/L			<0.000010					<0.000010						<0.000010						
Ca-D	mg/L			123					111						147						
Cr-D	mg/L			<0.0010					<0.0010						<0.0010						
Co-D	mg/L			<0.00020					<0.00020						0.00027						
Cu-D	mg/L	0.02	0	0.00024					<0.00020						0.00036						
Hard-D	mg/L			362					331						443						
Fe-D	mg/L	0.3	0	0.0064					0.0064						0.0135						
Pb-D	mg/L	0.05	0	<0.00020					<0.00020						<0.00020						
Mg-D	mg/L			13.1					12.9						18.7						
Mn-D	mg/L			0.0468					0.0468						0.0941						
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						0.0013						
K-D	mg/L			4.33					3.97						3.43						
S-D	mg/L			198					186						239						
Se-D	mg/L			<0.00010					<0.00010						<0.00010						
Si-D	mg/L			2.71					2.88						3.03						
Na-D	mg/L			310					293						261						
Sr-D	mg/L			1.22					1.11						1.40						
Zn-D	mg/L	0.1	0	<0.0050					<0.0050						<0.0050						
O&G	mg/L	10	0	<1.0											<1.0						

Table 6
Q3 Oct. 1st to Dec. 31st

EMS ID		E207412		
Site Description		2 North Pit Sump CCR Water Cover		
Site Name	WP	WP-5OCT20-M	WP-2NOV20-M	WP-7DEC20-M
Date		05-10-2020	02-11-2020	07-12-2020
pH-F	pH Units	8.26	8.35	8.24
Cond-F	uS/cm	2001	1596	1623
SO4-D	mg/L	590	590	550
TSS	mg/L	4.4	6.8	1.6
Alk-T	mg/L	400	300	270
Acidity83	mg/L	2.3	<1.0	<1.0
Al-T	mg/L	0.0132	0.261	0.0177
As-T	mg/L	0.00133	0.00176	0.00066
Ba-T	mg/L	0.0167	0.0133	0.0121
B-T	mg/L	1.01	0.944	0.748
Cd-T	mg/L	<0.000010	<0.000010	<0.000010
Ca-T	mg/L	107	70.1	94.5
Cr-T	mg/L	<0.0010	<0.0010	<0.0010
Co-T	mg/L	0.00027	0.00067	0.00072
Cu-T	mg/L	0.00083	0.00379	0.00081
Hard-T	mg/L	323	235	298
Fe-T	mg/L	0.202	0.573	0.100
Pb-T	mg/L	<0.00020	<0.00020	<0.00020
Mg-T	mg/L	13.8	14.6	15.0
Mn-T	mg/L	0.0277	0.0207	0.0291
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	0.0017	0.0024
K-T	mg/L	4.82	4.44	3.65
S-T	mg/L	223	211	194
Se-T	mg/L	<0.00010	<0.00010	<0.00010
Si-T	mg/L	3.11	1.93	2.30
Ag-T	mg/L	<0.000020	<0.000020	<0.000020
Na-T	mg/L	347	303	247
Sr-T	mg/L	1.28	1.08	1.04
Zn-T	mg/L	<0.0050	<0.0050	<0.0050
Al-D	mg/L	0.0087	0.0033	0.0072
As-D	mg/L	0.00109	0.00081	0.00060
Ba-D	mg/L	0.0161	0.0115	0.0117
B-D	mg/L	1.01	0.889	0.725
Be-D	mg/L	<0.00010	<0.00010	<0.00010
Cd-D	mg/L	<0.000010	<0.000010	<0.000010
Ca-D	mg/L	93.4	71.0	87.5
Cr-D	mg/L	<0.0010	<0.0010	<0.0010
Co-D	mg/L	<0.00020	<0.00020	0.00062
Cu-D	mg/L	0.00057	0.00082	0.00088
Hard-D	mg/L	286	233	279
Fe-D	mg/L	0.0240	0.0079	0.0263
Pb-D	mg/L	<0.00020	<0.00020	<0.00020
Mg-D	mg/L	12.8	13.6	14.7
Mn-D	mg/L	0.0114	0.0027	0.0252
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	0.0023
K-D	mg/L	4.71	4.37	3.51
S-D	mg/L	218	209	191
Se-D	mg/L	<0.00010	<0.00010	<0.00010
Si-D	mg/L	2.85	1.67	2.17
Na-D	mg/L	334	298	244
Sr-D	mg/L	1.25	1.07	1.02
Zn-D	mg/L	<0.0050	<0.0050	<0.0050

Table 7
Q3 Oct. 1st to Dec. 31st

EMS ID		E283433		
Site Description		2-North Portal Sump Effluent		
Site Name	2NPS	2NPS-5OCT20-M	2NPS-2NOV20-M	2NPS-7DEC20-M
Date		05-10-2020	02-11-2020	07-12-2020
pH-F	pH Units	7.77	7.61	7.72
Cond-F	uS/cm	2028	1974	1168
SO4-D	mg/L	940	900	460
Alk-T	mg/L	280	340	140
Acidity83	mg/L	12.4	12.2	3.0
Al-T	mg/L	0.145	0.0513	0.896
As-T	mg/L	0.00106	0.00135	0.00214
Ba-T	mg/L	0.0146	0.0131	0.0147
B-T	mg/L	0.884	0.934	0.453
Cd-T	mg/L	0.000031	<0.000010	0.000017
Ca-T	mg/L	265	226	153
Cr-T	mg/L	<0.0010	<0.0010	0.0027
Co-T	mg/L	0.00395	0.00132	0.00209
Cu-T	mg/L	0.00236	0.00059	0.00776
Hard-T	mg/L	770	671	445
Fe-T	mg/L	0.279	0.357	2.23
Pb-T	mg/L	<0.00020	<0.00020	0.00029
Mg-T	mg/L	26.2	25.8	15.4
Mn-T	mg/L	0.324	0.329	0.173
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019
Mo-T	mg/L	<0.0010	<0.0010	<0.0010
Ni-T	mg/L	0.0106	0.0024	0.0040
K-T	mg/L	3.84	3.91	2.36
S-T	mg/L	329	314	176
Se-T	mg/L	<0.00010	<0.00010	0.00015
Si-T	mg/L	3.89	3.14	3.41
Ag-T	mg/L	<0.000020	<0.000020	<0.000020
Na-T	mg/L	234	242	106
Sr-T	mg/L	1.89	1.88	0.981
Zn-T	mg/L	0.0159	<0.0050	0.0062
Al-D	mg/L	0.0288	0.0066	0.0121
As-D	mg/L	0.00066	0.00095	0.00035
Ba-D	mg/L	0.0136	0.0122	0.0119
B-D	mg/L	0.824	0.882	0.497
Be-D	mg/L	<0.00010	<0.00010	<0.00010
Cd-D	mg/L	0.000040	<0.000010	0.000012
Ca-D	mg/L	245	227	158
Cr-D	mg/L	<0.0010	<0.0010	<0.0010
Co-D	mg/L	0.00379	0.00123	0.00110
Cu-D	mg/L	0.00122	<0.00020	0.00046
Hard-D	mg/L	715	666	463
Fe-D	mg/L	0.0078	0.0566	0.0088
Pb-D	mg/L	<0.00020	<0.00020	<0.00020
Mg-D	mg/L	25.0	24.3	16.7
Mn-D	mg/L	0.317	0.312	0.199
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019
Mo-D	mg/L	<0.0010	<0.0010	<0.0010
Ni-D	mg/L	0.0104	0.0021	0.0024
K-D	mg/L	3.71	3.88	2.54
S-D	mg/L	321	308	197
Se-D	mg/L	<0.00010	<0.00010	0.00012
Si-D	mg/L	3.48	3.22	2.24
Na-D	mg/L	226	237	124
Sr-D	mg/L	1.82	1.81	1.12
Zn-D	mg/L	0.0139	<0.0050	<0.0050

Table 8
Q3 Oct. 1st to Dec. 31st

EMS ID	E207411				
Site Description	Culvert at Middle Quinsam Lake Road				
Site Name	WC	WC-5OCT20-M	WC-2NOV20-R	WC-2NOV20-M	WC-7DEC20-M
Date		05-10-2020	02-11-2020	02-11-2020	07-12-2020
pH-F	pH Units	8.66		8.35	8.35
Cond-F	uS/cm	1983		1596	1575
SO4-D	mg/L	550	510	500	530
TSS	mg/L	<1.0	<1.0	<1.0	1.2
Al-T	mg/L	<0.0030			0.0099
As-T	mg/L	0.00055			0.00046
Ba-T	mg/L	0.0132			0.0147
B-T	mg/L	0.982			0.605
Cd-T	mg/L	<0.000010			<0.000010
Ca-T	mg/L	92.4			112
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	283			337
Fe-T	mg/L	0.081			0.046
Pb-T	mg/L	<0.00020			<0.00020
Mg-T	mg/L	12.7			14.2
Mn-T	mg/L	0.0087			0.0094
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	4.39			2.85
S-T	mg/L	193			184
Se-T	mg/L	<0.00010			<0.00010
Si-T	mg/L	3.06			3.19
Ag-T	mg/L	<0.000020			<0.000020
Na-T	mg/L	324			212
Sr-T	mg/L	1.10			1.05
Zn-T	mg/L	<0.0050			<0.0050
Al-D	mg/L	<0.0030			0.0081
As-D	mg/L	0.00049			0.00042
Ba-D	mg/L	0.0136			0.0141
B-D	mg/L	0.950			0.604
Be-D	mg/L	<0.00010			<0.00010
Cd-D	mg/L	<0.000010			<0.000010
Ca-D	mg/L	91.3			106
Cr-D	mg/L	<0.0010			<0.0010
Co-D	mg/L	<0.00020			<0.00020
Cu-D	mg/L	<0.00020			0.00026
Hard-D	mg/L	278			325
Fe-D	mg/L	0.0084			0.0135
Pb-D	mg/L	<0.00020			<0.00020
Mg-D	mg/L	12.0			14.3
Mn-D	mg/L	0.0082			0.0086
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	4.35			2.83
S-D	mg/L	189			185
Se-D	mg/L	<0.00010			<0.00010
Si-D	mg/L	3.02			3.10
Na-D	mg/L	310			212
Sr-D	mg/L	1.10			1.07
Zn-D	mg/L	<0.0050			<0.0050

Table 9
Q3 Oct. 1st to Dec. 31st

EMS ID			
Site Description		Road Side Ditch Draining into MQL	
Site Name	PDSR	PDSR-2NOV20-M	PDSR-7DEC20-M
Date		02-11-2020	07-12-2020
pH-F	pH Units	7.44	7.9
Cond-F	uS/cm	1345	1183
SO4-D	mg/L	620	510
TSS	mg/L	3.6	4.0
Al-T	mg/L	0.0084	0.327
As-T	mg/L	0.00012	0.00024
Ba-T	mg/L	0.0259	0.0180
B-T	mg/L	0.252	0.225
Cd-T	mg/L	<0.000010	<0.000010
Ca-T	mg/L	198	172
Cr-T	mg/L	<0.0010	<0.0010
Co-T	mg/L	<0.00020	<0.00020
Cu-T	mg/L	<0.00050	0.00113
Hard-T	mg/L	644	554
Fe-T	mg/L	<0.010	0.348
Pb-T	mg/L	<0.00020	<0.00020
Mg-T	mg/L	36.3	30.1
Mn-T	mg/L	<0.0010	0.0088
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	1.59	1.27
S-T	mg/L	219	172
Se-T	mg/L	<0.00010	<0.00010
Si-T	mg/L	3.34	3.83
Ag-T	mg/L	<0.000020	<0.000020
Na-T	mg/L	60.1	47.9
Sr-T	mg/L	1.32	1.08
Zn-T	mg/L	<0.0050	<0.0050
Al-D	mg/L	0.0056	0.0121
As-D	mg/L	0.00012	0.00010
Ba-D	mg/L	0.0258	0.0179
B-D	mg/L	0.241	0.222
Be-D	mg/L	<0.00010	<0.00010
Cd-D	mg/L	<0.000010	<0.000010
Ca-D	mg/L	201	170
Cr-D	mg/L	<0.0010	<0.0010
Co-D	mg/L	<0.00020	<0.00020
Cu-D	mg/L	0.00037	0.00039
Hard-D	mg/L	644	550
Fe-D	mg/L	<0.0050	<0.0050
Pb-D	mg/L	<0.00020	<0.00020
Mg-D	mg/L	34.6	30.3
Mn-D	mg/L	<0.0010	<0.0010
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	1.57	1.26
S-D	mg/L	216	178
Se-D	mg/L	<0.00010	<0.00010
Si-D	mg/L	3.44	3.47
Na-D	mg/L	58.8	48.6
Sr-D	mg/L	1.30	1.13
Zn-D	mg/L	<0.0050	<0.0050

Table 10
Q3 Oct. 1st to Dec. 31st

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-5OCT20-P	SPD-13OCT20-P	SPD-19OCT20-M	SPD-26OCT20-P	SPD-2NOV20-P	SPD-9NOV20-P	SPD-16NOV20-P	SPD-23NOV20-P	SPD-2DEC2020-P	SPD-7DEC20-P	SPD-14DEC2020-P	SPD-21DEC2020-P	SPD-29DEC20-P
Date		Max	Min	05-10-2020	13-10-2020	19-10-2020	26-10-2020	02-11-2020	09-11-2020	16-11-2020	23-11-2020	02-12-2020	07-12-2020	14-12-2020	21-12-2020	29-12-2020
pH-F	pH Units			7.49	7.71	7.8	7.74	7.45	7.27	7.32	7.41	7.46	7.16	6.85	7.16	6.85
Cond-F	uS/cm			1048	935	929	806	754	759	752	738	449	577	324	577	324
pH-L	pH Units	8.5	6.0		8.10	7.73	8.09		7.86		7.66	7.60		7.85	7.76	7.18
Cond-L	uS/cm				990	870	830		720		440	520		580	530	230
SO4-D	mg/L			380	360	320	280	320	270	240	160	190	150	170	200	75
TSS	mg/L	25	0	2.4	<1.0	<1.0	<1.0	2.0	<1.0	<1.0	2.4	1.2	<1.0	4.0	2.0	<1.0
Alk-T	mg/L			130				110					58			
Acidity83	mg/L			2.0				2.5					3.2			
Al-T	mg/L			<0.0030									0.0454			
As-T	mg/L			0.00075									0.00043			
Ba-T	mg/L			0.0190									0.0069			
B-T	mg/L			0.337									0.100			
Cd-T	mg/L			<0.000010									<0.000010			
Ca-T	mg/L			151									55.8			
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			462									169			
Fe-T	mg/L			0.170									0.304			
Pb-T	mg/L			<0.00020									<0.00020			
Mg-T	mg/L			20.4									7.27			
Mn-T	mg/L			0.0360									0.0629			
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			2.06									0.616			
S-T	mg/L			143									48.2			
Se-T	mg/L			<0.00010									<0.00010			
Si-T	mg/L			1.32									3.34			
Ag-T	mg/L			<0.000020									<0.000020			
Na-T	mg/L			40.4									12.5			
Sr-T	mg/L			1.04									0.335			
Zn-T	mg/L			<0.0050									<0.0050			
Al-D	mg/L	0.5	0	<0.0030				0.0069					0.0304		0.0420	
As-D	mg/L			0.00076				0.00044					0.00035		0.00028	
Ba-D	mg/L			0.0186				0.0139					0.0064		0.0076	
B-D	mg/L			0.340				0.246					0.099		0.103	
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			154				114					54.2		77.7	
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	0.02	0	<0.00020				<0.00020					0.00036		0.00040	
Hard-D	mg/L			467				346					166		234	
Fe-D	mg/L	0.5	0	0.0986				0.0707					0.146		0.108	
Pb-D	mg/L	0.05	0	<0.00020				<0.00020					<0.00020		<0.00020	
Mg-D	mg/L			20.2				15.1					7.40		9.69	
Mn-D	mg/L			0.0326				0.0365					0.0604		0.0297	
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			2.03				1.53					0.611		0.830	
S-D	mg/L			144				110					49.4		69.0	
Se-D	mg/L			<0.00010				<0.00010					<0.00010		<0.00010	
Si-D	mg/L			1.25				2.14					3.25		3.15	
Na-D	mg/L			39.4				30.1					12.6		16.8	
Sr-D	mg/L			1.05				0.766					0.348		0.454	
Zn-D	mg/L	0.2	0	<0.0050				<0.0050					<0.0050		<0.0050	
O&G	mg/L	10	0	<1.0									<1.0			

Table 11
Q3 Oct. 1st to Dec. 31st

EMS ID																
Site Description Passive Treatment System (PTS) Influent from 2-S Mine Pool																
Site Name	INF	INF-5OCT20-M	INF-13OCT20-R	INF-13OCT20-M	INF-19OCT20-M	INF-26OCT20-M	INF-2NOV20-M	INF-9NOV20-R	INF-9NOV20-M	INF-16NOV20-M	INF-23NOV20-M	INF-2DEC2020-M	INF-7DEC20-M	INF-14DEC2020-M	INF-21DEC2020-M	INF-29DEC20-M
Date		05-10-2020	13-10-2020	13-10-2020	19-10-2020	26-10-2020	02-11-2020	09-11-2020	09-11-2020	16-11-2020	23-11-2020	02-12-2020	07-12-2020	14-12-2020	21-12-2020	29-12-2020
pH-F	pH Units	7.47		7.02	7.23	7.25	7.13		6.98	7.22	7.37	7.17	7.38	7.01	6.92	6.92
Cond-F	uS/cm	1674			1794	1640	1495		1595	1540	1320	1236	1633	1514	1580	1580
SO4-D	mg/L	640	620	640	640	630	620	590	620	630	620	640	650	690	660	650
TSS	mg/L	8.4											11			
Alk-T	mg/L	270					280						270			
Acidity83	mg/L	17.5					18.7						16.5			
Al-T	mg/L	<0.0030					<0.0030						0.0061			
As-T	mg/L	0.00518					0.00530						0.00558			
Ba-T	mg/L	0.0207					0.0218						0.0232			
B-T	mg/L	0.743					0.773						0.706			
Cd-T	mg/L	<0.000010					<0.000010						<0.000010			
Ca-T	mg/L	241					223						235			
Cr-T	mg/L	<0.0010					<0.0010						<0.0010			
Co-T	mg/L	0.00037					0.00032						0.00095			
Cu-T	mg/L	0.00077					<0.00050						<0.00050			
Hard-T	mg/L	666					623						647			
Fe-T	mg/L	4.30					3.89						4.69			
Pb-T	mg/L	<0.00020					<0.00020						<0.00020			
Mg-T	mg/L	15.9					15.9						14.9			
Mn-T	mg/L	0.419					0.429						0.502			
Hg-T	mg/L	0.0000079											<0.0000019			
Mo-T	mg/L	<0.0010					<0.0010						<0.0010			
Ni-T	mg/L	<0.0010					<0.0010						0.0016			
K-T	mg/L	2.02					2.03						1.95			
S-T	mg/L	217					218						222			
Se-T	mg/L	<0.00010					<0.00010						<0.00010			
Si-T	mg/L	3.56					3.30						3.71			
Ag-T	mg/L	<0.000020					<0.000020						<0.000020			
Na-T	mg/L	116					113						114			
Sr-T	mg/L	2.25					2.23						2.24			
Zn-T	mg/L	<0.0050					<0.0050						<0.0050			
Al-D	mg/L	<0.0030					<0.0030						<0.0030			
As-D	mg/L	0.00525					0.00494						0.00561			
Ba-D	mg/L	0.0206					0.0209						0.0226			
B-D	mg/L	0.735					0.714						0.673			
Be-D	mg/L	<0.00010					<0.00010						<0.00010			
Cd-D	mg/L	<0.000010					<0.000010						<0.000010			
Ca-D	mg/L	239					227						225			
Cr-D	mg/L	<0.0010					<0.0010						<0.0010			
Co-D	mg/L	0.00037					0.00030						0.00091			
Cu-D	mg/L	<0.00020					<0.00020						<0.00020			
Hard-D	mg/L	659					626						622			
Fe-D	mg/L	4.26					3.96						4.44			
Pb-D	mg/L	<0.00020					<0.00020						<0.00020			
Mg-D	mg/L	15.1					14.7						14.5			
Mn-D	mg/L	0.417					0.407						0.485			
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						0.0015			
K-D	mg/L	1.93					1.92						1.90			
S-D	mg/L	212					206						215			
Se-D	mg/L	<0.00010					<0.00010						<0.00010			
Si-D	mg/L	3.46					3.39						3.59			
Na-D	mg/L	113					108						110			
Sr-D	mg/L	2.28					2.12						2.24			
Zn-D	mg/L	<0.0050					<0.0050						<0.0050			

Table 12
Q3 Oct. 1st to Dec. 31st

EMS ID															
Site Description	PTS Biochemical Reactor Cell														
Site Name	BCR	BCREFF-5OCT20-M	BCREFF-13OCT20-M	BCREFF-19OCT20-M	BCREFF-26OCT20-M	BCREFF-2NOV20-M	BCREFF-9NOV20-M	BCREFF-16NOV20-M	BCREFF-23NOV20-M	BCREFF-2DEC2020-M	BCREFF-7DEC20-M	BCREFF-14DEC2020-M	BCREFF-21DEC2020-M	BCREFF-21DEC2020-R	BCREFF-29DEC20-M
Date		05-10-2020	13-10-2020	19-10-2020	26-10-2020	02-11-2020	09-11-2020	16-11-2020	23-11-2020	02-12-2020	07-12-2020	14-12-2020	21-12-2020	21-12-2020	29-12-2020
pH-F	pH Units	8.03	7.50	7.83	7.86	7.47	7.60	7.82	7.71	7.45	7.86	7.72	7.58		7.41
Cond-F	uS/cm	1539	1508	1357	1528	1383	1587	1476	1500	1468	1682	1608	1321		1531
SO4-D	mg/L	570	540	540	540	590	540	580	490	550	580	580	520	510	600
TSS	mg/L	2.4									1.6				
Alk-T	mg/L	230				260					240				
Acidity83	mg/L	7.6				8.4					7.7				
Al-T	mg/L	<0.0030				0.0059					0.0074				
As-T	mg/L	0.00071				0.00120					0.00133				
Ba-T	mg/L	0.0178				0.0185					0.0177				
B-T	mg/L	0.709				0.773					0.646				
Cd-T	mg/L	<0.000010				<0.000010					<0.000010				
Ca-T	mg/L	218				220					213				
Cr-T	mg/L	<0.0010				<0.0010					<0.0010				
Co-T	mg/L	<0.00020				<0.00020					0.00046				
Cu-T	mg/L	<0.00050				<0.00050					<0.00050				
Hard-T	mg/L	606				614					588				
Fe-T	mg/L	0.306				0.786					0.907				
Pb-T	mg/L	<0.00020				<0.00020					<0.00020				
Mg-T	mg/L	15.3				16.0					13.7				
Mn-T	mg/L	0.0187				0.0829					0.294				
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					0.0012				
K-T	mg/L	1.83				2.04					1.88				
S-T	mg/L	204				218					199				
Se-T	mg/L	<0.00010				<0.00010					<0.00010				
Si-T	mg/L	2.67				3.10					3.22				
Ag-T	mg/L	<0.000020				<0.000020					<0.000020				
Na-T	mg/L	113				117					102				
Sr-T	mg/L	2.10				2.27					2.02				
Zn-T	mg/L	<0.0050				<0.0050					<0.0050				
Al-D	mg/L	<0.0030				<0.0030					<0.0030				
As-D	mg/L	0.00066				0.00081					0.00097				
Ba-D	mg/L	0.0175				0.0168					0.0169				
B-D	mg/L	0.695				0.692					0.624				
Be-D	mg/L	<0.00010				<0.00010					<0.00010				
Cd-D	mg/L	<0.000010				<0.000010					<0.000010				
Ca-D	mg/L	209				210					200				
Cr-D	mg/L	<0.0010				<0.0010					<0.0010				
Co-D	mg/L	<0.00020				<0.00020					0.00044				
Cu-D	mg/L	<0.00020				<0.00020					<0.00020				
Hard-D	mg/L	580				586					554				
Fe-D	mg/L	0.101				0.0858					0.0228				
Pb-D	mg/L	<0.00020				<0.00020					<0.00020				
Mg-D	mg/L	14.2				14.7					13.3				
Mn-D	mg/L	0.0172				0.0973					0.293				
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					0.0011				
K-D	mg/L	1.81				1.90					1.88				
S-D	mg/L	201				204					194				
Se-D	mg/L	<0.00010				<0.00010					<0.00010				
Si-D	mg/L	2.60				2.97					3.00				
Na-D	mg/L	108				108					101				
Sr-D	mg/L	2.03				2.05					2.00				
Zn-D	mg/L	<0.0050				<0.0050					<0.0050				

Table 13
Q3 Oct. 1st to Dec. 31st

EMS ID													
Site Description		PTS Sulphide Polishing Cell											
Site Name	SPCEFF	SPCEFF-5OCT20-M	SPCEFF-13OCT20-M	SPCEFF-19OCT20-M	SPCEFF-26OCT20-M	SPCEFF-2NOV20-M	SPCEFF-9NOV20-M	SPCEFF-16NOV20-M	SPCEFF-23NOV20-M	SPCEFF-7DEC20-M	SPCEFF-14DEC2020-M	SPCEFF-21DEC2020-M	SPCEFF-29DEC20-M
Date		05-10-2020	13-10-2020	19-10-2020	26-10-2020	02-11-2020	09-11-2020	16-11-2020	23-11-2020	07-12-2020	14-12-2020	21-12-2020	29-12-2020
pH-F	pH Units	7.40	7.53	7.44	7.37	7.73	7.41	7.52	7.80	7.86	7.38	7.38	7.81
Cond-F	uS/cm	1584	1330	1568	1399	1527	1503	1520	1601	1398	1463	1668	1668
SO4-D	mg/L	550	500	460	520	530	490	490	520	510	550	410	510
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
Q3 Oct. 1st to Dec. 31st

EMS ID																	
Site Description	2 South Pit Inflow																
Site Name	2SI	2SI-5OCT20-M	2SI-13OCT20-M	2SI-19OCT20-M	2SI-26OCT20-R	2SI-26OCT20-M	2SI-2NOV20-M	2SI-9NOV20-M	2SI-16NOV20-R	2SI-16NOV20-M	2SI-23NOV20-M	2SI-2DEC2020-M	2SI-2DEC2020-R	2SI-7DEC20-M	2SI-14DEC2020-M	2SI-21DEC20-M	2SI-29DEC20-M
Date		05-10-2020	13-10-2020	19-10-2020	26-10-2020	26-10-2020	02-11-2020	09-11-2020	16-11-2020	16-11-2020	23-11-2020	02-12-2020	02-12-2020	07-12-2020	14-12-2020	21-12-2020	29-12-2020
pH-F	pH Units	8.46	7.57	7.81		7.54	7.86	7.69		7.41	7.58	7.69		7.89	7.44	7.5	7.12
Cond-F	uS/cm	1565	1119	1268		794	1194	1266		1045	1147	1048		856	747	914	400
SO4-D	mg/L	490	320	400	220	220	420	420	330	320	200	340	340	250	380	180	310
TSS	mg/L	1.6															
Alk-T	mg/L	320					260							140			
Acidity63	mg/L	4.6					3.5							3.8			
Al-T	mg/L	<0.0030					0.0044							0.0228			
As-T	mg/L	0.00025					0.00022							0.00017			
Ba-T	mg/L	0.0424					0.0351							0.0203			
B-T	mg/L	0.650					0.500							0.273			
Cd-T	mg/L	<0.000010					<0.000010							<0.000010			
Ca-T	mg/L	221					180							114			
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	619					511							330			
Fe-T	mg/L	0.091					0.087							0.174			
Pb-T	mg/L	<0.00020					<0.00020							<0.00020			
Mg-T	mg/L	16.3					15.3							10.7			
Mn-T	mg/L	0.0274					0.0317							0.0573			
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	1.84					1.49							0.908			
S-T	mg/L	180					163							97.4			
Se-T	mg/L	<0.00010					<0.00010							<0.00010			
Si-T	mg/L	4.74					4.09							4.06			
Ag-T	mg/L	<0.000020					<0.000020							<0.000020			
Na-T	mg/L	112					87.9							46.0			
Sr-T	mg/L	2.04					1.68							0.896			
Zn-T	mg/L	<0.0050					<0.0050							<0.0050			
Al-D	mg/L	<0.0030					0.0032							0.0077			
As-D	mg/L	0.00028					0.00021							0.00015			
Ba-D	mg/L	0.0416					0.0348							0.0193			
B-D	mg/L	0.631					0.477							0.263			
Be-D	mg/L	<0.00010					<0.00010							<0.00010			
Cd-D	mg/L	<0.000010					<0.000010							<0.000010			
Ca-D	mg/L	206					171							106			
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							0.00037			
Hard-D	mg/L	577					486							307			
Fe-D	mg/L	0.0284					0.0595							0.132			
Pb-D	mg/L	<0.00020					<0.00020							<0.00020			
Mg-D	mg/L	15.4					14.6							10.3			
Mn-D	mg/L	0.0266					0.0312							0.0584			
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	1.80					1.44							0.831			
S-D	mg/L	176					155							94.8			
Se-D	mg/L	<0.00010					<0.00010							<0.00010			
Si-D	mg/L	4.40					3.95							4.01			
Na-D	mg/L	111					86.2							42.2			
Sr-D	mg/L	1.98					1.57							0.827			
Zn-D	mg/L	<0.0050					<0.0050							<0.0050			

Table 15
Q3 Oct. 1st to Dec. 31st

EMS ID		E292127		
Site Description		2-South Pit in Pit Water Cover Over PAG-CCR		
Site Name		2S	2S-5OCT20-M	2S-2NOV20-M
Date		05-10-2020	02-11-2020	07-12-2020
pH-F	pH Units	8.33	7.82	8.17
Cond-F	uS/cm	1124	1057	1086
SO4-D	mg/L	420	450	400
TSS	mg/L	2.0		
Alk-T	mg/L	130	140	160
Acidity83	mg/L	<1.0	2.1	<1.0
Al-T	mg/L	0.0048	0.0077	0.0307
As-T	mg/L	0.00590	0.00454	0.00481
Ba-T	mg/L	0.0264	0.0258	0.0204
B-T	mg/L	0.520	0.475	0.373
Cd-T	mg/L	<0.000010	<0.000010	<0.000010
Ca-T	mg/L	147	140	142
Cr-T	mg/L	<0.0010	<0.0010	<0.0010
Co-T	mg/L	<0.00020	<0.00020	0.00026
Cu-T	mg/L	<0.00050	<0.00050	<0.00050
Hard-T	mg/L	440	418	419
Fe-T	mg/L	0.099	0.082	0.145
Pb-T	mg/L	<0.00020	<0.00020	<0.00020
Mg-T	mg/L	17.8	17.0	15.8
Mn-T	mg/L	0.0607	0.0742	0.124
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	2.31	2.17	1.86
S-T	mg/L	162	165	146
Se-T	mg/L	<0.00010	<0.00010	<0.00010
Si-T	mg/L	1.22	1.31	1.81
Ag-T	mg/L	<0.000020	<0.000020	<0.000020
Na-T	mg/L	76.1	74.4	70.7
Sr-T	mg/L	1.22	1.21	1.06
Zn-T	mg/L	<0.0050	<0.0050	<0.0050
Al-D	mg/L	<0.0030	<0.0030	<0.0030
As-D	mg/L	0.00521	0.00394	0.00430
Ba-D	mg/L	0.0251	0.0250	0.0195
B-D	mg/L	0.503	0.452	0.369
Be-D	mg/L	<0.00010	<0.00010	<0.00010
Cd-D	mg/L	<0.000010	<0.000010	<0.000010
Ca-D	mg/L	143	141	136
Cr-D	mg/L	<0.0010	<0.0010	<0.0010
Co-D	mg/L	<0.00020	<0.00020	0.00023
Cu-D	mg/L	0.00028	<0.00020	<0.00020
Hard-D	mg/L	424	422	403
Fe-D	mg/L	0.0370	0.0362	0.0340
Pb-D	mg/L	<0.00020	<0.00020	<0.00020
Mg-D	mg/L	16.3	16.9	15.5
Mn-D	mg/L	0.0291	0.0673	0.113
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	2.20	2.13	1.81
S-D	mg/L	157	164	145
Se-D	mg/L	<0.00010	<0.00010	<0.00010
Si-D	mg/L	1.10	1.34	1.66
Na-D	mg/L	71.4	75.3	70.4
Sr-D	mg/L	1.18	1.19	1.08
Zn-D	mg/L	<0.0050	<0.0050	<0.0050

Table 16
Q3 Oct. 1st to Dec. 31st

EMS ID						
Site Description	2-South Outflow Culvert into 3-South Pit					
Site Name	2SC	2SC-5OCT20-R	2SC-5OCT20-M	2SC-2NOV20-M	2SC-7DEC20-M	2SC-7DEC20-R
Date	05-10-2020	05-10-2020	02-11-2020	07-12-2020	07-12-2020	
pH-F	pH Units		8.23	7.67	7.89	
Cond-F	uS/cm		1520	1283	1318	
SO4-D	mg/L	620	630	620	600	600
Alk-T	mg/L	230	230	200	180	180
Acidity83	mg/L	3.8	4.0	4.0	3.9	2.3
Al-T	mg/L	<0.0030	<0.0030	0.0040	0.0065	0.0119
As-T	mg/L	0.00044	0.00043	0.00057	0.00060	0.00063
Ba-T	mg/L	0.0188	0.0184	0.0193	0.0149	0.0156
B-T	mg/L	0.442	0.438	0.426	0.314	0.333
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Ca-T	mg/L	260	257	230	222	220
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Cu-T	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Hard-T	mg/L	764	755	687	660	654
Fe-T	mg/L	<0.010	<0.010	0.046	0.030	0.040
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Mg-T	mg/L	28.2	27.4	27.2	25.6	25.5
Mn-T	mg/L	0.0026	0.0025	0.0192	0.0185	0.0188
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019		
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
K-T	mg/L	2.75	2.69	2.69	2.17	2.18
S-T	mg/L	213	209	216	204	205
Se-T	mg/L	0.00019	0.00018	0.00018	0.00018	0.00017
Si-T	mg/L	2.71	2.69	2.38	2.37	2.38
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Na-T	mg/L	52.6	50.5	53.7	46.7	46.2
Sr-T	mg/L	1.60	1.52	1.55	1.38	1.42
Zn-T	mg/L	<0.0050	<0.0050	0.0054	<0.0050	<0.0050
Al-D	mg/L	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030
As-D	mg/L	0.00050	0.00049	0.00055	0.00051	0.00054
Ba-D	mg/L	0.0178	0.0182	0.0253	0.0149	0.0148
B-D	mg/L	0.440	0.433	0.451	0.316	0.311
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	252	247	225	214	210
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	<0.00020
Hard-D	mg/L	738	727	667	638	627
Fe-D	mg/L	<0.0050	<0.0050	0.0358	0.0082	0.0100
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Mg-D	mg/L	26.4	26.9	25.5	25.2	24.9
Mn-D	mg/L	0.0024	0.0024	0.0185	0.0176	0.0178
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019		
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
K-D	mg/L	2.64	2.64	2.44	2.11	2.15
S-D	mg/L	207	206	199	203	198
Se-D	mg/L	0.00020	0.00021	<0.00010	0.00017	0.00017
Si-D	mg/L	2.56	2.53	1.36	2.33	2.28
Na-D	mg/L	49.0	50.2	53.2	45.5	45.6
Sr-D	mg/L	1.52	1.54	1.19	1.40	1.40
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050

Table 17
Q3 Oct. 1st to Dec. 31st

EMS ID		E217015		
Site Description		3-South Pit Water Cover Over PAG-CCR		
Site Name		3S	3S-5OCT20-M	3S-2NOV20-M
				3S-7DEC20-M
Date		05-10-2020	02-11-2020	07-12-2020
pH-F	pH Units	8.2	7.48	7.57
Cond-F	uS/cm	1318	1122	1165
SO4-D	mg/L	570	510	480
Alk-T	mg/L	150	170	160
Acidity83	mg/L	2.2	5.2	5.3
Al-T	mg/L	0.0223		0.152
As-T	mg/L	0.00054		0.00045
Ba-T	mg/L	0.0173		0.0185
B-T	mg/L	0.437		0.310
Cd-T	mg/L	<0.000010		<0.000010
Ca-T	mg/L	212		209
Cr-T	mg/L	<0.0010		<0.0010
Co-T	mg/L	<0.00020		0.00021
Cu-T	mg/L	<0.00050		0.00112
Hard-T	mg/L	635		626
Fe-T	mg/L	0.055		0.251
Pb-T	mg/L	<0.00020		<0.00020
Mg-T	mg/L	25.9		25.2
Mn-T	mg/L	0.0047		0.0117
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	2.58		2.08
S-T	mg/L	195		190
Se-T	mg/L	0.00011		0.00012
Si-T	mg/L	1.33		2.23
Ag-T	mg/L	<0.000020		<0.000020
Na-T	mg/L	53.3		41.0
Sr-T	mg/L	1.41		1.31
Zn-T	mg/L	<0.0050		<0.0050
Al-D	mg/L	<0.0030		<0.0030
As-D	mg/L	0.00059		0.00034
Ba-D	mg/L	0.0169		0.0164
B-D	mg/L	0.422		0.275
Be-D	mg/L	<0.00010		<0.00010
Cd-D	mg/L	<0.000010		<0.000010
Ca-D	mg/L	199		178
Cr-D	mg/L	<0.0010		<0.0010
Co-D	mg/L	<0.00020		<0.00020
Cu-D	mg/L	0.00021		0.00063
Hard-D	mg/L	596		534
Fe-D	mg/L	0.0067		<0.0050
Pb-D	mg/L	<0.00020		<0.00020
Mg-D	mg/L	24.3		21.8
Mn-D	mg/L	<0.0010		0.0093
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	2.52		1.89
S-D	mg/L	189		164
Se-D	mg/L	<0.00010		<0.00010
Si-D	mg/L	1.10		1.82
Na-D	mg/L	51.4		37.2
Sr-D	mg/L	1.39		1.16
Zn-D	mg/L	<0.0050		<0.0050

Table 18
Q3 Oct. 1st to Dec. 31st

EMS ID		E217014		
Site Description		Culvert Downstream End at Access Road		
Site Name	SPC	SPC-26OCT20-M	SPC-2NOV20-M	SPC-7DEC20-M
Date		26-10-2020	02-11-2020	07-12-2020
pH-F	pH Units	7.80	7.91	7.86
Cond-F	uS/cm	352	413	352
SO4-D	mg/L	140	140	120
TSS	mg/L	<1.0	<1.0	1.2
Alk-T	mg/L	49	50	43
Acidity83	mg/L	<1.0	<1.0	<1.0
Al-T	mg/L	0.0695		0.0573
As-T	mg/L	0.00039		0.00030
Ba-T	mg/L	0.0120		0.0087
B-T	mg/L	0.085		0.078
Cd-T	mg/L	<0.000010		<0.000010
Ca-T	mg/L	50.6		43.6
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	156		133
Fe-T	mg/L	0.116		0.110
Pb-T	mg/L	<0.00020		<0.00020
Mg-T	mg/L	7.22		5.79
Mn-T	mg/L	0.0033		0.0029
Hg-T	mg/L	0.0000024		<0.0000019
Mo-T	mg/L	<0.0010		<0.0010
Ni-T	mg/L	<0.0010		<0.0010
K-T	mg/L	0.617		0.515
S-T	mg/L	45.5		37.6
Se-T	mg/L	<0.00010		<0.00010
Si-T	mg/L	3.43		3.25
Ag-T	mg/L	<0.000020		<0.000020
Na-T	mg/L	13.6		10.2
Sr-T	mg/L	0.325		0.259
Zn-T	mg/L	<0.0050		<0.0050
Al-D	mg/L	0.0547		0.0418
As-D	mg/L	0.00033		0.00024
Ba-D	mg/L	0.0117		0.0082
B-D	mg/L	0.090		0.078
Be-D	mg/L	<0.00010		<0.00010
Cd-D	mg/L	<0.000010		<0.000010
Ca-D	mg/L	51.1		41.7
Cr-D	mg/L	<0.0010		<0.0010
Co-D	mg/L	<0.00020		<0.00020
Cu-D	mg/L	0.00036		0.00031
Hard-D	mg/L	157		128
Fe-D	mg/L	0.0940		0.0627
Pb-D	mg/L	<0.00020		<0.00020
Mg-D	mg/L	7.04		5.72
Mn-D	mg/L	0.0028		0.0012
Hg-D	mg/L	0.0000021		<0.0000019
Mo-D	mg/L	<0.0010		<0.0010
Ni-D	mg/L	<0.0010		<0.0010
K-D	mg/L	0.620		0.499
S-D	mg/L	45.3		38.6
Se-D	mg/L	<0.00010		<0.00010
Si-D	mg/L	3.61		3.24
Na-D	mg/L	12.9		10.3
Sr-D	mg/L	0.312		0.260
Zn-D	mg/L	<0.0050		<0.0050

Table 19
Q3 Oct. 1st to Dec. 31st

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-5OCT20-M	LLE-13OCT20-M	LLE-19OCT20-M	LLE-26OCT20-M	LLE-2NOV20-M	LLE-9NOV20-M	LLE-16NOV20-M	LLE-23NOV20-M	LLE-2DEC2020-M	LLE-7DEC20-M	LLE-14DEC2020-M	LLE-14DEC2020-R	LLE-21DEC20-M	LLE-29DEC20-M
Date		Max	Min	05-10-2020	13-10-2020	19-10-2020	26-10-2020	02-11-2020	09-11-2020	16-11-2020	23-11-2020	02-12-2020	07-12-2020	14-12-2020	14-12-2020	21-12-2020	29-12-2020
pH-F	pH Units			6.89	7.25	7.59	7.11	7.32	7.46	7.54	7.36	7.55	7.48	7.44		7.69	7.97
Cond-F	uS/cm			716	738	702	502	482	467	330	342	382	360	303		393	416
SO4-D	mg/L			220	160	100	130	120	99	130	80	99	110	140	140	94	87
TSS	mg/L	25	0	<1.0				5.6					2.4				
Alk-T	mg/L			85				46					41				
Acidity83	mg/L			2.7				<1.0					1.8				
N-NH3	mg/L	12.9	0	0.016				<0.015					<0.015				
N-NO23	mg/L			<0.020				<0.020					0.026				
P-T	mg/L			0.0039				0.0099					<0.0030				
Al-T	mg/L			0.0079				0.110					0.0863				
As-T	mg/L	0.005	0	0.00062				0.00048					0.00078				
Ba-T	mg/L			0.0304				0.0129					0.0104				
B-T	mg/L			0.153				0.089					0.077				
Cd-T	mg/L			<0.000010				<0.000010					<0.000010				
Ca-T	mg/L			79.9				45.4					38.4				
Cr-T	mg/L			<0.0010				<0.0010					<0.0010				
Co-T	mg/L	0.11	0	<0.00020				<0.00020					<0.00020				
Cu-T	mg/L			<0.00050				0.00064					<0.00050				
Hard-T	mg/L			247				142					118				
Fe-T	mg/L	1.0	0	0.456				0.257					0.374				
Pb-T	mg/L	0.01763	0	<0.00020				<0.00020					<0.00020				
Mg-T	mg/L			11.5				6.94					5.33				
Mn-T	mg/L	0.8706	0	0.0700				0.0205					0.0431				
Hg-T	mg/L			<0.0000019				0.0000025					<0.0000019				
Mo-T	mg/L	2.0	0	<0.0010				<0.0010					<0.0010				
Ni-T	mg/L			<0.0010				<0.0010					<0.0010				
K-T	mg/L			0.984				0.820					0.508				
S-T	mg/L			71.5				43.8					34.9				
Se-T	mg/L			<0.00010				<0.00010					<0.00010				
Si-T	mg/L			3.97				3.38					3.51				
Ag-T	mg/L	0.0001	0	<0.000020				<0.000020					<0.000020				
Na-T	mg/L			20.3				12.3					9.44				
Sr-T	mg/L			0.505				0.306					0.233				
Zn-T	mg/L	0.033	0	<0.0050				<0.0050					<0.0050				
Al-D	mg/L	0.1	0	0.0040				0.0486					0.0370				
As-D	mg/L			0.00057				0.00031					0.00065				
Ba-D	mg/L			0.0299				0.0116					0.0103				
B-D	mg/L			0.161				0.085					0.072				
Be-D	mg/L			<0.00010				<0.00010					<0.00010				
Cd-D	mg/L	0.00017	0	<0.000010				<0.000010					<0.000010				
Ca-D	mg/L			82.3				43.7					36.7				
Cr-D	mg/L			<0.0010				<0.0010					<0.0010				
Co-D	mg/L			<0.00020				<0.00020					<0.00020				
Cu-D	mg/L	0.002	0	0.00030				0.00042					0.00031				
Hard-D	mg/L			253				135					113				
Fe-D	mg/L	0.35	0	0.297				0.182					0.278				
Pb-D	mg/L			<0.00020				<0.00020					<0.00020				
Mg-D	mg/L			11.5				6.28					5.24				
Mn-D	mg/L			0.0697				0.0174					0.0420				
Hg-D	mg/L			<0.0000019				0.0000030					<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			1.03				0.756					0.479				
S-D	mg/L			71.9				40.4					33.2				
Se-D	mg/L			<0.00010				<0.00010					<0.00010				
Si-D	mg/L			4.10				3.12					3.33				
Na-D	mg/L			20.2				11.5					9.38				
Sr-D	mg/L			0.518				0.274					0.234				
Zn-D	mg/L			<0.0050				<0.0050					<0.0050				

Table 20
Q3 Oct. 1st to Dec. 31st

EMS ID	E292131			Stn Std	WQG-Max
Site Description	Seep into Long Lake				
Site Name	LLS	Std Val		LLS-23NOV20-M	LLS-7DEC20-M
Date		Max	Min	23-11-2020	07-12-2020
pH-F	pH Units			7.01	7.33
Cond-F	uS/cm			1281	1155
SO4-D	mg/L			420	420
TSS	mg/L	25	0	2.8	3.2
Alk-T	mg/L			180	190
Acidity83	mg/L			4.2	12.0
Al-T	mg/L			0.0356	0.0199
As-T	mg/L	0.005	0	0.00140	0.00122
Ba-T	mg/L			0.0191	0.0189
B-T	mg/L			0.465	0.414
Cd-T	mg/L			<0.000010	<0.000010
Ca-T	mg/L			177	168
Cr-T	mg/L			<0.0010	<0.0010
Co-T	mg/L	0.11	0	0.00165	0.00077
Cu-T	mg/L			0.00091	0.00063
Hard-T	mg/L			507	482
Fe-T	mg/L	1.0	0	0.708	0.495
Pb-T	mg/L	0.01763	0	<0.00020	<0.00020
Mg-T	mg/L			15.6	15.4
Mn-T	mg/L	0.8706	0	0.208	0.180
Hg-T	mg/L			<0.0000019	<0.0000019
Mo-T	mg/L	2.0	0	<0.0010	<0.0010
Ni-T	mg/L			0.0045	0.0025
K-T	mg/L			2.18	2.12
S-T	mg/L			154	149
Se-T	mg/L			0.00011	<0.00010
Si-T	mg/L			3.01	2.60
Ag-T	mg/L	0.0001	0	<0.000020	<0.000020
Na-T	mg/L			65.9	62.9
Sr-T	mg/L			1.57	1.52
Zn-T	mg/L	0.033	0	0.0053	<0.0050
Al-D	mg/L	0.1	0	0.0063	0.0058
As-D	mg/L			0.00115	0.00099
Ba-D	mg/L			0.0181	0.0177
B-D	mg/L			0.417	0.392
Be-D	mg/L			<0.00010	<0.00010
Cd-D	mg/L	0.00017	0	<0.000010	<0.000010
Ca-D	mg/L			162	157
Cr-D	mg/L			<0.0010	<0.0010
Co-D	mg/L			0.00160	0.00075
Cu-D	mg/L	0.002	0	0.00032	0.00032
Hard-D	mg/L			468	454
Fe-D	mg/L	0.35	0	0.545	0.330
Pb-D	mg/L			<0.00020	<0.00020
Mg-D	mg/L			15.1	15.0
Mn-D	mg/L			0.203	0.162
Hg-D	mg/L			<0.0000019	<0.0000019
Mo-D	mg/L			<0.0010	<0.0010
Ni-D	mg/L			0.0045	0.0025
K-D	mg/L			2.16	2.11
S-D	mg/L			151	145
Se-D	mg/L			<0.00010	<0.00010
Si-D	mg/L			2.92	2.50
Na-D	mg/L			63.5	61.0
Sr-D	mg/L			1.54	1.49
Zn-D	mg/L			<0.0050	<0.0050

Table 21
Q3 Oct. 1st to Dec. 31st

EMS ID	E292131	Stn	Std	WQG-Max	
Site Description Long Lake Middle Seep					
Site Name	LLSM	Std Val	LLSM-23NOV20-M	LLSM-7DEC20-M	
Date		Max	Min	23-11-2020	07-12-2020
pH-F	pH Units			7.62	7.64
Cond-F	uS/cm			1370	1022
SO4-D	mg/L			330	340
TSS	mg/L	25	0	2.4	2.4
Alk-T	mg/L			130	160
Acidity83	mg/L			2.0	4.7
Al-T	mg/L			0.211	0.0571
As-T	mg/L	0.005	0	0.00061	0.00044
Ba-T	mg/L			0.0177	0.0168
B-T	mg/L			0.332	0.359
Cd-T	mg/L			<0.000010	<0.000010
Ca-T	mg/L			136	135
Cr-T	mg/L			<0.0010	<0.0010
Co-T	mg/L	0.11	0	0.00161	0.00064
Cu-T	mg/L			0.00218	0.00097
Hard-T	mg/L			398	395
Fe-T	mg/L	1.0	0	0.500	0.288
Pb-T	mg/L	0.01763	0	<0.00020	<0.00020
Mg-T	mg/L			13.8	13.9
Mn-T	mg/L	0.8706	0	0.113	0.0827
Hg-T	mg/L			<0.0000019	<0.0000019
Mo-T	mg/L	2.0	0	<0.0010	<0.0010
Ni-T	mg/L			0.0048	0.0026
K-T	mg/L			1.86	1.91
S-T	mg/L			121	125
Se-T	mg/L			0.00018	0.00013
Si-T	mg/L			2.78	2.53
Ag-T	mg/L	0.0001	0	<0.000020	<0.000020
Na-T	mg/L			45.5	47.9
Sr-T	mg/L			1.17	1.21
Zn-T	mg/L	0.033	0	<0.0050	<0.0050
Al-D	mg/L	0.1	0	0.0253	0.0100
As-D	mg/L			0.00020	0.00026
Ba-D	mg/L			0.0168	0.0168
B-D	mg/L			0.305	0.332
Be-D	mg/L			<0.00010	<0.00010
Cd-D	mg/L	0.00017	0	<0.000010	<0.000010
Ca-D	mg/L			133	136
Cr-D	mg/L			<0.0010	<0.0010
Co-D	mg/L			0.00128	0.00061
Cu-D	mg/L	0.002	0	0.00137	0.00068
Hard-D	mg/L			387	397
Fe-D	mg/L	0.35	0	0.0746	0.0871
Pb-D	mg/L			<0.00020	<0.00020
Mg-D	mg/L			13.7	14.0
Mn-D	mg/L			0.0623	0.0811
Hg-D	mg/L			<0.0000019	<0.0000019
Mo-D	mg/L			<0.0010	<0.0010
Ni-D	mg/L			0.0044	0.0024
K-D	mg/L			1.90	1.90
S-D	mg/L			122	127
Se-D	mg/L			0.00016	0.00014
Si-D	mg/L			2.80	2.52
Na-D	mg/L			44.1	49.3
Sr-D	mg/L			1.17	1.24
Zn-D	mg/L			<0.0050	<0.0050

Table 22
Q3 Oct. 1st to Dec. 31st

EMS ID	E292069	Stn Std	PL-7S
Site Description	Authorised Discharge Location for 7S South Mine Water		
Site Name	7SSD	Std Val	7SSD-5OCT20-P
Date	Max	Min	05-10-2020
pH-F	pH Units		7.95
Cond-F	uS/cm		289
SO4-D	mg/L	500	7.3
TSS	mg/L	25	2.0
Alk-T	mg/L		120
Acidity83	mg/L		<1.0
DOC	mg/L		3.1
Al-T	mg/L		0.0075
As-T	mg/L		0.00737
Ba-T	mg/L		0.0050
B-T	mg/L		<0.050
Cd-T	mg/L		<0.000010
Ca-T	mg/L		24.0
Cr-T	mg/L		<0.0010
Co-T	mg/L		<0.00020
Cu-T	mg/L		0.00096
Hard-T	mg/L		109
Fe-T	mg/L		0.078
Pb-T	mg/L		<0.00020
Mg-T	mg/L		11.9
Mn-T	mg/L		0.172
Hg-T	mg/L		<0.0000019
Mo-T	mg/L		<0.0010
Ni-T	mg/L		<0.0010
K-T	mg/L		0.749
S-T	mg/L		<3.0
Se-T	mg/L		<0.00010
Si-T	mg/L		1.89
Ag-T	mg/L		<0.000020
Na-T	mg/L		6.40
Sr-T	mg/L		0.132
Zn-T	mg/L		<0.0050
Al-D	mg/L	0.1	<0.0030
As-D	mg/L		0.00646
Ba-D	mg/L		0.0030
B-D	mg/L		<0.050
Be-D	mg/L		<0.00010
Cd-D	mg/L	0.000045	<0.000010
Ca-D	mg/L		25.5
Cr-D	mg/L		<0.0010
Co-D	mg/L		<0.00020
Cu-D	mg/L	0.014	0.00064
Hard-D	mg/L		110
Fe-D	mg/L	0.35	0.0081
Pb-D	mg/L		<0.00020
Mg-D	mg/L		11.1
Mn-D	mg/L		0.0053
Hg-D	mg/L		<0.0000019
Mo-D	mg/L		<0.0010
Ni-D	mg/L		<0.0010
K-D	mg/L		0.724
S-D	mg/L		<3.0
Se-D	mg/L	0.016	<0.00010
Si-D	mg/L		1.81
Na-D	mg/L		6.18
Sr-D	mg/L		0.137
Zn-D	mg/L		<0.0050

Table 23
Q3 Oct. 1st to Dec. 31st

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-2NOV20-M	7S-7DEC20-M
Date		Max	Min	02-11-2020	07-12-2020
pH-F	pH Units			7.54	6.90
Cond-F	uS/cm			330	73.7
SO4-D	mg/L			4.6	3.5
TSS	mg/L	25	0	2.8	<1.0
Alk-T	mg/L			22	14
Acidity83	mg/L			<1.0	<1.0
DOC	mg/L			2.7	2.2
Al-T	mg/L			0.0510	0.0378
As-T	mg/L	0.005	0	0.00012	<0.00010
Ba-T	mg/L			0.0024	0.0015
B-T	mg/L			<0.050	<0.050
Cd-T	mg/L			<0.000010	<0.000010
Ca-T	mg/L			5.90	4.51
Cr-T	mg/L			<0.0010	<0.0010
Co-T	mg/L	0.11	0	<0.00020	<0.00020
Cu-T	mg/L			<0.00050	<0.00050
Hard-T	mg/L			21.1	15.7
Fe-T	mg/L	1.0	0	0.018	0.012
Pb-T	mg/L	0.01763	0	<0.00020	<0.00020
Mg-T	mg/L			1.54	1.09
Mn-T	mg/L	0.8706	0	<0.0010	<0.0010
Hg-T	mg/L			<0.0000019	<0.0000019
Mo-T	mg/L	2.0	0	<0.0010	<0.0010
Ni-T	mg/L			<0.0010	<0.0010
K-T	mg/L			0.137	0.095
S-T	mg/L			<3.0	<3.0
Se-T	mg/L			<0.00010	<0.00010
Si-T	mg/L			4.45	4.27
Ag-T	mg/L	0.0001	0	<0.000020	<0.000020
Na-T	mg/L			2.03	1.57
Sr-T	mg/L			0.0261	0.0186
Zn-T	mg/L	0.033	0	<0.0050	<0.0050
Al-D	mg/L	0.1	0	0.0402	0.0350
As-D	mg/L			0.00011	<0.00010
Ba-D	mg/L			0.0022	0.0016
B-D	mg/L			<0.050	<0.050
Be-D	mg/L			<0.00010	<0.00010
Cd-D	mg/L	0.00017	0	<0.000010	<0.000010
Ca-D	mg/L			5.93	4.34
Cr-D	mg/L			<0.0010	<0.0010
Co-D	mg/L			<0.00020	<0.00020
Cu-D	mg/L	0.002	0	0.00041	0.00060
Hard-D	mg/L			20.7	15.3
Fe-D	mg/L	0.35	0	0.0133	0.0112
Pb-D	mg/L			<0.00020	<0.00020
Mg-D	mg/L			1.42	1.09
Mn-D	mg/L			<0.0010	<0.0010
Hg-D	mg/L			0.0000020	<0.0000019
Mo-D	mg/L			<0.0010	<0.0010
Ni-D	mg/L			<0.0010	<0.0010
K-D	mg/L			0.137	0.091
S-D	mg/L			<3.0	<3.0
Se-D	mg/L			<0.00010	<0.00010
Si-D	mg/L			4.41	4.26
Na-D	mg/L			1.92	1.60
Sr-D	mg/L			0.0249	0.0182
Zn-D	mg/L			<0.0050	<0.0050

Table 24
Q3 Oct. 1st to Dec. 31st

EMS ID		E292110		
Site Description		7 South Portal Sump		
Site Name	7SPS	7SPS-5OCT20-M	7SPS-2NOV20-M	7SPS-7DEC20-M
Date		05-10-2020	02-11-2020	07-12-2020
pH-F	pH Units	5.78	6.95	7.17
Cond-F	uS/cm	1183	437	519
SO4-D	mg/L	570	190	200
TSS	mg/L	8.4	35	130
Alk-T	mg/L	<1.0	39	47
Acidity83	mg/L	73.9	4.2	7.7
Al-T	mg/L	0.186	0.746	3.79
As-T	mg/L	0.00030	0.00302	0.0100
Ba-T	mg/L	0.0327	0.0179	0.0310
B-T	mg/L	0.170	0.101	0.078
Cd-T	mg/L	0.000224	0.000061	0.000062
Ca-T	mg/L	142	63.1	68.5
Cr-T	mg/L	<0.0010	0.0022	0.0050
Co-T	mg/L	0.0324	0.00706	0.00944
Cu-T	mg/L	0.0338	0.0105	0.0195
Hard-T	mg/L	500	225	247
Fe-T	mg/L	36.1	9.07	14.3
Pb-T	mg/L	<0.00020	<0.00020	0.00082
Mg-T	mg/L	35.3	16.3	18.5
Mn-T	mg/L	0.832	0.235	0.335
Hg-T	mg/L	<0.0000019	<0.0000019	<0.0000019
Mo-T	mg/L	<0.0010	<0.0010	<0.0010
Ni-T	mg/L	0.0499	0.0132	0.0162
K-T	mg/L	1.98	1.24	1.18
S-T	mg/L	195	72.8	70.8
Se-T	mg/L	0.00018	0.00013	0.00011
Si-T	mg/L	6.83	4.31	9.32
Ag-T	mg/L	<0.000020	<0.000020	<0.000020
Na-T	mg/L	9.68	4.30	5.16
Sr-T	mg/L	0.575	0.256	0.260
Zn-T	mg/L	0.0942	0.0268	0.0377
Al-D	mg/L	0.115	0.0109	0.0059
As-D	mg/L	0.00022	0.00029	0.00054
Ba-D	mg/L	0.0310	0.0154	0.0149
B-D	mg/L	0.174	0.099	0.068
Be-D	mg/L	0.00017	<0.00010	<0.00010
Cd-D	mg/L	0.000230	0.000046	0.000039
Ca-D	mg/L	148	59.7	65.6
Cr-D	mg/L	<0.0010	<0.0010	<0.0010
Co-D	mg/L	0.0307	0.00587	0.00560
Cu-D	mg/L	0.0304	0.00241	0.00117
Hard-D	mg/L	508	209	236
Fe-D	mg/L	35.3	4.04	5.56
Pb-D	mg/L	<0.00020	<0.00020	<0.00020
Mg-D	mg/L	33.8	14.6	17.5
Mn-D	mg/L	0.813	0.200	0.250
Hg-D	mg/L	0.0000034	<0.0000019	<0.0000019
Mo-D	mg/L	<0.0010	<0.0010	<0.0010
Ni-D	mg/L	0.0481	0.0109	0.0108
K-D	mg/L	1.88	1.14	0.867
S-D	mg/L	192	64.4	71.8
Se-D	mg/L	0.00019	0.00010	<0.00010
Si-D	mg/L	6.87	3.59	4.08
Na-D	mg/L	9.35	4.14	4.95
Sr-D	mg/L	0.565	0.227	0.255
Zn-D	mg/L	0.0892	0.0194	0.0227

Table 25
Q3 Oct. 1st to Dec. 31st

EMS ID		E207409				
DISCHARGE FROM SETTLING POND # 4 (WD)						
Date	October Max. (m3/s)	October Daily (m3/s)	November Max. (m3/s)	November Daily (m3/s)	December Max. (m3/s)	December Daily (m3/s)
1	0.0630	0.05	0.0770	0.069	0.1340	0.095
2	0.0490	0.045	0.0810	0.070	0.0650	0.058
3	0.0840	0.05	0.0930	0.079	0.0620	0.051
4	0.1440	0.119	0.1300	0.124	0.0600	0.054
5	0.1430	0.135	0.1330	0.125	0.0550	0.051
6	0.1480	0.143	0.1280	0.101	0.0530	0.048
7	0.1490	0.146	0.1070	0.089	0.0510	0.046
8	0.1480	0.143	0.1100	0.095	0.0780	0.062
9	0.1450	0.143	0.0950	0.085	0.0800	0.062
10	0.1470	0.14	0.0890	0.087	0.0320	0.021
11	0.1390	0.095	0.0850	0.080	0.0230	0.011
12	0.0850	0.076	0.0860	0.081	0.0210	0.016
13	0.0810	0.07	0.0840	0.076	0.0210	0.017
14	0.0790	0.066	0.0860	0.080	0.0200	0.016
15	0.0830	0.078	0.0810	0.075	0.0220	0.015
16	0.0800	0.072	0.0970	0.083	0.0220	0.017
17	0.1000	0.074	0.1170	0.084	0.0300	0.020
18	0.1030	0.086	0.0790	0.051	0.0280	0.021
19	0.0970	0.093	0.1550	0.075	0.0540	0.036
20	0.1040	0.088	0.1700	0.160	0.0580	0.046
21	0.1120	0.081	0.1530	0.147	0.0390	0.029
22	0.0880	0.076	0.1420	0.131	0.0310	0.027
23	0.0810	0.069	0.1380	0.125	0.0290	0.021
24	0.1140	0.084	0.1280	0.105	0.0250	0.021
25	0.0800	0.070	0.1360	0.119	0.0230	0.019
26	0.0710	0.064	0.1180	0.093	0.0270	0.020
27	0.0830	0.071	0.1050	0.095	0.0390	0.029
28	0.0720	0.066	0.1300	0.102	0.0290	0.026
29	0.0770	0.075	0.1290	0.093	0.0280	0.022
30	0.113	0.105	0.1110	0.094	0.0280	0.023
31	0.0860	0.074			0.0370	0.030
Monthly Max	0.1490		0.1700		0.1340	
Monthly Avg		0.0886		0.0958		0.0332
Weekly TSS is required for decant flow > 0.054 m³/s				All flow data is subject to revisions		

Table 26
Q3 Oct. 1st to Dec. 31st

EMS ID E218582						
DISCHARGE FROM SETTLING POND # 1 (SPD)						
Date	October Max. (m3/s)	October Daily (m3/s)	November Max. (m3/s)	November Daily (m3/s)	December Max. (m3/s)	December Daily (m3/s)
1	0.0764	0.0160	0.0032	0.0000	0.1279	0.0764
2	0.0091	0.0000	0.0443	0.0160	0.0764	0.0341
3	0.0091	0.0000	0.0534	0.0250	0.0877	0.0443
4	0.0032	0.0000	0.1088	0.0877	0.0091	0.0032
5	0.0032	0.0000	0.0764	0.0341	0.0534	0.0341
6	0.0764	0.0160	0.0877	0.0534	0.0091	0.0032
7	0.0534	0.0091	0.0534	0.0091	0.0877	0.0341
8	0.0250	0.0091	0.0639	0.0341	0.1088	0.0639
9	0.0341	0.0160	0.0160	0.0091	0.0764	0.0534
10	0.0989	0.0443	0.0534	0.0250	0.0639	0.0250
11	0.0989	0.0534	0.0250	0.0000	0.0764	0.0534
12	0.0443	0.0250	0.0000	0.0000	0.0443	0.0160
13	0.0764	0.0341	0.0341	0.0091	0.0764	0.0443
14	0.0764	0.0534	0.0250	0.0000	0.0443	0.0160
15	0.0443	0.0250	0.0160	0.0000	0.0877	0.0341
16	0.0091	0.0091	0.0534	0.0341	0.0877	0.0250
17	0.0764	0.0443	0.1088	0.0764	0.0877	0.0341
18	0.0639	0.0341	0.1088	0.0773	0.1185	0.0764
19	0.0764	0.0341	0.0877	0.0639	0.1667	0.0885
20	0.0764	0.0250	0.0639	0.0534	0.1522	0.0128
21	0.0989	0.0341	0.0443	0.0160	0.1088	0.0639
22	0.1088	0.0443	0.0341	0.0032	0.0877	0.0443
23	0.0443	0.0341	0.0443	0.0091	0.0443	0.0091
24	0.0534	0.0250	0.0000	0.0000	0.0443	0.0250
25	0.1088	0.0443	0.0443	0.0250	0.0160	0.0358
26	0.1088	0.0341	0.0250	0.0091	0.0877	0.0639
27	0.0091	0.0032	0.0877	0.0639	0.0639	0.0341
28	0.0032	0.0000	0.0877	0.0534	0.0639	0.0443
29	0.0443	0.0091	0.0877	0.0443	0.0764	0.0160
30	0.0160	0.0032	0.1279	0.0399	0.1185	0.0877
31	0.0091	0.0000			0.1279	0.0854
Monthly Max	0.1088		0.128		0.167	
Monthly Avg		0.022		0.029		0.041
TSS is required weekly when max daily flow > 0.046m ³ /s						
NF= No Flow				All flow data is subject to revisions		

Table 27
Q3 Oct. 1st to Dec. 31st

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

Table 28
Q3 Oct. 1st to Dec. 31st

STATION NAME: LONG LAKE (LLM) EMS ID: E206619													LONG LAKE DEPTH PROFILING																		
Sample Date		07-Oct						15-Oct						21-Oct						28-Oct						05-Nov					
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	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	
22																									5.41	5.86	351.20	4.00	0.50	120.40	
1m from Bottom (BS)	BS= 21						BS=21.5						BS=21.5						BS=21						BS=22						

STATION NAME: MIDDLE QUINSAM LAKE (MQL) EMS ID: E206618													MIDDLE QUINSAM LAKE DEPTH PROFILING																		
Sample Date		07-Oct						15-Oct						21-Oct						28-Oct						05-Nov					
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	16.82	7.33	158.50	96.80	9.39	166.60	13.48	7.42	170.00	89.90	9.37	173.00	9.89	7.06	167.30	87.80	9.92	130.10	12.07	6.93	166.90	88.80	9.55	124.30	9.45	6.97	135.10	88.90	10.16	147.50	
2	16.76	7.32	158.50	96.80	9.40	166.50	13.47	7.44	168.70	89.90	9.36	172.50	9.86	7.06	167.10	87.40	9.90	132.60	12.08	6.91	166.70	88.80	9.55	125.20	9.42	6.96	135.10	88.70	10.15	147.50	
3	16.74	7.31	158.50	96.60	9.38	166.20	13.48	7.44	169.90	89.80	9.35	172.50	9.83	7.06	167.00	87.20	9.88	135.70	12.06	6.92	166.80	88.80	9.55	125.10	9.41	6.96	125.20	88.70	10.15	147.90	
4	16.73	7.32	158.50	96.50	9.38	166.30	13.48	7.44	168.90	89.70	9.35	172.50	9.81	7.06	166.90	87.10	9.88	137.70	12.06	6.92	166.80	88.70	9.54	124.70	9.40	6.95	135.00	88.60	10.14	148.20	
5	16.67	7.28	158.70	94.40	9.19	166.60	13.48	7.45	169.90	89.70	9.35	171.90	9.79	7.06	166.90	87.00	9.86	138.70	12.05	6.92	166.80	88.70	9.54	124.20	9.40	6.94	135.10	88.50	10.13	148.70	
6	16.61	7.27	159.60	94.00	9.15	166.80	13.48	7.44	169.90	89.70	9.34	172.20	9.78	7.06	166.90	87.00	9.86	139.70	12.05	6.92	166.60	88.60	9.50	123.90	9.39	6.94	135.20	88.50	10.13	148.70	
7	16.51	7.24	159.30	92.30	9.00	167.30	13.47	7.45	169.80	89.50	9.33	171.70	9.78	7.06	167.00	87.00	9.86	141.70	12.04	6.92	166.50	88.50	9.53	124.30	9.39	6.93	135.10	88.40	10.13	149.00	
8	16.37	7.22	159.60	89.90	8.80	167.60	13.46	7.43	170.00	89.40	9.32	171.20	9.78	7.06	167.10	87.00	9.86	142.20	12.04	6.92	166.50	88.50	9.52	123.50	9.39	6.93	135.10	88.40	10.12	149.30	
9	15.15	7.08	160.20	82.20	8.30	169.60	13.45	7.43	170.00	89.20	9.30	171.80	9.78	7.06	167.20	87.00	9.85	143.10	12.04	6.91	166.60	88.40	9.52	123.70	9.39	6.93	135.20	88.40	10.12	149.50	
10	12.28	6.83	162.50	78.30	8.39	175.20	13.42	7.42	171.60	88.60	9.25	171.70	9.77	7.06	167.10	86.60	9.83	143.90	12.04	6.92	166.60	88.40	9.52	124.60	9.39	6.92	135.20	88.40	10.12	149.80	
11	10.76	6.70	165.50	60.90	6.77	177.80	13.27	7.39	171.00	87.00	9.10	172.20	9.73	7.03	167.10	86.10	9.80	144.70	12.03	6.91	166.60	88.30	9.51	124.50	9.38	6.92	135.40	88.40	10.12	149.80	
12	9.81	6.52	173.80	34.10	3.88	182.00	12.55	7.16	172.00	71.60	7.64	174.60	9.66	7.03	167.00	86.00	9.77	145.60	11.60	6.78	179.60	76.50	8.31	128.20	9.38	6.92	135.30	88.40	10.12	149.90	

Table 29
Q3 Oct. 1st to Dec. 31st

EMS ID E206619							Count	Maximum	5 in 30 Ave	Water Quality Guideline	
StnName Long Lake Middle 1 Metre Depth										Average	Max
StnCode LLM1											
Date		7-Oct-20	15-Oct-20	21-Oct-20	28-Oct-20	5-Nov-20					
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
Cl-D	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	5	<1.0	0.50	150	600
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	0.737	0.8706
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	0.00032		
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		
N-NO23	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	5	<0.020	0.0100		
P-T	mg/L	<0.0030		<0.0030	<0.0030	0.0034	4	0.0034	0.00198	0.007	
Chlr-a	ug/L	0.89					1	0.89	0.89		
Chlr-c	ug/L	<0.50					1	<0.50	0.250		
Pheo	ug/L	<0.50					1	<0.50	0.250		
Notes:											
Factor applied to less-than results when calculating statistics: 0.5											

Table 30
Q3 Oct. 1st to Dec. 31st

EMS ID E206619							Count	Maximum	5 in 30 Ave	Water Quality Guideline	
StnName Long Lake Middle 4 Metre Depth										Average	Max
StnCode LLM4											
Date	7-Oct-20		15-Oct-20	21-Oct-20	28-Oct-20	5-Nov-20					
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
Cl-D	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	5	<1.0	0.50	150	600
Alk-T	mg/L	38	42	37	36	30	5	42	36.6		
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	0.737	0.8706
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		
N-NO23	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	5	<0.020	0.0100		
P-T	mg/L	<0.0030		<0.0030	<0.0030	<0.0030	4	<0.0030	0.00150	0.007	
Notes:											
Factor applied to less-than results when calculating statistics: 0.5											

Table 31
Q3 Oct. 1st to Dec. 31st

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							
Parameter	Unit								Count	Maximum	5 in 30 Ave	Average	Max			
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			
Cl-D	mg/L	<1.0	<1.0		<1.0	<1.0	<1.0		5	<1.0	0.50	150	600			
Alk-T	mg/L	48	58		51	48	34		5	58	47.8					
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	0.737	0.8706			
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					
N-NO23	mg/L	<0.020	<0.020		<0.020	<0.020	<0.020		5	<0.020	0.0100					
P-T	mg/L	<0.0030			<0.0030	<0.0030	<0.0030		4	<0.0030	0.00150	0.007				
Notes:																
Factor applied to less-than results when calculating statistics: 0.5																

Table 32
Q3 Oct. 1st to Dec. 31st

E206619							Count	Maximum	5 in 30 Ave	Water Quality Guideline	
Long Lake Middle 1 Metre from Bottom Depth										Average	Max
LLMB											
Date		7-Oct-20	15-Oct-20	21-Oct-20	28-Oct-20	5-Nov-20					
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
Cl-D	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	5	<1.0	0.50	150	600
Alk-T	mg/L	54	63	57	59	53	5	63	57.2		
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	0.737	0.8706
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		
N-NO23	mg/L	0.102	0.104	0.102	0.104	0.113	5	0.113	0.105		
P-T	mg/L	<0.0030		<0.0030	<0.0030	<0.0030	4	<0.0030	0.00150	0.007	
Notes:											
Factor applied to less-than results when calculating statistics: 0.5											

Table 33
Q3 Oct. 1st to Dec. 31st

EMS ID E206618							Count	Maximum	5 in 30 Ave	Water Quality Guideline	
StnName Middle Quinsam Lake 1 Metre Depth										Average	Max
StnCode MQL1											
Date		7-Oct-20	15-Oct-20	21-Oct-20	28-Oct-20	5-Nov-20					
Parameter	Unit										
SO4-D	mg/L	27	31	31	31	29	5	31	29.8	128	
Turb	NTU	0.19	0.46	1.6	0.36	0.28	5	1.6	0.58	2.5	8.5
Cl-D	mg/L	1.1	1.4	1.3	1.5	1.4	5	1.5	1.3	150	600
Alk-T	mg/L	39	44	40	41	38	5	44	40.4		
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	0.737	0.8706
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		
N-NO23	mg/L	<0.020	<0.020	0.151	<0.020	<0.020	5	0.151	0.0382		
P-T	mg/L	<0.0030		<0.0030	<0.0030	<0.0030	4	<0.0030	0.00150	0.007	
Chlr-a	ug/L	<0.50					1	<0.50	0.250		
Chlr-c	ug/L	<0.50					1	<0.50	0.250		
Pheo	ug/L	1.9					1	1.9	1.9		
Notes:											
Factor applied to less-than results when calculating statistics: 0.5											

Table 34
Q3 Oct. 1st to Dec. 31st

EMS ID	E206618						Count	Maximum	Water Quality Guideline		
StnName	Middle Quinsam Lake 4 Metre Depth								5 in 30 Ave	Average	Max
StnCode	MQL4										
Date	7-Oct-20		15-Oct-20		21-Oct-20		28-Oct-20		5-Nov-20		
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
Cl-D	mg/L	1.1	1.3	1.2	1.5	1.4	5	1.5	1.3	150	600
Alk-T	mg/L	38	42	40	41	38	5	42	39.8		
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	0.737	0.8706
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	0.000050	1	2
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	5	<0.0010	0.000050	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		
N-NO23	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	5	<0.020	0.0100		
P-T	mg/L	<0.0030		<0.0030	<0.0030	<0.0030	4	<0.0030	0.00150	0.007	
Notes:											
Factor applied to less-than results when calculating statistics: 0.5											

Table 35
Q3 Oct. 1st to Dec. 31st

EMS ID	E206618						Count	Maximum	5 in 30 Ave	Water Quality Guideline	
StnName	Middle Quinsam Lake 9 Metre Depth									Average	Max
StnCode	MQL9										
Date	7-Oct-20		15-Oct-20		21-Oct-20		28-Oct-20			5-Nov-20	
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
Cl-D	mg/L	1.1	1.4	1.3	1.4	1.5	5	1.5	1.3	150	600
Alk-T	mg/L	39	44	40	41	38	5	44	40.4		
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	0.737	0.8706
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		
N-NO23	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	5	<0.020	0.0100		
P-T	mg/L	<0.0030		<0.0030	<0.0030	<0.0030	4	<0.0030	0.00150	0.007	
Notes:											
Factor applied to less-than results when calculating statistics: 0.5											

Table 36
Q3 Oct. 1st to Dec. 31st

EMS ID E206618							Count	Maximum	Water Quality Guideline		
StnName Middle Quinsam Lake 1 Metre from Bottom Depth									5 in 30 Ave	Average	Max
StnCode MQLB											
Date	7-Oct-20		15-Oct-20	21-Oct-20	28-Oct-20	5-Nov-20					
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
Cl-D	mg/L	4.1	5.0	3.0	1.5	1.5	5	5.0	3.0	150	600
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	0.737	0.8706
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		
N-NO23	mg/L	0.026	0.027	<0.020	<0.020	<0.020	5	0.027	0.0166		
P-T	mg/L	0.0089		<0.0030	<0.0030	<0.0030	4	0.0089	0.00335	0.007	
Notes:											
Factor applied to less-than results when calculating statistics: 0.5											

Table 37
Q3 Oct. 1st to Dec. 31st

EMS ID							Count	Maximum	Water Quality Guideline		
StnName	LLE Zone of Dilution 2- In Long lake near the outlet								5 in 30 Ave	Average	Max
StnCode	LLEZ2										
Date	7-Oct-20	15-Oct-20	21-Oct-20	28-Oct-20	5-Nov-20						
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
Cl-D	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	5	<1.0	0.50	150	600
Alk-T	mg/L	38	42	38	37	25	5	42	36.0		
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	0.737	0.8706
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		
N-NO23	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	5	<0.020	0.0100		
P-T	mg/L	0.017		<0.0030	<0.0030	<0.0030	4	0.017	0.00538	0.007	
Notes:											
Factor applied to less-than results when calculating statistics: 0.5											

Table 38
Q3 Oct. 1st to Dec. 31st

EMS ID	E217017						Count	Maximum	5 in 30 Ave	Water Quality Guidelines	
StnName	No Name Lake Outlet									Average	Max
StnCode	NNO										
Date	6-Oct-20		14-Oct-20	22-Oct-20	29-Oct-20	4-Nov-20					
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	0.737	0.8706
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	0.0004	
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		
Cl-D	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	5	<1.0	0.50	150	600
pH-F	pH Unit	7.02	7.06	7.01	7.06	7.01	5	7.06	7.03	9	
Cond-F	uS/cm	48.4	49.1	51.2	47.3	38.1	5	51.2	46.8		
Notes:											
Factor applied to less-than results when calculating statistics: 0.5											

Table 39
Q3 Oct. 1st to Dec. 31st

EMS ID	E219412						Count	Maximum	5 in 30 Ave	Water Quality Guidelines	
StnName	Long Lake Outlet									Average	Max
StnCode	LLO										
Date	6-Oct-20		14-Oct-20	22-Oct-20	29-Oct-20	4-Nov-20					
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	0.737	0.8706
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		
Cl-D	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	5	<1.0	0.50	150	600
pH-F	pH Unit	7.16	7.32	7.36	7.53	7.25	5	7.53	7.32		
Cond-F	uS/cm	259	248	246	172.5	146	5	259	214.3		
Notes:											
Factor applied to less-than results when calculating statistics: 0.5											

Table 40
Q3 Oct. 1st to Dec. 31st

EMS ID	E0126402						Count	Maximum	5 in 30 Ave	Water Quality Guidelines	
StnName	Quinsam River at Argonaut Road									Average	Max
StnCode	WA										
Date	6-Oct-20	14-Oct-20	22-Oct-20	29-Oct-20	4-Nov-20						
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	0.737	0.8706
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		
Cl-D	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	5	<1.0	0.50	150	600
pH-F	pH Unit	6.88	7	7.56	7.73	7.35	5	7.73	7.30	9	6.5
Cond-F	uS/cm	80.3	48.4	47.6	50.8	39.5	5	80.3	53.3		
Notes:											
Factor applied to less-than results when calculating statistics: 0.5											

Table 41
Q3 Oct. 1st to Dec. 31st

EMS ID	E0900504						Count	Maximum	5 in 30 Ave	Water Quality Guidelines	
StnName	Outflow from Middle Quinsam Lake									Average	Max
StnCode	WB										
Date	6-Oct-20	14-Oct-20	22-Oct-20	29-Oct-20	4-Nov-20						
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	0.737	0.8706
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		
Cl-D	mg/L	1.1	1.1	1.1	1.3	<1.0	5	1.3	1.02	150	600
pH-F	pH Unit	7.13	7.34	7.82	7.66	7.34	5	7.82	7.46		
Cond-F	uS/cm	174.3	179.4	168.9	148.4	142	5	179.4	162.6		
Notes:											
Factor applied to less-than results when calculating statistics: 0.5											

Table 42
Q3 Oct. 1st to Dec. 31st

EMS ID	E292113						Count	Maximum	5 in 30 Ave	Water Quality Guidelines	
StnName	Quinsam River Downstream of 7 South Mine Operation									Average	Max
StnCode	7SQR										
Date	6-Oct-20	14-Oct-20	22-Oct-20	29-Oct-20	4-Nov-20						
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	0.737	0.8706
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		
Cl-D	mg/L	1.5	1.4	1.3	1.5	1.5	5	1.5	1.4	150	600
pH-F	pH Unit	6.94	7.26	7.37	7.74	7.38	5	7.74	7.34		
Cond-F	uS/cm	174.4	174.8	165	146.3	148.6	5	174.8	161.8		
Notes:											
Factor applied to less-than results when calculating statistics: 0.5											

Table 43
Q3 Oct. 1st to Dec. 31st

EMS ID		E299256					Count	Maximum	5 in 30 Ave	Water Quality Guidelines			
StnName	Quinsam River Downstream of the Confluence with Iron River									Average	Max		
StnCode	IRQR												
Date	6-Oct-20		14-Oct-20		22-Oct-20							29-Oct-20	
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	0.002	0.007		
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	0.737	0.8706		
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				
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				
Cl-D	mg/L	1.5	1.1	<1.0	1.2	1.1	5	1.5	1.08	150	600		
pH-F	pH Unit	6.87	7.24	7.47	7.72	7.52	5	7.72	7.36				
Cond-F	uS/cm	150.5	109	136	124.4	121.3	5	150.5	128.2				
Notes:													
Factor applied to less-than results when calculating statistics: 0.5													

Table 44
Q3 Oct. 1st to Dec. 31st

EMS ID		E297231					Count	Maximum	5 in 30 Ave	Water Quality Guidelines	
StnName		Iron River Upstream of 75 Mine Operation & Reclaimed 242 Mine								Average	Max
StnCode		IR6									
Date		6-Oct-20	14-Oct-20	22-Oct-20	29-Oct-20	4-Nov-20					
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	0.737	0.8706
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	0.0011	
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		
Cl-D	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	5	<1.0	0.50	150	600
pH-F	pH Unit	7.44	7.35	7.51	7.96	7.41	5	7.96	7.53		
Cond-F	uS/cm	112.4	64.1	76.6	70.4	68.1	5	112.4	78.3		
Notes:											
Factor applied to less-than results when calculating statistics: 0.5											

Table 45
Q3 Oct. 1st to Dec. 31st

EMS ID		E297232					Count	Maximum	5 in 30 Ave	Water Quality Guidelines	
StnName		Iron River Downstream of 7S Mine Operation & Reclaimed 242 Mine								Average	Max
StnCode		IR8									
Date		6-Oct-20	14-Oct-20	22-Oct-20	29-Oct-20	4-Nov-20					
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	0.737	0.8706
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	0.0001	
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		
Cl-D	mg/L	1.0	<1.0	<1.0	<1.0	<1.0	5	1.0	0.60	150	600
pH-F	pH Unit	7.28	7.24	7.62	7.94	7.45	5	7.94	7.51		
Cond-F	uS/cm	117.4	94.6	82.5	67.4	51.2	5	117.4	82.6		
Notes:											
Factor applied to less-than results when calculating statistics: 0.5											

Table 46
Q3 Oct. 1st to Dec. 31st

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				
<u>Cryptocyclops bicolor</u>	adult		28	11
<u>Microcyclops varicans</u>	adult		9	
UID	copepodid	35	29	
Order : Calanoida				
Family : Diaptomidae				
<u>Skistodiaptomus oregonensis</u>	adult	37	37	42
UID	copepodid	2		18
UID Calanoida / Cyclopoida	nauplii	57	66	60
Order : Cladocera				
<u>Bosmina longirostris</u>	adult		2	32
<u>Daphnia longiremis</u>	adult	68	66	5
<u>Daphnia rosea</u>	adult	37	33	103
<u>Daphnia sp.</u>	juvenile			39
<u>Diaphanosoma brachyurum</u>	adult	4		42
<u>Polyphemus pediculus</u>	adult			3
Phylum : Rotifera				
<u>Asplanchna sp.</u>		25	37	
<u>Conochilus sp.</u>	colonies			3
<u>Conochilus sp.</u>	solitary			55
<u>Kellicottia longispina</u>		343	211	97
<u>Keratella cochlearis</u>		365	440	5
<u>Keratella quadrata</u>		169	42	32
<u>Polyarthra sp.</u>		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 Q3 Oct. 1st to Dec. 31st				
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	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	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
Q3 Oct. 1st to Dec. 31st

Ex-Situ Groundwater			3-North Area					
Area Well ID			QU0821GS	QU0821GD	QU0821GD	QU1010S	QU1010S	QU1010D
Date			10-Nov-20	10-Nov-20	10-Nov-20	8-Dec-20	8-Dec-20	8-Dec-20
	QA/QC				Replicate		Replicate	M
Parameter	Units	CSR Freshwater Aquatic Life (C)						
SO4-D	mg/L	1280	<1.0	<1.0	<1.0	3.4	3.5	<1.0
H2SEquiv	mg/L	0.02	0.0436	0.191	0.191	0.723	0.755	0.0957
Cond-F	uS/cm		607.3	7.43	7.43	232.7	232.7	10611.8
pH-F	pH Units		7.85	7.43	7.43	7.94	7.94	7.11
Turb	NTU		5.3	12	11	10	9.3	140
Alk-T	mg/L		200	210	210	150	150	100
Acidity83	mg/L		<1.0	4.8	5.5	<1.0	<1.0	9.6
N-D	mg/L		0.387	4.16	3.95	0.312	0.301	0.798
DOC	mg/L		0.87	19	18	0.90	<0.50	6.1
Hydrox	mg/L		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bicarb	mg/L		240	260	260	190	190	130
Carb	mg/L		2.9	<1.0	<1.0	<1.0	<1.0	<1.0
Cl-D	mg/L	1500	160	1300	1300	4.9	5.0	3000
F-D	mg/L		1.8	0.93	0.92	0.67	0.66	<0.050
Br-D	mg/L		0.19	1.7	1.7	<0.010	<0.010	4.5
P-D	mg/L		0.11	0.45	0.45	0.022	0.024	0.065
Al-D	mg/L		<0.0060	<0.015	<0.015	0.0033	<0.0030	<0.015
Ag-D	mg/L		<0.000040	<0.00010	<0.00010	<0.000020	<0.000020	<0.00010
As-D	mg/L	0.05	0.414	0.175	0.175	0.108	0.104	0.0157
Ba-D	mg/L	10	0.548	2.73	2.78	0.318	0.318	1.19
B-D	mg/L	50	2.00	2.94	3.05	0.597	0.608	0.34
Be-D	mg/L	0.053	<0.00020	<0.00050	<0.00050	<0.00010	<0.00010	<0.00050
Bi-D	mg/L		<0.0020	<0.0050	<0.0050	<0.0010	<0.0010	<0.0050
Cd-D	mg/L		<0.000020	<0.000050	<0.000050	<0.000010	<0.000010	<0.000050
Ca-D	mg/L		22.4	142	140	22.4	22.6	562
Cr-D	mg/L	0.010	<0.0020	<0.0050	<0.0050	<0.0010	<0.0010	<0.0050
Co-D	mg/L	0.04	<0.00040	<0.0010	<0.0010	<0.00020	<0.00020	<0.0010
Cu-D	mg/L		<0.00040	<0.0010	<0.0010	<0.00020	<0.00020	<0.0010
Fe-D	mg/L		1.19	1.62	1.65	0.168	0.173	8.72
Hard-D	mg/L		76.7	428	424	76.8	77.3	1450
Pb-D	mg/L		<0.00040	<0.0010	<0.0010	<0.00020	<0.00020	<0.0010
Mg-D	mg/L		5.07	18.0	18.2	5.09	5.08	10.7
Mn-D	mg/L		0.0619	0.132	0.132	0.0296	0.0297	0.344
Hg-D	mg/L	0.001	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019
Na-D	mg/L		144	647	634	34.5	34.8	1280
Mo-D	mg/L	10	<0.0020	<0.0050	<0.0050	<0.0010	<0.0010	<0.0050
Ni-D	mg/L		<0.0020	<0.0050	<0.0050	<0.0010	<0.0010	<0.0050
K-D	mg/L		4.52	11.4	11.4	3.24	3.26	7.98
S-D	mg/L		<6.0	<15	<15	<3.0	<3.0	<15
Sb-D	mg/L	0.2	<0.0010	<0.0025	<0.0025	<0.00050	<0.00050	<0.0025
Se-D	mg/L	0.01	<0.00020	<0.00050	<0.00050	0.00711	0.00724	0.00142
Si-D	mg/L		3.27	4.65	4.57	4.30	4.34	3.59
Sr-D	mg/L		0.579	2.75	2.75	0.376	0.376	5.69
Tl-D	mg/L	0.003	<0.000020	<0.000050	<0.000050	<0.000010	<0.000010	<0.000050
Ti-D	mg/L	1.00	<0.010	<0.025	<0.025	<0.0050	<0.0050	<0.025
U-D	mg/L	3	<0.00020	<0.00050	<0.00050	<0.00010	<0.00010	<0.00050
V-D	mg/L		<0.010	<0.025	<0.025	<0.0050	<0.0050	<0.025
Zn-D	mg/L		<0.010	<0.025	<0.025	<0.0050	<0.0050	<0.025

Table 49
Q3 Oct. 1st to Dec. 31st

Ex-Situ Groundwater			River Barrier Pillar				2-North Below Plant						
Area Well ID			QU1105S	QU1105S	QU1105D	QU1109S	MW001S	MW001S	MW001D	MW001D	MW006S	MW006D	MW006D
Date			17-Dec-20	17-Dec-20	17-Dec-20	19-Nov-20	12-Nov-20	15-Dec-20	12-Nov-20	15-Dec-20	14-Dec-20	14-Dec-20	14-Dec-20
	QA/QC		M	Replicate	M	M	M	M	M	M	M	M	Replicate
Parameter	Units	CSR Freshwater Aquatic Life (C)											
SO4-D	mg/L	1280	180	180	170	160	730	600	700	580	580	11	11
H2SEquiv	mg/L	0.02	0.308	0.308	26.6	0.372	0.0159	0.000957	0.000957	0.000957	0.000957	0.000957	0.000957
Cond-F	uS/cm		505	505	3772.8	8945	1264.7	1341	1161.1	1383	1046	150	150
pH-F	pH Units		6.93	6.93	7.6	7.83	6.17	6.52	6.35	6.68	7.41	7.94	7.94
Turb	NTU		10	9.0	69	7.8	1.2	1.6	22	31	0.82	1.5	0.94
Alk-T	mg/L		270	260	420	440	310	320	340	340	150	77	78
Acidity83	mg/L		9.4	7.3	<1.0	<1.0	22.7	21.2	25.8	16.4	<1.0	<1.0	<1.0
N-D	mg/L		0.187	0.196	0.560	0.307	0.294	0.134	0.101	0.137	0.367	0.081	0.081
DOC	mg/L		2.3	1.9	8.7	1.1	2.7	1.7	2.1	1.8	1.3	<0.50	<0.50
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		330	320	480	500	370	390	420	420	190	94	95
Carb	mg/L		<1.0	<1.0	16	16	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cl-D	mg/L	1500	2.2	2.1	1400	27	3.6	2.5	3.7	30	3.6	<1.0	<1.0
F-D	mg/L		0.21	0.21	0.059	0.62	<0.050	<0.050	<0.050	<0.050	0.064	0.10	0.10
Br-D	mg/L		<0.010	<0.010	1.9	0.039	0.066	0.082	0.059	0.082	0.077	<0.010	<0.010
P-D	mg/L		0.013	0.012	0.52	0.054	0.0065	<0.0030	0.0091	<0.0030	0.040	0.11	0.11
Al-D	mg/L		<0.0030	<0.0030	0.0102	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.0100	0.0098
Ag-D	mg/L		<0.000020	<0.000020	<0.000040	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
As-D	mg/L	0.05	0.0701	0.0708	0.0120	0.147	0.00077	0.00100	0.00289	0.00274	0.00171	0.0264	0.0264
Ba-D	mg/L	10	0.171	0.174	0.247	0.0465	0.0257	0.0224	0.0565	0.0549	0.0327	0.0094	0.0094
B-D	mg/L	50	0.830	0.849	0.39	1.79	0.365	0.390	0.376	0.381	0.174	<0.050	<0.050
Be-D	mg/L	0.053	<0.00010	<0.00010	<0.00020	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bi-D	mg/L		<0.0010	<0.0010	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cd-D	mg/L		<0.000010	<0.000010	<0.000020	<0.000010	0.000063	0.000059	0.000021	0.000066	0.000035	<0.000010	<0.000010
Ca-D	mg/L		50.6	50.5	142	25.2	257	216	264	232	147	16.4	16.8
Cr-D	mg/L	0.010	<0.0010	<0.0010	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Co-D	mg/L	0.04	<0.00020	<0.00020	<0.00040	<0.00020	0.00212	0.00196	0.00327	0.00337	<0.00020	<0.00020	<0.00020
Cu-D	mg/L		<0.00020	<0.00020	<0.00040	<0.00020	0.00039	0.00051	<0.00020	0.00040	0.00072	0.00064	0.00064
Fe-D	mg/L		1.50	1.48	<0.010	0.247	0.594	0.660	4.09	3.39	<0.0050	<0.0050	<0.0050
Hard-D	mg/L		170	171	373	89.3	811	694	822	728	422	43.0	44.0
Pb-D	mg/L		<0.00020	<0.00020	<0.00040	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Mg-D	mg/L		10.7	10.8	4.68	6.39	41.0	37.3	39.6	36.3	13.5	0.521	0.525
Mn-D	mg/L		0.205	0.211	0.158	0.0275	4.05	2.06	2.58	2.20	0.0493	0.0151	0.0153
Hg-D	mg/L	0.001	<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		109	111	864	245	91.8	84.4	96.4	89.9	140	19.0	19.0
Mo-D	mg/L	10	<0.0010	<0.0010	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	0.0011	0.0297	0.0030	0.0029
Ni-D	mg/L		<0.0010	<0.0010	<0.0020	<0.0010	0.0021	0.0011	0.0032	0.0035	<0.0010	<0.0010	<0.0010
K-D	mg/L		3.25	3.33	5.00	3.15	2.12	1.92	2.07	1.98	2.22	0.911	0.949
S-D	mg/L		52.3	54.9	257	57.6	226	196	225	206	202	3.9	3.4
Sb-D	mg/L	0.2	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Se-D	mg/L	0.01	0.00161	0.00191	0.0522	0.00250	<0.00010	<0.00010	<0.00010	<0.00010	0.00035	<0.00010	<0.00010
Si-D	mg/L		3.29	3.18	4.84	6.54	8.06	8.70	8.33	8.47	4.89	3.49	3.49
Sr-D	mg/L		0.643	0.645	1.82	0.360	1.51	1.37	1.46	1.34	0.857	0.0748	0.0759
Tl-D	mg/L	0.003	<0.000010	<0.000010	<0.000020	<0.000010	<0.000010	<0.000010	<0.000010	0.000018	<0.000010	<0.000010	<0.000010
Ti-D	mg/L	1.00	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
U-D	mg/L	3	<0.00010	<0.00010	0.00028	<0.00010	0.00199	0.00176	0.00260	0.00230	0.00637	0.00051	0.00049
V-D	mg/L		<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Zn-D	mg/L		<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050

Table 50
Q3 Oct. 1st to Dec. 31st

Ex-Situ Groundwater			7-South Area			4-South Mine Area			7-South Area 5	
Area Well ID			QU0810	QU0813A	QU0813B	QU1009S	QU1009D	QU1009D	QU1136D	QU1136D
Date			9-Dec-20	30-Nov-20	30-Nov-20	10-Dec-20	10-Dec-20	10-Dec-20	16-Dec-20	16-Dec-20
	QA/QC							Replicate		Replicate
Parameter	Units	CSR Freshwater Aquatic Life (C)								
SO4-D	mg/L	1280	23	42	31	100	78	78	15	15
H2SEquiv	mg/L	0.02	0.0223	0.181	0.0213	0.0191	0.106	0.104	0.00755	0.000957
Cond-F	uS/cm			330.1	224.7	377.6	357.5	357.5	309.7	309.7
pH-F	pH Units			7.72	7.97	6.63	7.14	7.14	7.29	7.29
Turb	NTU		53	4.3	180	25	7.0	6.9	34	36
Alk-T	mg/L		170	190	120	160	180	180	150	150
Acidity83	mg/L		<1.0	<1.0	<1.0	7.8	1.5	1.5	1.7	1.6
N-D	mg/L		0.282	1.26	0.190	0.108	0.162	0.156	0.249	0.128
DOC	mg/L		0.55	<0.50	1.0	1.1	0.70	0.75	0.59	<0.50
Hydrox	mg/L		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bicarb	mg/L		210	230	150	200	220	220	180	180
Carb	mg/L		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cl-D	mg/L	1500	<1.0	9.7	<1.0	<1.0	1.5	1.3	1.1	1.0
F-D	mg/L		0.74	0.72	0.37	0.061	0.24	0.24	0.66	0.67
Br-D	mg/L		<0.010	0.019	<0.010	0.033	0.020	0.020	<0.010	<0.010
P-D	mg/L		0.014	0.032	0.060	<0.0030	0.0054	0.0080	0.044	0.049
Al-D	mg/L		<0.0030	<0.0030	0.0040	<0.0030	<0.0030	<0.0030	<0.0060	<0.0060
Ag-D	mg/L		<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000040	<0.000040
As-D	mg/L	0.05	0.00056	0.383	0.442	0.0821	0.103	0.105	0.764	0.828
Ba-D	mg/L	10	0.111	0.264	0.0384	0.130	0.112	0.113	0.0985	0.106
B-D	mg/L	50	0.169	0.774	0.280	0.054	0.426	0.401	0.56	0.64
Be-D	mg/L	0.053	<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	<0.0020	<0.0020
Cd-D	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000020	<0.000020
Ca-D	mg/L		51.2	36.5	29.7	75.4	53.3	53.2	38.8	41.3
Cr-D	mg/L	0.010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020	<0.0020
Co-D	mg/L	0.04	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00040	<0.00040
Cu-D	mg/L		0.00126	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00040	<0.00040
Fe-D	mg/L		<0.0050	0.242	0.0437	4.59	0.654	0.617	0.531	0.558
Hard-D	mg/L		171	128	95.2	234	177	176	128	138
Pb-D	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00040	<0.00040
Mg-D	mg/L		10.6	9.06	5.09	11.0	10.6	10.5	7.68	8.37
Mn-D	mg/L		0.0087	0.0430	0.0780	0.367	0.0557	0.0558	0.0394	0.0432
Hg-D	mg/L	0.001	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019
Na-D	mg/L		3.48	51.0	25.1	8.60	29.7	30.2	10.9	11.9
Mo-D	mg/L	10	0.0011	<0.0010	0.0027	<0.0010	<0.0010	<0.0010	0.0024	0.0026
Ni-D	mg/L		0.0011	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020	<0.0020
K-D	mg/L		2.47	2.29	1.39	0.709	1.55	1.55	0.71	0.79
S-D	mg/L		7.1	15.2	11.1	31.2	24.1	24.3	<6.0	<6.0
Sb-D	mg/L	0.2	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0010	<0.0010
Se-D	mg/L	0.01	0.00012	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00034	0.00033
Si-D	mg/L		3.73	3.67	4.16	8.73	9.08	9.51	4.25	4.63
Sr-D	mg/L		0.441	0.500	0.230	0.265	0.869	0.877	0.361	0.401
Tl-D	mg/L	0.003	0.000021	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000020	<0.000020
Ti-D	mg/L	1.00	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010
U-D	mg/L	3	0.00081	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	<0.00020
V-D	mg/L		<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	<0.010	<0.010

Table 51
Q3 Oct. 1st to Dec. 31st

In-Situ Groundwater		2-North Mine Pool				
Area	Well ID	1M2N	1M2N	3M2N	3M2N	QU1013D
Date		9-Nov-20	9-Nov-20	5-Nov-20	8-Dec-20	21-Dec-20
	QA/QC		Replicate	M	M	
Parameter	Units					
SO4-D	mg/L	350	360	830	750	320
H2SEquiv	mg/L					
Cond-F	uS/cm	1776	1776	422	2008	2621.6
pH-F	pH Units	7.56	7.56	7.81	7.26	6.45
Turb	NTU	21	21	5.6	2.1	26
Alk-T	mg/L	550	560	420	400	550
Acidity83	mg/L	8.9	11.7	10.7	11.8	13.3
N-D	mg/L				0.202	0.367
DOC	mg/L				<0.50	0.64
Hydrox	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Bicarb	mg/L	670	680	510	480	670
Carb	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Cl-D	mg/L	27	27	6.1	4.9	13
F-D	mg/L	0.14	0.14	0.12	0.13	0.13
Br-D	mg/L	0.064	0.067	0.10	0.080	0.055
P-D	mg/L				<0.0030	0.0083
Al-D	mg/L	<0.0060	<0.0030	<0.0060	<0.0030	<0.0030
Ag-D	mg/L	<0.000040	<0.000020	<0.000040	<0.000020	<0.000020
As-D	mg/L	0.00942	0.00984	0.00045	0.00035	0.00305
Ba-D	mg/L	0.0236	0.0242	0.0162	0.0136	0.0634
B-D	mg/L	1.08	1.03	0.81	0.740	0.990
Be-D	mg/L	<0.00020	<0.00010	<0.00020	<0.00010	<0.00010
Bi-D	mg/L	<0.0020	<0.0010	<0.0020	<0.0010	<0.0010
Cd-D	mg/L	<0.000020	<0.000010	<0.000020	<0.000010	<0.000010
Ca-D	mg/L	74.8	75.4	144	123	70.5
Cr-D	mg/L	<0.0020	<0.0010	<0.0020	<0.0010	<0.0010
Co-D	mg/L	<0.00040	<0.00020	0.00069	0.00025	<0.00020
Cu-D	mg/L	<0.00040	<0.00020	<0.00040	<0.00020	<0.00020
Fe-D	mg/L	2.27	2.29	0.331	0.131	2.34
Hard-D	mg/L	217	219	440	376	201
Pb-D	mg/L	<0.00040	<0.00020	<0.00040	<0.00020	<0.00020
Mg-D	mg/L	7.46	7.59	19.5	16.9	6.07
Mn-D	mg/L	0.243	0.248	0.197	0.110	0.343
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019
Na-D	mg/L	299	316	363	299	317
Mo-D	mg/L	<0.0020	0.0016	<0.0020	<0.0010	<0.0010
Ni-D	mg/L	<0.0020	<0.0010	<0.0020	0.0012	<0.0010
K-D	mg/L	4.04	4.18	3.77	3.49	3.96
S-D	mg/L	122	124	283	226	126
Sb-D	mg/L	<0.0010	<0.00050	<0.0010	<0.00050	<0.00050
Se-D	mg/L	<0.00020	<0.00010	<0.00020	<0.00010	<0.00010
Si-D	mg/L	3.58	3.39	3.21	3.07	4.14
Sr-D	mg/L	0.829	0.839	1.50	1.28	0.838
Tl-D	mg/L	<0.000020	<0.000010	<0.000020	<0.000010	<0.000010
Ti-D	mg/L	<0.010	<0.0050	<0.010	<0.0050	<0.0050
U-D	mg/L	<0.00020	<0.00010	<0.00020	<0.00010	<0.00010
V-D	mg/L	<0.010	<0.0050	<0.010	<0.0050	<0.0050
Zn-D	mg/L	<0.010	<0.0050	<0.010	<0.0050	<0.0050

Table 52
Q3 Oct. 1st to Dec. 31st

In-Situ Groundwater		3-South Pit		2-3 South Mine Pool				5-South Mine Pool
Area	Well ID	MW002	MW002	INF	INF	INF	MW004	SSMW
Date		10-Dec-20	10-Dec-20	5-Oct-20	2-Nov-20	7-Dec-20	10-Dec-20	7-Dec-20
Parameter	QA/QC		Replicate					
	Units							
SO4-D	mg/L	1300	1300	640	620	650	290	270
H2SEquiv	mg/L	0.000957	0.0106	0.0149			0.000957	0.0298
Cond-F	uS/cm	2282	2282	1674	1437	1633	702	1268
pH-F	pH Units	7.24	7.24	7.47	7.13	7.38	6.94	7.54
Turb	NTU	16	20				0.35	20
Alk-T	mg/L	290	290	270	280	270	110	360
Acidity83	mg/L	21.3	21.1	17.5	18.7	16.5	3.3	7.5
N-D	mg/L	0.223	0.206				0.129	0.406
DOC	mg/L	0.79	0.76				2.1	2.4
Hydrox	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bicarb	mg/L	350	360	330	340	330	140	440
Carb	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cl-D	mg/L	1.7	1.6				<1.0	5.5
F-D	mg/L	0.13	0.14				0.079	0.17
Br-D	mg/L	0.16	0.15				0.029	0.029
P-D	mg/L	<0.0030	<0.0030				<0.0030	<0.0030
Al-D	mg/L	<0.0060	<0.0060	<0.0030	<0.0030	<0.0030	0.0048	0.0086
Ag-D	mg/L	<0.000040	<0.000040	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
As-D	mg/L	0.00205	0.00205	0.00525	0.00494	0.00561	0.00027	0.00897
Ba-D	mg/L	0.0144	0.0143	0.0206	0.0209	0.0226	0.0216	0.0332
B-D	mg/L	0.71	0.73	0.735	0.714	0.673	0.201	0.858
Be-D	mg/L	<0.00020	<0.00020	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bi-D	mg/L	<0.0020	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cd-D	mg/L	<0.000020	<0.000020	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Ca-D	mg/L	459	474	239	227	225	122	59.9
Cr-D	mg/L	<0.0020	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Co-D	mg/L	0.00303	0.00301	0.00037	0.00030	0.00091	<0.00020	0.00156
Cu-D	mg/L	<0.00040	<0.00040	<0.00020	<0.00020	<0.00020	0.00174	0.00038
Fe-D	mg/L	4.17	4.22	4.26	3.96	4.44	0.0069	6.03
Hard-D	mg/L	1350	1380	659	626	622	362	188
Pb-D	mg/L	<0.00040	<0.00040	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Mg-D	mg/L	48.7	47.8	15.1	14.7	14.5	13.8	9.39
Mn-D	mg/L	1.35	1.38	0.417	0.407	0.485	0.0046	0.216
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019		<0.0000019	<0.0000019	<0.0000019
Na-D	mg/L	65.2	65.7	113	108	110	31.8	199
Mo-D	mg/L	<0.0020	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	0.0023
Ni-D	mg/L	0.0029	0.0023	<0.0010	<0.0010	0.0015	<0.0010	0.0026
K-D	mg/L	5.22	5.23	1.93	1.92	1.90	1.52	5.20
S-D	mg/L	420	423	212	206	215	111	96.7
Sb-D	mg/L	<0.0010	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Se-D	mg/L	<0.00020	<0.00020	<0.00010	<0.00010	<0.00010	<0.00010	0.00017
Si-D	mg/L	3.69	3.75	3.46	3.39	3.59	3.08	3.15
Sr-D	mg/L	4.08	4.18	2.28	2.12	2.24	0.959	0.884
Ti-D	mg/L	<0.000020	<0.000020	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Ti-D	mg/L	<0.010	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
U-D	mg/L	0.00043	0.00044	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
V-D	mg/L	<0.010	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Zn-D	mg/L	<0.010	<0.010	<0.0050	<0.0050	<0.0050	0.0131	<0.0050

Table 53
Q3 Oct. 1st to Dec. 31st

In-Situ Groundwater		Water Cover Over PAG-CCR				242 Mine Pool		7-South	
Area	Well ID	RBP 88 Panel	7-South 2-Mains			242MW	1M7SA5	7SA5	7SA5
Date		QU1109M	QU1410	QU1410	QU1410				
	QA/QC	19-Nov-20	19-Nov-20	16-Dec-20	16-Dec-20	16-Dec-20	9-Nov-20	5-Nov-20	8-Dec-20
Parameter	Units				Replicate				
SO4-D	mg/L	540	1900	1900	1900	43	450	31	11
H2SEquiv	mg/L	0.00978	0.000957	0.00478	0.00478	0.00967			
Cond-F	uS/cm	1571.8	2204	2231.3	2231.3	227.9	972	370	449
pH-F	pH Units	7.12	6.42	6.33	6.33	6.19	6.96	7.94	8.15
Turb	NTU	76	15	21	23	130	110	1.2	1.2
Alk-T	mg/L	490	310	310	310	93	2.6	170	180
Acidity83	mg/L	<1.0	22.6	30.4	34.8	12.8	57.2	<1.0	<1.0
N-D	mg/L	0.327	0.411	0.290	0.218	0.254			0.384
DOC	mg/L	0.68	1.8	1.3	1.3	1.5			1.2
Hydrox	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bicarb	mg/L	590	380	380	380	110	3.2	210	210
Carb	mg/L	6.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cl-D	mg/L	44	5.7	5.9	6.4	<1.0	1.0	1.3	1.0
F-D	mg/L	0.11	0.16	0.17	0.17	0.077	0.067	0.50	0.47
Br-D	mg/L	0.10	0.19	0.30	0.18	<0.010	0.064	<0.010	<0.010
P-D	mg/L	<0.0030	0.0041	0.0040	0.0038	0.0063			0.011
Al-D	mg/L	<0.0060	<0.0060	<0.015	<0.015	0.0040	0.176	<0.0030	<0.0030
Ag-D	mg/L	<0.000040	<0.000040	<0.00010	<0.00010	<0.000020	<0.000020	<0.000020	<0.000020
As-D	mg/L	0.00232	0.0998	0.0919	0.0981	0.0790	0.00081	0.245	0.248
Ba-D	mg/L	0.0160	0.0155	0.0141	0.0157	0.0684	0.0208	0.391	0.553
B-D	mg/L	0.85	1.18	1.01	1.09	0.079	0.099	0.507	0.461
Be-D	mg/L	<0.00020	<0.00020	<0.00050	<0.00050	<0.00010	0.00012	<0.00010	<0.00010
Bi-D	mg/L	<0.0020	<0.0020	<0.0050	<0.0050	<0.0010	<0.0010	<0.0010	<0.0010
Cd-D	mg/L	<0.000020	<0.000020	<0.000050	<0.000050	<0.000010	0.000167	<0.000010	<0.000010
Ca-D	mg/L	79.1	500	463	505	43.2	113	44.3	41.1
Cr-D	mg/L	<0.0020	<0.0020	<0.0050	<0.0050	<0.0010	<0.0010	<0.0010	<0.0010
Co-D	mg/L	<0.00040	0.00042	<0.0010	<0.0010	0.00176	0.0252	<0.00020	<0.00020
Cu-D	mg/L	<0.00040	<0.00040	<0.0010	<0.0010	<0.00020	0.0292	0.00022	<0.00020
Fe-D	mg/L	5.87	1.73	1.66	1.83	15.7	33.2	0.0116	0.0069
Hard-D	mg/L	235	1910	1780	1940	122	410	148	134
Pb-D	mg/L	<0.00040	<0.00040	<0.0010	<0.0010	<0.00020	<0.00020	<0.00020	<0.00020
Mg-D	mg/L	9.05	161	151	166	3.53	31.2	8.97	7.57
Mn-D	mg/L	0.221	1.38	1.34	1.46	0.779	0.697	0.0141	0.0236
Hg-D	mg/L	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019	<0.0000019
Na-D	mg/L	367	50.1	48.4	53.0	2.53	6.77	22.3	19.5
Mo-D	mg/L	<0.0020	<0.0020	<0.0050	<0.0050	<0.0010	<0.0010	<0.0010	<0.0010
Ni-D	mg/L	<0.0020	0.0020	<0.0050	<0.0050	0.0013	0.0439	<0.0010	<0.0010
K-D	mg/L	5.03	7.12	6.31	6.96	0.481	1.17	2.16	2.23
S-D	mg/L	183	613	558	590	12.5	152	10.7	3.1
Sb-D	mg/L	<0.0010	<0.0010	<0.0025	<0.0025	<0.00050	<0.00050	<0.00050	<0.00050
Se-D	mg/L	<0.00020	<0.00020	0.00168	0.00132	0.00017	<0.00010	<0.00010	0.00016
Si-D	mg/L	3.40	3.28	2.84	3.10	3.65	6.77	4.80	4.38
Sr-D	mg/L	1.02	4.60	4.20	4.56	0.0723	0.438	0.524	0.468
Tl-D	mg/L	<0.000020	<0.000020	<0.000050	<0.000050	0.000026	0.000016	<0.000010	<0.000010
Ti-D	mg/L	<0.010	<0.010	<0.025	<0.025	<0.0050	<0.0050	<0.0050	<0.0050
U-D	mg/L	<0.00020	0.00086	0.00074	0.00084	<0.00010	0.00018	<0.00010	<0.00010
V-D	mg/L	<0.010	<0.010	<0.025	<0.025	<0.0050	<0.0050	<0.0050	<0.0050
Zn-D	mg/L	<0.010	<0.010	<0.025	<0.025	<0.0050	0.102	<0.0050	<0.0050

Table 54
Q3 Oct. 1st to Dec. 31st

Daily Precipitation (mm)									
DATE	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	7.8	5.7	0	0.0	0.0	0.1	0.0	0.0	14.8
2	0.4	0	0	0.0	0.0	0.0	0.0	0.0	0.0
3	0	5.1	0	0.7	6.3	0.0	0.0	5.6	0.1
4	0	3	0	0.9	2.7	0.0	0.0	24.0	0.4
5	0.2	0.5	0	0.0	0.0	0.0	0.0	7.9	0.0
6	0	0	0	0.0	5.3	0.0	0.0	6.4	0.0
7	0	0.1	0	0.0	8.0	0.0	0.0	0.0	0.2
8	0	0	0	9.2	0.7	0.0	0.0	0.0	24.7
9	0	0	0	5.3	0.0	0.0	0.0	0.0	0.9
10	0	0	0	8.0	0.0	0.0	18.9	3.2	0.1
11	0	0	0	0.0	0.0	0.0	5.7	1.0	0.2
12	0	0	0	13.0	0.0	0.0	15.1	0.1	1.6
13	0	11.5	0	0.0	0.0	0.0	0.2	4.1	0.0
14	0	2.9	0	0.0	0.0	0.0	18.2	6.5	1.1
15	0	1.6	0	0.0	0.0	2.3	0.0	5.5	1.1
16	0	0	0	0.0	0.0	0.1	4.1	2.6	5.0
17	0	7.8	0	0.0	0.0	1.3	4.3	13.8	8.4
18	0	10.1	0	0.0	0.0	0.2	7.4	29.6	2.5
19	0	0.1	0	0.0	0.1	0.1	5.6	4.7	26.5
20	0	0.7	0	0.0	2.2	1.0	0.5	0.7	8.1
21	0	0	0	0.0	6.2	0.4	0.0	1.8	0.6
22	0.2	0	0	0.0	9.5	4.1	0.0	0.1	6.7
23	2	0	0	0.0	0.0	0.7	0.0	2.7	0.0
24	0	0	3.8	0.0	0.0	24.1	14.5	0.1	0.0
25	0	0	12.6	0.0	0.0	13.1	0.1	12.0	0.0
26	1.9	0	0	0.0	0.0	20.9	0.0	0.0	6.8
27	4.3	0	1.9	0.0	0.0	3.3	0.6	0.4	11.6
28	0.7	0	0	0.0	0.0	0.4	0.0	10.3	6.5
29	2.5	0	0	0.0	0.0	0.0	0.0	0.2	0.4
30	2.8	0	0	0.0	0.0	0.0	5.6	5.0	4.5
31		0		0.0	8.9		4.4		17.60
Monthly Total (mm)	22.80	49.10	18.30	37.10	49.90	72.10	105.20	148.30	150.40
Quarterly Totals (mm)		90.20			159.10			403.90	

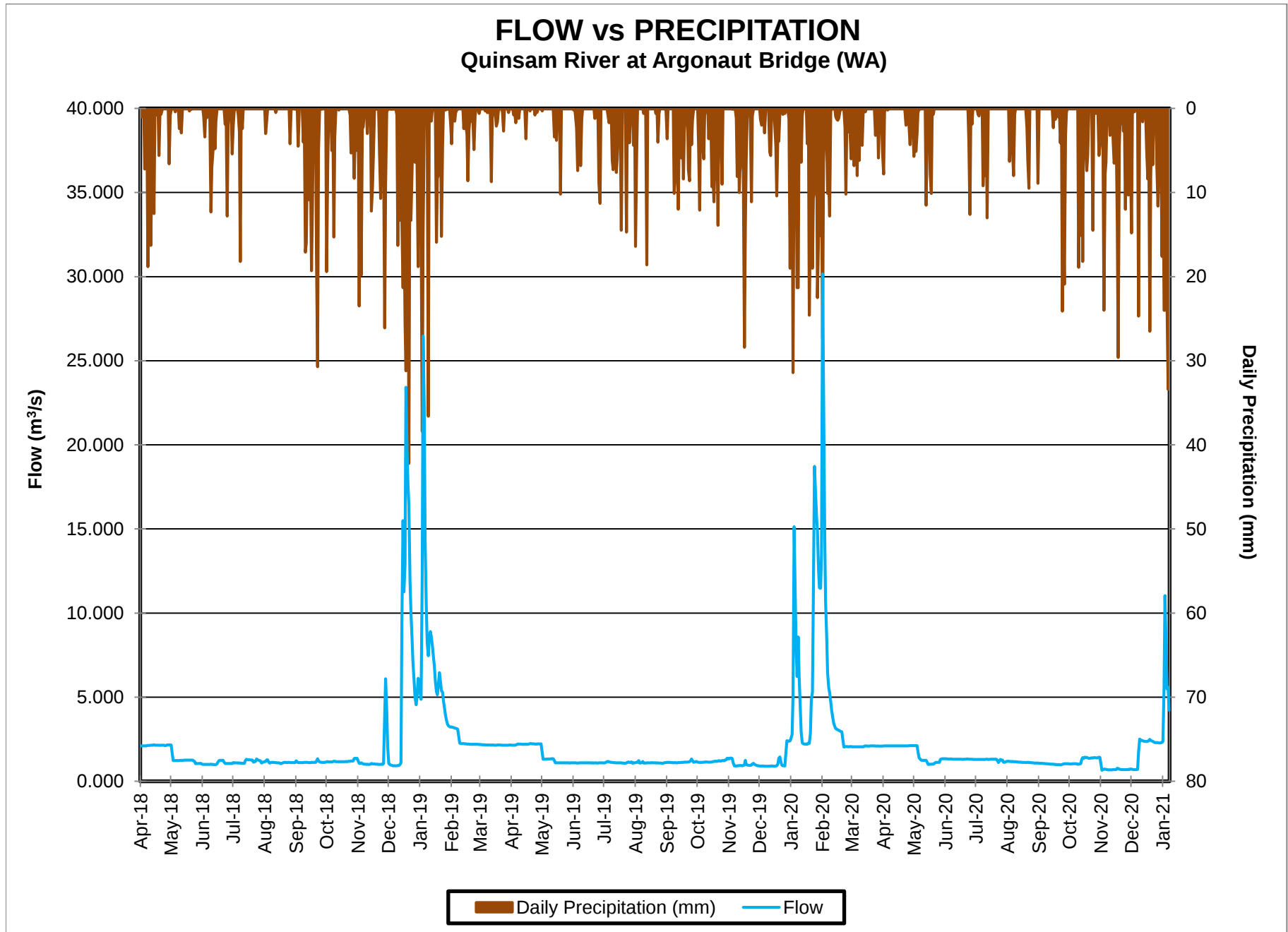
Table 55
Q3 Oct. 1st to Dec. 31st

EMS ID: E292127 2-South Pit Continous Inflow and Outflow						
Date	2S Inflow			2S Outflow Culvert into 3S Pit		
	October	November	December	October	November	December
	Q (L/s)	Q (L/s)	Q (L/s)	Q (L/s)	Q (L/s)	Q (L/s)
1	2.204	4.440	7.471	4.884	9.323	22.426
2	2.242	4.428	5.357	4.361	9.183	19.360
3	2.246	10.182	3.636	4.399	17.782	16.022
4	2.434	10.054	3.313	4.588	21.137	13.284
5	2.200	9.591	3.321	4.604	21.356	11.848
6	2.180	6.715	3.351	4.538	18.652	11.104
7	2.124	5.818	8.094	4.262	15.770	15.496
8	2.206	5.018	10.640	4.649	13.360	21.998
9	2.899	4.406	8.145	5.262	12.437	20.688
10	3.370	3.588	6.780	5.366	11.579	18.742
11	2.834	2.969	6.857	6.534	9.858	17.458
12	2.849	2.112	5.600	7.392	9.548	15.988
13	5.864	3.851	5.747	11.546	10.050	15.048
14	4.353	3.390	5.270	9.399	10.141	14.217
15	3.511	4.754	5.369	8.079	11.292	14.593
16	4.328	6.179	3.540	8.831	13.530	13.749
17	4.055	24.739	5.331	8.249	37.722	14.055
18	6.256	12.742	9.819	12.096	38.506	18.119
19	10.232	6.743	11.198	10.934	27.457	PNC
20	3.756	3.230	8.582	14.436	19.517	27.385
21	1.315	2.046	7.034	8.192	14.870	23.982
22	0.869	1.701	6.685	6.090	12.521	21.104
23	2.349	1.718	4.930	6.840	11.029	18.338
24	1.925	3.123	4.508	6.609	11.982	16.465
25	1.222	5.898	5.015	6.344	12.428	16.031
26	2.411	8.707	10.091	6.171	17.462	21.505
27	5.096	6.802	7.810	6.493	17.743	22.509
28	5.209	6.653	6.839	8.459	17.315	21.116
29	4.886	5.343	6.998	9.182	16.223	19.556
30	6.856	13.221	12.715	11.772	23.837	26.371
31	5.013	6.888	13.355	10.199		31.312

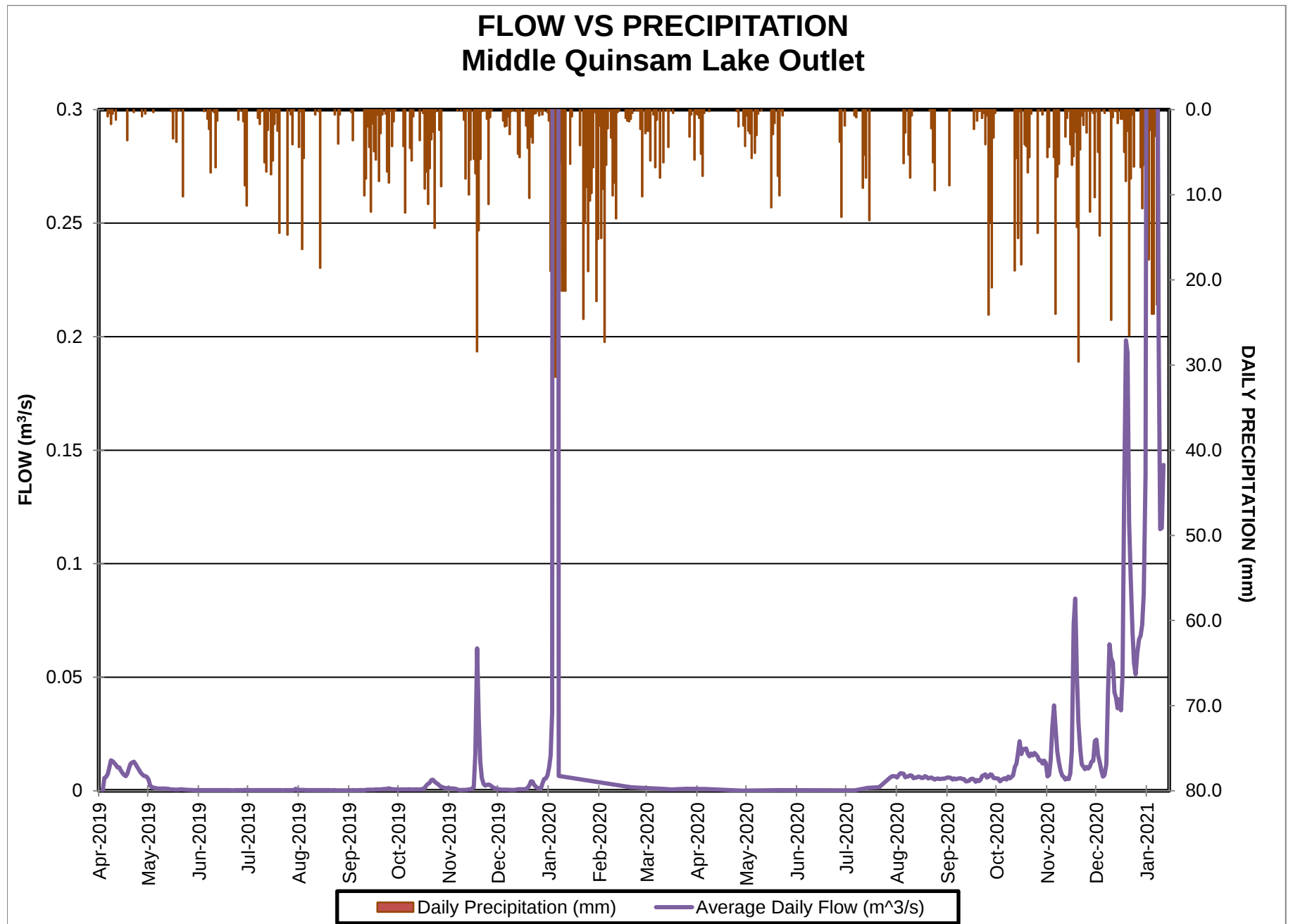
Table 56
Q3 Oct. 1st to Dec. 31st

Weekly Flow Requirements (L/s)									
EMS ID:	E292130			E292131					
Site	LLE								
Flow (L/S)				LLSM					
Date	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.	Oct.	Nov.	Dec.
1	3.1	2155.8	95.6	0.0	0.0	4.2	0.0	0.0	0.5
2	2.1	2154.9	536.7	0.0	0.0	4.2	0.0	0.0	0.5
3	1.8	1521.1	48.1	0.0	0.0	4.3	0.0	0.0	0.5
4	1.7	944.4	19.6	0.0	0.0	4.3	0.0	0.0	0.5
5	1.7	303.2	12.0	0.0	0.0	4.3	0.0	0.0	0.5
6	1.3	376.2	10.4	0.0	0.0	4.2	0.0	0.0	0.5
7	1.2	289.4	17.4	0.0	0.0	3.7	0.0	0.0	0.5
8	1.1	398.5	77.9	0.0	0.0	3.9	0.0	0.0	0.5
9	1.5	227.0	64.0	0.0	0.0	4.3	0.0	0.0	0.5
10	3.4	9.7	51.9	0.0	0.0	4.1	0.0	0.0	0.5
11	7.7	12.4	30.2	0.0	0.0	3.3	0.0	0.0	0.5
12	2.6	4.7	26.8	0.0	0.0	3.1	0.0	0.0	0.5
13	22.4	7.5	11.5	0.0	0.0	3.2	0.0	0.0	0.5
14	93.1	15.5	14.6	0.0	0.0	3.2	0.0	0.0	0.5
15	62.4	18.9	9.7	0.0	0.0	3.0	0.0	0.0	0.5
16	24.3	38.9	16.6	0.0	0.0	2.4	0.0	0.0	0.5
17	20.1	278.3	42.5	0.0	0.0	2.6	0.0	0.0	0.5
18	83.8	340.5	103.1	0.0	0.0	2.7	0.0	0.0	0.5
19	176.3	139.6	358.5	0.0	0.0	2.9	0.0	0.0	0.5
20	78.7	74.6	243.8	0.0	0.0	3.0	0.0	0.0	0.5
21	196.9	46.0	114.6	0.0	0.0	3.4	0.0	0.0	0.5
22	443.7	21.9	289.4	0.0	0.0	3.4	0.0	0.0	0.5
23	634.4	25.5	47.8	0.0	4.3	3.4	0.0	0.5	0.5
24	739.0	23.2	44.6	0.0	4.3	3.4	0.0	0.5	0.5
25	1118.0	42.9	26.8	0.0	4.3	3.4	0.0	0.5	0.5
26	1879.3	35.3	92.1	0.0	4.3	3.4	0.0	0.5	0.5
27	2154.9	26.8	125.5	0.0	4.3	3.4	0.0	0.5	0.5
28	2154.9	45.9	101.5	0.0	4.3	3.4	0.0	0.5	0.5
29	2154.9	38.6	62.7	0.0	3.7	3.4	0.0	0.5	0.5
30	2154.8	70.2	102.3	0.0	3.7	3.4	0.0	0.5	0.5
31	2154.9		240.6	0.0		3.4	0.0	0.5	0.5
Monthly Average:	528	323	98	0.00	1.11	3.49	0.00	0.145	0.500
Notes:									
LLE -Sept 8 - Dec 31. Beaver activity (dams and dam release) caused sensor errors and fluctuation anomalies (red bold). Logs had to be removed from under the sensor daily.									

Graph 1



Graph 2

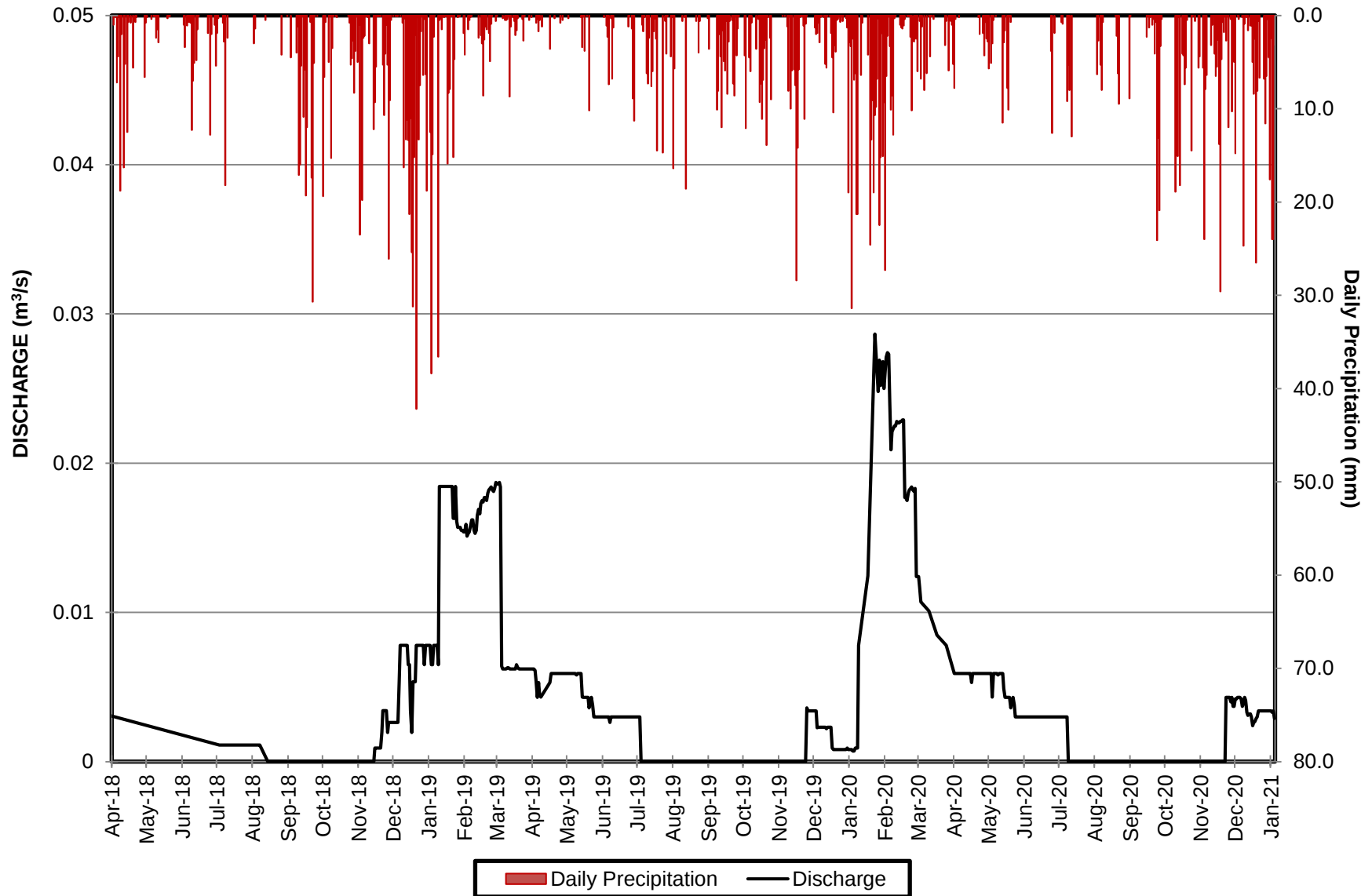


Average D=daily flow is not representative of high flow events when compared to inputs of WA, LLO and WD. Therefore the average daily flow from WA, WD and LLO is used for comparison.

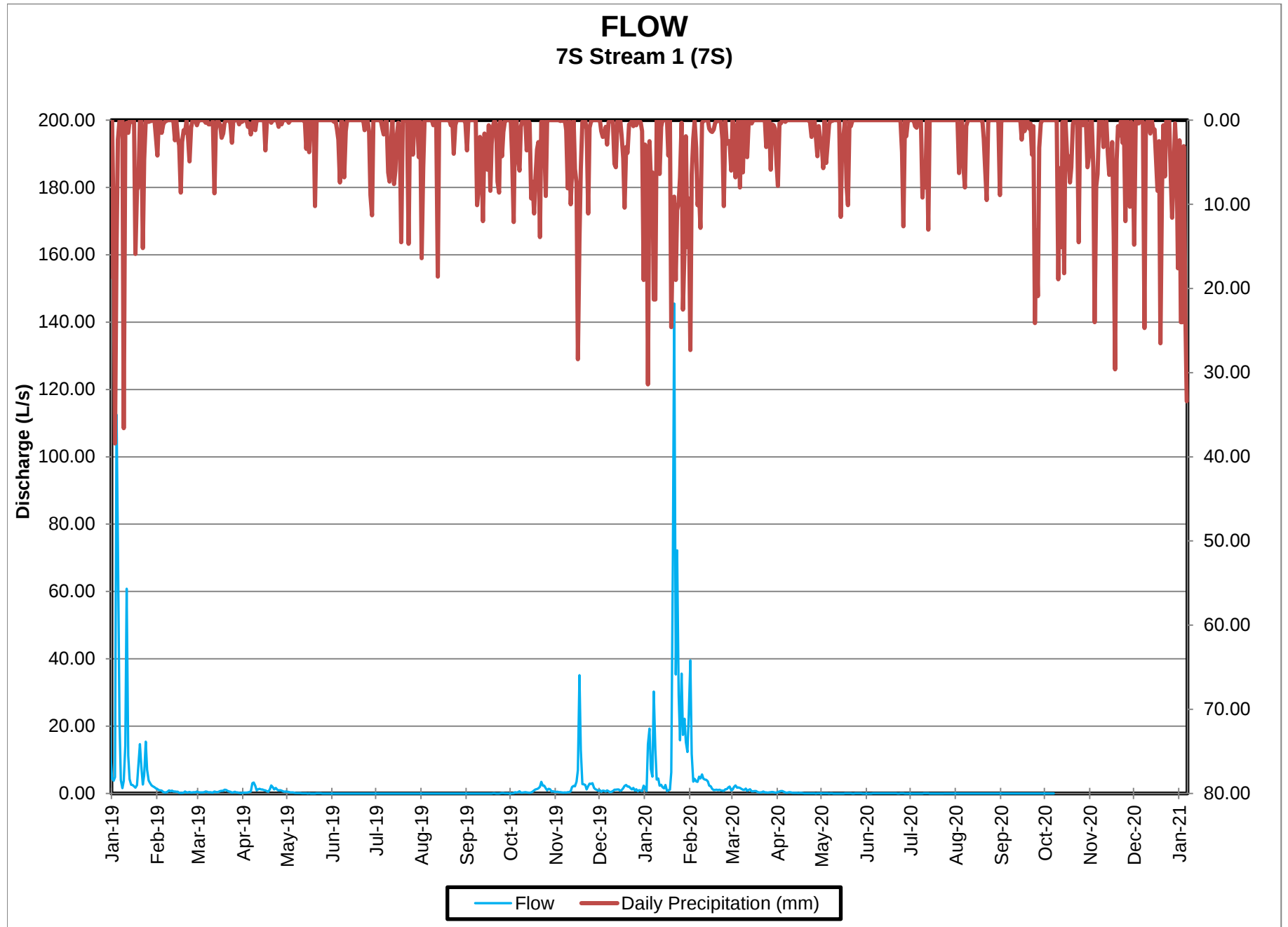
Graph 3

DISCHARGE vs PRECIPITATION

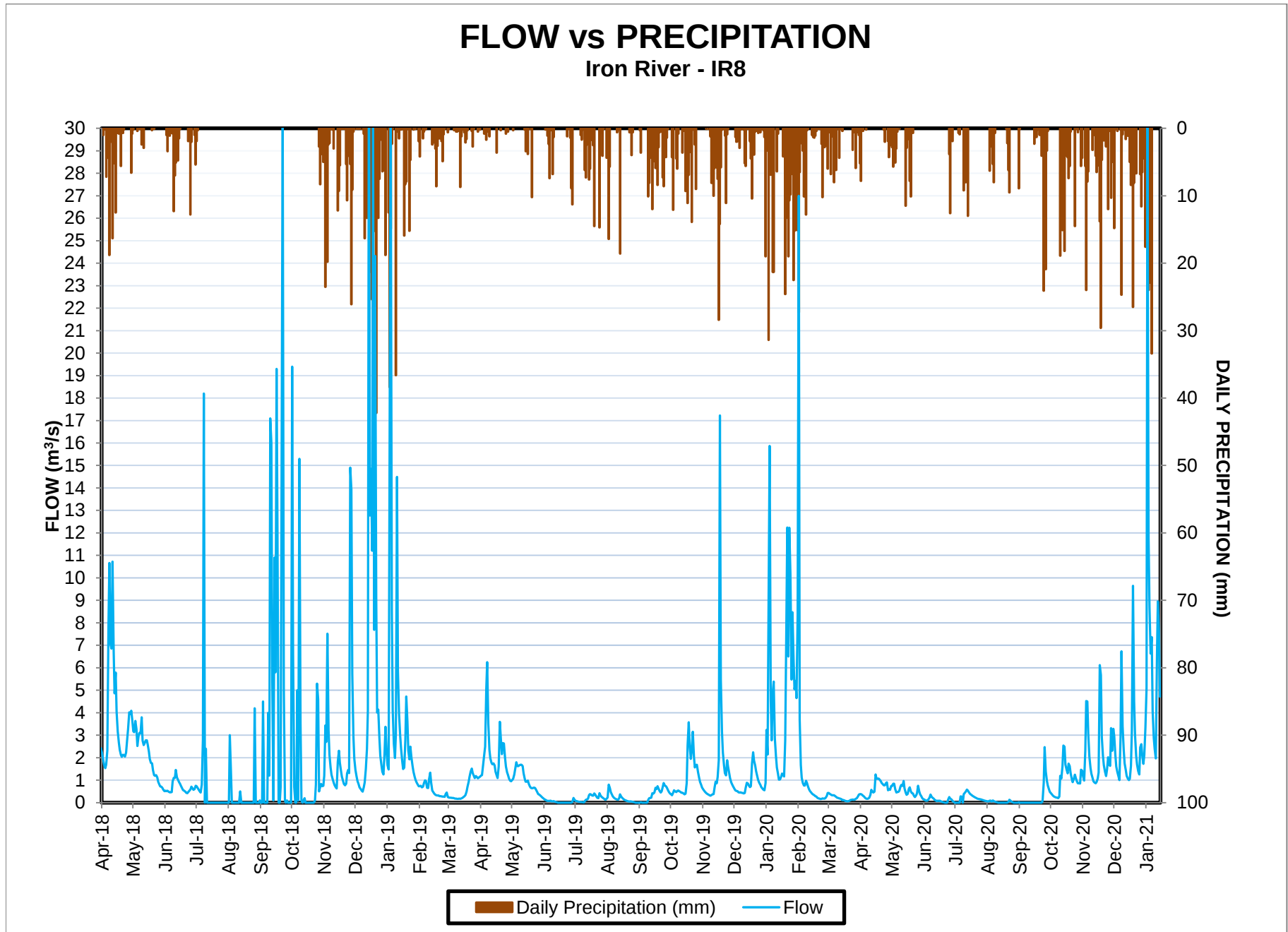
Long Lake Seep Middle - LLSM



Graph 4

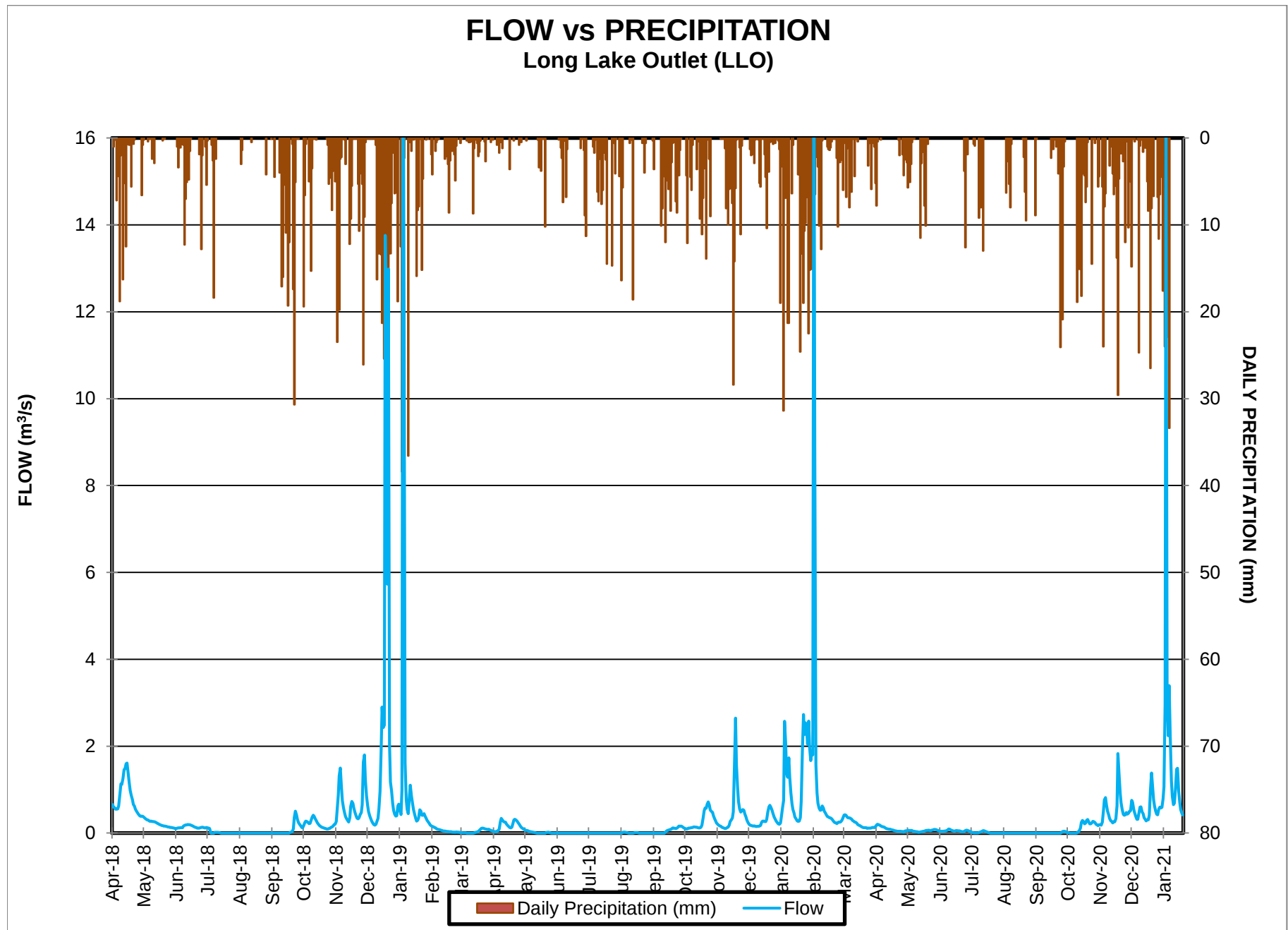


Graph 5



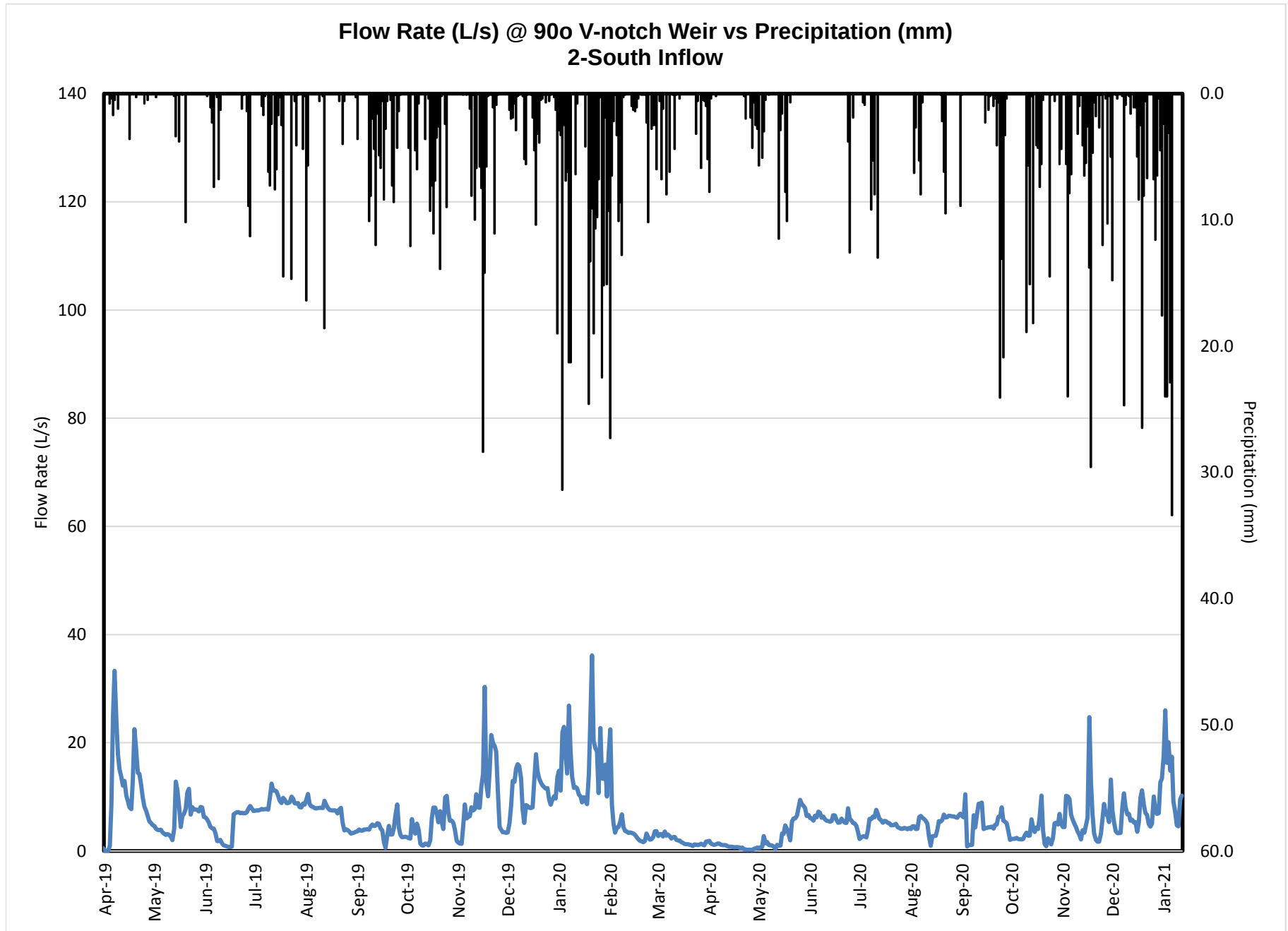
The Dec. 9th storm event encompassed data that was out of range for the discharge curve used on the Iron River.

Graph 6



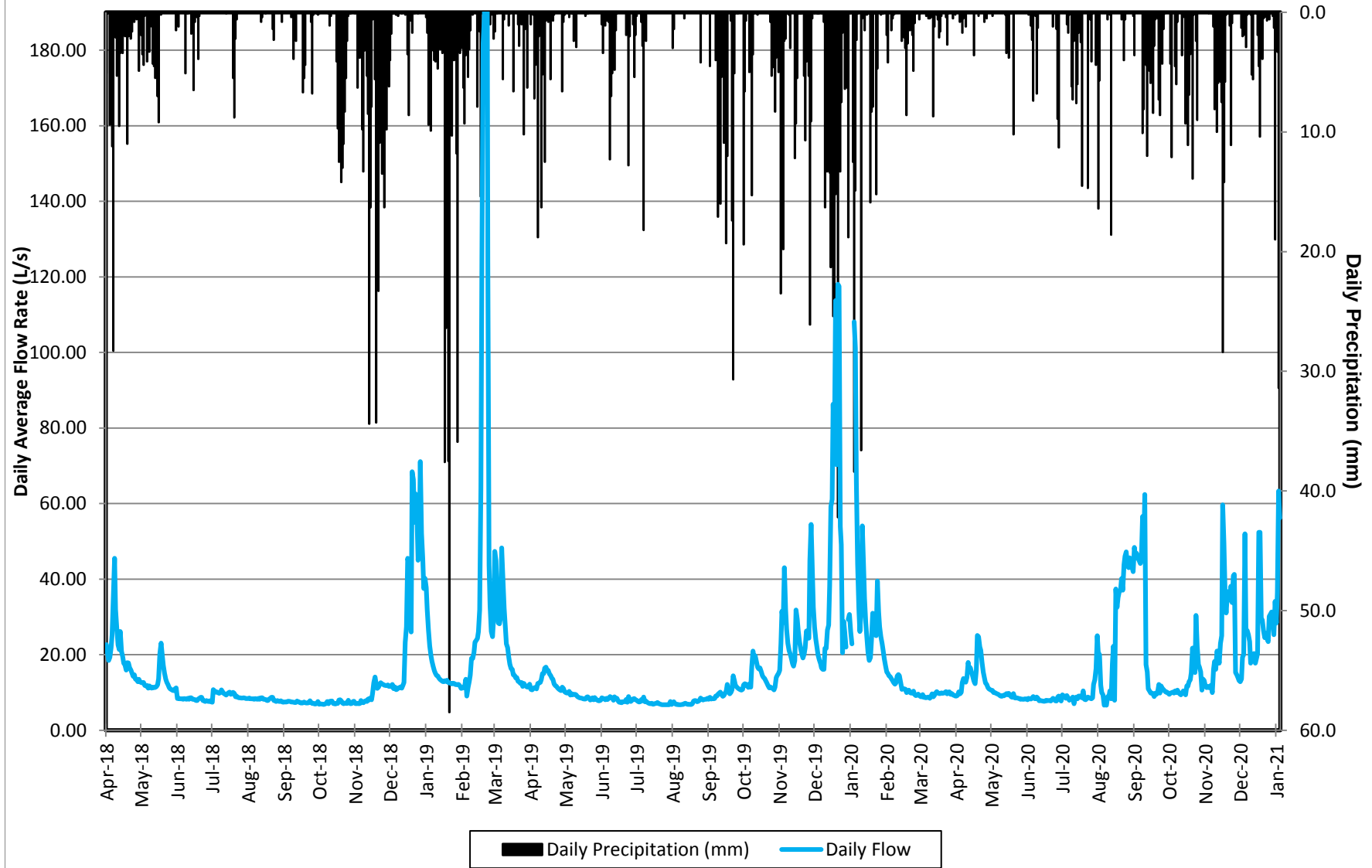
Average D=daily flow is not representative of high flow events when compared to inputs of WA, LLO and WD. Therore the average daily flow from WA, WD and LLO is used for comparson.

Graph 7

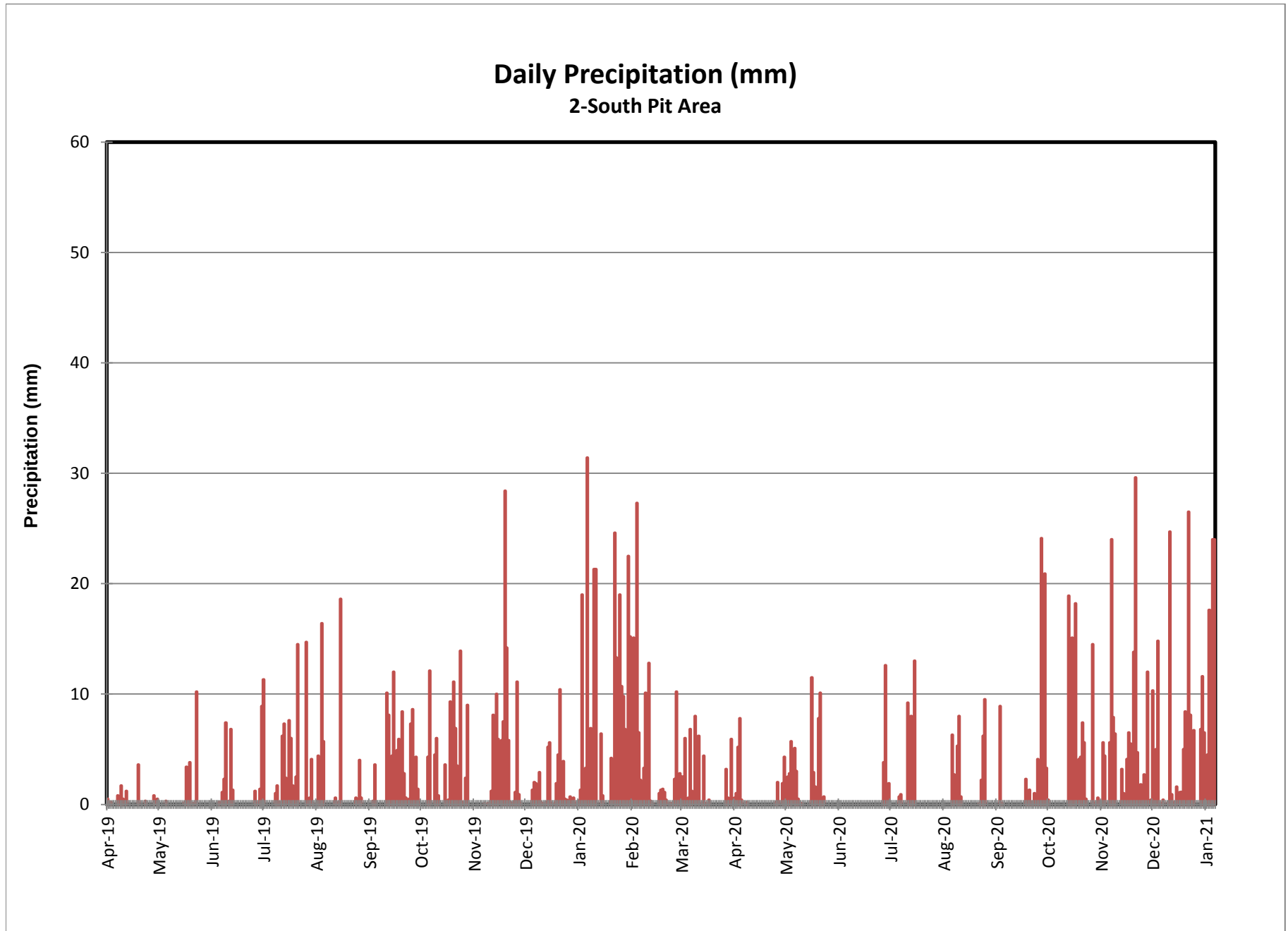


Graph 8

Flow Rate (L/s) vs Precipitation (mm) Culvert Entering 3-South (2SC)

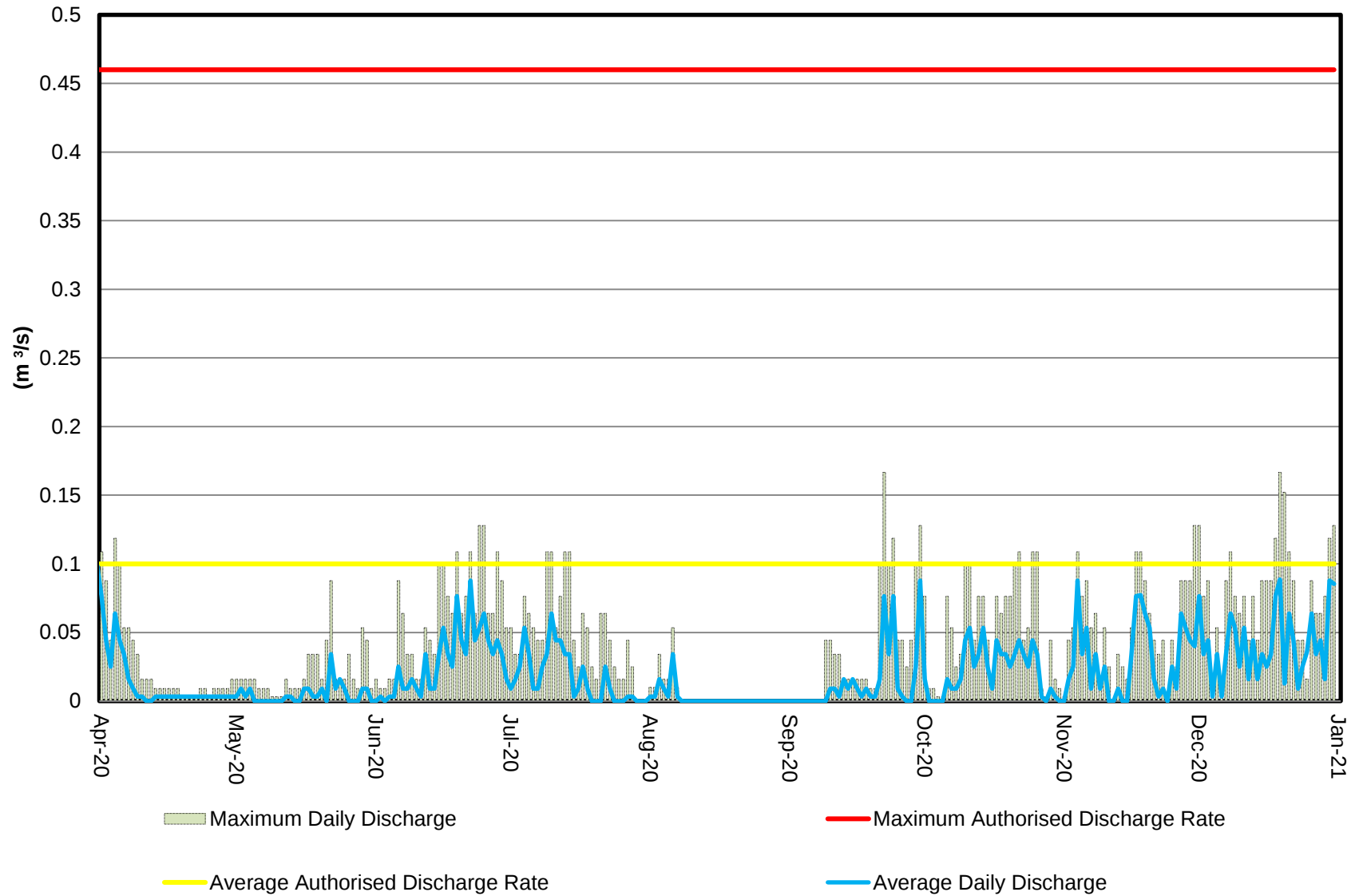


Graph 9



Graph 10

Maximum and Average Daily Discharge Rate (m³/s) Settling Pond 1 (SPD)



Graph 11

