



BEAVERLODGE RIVER WEIR MONITORING PROGRAM - 2020 REPORT
BEAVERLODGE RIVER
SE ½ 34-071-10 W6M

Prepared for:
MIGHTY PEACE WATERSHED ALLIANCE

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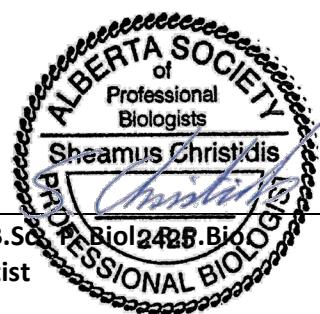
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Prepared for Mighty Peace Watershed Alliance, December 2020



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TABLE OF CONTENTS

1	INTRODUCTION	1
1.1	Background	1
1.2	Monitoring Program Parameters.....	4
2	METHODS.....	6
2.1	Spatial Monitoring Extent	6
2.2	Timing	11
2.3	Site Inspections	11
2.4	Hydrology.....	11
2.5	Water Quality.....	12
2.6	Fish Use and Fish Passage.....	12
2.6.1	Fish Sampling	13
2.6.2	eDNA Sampling	13
2.6.2.1	Field Sampling and Filtration	14
2.6.2.2	Primer Validation Assay	14
2.6.2.3	Laboratory Analysis.....	14
2.6.3	Tagging.....	15
2.6.3.1	Radio Frequency Identification System Description.....	15
2.6.3.2	Fish Handling.....	15
2.6.3.3	Quality Control Procedures	16
2.6.4	Riffle Water Velocities for Fish Passage.....	16
2.6.5	Data Analysis.....	16
3	RESULTS	17
3.1	Habitat Structure Site Inspections	17
3.1.1	Site Inspection	17
3.2	Hydrology.....	18
3.2.1	Precipitation.....	18
3.2.2	Water Survey of Canada Gauge 07GD001	19
3.2.3	Beaverlodge River at the Weir	20
3.3	Water Quality.....	21
3.3.1	Continuous Monitoring.....	21
3.3.2	Monitoring Locations.....	26
3.4	Fish Sampling	27
3.4.1	Catch Per Unit Effort	27
3.4.2	Species Richness, Abundance, and Composition.....	28
3.4.3	Size Class	30
3.5	eDNA Sampling	31
3.6	Fish Passage	32
3.6.1	Tagging.....	32

3.6.2	Riffle Water Velocities	33
4	DISCUSSION.....	35
5	RECOMMENDATIONS	37
6	REFERENCES.....	38

LIST OF FIGURES

FIGURE 1-1	Site Location.....	3
FIGURE 2-1	Site Plan	9
FIGURE 2-2	eDNA Sampling Locations	9
FIGURE 3-1	Beaverlodge Precipitation for 2020 Compared to 30-year Normal Precipitation	18
FIGURE 3-2	pH Daily Average.....	22
FIGURE 3-3	Dissolved Oxygen Concentration Daily Average	23
FIGURE 3-4	Temperature Daily Average	24
FIGURE 3-5	Specific Conductivity Daily Average.....	25
FIGURE 3-6	Turbidity Daily Average.....	26
FIGURE 3-7	2019 Versus 2020 Species Abundance - By Sampling Reach	29
FIGURE 3-8	2019 Versus 2020 Species Composition - By Sampling Reach.....	30
FIGURE 3-9	2019 Versus 2020 White Sucker Fork Length Distribution	31
FIGURE 3-10	2019 Versus 2020 Northern Pike Fork Length Distribution	31

LIST OF TABLES

TABLE 2-1	Site Location.....	7
TABLE 2-2	Summary of Monitoring Events of 2020.....	11
TABLE 2-3	Flow Measurement Summary.....	12
TABLE 3-1	Beaverlodge Total Precipitation for 2019 to 2020 and Departures From the 1981 to 2010 Normal	19
TABLE 3-2	Minimum Monthly Mean, Maximum Monthly Mean and Mean Monthly Discharge (m ³ /s), Beaverlodge River at 07GD001 (1968 to 2019)	19
TABLE 3-3	2019 Mean Monthly Discharge (m ³ /s), Beaverlodge River Water Survey of Canada Gauge 07GD001	20
TABLE 3-4	June to September Minimum, Maximum and Mean Monthly Discharge (m ³ /s) for the Beaverlodge River at the Weir - 2019 to 2020	20
TABLE 3-5	2020 Sonde Data Summary	21
TABLE 3-6	Water Quality Summary	27
TABLE 3-7	Yearly Electrofishing Catch Per Unit Effort Comparison 2019 Versus 2020	28
TABLE 3-8	Yearly Angling Catch Per Unit Effort Comparison 2019 (July) Versus 2020.....	28
TABLE 3-9	Passive Integrated Transponder Tagging Summary	32
TABLE 3-10	Passive Integrated Transponders Tag Detection Summary	32
TABLE 3-11	Riffle 1 Point Velocity Summary Data	34
TABLE 3-12	Riffle 2 Point Velocity Summary Data	34

APPENDICES

- APPENDIX A Site Photographs
- APPENDIX B Hydrology
- APPENDIX C Environmental DNA Results
- APPENDIX D PIT Tag Data
- APPENDIX E Water Quality Sonde Data.

1 INTRODUCTION

The Mighty Peace Watershed Alliance (MPWA) conducted works in 2018 to improve fish passage at the Beaverlodge River weir, located southwest of the Town of Beaverlodge, Alberta (Figure 1-1). Engineered riffle river features and channel enhancements were built at the weir and immediately downstream; the purpose of the fish passage structure was to create conditions suitable for fish to migrate/pass the weir situated on the Beaverlodge River. The design focused on the passage requirements of Arctic Grayling (*Thymallus arcticus*), but also considered all resident fish species. In order to assess the ongoing performance of the fish passage structures, including structural integrity of the riffles and flow suitability for fish passage through these structures, Matrix Solutions Inc. prepared a monitoring plan (Matrix 2017a) which was approved by Fisheries and Oceans Canada (DFO).

The fish passage improvement project (the Project) was supported by Alberta Transportation to meet offset conditions in their *Fisheries Act* Authorization to twin the Peace River Bridge, near Peace River, Alberta. A monitoring plan was initially submitted to Alberta Environment and Parks (AEP) to meet monitoring conditions under Alberta *Water Act* Approval No. 00372572-00-00 (Matrix 2017b). In addition to the parameters detailed in the monitoring plan submitted to AEP, DFO requested monitoring of fish movement through the fish passage structure over a 3-year period, beginning the first-year post-construction (i.e., 2019).

This report includes the data from the 2020 monitoring activities as per DFO monitoring plan requirements, as well as result comparisons from the previous year of monitoring (Matrix 2019a).

1.1 Background

Historical activities in the Beaverlodge River watershed, including agriculture and logging, the installation of a weir for water supply, and wetland modifications, among other elements, have altered streamflow, water quality, and fish habitat. The MPWA is still working with stakeholders in the watershed to restore watershed conditions, facilitating a return of natural environmental processes. This Project focuses on the weir.

The Beaverlodge River weir is situated approximately 20 km upstream from the confluence of the Beaverlodge and the Wapiti rivers (Figure 1-1). The weir was constructed in the early-1980s to hold back water and provide a place to withdraw drinking water for the Town of Beaverlodge. Once constructed, it was observed that fish were having difficulty moving upstream (Sharp 2019). Due to the shape of the weir, summer flows have been insufficient to maintain fish passage over the weir in either direction. Consequently, fish populations upstream of the weir are low, and some historically abundant populations, such as Arctic Grayling, are now absent and considered functionally extirpated (CharettePellPoscente Environmental Corp. 2012). Several fish ladders have been in place at the Beaverlodge River weir since 1981; however, the ladders have been in various states of disrepair. The ladder that existed prior to 2018

was not functioning given its state observed during field visits (broken and missing baffles, debris jams) and was unlikely to be providing upstream or downstream fish passage.

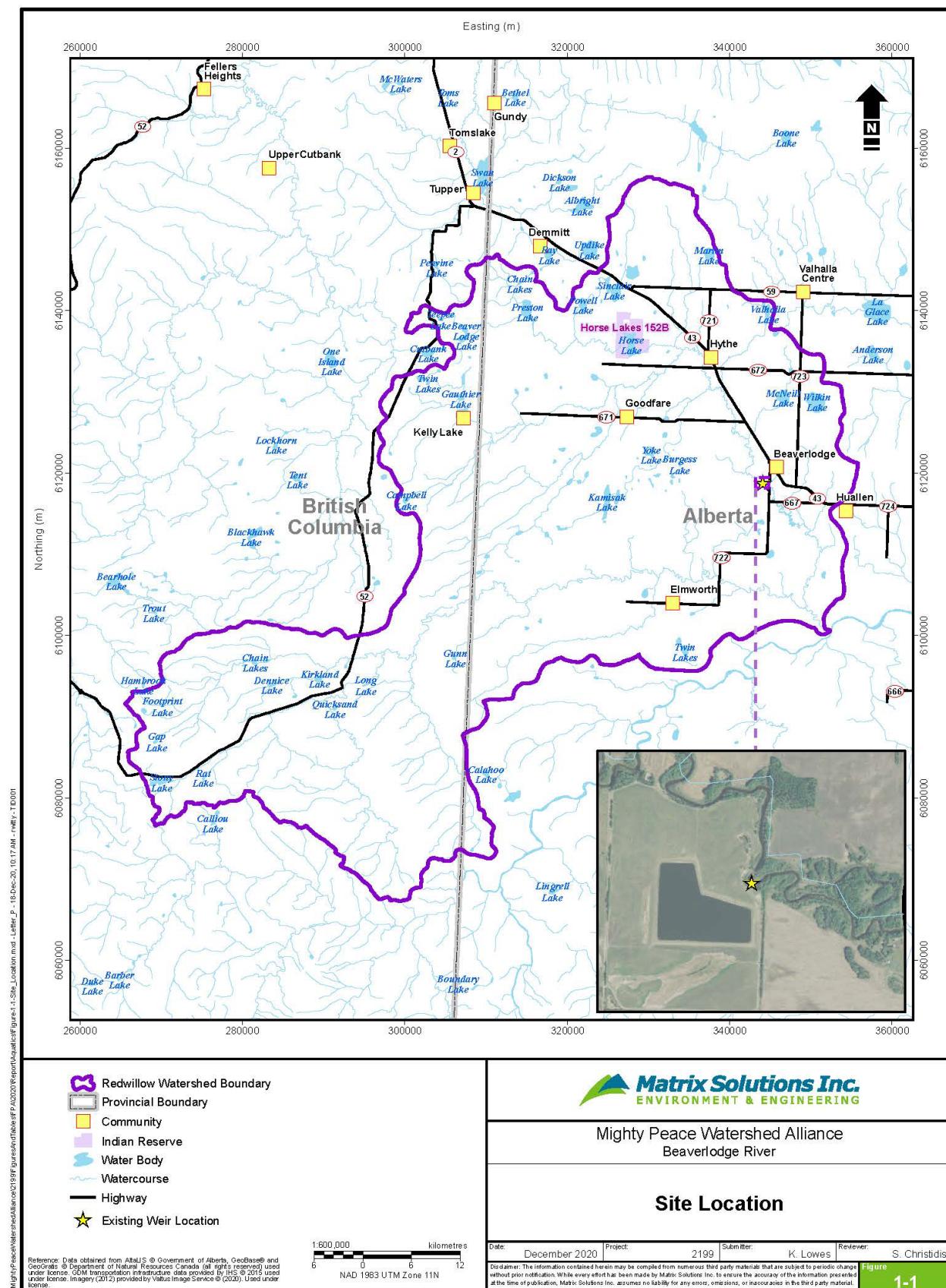
As part of the MPWA's larger plans for watershed restoration and water quality improvement in the Beaverlodge River, fish passage improvement structures, comprising of two rock riffles, were installed at the weir, and immediately downstream, in the fall of 2018. The intent of the Project was to create the conditions needed to facilitate fish access to the upstream spawning and rearing habitat in the spring and just as importantly, to downstream habitat later in the summer and fall (i.e., overwintering in the Wapiti River).

The specific objective of the Project was to create conditions suitable for fish to migrate/pass the weir situated on the Beaverlodge River in a manner that complements the need to keep the existing weir. The objective considered the following:

- Maintaining weir (water level) for water supply for the Town of Beaverlodge.
- Passage of Arctic Grayling, among other resident large-bodied fish, including Northern Pike (*Esox lucius*), Bull Trout (*Salvelinus confluentus*), Burbot (*Lota lota*), Longnose Sucker (*Catostomus catostomus*), White Sucker (*Catostomus commersonii*), and small-bodied fish during spring freshet, but also as importantly, during summer as the hydrograph declines.
- Minimizing maintenance (e.g., the movement of woody debris, sediment accumulation, and bank erosion) to maximize weir capacity to function without attention.

The fish passage design considered the extent of different flows to facilitate the passage of fish upstream and downstream past the weir, particularly during the decreasing portion of the hydrograph. The design maximizes available discharge by concentrating river flow into the centre of the structure to permit swimming during low flow periods, but not so much that fish cannot swim and pass; this feature is dependent on having river discharge that allows water to flow through the riffle features. Historically, flow in the Beaverlodge River at the weir have all but ceased in various late summer periods.

FIGURE 1-1 Site Location



1.2 Monitoring Program Parameters

The monitoring program is structured to assess conditions necessary for fish passage during the early and late portions of the hydrograph (i.e., seasonal streamflow measurements including velocity and depth at important points on the structures; the upstream (weir) and downstream riffle structures are herein referred to as Riffle 1 and Riffle 2, respectively). However, fish use of the structure is dependent on the overall quality of fish habitat within the watershed. Monitoring parameters approved by DFO were developed based on available information on hydrology and potential fish species use and include:

- Visual inspection of the fish passage structure by a qualified engineer to assess erosion and redistribution of sediments (i.e., degradation and aggradation) caused by altered hydraulic dynamics and assess the ongoing structural integrity of the structure.
 - ♦ Rationale: ensure that the structures are stable and work with a fisheries biologist to provide recommendations for improvement, if needed.
- Assessment of the passage structure channel shape – channel depth and width, stream discharge, and water depth.
 - ♦ Rationale: the channel has been constructed with an inverted parabolic shape concentrating stream flows through the middle of the fish passage structure and these parameters will be used to determine if the channel shape changes over time.
- Monitoring of water depth and velocity over each of the passage structure steps, and water depth in each associated downstream pool.
 - ♦ Rationale: the fish passage structure was designed with the intent that flow velocities over each step will be less than burst speeds for anguilliform and subcarangiform fish 20 cm or larger, which is 1.2 m/s (Katapodis 1992).
- Monitoring of water temperature and dissolved oxygen (DO) above and immediately below the fish passage structures.
 - ♦ Rationale: concentrating the flows through the central portion of the fish passage structure will decrease the width of the flow, increase depth, and allow water to move through this section of the river more quickly. Thus, water temperatures and DO levels should be maintained.
- Visual inspection by a fish biologist to identify potential conditions that may prevent fish using the fish passage structure.
 - ♦ Rationale: changes to site conditions from variable stream flows and hydraulic forces may result in subtle changes to the structure and adjacent habitat that discourage fish from passing.

- Visual inspection of the watercourse banks and the outside bend of the river immediately downstream of the structures.
 - ♦ Rationale: ensure that vegetation is establishing, document any form of erosion, and provide recommendations, as needed.
- Fish passage and fish use monitoring, including Environmental DNA (eDNA) sampling for Arctic Grayling.
 - ♦ Rationale: ensure that fish are able to pass the riffle structures, determine fish species composition and abundance in the study reach, and to determine if Arctic Grayling are present in the Beaverlodge River. Conducted through a variety of methods.

Monitoring parameters that were included in the original monitoring plan (Matrix 2017a) but have since been removed include:

- Visual inspection of installed wood structures (e.g., root balls) by a fish biologist to assess the nature and value of enhanced habitat.
 - ♦ Rationale for removal: rootwads were not installed during construction in 2018 due to bank instability issues (Matrix 2019b).
- Visual inspection of installed wood structures by a qualified engineer to assess erosion and redistribution of sediments (i.e., degradation and aggradation) caused by altered hydraulic dynamics and assess the ongoing structural integrity of each wood structure.
 - ♦ Rationale for removal: rootwads were not installed during construction in 2018 due to bank instability issues (Matrix 2019b).
- Sonar videography of the channel immediately upstream of the fish passage structure to determine if resident fish are moving through the fish passage structure.
 - ♦ Rationale for removal: sonar videography was determined to be an inefficient manner of detecting fish passage at the weir; the Sonar camera is only budgeted for a 3-day period and capable of recording three, 2-hour periods each of the 3 days. Due to security issues, the camera could not be left onsite overnight. The duration of daily and seasonal data collection was extremely limited and was likely to be missing fish movement that occurred outside of the 3-day period. The camera did not observe any fish movement in 2019.

New monitoring parameters were introduced in 2020 based on recommendations made in the 2019 summary report (Matrix 2019a) and the removal of the sonar videography for detection of fish passage. New monitoring parameters include:

- Continuous monitoring of in situ water quality parameters including water temperature, DO concentrations, pH, specific conductivity, and turbidity from June 29 to October 1, 2020.
 - ◆ Rationale for inclusion: water quality monitoring was limited to the seasonal site visits in spring, summer and fall. In order to understand seasonal and diurnal water quality fluctuations at the site, continuous data loggers were installed upstream of Riffle 1, and downstream of Riffle 2.
- Fish tagging program using passive integrated transponders (PIT) tag system.
 - ◆ Rationale for inclusion: the PIT tag system, including reader and antenna, were set up for a four month period (late June to early October), greatly increasing the duration of fish passage monitoring (yearly cost to the Project is no greater than the yearly sonar camera rental cost). Overall, the PIT tag system increases our fish passage monitoring efforts and duration, well maintaining a generally low cost of operation and maintenance effort compared to the sonar videography.

2 METHODS

The following subsections describe the methods used to assess the parameters identified in Section 1.2. Quality assurance (QA) and quality control (QC) protocols were followed during the monitoring program described in this report and were designed to ensure production of data of known and defensible quality. Field sampling, data recording, and equipment operations were completed using an approach that included standardized procedures for sample and data collection, and in the case of eDNA sampling, sample preservation, storage and shipping.

2.1 Spatial Monitoring Extent

Site inspections, hydrology, and fish use monitoring were focused on a 500 m reach of the Beaverlodge River: 200 m upstream of Riffle 1, within the large scour pool downstream of the Riffle 1 (100 m), and 200 m downstream of Riffle 2 (Table 2-1; Figure 2-1):

- Six site inspection monitoring locations that were established in 2019 were used for 2020 annual monitoring (BL1 to BL6;). All six site inspection monitoring locations were used for photographic documentation, erosion, and bank instability assessments. Four locations were used for spot check water quality monitoring (BL1, BL2, BL5, and BL6;); site included four locations upstream and downstream of Riffle 1 and Riffle 2, and two locations within the scour pool between Riffle 1 and Riffle 2.
- Two water quality data sondes for continuous water quality monitoring were installed immediately upstream of Riffle 1, and immediately installed downstream of Riffle 2.
- A pressure transducer was installed upstream of Riffle 1 to monitor water levels.

- Three fish sampling reaches were established; upstream of Riffle 1 (Reach 1), between Riffle 1 and Riffle 2 (Reach 2), and downstream of Riffle 2 (Reach 3). Fishing effort within these reaches was used to establish fish catch data, and the deployment of PIT tags within suitable fish.
- eDNA sampling was conducted at six locations around the weir site and over a larger extent of the Beaverlodge River. Sampling locations included:
 - approximately 5 km upstream of the weir (BL-eDNA-1)
 - 50 m upstream of Riffle 1 (BL-eDNA-2)
 - between Riffle 1 and Riffle 2 (BL-eDNA-3)
 - 50 m downstream of Riffle 2 (BL-eDNA-4)
 - approximately 6 km downstream of the weir (BL-eDNA-5)
 - approximately 22 km downstream of the weir (BL-eDNA-6)
 - Redwillow River, immediately downstream of the Beaverlodge River confluence (BL-eDNA-7).

TABLE 2-1 Site Location

Site ID	Location (UTM Location NAD 83 11 U)
Riffle Structures	
Riffle 1 (weir, upstream)	344044E 6118864N
Riffle 2 (downstream)	344093E 6118823N
Hydrology	
Manual Flow Measurement Location	344056E 6118871N
Pressure Transducer Location	344050E 6118876N
Monitoring Locations	
BL1	344049E 6118870N
BL2	344039E 6118857N
BL3	344019E 6118815N
BL4	344038E 6118833N
BL5	344086E 6118811N
BL6	344105E 6118827N
Instream Sonde Monitoring Locations	
Upstream	344064E 6118869N
Downstream	344104E 6118823N
eDNA Sample Locations	
BL-eDNA-1	341953E 6120032N
BL-eDNA-2	344064E 6118883N
BL-eDNA-3	344086E 6118822N
BL-eDNA-4	344168E 6118856N
BL-eDNA-5	345496E 6116482N
BL-eDNA-6	349456E 6113145N

Site ID	Location (UTM Location NAD 83 11 U)	
BL-eDNA-7	349512E 6102931N	
Fish Sampling Locations		
Reach 1	344050E 6118869N	344084E 6119041N
Reach 2	344039E 6118857N	344085E 6118816N
Reach 3	344101E 6118830N	344275E 6118844N

Notes:

UTM = Universal Transverse Mercator Coordinate system

NAD = North American Datum

U = UTM Zone

FIGURE 2-1 Site Plan

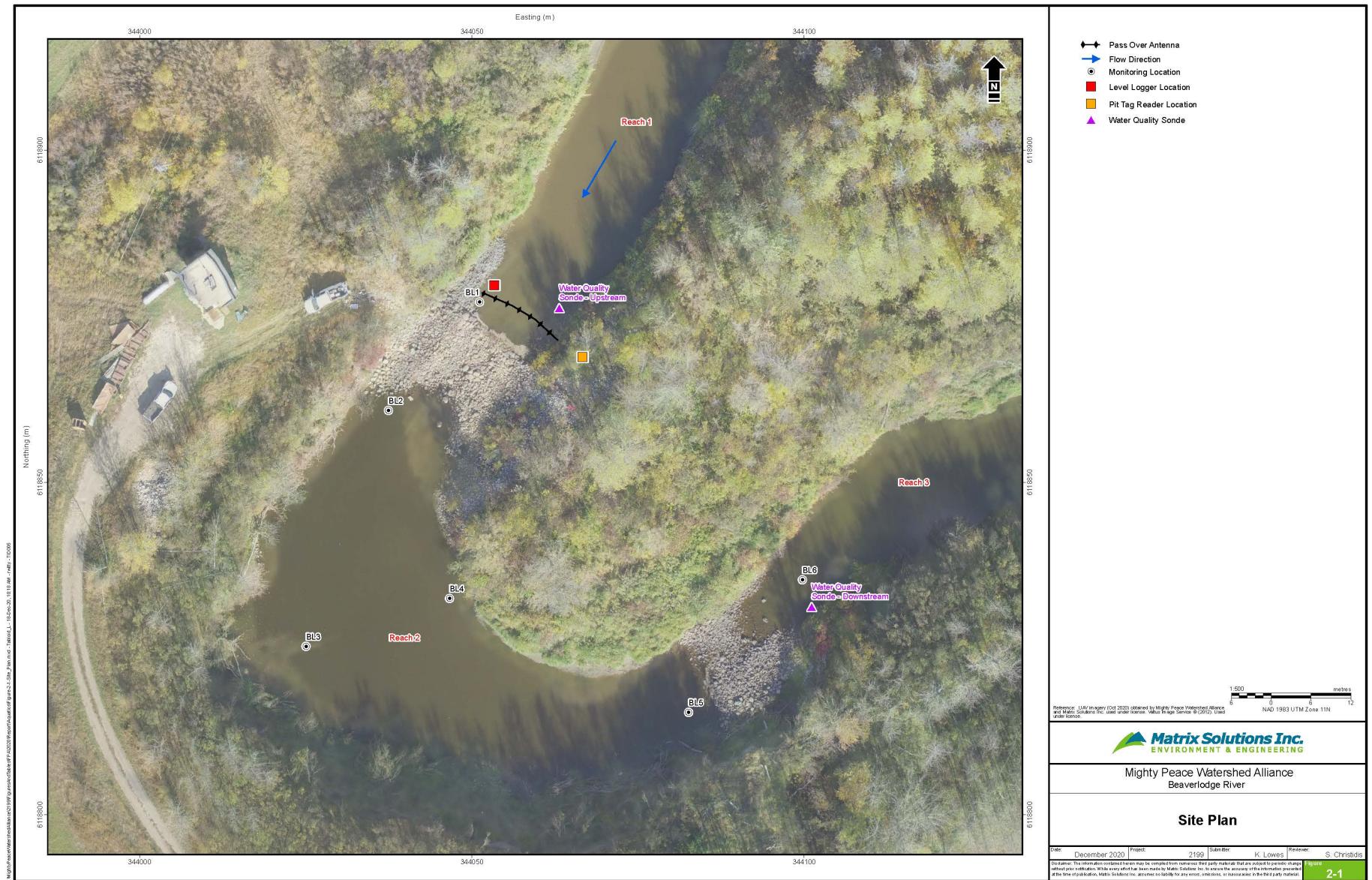
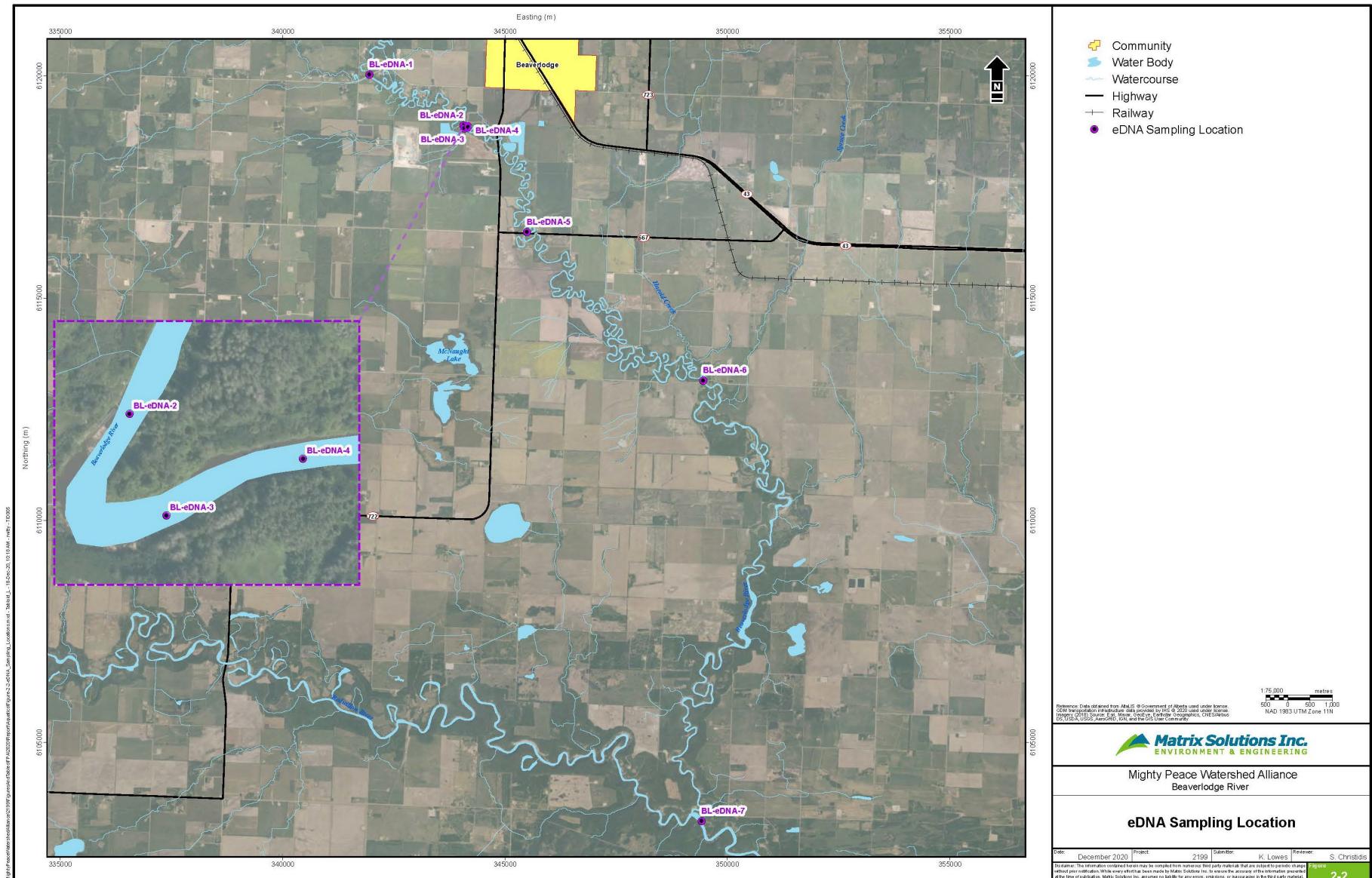


FIGURE 2-2 eDNA Sampling Location



2.2 Timing

Five monitoring events took place in 2020 (Table 2-2). Additional site visits were conducted to check on equipment after high water events (Table 2-2).

TABLE 2-2 Summary of Monitoring Events of 2020

Date	Monitoring Task
April 28, 2020	Site inspection
June 15, 2020	eDNA sample collection
June 25 to 29, 2020	Install PIT Tag system, level logger, water quality data sondes, fish sampling, hydrology measurement and site inspection.
July 19, 2020	Check on PIT tag system after high water flow event; remove PIT tag system after equipment washed out. Download PIT tag and Sonde download.
August 7, 2020	Re-install PIT Tag system. Download PIT tag and Sonde download, complete hydrology measurement and point velocities with riffle structures, site inspection.
October 1, 2020	Site inspection. Download PIT tag and Sonde download. Remove all monitoring equipment from site, and complete hydrology measurement.

2.3 Site Inspections

Habitat structure inspections were completed during each site visit to determine if conditions deviated from the engineered design or have changed since the construction completion (based on as-built drawings) in a manner that degrades fish habitat and/or prevents fish using the passage structure. Sites included BL1 to BL6 (Table 2-1; Figure 2-1).

Velocity and water depth measurements were completed to confirm fish passage potential through the structure.

2.4 Hydrology

Open season water levels were monitored continuously with a hydrometric station installed 1.5 km upstream of the Water Survey of Canada hydrometric gauge 07GFD001 with the objective to calculate streamflow directly at the riffle structures. Streamflow was used to estimate the percentage of time that sufficient flow is present within the Beaverlodge River to allow fish passage ($Q_{fish,min}$) at the riffle structures. Monitoring periods and flow measurements completed are summarized in Table 2-3.

TABLE 2-3 Flow Measurement Summary

Year	Monitoring Period	Number of Measurements Completed	Active Stage-Discharge Rating Curve
2019	May 31 to October 31	4	2019-001
2020	June 21 to October 1	3	2019-002

The stage-discharge rating curve (2019-001) developed in 2019 was updated with three flow measurements and corresponding water level surveys completed in 2020 (Table 2-3). The low flow range of the rating was confirmed with measurements as low as 0.016 m³/s and the highest flow measurement to date measured 4.698 m³/s. The rating was extended to enable streamflow calculations for the maximum recorded water level and flows greater than 7.047 m³/s and are graded E for estimate. The updated stage-discharge rating curve (2019-002) was used to re-calculate the streamflow for 2019 and to calculate streamflow for 2020 (Appendix B).

All hydrometric data was processed using Aquarius according to the British Columbia Resources Information Standards Committee Hydrometric Standards Version 2 (B.C. ENV 2018).

Hydrometric monitoring instrumentation used in 2020 is identical to instrumentation used in 2019 and is detailed in Matrix (2019a).

2.5 Water Quality

Two In Situ Inc Aquatroll 600 Multiparameter Sondes were installed Upstream of Riffle 1, and downstream of Riffle 2 to continuously monitor in situ water quality parameters throughout the open water season. Continuous water quality monitoring parameters included water temperature, DO (mg/L), pH, specific conductivity, and turbidity. Sondes were deployed from June 29 to October 1, 2020.

Manual spot check of in situ water quality parameters were conducted at sites BL1, BL2, BL5, and BL6 (Table 2-1; Figure 2-1). Water temperature, DO, pH, specific conductivity (SPC), and turbidity were measured upstream and downstream of the fish passage structures to determine if these parameters are affected by the structure. In situ water quality was collected using a calibrated multimeter (YSI 550 or Pro Plus model). Turbidity values were collected using a turbidity meter (Orbecco Hellige TB 200).

2.6 Fish Use and Fish Passage

Several monitoring methods were used to help observe fish movement and determine Arctic Grayling presence at the weir site. Fish sampling and tagging, and water sampling for eDNA (Arctic Grayling) analysis were conducted in 2020. Installation of a fish fence was planned for 2020; however, due to higher than average water conditions in June 2020, the fence was not installed.

All fish sampling, PIT tagging, and the installation of the fish fence were conducted under Fish Research Licence No. RL20-1003.

2.6.1 Fish Sampling

Fish sampling was conducted to support the fish movement (PIT tagging, movement through the riffles) and habitat use monitoring parameters. Fish sampling was completed from June 27 to 29, 2020. Fish sampling was not completed within the riffle structures, due to unsafe wading conditions.

Reach 1 and Reach 3 were approximately 200 m in length, while Reach 2 was 100 m (Reach 2 was located between the riffle structures). Thalweg depths within each sampling reach ranged from 1 to 3 m in depth. These reaches were established to determine fish presence and species type below and above each riffle structure.

Electrofishing was completed during the June field program using a SmithRoot Generator Powered Pulse (GPP) 2.5 portable electrofishing unit mounted on an inflatable zodiac boat. Electrofishing was conducted within each sampling reach over a 3-day period (Table 2-1; Figure 2-2). Temperature and electrical conductivity (EC) were measured prior to each electrofishing event to calculate appropriate unit settings. Electrofishing was typically conducted along the shoreline areas, with limited effort directly over the deeper pool sections where visibility was lower; this was done to avoid the continual shocking of fish without being able to capture them and thereby reducing the risk of mortalities. Pulse bursts of 5 to 15 seconds were conducted while moving the boat slowly against the flow. Captured fish were placed in an aerated container and held for up to 15 minutes before being processed.

Angling was completed during the June sample period by two crew members with the use of spoon lures, either casting from the shore or boat. Arctic Grayling and Northern Pike were targeted during angling.

All fish captured through the 2020 sampling events were identified to species, enumerated, measured and weighed. All large-bodied fish species over 120 mm in fork length were tagged according to the procedures described in Section 2.6.3. Fish were able to recover in separate live wells before being released where they were captured. A total of 10 % of tagged fish were held in live wells with aerators for up to 2 hours to monitor survival rate and ensure the insertion of PIT tags were not causing mortalities.

2.6.2 eDNA Sampling

The eDNA monitoring was completed on June 15, 2020 to assess the presence of Arctic Grayling in the Beaverlodge River. Sampling occurred later in the year than in 2019 (2019 eDNA sampling occurred in April) to better align with the end of historical Arctic Grayling spawning periods in the Redwillow River watershed (Hvenegaard 2001). Seven sites were selected for eDNA sampling (BL-eDNA-1 to BL-eDNA-7; Table 2-1; Figure 2-2). Sampling and data analysis were conducted according to the methods provided by the British Columbia Ministry of Environment's *Environmental DNA Protocol for Freshwater Aquatic Ecosystems* (Hobbs and Goldberg 2017) and are summarized in the following subsections.

2.6.2.1 *Field Sampling and Filtration*

Water samples were collected at each site and filtered at a dedicated, sterile filtration location. Methods included:

- Three, 1 L water samples (three replicates per site) were collected per site, using sterile, non-reactive containers. Water samples were stored on ice within a cooler until filtration.
- Filtration occurred at a dedicated filtration station located at the Matrix Grande Prairie office within 24 hours of sample collection.
- Each individual 1 L sample was filtered through Thermo-Scientific Nalgene T Analytical Test Filter Funnels, with a 47 mm diameter membrane, 0.45 µm pore size and 250 mL capacity. A minimum of 250 mL of water over a period of at least 30 minutes was filtered for each sample.
- Filters were stored in Ziploc™ bags, labelled according to sample location and replicate number, and preserved using silica desiccant.
- All equipment was cleaned and sterilized using bleach solutions and rinsed with deionized (DI) water between sampling events and during the filtration process to avoid the potential for cross-contamination and false positive results.

2.6.2.2 *Primer Validation Assay*

Single species eDNA detection requires validation of the species-specific DNA primer. To ensure primer validation is accurate, DNA samples from individuals in the target population were required to be tested with the laboratory primer specific to Arctic Grayling. Ideally, tissue samples should be obtained from individuals present in the target population to reduce false negatives due to differences in genetic variability between regional populations. Given that Arctic Grayling are considered functionally extirpated from the Beaverlodge River, tissue samples from the Wapiti River Arctic Grayling population were used. AEP biologists provided tissue samples in the form of scales of Wapiti River Arctic Grayling for primer validation purposes. Scales were sent to the Helbing Laboratory at the Department of Biochemistry & Microbiology located in British Columbia for analysis in 2019. The DNA was extracted and analyzed from the scale samples and were able to be amplified with laboratory Arctic Grayling primer meaning that Arctic Grayling from the Beaverlodge River and Wapiti River populations should be detected with strong efficiency, if DNA is present.

2.6.2.3 *Laboratory Analysis*

Samples were shipped to the Helbing Laboratory for analysis. Samples were tested against the Arctic Grayling DNA primer using quantitative polymerase chain reaction (qPCR) methods. Methods for DNA isolation, eDNA assay set up and data analysis are described in Hobbs *et al.* (2019).

The QC/QA on eDNA samples was conducted prior to analyzing each sample for the target DNA. This included running an “IntegritE-DNA” viability control to ensure the quality of DNA extracted was suitable for qPCR analysis and that there were no inhibitors present. The IntegritE-DNA used four technical replicates of the ePlant5 qPCR assay; inhibition to the qPCR application process is not occurring if amplifiable DNA is present in the sample.

2.6.3 Tagging

An Oregon Radio-Frequency Identification (RFID) Half-duplex (HDX) single antenna PIT tag system was installed at the weir location from June 27 to October 1, 2020. Following a high water event on July 2, 2020, the PIT tag reader antenna was washed out, causing the whole system to be offline from July 2 to August 7, 2020 when the system was re-installed.

2.6.3.1 *Radio Frequency Identification System Description*

The system included:

- A pass over antenna, laid flat across the substrate 5 m upstream of Riffle 1 (Figure 2-1). The antenna used marine grade, 8 gauge copper wire looped around on itself to generate a magnetic field; the loop in the long axis (i.e., crossing the width of the river) was approximately 20 m in length, and the second axis (i.e., ends of the antenna parallel to the flow and banks) was 0.6 m. The antenna was secured using climbing grade rope, was weighted down with concrete anchors and sandbags, and tied off to both shores. At the end of the antenna loop, the marine wire was twisted around on itself to inhibit noise, before being connected to the tuning capacitor.
- The twisted portion of the antenna was connected to a tuning capacitor housed in a waterproof box, which is connected to the HDX reader with twinax cable. The tuning capacitor operates to 134.2 kHz frequency and auto tunes to the antenna.
- A HDX reader installed in a secure, waterproof lock box. The HDX timing cycle was set to ten scans per second. The reader detects PIT tags and timestamps each event before writing it to the log file contained in the reader.
- A power unit consisting of a 100 W solar panel, charging two 12-volt deep cycle batteries.

2.6.3.2 *Fish Handling*

All captured large-bodied and sport fish species over 120 mm in fork length had a PIT tag inserted into them; White Sucker and Northern Pike were the only large-bodied and sport fish species captured. Two sizes of PIT tags were used: 12 mm tags for fish sized between 120 and 250 mm; and, 23 mm PIT tags for fish sized over 250 mm. Each tag was individually numbered for individual fish identification. Tags were inserted in the ventral side of the body, 1 to 2 mm off the middle of the fish, midway between the caudal

tip of the pectoral fin and pectoral girdle. The depth of tag insertion was dependent on the fish species and size; some smaller fish required insertion into the body cavity while larger fish required tag insertion into muscle tissue (2 to 3 mm of needle insertion may be required for fish around 150 mm). Two needle injectors were used, dependent on the tag size. Each injector and needles were disinfected with 70% ethanol and rinsed with DI water between each tag insertion.

Each fish tagged was measured, weighed, and its captured and release location documented. Release location was important to determine which riffle structure (just Riffle 1 or both riffles) was passed if a fish was detected at the antenna location.

2.6.3.3 *Quality Control Procedures*

The RFID systems can produce false detections called phantom tags, caused by random noise that generates the correct pattern that matches a PIT tag. The tag number will appear as a tag identification number outside the known range of PIT tag identification numbers used. In addition, the scan will appear with different type codes compared to real scans.

The PIT tag identification numbers were recorded by passing the tag over the looped antenna. Tag identification numbers were recorded and correspond with the data collected on the individual fish captured. Test readings of the PIT tags within fish was completed during the installation of the PIT tag system, by simply passing fish over the antenna loop within the watercourse to ensure scan range and confirm the PIT tags system was working correctly.

Tag scans that were identified as phantom tags or test tags were removed from the data.

2.6.4 *Riffle Water Velocities for Fish Passage*

At each riffle structure, point velocity measurements were recorded upstream, at the mid-section and downstream at 25 % and 75% of the riffle structure width in July and August (Table 2-1). The velocity measurements were completed at the top and bottom of the water column.

2.6.5 *Data Analysis*

Measurement end points of fish sampling data included:

- relative abundance expressed as the number of fish captured and catch per unit effort (CPUE)
- percent composition
- length frequency (large-bodied fish only)
- comparison of 2019 to 2020 fish sampling data
- fish passage events over the PIT tag antenna

3 RESULTS

3.1 Habitat Structure Site Inspections

3.1.1 Site Inspection

Both riffle structures appeared to be performing as intended. Flow was being directed through the centre of each riffle at various flow conditions; numerous step pools, back water eddies, cascades and chutes, were present. Wetted depths in the riffle structures ranged from less than 0.1 m up to 0.5 m during the July and August field programs. The riffle structures were flooded out during the April site visit due to high water. Flow was observed to be moving over the riffles, with no subterranean flow observed; smaller material consisting of fines and gravel had settled within the interstices of the larger cobble and boulder material. At different times throughout the 2020 season, woody debris was observed within the riffle structures. During the October 1 field visit, streamflow and water levels were observed to be insufficient to pass over Riffle 1 and Riffle 2 (Section 3.2.3). Recorded October 1 streamflow was 0.022 m³/s (Appendix B).

Movement of boulder and cobble material within the riffle structures was not observed when compared to 2019 conditions. Any movement of material that has occurred is not affecting the integrity of the structures and is therefore insignificant. The large pool at the downstream end of Riffle 1 (weir Riffle) was still present (observed in 2019), and wetted depths at the time of assessment were up to 3 m (July depths; similar depths to what was recorded pre-construction, and in 2019). Wetted depths downstream of Riffle 2 ranged from 0.4 to 2.0 m. Wetted depths upstream of Riffle 1, within 200 m, were up to 2 m during the July 2020 field program.

While the structures themselves remain stable, significant erosion was observed on the right bank (south bank) at the upper portion of the Riffle 2, with minimal erosion along the left bank (Appendix A; Photographs 19, 20, 21, and 22). The erosion along the right bank is an extension of the continual erosion of the high, unstable right bank that exists from Riffle 2 upstream to the sharp 90 degree bend in the river. If these eroded areas are left alone, there is a potential for water to go around the riffle structure and create a new channel. Under low flow conditions the channel may bypass Riffle 2, resulting in water depths lowering between Riffle 2 and Riffle 1 to pre-construction elevations. Matrix has notified MPWA of the erosion.

The MPWA conducted willow planting in the summer of 2019. Plantings occurred along the south bank from Riffle 2 for a distance of 30 m upstream; planting could not be conducted further upstream as the high, unstable bank presented overhead safety concerns for workers. It appeared that the majority of willow plantings had been washed out due to the bank erosion and slumping in this area (Appendix A, Photographs 7, 13, and 17).

The channel habitat units had not changed from 2019 to 2020. Run habitat with areas of backwater pools were present in both Reaches 1 and 3. The pool has increased in surface area due to erosion of the right bank downstream of Riffle 1. Gravels and cobble made up the majority of bed substrates in Reach 3, and fines in Reaches 1 and 2. The banks remain well vegetated throughout the whole study area; overhanging willows and deciduous trees are abundant. Accumulation of large woody debris was prominent in Reach 2 and Reach 3. These areas are providing good instream cover for resident fish, with the majority of fish being captured in these areas.

3.2 Hydrology

3.2.1 Precipitation

Total precipitation from the Environment Canada Climate Data Archive (CDA) for the Beaverlodge Climate Station (Climate ID: 3070560) for 2019 and 2020, including a comparison to the 1981 to 2010 normal precipitation (30-year mean precipitation) is provided in Table 3-1. The monthly variations in precipitation for 2020 from the 1981 to 2010 normal precipitation are shown as percent differences indicating the dominant wet or dry conditions over the course of the year (Table 3-1; Figure 3-1).

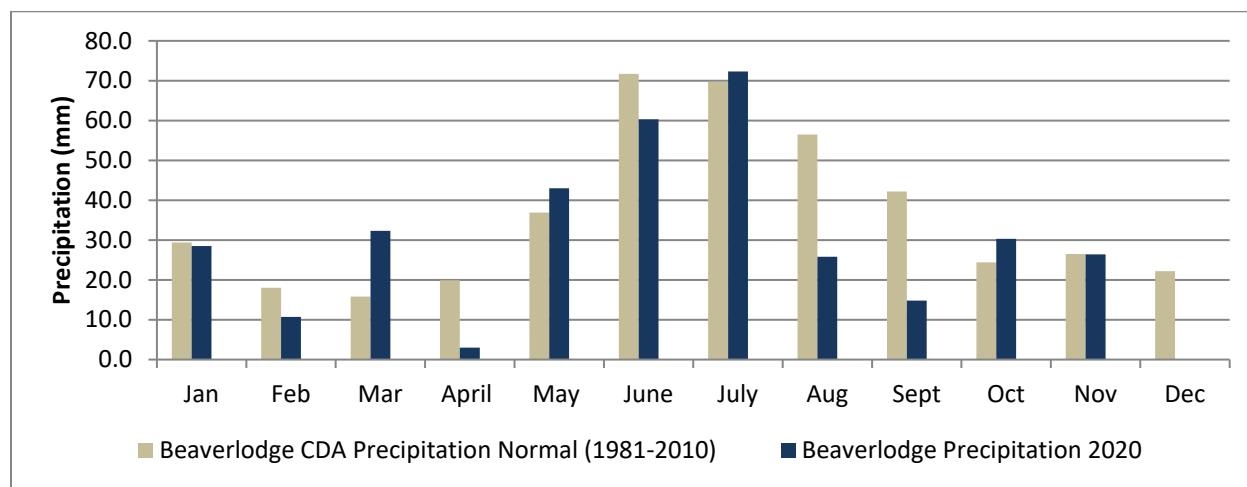


FIGURE 3-1 Beaverlodge Precipitation for 2020 Compared to 30-year Normal Precipitation

Annual precipitation to the end of November was 15% below normal but varied throughout 2020. Winter precipitation was near normal in January, while precipitation was well below normal for February and April. Precipitation for the month of March substantially greater at 104% above normal. May, June, and July were close to normal while well below normal precipitation was recorded for the months of August and September. October received 24% greater than normal precipitation and November received normal precipitation.

TABLE 3-1 Beaverlodge Total Precipitation for 2019 to 2020 and Departures From the 1981 to 2010 Normal

Year	Site	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual	EOR ¹
1980-2010	Beaverlodge CDA 1981-2010 Normal (mm)	29.4	18.0	15.8	19.9	36.9	71.7	69.7	56.5	42.2	24.4	26.5	22.2	433.1	411
2019	Beaverlodge Precipitation (mm)	28.2	21	0.6	19.5	31	54.2	91.6	51.9	26.9	55.3	57.3	-	437.5	437.5
	Departure from Normal	-4%	17%	-96%	-2%	-16%	-24%	31%	-8%	-36%	127%	116%	-	1%	6%
2020	Beaverlodge Precipitation (mm)	28.5	10.7	32.3	3	43	60.3	72.3	25.8	14.8	30.3	26.4	-		347.4
	Departure from Normal	-3%	-41%	104%	-85%	17%	-16%	4%	-54%	-65%	24%	0%			-15%

1 End of available record.

3.2.2 Water Survey of Canada Gauge 07GD001

Over the period of available record (1968 to 2019), discharge on the Beaverlodge River at the WSC gauge 07GD001 is dominated by snowmelt runoff with maximum annual flows occurring toward the end of April. Streamflow for the remainder of the year is highly dependent on the magnitude and frequency of rainfall runoff events. Base flows decrease throughout the open season with minimum flows frequently approaching zero from August to March (Table 3-2). The Water Survey of Canada gauge 07GD001 is operated seasonally only and winter discharge is not available.

TABLE 3-2 Minimum Monthly Mean, Maximum Monthly Mean and Mean Monthly Discharge (m³/s), Beaverlodge River at 07GD001 (1968 to 2019)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Min. Monthly Mean	0	0	0	0.251	0.011	0.031	0.006	0	0	0	0	0
Max. Monthly Mean	0.196	0.217	11.50	38.60	39.60	26.100	27.00	15.20	10.20	3.77	0.57	1.22
Mean Monthly	0.062	0.07	1.700	11.1	7.87	3.54	2.49	1.170	0.561	0.515	0.151	0.221

For 2020, streamflow at the Water Survey of Canada gauge recorded a peak flow of 105 m³/s on April 21 as a result of spring snow melt and the substantially greater than normal precipitation as snow observed in March. Flows receded until July when sustained precipitation again increased flow to 60.7 m³/s on July 8. Flows receded throughout August and September as a result of below normal precipitation and were below 1.0 m³/s for the remainder of the open season (Table 3-3).

TABLE 3-3 2019 Mean Monthly Discharge (m³/s), Beaverlodge River Water Survey of Canada Gauge 07GD001

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2019			10.3	20.2	5.85	2.1	3.96	5.16	2.33	2.09		

Note: 2020 discharge for the WSC gauge 07GD001 is provisional and summary statistics are not yet available.

3.2.3 Beaverlodge River at the Weir

Snowmelt runoff occurred before the installation of the hydrometric gauge on June 25 and a rainfall-induced maximum instantaneous flow of 59.846 m³/s occurred on July 8, corresponding to sustained but near normal precipitation in early July. A minimum instantaneous flow of 0.002 m³/s was recorded on September 8. Compared to 2019, flows were considerably less in 2020 for the months of August and September with mean flows of 1.016 and 0.007 m³/s, respectively, and minimum monthly low flows of 0.004 and 0.002 m³/s, respectively. At the time of the October 1 field visit, it was noted that water levels had receded to below the height of Riffle 1 with a corresponding measured flow of 0.016 m³/s. This streamflow and corresponding water level were insufficient to allow for fish passage and lasted from August 30 to October 1 when the hydrometric instrumentation was removed for the season. This low flow condition is attributable to the less than normal precipitation observed in August (-54%) and September (-65%), (Table 3-1). Although precipitation for October was 24% above the normal, it is possible that low streamflow may have persisted until freeze up, eliminating fish passage until the spring freshet.

Monthly streamflow summary statistics for the Beaverlodge River at the weir for the 2019 and 2020 open seasons are summarized in Table 3-4. Hydrographs and mean daily streamflow summaries are included in Appendix B. Compared to the 1968 to 2018 average at the WSC gauge 07GD001, minimum monthly flows at the weir were above average from June to September and with the exception of June, mean monthly flows were greater. Maximum monthly flows measured at the weir were less from June to September compared to the WSC gauge 07GD001.

TABLE 3-4 June to September Minimum, Maximum and Mean Monthly Discharge (m³/s) for the Beaverlodge River at the Weir - 2019 to 2020

Year		Jun.	Jul.	Aug.	Sep.
2019	Minimum	0.245	0.732	2.479	1.027
	Mean	2.045	3.617	5.220	1.945
	Maximum	6.913	17.358	10.460	3.901
2020	Minimum	n/c	3.002	0.004	0.002
	Mean	n/c	20.385	1.016	0.007
	Maximum	n/c	59.846	3.662	0.024

Note: n/c= not collected

3.3 Water Quality

3.3.1 Continuous Monitoring

Data for all water quality parameters recorded by the continuous data loggers is presented in Appendix E. Minimum, maximum, and mean daily averages is presented in Table 3-5, while daily averages for upstream and downstream data is displayed in Figures 3-2 to 3-6. The daily averages in each figure were compared the *Environmental Quality Guidelines for Alberta Surface Waters* (AEP 2018).

TABLE 3-5 2020 Sonde Data Summary

Month	Water Quality Parameter	Upstream			Downstream		
		Min	Max	Mean	Min	Max	Mean
June	pH	7.9	11	8.4	8.2	8.4	8.3
	Temperature (°C)	17.7	21	18.6	17.7	19.3	18.5
	EC (µS/cm)	263	274	269.1	255.5	268.6	264.2
	SPC (µS/cm)	302	310.6	307.2	287	305	301.7
	DO (mg/L)	8	10	8.9	7.3	8.8	8
	Turbidity (NTU)	0	16.3	10.2	8.9	14	10.6
July	pH	7.6	8.5	8	7.8	8.4	8
	Temperature (°C)	13.3	23.5	18.1	13.3	23.3	18.1
	EC (µS/cm)	211.8	338.3	252.8	204	344	246.2
	SPC (µS/cm)	249.6	409.8	290.9	241.7	407.4	283.4
	DO (mg/L)	7	9.4	8	6.3	8.1	7.2
	Turbidity (NTU)	6.1	271.1	113.3	10.6	256	59
August	pH	7.5	8.5	8.1	8	8.5	8.2
	Temperature (°C)	13.7	24.2	17.6	13.7	24.1	17.7
	EC (µS/cm)	251	401	317.7	241.3	387.9	305.8
	SPC (µS/cm)	286.1	479.1	371.4	275.4	467.4	357.7
	DO (mg/L)	6.1	9.9	8.1	6.1	8.8	7.2
	Turbidity (NTU)	4.8	367.1	17.4	3.3	416	10.8
September	pH	7.7	7.9	7.8	7.9	8.4	8.2
	Temperature (°C)	9.3	19.3	12.6	8.1	16.3	10.1
	EC (µS/cm)	373.1	615.2	430.1	362.3	1005.1	593
	SPC (µS/cm)	477.7	862.7	566.3	467.5	1382	789.4
	DO (mg/L)	1.3	8.9	6.2	4.7	10.4	7.2
	Turbidity (NTU)	3	389.2	60.3	1.3	584	6.1

Average pH levels recorded upstream and downstream of the study reach stayed consistent throughout the open water season with average monthly values ranging from 7.8 to 8.4 (Table 3-5). The minimum pH

levels recorded throughout the monitoring period was observed in August (7.5), and the maximum recorded in June (11.0; Table 3-5). The upstream and downstream daily pH levels were consistent throughout the monitoring period and fell within the AEP guidelines (Figure 3-2). The upstream and downstream readings followed a linear relationship until early August. A slight decrease in the upstream daily average pH levels were observed on July 19 and 20, 2020 when compared to the downstream levels. Starting in early-August, upstream pH levels decreased slightly compared to downstream pH levels, and remained lower for the remainder of the monitoring period. This decrease in pH levels corresponds with a decrease in monthly discharges (Table 3-4). Values remained within the AEP surface water guidelines for the remainder of the monitoring period.

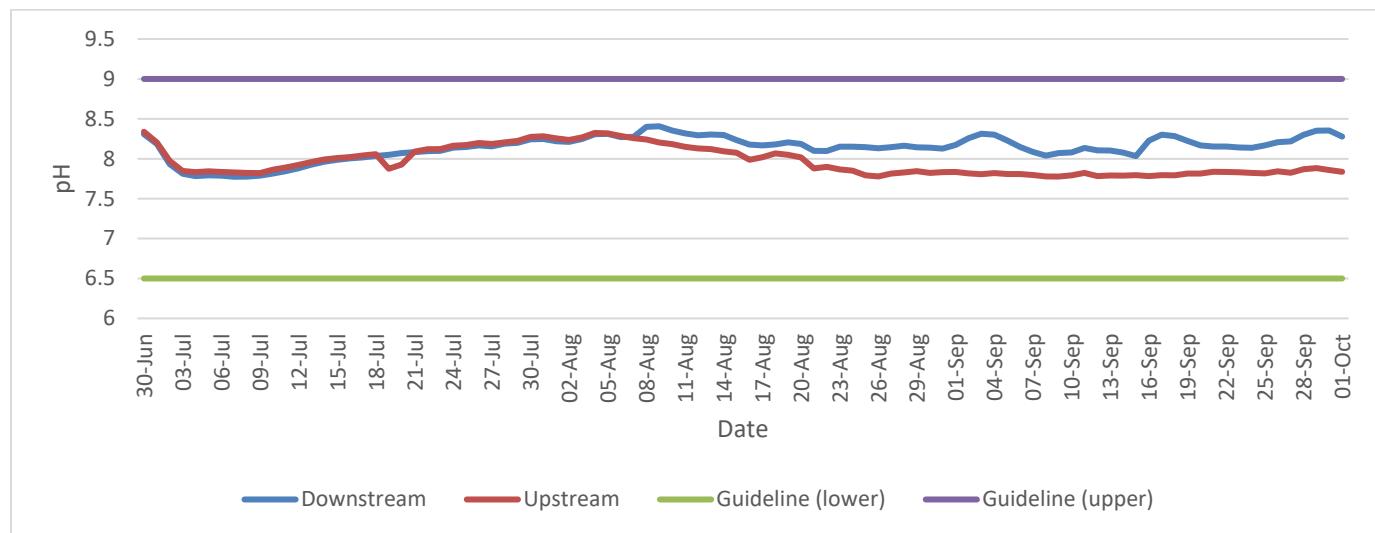


FIGURE 3-2 pH Daily Average

The DO concentrations ranged from 6 to 10 mg/L during the summer months (June to August); on average DO concentrations were around 7 to 8 mg/L both upstream downstream of the study reach (Table 3-5). In September, average DO concentration fell between 6 and 7 mg/L upstream and downstream of the study location. A minimum DO concentration of 1.3 mg/L was recorded on September 30 2020, upstream of Riffle 1 (Table 3-5). The average daily DO concentrations displayed a parallel pattern of variation between the upstream and downstream sondes (Figure 3-3). Generally, the concentrations were lower at the downstream sonde compared to the upstream sonde location; this is likely due to differences in sonde calibration. In mid-August, the DO at the upstream location started to decline steadily. This decline continued until the end of the monitoring period. This decline in DO seems to correlate with the sharp decrease in flow observed in August and September and the presence of a partially constructed beaver dam at Riffle 1. The downstream DO remained relatively steady throughout the monitoring period.

The DO concentrations were above AEP long-term guidelines of 6.5 mg/L from June to early-September at both upstream and downstream monitoring locations, with the exception of a decreased DO concentration recorded in early-July (< 5mg/L) at the downstream monitoring location (Figure 3-3). In general, the downstream DO concentrations were above the long-term AEP guidelines through the remainder of the monitoring period. At the upstream location, the DO concentrations decreased below the long-term guideline in mid-September, with the lowest levels recorded in late-September (< 5mg/L).

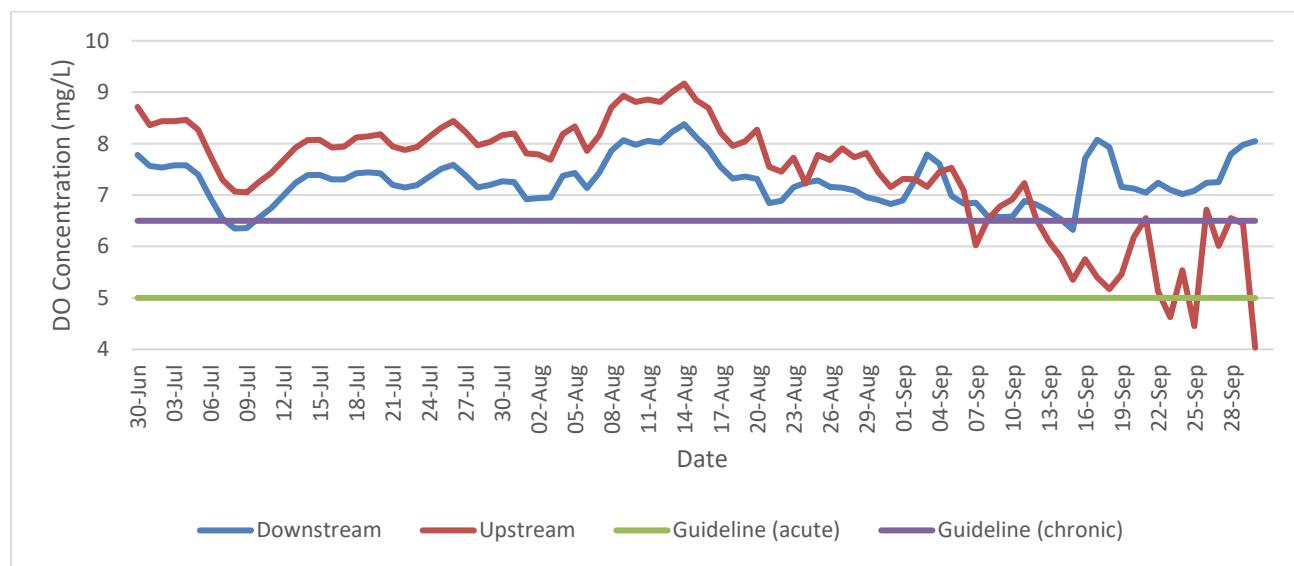


FIGURE 3-3 Dissolved Oxygen Concentration Daily Average

Water temperatures ranged from 7.8 to 24.2°C; on average temperatures were approximately 18°C during the summer months. The average temperature decreased to 12.6°C (Upstream) and 10.1°C (Downstream) in September (Table 3-5). The upstream and downstream water temperatures displayed a parallel trend throughout the monitoring period (Figure 3-4). Temperatures peaked in early-August, with temperatures above 20 °C both upstream and downstream of the weir and steadily decreased after August 18 until the end of the recording period.

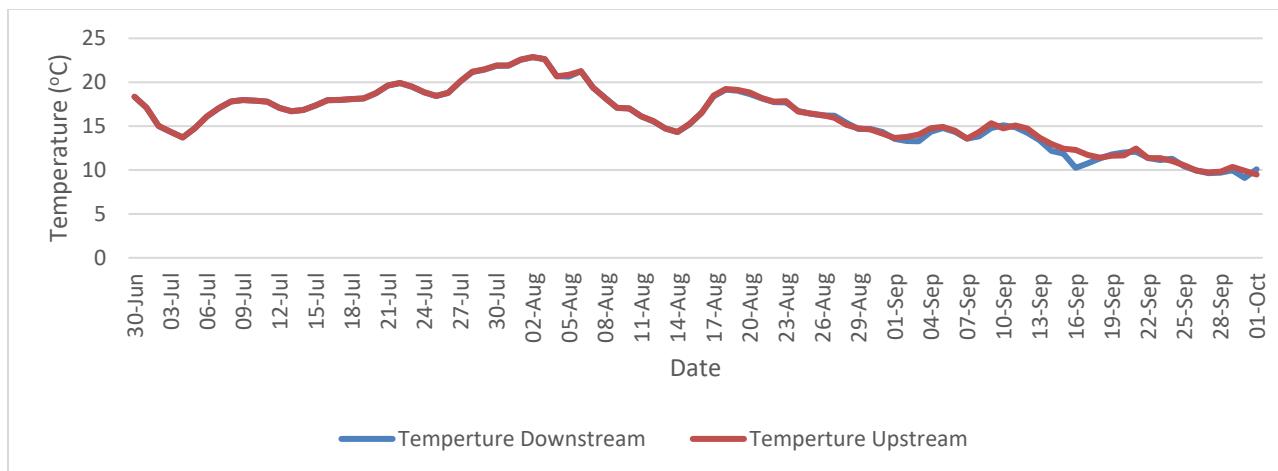


FIGURE 3-4 Temperature Daily Average

Specific conductivity (SC) displayed a parallel increasing trend through most of the monitoring period. The SC recorded upstream and downstream ranged from 250 to 350 $\mu\text{S}/\text{cm}$ from late-July to early-August (Figure 3-5). The SC values displayed a more pronounced upward trend starting in early-August, corresponding with the period of decreasing flow. The downstream sonde had three unexplained spikes within the month of September (Figure 3-5).

Average SC and electrical conductivity ranged from 252.8 to 566.3 $\mu\text{S}/\text{cm}$ upstream, and 246.2 to 789.4 $\mu\text{S}/\text{cm}$ downstream (Table 3-5) of the study reach. The upstream minimum monthly SC readings were recorded in July (211.8 $\mu\text{S}/\text{cm}$), and maximum were observed in September (862.7 $\mu\text{S}/\text{cm}$). Downstream of Riffle 2, maximum SC and EC values were recorded in September, with values exceeding 1,000 $\mu\text{S}/\text{cm}$ (Table 3-5). In general, SC and EC values fell between 200 and 400 $\mu\text{S}/\text{cm}$ from June to August (Table 3-5).

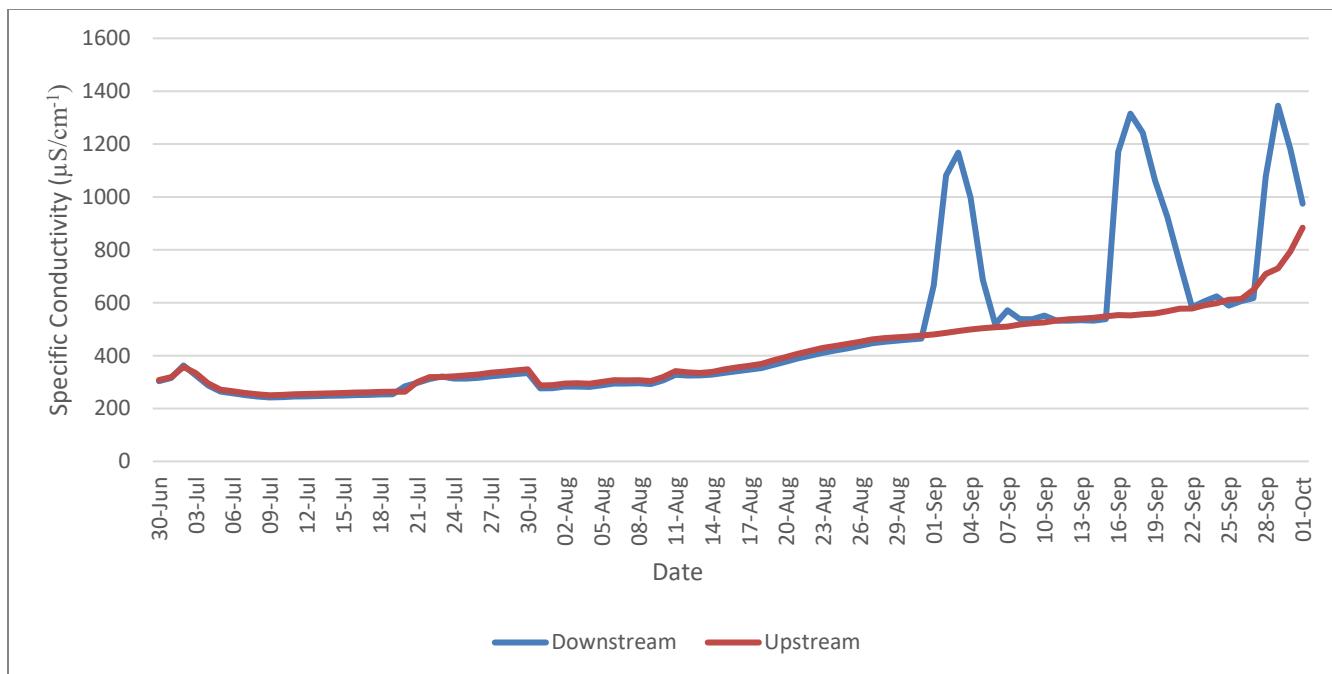


FIGURE 3-5 Specific Conductivity Daily Average

On average, highest NTU readings were recorded in July at the upstream sonde (113.3 NTU; Table 3-6), corresponding with highest precipitation (Figure 3.1). Upstream of Riffle 1, NTU readings ranged from 0 NTU, to 389.2 NTU; Downstream NTU readings ranged from 1.3 NTU to 584 NTU (Table 3-6). The NTU values occasionally differed upstream and downstream of Riffles 1 and 2 throughout the monitoring period (Figure 3-6). High NTU values were observed earlier in the monitoring period (July), corresponding with higher flow rates (Beaverlodge Hydrograph; Appendix B). High NTU values were also observed at the following precipitation or runoff events. Higher NTU values were recorded at the upstream location, suggesting that the weir may act as sediment barrier at lower flows.

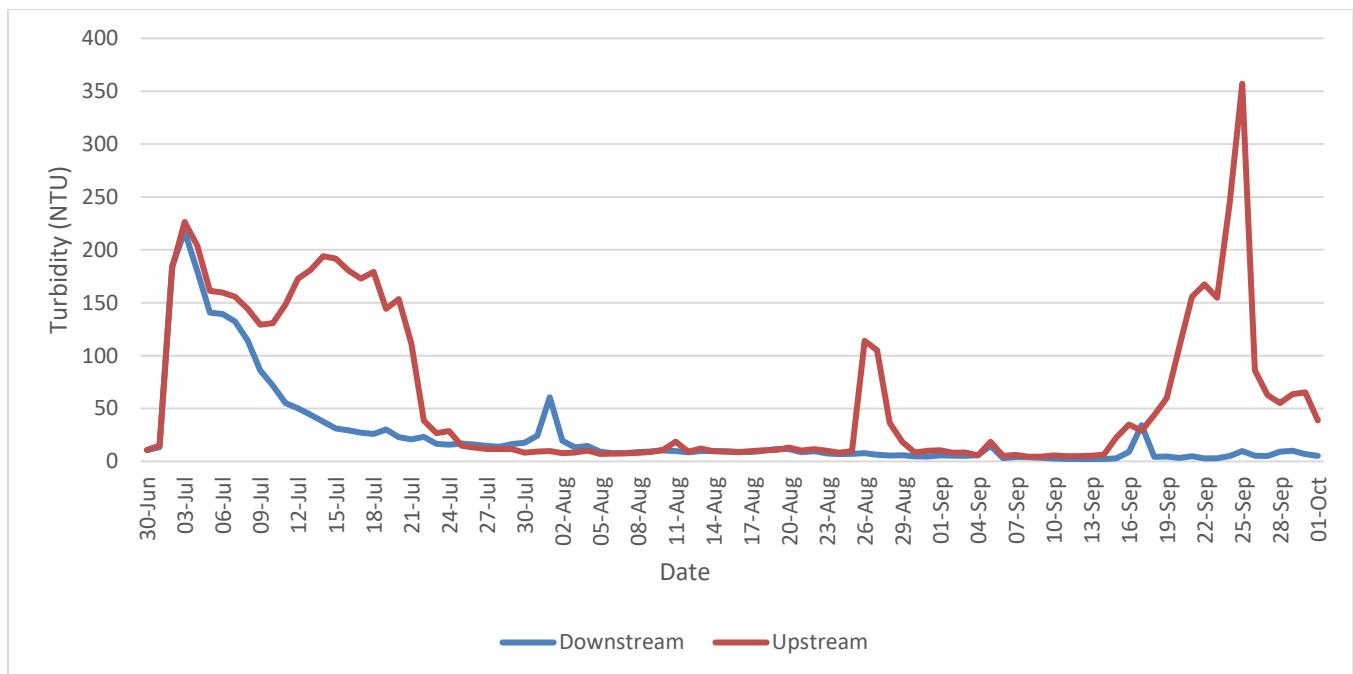


FIGURE 3-6 Turbidity Daily Average

3.3.2 Monitoring Locations

Table 3-6 displays the in situ water quality summary data from the established monitoring locations (Table 2-1; Figure 2-1). Water temperatures were recorded below 6 °C in April, and within June, August, and October ranged from 10.4 to 19.2 °C (Table 3-6). The DO concentrations were consistently above 7 mg/L at all sampling locations during each sampling event. pH was slightly alkaline and stayed relatively constant at all sampling locations during each sampling event. The SPC was recorded at its lowest during the April sample event, around 140 µS/cm. During the summer months, SPC ranged from 309.4 to 438 µS/cm, with the October sample event being on average 596 µS/cm (Table 3-6).

The manual readings collected at monitoring locations BL 1 (Upstream of Riffle 1) and BL 6 (Downstream of Riffle 2; Table 3-6) between June and October were similar to those measured at corresponding dates by the sondes (Figures 3-2 to 3-6).

TABLE 3-6 Water Quality Summary

Date	Water Quality Parameter	BL1	BL2	BL5	BL6
28-April-20	pH	7.6	7.1	-	-
	Temperature (°C)	5.6	5.6	-	-
	SPC (µS/cm)	143.4	146.6	-	-
	DO (mg/L)	11.5	10.6	-	-
	Turbidity (NTU)	43.3	77.5	-	-
15-June-20	pH	7.7	7.4	7.9	7.6
	Temperature (°C)	12.9	12.9	12.9	13.1
	SPC (µS/cm)	438.0	438.0	438.0	438.0
	DO (mg/L)	8.7	8.5	8.6	8.3
	Turbidity (NTU)	181.8	190.8	204.1	200.0
28-June-20	pH	8.5	8.1	8.3	8.8
	Temperature (°C)	16.7	16.6	16.7	16.7
	SPC (µS/cm)	311.4	311.2	311.2	309.4
	DO (mg/L)	8.9	9.0	9.1	9.1
	Turbidity (NTU)	8.7	8.2	5.7	4.2
07-Aug-20	pH	7.8	7.9	7.9	8.2
	Temperature (°C)	19.2	19.2	17.2	17.5
	SPC (µS/cm)	440.0	441.0	236.0	238.0
	DO (mg/L)	8.2	8.1	7.7	7.6
	Turbidity (NTU)	10.1	11.6	10.8	14.6
01-Oct-20	pH	7.9	7.7	7.8	7.9
	Temperature (°C)	11.3	10.4	11.5	10.7
	SPC (µS/cm)	591.6	553.7	523.0	716.0
	DO (mg/L)	9.6	8.9	8.9	10.9
	Turbidity (NTU)	9.6	17.2	13.9	7.1

3.4 Fish Sampling

3.4.1 Catch Per Unit Effort

A total of 6,080 seconds of electrofishing was conducted in July 2020, which resulted in a total of 90 fish captured (Table 3-7). Species capture in 2020 included Northern Pike, White Sucker, Redside Shiner (*Richardsonius balteatus*) and Lake Chub (*Couesius plumbeus*). Total catch per unit effort (CPUE) was

1.48 fish/100 seconds (Table 3-7). A total of 3.5 hours of angling was completed in July 2020. One Northern Pike was captured for a total CPUE of 0.29 fish/hr (Table 3-8).

The July 2019 fish sampling effort resulted in 1,948 seconds of electrofishing effort, which included an additional species capture in Longnose Sucker (Table 3-7). Angling effort in 2019 was 2.5 hours, which resulted in two Northern Pike captured (Table 3-8). Although total effort was three times in higher in 2020, The CPUE did not follow the same trend. Electrofishing CPUE was higher in 2019 (1.62 fish/100 seconds) compared to 2020 (1.48 fish/100 seconds; Table 3-7). White Sucker had the highest CPUE in both 2019 and 2020 when looking at individual species capture. Angling CPUE was lower in 2020 (0.29 fish/hour) compared to 2019 (0.8 fish/hour; Table 3-8).

TABLE 3-7 Yearly Electrofishing Catch Per Unit Effort Comparison 2019 Versus 2020

Sampling Period	2019			2020			
	Species	Number Captured	Effort (seconds)	CPUE (Fish Captured/100 seconds)	Number Captured	Effort (seconds)	CPUE (Fish Captured/100 seconds)
Lake Chub	2	1,948		0.10	1	6,080	0.02
Longnose Sucker	3	1,948		0.15	0	6,080	0.00
Northern Pike	2	1,948		0.10	1	6,080	0.02
Redside Shiner	3	1,948		0.15	19	6,080	0.31
White Sucker	31	1,948		1.59	69	6,080	1.13
TOTAL	41	1,948		1.62	90	6,080	1.48

Note: 2019 CPUE efforts includes July fish sampling.

TABLE 3-8 Yearly Angling Catch Per Unit Effort Comparison 2019 (July) Versus 2020

Sampling Period	2019			2020			
	Species	Number Captured	Effort (hours)	CPUE (Fish Captured/hour)	Number Captured	Effort (seconds)	CPUE (Fish Captured/hour)
Northern Pike		2	2.5	0.8	1	3.5	0.29

3.4.2 Species Richness, Abundance, and Composition

Species richness in 2020 was low across all sampling reaches, with a total of four species captured (Figure 3-7). White Sucker were the most abundant fish captured in 2020 with 69 individuals captured across the study area (Table 3-7; Figure 3-7), and were the only species captured in Reaches 1 and 3 (Figure 3-7; Figure 3-8). Four species were captured in Reach 2 with the most abundant being Redside

Shiner (Figure 3-7). Northern Pike were only captured in Reach 2 (Figure 3-7; Figure 3-8). Large freshwater mussels were also captured on electrofishing wire in Reach 3.

Species richness did not vary much between 2019 and 2020; 5 species were captured in 2019 compared to 4 in 2020 (Table 3-7; Figure 3-7). Longnose Sucker were captured in all three study reaches in 2019 but were not captured in 2020, reducing species richness within each study reach. Northern Pike remained the only sport fish species captured during sampling in both years. A total of three individuals were captured within Reach 1 in 2019 which included White Sucker (2) and Longnose Sucker (1), which resulted in a species composition within the reach of 33 % Longnose Sucker, and 67% White Sucker (Figure 3-8). In 2020 within Reach 1, 15 individual White Suckers were captured (Figure 3-7) accounting for 100% of the species composition within the reach (Figure 3-8).

A more diverse species composition was observed in Reach 2 for both the 2019 and 2020 sampling year (Figure 3-8). The 2019 species composition within Reach 2 comprised of White Sucker (45%), Northern Pike (20%), Redside Shiner (15%), Longnose Sucker (10%), and Lake Chub (10%) (Figure 3-8); with 20 individual fish captured (Figure 3-7). The 2020 species count totaled 33 individuals captured within Reach 2 (Figure 3-7), which resulted in a species composition of 58% Red Shiner, 33 % White Sucker, 6% Northern Pike, and 3 % Lake Chub (Figure 3-8).

Reach 3 consisted of White Suckers (22), and Longnose Sucker (1) in 2019, and only White Sucker (43) in 2020, respectively (Figure 3-7). This resulted in a species composition of 97% White Suckers, and 4% Longnose Suckers in 2019, and 100% White Suckers in 2020 (Figure 3-9).

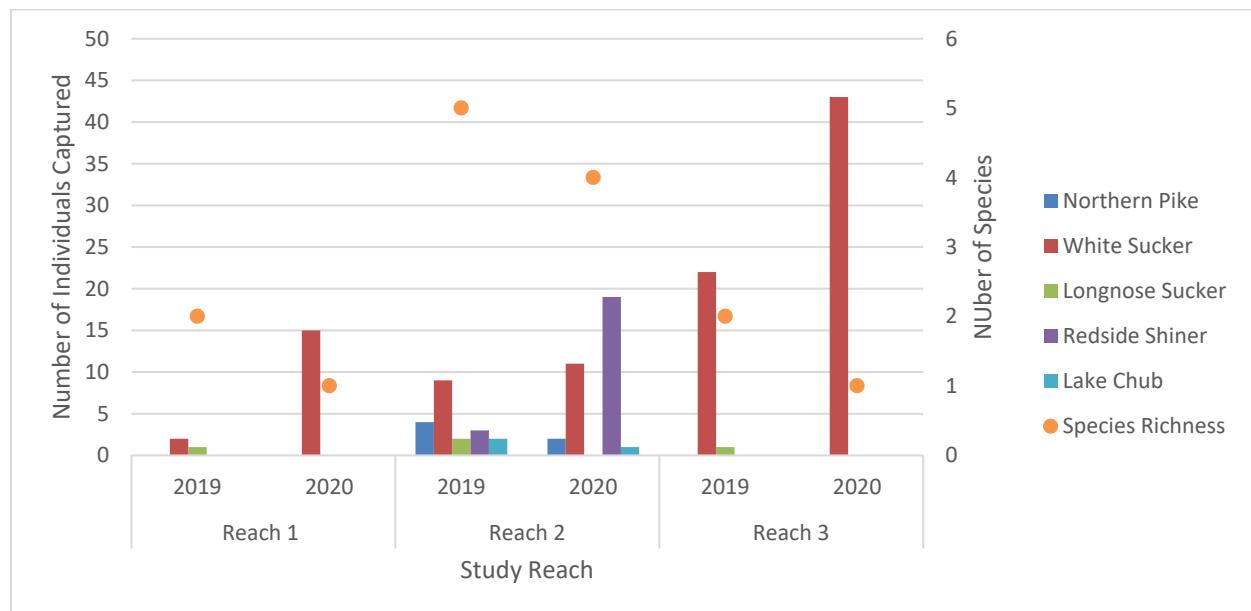


FIGURE 3-7 2019 Versus 2020 Species Abundance - By Sampling Reach

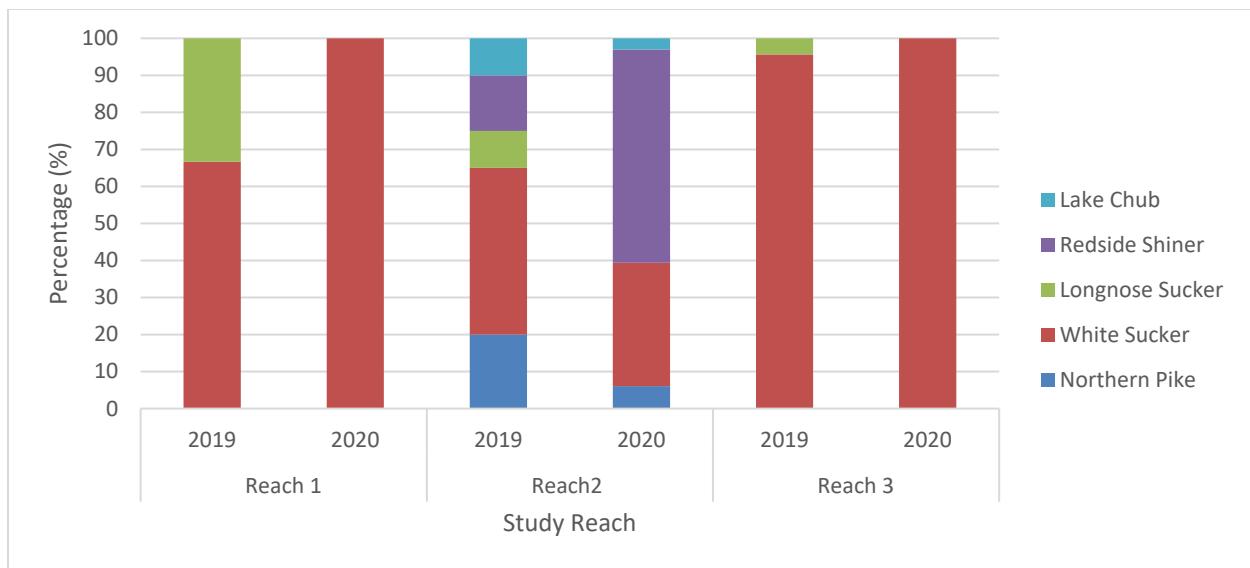


FIGURE 3-8 2019 Versus 2020 Species Composition - By Sampling Reach

3.4.3 Size Class

The majority of White Sucker species captured in 2019 and 2020 fell in the 201 to 350 mm fork length range, as displayed in Figure 3-9. A greater amount of larger White Suckers were captured in 2020 with four individuals within the 351 to 400 mm size class (Figure 3-9). In 2020, the majority of White Suckers (27) belonged to the 251 to 300 mm size class, whereas the majority of White Suckers captured in 2019 belonged to the 201 to 250 mm size class (Figure 3-9).

The six Northern Pike captured in 2019 ranged from 351 to 550 mm in fork length, compared to the two individuals captured in 2020 which belonged to the 501 to 550 mm size class (Figure 3-10).

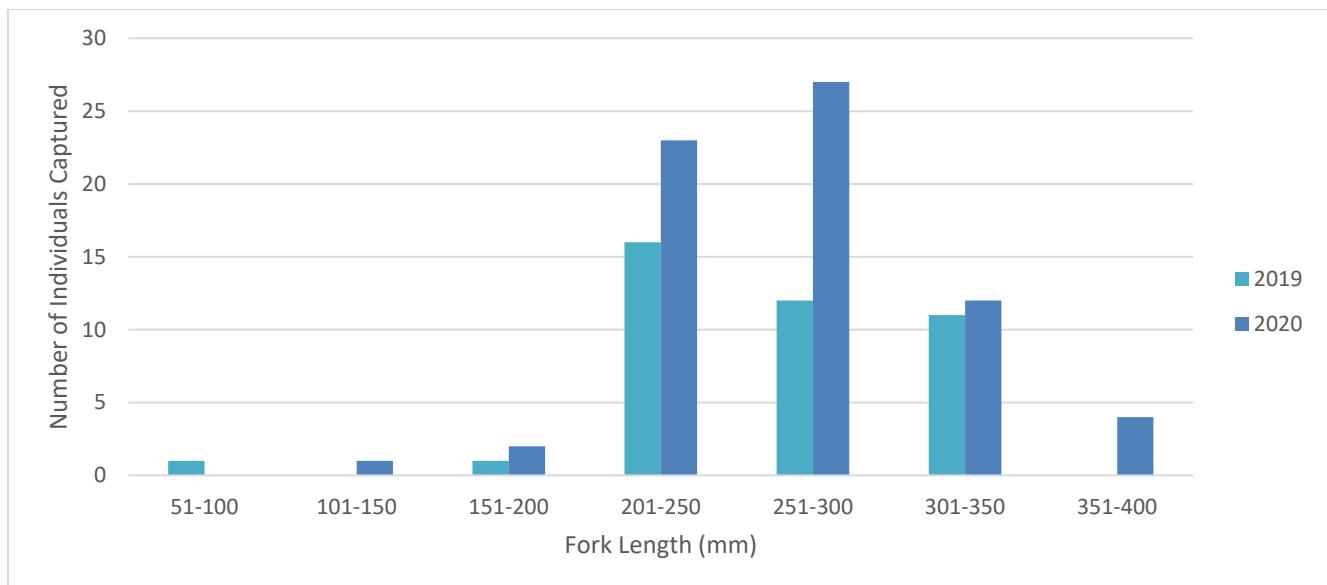


FIGURE 3-9 2019 Versus 2020 White Sucker Fork Length Distribution

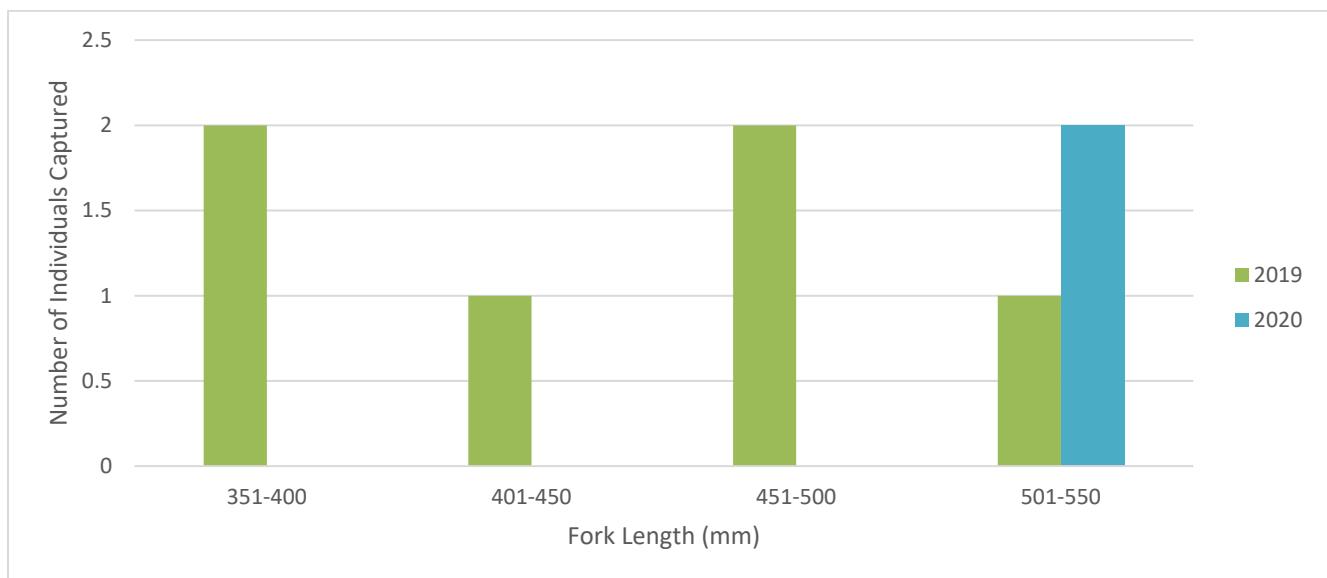


FIGURE 3-10 2019 Versus 2020 Northern Pike Fork Length Distribution

3.5 eDNA Sampling

Arctic Grayling DNA was not detected in any of the samples analyzed by Hebling Laboratory. Laboratory QA/QC performed using chloroplast DNA amplification was conducted and all samples performed well when tested for chloroplast DNA with the IntegritE-DNA test, meaning that there was ample intact DNA present in the samples, and inhibitory chemicals did not significantly interfere with the qPCR amplifications. Detailed results are presented in Appendix C.

3.6 Fish Passage

3.6.1 Tagging

Sixty-eight fish were implanted with PIT tags (Table 3-9). 12 White Sucker were tagged and released in Reach 1; 11 White Sucker and 2 Northern Pike were tagged and released in Reach 2; and 43 White Sucker were tagged and released in Reach 3 (Table 3-9). The system was offline from July 2 to August 7, 2020 due to a high water event ripping out the antenna. The antenna could not be replaced until August 7.

TABLE 3-9 Passive Integrated Transponder Tagging Summary

Species	Reach 1	Reach 2	Reach 3	Total
Northern Pike	0	2	0	2
White Sucker	12	11	43	66
TOTAL	12	13	43	68

Eleven individual fish were detected over the PIT tag antenna including 10 White Sucker and 1 Northern Pike (Table 3-10). All detections occurred from June 29 to August 24, 2020. Four of these fish were captured and released in Reach 1; three were captured and released in Reach 2; and, four were captured and released in Reach 3 (Table 3-10). Fish that were tagged and released in Reach 3 had to have passed both riffles in order to be detected by the antenna, while fish tagged and released in Reach 2 had to pass Riffle 1. It is unknown if fish that were tagged and released in Reach 1 moved downstream through the riffles.

The fork length of fish that migrated upstream through Riffle 1 from downstream reaches ranged from 240 to 530 mm.

TABLE 3-10 Passive Integrated Transponders Tag Detection Summary

Tag Identification Number	Species	Fork Length (mm)	Weight (g)	Capture Study Reach	Scan Date
900_226001123901	WHSC	330	412	1	June 29, 2020
					June 30, 2020
900_226001123904	WHSC	341	512	1	August 22, 2020
900_226001123926	WHSC	350	571	1	June 29, 2020
					June 30, 2020
900_226001123955	WHSC	330	378	1	August 20, 2020
					August 24, 2020

Tag Identification Number	Species	Fork Length (mm)	Weight (g)	Capture Study Reach	Scan Date
900_228000709329	WHSC	300	366	3	August 21, 2020
900_228000709341	WHSC	240	183	3	August 17, 2020
900_228000709343	WHSC	250	290	3	June 30, 2020
900_228000709390	WHSC	330	440	2	June 30, 2020
					July 2, 2020
900_228000709391	WHSC	251	216	2	July 1, 2020
900_228000709392	WHSC	240	190	2	June 30, 2020
900_228000709395	NRPK	530	1150	2	July 1, 2020

3.6.2 Riffle Water Velocities

The fish passage design considered maximum flow velocities that resident fish can negotiate (i.e., fish burst speed or maximum speed for 10 seconds). This would account for short sections between resting locations within the fish passage structure (i.e., <1 m step between pools). Flow velocities to accommodate burst speeds for various sized fish are outlined below (Katapodis 1992); these velocities consider both anguilliform and subcarangiform swimming forms:

- 20 cm long fish – burst speed/maximum flow velocity is 1.20 m/s
- 25 cm long fish – burst speed/maximum flow velocity is 1.50 m/s
- 30 cm long fish – burst speed/maximum flow velocity is 1.85 m/s
- 40 cm long fish – burst speed/maximum flow velocity is 2.45 m/s

Point velocity measurements were completed during receding streamflow conditions with corresponding mean daily discharges of 2.946 m³/s on June 29 and 1.743 m³/s on August 7 (Table 3-11 and 3-12). As expected, increasing streamflow causes greater velocities across the riffles, in particular at the surface while remaining near constant toward the bottom due to channel bed friction. Velocities at the riffles are expected to decrease during times of high flow conditions (e.g., bankfull flow) due to an increase in cross-sectional area. However, velocity measurements during times of high flow across the riffles were not attempted due to unsafe access conditions.

Velocity measurements follow a vertical velocity profile where velocities decrease toward the channel bottom while also decreasing/increasing with decreasing/increasing streamflow. Point velocity measurements at the surface of Riffle 1 ranged from 3.4 m/s on June 29 to 1.1 m/s on August 7, while the bottom water column measurements ranged from 0.7 m/s to 0.1 m/s, both observed on August 7. (Table 3-11). On Riffle 2, surface point velocities ranged from 2.9 m/s on August 7 to 0.3 m/s on June 29,

while bottom velocities ranged from 0.4 m/s on August 7 to 0.1 m/s on June 29 and August 7 (Table 3-12). In general, velocities are greatest on the upstream and mid-stream sections of each riffle. Riffle 1 also experiences greater surface velocities compared to the downstream Riffle 2. This is likely attributable to the initial energy dissipation across Riffle 1 and the sharp channel bend upstream of Riffle 2. While some surface velocities exceed the above listed burst speeds, both riffle structures provide velocities suitable for migration of both, anguilliform and subcarangiform swimming forms, as the point velocity measurements taken at depth fall within the established burst speeds/maximum flow velocity outlined above (Katapodis 1992). In addition, the riffle structures provide pools and back water areas that fish can utilize for resting. As detailed in Section 3.2.3, insufficient flow across Riffle 1 from August 30 to October 1 prevented fish passage.

TABLE 3-11 Riffle 1 Point Velocity Summary Data

Transect Location within the riffle structure	Water Column Location	June 29, 2020		August 7, 2020	
		Measurement Location Within Riffle Structure		Measurement Location Within Riffle Structure	
		25%	75%	25%	75%
Upstream	Surface	3.3 m/s	3.4 m/s	1.2 m/s	1.1 m/s
	Bottom	0.3 m/s	0.2 m/s	0.2 m/s	0.3 m/s
Middle	Surface	2.6 m/s	1.9 m/s	1.3 m/s	1.6 m/s
	Bottom	0.2 m/s	0.2 m/s	0.7 m/s	0.3 m/s
Downstream	Surface	1.1 m/s	1.1 m/s	1.1 m/s	2.7 m/s
	Bottom	0.2 m/s	0.3 m/s	0.1 m/s	0.2 m/s
Streamflow at time of velocity measurements		2.946 m ³ /s		1.743 m ³ /s	

Note: Measurements were started at the right bank (25%), left bank (75%).

TABLE 3-12 Riffle 2 Point Velocity Summary Data

Transect Location within the riffle structure	Water Column Location	June 29, 2020		August 7, 2020	
		Measurement Location Within Riffle Structure		Measurement Location Within Riffle Structure	
		25%	75%	25%	75%
Upstream	Surface	1.9 m/s	0.3 m/s	1.6 m/s	2.2 m/s
	Bottom	0.2 m/s	0.1 m/s	0.2 m/s	0.1 m/s
Middle	Surface	1.6 m/s	0.5 m/s	2.9 m/s	1.1 m/s
	Bottom	0.1 m/s	0.1 m/s	0.3 m/s	0.4 m/s
Downstream	Surface	1.1 m/s	0.4 m/s	2.6 m/s	2.4 m/s
	Bottom	0.1 m/s	0.1 m/s	0.3 m/s	0.3 m/s
Streamflow at time of velocity measurements		2.946 m ³ /s		1.743 m ³ /s	

Note: Measurements were started at the right bank (25%), left bank (75%).

4 DISCUSSION

Both riffle structures were observed to be stable with no significant movement of cobble or boulder material that would reduce the functionality of the riffles. The right downstream bank between Riffles 1 and 2 (Figure 2-1) saw extensive erosion in 2020. The bank is eroding and continuing to shift to the south. The bank remains unstable with large areas of vegetation and soil slumping into the river. The vegetation is providing instream cover for fish, however the continual erosion of the bank is ultimately detrimental due to the large quantities of sediment entering the water. The bank erosion is also posing a risk to the functionality of Riffle 2. Erosion of the right bank had extended downstream to Riffle 2, causing the channel to widen (Appendix A; Photographs 19, 20, and 21). Continued erosion of the bank and lowering of the channel bed adjacent to Riffle 2 may eventually cause flow to bypass the riffle during low water periods. If a new channel forms between the riffle and new bank location, water levels in the large pool located between Riffle 1 and Riffle 2 may lower to an elevation that is closer to pre-construction conditions. Lower water levels would expose a large portion of the toe/run out of Riffle 1 which would increase the distance that fish are required to swim to pass the riffle. The likelihood of the riffle being bypassed is unknown at this time. If the riffle is bypassed and water levels are reduced, fish may still be able to pass a longer riffle structure at Riffle 1.

Fish habitat within the study area has not changed significantly since 2019, with the exception of the continued slumping of the right bank in Reach 2 which is contributing additional woody debris. Water depths in all three study reaches were suitable to support fish year-round, including overwintering (overwintering is also dependent on suitable DO concentrations). Large woody debris and brush continue to accumulate along the banks and mid-channel providing good instream cover and surfaces for macrophytes and invertebrates to inhabit. Gravel substrates remain abundant in Reach 3; these areas are suitable for sucker spawning. Overall, the study reach is providing good instream and overhead cover, and the physical channel conditions to support summer rearing and feeding, and overwintering fish.

Water quality parameters measured during most of the open water period were suitable to support resident fish species during July and August, with deterioration of water quality beginning in late-August and extending into September. The deterioration of water quality parameters coincided with the decline in the hydrograph. The DO concentrations were above Alberta surface water guidelines for the protection of aquatic life during July and most of August, but started trending down during the late summer and fall. Daily average DO concentrations at the upstream sonde remained below the chronic DO concentration guideline (6.5 mg/L) throughout September and was below the acute guideline (5 mg/L) on several occasions. The downstream sonde observed similar trends in DO concentrations throughout July and August with the exception of being consistently 1 mg/L lower (likely due to calibration issues) lower. While DO concentrations dipped below the chronic and acute guidelines at the upstream location, DO concentrations at the downstream sonde remained above the chronic guideline for most of the monitoring period. This may be attributed to oxygenation of water occurring as water passes over and through the riffle structures. White Sucker and Northern Pike are known to be tolerant of lower DO concentrations compared to the acute guidelines for short periods of time (Ford et al 1995). Other sport

fish species including Arctic Grayling and Bull Trout are less tolerant of low DO concentrations compared to Northern Pike and White Sucker (Ford et al. 1995). Although it is not clear if DO concentrations remained below the chronic guidelines for the remainder of the fall and winter, the concentrations observed upstream of Riffle 1 indicate that conditions may be unsuitable to support overwintering fish in winter 2020/2021. Poor water quality conditions a factor in the absence of Arctic Grayling in the Beaverlodge River, and are known to have caused Bull Trout mortalities within this reach of the river (Adam Norris, personal communication).

Fish passage suitability in 2019 was assessed based on habitat structure and measurement of point velocities within each riffle. This method continued in 2020 and concluded that velocities measured within both riffle structures met the flow requirements to accommodate the burst speeds for various sized anguilliform and subcarangiform swimming forms, including Arctic Grayling, Northern Pike, and sucker species. Higher velocities that exceeded the maximum burst speed velocities were observed in the riffles, predominantly at the water surface and within the middle of the fish passage structures; however, velocities recorded on the edges of the riffles and at the bottom of the water column were lower, providing suitable swimming conditions for fish. Back water eddies and small pools were present throughout each reach provided holding and resting areas for fish, thereby reducing the overall distance fish are required to swim at maximum burst speed. Following the peak flow of 59.8 m³/s, streamflow at the riffles receded for the remainder of the season to mean monthly flows of 1.0 and 0.007 m³/s for August and September, respectively, and minimum monthly flows reaching 0.004 m³/s in August and 0.002 m³/s in September. Streamflow and water levels at Riffle 1 were insufficient to overtop the riffle, effectively eliminating upstream fish passage. This condition lasted at least from August 30 to October 1. Although flow was not topping the riffle, flow was still observed to be directed toward the centre of the riffles as intended, and water was flowing within the interstices of the boulder and cobble material of the riffles. Although flow conditions from August 30 to October 1 would not allow upstream fish movement, flow through the boulder and cobble interstices would allow some small fish (e.g., fry, forage fish) to drift downstream. The fact that water was unable to top the riffle structures is not a function of the riffle design, but a result of low flow conditions that are experienced regularly in the Beaverlodge River.

The results of the fish movement monitoring using PIT tags confirmed that fish are able to pass both riffle structures. The six White Sucker and one Northern Pike that were detected were released in Reaches 2 and 3; in order for these fish to be detected, they needed to swim upstream through Riffle 1, with some moving through both Riffles 1 and 2. Of the seven fish detected, fork lengths ranged from 240 to 251 mm. These fish sizes represent the lower sizes used in developing the design flow criteria (200 and 250 mm fish). Fish detections ceased after August 24 which correlates with the decline in the hydrograph, low discharge in the river and deterioration of water quality. While the proportion of fish that were detected versus the number of fish that were tagged was low, the results of the tagging program show the fish passage is being provided under regular summer flow conditions.

Laboratory analysis of the eDNA samples did not detect Arctic Grayling DNA. Although Arctic Grayling DNA was not detected in the samples, it is not a conclusive indication that they are not present within the

watercourse. Aside from their absence in the river, other factors may be contributing to non-detects including low population density (less DNA available to be detected), and DNA degradation in poor water quality conditions (various chemical and light interactions with DNA can cause DNA to degrade at faster rates, meaning samples need to be collected closer to the source to reduce the amount of time available for degradation to occur (i.e., close to individual Arctic Grayling).

5 RECOMMENDATIONS

Monitoring activities will continue to follow the Beaverlodge River monitoring plan (Matrix 2017a) with the following recommendations:

- Fish fence installation will be discontinued.
 - ♦ Rationale:
 - The operation and installation of the fish fence was originally intended to be part of the sonar camera monitoring that was discontinued in 2020. The installation and removal of the fence is time and labour intensive and is dependant on suitable water levels in order to install correctly. As observed in 2020, water levels at the time of the field program made the installation unfeasible.
 - More data collection with the PIT tag reader throughout the open water season is proposed and will require less effort than using a fish fence for three days of sampling.
 - Funding/budget can be allocated to increase fish sampling effort and tagging more fish.
- Continue hydrometric monitoring upstream of Riffle 1 focussing on high flow event-based site visits (conducting flow measurements in high water events is dependent on crews being able to safely enter the water with a watercraft).
 - ♦ Rationale:
 - Complete high flow measurements to minimize uncertainty of the stage-discharge rating in the high flow range

Changes to the monitoring program as described above should be approved by DFO before being executed in 2021.

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APPENDIX A

Site Photographs



1. BL1; facing left downstream bank (April 2020).

2. BL3; facing upstream at Riffle 1 (April 2020).

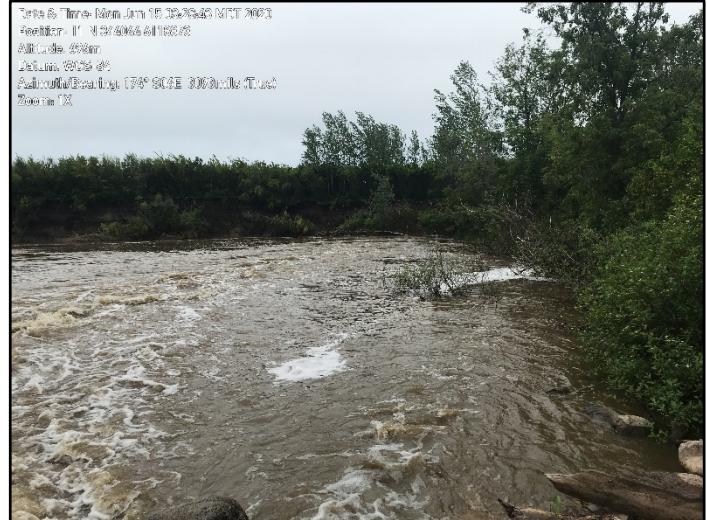


3. BL 5; facing upstream from Riffle 5 (April 2020).

4. BL 5; facing downstream at Riffle 2 (April 2020).



5. BL 1; facing left downstream bank at Riffle 1 (June 15, 2020).



6. BL 2; facing downstream from BL2 (June 15, 2020).



7. BL 5; facing upstream from Riffle 2 (June 15, 2020).



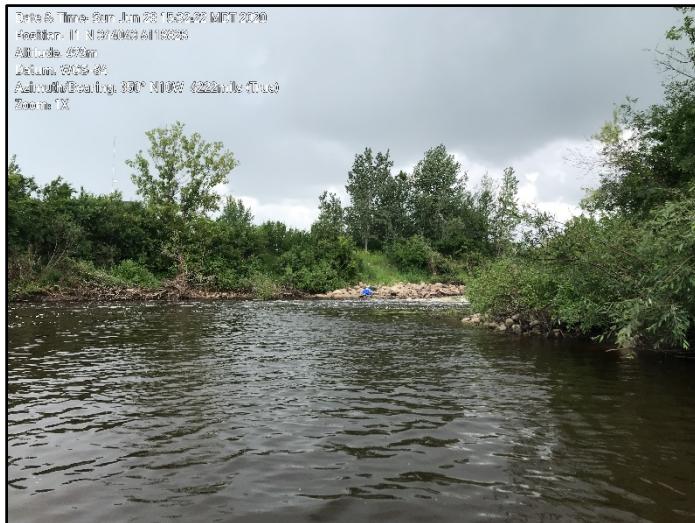
8. BL 5; facing downstream from Riffle 2 (June 15, 2020).



9. BL 2; facing upstream at Riffle 1 (June 28, 2020).



10. BL 1; facing downstream at Riffle 1 (June 28, 2020).



11. BL 4; facing upstream at Riffle 1 (June 28, 2020).



12. BL 3; facing downstream at Riffle 1 (June 28, 2020).



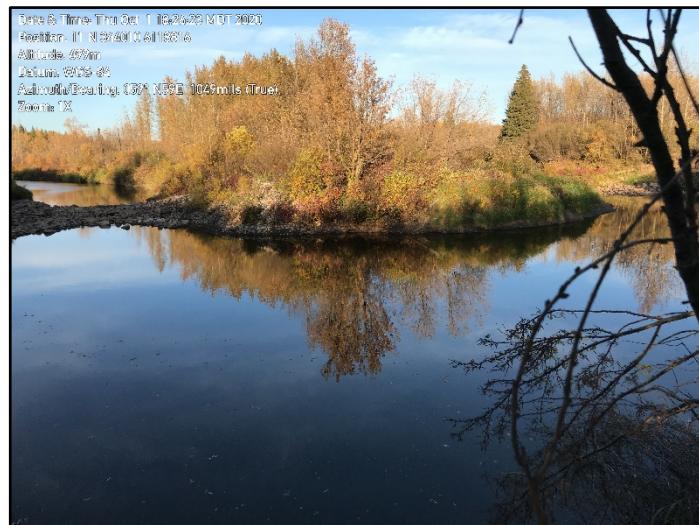
13. BL 6; facing upstream at Riffle 2 (June 28, 2020).



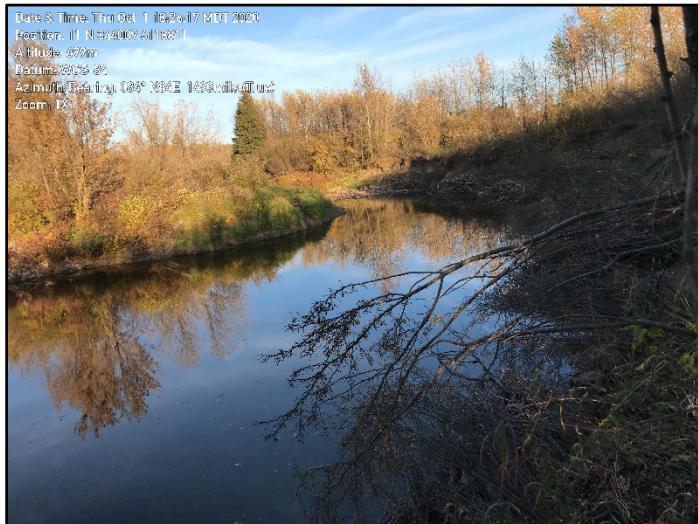
14. BL 6; facing downstream from Riffle 2 (June 28, 2020).



15. BL 2; facing upstream (October 2020).



16. BL 3; facing left downstream bank (October 2020).



17. BL 3; facing downstream (October 2020).



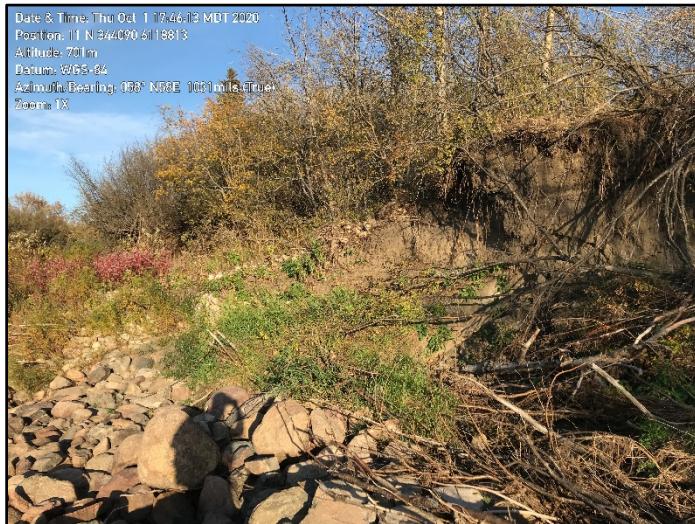
18. BL 5; facing downstream at Riffle 2 (October 2020).



19. BL 5; facing right bank erosion upstream of Riffle 2 (October 2020).



20. BL 5; facing right bank erosion upstream of Riffle 2 (October 2020).



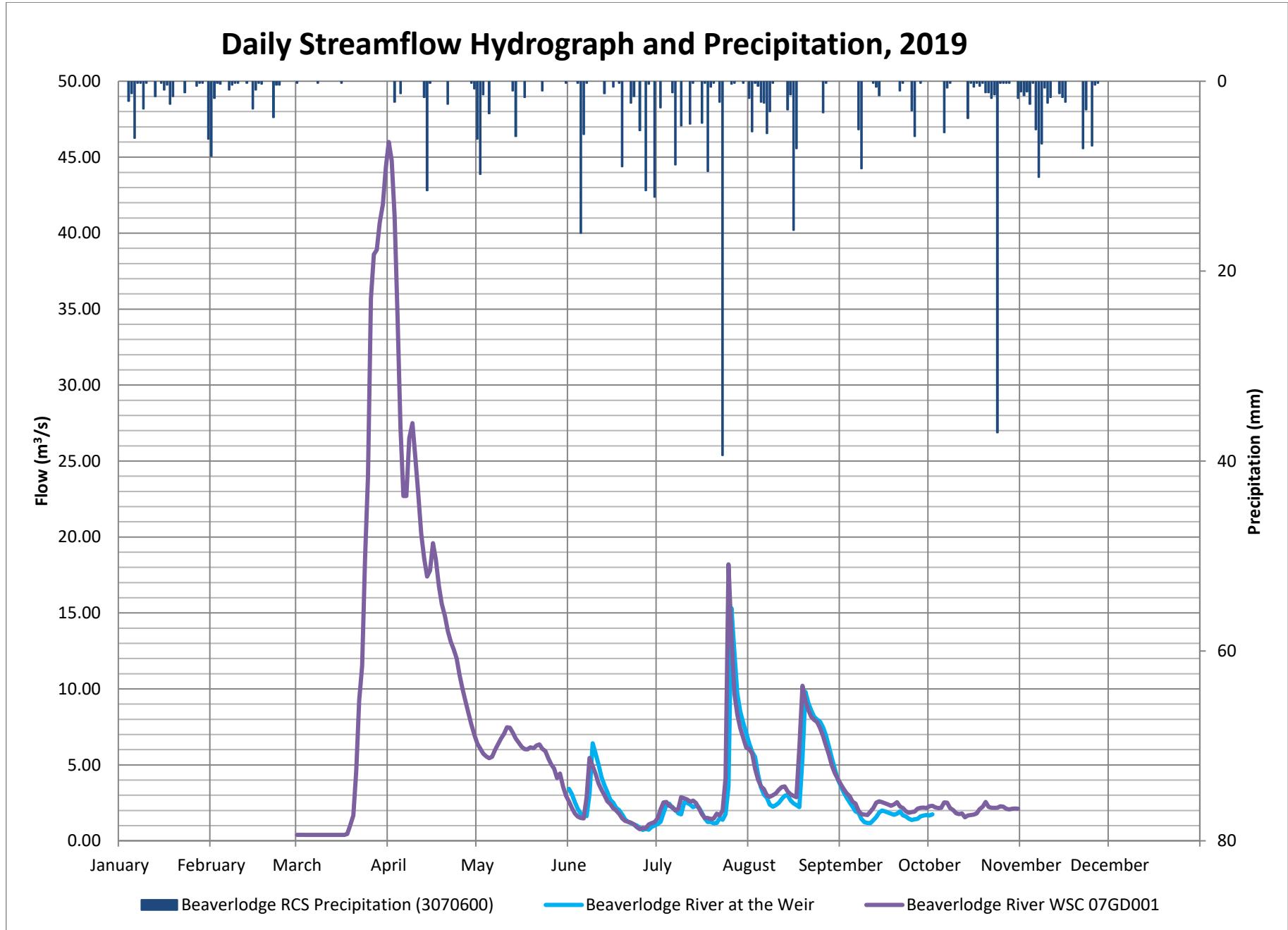
21. BL 5; facing downstream at right bank erosion upstream of Riffle 2 (October 2020).



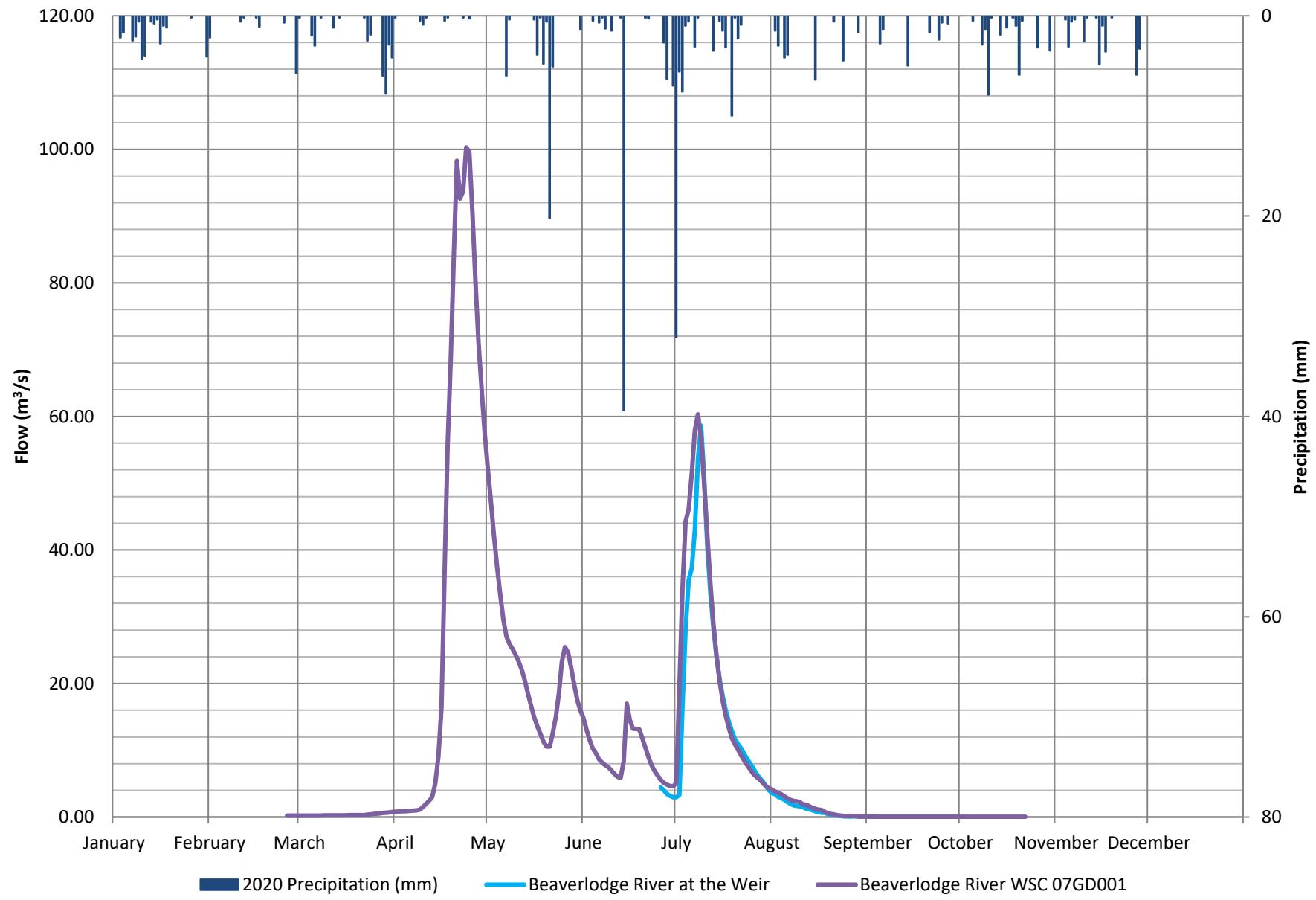
22. Facing downstream at left bank erosion at Riffle 2 (October 2020).

APPENDIX B

Hydrology



Daily Streamflow Hydrograph and Precipitation, 2020



Identifier: Discharge.Discharge@2199-01

Location: Beaverlodge River at the Weir

Units: m³/s

Mean Daily Streamflow

Year: 2019												Mean: 3.126	Min: 0.663	Max: 16.918	Total (Dam ³): 33206
Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
1						3.068 B	1.245 B	5.850 B	3.179 B	1.744 B					
2						2.550 B	1.835 B	5.512 B	2.834 B						
3						2.095 B	2.379 B	4.356 B	2.524 B						
4						1.785 B	2.435 B	3.527 B	2.250 B						
5						1.688 B	2.153 B	3.054 B	1.939 B						
6						1.620 B	2.065 B	2.839 B	1.853 B						
7						3.101 B	1.809 B	2.382 B	1.450 B						
8						6.427 B	1.735 B	2.247 B	1.229 B						
9						5.738 B	2.539 B	2.354 B	1.183 B						
10						5.008 B	2.500 B	2.495 B	1.164 B						
11						4.195 B	2.390 B	2.748 B	1.351 B						
12						3.658 B	2.224 B	2.955 B	1.567 B						
13						3.209 B	2.301 B	3.026 B	1.857 B						
14						2.698 B	2.180 B	2.655 B	2.000 B						
15						2.516 B	1.839 B	2.472 B	1.941 B						
16						2.173 B	1.468 B	2.343 B	1.854 B						
17						2.019 B	1.243 B	2.224 B	1.790 B						
18						1.728 B	1.255 B	5.463 B	1.715 B						
19						1.403 B	1.151 B	9.801 E	1.793 B						
20						1.258 B	1.179 B	9.083 E	1.932 B						
21						1.159 B	1.483 B	8.570 E	1.683 B						
22						1.087 B	1.380 B	8.158 E	1.602 B						
23						0.996 B	1.762 B	7.973 E	1.454 B						
24						0.843 B	3.593 B	7.844 E	1.372 B						
25						0.718 B	15.318 E	7.478 E	1.412 B						
26						0.801 B	12.436 E	6.943 B	1.438 B						
27						0.727 B	9.694 E	6.207 B	1.613 B						
28						0.915 B	8.521 E	5.451 B	1.673 B						
29						1.011 B	7.721 E	4.679 B	1.698 B						
30						1.103 B	7.076 E	4.033 B	1.663 B						
31					3.421		6.405 B	3.611 B							
Mean					3.421	2.243	3.655	4.785	1.767	1.744					
Min					3.246	0.663	1.029	2.140	1.108	1.734					
Max					3.582	7.041	16.918	9.999	3.406	1.853					
Total					129.3	5814.6	9790.3	12815.8	4580.4	75.3					

Note: Calculated flows are provisional and graded B until the rating is verified further with flow measurements across the full range of high and low flow conditions. Flows greater than 1.5 times of the highest flow measurement are estimated and graded E. For quality grades, see Hydrometric Grading Criteria.

Instantaneous minimum flow over the period of available record: 0.668m³/s on June 25, 2019 at 18:45

Instantaneous maximum flow over the period of available record: 16.918 m³/s on July 25, 2019 at 13:30

Mean Daily Streamflow

Identifier: Discharge.Discharge@2199-01
Location: Beaverlodge River at the Weir
Units: m³/s

Year: 2020			Mean:	6.957	Min:	0.002	Max:	59.846	Total (Dam ³):	58915			
Day		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1								3.320 B	3.443 B	0.005 B	0.022 B		
2								16.549 E	3.049 B	0.004 B			
3								28.103 E	2.858 B	0.003 B			
4								35.491 E	2.603 B	0.003 B			
5								37.224 E	2.261 B	0.003 B			
6								42.988 E	1.999 B	0.003 B			
7								53.565 E	1.753 B	0.003 B			
8								58.630 E	1.687 B	0.003 B			
9								50.945 E	1.618 B	0.003 B			
10								40.768 E	1.516 B	0.003 B			
11								33.713 E	1.245 B	0.003 B			
12								28.375 E	1.216 B	0.004 B			
13								24.057 E	1.049 B	0.004 B			
14								20.676 E	0.880 B	0.004 B			
15								18.116 E	0.771 B	0.005 B			
16								15.969 E	0.665 B	0.005 B			
17								14.237 E	0.656 B	0.004 B			
18								12.852 E	0.458 B	0.004 B			
19								11.679 E	0.349 B	0.004 B			
20								10.907 E	0.283 B	0.004 B			
21								10.271 E	0.245 B	0.007 B			
22								9.458 E	0.172 B	0.009 B			
23								8.695 E	0.131 B	0.009 B			
24								7.980 E	0.108 B	0.017 B			
25							4.444 B	7.273 E	0.094 B	0.019 B			
26							4.002 B	6.505 B	0.118 B	0.019 B			
27							3.473 B	5.882 B	0.109 B	0.011 B			
28							3.189 B	5.346 B	0.097 B	0.008 B			
29							2.980 B	4.682 B	0.036 B	0.007 B			
30							2.981 B	4.049 B	0.015 B	0.018 B			
31								3.626 B	0.007 B				
Mean							3.401	20.385	1.016	0.007	0.022		
Min							2.879	3.002	0.004	0.002	0.015		
Max							4.581	59.846	3.662	0.024	0.024		
Total							1576.4	54598.9	2720.9	17.2	1.2		

Note: Calculated flows are provisional and graded B until the rating is verified further with flow measurements across the full range of high and low flow conditions. Flows greater than 1.5 times of the highest flow measurement are estimated and graded E. For quality grades, see Hydrometric Grading Criteria.

Instantaneous minimum flow over the available period of record: 0.002 m³/s on Sept 8, 2020 at 5:00

Instantaneous maximum flow over the available period of record: 59.846 m³/s on July 8, 2019 at 7:45

Stage-Discharge Rating Curve

Beaverlodge River at the Weir

Label: Rating Curve 2019-002

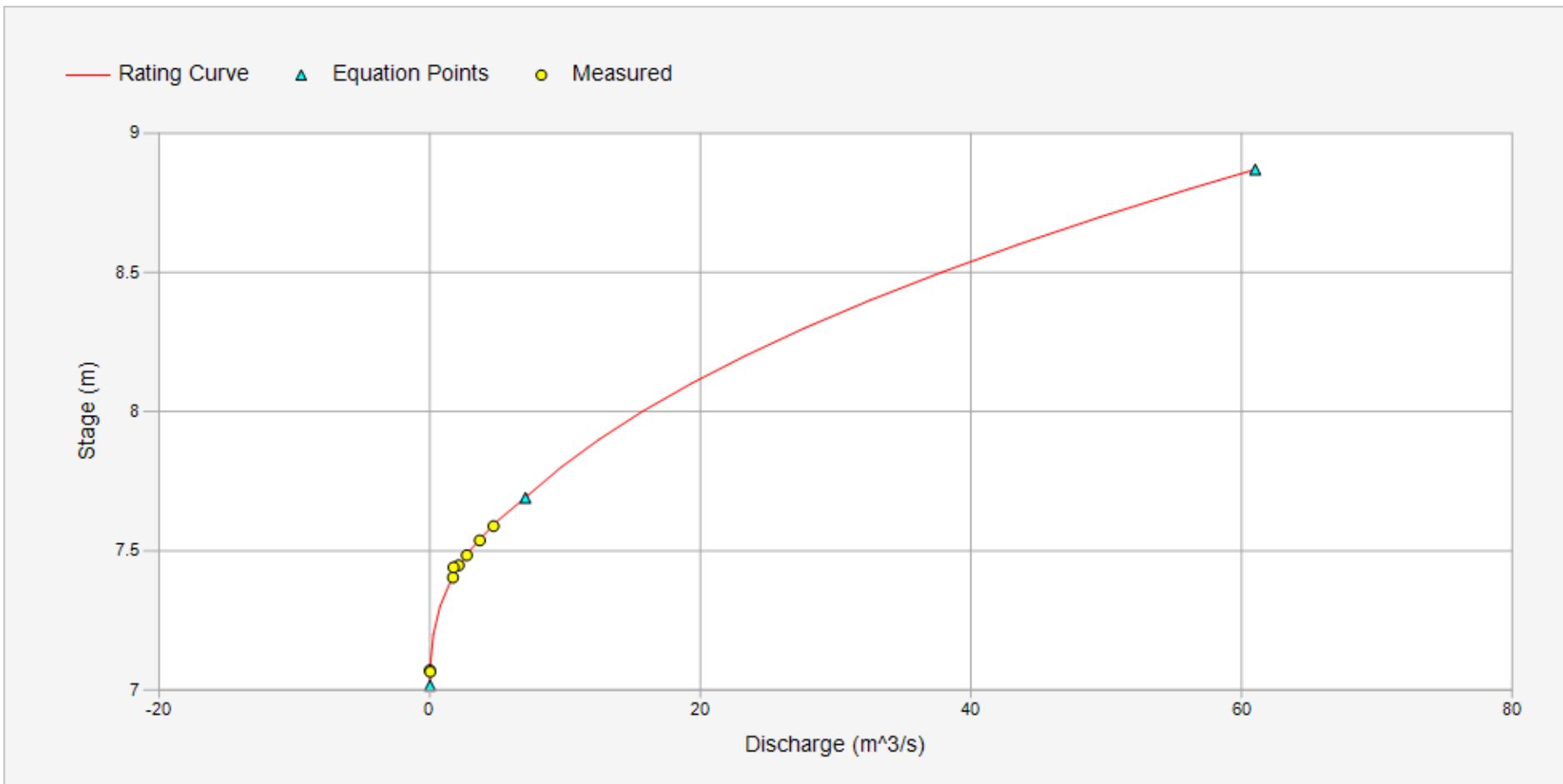
Description: Site ID-2199-01

Curve on: December 9, 2020

Curve Start Date: 31-May-19

Location:

Beaverlodge River



Date Processed: December 9, 2020 13:55



APPENDIX C

Environmental DNA Results

Master Sort	Location name	Sample Number	Site ID	Sample replicate	Lab Code	DPN	Test for THAR	Known Target THAR	Clean Up Required	IntegritE-DNA Frequency	IntegritE-DNA Call	eTHAR1	Lab Call	Biol Call	Collection date	Collected by	Collection Time	Zone	Easting	Northing	Filter Date	Filter start time	Filter end time	Filtering time (calc)	Sample Volume (ml)	Sample Contents	Preservation Method	Filtered by	Test Priority	Comments	Project Number	Client Name
1	Beaverlodge River	2199200615001	BL1	A	BL1-A	14	THAR	No	N	4/4	Y	0/8	N	PI	15-Jun-20	KL	10:15	11	341953	6120032	15-Jun-19	4:05	5:11	1:10	300	Site Water	Silica	KL	1	Rain over the weekend, high	2199-510	Matrix Solutions Inc
2	Beaverlodge River	2199200615002	BL1	B	BL1-B	10	THAR	No	N	4/4	Y	0/8	N	PI	15-Jun-20	KL	10:15	11	341953	6120032	15-Jun-19	5:07	5:53	0:46	400	Site Water	Silica	KL	1	Rain over the weekend, high	2199-510	Matrix Solutions Inc
3	Beaverlodge River	2199200615003	BL1	C	BL1-C	19	THAR	No	Y	4/4	Y	0/8	N	PI	15-Jun-20	KL	10:15	11	341953	6120032	15-Jun-19	5:49	6:34	0:45	250	Site Water	Silica	KL	1	Rain over the weekend, high	2199-510	Matrix Solutions Inc
4	Beaverlodge River	2199200615007	BL2	A	BL2-A	6	THAR	No	Y	4/4	Y	0/8	N	PI	15-Jun-20	KL	08:45	11	344064	6118883	16-Jun-19	11:33	13:00	1:27	250	Site Water	Silica	KL	1	Rain over the weekend, high	2199-510	Matrix Solutions Inc
5	Beaverlodge River	2199200615008	BL2	B	BL2-B	20	THAR	No	Y	4/4	Y	0/8	N	PI	15-Jun-20	KL	08:45	11	344064	6118883	16-Jun-19	12:00	13:03	1:03	250	Site Water	Silica	KL	1	Rain over the weekend, high	2199-510	Matrix Solutions Inc
6	Beaverlodge River	2199200615009	BL2	C	BL2-C	12	THAR	No	Y	4/4	Y	0/8	N	PI	15-Jun-20	KL	08:45	11	344064	6118883	16-Jun-19	13:08	13:55	0:47	250	Site Water	Silica	KL	1	double pump to decrease filter	2199-510	Matrix Solutions Inc
7	Beaverlodge River	2199200615004	BL3	A	BL3-A	2	THAR	No	N	4/4	Y	0/8	N	PI	15-Jun-20	KL	09:15	11	344086	6118822	16-Jun-19	9:40	10:50	1:10	300	Site Water	Silica	KL	1	Rain over the weekend, high	2199-510	Matrix Solutions Inc
8	Beaverlodge River	2199200615005	BL3	C	BL3-C	21	THAR	No	N	4/4	Y	0/8	N	PI	15-Jun-20	KL	09:15	11	344086	6118822	16-Jun-19	9:40	11:10	1:30	250	Site Water	Silica	KL	1	Rain over the weekend, high	2199-510	Matrix Solutions Inc
9	Beaverlodge River	2199200615006	BL3	B	BL3-B	5	THAR	No	Y	4/4	Y	0/8	N	PI	15-Jun-20	KL	09:15	11	344086	6118822	16-Jun-19	10:56	11:57	1:01	250	Site Water	Silica	KL	1	Rain over the weekend, high	2199-510	Matrix Solutions Inc
10	Beaverlodge River	2199200615010	BL4	A	BL4-A	8	THAR	No	N	4/4	Y	0/8	N	PI	15-Jun-20	KL	09:35	11	344168	6118856	16-Jun-19	13:50	14:35	0:45	250	Site Water	Silica	KL	1	Rain over the weekend, high	2199-510	Matrix Solutions Inc
11	Beaverlodge River	2199200615011	BL4	B	BL4-B	15	THAR	No	N	4/4	Y	0/8	N	PI	15-Jun-20	KL	09:35	11	344168	6118856	16-Jun-19	14:20	15:05	0:45	250	Site Water	Silica	KL	1	Rain over the weekend, high	2199-510	Matrix Solutions Inc
12	Beaverlodge River	2199200615012	BL4	C	BL4-C	17	THAR	No	N	4/4	Y	0/8	N	PI	15-Jun-20	KL	09:35	11	344168	6118856	16-Jun-19	15:05	15:50	0:45	200	Site Water	Silica	KL	1	Rain over the weekend, high	2199-510	Matrix Solutions Inc
13	Beaverlodge River	2199200615013	BL5	A	BL5-A	16	THAR	No	N	4/4	Y	0/8	N	PI	15-Jun-20	KL	12:25	11			16-Jun-19	15:08	15:56	0:48	200	Site Water	Silica	KL	1	Rain over the weekend, high	2199-510	Matrix Solutions Inc
14	Beaverlodge River	2199200615014	BL5	B	BL5-B	7	THAR	No	N	4/4	Y	0/8	N	PI	15-Jun-20	KL	12:25	11			16-Jun-19	15:50	16:35	0:45	270	Site Water	Silica	KL	1	Rain over the weekend, high	2199-510	Matrix Solutions Inc
15	Beaverlodge River	2199200615015	BL5	C	BL5-C	9	THAR	No	N	4/4	Y	0/8	N	PI	15-Jun-20	KL	12:25	11			16-Jun-19	16:09	16:54	0:45	250	Site Water	Silica	KL	1	Rain over the weekend, high	2199-510	Matrix Solutions Inc
16	Beaverlodge River	2199200615016	BL6	A	BL6-A	18	THAR	No	N	4/4	Y	0/8	N	PI	15-Jun-20	KL	11:10	11	349456	6113145	16-Jun-19	16:38	17:23	0:45	270	Site Water	Silica	KL	1	Rain over the weekend, high	2199-510	Matrix Solutions Inc
17	Beaverlodge River	2199200615017	BL6	B	BL6-B	1	THAR	No	N	4/4	Y	0/8	N	PI	15-Jun-20	KL	11:10	11	349456	6113145	16-Jun-19	16:54	17:39	0:45	220	Site Water	Silica	KL	1	Rain over the weekend, high	2199-510	Matrix Solutions Inc
18	Beaverlodge River	2199200615018	BL6	C	BL6-C	11	THAR	No	N	4/4	Y	0/8	N	PI	15-Jun-20	KL	11:10	11	349456	6113145	16-Jun-19	17:27	18:12	0:45	250	Site Water	Silica	KL	1	Rain over the weekend, high	2199-510	Matrix Solutions Inc
19	Beaverlodge River	2199200615019	BL7	A	BL7-A	3	THAR	No	N	4/4	Y	0/8	N	PI	15-Jun-20	KL	10:30	11	345496	6116482	16-Jun-19	17:43	18:28	0:45	230	Site Water	Silica	KL	1	Rain over the weekend, high	2199-510	Matrix Solutions Inc
20	Beaverlodge River	2199200615020	BL7	B	BL7-B	13	THAR	No	N	4/4	Y	0/8	N	PI	15-Jun-20	KL	10:30	11	345496	6116482	16-Jun-19	18:17	19:02	0:45	200	Site Water	Silica	KL	1	Rain over the weekend, high	2199-510	Matrix Solutions Inc
21	Beaverlodge River	2199200615021	BL7	C	BL7-C	4	THAR	No	N	4/4	Y	0/8	N	PI	15-Jun-20	KL	10:30	11	345496	6116482	16-Jun-19	18:30	19:15	0:45	200	Site Water	Silica	KL	1	Rain over the weekend, high	2199-510	Matrix Solutions Inc
22	Distilled Water Control		DI	A	DI	22	THAR	No	N	0/4	Y	0/8	N	PI							16-Jun-19	19:03	19:05	0:02	400	Silica	KL			2199-510	Matrix Solutions Inc	

Laboratory Report of qPCR run controls performed for the eDNA assay

- qPCR Positive Controls for correct assembly of assay reactions were successful for all technical plate runs
- qPCR Negative Controls for detection of assay contamination were successful for all technical plate runs

Biologist Status Assignment Guide:

- Site = Yes (Y) if lab call is Yes (2/8 or higher) for at least 1 replicate;
- Site = Suspected (S) if lab call is 1/8 for at least 1 replicate;
- It is important to note that generally the error rate is highest for 1/8 calls.
- Site = No (N) if result is 0/8 for all replicates.

APPENDIX D

PIT Tag Data

TABLE D1**PIT Tag Data**

Mighty Peace Watershed Alliance
Beaverlodge River

Scan Date	Scan Time	Duration	Tag Type	Tag ID Number	Site Code	Number of consecutive detections	Effective Amps
6/30/2020	7:14:05 PM	00:03.4	A	900_228000709390	AAA	35	0.7
6/30/2020	7:14:11 PM	00:02.3	A	900_228000709390	AAA	24	0.7
6/30/2020	10:59:26 PM	00:03.2	A	900_228000709392	AAA	33	0.7
6/30/2020	10:59:31 PM	00:04.9	A	900_228000709392	AAA	50	0.7
6/30/2020	3:20:51 AM	00:00.2	A	900_226001123901	AAA	3	0.7
6/30/2020	3:21:05 AM	00:01.4	A	900_226001123901	AAA	15	0.7
6/30/2020	3:22:54 AM	00:01.2	A	900_226001123901	AAA	13	0.7
6/30/2020	3:23:06 AM	00:04.3	A	900_226001123901	AAA	44	0.7
6/30/2020	3:23:13 AM	00:03.7	A	900_226001123901	AAA	38	0.7
6/30/2020	3:23:26 AM	00:01.2	A	900_226001123901	AAA	13	0.7
6/30/2020	3:23:40 AM	00:02.2	A	900_226001123901	AAA	23	0.7
6/30/2020	4:05:04 AM	00:06.4	A	900_228000709343	AAA	65	0.7
6/30/2020	4:05:12 AM	00:10.6	A	900_228000709343	AAA	107	0.7
6/30/2020	4:33:07 AM	00:01.4	A	900_226001123926	AAA	15	0.7
6/30/2020	4:34:04 AM	00:00.5	A	900_226001123926	AAA	6	0.7
6/30/2020	4:35:36 AM	00:01.1	A	900_226001123926	AAA	12	0.7
6/30/2020	4:37:13 AM	00:00.0	A	900_226001123926	AAA	1	0.7
6/30/2020	6:00:07 AM	00:00.3	A	900_226001123926	AAA	4	0.7
6/30/2020	1:19:52 PM	00:00.3	A	900_226001123901	AAA	4	0.7
6/30/2020	1:20:29 PM	00:00.1	A	900_226001123901	AAA	2	0.7
6/30/2020	1:22:02 PM	00:01.7	A	900_226001123901	AAA	18	0.7
6/30/2020	1:22:06 PM	00:00.3	A	900_226001123901	AAA	4	0.7
7/1/2020	10:37:10 PM	00:04.4	A	900_228000709395	AAA	45	0.7
7/1/2020	10:37:16 PM	00:03.4	A	900_228000709395	AAA	35	0.7
7/1/2020	4:47:43 AM	00:07.1	A	900_228000709391	AAA	72	0.7
7/1/2020	4:47:52 AM	00:05.1	A	900_228000709391	AAA	52	0.7
7/2/2020	9:10:05 PM	00:00.0	A	900_228000709390	AAA	1	0.7
8/7/2020	4:42:12 PM	00:00.4	A	900_228000709367	AAA	5	0.7
8/7/2020	4:42:27 PM	00:00.7	A	900_228000709367	AAA	8	0.8
8/7/2020	4:42:35 PM	00:00.4	A	900_228000709367	AAA	5	0.7
8/7/2020	4:42:58 PM	00:00.7	A	900_228000709367	AAA	8	0.8
8/7/2020	4:43:02 PM	00:01.0	A	900_228000709367	AAA	11	0.7
8/7/2020	4:43:24 PM	00:00.0	A	900_228000709367	AAA	1	0.8
8/7/2020	4:43:37 PM	00:00.7	A	900_228000709367	AAA	8	0.7
8/7/2020	4:44:16 PM	00:00.6	A	900_228000709367	AAA	7	0.7
8/7/2020	4:47:10 PM	00:00.5	A	900_228000709366	AAA	6	0.7
8/17/2020	10:52:16 PM	00:07.8	A	900_228000709341	AAA	79	0.6
8/17/2020	10:52:26 PM	00:05.5	A	900_228000709341	AAA	56	0.6
8/20/2020	5:27:24 AM	00:07.8	A	900_226001123955	AAA	79	0.5
8/20/2020	5:27:59 AM	00:08.4	A	900_226001123955	AAA	85	0.5
8/20/2020	5:28:20 AM	00:18.0	A	900_226001123955	AAA	181	0.5
8/20/2020	5:32:24 AM	00:03.8	A	900_226001123955	AAA	39	0.5
8/20/2020	5:32:42 AM	00:03.9	A	900_226001123955	AAA	40	0.5
8/20/2020	1:55:01 PM	00:07.0	A	900_226001123955	AAA	71	0.5
8/20/2020	1:57:05 PM	00:01.1	A	900_226001123955	AAA	12	0.5
8/20/2020	1:57:39 PM	00:04.4	A	900_226001123955	AAA	45	0.5
8/20/2020	1:59:33 PM	00:04.8	A	900_226001123955	AAA	49	0.5
8/20/2020	2:00:13 PM	00:11.8	A	900_226001123955	AAA	119	0.5
8/20/2020	2:01:05 PM	00:07.3	A	900_226001123955	AAA	74	0.5
8/20/2020	2:03:51 PM	00:00.1	A	900_226001123955	AAA	2	0.5
8/20/2020	2:05:06 PM	00:38.5	A	900_226001123955	AAA	386	0.5
8/20/2020	2:06:08 PM	00:05.4	A	900_226001123955	AAA	55	0.5
8/20/2020	2:06:42 PM	00:04.5	A	900_226001123955	AAA	46	0.5
8/20/2020	2:17:32 PM	00:02.9	A	900_226001123955	AAA	30	0.5
8/20/2020	2:17:44 PM	00:04.1	A	900_226001123955	AAA	42	0.5
8/20/2020	2:18:34 PM	00:21.2	A	900_226001123955	AAA	213	0.5
8/21/2020	1:10:50 AM	00:33.9	A	900_228000709329	AAA	340	0.5
8/21/2020	1:16:06 AM	00:39.5	A	900_228000709329	AAA	396	0.5
8/21/2020	1:16:53 AM	00:06.8	A	900_228000709329	AAA	69	0.5
8/21/2020	1:17:03 AM	00:04.6	A	900_228000709329	AAA	47	0.5
8/21/2020	1:17:11 AM	00:01.0	A	900_228000709329	AAA	11	0.5
8/21/2020	1:17:18 AM	00:03.3	A	900_228000709329	AAA	34	0.5
8/21/2020	1:20:13 AM	00:02.8	A	900_228000709329	AAA	29	0.5
8/21/2020	1:20:20 AM	00:06.1	A	900_228000709329	AAA	62	0.5
8/21/2020	1:20:29 AM	00:10.2	A	900_228000709329	AAA	103	0.5
8/21/2020	1:20:42 AM	00:03.8	A	900_228000709329	AAA	39	0.5
8/21/2020	1:27:30 AM	00:05.3	A	900_228000709329	AAA	54	0.5
8/21/2020	1:27:37 AM	00:08.1	A	900_228000709329	AAA	82	0.5
8/21/2020	1:27:49 AM	00:04.3	A	900_228000709329	AAA	44	0.5
8/21/2020	2:06:37 AM	02:49.8	A	900_228000709329	AAA	1699	0.5
8/21/2020	2:11:01 AM	00:49.8	A	900_228000709329	AAA	499	0.5

TABLE D1**PIT Tag Data**

Mighty Peace Watershed Alliance
Beaverlodge River

Scan Date	Scan Time	Duration	Tag Type	Tag ID Number	Site Code	Number of consecutive detections	Effective Amps
8/21/2020	2:11:57 AM	00:02.1	A	900_228000709329	AAA	22	0.5
8/21/2020	2:12:01 AM	00:12.0	A	900_228000709329	AAA	121	0.5
8/21/2020	2:12:14 AM	00:59.3	A	900_228000709329	AAA	594	0.5
8/21/2020	2:43:33 AM	00:07.8	A	900_228000709329	AAA	79	0.5
8/21/2020	2:43:49 AM	00:00.1	A	900_228000709329	AAA	2	0.5
8/21/2020	2:54:00 AM	00:20.8	A	900_228000709329	AAA	209	0.5
8/21/2020	2:54:27 AM	00:19.3	A	900_228000709329	AAA	194	0.5
8/21/2020	4:54:12 AM	00:30.7	A	900_228000709329	AAA	308	0.5
8/21/2020	4:54:48 AM	00:13.2	A	900_228000709329	AAA	133	0.5
8/21/2020	5:08:17 AM	00:41.3	A	900_228000709329	AAA	414	0.5
8/22/2020	12:46:26 PM	00:03.5	A	900_226001123904	AAA	36	0.5
8/22/2020	12:46:53 PM	00:02.1	A	900_226001123904	AAA	22	0.5
8/22/2020	12:47:15 PM	00:24.0	A	900_226001123904	AAA	241	0.5
8/22/2020	12:48:09 PM	00:03.5	A	900_226001123904	AAA	36	0.5
8/22/2020	12:48:22 PM	00:06.4	A	900_226001123904	AAA	65	0.5
8/22/2020	12:49:41 PM	00:21.6	A	900_226001123904	AAA	217	0.5
8/22/2020	12:50:27 PM	00:09.4	A	900_226001123904	AAA	95	0.5
8/22/2020	12:50:39 PM	00:07.7	A	900_226001123904	AAA	78	0.5
8/22/2020	12:51:56 PM	00:09.5	A	900_226001123904	AAA	96	0.5
8/22/2020	12:52:13 PM	00:08.4	A	900_226001123904	AAA	85	0.5
8/22/2020	1:00:49 PM	00:25.4	A	900_226001123904	AAA	255	0.5
8/22/2020	1:04:09 PM	00:14.8	A	900_226001123904	AAA	149	0.5
8/22/2020	1:04:40 PM	00:02.2	A	900_226001123904	AAA	23	0.5
8/22/2020	1:19:32 PM	00:38.2	A	900_226001123904	AAA	383	0.5
8/22/2020	1:20:41 PM	00:03.6	A	900_226001123904	AAA	37	0.5
8/22/2020	1:22:29 PM	00:12.0	A	900_226001123904	AAA	121	0.5
8/22/2020	1:30:50 PM	00:03.2	A	900_226001123904	AAA	33	0.5
8/22/2020	1:30:56 PM	00:03.6	A	900_226001123904	AAA	37	0.5
8/22/2020	1:44:10 PM	00:07.7	A	900_226001123904	AAA	78	0.5
8/22/2020	1:44:28 PM	00:16.5	A	900_226001123904	AAA	166	0.5
8/22/2020	1:45:27 PM	00:25.6	A	900_226001123904	AAA	257	0.5
8/22/2020	1:46:08 PM	00:05.3	A	900_226001123904	AAA	54	0.5
8/22/2020	1:52:03 PM	00:04.0	A	900_226001123904	AAA	41	0.5
8/22/2020	1:53:01 PM	00:28.1	A	900_226001123904	AAA	282	0.5
8/22/2020	1:57:28 PM	00:03.3	A	900_226001123904	AAA	34	0.5
8/22/2020	2:12:49 PM	00:01.7	A	900_226001123904	AAA	18	0.5
8/22/2020	2:12:59 PM	00:05.2	A	900_226001123904	AAA	53	0.5
8/22/2020	2:14:56 PM	00:01.8	A	900_226001123904	AAA	19	0.5
8/22/2020	2:16:38 PM	00:28.3	A	900_226001123904	AAA	284	0.5
8/22/2020	2:43:56 PM	00:01.8	A	900_226001123904	AAA	19	0.5
8/22/2020	2:44:05 PM	00:08.3	A	900_226001123904	AAA	84	0.5
8/22/2020	2:44:32 PM	00:15.2	A	900_226001123904	AAA	153	0.5
8/22/2020	3:03:04 PM	00:02.1	A	900_226001123904	AAA	22	0.5
8/22/2020	3:04:16 PM	00:07.5	A	900_226001123904	AAA	76	0.5
8/22/2020	3:28:24 PM	00:08.0	A	900_226001123904	AAA	81	0.5
8/22/2020	3:30:12 PM	00:09.7	A	900_226001123904	AAA	98	0.5
8/23/2020	5:01:44 PM	00:01.6	A	900_226001123904	AAA	17	0.5
8/23/2020	5:02:55 PM	00:13.3	A	900_226001123904	AAA	134	0.5
8/23/2020	6:32:05 PM	00:25.7	A	900_226001123904	AAA	258	0.5
8/23/2020	6:45:25 PM	00:00.0	A	900_226001123904	AAA	1	0.5
8/23/2020	6:45:34 PM	00:00.0	A	900_226001123904	AAA	1	0.5
8/23/2020	6:51:40 PM	00:00.6	A	900_226001123904	AAA	7	0.5
8/23/2020	6:53:09 PM	00:30.0	A	900_226001123904	AAA	301	0.5
8/23/2020	6:53:48 PM	00:02.7	A	900_226001123904	AAA	28	0.5
8/23/2020	6:33:53 PM	00:44.6	A	900_226001123904	AAA	447	0.5
8/23/2020	6:54:45 PM	00:07.8	A	900_226001123904	AAA	79	0.5
8/23/2020	7:10:58 PM	00:05.4	A	900_226001123904	AAA	55	0.5
8/23/2020	7:23:54 PM	00:37.7	A	900_226001123904	AAA	378	0.5
8/23/2020	7:25:14 PM	00:04.0	A	900_226001123904	AAA	41	0.5
8/23/2020	7:36:19 PM	00:01.1	A	900_226001123904	AAA	12	0.5
8/23/2020	7:36:56 PM	00:10.1	A	900_226001123904	AAA	102	0.5
8/23/2020	7:44:50 PM	00:08.6	A	900_226001123904	AAA	87	0.5
8/23/2020	7:45:07 PM	00:04.8	A	900_226001123904	AAA	49	0.5
8/23/2020	7:47:03 PM	00:01.0	A	900_226001123904	AAA	11	0.5
8/23/2020	7:49:28 PM	00:14.6	A	900_226001123904	AAA	147	0.5
8/23/2020	7:50:53 PM	00:02.3	A	900_226001123904	AAA	24	0.5
8/23/2020	7:51:10 PM	00:21.9	A	900_226001123904	AAA	220	0.5
8/23/2020	7:58:00 PM	00:00.1	A	900_226001123904	AAA	2	0.5
8/23/2020	8:04:43 PM	00:10.4	A	900_226001123904	AAA	105	0.5
8/23/2020	8:10:57 PM	00:00.5	A	900_226001123904	AAA	6	0.5
8/23/2020	8:11:01 PM	00:07.5	A	900_226001123904	AAA	76	0.5

TABLE D1**PIT Tag Data**

Mighty Peace Watershed Alliance
Beaverlodge River

Scan Date	Scan Time	Duration	Tag Type	Tag ID Number	Site Code	Number of consecutive detections	Effective Amps
8/23/2020	8:20:41 PM	00:02.5	A	900_226001123904	AAA	26	0.5
8/23/2020	8:27:18 PM	00:01.6	A	900_226001123904	AAA	17	0.5
8/23/2020	8:29:53 PM	00:07.7	A	900_226001123904	AAA	78	0.5
8/23/2020	8:33:51 PM	00:00.1	A	900_226001123904	AAA	2	0.5
8/23/2020	8:33:53 PM	00:03.0	A	900_226001123904	AAA	31	0.5
8/23/2020	10:39:47 PM	00:29.2	A	900_226001123904	AAA	293	0.5
8/23/2020	10:40:20 PM	00:00.3	A	900_226001123904	AAA	4	0.5
8/23/2020	10:42:26 PM	00:05.7	A	900_226001123904	AAA	58	0.5
8/23/2020	10:42:56 PM	00:13.1	A	900_226001123904	AAA	132	0.5
8/23/2020	10:43:17 PM	00:00.0	A	900_226001123904	AAA	1	0.5
8/23/2020	10:43:20 PM	00:10.7	A	900_226001123904	AAA	108	0.5
8/23/2020	10:43:41 PM	00:01.3	A	900_226001123904	AAA	14	0.5
8/23/2020	2:38:58 PM	00:01.0	A	900_226001123904	AAA	11	0.5
8/23/2020	2:39:12 PM	00:01.9	A	900_226001123904	AAA	20	0.5
8/23/2020	3:11:31 PM	00:05.4	A	900_226001123904	AAA	55	0.5
8/23/2020	3:11:48 PM	00:15.1	A	900_226001123904	AAA	152	0.5
8/23/2020	3:13:49 PM	00:02.5	A	900_226001123904	AAA	26	0.5
8/23/2020	3:15:10 PM	00:33.4	A	900_226001123904	AAA	335	0.5
8/23/2020	3:16:11 PM	00:17.0	A	900_226001123904	AAA	171	0.5
8/23/2020	3:16:50 PM	00:46.8	A	900_226001123904	AAA	469	0.5
8/23/2020	3:17:50 PM	00:02.0	A	900_226001123904	AAA	21	0.5
8/23/2020	3:18:52 PM	00:00.1	A	900_226001123904	AAA	2	0.5
8/23/2020	4:00:17 PM	00:02.7	A	900_226001123904	AAA	28	0.5
8/23/2020	4:00:26 PM	00:01.8	A	900_226001123904	AAA	19	0.5
8/24/2020	8:06:37 AM	00:03.9	A	900_226001123955	AAA	40	0.5
8/24/2020	8:07:38 AM	01:07.0	A	900_226001123955	AAA	671	0.5
8/24/2020	8:10:11 AM	00:01.6	A	900_226001123955	AAA	17	0.5
8/24/2020	8:10:18 AM	00:01.3	A	900_226001123955	AAA	14	0.5
8/24/2020	8:10:21 AM	00:02.0	A	900_226001123955	AAA	21	0.5
8/24/2020	8:15:11 AM	00:01.9	A	900_226001123955	AAA	20	0.5
8/24/2020	8:15:19 AM	00:41.3	A	900_226001123955	AAA	414	0.5
8/24/2020	8:16:33 AM	00:04.0	A	900_226001123955	AAA	41	0.5
8/24/2020	8:17:01 AM	00:22.1	A	900_226001123955	AAA	222	0.5
8/24/2020	8:19:45 AM	00:06.1	A	900_226001123955	AAA	62	0.5
8/26/2020	5:16:31 AM	00:02.5	A	900_226001123955	AAA	26	0.5
8/26/2020	8:09:10 AM	00:00.2	A	900_226001123955	AAA	3	0.5
8/27/2020	5:07:47 AM	00:45.5	A	900_226001123955	AAA	456	0.5
8/27/2020	5:08:41 AM	00:01.1	A	900_226001123955	AAA	12	0.5
8/27/2020	5:08:50 AM	00:01.3	A	900_226001123955	AAA	14	0.5
8/27/2020	5:08:53 AM	00:03.9	A	900_226001123955	AAA	40	0.5
8/27/2020	5:18:47 AM	00:05.3	A	900_226001123955	AAA	54	0.5
8/27/2020	5:19:43 AM	00:05.6	A	900_226001123955	AAA	57	0.5
8/28/2020	8:28:56 PM	00:04.6	A	900_226001123955	AAA	47	0.5
8/28/2020	8:31:02 PM	00:58.7	A	900_226001123955	AAA	588	0.5
8/29/2020	7:27:24 AM	00:00.2	A	900_226001123955	AAA	3	0.5
8/29/2020	10:43:47 AM	00:01.4	A	900_226001123904	AAA	15	0.5
8/29/2020	10:43:52 AM	00:01.2	A	900_226001123904	AAA	13	0.5
8/29/2020	10:44:10 AM	00:02.0	A	900_226001123904	AAA	21	0.5
8/29/2020	10:44:22 AM	00:01.2	A	900_226001123904	AAA	13	0.5
8/29/2020	10:44:54 AM	00:02.9	A	900_226001123904	AAA	30	0.5
8/29/2020	10:45:26 AM	00:00.0	A	900_226001123904	AAA	1	0.5
8/29/2020	10:45:43 AM	00:12.8	A	900_226001123904	AAA	129	0.5
8/29/2020	10:46:02 AM	00:01.1	A	900_226001123904	AAA	12	0.5
8/29/2020	10:46:05 AM	00:00.2	A	900_226001123904	AAA	3	0.5
8/29/2020	10:48:14 AM	00:02.1	A	900_226001123904	AAA	22	0.5
8/29/2020	10:48:23 AM	00:08.7	A	900_226001123904	AAA	88	0.5
8/29/2020	10:48:54 AM	00:02.7	A	900_226001123904	AAA	28	0.5
8/29/2020	10:49:05 AM	00:03.3	A	900_226001123904	AAA	34	0.5
8/29/2020	10:49:14 AM	00:01.8	A	900_226001123904	AAA	19	0.5
8/29/2020	10:49:19 AM	00:00.9	A	900_226001123904	AAA	10	0.5
8/29/2020	10:49:24 AM	00:01.0	A	900_226001123904	AAA	11	0.5
6/28/2020	9:58:00 PM	00:00.0	A	900_226001123925	AAA	1	0.7
6/28/2020	8:57:25PM	00:05.6	A	900_226001123925	AAA	57	0.7
6/28/2020	8:57:45 PM	00:01.8	A	900_226001123925	AAA	19	0.7
6/28/2020	8:57:49 PM	00:02.6	A	900_226001123925	AAA	27	0.7
6/29/2020	8:57:31 PM	00:00.7	A	900_226001123901	AAA	8	0.7
6/29/2020	8:57:35 PM	00:00.0	A	900_226001123901	AAA	1	0.7
6/29/2020	8:57:40 PM	00:00.5	A	900_226001123901	AAA	6	0.7
6/29/2020	8:57:42 PM	00:00.0	A	900_226001123901	AAA	1	0.7
6/29/2020	8:57:46 PM	00:00.8	A	900_226001123901	AAA	9	0.7
6/29/2020	8:57:54 PM	00:00.0	A	900_226001123901	AAA	1	0.7

TABLE D1**PIT Tag Data**

Mighty Peace Watershed Alliance
Beaverlodge River

Scan Date	Scan Time	Duration	Tag Type	Tag ID Number	Site Code	Number of consecutive detections	Effective Amps
6/29/2020	8:58:00 PM	00:00.0	A	900_226001123901	AAA	1	0.7
6/29/2020	8:58:27 PM	00:03.2	A	900_226001123901	AAA	33	0.7
6/29/2020	8:58:37 PM	00:00.7	A	900_226001123901	AAA	8	0.7
6/29/2020	9:30:16 PM	00:00.4	A	900_226001123901	AAA	5	0.7
6/29/2020	3:13:37 AM	00:00.1	A	900_226001123926	AAA	2	0.7
6/29/2020	3:13:45 AM	00:04.8	A	900_226001123926	AAA	49	0.7
6/29/2020	3:53:46 AM	00:03.4	A	900_226001123926	AAA	35	0.7
6/29/2020	3:54:09 AM	00:00.2	A	900_226001123926	AAA	3	0.7
6/29/2020	3:54:10 AM	00:00.0	A	900_226001123926	AAA	1	0.7

Notes:

- Removed PIT Tags Scanned from 27 to 29, added in scans outside of field hours, adjusted time to correct timezone

APPENDIX E

Water Quality Sonde Data

TABLE E1

Upstream Water Quality Sonde Data

Mighty Peace Watershed Alliance
Beaverlodge River

Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848 Temperature (C)	Sensor: Turb SN#: 737648 Turbidity (NTU)
Seconds	pH (pH)	pH(mV) (mV)										
6/29/2020 16:00	0	7.942	-52.24	276.956	18.164	262.992	302.49	0.145	0.197	9.936	18.164	9.241
6/29/2020 17:00	3600	8.37	11.025	-236.516	201.282	20.974	0.055	0.06	0	8.381	20.974	0
6/29/2020 18:00	7200	8.418	-77.679	256.859	18.896	272.587	308.561	0.148	0.201	10.042	18.896	10.076
6/29/2020 19:00	10800	8.418	-80.614	266.687	19.173	271.051	304.997	0.147	0.198	10.019	19.173	8.817
6/29/2020 20:00	14400	8.431	-81.422	269.005	19.292	271.355	304.56	0.146	0.198	9.936	19.292	9.015
6/29/2020 21:00	18000	8.436	-81.723	271.274	19.323	271.408	304.417	0.146	0.198	9.778	19.323	10.826
6/29/2020 22:00	21600	8.441	-82.045	272.307	19.342	271.526	304.423	0.146	0.198	9.582	19.342	8.952
6/29/2020 23:00	25200	8.428	-81.224	274.102	19.265	270.955	304.286	0.146	0.198	9.347	19.265	9.799
6/30/2020 0:00	28800	8.423	-80.883	274.717	19.102	269.811	304.065	0.146	0.198	9.097	19.102	10.857
6/30/2020 1:00	32400	8.406	-79.801	276.941	18.901	268.572	303.982	0.146	0.198	8.866	18.901	10.402
6/30/2020 2:00	36000	8.38	-78.239	278.763	18.66	267.856	304.761	0.146	0.198	8.645	18.66	9.62
6/30/2020 3:00	39600	8.37	-77.565	279.915	18.465	267.321	305.445	0.147	0.199	8.468	18.465	8.698
6/30/2020 4:00	43200	8.348	-76.261	282.742	18.294	266.333	305.459	0.147	0.199	8.315	18.294	10.066
6/30/2020 5:00	46800	8.324	-74.761	284.96	18.157	266.024	306.022	0.147	0.199	8.194	18.157	10.447
6/30/2020 6:00	50400	8.309	-73.841	286.693	18.026	265.631	306.455	0.147	0.199	8.106	18.026	9.987
6/30/2020 7:00	54000	8.289	-72.672	289.318	17.911	265.089	306.606	0.147	0.199	8.033	17.911	11.093
6/30/2020 8:00	57600	8.271	-71.561	291.926	17.804	264.704	306.882	0.147	0.199	7.994	17.804	10.905
6/30/2020 9:00	61200	8.259	-70.834	294.215	17.717	264.794	307.581	0.148	0.2	8.004	17.717	10.812
6/30/2020 10:00	64800	8.258	-70.77	295.529	17.705	265.576	308.573	0.148	0.201	8.078	17.705	11.221
6/30/2020 11:00	68400	8.254	-70.548	297.741	17.775	266.414	309.063	0.149	0.201	8.202	17.775	12.259
6/30/2020 12:00	72000	8.276	-71.886	297.991	17.861	267.148	309.328	0.149	0.201	8.426	17.861	11.112
6/30/2020 13:00	75600	8.284	-72.365	299.026	17.897	267.541	309.532	0.149	0.201	8.627	17.897	11.759
6/30/2020 14:00	79200	8.312	-74.019	299.253	18.07	268.65	309.634	0.149	0.201	8.852	18.07	11.508
6/30/2020 15:00	82800	8.336	-75.552	298.94	18.299	270.085	309.726	0.149	0.201	9.054	18.299	10.744
6/30/2020 16:00	86400	8.354	-76.649	298.869	18.479	271.287	309.881	0.149	0.201	9.248	18.479	10.869
6/30/2020 17:00	90000	8.381	-78.292	298.32	18.702	272.87	310.182	0.149	0.202	9.379	18.702	10.847
6/30/2020 18:00	93600	8.396	-79.186	298.716	18.831	273.998	310.597	0.149	0.202	9.46	18.831	9.544
6/30/2020 19:00	97200	8.395	-79.153	300.044	18.836	273.073	309.515	0.149	0.201	9.386	18.836	10.142
6/30/2020 20:00	100800	8.392	-79.002	301.325	18.871	273.288	309.523	0.149	0.201	9.261	18.871	10.158
6/30/2020 21:00	104400	8.388	-78.716	302.853	18.827	272.947	309.428	0.149	0.201	9.139	18.827	16.331
6/30/2020 22:00	108000	8.372	-77.744	305.454	18.714	271.985	309.095	0.149	0.201	8.965	18.714	10.929
6/30/2020 23:00	111600	8.346	-76.17	308.904	18.541	270.469	308.531	0.148	0.201	8.756	18.541	10.33
7/1/2020 0:00	115200	8.307	-73.781	313.806	18.297	267.43	306.699	0.147	0.199	8.536	18.297	15.177
7/1/2020 1:00	118800	8.282	-72.293	317.849	18.086	269.558	310.574	0.149	0.202	8.387	18.086	12.501
7/1/2020 2:00	122400	8.266	-71.313	321.268	17.956	272.333	314.672	0.151	0.205	8.297	17.956	12.09
7/1/2020 3:00	126000	8.251	-70.376	324.721	17.819	272.427	315.73	0.152	0.205	8.22	17.819	25.011
7/1/2020 4:00	129600	8.234	-69.375	327.777	17.682	270.988	315.017	0.151	0.205	8.139	17.682	13.15
7/1/2020 5:00	133200	8.227	-68.903	330.414	17.59	270.818	315.468	0.152	0.205	8.074	17.59	11.93
7/1/2020 6:00	136800	8.212	-68.03	332.91	17.524	270.804	315.913	0.152	0.205	8.007	17.524	13.157
7/1/2020 7:00	140400	8.205	-67.575	334.839	17.457	270.048	315.506	0.152	0.205	7.981	17.457	11.122
7/1/2020 8:00	144000	8.188	-66.564	337.714	17.374	269.184	315.074	0.151	0.205	7.965	17.374	11.934
7/1/2020 9:00	147600	8.18	-66.051	340.006	17.273	268.361	314.825	0.151	0.205	7.965	17.273	13.064
7/1/2020 10:00	151200	8.176	-65.792	341.856	17.175	267.369	314.353	0.151	0.204	7.997	17.175	12.509
7/1/2020 11:00	154800	8.167	-65.258	343.742	17.086	266.971	314.509	0.151	0.204	8.058	17.086	14.41
7/1/2020 12:00	158400	8.167	-65.255	341.739	16.99	267.06	315.299	0.152	0.205	8.141	16.99	13.683
7/1/2020 13:00	162000	8.169	-65.365	343.675	16.896	267.352	316.314	0.152	0.206	8.242	16.896	15.164
7/1/2020 14:00	165600	8.174	-65.622	345.518	16.796	267.088	316.713	0.152	0.206	8.338	16.796	13.995
7/1/2020 15:00	169200	8.175	-65.646	347.017	16.725	267.507	317.724	0.153	0.207	8.456	16.725	12.557
7/1/2020 16:00	172800	8.188	-66.409	347.919	16.677	269.695	320.669	0.154	0.208	8.552	16.677	12.553
7/1/2020 17:00	176400	8.194	-66.762	348.882	16.625	270.716	322.265	0.155	0.209	8.632	16.625	13.371
7/1/2020 18:00	180000	8.197	-66.91	349.69	16.559	274.011	326.681	0.157	0.212	8.716	16.559	15.574
7/1/2020 19:00	183600	8.199	-66.991	350.863	16.503	274.256	327.391	0.157	0.213	8.772	16.503	16.201
7/1/2020 20:00	187200	8.196	-66.833	351.838	16.443	275.292	329.079	0.158	0.214	8.808	16.443	18.839
7/1/2020 21:00	190800	8.193	-66.631	353.245	16.359	275.832	330.354	0.159	0.215	8.812	16.359	22.336
7/1/2020 22:00	194400	8.185	-66.14	354.518	16.244	275.157	330.415	0.159	0.215	8.759	16.244	17.887
7/1/2020 23:00	198000	8.165	-64.94	356.557	16.11	275.54	331.897	0.16	0.216	8.689	16.11	18.504
7/2/2020 0:00	201600	8.156	-64.349	358.299	15.961	276.364	334.033	0.161	0.217	8.608	15.961	20.759
7/2/2020 1:00	205200	8.14	-63.407	360.75	15.812	274.885	333.393	0.16	0.217	8.517	15.812	26.183
7/2/2020 2:00	208800	8.127	-62.606	363.056	15.672	271.228	330.025	0.159	0.215	8.463	15.672	41.692
7/2/2020 3:00	212400	8.11	-61.61	365.266	15.527	270.356	330.079	0.159	0.215	8.423	15.527	47.818

TABLE E1**Upstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance
Beaverlodge River

Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848	Sensor: Turb SN#: 737648
Seconds	pH (pH)	pH(mV) (mV)										Turbidity (NTU)
7/2/2020 4:00	216000	8.094	-60.642	367.109	15.39	269.943	330.633	0.159	0.215	8.394	15.39	58.877
7/2/2020 5:00	219600	8.079	-59.71	368.764	15.243	272.84	335.334	0.161	0.218	8.385	15.243	96.562
7/2/2020 6:00	223200	8.062	-58.696	370.79	15.118	272.895	336.39	0.162	0.219	8.367	15.118	125.242
7/2/2020 7:00	226800	8.051	-58.043	372.54	15.006	275.263	340.204	0.164	0.221	8.375	15.006	143.558
7/2/2020 8:00	230400	8.038	-57.22	374.541	14.916	275.707	341.48	0.164	0.222	8.372	14.916	192.201
7/2/2020 9:00	234000	8.005	-55.32	373.787	14.863	285.901	354.549	0.171	0.23	8.365	14.863	194.953
7/2/2020 10:00	237600	7.991	-54.462	374.986	14.795	292.906	363.82	0.175	0.236	8.396	14.795	212.181
7/2/2020 11:00	241200	7.976	-53.573	376.231	14.742	294.153	365.826	0.176	0.238	8.408	14.742	228.09
7/2/2020 12:00	244800	7.953	-52.221	377.003	14.683	293.59	365.643	0.176	0.238	8.423	14.683	234.586
7/2/2020 13:00	248400	7.928	-50.762	378.677	14.646	293.035	365.27	0.176	0.237	8.445	14.646	233.396
7/2/2020 14:00	252000	7.893	-48.745	381.116	14.583	293.871	366.86	0.177	0.238	8.44	14.583	239.879
7/2/2020 15:00	255600	7.876	-47.717	381.459	14.579	288.56	360.271	0.173	0.234	8.429	14.579	265.47
7/2/2020 16:00	259200	7.875	-47.684	380.294	14.703	283.906	353.413	0.17	0.23	8.428	14.703	257.546
7/2/2020 17:00	262800	7.872	-47.543	379.893	14.828	293.553	364.342	0.175	0.237	8.438	14.828	262.671
7/2/2020 18:00	266400	7.87	-47.467	378.858	14.95	303.646	375.78	0.181	0.244	8.451	14.95	247.4
7/2/2020 19:00	270000	7.853	-46.468	377.943	15.049	307.528	379.694	0.183	0.247	8.441	15.049	251.527
7/2/2020 20:00	273600	7.846	-46.048	376.748	15.005	307.943	380.601	0.183	0.247	8.428	15.005	254.5
7/2/2020 21:00	277200	7.843	-45.85	377.516	15.015	306.226	378.387	0.182	0.246	8.418	15.015	246.865
7/2/2020 22:00	280800	7.846	-46.039	378.493	14.995	310.099	383.358	0.185	0.249	8.396	14.995	245.638
7/2/2020 23:00	284400	7.849	-46.227	379.125	14.917	330.858	409.77	0.198	0.266	8.378	14.917	257.577
7/3/2020 0:00	288000	7.846	-46.012	380.053	14.822	317.948	394.668	0.19	0.257	8.354	14.822	257.243
7/3/2020 1:00	291600	7.849	-46.201	381.703	14.768	304.614	378.603	0.182	0.246	8.337	14.768	232.4
7/3/2020 2:00	295200	7.847	-46.089	382.766	14.709	297.278	370.008	0.178	0.241	8.331	14.709	259.995
7/3/2020 3:00	298800	7.851	-46.27	384.232	14.639	294.254	366.849	0.177	0.238	8.335	14.639	241.532
7/3/2020 4:00	302400	7.849	-46.144	385.477	14.56	288.075	359.827	0.173	0.234	8.348	14.56	233.152
7/3/2020 5:00	306000	7.849	-46.163	385.753	14.492	281.208	351.817	0.169	0.229	8.361	14.492	230.056
7/3/2020 6:00	309600	7.842	-45.748	387.236	14.41	274.578	344.196	0.165	0.224	8.374	14.41	209.525
7/3/2020 7:00	313200	7.849	-46.148	387.546	14.336	269.38	338.279	0.162	0.22	8.392	14.336	212.343
7/3/2020 8:00	316800	7.842	-45.674	387.716	14.272	265.127	333.455	0.16	0.217	8.408	14.272	216.236
7/3/2020 9:00	320400	7.848	-46.041	387.077	14.241	261.744	329.442	0.158	0.214	8.434	14.241	227.525
7/3/2020 10:00	324000	7.852	-46.291	385.923	14.221	258.837	325.94	0.156	0.212	8.452	14.221	218.184
7/3/2020 11:00	327600	7.843	-45.769	385.849	14.204	256.103	322.634	0.155	0.21	8.472	14.204	194.174
7/3/2020 12:00	331200	7.85	-46.134	385.16	14.188	253.885	319.961	0.153	0.208	8.492	14.188	208.42
7/3/2020 13:00	334800	7.851	-46.21	383.677	14.202	251.587	316.954	0.152	0.206	8.505	14.202	229.691
7/3/2020 14:00	338400	7.85	-46.177	382.656	14.231	249.792	314.475	0.151	0.204	8.524	14.231	213.803
7/3/2020 15:00	342001	7.866	-47.121	382.613	14.244	248.128	312.282	0.15	0.203	8.529	14.244	206.228
7/3/2020 16:00	345601	7.856	-46.504	382.203	14.276	247.81	311.642	0.149	0.203	8.522	14.276	201.219
7/3/2020 17:00	349201	7.852	-46.308	381.834	14.302	248.66	312.52	0.15	0.203	8.519	14.302	202.704
7/3/2020 18:00	352801	7.838	-45.49	380.394	14.325	250.021	314.052	0.151	0.204	8.518	14.325	206.368
7/3/2020 19:00	356401	7.843	-45.786	378.825	14.317	251.501	315.971	0.152	0.205	8.506	14.317	235.59
7/3/2020 20:00	360001	7.827	-44.823	375.94	14.277	252.169	317.121	0.152	0.206	8.488	14.277	236.541
7/3/2020 21:00	363601	7.849	-46.089	380.155	14.205	253.822	319.749	0.153	0.208	8.475	14.205	229.086
7/3/2020 22:00	367201	7.834	-45.199	383.038	14.101	252.885	319.365	0.153	0.208	8.464	14.101	271.131
7/3/2020 23:00	370801	7.842	-45.669	384.981	13.962	250.49	317.41	0.152	0.206	8.465	13.962	259.327
7/4/2020 0:00	374401	7.83	-44.954	386.845	13.829	248.563	315.983	0.151	0.205	8.477	13.829	223.837
7/4/2020 1:00	378001	7.833	-45.068	385.334	13.72	247.102	314.961	0.151	0.205	8.483	13.72	226.815
7/4/2020 2:00	381601	7.822	-44.441	385.98	13.634	245.103	313.068	0.15	0.203	8.481	13.634	228.059
7/4/2020 3:00	385201	7.826	-44.68	393.581	13.566	242.952	310.836	0.149	0.202	8.475	13.566	251.642
7/4/2020 4:00	388801	7.829	-44.804	399.427	13.507	240.744	308.451	0.148	0.2	8.473	13.507	264.299
7/4/2020 5:00	392401	7.827	-44.711	401.887	13.452	238.64	306.174	0.147	0.199	8.467	13.452	215.175
7/4/2020 6:00	396001	7.825	-44.549	404.588	13.393	236.488	303.847	0.145	0.198	8.469	13.393	231.409
7/4/2020 7:00	399601	7.826	-44.637	405.125	13.345	235.329	302.716	0.145	0.197	8.467	13.345	220.966
7/4/2020 8:00	403201	7.84	-45.452	406.231	13.311	234.06	301.335	0.144	0.196	8.472	13.311	248.099
7/4/2020 9:00	406801	7.822	-44.374	406.224	13.294	232.423	299.358	0.143	0.195	8.476	13.294	205.013
7/4/2020 10:00	410401	7.841	-45.481	405.976	13.309	230.728	297.061	0.142	0.193	8.478	13.309	194.651
7/4/2020 11:00	414001	7.833	-45.037	406.541	13.345	228.851	294.383	0.141	0.191	8.489	13.345	190.56
7/4/2020 12:00	417601	7.836	-45.202	405.547	13.4	227.88	292.738	0.14	0.19	8.463	13.4	190.009
7/4/2020 13:00	421201	7.842	-45.564	404.445	13.52	226.58	290.217	0.139	0.189	8.483	13.52	194.794
7/4/2020 14:00	424801	7.818	-44.234	405.325	13.67	225.933	288.331	0.138	0.187	8.481	13.67	187.791
7/4/2020 15:00	428401	7.831	-44.978	404.128	13.78	225.416	286.897	0.137	0.186	8.475	13.78	212.568

TABLE E1**Upstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance
Beaverlodge River

Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848	Sensor: Turb SN#: 737648
Date and Time	Seconds	pH (pH)	pH(mV) (mV)	Potential (ORP)								Turbidity (NTU)
7/4/2020 16:00	432001	7.842	-45.655	404.207	13.882	224.977	285.631	0.137	0.186	8.468	13.882	164.691
7/4/2020 17:00	435601	7.832	-45.08	404.991	14.011	224.94	284.694	0.136	0.185	8.458	14.011	163.631
7/4/2020 18:00	439201	7.841	-45.617	405.59	14.086	224.728	283.911	0.136	0.185	8.447	14.086	195.893
7/4/2020 19:00	442801	7.835	-45.29	406.703	14.164	224.401	282.967	0.135	0.184	8.43	14.164	191.747
7/4/2020 20:00	446401	7.836	-45.352	407.221	14.205	224.066	282.263	0.135	0.183	8.419	14.205	162.7
7/4/2020 21:00	450001	7.841	-45.626	408.649	14.222	223.552	281.505	0.135	0.183	8.402	14.222	198.499
7/4/2020 22:00	453601	7.832	-45.114	410.568	14.194	222.795	280.735	0.134	0.182	8.385	14.194	182.88
7/4/2020 23:00	457201	7.844	-45.779	410.771	14.131	221.746	279.843	0.134	0.182	8.38	14.131	150.817
7/5/2020 0:00	460801	7.834	-45.183	412.375	14.059	220.553	278.817	0.133	0.181	8.383	14.059	158.238
7/5/2020 1:00	464401	7.843	-45.736	412.966	14.008	219.462	277.784	0.133	0.181	8.379	14.008	170.01
7/5/2020 2:00	468001	7.841	-45.621	413.901	13.966	218.6	276.972	0.132	0.18	8.37	13.966	149.668
7/5/2020 3:00	471601	7.841	-45.612	415.198	13.936	217.727	276.066	0.132	0.179	8.374	13.936	150.302
7/5/2020 4:00	475201	7.826	-44.689	417.105	13.904	216.814	275.119	0.131	0.179	8.369	13.904	165.628
7/5/2020 5:00	478801	7.838	-45.407	417.651	13.884	215.889	274.08	0.131	0.178	8.364	13.884	156.76
7/5/2020 6:00	482401	7.832	-45.071	418.107	13.875	215.146	273.2	0.131	0.178	8.361	13.875	158.184
7/5/2020 7:00	486001	7.847	-45.953	418.555	13.875	214.447	272.311	0.13	0.177	8.359	13.875	165.677
7/5/2020 8:00	489601	7.835	-45.216	419.184	13.886	213.7	271.289	0.13	0.176	8.355	13.886	151.461
7/5/2020 9:00	493201	7.845	-45.834	419.132	13.914	213.209	270.478	0.129	0.176	8.353	13.914	166.203
7/5/2020 10:00	496801	7.836	-45.311	418.853	14.019	213.196	269.768	0.129	0.175	8.351	14.019	151.642
7/5/2020 11:00	500401	7.85	-46.155	416.869	14.232	213.875	269.248	0.129	0.175	8.348	14.232	155.747
7/5/2020 12:00	504001	7.839	-45.538	415.951	14.481	214.769	268.766	0.128	0.175	8.328	14.481	131.823
7/5/2020 13:00	507601	7.854	-46.508	413.989	14.781	216.181	268.607	0.128	0.175	8.307	14.781	173.766
7/5/2020 14:00	511201	7.842	-45.846	412.859	15.169	218.276	268.74	0.129	0.175	8.268	15.169	150.644
7/5/2020 15:00	514801	7.862	-47.097	411.464	15.506	220.144	268.904	0.129	0.175	8.222	15.506	178.542
7/5/2020 16:00	518401	7.841	-45.867	412.304	15.77	221.72	269.171	0.129	0.175	8.188	15.77	174.478
7/5/2020 17:00	522001	7.848	-46.299	413.217	15.913	222.712	269.483	0.129	0.175	8.147	15.913	188.411
7/5/2020 18:00	525601	7.84	-45.841	415.475	15.894	223.266	270.275	0.129	0.176	8.101	15.894	161.523
7/5/2020 19:00	529201	7.855	-46.756	415.596	15.934	223.892	270.782	0.13	0.176	8.071	15.934	164.49
7/5/2020 20:00	532801	7.844	-46.098	417.525	15.972	224.068	270.757	0.13	0.176	8.05	15.972	171.545
7/5/2020 21:00	536401	7.85	-46.458	418.531	15.902	223.154	270.088	0.129	0.176	8.024	15.902	162.483
7/5/2020 22:00	540001	7.839	-45.738	420.992	15.782	221.97	269.401	0.129	0.175	8.002	15.782	142.943
7/5/2020 23:00	543601	7.845	-46.105	420.994	15.694	221.128	268.929	0.129	0.175	7.974	15.694	170.127
7/6/2020 0:00	547201	7.835	-45.478	422.539	15.609	220.308	268.46	0.128	0.174	7.956	15.609	161.268
7/6/2020 1:00	550801	7.848	-46.237	422.799	15.544	219.599	268.005	0.128	0.174	7.945	15.544	159.666
7/6/2020 2:00	554401	7.826	-44.94	425.35	15.468	218.928	267.661	0.128	0.174	7.926	15.468	169.93
7/6/2020 3:00	558002	7.837	-45.607	425.638	15.388	218.256	267.337	0.128	0.174	7.92	15.388	163.806
7/6/2020 4:00	561602	7.828	-45.028	425.948	15.318	217.562	266.926	0.128	0.174	7.912	15.318	163.92
7/6/2020 5:00	565202	7.828	-45.047	427.334	15.28	217.178	266.693	0.128	0.173	7.896	15.28	150.982
7/6/2020 6:00	568802	7.834	-45.364	427.19	15.249	216.692	266.285	0.127	0.173	7.885	15.249	172.015
7/6/2020 7:00	572402	7.84	-45.755	428.228	15.222	216.386	266.081	0.127	0.173	7.874	15.222	166.949
7/6/2020 8:00	576002	7.839	-45.669	427.796	15.229	216.166	265.765	0.127	0.173	7.861	15.229	156.78
7/6/2020 9:00	579602	7.843	-45.927	427.086	15.306	216.384	265.554	0.127	0.173	7.847	15.306	149.86
7/6/2020 10:00	583202	7.845	-46.048	426.768	15.416	216.845	265.434	0.127	0.173	7.836	15.416	148.716
7/6/2020 11:00	586802	7.841	-45.886	427.076	15.614	217.705	265.256	0.127	0.172	7.812	15.614	152.934
7/6/2020 12:00	590402	7.835	-45.547	426.723	15.87	218.857	265.084	0.127	0.172	7.795	15.87	162.022
7/6/2020 13:00	594002	7.837	-45.679	425.207	16.14	220.269	265.136	0.127	0.172	7.764	16.14	148.119
7/6/2020 14:00	597602	7.835	-45.636	424.394	16.435	221.734	265.105	0.127	0.172	7.728	16.435	158.472
7/6/2020 15:00	601202	7.838	-45.846	423.853	16.752	223.214	264.957	0.127	0.172	7.691	16.752	169.244
7/6/2020 16:00	604802	7.83	-45.416	422.999	16.971	224.147	264.745	0.127	0.172	7.64	16.971	151.169
7/6/2020 17:00	608402	7.84	-46.041	423.674	17.057	224.313	264.427	0.127	0.172	7.597	17.057	155.204
7/6/2020 18:00	612002	7.827	-45.285	424.546	17.14	224.385	264.025	0.126	0.172	7.557	17.14	164.572
7/6/2020 19:00	615602	7.827	-45.269	425.286	17.189	224.338	263.674	0.126	0.171	7.522	17.189	168.802
7/6/2020 20:00	619202	7.832	-45.605	425.865	17.172	223.782	263.123	0.126	0.171	7.492	17.172	145.845
7/6/2020 21:00	622802	7.836	-45.784	426.547	17.115	223.039	262.587	0.126	0.171	7.466	17.115	163.511
7/6/2020 22:00	626402	7.826	-45.221	428.437	17.034	222.271	262.161	0.125	0.170	7.447	17.034	156.635
7/6/2020 23:00	630002	7.836	-45.745	428.867	16.943	221.49	261.776	0.125	0.17	7.422	16.943	172.348
7/7/2020 0:00	633602	7.83	-45.404	429.92	16.861	220.73	261.359	0.125	0.17	7.404	16.861	151.096
7/7/2020 1:00	637202	7.829	-45.331	430.805	16.809	220.022	260.826	0.125	0.17	7.386	16.809	178.232
7/7/2020 2:00	640802	7.83	-45.364	431.899	16.752	219.341	260.357	0.125	0.169	7.384	16.752	151.606
7/7/2020 3:00	644402	7.827	-45.18	433.511	16.696	218.77	260.009	0.124	0.169	7.379	16.696	162.707

TABLE E1**Upstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance
Beaverlodge River

Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848	Sensor: Turb SN#: 737648
Seconds	pH (pH)	pH(mV) (mV)	Potential (ORP)									Turbidity (NTU)
7/7/2020 4:00	648002	7.831	-45.416	433.392	16.635	218.087	259.554	0.124	0.169	7.382	16.635	149.765
7/7/2020 5:00	651602	7.826	-45.14	434.932	16.579	217.471	259.156	0.124	0.168	7.383	16.579	152.462
7/7/2020 6:00	655202	7.831	-45.397	434.317	16.524	216.923	258.822	0.124	0.168	7.378	16.524	168.685
7/7/2020 7:00	658802	7.829	-45.321	433.656	16.491	216.623	258.662	0.124	0.168	7.373	16.491	159.037
7/7/2020 8:00	662402	7.83	-45.338	434.729	16.493	216.674	258.71	0.124	0.168	7.366	16.493	156.582
7/7/2020 9:00	666002	7.83	-45.333	435.006	16.519	216.8	258.709	0.124	0.168	7.36	16.519	177.341
7/7/2020 10:00	669602	7.832	-45.495	434.872	16.579	217.017	258.612	0.124	0.168	7.343	16.579	154.113
7/7/2020 11:00	673202	7.834	-45.605	434.455	16.683	217.363	258.412	0.124	0.168	7.329	16.683	138.809
7/7/2020 12:00	676802	7.829	-45.323	434.376	16.794	217.797	258.275	0.124	0.168	7.314	16.794	141.94
7/7/2020 13:00	680402	7.831	-45.5	434.746	16.882	218.112	258.138	0.124	0.168	7.292	16.882	158.545
7/7/2020 14:00	684002	7.826	-45.185	435.085	16.962	218.307	257.901	0.123	0.168	7.265	16.962	155.033
7/7/2020 15:00	687602	7.83	-45.445	434.274	17.116	219.074	257.91	0.123	0.168	7.241	17.116	149.758
7/7/2020 16:00	691202	7.829	-45.428	432.965	17.366	220.375	257.995	0.123	0.168	7.221	17.366	172.813
7/7/2020 17:00	694802	7.823	-45.14	432.955	17.674	222.046	258.173	0.124	0.168	7.195	17.674	135.943
7/7/2020 18:00	698402	7.83	-45.54	433.828	17.791	222.538	258.074	0.124	0.168	7.17	17.791	145.312
7/7/2020 19:00	702002	7.827	-45.383	434.953	17.825	222.729	258.102	0.124	0.168	7.148	17.825	160.174
7/7/2020 20:00	705602	7.829	-45.533	435.309	17.871	222.817	257.937	0.123	0.168	7.132	17.871	157.862
7/7/2020 21:00	709202	7.824	-45.211	435.139	17.885	222.72	257.744	0.123	0.168	7.102	17.885	149.328
7/7/2020 22:00	712802	7.824	-45.228	434.698	17.828	222.3	257.586	0.123	0.167	7.09	17.828	157.88
7/7/2020 23:00	716402	7.827	-45.388	435.812	17.699	221.415	257.294	0.123	0.167	7.08	17.699	152.022
7/8/2020 0:00	720002	7.82	-44.94	438.706	17.608	220.743	257.033	0.123	0.167	7.07	17.608	149.653
7/8/2020 1:00	723602	7.813	-44.513	440.315	17.505	220.053	256.815	0.123	0.167	7.069	17.505	125.933
7/8/2020 2:00	727202	7.821	-44.978	441.45	17.422	219.312	256.427	0.123	0.167	7.07	17.422	153.781
7/8/2020 3:00	730802	7.816	-44.675	442.638	17.375	218.837	256.14	0.123	0.166	7.081	17.375	190.587
7/8/2020 4:00	734402	7.815	-44.582	445.213	17.329	218.344	255.824	0.122	0.166	7.085	17.329	149.409
7/8/2020 5:00	738002	7.824	-45.14	444.409	17.273	217.585	255.26	0.122	0.166	7.098	17.273	143.286
7/8/2020 6:00	741602	7.826	-45.23	446.018	17.214	217.274	255.232	0.122	0.166	7.095	17.214	150.923
7/8/2020 7:00	745202	7.819	-44.818	447.647	17.17	216.822	254.95	0.122	0.166	7.108	17.17	148.196
7/8/2020 8:00	748802	7.819	-44.782	447.697	17.153	216.448	254.61	0.122	0.165	7.109	17.153	152.912
7/8/2020 9:00	752402	7.835	-45.753	447.027	17.191	216.456	254.399	0.122	0.165	7.113	17.191	172.063
7/8/2020 10:00	756002	7.838	-45.972	446.314	17.267	216.53	254.053	0.122	0.165	7.112	17.267	145.804
7/8/2020 11:00	759602	7.834	-45.753	445.31	17.395	216.808	253.652	0.121	0.165	7.113	17.395	143.152
7/8/2020 12:00	763202	7.837	-45.962	444.521	17.607	217.594	253.37	0.121	0.165	7.107	17.607	152.552
7/8/2020 13:00	766802	7.837	-45.991	445.196	17.816	218.384	253.118	0.121	0.165	7.111	17.816	151.253
7/8/2020 14:00	770402	7.828	-45.435	446.166	17.959	218.656	252.629	0.121	0.164	7.081	17.959	138.672
7/8/2020 15:00	774002	7.825	-45.295	445.742	18.135	219.393	252.5	0.121	0.164	7.072	18.135	167.204
7/8/2020 16:00	777602	7.829	-45.593	446.316	18.281	219.979	252.363	0.121	0.164	7.054	18.281	138.777
7/8/2020 17:00	781202	7.815	-44.775	445.155	18.438	220.563	252.166	0.121	0.164	7.031	18.438	140.351
7/8/2020 18:00	784802	7.811	-44.549	444.96	18.587	220.071	250.788	0.12	0.163	7.016	18.587	118.794
7/8/2020 19:00	788402	7.824	-45.311	443.417	18.638	221.224	251.823	0.121	0.164	7	18.638	132.331
7/8/2020 20:00	792002	7.813	-44.672	444.44	18.637	220.923	251.484	0.12	0.163	6.997	18.637	119.509
7/8/2020 21:00	795602	7.82	-45.078	445.492	18.553	220.188	251.107	0.12	0.163	6.996	18.553	125.33
7/8/2020 22:00	799202	7.809	-44.403	446.243	18.504	219.814	250.951	0.12	0.163	6.982	18.504	121.51
7/8/2020 23:00	802802	7.818	-44.954	444.819	18.423	219.015	250.478	0.12	0.163	6.974	18.423	129.569
7/9/2020 0:00	806402	7.823	-45.195	444.102	18.29	218.236	250.32	0.12	0.163	6.974	18.29	130.708
7/9/2020 1:00	810002	7.81	-44.415	445.253	18.133	217.383	250.198	0.12	0.163	6.982	18.133	134.487
7/9/2020 2:00	813602	7.812	-44.537	445.649	17.987	216.643	250.149	0.12	0.163	6.99	17.987	122.024
7/9/2020 3:00	817202	7.812	-44.477	446.722	17.859	215.958	250.068	0.12	0.163	7.006	17.859	126.299
7/9/2020 4:00	820802	7.813	-44.57	448.109	17.749	215.305	249.92	0.12	0.162	7.021	17.749	136.579
7/9/2020 5:00	824402	7.817	-44.739	447.394	17.653	214.798	249.858	0.12	0.162	7.034	17.653	122.577
7/9/2020 6:00	828002	7.811	-44.396	448.057	17.574	214.525	249.984	0.12	0.162	7.048	17.574	131.226
7/9/2020 7:00	831602	7.806	-44.122	448.384	17.513	214.165	249.9	0.12	0.162	7.054	17.513	122.391
7/9/2020 8:00	835202	7.809	-44.272	448.658	17.486	214.311	250.22	0.12	0.163	7.071	17.486	112.721
7/9/2020 9:00	838802	7.808	-44.188	448.357	17.51	214.166	249.917	0.12	0.162	7.081	17.51	121.022
7/9/2020 10:00	842402	7.813	-44.525	447.23	17.613	214.802	250.09	0.12	0.163	7.093	17.613	149.65
7/9/2020 11:00	846002	7.81	-44.389	446.958	17.751	215.41	250.027	0.12	0.163	7.097	17.751	124.742
7/9/2020 12:00	849602	7.816	-44.725	446.424	17.908	216.205	250.082	0.12	0.163	7.099	17.908	134.108
7/9/2020 13:00	853202	7.825	-45.295	444.335	18.113	217.036	249.908	0.12	0.162	7.096	18.113	133.284
7/9/2020 14:00	856802	7.814	-44.72	444.686	18.314	218.206	250.154	0.12	0.163	7.089	18.314	129.991
7/9/2020 15:00	860402	7.814	-44.708	445.894	18.249	217.738	249.968	0.12	0.162	7.073	18.249	125.605

TABLE E1**Upstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance
Beaverlodge River

Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848	Sensor: Turb SN#: 737648
Date and Time	Seconds	pH (pH)	pH(mV) (mV)									Turbidity (NTU)
7/9/2020 16:00	864002	7.818	-44.897	446.507	18.151	217.286	249.986	0.12	0.162	7.052	18.151	125.122
7/9/2020 17:00	867602	7.816	-44.818	445.546	18.182	217.32	249.857	0.12	0.162	7.06	18.182	134.927
7/9/2020 18:00	871202	7.824	-45.261	444.426	18.241	217.69	249.96	0.12	0.162	7.072	18.241	127.982
7/9/2020 19:00	874802	7.825	-45.347	444.717	18.28	218.007	250.111	0.12	0.163	7.07	18.28	124.627
7/9/2020 20:00	878402	7.852	-46.916	443.57	18.27	218.042	250.202	0.12	0.163	7.078	18.27	131.559
7/9/2020 21:00	882002	7.85	-46.811	444.168	18.24	218.033	250.358	0.12	0.163	7.092	18.24	128.483
7/9/2020 22:00	885602	7.854	-47.002	444.559	18.159	217.765	250.494	0.12	0.163	7.099	18.159	134.474
7/9/2020 23:00	889202	7.857	-47.197	445.189	18.068	217.349	250.517	0.12	0.163	7.103	18.068	137.777
7/10/2020 0:00	892802	7.855	-47.073	446.538	17.952	216.832	250.562	0.12	0.163	7.114	17.952	131.21
7/10/2020 1:00	896402	7.848	-46.597	447.876	17.802	215.889	250.3	0.12	0.163	7.125	17.802	140.274
7/10/2020 2:00	900002	7.84	-46.136	449.056	17.668	214.661	249.62	0.119	0.162	7.136	17.668	137.813
7/10/2020 3:00	903602	7.852	-46.79	447.747	17.545	214.675	250.319	0.12	0.163	7.158	17.545	129.33
7/10/2020 4:00	907202	7.842	-46.206	448.455	17.429	214.097	250.289	0.12	0.163	7.18	17.429	132.393
7/10/2020 5:00	910802	7.857	-47.097	448.548	17.333	213.619	250.268	0.12	0.163	7.19	17.333	129.815
7/10/2020 6:00	914402	7.852	-46.773	448.93	17.248	213.211	250.265	0.12	0.163	7.217	17.248	131.542
7/10/2020 7:00	918002	7.863	-47.39	448.4	17.18	212.922	250.311	0.12	0.163	7.228	17.18	126.14
7/10/2020 8:00	921602	7.861	-47.25	448.305	17.147	212.75	250.291	0.12	0.163	7.249	17.147	137.135
7/10/2020 9:00	925202	7.863	-47.381	446.92	17.132	212.125	249.641	0.119	0.162	7.276	17.132	113.287
7/10/2020 10:00	928802	7.85	-46.649	447.103	17.194	213.329	250.709	0.12	0.163	7.288	17.194	128.397
7/10/2020 11:00	932402	7.843	-46.237	445.94	17.34	214.159	250.86	0.12	0.163	7.303	17.34	124.236
7/10/2020 12:00	936002	7.871	-47.908	442.945	17.563	215.419	251.083	0.12	0.163	7.326	17.563	120.02
7/10/2020 13:00	939602	7.874	-48.153	441.934	17.838	217.136	251.544	0.12	0.164	7.338	17.838	132.305
7/10/2020 14:00	943202	7.868	-47.87	440.399	18.082	218.469	251.73	0.12	0.164	7.341	18.082	141.206
7/10/2020 15:00	946802	7.872	-48.134	439.007	18.29	219.833	252.147	0.121	0.164	7.327	18.29	134.402
7/10/2020 16:00	950402	7.877	-48.432	437.748	18.544	221.336	252.497	0.121	0.164	7.319	18.544	143.501
7/10/2020 17:00	954002	7.871	-48.146	437.76	18.736	222.396	252.619	0.121	0.164	7.316	18.736	129.045
7/10/2020 18:00	957602	7.841	-46.353	439.631	18.773	222.67	252.73	0.121	0.164	7.311	18.773	144.625
7/10/2020 19:00	961202	7.879	-48.592	437.643	18.771	222.428	252.465	0.121	0.164	7.309	18.771	127.807
7/10/2020 20:00	964802	7.885	-48.933	437.607	18.681	222.072	252.552	0.121	0.164	7.323	18.681	126.083
7/10/2020 21:00	968402	7.878	-48.535	438.668	18.552	221.464	252.57	0.121	0.164	7.322	18.552	116.91
7/10/2020 22:00	972002	7.885	-48.923	439.929	18.397	220.692	252.541	0.121	0.164	7.319	18.397	129.503
7/10/2020 23:00	975602	7.867	-47.805	441.939	18.229	219.833	252.485	0.121	0.164	7.315	18.229	127.457
7/11/2020 0:00	979202	7.873	-48.137	442.948	18.055	219.086	252.591	0.121	0.164	7.317	18.055	142.194
7/11/2020 1:00	982802	7.865	-47.657	442.735	17.903	218.343	252.582	0.121	0.164	7.33	17.903	124.703
7/11/2020 2:00	986403	7.881	-48.547	443.15	17.769	217.824	252.73	0.121	0.164	7.34	17.769	145.242
7/11/2020 3:00	990003	7.884	-48.709	443.811	17.646	217.476	253.017	0.121	0.164	7.355	17.646	131.128
7/11/2020 4:00	993603	7.882	-48.58	444.779	17.544	216.92	252.944	0.121	0.164	7.369	17.544	124.945
7/11/2020 5:00	997203	7.85	-46.711	446.202	17.479	216.975	253.371	0.121	0.165	7.379	17.479	141.542
7/11/2020 6:00	1000803	7.859	-47.231	446.216	17.419	216.763	253.465	0.121	0.165	7.392	17.419	142.878
7/11/2020 7:00	1004403	7.882	-48.537	445.363	17.36	216.425	253.405	0.121	0.165	7.412	17.36	145.874
7/11/2020 8:00	1008003	7.891	-49.1	445.272	17.343	216.414	253.487	0.121	0.165	7.412	17.343	143.628
7/11/2020 9:00	1011603	7.885	-48.723	445.286	17.377	216.707	253.637	0.121	0.165	7.445	17.377	148.547
7/11/2020 10:00	1015203	7.892	-49.176	443.749	17.457	217.148	253.697	0.121	0.165	7.457	17.457	154.747
7/11/2020 11:00	1018803	7.896	-49.4	441.798	17.612	217.785	253.565	0.121	0.165	7.479	17.612	126.699
7/11/2020 12:00	1022403	7.881	-48.556	442.175	17.738	218.513	253.702	0.121	0.165	7.482	17.738	150.302
7/11/2020 13:00	1026003	7.907	-50.111	439.35	17.858	219.411	254.069	0.122	0.165	7.486	17.858	155.135
7/11/2020 14:00	1029603	7.89	-49.133	439.927	17.966	220.175	254.346	0.122	0.165	7.491	17.966	148.413
7/11/2020 15:00	1033203	7.907	-50.168	438.692	18.079	220.955	254.614	0.122	0.165	7.482	18.079	158.176
7/11/2020 16:00	1036803	7.912	-50.428	437.81	18.155	221.571	254.897	0.122	0.166	7.486	18.155	158.453
7/11/2020 17:00	1040403	7.91	-50.34	436.885	18.158	221.783	255.121	0.122	0.166	7.47	18.158	161.24
7/11/2020 18:00	1044003	7.909	-50.292	436.424	18.159	221.977	255.342	0.122	0.166	7.492	18.159	168
7/11/2020 19:00	1047603	7.907	-50.17	436.601	18.137	222.003	255.525	0.122	0.166	7.485	18.137	168.938
7/11/2020 20:00	1051203	7.913	-50.471	437.395	18.074	221.727	255.532	0.122	0.166	7.471	18.074	165.029
7/11/2020 21:00	1054803	7.909	-50.271	437.862	17.978	221.136	255.387	0.122	0.166	7.478	17.978	163.074
7/11/2020 22:00	1058403	7.912	-50.387	438.093	17.882	220.902	255.662	0.122	0.166	7.48	17.882	127.955
7/11/2020 23:00	1062003	7.9	-49.66	438.17	17.742	220.24	255.686	0.122	0.166	7.502	17.742	158.322
7/12/2020 0:00	1065603	7.91	-50.213	439.581	17.568	219.294	255.57	0.122	0.166	7.486	17.568	165.794
7/12/2020 1:00	1069203	7.909	-50.154	440.78	17.392	218.196	255.294	0.122	0.166	7.508	17.392	147.71
7/12/2020 2:00	1072803	7.903	-49.748	442.249	17.213	217.125	255.059	0.122	0.166	7.518	17.213	162.069
7/12/2020 3:00	1076403	7.904	-49.803	442.254	17.039	216.033	254.771	0.122	0.166	7.535	17.039	158.638

TABLE E1**Upstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance
Beaverlodge River

Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848 Temperature (C)	Sensor: Turb SN#: 737648 Turbidity (NTU)
Seconds	pH (pH)	pH(mV) (mV)	Potential (ORP)									
7/12/2020 4:00	1080003	7.907	-49.915	442.483	16.886	215.106	254.555	0.122	0.165	7.557	16.886	163.106
7/12/2020 5:00	1083603	7.907	-49.937	442.471	16.767	214.46	254.474	0.122	0.165	7.594	16.767	167.634
7/12/2020 6:00	1087203	7.908	-49.963	443.279	16.663	213.882	254.388	0.122	0.165	7.599	16.663	165.532
7/12/2020 7:00	1090803	7.91	-50.08	442.344	16.571	213.713	254.722	0.122	0.166	7.635	16.571	171.417
7/12/2020 8:00	1094403	7.899	-49.424	442.633	16.498	213.379	254.746	0.122	0.166	7.646	16.498	173.889
7/12/2020 9:00	1098003	7.917	-50.485	440.923	16.502	213.299	254.628	0.122	0.166	7.667	16.502	180.41
7/12/2020 10:00	1101603	7.922	-50.778	439.24	16.57	213.811	254.842	0.122	0.166	7.708	16.57	177.797
7/12/2020 11:00	1105203	7.921	-50.755	438.115	16.703	214.395	254.769	0.122	0.166	7.746	16.703	180.619
7/12/2020 12:00	1108803	7.925	-50.991	436.138	16.858	215.172	254.798	0.122	0.166	7.745	16.858	175.899
7/12/2020 13:00	1112403	7.931	-51.341	434.901	16.983	215.84	254.865	0.122	0.166	7.767	16.983	176.127
7/12/2020 14:00	1116003	7.936	-51.706	433.604	17.1	216.552	255.036	0.122	0.166	7.763	17.1	171.272
7/12/2020 15:00	1119603	7.935	-51.632	433.108	17.211	217.095	255.037	0.122	0.166	7.791	17.211	174.956
7/12/2020 16:00	1123203	7.929	-51.291	432.331	17.319	217.683	255.108	0.122	0.166	7.781	17.319	181.502
7/12/2020 17:00	1126803	7.94	-52.011	431.608	17.472	218.41	255.088	0.122	0.166	7.781	17.472	180.349
7/12/2020 18:00	1130403	7.937	-51.799	431.544	17.551	218.844	255.143	0.122	0.166	7.776	17.551	164.188
7/12/2020 19:00	1134003	7.945	-52.288	431.189	17.544	218.755	255.081	0.122	0.166	7.785	17.544	184.74
7/12/2020 20:00	1137603	7.948	-52.493	431.089	17.529	218.913	255.347	0.122	0.166	7.777	17.529	181.453
7/12/2020 21:00	1141203	7.952	-52.671	431.806	17.445	218.563	255.418	0.122	0.166	7.757	17.445	183.969
7/12/2020 22:00	1144803	7.945	-52.278	432.92	17.337	218.193	255.604	0.122	0.166	7.768	17.337	184.364
7/12/2020 23:00	1148403	7.935	-51.658	434.674	17.146	217.302	255.653	0.122	0.166	7.76	17.146	176.105
7/13/2020 0:00	1152003	7.942	-52.001	435.158	16.945	216.359	255.7	0.122	0.166	7.745	16.945	184.921
7/13/2020 1:00	1155603	7.933	-51.422	436.82	16.762	215.69	255.965	0.122	0.166	7.793	16.762	160.066
7/13/2020 2:00	1159203	7.933	-51.415	437.228	16.598	214.933	256.016	0.122	0.166	7.804	16.598	165.393
7/13/2020 3:00	1162803	7.942	-51.92	437.745	16.44	214.192	256.053	0.122	0.166	7.811	16.44	181.723
7/13/2020 4:00	1166403	7.944	-52.025	438.387	16.317	213.652	256.13	0.122	0.166	7.831	16.317	174.157
7/13/2020 5:00	1170003	7.942	-51.88	439.1	16.197	213.104	256.178	0.122	0.167	7.816	16.197	181.544
7/13/2020 6:00	1173603	7.948	-52.211	439.049	16.107	212.599	256.097	0.122	0.166	7.867	16.107	156.659
7/13/2020 7:00	1177203	7.946	-52.085	439.278	16.038	212.249	256.086	0.122	0.166	7.912	16.038	181.288
7/13/2020 8:00	1180803	7.949	-52.233	439.269	15.978	211.874	255.983	0.122	0.166	7.936	15.978	182.013
7/13/2020 9:00	1184403	7.946	-52.08	438.976	15.949	211.843	256.118	0.122	0.166	7.96	15.949	160.996
7/13/2020 10:00	1188003	7.959	-52.845	437.545	16.016	212.12	256.06	0.122	0.166	7.977	16.016	178.549
7/13/2020 11:00	1191603	7.965	-53.194	435.673	16.159	212.897	256.151	0.122	0.166	7.993	16.159	183.014
7/13/2020 12:00	1195203	7.956	-52.717	434.91	16.362	213.813	256.057	0.122	0.166	8.026	16.362	181.859
7/13/2020 13:00	1198803	7.974	-53.844	432.476	16.599	215.236	256.376	0.123	0.167	8.017	16.599	185.406
7/13/2020 14:00	1202403	7.969	-53.594	431.678	16.839	216.577	256.568	0.123	0.167	8.004	16.839	161.119
7/13/2020 15:00	1206003	7.969	-53.616	431.089	17.066	217.965	256.893	0.123	0.167	8.002	17.066	184.13
7/13/2020 16:00	1209603	7.983	-54.469	429.458	17.288	219.244	257.119	0.123	0.167	7.996	17.288	190.617
7/13/2020 17:00	1213203	7.966	-53.499	430.752	17.412	219.905	257.178	0.123	0.167	8.005	17.412	182.967
7/13/2020 18:00	1216803	7.979	-54.278	430.586	17.45	220.1	257.19	0.123	0.167	7.977	17.45	191.742
7/13/2020 19:00	1220403	7.969	-53.654	432.059	17.388	219.672	257.045	0.123	0.167	7.961	17.388	196.565
7/13/2020 20:00	1224003	7.977	-54.128	432.202	17.326	219.333	257.006	0.123	0.167	7.976	17.326	194.363
7/13/2020 21:00	1227603	7.969	-53.661	433.206	17.213	218.805	257.032	0.123	0.167	7.987	17.213	196.149
7/13/2020 22:00	1231203	7.983	-54.467	434.157	17.088	218.267	257.122	0.123	0.167	7.959	17.088	199.404
7/13/2020 23:00	1234803	7.978	-54.121	435.07	16.957	217.695	257.205	0.123	0.167	7.967	16.957	190.959
7/14/2020 0:00	1238403	7.976	-53.98	436.265	16.831	217.097	257.23	0.123	0.167	7.949	16.831	186.895
7/14/2020 1:00	1242003	7.982	-54.317	436.541	16.717	216.536	257.234	0.123	0.167	7.959	16.717	200.306
7/14/2020 2:00	1245603	7.971	-53.668	438.503	16.559	215.749	257.219	0.123	0.167	7.968	16.559	197.415
7/14/2020 3:00	1249203	7.977	-53.985	438.904	16.405	215.068	257.307	0.123	0.167	7.97	16.405	203.231
7/14/2020 4:00	1252803	7.975	-53.83	439.953	16.262	214.159	257.065	0.123	0.167	8.003	16.262	167.26
7/14/2020 5:00	1256403	7.973	-53.661	441.052	16.11	213.336	256.97	0.123	0.167	8.027	16.11	206.786
7/14/2020 6:00	1260003	7.984	-54.278	441.243	15.973	212.566	256.85	0.123	0.167	8.026	15.973	201.307
7/14/2020 7:00	1263603	7.982	-54.178	441.422	15.862	211.981	256.801	0.123	0.167	8.082	15.862	200.902
7/14/2020 8:00	1267203	7.984	-54.288	441.395	15.793	211.877	257.083	0.123	0.167	8.101	15.793	181.596
7/14/2020 9:00	1270803	7.984	-54.278	440.559	15.771	211.828	257.158	0.123	0.167	8.137	15.771	197.078
7/14/2020 10:00	1274403	7.985	-54.297	440.695	15.818	212.049	257.144	0.123	0.167	8.164	15.818	189.07
7/14/2020 11:00	1278003	7.991	-54.677	439.939	15.929	211.949	256.369	0.123	0.167	8.178	15.929	199.68
7/14/2020 12:00	1281603	7.998	-55.125	438.654	16.164	213.815	257.23	0.123	0.167	8.199	16.164	201.8
7/14/2020 13:00	1285203	8.002	-55.485	436.277	16.607	216.206	257.482	0.123	0.167	8.182	16.607	190.464
7/14/2020 14:00	1288803	7.996	-55.182	434.527	17.001	218.157	257.5	0.123	0.167	8.176	17.001	200.33
7/14/2020 15:00	1292403	7.981	-54.395	433.666	17.322	219.826	257.602	0.123	0.167	8.193	17.322	195.129

TABLE E1**Upstream Water Quality Sonde Data**Mighty Peace Watershed Alliance
Beaverlodge River

Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848	Sensor: Turb SN#: 737648
Date and Time	Seconds	pH (pH)	pH(mV) (mV)									Turbidity (NTU)
7/14/2020 16:00	1296003	8.007	-55.945	431.186	17.555	221.013	257.65	0.123	0.167	8.147	17.555	200.07
7/14/2020 17:00	1299603	8.007	-56.019	428.933	17.953	223.092	257.79	0.123	0.168	8.135	17.953	165.642
7/14/2020 18:00	1303203	8.007	-56.047	429.1	18.153	224.165	257.892	0.123	0.168	8.087	18.153	192.724
7/14/2020 19:00	1306803	8.006	-56.009	428.974	18.204	224.429	257.905	0.123	0.168	8.044	18.204	198.447
7/14/2020 20:00	1310403	8.004	-55.897	430.817	18.085	223.746	257.793	0.123	0.168	8.018	18.085	190.827
7/14/2020 21:00	1314003	8.009	-56.145	432.116	17.945	222.838	257.544	0.123	0.167	7.994	17.945	193.973
7/14/2020 22:00	1317603	8.007	-55.978	433.561	17.764	221.805	257.375	0.123	0.167	8.012	17.764	198.675
7/14/2020 23:00	1321203	8.009	-56.052	435.685	17.538	220.476	257.121	0.123	0.167	8.018	17.538	195.975
7/15/2020 0:00	1324803	8.006	-55.876	437.233	17.346	219.326	256.878	0.123	0.167	8.014	17.346	175.516
7/15/2020 1:00	1328403	7.996	-55.223	439.169	17.196	218.438	256.702	0.123	0.167	8.011	17.196	186.453
7/15/2020 2:00	1332003	7.992	-54.975	440.969	17.064	217.777	256.683	0.123	0.167	8.023	17.064	197.033
7/15/2020 3:00	1335603	8.001	-55.492	441.636	16.931	217.58	257.223	0.123	0.167	8.018	16.931	199.178
7/15/2020 4:00	1339203	7.992	-54.901	443.141	16.825	217.7	257.984	0.123	0.168	8.018	16.825	190.152
7/15/2020 5:00	1342803	7.989	-54.739	443.377	16.714	217.303	258.158	0.124	0.168	8.038	16.714	193.638
7/15/2020 6:00	1346403	7.995	-55.06	443.718	16.605	216.856	258.27	0.124	0.168	8.047	16.605	188.882
7/15/2020 7:00	1350003	8.003	-55.485	443.546	16.465	216.186	258.295	0.124	0.168	8.071	16.465	179.607
7/15/2020 8:00	1353603	8.005	-55.602	443.649	16.345	215.645	258.355	0.124	0.168	8.099	16.345	189.468
7/15/2020 9:00	1357203	8	-55.299	444.264	16.294	215.463	258.439	0.124	0.168	8.134	16.294	193.827
7/15/2020 10:00	1360803	8.001	-55.349	443.992	16.328	215.69	258.509	0.124	0.168	8.164	16.328	192
7/15/2020 11:00	1364403	8.012	-56.005	443.033	16.477	216.506	258.603	0.124	0.168	8.176	16.477	195.278
7/15/2020 12:00	1368003	8.018	-56.458	441.481	16.747	218.086	258.895	0.124	0.168	8.197	16.747	199.72
7/15/2020 13:00	1371603	8.018	-56.524	440.044	17.174	220.552	259.312	0.124	0.169	8.209	17.174	198.81
7/15/2020 14:00	1375204	8.004	-55.792	440.113	17.537	222.67	259.688	0.124	0.169	8.19	17.537	199.454
7/15/2020 15:00	1378804	8.019	-56.674	439.276	17.747	223.906	259.912	0.124	0.169	8.157	17.747	171.531
7/15/2020 16:00	1382404	8.018	-56.715	438.368	18.066	225.81	260.278	0.125	0.169	8.12	18.066	199.893
7/15/2020 17:00	1386004	8.022	-57.006	436.701	18.357	227.26	260.287	0.125	0.169	8.092	18.357	205.11
7/15/2020 18:00	1389604	8.019	-56.863	436.219	18.516	227.357	259.493	0.124	0.169	8.06	18.516	205.595
7/15/2020 19:00	1393204	8.03	-57.511	435.795	18.516	227.49	259.648	0.124	0.169	8.019	18.516	181.803
7/15/2020 20:00	1396804	8.029	-57.435	436.343	18.459	226.82	259.202	0.124	0.168	7.996	18.459	191.717
7/15/2020 21:00	1400404	8.027	-57.297	437.705	18.38	225.719	258.394	0.124	0.168	7.975	18.38	189.658
7/15/2020 22:00	1404004	8.022	-56.97	439.259	18.26	225.503	258.822	0.124	0.168	7.945	18.26	187.815
7/15/2020 23:00	1407604	8.019	-56.736	440.656	18.127	224.695	258.646	0.124	0.168	7.94	18.127	189.639
7/16/2020 0:00	1411204	8.015	-56.515	442.292	17.974	223.769	258.45	0.124	0.168	7.93	17.974	189.342
7/16/2020 1:00	1414804	8.009	-56.126	444.164	17.809	222.774	258.244	0.124	0.168	7.906	17.809	193.811
7/16/2020 2:00	1418404	8	-55.547	446.083	17.644	221.928	258.206	0.124	0.168	7.934	17.644	189.966
7/16/2020 3:00	1422004	7.999	-55.48	446.886	17.532	221.331	258.155	0.124	0.168	7.919	17.532	195.004
7/16/2020 4:00	1425604	7.995	-55.227	447.12	17.454	221.934	259.31	0.124	0.169	7.895	17.454	189.243
7/16/2020 5:00	1429204	8.006	-55.85	446.212	17.392	222.418	260.233	0.125	0.169	7.874	17.392	188.305
7/16/2020 6:00	1432804	8.004	-55.721	446.347	17.318	222.163	260.366	0.125	0.169	7.909	17.318	182.278
7/16/2020 7:00	1436404	7.994	-55.091	447.392	17.225	221.866	260.557	0.125	0.169	7.904	17.225	172.668
7/16/2020 8:00	1440004	8.005	-55.757	442.476	17.135	221.565	260.731	0.125	0.169	7.889	17.135	179.567
7/16/2020 9:00	1443604	8.014	-56.241	440.196	17.087	221.351	260.76	0.125	0.169	7.624	17.087	181.335
7/16/2020 10:00	1447204	7.993	-55.051	438.499	17.124	221.567	260.802	0.125	0.17	7.962	17.124	173.692
7/16/2020 11:00	1450804	8.022	-56.765	435.464	17.201	222.01	260.87	0.125	0.17	8.01	17.201	177.417
7/16/2020 12:00	1454404	8.024	-56.877	433.418	17.327	222.761	261.015	0.125	0.17	8.016	17.327	177.979
7/16/2020 13:00	1458004	8.032	-57.402	430.447	17.552	223.999	261.15	0.125	0.17	8.059	17.552	165.108
7/16/2020 14:00	1461604	8.023	-56.944	429.677	17.77	225.268	261.358	0.125	0.17	8.03	17.77	169.012
7/16/2020 15:00	1465204	8.036	-57.719	427.286	18.018	226.35	261.179	0.125	0.17	7.919	18.018	179.722
7/16/2020 16:00	1468804	8.04	-58.072	423.702	18.395	228.314	261.274	0.125	0.17	8.017	18.395	179.891
7/16/2020 17:00	1472404	8.049	-58.668	419.792	18.787	230.419	261.446	0.125	0.17	7.992	18.787	179.696
7/16/2020 18:00	1476004	8.042	-58.291	418.34	19.068	231.932	261.57	0.125	0.17	7.965	19.068	179.349
7/16/2020 19:00	1479604	8.053	-58.975	416.378	19.194	232.6	261.611	0.125	0.17	7.928	19.194	184.835
7/16/2020 20:00	1483204	8.038	-58.1	417.265	19.177	232.552	261.651	0.125	0.17	7.906	19.177	163.345
7/16/2020 21:00	1486804	8.031	-57.647	418.553	19.053	231.881	261.593	0.125	0.17	7.862	19.053	181.628
7/16/2020 22:00	1490404	8.034	-57.824	420.324	18.887	230.86	261.376	0.125	0.17	7.817	18.887	180.798
7/16/2020 23:00	1494004	8.039	-58.069	421.697	18.766	230.274	261.397	0.125	0.17	7.828	18.766	178.8
7/17/2020 0:00	1497604	8.04	-58.1	423.695	18.533	228.92	261.179	0.125	0.17	7.82	18.533	176.799
7/17/2020 1:00	1501204	8.038	-57.933	425.495	18.341	227.72	260.902	0.125	0.17	7.813	18.341	174.887
7/17/2020 2:00	1504804	8.032	-57.564	427.317	18.174	226.602	260.576	0.125	0.169	7.809	18.174	161.185
7/17/2020 3:00	1508404	8.036	-57.728	428.995	17.984	225.482	260.372	0.125	0.169	7.842	17.984	176.032

TABLE E1**Upstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance
Beaverlodge River

Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848	Sensor: Turb SN#: 737648
Date and Time	Seconds	pH (pH)	pH(mV) (mV)									Turbidity (NTU)
7/17/2020 4:00	1512004	8.033	-57.504	431.048	17.809	224.58	260.337	0.125	0.169	7.834	17.809	168.155
7/17/2020 5:00	1515604	8.027	-57.17	432.123	17.69	224.489	260.915	0.125	0.17	7.817	17.69	169.671
7/17/2020 6:00	1519204	8.019	-56.643	432.438	17.596	224.41	261.372	0.125	0.17	7.859	17.596	176.547
7/17/2020 7:00	1522804	8.024	-56.915	432.972	17.504	223.964	261.387	0.125	0.17	7.871	17.504	161.865
7/17/2020 8:00	1526404	8.02	-56.66	433.435	17.418	223.418	261.254	0.125	0.17	7.896	17.418	159.412
7/17/2020 9:00	1530004	8.035	-57.571	433.189	17.377	223.068	261.081	0.125	0.17	7.899	17.377	159.607
7/17/2020 10:00	1533604	8.025	-56.992	433.788	17.405	223.203	261.079	0.125	0.17	7.957	17.405	155.838
7/17/2020 11:00	1537204	8.037	-57.695	432.338	17.485	223.658	261.139	0.125	0.17	7.956	17.485	154.469
7/17/2020 12:00	1540804	8.027	-57.123	432.216	17.546	223.606	260.728	0.125	0.169	8.019	17.546	164.978
7/17/2020 13:00	1544404	8.042	-58.01	431.31	17.523	223.477	260.708	0.125	0.169	7.739	17.523	161.365
7/17/2020 14:00	1548004	8.047	-58.284	431.062	17.498	223.079	260.389	0.125	0.169	7.931	17.498	168.721
7/17/2020 15:00	1551604	8.042	-58.069	430.426	17.712	224.321	260.595	0.125	0.169	8.097	17.712	179.053
7/17/2020 16:00	1555204	8.047	-58.413	428.809	18.03	226.408	261.177	0.125	0.17	8.118	18.03	165.105
7/17/2020 17:00	1558804	8.052	-58.751	427.038	18.286	228.048	261.594	0.125	0.17	8.144	18.286	186.819
7/17/2020 18:00	1562404	8.056	-59.021	425.722	18.54	229.921	262.283	0.126	0.17	8.12	18.54	188.856
7/17/2020 19:00	1566004	8.062	-59.431	425.219	18.629	229.833	261.673	0.125	0.17	8.103	18.629	193.185
7/17/2020 20:00	1569604	8.066	-59.621	427.257	18.633	229.839	261.662	0.125	0.17	8.052	18.633	196.74
7/17/2020 21:00	1573204	8.056	-59.056	427.107	18.69	230.446	262.023	0.126	0.17	8.043	18.69	172.343
7/17/2020 22:00	1576804	8.059	-59.257	428.132	18.655	230.374	262.14	0.126	0.17	8.024	18.655	192.304
7/17/2020 23:00	1580404	8.048	-58.529	430.159	18.514	229.721	262.204	0.126	0.17	8.009	18.514	185.4
7/18/2020 0:00	1584004	8.048	-58.539	431.289	18.361	228.93	262.173	0.126	0.17	7.993	18.361	180.299
7/18/2020 1:00	1587604	8.046	-58.355	432.264	18.198	228.086	262.145	0.126	0.17	7.976	18.198	187.804
7/18/2020 2:00	1591204	8.044	-58.215	434.894	18.027	227.272	262.189	0.126	0.17	7.945	18.027	196.055
7/18/2020 3:00	1594804	8.041	-58	436.122	17.857	226.632	262.439	0.126	0.171	7.992	17.857	186.554
7/18/2020 4:00	1598404	8.025	-57.008	436.827	17.697	225.871	262.482	0.126	0.171	8.014	17.697	181.86
7/18/2020 5:00	1602004	8.035	-57.611	436.05	17.526	225.006	262.474	0.126	0.171	8.015	17.526	189.81
7/18/2020 6:00	1605604	8.044	-58.084	433.449	17.358	224.14	262.446	0.126	0.171	8.024	17.358	190.619
7/18/2020 7:00	1609204	8.033	-57.385	432.543	17.189	222.819	261.887	0.125	0.17	8.067	17.189	189.798
7/18/2020 8:00	1612804	8.034	-57.411	431.289	17.053	222.007	261.735	0.125	0.17	8.068	17.053	194.194
7/18/2020 9:00	1616404	8.031	-57.251	431.554	16.98	222.001	262.158	0.125	0.17	8.095	16.98	199.667
7/18/2020 10:00	1620004	8.036	-57.549	430.323	17.026	220.609	260.247	0.125	0.169	8.15	17.026	184.824
7/18/2020 11:00	1623604	8.051	-58.448	418.302	17.203	226.739	266.412	0.128	0.173	8.186	17.203	194.699
7/18/2020 12:00	1627204	8.054	-58.672	412.399	17.47	225.601	263.497	0.126	0.171	8.218	17.47	184.517
7/18/2020 13:00	1630804	8.056	-58.889	404.915	17.793	227.319	263.606	0.126	0.171	8.248	17.793	205.907
7/18/2020 14:00	1634404	8.062	-59.304	402.347	18.159	228.982	263.4	0.126	0.171	8.25	18.159	189.722
7/18/2020 15:00	1638004	8.071	-59.927	399.403	18.442	230.454	263.452	0.126	0.171	8.27	18.442	185.01
7/18/2020 16:00	1641604	8.071	-59.941	397.92	18.637	231.329	263.334	0.126	0.171	8.262	18.637	170.688
7/18/2020 17:00	1645204	8.086	-60.859	395.292	18.771	231.742	263.034	0.126	0.171	8.244	18.771	185.916
7/18/2020 18:00	1648804	8.08	-60.518	388.083	18.982	231.963	262.09	0.126	0.17	8.244	18.982	144.532
7/18/2020 19:00	1652404	8.087	-60.964	387.534	19.055	234.894	264.982	0.127	0.172	8.204	19.055	144.33
7/18/2020 20:00	1656004	8.091	-61.271	387.918	19.224	234.347	263.404	0.126	0.171	8.172	19.224	133.548
7/18/2020 21:00	1659604	8.083	-60.735	388.824	19.186	234.08	263.321	0.126	0.171	8.125	19.186	136.74
7/18/2020 22:00	1663204	8.081	-60.632	389.561	19.022	233.132	263.182	0.126	0.171	8.115	19.022	193.185
7/18/2020 23:00	1666804	8.081	-60.596	391.115	18.821	232.083	263.141	0.126	0.171	8.071	18.821	149.682
7/19/2020 0:00	1670404	8.065	-59.595	394.999	18.596	230.877	263.054	0.126	0.171	8.061	18.596	125.783
7/19/2020 1:00	1674004	8.069	-59.795	396.361	18.378	229.736	263.003	0.126	0.171	8.041	18.378	161.386
7/19/2020 2:00	1677604	8.057	-59.025	397.984	18.16	228.738	263.113	0.126	0.171	8.048	18.16	150.301
7/19/2020 3:00	1681204	8.049	-58.525	399.043	18.011	228.073	263.21	0.126	0.171	8.043	18.011	157.661
7/19/2020 4:00	1684804	8.062	-59.23	399.169	17.892	227.575	263.324	0.126	0.171	8.035	17.892	144.075
7/19/2020 5:00	1688404	8.055	-58.815	400.159	17.788	226.863	263.104	0.126	0.171	8.046	17.788	154.481
7/19/2020 6:00	1692004	8.047	-58.336	401.806	17.681	226.542	263.36	0.126	0.171	8.045	17.681	158.547
7/19/2020 7:00	1695604	8.052	-58.579	402.276	17.56	226.124	263.582	0.126	0.171	8.062	17.56	161.051
7/19/2020 8:00	1699204	8.039	-57.838	403.623	17.458	225.491	263.441	0.126	0.171	8.059	17.458	162.522
7/19/2020 9:00	1702804	8.036	-57.64	403.146	17.377	225.072	263.428	0.126	0.171	8.106	17.377	142.297
7/19/2020 10:00	1706404	8.042	-57.96	403.322	17.353	224.94	263.416	0.126	0.171	8.105	17.353	232.481
7/19/2020 11:00	1710004	8.058	-58.935	402.679	17.411	225.157	263.323	0.126	0.171	8.187	17.411	135.435
7/19/2020 12:00	1713604	8.05	-58.47	410.127	17.469	226.63	264.707	0.127	0.172	8.166	17.469	131.306
7/19/2020 13:00	1717204	7.58	-30.785	417.468	17.555	233.466	272.167	0.13	0.177	7.413	17.555	116.814
7/19/2020 14:00	1720804	7.614	-32.83	397.448	17.667	226.215	263.061	0.126	0.171	8.231	17.667	107.913
7/19/2020 15:00	1724404	7.672	-36.228	408.828	17.891	226.4	261.973	0.125	0.17	8.317	17.891	129.035

TABLE E1**Upstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance
Beaverlodge River

Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848	Sensor: Turb SN#: 737648
Date and Time	Seconds	pH (pH)	pH(mV) (mV)									Turbidity (NTU)
7/19/2020 16:00	1728004	7.684	-37.012	419.082	18.217	227.883	261.804	0.125	0.17	8.385	18.217	137.045
7/19/2020 17:00	1731604	7.662	-35.77	427.264	18.55	229.099	261.288	0.125	0.17	8.4	18.55	128.699
7/19/2020 18:00	1735204	7.665	-35.98	434.472	18.902	231.248	261.734	0.125	0.17	8.406	18.902	139.572
7/19/2020 19:00	1738804	7.67	-36.311	433.516	19.103	233.997	263.701	0.126	0.171	8.373	19.103	147.037
7/19/2020 20:00	1742404	7.662	-35.851	423.819	19.211	234.267	263.389	0.126	0.171	8.319	19.211	154.997
7/19/2020 21:00	1746004	7.706	-38.431	420.839	19.222	234.232	263.29	0.126	0.171	8.249	19.222	129.997
7/19/2020 22:00	1749604	7.715	-38.943	417.189	19.201	234.01	263.156	0.126	0.171	8.208	19.201	119.483
7/19/2020 23:00	1753204	7.693	-37.68	415.193	19.143	233.291	262.677	0.126	0.171	8.144	19.143	133.712
7/20/2020 0:00	1756804	7.747	-40.855	412.573	19.055	232.642	262.442	0.126	0.171	8.079	19.055	161.015
7/20/2020 1:00	1760404	7.802	-44.045	411.288	18.904	231.467	261.971	0.126	0.17	8.047	18.904	145.708
7/20/2020 2:00	1764004	7.834	-45.946	406.913	18.698	229.952	261.418	0.125	0.17	8.047	18.698	174.69
7/20/2020 3:00	1767604	7.855	-47.147	406.152	18.506	229.597	262.106	0.126	0.17	8.039	18.506	136.697
7/20/2020 4:00	1771204	7.824	-45.302	399.274	18.28	228.612	262.277	0.126	0.17	8.036	18.28	160.063
7/20/2020 5:00	1774804	7.877	-48.401	407.504	18.067	228.793	263.713	0.126	0.171	8.045	18.067	149.111
7/20/2020 6:00	1778404	7.889	-49.047	411.433	17.834	228.249	264.444	0.127	0.172	8.074	17.834	146.079
7/20/2020 7:00	1782004	7.903	-49.827	412.864	17.639	226.682	263.767	0.126	0.171	8.104	17.639	147.311
7/20/2020 8:00	1785604	7.92	-50.819	412.373	17.488	225.497	263.27	0.126	0.171	8.123	17.488	154.567
7/20/2020 9:00	1789204	7.922	-50.936	414.063	17.395	224.531	262.685	0.126	0.171	8.16	17.395	141.287
7/20/2020 10:00	1792804	7.938	-51.861	412.757	17.436	224.746	262.7	0.126	0.171	8.197	17.436	158.872
7/20/2020 11:00	1796404	7.943	-52.183	411.245	17.649	225.69	262.552	0.126	0.171	8.249	17.649	136.335
7/20/2020 12:00	1800004	7.958	-53.165	404.615	17.994	227.797	262.988	0.126	0.171	8.271	17.994	156.041
7/20/2020 13:00	1803604	7.963	-53.482	401.215	18.387	230.384	263.691	0.126	0.171	8.308	18.387	159.009
7/20/2020 14:00	1807204	7.963	-53.551	395.662	18.755	232.484	263.968	0.126	0.172	8.342	18.755	146.902
7/20/2020 15:00	1810804	7.973	-54.202	392.591	19.069	234.039	263.938	0.126	0.172	8.352	19.069	163.588
7/20/2020 16:00	1814404	7.98	-54.667	389.752	19.329	235.337	263.922	0.126	0.172	8.356	19.329	163.293
7/20/2020 17:00	1818004	7.98	-54.739	388.393	19.649	236.88	263.847	0.126	0.172	8.353	19.649	163.461
7/20/2020 18:00	1821604	7.983	-54.967	386.726	19.908	238.103	263.755	0.126	0.171	8.33	19.908	166.72
7/20/2020 19:00	1825204	7.99	-55.437	385.076	20.063	238.499	263.331	0.126	0.171	8.292	20.063	155.069
7/20/2020 20:00	1828804	8.001	-56.064	387.83	20.052	238.113	262.966	0.126	0.171	8.214	20.052	138.52
7/20/2020 21:00	1832404	7.998	-55.889	390.534	20.075	238.281	263.023	0.126	0.171	8.161	20.075	146.828
7/20/2020 22:00	1836004	8.007	-56.415	392.486	20.009	238.617	263.758	0.126	0.171	8.069	20.009	160.777
7/20/2020 23:00	1839604	8.022	-57.259	391.819	19.879	240.674	266.764	0.128	0.173	8.012	19.879	152.6
7/21/2020 0:00	1843204	8.034	-58.002	393.795	19.796	244.01	270.938	0.13	0.176	7.949	19.796	173.698
7/21/2020 1:00	1846804	8.042	-58.448	396.685	19.701	244.797	272.366	0.131	0.177	7.899	19.701	172.42
7/21/2020 2:00	1850404	8.059	-59.433	398.587	19.57	243.461	271.63	0.13	0.177	7.872	19.57	163.693
7/21/2020 3:00	1854004	8.054	-59.106	399.76	19.423	241.213	269.969	0.129	0.175	7.833	19.423	163.695
7/21/2020 4:00	1857604	8.046	-58.563	399.768	19.284	239.49	268.838	0.129	0.175	7.857	19.284	141.138
7/21/2020 5:00	1861204	8.037	-58.014	399.894	19.167	238.11	267.967	0.128	0.174	7.854	19.167	128.304
7/21/2020 6:00	1864804	8.041	-58.267	400.08	19.062	237.337	267.698	0.128	0.174	7.844	19.062	153.686
7/21/2020 7:00	1868404	8.036	-57.94	401.262	18.972	236.163	266.889	0.128	0.173	7.834	18.972	149.161
7/21/2020 8:00	1872004	8.034	-57.788	401.57	18.91	239.633	271.175	0.13	0.176	7.842	18.91	137.028
7/21/2020 9:00	1875604	8.051	-58.825	400.149	18.916	257.467	291.318	0.14	0.189	7.835	18.916	127.313
7/21/2020 10:00	1879204	8.079	-60.456	397.302	18.956	275.232	311.154	0.15	0.202	7.863	18.956	121.405
7/21/2020 11:00	1882804	8.076	-60.332	395.767	19.094	282.521	318.441	0.153	0.207	7.914	19.094	108.265
7/21/2020 12:00	1886404	8.082	-60.694	394.699	19.21	283.233	318.448	0.153	0.207	7.952	19.21	87.167
7/21/2020 13:00	1890004	8.105	-62.089	390.493	19.408	290.409	325.136	0.157	0.211	7.998	19.408	106.614
7/21/2020 14:00	1893604	8.114	-62.692	388.502	19.508	287.518	321.214	0.155	0.209	8.028	19.508	104.983
7/21/2020 15:00	1897204	8.108	-62.387	385.451	19.719	288.554	320.926	0.154	0.209	8.073	19.719	86.864
7/21/2020 16:00	1900804	8.136	-64.039	382.098	19.836	289.037	320.662	0.154	0.208	8.056	19.836	175.899
7/21/2020 17:00	1904404	8.135	-64.015	380.878	20.048	290.198	320.513	0.154	0.208	8.078	20.048	138.835
7/21/2020 18:00	1908004	8.145	-64.65	378.815	20.259	291.376	320.391	0.154	0.208	8.091	20.259	43.716
7/21/2020 19:00	1911604	8.153	-65.157	377.871	20.41	292.654	320.775	0.154	0.209	8.063	20.41	44.325
7/21/2020 20:00	1915204	8.137	-64.261	379.175	20.485	292.979	320.628	0.154	0.208	8.038	20.485	36.406
7/21/2020 21:00	1918804	8.151	-65.1	378.393	20.499	293.036	320.595	0.154	0.208	8.003	20.499	36.956
7/21/2020 22:00	1922404	8.149	-64.931	378.665	20.464	292.771	320.542	0.154	0.208	7.936	20.464	36.794
7/21/2020 23:00	1926004	8.149	-64.898	380.294	20.321	291.914	320.561	0.154	0.208	7.858	20.321	37.363
7/22/2020 0:00	1929604	8.123	-63.367	383.794	20.178	291.212	320.752	0.154	0.208	7.789	20.178	50.049
7/22/2020 1:00	1933205	8.123	-63.324	383.91	20.042	290.603	321.004	0.155	0.209	7.731	20.042	43.34
7/22/2020 2:00	1936805	8.101	-61.972	387.074	19.852	289.457	321.022	0.155	0.209	7.712	19.852	48.029
7/22/2020 3:00	1940405	8.091	-61.34	389.368	19.641	288.172	321.034	0.155	0.209	7.692	19.641	31.864

TABLE E1**Upstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance
Beaverlodge River

Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848	Sensor: Turb SN#: 737648
Seconds	pH (pH)	pH(mV) (mV)										Turbidity (NTU)
7/22/2020 4:00	1944005	8.09	-61.257	391.745	19.443	286.966	321.039	0.155	0.209	7.685	19.443	37.557
7/22/2020 5:00	1947605	8.092	-61.319	393.059	19.257	285.745	320.949	0.154	0.209	7.677	19.257	38.338
7/22/2020 6:00	1951205	8.083	-60.732	394.274	19.104	284.539	320.65	0.154	0.208	7.685	19.104	41.667
7/22/2020 7:00	1954805	8.071	-59.996	396.556	18.969	283.298	320.179	0.154	0.208	7.688	18.969	41.123
7/22/2020 8:00	1958405	8.072	-60.06	397.808	18.86	282.263	319.763	0.154	0.208	7.711	18.86	44.125
7/22/2020 9:00	1962005	8.073	-60.093	398.177	18.803	281.434	319.215	0.154	0.207	7.728	18.803	34.985
7/22/2020 10:00	1965605	8.082	-60.661	397.639	18.85	281.304	318.745	0.153	0.207	7.795	18.85	36.738
7/22/2020 11:00	1969205	8.093	-61.336	397.295	19.022	281.829	318.158	0.153	0.207	7.871	19.022	37.064
7/22/2020 12:00	1972805	8.105	-62.07	395.602	19.315	283.252	317.753	0.153	0.207	7.933	19.315	36.042
7/22/2020 13:00	1976405	8.116	-62.754	393.495	19.459	283.037	316.536	0.152	0.206	7.991	19.459	39.232
7/22/2020 14:00	1980005	8.13	-63.701	389.969	19.773	284.602	316.169	0.152	0.206	8.045	19.773	35.729
7/22/2020 15:00	1983605	8.124	-63.407	387.441	20.058	285.798	315.589	0.152	0.205	8.048	20.058	39.587
7/22/2020 16:00	1987205	8.14	-64.423	384.218	20.442	287.789	315.232	0.152	0.205	8.096	20.442	43.121
7/22/2020 17:00	1990805	8.149	-65.043	378.393	20.805	290.994	316.343	0.152	0.206	8.133	20.805	42.354
7/22/2020 18:00	1994405	8.162	-65.863	378.463	21.023	293.012	317.099	0.153	0.206	8.13	21.023	42.978
7/22/2020 19:00	1998005	8.175	-66.655	376.817	21.196	294.378	317.442	0.153	0.206	8.118	21.196	41.703
7/22/2020 20:00	2001605	8.166	-66.152	377.099	21.23	294.88	317.763	0.153	0.207	8.074	21.23	32.897
7/22/2020 21:00	2005205	8.169	-66.304	378.231	21.18	295.195	318.432	0.153	0.207	7.986	21.18	29.3
7/22/2020 22:00	2008805	8.166	-66.099	380.148	20.979	294.281	318.764	0.153	0.207	7.893	20.979	28.112
7/22/2020 23:00	2012405	8.156	-65.441	382.959	20.766	292.864	318.633	0.153	0.207	7.805	20.766	26.698
7/23/2020 0:00	2016005	8.142	-64.566	384.077	20.6	291.718	318.482	0.153	0.207	7.746	20.6	28.871
7/23/2020 1:00	2019605	8.13	-63.789	387.038	20.401	290.347	318.308	0.153	0.207	7.686	20.401	22.98
7/23/2020 2:00	2023205	8.116	-62.933	390.021	20.16	288.741	318.154	0.153	0.207	7.662	20.16	23.116
7/23/2020 3:00	2026805	8.101	-61.989	392.901	19.896	287.06	318.067	0.153	0.207	7.649	19.896	37.43
7/23/2020 4:00	2030405	8.092	-61.398	394.623	19.642	285.452	317.993	0.153	0.207	7.653	19.642	24.139
7/23/2020 5:00	2034005	8.09	-61.235	397	19.413	284.039	317.97	0.153	0.207	7.661	19.413	23.822
7/23/2020 6:00	2037605	8.081	-60.642	398.494	19.187	282.754	318.069	0.153	0.207	7.683	19.187	27.372
7/23/2020 7:00	2041205	8.087	-60.961	399.272	19.006	282.01	318.467	0.153	0.207	7.695	19.006	24.136
7/23/2020 8:00	2044805	8.071	-59.969	401.794	18.848	280.807	318.196	0.153	0.207	7.727	18.848	22.724
7/23/2020 9:00	2048405	8.077	-60.294	401.682	18.718	280.29	318.504	0.153	0.207	7.765	18.718	21.894
7/23/2020 10:00	2052005	8.073	-60.05	402.502	18.68	280.287	318.765	0.153	0.207	7.822	18.68	23.516
7/23/2020 11:00	2055605	8.084	-60.749	401.181	18.763	281.829	319.943	0.154	0.208	7.892	18.763	24.617
7/23/2020 12:00	2059205	8.092	-61.231	398.84	18.919	282.14	319.215	0.154	0.207	7.973	18.919	25.725
7/23/2020 13:00	2062805	8.107	-62.187	396.077	19.082	283.314	319.419	0.154	0.208	8.067	19.082	22.081
7/23/2020 14:00	2066405	8.124	-63.19	393.125	19.214	284.243	319.56	0.154	0.208	8.144	19.214	32.693
7/23/2020 15:00	2070005	8.132	-63.715	390.55	19.333	285.093	319.694	0.154	0.208	8.18	19.333	20.907
7/23/2020 16:00	2073605	8.136	-63.982	389.032	19.45	285.9	319.801	0.154	0.208	8.19	19.45	32.858
7/23/2020 17:00	2077205	8.155	-65.117	385.787	19.659	286.74	319.313	0.154	0.208	8.259	19.659	30.808
7/23/2020 18:00	2080805	8.163	-65.649	384.092	19.839	288.216	319.731	0.154	0.208	8.301	19.839	29.148
7/23/2020 19:00	2084405	8.172	-66.223	380.756	19.935	288.729	319.65	0.154	0.208	8.278	19.935	30.883
7/23/2020 20:00	2088005	8.184	-66.929	379.652	20.065	289.688	319.835	0.154	0.208	8.268	20.065	24.263
7/23/2020 21:00	2091605	8.177	-66.524	381.626	19.955	289.24	320.083	0.154	0.208	8.175	19.955	24.28
7/23/2020 22:00	2095205	8.168	-65.913	383.524	19.786	288.217	320.095	0.154	0.208	8.104	19.786	34.113
7/23/2020 23:00	2098805	8.17	-66.025	384.437	19.577	286.871	320.019	0.154	0.208	8.064	19.577	28.062
7/24/2020 0:00	2102405	8.151	-64.843	388.133	19.363	285.584	320.038	0.154	0.208	7.988	19.363	27.214
7/24/2020 1:00	2106005	8.155	-65.022	387.375	19.18	284.543	320.128	0.154	0.208	7.936	19.18	46.39
7/24/2020 2:00	2109605	8.143	-64.266	387.844	19.044	283.773	320.199	0.154	0.208	7.895	19.044	27.971
7/24/2020 3:00	2113205	8.135	-63.767	391.635	18.915	283.009	320.23	0.154	0.208	7.873	18.915	28.153
7/24/2020 4:00	2116805	8.133	-63.667	393.407	18.788	282.377	320.394	0.154	0.208	7.849	18.788	26.449
7/24/2020 5:00	2120405	8.118	-62.716	396.685	18.613	281.618	320.745	0.154	0.208	7.843	18.613	25.227
7/24/2020 6:00	2124005	8.115	-62.482	397.023	18.426	280.299	320.476	0.154	0.208	7.846	18.426	22.845
7/24/2020 7:00	2127605	8.112	-62.253	397.598	18.244	279.29	320.672	0.154	0.208	7.849	18.244	26.43
7/24/2020 8:00	2131205	8.107	-61.92	400.092	18.058	278.508	321.079	0.154	0.209	7.871	18.058	27.814
7/24/2020 9:00	2134805	8.101	-61.567	400.023	17.918	277.962	321.444	0.155	0.209	7.891	17.918	27.772
7/24/2020 10:00	2138405	8.11	-62.079	399.739	17.883	277.95	321.681	0.155	0.209	7.939	17.883	40.113
7/24/2020 11:00	2142005	8.121	-62.785	398.986	18.014	279.048	322.012	0.155	0.209	8.025	18.014	25.46
7/24/2020 12:00	2145605	8.138	-63.818	396.005	18.23	280.711	322.396	0.155	0.21	8.135	18.23	26.129
7/24/2020 13:00	2149205	8.151	-64.678	392.119	18.581	282.991	322.537	0.155	0.21	8.234	18.581	26.835
7/24/2020 14:00	2152805	8.165	-65.527	387.78	18.876	284.996	322.751	0.155	0.21	8.305	18.876	26.249
7/24/2020 15:00	2156405	8.192	-67.194	384.12	19.184	288.139	324.146	0.156	0.211	8.372	19.184	27.622

TABLE E1**Upstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance
Beaverlodge River

Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848	Sensor: Turb SN#: 737648
Seconds	pH (pH)	pH(mV) (mV)	Potential (ORP)									Turbidity (NTU)
7/24/2020 16:00	2160005	8.201	-67.806	381.2	19.462	289.26	323.476	0.156	0.21	8.417	19.462	24.198
7/24/2020 17:00	2163605	8.195	-67.461	381.633	19.548	289.784	323.466	0.156	0.21	8.44	19.548	31.942
7/24/2020 18:00	2167205	8.218	-68.853	379.142	19.681	290.554	323.413	0.156	0.21	8.473	19.681	25.494
7/24/2020 19:00	2170805	8.241	-70.21	376.183	19.624	290.18	323.383	0.156	0.21	8.5	19.624	23.256
7/24/2020 20:00	2174405	8.233	-69.706	375.101	19.523	282.591	315.609	0.152	0.205	8.483	19.523	31.186
7/24/2020 21:00	2178005	8.233	-69.692	375.225	19.434	289.052	323.435	0.156	0.21	8.437	19.434	21.41
7/24/2020 22:00	2181605	8.224	-69.146	377.912	19.297	286.368	321.375	0.155	0.209	8.377	19.297	32.916
7/24/2020 23:00	2185205	8.215	-68.574	380.165	19.032	286.562	323.433	0.156	0.21	8.28	19.032	38.314
7/25/2020 0:00	2188805	8.195	-67.329	382.773	18.827	285.238	323.365	0.156	0.21	8.192	18.827	22.322
7/25/2020 1:00	2192405	8.178	-66.285	385.555	18.722	284.422	323.176	0.156	0.21	8.123	18.722	12.626
7/25/2020 2:00	2196005	8.177	-66.202	387.856	18.543	282.747	322.52	0.155	0.21	8.038	18.543	13.17
7/25/2020 3:00	2199605	8.165	-65.405	389.578	18.346	282.176	323.258	0.156	0.21	8.044	18.346	13.382
7/25/2020 4:00	2203205	8.143	-64.082	392.291	18.182	281.362	323.487	0.156	0.21	8.019	18.182	13.101
7/25/2020 5:00	2206805	8.141	-63.934	393.378	18.035	280.69	323.757	0.156	0.21	8.006	18.035	13.699
7/25/2020 6:00	2210405	8.13	-63.298	395.927	17.902	280.183	324.123	0.156	0.211	8.001	17.902	16.684
7/25/2020 7:00	2214005	8.124	-62.878	397.972	17.744	279.504	324.475	0.156	0.211	8.005	17.744	15.237
7/25/2020 8:00	2217605	8.113	-62.182	399.482	17.566	278.614	324.722	0.156	0.211	8.032	17.566	15.434
7/25/2020 9:00	2221205	8.108	-61.848	401.015	17.423	277.832	324.842	0.156	0.211	8.075	17.423	16.062
7/25/2020 10:00	2224805	8.111	-62.037	401.615	17.329	277.347	324.959	0.156	0.211	8.128	17.329	13.86
7/25/2020 11:00	2228405	8.125	-62.828	401.787	17.313	277.256	324.969	0.156	0.211	8.203	17.313	14.808
7/25/2020 12:00	2232005	8.135	-63.426	401.282	17.388	277.769	325.027	0.156	0.211	8.287	17.388	14.071
7/25/2020 13:00	2235605	8.144	-64.025	399.543	17.583	279.118	325.188	0.156	0.211	8.372	17.583	15.94
7/25/2020 14:00	2239205	8.157	-64.85	396.613	17.971	281.722	325.411	0.157	0.212	8.485	17.971	13.362
7/25/2020 15:00	2242805	8.174	-65.954	392.57	18.41	284.779	325.782	0.157	0.212	8.551	18.41	28.735
7/25/2020 16:00	2246405	8.191	-67.11	389.032	18.88	287.94	326.053	0.157	0.212	8.631	18.88	11.977
7/25/2020 17:00	2250005	8.203	-67.902	385.412	19.324	290.946	326.323	0.157	0.212	8.707	19.324	13.338
7/25/2020 18:00	2253605	8.215	-68.665	382.153	19.594	292.796	326.508	0.157	0.212	8.731	19.594	15.568
7/25/2020 19:00	2257205	8.243	-70.369	379.965	19.699	293.651	326.734	0.157	0.212	8.723	19.699	11.633
7/25/2020 20:00	2260805	8.243	-70.369	378.262	19.688	294.122	327.336	0.158	0.213	8.685	19.688	12.816
7/25/2020 21:00	2264405	8.239	-70.074	376.767	19.531	292.734	326.881	0.157	0.212	8.616	19.531	10.885
7/25/2020 22:00	2268005	8.244	-70.331	376.701	19.341	291.379	326.688	0.157	0.212	8.514	19.341	13.697
7/25/2020 23:00	2271605	8.222	-69.005	377.471	19.142	290.118	326.665	0.157	0.212	8.454	19.142	11.593
7/26/2020 0:00	2275205	8.226	-69.18	379.478	18.942	288.8	326.59	0.157	0.212	8.351	18.942	11.164
7/26/2020 1:00	2278805	8.201	-67.642	383.198	18.719	287.359	326.534	0.157	0.212	8.239	18.719	11.167
7/26/2020 2:00	2282405	8.195	-67.267	386.025	18.528	286.175	326.538	0.157	0.212	8.199	18.528	15.205
7/26/2020 3:00	2286005	8.182	-66.426	388.266	18.325	284.985	326.63	0.157	0.212	8.157	18.325	12.937
7/26/2020 4:00	2289605	8.163	-65.265	390.422	18.144	284.018	326.812	0.157	0.212	8.131	18.144	23.878
7/26/2020 5:00	2293205	8.155	-64.764	391.905	17.958	279.818	323.303	0.156	0.21	8.113	17.958	22.09
7/26/2020 6:00	2296805	8.154	-64.621	393.96	17.729	281.878	327.337	0.158	0.213	8.113	17.729	15.892
7/26/2020 7:00	2300405	8.14	-63.772	395.76	17.5	280.688	327.623	0.158	0.213	8.123	17.5	15.011
7/26/2020 8:00	2304005	8.144	-63.961	395.862	17.29	279.389	327.638	0.158	0.213	8.14	17.29	18.26
7/26/2020 9:00	2307605	8.136	-63.436	397.305	17.162	278.781	327.866	0.158	0.213	8.162	17.162	12.79
7/26/2020 10:00	2311205	8.131	-63.157	397.233	17.151	279.041	328.253	0.158	0.213	8.221	17.151	13.512
7/26/2020 11:00	2314805	8.144	-63.984	396.513	17.303	280.093	328.367	0.158	0.213	8.293	17.303	10.982
7/26/2020 12:00	2318405	8.149	-64.311	394.566	17.618	282.531	328.907	0.158	0.214	8.423	17.618	12.737
7/26/2020 13:00	2322005	8.169	-65.596	391.223	17.964	284.438	328.598	0.158	0.214	8.535	17.964	12.086
7/26/2020 14:00	2325605	8.191	-66.977	386.748	18.453	288.888	330.175	0.159	0.215	8.662	18.453	12.666
7/26/2020 15:00	2329205	8.206	-68.023	382.37	18.986	288.64	326.098	0.157	0.212	8.769	18.986	11.871
7/26/2020 16:00	2332805	8.23	-69.518	376.844	19.481	295.646	330.487	0.159	0.215	8.831	19.481	10.354
7/26/2020 17:00	2336405	8.236	-69.981	373.723	19.94	298.921	330.904	0.159	0.215	8.874	19.94	12.147
7/26/2020 18:00	2340005	8.255	-71.239	369.691	20.341	301.766	331.246	0.16	0.215	8.892	20.341	12.667
7/26/2020 19:00	2343605	8.27	-72.179	367.555	20.652	304.057	331.596	0.16	0.216	8.874	20.652	9.455
7/26/2020 20:00	2347205	8.275	-72.544	366.866	20.793	305.199	331.868	0.16	0.216	8.807	20.793	9.936
7/26/2020 21:00	2350805	8.284	-73.054	367.116	20.784	305.349	332.091	0.16	0.216	8.673	20.784	9.239
7/26/2020 22:00	2354405	8.264	-71.886	369.245	20.727	305.114	332.232	0.16	0.216	8.546	20.727	9.656
7/26/2020 23:00	2358005	8.255	-71.297	371.422	20.604	304.55	332.465	0.16	0.216	8.381	20.604	10.469
7/27/2020 0:00	2361605	8.23	-69.792	374.738	20.452	303.716	332.606	0.16	0.216	8.227	20.452	10.686
7/27/2020 1:00	2365205	8.203	-68.152	379.502	20.276	302.672	332.688	0.16	0.216	8.089	20.276	11.988
7/27/2020 2:00	2368805	8.196	-67.658	382.053	20.053	301.405	332.855	0.16	0.216	7.988	20.053	11.751
7/27/2020 3:00	2372405	8.176	-66.426	385.877	19.826	300.012	332.912	0.16	0.216	7.925	19.826	11.204

TABLE E1**Upstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance
Beaverlodge River

Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848	Sensor: Turb SN#: 737648
Date and Time	Seconds	pH (pH)	pH(mV) (mV)									Turbidity (NTU)
7/27/2020 4:00	2376005	8.159	-65.382	389.325	19.59	298.499	332.897	0.16	0.216	7.885	19.59	12.41
7/27/2020 5:00	2379605	8.145	-64.478	391.75	19.335	296.933	332.956	0.16	0.216	7.852	19.335	16.954
7/27/2020 6:00	2383205	8.128	-63.398	394.191	19.072	295.313	333.018	0.16	0.216	7.85	19.072	12.437
7/27/2020 7:00	2386805	8.126	-63.245	395.04	18.809	293.696	333.085	0.16	0.217	7.844	18.809	13.658
7/27/2020 8:00	2390405	8.103	-61.817	397.941	18.56	292.238	333.227	0.16	0.217	7.855	18.56	12.96
7/27/2020 9:00	2394005	8.093	-61.183	399.574	18.386	291.378	333.511	0.161	0.217	7.87	18.386	19.376
7/27/2020 10:00	2397605	8.092	-61.142	401.103	18.338	291.342	333.821	0.161	0.217	7.921	18.338	13.817
7/27/2020 11:00	2401205	8.093	-61.193	401.937	18.476	292.675	334.337	0.161	0.217	8.018	18.476	11.937
7/27/2020 12:00	2404805	8.123	-63.057	398.087	18.769	295.137	335.003	0.161	0.218	8.154	18.769	10.354
7/27/2020 13:00	2408405	8.15	-64.752	394.029	19.182	298.314	335.608	0.162	0.218	8.287	19.182	10.381
7/27/2020 14:00	2412005	8.168	-65.894	390.972	19.695	302.309	336.394	0.162	0.219	8.431	19.695	10.304
7/27/2020 15:00	2415605	8.192	-67.482	385.591	20.235	306.361	337.032	0.162	0.219	8.549	20.235	10.002
7/27/2020 16:00	2419205	8.198	-67.956	381.543	20.734	310.099	337.609	0.163	0.219	8.641	20.734	10.928
7/27/2020 17:00	2422805	8.245	-70.822	375.02	21.215	313.641	338.083	0.163	0.22	8.706	21.215	9.938
7/27/2020 18:00	2426405	8.264	-72.086	371.451	21.62	316.632	338.484	0.163	0.22	8.751	21.62	10.814
7/27/2020 19:00	2430005	8.26	-71.907	368.916	21.915	318.604	338.552	0.163	0.22	8.735	21.915	10.543
7/27/2020 20:00	2433605	8.281	-73.214	366.379	22.057	319.456	338.48	0.163	0.22	8.658	22.057	10.708
7/27/2020 21:00	2437205	8.29	-73.731	367.46	22.106	319.87	338.587	0.163	0.22	8.535	22.106	9.844
7/27/2020 22:00	2440805	8.281	-73.178	368.132	22.052	319.45	338.507	0.163	0.22	8.258	22.052	8.665
7/27/2020 23:00	2444405	8.279	-73.085	369.033	21.927	318.535	338.397	0.163	0.22	8.16	21.927	9.174
7/28/2020 0:00	2448005	8.253	-71.452	372.485	21.793	317.712	338.443	0.163	0.22	8.009	21.793	8.959
7/28/2020 1:00	2451605	8.217	-69.275	377.018	21.652	316.97	338.626	0.163	0.22	7.825	21.652	9.86
7/28/2020 2:00	2455205	8.189	-67.587	380.308	21.48	316.047	338.825	0.163	0.22	7.707	21.48	12.134
7/28/2020 3:00	2458805	8.194	-67.811	382.692	21.286	314.792	338.826	0.163	0.22	7.626	21.286	12.314
7/28/2020 4:00	2462405	8.172	-66.435	385.455	21.083	313.408	338.752	0.163	0.22	7.548	21.083	12.035
7/28/2020 5:00	2466005	8.153	-65.286	387.47	20.844	311.854	338.746	0.163	0.22	7.519	20.844	12.78
7/28/2020 6:00	2469605	8.145	-64.75	390.145	20.607	310.73	339.187	0.164	0.22	7.485	20.607	11.224
7/28/2020 7:00	2473205	8.136	-64.158	392.927	20.363	308.612	338.597	0.163	0.22	7.469	20.363	15.047
7/28/2020 8:00	2476805	8.115	-62.857	396.392	20.124	307.324	338.883	0.163	0.22	7.476	20.124	12.942
7/28/2020 9:00	2480405	8.107	-62.332	398.12	19.954	306.453	339.14	0.163	0.22	7.509	19.954	14.496
7/28/2020 10:00	2484005	8.102	-62.029	399.672	19.873	306.096	339.325	0.164	0.221	7.554	19.873	19.345
7/28/2020 11:00	2487605	8.11	-62.518	400.118	19.931	306.793	339.682	0.164	0.221	7.668	19.931	12.198
7/28/2020 12:00	2491205	8.128	-63.667	397.386	20.16	308.784	340.237	0.164	0.221	7.827	20.16	13.116
7/28/2020 13:00	2494805	8.161	-65.675	392.105	20.52	311.058	340.165	0.164	0.221	8.019	20.52	11.784
7/28/2020 14:00	2498405	8.198	-67.997	386.199	21.042	314.763	340.503	0.164	0.221	8.217	21.042	8.581
7/28/2020 15:00	2502005	8.227	-69.799	381.474	21.423	317.216	340.479	0.164	0.221	8.353	21.423	8.955
7/28/2020 16:00	2505605	8.266	-72.246	377.118	21.834	320.221	340.829	0.164	0.222	8.564	21.834	10.894
7/28/2020 17:00	2509205	8.292	-73.903	373.408	22.102	322.142	341.015	0.164	0.222	8.662	22.102	9.113
7/28/2020 18:00	2512805	8.306	-74.761	371.596	22.179	322.71	341.085	0.164	0.222	8.64	22.179	9.131
7/28/2020 19:00	2516405	8.333	-76.361	367.605	22.21	321.777	339.892	0.164	0.221	8.56	22.21	8.65
7/28/2020 20:00	2520005	8.332	-76.325	367.192	22.26	322.383	340.188	0.164	0.221	8.482	22.26	8.961
7/28/2020 21:00	2523605	8.3	-74.363	369.86	22.112	320.805	339.536	0.164	0.221	8.3	22.112	9.526
7/28/2020 22:00	2527205	8.267	-72.322	372.998	21.917	315.514	335.255	0.162	0.218	8.052	21.917	15.631
7/28/2020 23:00	2530805	8.241	-70.772	374.19	21.81	315.105	335.552	0.162	0.218	7.923	21.81	13.675
7/29/2020 0:00	2534405	8.257	-71.723	372.712	21.753	318.008	339.035	0.163	0.22	7.837	21.753	11.169
7/29/2020 1:00	2538005	8.232	-70.143	377.197	21.607	317.517	339.522	0.164	0.221	7.715	21.607	11.214
7/29/2020 2:00	2541605	8.212	-68.965	380.584	21.451	318.323	341.468	0.165	0.222	7.614	21.451	10.091
7/29/2020 3:00	2545205	8.189	-67.518	382.415	21.296	318.002	342.214	0.165	0.222	7.546	21.296	11.146
7/29/2020 4:00	2548805	8.158	-65.656	386.03	21.1	316.673	342.158	0.165	0.222	7.484	21.1	11.818
7/29/2020 5:00	2552405	8.16	-65.703	386.726	20.882	315.15	342.054	0.165	0.222	7.447	20.882	15.735
7/29/2020 6:00	2556005	8.139	-64.428	390.76	20.654	312.956	341.284	0.165	0.222	7.429	20.654	14.072
7/29/2020 7:00	2559605	8.119	-63.181	395.159	20.432	309.948	339.578	0.164	0.221	7.414	20.432	12.694
7/29/2020 8:00	2563205	8.103	-62.177	396.78	20.253	308.647	339.423	0.164	0.221	7.423	20.253	16.648
7/29/2020 9:00	2566805	8.102	-62.101	396.315	20.17	309.38	340.819	0.164	0.222	7.455	20.17	14.63
7/29/2020 10:00	2570405	8.107	-62.397	394.406	20.161	310.869	342.524	0.165	0.223	7.501	20.161	12.431
7/29/2020 11:00	2574005	8.109	-62.513	394.239	20.264	312.258	343.31	0.166	0.223	7.618	20.264	12.747
7/29/2020 12:00	2577605	8.123	-63.45	392.331	20.525	315.363	344.837	0.166	0.224	7.789	20.525	9.164
7/29/2020 13:00	2581205	8.147	-64.893	389.892	20.777	318.235	346.152	0.167	0.225	7.949	20.777	8.988
7/29/2020 14:00	2584805	8.189	-67.494	384.108	21.233	322.054	347.024	0.167	0.226	8.209	21.233	15.862
7/29/2020 15:00	2588405	8.234	-70.267	377.013	21.632	325.594	347.982	0.168	0.226	8.464	21.632	8.928

TABLE E1**Upstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance
Beaverlodge River

Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848	Sensor: Turb SN#: 737648
	Seconds	pH (pH)	pH(mV) (mV)									Turbidity (NTU)
7/29/2020 16:00	2592005	8.281	-73.178	368.778	22.052	327.45	346.987	0.167	0.226	8.687	22.052	8.427
7/29/2020 17:00	2595605	8.315	-75.324	361.416	22.376	332.611	350.157	0.169	0.228	8.855	22.376	7.766
7/29/2020 18:00	2599205	8.359	-78.039	356.321	22.638	331.392	347.048	0.167	0.226	8.96	22.638	8.05
7/29/2020 19:00	2602805	8.375	-79.052	351.888	22.781	332.603	347.322	0.168	0.226	9.015	22.781	8.16
7/29/2020 20:00	2606405	8.374	-78.995	352.542	22.833	333.024	347.4	0.168	0.226	8.953	22.833	21.971
7/29/2020 21:00	2610005	8.385	-79.656	353.231	22.845	333.42	347.735	0.168	0.226	8.835	22.845	8.681
7/29/2020 22:00	2613605	8.361	-78.208	355.968	22.782	333.278	348.019	0.168	0.226	8.633	22.782	9.82
7/29/2020 23:00	2617205	8.362	-78.23	361.041	22.623	332.429	348.242	0.168	0.226	8.354	22.623	7.956
7/30/2020 0:00	2620805	8.321	-75.731	364.126	22.466	331.549	348.415	0.168	0.226	8.112	22.466	10.085
7/30/2020 1:00	2624405	8.291	-73.874	368.711	22.319	330.881	348.736	0.168	0.227	7.908	22.319	8.385
7/30/2020 2:00	2628005	8.266	-72.329	371.279	22.153	330.089	349.074	0.168	0.227	7.722	22.153	7.934
7/30/2020 3:00	2631605	8.235	-70.424	375.072	22.015	329.699	349.631	0.169	0.227	7.588	22.015	8.82
7/30/2020 4:00	2635205	8.218	-69.396	378.3	21.887	329.394	350.22	0.169	0.228	7.492	21.887	7.978
7/30/2020 5:00	2638805	8.202	-68.433	381.786	21.732	328.651	350.529	0.169	0.228	7.423	21.732	9.073
7/30/2020 6:00	2642405	8.171	-66.512	385.288	21.561	327.623	350.657	0.169	0.228	7.377	21.561	10.196
7/30/2020 7:00	2646005	8.156	-65.551	388.562	21.385	326.625	350.846	0.169	0.228	7.344	21.385	10.362
7/30/2020 8:00	2649605	8.15	-65.16	391.02	21.195	325.637	351.16	0.169	0.228	7.324	21.195	9.768
7/30/2020 9:00	2653205	8.136	-64.328	393.075	21.023	324.585	351.264	0.17	0.228	7.294	21.023	9.114
7/30/2020 10:00	2656805	8.119	-63.274	394.608	20.901	324.366	351.919	0.17	0.229	7.425	20.901	8.378
7/30/2020 11:00	2660405	8.128	-63.777	396.244	20.836	324.24	352.259	0.17	0.229	7.509	20.836	8.934
7/30/2020 12:00	2664005	8.146	-64.874	396.666	20.908	325.089	352.653	0.17	0.229	7.744	20.908	8.125
7/30/2020 13:00	2667605	8.175	-66.626	393.376	21.018	326.02	352.86	0.17	0.229	7.957	21.018	6.876
7/30/2020 14:00	2671205	8.226	-69.742	387.141	21.347	328.112	352.722	0.17	0.229	8.297	21.347	8.116
7/30/2020 15:00	2674805	8.261	-71.94	382.773	21.671	330.416	352.851	0.17	0.229	8.605	21.671	7.533
7/30/2020 16:00	2678405	8.329	-76.091	375.542	22.065	333.285	353.08	0.17	0.23	8.947	22.065	7.336
7/30/2020 17:00	2682005	8.365	-78.313	368.122	22.385	335.345	352.973	0.17	0.229	9.236	22.385	7.646
7/30/2020 18:00	2685605	8.427	-82.09	358.745	22.654	337.348	353.174	0.17	0.23	9.368	22.654	7.502
7/30/2020 19:00	2689205	8.444	-83.165	354.785	22.857	338.256	352.696	0.17	0.229	9.43	22.857	6.923
7/30/2020 20:00	2692805	8.475	-85.089	352.344	22.999	336.519	349.893	0.169	0.227	9.374	22.999	6.458
7/30/2020 21:00	2696405	8.472	-84.87	352.575	22.978	327.815	340.985	0.164	0.222	9.192	22.978	7.11
7/30/2020 22:00	2700005	8.443	-83.125	356.831	22.773	311.946	325.807	0.157	0.212	8.897	22.773	8.287
7/30/2020 23:00	2703605	8.417	-81.463	360.014	22.583	296.099	310.43	0.149	0.202	8.625	22.583	6.201
7/31/2020 0:00	2707205	8.381	-79.265	363.709	22.418	283.984	298.717	0.144	0.194	8.344	22.418	6.951
7/31/2020 1:00	2710805	8.339	-76.73	368.356	22.252	277.411	292.777	0.141	0.19	8.093	22.252	8.744
7/31/2020 2:00	2714405	8.308	-74.837	374.417	22.096	273.534	289.596	0.139	0.188	7.875	22.096	6.59
7/31/2020 3:00	2718005	8.256	-71.676	379.55	21.949	273.294	290.208	0.139	0.189	7.711	21.949	23.047
7/31/2020 4:00	2721605	8.238	-70.55	382.196	21.769	269.872	287.62	0.138	0.187	7.556	21.769	8.635
7/31/2020 5:00	2725205	8.215	-69.168	386.635	21.565	268.447	287.297	0.138	0.187	7.489	21.565	8.518
7/31/2020 6:00	2728805	8.181	-67.046	392.274	21.34	266.89	286.951	0.138	0.187	7.44	21.34	30.907
7/31/2020 7:00	2732405	8.166	-66.111	393.545	21.112	265.413	286.704	0.138	0.186	7.41	21.112	7.87
7/31/2020 8:00	2736005	8.162	-65.82	394.1	20.896	263.931	286.381	0.138	0.186	7.408	20.896	10.203
7/31/2020 9:00	2739605	8.154	-65.289	392.367	20.7	262.532	286.021	0.137	0.186	7.425	20.7	9.081
7/31/2020 10:00	2743205	8.129	-63.808	394.437	20.584	262.155	286.306	0.137	0.186	7.473	20.584	9.969
7/31/2020 11:00	2746805	8.143	-64.654	395.107	20.6	262.302	286.371	0.138	0.186	7.644	20.6	7.555
7/31/2020 12:00	2750405	8.162	-65.775	394.036	20.73	262.87	286.215	0.137	0.186	7.749	20.73	7.753
7/31/2020 13:00	2754005	8.189	-67.463	391.347	20.954	264.163	286.287	0.137	0.186	8.075	20.954	6.831
7/31/2020 14:00	2757605	8.215	-69.072	389.346	21.27	265.848	286.24	0.137	0.186	8.393	21.27	9.238
7/31/2020 15:00	2761205	8.274	-72.684	384.421	21.682	267.982	286.115	0.137	0.186	8.676	21.682	7.252
7/31/2020 16:00	2764805	8.329	-76.075	376.939	22.139	270.198	285.814	0.137	0.186	8.955	22.139	6.992
7/31/2020 17:00	2768405	8.37	-78.666	369.448	22.557	272.396	285.729	0.137	0.186	9.103	22.557	7.709
7/31/2020 18:00	2772005	8.406	-80.914	365.798	22.917	274.246	285.608	0.137	0.186	9.243	22.917	7.27
7/31/2020 19:00	2775605	8.427	-82.245	361.101	23.097	275.31	285.694	0.137	0.186	9.229	23.097	6.487
7/31/2020 20:00	2779205	8.43	-82.445	359.351	23.17	275.789	285.777	0.137	0.186	9.107	23.17	6.071
7/31/2020 21:00	2782805	8.434	-82.698	359.394	23.291	276.66	285.995	0.137	0.186	8.958	23.291	6.555
7/31/2020 22:00	2786405	8.429	-82.407	359.267	23.358	277.148	286.123	0.137	0.186	8.779	23.358	6.633
7/31/2020 23:00	2790005	8.412	-81.396	362.148	23.315	277.129	286.347	0.138	0.186	8.526	23.315	6.094
8/1/2020 0:00	2793605	8.385	-79.72	364.157	23.248	277.148	286.745	0.138	0.186	8.25	23.248	7.246
8/1/2020 1:00	2797205	8.351	-77.66	368.22	23.149	276.933	287.084	0.138	0.187	7.967	23.149	6.768
8/1/2020 2:00	2800805	8.313	-75.338	373.043	23.018	276.527	287.405	0.138	0.187	7.729	23.018	6.918
8/1/2020 3:00	2804405	8.281	-73.388	376.624	22.903	276.077	287.598	0.138	0.187	7.522	22.903	7.326

TABLE E1

Upstream Water Quality Sonde Data

Mighty Peace Watershed Alliance
Beaverlodge River

Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848	Sensor: Turb SN#: 737648
	Seconds	pH (pH)	pH(mV) (mV)									Turbidity (NTU)
8/1/2020 4:00	2808005	8.249	-71.442	380.625	22.791	275.521	287.66	0.138	0.187	7.363	22.791	7.501
8/1/2020 5:00	2811605	8.229	-70.226	383.186	22.673	275.128	287.926	0.138	0.187	7.252	22.673	53.884
8/1/2020 6:00	2815205	8.207	-68.879	384.435	22.54	274.448	287.979	0.138	0.187	7.171	22.54	7.862
8/1/2020 7:00	2818805	8.185	-67.546	384.993	22.376	273.655	288.094	0.138	0.187	7.086	22.376	16.838
8/1/2020 8:00	2822405	8.171	-66.681	387.899	22.207	272.747	288.117	0.138	0.187	7.091	22.207	7.634
8/1/2020 9:00	2826005	8.156	-65.715	389.668	22.051	271.895	288.122	0.138	0.187	7.108	22.051	7.584
8/1/2020 10:00	2829605	8.145	-65.069	389.32	21.926	271.063	287.971	0.138	0.187	7.153	21.926	7.788
8/1/2020 11:00	2833205	8.156	-65.701	390.658	21.929	271.021	287.907	0.138	0.187	7.185	21.929	8.474
8/1/2020 12:00	2836805	8.162	-66.085	392.074	22.013	271.4	287.82	0.138	0.187	7.423	22.013	7.54
8/1/2020 13:00	2840405	8.176	-66.91	391.816	21.953	270.777	287.508	0.138	0.187	7.591	21.953	6.994
8/1/2020 14:00	2844005	8.2	-68.381	389.802	22.093	270.216	286.1	0.137	0.186	7.773	22.093	7.112
8/1/2020 15:00	2847605	8.228	-70.078	386.39	22.301	272.372	287.175	0.138	0.187	8.045	22.301	7.41
8/1/2020 16:00	2851205	8.266	-72.393	383.026	22.409	272.852	287.056	0.138	0.187	8.236	22.409	7.05
8/1/2020 17:00	2854805	8.299	-74.42	379.471	22.593	273.985	287.188	0.138	0.187	8.408	22.593	9.329
8/1/2020 18:00	2858405	8.316	-75.483	374.054	22.745	275.473	287.871	0.138	0.187	8.515	22.745	6.694
8/1/2020 19:00	2862005	8.338	-76.859	370.242	22.922	277.872	289.358	0.139	0.188	8.616	22.922	5.825
8/1/2020 20:00	2865605	8.342	-77.085	366.396	22.981	279.844	291.068	0.14	0.189	8.574	22.981	7.496
8/1/2020 21:00	2869205	8.331	-76.423	363.64	22.98	280.945	292.219	0.14	0.19	8.466	22.98	8.853
8/1/2020 22:00	2872805	8.344	-77.195	365.509	22.992	280.909	292.115	0.14	0.19	8.394	22.992	7.845
8/1/2020 23:00	2876405	8.326	-76.11	366.101	22.967	281.99	293.38	0.141	0.191	8.222	22.967	6.157
8/2/2020 0:00	2880005	8.307	-74.995	370.423	22.921	279.515	291.073	0.14	0.189	8.033	22.921	6.232
8/2/2020 1:00	2883605	8.273	-72.911	370.528	22.818	278.922	291.052	0.14	0.189	7.769	22.818	6.278
8/2/2020 2:00	2887205	8.24	-70.93	376.546	22.702	277.918	290.678	0.14	0.189	7.577	22.702	5.877
8/2/2020 3:00	2890805	8.214	-69.337	378.687	22.615	280.972	294.381	0.141	0.191	7.362	22.615	8.014
8/2/2020 4:00	2894405	8.191	-67.902	381.624	22.531	280.213	294.08	0.141	0.191	7.271	22.531	6.771
8/2/2020 5:00	2898005	8.17	-66.674	382.539	22.424	279.646	294.119	0.141	0.191	7.168	22.424	6.928
8/2/2020 6:00	2901605	8.151	-65.484	385.491	22.284	278.879	294.141	0.141	0.191	7.118	22.284	8.891
8/2/2020 7:00	2905205	8.141	-64.831	383.651	22.135	278.63	294.76	0.142	0.192	7.069	22.135	8.959
8/2/2020 8:00	2908805	8.132	-64.266	386.03	21.998	277.457	294.332	0.141	0.191	7.079	21.998	8.741
8/2/2020 9:00	2912405	8.12	-63.543	388.045	21.879	277.275	294.849	0.142	0.192	6.977	21.879	7.883
8/2/2020 10:00	2916005	8.117	-63.334	389.43	21.828	277.046	294.912	0.142	0.192	7.124	21.828	7.628
8/2/2020 11:00	2919605	8.122	-63.672	391.392	21.89	277.526	295.052	0.142	0.192	7.193	21.89	6.862
8/2/2020 12:00	2923205	8.128	-64.027	390.24	22.02	278.456	295.262	0.142	0.192	7.313	22.02	8.182
8/2/2020 13:00	2926805	8.143	-64.998	387.739	22.208	279.592	295.345	0.142	0.192	7.469	22.208	7.291
8/2/2020 14:00	2930405	8.176	-67.003	378.997	22.453	280.98	295.345	0.142	0.192	7.765	22.453	7.149
8/2/2020 15:00	2934005	8.214	-69.366	374.288	22.846	283.317	295.471	0.142	0.192	8.062	22.846	6.609
8/2/2020 16:00	2937605	8.256	-71.979	367.572	23.258	285.634	295.464	0.142	0.192	8.319	23.258	5.655
8/2/2020 17:00	2941205	8.302	-74.88	360.207	23.692	288.299	295.686	0.142	0.192	8.62	23.692	7.567
8/2/2020 18:00	2944805	8.349	-77.789	353.021	23.982	285.392	291.054	0.14	0.189	8.804	23.982	7.262
8/2/2020 19:00	2948405	8.381	-79.768	345.184	24.1	290.103	295.174	0.142	0.192	8.83	24.1	11.608
8/2/2020 20:00	2952005	8.391	-80.333	343.148	24.156	290.109	294.861	0.142	0.192	8.769	24.156	9.845
8/2/2020 21:00	2955605	8.381	-79.765	341.272	24.128	289.829	294.736	0.142	0.192	8.616	24.128	11.319
8/2/2020 22:00	2959205	8.391	-80.34	342.938	24.047	289.109	294.47	0.141	0.191	8.454	24.047	7.772
8/2/2020 23:00	2962805	8.371	-79.074	346.231	23.915	288.42	294.523	0.142	0.191	7.95	23.915	7.672
8/3/2020 0:00	2966405	8.339	-77.071	351.812	23.683	288.475	295.918	0.142	0.192	7.896	23.683	6.932
8/3/2020 1:00	2970005	8.301	-74.768	358.261	23.5	285.6	294.024	0.141	0.191	7.642	23.5	6.57
8/3/2020 2:00	2973605	8.271	-72.944	362.236	23.336	285.073	294.432	0.141	0.191	7.425	23.336	6.446
8/3/2020 3:00	2977205	8.242	-71.144	366.98	23.136	283.932	294.414	0.141	0.191	7.256	23.136	9.033
8/3/2020 4:00	2980805	8.218	-69.652	369.829	22.917	282.561	294.268	0.141	0.191	7.125	22.917	9.111
8/3/2020 5:00	2984405	8.198	-68.4	372.977	22.738	280.895	293.578	0.141	0.191	7.027	22.738	9.531
8/3/2020 6:00	2988005	8.185	-67.596	376.124	22.583	279.729	293.266	0.141	0.191	6.96	22.583	8.188
8/3/2020 7:00	2991605	8.172	-66.769	377.511	22.443	279.332	293.672	0.141	0.191	6.908	22.443	8.885
8/3/2020 8:00	2995205	8.165	-66.297	378.539	22.311	278.845	293.941	0.141	0.191	6.304	22.311	9.86
8/3/2020 9:00	2998805	8.159	-65.925	379.099	22.187	278.319	294.122	0.141	0.191	6.908	22.187	8.352
8/3/2020 10:00	3002405	8.149	-65.336	379.264	22.084	278.444	294.867	0.142	0.192	6.926	22.084	10.354
8/3/2020 11:00	3006005	8.149	-65.312	378.989	21.981	278.9	295.965	0.142	0.192	7.058	21.981	8.731
8/3/2020 12:00	3009605	8.159	-65.868	378.732	21.963	279.555	296.77	0.143	0.193	7.218	21.963	8.465
8/3/2020 13:00	3013205	8.179	-67.079	378.186	22.018	280.395	297.329	0.143	0.193	7.463	22.018	9.161
8/3/2020 14:00	3016805	8.198	-68.269	376.331	22.11	281.099	297.519	0.143	0.193	7.653	22.11	9.042
8/3/2020 15:00	3020405	8.234	-70.45	372.137	22.3	282.296	297.646	0.143	0.193	7.962	22.3	8.688

TABLE E1**Upstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance
Beaverlodge River

Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848 Temperature (C)	Sensor: Turb SN#: 737648 Turbidity (NTU)
Date and Time	Seconds	pH (pH)	pH(mV) (mV)									
8/3/2020 16:00	3024005	8.273	-72.815	365.051	22.523	283.678	297.763	0.143	0.194	8.252	22.523	9.12
8/3/2020 17:00	3027605	8.323	-75.917	356.259	22.755	284.812	297.574	0.143	0.193	8.53	22.755	9.941
8/3/2020 18:00	3031205	8.368	-78.64	348.956	22.878	285.085	297.127	0.143	0.193	8.761	22.878	7.777
8/3/2020 19:00	3034805	8.402	-80.671	342.49	22.965	285.033	296.562	0.143	0.193	8.85	22.965	7.837
8/3/2020 20:00	3038405	8.428	-82.266	338.62	22.968	284.328	295.809	0.142	0.192	8.891	22.968	6.344
8/3/2020 21:00	3042005	8.446	-83.311	338.358	22.836	282.891	295.088	0.142	0.192	8.827	22.836	6.02
8/3/2020 22:00	3045605	8.448	-83.354	339.433	22.596	281.149	294.681	0.142	0.192	8.706	22.596	7.208
8/3/2020 23:00	3049205	8.421	-81.666	340.242	22.268	279.201	294.571	0.142	0.191	8.502	22.268	8.489
8/4/2020 0:00	3052805	8.401	-80.318	342.8	21.889	277.092	294.595	0.142	0.191	8.248	21.889	47.389
8/4/2020 1:00	3056405	8.349	-77.105	347.144	21.496	274.724	294.432	0.141	0.191	8.065	21.496	8.013
8/4/2020 2:00	3060005	8.344	-76.761	354.253	21.16	272.484	294.05	0.141	0.191	7.898	21.16	9.035
8/4/2020 3:00	3063605	8.32	-75.226	357.522	20.877	270.439	293.557	0.141	0.191	7.768	20.877	8.095
8/4/2020 4:00	3067205	8.293	-73.54	361.521	20.599	268.511	293.154	0.141	0.191	7.635	20.599	6.899
8/4/2020 5:00	3070805	8.27	-72.141	365.838	20.361	267.034	292.994	0.141	0.19	7.532	20.361	10.596
8/4/2020 6:00	3074405	8.248	-70.786	368.983	20.128	265.314	292.533	0.141	0.19	7.463	20.128	22.995
8/4/2020 7:00	3078005	8.246	-70.572	370.933	19.93	264.983	293.393	0.141	0.191	7.428	19.93	7.94
8/4/2020 8:00	3081605	8.236	-69.954	372.917	19.745	262.76	292.077	0.14	0.19	7.415	19.745	8.107
8/4/2020 9:00	3085205	8.225	-69.28	374.891	19.606	261.987	292.079	0.14	0.19	7.412	19.606	8.364
8/4/2020 10:00	3088805	8.218	-68.827	377.17	19.512	261.432	292.045	0.14	0.19	7.459	19.512	8.921
8/4/2020 11:00	3092405	8.211	-68.414	378.997	19.562	261.884	292.239	0.14	0.19	7.538	19.562	8.917
8/4/2020 12:00	3096005	8.22	-69.003	378.772	19.632	262.541	292.533	0.141	0.19	7.669	19.632	8.175
8/4/2020 13:00	3099605	8.23	-69.587	376.765	19.789	263.436	292.554	0.141	0.19	7.881	19.789	7.221
8/4/2020 14:00	3103205	8.249	-70.765	374.214	19.982	264.839	292.914	0.141	0.19	8.09	19.982	7.147
8/4/2020 15:00	3106805	8.282	-72.806	368.752	20.305	267	293.302	0.141	0.191	8.403	20.305	8.343
8/4/2020 16:00	3110405	8.32	-75.197	362.572	20.626	269.53	294.101	0.141	0.191	8.702	20.626	7.8
8/4/2020 17:00	3114005	8.365	-77.946	355.09	21.013	272.559	295.025	0.142	0.192	8.967	21.013	7.029
8/4/2020 18:00	3117605	8.412	-80.85	347.423	21.424	275.564	295.766	0.142	0.192	9.24	21.424	6.926
8/4/2020 19:00	3121205	8.438	-82.493	341.45	21.708	277.645	296.272	0.142	0.193	9.382	21.708	7.698
8/4/2020 20:00	3124805	8.455	-83.559	337.393	21.783	278.122	296.33	0.142	0.193	9.281	21.783	7.294
8/4/2020 21:00	3128405	8.47	-84.455	336.11	21.782	278.002	296.206	0.142	0.193	9.297	21.782	6.504
8/4/2020 22:00	3132005	8.485	-85.318	332.121	21.707	277.454	296.075	0.142	0.192	9.202	21.707	6.53
8/4/2020 23:00	3135605	8.475	-84.646	332.143	21.548	276.43	295.94	0.142	0.192	8.969	21.548	8.239
8/5/2020 0:00	3139205	8.457	-83.518	334.574	21.33	275.327	296.083	0.142	0.192	8.791	21.33	7.621
8/5/2020 1:00	3142805	8.413	-80.86	339.832	21.087	273.914	296.038	0.142	0.192	8.534	21.087	9.564
8/5/2020 2:00	3146405	8.391	-79.434	344.855	20.828	272.65	296.256	0.142	0.193	8.279	20.828	8.465
8/5/2020 3:00	3150005	8.349	-76.89	350.017	20.578	271.332	296.362	0.142	0.193	8.044	20.578	9.672
8/5/2020 4:00	3153605	8.312	-74.632	362.341	20.341	270.098	296.484	0.142	0.193	7.866	20.341	7.631
8/5/2020 5:00	3157205	8.28	-72.672	361.559	20.124	269.071	296.703	0.143	0.193	7.726	20.124	7.36
8/5/2020 6:00	3160805	8.248	-70.701	366.477	19.888	268.359	297.397	0.143	0.193	7.627	19.888	7.96
8/5/2020 7:00	3164405	8.229	-69.556	370.278	19.675	268.181	298.547	0.143	0.194	7.549	19.675	7.381
8/5/2020 8:00	3168006	8.213	-68.545	373.518	19.479	267.451	298.981	0.144	0.194	7.52	19.479	7.667
8/5/2020 9:00	3171606	8.204	-67.954	376.744	19.327	269.036	301.731	0.145	0.196	7.483	19.327	7.077
8/5/2020 10:00	3175206	8.163	-65.494	378.36	19.217	269.532	303.001	0.146	0.197	7.467	19.217	8.327
8/5/2020 11:00	3178806	8.197	-67.549	377.967	19.282	270.411	303.566	0.146	0.197	7.51	19.282	6.516
8/5/2020 12:00	3182406	8.196	-67.482	377.409	19.414	271.421	303.836	0.146	0.197	7.646	19.414	6.888
8/5/2020 13:00	3186006	8.219	-69.063	375.141	20.144	275.596	303.772	0.146	0.197	7.893	20.144	5.864
8/5/2020 14:00	3189606	8.24	-70.512	371.598	21.002	280.557	303.752	0.146	0.197	8.154	21.002	4.832
8/5/2020 15:00	3193206	8.288	-73.419	361.509	21.281	281.758	303.305	0.146	0.197	8.508	21.281	6.78
8/5/2020 16:00	3196806	8.324	-75.696	355.1	21.665	283.501	302.79	0.146	0.197	8.813	21.665	5.917
8/5/2020 17:00	3200406	8.378	-79.05	348.918	22.114	285.882	302.557	0.145	0.197	9.151	22.114	5.603
8/5/2020 18:00	3204006	8.399	-80.316	345.277	22.172	286.024	302.356	0.145	0.197	9.352	22.172	5.655
8/5/2020 19:00	3207606	8.351	-77.417	343.394	22.164	285.867	302.236	0.145	0.196	9.379	22.164	5.797
8/5/2020 20:00	3211206	8.45	-83.377	340.79	22.347	287.145	302.475	0.145	0.197	9.371	22.347	5.351
8/5/2020 21:00	3214806	8.434	-82.421	340.361	22.358	285.47	300.641	0.145	0.195	9.262	22.358	7.418
8/5/2020 22:00	3218406	8.456	-83.764	339.452	22.415	285.135	299.944	0.144	0.195	9.142	22.415	6.705
8/5/2020 23:00	3222006	8.448	-83.313	340.873	22.362	286.685	301.894	0.145	0.196	8.951	22.362	8.304
8/6/2020 0:00	3225606	8.433	-82.359	346.772	22.242	286.34	302.264	0.145	0.196	8.662	22.242	10.501
8/6/2020 1:00	3229206	8.405	-80.655	352.287	22.064	285.575	302.54	0.145	0.197	8.43	22.064	8.014
8/6/2020 2:00	3232806	8.378	-78.938	353.817	21.871	286.524	304.737	0.147	0.198	8.144	21.871	7.527
8/6/2020 3:00	3236406	8.326	-75.793	357.439	21.64	285.029	304.577	0.146	0.198	7.881	21.64	8.193

TABLE E1**Upstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance
Beaverlodge River

Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848 Temperature (C)	Sensor: Turb SN#: 737648 Turbidity (NTU)
Seconds	pH (pH)	pH(mV) (mV)										
8/6/2020 4:00	3240006	8.29	-73.571	362.908	21.416	284.663	305.579	0.147	0.199	7.647	21.416	8.043
8/6/2020 5:00	3243606	8.257	-71.576	367.185	21.228	285.205	307.351	0.148	0.2	7.406	21.228	8.068
8/6/2020 6:00	3247206	8.229	-69.861	371.756	21.038	285.609	308.991	0.149	0.201	7.298	21.038	7.379
8/6/2020 7:00	3250806	8.213	-68.879	376.972	20.85	284.433	308.92	0.149	0.201	7.203	20.85	7.725
8/6/2020 8:00	3254406	8.197	-67.861	381.386	20.675	283.335	308.846	0.149	0.201	7.157	20.675	6.914
8/6/2020 9:00	3258006	8.168	-66.078	384.647	20.522	282.025	308.4	0.148	0.2	7.15	20.522	7.85
8/6/2020 10:00	3261606	8.171	-66.235	386.821	20.458	281.509	308.248	0.148	0.2	7.027	20.458	7.085
8/6/2020 11:00	3265206	8.179	-66.769	388.343	20.519	281.771	308.147	0.148	0.2	7.18	20.519	7.06
8/6/2020 12:00	3268806	8.159	-65.606	388.278	20.594	283.18	309.203	0.149	0.201	7.254	20.594	12.95
8/6/2020 13:00	3272406	8.191	-67.482	386.073	20.664	282.574	308.087	0.148	0.2	7.339	20.664	7.482
8/6/2020 14:00	3276006	8.212	-68.784	382.787	20.836	283.729	308.245	0.148	0.2	7.532	20.836	6.817
8/6/2020 15:00	3279606	8.252	-71.239	379.173	21.207	286.378	308.744	0.149	0.201	7.784	21.207	5.85
8/6/2020 16:00	3283206	8.297	-74.041	375.509	21.498	287.845	308.478	0.148	0.201	8.058	21.498	6.373
8/6/2020 17:00	3286806	8.32	-75.412	375.227	21.589	288.007	308.081	0.148	0.2	8.233	21.589	6.388
8/6/2020 18:00	3290406	8.345	-76.952	374.984	21.695	287.563	306.936	0.148	0.2	8.485	21.695	8.916
8/6/2020 19:00	3294006	8.349	-77.176	372.986	21.66	290.799	310.616	0.149	0.202	8.319	21.66	6.425
8/6/2020 20:00	3297606	8.358	-77.662	371.734	21.586	287.147	307.18	0.148	0.2	8.399	21.586	5.135
8/6/2020 21:00	3301206	8.366	-78.149	372.979	21.517	286.411	306.824	0.148	0.199	8.457	21.517	5.436
8/6/2020 22:00	3304806	8.374	-78.597	374.083	21.371	286.453	307.788	0.148	0.2	8.592	21.371	5.565
8/6/2020 23:00	3308406	8.371	-78.347	375.187	21.155	283.862	306.36	0.147	0.199	8.428	21.155	5.554
8/7/2020 0:00	3312006	8.332	-75.941	377.218	20.908	282.352	306.29	0.147	0.199	8.088	20.908	6.438
8/7/2020 1:00	3315606	8.32	-75.152	378.689	20.605	280.546	306.255	0.147	0.199	8.052	20.605	6.353
8/7/2020 2:00	3319206	8.288	-73.192	381.521	20.277	278.527	306.144	0.147	0.199	7.528	20.277	7.265
8/7/2020 3:00	3322806	8.249	-70.779	386.609	20.002	272.998	301.811	0.145	0.196	7.615	20.002	7.682
8/7/2020 4:00	3326406	8.234	-69.857	391.323	19.789	275.926	306.425	0.147	0.199	7.459	19.789	5.806
8/7/2020 5:00	3330006	8.222	-69.079	398.132	19.543	274.795	306.768	0.148	0.199	7.429	19.543	10.323
8/7/2020 6:00	3333606	8.204	-67.956	402.295	19.274	275.909	309.79	0.149	0.201	7.329	19.274	10.231
8/7/2020 7:00	3337206	8.181	-66.545	406.453	18.991	272.395	307.713	0.148	0.2	7.303	18.991	7.424
8/7/2020 8:00	3340806	8.17	-65.789	408.63	18.738	271.046	307.869	0.148	0.2	7.391	18.738	8.897
8/7/2020 9:00	3344406	8.117	-62.637	411.15	18.527	269.897	307.971	0.148	0.2	7.401	18.527	8.544
8/7/2020 10:00	3348006	8.156	-64.924	412.115	18.333	267.739	306.805	0.147	0.199	7.278	18.333	7.367
8/7/2020 11:00	3351606	8.158	-65.014	409.514	18.243	267.702	307.37	0.148	0.2	7.568	18.243	8.498
8/7/2020 12:00	3355206	8.162	-65.231	411.14	18.272	267.888	307.388	0.148	0.2	7.655	18.272	10.89
8/7/2020 13:00	3358806	8.185	-66.643	411.948	18.488	268.924	307.126	0.148	0.2	7.827	18.488	8.842
8/7/2020 14:00	3362406	8.186	-66.8	410.69	18.938	272.36	308.021	0.148	0.2	8.147	18.938	7.412
8/7/2020 15:00	3366006	8.205	-67.961	408.026	18.95	271.987	307.526	0.148	0.2	8.321	18.95	6.849
8/7/2020 16:00	3369606	8.276	-72.215	403.222	19.232	273.609	307.486	0.148	0.2	8.701	19.232	8.681
8/7/2020 17:00	3373206	8.292	-73.221	400.507	19.385	274.266	307.213	0.148	0.2	8.939	19.385	6.757
8/7/2020 18:00	3376806	8.324	-75.138	400.411	19.547	274.986	306.958	0.148	0.2	9.155	19.547	6.585
8/7/2020 19:00	3380406	8.335	-75.87	397.073	19.796	276.198	306.678	0.147	0.199	9.405	19.796	7.38
8/7/2020 20:00	3384006	8.38	-78.595	394	19.962	276.598	306.049	0.147	0.199	9.585	19.962	6.79
8/7/2020 21:00	3387606	8.399	-79.715	393.552	19.995	276.422	305.643	0.147	0.199	9.623	19.995	6.182
8/7/2020 22:00	3391206	8.414	-80.621	389.32	19.983	276.536	305.842	0.147	0.199	9.592	19.983	6.525
8/7/2020 23:00	3394806	8.414	-80.581	385.646	19.898	276.167	305.985	0.147	0.199	9.477	19.898	5.937
8/8/2020 0:00	3398406	8.4	-79.696	387.644	19.755	275.425	306.088	0.147	0.199	9.371	19.755	7.179
8/8/2020 1:00	3402006	8.435	-81.732	387.482	19.536	274.582	306.574	0.147	0.199	9.16	19.536	6.847
8/8/2020 2:00	3405606	8.422	-80.9	391.261	19.293	273.577	307.047	0.148	0.2	8.969	19.293	6.723
8/8/2020 3:00	3409206	8.368	-77.6	392.901	19.071	272.778	307.615	0.148	0.2	8.724	19.071	7.838
8/8/2020 4:00	3412806	8.34	-75.884	395.695	18.777	271.627	308.264	0.148	0.2	8.446	18.777	8.95
8/8/2020 5:00	3416406	8.313	-74.208	399.729	18.506	270.367	308.653	0.148	0.201	8.255	18.506	7.657
8/8/2020 6:00	3420006	8.303	-73.555	401.508	18.264	269.266	309.026	0.149	0.201	8.083	18.264	6.576
8/8/2020 7:00	3423606	8.232	-69.327	402.919	18.001	267.902	309.239	0.149	0.201	7.931	18.001	7.968
8/8/2020 8:00	3427206	8.248	-70.21	404.278	17.805	266.788	309.292	0.149	0.201	7.876	17.805	7.822
8/8/2020 9:00	3430806	8.237	-69.48	403.918	17.572	265.541	309.445	0.149	0.201	7.817	17.572	7.556
8/8/2020 10:00	3434406	8.22	-68.438	409.726	17.353	256.869	300.803	0.144	0.196	7.814	17.353	8.181
8/8/2020 11:00	3438006	8.214	-68.083	409.164	17.306	264.075	309.564	0.149	0.201	7.885	17.306	7.996
8/8/2020 12:00	3441606	8.199	-67.174	409.815	17.312	263.811	309.215	0.149	0.201	8.042	17.312	8.736
8/8/2020 13:00	3445206	8.134	-63.388	392.992	17.28	263.215	308.736	0.148	0.201	8.139	17.28	9.469
8/8/2020 14:00	3448806	8.068	-59.512	388.202	17.298	262.178	307.396	0.148	0.2	8.3	17.298	8.394
8/8/2020 15:00	3452406	8.05	-58.446	385.808	17.352	263.552	308.634	0.148	0.201	8.478	17.352	7.987

TABLE E1**Upstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance
Beaverlodge River

Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity ($\mu\text{S}/\text{cm}$)	Sensor: Cond SN#: 736508 Specific Conductivity ($\mu\text{S}/\text{cm}$)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848	Sensor: Turb SN#: 737648
		Seconds	pH (pH)	pH(mV) (mV)								Turbidity (NTU)
8/8/2020 16:00	3456006	8.112	-62.139	383.434	17.568	263.579	307.183	0.148	0.2	8.833	17.568	9.522
8/8/2020 17:00	3459606	8.106	-61.882	377.945	17.998	267.888	309.245	0.149	0.201	9.271	17.998	7.615
8/8/2020 18:00	3463206	8.165	-65.432	374.376	18.244	266.774	306.301	0.147	0.199	9.494	18.244	7.77
8/8/2020 19:00	3466806	8.231	-69.32	374.15	18.333	267.125	306.101	0.147	0.199	9.544	18.333	11.876
8/8/2020 20:00	3470406	8.186	-66.719	372.411	18.49	266.704	304.577	0.146	0.198	9.702	18.49	7.703
8/8/2020 21:00	3474006	8.252	-70.634	369.975	18.513	270.394	308.634	0.148	0.201	9.739	18.513	7.982
8/8/2020 22:00	3477606	8.194	-67.177	370.349	18.505	267.154	304.988	0.147	0.198	9.492	18.505	8.929
8/8/2020 23:00	3481206	8.374	-77.834	371.002	18.464	266.878	304.944	0.147	0.198	9.455	18.464	7.941
8/9/2020 0:00	3484806	8.389	-78.657	370.669	18.344	265.799	304.513	0.146	0.198	9.582	18.344	8.109
8/9/2020 1:00	3488406	8.424	-80.707	371.496	18.149	264.814	304.681	0.146	0.198	9.455	18.149	7.728
8/9/2020 2:00	3492006	8.38	-78.001	373.332	17.938	262.911	303.903	0.146	0.198	9.161	17.938	8.749
8/9/2020 3:00	3495606	8.3	-73.216	378.038	17.663	261.553	304.181	0.146	0.198	8.985	17.663	8.746
8/9/2020 4:00	3499206	8.3	-73.168	383.054	17.387	259.918	304.142	0.146	0.198	8.729	17.387	7.89
8/9/2020 5:00	3502806	8.205	-67.515	389.058	17.121	257.915	303.606	0.146	0.197	8.519	17.121	8.335
8/9/2020 6:00	3506406	8.196	-66.938	392.846	16.881	256.947	304.105	0.146	0.198	8.342	16.881	9.013
8/9/2020 7:00	3510006	8.275	-71.49	399.219	16.651	255.896	304.446	0.146	0.198	8.164	16.651	11.46
8/9/2020 8:00	3513606	8.157	-64.557	399.667	16.403	254.151	304.08	0.146	0.198	8.157	16.403	9.635
8/9/2020 9:00	3517206	8.165	-64.945	403.01	16.174	252.803	304.062	0.146	0.198	8.12	16.174	9.521
8/9/2020 10:00	3520806	8.149	-63.944	404.507	15.976	251.589	303.984	0.146	0.198	8.097	15.976	8.724
8/9/2020 11:00	3524406	8.069	-59.276	405.809	15.89	251.088	303.98	0.146	0.198	8.201	15.89	9.202
8/9/2020 12:00	3528006	8.125	-62.578	405.225	15.981	251.454	303.783	0.146	0.197	8.341	15.981	9.906
8/9/2020 13:00	3531606	8.048	-58.041	403.735	15.977	251.755	304.173	0.146	0.198	8.423	15.977	10.278
8/9/2020 14:00	3535206	8.067	-59.152	405.022	15.998	251.005	303.125	0.145	0.197	8.616	15.998	10.225
8/9/2020 15:00	3538806	8.189	-66.447	403.504	16.459	254.101	303.631	0.146	0.197	8.964	16.459	8.777
8/9/2020 16:00	3542406	8.107	-61.703	401.594	16.848	256.557	303.872	0.146	0.198	9.158	16.848	8.766
8/9/2020 17:00	3546006	8.16	-64.843	397.61	17.142	258.256	303.861	0.146	0.198	9.453	17.142	9.908
8/9/2020 18:00	3549606	8.189	-66.605	396.592	17.259	259.127	304.087	0.146	0.198	9.548	17.259	9.179
8/9/2020 19:00	3553206	8.239	-69.59	395.8	17.55	261.097	304.411	0.146	0.198	9.692	17.55	8.634
8/9/2020 20:00	3556806	8.213	-68.126	394.22	17.818	262.57	304.316	0.146	0.198	9.78	17.818	8.255
8/9/2020 21:00	3560406	8.176	-66.02	394.117	18.055	264.005	304.379	0.146	0.198	9.758	18.055	7.898
8/9/2020 22:00	3564006	8.167	-65.503	393.066	18.196	265.036	304.626	0.146	0.198	9.707	18.196	7.903
8/9/2020 23:00	3567606	8.185	-66.564	391.835	18.202	265.325	304.918	0.147	0.198	9.606	18.202	8.609
8/10/2020 0:00	3571206	8.241	-69.833	391.585	18.066	264.123	304.444	0.146	0.198	9.423	18.066	8.528
8/10/2020 1:00	3574806	8.193	-66.972	391.804	17.843	263.022	304.671	0.146	0.198	9.219	17.843	8.375
8/10/2020 2:00	3578406	8.272	-71.542	394.444	17.571	261.716	304.991	0.147	0.198	8.952	17.571	9.491
8/10/2020 3:00	3582006	8.209	-67.825	398.277	17.348	260.743	305.372	0.147	0.198	8.78	17.348	8.912
8/10/2020 4:00	3585606	8.167	-65.26	399.512	17.137	261.505	307.72	0.148	0.2	8.609	17.137	8.917
8/10/2020 5:00	3589206	8.134	-63.298	404.338	16.951	258.891	305.919	0.147	0.199	8.424	16.951	8.341
8/10/2020 6:00	3592806	8.206	-67.501	407.986	16.783	259.093	307.324	0.148	0.2	8.328	16.783	8.909
8/10/2020 7:00	3596406	8.143	-63.751	410.482	16.621	259.749	309.239	0.149	0.201	8.245	16.621	10.183
8/10/2020 8:00	3600006	8.144	-63.756	415.091	16.446	260.647	311.55	0.15	0.203	8.182	16.446	10.384
8/10/2020 9:00	3603606	8.143	-63.679	416.815	16.282	261.775	314.071	0.151	0.204	8.137	16.282	10.207
8/10/2020 10:00	3607206	8.102	-61.276	418.438	16.153	263.176	316.693	0.152	0.206	8.119	16.153	10.941
8/10/2020 11:00	3610806	8.094	-60.78	419.449	16.114	265.086	319.271	0.153	0.208	8.186	16.114	10.464
8/10/2020 12:00	3614406	8.159	-64.595	417	16.234	267.544	321.349	0.154	0.209	8.336	16.234	11.001
8/10/2020 13:00	3618006	8.136	-63.272	414.833	16.24	268.985	323.032	0.155	0.21	8.391	16.24	10.291
8/10/2020 14:00	3621606	8.207	-67.487	412.838	16.471	271.269	324.056	0.156	0.211	8.591	16.471	10.155
8/10/2020 15:00	3625206	8.144	-63.839	410.964	16.723	273.924	325.358	0.156	0.211	8.773	16.723	10.608
8/10/2020 16:00	3628806	8.162	-64.96	409.273	16.951	277.097	327.437	0.158	0.213	8.939	16.951	11.129
8/10/2020 17:00	3632406	8.145	-63.965	403.952	17.165	276.171	324.771	0.156	0.211	9.212	17.165	11.895
8/10/2020 18:00	3636006	8.19	-66.668	402.469	17.347	282.302	330.633	0.159	0.215	9.398	17.347	11.47
8/10/2020 19:00	3639606	8.271	-71.495	399.591	17.527	284.912	332.347	0.16	0.216	9.398	17.527	11.943
8/10/2020 20:00	3643206	8.27	-71.435	397.729	17.634	286.845	333.81	0.161	0.217	9.214	17.634	10.946
8/10/2020 21:00	3646806	8.248	-70.198	394.007	17.712	288.472	335.121	0.161	0.218	9.501	17.712	9.984
8/10/2020 22:00	3650406	8.23	-69.132	390.1	17.713	289.628	336.458	0.162	0.219	9.484	17.713	10.832
8/10/2020 23:00	3654006	8.212	-68.03	390.636	17.67	290.196	337.442	0.162	0.219	9.496	17.67	29.303
8/11/2020 0:00	3657606	8.211	-67.956	389.644	17.575	290.443	338.438	0.163	0.22	9.374	17.575	8.803
8/11/2020 1:00	3661206	8.226	-68.789	389.117	17.386	289.899	339.229	0.163	0.22	9.29	17.386	8.125
8/11/2020 2:00	3664806	8.191	-66.707	389.88	17.191	289.261	339.97	0.164	0.221	9.169	17.191	8.809
8/11/2020 3:00	3668406	8.146	-64.011	394.768	16.985	288.309	340.425	0.164	0.221	8.866	16.985	8.45

TABLE E1**Upstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance
Beaverlodge River

Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848	Sensor: Turb SN#: 737648
Seconds	pH (pH)	pH(mV) (mV)										Turbidity (NTU)
8/11/2020 4:00	3672006	8.216	-68.061	401.99	16.743	287.391	341.199	0.164	0.222	8.857	16.743	11.147
8/11/2020 5:00	3675606	8.154	-64.361	407.221	16.489	286.165	341.711	0.164	0.222	8.643	16.489	8.377
8/11/2020 6:00	3679206	8.124	-62.509	407.232	16.142	284.655	342.619	0.165	0.223	8.503	16.142	9.885
8/11/2020 7:00	3682806	8.105	-61.338	407.941	15.804	281.488	341.464	0.164	0.222	8.374	15.804	8.373
8/11/2020 8:00	3686406	8.128	-62.659	410.411	15.522	280.427	342.416	0.165	0.223	8.2	15.522	9.696
8/11/2020 9:00	3690006	8.085	-60.098	406.272	15.306	277.164	340.147	0.164	0.221	8.206	15.306	9.518
8/11/2020 10:00	3693606	8.067	-59.009	402.235	15.157	277.755	342.061	0.164	0.222	8.175	15.157	9.365
8/11/2020 11:00	3697206	8.041	-57.454	403.165	15.061	277.917	343.038	0.165	0.223	8.246	15.061	8.535
8/11/2020 12:00	3700806	8.075	-59.457	404.736	15.065	277.86	342.938	0.165	0.223	8.348	15.065	39.543
8/11/2020 13:00	3704406	8.127	-62.499	402.765	15.16	279.169	343.783	0.165	0.223	8.42	15.16	10.379
8/11/2020 14:00	3708006	8.065	-58.868	408.303	15.065	277.708	342.746	0.165	0.223	8.517	15.065	11.044
8/11/2020 15:00	3711606	8.135	-63.076	403.656	15.682	281.842	342.861	0.165	0.223	8.886	15.682	9.227
8/11/2020 16:00	3715206	8.061	-58.706	408.16	15.452	279.035	341.274	0.164	0.222	8.89	15.452	10.953
8/11/2020 17:00	3718806	8.161	-64.642	403.666	15.83	282.129	342.034	0.165	0.222	9.135	15.83	9.578
8/11/2020 18:00	3722407	8.167	-65.038	397.798	16.102	283.894	342.02	0.165	0.222	9.291	16.102	8.849
8/11/2020 19:00	3726007	8.224	-68.448	389.997	16.353	284.687	341.003	0.164	0.222	9.478	16.353	8.806
8/11/2020 20:00	3729607	8.209	-67.565	382.535	16.461	292.395	349.376	0.168	0.227	9.501	16.461	205.17
8/11/2020 21:00	3733207	8.262	-70.734	379.249	16.551	284.311	339.023	0.163	0.22	9.29	16.551	8.118
8/11/2020 22:00	3736807	8.134	-63.241	378.737	16.67	285.403	339.406	0.163	0.221	9.442	16.67	9.309
8/11/2020 23:00	3740407	8.264	-70.901	379.562	16.797	285.532	338.583	0.163	0.22	9.395	16.797	7.54
8/12/2020 0:00	3744007	8.235	-69.222	375.308	16.86	285.437	337.983	0.163	0.22	9.341	16.86	8.903
8/12/2020 1:00	3747607	8.196	-66.919	377.554	16.884	285.444	337.811	0.163	0.22	9.174	16.884	7.173
8/12/2020 2:00	3751207	8.171	-65.436	381.6	16.804	284.547	337.357	0.162	0.219	9.037	16.804	15.639
8/12/2020 3:00	3754807	8.129	-62.95	383.953	16.614	284.242	338.454	0.163	0.22	8.808	16.614	8.904
8/12/2020 4:00	3758407	8.144	-63.787	385.992	16.382	281.04	336.415	0.162	0.219	8.884	16.382	6.941
8/12/2020 5:00	3762007	8.184	-66.063	385.005	16.139	279.863	336.876	0.162	0.219	8.748	16.139	6.894
8/12/2020 6:00	3765607	8.127	-62.668	386.056	15.848	277.144	335.851	0.162	0.218	8.403	15.848	7.229
8/12/2020 7:00	3769207	8.131	-62.816	386.783	15.533	275.942	336.85	0.162	0.219	8.392	15.533	8.786
8/12/2020 8:00	3772807	8.112	-61.641	388.905	15.254	274.097	336.792	0.162	0.219	8.34	15.254	8.157
8/12/2020 9:00	3776407	8.074	-59.395	393.848	15.049	272.78	336.796	0.162	0.219	8.314	15.049	7.742
8/12/2020 10:00	3780007	8.056	-58.274	394.692	14.899	271.994	337.015	0.162	0.219	8.293	14.899	8.333
8/12/2020 11:00	3783607	8.104	-61.088	399.362	14.764	271.088	336.971	0.162	0.219	8.283	14.764	9.249
8/12/2020 12:00	3787207	8.071	-59.14	394.522	14.639	270.436	337.154	0.162	0.219	8.325	14.639	11.259
8/12/2020 13:00	3790807	8.06	-58.503	392.684	14.675	271.029	337.607	0.162	0.219	8.432	14.675	10.906
8/12/2020 14:00	3794407	8.081	-59.714	393.478	14.75	271.485	337.577	0.162	0.219	8.519	14.75	10.195
8/12/2020 15:00	3798007	8.068	-58.932	393.967	14.655	271.419	338.254	0.163	0.22	8.583	14.655	12.431
8/12/2020 16:00	3801607	8.146	-63.572	392.007	15.016	274.265	338.889	0.163	0.22	8.825	15.016	9.727
8/12/2020 17:00	3805207	8.099	-60.928	386.054	15.423	276.425	338.309	0.163	0.22	9.119	15.423	8.644
8/12/2020 18:00	3808807	8.101	-61.033	387.236	15.314	275.28	337.766	0.162	0.22	9.126	15.314	9.2
8/12/2020 19:00	3812407	8.135	-63.028	387.887	15.384	274.948	336.81	0.162	0.219	9.225	15.384	8.811
8/12/2020 20:00	3816007	8.169	-65.055	384.092	15.512	275.341	336.282	0.162	0.219	9.13	15.512	8.282
8/12/2020 21:00	3819607	8.158	-64.402	382.823	15.694	275.765	335.373	0.161	0.218	9.387	15.694	8.613
8/12/2020 22:00	3823207	8.184	-65.994	379.667	15.824	276.069	334.732	0.161	0.218	9.392	15.824	9.607
8/12/2020 23:00	3826807	8.19	-66.383	378.331	15.961	275.853	333.415	0.16	0.217	9.364	15.961	7.74
8/13/2020 0:00	3830407	8.125	-62.563	378.732	16.068	277.204	334.221	0.161	0.217	9.288	16.068	8.312
8/13/2020 1:00	3834007	8.211	-67.601	379.008	16.1	277.11	333.865	0.161	0.217	9.224	16.1	8.887
8/13/2020 2:00	3837607	8.207	-67.377	379.264	16.065	276.879	333.854	0.161	0.217	9.112	16.065	8.836
8/13/2020 3:00	3841207	8.204	-67.172	382.601	15.944	276.727	334.599	0.161	0.217	8.943	15.944	10.013
8/13/2020 4:00	3844807	8.224	-68.29	385.179	15.748	274.706	333.673	0.16	0.217	8.865	15.748	16.07
8/13/2020 5:00	3848407	8.195	-66.569	389.11	15.514	273.34	333.824	0.16	0.217	8.758	15.514	7.505
8/13/2020 6:00	3852007	8.161	-64.521	395.819	15.236	271.532	333.782	0.16	0.217	8.643	15.236	33.495
8/13/2020 7:00	3855607	8.153	-63.984	397.073	14.9	271.183	335.997	0.161	0.218	8.454	14.9	8.107
8/13/2020 8:00	3859207	8.068	-58.942	401.251	14.577	267.276	333.711	0.16	0.217	8.327	14.577	8.146
8/13/2020 9:00	3862807	8.105	-61.054	404.183	14.305	265.403	333.535	0.16	0.217	8.242	14.305	12.124
8/13/2020 10:00	3866407	8.044	-57.459	405.566	14.082	265.367	335.287	0.161	0.218	8.431	14.082	9.429
8/13/2020 11:00	3870007	8.036	-56.922	407.826	13.933	264.568	335.484	0.161	0.218	8.478	13.933	10.724
8/13/2020 12:00	3873607	8.04	-57.147	406.586	13.928	267.145	338.794	0.163	0.22	8.516	13.928	10.733
8/13/2020 13:00	3877207	8.048	-57.623	406.889	13.924	269.148	341.363	0.164	0.222	8.699	13.924	16.63
8/13/2020 14:00	3880807	8.037	-57.001	404.569	14.01	260.812	330.106	0.158	0.215	8.852	14.01	13.03
8/13/2020 15:00	3884407	8.053	-57.967	404.393	14.026	266.711	337.437	0.162	0.219	9.04	14.026	11.778

TABLE E1**Upstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance
Beaverlodge River

Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity ($\mu\text{S}/\text{cm}$)	Sensor: Cond SN#: 736508 Specific Conductivity ($\mu\text{S}/\text{cm}$)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848	Sensor: Turb SN#: 737648
Date and Time	Seconds	pH (pH)	pH(mV) (mV)									Turbidity (NTU)
8/13/2020 16:00	3888007	8.039	-57.125	400.845	13.895	259.842	329.795	0.158	0.214	9.021	13.895	11.9
8/13/2020 17:00	3891607	8.131	-62.475	396.938	14.063	267.402	338.009	0.162	0.22	9.332	14.063	11.742
8/13/2020 18:00	3895207	8.126	-62.242	392.472	14.268	270.589	340.352	0.163	0.221	9.573	14.268	10.797
8/13/2020 19:00	3898807	8.158	-64.13	391.888	14.404	259.964	325.929	0.156	0.212	9.779	14.404	11.237
8/13/2020 20:00	3902407	8.08	-59.581	389.215	14.452	260.393	326.088	0.157	0.212	9.771	14.452	13.311
8/13/2020 21:00	3906007	8.161	-64.33	389.604	14.554	268.28	335.147	0.161	0.218	9.865	14.554	10.571
8/13/2020 22:00	3909607	8.148	-63.581	388.419	14.637	271.599	338.545	0.163	0.22	9.549	14.637	9.647
8/13/2020 23:00	3913207	8.179	-65.441	385.744	14.737	269.8	335.583	0.161	0.218	9.663	14.737	20.91
8/14/2020 0:00	3916807	8.087	-60.084	381.374	14.777	266.841	331.588	0.159	0.216	9.506	14.777	8.855
8/14/2020 1:00	3920407	8.065	-58.825	381.209	14.809	271.308	336.879	0.162	0.219	9.512	14.809	8.931
8/14/2020 2:00	3924007	8.107	-61.24	385.2	14.812	265.013	329.044	0.158	0.214	9.536	14.812	8.835
8/14/2020 3:00	3927607	8.209	-67.191	385.684	14.778	271.097	336.868	0.162	0.219	9.314	14.778	10.012
8/14/2020 4:00	3931207	8.118	-61.858	390.319	14.686	269.954	336.18	0.162	0.219	9.165	14.686	8.582
8/14/2020 5:00	3934807	8.148	-63.577	389.051	14.591	272.999	340.741	0.164	0.221	8.967	14.591	8.545
8/14/2020 6:00	3938407	8.115	-61.655	387.105	14.492	255.389	319.517	0.153	0.208	9.018	14.492	8.192
8/14/2020 7:00	3942007	8.076	-59.373	392.362	14.354	265.819	333.664	0.16	0.217	8.831	14.354	9.252
8/14/2020 8:00	3945607	8.127	-62.277	392.801	14.209	259.828	327.284	0.157	0.213	8.69	14.209	8.373
8/14/2020 9:00	3949207	8.099	-60.599	396.044	14.005	266.113	336.858	0.162	0.219	8.596	14.005	8.542
8/14/2020 10:00	3952807	8.081	-59.512	396.377	13.803	266.219	338.644	0.163	0.22	8.709	13.803	10.663
8/14/2020 11:00	3956407	8.068	-58.742	397.834	13.668	270.73	345.514	0.166	0.225	8.656	13.668	9.93
8/14/2020 12:00	3960007	8.058	-58.181	399.799	13.683	262.039	334.296	0.16	0.217	8.723	13.683	9.681
8/14/2020 13:00	3963607	8.058	-58.219	399.777	13.883	268.049	340.307	0.163	0.221	8.868	13.883	9.279
8/14/2020 14:00	3967207	8.068	-58.794	397.386	14.001	258.666	327.455	0.157	0.213	8.961	14.001	12.606
8/14/2020 15:00	3970807	8.078	-59.35	395.643	13.847	271.97	345.585	0.166	0.225	9.045	13.847	12.53
8/14/2020 16:00	3974408	8.016	-55.768	392.575	13.97	273.454	346.436	0.166	0.225	9.184	13.97	10.674
8/14/2020 17:00	3978008	8.039	-57.137	389.163	14.149	272.077	343.207	0.165	0.223	9.328	14.149	10.843
8/14/2020 18:00	3981608	8.134	-62.704	386.59	14.24	275.278	346.484	0.166	0.225	9.418	14.24	10.138
8/14/2020 19:00	3985208	8.109	-61.316	388.376	14.506	276.463	345.769	0.166	0.225	9.54	14.506	10.813
8/14/2020 20:00	3988808	8.106	-61.152	386.75	14.528	276.025	345.04	0.166	0.224	9.516	14.528	9.692
8/14/2020 21:00	3992408	8.037	-57.137	391.328	14.588	277.151	345.946	0.166	0.225	9.641	14.588	8.86
8/14/2020 22:00	3996008	8.135	-62.857	388.142	14.704	275.818	343.334	0.165	0.223	9.677	14.704	9.698
8/14/2020 23:00	3999608	8.12	-62.02	385.443	14.834	278.888	346.091	0.166	0.225	9.569	14.834	8.896
8/15/2020 0:00	4003208	8.141	-63.279	384.094	14.975	280.145	346.49	0.167	0.225	9.642	14.975	8.876
8/15/2020 1:00	4006808	8.121	-62.158	383.949	15.108	280.517	345.865	0.166	0.225	9.555	15.108	8.988
8/15/2020 2:00	4010408	8.129	-62.637	384.592	15.183	281.386	346.325	0.167	0.225	9.525	15.183	8.242
8/15/2020 3:00	4014008	8.144	-63.515	385.136	15.206	281.649	346.464	0.167	0.225	9.281	15.206	8.426
8/15/2020 4:00	4017608	8.156	-64.185	387.503	15.198	281.297	346.094	0.166	0.225	9.246	15.198	7.974
8/15/2020 5:00	4021208	8.086	-60.086	388.812	15.163	281.528	346.664	0.167	0.225	9.119	15.163	10.584
8/15/2020 6:00	4024808	8.083	-59.912	388.743	15.095	281.033	346.605	0.167	0.225	8.462	15.095	8.147
8/15/2020 7:00	4028408	8.081	-59.781	391.988	15.027	281.144	347.296	0.167	0.226	8.588	15.027	8.015
8/15/2020 8:00	4032008	8.126	-62.418	393.719	14.977	280.586	347.021	0.167	0.226	8.568	14.977	8.848
8/15/2020 9:00	4035608	8.112	-61.591	394.901	14.914	279.232	345.863	0.166	0.225	8.41	14.914	10.495
8/15/2020 10:00	4039208	8.107	-61.281	395.602	14.858	284.423	352.757	0.17	0.229	8.308	14.858	8.54
8/15/2020 11:00	4042808	8.072	-59.24	394.663	14.823	280.297	347.927	0.167	0.226	8.281	14.823	9.616
8/15/2020 12:00	4046408	8.054	-58.148	395.328	14.805	277.956	345.166	0.166	0.224	8.165	14.805	13.081
8/15/2020 13:00	4050008	8.077	-59.531	393.657	14.968	281.643	348.403	0.168	0.226	8.456	14.968	10.374
8/15/2020 14:00	4053608	8.072	-59.302	392.896	15.137	282.341	347.875	0.167	0.226	8.544	15.137	10.186
8/15/2020 15:00	4057208	8.006	-55.497	390.054	15.469	284.447	347.751	0.167	0.226	8.715	15.469	9.486
8/15/2020 16:00	4060808	8.013	-55.985	391.337	15.914	288.897	349.559	0.168	0.227	8.819	15.914	9.493
8/15/2020 17:00	4064408	8.042	-57.669	387.341	15.906	288.367	348.985	0.168	0.227	8.849	15.906	8.593
8/15/2020 18:00	4068008	8.037	-57.325	388.307	15.47	285.658	349.225	0.168	0.227	8.747	15.47	10.458
8/15/2020 19:00	4071608	8.089	-60.353	388.152	15.647	287.13	349.583	0.168	0.227	8.978	15.647	9.188
8/15/2020 20:00	4075208	8.068	-59.152	389.785	15.607	287.195	349.988	0.168	0.227	8.848	15.607	8.352
8/15/2020 21:00	4078808	8.035	-57.256	389.728	15.734	288.26	350.248	0.169	0.228	9.017	15.734	8.933
8/15/2020 22:00	4082408	7.972	-53.561	394.51	15.733	288.578	350.64	0.169	0.228	8.591	15.733	7.996
8/15/2020 23:00	4086008	7.996	-54.982	407.674	15.753	289.455	351.544	0.169	0.229	9.082	15.753	8.274
8/16/2020 0:00	4089608	8.046	-57.893	405.64	15.847	290.485	352.028	0.169	0.229	9.087	15.847	8.325
8/16/2020 1:00	4093208	8.003	-55.389	405.301	15.959	291.243	352.032	0.17	0.229	8.88	15.959	9.006
8/16/2020 2:00	4096808	7.932	-51.246	408.084	16.076	292.74	352.889	0.17	0.229	9.078	16.076	8.604
8/16/2020 3:00	4100408	7.853	-46.642	406.467	16.147	293.586	353.331	0.17	0.23	9.009	16.147	9.026

TABLE E1**Upstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance
Beaverlodge River

Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity ($\mu\text{S}/\text{cm}$)	Sensor: Cond SN#: 736508 Specific Conductivity ($\mu\text{S}/\text{cm}$)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848 Temperature (C)	Sensor: Turb SN#: 737648 Turbidity (NTU)
Date and Time	Seconds	pH (pH)	pH(mV) (mV)									
8/16/2020 4:00	4104008	7.927	-51.003	409.245	16.188	294.302	353.856	0.17	0.23	8.961	16.188	8.966
8/16/2020 5:00	4107608	7.991	-54.731	408.134	16.188	293.825	353.284	0.17	0.23	8.803	16.188	8.963
8/16/2020 6:00	4111208	7.908	-49.868	408.451	16.142	293.616	353.409	0.17	0.23	8.551	16.142	9.58
8/16/2020 7:00	4114808	7.858	-46.911	408.296	16.043	290.909	350.951	0.169	0.228	8.626	16.043	8.624
8/16/2020 8:00	4118408	7.879	-48.149	409.438	15.936	292.289	353.484	0.17	0.23	8.475	15.936	8.974
8/16/2020 9:00	4122008	7.928	-51	408.017	15.843	291.633	353.448	0.17	0.23	8.265	15.843	8.761
8/16/2020 10:00	4125608	7.969	-53.37	406.818	15.772	291.296	353.622	0.17	0.23	8.119	15.772	8.724
8/16/2020 11:00	4129208	7.922	-50.623	406.255	15.769	300.272	364.549	0.176	0.237	8.162	15.769	8.806
8/16/2020 12:00	4132808	8.009	-55.73	404.023	15.83	292.076	354.096	0.171	0.23	8.05	15.83	9.356
8/16/2020 13:00	4136408	8.025	-56.725	402.006	16.012	293.772	354.653	0.171	0.231	8.292	16.012	9.857
8/16/2020 14:00	4140008	8.045	-57.926	400.082	16.277	296.152	355.355	0.171	0.231	8.373	16.277	8.665
8/16/2020 15:00	4143608	8.047	-58.007	398.733	16.209	295.25	354.827	0.171	0.231	8.402	16.209	9.243
8/16/2020 16:00	4147208	8.059	-58.737	397.329	16.298	296.369	355.444	0.171	0.231	8.454	16.298	10.086
8/16/2020 17:00	4150808	8.064	-59.063	396.89	16.479	297.934	355.846	0.171	0.231	8.645	16.479	9.029
8/16/2020 18:00	4154408	7.978	-54.076	400.256	16.693	299.471	355.949	0.172	0.231	8.758	16.693	9.272
8/16/2020 19:00	4158008	8.053	-58.67	395.681	17.565	306.672	357.433	0.172	0.232	9.136	17.565	8.065
8/16/2020 20:00	4161608	8.054	-58.739	396.032	17.803	308.786	357.998	0.173	0.233	9.226	17.803	7.616
8/16/2020 21:00	4165208	8.038	-57.855	392.057	18.056	311.936	359.631	0.173	0.234	9.197	18.056	7.572
8/16/2020 22:00	4168808	8.055	-58.939	392.377	18.255	313.563	359.932	0.174	0.234	9.089	18.255	7.8
8/16/2020 23:00	4172408	8.032	-57.626	391.092	18.471	315.724	360.709	0.174	0.234	9.141	18.471	7.286
8/17/2020 0:00	4176008	7.986	-54.834	393.805	18.302	313.323	359.283	0.173	0.234	8.97	18.302	7.22
8/17/2020 1:00	4179608	8.021	-56.901	395.414	18.264	313.206	359.454	0.173	0.234	8.978	18.264	8.363
8/17/2020 2:00	4183208	7.994	-55.318	399.088	18.394	314.446	359.853	0.174	0.234	8.976	18.394	7.428
8/17/2020 3:00	4186808	8.066	-60.811	394.301	18.517	315.591	360.194	0.174	0.234	8.868	18.517	7.647
8/17/2020 4:00	4190408	8.024	-57.144	395.476	18.59	316.004	360.087	0.174	0.234	8.67	18.59	7.639
8/17/2020 5:00	4194008	7.994	-55.389	396.153	18.593	316.251	360.351	0.174	0.234	8.455	18.593	9.597
8/17/2020 6:00	4197608	8.019	-56.846	398.559	18.539	315.365	359.765	0.174	0.234	8.299	18.539	9.149
8/17/2020 7:00	4201208	7.954	-53.008	403.556	18.407	314.63	359.956	0.174	0.234	8.043	18.407	25.697
8/17/2020 8:00	4204808	7.945	-52.4	405.564	18.252	312.096	358.272	0.173	0.233	7.905	18.252	8.18
8/17/2020 9:00	4208408	7.903	-49.896	410.384	18.123	313.554	360.965	0.174	0.235	7.654	18.123	9.119
8/17/2020 10:00	4212008	7.907	-50.139	410.737	17.998	312.871	361.174	0.174	0.235	7.526	17.998	9.055
8/17/2020 11:00	4215608	7.963	-53.432	414.643	17.862	312.145	361.418	0.174	0.235	7.447	17.862	9.936
8/17/2020 12:00	4219208	7.956	-52.974	415.465	17.71	310.936	361.23	0.174	0.235	7.274	17.71	9.914
8/17/2020 13:00	4222808	7.928	-51.31	415.522	17.697	310.58	360.924	0.174	0.235	7.282	17.697	10.726
8/17/2020 14:00	4226408	7.994	-55.201	413.105	17.725	311.691	361.994	0.175	0.235	7.498	17.725	10.981
8/17/2020 15:00	4230008	8.017	-56.562	413.608	17.662	310.493	361.107	0.174	0.235	7.554	17.662	10.067
8/17/2020 16:00	4233608	8.064	-59.45	409.753	18.147	314.484	361.845	0.175	0.235	7.879	18.147	9.801
8/17/2020 17:00	4237208	8.076	-60.303	405.521	18.886	320.56	362.942	0.175	0.236	8.139	18.886	9.623
8/17/2020 18:00	4240808	8.117	-62.664	405.592	18.779	319.236	362.287	0.175	0.235	8.403	18.779	9.388
8/17/2020 19:00	4244408	8.046	-58.57	405.23	19.224	326.507	366.992	0.177	0.239	8.625	19.224	8.982
8/17/2020 20:00	4248008	8.109	-62.349	404.743	19.343	324.025	363.278	0.175	0.236	8.517	19.343	8.969
8/17/2020 21:00	4251608	8.114	-62.628	405.931	19.276	323.371	363.062	0.175	0.236	8.526	19.276	9.41
8/17/2020 22:00	4255208	8.105	-62.115	408.892	19.462	326.448	365.06	0.176	0.237	8.56	19.462	9.219
8/17/2020 23:00	4258808	8.12	-63.033	410.265	19.592	327.476	365.194	0.176	0.237	8.597	19.592	8.599
8/18/2020 0:00	4262408	8.095	-61.519	409.259	19.362	324.106	363.218	0.175	0.236	8.446	19.362	9.941
8/18/2020 1:00	4266008	8.135	-63.827	410.911	19.131	323.004	363.782	0.176	0.236	8.306	19.131	8.982
8/18/2020 2:00	4269608	8.146	-64.49	410.68	19.054	323.625	365.085	0.176	0.237	8.331	19.054	8.82
8/18/2020 3:00	4273208	8.119	-62.897	412.146	19.092	324.421	365.685	0.177	0.238	8.387	19.092	10.302
8/18/2020 4:00	4276808	8.095	-61.457	413.009	19.136	324.656	365.603	0.177	0.238	8.268	19.136	9.748
8/18/2020 5:00	4280408	8.07	-59.986	412.688	19.17	325.002	365.723	0.177	0.238	8.263	19.17	9.27
8/18/2020 6:00	4284008	8.131	-63.632	412.862	19.174	326.656	367.56	0.177	0.239	8.062	19.174	9.104
8/18/2020 7:00	4287608	8.12	-62.971	412.311	19.127	325.828	366.999	0.177	0.239	7.883	19.127	9.467
8/18/2020 8:00	4291208	8.097	-61.586	412.73	19.066	326.085	367.764	0.178	0.239	7.777	19.066	9.046
8/18/2020 9:00	4294808	8.078	-60.432	412.766	19.044	325.835	367.661	0.178	0.239	7.647	19.044	9.347
8/18/2020 10:00	4298408	8.08	-60.542	420.765	19.017	326.159	368.243	0.178	0.239	7.526	19.017	9.541
8/18/2020 11:00	4302008	8.052	-58.904	412.711	19.067	326.885	368.658	0.178	0.24	7.373	19.067	9.756
8/18/2020 12:00	4305608	8.072	-60.031	412.225	18.924	326.204	369.034	0.178	0.24	7.299	18.924	10.121
8/18/2020 13:00	4309208	8.055	-59.075	411.488	18.952	326.352	368.976	0.178	0.24	7.412	18.952	10.177
8/18/2020 14:00	4312808	8.058	-59.237	408.999	19.059	327.522	369.448	0.178	0.24	7.514	19.059	10.322
8/18/2020 15:00	4316408	8.034	-57.855	408.022	19.117	328.24	369.789	0.179	0.24	7.646	19.117	11.724

TABLE E1**Upstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance
Beaverlodge River

Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848	Sensor: Turb SN#: 737648
Date and Time	Seconds	pH (pH)	pH(mV) (mV)	Potential (ORP)	(C)	(µS/cm)	(µS/cm)	(PSU)	(ppt)	(concentration)	Temperature (C)	Turbidity (NTU)
8/18/2020 16:00	4320008	8.072	-60.146	407.824	19.475	331	370.054	0.179	0.241	8.044	19.475	10.564
8/18/2020 17:00	4323608	8.114	-62.587	409.109	19.141	328.85	370.288	0.179	0.241	7.889	19.141	14.182
8/18/2020 18:00	4327208	7.958	-53.31	412.254	19.028	327.497	369.666	0.179	0.24	7.597	19.028	13.609
8/18/2020 19:00	4330808	8.046	-58.773	403.26	20.16	337.146	371.492	0.179	0.241	8.268	20.16	11.169
8/18/2020 20:00	4334408	7.955	-53.234	410.783	19.603	334.398	372.833	0.18	0.242	8.081	19.603	14.292
8/18/2020 21:00	4338008	8.05	-58.877	410.721	19.678	335.572	373.546	0.18	0.243	8.138	19.678	11.037
8/18/2020 22:00	4341608	7.983	-54.855	417.611	19.385	334.01	374.138	0.181	0.243	8.151	19.385	10.561
8/18/2020 23:00	4345209	7.997	-55.692	415.804	19.356	334.8	375.253	0.181	0.244	8.156	19.356	12.748
8/19/2020 0:00	4348809	8.075	-60.296	415.518	19.198	333.62	375.198	0.181	0.244	8.09	19.198	10.52
8/19/2020 1:00	4352409	8.048	-58.637	418.183	19.035	334.459	377.467	0.182	0.245	8.161	19.035	10.779
8/19/2020 2:00	4356009	8.051	-58.792	424.952	18.92	332.658	376.363	0.182	0.245	8.04	18.92	9.983
8/19/2020 3:00	4359609	8.055	-58.999	431.163	18.771	331.883	376.704	0.182	0.245	7.935	18.771	12.11
8/19/2020 4:00	4363209	7.963	-53.546	427.002	18.656	332.544	378.391	0.183	0.246	7.897	18.656	10.828
8/19/2020 5:00	4366809	7.981	-54.595	425.03	18.674	334.664	380.657	0.184	0.247	7.763	18.674	11.405
8/19/2020 6:00	4370409	7.983	-54.736	422.837	18.667	334.303	380.303	0.184	0.247	8.078	18.667	11.415
8/19/2020 7:00	4374009	7.992	-55.289	427.818	18.64	334.548	380.804	0.184	0.248	8.101	18.64	10.831
8/19/2020 8:00	4377609	7.976	-54.309	427.596	18.615	334.55	381.018	0.184	0.248	8.04	18.615	11.339
8/19/2020 9:00	4381209	8.014	-56.543	430.304	18.635	336.752	383.354	0.185	0.249	7.919	18.635	10.725
8/19/2020 10:00	4384809	8.017	-56.763	430.407	18.632	336.253	382.811	0.185	0.249	7.718	18.632	11.308
8/19/2020 11:00	4388409	8.119	-62.788	429.503	18.624	337.955	384.821	0.186	0.25	7.628	18.624	11.584
8/19/2020 12:00	4392009	8.145	-64.375	423.733	18.878	338.824	383.69	0.185	0.249	7.905	18.878	10.602
8/19/2020 13:00	4395609	7.975	-54.297	426.273	18.788	337.653	383.105	0.185	0.249	7.869	18.788	11.877
8/19/2020 14:00	4399209	8.025	-57.22	430.035	18.652	336.573	383.013	0.185	0.249	7.579	18.652	13.544
8/19/2020 15:00	4402809	7.955	-53.041	428.84	18.571	336.544	383.652	0.185	0.249	7.516	18.571	12.133
8/19/2020 16:00	4406409	8.044	-58.575	419.564	19.859	346.654	384.397	0.186	0.25	8.416	19.859	10.253
8/19/2020 17:00	4410009	8.166	-65.806	420.367	19.758	347.472	386.136	0.187	0.251	8.163	19.758	10.508
8/19/2020 18:00	4413609	8.045	-58.787	415.467	20.493	353.319	386.596	0.187	0.251	8.688	20.493	9.503
8/19/2020 19:00	4417209	8.02	-57.178	419.862	20.079	348.945	385.149	0.186	0.25	8.132	20.079	10.423
8/19/2020 20:00	4420809	8.103	-62.056	415.88	19.605	346.375	386.169	0.187	0.251	8.44	19.605	10.809
8/19/2020 21:00	4424409	8.17	-66.085	412.881	19.9	349.626	387.358	0.187	0.252	8.665	19.9	9.375
8/19/2020 22:00	4428009	8.155	-65.169	412.647	19.773	350.107	388.934	0.188	0.253	8.124	19.773	9.779
8/19/2020 23:00	4431609	8.09	-61.266	417.427	19.598	348.653	388.761	0.188	0.253	8.66	19.598	9.11
8/20/2020 0:00	4435209	8.059	-59.392	412.974	19.295	346.947	389.372	0.188	0.253	8.649	19.295	9.798
8/20/2020 1:00	4438809	8.133	-63.689	412.854	19.065	348.995	393.615	0.19	0.256	8.435	19.065	8.98
8/20/2020 2:00	4442409	8.1	-61.672	414.459	18.84	345.565	391.646	0.189	0.255	8.519	18.84	10.287
8/20/2020 3:00	4446009	8.008	-56.238	418.476	18.614	343.936	391.717	0.189	0.255	8.413	18.614	10.837
8/20/2020 4:00	4449609	7.948	-52.624	420.429	18.417	342.245	391.463	0.189	0.254	8.234	18.417	9.882
8/20/2020 5:00	4453209	7.964	-53.537	423.891	18.268	341.142	391.475	0.189	0.254	8.047	18.268	10.105
8/20/2020 6:00	4456809	7.993	-55.258	424.139	18.193	341.912	393.007	0.19	0.255	8.267	18.193	10.175
8/20/2020 7:00	4460409	7.967	-53.737	424.155	18.22	341.348	392.132	0.19	0.255	8.313	18.22	8.843
8/20/2020 8:00	4464009	7.894	-49.398	426.127	18.278	341.461	391.757	0.189	0.255	8.263	18.278	106.807
8/20/2020 9:00	4467609	8.026	-57.223	421.054	18.353	340.157	389.619	0.188	0.253	8.332	18.353	9.619
8/20/2020 10:00	4471209	8.058	-59.116	421.03	18.457	339.102	387.533	0.187	0.252	8.317	18.457	9.085
8/20/2020 11:00	4474809	8.072	-59.981	420.887	18.607	345.776	393.871	0.19	0.256	8.332	18.607	9.196
8/20/2020 12:00	4478409	8.035	-57.843	418.767	18.817	348.128	394.743	0.191	0.257	8.33	18.817	8.978
8/20/2020 13:00	4482009	8.066	-59.757	417.06	19.187	351.878	395.826	0.192	0.257	8.081	19.187	8.7
8/20/2020 14:00	4485609	8.025	-57.354	416.087	19.228	352.573	396.261	0.192	0.258	8.381	19.228	8.447
8/20/2020 15:00	4489209	8.085	-60.956	416.421	19.455	354.487	396.479	0.192	0.258	8.064	19.455	8.331
8/20/2020 16:00	4492809	8.084	-60.871	417.029	19.347	353.13	395.877	0.192	0.257	8.272	19.347	8.177
8/20/2020 17:00	4496409	8.036	-57.983	419.099	19.112	351.901	396.494	0.192	0.258	8.151	19.112	8.71
8/20/2020 18:00	4500009	8.025	-57.375	419.516	19.548	356.088	397.482	0.192	0.258	8.389	19.548	8.199
8/20/2020 19:00	4503609	7.968	-53.957	415.792	19.156	352.966	397.311	0.192	0.258	8.066	19.156	8.247
8/20/2020 20:00	4507209	7.998	-55.669	417.656	19.01	356.365	402.405	0.195	0.262	7.854	19.01	8.649
8/20/2020 21:00	4510809	8.019	-56.946	412.702	19.098	357.368	402.768	0.195	0.262	8.315	19.098	7.395
8/20/2020 22:00	4514409	7.917	-50.876	419.959	18.835	353.115	400.246	0.194	0.26	7.858	18.835	8.396
8/20/2020 23:00	4518009	7.936	-51.944	418.286	18.636	352.493	401.268	0.194	0.261	7.448	18.636	8.864
8/21/2020 0:00	4521609	7.872	-48.163	425.302	18.434	350.275	400.506	0.194	0.26	6.974	18.434	9.541
8/21/2020 1:00	4525209	7.889	-49.124	428.664	18.231	347.644	399.257	0.193	0.26	7.39	18.231	10.213
8/21/2020 2:00	4528809	7.88	-48.53	428.6	18.067	346.519	399.412	0.193	0.26	7.097	18.067	11.016
8/21/2020 3:00	4532409	7.876	-48.304	425.076	17.959	348.95	403.167	0.195	0.262	7.156	17.959	11.101

TABLE E1**Upstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance
Beaverlodge River

Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848	Sensor: Turb SN#: 737648
Date and Time	Seconds	pH (pH)	pH(mV) (mV)	Potential (ORP)								Turbidity (NTU)
8/21/2020 4:00	4536009	7.912	-50.428	418.808	17.884	348.754	403.609	0.195	0.262	7.073	17.884	11.81
8/21/2020 5:00	4539609	7.87	-47.905	418.6	17.816	348.595	404.037	0.195	0.263	6.911	17.816	12.044
8/21/2020 6:00	4543209	7.879	-48.444	421.385	17.747	349.313	405.484	0.196	0.264	6.99	17.747	10.363
8/21/2020 7:00	4546809	7.858	-47.207	417.754	17.675	348.82	405.56	0.196	0.264	7.039	17.675	10.907
8/21/2020 8:00	4550409	7.873	-48.034	416.524	17.617	348.786	406.046	0.196	0.264	6.922	17.617	11.934
8/21/2020 9:00	4554009	7.834	-45.772	414.781	17.567	348.802	406.517	0.197	0.264	7.039	17.567	10.558
8/21/2020 10:00	4557609	7.872	-48.018	411.689	17.598	350.028	407.663	0.197	0.265	7.132	17.598	10.495
8/21/2020 11:00	4561209	7.877	-48.332	411.028	17.663	350.762	407.925	0.197	0.265	7.356	17.663	9.331
8/21/2020 12:00	4564809	7.898	-49.591	408.091	17.784	352.411	408.749	0.198	0.266	7.423	17.784	9.958
8/21/2020 13:00	4568409	7.931	-51.546	405.373	17.99	354.274	409.042	0.198	0.266	7.383	17.99	9.044
8/21/2020 14:00	4572009	7.941	-52.171	404.669	18.156	357.054	410.751	0.199	0.267	8.198	18.156	8.86
8/21/2020 15:00	4575609	7.978	-54.414	404.774	18.501	360.621	411.733	0.199	0.268	8.283	18.501	8.41
8/21/2020 16:00	4579209	7.903	-50.027	405.337	18.714	361.928	411.309	0.199	0.267	8.409	18.714	8.234
8/21/2020 17:00	4582809	7.855	-47.121	411.152	18.509	359.845	410.772	0.199	0.267	8.175	18.509	9.212
8/21/2020 18:00	4586409	7.869	-48.101	407.862	19.187	366.913	412.738	0.2	0.268	8.645	19.187	8.462
8/21/2020 19:00	4590009	7.788	-43.344	412.595	19.466	367.945	411.431	0.199	0.267	8.47	19.466	9.014
8/21/2020 20:00	4593609	7.871	-48.206	404.846	19.366	369.001	413.51	0.2	0.269	8.41	19.366	9.58
8/21/2020 21:00	4597209	7.885	-49.005	408.143	18.93	364.828	412.673	0.2	0.268	8.023	18.93	11.368
8/21/2020 22:00	4600809	7.855	-47.064	415.346	17.945	356.213	411.69	0.199	0.268	7.223	17.945	13.688
8/21/2020 23:00	4604409	7.849	-46.682	415.513	17.866	356.429	412.654	0.2	0.268	6.763	17.866	10.987
8/22/2020 0:00	4608009	7.881	-48.616	405.294	18.021	357.882	412.928	0.2	0.268	7.273	18.021	12.738
8/22/2020 1:00	4611609	7.888	-49.002	407.442	17.995	360.407	416.08	0.201	0.27	7.303	17.995	11.122
8/22/2020 2:00	4615209	7.88	-48.506	407.004	17.873	360.549	417.363	0.202	0.271	7.459	17.873	11.022
8/22/2020 3:00	4618809	7.876	-48.261	408.439	17.787	360.903	418.567	0.203	0.272	7.426	17.787	11.301
8/22/2020 4:00	4622409	7.908	-50.156	412.48	17.693	356.835	414.711	0.201	0.27	6.167	17.693	10.814
8/22/2020 5:00	4626009	7.896	-49.407	414.621	17.579	356.07	414.876	0.201	0.27	6.208	17.579	10.104
8/22/2020 6:00	4629609	7.891	-49.121	414.857	17.446	354.919	414.759	0.201	0.27	6.12	17.446	10.684
8/22/2020 7:00	4633209	7.881	-48.513	414.955	17.344	354.92	415.713	0.201	0.27	6.135	17.344	9.408
8/22/2020 8:00	4636809	7.887	-48.809	412.664	17.292	354.768	416.011	0.201	0.27	6.916	17.292	10.58
8/22/2020 9:00	4640409	7.878	-48.287	409.123	17.271	352.093	413.072	0.2	0.268	6.805	17.271	10.055
8/22/2020 10:00	4644009	7.855	-46.949	408.239	17.295	356.391	417.887	0.202	0.272	7.307	17.295	10.551
8/22/2020 11:00	4647609	7.837	-45.884	406.439	17.349	356.926	418.008	0.202	0.272	7.54	17.349	10.683
8/22/2020 12:00	4651209	7.856	-47.03	404.352	17.467	358.471	418.721	0.203	0.272	7.749	17.467	10.356
8/22/2020 13:00	4654809	7.874	-48.106	403.029	17.57	359.494	418.944	0.203	0.272	7.783	17.57	12.26
8/22/2020 14:00	4658409	7.872	-48.02	400.459	17.646	361.325	420.368	0.204	0.273	7.917	17.646	10.452
8/22/2020 15:00	4662009	7.937	-51.882	396.342	17.83	362.615	420.157	0.203	0.273	8.089	17.83	11.456
8/22/2020 16:00	4665609	7.968	-53.756	391.187	18.078	364.409	419.93	0.203	0.273	8.349	18.078	10.614
8/22/2020 17:00	4669209	7.93	-51.553	390.095	18.227	366.709	421.2	0.204	0.274	8.374	18.227	12.906
8/22/2020 18:00	4672809	7.961	-53.394	386.819	18.338	369.007	422.803	0.205	0.275	8.378	18.338	12.258
8/22/2020 19:00	4676409	7.964	-53.57	386.881	18.347	368.416	422.05	0.204	0.274	8.359	18.347	13.118
8/22/2020 20:00	4680009	7.956	-53.091	387.065	18.217	367.699	422.428	0.205	0.275	8.241	18.217	14.483
8/22/2020 21:00	4683609	7.895	-49.462	388.324	18.144	367.497	422.87	0.205	0.275	8.236	18.144	15.662
8/22/2020 22:00	4687209	7.893	-49.307	389.325	18.061	367.175	423.277	0.205	0.275	7.968	18.061	11.313
8/22/2020 23:00	4690809	7.902	-49.849	388.493	18.012	366.901	423.416	0.205	0.275	7.936	18.012	13.967
8/23/2020 0:00	4694409	7.888	-48.978	389.17	17.92	366.184	423.45	0.205	0.275	7.633	17.92	9.089
8/23/2020 1:00	4698009	7.891	-49.174	390.941	17.835	365.816	423.819	0.205	0.275	7.818	17.835	9.197
8/23/2020 2:00	4701609	7.901	-49.744	392.205	17.762	366.607	425.418	0.206	0.277	7.886	17.762	9.656
8/23/2020 3:00	4705209	7.888	-48.954	391.161	17.707	365.224	424.335	0.206	0.276	7.577	17.707	11.163
8/23/2020 4:00	4708809	7.874	-48.139	392.76	17.66	365.805	425.451	0.206	0.277	7.635	17.66	9.884
8/23/2020 5:00	4712409	7.873	-48.072	392.105	17.556	364.903	425.38	0.206	0.276	7.199	17.556	10.851
8/23/2020 6:00	4716009	7.874	-48.07	390.183	17.445	364.249	425.675	0.206	0.277	7.297	17.445	11.693
8/23/2020 7:00	4719609	7.866	-47.612	389.921	17.316	363.736	426.305	0.206	0.277	7.29	17.316	10.355
8/23/2020 8:00	4723209	7.857	-47.073	387.632	17.195	362.617	426.148	0.206	0.277	6.945	17.195	12.055
8/23/2020 9:00	4726809	7.848	-46.52	385.172	17.051	361.47	426.177	0.206	0.277	7.071	17.051	10.782
8/23/2020 10:00	4730409	7.82	-44.854	384.082	16.911	362.077	428.244	0.207	0.278	7.054	16.911	11.472
8/23/2020 11:00	4734009	7.835	-45.714	380.425	16.757	360.684	428.079	0.207	0.278	6.854	16.757	11.856
8/23/2020 12:00	4737609	7.817	-44.618	378.651	16.631	360.04	428.54	0.207	0.279	7.107	16.631	13.881
8/23/2020 13:00	4741209	7.838	-45.838	378.732	16.639	360.282	428.755	0.208	0.279	7.457	16.639	11.137
8/23/2020 14:00	4744809	7.871	-47.87	375.32	17.186	364.748	428.732	0.208	0.279	7.699	17.186	9.67
8/23/2020 15:00	4748409	7.811	-44.403	378.696	17.532	368.232	429.497	0.208	0.279	7.94	17.532	9.139

TABLE E1**Upstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance
Beaverlodge River

Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848	Sensor: Turb SN#: 737648
Date and Time	Seconds	pH (pH)	pH(mV) (mV)									Turbidity (NTU)
8/23/2020 16:00	4752009	7.852	-47.314	364.107	20.602	397.233	433.665	0.21	0.282	8.323	20.602	9.538
8/23/2020 17:00	4755609	7.839	-46.408	364.858	19.957	391.458	433.184	0.21	0.282	8.509	19.957	9.211
8/23/2020 18:00	4759209	7.879	-48.752	364.041	19.675	390.788	435.037	0.211	0.283	8.866	19.675	8.84
8/23/2020 19:00	4762809	7.887	-49.145	366.766	19	385.347	435.224	0.211	0.283	8.519	19	8.589
8/23/2020 20:00	4766409	7.893	-49.372	371.048	18.414	379.94	434.613	0.211	0.282	8.491	18.414	8.532
8/23/2020 21:00	4770009	7.905	-50.049	373.332	18.108	377.428	434.641	0.211	0.283	8.409	18.108	8.244
8/23/2020 22:00	4773609	7.883	-48.676	376.693	17.799	375.542	435.43	0.211	0.283	7.923	17.799	8.742
8/23/2020 23:00	4777209	7.898	-49.541	379.926	17.55	373.36	435.297	0.211	0.283	8.141	17.55	7.401
8/24/2020 0:00	4780809	7.876	-48.184	381.297	17.333	371.1	434.768	0.211	0.283	7.859	17.333	7.662
8/24/2020 1:00	4784409	7.886	-48.764	384.804	17.137	369.633	434.952	0.211	0.283	7.726	17.137	7.826
8/24/2020 2:00	4788009	7.898	-49.436	388.478	16.962	367.726	434.422	0.21	0.282	6.813	16.962	8.998
8/24/2020 3:00	4791609	7.865	-47.433	390.231	16.798	366.086	434.087	0.21	0.282	7.131	16.798	9.775
8/24/2020 4:00	4795209	7.855	-46.844	392.975	16.683	365.454	434.47	0.21	0.282	6.832	16.683	8.35
8/24/2020 5:00	4798809	7.862	-47.243	392.565	16.585	365.031	434.938	0.211	0.283	7.199	16.585	8.701
8/24/2020 6:00	4802409	7.891	-48.912	392.136	16.509	364.698	435.292	0.211	0.283	6.893	16.509	7.577
8/24/2020 7:00	4806009	7.864	-47.343	393.779	16.448	364.513	435.675	0.211	0.283	6.935	16.448	9.517
8/24/2020 8:00	4809609	7.866	-47.419	394.363	16.383	363.047	434.573	0.21	0.282	6.936	16.383	8.606
8/24/2020 9:00	4813209	7.831	-45.412	396.587	16.366	362.193	433.722	0.21	0.282	6.689	16.366	7.632
8/24/2020 10:00	4816809	7.848	-46.38	397.369	16.366	362.242	433.779	0.21	0.282	6.576	16.366	8.599
8/24/2020 11:00	4820409	7.831	-45.393	403.079	16.37	362.35	433.867	0.21	0.282	6.362	16.37	7.917
8/24/2020 12:00	4824009	7.834	-45.574	403.015	16.387	363.143	434.651	0.21	0.283	6.692	16.387	8.274
8/24/2020 13:00	4827609	7.848	-46.389	397.803	16.394	363.595	435.12	0.211	0.283	6.742	16.394	9.086
8/24/2020 14:00	4831209	7.826	-45.102	400.576	16.372	365.117	437.157	0.212	0.284	6.808	16.372	9.174
8/24/2020 15:00	4834809	7.84	-45.989	392.043	16.662	368.13	437.86	0.212	0.285	7.318	16.662	7.726
8/24/2020 16:00	4838409	7.82	-44.792	387.007	16.528	369.598	440.953	0.214	0.287	7.096	16.528	7.581
8/24/2020 17:00	4842009	7.822	-44.928	383.743	16.708	368.368	437.687	0.212	0.284	7.117	16.708	7.04
8/24/2020 18:00	4845609	7.84	-45.955	381.166	16.549	369.704	440.867	0.214	0.287	7.285	16.549	9.832
8/24/2020 19:00	4849209	7.84	-46.01	375.313	17.038	372.589	439.409	0.213	0.286	8.218	17.038	7.782
8/24/2020 20:00	4852810	7.85	-46.566	377.366	16.899	371.434	439.428	0.213	0.286	8.226	16.899	8.603
8/24/2020 21:00	4856410	7.822	-44.911	380.782	16.83	373.794	442.913	0.215	0.288	8.21	16.83	7.95
8/24/2020 22:00	4860010	7.846	-46.318	379.261	16.8	370.781	439.641	0.213	0.286	7.605	16.8	7.551
8/24/2020 23:00	4863610	7.846	-46.337	381.588	16.762	370.136	439.254	0.213	0.286	8.014	16.762	7.321
8/25/2020 0:00	4867210	7.86	-47.157	383.548	16.665	369.573	439.548	0.213	0.286	7.898	16.665	9.303
8/25/2020 1:00	4870810	7.877	-48.139	384.237	16.555	369.174	440.177	0.213	0.286	7.717	16.555	8.436
8/25/2020 2:00	4874410	7.836	-45.729	384.387	16.475	369.531	441.399	0.214	0.287	7.654	16.475	9.338
8/25/2020 3:00	4878010	7.795	-43.28	386.962	16.367	368.706	441.501	0.214	0.287	8.135	16.367	7.804
8/25/2020 4:00	4881610	7.799	-43.473	389.704	16.297	367.602	440.889	0.214	0.287	7.671	16.297	7.247
8/25/2020 5:00	4885210	7.819	-44.663	392.274	16.21	367.742	441.935	0.214	0.287	7.591	16.21	7.683
8/25/2020 6:00	4888810	7.81	-44.143	391.566	16.132	366.799	441.592	0.214	0.287	7.89	16.132	7.299
8/25/2020 7:00	4892410	7.808	-43.993	391.673	16.06	367.541	443.228	0.215	0.288	7.556	16.06	8.365
8/25/2020 8:00	4896010	7.794	-43.175	395.412	15.988	366.264	442.412	0.214	0.288	6.968	15.988	7.735
8/25/2020 9:00	4899610	7.524	-27.332	397.085	15.939	368.341	445.429	0.216	0.29	7.324	15.939	8.101
8/25/2020 10:00	4903210	7.782	-42.434	396.065	15.897	365.989	443.013	0.215	0.288	7.644	15.897	8.314
8/25/2020 11:00	4906810	7.806	-43.867	396.735	15.852	366.254	443.799	0.215	0.288	7.513	15.852	10.316
8/25/2020 12:00	4910410	7.802	-43.64	391.201	15.858	366.907	444.531	0.215	0.289	7.713	15.858	9.994
8/25/2020 13:00	4914010	7.776	-42.136	385.136	16.057	368.898	444.894	0.216	0.289	7.949	16.057	12.364
8/25/2020 14:00	4917610	7.84	-45.867	382.861	16.17	370.026	445.091	0.216	0.289	7.859	16.17	10.258
8/25/2020 15:00	4921210	7.844	-46.191	379.824	16.594	374.057	445.605	0.216	0.29	8.086	16.594	8.978
8/25/2020 16:00	4924810	7.808	-44.079	378.26	16.568	374.326	446.188	0.216	0.29	8.138	16.568	10.879
8/25/2020 17:00	4928410	7.829	-45.354	376.41	16.866	376.835	446.15	0.216	0.29	8.332	16.866	11.308
8/25/2020 18:00	4932010	7.823	-45.028	375.704	16.977	377.799	446.165	0.216	0.29	8.405	16.977	11.12
8/25/2020 19:00	4935610	7.793	-43.275	378.274	17.079	380.553	448.391	0.217	0.291	8.417	17.079	11.04
8/25/2020 20:00	4939210	7.78	-42.481	380.408	17.037	379.81	447.943	0.217	0.291	8.3	17.037	11.219
8/25/2020 21:00	4942810	7.649	-34.8	382.16	17.108	383.279	451.305	0.219	0.293	7.183	17.108	10.528
8/25/2020 22:00	4946410	7.763	-41.475	379.471	17.074	380.045	447.843	0.217	0.291	6.793	17.074	10.664
8/25/2020 23:00	4950010	7.823	-45.021	381.178	16.96	379.854	448.769	0.218	0.292	7.279	16.96	15.287
8/26/2020 0:00	4953610	7.838	-45.865	386.464	16.802	378.598	448.89	0.218	0.292	7.575	16.802	9.856
8/26/2020 1:00	4957210	7.847	-46.406	388.405	16.734	378.763	449.773	0.218	0.292	6.981	16.734	8.833
8/26/2020 2:00	4960810	7.829	-45.335	389.404	16.624	378.315	450.37	0.218	0.293	7.409	16.624	7.219
8/26/2020 3:00	4964410	7.796	-43.352	390.753	16.491	378.922	452.454	0.219	0.294	7.324	16.491	8.283

TABLE E1**Upstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance
Beaverlodge River

Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848	Sensor: Turb SN#: 737648
Date and Time	Seconds	pH (pH)	pH(mV) (mV)									Turbidity (NTU)
8/26/2020 4:00	4968010	7.802	-43.697	394.193	16.362	375.498	449.691	0.218	0.292	7.535	16.362	7.945
8/26/2020 5:00	4971610	7.743	-40.19	398.232	16.256	376.271	451.713	0.219	0.294	7.306	16.256	10.574
8/26/2020 6:00	4975210	7.766	-41.533	400.054	16.162	373.385	449.211	0.218	0.292	7.335	16.162	12.306
8/26/2020 7:00	4978810	7.766	-41.506	398.287	16.066	373.104	449.867	0.218	0.292	7.35	16.066	16.018
8/26/2020 8:00	4982410	7.755	-40.872	401.661	15.958	372.376	450.108	0.218	0.293	7.269	15.958	19.052
8/26/2020 9:00	4986010	7.754	-40.827	404.324	15.908	371.92	450.081	0.218	0.293	7.318	15.908	25.059
8/26/2020 10:00	4989610	7.763	-41.337	402.624	15.887	372.321	450.787	0.218	0.293	7.363	15.887	28.153
8/26/2020 11:00	4993210	7.759	-41.106	407.092	15.856	372.886	451.788	0.219	0.294	7.227	15.856	23.477
8/26/2020 12:00	4996810	7.754	-40.765	396.871	15.793	373.381	453.051	0.22	0.294	7.595	15.793	50.406
8/26/2020 13:00	5000410	7.752	-40.667	391.082	15.689	372.823	453.466	0.22	0.295	7.841	15.689	115.21
8/26/2020 14:00	5004010	7.757	-40.963	390.219	15.914	373.95	452.477	0.219	0.294	8.043	15.914	123.167
8/26/2020 15:00	5007610	7.758	-41.046	388.736	16.05	375.912	453.423	0.22	0.295	8.059	16.05	170.606
8/26/2020 16:00	5011210	7.803	-43.736	385.758	16.105	377.357	454.594	0.22	0.295	8.247	16.105	180.19
8/26/2020 17:00	5014810	7.781	-42.458	384.344	16.28	378.898	454.613	0.22	0.295	8.476	16.28	259.061
8/26/2020 18:00	5018410	7.764	-41.482	382.477	16.453	381.805	456.296	0.221	0.297	8.602	16.453	238.679
8/26/2020 19:00	5022010	7.757	-41.07	383.031	16.539	382.046	455.684	0.221	0.296	8.639	16.539	322.244
8/26/2020 20:00	5025610	7.767	-41.687	384.793	16.543	382.92	456.691	0.221	0.297	8.574	16.543	367.136
8/26/2020 21:00	5029210	7.792	-43.159	387.265	16.644	383.414	456.224	0.221	0.297	7.677	16.644	236.663
8/26/2020 22:00	5032810	7.81	-44.181	391.192	16.588	382.637	455.888	0.221	0.296	7.342	16.588	275.872
8/26/2020 23:00	5036410	7.797	-43.423	392.474	16.522	382.833	456.807	0.222	0.297	8.47	16.522	218.949
8/27/2020 0:00	5040010	7.801	-43.638	394.716	16.43	382.726	457.633	0.222	0.297	7.608	16.43	211.883
8/27/2020 1:00	5043610	7.784	-42.62	394.465	16.338	383.478	459.495	0.223	0.299	8.472	16.338	209.242
8/27/2020 2:00	5047210	7.825	-44.99	397.636	16.166	381.932	459.457	0.223	0.299	7.861	16.166	207.298
8/27/2020 3:00	5050810	7.805	-43.819	399.25	15.984	380.712	459.911	0.223	0.299	8.02	15.984	202.566
8/27/2020 4:00	5054410	7.819	-44.625	403.103	15.873	379.767	459.943	0.223	0.299	7.798	15.873	196.556
8/27/2020 5:00	5058010	7.835	-45.555	400.24	15.743	378.111	459.327	0.223	0.299	7.896	15.743	198.734
8/27/2020 6:00	5061610	7.864	-47.19	405.027	15.592	376.748	459.278	0.223	0.299	7.462	15.592	196.962
8/27/2020 7:00	5065210	7.835	-45.493	405.885	15.502	376.652	460.123	0.223	0.299	7.065	15.502	196.755
8/27/2020 8:00	5068810	7.811	-44.093	407.02	15.403	374.899	459.043	0.222	0.298	7.034	15.403	197.252
8/27/2020 9:00	5072410	7.836	-45.547	405.661	15.37	375.082	459.62	0.223	0.299	7.05	15.37	195.667
8/27/2020 10:00	5076010	7.827	-45.006	405.385	15.364	375.006	459.597	0.223	0.299	7.742	15.364	187.461
8/27/2020 11:00	5079610	7.808	-43.876	400.7	15.346	375.721	460.668	0.223	0.299	7.686	15.346	24.761
8/27/2020 12:00	5083210	7.813	-44.203	397.464	15.342	376.644	461.837	0.224	0.3	7.657	15.342	24.198
8/27/2020 13:00	5086810	7.823	-44.77	394.77	15.483	378.226	462.257	0.224	0.3	7.862	15.483	24.146
8/27/2020 14:00	5090410	7.821	-44.687	395.61	15.5	378.715	462.669	0.224	0.301	7.656	15.5	23.293
8/27/2020 15:00	5094010	7.798	-43.38	394.348	15.74	380.628	462.416	0.224	0.301	7.81	15.74	24.002
8/27/2020 16:00	5097610	7.798	-43.378	395.822	15.855	384.116	465.404	0.226	0.303	7.792	15.855	23.516
8/27/2020 17:00	5101210	7.777	-42.226	394.656	16.477	386.015	461.078	0.224	0.3	8.168	16.477	24.035
8/27/2020 18:00	5104810	7.785	-42.877	390.355	17.825	400.979	464.657	0.226	0.302	8.883	17.825	23.554
8/27/2020 19:00	5108410	7.795	-43.347	388.908	16.865	390.26	462.051	0.224	0.3	8.513	16.865	23.92
8/27/2020 20:00	5112010	7.843	-46.089	390.135	16.202	384.581	462.258	0.224	0.3	8.503	16.202	24.618
8/27/2020 21:00	5115610	7.832	-45.416	391.988	16.157	384.717	462.899	0.225	0.301	8.378	16.157	26.168
8/27/2020 22:00	5119210	7.819	-44.625	394.501	16.067	384.715	463.854	0.225	0.302	8.402	16.067	27.06
8/27/2020 23:00	5122810	7.817	-44.525	395.686	16.061	384.857	464.098	0.225	0.302	8.011	16.061	28.556
8/28/2020 0:00	5126410	7.79	-42.927	399.775	16.087	384.827	463.783	0.225	0.301	8.321	16.087	28.358
8/28/2020 1:00	5130010	7.814	-44.303	398.723	15.93	383.842	464.27	0.225	0.302	8.195	15.93	29.89
8/28/2020 2:00	5133610	7.838	-45.726	398.647	15.745	382.907	465.123	0.226	0.302	8.282	15.745	28.717
8/28/2020 3:00	5137210	7.831	-45.257	399.362	15.54	380.957	464.975	0.225	0.302	8.228	15.54	28.688
8/28/2020 4:00	5140810	7.842	-45.886	402.688	15.367	379.864	465.509	0.226	0.303	8.056	15.367	28.24
8/28/2020 5:00	5144410	7.852	-46.446	404.207	15.227	378.07	464.843	0.225	0.302	8.012	15.227	28.525
8/28/2020 6:00	5148010	7.837	-45.557	406.486	15.12	377.047	464.748	0.225	0.302	7.753	15.12	29.597
8/28/2020 7:00	5151610	7.826	-44.906	407.922	15.04	376.306	464.713	0.225	0.302	7.748	15.04	30.219
8/28/2020 8:00	5155210	7.831	-45.19	407.664	14.995	376.056	464.892	0.225	0.302	7.593	14.995	31.786
8/28/2020 9:00	5158810	7.822	-44.639	408.811	14.972	376.305	465.456	0.226	0.303	7.565	14.972	33.214
8/28/2020 10:00	5162410	7.833	-45.316	408.2	14.985	377.085	466.276	0.226	0.303	7.605	14.985	32.341
8/28/2020 11:00	5166010	7.834	-45.369	408.262	15.009	377.122	466.057	0.226	0.303	7.709	15.009	32.711
8/28/2020 12:00	5169611	7.837	-45.505	409.216	15.012	377.644	466.677	0.226	0.303	7.629	15.012	33.235
8/28/2020 13:00	5173211	7.827	-44.966	409.409	15.033	378.491	467.486	0.227	0.304	7.596	15.033	35.344
8/28/2020 14:00	5176811	7.828	-45.035	410.217	15.052	377.99	466.662	0.226	0.303	7.541	15.052	35.004
8/28/2020 15:00	5180411	7.823	-44.737	411.41	15.035	378.192	467.1	0.226	0.304	7.555	15.035	35.094

TABLE E1**Upstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance
Beaverlodge River

Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848	Sensor: Turb SN#: 737648
Date and Time	Seconds	pH (pH)	pH(mV) (mV)									Turbidity (NTU)
8/28/2020 16:00	5184011	7.818	-44.41	414.204	15.005	377.938	467.117	0.226	0.304	7.252	15.005	38.428
8/28/2020 17:00	5187611	7.823	-44.739	411.839	15.011	378.28	467.472	0.227	0.304	7.437	15.011	38.19
8/28/2020 18:00	5191211	7.845	-45.965	413.045	14.962	378.509	468.288	0.227	0.304	7.518	14.962	37.477
8/28/2020 19:00	5194811	7.835	-45.378	413.074	14.927	378.341	468.473	0.227	0.305	7.448	14.927	39.719
8/28/2020 20:00	5198411	7.835	-45.397	415.057	14.93	378.227	468.296	0.227	0.304	7.419	14.93	44.72
8/28/2020 21:00	5202011	7.809	-43.864	419.089	14.919	378.073	468.229	0.227	0.304	7.531	14.919	53.622
8/28/2020 22:00	5205611	7.812	-44.074	424.425	14.871	377.614	468.195	0.227	0.304	7.627	14.871	60.233
8/28/2020 23:00	5209211	7.826	-44.863	424.446	14.835	376.45	467.15	0.226	0.304	7.661	14.835	58.312
8/29/2020 0:00	5212811	7.832	-45.216	425.674	14.778	376.632	468.003	0.227	0.304	7.761	14.778	59.734
8/29/2020 1:00	5216411	7.817	-44.322	426.735	14.771	377.854	469.604	0.228	0.305	7.766	14.771	66.471
8/29/2020 2:00	5220011	7.826	-44.873	427.517	14.764	376.409	467.879	0.227	0.304	7.751	14.764	42.05
8/29/2020 3:00	5223611	7.821	-44.572	428.044	14.754	376.485	468.094	0.227	0.304	7.904	14.754	42.738
8/29/2020 4:00	5227211	7.816	-44.248	429.062	14.816	379.002	470.522	0.228	0.306	7.969	14.816	10.688
8/29/2020 5:00	5230811	7.816	-44.289	429.391	14.8	377.509	468.851	0.227	0.305	7.974	14.8	6.775
8/29/2020 6:00	5234411	7.83	-45.083	430.786	14.741	376.841	468.673	0.227	0.305	7.829	14.741	12.38
8/29/2020 7:00	5238011	7.819	-44.417	430.91	14.667	376.216	468.721	0.227	0.305	7.79	14.667	7.069
8/29/2020 8:00	5241611	7.843	-45.8	430.328	14.625	375.425	468.205	0.227	0.304	7.809	14.625	7.235
8/29/2020 9:00	5245211	7.858	-46.687	430.969	14.58	376.022	469.449	0.227	0.305	7.793	14.58	7.332
8/29/2020 10:00	5248811	7.894	-48.783	431.179	14.509	373.985	467.707	0.227	0.304	7.762	14.509	9.637
8/29/2020 11:00	5252411	7.88	-47.929	432.288	14.438	373.855	468.332	0.227	0.304	7.67	14.438	9.678
8/29/2020 12:00	5256011	7.881	-47.972	432.941	14.397	373.182	467.953	0.227	0.304	7.62	14.397	12.007
8/29/2020 13:00	5259611	7.88	-47.927	432.612	14.479	374.999	469.302	0.227	0.305	7.695	14.479	10.855
8/29/2020 14:00	5263211	7.875	-47.677	431.773	14.698	377.192	469.597	0.228	0.305	7.803	14.698	10.505
8/29/2020 15:00	5266811	7.861	-46.897	432.524	14.658	375.102	467.433	0.226	0.304	7.627	14.658	14.559
8/29/2020 16:00	5270411	7.889	-48.492	432.193	14.734	378.631	470.981	0.228	0.306	7.812	14.734	12.926
8/29/2020 17:00	5274011	7.881	-48.063	430.941	14.847	379.087	470.287	0.228	0.306	7.953	14.847	12.33
8/29/2020 18:00	5277611	7.866	-47.183	430.123	14.942	379.88	470.207	0.228	0.306	8.003	14.942	12
8/29/2020 19:00	5281211	7.825	-44.832	429.818	14.896	380.532	471.533	0.229	0.306	7.945	14.896	10.655
8/29/2020 20:00	5284811	7.861	-46.93	427.777	15.169	382.473	470.893	0.228	0.306	8.262	15.169	11.097
8/29/2020 21:00	5288411	7.783	-42.369	434.605	15.11	381.831	470.758	0.228	0.306	7.964	15.11	9.523
8/29/2020 22:00	5292011	7.805	-43.681	439.159	15.004	380.667	470.491	0.228	0.306	7.55	15.004	35.259
8/29/2020 23:00	5295611	7.818	-44.398	440.046	14.913	377.684	467.814	0.227	0.304	7.524	14.913	7.164
8/30/2020 0:00	5299211	7.809	-43.874	441.913	14.827	379.141	470.573	0.228	0.306	7.432	14.827	8.757
8/30/2020 1:00	5302811	7.815	-44.177	438.94	14.756	377.613	469.469	0.228	0.305	7.557	14.756	7.687
8/30/2020 2:00	5306411	7.823	-44.687	439.555	14.695	378.531	471.293	0.228	0.306	7.586	14.695	8.504
8/30/2020 3:00	5310011	7.801	-43.366	442.814	14.636	377.562	470.75	0.228	0.306	7.543	14.636	7.239
8/30/2020 4:00	5313611	7.807	-43.693	443.119	14.577	377.155	470.9	0.228	0.306	7.582	14.577	6.871
8/30/2020 5:00	5317211	7.822	-44.556	442.301	14.527	377.185	471.507	0.228	0.306	7.374	14.527	8.231
8/30/2020 6:00	5320811	7.806	-43.607	442.53	14.465	376.973	471.938	0.229	0.307	7.291	14.465	4.94
8/30/2020 7:00	5324411	7.813	-44.045	440.158	14.385	376.019	471.648	0.228	0.307	7.278	14.385	7.092
8/30/2020 8:00	5328011	7.817	-44.236	440.122	14.305	375.251	471.583	0.228	0.307	7.285	14.305	6.922
8/30/2020 9:00	5331611	7.805	-43.535	442.421	14.239	374.554	471.459	0.228	0.306	7.205	14.239	10.806
8/30/2020 10:00	5335211	7.807	-43.628	442.754	14.21	374.017	471.104	0.228	0.306	7.257	14.21	7.451
8/30/2020 11:00	5338811	7.844	-45.805	443.42	14.185	374.309	471.758	0.229	0.307	7.282	14.185	8.453
8/30/2020 12:00	5342411	7.836	-45.326	444.581	14.155	374.417	472.232	0.229	0.307	7.283	14.155	9.061
8/30/2020 13:00	5346011	7.826	-44.799	443.126	14.439	378.276	473.86	0.23	0.308	7.539	14.439	7.502
8/30/2020 14:00	5349611	7.849	-46.217	440.175	15.067	383.733	473.584	0.23	0.308	7.693	15.067	9.09
8/30/2020 15:00	5353211	7.797	-43.318	439.45	15.99	392.751	474.386	0.23	0.308	7.587	15.99	7.896
8/30/2020 16:00	5356811	7.828	-45.042	439.161	15.443	387.204	473.664	0.23	0.308	7.756	15.443	7.117
8/30/2020 17:00	5360411	7.851	-46.229	442.824	14.456	376.986	472.048	0.229	0.307	7.208	14.456	11.667
8/30/2020 18:00	5364011	7.846	-45.953	443.753	14.219	376.491	474.12	0.23	0.308	7.137	14.219	11.496
8/30/2020 19:00	5367611	7.867	-47.154	442.976	14.194	376.135	473.952	0.23	0.308	7.142	14.194	11.414
8/30/2020 20:00	5371211	7.822	-44.513	443.291	14.259	376.511	473.696	0.229	0.308	7.193	14.259	11.903
8/30/2020 21:00	5374811	7.802	-43.457	440.919	14.719	380.897	473.971	0.23	0.308	7.814	14.719	7.294
8/30/2020 22:00	5378411	7.832	-45.247	435.936	15.011	384.674	475.375	0.231	0.309	7.886	15.011	7.293
8/30/2020 23:00	5382011	7.83	-45.109	440.053	14.893	382.606	474.14	0.23	0.308	7.346	14.893	6.272
8/31/2020 0:00	5385611	7.824	-44.732	441.326	14.782	381.604	474.135	0.23	0.308	7.641	14.782	6.77
8/31/2020 1:00	5389211	7.846	-45.998	439.185	14.671	381.036	474.687	0.23	0.309	7.699	14.671	7.761
8/31/2020 2:00	5392811	7.823	-44.63	445.289	14.332	377.942	474.654	0.23	0.309	6.915	14.332	9.829
8/31/2020 3:00	5396411	7.82	-44.405	447.482	14.16	375.309	473.298	0.229	0.308	6.805	14.16	11.57

TABLE E1

Upstream Water Quality Sonde Data

Mighty Peace Watershed Alliance
Beaverlodge River

Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848	Sensor: Turb SN#: 737648
Date and Time	Seconds	pH (pH)	pH(mV) (mV)									Turbidity (NTU)
8/31/2020 4:00	5400011	7.812	-43.945	449.621	14.142	376.137	474.555	0.23	0.308	6.729	14.142	11.694
8/31/2020 5:00	5403611	7.826	-44.768	449.864	14.077	375.955	475.073	0.23	0.309	6.78	14.077	8.75
8/31/2020 6:00	5407212	7.824	-44.596	447.242	14.017	375.54	475.227	0.23	0.309	6.892	14.017	6.065
8/31/2020 7:00	5410812	7.812	-43.888	447.835	13.949	374.455	474.639	0.23	0.309	7.066	13.949	6.74
8/31/2020 8:00	5414412	7.807	-43.607	448.169	13.906	374.528	475.222	0.23	0.309	6.584	13.906	7.828
8/31/2020 9:00	5418012	7.815	-44.074	446.204	13.893	374.203	474.961	0.23	0.309	6.904	13.893	7.486
8/31/2020 10:00	5421612	7.82	-44.353	445.89	13.914	373.801	474.215	0.23	0.308	6.985	13.914	7.873
8/31/2020 11:00	5425212	7.833	-45.102	443.081	13.952	374.746	474.976	0.23	0.309	7.165	13.952	7.322
8/31/2020 12:00	5428812	7.855	-46.406	444.543	13.968	375.788	476.113	0.231	0.309	6.969	13.968	12.89
8/31/2020 13:00	5432412	7.858	-46.57	441.148	13.978	376.753	477.221	0.231	0.31	7.175	13.978	10.984
8/31/2020 14:00	5436012	7.86	-46.718	438.16	14.03	376.72	476.571	0.231	0.31	7.19	14.03	10.76
8/31/2020 15:00	5439612	7.866	-47.083	435.821	14.121	377.982	477.122	0.231	0.31	7.43	14.121	14.488
8/31/2020 16:00	5443212	7.866	-47.104	435.874	14.208	379.211	477.674	0.231	0.31	7.499	14.208	12.3
8/31/2020 17:00	5446812	7.827	-44.842	434.121	14.24	379.572	477.759	0.232	0.311	7.39	14.24	10.563
8/31/2020 18:00	5450412	7.861	-46.792	432.262	14.258	380.103	478.226	0.232	0.311	7.516	14.258	13.652
8/31/2020 19:00	5454012	7.862	-46.875	430.373	14.244	379.477	477.594	0.231	0.31	7.572	14.244	11.445
8/31/2020 20:00	5457612	7.852	-46.26	429.205	14.188	379.426	478.168	0.232	0.311	7.43	14.188	13.301
8/31/2020 21:00	5461212	7.812	-43.952	429.208	14.147	378.987	478.087	0.232	0.311	7.279	14.147	10.293
8/31/2020 22:00	5464812	7.804	-43.44	432.295	14.075	379.142	479.121	0.232	0.311	6.736	14.075	11.981
8/31/2020 23:00	5468412	7.813	-43.976	431.554	14.021	374.931	474.415	0.23	0.308	7.138	14.021	9.753
9/1/2020 0:00	5472012	7.834	-45.19	430.464	13.984	377.479	478.068	0.232	0.311	7.366	13.984	9.177
9/1/2020 1:00	5475612	7.824	-44.615	429.918	13.933	376.758	477.744	0.231	0.311	7.391	13.933	8.092
9/1/2020 2:00	5479212	7.831	-44.978	429.286	13.886	376.504	477.96	0.232	0.311	7.463	13.886	8.22
9/1/2020 3:00	5482812	7.844	-45.722	429.162	13.83	376.36	478.434	0.232	0.311	7.385	13.83	9.014
9/1/2020 4:00	5486412	7.839	-45.421	429.963	13.763	375.466	478.076	0.232	0.311	7.428	13.763	8.183
9/1/2020 5:00	5490012	7.852	-46.184	429.413	13.706	375.098	478.264	0.232	0.311	7.427	13.706	9.474
9/1/2020 6:00	5493612	7.829	-44.856	430.533	13.627	374.556	478.494	0.232	0.311	7.282	13.627	9.524
9/1/2020 7:00	5497212	7.822	-44.401	436.055	13.547	374.259	479.056	0.232	0.311	7.195	13.547	8.225
9/1/2020 8:00	5500812	7.838	-45.376	433.943	13.532	374.005	478.901	0.232	0.311	7.276	13.532	8.74
9/1/2020 9:00	5504412	7.846	-45.784	433.161	13.485	374.034	479.488	0.232	0.312	7.294	13.485	9.558
9/1/2020 10:00	5508012	7.851	-46.079	432.405	13.44	373.496	479.332	0.232	0.312	7.326	13.44	10.177
9/1/2020 11:00	5511612	7.864	-46.852	431.518	13.374	373.25	479.791	0.232	0.312	7.334	13.374	9.932
9/1/2020 12:00	5515212	7.848	-45.927	431.201	13.338	373.063	479.98	0.232	0.312	7.337	13.338	11.979
9/1/2020 13:00	5518812	7.866	-46.954	429.842	13.384	373.728	480.283	0.233	0.312	7.43	13.384	10.533
9/1/2020 14:00	5522412	7.845	-45.803	428.223	13.682	377.198	481.226	0.233	0.313	7.603	13.682	11.105
9/1/2020 15:00	5526012	7.853	-46.26	428.342	13.659	375.174	478.918	0.232	0.311	7.518	13.659	12.715
9/1/2020 16:00	5529612	7.847	-45.877	429.007	13.493	375.185	480.876	0.233	0.313	7.398	13.493	13.963
9/1/2020 17:00	5533212	7.832	-45.009	428.592	13.657	377.954	482.487	0.234	0.314	7.421	13.657	14.236
9/1/2020 18:00	5536812	7.826	-44.699	427.403	13.707	378.235	482.261	0.234	0.313	7.427	13.707	13.867
9/1/2020 19:00	5540412	7.838	-45.4	426.196	13.721	378.179	482.024	0.233	0.313	7.497	13.721	11.621
9/1/2020 20:00	5544012	7.805	-43.437	428.917	13.632	378.712	483.745	0.234	0.314	7.236	13.632	15.455
9/1/2020 21:00	5547612	7.794	-42.808	429.324	13.618	379.029	484.313	0.235	0.315	6.976	13.618	10.507
9/1/2020 22:00	5551212	7.798	-43.042	432.522	13.745	378.736	482.45	0.234	0.314	6.399	13.745	8.973
9/1/2020 23:00	5554812	7.787	-42.458	433.795	13.818	380.616	483.985	0.234	0.315	6.801	13.818	9.19
9/2/2020 0:00	5558412	7.82	-44.343	435.125	13.791	380.724	484.442	0.235	0.315	6.904	13.791	8.91
9/2/2020 1:00	5562012	7.777	-41.852	435.647	13.777	381.055	485.027	0.235	0.315	6.481	13.777	6.072
9/2/2020 2:00	5565612	7.787	-42.396	435.461	13.73	380.405	484.747	0.235	0.315	6.934	13.73	6.92
9/2/2020 3:00	5569212	7.811	-43.797	428.044	13.684	378.87	483.333	0.234	0.314	7.671	13.684	7.23
9/2/2020 4:00	5572812	7.808	-43.638	427.102	13.653	379.273	484.221	0.235	0.315	7.372	13.653	7.199
9/2/2020 5:00	5576412	7.814	-43.964	428.571	13.577	377.699	483.1	0.234	0.314	7.352	13.577	6.899
9/2/2020 6:00	5580012	7.837	-45.314	427.851	13.513	377.516	483.629	0.234	0.314	7.282	13.513	7.659
9/2/2020 7:00	5583612	7.832	-44.982	428.747	13.453	377.614	484.462	0.235	0.315	7.245	13.453	8.496
9/2/2020 8:00	5587212	7.814	-43.931	433.115	13.361	377.128	484.926	0.235	0.315	6.464	13.361	4.978
9/2/2020 9:00	5590812	7.799	-43.037	435.516	13.309	377.083	485.487	0.235	0.316	6.256	13.309	8.478
9/2/2020 10:00	5594412	7.829	-44.816	431.508	13.311	377.915	486.536	0.236	0.316	7.27	13.311	10.89
9/2/2020 11:00	5598012	7.839	-45.397	428.955	13.308	375.94	484.032	0.234	0.315	7.34	13.308	8.416
9/2/2020 12:00	5601613	7.834	-45.073	429.796	13.328	377.299	485.542	0.235	0.316	7.258	13.328	13.3
9/2/2020 13:00	5605213	7.84	-45.471	427.891	13.599	379.929	485.699	0.235	0.316	7.557	13.599	9.119
9/2/2020 14:00	5608813	7.817	-44.239	426.687	14.181	387.439	488.354	0.237	0.317	7.544	14.181	8.432
9/2/2020 15:00	5612413	7.811	-43.955	425.479	14.583	391.116	488.266	0.237	0.317	7.741	14.583	7.85

TABLE E1

Upstream Water Quality Sonde Data

Mighty Peace Watershed Alliance
Beaverlodge River

Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848	Sensor: Turb SN#: 737648
		Seconds	pH (pH)	pH(mV) (mV)								Turbidity (NTU)
9/2/2020 16:00		5616013	7.816	-44.188	425.562	14.343	387.946	487.09	0.236	0.317	7.751	14.343
9/2/2020 17:00		5619613	7.822	-44.518	425.393	14.013	384.284	486.341	0.236	0.316	7.676	14.013
9/2/2020 18:00		5623213	7.823	-44.529	427.434	13.748	381.754	486.251	0.236	0.316	7.463	13.748
9/2/2020 19:00		5626813	7.825	-44.651	427.005	13.919	384.836	488.148	0.237	0.317	7.58	13.919
9/2/2020 20:00		5630413	7.812	-43.931	423.612	14.161	387.541	488.716	0.237	0.318	7.902	14.161
9/2/2020 21:00		5634013	7.817	-44.241	423.164	14.27	388.051	488.083	0.237	0.317	7.981	14.27
9/2/2020 22:00		5637613	7.797	-43.08	427.298	14.084	387.322	489.347	0.237	0.318	7.558	14.084
9/2/2020 23:00		5641213	7.802	-43.33	427.188	14.041	390.573	493.968	0.24	0.321	7.35	14.041
9/3/2020 0:00		5644813	7.81	-43.783	431.568	14.039	388.789	491.731	0.238	0.32	6.541	14.039
9/3/2020 1:00		5648413	7.803	-43.385	434.744	14.042	389.553	492.67	0.239	0.32	6.315	14.042
9/3/2020 2:00		5652013	7.776	-41.802	442.69	14.003	389.392	492.927	0.239	0.32	6.074	14.003
9/3/2020 3:00		5655613	7.79	-42.651	442.802	13.981	389.897	493.829	0.239	0.321	6.24	13.981
9/3/2020 4:00		5659213	7.802	-43.294	435.929	13.895	387.917	492.352	0.239	0.32	6.559	13.895
9/3/2020 5:00		5662813	7.831	-45.009	432.085	13.799	386.751	492.008	0.238	0.32	7.09	13.799
9/3/2020 6:00		5666413	7.818	-44.186	433.602	13.689	385.442	491.667	0.238	0.32	7.127	13.689
9/3/2020 7:00		5670013	7.823	-44.515	434.746	13.572	384.139	491.4	0.238	0.319	7.108	13.572
9/3/2020 8:00		5673613	7.825	-44.587	436.458	13.46	382.53	490.684	0.238	0.319	6.842	13.46
9/3/2020 9:00		5677213	7.814	-43.917	440.993	13.411	381.844	490.393	0.238	0.319	6.606	13.411
9/3/2020 10:00		5680813	7.826	-44.649	437.793	13.431	381.713	489.99	0.237	0.318	7.312	13.431
9/3/2020 11:00		5684413	7.827	-44.723	436.937	13.421	381.378	489.669	0.237	0.318	7.367	13.421
9/3/2020 12:00		5688013	7.827	-44.718	435.921	13.426	382.159	490.616	0.238	0.319	7.232	13.426
9/3/2020 13:00		5691613	7.827	-44.684	435.604	13.457	382.8	491.067	0.238	0.319	7.197	13.457
9/3/2020 14:00		5695213	7.829	-44.892	432.588	13.851	387.971	492.945	0.239	0.32	7.595	13.851
9/3/2020 15:00		5698813	7.805	-43.533	429.572	14.117	389.936	492.254	0.239	0.32	7.797	14.117
9/3/2020 16:00		5702413	7.791	-42.737	430.245	14.223	391.08	492.443	0.239	0.32	7.659	14.223
9/3/2020 17:00		5706013	7.794	-42.875	428.881	14.046	389.047	491.974	0.239	0.32	7.747	14.046
9/3/2020 18:00		5709613	7.82	-44.36	432.15	14.021	388.844	492.022	0.239	0.32	7.61	14.021
9/3/2020 19:00		5713213	7.812	-43.981	429.444	14.324	393.956	494.864	0.24	0.322	7.835	14.324
9/3/2020 20:00		5716813	7.806	-43.671	426.432	14.678	397.771	495.445	0.24	0.322	7.79	14.678
9/3/2020 21:00		5720413	7.759	-41.039	419.13	15.343	405.02	496.616	0.241	0.323	7.864	15.343
9/3/2020 22:00		5724013	7.773	-41.804	427.045	15.301	404.679	496.686	0.241	0.323	7.016	15.301
9/3/2020 23:00		5727613	7.794	-43.027	425.185	15.131	402.944	496.536	0.241	0.323	7.137	15.131
9/4/2020 0:00		5731213	7.808	-43.814	424.535	15.005	401.943	496.779	0.241	0.323	7.11	15.005
9/4/2020 1:00		5734813	7.796	-43.125	429.343	14.896	401.09	497.002	0.241	0.323	7.083	14.896
9/4/2020 2:00		5738413	7.828	-44.947	426.437	14.772	399.99	497.101	0.241	0.323	7.27	14.772
9/4/2020 3:00		5742013	7.809	-43.845	428.855	14.632	396.511	494.423	0.24	0.321	7.257	14.632
9/4/2020 4:00		5745613	7.815	-44.165	429.203	14.517	395.706	494.773	0.24	0.322	7.005	14.517
9/4/2020 5:00		5749213	7.812	-43.952	429.889	14.401	395.985	496.5	0.241	0.323	6.865	14.401
9/4/2020 6:00		5752813	7.823	-44.601	431.523	14.303	394.896	496.293	0.241	0.323	6.881	14.303
9/4/2020 7:00		5756413	7.823	-44.572	432.872	14.192	394.499	497.125	0.241	0.323	6.829	14.192
9/4/2020 8:00		5760013	7.819	-44.332	436.758	14.087	393.721	497.395	0.241	0.323	6.497	14.087
9/4/2020 9:00		5763613	7.821	-44.451	434.016	14.069	392.769	496.412	0.241	0.323	7.428	14.069
9/4/2020 10:00		5767213	7.839	-45.476	433.845	14.047	392.28	496.059	0.241	0.322	7.419	14.047
9/4/2020 11:00		5770813	7.843	-45.702	433.828	14.085	394.043	497.827	0.241	0.324	7.527	14.085
9/4/2020 12:00		5774413	7.846	-45.929	432.576	14.155	395.67	499.035	0.242	0.324	7.768	14.155
9/4/2020 13:00		5778013	7.848	-46.074	431.365	14.311	397.231	499.128	0.242	0.324	7.827	14.311
9/4/2020 14:00		5781613	7.834	-45.28	430.297	14.412	397.95	498.826	0.242	0.324	7.985	14.412
9/4/2020 15:00		5785213	7.848	-46.055	431.256	14.42	398.39	499.279	0.242	0.325	7.757	14.42
9/4/2020 16:00		5788813	7.82	-44.518	427.77	15.014	405.056	500.518	0.243	0.325	8.068	15.014
9/4/2020 17:00		5792413	7.822	-44.777	423.991	15.657	412.636	502.27	0.244	0.326	8.259	15.657
9/4/2020 18:00		5796013	7.813	-44.262	422.672	15.866	414.304	501.863	0.244	0.326	8.289	15.866
9/4/2020 19:00		5799613	7.815	-44.355	422.694	15.815	415.371	503.742	0.245	0.327	8.097	15.815
9/4/2020 20:00		5803213	7.821	-44.696	425.81	15.575	411.389	501.708	0.244	0.326	7.614	15.575
9/4/2020 21:00		5806813	7.8	-43.428	432.104	15.57	411.709	502.158	0.244	0.326	7.288	15.57
9/4/2020 22:00		5810413	7.801	-43.461	432.498	15.412	410.319	502.31	0.244	0.327	7.458	15.412
9/4/2020 23:00		5814013	7.789	-42.775	433.087	15.281	408.573	501.702	0.244	0.326	7.458	15.281
9/5/2020 0:00		5817614	7.818	-44.425	431.802	15.125	407.396	502.099	0.244	0.326	7.994	15.125
9/5/2020 1:00		5821214	7.799	-43.323	436.179	14.998	405.338	501.059	0.243	0.326	7.518	14.998
9/5/2020 2:00		5824814	7.798	-43.218	435.909	14.861	404.216	501.299	0.243	0.326	7.727	14.861
9/5/2020 3:00		5828414	7.799	-43.292	435.7	14.782	403.66	501.548	0.244	0.326	7.69	14.782

TABLE E1

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Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848	Sensor: Turb SN#: 737648
		Seconds	pH (pH)	pH(mV) (mV)								Turbidity (NTU)
9/5/2020 4:00		5832014	7.792	-42.861	438.47	14.693	403.38	502.26	0.244	0.326	7.416	14.693
9/5/2020 5:00		5835614	7.793	-42.892	440.745	14.588	401.4	501.042	0.243	0.326	6.969	14.588
9/5/2020 6:00		5839214	7.789	-42.658	442.595	14.52	401.555	502.046	0.244	0.326	7.055	14.52
9/5/2020 7:00		5842814	7.82	-44.425	443.16	14.447	400.035	501.025	0.243	0.326	6.906	14.447
9/5/2020 8:00		5846414	7.795	-42.996	446.183	14.374	399.44	501.151	0.243	0.326	6.762	14.374
9/5/2020 9:00		5850014	7.788	-42.574	449.335	14.342	399.406	501.496	0.243	0.326	7.104	14.342
9/5/2020 10:00		5853614	7.812	-43.943	442.156	14.374	400.181	502.084	0.244	0.326	8.182	14.374
9/5/2020 11:00		5857214	7.851	-46.268	437.507	14.382	400.179	501.987	0.244	0.326	8.192	14.382
9/5/2020 12:00		5860814	7.843	-45.793	438.596	14.425	400.965	502.455	0.244	0.327	7.905	14.425
9/5/2020 13:00		5864414	7.836	-45.395	438.179	14.513	402.556	503.387	0.244	0.327	7.97	14.513
9/5/2020 14:00		5868014	7.839	-45.643	436.649	14.831	406.209	504.122	0.245	0.328	8.374	14.831
9/5/2020 15:00		5871614	7.831	-45.245	434.035	15.364	413.137	506.33	0.246	0.329	8.419	15.364
9/5/2020 16:00		5875214	7.83	-45.211	432.131	15.626	415.619	506.264	0.246	0.329	8.324	15.626
9/5/2020 17:00		5878814	7.798	-43.352	443.854	15.651	418.729	509.754	0.248	0.331	7.423	15.651
9/5/2020 18:00		5882414	7.779	-42.219	445.785	15.601	417.455	508.79	0.247	0.331	7.282	15.601
9/5/2020 19:00		5886014	7.796	-43.194	441.686	15.487	415.579	507.858	0.247	0.33	7.587	15.487
9/5/2020 20:00		5889614	7.784	-42.496	444.354	15.458	415.109	507.629	0.247	0.33	7.019	15.458
9/5/2020 21:00		5893214	7.803	-43.545	445.451	15.198	411.633	506.447	0.246	0.329	5.722	15.198
9/5/2020 22:00		5896814	7.802	-43.528	441.627	15.213	412.991	507.942	0.247	0.33	7.731	15.213
9/5/2020 23:00		5900414	7.813	-44.127	442.135	15.095	411.172	507.108	0.246	0.33	7.489	15.095
9/6/2020 0:00		5904014	7.806	-43.721	442.864	14.94	409.615	507.043	0.246	0.33	7.726	14.94
9/6/2020 1:00		5907614	7.822	-44.641	443.224	14.803	407.753	506.371	0.246	0.329	7.619	14.803
9/6/2020 2:00		5911214	7.812	-44.017	443.641	14.682	406.37	506.105	0.246	0.329	8.071	14.682
9/6/2020 3:00		5914814	7.819	-44.41	444.745	14.549	405.26	506.335	0.246	0.329	7.475	14.549
9/6/2020 4:00		5918414	7.814	-44.124	449.745	14.486	404.117	505.659	0.245	0.329	7.38	14.486
9/6/2020 5:00		5922014	7.821	-44.491	450.746	14.417	404.011	506.364	0.246	0.329	7.077	14.417
9/6/2020 6:00		5925614	7.809	-43.797	452.043	14.34	403.652	506.853	0.246	0.329	7.199	14.34
9/6/2020 7:00		5929214	7.818	-44.322	453.972	14.268	399.463	502.453	0.244	0.327	7.015	14.268
9/6/2020 8:00		5932814	7.82	-44.408	454.325	14.208	405.524	510.82	0.248	0.332	6.644	14.208
9/6/2020 9:00		5936414	7.798	-43.097	456.375	14.159	400.104	504.586	0.245	0.328	6.442	14.159
9/6/2020 10:00		5940014	7.799	-43.175	458.857	14.135	401.855	507.084	0.246	0.33	5.829	14.135
9/6/2020 11:00		5943614	7.802	-43.359	459.983	14.157	396.237	499.735	0.242	0.325	5.863	14.157
9/6/2020 12:00		5947214	7.789	-42.62	459.546	14.206	399.124	502.779	0.244	0.327	6.388	14.206
9/6/2020 13:00		5950814	7.792	-42.81	458.514	14.325	399.987	502.424	0.244	0.327	6.836	14.325
9/6/2020 14:00		5954414	7.822	-44.553	452.687	14.514	405.933	507.599	0.246	0.33	7.538	14.514
9/6/2020 15:00		5958014	7.796	-43.063	454.776	14.572	415.809	519.225	0.252	0.337	6.998	14.572
9/6/2020 16:00		5961614	7.798	-43.216	453.083	14.641	407.044	507.445	0.246	0.33	7.469	14.641
9/6/2020 17:00		5965214	7.802	-43.452	453.09	14.69	409.922	510.434	0.248	0.332	7.207	14.69
9/6/2020 18:00		5968814	7.796	-43.111	457.114	14.708	410.558	511.013	0.248	0.332	6.49	14.708
9/6/2020 19:00		5972414	7.792	-42.827	451.988	14.697	407.394	507.202	0.246	0.33	7.123	14.697
9/6/2020 20:00		5976014	7.809	-43.833	451.345	14.629	408.776	509.748	0.248	0.331	6.985	14.629
9/6/2020 21:00		5979614	7.833	-45.218	449.027	14.461	406.304	508.705	0.247	0.331	7.964	14.461
9/6/2020 22:00		5983214	7.829	-44.951	449.709	14.311	404.894	508.76	0.247	0.331	7.342	14.311
9/6/2020 23:00		5986814	7.827	-44.839	452.797	14.23	404.165	508.838	0.247	0.331	6.476	14.23
9/7/2020 0:00		5990414	7.814	-44.031	454.292	14.103	402.863	508.751	0.247	0.331	6.28	14.103
9/7/2020 1:00		5994014	7.81	-43.793	456.394	13.995	401.346	508.157	0.247	0.33	6.54	13.995
9/7/2020 2:00		5997614	7.823	-44.525	456.487	13.88	400.072	507.962	0.246	0.33	6.581	13.88
9/7/2020 3:00		6001214	7.806	-43.542	458.664	13.801	399.23	507.857	0.246	0.33	5.996	13.801
9/7/2020 4:00		6004814	7.802	-43.294	458.59	13.704	398.308	507.889	0.246	0.33	5.668	13.704
9/7/2020 5:00		6008414	7.797	-42.973	459.868	13.578	397.045	507.83	0.246	0.33	5.965	13.578
9/7/2020 6:00		6012014	7.791	-42.603	462.176	13.45	395.954	508.028	0.246	0.33	5.99	13.45
9/7/2020 7:00		6015614	7.788	-42.448	462.205	13.403	395.847	508.482	0.247	0.331	5.559	13.403
9/7/2020 8:00		6019214	7.788	-42.436	462.043	13.365	401.847	516.661	0.251	0.336	5.483	13.365
9/7/2020 9:00		6022814	7.8	-43.082	458.008	13.288	394.647	508.373	0.246	0.33	5.771	13.288
9/7/2020 10:00		6026414	7.806	-43.476	456.886	13.272	395.076	509.12	0.247	0.331	5.509	13.272
9/7/2020 11:00		6030014	7.8	-43.092	456.919	13.321	395.373	508.896	0.247	0.331	5.234	13.321
9/7/2020 12:00		6033614	7.79	-42.543	458.993	13.403	393.868	505.939	0.245	0.329	5.791	13.403
9/7/2020 13:00		6037214	7.795	-42.851	456.423	13.485	397.691	509.821	0.247	0.331	5.623	13.485
9/7/2020 14:00		6040814	7.795	-42.872	453.047	13.57	397.507	508.529	0.247	0.331	5.895	13.57
9/7/2020 15:00		6044415	7.794	-42.841	449.158	13.723	399.786	509.53	0.247	0.331	6.749	13.723

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	Seconds	pH (pH)	pH(mV) (mV)									
9/7/2020 16:00	6048015	7.8	-43.163	445.773	13.83	400.878	509.6	0.247	0.331	6.702	13.83	8.428
9/7/2020 17:00	6051615	7.8	-43.187	444.609	13.664	399.295	509.645	0.247	0.331	6.517	13.664	9.933
9/7/2020 18:00	6055215	7.798	-43.044	443.501	13.538	400.777	513.114	0.249	0.334	6.665	13.538	9.294
9/7/2020 19:00	6058815	7.804	-43.39	442.487	13.526	398.54	510.39	0.248	0.332	6.422	13.526	8.496
9/7/2020 20:00	6062415	7.786	-42.348	445.513	13.474	395.319	506.915	0.246	0.329	5.924	13.474	6.758
9/7/2020 21:00	6066015	7.775	-41.692	448.474	13.479	402.534	516.102	0.25	0.335	5.565	13.479	5.39
9/7/2020 22:00	6069615	7.785	-42.238	449.197	13.469	402.689	516.426	0.251	0.336	5.684	13.469	4.473
9/7/2020 23:00	6073215	7.791	-42.603	448.61	13.538	402.817	515.725	0.25	0.335	6.002	13.538	5.945
9/8/2020 0:00	6076815	7.767	-41.23	451.874	13.639	404.178	516.194	0.251	0.336	5.748	13.639	3.913
9/8/2020 1:00	6080415	7.766	-41.187	450.975	13.647	405.591	517.894	0.251	0.337	5.694	13.647	4.865
9/8/2020 2:00	6084015	7.782	-42.095	447.804	13.588	404.18	516.832	0.251	0.336	6.233	13.588	4.333
9/8/2020 3:00	6087615	7.798	-43.051	449.07	13.526	398.617	510.492	0.248	0.332	6.289	13.526	4.462
9/8/2020 4:00	6091215	7.802	-43.268	449.39	13.492	403.527	517.211	0.251	0.336	6.203	13.492	4.169
9/8/2020 5:00	6094815	7.806	-43.495	448.095	13.383	401.802	516.381	0.251	0.336	6.386	13.383	3.848
9/8/2020 6:00	6098415	7.79	-42.548	453.195	13.335	402.013	517.264	0.251	0.336	5.943	13.335	4.944
9/8/2020 7:00	6102015	7.796	-42.851	452.017	13.311	401.579	517	0.251	0.336	6.138	13.311	5.161
9/8/2020 8:00	6105615	7.79	-42.498	452.902	13.275	400.974	516.689	0.251	0.336	5.708	13.275	3.563
9/8/2020 9:00	6109215	7.777	-41.795	456.571	13.288	401.298	516.939	0.251	0.336	5.49	13.288	4.251
9/8/2020 10:00	6112815	7.77	-41.378	458.664	13.32	402.255	517.758	0.251	0.337	5.25	13.32	3.989
9/8/2020 11:00	6116415	7.773	-41.535	456.857	13.321	401.686	517.02	0.251	0.336	6.064	13.321	5.224
9/8/2020 12:00	6120015	7.795	-42.863	450.57	13.409	401.925	516.206	0.25	0.336	6.864	13.409	6.338
9/8/2020 13:00	6123615	7.797	-42.994	448.26	13.791	406.329	517.022	0.251	0.336	7.115	13.791	6.949
9/8/2020 14:00	6127215	7.796	-43.039	443.82	14.477	414.547	518.824	0.252	0.337	7.292	14.477	6.139
9/8/2020 15:00	6130815	7.804	-43.53	442.478	14.558	415.039	518.437	0.252	0.337	7.251	14.558	3.79
9/8/2020 16:00	6134415	7.794	-42.996	441.963	14.872	418.006	518.257	0.252	0.337	7.319	14.872	4.902
9/8/2020 17:00	6138015	7.778	-42.131	439.583	15.455	424.141	518.705	0.252	0.337	7.733	15.455	3.928
9/8/2020 18:00	6141615	7.79	-42.88	439.948	15.815	428.307	519.429	0.253	0.338	7.963	15.815	4.143
9/8/2020 19:00	6145215	7.752	-40.755	439.033	16.319	434.574	520.956	0.254	0.339	7.561	16.319	3.35
9/8/2020 20:00	6148815	7.758	-41.113	441.224	16.344	435.013	521.178	0.254	0.339	7.096	16.344	3.482
9/8/2020 21:00	6152415	7.732	-39.537	447.041	16.085	431.677	520.272	0.253	0.338	7.058	16.085	4.422
9/8/2020 22:00	6156015	7.737	-39.797	445.911	15.962	430.78	520.663	0.253	0.338	6.395	15.962	2.957
9/8/2020 23:00	6159615	7.745	-40.245	444.652	15.841	429.862	521.001	0.254	0.339	6.744	15.841	4.772
9/9/2020 0:00	6163215	7.786	-42.653	444.23	15.756	430.501	522.811	0.254	0.34	6.217	15.756	4.919
9/9/2020 1:00	6166815	7.764	-41.296	445.427	15.307	421.204	516.9	0.251	0.336	6.378	15.307	4.545
9/9/2020 2:00	6170415	7.789	-42.758	447.849	15.24	424.94	522.308	0.254	0.34	6.185	15.24	4.075
9/9/2020 3:00	6174015	7.814	-44.184	445.396	14.997	425.242	525.671	0.256	0.342	6.495	14.997	4.548
9/9/2020 4:00	6177615	7.817	-44.327	445.482	14.736	422.978	526.117	0.256	0.342	6.723	14.736	6.708
9/9/2020 5:00	6181215	7.819	-44.37	449.759	14.46	416.252	521.173	0.253	0.339	6.334	14.46	4.548
9/9/2020 6:00	6184815	7.828	-44.889	449.557	14.171	413.357	521.143	0.253	0.339	6.772	14.171	4.978
9/9/2020 7:00	6188415	7.815	-44.096	453.107	13.978	411.138	520.769	0.253	0.338	6.24	13.978	4.623
9/9/2020 8:00	6192015	7.819	-44.272	454.916	13.81	409.025	520.212	0.253	0.338	6.357	13.81	3.918
9/9/2020 9:00	6195615	7.822	-44.432	455.844	13.681	407.549	519.963	0.252	0.338	6.15	13.681	3.708
9/9/2020 10:00	6199215	7.806	-43.516	458.776	13.644	407.166	519.944	0.252	0.338	5.706	13.644	4.311
9/9/2020 11:00	6202815	7.786	-42.348	461.821	13.626	406.947	519.883	0.252	0.338	5.489	13.626	4.839
9/9/2020 12:00	6206415	7.791	-42.67	460.717	13.67	406.639	518.939	0.252	0.337	6.348	13.67	5.918
9/9/2020 13:00	6210015	7.786	-42.422	457.625	14.17	413.28	521.067	0.253	0.339	7.177	14.17	4.348
9/9/2020 14:00	6213615	7.752	-40.66	449.437	15.617	430.092	524.003	0.255	0.341	7.338	15.617	3.811
9/9/2020 15:00	6217215	7.742	-40.15	448.853	16.329	444.531	532.762	0.26	0.346	7.527	16.329	4.195
9/9/2020 16:00	6220815	7.727	-39.489	446.574	17.679	457.94	532.382	0.26	0.346	7.808	17.679	3.632
9/9/2020 17:00	6224415	7.676	-36.652	441.441	19.339	478.285	536.267	0.262	0.349	7.355	19.339	3.725
9/9/2020 18:00	6228015	7.712	-38.552	437.619	17.628	452.405	526.543	0.257	0.342	7.921	17.628	3.537
9/9/2020 19:00	6231615	7.736	-39.897	440.714	16.85	431.983	511.622	0.249	0.333	8.025	16.85	3.784
9/9/2020 20:00	6235215	7.756	-40.934	444.29	16.105	430.623	518.762	0.252	0.337	7.597	16.105	3.375
9/9/2020 21:00	6238815	7.757	-41.001	449.619	15.862	430.911	522.024	0.254	0.339	7.033	15.862	4.068
9/9/2020 22:00	6242415	7.787	-42.672	452.759	15.641	428.314	521.549	0.254	0.339	6.842	15.641	4.881
9/9/2020 23:00	6246015	7.765	-41.42	453.042	15.689	430.473	523.591	0.255	0.34	6.749	15.689	6.475
9/10/2020 0:00	6249615	7.799	-43.387	452.804	15.602	429.258	523.173	0.255	0.34	6.591	15.602	6.314
9/10/2020 1:00	6253215	7.78	-42.272	454.461	15.529	429.294	524.103	0.255	0.341	6.581	15.529	4.694
9/10/2020 2:00	6256815	7.777	-42.088	453.996	15.369	429.771	526.649	0.256	0.342	6.349	15.369	6.693
9/10/2020 3:00	6260415	7.808	-43.848	452.239	15.076	425.2	524.65	0.255	0.341	6.684	15.076	9.69

TABLE E1

Upstream Water Quality Sonde Data

Mighty Peace Watershed Alliance
Beaverlodge River

Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848	Sensor: Turb SN#: 737648
	Seconds	pH (pH)	pH(mV) (mV)									Turbidity (NTU)
9/10/2020 4:00	6264015	7.817	-44.324	451.65	14.783	423.691	526.423	0.256	0.342	6.569	14.783	6.271
9/10/2020 5:00	6267615	7.813	-44.06	453.719	14.499	420.07	525.466	0.255	0.342	6.719	14.499	4.472
9/10/2020 6:00	6271215	7.809	-43.766	455.355	14.259	417.098	524.752	0.255	0.341	6.564	14.259	4.324
9/10/2020 7:00	6274815	7.817	-44.208	458.023	14.054	414.476	524.041	0.255	0.341	6.208	14.054	4.801
9/10/2020 8:00	6278416	7.808	-43.65	458.807	13.878	421.79	535.565	0.26	0.348	6.447	13.878	3.273
9/10/2020 9:00	6282016	7.804	-43.416	460.886	13.76	410.32	522.495	0.254	0.34	6.081	13.76	3.27
9/10/2020 10:00	6285616	7.791	-42.653	461.365	13.71	409.039	521.488	0.253	0.339	5.927	13.71	3.721
9/10/2020 11:00	6289216	7.771	-41.471	460.798	13.687	427.992	545.966	0.265	0.355	6.005	13.687	9.032
9/10/2020 12:00	6292816	7.793	-42.794	458.059	13.711	411.67	524.831	0.255	0.341	7.027	13.711	6.825
9/10/2020 13:00	6296416	7.801	-43.209	458.295	13.739	397.263	506.122	0.246	0.329	6.932	13.739	7.091
9/10/2020 14:00	6300016	7.811	-43.836	455.455	14.02	414.135	524.032	0.255	0.341	7.241	14.02	6.573
9/10/2020 15:00	6303616	7.799	-43.192	454.425	14.363	417.99	524.57	0.255	0.341	7.395	14.363	6.975
9/10/2020 16:00	6307216	7.802	-43.416	453.176	14.544	419.508	524.193	0.255	0.341	7.685	14.544	5.928
9/10/2020 17:00	6310816	7.798	-43.278	452.499	15.166	426.319	524.913	0.255	0.341	7.824	15.166	6.777
9/10/2020 18:00	6314416	7.782	-42.336	450.401	15.092	424.98	524.171	0.255	0.341	8.049	15.092	6.62
9/10/2020 19:00	6318016	7.787	-42.617	449.833	15.242	423.172	520.109	0.253	0.338	8.106	15.242	6.525
9/10/2020 20:00	6321616	7.768	-41.575	452.251	15.465	431.491	527.565	0.257	0.343	8.087	15.465	5.448
9/10/2020 21:00	6325216	7.743	-40.162	454.327	16.01	438.062	528.875	0.257	0.344	7.149	16.01	4.381
9/10/2020 22:00	6328816	7.762	-41.296	454.783	16.178	439.849	528.977	0.258	0.344	7.025	16.178	3.865
9/10/2020 23:00	6332416	7.795	-43.261	448.846	16.196	439.964	528.904	0.258	0.344	7.264	16.196	4.757
9/11/2020 0:00	6336016	7.788	-42.81	449.118	15.786	435.163	528.099	0.257	0.343	7.093	15.786	6.428
9/11/2020 1:00	6339616	7.813	-44.212	448.229	15.597	433.396	528.268	0.257	0.343	7.506	15.597	7.323
9/11/2020 2:00	6343216	7.827	-45.004	448.844	15.339	431.754	529.448	0.258	0.344	7.591	15.339	5.703
9/11/2020 3:00	6346816	7.841	-45.803	446.145	15.219	430.441	529.329	0.258	0.344	7.748	15.219	5.162
9/11/2020 4:00	6350416	7.813	-44.146	447.151	15.085	430.111	530.588	0.258	0.345	7.539	15.085	4.849
9/11/2020 5:00	6354016	7.814	-44.177	451.967	15	430.642	532.317	0.259	0.346	6.682	15	3.765
9/11/2020 6:00	6357616	7.798	-43.256	455.243	14.871	430.015	533.159	0.259	0.347	5.791	14.871	5.565
9/11/2020 7:00	6361216	7.808	-43.809	457.05	14.791	426.41	529.695	0.258	0.344	5.829	14.791	5.07
9/11/2020 8:00	6364816	7.816	-44.262	456.518	14.695	427.286	531.992	0.259	0.346	5.674	14.695	4.006
9/11/2020 9:00	6368416	7.801	-43.373	457.203	14.635	426.984	532.375	0.259	0.346	6.498	14.635	6.031
9/11/2020 10:00	6372016	7.838	-45.54	450.765	14.58	425.007	530.613	0.258	0.345	7.465	14.58	5.155
9/11/2020 11:00	6375616	7.843	-45.779	449.583	14.551	424.722	530.624	0.258	0.345	7.487	14.551	4.764
9/11/2020 12:00	6379216	7.844	-45.884	447.592	14.678	426.104	530.741	0.258	0.345	7.59	14.678	4.641
9/11/2020 13:00	6382816	7.844	-45.891	446.917	14.853	428.675	531.724	0.259	0.346	7.465	14.853	4.828
9/11/2020 14:00	6386416	7.843	-45.898	443.572	15.074	430.913	531.719	0.259	0.346	7.944	15.074	5.042
9/11/2020 15:00	6390016	7.849	-46.277	441.77	15.134	433.705	534.413	0.26	0.347	8.093	15.134	5.452
9/11/2020 16:00	6393616	7.825	-44.854	440.506	15.255	435.672	535.31	0.261	0.348	8.227	15.255	5.597
9/11/2020 17:00	6397216	7.828	-45.042	438.992	15.398	437.752	536.065	0.261	0.348	8.184	15.398	5.247
9/11/2020 18:00	6400816	7.821	-44.661	439.054	15.449	438.935	536.873	0.261	0.349	8.285	15.449	4.829
9/11/2020 19:00	6404416	7.828	-45.044	440.859	15.402	439.124	537.69	0.262	0.349	7.663	15.402	4.231
9/11/2020 20:00	6408016	7.82	-44.549	444.097	15.276	438.367	538.353	0.262	0.35	7.024	15.276	4.913
9/11/2020 21:00	6411616	7.82	-44.582	444.955	15.137	436.48	537.787	0.262	0.35	6.178	15.137	3.801
9/11/2020 22:00	6415216	7.807	-43.755	447.158	14.975	434.615	537.548	0.262	0.349	6.779	14.975	3.474
9/11/2020 23:00	6418816	7.819	-44.453	446.591	14.823	432.852	537.288	0.261	0.349	7.262	14.823	3.223
9/12/2020 0:00	6422416	7.802	-43.459	449.352	14.68	430.89	536.67	0.261	0.349	6.801	14.68	3.7
9/12/2020 1:00	6426016	7.787	-42.524	452.763	14.548	429.492	536.626	0.261	0.349	6.225	14.548	3.396
9/12/2020 2:00	6429616	7.795	-42.984	453.171	14.443	428.256	536.417	0.261	0.349	6.61	14.443	3.816
9/12/2020 3:00	6433216	7.792	-42.822	455.293	14.342	427.204	536.391	0.261	0.349	6.384	14.342	4.124
9/12/2020 4:00	6436816	7.78	-42.071	457.055	14.252	425.946	535.974	0.261	0.348	5.604	14.252	3.227
9/12/2020 5:00	6440416	7.8	-43.223	453.355	14.161	425.366	536.421	0.261	0.349	7.026	14.161	6.868
9/12/2020 6:00	6444016	7.813	-43.957	452.48	14.07	424.085	535.983	0.261	0.348	7.153	14.07	5.754
9/12/2020 7:00	6447616	7.802	-43.335	453.7	13.999	423.761	536.482	0.261	0.349	6.685	13.999	6.859
9/12/2020 8:00	6451216	7.803	-43.371	455.105	13.953	423.011	536.128	0.261	0.348	5.976	13.953	7.231
9/12/2020 9:00	6454816	7.793	-42.777	458.278	13.912	422.657	536.223	0.261	0.349	5.467	13.912	5.413
9/12/2020 10:00	6458416	7.789	-42.543	457.839	13.853	421.94	536.078	0.261	0.348	5.694	13.853	4.186
9/12/2020 11:00	6462016	7.771	-41.53	456.146	13.884	421.835	535.54	0.26	0.348	6.571	13.884	4.678
9/12/2020 12:00	6465616	7.774	-41.702	455.844	13.936	422.39	535.572	0.26	0.348	5.99	13.936	3.604
9/12/2020 13:00	6469216	7.782	-42.15	456.423	14.014	423.385	535.816	0.26	0.348	5.934	14.014	3.092
9/12/2020 14:00	6472816	7.784	-42.369	453.49	14.429	427.939	536.198	0.261	0.349	6.641	14.429	8.302
9/12/2020 15:00	6476416	7.773	-41.845	449.299	15.206	437.476	538.147	0.262	0.35	6.8	15.206	5.663

TABLE E1**Upstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance
Beaverlodge River

Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity ($\mu\text{S}/\text{cm}$)	Sensor: Cond SN#: 736508 Specific Conductivity ($\mu\text{S}/\text{cm}$)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848 Temperature (C)	Sensor: Turb SN#: 737648 Turbidity (NTU)
Date and Time	Seconds	pH (pH)	pH(mV) (mV)									
9/12/2020 16:00	6480016	7.766	-41.547	443.219	16.175	450.257	541.538	0.264	0.352	7.24	16.175	6.278
9/12/2020 17:00	6483616	7.768	-41.69	440.482	16.354	452.173	541.609	0.264	0.352	7.246	16.354	5.306
9/12/2020 18:00	6487216	7.761	-41.285	443.019	16.269	451.215	541.519	0.264	0.352	6.825	16.269	5.625
9/12/2020 19:00	6490816	7.759	-41.168	443.885	16.183	450.989	542.316	0.264	0.353	7.332	16.183	4.638
9/12/2020 20:00	6494416	7.769	-41.687	441.608	15.846	446.015	540.52	0.263	0.351	6.551	15.846	4.825
9/12/2020 21:00	6498016	7.772	-41.749	445.313	15.331	438.943	538.362	0.262	0.35	6.459	15.331	3.702
9/12/2020 22:00	6501616	7.783	-42.353	447.575	14.981	435.805	538.938	0.262	0.35	6.129	14.981	4.413
9/12/2020 23:00	6505216	7.777	-41.983	449.278	14.679	432.499	538.698	0.262	0.35	6.016	14.679	4.692
9/13/2020 0:00	6508816	7.811	-43.898	447.261	14.343	429.622	539.416	0.262	0.351	6.359	14.343	5.501
9/13/2020 1:00	6512416	7.817	-44.229	447.184	14.066	425.969	538.409	0.262	0.35	6.273	14.066	4.248
9/13/2020 2:00	6516017	7.812	-43.902	449.65	13.884	423.184	537.251	0.261	0.349	6.077	13.884	3.688
9/13/2020 3:00	6519617	7.775	-41.714	455.87	13.752	421.636	537.01	0.261	0.349	5.515	13.752	3.95
9/13/2020 4:00	6523217	7.775	-41.733	457.963	13.669	421.4	537.784	0.261	0.35	5.125	13.669	5.41
9/13/2020 5:00	6526817	7.772	-41.497	459.048	13.56	421.056	538.786	0.262	0.35	5.106	13.56	3.506
9/13/2020 6:00	6530417	7.778	-41.883	459.036	13.451	420.23	539.168	0.262	0.35	5.475	13.451	4.776
9/13/2020 7:00	6534017	7.786	-42.305	458.121	13.29	418.711	539.339	0.262	0.351	5.446	13.29	4.167
9/13/2020 8:00	6537617	7.791	-42.553	459.747	13.26	419.26	540.451	0.263	0.351	4.858	13.26	4.9
9/13/2020 9:00	6541217	7.797	-42.913	455.953	13.186	417.498	539.162	0.262	0.35	5.199	13.186	6.02
9/13/2020 10:00	6544817	7.79	-42.539	453.824	13.219	418.422	539.91	0.262	0.351	5.057	13.219	4.277
9/13/2020 11:00	6548417	7.779	-41.862	454.039	13.293	419.852	540.771	0.263	0.352	4.798	13.293	3.455
9/13/2020 12:00	6552017	7.801	-43.161	443.799	13.428	420.124	539.326	0.262	0.351	6.354	13.428	6.099
9/13/2020 13:00	6555617	7.8	-43.135	437.321	13.54	421.419	539.506	0.262	0.351	6.482	13.54	6.159
9/13/2020 14:00	6559217	7.798	-43.035	434.148	13.615	422.272	539.619	0.262	0.351	6.417	13.615	7.458
9/13/2020 15:00	6562817	7.779	-41.952	432.102	13.833	424.847	540.035	0.262	0.351	6.55	13.833	6.976
9/13/2020 16:00	6566417	7.793	-42.775	429.076	13.89	424.958	539.425	0.262	0.351	6.873	13.89	7.486
9/13/2020 17:00	6570017	7.777	-41.89	427.007	13.987	427.251	541.063	0.263	0.352	6.785	13.987	6.296
9/13/2020 18:00	6573617	7.777	-41.895	426.108	14.047	428.575	541.954	0.264	0.352	6.977	14.047	5.529
9/13/2020 19:00	6577217	7.785	-42.322	424.496	14.042	429.241	542.865	0.264	0.353	7.244	14.042	6.064
9/13/2020 20:00	6580817	7.787	-42.455	424.203	13.929	426.671	541.082	0.263	0.352	7.272	13.929	5.55
9/13/2020 21:00	6584417	7.797	-43.004	422.951	13.836	427.116	542.871	0.264	0.353	7.197	13.836	5.854
9/13/2020 22:00	6588017	7.786	-42.374	422.553	13.76	426.457	543.035	0.264	0.353	7.116	13.76	5.181
9/13/2020 23:00	6591617	7.796	-42.903	421.967	13.645	424.859	542.521	0.264	0.353	7.244	13.645	5.761
9/14/2020 0:00	6595217	7.792	-42.689	424.427	13.54	423.897	542.679	0.264	0.353	7.14	13.54	5.688
9/14/2020 1:00	6598817	7.785	-42.25	427.753	13.464	422.489	541.881	0.263	0.352	6.969	13.464	7.027
9/14/2020 2:00	6602417	7.781	-42.038	429.181	13.41	421.89	541.838	0.263	0.352	6.797	13.41	6.158
9/14/2020 3:00	6606017	7.782	-42.067	433.237	13.321	421.114	542.024	0.263	0.352	6.538	13.321	6.378
9/14/2020 4:00	6609617	7.781	-41.988	435.44	13.246	420.339	542.02	0.263	0.352	6.365	13.246	7.536
9/14/2020 5:00	6613217	7.788	-42.408	433.549	13.148	418.313	540.718	0.263	0.351	6.339	13.148	7.448
9/14/2020 6:00	6616817	7.801	-43.132	433.709	13.098	418.188	541.22	0.263	0.352	6.304	13.098	7.751
9/14/2020 7:00	6620417	7.794	-42.722	433.253	13.041	417.623	541.257	0.263	0.352	6.286	13.041	7.187
9/14/2020 8:00	6624017	7.794	-42.729	432.569	13.026	418.822	543.013	0.264	0.353	6.185	13.026	8.5
9/14/2020 9:00	6627617	7.794	-42.739	432.305	12.98	417.338	541.699	0.263	0.352	6.243	12.98	7.112
9/14/2020 10:00	6631217	7.794	-42.725	433.344	12.918	416.76	541.785	0.263	0.352	6.184	12.918	7.243
9/14/2020 11:00	6634817	7.804	-43.306	433.969	12.927	416.374	541.168	0.263	0.352	6.272	12.927	7.822
9/14/2020 12:00	6638417	7.805	-43.337	431.883	12.914	416.609	541.649	0.263	0.352	6.408	12.914	6.7
9/14/2020 13:00	6642017	7.799	-43.011	433.683	12.9	417.117	542.488	0.263	0.353	5.822	12.9	4.97
9/14/2020 14:00	6645617	7.795	-42.777	434.951	12.868	416.657	542.326	0.263	0.353	5.955	12.868	7.147
9/14/2020 15:00	6649217	7.789	-42.388	439.09	12.83	416.883	543.129	0.264	0.353	4.811	12.83	4.227
9/14/2020 16:00	6652817	7.781	-41.959	443.62	12.81	416.84	543.352	0.264	0.353	4.262	12.81	4.763
9/14/2020 17:00	6656417	7.769	-41.251	448.5	12.801	417.515	544.354	0.264	0.354	3.737	12.801	5.031
9/14/2020 18:00	6660017	7.775	-41.58	448.124	12.787	417.661	544.735	0.264	0.354	4.108	12.787	5.056
9/14/2020 19:00	6663617	7.797	-42.834	442.716	12.728	417.552	545.39	0.265	0.355	4.83	12.728	4.886
9/14/2020 20:00	6667217	7.787	-42.233	443.191	12.649	416.987	545.724	0.265	0.355	4.962	12.649	5.687
9/14/2020 21:00	6670817	7.794	-42.644	440.723	12.593	417.158	546.713	0.265	0.355	4.658	12.593	5.301
9/14/2020 22:00	6674417	7.788	-42.298	439.51	12.521	417.176	547.719	0.266	0.356	4.846	12.521	5.186
9/14/2020 23:00	6678017	7.78	-41.847	441.822	12.474	416.794	547.871	0.266	0.356	4.959	12.474	5.196
9/15/2020 0:00	6681617	7.79	-42.377	441.245	12.437	416.465	547.952	0.266	0.356	4.968	12.437	5.679
9/15/2020 1:00	6685217	7.782	-41.916	443.968	12.405	415.064	546.549	0.265	0.355	4.475	12.405	5.841
9/15/2020 2:00	6688817	7.786	-42.183	445.053	12.355	416.434	549.037	0.266	0.357	4.748	12.355	5.247
9/15/2020 3:00	6692417	7.786	-42.152	446.521	12.328	415.54	548.229	0.266	0.356	4.653	12.328	4.712

TABLE E1**Upstream Water Quality Sonde Data**Mighty Peace Watershed Alliance
Beaverlodge River

Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848	Sensor: Turb SN#: 737648
Seconds	pH (pH)	pH(mV) (mV)										Turbidity (NTU)
9/15/2020 4:00	6696017	7.784	-42.057	446.984	12.294	415.569	548.741	0.266	0.357	4.717	12.294	4.653
9/15/2020 5:00	6699618	7.787	-42.179	446.371	12.237	413.146	546.324	0.265	0.355	4.8	12.237	4.36
9/15/2020 6:00	6703218	7.782	-41.928	446.576	12.181	415.199	549.823	0.267	0.357	4.726	12.181	4.615
9/15/2020 7:00	6706818	7.789	-42.281	445.828	12.144	415.055	550.144	0.267	0.358	4.076	12.144	5.26
9/15/2020 8:00	6710418	7.794	-42.572	445.997	12.111	414.536	549.92	0.267	0.357	4.683	12.111	5.03
9/15/2020 9:00	6714018	7.802	-43.058	444.428	12.102	414.339	549.779	0.267	0.357	5.086	12.102	5.933
9/15/2020 10:00	6717618	7.801	-43.011	443.136	12.141	414.496	549.439	0.267	0.357	5.56	12.141	7.259
9/15/2020 11:00	6721218	7.812	-43.602	438.897	12.131	413.51	548.273	0.266	0.356	6.377	12.131	24.008
9/15/2020 12:00	6724818	7.817	-43.905	436.541	12.121	413.553	548.467	0.266	0.357	6.392	12.121	32.908
9/15/2020 13:00	6728418	7.82	-44.119	433.423	12.172	413.753	548.032	0.266	0.356	6.555	12.172	37.963
9/15/2020 14:00	6732018	7.811	-43.638	434.472	12.609	419.09	549.026	0.267	0.357	6.192	12.609	36.438
9/15/2020 15:00	6735618	7.791	-42.584	436.267	13.251	426.301	549.647	0.267	0.357	5.998	13.251	37.123
9/15/2020 16:00	6739218	7.76	-40.82	436.906	13.605	430.142	549.809	0.267	0.357	5.566	13.605	37.998
9/15/2020 17:00	6742818	7.77	-41.42	433.387	13.486	428.606	549.434	0.267	0.357	6.234	13.486	43.626
9/15/2020 18:00	6746418	7.807	-43.478	431.651	13.048	423.78	549.137	0.267	0.357	6.076	13.048	41.47
9/15/2020 19:00	6750018	7.808	-43.504	432.512	12.693	419.092	547.873	0.266	0.356	5.928	12.693	46.294
9/15/2020 20:00	6753618	7.794	-42.62	436.088	12.379	415.51	547.494	0.266	0.356	5.267	12.379	43.494
9/15/2020 21:00	6757218	7.791	-42.436	438.263	12.225	415.531	549.646	0.267	0.357	5.023	12.225	39.432
9/15/2020 22:00	6760818	7.805	-43.199	435.414	12.01	413.082	549.388	0.266	0.357	5.404	12.01	37.305
9/15/2020 23:00	6764418	7.795	-42.62	437.268	11.804	411.014	549.517	0.266	0.357	5.688	11.804	28.099
9/16/2020 0:00	6768018	7.796	-42.651	436.084	11.637	409.294	549.563	0.266	0.357	5.454	11.637	28.33
9/16/2020 1:00	6771618	7.793	-42.429	437.175	11.516	407.42	548.746	0.266	0.357	5.605	11.516	29.213
9/16/2020 2:00	6775218	7.796	-42.603	438.797	11.443	420.144	566.945	0.275	0.369	5.246	11.443	28.84
9/16/2020 3:00	6778818	7.807	-43.237	439.054	11.346	406.823	550.345	0.267	0.358	5.291	11.346	28.473
9/16/2020 4:00	6782418	7.794	-42.486	438.754	11.273	403.981	547.544	0.265	0.356	5.441	11.273	28.834
9/16/2020 5:00	6786018	7.785	-41.933	439.607	11.229	406.441	551.498	0.267	0.358	5.437	11.229	34.137
9/16/2020 6:00	6789618	7.809	-43.304	441.765	11.193	405.586	550.859	0.267	0.358	5.072	11.193	33.931
9/16/2020 7:00	6793218	7.806	-43.113	441.064	11.124	405.403	551.59	0.267	0.359	4.832	11.124	34.132
9/16/2020 8:00	6796818	7.79	-42.219	443.076	11.077	404.868	551.54	0.267	0.359	4.815	11.077	35.149
9/16/2020 9:00	6800418	7.796	-42.508	443.305	11.018	403.497	550.51	0.267	0.358	4.966	11.018	36.284
9/16/2020 10:00	6804018	7.794	-42.434	443.567	11.009	403.316	550.392	0.267	0.358	5.11	11.009	35.232
9/16/2020 11:00	6807618	7.793	-42.362	442.781	11.052	403.941	550.63	0.267	0.358	5.32	11.052	40.099
9/16/2020 12:00	6811218	7.793	-42.384	443.842	11.087	404.169	550.44	0.267	0.358	5.195	11.087	40.32
9/16/2020 13:00	6814818	7.793	-42.458	444.326	11.557	410.837	552.762	0.268	0.359	5.903	11.557	40.762
9/16/2020 14:00	6818418	7.771	-41.358	438.952	13.004	429.904	557.687	0.271	0.362	6.192	13.004	40.422
9/16/2020 15:00	6822018	7.754	-40.491	438.062	13.584	434.471	555.619	0.27	0.361	6.116	13.584	32.135
9/16/2020 16:00	6825618	7.747	-40.164	436.293	14.092	440.93	556.974	0.271	0.362	6.606	14.092	33.801
9/16/2020 17:00	6829218	7.758	-40.798	431.346	14.129	441.627	557.355	0.271	0.362	7.307	14.129	34.031
9/16/2020 18:00	6832818	7.747	-40.338	423.04	15.557	459.789	560.965	0.273	0.365	7.25	15.557	34.62
9/16/2020 19:00	6836418	7.749	-40.431	425.519	15.231	451.897	555.561	0.271	0.361	6.527	15.231	34.628
9/16/2020 20:00	6840018	7.764	-40.998	429.024	13.338	429.758	552.913	0.269	0.359	6.659	13.338	36.482
9/16/2020 21:00	6843618	7.796	-42.82	434.598	12.882	425.091	553.109	0.269	0.36	6.113	12.882	37.341
9/16/2020 22:00	6847218	7.781	-41.962	434.875	12.968	426.441	553.685	0.269	0.36	5.884	12.968	39.984
9/16/2020 23:00	6850819	7.793	-42.589	437.364	12.673	422.919	553.16	0.269	0.36	5.641	12.673	39.16
9/17/2020 0:00	6854419	7.801	-43.046	439.765	12.423	419.65	552.327	0.268	0.359	5.165	12.423	40.717
9/17/2020 1:00	6858019	7.793	-42.512	441.708	12.195	418.027	553.363	0.269	0.36	5.231	12.195	21.563
9/17/2020 2:00	6861619	7.797	-42.77	442.769	12.001	415.916	553.281	0.268	0.36	5.278	12.001	22.683
9/17/2020 3:00	6865219	7.805	-43.178	443.37	11.785	414.015	553.801	0.269	0.36	5.441	11.785	25.137
9/17/2020 4:00	6868819	7.801	-42.92	445.191	11.584	411.567	553.365	0.268	0.36	5.127	11.584	25.242
9/17/2020 5:00	6872419	7.798	-42.727	446.133	11.41	409.356	552.865	0.268	0.359	5.208	11.41	24.807
9/17/2020 6:00	6876019	7.809	-43.354	446.438	11.294	405.589	549.425	0.266	0.357	5.254	11.294	25.322
9/17/2020 7:00	6879619	7.81	-43.368	448.515	11.195	405.072	550.129	0.266	0.358	5.156	11.195	25.567
9/17/2020 8:00	6883219	7.805	-43.063	449.204	11.135	405.978	552.224	0.267	0.359	4.962	11.135	26.151
9/17/2020 9:00	6886819	7.816	-43.674	450.167	11.073	405.303	552.187	0.267	0.359	4.975	11.073	25.638
9/17/2020 10:00	6890419	7.809	-43.278	450.358	11.024	404.396	551.659	0.267	0.359	5.311	11.024	27.131
9/17/2020 11:00	6894019	7.803	-42.963	449.506	11.008	404.025	551.375	0.267	0.358	5.399	11.008	26.053
9/17/2020 12:00	6897619	7.798	-42.665	450.131	11.045	404.593	551.627	0.267	0.359	5.101	11.045	26.11
9/17/2020 13:00	6901219	7.798	-42.722	449.704	11.357	408.015	551.799	0.267	0.359	5.507	11.357	26.843
9/17/2020 14:00	6904819	7.786	-42.064	449.692	11.847	414.147	553.095	0.268	0.36	5.703	11.847	28.765
9/17/2020 15:00	6908419	7.777	-41.628	446.018	12.256	417.621	551.985	0.268	0.359	5.682	12.256	31.2

TABLE E1**Upstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance
Beaverlodge River

Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848	Sensor: Turb SN#: 737648
Seconds	pH (pH)	pH(mV) (mV)										Turbidity (NTU)
9/17/2020 16:00	6912019	7.769	-41.225	444.285	12.659	422.949	553.396	0.269	0.36	6.261	12.659	32.166
9/17/2020 17:00	6915619	7.789	-42.326	443.224	12.267	417.487	551.651	0.268	0.359	6.214	12.267	32.126
9/17/2020 18:00	6919219	7.79	-42.336	445.823	12.076	415.369	551.508	0.268	0.358	6.052	12.076	31.651
9/17/2020 19:00	6922819	7.794	-42.555	446.977	11.954	414.136	551.575	0.268	0.359	5.718	11.954	33.344
9/17/2020 20:00	6926419	7.791	-42.36	450.553	11.903	413.873	551.942	0.268	0.359	5.319	11.903	33.22
9/17/2020 21:00	6930019	7.786	-42.064	451.171	11.857	413.371	551.918	0.268	0.359	4.831	11.857	34.723
9/17/2020 22:00	6933619	7.779	-41.68	450.906	11.95	414.785	552.493	0.268	0.359	5.074	11.95	34.885
9/17/2020 23:00	6937219	7.78	-41.8	449.661	12.119	416.751	552.737	0.268	0.359	5.337	12.119	35.301
9/18/2020 0:00	6940819	7.793	-42.5	448.181	11.921	414.592	552.648	0.268	0.359	5.273	11.921	38.754
9/18/2020 1:00	6944419	7.787	-42.114	450.515	11.825	414.214	553.494	0.268	0.36	5.149	11.825	38.634
9/18/2020 2:00	6948019	7.802	-42.963	447.647	11.594	411.691	553.395	0.268	0.36	5.392	11.594	41.875
9/18/2020 3:00	6951619	7.796	-42.601	448.119	11.407	410.428	554.358	0.269	0.36	5.368	11.407	43.059
9/18/2020 4:00	6955219	7.802	-42.939	448.524	11.231	407.909	553.456	0.268	0.36	5.078	11.231	42.304
9/18/2020 5:00	6958819	7.802	-42.92	449.58	11.116	407.021	553.906	0.268	0.36	5.307	11.116	39.337
9/18/2020 6:00	6962419	7.792	-42.288	451.884	11.041	406.915	554.853	0.269	0.361	5.417	11.041	39.395
9/18/2020 7:00	6966019	7.802	-42.851	452.12	10.995	408.231	557.306	0.27	0.362	4.985	10.995	42.548
9/18/2020 8:00	6969619	7.795	-42.446	451.528	10.938	406.183	555.344	0.269	0.361	4.837	10.938	47.801
9/18/2020 9:00	6973219	7.8	-42.77	451.769	10.873	405.388	555.191	0.269	0.361	5.022	10.873	45.232
9/18/2020 10:00	6976819	7.808	-43.228	451.256	10.866	405.553	555.527	0.269	0.361	5.428	10.866	44.5
9/18/2020 11:00	6980419	7.797	-42.551	449.661	10.913	406.64	556.323	0.269	0.362	4.89	10.913	51.807
9/18/2020 12:00	6984019	7.785	-41.902	452.694	11.026	408.026	556.582	0.27	0.362	4.661	11.026	44.962
9/18/2020 13:00	6987619	7.789	-42.14	453.052	11.157	409.43	556.588	0.27	0.362	4.516	11.157	42.132
9/18/2020 14:00	6991219	7.784	-41.888	451.006	11.323	411.512	557.03	0.27	0.362	4.872	11.323	45.151
9/18/2020 15:00	6994820	7.787	-42.062	451.431	11.421	412.843	557.412	0.27	0.362	5.192	11.421	47.131
9/18/2020 16:00	6998420	7.786	-42.036	450.246	11.638	415.09	557.324	0.27	0.362	4.996	11.638	44.853
9/18/2020 17:00	7002020	7.79	-42.284	448.372	11.714	415.676	557.029	0.27	0.362	5.273	11.714	43.446
9/18/2020 18:00	7005620	7.785	-42.007	447.749	11.749	416.017	556.981	0.27	0.362	5.463	11.749	44.298
9/18/2020 19:00	7009220	7.787	-42.14	448.181	11.744	416.008	557.039	0.27	0.362	5.556	11.744	44.096
9/18/2020 20:00	7012820	7.787	-42.129	450.212	11.712	415.979	557.466	0.27	0.362	5.307	11.712	44.789
9/18/2020 21:00	7016420	7.787	-42.083	449.22	11.641	416.144	558.7	0.271	0.363	5.137	11.641	45.362
9/18/2020 22:00	7020020	7.783	-41.943	447.764	11.977	421.29	560.784	0.272	0.365	5.61	11.977	45.472
9/18/2020 23:00	7023620	7.787	-42.174	447.423	12.002	423.931	563.93	0.274	0.367	5.325	12.002	46.01
9/19/2020 0:00	7027220	7.811	-43.499	444.593	11.84	421.499	563.019	0.273	0.366	5.662	11.84	47.896
9/19/2020 1:00	7030820	7.825	-44.281	441.968	11.653	418.469	561.649	0.272	0.365	5.418	11.653	46.614
9/19/2020 2:00	7034420	7.834	-44.785	442.182	11.487	416.63	561.573	0.272	0.365	5.148	11.487	45.726
9/19/2020 3:00	7038020	7.833	-44.694	441.307	11.32	414.273	560.812	0.272	0.365	5.557	11.32	48.113
9/19/2020 4:00	7041620	7.831	-44.589	442.182	11.212	414.208	562.28	0.273	0.365	5.41	11.212	47.184
9/19/2020 5:00	7045220	7.835	-44.787	441.581	11.143	413.3	562.054	0.272	0.365	5.063	11.143	48.108
9/19/2020 6:00	7048820	7.829	-44.444	443.851	11.114	414.065	563.529	0.273	0.366	5.036	11.114	50.58
9/19/2020 7:00	7052420	7.819	-43.843	445.599	11.073	412.879	562.508	0.273	0.366	4.856	11.073	52.16
9/19/2020 8:00	7056020	7.793	-42.362	449.709	11.024	404.683	552.05	0.267	0.359	4.696	11.024	52.671
9/19/2020 9:00	7059620	7.811	-43.378	448.083	11.015	408.139	556.897	0.27	0.362	4.644	11.015	54.18
9/19/2020 10:00	7063220	7.816	-43.674	446.705	11.051	401.312	547.068	0.265	0.356	4.403	11.051	53.21
9/19/2020 11:00	7066820	7.825	-44.21	444.38	11.102	409.751	557.831	0.27	0.363	5.189	11.102	56.486
9/19/2020 12:00	7070420	7.826	-44.272	442.938	11.173	408.266	554.775	0.269	0.361	4.852	11.173	56.06
9/19/2020 13:00	7074020	7.82	-43.969	442.533	11.239	409.439	555.425	0.269	0.361	4.849	11.239	56.371
9/19/2020 14:00	7077620	7.813	-43.542	443.668	11.34	412.176	557.677	0.27	0.362	4.72	11.34	56.59
9/19/2020 15:00	7081220	7.818	-43.862	439.915	11.402	410.737	554.846	0.269	0.361	5.668	11.402	60.668
9/19/2020 16:00	7084820	7.829	-44.501	435.974	11.45	411.211	554.797	0.269	0.361	6.33	11.45	70.001
9/19/2020 17:00	7088420	7.819	-43.952	432.095	11.633	416.718	559.59	0.271	0.364	6.863	11.633	74.4
9/19/2020 18:00	7092020	7.823	-44.305	430.054	12.585	424.017	555.815	0.27	0.361	6.764	12.585	73.833
9/19/2020 19:00	7095620	7.814	-43.876	425.898	13.122	444.332	574.716	0.28	0.374	6.861	13.122	77.488
9/19/2020 20:00	7099220	7.795	-42.717	427.901	12.665	431.92	565.048	0.275	0.367	6.948	12.665	79.373
9/19/2020 21:00	7102820	7.776	-41.599	434.996	12.639	429.604	562.383	0.273	0.366	5.793	12.639	76.708
9/19/2020 22:00	7106420	7.782	-41.95	441.236	12.588	435.988	571.472	0.278	0.371	4.959	12.588	74.634
9/19/2020 23:00	7110020	7.797	-42.825	439.052	12.445	417.568	549.287	0.267	0.357	5.896	12.445	76.605
9/20/2020 0:00	7113620	7.811	-43.559	436.815	11.929	423.514	564.432	0.274	0.367	5.87	11.929	81.092
9/20/2020 1:00	7117220	7.811	-43.516	437.39	11.807	424.857	567.975	0.276	0.369	5.679	11.807	75.755
9/20/2020 2:00	7120820	7.803	-43.042	434.41	11.779	425.267	568.936	0.276	0.37	5.515	11.779	74.055
9/20/2020 3:00	7124420	7.846	-45.519	433.163	11.651	425.946	571.718	0.277	0.372	5.731	11.651	73.691

TABLE E1

Upstream Water Quality Sonde Data

Mighty Peace Watershed Alliance
Beaverlodge River

Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848	Sensor: Turb SN#: 737648
Date and Time	Seconds	pH (pH)	pH(mV) (mV)									Turbidity (NTU)
9/20/2020 4:00	7128020	7.845	-45.431	432.462	11.517	414.497	558.26	0.271	0.363	5.643	11.517	73.406
9/20/2020 5:00	7131621	7.848	-45.588	432.333	11.392	415.734	561.743	0.272	0.365	6.196	11.392	75.636
9/20/2020 6:00	7135221	7.823	-44.148	431.322	11.331	414.478	560.925	0.272	0.365	6.767	11.331	77.821
9/20/2020 7:00	7138821	7.811	-43.433	436.112	11.267	394.549	534.838	0.259	0.348	5.796	11.267	79.127
9/20/2020 8:00	7142421	7.803	-42.977	438.558	11.177	416.749	566.245	0.275	0.368	5.102	11.177	79.915
9/20/2020 9:00	7146021	7.824	-44.153	438.663	11.085	427.06	581.643	0.282	0.378	5.079	11.085	78.119
9/20/2020 10:00	7149621	7.81	-43.34	439.157	11.081	425.585	579.693	0.281	0.377	4.986	11.081	78.419
9/20/2020 11:00	7153221	7.817	-43.755	434.276	11.104	423.412	576.394	0.28	0.375	6.377	11.104	88.911
9/20/2020 12:00	7156821	7.827	-44.317	430.297	11.143	420.314	571.599	0.277	0.372	6.659	11.143	101.244
9/20/2020 13:00	7160421	7.826	-44.262	429.167	11.155	407.346	553.794	0.268	0.36	6.676	11.155	112.656
9/20/2020 14:00	7164021	7.82	-43.938	427.019	11.319	431.794	584.542	0.284	0.38	6.841	11.319	122.229
9/20/2020 15:00	7167621	7.825	-44.317	423.972	11.582	423.182	569.011	0.276	0.37	7.063	11.582	137.422
9/20/2020 16:00	7171221	7.818	-43.881	423.328	11.578	424	570.166	0.277	0.371	7.297	11.578	146.116
9/20/2020 17:00	7174821	7.828	-44.432	424.029	11.382	415.494	561.553	0.272	0.365	6.886	11.382	148.393
9/20/2020 18:00	7178421	7.825	-44.322	424.88	11.597	429.955	577.895	0.281	0.376	6.795	11.597	151.07
9/20/2020 19:00	7182021	7.821	-44.153	423.333	12.072	420.663	558.591	0.271	0.363	6.832	12.072	150.694
9/20/2020 20:00	7185621	7.791	-42.527	422.317	12.74	436.472	569.934	0.277	0.37	6.897	12.74	149.188
9/20/2020 21:00	7189221	7.785	-42.16	423.838	12.939	439.211	570.674	0.278	0.371	5.781	12.939	147.981
9/20/2020 22:00	7192821	7.763	-40.863	430.474	12.784	444.565	579.859	0.282	0.377	5.908	12.784	150.073
9/20/2020 23:00	7196421	7.779	-41.788	429.212	12.668	440.802	576.621	0.28	0.375	6.287	12.668	147.531
9/21/2020 0:00	720021	7.817	-43.981	426.578	12.519	428.93	563.193	0.274	0.366	6.03	12.519	135.179
9/21/2020 1:00	7203621	7.842	-45.4	421.018	12.414	431.926	568.613	0.276	0.37	7.025	12.414	140.448
9/21/2020 2:00	7207221	7.844	-45.514	421.788	12.35	435.543	574.304	0.279	0.373	6.196	12.35	141.055
9/21/2020 3:00	7210821	7.855	-46.155	420.441	12.275	436.38	576.502	0.28	0.375	6.101	12.275	139.241
9/21/2020 4:00	7214421	7.845	-45.569	422.901	12.198	435.107	575.926	0.28	0.374	5.922	12.198	139.171
9/21/2020 5:00	7218021	7.854	-46.034	421.964	12.118	433.101	574.438	0.279	0.373	5.517	12.118	137.149
9/21/2020 6:00	7221621	7.828	-44.556	423.106	12.012	433.362	576.337	0.28	0.375	5.755	12.012	134.106
9/21/2020 7:00	7225221	7.841	-45.292	423.505	11.889	432.445	576.911	0.28	0.375	5.723	11.889	136.222
9/21/2020 8:00	7228821	7.85	-45.786	423.104	11.716	432.584	579.652	0.281	0.377	5.445	11.716	135.602
9/21/2020 9:00	7232421	7.85	-45.748	424.008	11.597	441.877	593.925	0.289	0.386	5.475	11.597	134.555
9/21/2020 10:00	7236021	7.848	-45.605	424.058	11.537	428.148	576.346	0.28	0.375	6.456	11.537	136.039
9/21/2020 11:00	7239621	7.837	-44.951	427.074	11.487	426.634	575.062	0.279	0.374	6.246	11.487	143.941
9/21/2020 12:00	7243221	7.828	-44.415	426.711	11.407	422.876	571.168	0.277	0.371	6.32	11.407	149.532
9/21/2020 13:00	7246821	7.837	-44.942	424.086	11.437	423.969	572.204	0.278	0.372	6.522	11.437	179.99
9/21/2020 14:00	7250421	7.837	-45.013	420.505	11.6	426.971	573.836	0.279	0.373	7.135	11.6	172.958
9/21/2020 15:00	7254021	7.833	-44.961	412.087	13.065	444.731	576.049	0.28	0.374	7.956	13.065	183.516
9/21/2020 16:00	7257621	7.827	-44.775	407.154	13.851	454.711	577.729	0.281	0.376	7.848	13.851	170.863
9/21/2020 17:00	7261221	7.834	-45.18	404.553	13.767	457.744	582.781	0.284	0.379	8.211	13.767	185.093
9/21/2020 18:00	7264821	7.842	-45.626	402.533	13.828	461.542	586.742	0.286	0.381	8.441	13.828	180.049
9/21/2020 19:00	7268421	7.848	-46.015	403.053	13.91	464.938	589.882	0.288	0.383	7.907	13.91	178.873
9/21/2020 20:00	7272021	7.844	-45.683	407.647	13.498	448.647	574.962	0.28	0.374	7.01	13.498	175.991
9/21/2020 21:00	7275621	7.815	-43.955	414.745	13.138	451.907	584.292	0.284	0.38	6.422	13.138	171.091
9/21/2020 22:00	7279221	7.82	-44.177	417.287	12.802	447.719	583.713	0.284	0.379	5.268	12.802	170.153
9/21/2020 23:00	7282822	7.831	-44.763	414.504	12.435	442.611	582.382	0.283	0.379	6.137	12.435	168.669
9/22/2020 0:00	7286422	7.847	-45.626	416.908	12.147	437.759	580.192	0.282	0.377	6.211	12.147	169.09
9/22/2020 1:00	7290022	7.865	-46.651	416.18	11.904	432.946	577.37	0.28	0.375	5.867	11.904	168.681
9/22/2020 2:00	7293622	7.846	-45.505	418.693	11.697	430.2	576.741	0.28	0.375	5.934	11.697	169.135
9/22/2020 3:00	7297222	7.827	-44.382	424.625	11.561	430.35	578.967	0.281	0.376	5.568	11.561	172.697
9/22/2020 4:00	7300822	7.822	-44.115	427.31	11.431	428.508	578.412	0.281	0.376	5.381	11.431	176.21
9/22/2020 5:00	7304422	7.825	-44.253	428.33	11.329	427.357	578.376	0.281	0.376	5.099	11.329	177.472
9/22/2020 6:00	7308022	7.816	-43.719	431.589	11.231	425.487	577.312	0.28	0.375	4.649	11.231	176.119
9/22/2020 7:00	7311622	7.818	-43.836	432.338	11.139	421.887	573.79	0.278	0.373	4.185	11.139	172.959
9/22/2020 8:00	7315222	7.821	-43.993	433.459	11.044	424.15	578.309	0.28	0.376	4.205	11.044	164.831
9/22/2020 9:00	7318822	7.835	-44.785	431.329	10.967	422.708	577.499	0.28	0.375	4.41	10.967	166.79
9/22/2020 10:00	7322422	7.838	-44.961	428.757	10.887	421.532	577.091	0.28	0.375	4.895	10.887	165.05
9/22/2020 11:00	7326022	7.839	-44.963	429.358	10.847	421.298	577.378	0.28	0.375	4.812	10.847	161.456
9/22/2020 12:00	7329622	7.838	-44.916	428.793	10.82	421.038	577.422	0.28	0.375	4.734	10.82	162.227
9/22/2020 13:00	7333222	7.853	-45.807	423.352	11.042	423.457	577.38	0.28	0.375	5.241	11.042	164.86
9/22/2020 14:00	7336822	7.846	-45.455	423.586	11.086	423.986	577.449	0.28	0.375	5.368	11.086	165.182
9/22/2020 15:00	7340422	7.849	-45.66	422.866	11.295	426.877	578.233	0.281	0.376	5.17	11.295	165.514

TABLE E1

Upstream Water Quality Sonde Data

Mighty Peace Watershed Alliance
Beaverlodge River

Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848	Sensor: Turb SN#: 737648
	Seconds	pH (pH)	pH(mV) (mV)									Turbidity (NTU)
9/22/2020 16:00	7344022	7.838	-45.047	423.722	11.69	431.887	579.105	0.281	0.376	4.707	11.69	160.725
9/22/2020 17:00	7347622	7.848	-45.648	418.276	11.748	432.634	579.251	0.281	0.377	5.712	11.748	163.549
9/22/2020 18:00	7351222	7.85	-45.764	417.251	11.581	430.175	578.43	0.281	0.376	5.64	11.581	162.592
9/22/2020 19:00	7354822	7.848	-45.595	417.451	11.397	428.693	579.177	0.281	0.376	5.561	11.397	161.094
9/22/2020 20:00	7358422	7.843	-45.316	419.754	11.307	426.328	577.316	0.28	0.375	5.14	11.307	161.419
9/22/2020 21:00	7362022	7.826	-44.31	424.52	11.334	427.694	578.761	0.281	0.376	4.663	11.334	195.718
9/22/2020 22:00	7365622	7.801	-42.87	426.587	11.486	430.652	580.482	0.282	0.377	3.722	11.486	157.663
9/22/2020 23:00	7369222	7.82	-43.983	423.152	11.446	430.692	581.138	0.282	0.378	4.61	11.446	155.179
9/23/2020 0:00	7372822	7.832	-44.656	421.571	11.293	428.869	580.972	0.282	0.378	5.339	11.293	157.01
9/23/2020 1:00	7376422	7.851	-45.743	420.608	11.134	427.435	581.411	0.282	0.378	5.239	11.134	160.005
9/23/2020 2:00	7380022	7.845	-45.345	423.052	10.993	425.26	580.588	0.282	0.377	5.092	10.993	156.194
9/23/2020 3:00	7383622	7.849	-45.586	422.289	10.898	425.293	582.076	0.282	0.378	5.375	10.898	155.414
9/23/2020 4:00	7387222	7.833	-44.606	422.284	10.806	426.066	584.535	0.283	0.38	4.391	10.806	155.085
9/23/2020 5:00	7390822	7.84	-45.011	419.921	10.73	426.163	585.836	0.284	0.381	4.154	10.73	153.471
9/23/2020 6:00	7394422	7.832	-44.565	421.726	10.677	427.609	588.646	0.285	0.383	4.261	10.677	153.9
9/23/2020 7:00	7398022	7.849	-45.533	420.005	10.621	427.966	589.996	0.286	0.383	4.063	10.621	153.831
9/23/2020 8:00	7401622	7.846	-45.331	421.793	10.575	427.159	589.606	0.286	0.383	3.999	10.575	154.159
9/23/2020 9:00	7405222	7.841	-45.063	424.124	10.563	428.23	591.273	0.287	0.384	3.546	10.563	152.966
9/23/2020 10:00	7408822	7.845	-45.269	424.091	10.591	428.112	590.679	0.286	0.384	4.034	10.591	151.287
9/23/2020 11:00	7412423	7.832	-44.553	425.536	10.65	429.906	592.227	0.287	0.385	3.623	10.65	151.782
9/23/2020 12:00	7416023	7.843	-45.218	421.256	10.722	429.277	590.24	0.286	0.384	4.363	10.722	152.171
9/23/2020 13:00	7419623	7.845	-45.328	422.062	10.818	431.492	591.79	0.287	0.385	4.173	10.818	150.964
9/23/2020 14:00	7423223	7.84	-45.075	421.743	10.957	433.595	592.515	0.288	0.385	4.394	10.957	149.451
9/23/2020 15:00	7426823	7.82	-43.933	422.975	11.184	436.658	593.188	0.288	0.386	3.727	11.184	150.819
9/23/2020 16:00	7430423	7.82	-43.972	424.287	11.317	438.804	594.055	0.289	0.386	4.186	11.317	153.375
9/23/2020 17:00	7434023	7.803	-43.247	419.628	12.921	458.17	595.581	0.29	0.387	5.402	12.921	153.779
9/23/2020 18:00	7437623	7.797	-42.963	418.348	13.468	466.692	598.526	0.292	0.389	4.499	13.468	153.282
9/23/2020 19:00	7441223	7.818	-44.188	411.791	13.469	470.255	603.074	0.294	0.392	4.987	13.469	154.976
9/23/2020 20:00	7444823	7.816	-43.957	409.25	12.894	452.535	588.645	0.287	0.383	6.343	12.894	157.36
9/23/2020 21:00	7448423	7.812	-43.628	416.676	12.007	447.403	595.078	0.289	0.387	6.082	12.007	160.134
9/23/2020 22:00	7452023	7.828	-44.475	419.294	11.665	442.51	593.727	0.289	0.386	5.234	11.665	160.804
9/23/2020 23:00	7455623	7.814	-43.678	421.561	11.778	444.583	594.786	0.289	0.387	4.623	11.778	160.751
9/24/2020 0:00	7459223	7.799	-42.787	424.668	11.692	444.663	596.211	0.29	0.388	4.226	11.692	162.443
9/24/2020 1:00	7462823	7.793	-42.448	425.474	11.521	443.049	596.658	0.29	0.388	3.844	11.521	163.021
9/24/2020 2:00	7466423	7.796	-42.61	427.186	11.375	442.264	597.844	0.29	0.389	3.572	11.375	165.116
9/24/2020 3:00	7470023	7.808	-43.235	428.645	11.146	437.749	595.262	0.289	0.387	3.754	11.146	188.096
9/24/2020 4:00	7473623	7.816	-43.671	430.505	10.958	437.52	597.877	0.29	0.389	3.052	10.958	186.544
9/24/2020 5:00	7477223	7.803	-42.944	433.373	10.867	435.666	596.749	0.29	0.388	3.026	10.867	183.65
9/24/2020 6:00	7480823	7.782	-41.721	438.141	10.8	434.764	596.569	0.289	0.388	2.811	10.8	181.711
9/24/2020 7:00	7484423	7.799	-42.679	435.781	10.771	432.602	594.046	0.288	0.386	1.905	10.771	179.604
9/24/2020 8:00	7488023	7.811	-43.373	430.855	10.751	432.418	594.103	0.288	0.386	3.636	10.751	179.96
9/24/2020 9:00	7491623	7.821	-43.943	428.251	10.745	433.204	595.288	0.289	0.387	5.379	10.745	191.086
9/24/2020 10:00	7495223	7.826	-44.239	426.881	10.761	434.988	597.474	0.29	0.388	6.068	10.761	198.482
9/24/2020 11:00	7498823	7.825	-44.191	422.765	10.749	434.935	597.591	0.29	0.388	5.786	10.749	206.709
9/24/2020 12:00	7502423	7.842	-45.125	419.447	10.757	434.96	597.511	0.29	0.388	6.452	10.757	218.164
9/24/2020 13:00	7506023	7.84	-45.013	418.283	10.803	436.789	599.302	0.291	0.39	7.683	10.803	231.616
9/24/2020 14:00	7509623	7.844	-45.269	417.074	10.892	438.113	599.714	0.291	0.39	7.82	10.892	168.685
9/24/2020 15:00	7513223	7.84	-45.078	416.164	10.999	439.576	600.036	0.291	0.39	7.789	10.999	247.417
9/24/2020 16:00	7516823	7.844	-45.3	415.327	11.106	440.67	599.852	0.291	0.39	8.058	11.106	281.33
9/24/2020 17:00	7520423	7.838	-44.963	414.161	11.215	441.66	599.507	0.291	0.39	7.878	11.215	297.909
9/24/2020 18:00	7524023	7.84	-45.111	412.897	11.258	442.651	600.189	0.292	0.39	7.85	11.258	365.244
9/24/2020 19:00	7527623	7.836	-44.849	413.207	11.241	442.587	600.36	0.292	0.39	7.398	11.241	358.171
9/24/2020 20:00	7531223	7.834	-44.761	414.006	11.178	442.473	601.181	0.292	0.391	6.746	11.178	371.465
9/24/2020 21:00	7534823	7.833	-44.677	416.354	11.111	441.761	601.261	0.292	0.391	7.091	11.111	372.509
9/24/2020 22:00	7538423	7.83	-44.503	416.009	11.042	440.054	600.024	0.291	0.39	6.453	11.042	387.229
9/24/2020 23:00	7542023	7.826	-44.262	419.265	10.977	443.913	606.301	0.294	0.394	5.736	10.977	389.178
9/25/2020 0:00	7545623	7.827	-44.305	422.885	10.958	443.716	606.334	0.294	0.394	5.218	10.958	386.206
9/25/2020 1:00	7549224	7.827	-44.274	424.561	10.888	443.4	607.017	0.295	0.395	4.684	10.888	373.187
9/25/2020 2:00	7552824	7.804	-42.98	429.231	10.815	441.624	605.744	0.294	0.394	4.461	10.815	370.526
9/25/2020 3:00	7556424	7.795	-42.455	433.892	10.746	441.861	607.157	0.295	0.395	4.091	10.746	372.159

TABLE E1

Upstream Water Quality Sonde Data

Mighty Peace Watershed Alliance
Beaverlodge River

Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848	Sensor: Turb SN#: 737648
Seconds	pH (pH)	pH(mV) (mV)										Turbidity (NTU)
9/25/2020 4:00	7560024	7.813	-43.471	434.348	10.672	441.951	608.466	0.295	0.396	3.869	10.672	371.583
9/25/2020 5:00	7563624	7.814	-43.478	435.154	10.57	440.941	608.715	0.295	0.396	3.996	10.57	369.619
9/25/2020 6:00	7567224	7.823	-43.986	432.772	10.47	440.208	609.306	0.296	0.396	4.453	10.47	368.302
9/25/2020 7:00	7570824	7.825	-44.096	434.522	10.381	428.968	595.151	0.289	0.387	3.905	10.381	367.477
9/25/2020 8:00	7574424	7.819	-43.757	437.662	10.304	435.264	605.113	0.293	0.393	3.754	10.304	367.153
9/25/2020 9:00	7578024	7.813	-43.402	439.378	10.294	438.846	610.252	0.296	0.397	3.85	10.294	360.991
9/25/2020 10:00	7581624	7.825	-44.076	440.962	10.305	437.958	608.851	0.295	0.396	3.647	10.305	359.828
9/25/2020 11:00	7585224	7.799	-42.634	442.161	10.376	440.542	611.279	0.297	0.397	4.029	10.376	354.99
9/25/2020 12:00	7588824	7.804	-42.913	442.037	10.448	441.439	611.366	0.297	0.397	4.106	10.448	347.529
9/25/2020 13:00	7592424	7.796	-42.484	442.259	10.548	443.401	612.464	0.297	0.398	4.207	10.548	346.195
9/25/2020 14:00	7596024	7.818	-43.709	440.728	10.578	441.951	609.978	0.296	0.396	4.294	10.578	344.454
9/25/2020 15:00	7599624	7.809	-43.225	442.986	10.66	443.51	610.809	0.297	0.397	4.201	10.66	340.217
9/25/2020 16:00	7603224	7.816	-43.616	442.316	10.71	444.01	610.697	0.297	0.397	4.12	10.71	341.083
9/25/2020 17:00	7606824	7.819	-43.788	442.673	10.622	444.315	612.532	0.297	0.398	4.439	10.622	343.552
9/25/2020 18:00	7610424	7.83	-44.403	441.05	10.532	443.567	612.943	0.298	0.398	4.514	10.532	342.539
9/25/2020 19:00	7614024	7.824	-44.069	440.189	10.474	445.181	616.129	0.299	0.4	5.329	10.474	342.843
9/25/2020 20:00	7617624	7.817	-43.645	440.056	10.446	445.766	617.382	0.3	0.401	5.37	10.446	348.437
9/25/2020 21:00	7621224	7.836	-44.715	440.118	10.407	448.792	622.217	0.302	0.404	4.896	10.407	344.285
9/25/2020 22:00	7624824	7.837	-44.806	435.878	10.331	453.856	630.511	0.306	0.41	5.676	10.331	348.975
9/25/2020 23:00	7628424	7.832	-44.51	437.96	10.256	449.142	625.213	0.303	0.406	5.291	10.256	357.611
9/26/2020 0:00	7632024	7.826	-44.155	441.815	10.208	450.609	628.048	0.305	0.408	4.548	10.208	354.149
9/26/2020 1:00	7635624	7.821	-43.824	445.532	10.123	442.6	618.295	0.3	0.402	4.194	10.123	356.025
9/26/2020 2:00	7639224	7.822	-43.857	443.262	10.06	450.421	630.272	0.306	0.41	5.078	10.06	72.841
9/26/2020 3:00	7642824	7.83	-44.341	443.021	10.002	437.562	613.221	0.297	0.399	5.3	10.002	69.935
9/26/2020 4:00	7646424	7.817	-43.583	446.917	9.952	446.966	627.252	0.304	0.408	4.438	9.952	67.783
9/26/2020 5:00	7650024	7.819	-43.693	447.866	9.918	441.733	620.473	0.301	0.403	5.006	9.918	61.001
9/26/2020 6:00	7653624	7.835	-44.611	442.073	9.872	444.611	625.29	0.303	0.406	6.097	9.872	60.725
9/26/2020 7:00	7657224	7.853	-45.6	438.611	9.81	435.049	612.86	0.297	0.398	6.952	9.81	62.263
9/26/2020 8:00	7660824	7.847	-45.257	439.479	9.761	443.078	624.985	0.303	0.406	6.311	9.761	64.616
9/26/2020 9:00	7664424	7.859	-45.95	435.728	9.738	445.38	628.63	0.305	0.409	6.822	9.738	64.336
9/26/2020 10:00	7668025	7.855	-45.7	433.423	9.708	415.366	586.742	0.284	0.381	7.564	9.708	60.113
9/26/2020 11:00	7671625	7.841	-44.93	432.414	9.691	417.317	589.772	0.285	0.383	7.5	9.691	61.64
9/26/2020 12:00	7675225	7.845	-45.128	431.463	9.684	406.851	575.08	0.278	0.374	7.664	9.684	57.325
9/26/2020 13:00	7678825	7.855	-45.731	430.5	9.698	420.615	594.32	0.288	0.386	7.811	9.698	55.328
9/26/2020 14:00	7682425	7.849	-45.376	429.656	9.783	424.474	598.402	0.29	0.389	7.903	9.783	60.787
9/26/2020 15:00	7686025	7.857	-45.855	428.211	9.934	420.639	590.584	0.286	0.384	8.078	9.934	56.816
9/26/2020 16:00	7689625	7.858	-45.965	426.802	10.035	428.551	600.077	0.291	0.39	8.194	10.035	57.411
9/26/2020 17:00	7693225	7.845	-45.209	426.299	10.134	436.973	610.239	0.296	0.397	8.172	10.134	58.726
9/26/2020 18:00	7696825	7.848	-45.381	426.017	10.164	438.778	612.286	0.297	0.398	8.135	10.164	58.662
9/26/2020 19:00	7700425	7.846	-45.259	426.103	10.144	445.525	622.017	0.302	0.404	7.989	10.144	59.954
9/26/2020 20:00	7704025	7.856	-45.846	427.582	10.104	443.009	619.173	0.3	0.402	7.668	10.104	61.248
9/26/2020 21:00	7707625	7.853	-45.667	428.337	10.059	454.29	635.703	0.309	0.413	7.159	10.059	63.648
9/26/2020 22:00	7711225	7.855	-45.75	427.872	10.005	453.751	635.873	0.309	0.413	7.346	10.005	63.145
9/26/2020 23:00	7714825	7.855	-45.764	428.616	9.974	453.223	635.651	0.309	0.413	6.857	9.974	59.545
9/27/2020 0:00	7718425	7.831	-44.372	432.984	9.936	452.37	635.11	0.308	0.413	6.165	9.936	58.137
9/27/2020 1:00	7722025	7.818	-43.647	438.911	9.904	452.652	636.045	0.309	0.413	5.862	9.904	59.468
9/27/2020 2:00	7725625	7.835	-44.599	435.101	9.879	454.085	638.485	0.31	0.415	6.975	9.879	59.213
9/27/2020 3:00	7729225	7.841	-44.923	434.219	9.851	452.597	636.865	0.309	0.414	6.916	9.851	59.757
9/27/2020 4:00	7732825	7.837	-44.708	436.224	9.819	454.329	639.869	0.311	0.416	6.221	9.819	59.543
9/27/2020 5:00	7736425	7.838	-44.765	435.738	9.769	453.197	639.135	0.31	0.415	6.302	9.769	60.128
9/27/2020 6:00	7740025	7.839	-44.782	437.013	9.695	453.709	641.119	0.311	0.417	5.902	9.695	60.853
9/27/2020 7:00	7743625	7.844	-45.071	436.184	9.678	452.314	639.445	0.31	0.416	6.519	9.678	61.301
9/27/2020 8:00	7747225	7.832	-44.382	443.982	9.602	451.759	639.979	0.31	0.416	5.726	9.602	56.964
9/27/2020 9:00	7750825	7.812	-43.242	441.853	9.54	451.239	640.317	0.311	0.416	4.536	9.54	57.953
9/27/2020 10:00	7754425	7.825	-43.943	441.279	9.507	451.056	640.624	0.311	0.416	6.885	9.507	60.818
9/27/2020 11:00	7758025	7.84	-44.861	435.876	9.544	451.335	640.376	0.311	0.416	7.525	9.544	61.81
9/27/2020 12:00	7761625	7.838	-44.703	434.417	9.57	451.502	640.162	0.311	0.416	7.197	9.57	62.803
9/27/2020 13:00	7765225	7.831	-44.332	436.453	9.6	454.648	644.107	0.313	0.419	6.655	9.6	64.431
9/27/2020 14:00	7768825	7.82	-43.7	438.637	9.66	456.174	645.219	0.313	0.419	6.324	9.66	65.841
9/27/2020 15:00	7772425	7.826	-44.065	437.872	9.688	457.08	646.006	0.314	0.42	6.235	9.688	67.821

TABLE E1

Upstream Water Quality Sonde Data

Mighty Peace Watershed Alliance
Beaverlodge River

Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848	Sensor: Turb SN#: 737648
		Seconds	pH (pH)	pH(mV) (mV)								Turbidity (NTU)
9/27/2020 16:00	7776026	7.813	-43.306	440.976	9.736	465.997	657.766	0.319	0.428	5.716	9.736	66.075
9/27/2020 17:00	7779626	7.82	-43.707	438.477	9.786	469.284	661.502	0.321	0.43	7.017	9.786	69.474
9/27/2020 18:00	7783226	7.817	-43.53	441.765	9.787	476.346	671.45	0.326	0.436	5.821	9.787	67.767
9/27/2020 19:00	7786826	7.81	-43.19	445.718	9.846	476.3	670.324	0.326	0.436	4.55	9.846	66.602
9/27/2020 20:00	7790426	7.809	-43.087	449.08	9.84	475.177	668.849	0.325	0.435	4.308	9.84	64.981
9/27/2020 21:00	7794026	7.807	-42.98	451.416	9.816	473.719	667.226	0.324	0.434	4.159	9.816	63.349
9/27/2020 22:00	7797626	7.801	-42.622	453.138	9.81	473.678	667.273	0.324	0.434	3.904	9.81	64.227
9/27/2020 23:00	7801226	7.803	-42.624	455.71	9.794	472.541	665.955	0.324	0.433	2.853	9.794	64.76
9/28/2020 0:00	7804826	7.803	-42.772	455.894	9.765	469.837	662.673	0.322	0.431	3.327	9.765	50.832
9/28/2020 1:00	7808426	7.813	-43.311	453.204	9.728	469.049	662.216	0.322	0.43	3.533	9.728	45.79
9/28/2020 2:00	7812026	7.818	-43.612	450.539	9.661	468.514	662.647	0.322	0.431	3.637	9.661	45.252
9/28/2020 3:00	7815626	7.822	-43.817	451.202	9.611	468.983	664.209	0.323	0.432	3.363	9.611	45.826
9/28/2020 4:00	7819226	7.825	-43.986	453.352	9.571	469.393	665.525	0.323	0.433	3.496	9.571	46.819
9/28/2020 5:00	7822826	7.857	-45.824	447.351	9.573	471.222	668.082	0.325	0.434	6.84	9.573	48.968
9/28/2020 6:00	7826426	7.869	-46.52	445.115	9.626	474.923	672.363	0.327	0.437	6.945	9.626	49.051
9/28/2020 7:00	7830026	7.874	-46.825	443.992	9.711	488.442	689.902	0.336	0.448	7.396	9.711	51.564
9/28/2020 8:00	7833626	7.88	-47.145	441.989	9.699	490.612	693.2	0.337	0.451	7.371	9.699	54.203
9/28/2020 9:00	7837226	7.873	-46.725	441.343	9.677	490.737	693.779	0.338	0.451	6.92	9.677	57.475
9/28/2020 10:00	7840826	7.873	-46.744	440.497	9.706	493.61	697.305	0.339	0.453	7.126	9.706	57.988
9/28/2020 11:00	7844426	7.873	-46.749	439.758	9.758	506.696	714.779	0.348	0.465	7.322	9.758	60.609
9/28/2020 12:00	7848026	7.88	-47.154	438.861	9.781	515.906	727.332	0.354	0.473	7.46	9.781	65.675
9/28/2020 13:00	7851626	7.882	-47.269	436.708	9.82	520.29	732.735	0.357	0.476	7.745	9.82	69.136
9/28/2020 14:00	7855226	7.887	-47.593	435.583	9.851	521.619	733.992	0.358	0.477	7.862	9.851	72.245
9/28/2020 15:00	7858826	7.898	-48.215	434.25	9.947	523.768	735.12	0.359	0.478	8.012	9.947	75.554
9/28/2020 16:00	7862426	7.898	-48.249	432.82	9.979	529.4	742.389	0.362	0.483	7.948	9.979	73.285
9/28/2020 17:00	7866026	7.899	-48.306	431.384	10.052	527.897	738.836	0.36	0.48	8	10.052	67.231
9/28/2020 18:00	7869626	7.879	-47.145	431.062	10.056	529.416	740.891	0.362	0.482	7.998	10.056	34.194
9/28/2020 19:00	7873226	7.869	-46.558	429.923	10.056	528.963	740.244	0.361	0.481	8.067	10.056	32.411
9/28/2020 20:00	7876827	7.89	-47.81	430.049	10.039	529.806	741.768	0.362	0.482	8.072	10.039	51.745
9/28/2020 21:00	7880427	7.89	-47.786	428.499	9.998	529.842	742.642	0.362	0.483	8.009	9.998	51.08
9/28/2020 22:00	7884027	7.894	-47.975	427.274	9.961	529.354	742.679	0.362	0.483	7.935	9.961	59.349
9/28/2020 23:00	7887627	7.898	-48.199	426.115	9.929	529.767	743.914	0.363	0.484	7.778	9.929	56.615
9/29/2020 0:00	7891227	7.891	-47.801	425.753	9.906	530.983	746.081	0.364	0.485	7.162	9.906	55.33
9/29/2020 1:00	7894827	7.867	-46.446	430.943	9.895	532.241	748.058	0.365	0.486	5.719	9.895	57.44
9/29/2020 2:00	7898427	7.865	-46.318	430.443	9.866	527.271	741.66	0.362	0.482	5.933	9.866	55.045
9/29/2020 3:00	7902027	7.879	-47.1	429.353	9.885	518.75	729.29	0.356	0.474	7.117	9.885	56.688
9/29/2020 4:00	7905627	7.899	-48.304	428.085	9.897	521.36	732.733	0.357	0.476	7.697	9.897	59.273
9/29/2020 5:00	7909227	7.894	-47.994	428.464	9.889	523.622	736.068	0.359	0.478	6.863	9.889	54.905
9/29/2020 6:00	7912827	7.875	-46.906	432.624	9.837	522.662	735.747	0.359	0.478	5.53	9.837	57.762
9/29/2020 7:00	7916427	7.866	-46.368	434.61	9.822	522.009	735.114	0.358	0.478	5.333	9.822	53.45
9/29/2020 8:00	7920027	7.853	-45.617	439.681	9.785	521.493	735.125	0.358	0.478	4.246	9.785	52.66
9/29/2020 9:00	7923627	7.843	-45.023	442.664	9.727	520.688	735.134	0.358	0.478	3.371	9.727	54.635
9/29/2020 10:00	7927227	7.839	-44.816	445.558	9.709	519.169	733.355	0.357	0.477	2.83	9.709	55.139
9/29/2020 11:00	7930827	7.836	-44.663	447.611	9.735	519.31	733.043	0.357	0.476	2.436	9.735	57.771
9/29/2020 12:00	7934427	7.891	-47.774	439.722	9.706	512.559	724.074	0.353	0.471	7.737	9.706	58.064
9/29/2020 13:00	7938027	7.913	-49.076	433.966	10.03	513.523	719.141	0.351	0.467	8.409	10.03	69.73
9/29/2020 14:00	7941627	7.911	-49.098	431.449	10.498	520.255	719.568	0.351	0.468	8.287	10.498	70.876
9/29/2020 15:00	7945227	7.913	-49.286	428.33	11.077	528.607	720.102	0.352	0.468	8.855	11.077	74.838
9/29/2020 16:00	7948827	7.914	-49.407	426.182	11.378	533.513	721.142	0.352	0.469	8.816	11.378	71.48
9/29/2020 17:00	7952427	7.913	-49.355	424.122	11.517	536.269	722.273	0.353	0.469	8.925	11.517	73.799
9/29/2020 18:00	7956027	7.91	-49.15	424.356	11.355	535.627	724.424	0.354	0.471	7.874	11.355	74.037
9/29/2020 19:00	7959627	7.919	-49.648	423.588	11.186	533.127	724.208	0.354	0.471	8.221	11.186	74.742
9/29/2020 20:00	7963227	7.894	-48.184	427.899	11.074	532.2	725.053	0.354	0.471	6.422	11.074	73.319
9/29/2020 21:00	7966827	7.867	-46.647	433.466	10.999	532.912	727.441	0.355	0.473	4.804	10.999	72.214
9/29/2020 22:00	7970427	7.863	-46.368	437.03	10.876	530.763	726.835	0.355	0.472	4.335	10.876	71.534
9/29/2020 23:00	7974027	7.869	-46.704	439.746	10.714	526.984	724.729	0.354	0.471	4.333	10.714	71.474
9/30/2020 0:00	7977627	7.867	-46.537	439.922	10.522	524.884	725.502	0.354	0.472	4.27	10.522	68.756
9/30/2020 1:00	7981227	7.859	-46.022	439.901	10.31	522.35	726.065	0.354	0.472	4.241	10.31	66.293
9/30/2020 2:00	7984827	7.851	-45.586	440.168	10.118	520.117	726.678	0.354	0.472	3.83	10.118	65.167
9/30/2020 3:00	7988427	7.852	-45.586	441.131	9.905	517.95	727.782	0.355	0.473	3.807	9.905	65.206

TABLE E1**Upstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance
Beaverlodge River

Date and Time	Elapsed Time	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080	Sensor: pH/ORP SN#: 723080 Oxidation Reduction Potential (ORP)	Sensor: Cond SN#: 736508 Temperature (C)	Sensor: Cond SN#: 736508 Actual Conductivity ($\mu\text{S}/\text{cm}$)	Sensor: Cond SN#: 736508 Specific Conductivity ($\mu\text{S}/\text{cm}$)	Sensor: Cond SN#: 736508 Salinity (PSU)	Sensor: Cond SN#: 736508 Total Dissolved Solids (ppt)	Sensor: RDO SN#: 728799 Dissolved Oxygen (concentration)	Sensor: Internal SN#: 740848 Temperature (C)	Sensor: Turb SN#: 737648 Turbidity (NTU)
Date and Time	Seconds	pH (pH)	pH(mV) (mV)									
9/30/2020 4:00	799208	7.854	-45.671	442.34	9.739	517.233	730.016	0.356	0.475	3.496	9.739	65.026
9/30/2020 5:00	7995628	7.858	-45.853	443.541	9.584	517.301	733.185	0.357	0.477	3.004	9.584	65.136
9/30/2020 6:00	7999228	7.855	-45.662	446.166	9.455	519.084	738.295	0.36	0.48	2.647	9.455	65.61
9/30/2020 7:00	8002828	7.86	-45.955	449.728	9.335	522.093	744.993	0.363	0.484	2.817	9.335	65.663
9/30/2020 8:00	8006428	7.875	-46.787	450.432	9.281	529.47	756.646	0.369	0.492	2.83	9.281	64.856
9/30/2020 9:00	8010028	7.868	-46.368	451.152	9.265	540.945	773.37	0.377	0.503	2.62	9.265	64.278
9/30/2020 10:00	8013628	7.85	-45.397	451.442	9.292	552.432	789.219	0.385	0.513	2.535	9.292	64.304
9/30/2020 11:00	8017228	7.854	-45.595	451.783	9.314	560.141	799.751	0.391	0.52	2.564	9.314	65.871
9/30/2020 12:00	8020828	7.845	-45.116	452.108	9.376	570.22	812.775	0.397	0.528	2.096	9.376	63.91
9/30/2020 13:00	8024428	7.849	-45.359	450.799	9.654	586.761	830.06	0.406	0.54	5.308	9.654	63.899
9/30/2020 14:00	8028028	7.857	-45.915	447.754	10.149	602.553	841.155	0.412	0.547	6.375	10.149	67.003
9/30/2020 15:00	8031628	7.857	-45.96	446.023	10.418	602.14	834.578	0.409	0.542	6.493	10.418	69.312
9/30/2020 16:00	8035228	7.866	-46.499	443.293	10.769	604.273	829.826	0.407	0.539	6.73	10.769	68.606
9/30/2020 17:00	8038828	7.867	-46.566	442.895	10.694	608.84	837.742	0.411	0.545	6.624	10.694	71.432
9/30/2020 18:00	8042428	7.868	-46.601	443.722	10.496	608.105	841.115	0.413	0.547	6.202	10.496	72.966
9/30/2020 19:00	8046028	7.864	-46.301	446.042	10.258	606.487	844.187	0.414	0.549	5.41	10.258	70.49
9/30/2020 20:00	8049628	7.846	-45.295	449.089	10.18	605.263	844.238	0.414	0.549	3.931	10.18	78.401
9/30/2020 21:00	8053228	7.858	-45.922	450.498	10.048	607.466	850.301	0.417	0.553	2.678	10.048	75.663
9/30/2020 22:00	8056828	7.866	-46.42	451.116	10.02	612.975	858.649	0.421	0.558	1.955	10.02	39.623
9/30/2020 23:00	8060428	7.849	-45.416	452.852	9.977	615.166	862.72	0.423	0.561	1.272	9.977	38.605
10/1/2020 0:00	8064028	7.848	-45.366	453.634	9.874	599.374	842.891	0.413	0.548	0.84	9.874	40.465
10/1/2020 1:00	8067628	7.849	-45.395	452.873	9.801	621.08	875.126	0.429	0.569	0.8	9.801	38.922
10/1/2020 2:00	8071228	7.863	-46.208	452.627	9.779	626.043	882.645	0.433	0.574	0.907	9.779	38.78
10/1/2020 3:00	8074828	7.842	-44.956	454.709	9.624	625.538	885.628	0.435	0.576	0.674	9.624	37.98
10/1/2020 4:00	8078428	7.835	-44.534	458.633	9.453	622.535	885.473	0.434	0.576	0.355	9.453	38.304
10/1/2020 5:00	8082028	7.829	-44.162	459.167	9.446	621.445	884.092	0.434	0.575	0.16	9.446	37.666
10/1/2020 6:00	8085628	7.827	-44.055	459.17	9.444	622.582	885.753	0.434	0.576	0.141	9.444	37.206
10/1/2020 7:00	8089228	7.831	-44.296	460.08	9.341	620.897	885.843	0.434	0.576	0.26	9.341	36.893
10/1/2020 8:00	8092828	7.822	-43.755	462.786	9.26	619.21	885.397	0.434	0.576	0.225	9.26	37.935
10/1/2020 9:00	8096428	7.817	-43.447	464.484	9.184	615.847	882.418	0.432	0.574	0.057	9.184	39.198
10/1/2020 10:00	8100029	7.807	-42.856	466.453	9.109	612.201	878.982	0.431	0.571	0.548	9.109	39.249
10/1/2020 11:00	8103629	7.87	-46.532	456.714	9.526	656.248	931.567	0.458	0.606	6.556	9.526	43.002

Notes:

DO - minimum long-term exposure guideline; see applicable guidelines for further details

pH - not to be altered by more than 0.5 units from background

narrative - see applicable guidelines for further details

NS - not specified

SO⁴ - guideline level is hardness dependent; hardness values greater than 250 mg/L need to be determined based on site water

* - Environmental Quality Guidelines for Alberta Surface Waters (AEP 2018)

Italics - values do not meet applicable guidelines

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
6/29/2020 17:00	0	8.308	-74.048	18.372	264.845	303.231	0.146	11.626	18.372	8.761
6/29/2020 18:00	3600	8.387	-78.812	18.816	262.953	298.169	0.143	10.002	18.816	8.754
6/29/2020 19:00	7200	8.383	-78.607	19.065	261.644	295.097	0.142	10.003	19.065	8.723
6/29/2020 20:00	10800	8.415	-80.54	19.215	257.728	289.744	0.139	9.917	19.215	8.645
6/29/2020 21:00	14400	8.414	-80.481	19.241	255.456	287.028	0.138	9.667	19.241	8.536
6/29/2020 22:00	18000	8.405	-79.956	19.259	262.014	294.287	0.141	9.622	19.259	8.411
6/29/2020 23:00	21600	8.399	-79.634	19.224	266.261	299.28	0.144	9.567	19.224	8.243
6/30/2020 0:00	25200	8.386	-78.828	19.108	267.637	301.574	0.145	8.848	19.108	8.077
6/30/2020 1:00	28800	8.37	-77.808	18.926	267.387	302.478	0.145	10.643	18.926	7.917
6/30/2020 2:00	32400	8.357	-77.012	18.684	265.901	302.381	0.145	11.934	18.684	7.764
6/30/2020 3:00	36000	8.339	-75.91	18.481	264.928	302.605	0.145	9.25	18.481	7.634
6/30/2020 4:00	39600	8.316	-74.499	18.311	263.619	302.233	0.145	9.903	18.311	7.529
6/30/2020 5:00	43200	8.297	-73.369	18.17	263.144	302.622	0.145	9.116	18.17	7.434
6/30/2020 6:00	46800	8.268	-71.657	18.033	262.314	302.575	0.145	9.912	18.033	7.374
6/30/2020 7:00	50400	8.243	-70.152	17.916	261.818	302.79	0.145	9.996	17.916	7.327
6/30/2020 8:00	54000	8.247	-70.364	17.813	261.393	302.986	0.146	9.515	17.813	7.307
6/30/2020 9:00	57600	8.233	-69.549	17.739	261.002	303.029	0.146	10.359	17.739	7.312
6/30/2020 10:00	61200	8.219	-68.727	17.728	261.789	304.018	0.146	10.342	17.728	7.366
6/30/2020 11:00	64800	8.23	-69.404	17.823	262.797	304.544	0.146	13.707	17.823	7.465
6/30/2020 12:00	68400	8.249	-70.534	17.848	262.992	304.604	0.146	11.364	17.848	7.577
6/30/2020 13:00	72000	8.263	-71.344	17.903	263.526	304.851	0.146	11.118	17.903	7.707
6/30/2020 14:00	75600	8.283	-72.517	18.051	264.149	304.572	0.146	11.572	18.051	7.872
6/30/2020 15:00	79200	8.3	-73.564	18.219	265.102	304.546	0.146	13.689	18.219	8.026
6/30/2020 16:00	82800	8.327	-75.161	18.407	266.251	304.611	0.146	10.641	18.407	8.147
6/30/2020 17:00	86400	8.341	-76.051	18.622	267.636	304.762	0.146	10.235	18.622	8.239
6/30/2020 18:00	90000	8.359	-77.164	18.75	268.574	304.98	0.147	9.904	18.75	8.292
6/30/2020 19:00	93600	8.354	-76.83	18.761	267.708	303.922	0.146	13.241	18.761	8.249
6/30/2020 20:00	97200	8.364	-77.477	18.825	268.31	304.188	0.146	9.286	18.825	8.185
6/30/2020 21:00	100800	8.36	-77.236	18.809	267.82	303.738	0.146	10.071	18.809	8.097
6/30/2020 22:00	104400	8.349	-76.568	18.712	267.081	303.536	0.146	11.463	18.712	7.987
6/30/2020 23:00	108000	8.313	-74.413	18.567	265.958	303.213	0.146	11.885	18.567	7.851
7/1/2020 0:00	111600	8.294	-73.264	18.342	262.54	300.792	0.145	10.597	18.342	7.706
7/1/2020 1:00	115200	8.269	-71.764	18.115	265.542	305.748	0.147	11.696	18.115	7.586
7/1/2020 2:00	118800	8.242	-70.128	17.965	268.168	309.794	0.149	12.32	17.965	7.52
7/1/2020 3:00	122400	8.215	-68.543	17.836	266.891	309.201	0.149	12.062	17.836	7.455
7/1/2020 4:00	126000	8.222	-68.924	17.697	265.752	308.831	0.148	13.03	17.697	7.399
7/1/2020 5:00	129600	8.194	-67.232	17.589	265.366	309.125	0.149	12.124	17.589	7.348
7/1/2020 6:00	133200	8.192	-67.127	17.51	265.021	309.262	0.149	10.568	17.51	7.311
7/1/2020 7:00	136800	8.187	-66.776	17.447	264.489	309.08	0.149	11.253	17.447	7.289
7/1/2020 8:00	140400	8.177	-66.228	17.372	263.552	308.5	0.148	12.361	17.372	7.281
7/1/2020 9:00	144000	8.165	-65.489	17.277	264.447	310.206	0.149	12.741	17.277	7.281

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
7/1/2020 10:00	147600	8.165	-65.475	17.18	261.741	307.7	0.148	11.469	17.18	7.314
7/1/2020 11:00	151200	8.162	-65.243	17.086	262.342	309.057	0.148	12.76	17.086	7.361
7/1/2020 12:00	154800	8.156	-64.876	16.986	263.137	310.694	0.149	14.12	16.986	7.418
7/1/2020 13:00	158400	8.15	-64.526	16.889	264.153	312.577	0.15	12.422	16.889	7.481
7/1/2020 14:00	162000	8.141	-64.006	16.792	262.424	311.212	0.15	11.558	16.792	7.554
7/1/2020 15:00	165600	8.163	-65.26	16.725	265.235	315.023	0.151	13.593	16.725	7.628
7/1/2020 16:00	169200	8.17	-65.653	16.69	264.983	314.976	0.151	13.328	16.69	7.721
7/1/2020 17:00	172800	8.178	-66.087	16.615	269.072	320.385	0.154	14.936	16.615	7.78
7/1/2020 18:00	176400	8.182	-66.309	16.556	270.618	322.657	0.155	13.217	16.556	7.845
7/1/2020 19:00	180000	8.18	-66.166	16.482	273.584	326.744	0.157	14.478	16.482	7.874
7/1/2020 20:00	183600	8.172	-65.718	16.424	271.864	325.12	0.156	15.11	16.424	7.902
7/1/2020 21:00	187200	8.171	-65.632	16.335	280.015	335.551	0.161	17.015	16.335	7.883
7/1/2020 22:00	190800	8.161	-65.01	16.218	285.346	342.855	0.165	18.68	16.218	7.843
7/1/2020 23:00	194400	8.146	-64.104	16.105	279.461	336.658	0.162	19.339	16.105	7.808
7/2/2020 0:00	198000	8.137	-63.589	15.976	275.804	333.237	0.16	19.865	15.976	7.758
7/2/2020 1:00	201600	8.116	-62.349	15.806	280.446	340.183	0.164	28.792	15.806	7.669
7/2/2020 2:00	205200	8.079	-60.136	15.6	298.815	364.202	0.175	63.15	15.6	7.566
7/2/2020 3:00	208800	8.054	-58.672	15.419	304.392	372.572	0.18	69.657	15.419	7.462
7/2/2020 4:00	212400	8.01	-56.055	15.204	323.429	397.875	0.192	102.483	15.204	7.368
7/2/2020 5:00	216000	7.974	-53.978	14.983	329.447	407.389	0.197	155.442	14.983	7.284
7/2/2020 6:00	219600	7.984	-54.538	14.928	301.156	372.894	0.18	212.031	14.928	7.385
7/2/2020 7:00	223200	7.955	-52.841	14.749	299.659	372.618	0.179	239.628	14.749	7.3
7/2/2020 8:00	226800	7.985	-54.562	14.818	276.473	343.225	0.165	244.364	14.818	7.463
7/2/2020 9:00	230400	7.999	-55.385	14.88	276.445	342.683	0.165	173.934	14.88	7.577
7/2/2020 10:00	234000	7.976	-54.038	14.802	285.085	354.043	0.17	185.653	14.802	7.573
7/2/2020 11:00	237600	7.959	-53.043	14.754	285.947	355.522	0.171	207.039	14.754	7.584
7/2/2020 12:00	241200	7.937	-51.754	14.697	285.716	355.72	0.171	208.58	14.697	7.58
7/2/2020 13:00	244800	7.896	-49.391	14.653	285.135	355.363	0.171	210.187	14.653	7.592
7/2/2020 14:00	248400	7.876	-48.265	14.593	286.133	357.12	0.172	217.439	14.593	7.589
7/2/2020 15:00	252000	7.843	-46.332	14.584	281.516	351.432	0.169	232.583	14.584	7.586
7/2/2020 16:00	255600	7.842	-46.327	14.701	275.97	343.553	0.165	238.888	14.701	7.577
7/2/2020 17:00	259200	7.844	-46.451	14.832	284.619	353.213	0.17	232.265	14.832	7.586
7/2/2020 18:00	262800	7.839	-46.194	14.948	294.936	365.013	0.176	233.729	14.948	7.587
7/2/2020 19:00	266400	7.837	-46.093	15.05	298.953	369.097	0.178	230.667	15.05	7.583
7/2/2020 20:00	270000	7.817	-44.92	15.008	299.583	370.247	0.178	232.973	15.008	7.569
7/2/2020 21:00	273600	7.812	-44.632	15.012	298.09	368.365	0.177	228.97	15.012	7.561
7/2/2020 22:00	277200	7.818	-44.942	14.995	300.656	371.68	0.179	231.111	14.995	7.546
7/2/2020 23:00	280800	7.825	-45.347	14.918	320.769	397.272	0.192	239.07	14.918	7.523
7/3/2020 0:00	284400	7.815	-44.768	14.824	310.656	385.599	0.186	232.918	14.824	7.505
7/3/2020 1:00	288000	7.815	-44.756	14.767	296.805	368.904	0.178	248.059	14.767	7.493
7/3/2020 2:00	291600	7.821	-45.097	14.709	291.199	362.436	0.174	226.207	14.709	7.482

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
7/3/2020 3:00	295200	7.814	-44.692	14.64	286.736	357.467	0.172	219.979	14.64	7.488
7/3/2020 4:00	298800	7.805	-44.129	14.56	280.688	350.598	0.169	212.822	14.56	7.497
7/3/2020 5:00	302400	7.815	-44.718	14.49	274.046	342.875	0.165	223.091	14.49	7.51
7/3/2020 6:00	306000	7.808	-44.291	14.41	267.594	335.444	0.161	222.617	14.41	7.522
7/3/2020 7:00	309600	7.818	-44.885	14.337	262.373	329.473	0.158	219.851	14.337	7.536
7/3/2020 8:00	313200	7.814	-44.644	14.273	258.159	324.683	0.156	200.69	14.273	7.56
7/3/2020 9:00	316800	7.809	-44.31	14.243	254.807	320.698	0.154	199.687	14.243	7.566
7/3/2020 10:00	320400	7.82	-44.944	14.222	251.967	317.284	0.152	211.131	14.222	7.591
7/3/2020 11:00	324000	7.803	-43.962	14.204	249.59	314.423	0.151	199.654	14.204	7.61
7/3/2020 12:00	327600	7.802	-43.914	14.188	247.076	311.382	0.149	200.005	14.188	7.617
7/3/2020 13:00	331200	7.803	-43.998	14.206	244.959	308.575	0.148	218.34	14.206	7.633
7/3/2020 14:00	334800	7.815	-44.663	14.229	243.054	306.011	0.147	214.548	14.229	7.642
7/3/2020 15:00	338400	7.818	-44.837	14.245	241.604	304.066	0.146	203.469	14.245	7.651
7/3/2020 16:00	342000	7.822	-45.109	14.277	241.125	303.228	0.145	201.949	14.277	7.647
7/3/2020 17:00	345601	7.823	-45.135	14.304	242.267	304.47	0.146	226.616	14.304	7.646
7/3/2020 18:00	349201	7.817	-44.804	14.326	243.811	306.248	0.147	210.31	14.326	7.637
7/3/2020 19:00	352801	7.819	-44.916	14.318	244.727	307.454	0.147	208.946	14.318	7.629
7/3/2020 20:00	356401	7.809	-44.351	14.279	245.31	308.48	0.148	221.38	14.279	7.614
7/3/2020 21:00	360001	7.804	-44.038	14.205	246.946	311.089	0.149	215.702	14.205	7.601
7/3/2020 22:00	363601	7.799	-43.726	14.105	246.233	310.934	0.149	221.607	14.105	7.592
7/3/2020 23:00	367201	7.799	-43.716	13.966	243.858	308.975	0.148	255.757	13.966	7.589
7/4/2020 0:00	370801	7.798	-43.612	13.832	241.9	307.489	0.147	214.919	13.832	7.597
7/4/2020 1:00	374401	7.788	-43.063	13.721	240.489	306.524	0.147	210.007	13.721	7.6
7/4/2020 2:00	378001	7.785	-42.846	13.633	238.616	304.79	0.146	210.676	13.633	7.6
7/4/2020 3:00	381601	7.783	-42.748	13.566	236.452	302.521	0.145	227.065	13.566	7.594
7/4/2020 4:00	385201	7.77	-41.959	13.507	234.294	300.19	0.144	197.968	13.507	7.593
7/4/2020 5:00	388801	7.777	-42.353	13.449	232.237	297.975	0.143	194.412	13.449	7.591
7/4/2020 6:00	392401	7.784	-42.763	13.393	230.094	295.631	0.141	192.827	13.393	7.59
7/4/2020 7:00	396001	7.766	-41.73	13.345	228.908	294.458	0.141	190.26	13.345	7.585
7/4/2020 8:00	399601	7.779	-42.453	13.312	227.664	293.093	0.14	185.624	13.312	7.594
7/4/2020 9:00	403201	7.779	-42.474	13.295	226.084	291.184	0.139	188.311	13.295	7.589
7/4/2020 10:00	406801	7.781	-42.613	13.311	224.455	288.968	0.138	181.29	13.311	7.599
7/4/2020 11:00	410401	7.779	-42.465	13.345	222.572	286.309	0.137	177.836	13.345	7.604
7/4/2020 12:00	414001	7.78	-42.56	13.402	221.62	284.684	0.136	179.258	13.402	7.581
7/4/2020 13:00	417601	7.78	-42.579	13.523	220.429	282.313	0.135	177.689	13.523	7.597
7/4/2020 14:00	421201	7.785	-42.889	13.667	219.779	280.492	0.134	170.64	13.667	7.602
7/4/2020 15:00	424801	7.791	-43.256	13.784	219.287	279.07	0.133	180.352	13.784	7.602
7/4/2020 16:00	428401	7.789	-43.111	13.882	218.835	277.836	0.133	166.252	13.882	7.588
7/4/2020 17:00	432001	7.77	-42.048	14.012	218.761	276.869	0.132	162.433	14.012	7.579
7/4/2020 18:00	435601	7.788	-43.097	14.087	218.569	276.124	0.132	161.248	14.087	7.569
7/4/2020 19:00	439201	7.781	-42.701	14.162	218.23	275.195	0.132	156.302	14.162	7.561

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
7/4/2020 20:00	442801	7.791	-43.283	14.201	217.866	274.479	0.131	155.317	14.201	7.542
7/4/2020 21:00	446401	7.789	-43.197	14.22	217.389	273.758	0.131	150.756	14.22	7.534
7/4/2020 22:00	450001	7.786	-43.006	14.193	216.625	272.968	0.13	148.581	14.193	7.515
7/4/2020 23:00	453601	7.788	-43.123	14.13	215.642	272.145	0.13	143.381	14.13	7.517
7/5/2020 0:00	457201	7.791	-43.273	14.058	214.42	271.073	0.13	146.921	14.058	7.516
7/5/2020 1:00	460801	7.793	-43.399	14.005	213.323	270.029	0.129	148.925	14.005	7.507
7/5/2020 2:00	464401	7.785	-42.889	13.964	212.503	269.262	0.129	141.224	13.964	7.506
7/5/2020 3:00	468001	7.794	-43.409	13.932	211.68	268.423	0.128	143.029	13.932	7.5
7/5/2020 4:00	471601	7.785	-42.88	13.901	210.771	267.471	0.128	141.3	13.901	7.504
7/5/2020 5:00	475201	7.792	-43.292	13.882	209.869	266.449	0.127	136.503	13.882	7.499
7/5/2020 6:00	478801	7.796	-43.516	13.871	209.15	265.609	0.127	137.802	13.871	7.492
7/5/2020 7:00	482401	7.791	-43.228	13.873	208.473	264.738	0.126	136.133	13.873	7.491
7/5/2020 8:00	486001	7.794	-43.418	13.884	207.759	263.761	0.126	139.489	13.884	7.487
7/5/2020 9:00	489601	7.802	-43.879	13.913	207.216	262.888	0.126	131.972	13.913	7.488
7/5/2020 10:00	493201	7.79	-43.204	14.023	207.27	262.251	0.125	131.649	14.023	7.486
7/5/2020 11:00	496801	7.793	-43.44	14.238	207.893	261.68	0.125	130.103	14.238	7.482
7/5/2020 12:00	500401	7.793	-43.459	14.488	208.767	261.216	0.125	135.003	14.488	7.47
7/5/2020 13:00	504001	7.802	-43.998	14.785	210.097	261.025	0.125	133.897	14.785	7.448
7/5/2020 14:00	507601	7.796	-43.705	15.172	212.13	261.154	0.125	138.664	15.172	7.414
7/5/2020 15:00	511201	7.799	-43.974	15.507	213.921	261.3	0.125	145.599	15.507	7.377
7/5/2020 16:00	514801	7.803	-44.222	15.773	215.433	261.52	0.125	147.549	15.773	7.334
7/5/2020 17:00	518401	7.79	-43.499	15.908	216.343	261.807	0.125	152.675	15.908	7.309
7/5/2020 18:00	522001	7.791	-43.526	15.896	216.877	262.528	0.126	137.624	15.896	7.27
7/5/2020 19:00	525601	7.799	-44.012	15.932	217.507	263.073	0.126	142.295	15.932	7.239
7/5/2020 20:00	529201	7.789	-43.452	15.967	217.606	262.975	0.126	146.961	15.967	7.219
7/5/2020 21:00	532801	7.792	-43.633	15.902	216.803	262.401	0.126	139.411	15.902	7.197
7/5/2020 22:00	536401	7.791	-43.526	15.78	215.628	261.717	0.125	144.396	15.78	7.179
7/5/2020 23:00	540001	7.793	-43.631	15.69	214.772	261.22	0.125	145.302	15.69	7.159
7/6/2020 0:00	543601	7.793	-43.631	15.607	213.956	260.733	0.125	148.428	15.607	7.141
7/6/2020 1:00	547202	7.788	-43.314	15.54	213.302	260.343	0.124	144.688	15.54	7.13
7/6/2020 2:00	550802	7.792	-43.533	15.463	212.632	259.991	0.124	144.514	15.463	7.113
7/6/2020 3:00	554402	7.793	-43.612	15.382	211.952	259.653	0.124	144.107	15.382	7.103
7/6/2020 4:00	558002	7.792	-43.547	15.312	211.278	259.247	0.124	139.612	15.312	7.089
7/6/2020 5:00	561602	7.786	-43.19	15.273	210.868	258.982	0.124	144.059	15.273	7.086
7/6/2020 6:00	565202	7.788	-43.273	15.242	210.438	258.642	0.124	140.664	15.242	7.073
7/6/2020 7:00	568802	7.795	-43.657	15.217	210.131	258.418	0.123	142.934	15.217	7.059
7/6/2020 8:00	572402	7.785	-43.097	15.225	209.905	258.089	0.123	139.611	15.225	7.053
7/6/2020 9:00	576002	7.792	-43.49	15.3	210.072	257.844	0.123	135.466	15.3	7.044
7/6/2020 10:00	579602	7.784	-43.044	15.417	210.543	257.715	0.123	134.388	15.417	7.027
7/6/2020 11:00	583202	7.785	-43.18	15.612	211.362	257.543	0.123	134.315	15.612	7.009
7/6/2020 12:00	586802	7.791	-43.564	15.87	212.545	257.439	0.123	131.5	15.87	6.985

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
7/6/2020 13:00	590402	7.786	-43.294	16.135	213.872	257.469	0.123	135.543	16.135	6.968
7/6/2020 14:00	594002	7.789	-43.542	16.436	215.267	257.363	0.123	134.793	16.436	6.933
7/6/2020 15:00	597602	7.782	-43.13	16.752	216.788	257.328	0.123	135.294	16.752	6.898
7/6/2020 16:00	601202	7.79	-43.678	16.966	217.659	257.113	0.123	139.583	16.966	6.857
7/6/2020 17:00	604802	7.787	-43.49	17.053	217.799	256.773	0.123	143.589	17.053	6.82
7/6/2020 18:00	608402	7.786	-43.43	17.137	217.856	256.356	0.123	140.436	17.137	6.787
7/6/2020 19:00	612002	7.79	-43.709	17.185	217.775	255.983	0.122	136.443	17.185	6.758
7/6/2020 20:00	615602	7.786	-43.437	17.17	217.252	255.457	0.122	141.066	17.17	6.731
7/6/2020 21:00	619202	7.779	-43.023	17.112	216.551	254.962	0.122	134.683	17.112	6.706
7/6/2020 22:00	622802	7.785	-43.395	17.03	215.773	254.52	0.122	139.063	17.03	6.685
7/6/2020 23:00	626402	7.781	-43.154	16.939	215.061	254.199	0.122	142.862	16.939	6.664
7/7/2020 0:00	630002	7.78	-43.046	16.856	214.137	253.58	0.121	139.465	16.856	6.649
7/7/2020 1:00	633602	7.774	-42.725	16.802	213.453	253.079	0.121	137.675	16.802	6.634
7/7/2020 2:00	637202	7.776	-42.83	16.744	212.754	252.583	0.121	135.383	16.744	6.635
7/7/2020 3:00	640802	7.774	-42.696	16.688	212.108	252.134	0.121	132.819	16.688	6.629
7/7/2020 4:00	644402	7.77	-42.419	16.629	211.46	251.701	0.12	133.874	16.629	6.629
7/7/2020 5:00	648002	7.77	-42.446	16.572	210.832	251.281	0.12	131.772	16.572	6.625
7/7/2020 6:00	651602	7.776	-42.777	16.518	210.273	250.925	0.12	133.881	16.518	6.623
7/7/2020 7:00	655202	7.783	-43.185	16.485	209.961	250.739	0.12	139.528	16.485	6.618
7/7/2020 8:00	658802	7.771	-42.465	16.487	209.991	250.764	0.12	140.166	16.487	6.612
7/7/2020 9:00	662402	7.771	-42.462	16.514	210.105	250.745	0.12	136.708	16.514	6.607
7/7/2020 10:00	666002	7.775	-42.72	16.576	210.32	250.647	0.12	138.566	16.576	6.596
7/7/2020 11:00	669602	7.778	-42.913	16.678	210.693	250.51	0.12	128.196	16.678	6.583
7/7/2020 12:00	673202	7.774	-42.717	16.788	211.066	250.328	0.12	133.908	16.788	6.566
7/7/2020 13:00	676802	7.764	-42.126	16.877	211.307	250.115	0.12	131.258	16.877	6.549
7/7/2020 14:00	680402	7.778	-42.963	16.956	211.539	249.941	0.12	132.833	16.956	6.526
7/7/2020 15:00	684002	7.779	-43.035	17.112	212.22	249.864	0.119	132.252	17.112	6.507
7/7/2020 16:00	687602	7.778	-43.018	17.359	213.468	249.944	0.12	133.776	17.359	6.489
7/7/2020 17:00	691202	7.768	-42.45	17.668	215.023	250.041	0.12	128.53	17.668	6.464
7/7/2020 18:00	694802	7.778	-43.092	17.788	215.585	250.025	0.12	124.507	17.788	6.442
7/7/2020 19:00	698402	7.774	-42.849	17.819	215.67	249.952	0.12	128.301	17.819	6.42
7/7/2020 20:00	702002	7.778	-43.075	17.861	215.768	249.833	0.12	131.518	17.861	6.405
7/7/2020 21:00	705602	7.777	-43.051	17.879	215.694	249.651	0.119	123.426	17.879	6.389
7/7/2020 22:00	709202	7.767	-42.422	17.823	215.262	249.455	0.119	124.634	17.823	6.369
7/7/2020 23:00	712802	7.775	-42.875	17.696	214.412	249.171	0.119	120.839	17.696	6.359
7/8/2020 0:00	716402	7.774	-42.813	17.603	213.75	248.919	0.119	122.722	17.603	6.355
7/8/2020 1:00	720002	7.773	-42.772	17.503	213.04	248.645	0.119	122.17	17.503	6.359
7/8/2020 2:00	723602	7.774	-42.782	17.417	212.32	248.28	0.119	123.663	17.417	6.358
7/8/2020 3:00	727202	7.772	-42.655	17.368	211.826	247.976	0.119	125.741	17.368	6.365
7/8/2020 4:00	730802	7.767	-42.35	17.323	211.311	247.619	0.118	120.707	17.323	6.364
7/8/2020 5:00	734402	7.77	-42.517	17.267	210.792	247.321	0.118	121.276	17.267	6.367

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
7/8/2020 6:00	738002	7.764	-42.188	17.207	210.303	247.08	0.118	124.264	17.207	6.378
7/8/2020 7:00	741602	7.775	-42.789	17.163	209.797	246.729	0.118	117.291	17.163	6.382
7/8/2020 8:00	745202	7.777	-42.899	17.148	209.435	246.387	0.118	117.038	17.148	6.393
7/8/2020 9:00	748802	7.779	-43.037	17.186	209.4	246.138	0.118	116.442	17.186	6.398
7/8/2020 10:00	752402	7.772	-42.644	17.262	209.535	245.876	0.118	122.846	17.262	6.395
7/8/2020 11:00	756002	7.781	-43.166	17.395	209.884	245.553	0.117	123.122	17.395	6.395
7/8/2020 12:00	759602	7.782	-43.263	17.604	210.628	245.279	0.117	120.769	17.604	6.391
7/8/2020 13:00	763202	7.784	-43.414	17.816	211.418	245.04	0.117	113.436	17.816	6.384
7/8/2020 14:00	766802	7.78	-43.223	17.957	211.842	244.766	0.117	115.698	17.957	6.369
7/8/2020 15:00	770402	7.782	-43.335	18.131	212.383	244.454	0.117	112.956	18.131	6.358
7/8/2020 16:00	774002	7.781	-43.306	18.278	212.844	244.195	0.117	111.273	18.278	6.344
7/8/2020 17:00	777602	7.776	-43.061	18.438	213.416	243.999	0.117	106.466	18.438	6.324
7/8/2020 18:00	781202	7.778	-43.168	18.582	213.918	243.802	0.117	104.791	18.582	6.308
7/8/2020 19:00	784802	7.772	-42.868	18.635	213.947	243.555	0.116	100.918	18.635	6.302
7/8/2020 20:00	788402	7.778	-43.206	18.636	213.679	243.247	0.116	100.879	18.636	6.293
7/8/2020 21:00	792002	7.779	-43.268	18.548	213.018	242.961	0.116	100.632	18.548	6.29
7/8/2020 22:00	795602	7.77	-42.737	18.498	212.595	242.742	0.116	99.893	18.498	6.28
7/8/2020 23:00	799202	7.784	-43.492	18.42	211.978	242.449	0.116	97.19	18.42	6.274
7/9/2020 0:00	802802	7.776	-43.025	18.285	211.174	242.243	0.116	94.298	18.285	6.273
7/9/2020 1:00	806402	7.78	-43.223	18.13	210.31	242.074	0.116	98.796	18.13	6.276
7/9/2020 2:00	810002	7.78	-43.199	17.982	209.54	241.977	0.116	94.661	17.982	6.283
7/9/2020 3:00	813602	7.781	-43.278	17.853	208.911	241.935	0.116	95.163	17.853	6.302
7/9/2020 4:00	817202	7.778	-43.085	17.742	208.294	241.819	0.116	95.02	17.742	6.316
7/9/2020 5:00	820802	7.774	-42.849	17.645	207.843	241.814	0.116	92.975	17.645	6.326
7/9/2020 6:00	824402	7.769	-42.527	17.566	207.476	241.809	0.116	91.262	17.566	6.34
7/9/2020 7:00	828002	7.785	-43.435	17.507	207.147	241.747	0.116	94.05	17.507	6.353
7/9/2020 8:00	831602	7.781	-43.194	17.479	206.98	241.703	0.116	87.925	17.479	6.364
7/9/2020 9:00	835202	7.788	-43.595	17.505	207.146	241.753	0.116	85.723	17.505	6.378
7/9/2020 10:00	838802	7.781	-43.228	17.605	207.691	241.851	0.116	87.967	17.605	6.385
7/9/2020 11:00	842402	7.788	-43.654	17.749	208.341	241.833	0.116	82.685	17.749	6.389
7/9/2020 12:00	846002	7.793	-43.964	17.903	209.049	241.83	0.116	83.054	17.903	6.39
7/9/2020 13:00	849602	7.792	-43.921	18.109	210.025	241.856	0.116	82.498	18.109	6.394
7/9/2020 14:00	853202	7.797	-44.279	18.306	211.006	241.94	0.116	81.956	18.306	6.387
7/9/2020 15:00	856802	7.801	-44.47	18.247	210.657	241.849	0.116	83.005	18.247	6.372
7/9/2020 16:00	860402	7.797	-44.21	18.15	210.116	241.744	0.116	79.41	18.15	6.36
7/9/2020 17:00	864002	7.789	-43.776	18.177	210.185	241.683	0.116	83.86	18.177	6.36
7/9/2020 18:00	867602	7.787	-43.697	18.241	210.578	241.791	0.116	79.657	18.241	6.369
7/9/2020 19:00	871202	7.793	-44.003	18.274	210.858	241.937	0.116	77.709	18.274	6.383
7/9/2020 20:00	874802	7.801	-44.501	18.266	210.871	241.998	0.116	78.257	18.266	6.383
7/9/2020 21:00	878402	7.797	-44.267	18.233	210.86	242.159	0.116	79.939	18.233	6.392
7/9/2020 22:00	882002	7.8	-44.429	18.153	210.613	242.301	0.116	80.07	18.153	6.402

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
7/9/2020 23:00	885602	7.804	-44.651	18.061	210.213	242.329	0.116	77.9	18.061	6.407
7/10/2020 0:00	889202	7.805	-44.665	17.948	209.698	242.339	0.116	77.142	17.948	6.418
7/10/2020 1:00	892802	7.802	-44.491	17.798	208.947	242.271	0.116	74.672	17.798	6.428
7/10/2020 2:00	896402	7.803	-44.487	17.664	208.28	242.22	0.116	74.878	17.664	6.44
7/10/2020 3:00	900002	7.803	-44.508	17.539	207.666	242.176	0.116	75.865	17.539	6.457
7/10/2020 4:00	903602	7.803	-44.482	17.425	207.114	242.146	0.116	72.069	17.425	6.47
7/10/2020 5:00	907202	7.8	-44.289	17.327	206.667	242.156	0.116	72.014	17.327	6.492
7/10/2020 6:00	910802	7.8	-44.296	17.242	206.273	242.154	0.116	69.103	17.242	6.508
7/10/2020 7:00	914402	7.806	-44.584	17.174	205.977	242.176	0.116	70.926	17.174	6.529
7/10/2020 8:00	918002	7.808	-44.742	17.141	205.956	242.331	0.116	70.582	17.141	6.518
7/10/2020 9:00	921602	7.817	-45.223	17.129	205.889	242.319	0.116	67.141	17.129	6.569
7/10/2020 10:00	925202	7.813	-45.049	17.195	206.356	242.509	0.116	72.771	17.195	6.58
7/10/2020 11:00	928802	7.818	-45.316	17.342	207.178	242.671	0.116	70.217	17.342	6.598
7/10/2020 12:00	932402	7.817	-45.333	17.563	208.361	242.859	0.116	67.417	17.563	6.615
7/10/2020 13:00	936002	7.818	-45.424	17.839	209.943	243.21	0.116	79.962	17.839	6.628
7/10/2020 14:00	939602	7.814	-45.197	18.082	211.332	243.508	0.116	83.01	18.082	6.634
7/10/2020 15:00	943202	7.824	-45.824	18.283	212.553	243.838	0.117	85.63	18.283	6.627
7/10/2020 16:00	946802	7.823	-45.8	18.543	214.052	244.164	0.117	80.408	18.543	6.616
7/10/2020 17:00	950402	7.82	-45.679	18.737	215.011	244.224	0.117	73.003	18.737	6.614
7/10/2020 18:00	954002	7.819	-45.605	18.768	215.222	244.303	0.117	64.362	18.768	6.622
7/10/2020 19:00	957602	7.823	-45.877	18.768	215.051	244.105	0.117	64.438	18.768	6.625
7/10/2020 20:00	961202	7.83	-46.225	18.675	214.469	243.938	0.117	65.128	18.675	6.627
7/10/2020 21:00	964803	7.834	-46.434	18.547	213.875	243.939	0.117	63.375	18.547	6.626
7/10/2020 22:00	968403	7.825	-45.9	18.395	213.09	243.855	0.117	64.635	18.395	6.625
7/10/2020 23:00	972003	7.82	-45.588	18.226	212.314	243.868	0.117	63.16	18.226	6.628
7/11/2020 0:00	975603	7.827	-45.96	18.05	211.513	243.888	0.117	63.253	18.05	6.63
7/11/2020 1:00	979203	7.823	-45.736	17.9	210.985	244.087	0.117	65.367	17.9	6.638
7/11/2020 2:00	982803	7.828	-45.96	17.765	210.332	244.058	0.117	60.851	17.765	6.65
7/11/2020 3:00	986403	7.834	-46.289	17.64	210.012	244.364	0.117	58.948	17.64	6.656
7/11/2020 4:00	990003	7.831	-46.136	17.538	209.591	244.43	0.117	59.608	17.538	6.671
7/11/2020 5:00	993603	7.829	-45.996	17.472	209.41	244.576	0.117	58.259	17.472	6.682
7/11/2020 6:00	997203	7.827	-45.891	17.412	209.226	244.689	0.117	56.842	17.412	6.696
7/11/2020 7:00	1000803	7.829	-46.003	17.354	209.006	244.749	0.117	59.27	17.354	6.706
7/11/2020 8:00	1004403	7.837	-46.444	17.336	208.979	244.815	0.117	56.115	17.336	6.727
7/11/2020 9:00	1008003	7.84	-46.599	17.371	209.204	244.886	0.117	52.698	17.371	6.738
7/11/2020 10:00	1011603	7.843	-46.828	17.457	209.66	244.948	0.117	52.436	17.457	6.752
7/11/2020 11:00	1015203	7.845	-46.957	17.607	210.453	245.058	0.117	51.051	17.607	6.774
7/11/2020 12:00	1018803	7.844	-46.883	17.731	211.154	245.199	0.117	52.297	17.731	6.791
7/11/2020 13:00	1022403	7.852	-47.4	17.852	211.858	245.354	0.117	51.825	17.852	6.791
7/11/2020 14:00	1026003	7.849	-47.266	17.962	212.508	245.513	0.117	51.469	17.962	6.797
7/11/2020 15:00	1029603	7.858	-47.755	18.079	213.338	245.835	0.118	55.848	18.079	6.796

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
7/11/2020 16:00	1033203	7.86	-47.922	18.152	213.944	246.14	0.118	55.229	18.152	6.793
7/11/2020 17:00	1036803	7.849	-47.266	18.157	214.196	246.402	0.118	52.169	18.157	6.787
7/11/2020 18:00	1040403	7.857	-47.746	18.156	214.359	246.595	0.118	52.401	18.156	6.795
7/11/2020 19:00	1044003	7.859	-47.836	18.132	214.454	246.831	0.118	54.41	18.132	6.802
7/11/2020 20:00	1047603	7.867	-48.28	18.07	214.245	246.928	0.118	49.883	18.07	6.796
7/11/2020 21:00	1051203	7.863	-48.084	17.975	213.878	247.02	0.118	53.159	17.975	6.805
7/11/2020 22:00	1054803	7.863	-48.048	17.877	213.432	247.044	0.118	49.018	17.877	6.809
7/11/2020 23:00	1058403	7.861	-47.903	17.737	212.738	247.002	0.118	52.271	17.737	6.809
7/12/2020 0:00	1062003	7.865	-48.115	17.564	211.751	246.805	0.118	54.259	17.564	6.815
7/12/2020 1:00	1065603	7.862	-47.901	17.386	210.768	246.634	0.118	52.167	17.386	6.825
7/12/2020 2:00	1069203	7.856	-47.536	17.207	209.675	246.34	0.118	51.083	17.207	6.841
7/12/2020 3:00	1072803	7.862	-47.858	17.033	208.605	246.048	0.118	51.622	17.033	6.856
7/12/2020 4:00	1076403	7.865	-47.996	16.88	207.76	245.895	0.118	52.385	16.88	6.876
7/12/2020 5:00	1080003	7.851	-47.171	16.762	207.083	245.752	0.117	51.257	16.762	6.901
7/12/2020 6:00	1083603	7.867	-48.058	16.658	206.664	245.836	0.117	50.759	16.658	6.917
7/12/2020 7:00	1087203	7.868	-48.122	16.564	206.35	245.985	0.118	50.101	16.564	6.934
7/12/2020 8:00	1090803	7.87	-48.234	16.493	206.093	246.076	0.118	53.703	16.493	6.95
7/12/2020 9:00	1094403	7.866	-48.003	16.5	206.058	245.996	0.118	54.059	16.5	6.977
7/12/2020 10:00	1098003	7.87	-48.242	16.576	206.494	246.09	0.118	52.349	16.576	6.998
7/12/2020 11:00	1101603	7.865	-47.953	16.71	207.135	246.105	0.118	47.188	16.71	7.02
7/12/2020 12:00	1105203	7.887	-49.238	16.849	207.896	246.229	0.118	47.774	16.849	7.042
7/12/2020 13:00	1108803	7.895	-49.729	16.984	208.558	246.264	0.118	43.439	16.984	7.057
7/12/2020 14:00	1112403	7.888	-49.341	17.101	209.163	246.327	0.118	45.753	17.101	7.074
7/12/2020 15:00	1116003	7.905	-50.361	17.209	209.68	246.339	0.118	48.568	17.209	7.079
7/12/2020 16:00	1119603	7.893	-49.663	17.323	210.272	246.404	0.118	46.261	17.323	7.086
7/12/2020 17:00	1123203	7.887	-49.35	17.479	210.922	246.305	0.118	47.758	17.479	7.085
7/12/2020 18:00	1126803	7.89	-49.553	17.556	211.292	246.312	0.118	47.686	17.556	7.087
7/12/2020 19:00	1130403	7.906	-50.457	17.545	211.223	246.294	0.118	50.531	17.545	7.083
7/12/2020 20:00	1134003	7.903	-50.335	17.529	211.214	246.369	0.118	52.621	17.529	7.077
7/12/2020 21:00	1137603	7.912	-50.836	17.44	210.898	246.487	0.118	51.857	17.44	7.077
7/12/2020 22:00	1141203	7.898	-50.011	17.333	210.544	246.665	0.118	51.278	17.333	7.071
7/12/2020 23:00	1144803	7.893	-49.648	17.146	209.672	246.678	0.118	49.981	17.146	7.07
7/13/2020 0:00	1148403	7.898	-49.934	16.942	208.703	246.665	0.118	49.789	16.942	7.078
7/13/2020 1:00	1152003	7.902	-50.12	16.761	208.005	246.85	0.118	49.341	16.761	7.092
7/13/2020 2:00	1155603	7.906	-50.304	16.596	207.328	246.969	0.118	47.175	16.596	7.107
7/13/2020 3:00	1159203	7.898	-49.849	16.437	206.58	246.974	0.118	48.944	16.437	7.128
7/13/2020 4:00	1162803	7.902	-50.027	16.312	206.026	247.017	0.118	45.569	16.312	7.148
7/13/2020 5:00	1166403	7.916	-50.826	16.194	205.463	247.007	0.118	47.115	16.194	7.162
7/13/2020 6:00	1170003	7.902	-50.015	16.103	204.989	246.955	0.118	43.722	16.103	7.185
7/13/2020 7:00	1173603	7.91	-50.478	16.034	204.628	246.913	0.118	44.784	16.034	7.202
7/13/2020 8:00	1177203	7.914	-50.654	15.974	204.114	246.63	0.118	45.622	15.974	7.22

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
7/13/2020 9:00	1180803	7.921	-51.095	15.951	204.029	246.662	0.118	43.571	15.951	7.244
7/13/2020 10:00	1184403	7.916	-50.821	16.023	204.379	246.674	0.118	41.793	16.023	7.273
7/13/2020 11:00	1188003	7.927	-51.479	16.168	205.102	246.723	0.118	41.369	16.168	7.296
7/13/2020 12:00	1191603	7.923	-51.248	16.362	206.139	246.866	0.118	38.29	16.362	7.316
7/13/2020 13:00	1195203	7.932	-51.849	16.611	207.479	247.067	0.118	37.915	16.611	7.32
7/13/2020 14:00	1198803	7.935	-52.032	16.852	208.861	247.358	0.118	39.453	16.852	7.323
7/13/2020 15:00	1202403	7.943	-52.552	17.061	210.042	247.587	0.118	37.686	17.061	7.312
7/13/2020 16:00	1206003	7.945	-52.683	17.289	211.246	247.732	0.118	42.208	17.289	7.302
7/13/2020 17:00	1209603	7.945	-52.745	17.396	211.81	247.8	0.118	42.681	17.396	7.295
7/13/2020 18:00	1213203	7.946	-52.791	17.451	212.086	247.817	0.119	42.778	17.451	7.277
7/13/2020 19:00	1216803	7.946	-52.807	17.388	211.728	247.748	0.118	42.501	17.388	7.27
7/13/2020 20:00	1220403	7.954	-53.236	17.322	211.334	247.652	0.118	45.14	17.322	7.273
7/13/2020 21:00	1224003	7.955	-53.296	17.211	210.824	247.671	0.118	45.242	17.211	7.282
7/13/2020 22:00	1227603	7.953	-53.113	17.085	210.398	247.87	0.119	46.973	17.085	7.276
7/13/2020 23:00	1231203	7.947	-52.743	16.955	210.062	248.198	0.119	49.289	16.955	7.267
7/14/2020 0:00	1234803	7.935	-52.052	16.827	209.234	247.937	0.119	46.347	16.827	7.275
7/14/2020 1:00	1238403	7.941	-52.381	16.709	208.97	248.286	0.119	46.689	16.709	7.284
7/14/2020 2:00	1242003	7.948	-52.738	16.555	208.063	248.076	0.119	45.555	16.555	7.291
7/14/2020 3:00	1245603	7.942	-52.366	16.4	207.879	248.736	0.119	44.515	16.4	7.304
7/14/2020 4:00	1249203	7.947	-52.652	16.257	206.561	247.971	0.118	44.491	16.257	7.325
7/14/2020 5:00	1252803	7.943	-52.354	16.109	205.651	247.717	0.118	43.417	16.109	7.35
7/14/2020 6:00	1256403	7.943	-52.369	15.968	204.928	247.653	0.118	41.59	15.968	7.367
7/14/2020 7:00	1260003	7.95	-52.764	15.86	204.767	248.074	0.119	39.343	15.86	7.397
7/14/2020 8:00	1263603	7.95	-52.714	15.789	204.811	248.534	0.119	38.34	15.789	7.418
7/14/2020 9:00	1267203	7.956	-53.084	15.767	204.247	247.978	0.118	37.375	15.767	7.445
7/14/2020 10:00	1270803	7.962	-53.442	15.814	205.579	249.322	0.119	36.417	15.814	7.459
7/14/2020 11:00	1274403	7.961	-53.389	15.928	204.951	247.905	0.118	34.412	15.928	7.485
7/14/2020 12:00	1278003	7.966	-53.73	16.16	206.179	248.062	0.119	34.567	16.16	7.491
7/14/2020 13:00	1281603	7.964	-53.713	16.615	208.69	248.488	0.119	34.157	16.615	7.495
7/14/2020 14:00	1285203	7.975	-54.402	17	210.622	248.61	0.119	33.938	17	7.495
7/14/2020 15:00	1288803	7.97	-54.185	17.315	211.976	248.442	0.119	35.912	17.315	7.472
7/14/2020 16:00	1292403	7.975	-54.474	17.561	213.849	249.265	0.119	33.527	17.561	7.443
7/14/2020 17:00	1296003	7.972	-54.383	17.929	215.134	248.725	0.119	33.475	17.929	7.416
7/14/2020 18:00	1299603	7.975	-54.617	18.146	216.058	248.605	0.119	33.745	18.146	7.387
7/14/2020 19:00	1303203	7.987	-55.299	18.202	216.424	248.72	0.119	33.177	18.202	7.362
7/14/2020 20:00	1306803	7.977	-54.736	18.084	215.669	248.496	0.119	32.912	18.084	7.352
7/14/2020 21:00	1310403	7.983	-55.013	17.946	214.928	248.396	0.119	33.277	17.946	7.338
7/14/2020 22:00	1314003	7.986	-55.196	17.765	213.759	248.036	0.119	33.517	17.765	7.338
7/14/2020 23:00	1317603	7.986	-55.12	17.542	212.592	247.907	0.119	32.767	17.542	7.332
7/15/2020 0:00	1321203	7.972	-54.3	17.347	211.349	247.531	0.118	34.485	17.347	7.328
7/15/2020 1:00	1324803	7.978	-54.619	17.196	210.484	247.355	0.118	32.803	17.196	7.335

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
7/15/2020 2:00	1328403	7.974	-54.343	17.063	209.923	247.433	0.118	35.696	17.063	7.343
7/15/2020 3:00	1332003	7.972	-54.195	16.93	209.555	247.742	0.118	32.594	16.93	7.345
7/15/2020 4:00	1335603	7.972	-54.176	16.822	209.644	248.455	0.119	32.14	16.822	7.35
7/15/2020 5:00	1339203	7.967	-53.866	16.71	209.315	248.691	0.119	33.418	16.71	7.353
7/15/2020 6:00	1342803	7.971	-54.085	16.602	209.173	249.136	0.119	35.185	16.602	7.363
7/15/2020 7:00	1346403	7.974	-54.243	16.462	208.256	248.835	0.119	32.353	16.462	7.388
7/15/2020 8:00	1350003	7.978	-54.438	16.345	207.693	248.827	0.119	30.909	16.345	7.42
7/15/2020 9:00	1353603	7.974	-54.219	16.293	207.475	248.862	0.119	30.657	16.293	7.453
7/15/2020 10:00	1357204	7.983	-54.743	16.334	207.77	248.979	0.119	30.292	16.334	7.467
7/15/2020 11:00	1360804	7.981	-54.624	16.489	208.559	249.045	0.119	29.593	16.489	7.488
7/15/2020 12:00	1364404	7.985	-54.946	16.763	210.138	249.371	0.119	29.885	16.763	7.497
7/15/2020 13:00	1368004	7.988	-55.177	17.186	212.449	249.719	0.119	29.234	17.186	7.497
7/15/2020 14:00	1371604	7.998	-55.826	17.54	214.445	250.08	0.12	29.164	17.54	7.49
7/15/2020 15:00	1375204	7.996	-55.766	17.754	215.653	250.291	0.12	29.246	17.754	7.46
7/15/2020 16:00	1378804	7.998	-55.919	18.058	217.332	250.555	0.12	31.657	18.058	7.44
7/15/2020 17:00	1382404	8.001	-56.148	18.341	218.787	250.67	0.12	29.828	18.341	7.414
7/15/2020 18:00	1386004	7.992	-55.668	18.512	219.479	250.524	0.12	31.067	18.512	7.378
7/15/2020 19:00	1389604	8.007	-56.541	18.515	219.277	250.277	0.12	29.234	18.515	7.362
7/15/2020 20:00	1393204	8.006	-56.453	18.455	218.844	250.108	0.12	30.463	18.455	7.342
7/15/2020 21:00	1396804	8.01	-56.674	18.378	218.371	249.992	0.12	28.36	18.378	7.314
7/15/2020 22:00	1400404	8.008	-56.555	18.259	217.619	249.777	0.12	28.252	18.259	7.299
7/15/2020 23:00	1404004	7.997	-55.871	18.128	216.795	249.55	0.119	28.677	18.128	7.283
7/16/2020 0:00	1407604	7.997	-55.854	17.976	215.906	249.361	0.119	30.469	17.976	7.268
7/16/2020 1:00	1411204	8	-56.019	17.813	214.963	249.167	0.119	31.441	17.813	7.272
7/16/2020 2:00	1414804	7.99	-55.401	17.647	213.926	248.877	0.119	30.688	17.647	7.272
7/16/2020 3:00	1418404	7.984	-55.022	17.531	213.48	249.002	0.119	32.491	17.531	7.279
7/16/2020 4:00	1422004	7.981	-54.812	17.45	213.886	249.925	0.12	30.807	17.45	7.27
7/16/2020 5:00	1425604	7.982	-54.853	17.387	214.292	250.754	0.12	31.12	17.387	7.261
7/16/2020 6:00	1429204	7.978	-54.631	17.312	214.207	251.072	0.12	30.813	17.312	7.265
7/16/2020 7:00	1432804	7.982	-54.853	17.224	213.832	251.131	0.12	30.23	17.224	7.282
7/16/2020 8:00	1436404	7.983	-54.858	17.136	213.527	251.268	0.12	30.05	17.136	7.3
7/16/2020 9:00	1440004	7.98	-54.686	17.092	213.385	251.346	0.12	29.888	17.092	7.322
7/16/2020 10:00	1443604	7.987	-55.113	17.123	213.533	251.348	0.12	27.939	17.123	7.344
7/16/2020 11:00	1447204	7.996	-55.649	17.203	213.903	251.331	0.12	30.105	17.203	7.372
7/16/2020 12:00	1450804	8.005	-56.174	17.336	214.637	251.442	0.12	27.211	17.336	7.385
7/16/2020 13:00	1454404	8.011	-56.579	17.545	215.786	251.613	0.12	27.916	17.545	7.397
7/16/2020 14:00	1458004	8.015	-56.839	17.765	216.979	251.77	0.12	27.986	17.765	7.398
7/16/2020 15:00	1461604	8.019	-57.142	18.015	218.007	251.568	0.12	28.74	18.015	7.392
7/16/2020 16:00	1465204	8.025	-57.6	18.396	219.636	251.337	0.12	28.323	18.396	7.373
7/16/2020 17:00	1468804	8.027	-57.793	18.78	221.77	251.67	0.12	27.094	18.78	7.357
7/16/2020 18:00	1472404	8.039	-58.51	19.058	223.189	251.763	0.121	28.332	19.058	7.323

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
7/16/2020 19:00	1476004	8.033	-58.215	19.18	223.775	251.76	0.121	29.07	19.18	7.286
7/16/2020 20:00	1479604	8.028	-57.898	19.17	223.834	251.879	0.121	28.597	19.17	7.248
7/16/2020 21:00	1483204	8.033	-58.165	19.051	223.073	251.671	0.12	29.468	19.051	7.227
7/16/2020 22:00	1486804	8.029	-57.931	18.88	222.239	251.654	0.12	28.334	18.88	7.209
7/16/2020 23:00	1490404	8.023	-57.523	18.757	221.59	251.588	0.12	28.313	18.757	7.189
7/17/2020 0:00	1494004	8.018	-57.199	18.537	220.243	251.256	0.12	29.049	18.537	7.177
7/17/2020 1:00	1497604	8.013	-56.875	18.339	219.789	251.831	0.121	29.788	18.339	7.173
7/17/2020 2:00	1501204	8.008	-56.529	18.169	218.172	250.906	0.12	28.668	18.169	7.182
7/17/2020 3:00	1504804	8.004	-56.245	17.984	217.021	250.602	0.12	29.54	17.984	7.171
7/17/2020 4:00	1508404	8.004	-56.245	17.806	216.167	250.603	0.12	29.411	17.806	7.201
7/17/2020 5:00	1512004	7.997	-55.828	17.684	216.112	251.214	0.12	28.546	17.684	7.22
7/17/2020 6:00	1515604	8	-55.95	17.587	215.985	251.608	0.12	28.476	17.587	7.231
7/17/2020 7:00	1519204	7.999	-55.873	17.502	215.668	251.716	0.12	29.87	17.502	7.239
7/17/2020 8:00	1522804	8.007	-56.31	17.414	215.046	251.485	0.12	28.86	17.414	7.256
7/17/2020 9:00	1526404	8.008	-56.374	17.377	214.856	251.471	0.12	28.809	17.377	7.29
7/17/2020 10:00	1530004	8.01	-56.505	17.409	214.815	251.241	0.12	27.036	17.409	7.317
7/17/2020 11:00	1533604	8.014	-56.756	17.479	215.052	251.128	0.12	27.801	17.479	7.343
7/17/2020 12:00	1537204	8.013	-56.715	17.537	215.051	250.8	0.12	26.342	17.537	7.372
7/17/2020 13:00	1540804	8.019	-57.044	17.52	214.915	250.738	0.12	25.095	17.52	7.38
7/17/2020 14:00	1544404	8.02	-57.123	17.5	214.421	250.275	0.12	26.205	17.5	7.386
7/17/2020 15:00	1548004	8.02	-57.132	17.703	215.909	250.872	0.12	25.081	17.703	7.389
7/17/2020 16:00	1551604	8.021	-57.28	18.005	217.902	251.504	0.12	25.025	18.005	7.413
7/17/2020 17:00	1555204	8.034	-58.048	18.282	219.47	251.775	0.12	24.804	18.282	7.419
7/17/2020 18:00	1558804	8.03	-57.914	18.525	219.77	250.787	0.12	24.436	18.525	7.404
7/17/2020 19:00	1562404	8.032	-58.038	18.625	220.802	251.414	0.12	25.854	18.625	7.401
7/17/2020 20:00	1566004	8.035	-58.205	18.628	220.887	251.495	0.12	26.607	18.628	7.372
7/17/2020 21:00	1569604	8.036	-58.286	18.681	221.484	251.888	0.121	24.304	18.681	7.348
7/17/2020 22:00	1573204	8.033	-58.091	18.645	221.549	252.154	0.121	26.045	18.645	7.327
7/17/2020 23:00	1576804	8.03	-57.864	18.513	220.803	252.03	0.121	26.04	18.513	7.308
7/18/2020 0:00	1580404	8.029	-57.812	18.361	220.067	252.027	0.121	26.349	18.361	7.296
7/18/2020 1:00	1584004	8.026	-57.595	18.196	220.881	253.875	0.122	27.192	18.196	7.285
7/18/2020 2:00	1587604	8.017	-57.054	18.025	219.213	252.903	0.121	28.465	18.025	7.296
7/18/2020 3:00	1591204	8.017	-56.999	17.857	217.771	252.176	0.121	27.96	17.857	7.32
7/18/2020 4:00	1594804	8.012	-56.686	17.693	217.053	252.257	0.121	30.436	17.693	7.322
7/18/2020 5:00	1598404	8.012	-56.639	17.522	216.243	252.274	0.121	28.259	17.522	7.336
7/18/2020 6:00	1602004	8.006	-56.243	17.349	215.34	252.196	0.121	29.727	17.349	7.353
7/18/2020 7:00	1605604	8.002	-55.978	17.184	214.33	251.939	0.121	28.785	17.184	7.373
7/18/2020 8:00	1609204	8.009	-56.381	17.052	213.575	251.801	0.12	25.185	17.052	7.404
7/18/2020 9:00	1612804	8.015	-56.686	16.984	213.432	252.016	0.121	24.83	16.984	7.439
7/18/2020 10:00	1616404	8.019	-56.937	17.037	214.208	252.631	0.121	26.636	17.037	7.461
7/18/2020 11:00	1620004	8.03	-57.657	17.215	215.418	253.042	0.121	27.769	17.215	7.493

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
7/18/2020 12:00	1623604	8.038	-58.162	17.473	216.818	253.221	0.121	25.046	17.473	7.52
7/18/2020 13:00	1627204	8.037	-58.136	17.794	218.471	253.337	0.121	27.215	17.794	7.539
7/18/2020 14:00	1630804	8.042	-58.546	18.157	220.451	253.594	0.121	23.801	18.157	7.55
7/18/2020 15:00	1634404	8.046	-58.815	18.434	221.957	253.782	0.121	22.385	18.434	7.547
7/18/2020 16:00	1638004	8.059	-59.588	18.648	222.864	253.637	0.121	30.114	18.648	7.534
7/18/2020 17:00	1641604	8.059	-59.612	18.762	223.329	253.535	0.121	22.709	18.762	7.519
7/18/2020 18:00	1645204	8.068	-60.222	18.985	224.759	253.931	0.122	22.107	18.985	7.508
7/18/2020 19:00	1648804	8.065	-60.029	19.034	224.423	253.283	0.121	22.883	19.034	7.478
7/18/2020 20:00	1652404	8.065	-60.07	19.201	225.541	253.632	0.121	27.329	19.201	7.444
7/18/2020 21:00	1656004	8.071	-60.41	19.169	226.416	254.794	0.122	24.182	19.169	7.399
7/18/2020 22:00	1659604	8.064	-59.996	19.018	224.62	253.593	0.121	21.249	19.018	7.371
7/18/2020 23:00	1663204	8.057	-59.538	18.82	223.594	253.52	0.121	22.217	18.82	7.35
7/19/2020 0:00	1666804	8.048	-58.954	18.6	222.509	253.496	0.121	24.609	18.6	7.341
7/19/2020 1:00	1670404	8.043	-58.608	18.38	221.475	253.53	0.121	24.36	18.38	7.323
7/19/2020 2:00	1674004	8.04	-58.417	18.168	220.366	253.436	0.121	26.488	18.168	7.332
7/19/2020 3:00	1677604	8.035	-58.069	18.011	219.676	253.519	0.121	30.258	18.011	7.34
7/19/2020 4:00	1681204	8.037	-58.181	17.889	219.186	253.637	0.121	30.842	17.889	7.338
7/19/2020 5:00	1684804	8.035	-58.057	17.785	218.728	253.686	0.121	26.545	17.785	7.337
7/19/2020 6:00	1688404	8.021	-57.194	17.678	218.213	253.695	0.121	31.073	17.678	7.343
7/19/2020 7:00	1692004	8.021	-57.201	17.56	217.779	253.852	0.121	30.299	17.56	7.36
7/19/2020 8:00	1695604	8.017	-56.932	17.459	217.393	253.974	0.122	91.734	17.459	7.378
7/19/2020 9:00	1699204	8.025	-57.387	17.377	216.921	253.886	0.121	29.648	17.377	7.406
7/19/2020 10:00	1702804	8.032	-57.766	17.355	216.756	253.818	0.121	31.677	17.355	7.432
7/19/2020 11:00	1706404	8.034	-57.895	17.409	216.781	253.539	0.121	28.703	17.409	7.457
7/19/2020 12:00	1710004	8.034	-57.909	17.466	217.135	253.63	0.121	26.748	17.466	7.484
7/19/2020 13:00	1713604	8.049	-58.784	17.556	217.292	253.308	0.121	27.099	17.556	7.522
7/19/2020 14:00	1717204	8.053	-59.054	17.687	218.011	253.409	0.121	31.448	17.687	7.533
7/19/2020 15:00	1720804	8.058	-59.416	17.891	219.097	253.522	0.121	25.316	17.891	7.558
7/19/2020 16:00	1724404	8.069	-60.079	18.212	220.832	253.73	0.121	26.088	18.212	7.604
7/19/2020 17:00	1728004	8.074	-60.475	18.55	222.627	253.908	0.122	29.073	18.55	7.603
7/19/2020 18:00	1731604	8.08	-60.885	18.858	228.677	259.071	0.124	29.356	18.858	7.583
7/19/2020 19:00	1735204	8.079	-60.861	19.08	226.008	254.823	0.122	28.737	19.08	7.561
7/19/2020 20:00	1738804	8.077	-60.79	19.191	225.43	253.564	0.121	22.391	19.191	7.516
7/19/2020 21:00	1742404	8.078	-60.856	19.193	225.813	253.983	0.122	22.166	19.193	7.458
7/19/2020 22:00	1746004	8.081	-60.978	19.18	225.224	253.392	0.121	23.891	19.18	7.425
7/19/2020 23:00	1749604	8.072	-60.463	19.123	224.848	253.276	0.121	24.566	19.123	7.373
7/20/2020 0:00	1753204	8.058	-59.628	19.046	224.194	252.96	0.121	24.706	19.046	7.332
7/20/2020 1:00	1756804	8.053	-59.288	18.9	224.034	253.579	0.121	26.429	18.9	7.307
7/20/2020 2:00	1760404	8.049	-59.042	18.699	221.941	252.307	0.121	26.293	18.699	7.302
7/20/2020 3:00	1764004	8.05	-59.052	18.501	223.234	254.871	0.122	28.068	18.501	7.281
7/20/2020 4:00	1767604	8.045	-58.682	18.237	246.064	282.561	0.136	32.452	18.237	7.297

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
7/20/2020 5:00	1771204	8.028	-57.654	18.055	226.383	261.004	0.125	28.332	18.055	7.319
7/20/2020 6:00	1774804	8.027	-57.573	17.787	251.315	291.468	0.14	27.281	17.787	7.33
7/20/2020 7:00	1778404	8.025	-57.409	17.611	235.11	273.743	0.131	27.953	17.611	7.349
7/20/2020 8:00	1782004	8.025	-57.411	17.447	236.322	276.16	0.132	26.975	17.447	7.376
7/20/2020 9:00	1785604	8.026	-57.428	17.381	224.737	263.014	0.126	26.416	17.381	7.418
7/20/2020 10:00	1789204	8.026	-57.447	17.43	226.279	264.528	0.127	21.704	17.43	7.452
7/20/2020 11:00	1792804	8.035	-57.983	17.615	234.263	272.732	0.131	24.725	17.615	7.478
7/20/2020 12:00	1796404	8.045	-58.668	17.983	233.15	269.231	0.129	20.549	17.983	7.507
7/20/2020 13:00	1800004	8.06	-59.609	18.374	233.542	267.381	0.128	21.314	18.374	7.532
7/20/2020 14:00	1803604	8.085	-61.138	18.74	254.661	289.247	0.139	20.181	18.74	7.575
7/20/2020 15:00	1807204	8.109	-62.621	19.077	288.067	324.815	0.156	18.637	19.077	7.603
7/20/2020 16:00	1810804	8.112	-62.864	19.353	265.554	297.661	0.143	22.026	19.353	7.594
7/20/2020 17:00	1814404	8.124	-63.601	19.661	276.766	308.195	0.148	17.109	19.661	7.565
7/20/2020 18:00	1818004	8.161	-65.875	19.938	343.964	380.776	0.184	16.207	19.938	7.606
7/20/2020 19:00	1821604	8.15	-65.227	20.067	308.02	340.059	0.164	19.413	20.067	7.536
7/20/2020 20:00	1825204	8.127	-63.877	20.054	269.982	298.149	0.143	19.067	20.054	7.448
7/20/2020 21:00	1828804	8.121	-63.5	20.044	256.754	283.6	0.136	18.467	20.044	7.394
7/20/2020 22:00	1832404	8.102	-62.397	19.993	258.551	285.891	0.137	18.883	19.993	7.315
7/20/2020 23:00	1836004	8.089	-61.624	19.864	249.734	276.899	0.133	17.133	19.864	7.268
7/21/2020 0:00	1839604	8.084	-61.3	19.767	267.001	296.652	0.143	21.474	19.767	7.214
7/21/2020 1:00	1843204	8.069	-60.425	19.682	248.284	276.353	0.133	21.594	19.682	7.175
7/21/2020 2:00	1846804	8.059	-59.812	19.557	243.138	271.35	0.13	21.499	19.557	7.156
7/21/2020 3:00	1850404	8.057	-59.638	19.403	253.661	284.026	0.136	23.257	19.403	7.137
7/21/2020 4:00	1854004	8.051	-59.283	19.262	244.149	274.202	0.132	23.521	19.262	7.119
7/21/2020 5:00	1857604	8.042	-58.713	19.156	232.043	261.199	0.125	25.409	19.156	7.128
7/21/2020 6:00	1861204	8.043	-58.739	19.045	233.7	263.695	0.126	25.878	19.045	7.123
7/21/2020 7:00	1864804	8.042	-58.68	18.963	231.453	261.619	0.125	22.513	18.963	7.126
7/21/2020 8:00	1868404	8.038	-58.441	18.9	234.993	265.98	0.127	23.144	18.9	7.13
7/21/2020 9:00	1872004	8.043	-58.734	18.91	246.037	278.425	0.134	26.977	18.91	7.141
7/21/2020 10:00	1875604	8.063	-59.919	18.966	265.085	299.616	0.144	21.321	18.966	7.156
7/21/2020 11:00	1879205	8.066	-60.129	19.085	274.864	309.875	0.149	19.995	19.085	7.117
7/21/2020 12:00	1882805	8.076	-60.687	19.197	279.746	314.615	0.151	22.076	19.197	7.224
7/21/2020 13:00	1886405	8.079	-60.966	19.423	283.101	316.851	0.152	21.402	19.423	7.257
7/21/2020 14:00	1890005	8.09	-61.617	19.48	282.403	315.688	0.152	22.892	19.48	7.27
7/21/2020 15:00	1893605	8.107	-62.652	19.722	284.608	316.518	0.152	18.507	19.722	7.299
7/21/2020 16:00	1897205	8.112	-62.947	19.843	281.767	312.556	0.15	18.319	19.843	7.27
7/21/2020 17:00	1900805	8.113	-63.057	20.004	283.948	313.901	0.151	17.311	20.004	7.299
7/21/2020 18:00	1904405	8.123	-63.674	20.251	289.58	318.467	0.153	16.257	20.251	7.316
7/21/2020 19:00	1908005	8.125	-63.853	20.38	286.487	314.212	0.151	15.018	20.38	7.288
7/21/2020 20:00	1911605	8.128	-64.003	20.456	285.693	312.846	0.151	16.803	20.456	7.27
7/21/2020 21:00	1915205	8.131	-64.22	20.468	288.562	315.905	0.152	19.074	20.468	7.227

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090	Sensor: pH/ORP SN#: 723090	Sensor: Cond SN#: 737314	Sensor: Cond SN#: 737314	Sensor: Cond SN#: 737314	Sensor: Cond SN#: 737314	Sensor: Turb SN#: 730625	Sensor: Internal SN#: 740839	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
7/21/2020 22:00	1918805	8.124	-63.794	20.447	285.124	312.28	0.15	18.046	20.447	7.173
7/21/2020 23:00	1922405	8.113	-63.105	20.311	284.119	312.067	0.15	18.029	20.311	7.129
7/22/2020 0:00	1926005	8.107	-62.737	20.158	285.891	315.026	0.152	18.677	20.158	7.07
7/22/2020 1:00	1929605	8.096	-62.044	20.014	289.885	320.398	0.154	18.712	20.014	7.028
7/22/2020 2:00	1933205	8.083	-61.266	19.832	284.538	315.699	0.152	19.922	19.832	7.014
7/22/2020 3:00	1936805	8.078	-60.894	19.616	284.855	317.504	0.153	21.377	19.616	7.012
7/22/2020 4:00	1940405	8.07	-60.394	19.427	280.049	313.407	0.151	23.091	19.427	7.009
7/22/2020 5:00	1944005	8.063	-59.981	19.235	280.336	315.023	0.152	21.324	19.235	6.998
7/22/2020 6:00	1947605	8.061	-59.838	19.068	280.333	316.151	0.152	18.754	19.068	7.003
7/22/2020 7:00	1951205	8.055	-59.416	18.946	275.154	311.131	0.15	18.997	18.946	7.031
7/22/2020 8:00	1954805	8.055	-59.402	18.846	275.454	312.147	0.15	21.105	18.846	7.04
7/22/2020 9:00	1958405	8.05	-59.118	18.791	276.958	314.223	0.151	20.856	18.791	7.068
7/22/2020 10:00	1962005	8.057	-59.516	18.83	276.353	313.268	0.151	19.139	18.83	7.112
7/22/2020 11:00	1965605	8.069	-60.263	19.016	274.557	309.987	0.149	18.995	19.016	7.15
7/22/2020 12:00	1969205	8.077	-60.778	19.325	275.275	308.739	0.148	19.83	19.325	7.212
7/22/2020 13:00	1972805	8.092	-61.7	19.422	275.123	307.93	0.148	18.387	19.422	7.25
7/22/2020 14:00	1976405	8.096	-62.02	19.786	275.907	306.421	0.147	18.123	19.786	7.283
7/22/2020 15:00	1980005	8.101	-62.38	20.076	279.869	308.925	0.149	16.468	20.076	7.288
7/22/2020 16:00	1983605	8.116	-63.312	20.406	278.284	305.051	0.147	17.895	20.406	7.304
7/22/2020 17:00	1987205	8.128	-64.111	20.769	281.32	306.056	0.147	21.125	20.769	7.33
7/22/2020 18:00	1990805	8.143	-65.01	20.991	282.826	306.277	0.147	16.341	20.991	7.321
7/22/2020 19:00	1994405	8.144	-65.15	21.16	284.919	307.469	0.148	14.816	21.16	7.307
7/22/2020 20:00	1998005	8.139	-64.824	21.189	285.079	307.458	0.148	126.855	21.189	7.257
7/22/2020 21:00	2001605	8.142	-65.024	21.143	287.491	310.353	0.149	15.828	21.143	7.2
7/22/2020 22:00	2005205	8.135	-64.552	20.962	286.543	310.492	0.149	14.087	20.962	7.128
7/22/2020 23:00	2008805	8.118	-63.534	20.745	283.227	308.28	0.148	16.651	20.745	7.063
7/23/2020 0:00	2012405	8.107	-62.823	20.566	282	308.092	0.148	16.206	20.566	7.014
7/23/2020 1:00	2016005	8.095	-62.082	20.374	282.619	310.009	0.149	15.1	20.374	7.002
7/23/2020 2:00	2019605	8.088	-61.593	20.153	279.405	307.914	0.148	17.024	20.153	6.975
7/23/2020 3:00	2023205	8.037	-58.56	19.892	277.681	307.7	0.148	18.99	19.892	6.974
7/23/2020 4:00	2026805	8.073	-60.644	19.631	276.459	308.049	0.148	16.256	19.631	6.968
7/23/2020 5:00	2030405	8.064	-60.062	19.395	275.706	308.763	0.148	18.09	19.395	6.98
7/23/2020 6:00	2034005	8.054	-59.412	19.179	273.282	307.469	0.148	20.249	19.179	7.006
7/23/2020 7:00	2037605	8.054	-59.407	18.994	272.827	308.182	0.148	17.614	18.994	7.024
7/23/2020 8:00	2041205	8.049	-59.063	18.838	272.681	309.056	0.149	17.931	18.838	7.046
7/23/2020 9:00	2044805	8.051	-59.159	18.718	273.053	310.281	0.149	24.787	18.718	7.075
7/23/2020 10:00	2048405	8.055	-59.373	18.679	271.021	308.238	0.148	14.604	18.679	7.125
7/23/2020 11:00	2052005	8.067	-60.112	18.765	271.237	307.901	0.148	17.321	18.765	7.176
7/23/2020 12:00	2055605	8.071	-60.344	18.918	271.462	307.14	0.148	17.182	18.918	7.23
7/23/2020 13:00	2059205	8.085	-61.19	19.054	273.769	308.845	0.149	14.816	19.054	7.293
7/23/2020 14:00	2062805	8.101	-62.206	19.21	274.166	308.255	0.148	14.883	19.21	7.344

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
7/23/2020 15:00	2066405	8.119	-63.241	19.369	275.006	308.15	0.148	17.235	19.369	7.389
7/23/2020 16:00	2070005	8.117	-63.188	19.427	277.04	310.042	0.149	16.041	19.427	7.377
7/23/2020 17:00	2073605	8.129	-63.894	19.59	323.46	360.733	0.174	15.998	19.59	7.419
7/23/2020 18:00	2077205	8.185	-67.253	19.859	342.858	380.19	0.184	16.459	19.859	7.492
7/23/2020 19:00	2080805	8.169	-66.297	19.902	333.988	370.015	0.179	13.701	19.902	7.42
7/23/2020 20:00	2084405	8.172	-66.54	20.011	322.977	356.992	0.172	12.37	20.011	7.414
7/23/2020 21:00	2088005	8.166	-66.121	19.907	299.867	332.179	0.16	11.71	19.907	7.35
7/23/2020 22:00	2091605	8.153	-65.351	19.727	315.115	350.408	0.169	18.179	19.727	7.291
7/23/2020 23:00	2095205	8.144	-64.776	19.56	280.692	313.239	0.151	14.472	19.56	7.271
7/24/2020 0:00	2098805	8.137	-64.285	19.312	299.012	335.455	0.162	14.545	19.312	7.223
7/24/2020 1:00	2102405	8.127	-63.71	19.158	280.068	315.241	0.152	17.358	19.158	7.195
7/24/2020 2:00	2106005	8.119	-63.198	18.997	285.631	322.625	0.155	13.93	18.997	7.157
7/24/2020 3:00	2109605	8.122	-63.353	18.873	280.538	317.72	0.153	15.611	18.873	7.149
7/24/2020 4:00	2113205	8.114	-62.84	18.757	277.154	314.679	0.151	16.406	18.757	7.143
7/24/2020 5:00	2116805	8.103	-62.184	18.585	273.228	311.383	0.15	16.907	18.585	7.136
7/24/2020 6:00	2120405	8.1	-61.946	18.404	271.075	310.152	0.149	19.447	18.404	7.147
7/24/2020 7:00	2124005	8.099	-61.874	18.225	270.664	310.891	0.149	15.726	18.225	7.159
7/24/2020 8:00	2127605	8.095	-61.581	18.041	267.928	308.999	0.149	18.809	18.041	7.175
7/24/2020 9:00	2131205	8.086	-61.035	17.91	268.949	311.075	0.15	15.359	17.91	7.201
7/24/2020 10:00	2134805	8.083	-60.833	17.901	267.547	309.515	0.149	18.733	17.901	7.239
7/24/2020 11:00	2138405	8.104	-62.108	18.012	271.345	313.141	0.151	15.166	18.012	7.295
7/24/2020 12:00	2142005	8.114	-62.728	18.235	272.039	312.404	0.15	15.762	18.235	7.371
7/24/2020 13:00	2145605	8.125	-63.45	18.568	273.758	312.098	0.15	14.586	18.568	7.437
7/24/2020 14:00	2149205	8.144	-64.6	18.831	274.679	311.367	0.15	16.713	18.831	7.486
7/24/2020 15:00	2152805	8.151	-65.086	19.159	277.559	312.413	0.15	16.305	19.159	7.534
7/24/2020 16:00	2156405	8.169	-66.209	19.424	278.266	311.435	0.15	16.143	19.424	7.557
7/24/2020 17:00	2160005	8.181	-66.926	19.508	279.872	312.668	0.15	15.225	19.508	7.572
7/24/2020 18:00	2163605	8.194	-67.742	19.644	279.778	311.664	0.15	16.454	19.644	7.585
7/24/2020 19:00	2167205	8.204	-68.271	19.613	281.13	313.374	0.151	14.425	19.613	7.619
7/24/2020 20:00	2170805	8.202	-68.157	19.471	279.581	312.59	0.15	16.484	19.471	7.589
7/24/2020 21:00	2174405	8.206	-68.338	19.409	278.133	311.384	0.15	13.203	19.409	7.576
7/24/2020 22:00	2178005	8.199	-67.918	19.27	277.616	311.736	0.15	14.306	19.27	7.532
7/24/2020 23:00	2181605	8.19	-67.356	19.025	274.059	309.363	0.149	13.061	19.025	7.466
7/25/2020 0:00	2185205	8.17	-66.152	18.805	275.014	311.924	0.15	16.267	18.805	7.411
7/25/2020 1:00	2188805	8.16	-65.532	18.683	275.234	313.001	0.151	14.232	18.683	7.358
7/25/2020 2:00	2192405	8.141	-64.368	18.518	273.355	311.98	0.15	18.484	18.518	7.316
7/25/2020 3:00	2196005	8.135	-63.996	18.322	271.97	311.73	0.15	16.917	18.322	7.299
7/25/2020 4:00	2199605	8.127	-63.491	18.159	271.653	312.482	0.15	17.228	18.159	7.29
7/25/2020 5:00	2203205	8.117	-62.859	18.01	270.983	312.736	0.15	16.298	18.01	7.277
7/25/2020 6:00	2206805	8.109	-62.337	17.881	269.995	312.482	0.15	18.171	17.881	7.272
7/25/2020 7:00	2210405	8.102	-61.917	17.73	269.704	313.192	0.151	15.908	17.73	7.286

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
7/25/2020 8:00	2214005	8.094	-61.443	17.567	268.786	313.258	0.151	17.912	17.567	7.315
7/25/2020 9:00	2217605	8.095	-61.452	17.428	267.792	313.067	0.15	17.663	17.428	7.352
7/25/2020 10:00	2221205	8.094	-61.4	17.333	264.14	309.455	0.149	17.587	17.333	7.4
7/25/2020 11:00	2224805	8.099	-61.641	17.345	265.307	310.74	0.149	19.192	17.345	7.462
7/25/2020 12:00	2228405	8.112	-62.444	17.396	267.439	312.882	0.15	18.203	17.396	7.522
7/25/2020 13:00	2232005	8.119	-62.895	17.63	268.468	312.453	0.15	18.053	17.63	7.58
7/25/2020 14:00	2235605	8.133	-63.806	17.984	272.851	315.076	0.152	17.767	17.984	7.645
7/25/2020 15:00	2239205	8.151	-64.933	18.415	273.829	313.225	0.151	18.634	18.415	7.69
7/25/2020 16:00	2242805	8.166	-65.897	18.865	276.546	313.252	0.151	15.608	18.865	7.737
7/25/2020 17:00	2246405	8.184	-67.07	19.299	279.478	313.627	0.151	15.803	19.299	7.781
7/25/2020 18:00	2250005	8.198	-67.942	19.552	281.502	314.197	0.151	17.907	19.552	7.786
7/25/2020 19:00	2253605	8.207	-68.464	19.654	282.253	314.354	0.151	16.431	19.654	7.782
7/25/2020 20:00	2257205	8.213	-68.851	19.652	282.677	314.837	0.151	15.37	19.652	7.749
7/25/2020 21:00	2260805	8.216	-68.958	19.512	281.21	314.139	0.151	14.515	19.512	7.704
7/25/2020 22:00	2264405	8.211	-68.655	19.327	280.028	314.059	0.151	15.401	19.327	7.653
7/25/2020 23:00	2268005	8.201	-68.014	19.13	279.074	314.312	0.151	14.378	19.13	7.595
7/26/2020 0:00	2271605	8.193	-67.511	18.93	277.742	314.169	0.151	15.462	18.93	7.533
7/26/2020 1:00	2275205	8.175	-66.39	18.71	276.24	313.956	0.151	13.521	18.71	7.469
7/26/2020 2:00	2278805	8.165	-65.78	18.518	275.072	313.937	0.151	15.821	18.518	7.418
7/26/2020 3:00	2282405	8.15	-64.816	18.309	273.914	314.052	0.151	15.614	18.309	7.401
7/26/2020 4:00	2286005	8.14	-64.194	18.124	273.355	314.685	0.151	16.581	18.124	7.385
7/26/2020 5:00	2289605	8.131	-63.658	17.945	271.98	314.338	0.151	18.34	17.945	7.369
7/26/2020 6:00	2293205	8.125	-63.252	17.727	271.082	314.818	0.151	17.609	17.727	7.382
7/26/2020 7:00	2296805	8.118	-62.78	17.499	269.67	314.766	0.151	20.45	17.499	7.393
7/26/2020 8:00	2300405	8.105	-62.013	17.297	269.007	315.414	0.152	15.869	17.297	7.409
7/26/2020 9:00	2304005	8.107	-62.11	17.175	267.842	314.904	0.151	15.701	17.175	7.431
7/26/2020 10:00	2307605	8.107	-62.075	17.183	268.055	315.103	0.151	18.684	17.183	7.463
7/26/2020 11:00	2311205	8.113	-62.466	17.338	269.606	315.827	0.152	16.949	17.338	7.527
7/26/2020 12:00	2314805	8.122	-63.074	17.611	271.941	316.628	0.152	16.018	17.611	7.598
7/26/2020 13:00	2318405	8.137	-63.994	17.987	274.272	316.691	0.152	17.516	17.987	7.688
7/26/2020 14:00	2322005	8.155	-65.193	18.447	278.539	318.389	0.153	15.237	18.447	7.76
7/26/2020 15:00	2325605	8.178	-66.605	18.955	280.586	317.214	0.153	15.718	18.955	7.818
7/26/2020 16:00	2329205	8.192	-67.565	19.448	284.046	317.74	0.153	14.772	19.448	7.858
7/26/2020 17:00	2332805	8.211	-68.755	19.908	287.858	318.874	0.153	13.805	19.908	7.886
7/26/2020 18:00	2336405	8.218	-69.265	20.304	289.561	318.094	0.153	15.757	20.304	7.882
7/26/2020 19:00	2340005	8.231	-70.131	20.602	291.528	318.26	0.153	15.145	20.602	7.844
7/26/2020 20:00	2343605	8.237	-70.512	20.748	292.799	318.684	0.153	17.74	20.748	7.78
7/26/2020 21:00	2347205	8.237	-70.5	20.76	292.852	318.658	0.153	13.844	20.76	7.712
7/26/2020 22:00	2350805	8.232	-70.217	20.707	292.818	318.97	0.154	12.525	20.707	7.613
7/26/2020 23:00	2354405	8.222	-69.592	20.587	292.252	319.15	0.154	14.855	20.587	7.501
7/27/2020 0:00	2358005	8.191	-67.723	20.438	291.417	319.233	0.154	18.061	20.438	7.395

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
7/27/2020 1:00	2361605	8.183	-67.234	20.267	290.587	319.464	0.154	14.245	20.267	7.297
7/27/2020 2:00	2365205	8.162	-65.908	20.05	289.439	319.659	0.154	15.046	20.05	7.233
7/27/2020 3:00	2368805	8.144	-64.807	19.824	288.038	319.64	0.154	13.483	19.824	7.181
7/27/2020 4:00	2372405	8.133	-64.158	19.582	286.627	319.71	0.154	14.604	19.582	7.157
7/27/2020 5:00	2376005	8.12	-63.291	19.334	285.289	319.913	0.154	16.525	19.334	7.145
7/27/2020 6:00	2379605	8.1	-62.11	19.077	283.477	319.638	0.154	18.256	19.077	7.143
7/27/2020 7:00	2383205	8.086	-61.209	18.812	282.11	319.92	0.154	17.041	18.812	7.154
7/27/2020 8:00	2386805	8.076	-60.601	18.574	280.946	320.252	0.154	15.869	18.574	7.157
7/27/2020 9:00	2390405	8.071	-60.275	18.408	280.154	320.506	0.154	16.101	18.408	7.18
7/27/2020 10:00	2394005	8.073	-60.365	18.377	280.158	320.727	0.154	14.657	18.377	7.22
7/27/2020 11:00	2397605	8.075	-60.501	18.5	280.941	320.766	0.154	17.14	18.5	7.28
7/27/2020 12:00	2401205	8.09	-61.433	18.751	283.015	321.371	0.155	17.352	18.751	7.364
7/27/2020 13:00	2404805	8.11	-62.702	19.129	285.854	321.956	0.155	15.025	19.129	7.45
7/27/2020 14:00	2408405	8.133	-64.127	19.607	289.427	322.665	0.155	17.862	19.607	7.531
7/27/2020 15:00	2412005	8.156	-65.601	20.125	293.239	323.348	0.156	14.069	20.125	7.62
7/27/2020 16:00	2415605	8.177	-66.981	20.655	297.081	323.967	0.156	14.253	20.655	7.662
7/27/2020 17:00	2419205	8.202	-68.555	21.148	300.593	324.467	0.156	12.543	21.148	7.706
7/27/2020 18:00	2422805	8.225	-70.002	21.566	303.418	324.718	0.156	11.172	21.566	7.711
7/27/2020 19:00	2426405	8.237	-70.779	21.854	305.427	324.952	0.157	12.211	21.854	7.689
7/27/2020 20:00	2430005	8.25	-71.545	22.014	306.328	324.854	0.156	11.543	22.014	7.635
7/27/2020 21:00	2433605	8.257	-72.024	22.069	306.761	324.954	0.157	13.091	22.069	7.54
7/27/2020 22:00	2437205	8.257	-72	22.033	306.248	324.647	0.156	10.984	22.033	7.432
7/27/2020 23:00	2440805	8.237	-70.786	21.917	305.651	324.777	0.156	11.303	21.917	7.299
7/28/2020 0:00	2444405	8.221	-69.785	21.779	304.878	324.861	0.156	12.929	21.779	7.178
7/28/2020 1:00	2448005	8.207	-68.927	21.641	304.142	324.993	0.157	13.126	21.641	7.058
7/28/2020 2:00	2451605	8.183	-67.499	21.473	303.253	325.155	0.157	13.22	21.473	6.967
7/28/2020 3:00	2455205	8.165	-66.414	21.287	302.15	325.211	0.157	14.706	21.287	6.898
7/28/2020 4:00	2458805	8.149	-65.389	21.078	300.956	325.325	0.157	13.762	21.078	6.872
7/28/2020 5:00	2462405	8.133	-64.421	20.849	299.477	325.263	0.157	14.472	20.849	6.843
7/28/2020 6:00	2466005	8.116	-63.36	20.615	297.919	325.151	0.157	16.34	20.615	6.827
7/28/2020 7:00	2469605	8.114	-63.167	20.374	296.374	325.095	0.157	14.927	20.374	6.832
7/28/2020 8:00	2473205	8.105	-62.587	20.137	295.077	325.29	0.157	14.399	20.137	6.826
7/28/2020 9:00	2476805	8.104	-62.492	19.983	294.315	325.507	0.157	15.574	19.983	6.873
7/28/2020 10:00	2480405	8.095	-61.977	19.888	293.961	325.767	0.157	16.268	19.888	6.902
7/28/2020 11:00	2484005	8.109	-62.797	19.961	294.7	326.085	0.157	13.057	19.961	6.982
7/28/2020 12:00	2487605	8.126	-63.82	20.15	296.1	326.328	0.157	14.224	20.15	7.085
7/28/2020 13:00	2491205	8.147	-65.129	20.462	298.245	326.546	0.157	15.243	20.462	7.205
7/28/2020 14:00	2494805	8.172	-66.721	20.89	301.117	326.771	0.157	11.956	20.89	7.328
7/28/2020 15:00	2498405	8.213	-69.239	21.323	303.907	326.862	0.157	12.878	21.323	7.45
7/28/2020 16:00	2502005	8.236	-70.653	21.692	306.391	327.052	0.158	14.051	21.692	7.536
7/28/2020 17:00	2505605	8.272	-72.865	22.006	308.556	327.271	0.158	13.183	22.006	7.597

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
7/28/2020 18:00	2509205	8.283	-73.559	22.131	309.489	327.428	0.158	13.082	22.131	7.598
7/28/2020 19:00	2512805	8.301	-74.601	22.167	309.121	326.807	0.157	11.207	22.167	7.574
7/28/2020 20:00	2516405	8.307	-74.985	22.234	309.426	326.683	0.157	11.176	22.234	7.488
7/28/2020 21:00	2520005	8.288	-73.86	22.109	308.085	326.093	0.157	11.582	22.109	7.369
7/28/2020 22:00	2523605	8.258	-72.029	21.92	305.719	324.827	0.156	14.528	21.92	7.205
7/28/2020 23:00	2527205	8.233	-70.531	21.797	302.494	322.206	0.155	17.983	21.797	7.091
7/29/2020 0:00	2530805	8.218	-69.613	21.734	304.902	325.186	0.157	16.318	21.734	7.052
7/29/2020 1:00	2534405	8.202	-68.631	21.598	305.606	326.842	0.157	13.71	21.598	6.963
7/29/2020 2:00	2538005	8.186	-67.677	21.447	305.474	327.716	0.158	13.676	21.447	6.905
7/29/2020 3:00	2541605	8.174	-66.9	21.291	305.268	328.542	0.158	14.152	21.291	6.85
7/29/2020 4:00	2545205	8.153	-65.622	21.108	304.888	329.371	0.159	15.039	21.108	6.798
7/29/2020 5:00	2548805	8.136	-64.571	20.891	301.87	327.582	0.158	19.772	20.891	6.784
7/29/2020 6:00	2552405	8.114	-63.229	20.664	300.854	328.022	0.158	17.851	20.664	6.78
7/29/2020 7:00	2556005	8.1	-62.397	20.442	297.918	326.328	0.157	18.891	20.442	6.776
7/29/2020 8:00	2559605	8.087	-61.574	20.265	296.233	325.688	0.157	20.121	20.265	6.791
7/29/2020 9:00	2563205	8.078	-61.023	20.173	296.813	326.956	0.157	18.807	20.173	6.822
7/29/2020 10:00	2566805	8.085	-61.419	20.171	297.847	328.11	0.158	18.621	20.171	6.873
7/29/2020 11:00	2570405	8.091	-61.839	20.272	299.478	329.207	0.159	16.699	20.272	6.917
7/29/2020 12:00	2574005	8.107	-62.804	20.472	301.924	330.509	0.159	16.258	20.472	7.033
7/29/2020 13:00	2577605	8.129	-64.17	20.744	304.942	331.921	0.16	14.408	20.744	7.149
7/29/2020 14:00	2581205	8.165	-66.352	21.118	308.441	333.142	0.161	18.814	21.118	7.307
7/29/2020 15:00	2584805	8.205	-68.769	21.495	311.526	333.881	0.161	18.074	21.495	7.475
7/29/2020 16:00	2588405	8.245	-71.223	21.902	314.186	333.946	0.161	16.036	21.902	7.615
7/29/2020 17:00	2592005	8.278	-73.287	22.257	316.293	333.779	0.161	15.844	22.257	7.726
7/29/2020 18:00	2595605	8.311	-75.305	22.554	317.917	333.497	0.161	17.547	22.554	7.801
7/29/2020 19:00	2599205	8.344	-77.293	22.729	318.896	333.358	0.161	16.435	22.729	7.826
7/29/2020 20:00	2602805	8.358	-78.13	22.787	319.366	333.463	0.161	15.448	22.787	7.784
7/29/2020 21:00	2606405	8.359	-78.232	22.812	319.73	333.672	0.161	11.282	22.812	7.69
7/29/2020 22:00	2610005	8.341	-77.126	22.762	319.705	333.979	0.161	16.161	22.762	7.58
7/29/2020 23:00	2613605	8.327	-76.296	22.613	318.973	334.212	0.161	14.376	22.613	7.398
7/30/2020 0:00	2617205	8.295	-74.339	22.458	318.147	334.383	0.161	17.776	22.458	7.203
7/30/2020 1:00	2620805	8.268	-72.706	22.308	317.473	334.684	0.161	14.762	22.308	7.07
7/30/2020 2:00	2624405	8.233	-70.589	22.143	316.855	335.145	0.162	18.674	22.143	6.954
7/30/2020 3:00	2628005	8.211	-69.256	22.006	316.381	335.568	0.162	14.261	22.006	6.844
7/30/2020 4:00	2631605	8.188	-67.887	21.875	315.944	335.998	0.162	15.087	21.875	6.773
7/30/2020 5:00	2635205	8.168	-66.659	21.726	315.221	336.248	0.162	15.712	21.726	6.732
7/30/2020 6:00	2638805	8.151	-65.649	21.56	314.387	336.495	0.162	17.584	21.56	6.697
7/30/2020 7:00	2642405	8.135	-64.638	21.384	313.368	336.616	0.162	16.154	21.384	6.689
7/30/2020 8:00	2646005	8.127	-64.13	21.208	312.37	336.764	0.162	18.532	21.208	6.7
7/30/2020 9:00	2649605	8.111	-63.15	21.04	311.582	337.076	0.162	21.688	21.04	6.718
7/30/2020 10:00	2653205	8.109	-63.016	20.936	311.335	337.532	0.163	19.354	20.936	6.774

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
7/30/2020 11:00	2656805	8.104	-62.683	20.86	311.229	337.951	0.163	17.216	20.86	6.856
7/30/2020 12:00	2660405	8.127	-64.046	20.917	311.855	338.235	0.163	16.69	20.917	6.988
7/30/2020 13:00	2664005	8.15	-65.441	21.023	312.627	338.329	0.163	17.279	21.023	7.16
7/30/2020 14:00	2667605	8.191	-67.887	21.241	314.208	338.512	0.163	15.705	21.241	7.355
7/30/2020 15:00	2671205	8.243	-71.046	21.565	316.304	338.51	0.163	20.96	21.565	7.57
7/30/2020 16:00	2674805	8.29	-73.903	21.927	318.637	338.504	0.163	17.142	21.927	7.8
7/30/2020 17:00	2678405	8.343	-77.136	22.245	320.838	338.656	0.163	18.309	22.245	7.965
7/30/2020 18:00	2682005	8.379	-79.331	22.545	322.877	338.763	0.163	21.708	22.545	8.09
7/30/2020 19:00	2685605	8.406	-81.015	22.773	324.264	338.671	0.163	18.988	22.773	8.104
7/30/2020 20:00	2689205	8.425	-82.178	22.93	323.257	336.561	0.162	15.856	22.93	8.083
7/30/2020 21:00	2692805	8.432	-82.583	22.945	316.281	329.203	0.159	17.899	22.945	7.975
7/30/2020 22:00	2696405	8.405	-80.936	22.762	302.59	316.102	0.152	18.293	22.762	7.772
7/30/2020 23:00	2700005	8.379	-79.329	22.577	287.384	301.332	0.145	17.574	22.577	7.582
7/31/2020 0:00	2703605	8.347	-77.403	22.408	275.16	289.491	0.139	17.875	22.408	7.373
7/31/2020 1:00	2707205	8.314	-75.4	22.235	267.339	282.244	0.136	16.159	22.235	7.201
7/31/2020 2:00	2710805	8.273	-72.956	22.08	263.044	278.581	0.134	20.36	22.08	7.044
7/31/2020 3:00	2714405	8.236	-70.734	21.936	260.687	276.889	0.133	18.511	21.936	6.895
7/31/2020 4:00	2718005	8.205	-68.855	21.758	259.052	276.153	0.133	17.627	21.758	6.805
7/31/2020 5:00	2721605	8.185	-67.63	21.556	257.653	275.797	0.132	30.787	21.556	6.768
7/31/2020 6:00	2725205	8.158	-66.013	21.338	256.149	275.412	0.132	27.06	21.338	6.733
7/31/2020 7:00	2728805	8.139	-64.8	21.114	254.734	275.154	0.132	26.725	21.114	6.715
7/31/2020 8:00	2732405	8.137	-64.642	20.91	253.501	274.984	0.132	18.755	20.91	6.72
7/31/2020 9:00	2736005	8.121	-63.684	20.736	252.348	274.723	0.132	25.999	20.736	6.732
7/31/2020 10:00	2739605	8.107	-62.852	20.639	251.882	274.766	0.132	19.385	20.639	6.796
7/31/2020 11:00	2743205	8.127	-64.011	20.653	252.009	274.829	0.132	23.329	20.653	6.886
7/31/2020 12:00	2746805	8.136	-64.58	20.758	252.326	274.572	0.132	27.235	20.758	7.026
7/31/2020 13:00	2750405	8.166	-66.381	20.985	253.722	274.796	0.132	20.635	20.985	7.217
7/31/2020 14:00	2754005	8.203	-68.622	21.27	255.265	274.845	0.132	20.429	21.27	7.398
7/31/2020 15:00	2757605	8.234	-70.512	21.588	256.627	274.517	0.132	25.062	21.588	7.574
7/31/2020 16:00	2761205	8.282	-73.442	22.011	258.888	274.564	0.132	37.482	22.011	7.773
7/31/2020 17:00	2764805	8.319	-75.786	22.445	260.89	274.276	0.132	28.145	22.445	7.89
7/31/2020 18:00	2768405	8.357	-78.099	22.793	262.773	274.34	0.132	25.592	22.793	7.941
7/31/2020 19:00	2772005	8.381	-79.577	23.03	264.023	274.345	0.132	24.069	23.03	7.946
7/31/2020 20:00	2775605	8.388	-80.016	23.114	264.444	274.324	0.132	35.417	23.114	7.833
7/31/2020 21:00	2779205	8.382	-79.691	23.22	265.122	274.454	0.132	26.891	23.22	7.733
7/31/2020 22:00	2782805	8.383	-79.753	23.301	265.934	274.852	0.132	26.158	23.301	7.582
7/31/2020 23:00	2786405	8.364	-78.628	23.282	265.985	275.011	0.132	24.051	23.282	7.433
8/1/2020 0:00	2790005	8.34	-77.176	23.221	266.027	275.385	0.132	32.601	23.221	7.226
8/1/2020 1:00	2793605	8.31	-75.407	23.128	265.719	275.571	0.132	35.482	23.128	7.047
8/1/2020 2:00	2797205	8.274	-73.264	23.005	265.477	275.995	0.132	28.732	23.005	6.865
8/1/2020 3:00	2800805	8.246	-71.554	22.889	265.025	276.158	0.133	23.879	22.889	6.698

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
8/1/2020 4:00	2804405	8.217	-69.809	22.78	264.71	276.434	0.133	35.247	22.78	6.606
8/1/2020 5:00	2808005	8.196	-68.56	22.666	264.294	276.628	0.133	28.37	22.666	6.506
8/1/2020 6:00	2811605	8.175	-67.263	22.536	263.524	276.539	0.133	31.548	22.536	6.455
8/1/2020 7:00	2815205	8.16	-66.364	22.376	262.726	276.588	0.133	42.283	22.376	6.426
8/1/2020 8:00	2818805	8.144	-65.334	22.222	261.993	276.673	0.133	43.784	22.222	6.408
8/1/2020 9:00	2822405	8.131	-64.533	22.074	261.143	276.6	0.133	51.434	22.074	6.441
8/1/2020 10:00	2826005	8.125	-64.178	21.949	260.352	276.46	0.133	55.559	21.949	6.469
8/1/2020 11:00	2829605	8.119	-63.851	21.949	260.488	276.605	0.133	47.165	21.949	6.572
8/1/2020 12:00	2833205	8.123	-64.049	21.961	260.407	276.455	0.133	47.188	21.961	6.645
8/1/2020 13:00	2836805	8.143	-65.236	21.979	260.171	276.103	0.132	52.139	21.979	6.784
8/1/2020 14:00	2840405	8.164	-66.507	22.067	260.56	276.025	0.132	68.858	22.067	6.963
8/1/2020 15:00	2844005	8.188	-67.947	22.218	261.067	275.718	0.132	61.665	22.218	7.065
8/1/2020 16:00	2847605	8.221	-69.959	22.387	261.784	275.536	0.132	81.886	22.387	7.239
8/1/2020 17:00	2851205	8.246	-71.459	22.537	262.394	275.346	0.132	78.174	22.537	7.335
8/1/2020 18:00	2854805	8.275	-73.225	22.673	263.252	275.498	0.132	76.639	22.673	7.402
8/1/2020 19:00	2858405	8.3	-74.728	22.842	265.997	277.431	0.133	72.191	22.842	7.498
8/1/2020 20:00	2862005	8.307	-75.147	22.932	268.232	279.264	0.134	415.501	22.932	7.454
8/1/2020 21:00	2865605	8.298	-74.644	22.951	269.198	280.16	0.134	13.849	22.951	7.416
8/1/2020 22:00	2869205	8.299	-74.699	22.958	269.783	280.73	0.135	12.481	22.958	7.334
8/1/2020 23:00	2872805	8.284	-73.791	22.949	270.311	281.33	0.135	17.3	22.949	7.172
8/2/2020 0:00	2876405	8.278	-73.44	22.909	270.537	281.791	0.135	16.765	22.909	7.053
8/2/2020 1:00	2880005	8.253	-71.94	22.806	270.096	281.908	0.135	14.51	22.806	6.805
8/2/2020 2:00	2883605	8.218	-69.852	22.691	269.864	282.313	0.136	12.045	22.691	6.704
8/2/2020 3:00	2887205	8.183	-67.749	22.606	269.311	282.215	0.135	16.828	22.606	6.658
8/2/2020 4:00	2890805	8.168	-66.869	22.523	268.865	282.217	0.135	20.386	22.523	6.557
8/2/2020 5:00	2894405	8.148	-65.629	22.418	268.198	282.108	0.135	16.65	22.418	6.473
8/2/2020 6:00	2898005	8.129	-64.502	22.273	267.358	282.047	0.135	19.72	22.273	6.46
8/2/2020 7:00	2901605	8.107	-63.131	22.126	266.891	282.39	0.136	29.298	22.126	6.427
8/2/2020 8:00	2905205	8.114	-63.517	22	266.296	282.482	0.136	17.484	22	6.47
8/2/2020 9:00	2908805	8.107	-63.097	21.901	265.935	282.667	0.136	17.446	21.901	6.45
8/2/2020 10:00	2912405	8.101	-62.749	21.864	265.818	282.755	0.136	26.034	21.864	6.493
8/2/2020 11:00	2916005	8.106	-63.033	21.93	266.371	282.965	0.136	18.296	21.93	6.566
8/2/2020 12:00	2919605	8.113	-63.498	22.061	267.298	283.196	0.136	16.81	22.061	6.676
8/2/2020 13:00	2923205	8.14	-65.107	22.26	268.585	283.415	0.136	14.866	22.26	6.826
8/2/2020 14:00	2926805	8.164	-66.631	22.543	269.955	283.245	0.136	15.593	22.543	7.012
8/2/2020 15:00	2930405	8.212	-69.511	22.876	272.084	283.586	0.136	19.186	22.876	7.192
8/2/2020 16:00	2934005	8.24	-71.256	23.137	273.527	283.619	0.136	34.335	23.137	7.383
8/2/2020 17:00	2937605	8.275	-73.419	23.58	275.862	283.552	0.136	14.694	23.58	7.534
8/2/2020 18:00	2941205	8.309	-75.51	23.817	276.288	282.677	0.136	23.196	23.817	7.454
8/2/2020 19:00	2944805	8.33	-76.833	24.007	276.324	281.666	0.135	25.663	24.007	7.597
8/2/2020 20:00	2948405	8.338	-77.293	24.094	278.17	283.069	0.136	25.542	24.094	7.65

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
8/2/2020 21:00	2952005	8.345	-77.758	24.099	278.109	282.978	0.136	26.53	24.099	7.533
8/2/2020 22:00	2955605	8.352	-78.139	24.025	277.325	282.588	0.136	12.496	24.025	7.399
8/2/2020 23:00	2959205	8.331	-76.869	23.898	276.477	282.42	0.136	12.366	23.898	7.227
8/3/2020 0:00	2962805	8.314	-75.796	23.687	276.819	283.94	0.136	12.172	23.687	7.019
8/3/2020 1:00	2966405	8.275	-73.45	23.515	271.707	279.637	0.134	11.096	23.515	6.864
8/3/2020 2:00	2970005	8.244	-71.53	23.349	272.477	281.352	0.135	11.419	23.349	6.718
8/3/2020 3:00	2973605	8.225	-70.348	23.133	272.367	282.437	0.136	11.216	23.133	6.602
8/3/2020 4:00	2977205	8.192	-68.383	22.911	271.144	282.414	0.136	12.555	22.911	6.465
8/3/2020 5:00	2980805	8.175	-67.317	22.74	269.701	281.868	0.135	15.241	22.74	6.406
8/3/2020 6:00	2984405	8.16	-66.388	22.579	268.258	281.263	0.135	14.667	22.579	6.332
8/3/2020 7:00	2988005	8.153	-65.949	22.439	267.674	281.443	0.135	23.747	22.439	6.343
8/3/2020 8:00	2991605	8.137	-64.983	22.315	267.541	282.001	0.135	17.739	22.315	6.368
8/3/2020 9:00	2995205	8.15	-65.708	22.191	266.805	281.932	0.135	12.431	22.191	6.391
8/3/2020 10:00	2998805	8.14	-65.091	22.103	267.019	282.658	0.136	12.835	22.103	6.436
8/3/2020 11:00	3002405	8.138	-64.962	22.029	267.371	283.455	0.136	13.276	22.029	6.496
8/3/2020 12:00	3006005	8.151	-65.753	22.009	268.061	284.303	0.137	13.121	22.009	6.6
8/3/2020 13:00	3009605	8.169	-66.805	22.07	269.053	285	0.137	13.299	22.07	6.778
8/3/2020 14:00	3013205	8.194	-68.326	22.219	270.003	285.147	0.137	12.326	22.219	6.983
8/3/2020 15:00	3016805	8.23	-70.484	22.385	270.858	285.101	0.137	11.854	22.385	7.184
8/3/2020 16:00	3020405	8.26	-72.265	22.519	271.914	285.439	0.137	13.188	22.519	7.36
8/3/2020 17:00	3024005	8.303	-74.832	22.63	272.635	285.562	0.137	12.55	22.63	7.518
8/3/2020 18:00	3027605	8.339	-77.004	22.764	272.86	285.034	0.137	13.412	22.764	7.624
8/3/2020 19:00	3031205	8.365	-78.592	22.854	272.913	284.576	0.137	12.774	22.854	7.73
8/3/2020 20:00	3034805	8.403	-80.86	22.898	272.488	283.885	0.136	11.536	22.898	7.761
8/3/2020 21:00	3038405	8.417	-81.63	22.78	271.118	283.122	0.136	10.359	22.78	7.73
8/3/2020 22:00	3042005	8.419	-81.682	22.562	269.473	282.632	0.136	11.715	22.562	7.648
8/3/2020 23:00	3045605	8.409	-81.019	22.252	267.815	282.65	0.136	11.884	22.252	7.511
8/4/2020 0:00	3049205	8.384	-79.463	21.914	265.952	282.607	0.136	13.438	21.914	7.365
8/4/2020 1:00	3052805	8.356	-77.705	21.531	263.482	282.177	0.135	12.126	21.531	7.23
8/4/2020 2:00	3056405	8.326	-75.819	21.173	261.35	281.957	0.135	11.678	21.173	7.138
8/4/2020 3:00	3060005	8.302	-74.379	20.893	259.347	281.422	0.135	11.382	20.893	7.053
8/4/2020 4:00	3063606	8.276	-72.753	20.609	257.689	281.277	0.135	10.907	20.609	6.947
8/4/2020 5:00	3067206	8.252	-71.301	20.358	255.868	280.759	0.135	11.896	20.358	6.892
8/4/2020 6:00	3070806	8.236	-70.288	20.131	254.445	280.536	0.135	15.341	20.131	6.852
8/4/2020 7:00	3074406	8.225	-69.597	19.928	253.254	280.42	0.135	15.377	19.928	6.834
8/4/2020 8:00	3078006	8.216	-69.022	19.748	251.84	279.922	0.134	16.695	19.748	6.846
8/4/2020 9:00	3081606	8.202	-68.157	19.636	251.11	279.775	0.134	19.015	19.636	6.843
8/4/2020 10:00	3085206	8.205	-68.321	19.559	250.955	280.061	0.134	19.834	19.559	6.852
8/4/2020 11:00	3088806	8.212	-68.736	19.601	249.39	278.063	0.133	18.003	19.601	6.936
8/4/2020 12:00	3092406	8.213	-68.853	19.701	251.929	280.297	0.135	14.237	19.701	7.054
8/4/2020 13:00	3096006	8.233	-70.062	19.888	253.457	280.884	0.135	11.999	19.888	7.189

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
8/4/2020 14:00	3099606	8.247	-70.937	20.092	254.19	280.483	0.135	12.389	20.092	7.357
8/4/2020 15:00	3103206	8.284	-73.192	20.401	256.455	281.15	0.135	14.938	20.401	7.57
8/4/2020 16:00	3106806	8.319	-75.314	20.713	258.512	281.567	0.135	15.048	20.713	7.755
8/4/2020 17:00	3110406	8.354	-77.429	21.018	260.992	282.478	0.136	14.236	21.018	7.909
8/4/2020 18:00	3114006	8.386	-79.427	21.284	262.996	283.086	0.136	20.021	21.284	8.057
8/4/2020 19:00	3117606	8.411	-80.922	21.525	264.762	283.586	0.136	19.992	21.525	8.124
8/4/2020 20:00	3121206	8.429	-82.04	21.666	265.921	284.006	0.136	21.825	21.666	8.115
8/4/2020 21:00	3124806	8.445	-83.003	21.722	266.159	283.933	0.136	15.206	21.722	8.087
8/4/2020 22:00	3128406	8.448	-83.163	21.684	266.228	284.231	0.136	8.573	21.684	8.016
8/4/2020 23:00	3132006	8.452	-83.389	21.553	264.795	283.457	0.136	7.813	21.553	7.924
8/5/2020 0:00	3135606	8.44	-82.583	21.347	263.978	283.775	0.136	9.842	21.347	7.771
8/5/2020 1:00	3139206	8.418	-81.265	21.096	262.773	283.948	0.136	8.783	21.096	7.601
8/5/2020 2:00	3142806	8.379	-78.857	20.844	261.336	283.867	0.136	8.855	20.844	7.427
8/5/2020 3:00	3146406	8.339	-76.487	20.596	260.164	284.059	0.136	7.666	20.596	7.258
8/5/2020 4:00	3150006	8.304	-74.372	20.367	258.836	283.967	0.136	7.962	20.367	7.133
8/5/2020 5:00	3153606	8.266	-72.045	20.134	258.003	284.441	0.137	8.343	20.134	7.038
8/5/2020 6:00	3157206	8.249	-70.98	19.902	257.036	284.765	0.137	8.738	19.902	6.956
8/5/2020 7:00	3160806	8.219	-69.184	19.684	256.942	285.977	0.137	8.159	19.684	6.915
8/5/2020 8:00	3164406	8.209	-68.555	19.501	257.12	287.293	0.138	8.461	19.501	6.886
8/5/2020 9:00	3168006	8.202	-68.128	19.373	257.736	288.772	0.139	32.357	19.373	6.879
8/5/2020 10:00	3171606	8.191	-67.453	19.29	258.868	290.555	0.14	8.064	19.29	6.887
8/5/2020 11:00	3175206	8.197	-67.854	19.357	259.584	290.943	0.14	9.23	19.357	6.913
8/5/2020 12:00	3178806	8.208	-68.491	19.531	260.72	291.131	0.14	8.109	19.531	7.018
8/5/2020 13:00	3182406	8.217	-69.094	19.768	262.158	291.263	0.14	6.664	19.768	7.146
8/5/2020 14:00	3186006	8.245	-70.822	20.061	263.38	290.814	0.14	8.136	20.061	7.321
8/5/2020 15:00	3189606	8.271	-72.386	20.395	264.689	290.212	0.139	7.314	20.395	7.505
8/5/2020 16:00	3193206	8.304	-74.456	20.785	266.693	290.04	0.139	7.065	20.785	7.651
8/5/2020 17:00	3196806	8.347	-77.105	21.192	268.678	289.752	0.139	6.365	21.192	7.819
8/5/2020 18:00	3200406	8.374	-78.757	21.575	270.87	289.83	0.139	6.439	21.575	8.035
8/5/2020 19:00	3204006	8.396	-80.142	21.905	272.621	289.752	0.139	6.016	21.905	8.118
8/5/2020 20:00	3207606	8.417	-81.491	22.162	274.359	290.083	0.139	5.921	22.162	8.142
8/5/2020 21:00	3211206	8.413	-81.272	22.252	274.268	289.458	0.139	7.491	22.252	8.06
8/5/2020 22:00	3214806	8.432	-82.431	22.336	275.019	289.762	0.139	16.494	22.336	7.975
8/5/2020 23:00	3218406	8.432	-82.378	22.317	274.662	289.5	0.139	8.662	22.317	7.819
8/6/2020 0:00	3222006	8.422	-81.813	22.253	274.748	289.963	0.139	8.287	22.253	7.697
8/6/2020 1:00	3225606	8.386	-79.603	22.088	273.596	289.711	0.139	8.118	22.088	7.523
8/6/2020 2:00	3229206	8.357	-77.884	21.895	274.895	292.226	0.14	8.555	21.895	7.326
8/6/2020 3:00	3232806	8.325	-75.936	21.662	271.143	289.61	0.139	7.451	21.662	7.146
8/6/2020 4:00	3236406	8.278	-73.071	21.441	273.136	293.058	0.141	8.362	21.441	6.972
8/6/2020 5:00	3240006	8.238	-70.677	21.252	273.163	294.223	0.141	8.212	21.252	6.828
8/6/2020 6:00	3243606	8.214	-69.222	21.055	274.063	296.396	0.142	7.956	21.055	6.735

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
8/6/2020 7:00	3247206	8.192	-67.885	20.871	273.248	296.643	0.143	8.939	20.871	6.672
8/6/2020 8:00	3250806	8.183	-67.315	20.708	272.356	296.679	0.143	7.682	20.708	6.648
8/6/2020 9:00	3254406	8.17	-66.507	20.583	271.296	296.29	0.142	11.117	20.583	6.624
8/6/2020 10:00	3258006	8.169	-66.445	20.536	270.749	295.988	0.142	8.693	20.536	6.65
8/6/2020 11:00	3261606	8.175	-66.826	20.556	270.787	295.907	0.142	7.635	20.556	6.708
8/6/2020 12:00	3265206	8.184	-67.375	20.738	271.961	296.059	0.142	8.39	20.738	6.796
8/6/2020 13:00	3268806	8.187	-67.544	20.687	271.247	295.596	0.142	8.28	20.687	6.819
8/6/2020 14:00	3272406	8.196	-68.14	20.865	272.559	295.933	0.142	7.013	20.865	6.956
8/6/2020 15:00	3276006	8.236	-70.543	21.127	274.074	295.966	0.142	8.107	21.127	7.134
8/6/2020 16:00	3279606	8.271	-72.639	21.333	275.303	296.035	0.142	8.036	21.333	7.292
8/6/2020 17:00	3283206	8.3	-74.41	21.535	276.278	295.861	0.142	7.062	21.535	7.435
8/6/2020 18:00	3286806	8.316	-75.378	21.57	276.565	295.952	0.142	5.645	21.57	7.492
8/6/2020 19:00	3290406	8.334	-76.399	21.583	276.149	295.433	0.142	6.616	21.583	7.537
8/6/2020 20:00	3294006	8.335	-76.489	21.57	275.746	295.079	0.142	6.712	21.57	7.563
8/6/2020 21:00	3297606	8.347	-77.188	21.498	274.99	294.703	0.142	5.919	21.498	7.6
8/6/2020 22:00	3301206	8.356	-77.643	21.374	274.125	294.52	0.142	6.482	21.374	7.603
8/6/2020 23:00	3304806	8.357	-77.648	21.173	272.649	294.149	0.141	7.341	21.173	7.557
8/7/2020 0:00	3308406	8.34	-76.59	20.944	271.225	294.002	0.141	6.847	20.944	7.442
8/7/2020 1:00	3312006	8.324	-75.6	20.656	269.527	293.915	0.141	6.831	20.656	7.299
8/7/2020 2:00	3315606	8.287	-73.316	20.326	267.757	294.004	0.141	9.266	20.326	7.178
8/7/2020 3:00	3319206	8.252	-71.232	20.047	266.139	293.945	0.141	7.775	20.047	7.054
8/7/2020 4:00	3322806	8.237	-70.25	19.811	265.033	294.19	0.141	6.862	19.811	6.976
8/7/2020 5:00	3326406	8.214	-68.867	19.562	263.724	294.289	0.141	6.733	19.562	6.923
8/7/2020 6:00	3330006	8.195	-67.689	19.298	262.557	294.646	0.142	7.916	19.298	6.877
8/7/2020 7:00	3333606	8.179	-66.721	19.022	261.455	295.157	0.142	7.893	19.022	6.866
8/7/2020 8:00	3337206	8.16	-65.517	18.776	260.271	295.386	0.142	9.667	18.776	6.855
8/7/2020 9:00	3340806	8.16	-65.479	18.57	259.082	295.353	0.142	8.171	18.57	6.866
8/7/2020 10:00	3344406	8.16	-65.444	18.411	258.16	295.324	0.142	8.104	18.411	6.909
8/7/2020 11:00	3348006	8.162	-65.527	18.359	257.739	295.181	0.142	8.244	18.359	6.977
8/7/2020 12:00	3351606	8.172	-66.135	18.435	258.065	295.064	0.142	8.832	18.435	7.092
8/7/2020 13:00	3355206	8.196	-67.611	18.571	258.868	295.106	0.142	8.651	18.571	7.229
8/7/2020 14:00	3358806	8.22	-68.996	18.713	259.716	295.159	0.142	7.401	18.713	7.363
8/7/2020 15:00	3362406	8.234	-69.888	18.853	260.519	295.173	0.142	7.886	18.853	7.49
8/7/2020 16:00	3366006	8.271	-72.095	19.021	261.342	295.032	0.142	7.592	19.021	7.673
8/7/2020 17:00	3369606	8.312	-74.522	19.26	262.496	294.821	0.142	7.238	19.26	7.893
8/7/2020 18:00	3373206	8.325	-75.326	19.4	263.215	294.739	0.142	7.426	19.4	8.029
8/7/2020 19:00	3376806	8.389	-79.131	19.607	264.044	294.363	0.141	8.823	19.607	8.212
8/7/2020 20:00	3380406	8.409	-80.34	19.737	264.617	294.192	0.141	6.562	19.737	8.271
8/7/2020 21:00	3384006	8.439	-82.107	19.859	265.029	293.885	0.141	8.236	19.859	8.309
8/7/2020 22:00	3387606	8.457	-83.213	19.896	265.067	293.696	0.141	7.934	19.896	8.32
8/7/2020 23:00	3391206	8.469	-83.907	19.859	264.981	293.832	0.141	7.981	19.859	8.271

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
8/8/2020 0:00	3394806	8.47	-83.923	19.749	265.331	294.912	0.142	7.541	19.749	8.204
8/8/2020 1:00	3398406	8.466	-83.654	19.562	263.471	294.01	0.141	7.476	19.562	8.107
8/8/2020 2:00	3402006	8.464	-83.458	19.329	262.756	294.675	0.142	7.082	19.329	7.977
8/8/2020 3:00	3405606	8.433	-81.537	19.081	261.833	295.207	0.142	7.343	19.081	7.826
8/8/2020 4:00	3409206	8.411	-80.175	18.803	260.733	295.736	0.142	8.631	18.803	7.667
8/8/2020 5:00	3412806	8.367	-77.581	18.519	259.51	296.172	0.142	7.557	18.519	7.501
8/8/2020 6:00	3416406	8.343	-76.082	18.255	258.326	296.525	0.142	7.472	18.255	7.377
8/8/2020 7:00	3420006	8.308	-73.988	18.005	257.17	296.829	0.143	7.974	18.005	7.295
8/8/2020 8:00	3423606	8.294	-73.128	17.802	256.165	297	0.143	8.451	17.802	7.231
8/8/2020 9:00	3427206	8.271	-71.7	17.613	255.165	297.082	0.143	9.279	17.613	7.196
8/8/2020 10:00	3430806	8.266	-71.378	17.422	254.219	297.243	0.143	10.722	17.422	7.225
8/8/2020 11:00	3434406	8.282	-72.341	17.405	254.067	297.177	0.143	10.081	17.405	7.333
8/8/2020 12:00	3438006	8.282	-72.334	17.397	253.912	297.051	0.143	8.807	17.397	7.41
8/8/2020 13:00	3441606	8.307	-73.762	17.445	253.956	296.784	0.142	9.58	17.445	7.549
8/8/2020 14:00	3445206	8.329	-75.078	17.488	253.553	296.028	0.142	8.885	17.488	7.693
8/8/2020 15:00	3448806	8.353	-76.461	17.579	254.179	296.154	0.142	8.249	17.579	7.846
8/8/2020 16:00	3452406	8.395	-78.969	17.779	254.97	295.762	0.142	7.825	17.779	8.041
8/8/2020 17:00	3456006	8.438	-81.544	17.984	255.754	295.332	0.142	8.504	17.984	8.218
8/8/2020 18:00	3459606	8.48	-84.057	18.214	256.622	294.839	0.142	8.61	18.214	8.405
8/8/2020 19:00	3463206	8.514	-86.052	18.294	256.711	294.425	0.141	8.099	18.294	8.49
8/8/2020 20:00	3466806	8.526	-86.78	18.356	258.471	296.039	0.142	17.549	18.356	8.531
8/8/2020 21:00	3470406	8.532	-87.156	18.404	256.807	293.827	0.141	8.462	18.404	8.55
8/8/2020 22:00	3474006	8.537	-87.421	18.412	255.852	292.681	0.141	9.226	18.412	8.526
8/8/2020 23:00	3477606	8.543	-87.805	18.374	256.07	293.174	0.141	9.697	18.374	8.507
8/9/2020 0:00	3481206	8.544	-87.788	18.278	255.248	292.846	0.141	8.371	18.278	8.426
8/9/2020 1:00	3484806	8.538	-87.397	18.127	254.178	292.587	0.14	8.415	18.127	8.372
8/9/2020 2:00	3488406	8.517	-86.095	17.901	252.541	292.155	0.14	9.592	17.901	8.247
8/9/2020 3:00	3492006	8.485	-84.176	17.65	251.365	292.416	0.14	9.1	17.65	8.103
8/9/2020 4:00	3495606	8.45	-82.097	17.384	249.844	292.376	0.14	9.065	17.384	7.942
8/9/2020 5:00	3499206	8.424	-80.481	17.128	248.41	292.368	0.14	8.572	17.128	7.794
8/9/2020 6:00	3502806	8.384	-78.077	16.879	247.031	292.381	0.14	8.97	16.879	7.655
8/9/2020 7:00	3506406	8.352	-76.182	16.651	245.256	291.789	0.14	9.434	16.651	7.574
8/9/2020 8:00	3510006	8.326	-74.618	16.426	244.463	292.338	0.14	10.293	16.426	7.536
8/9/2020 9:00	3513606	8.323	-74.41	16.222	243.349	292.371	0.14	9.528	16.222	7.513
8/9/2020 10:00	3517206	8.308	-73.514	16.071	242.14	291.927	0.14	9.575	16.071	7.538
8/9/2020 11:00	3520806	8.298	-72.913	16.024	241.308	291.236	0.14	11.202	16.024	7.602
8/9/2020 12:00	3524406	8.315	-73.907	16.12	243.013	292.647	0.14	10.155	16.12	7.714
8/9/2020 13:00	3528006	8.328	-74.713	16.312	244.128	292.698	0.14	10.501	16.312	7.841
8/9/2020 14:00	3531606	8.337	-75.257	16.481	245.137	292.777	0.14	9.32	16.481	7.986
8/9/2020 15:00	3535206	8.352	-76.182	16.688	246.369	292.863	0.14	9.584	16.688	8.123
8/9/2020 16:00	3538806	8.367	-77.093	16.846	247.236	292.845	0.14	8.439	16.846	8.251

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
8/9/2020 17:00	3542406	8.404	-79.31	16.985	248.056	292.896	0.141	9.158	16.985	8.366
8/9/2020 18:00	3546006	8.417	-80.078	17.114	248.737	292.844	0.141	9.577	17.114	8.452
8/9/2020 19:00	3549606	8.435	-81.196	17.302	249.786	292.845	0.141	9.025	17.302	8.512
8/9/2020 20:00	3553206	8.448	-82.033	17.551	251.113	292.765	0.141	9.206	17.551	8.555
8/9/2020 21:00	3556806	8.466	-83.129	17.807	252.541	292.764	0.141	7.975	17.807	8.547
8/9/2020 22:00	3560406	8.469	-83.351	18.021	253.73	292.751	0.141	8.59	18.021	8.535
8/9/2020 23:00	3564006	8.481	-84.074	18.097	254.215	292.824	0.141	8.956	18.097	8.463
8/10/2020 0:00	3567606	8.474	-83.632	18.032	254.027	293.023	0.141	8.878	18.032	8.379
8/10/2020 1:00	3571206	8.464	-83.01	17.851	253.121	293.147	0.141	8.023	17.851	8.25
8/10/2020 2:00	3574806	8.435	-81.275	17.615	252.061	293.453	0.141	8.914	17.615	8.123
8/10/2020 3:00	3578406	8.408	-79.648	17.372	250.742	293.507	0.141	8.75	17.372	7.961
8/10/2020 4:00	3582006	8.37	-77.369	17.148	249.576	293.611	0.141	7.667	17.148	7.835
8/10/2020 5:00	3585606	8.349	-76.072	16.954	248.87	294.064	0.141	8.208	16.954	7.729
8/10/2020 6:00	3589206	8.317	-74.179	16.769	248.577	294.946	0.142	10.316	16.769	7.63
8/10/2020 7:00	3592806	8.297	-72.973	16.616	248.99	296.466	0.142	8.905	16.616	7.564
8/10/2020 8:00	3596406	8.29	-72.548	16.448	249.701	298.448	0.143	9.609	16.448	7.531
8/10/2020 9:00	3600006	8.281	-71.969	16.294	250.789	300.809	0.144	10.537	16.294	7.514
8/10/2020 10:00	3603606	8.274	-71.566	16.198	252.341	303.339	0.146	10.696	16.198	7.53
8/10/2020 11:00	3607206	8.27	-71.328	16.201	254.284	305.652	0.147	10.947	16.201	7.572
8/10/2020 12:00	3610806	8.278	-71.845	16.334	256.965	307.936	0.148	10.966	16.334	7.676
8/10/2020 13:00	3614406	8.297	-72.973	16.488	259.491	309.867	0.149	10.504	16.488	7.778
8/10/2020 14:00	3618006	8.308	-73.65	16.625	261.517	311.316	0.15	10.825	16.625	7.86
8/10/2020 15:00	3621606	8.328	-74.859	16.792	263.462	312.448	0.15	11.48	16.792	7.954
8/10/2020 16:00	3625206	8.33	-74.942	16.818	264.623	313.641	0.151	11.354	16.818	8.033
8/10/2020 17:00	3628806	8.352	-76.287	17.066	267.359	315.114	0.151	13.324	17.066	8.185
8/10/2020 18:00	3632406	8.374	-77.62	17.248	269.86	316.759	0.152	11.443	17.248	8.311
8/10/2020 19:00	3636006	8.386	-78.321	17.359	272.008	318.488	0.153	10.772	17.359	8.407
8/10/2020 20:00	3639606	8.398	-79.064	17.428	273.669	319.937	0.154	12.522	17.428	8.423
8/10/2020 21:00	3643206	8.406	-79.556	17.522	275.475	321.376	0.155	9.791	17.522	8.422
8/10/2020 22:00	3646806	8.409	-79.713	17.561	276.928	322.791	0.155	11.89	17.561	8.411
8/10/2020 23:00	3650406	8.411	-79.856	17.568	277.885	323.859	0.156	11.36	17.568	8.358
8/11/2020 0:00	3654006	8.405	-79.47	17.504	278.426	324.949	0.156	10.234	17.504	8.322
8/11/2020 1:00	3657606	8.4	-79.157	17.374	278.273	325.716	0.157	10.761	17.374	8.258
8/11/2020 2:00	3661206	8.394	-78.773	17.192	277.753	326.434	0.157	9.006	17.192	8.2
8/11/2020 3:00	3664806	8.385	-78.177	16.988	277.082	327.142	0.157	8.855	16.988	8.122
8/11/2020 4:00	3668406	8.365	-76.99	16.777	276.17	327.627	0.158	8.813	16.777	8.038
8/11/2020 5:00	3672006	8.354	-76.265	16.511	274.938	328.139	0.158	8.888	16.511	7.928
8/11/2020 6:00	3675606	8.325	-74.484	16.193	273.256	328.516	0.158	9.031	16.193	7.825
8/11/2020 7:00	3679206	8.306	-73.318	15.859	271.419	328.829	0.158	8.627	15.859	7.743
8/11/2020 8:00	3682806	8.282	-71.852	15.578	269.785	328.992	0.158	10.575	15.578	7.699
8/11/2020 9:00	3686406	8.274	-71.375	15.389	268.735	329.161	0.158	10.718	15.389	7.662

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
8/11/2020 10:00	3690007	8.263	-70.665	15.269	268.066	329.267	0.158	10.414	15.269	7.654
8/11/2020 11:00	3693607	8.255	-70.226	15.234	267.974	329.424	0.158	10.007	15.234	7.703
8/11/2020 12:00	3697207	8.262	-70.643	15.272	265.386	325.953	0.157	10.91	15.272	7.77
8/11/2020 13:00	3700807	8.266	-70.868	15.332	269.003	329.926	0.159	10.042	15.332	7.844
8/11/2020 14:00	3704407	8.27	-71.163	15.501	270.572	330.543	0.159	10.187	15.501	7.951
8/11/2020 15:00	3708007	8.279	-71.685	15.636	270.821	329.808	0.159	10.225	15.636	8.049
8/11/2020 16:00	3711607	8.286	-72.148	15.799	271.392	329.253	0.158	10.778	15.799	8.139
8/11/2020 17:00	3715207	8.296	-72.737	15.849	265.732	322.016	0.155	9.502	15.849	8.196
8/11/2020 18:00	3718807	8.304	-73.209	15.991	272.287	328.881	0.158	10.687	15.991	8.299
8/11/2020 19:00	3722407	8.319	-74.136	16.082	272.613	328.584	0.158	10.241	16.082	8.359
8/11/2020 20:00	3726007	8.321	-74.289	16.197	273.66	328.972	0.158	8.547	16.197	8.408
8/11/2020 21:00	3729607	8.337	-75.254	16.3	273.322	327.791	0.158	9	16.3	8.397
8/11/2020 22:00	3733207	8.33	-74.837	16.428	273.397	326.919	0.157	8.662	16.428	8.365
8/11/2020 23:00	3736807	8.348	-75.915	16.546	274.18	326.975	0.157	8.638	16.546	8.345
8/12/2020 0:00	3740407	8.353	-76.256	16.646	275.704	328.045	0.158	8.564	16.646	8.302
8/12/2020 1:00	3744007	8.358	-76.559	16.705	274.313	325.959	0.157	8.042	16.705	8.243
8/12/2020 2:00	3747607	8.354	-76.332	16.694	273.255	324.78	0.156	6.998	16.694	8.182
8/12/2020 3:00	3751207	8.349	-75.986	16.581	272.297	324.475	0.156	7.828	16.581	8.12
8/12/2020 4:00	3754807	8.341	-75.469	16.385	271.385	324.834	0.156	6.931	16.385	8.019
8/12/2020 5:00	3758407	8.323	-74.387	16.138	269.491	324.399	0.156	7.619	16.138	7.954
8/12/2020 6:00	3762007	8.311	-73.624	15.856	267.727	324.382	0.156	6.468	15.856	7.864
8/12/2020 7:00	3765607	8.296	-72.651	15.585	265.903	324.204	0.156	8.54	15.585	7.78
8/12/2020 8:00	3769207	8.276	-71.435	15.334	265.187	325.235	0.156	8.219	15.334	7.738
8/12/2020 9:00	3772807	8.266	-70.825	15.132	263.639	324.867	0.156	7.843	15.132	7.708
8/12/2020 10:00	3776407	8.247	-69.692	14.996	262.068	323.97	0.156	8.586	14.996	7.7
8/12/2020 11:00	3780007	8.242	-69.392	14.868	261.312	324.019	0.156	7.97	14.868	7.71
8/12/2020 12:00	3783607	8.24	-69.242	14.817	261.176	324.243	0.156	8.924	14.817	7.735
8/12/2020 13:00	3787207	8.238	-69.103	14.794	261.327	324.601	0.156	9.658	14.794	7.772
8/12/2020 14:00	3790807	8.235	-68.991	14.848	262.006	325.033	0.156	9.981	14.848	7.855
8/12/2020 15:00	3794407	8.243	-69.451	14.911	262.746	325.462	0.156	10.46	14.911	7.927
8/12/2020 16:00	3798007	8.236	-69.041	14.962	263.254	325.696	0.156	10.288	14.962	7.981
8/12/2020 17:00	3801607	8.255	-70.188	15.154	264.359	325.588	0.156	9.594	15.154	8.122
8/12/2020 18:00	3805207	8.275	-71.402	15.259	264.731	325.246	0.156	9.869	15.259	8.217
8/12/2020 19:00	3808807	8.294	-72.472	15.27	263.219	323.3	0.155	9.487	15.27	8.253
8/12/2020 20:00	3812407	8.309	-73.369	15.334	264.095	323.89	0.156	9.146	15.334	8.297
8/12/2020 21:00	3816007	8.317	-73.841	15.458	264.271	323.173	0.155	9.27	15.458	8.326
8/12/2020 22:00	3819607	8.333	-74.835	15.599	264.623	322.535	0.155	7.479	15.599	8.324
8/12/2020 23:00	3823207	8.349	-75.76	15.721	265.068	322.163	0.155	9.063	15.721	8.333
8/13/2020 0:00	3826807	8.349	-75.81	15.849	265.419	321.635	0.155	8.594	15.849	8.309
8/13/2020 1:00	3830407	8.355	-76.16	15.935	265.883	321.558	0.154	8.472	15.935	8.261
8/13/2020 2:00	3834007	8.355	-76.175	15.933	265.784	321.453	0.154	7.211	15.933	8.159

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
8/13/2020 3:00	3837607	8.35	-75.891	15.875	265.87	321.99	0.155	8.675	15.875	8.141
8/13/2020 4:00	3841207	8.344	-75.476	15.733	264.859	321.818	0.155	8.325	15.733	8.077
8/13/2020 5:00	3844807	8.323	-74.236	15.534	263.196	321.283	0.154	7.053	15.534	8.007
8/13/2020 6:00	3848407	8.309	-73.369	15.276	262.061	321.832	0.155	8.105	15.276	7.945
8/13/2020 7:00	3852007	8.298	-72.644	14.975	263.356	325.724	0.156	8.811	14.975	7.885
8/13/2020 8:00	3855607	8.28	-71.509	14.688	258.658	322.097	0.155	8.284	14.688	7.844
8/13/2020 9:00	3859207	8.261	-70.341	14.437	257.388	322.443	0.155	8.845	14.437	7.816
8/13/2020 10:00	3862807	8.249	-69.644	14.26	257.704	324.207	0.156	9.803	14.26	7.853
8/13/2020 11:00	3866407	8.247	-69.511	14.16	257.456	324.676	0.156	8.629	14.16	7.891
8/13/2020 12:00	3870007	8.25	-69.656	14.117	259.17	327.175	0.157	10.016	14.117	7.955
8/13/2020 13:00	3873607	8.253	-69.804	14.12	259.169	327.157	0.157	11.198	14.12	8.041
8/13/2020 14:00	3877207	8.257	-70.038	14.087	259.831	328.247	0.158	9.91	14.087	8.13
8/13/2020 15:00	3880807	8.272	-70.913	14.149	260.482	328.584	0.158	10.629	14.149	8.255
8/13/2020 16:00	3884407	8.272	-70.93	14.134	260.075	328.19	0.157	12.83	14.134	8.339
8/13/2020 17:00	3888007	8.281	-71.428	14.084	259.618	328.008	0.157	11.902	14.084	8.397
8/13/2020 18:00	3891607	8.297	-72.391	14.225	260.812	328.397	0.158	13.898	14.225	8.548
8/13/2020 19:00	3895207	8.311	-73.185	14.284	260.938	328.087	0.157	10.71	14.284	8.65
8/13/2020 20:00	3898807	8.329	-74.275	14.316	260.029	326.696	0.157	11.409	14.316	8.706
8/13/2020 21:00	3902407	8.339	-74.818	14.35	260.54	327.074	0.157	11.349	14.35	8.749
8/13/2020 22:00	3906007	8.343	-75.085	14.439	260.642	326.506	0.157	9.715	14.439	8.777
8/13/2020 23:00	3909607	8.353	-75.698	14.546	261.475	326.712	0.157	10.567	14.546	8.771
8/14/2020 0:00	3913207	8.357	-75.941	14.622	261.618	326.299	0.157	10.497	14.622	8.742
8/14/2020 1:00	3916807	8.359	-76.065	14.665	260.625	324.724	0.156	10.145	14.665	8.696
8/14/2020 2:00	3920407	8.353	-75.748	14.668	261.709	326.049	0.157	9.671	14.668	8.622
8/14/2020 3:00	3924007	8.348	-75.448	14.665	261.127	325.352	0.156	9.091	14.665	8.554
8/14/2020 4:00	3927607	8.338	-74.856	14.616	261.41	326.086	0.157	11.217	14.616	8.459
8/14/2020 5:00	3931207	8.326	-74.131	14.544	260.256	325.2	0.156	7.96	14.544	8.352
8/14/2020 6:00	3934807	8.315	-73.466	14.469	259.955	325.406	0.156	8.593	14.469	8.273
8/14/2020 7:00	3938407	8.304	-72.823	14.362	259.169	325.26	0.156	8.929	14.362	8.201
8/14/2020 8:00	3942008	8.298	-72.439	14.247	258.987	325.924	0.156	8.712	14.247	8.143
8/14/2020 9:00	3945608	8.289	-71.883	14.109	258.464	326.348	0.157	9.161	14.109	8.098
8/14/2020 10:00	3949208	8.28	-71.349	14.018	258.261	326.808	0.157	9.329	14.018	8.083
8/14/2020 11:00	3952808	8.269	-70.689	13.954	258.5	327.617	0.157	9.778	13.954	8.077
8/14/2020 12:00	3956408	8.26	-70.212	13.936	257.988	327.114	0.157	9.091	13.936	8.134
8/14/2020 13:00	3960008	8.271	-70.82	13.966	258.852	327.968	0.157	9.943	13.966	8.182
8/14/2020 14:00	3963608	8.277	-71.225	14.128	261.04	329.449	0.158	10.12	14.128	8.255
8/14/2020 15:00	3967208	8.272	-70.937	14.159	261.41	329.676	0.158	10.567	14.159	8.306
8/14/2020 16:00	3970808	8.27	-70.834	14.134	261.506	329.991	0.158	11.977	14.134	8.339
8/14/2020 17:00	3974408	8.276	-71.189	14.211	262.463	330.584	0.159	12.387	14.211	8.397
8/14/2020 18:00	3978008	8.285	-71.69	14.306	263.934	331.686	0.159	9.818	14.306	8.447
8/14/2020 19:00	3981608	8.279	-71.39	14.311	264.319	332.124	0.159	9.588	14.311	8.472

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090	Sensor: pH/ORP SN#: 723090	Sensor: Cond SN#: 737314	Sensor: Cond SN#: 737314	Sensor: Cond SN#: 737314	Sensor: Cond SN#: 737314	Sensor: Turb SN#: 730625	Sensor: Internal SN#: 740839	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
		pH (pH)	pH(mV) (mV)	Temperature (C)	Actual Conductivity (μ S/cm)	Specific Conductivity (μ S/cm)	Salinity (PSU)	Turbidity (NTU)	Temperature (C)	
8/14/2020 20:00	3985208	8.277	-71.278	14.335	264.756	332.483	0.16	9.834	14.335	8.535
8/14/2020 21:00	3988808	8.277	-71.297	14.374	265.531	333.143	0.16	10.534	14.374	8.551
8/14/2020 22:00	3992408	8.278	-71.325	14.462	266.028	333.065	0.16	9.734	14.462	8.567
8/14/2020 23:00	3996008	8.286	-71.828	14.579	266.778	333.071	0.16	9.452	14.579	8.572
8/15/2020 0:00	3999608	8.286	-71.907	14.722	268.113	333.603	0.16	9.11	14.722	8.571
8/15/2020 1:00	4003208	8.291	-72.207	14.863	269.211	333.854	0.16	10.017	14.863	8.549
8/15/2020 2:00	4006808	8.295	-72.46	14.988	270.048	333.902	0.16	9.209	14.988	8.519
8/15/2020 3:00	4010408	8.297	-72.584	15.074	270.703	334.031	0.161	14.06	15.074	8.463
8/15/2020 4:00	4014008	8.291	-72.277	15.105	271.158	334.35	0.161	8.651	15.105	8.394
8/15/2020 5:00	4017608	8.286	-71.948	15.102	271.185	334.404	0.161	9.918	15.102	8.312
8/15/2020 6:00	4021208	8.266	-70.791	15.067	271.485	335.051	0.161	8.505	15.067	8.209
8/15/2020 7:00	4024808	8.262	-70.541	15.02	270.306	333.962	0.16	8.693	15.02	8.113
8/15/2020 8:00	4028408	8.254	-70.078	14.97	270.618	334.744	0.161	8.603	14.97	8.037
8/15/2020 9:00	4032008	8.247	-69.683	14.927	269.777	334.048	0.16	8.334	14.927	7.976
8/15/2020 10:00	4035608	8.236	-69.022	14.895	269.571	334.046	0.16	8.748	14.895	7.919
8/15/2020 11:00	4039208	8.231	-68.786	14.957	269.637	333.637	0.16	10.147	14.957	7.902
8/15/2020 12:00	4042808	8.225	-68.414	15.017	270.17	333.818	0.16	9.927	15.017	7.893
8/15/2020 13:00	4046408	8.218	-68.052	15.157	271.604	334.488	0.161	11.075	15.157	7.901
8/15/2020 14:00	4050008	8.211	-67.711	15.309	273.064	335.086	0.161	10.652	15.309	7.917
8/15/2020 15:00	4053608	8.207	-67.515	15.498	274.144	334.933	0.161	11.245	15.498	7.915
8/15/2020 16:00	4057208	8.209	-67.646	15.623	275.436	335.526	0.161	10.51	15.623	7.987
8/15/2020 17:00	4060808	8.199	-67.089	15.567	275.574	336.138	0.162	9.593	15.567	7.988
8/15/2020 18:00	4064408	8.188	-66.426	15.522	275.287	336.137	0.162	9.043	15.522	8.045
8/15/2020 19:00	4068008	8.197	-66.943	15.456	275.432	336.836	0.162	9.69	15.456	8.06
8/15/2020 20:00	4071608	8.188	-66.428	15.439	275.392	336.916	0.162	9.122	15.439	8.06
8/15/2020 21:00	4075208	8.183	-66.109	15.467	275.984	337.418	0.162	8.671	15.467	8.082
8/15/2020 22:00	4078808	8.159	-64.733	15.488	276.19	337.51	0.162	9.486	15.488	8.088
8/15/2020 23:00	4082408	8.179	-65.875	15.521	276.318	337.409	0.162	9.6	15.521	8.089
8/16/2020 0:00	4086008	8.176	-65.737	15.598	277.04	337.679	0.162	8.281	15.598	8.102
8/16/2020 1:00	4089608	8.182	-66.133	15.704	277.97	337.977	0.163	9.925	15.704	8.132
8/16/2020 2:00	4093208	8.177	-65.83	15.824	278.954	338.232	0.163	9.691	15.824	8.147
8/16/2020 3:00	4096808	8.193	-66.772	15.92	280.099	338.869	0.163	8.725	15.92	8.132
8/16/2020 4:00	4100408	8.197	-67.034	15.997	281.052	339.414	0.163	10.282	15.997	8.102
8/16/2020 5:00	4104008	8.194	-66.888	16.04	282.131	340.381	0.164	8.444	16.04	8.043
8/16/2020 6:00	4107608	8.194	-66.857	16.031	282.482	340.877	0.164	8.219	16.031	7.952
8/16/2020 7:00	4111208	8.187	-66.493	15.971	283.123	342.127	0.165	8.797	15.971	7.855
8/16/2020 8:00	4114808	8.182	-66.152	15.898	280.784	339.874	0.164	7.948	15.898	7.792
8/16/2020 9:00	4118408	8.174	-65.703	15.86	280.534	339.868	0.163	10.771	15.86	7.715
8/16/2020 10:00	4122008	8.171	-65.494	15.876	280.908	340.194	0.164	10.377	15.876	7.66
8/16/2020 11:00	4125608	8.166	-65.26	15.945	281.186	339.987	0.164	9.23	15.945	7.615
8/16/2020 12:00	4129208	8.168	-65.367	16.092	282.681	340.639	0.164	9.511	16.092	7.624

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090	Sensor: pH/ORP SN#: 723090	Sensor: Cond SN#: 737314	Sensor: Cond SN#: 737314	Actual Conductivity ($\mu\text{S}/\text{cm}$)	Specific Conductivity ($\mu\text{S}/\text{cm}$)	Sensor: Cond SN#: 737314	Sensor: Cond SN#: 737314	Sensor: Turb SN#: 730625	Sensor: Internal SN#: 740839	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
8/16/2020 13:00	4132808	8.171	-65.61	16.325	284.199	340.644	0.164	9.603	16.325	16.325	7.659	
8/16/2020 14:00	4136408	8.171	-65.715	16.643	286.555	340.979	0.164	9.071	16.643	16.643	7.718	
8/16/2020 15:00	4140008	8.177	-66.068	16.857	288.039	341.089	0.164	10.249	16.857	16.857	7.784	
8/16/2020 16:00	4143608	8.173	-65.88	16.914	288.927	341.697	0.165	8.332	16.914	16.914	7.837	
8/16/2020 17:00	4147208	8.174	-65.949	17.026	291.25	343.581	0.165	9.379	17.026	17.026	7.874	
8/16/2020 18:00	4150808	8.175	-66.097	17.367	293.407	343.484	0.165	9.392	17.367	17.367	7.91	
8/16/2020 19:00	4154408	8.175	-66.087	17.485	294.69	344.076	0.166	7.852	17.485	17.485	7.927	
8/16/2020 20:00	4158008	8.167	-65.656	17.511	295.55	344.881	0.166	8.617	17.511	17.511	7.916	
8/16/2020 21:00	4161608	8.167	-65.737	17.766	297.037	344.66	0.166	8.163	17.766	17.766	7.956	
8/16/2020 22:00	4165208	8.181	-66.581	18.014	297.97	343.852	0.166	7.54	18.014	18.042	7.984	
8/16/2020 23:00	4168808	8.178	-66.428	18.042	298.822	344.623	0.166	8.296	18.042	18.042	8	
8/17/2020 0:00	4172408	8.173	-66.125	17.992	299.174	345.407	0.166	7.555	17.992	17.992	7.987	
8/17/2020 1:00	4176008	8.165	-65.639	17.87	297.863	344.826	0.166	7.667	17.87	17.87	7.958	
8/17/2020 2:00	4179608	8.168	-65.796	17.923	298.359	344.989	0.166	7.608	17.923	17.923	7.95	
8/17/2020 3:00	4183208	8.169	-65.875	18.05	299.358	345.176	0.166	8.476	18.05	18.05	7.923	
8/17/2020 4:00	4186808	8.172	-66.106	18.185	300.345	345.291	0.166	8.047	18.185	18.185	7.882	
8/17/2020 5:00	4190408	8.171	-66.051	18.279	301.294	345.666	0.167	8.87	18.279	18.279	7.777	
8/17/2020 6:00	4194008	8.172	-66.116	18.287	301.586	345.945	0.167	7.587	18.287	18.287	7.644	
8/17/2020 7:00	4197608	8.168	-65.904	18.231	301.261	345.994	0.167	8.02	18.231	18.231	7.54	
8/17/2020 8:00	4201208	8.161	-65.434	18.157	300.898	346.14	0.167	8.016	18.157	18.157	7.445	
8/17/2020 9:00	4204808	8.159	-65.312	18.093	301.136	346.899	0.167	8.995	18.093	18.093	7.382	
8/17/2020 10:00	4208408	8.154	-65.048	18.046	300.801	346.876	0.167	8.301	18.046	18.046	7.313	
8/17/2020 11:00	4212008	8.142	-64.285	17.938	300.033	346.815	0.167	8.813	17.938	17.938	7.189	
8/17/2020 12:00	4215608	8.137	-63.989	17.99	300.444	346.89	0.167	9.712	17.99	17.99	7.198	
8/17/2020 13:00	4219208	8.14	-64.204	18.148	301.716	347.149	0.167	9.123	18.148	18.148	7.233	
8/17/2020 14:00	4222808	8.147	-64.633	18.189	306.729	352.598	0.17	11.976	18.189	18.189	7.255	
8/17/2020 15:00	4226408	8.141	-64.249	18.035	300.547	346.663	0.167	10.02	18.035	18.035	7.258	
8/17/2020 16:00	4230008	8.16	-65.458	18.362	303.192	347.215	0.167	10.291	18.362	18.362	7.361	
8/17/2020 17:00	4233608	8.157	-65.367	18.753	305.886	347.327	0.167	10.494	18.753	18.753	7.462	
8/17/2020 18:00	4237209	8.19	-67.351	18.95	307.352	347.511	0.168	10.527	18.95	18.95	7.525	
8/17/2020 19:00	4240809	8.199	-67.842	19.038	308.846	348.535	0.168	8.532	19.038	19.038	7.555	
8/17/2020 20:00	4244409	8.194	-67.546	19.016	308.142	347.903	0.168	9.777	19.016	19.016	7.519	
8/17/2020 21:00	4248009	8.199	-67.925	19.245	309.869	348.134	0.168	8.773	19.245	19.245	7.565	
8/17/2020 22:00	4251609	8.2	-67.973	19.265	310.281	348.45	0.168	8.706	19.265	19.265	7.608	
8/17/2020 23:00	4255209	8.205	-68.25	19.199	310.17	348.821	0.168	8.633	19.199	19.199	7.627	
8/18/2020 0:00	4258809	8.201	-67.985	19.11	309.852	349.131	0.168	8.324	19.11	19.11	7.623	
8/18/2020 1:00	4262409	8.198	-67.785	18.986	308.813	348.889	0.168	8.599	18.986	18.986	7.61	
8/18/2020 2:00	4266009	8.188	-67.179	18.848	307.958	348.963	0.168	8.634	18.848	18.848	7.522	
8/18/2020 3:00	4269609	8.182	-66.836	18.818	308.083	349.328	0.168	12.002	18.818	18.818	7.539	
8/18/2020 4:00	4273209	8.184	-66.953	18.849	308.449	349.512	0.169	8.421	18.849	18.849	7.521	
8/18/2020 5:00	4276809	8.184	-66.986	18.891	309.077	349.906	0.169	8.802	18.891	18.891	7.491	

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
8/18/2020 6:00	4280409	8.181	-66.805	18.916	309.538	350.237	0.169	8.666	18.916	7.427
8/18/2020 7:00	4284009	8.178	-66.64	18.911	309.959	350.751	0.169	8.068	18.911	7.368
8/18/2020 8:00	4287609	8.175	-66.426	18.9	310.222	351.131	0.169	8.482	18.9	7.262
8/18/2020 9:00	4291209	8.175	-66.433	18.928	312.325	353.298	0.17	8.065	18.928	7.253
8/18/2020 10:00	4294809	8.172	-66.273	19.02	311.976	352.201	0.17	7.928	19.02	7.212
8/18/2020 11:00	4298409	8.175	-66.459	19.071	312.745	352.684	0.17	8.233	19.071	7.189
8/18/2020 12:00	4302009	8.176	-66.557	19.177	313.838	353.11	0.17	9.106	19.177	7.171
8/18/2020 13:00	4305609	8.169	-66.168	19.193	314.435	353.658	0.171	9.203	19.193	7.149
8/18/2020 14:00	4309209	8.169	-66.178	19.256	315.3	354.152	0.171	9.648	19.256	7.116
8/18/2020 15:00	4312809	8.177	-66.648	19.437	316.98	354.661	0.171	10.036	19.437	7.169
8/18/2020 16:00	4316409	8.171	-66.39	19.785	319.913	355.306	0.171	9.51	19.785	7.243
8/18/2020 17:00	4320009	8.198	-67.99	19.793	320.02	355.359	0.171	9.465	19.793	7.305
8/18/2020 18:00	4323609	8.185	-67.148	19.445	314.152	351.441	0.17	10.416	19.445	7.259
8/18/2020 19:00	4327209	8.171	-66.333	19.345	316.234	354.524	0.171	10.501	19.345	7.207
8/18/2020 20:00	4330809	8.183	-67.067	19.546	319.54	356.7	0.172	11.518	19.546	7.28
8/18/2020 21:00	4334409	8.168	-66.142	19.353	318.901	357.456	0.172	9.926	19.353	7.254
8/18/2020 22:00	4338009	8.167	-66.059	19.258	318.935	358.223	0.173	10.916	19.258	7.27
8/18/2020 23:00	4341609	8.16	-65.615	19.11	318.359	358.716	0.173	27.806	19.11	7.267
8/19/2020 0:00	4345209	8.165	-65.904	19.007	317.799	358.876	0.173	9.734	19.007	7.284
8/19/2020 1:00	4348809	8.158	-65.467	18.898	317.645	359.553	0.174	9.832	18.898	7.205
8/19/2020 2:00	4352409	8.16	-65.539	18.798	317.279	359.916	0.174	9.354	18.798	7.287
8/19/2020 3:00	4356009	8.142	-64.473	18.686	315.504	358.77	0.173	10.934	18.686	7.264
8/19/2020 4:00	4359609	8.139	-64.28	18.56	316.354	360.728	0.174	10.702	18.56	7.226
8/19/2020 5:00	4363209	8.145	-64.585	18.494	316.776	361.728	0.175	10.996	18.494	7.282
8/19/2020 6:00	4366809	8.155	-65.162	18.458	317.264	362.572	0.175	19.152	18.458	7.26
8/19/2020 7:00	4370409	8.154	-65.11	18.423	317.53	363.147	0.175	10.956	18.423	7.344
8/19/2020 8:00	4374009	8.163	-65.603	18.4	317.833	363.674	0.176	10.153	18.4	7.356
8/19/2020 9:00	4377609	8.177	-66.473	18.462	318.836	364.33	0.176	12.003	18.462	7.374
8/19/2020 10:00	4381209	8.182	-66.755	18.568	320.142	364.978	0.176	11.53	18.568	7.364
8/19/2020 11:00	4384809	8.186	-67.017	18.712	321.741	365.656	0.177	10.573	18.712	7.345
8/19/2020 12:00	4388409	8.2	-67.921	18.886	323.592	366.374	0.177	10.971	18.886	7.333
8/19/2020 13:00	4392009	8.221	-69.187	19.116	325.632	366.862	0.177	11.347	19.116	7.383
8/19/2020 14:00	4395609	8.227	-69.551	19.134	326.446	367.635	0.178	11.521	19.134	7.356
8/19/2020 15:00	4399209	8.238	-70.162	19.183	327.384	368.308	0.178	11.248	19.183	7.378
8/19/2020 16:00	4402809	8.248	-70.803	19.351	329.221	369.041	0.178	11.109	19.351	7.389
8/19/2020 17:00	4406409	8.283	-72.997	19.955	333.923	369.534	0.179	11.915	19.955	7.533
8/19/2020 18:00	4410009	8.309	-74.587	20.161	335.82	370.02	0.179	10.455	20.161	7.635
8/19/2020 19:00	4413609	8.305	-74.384	20.176	336.284	370.415	0.179	11.466	20.176	7.394
8/19/2020 20:00	4417209	8.285	-73.121	19.831	334.297	370.916	0.179	16.051	19.831	7.527
8/19/2020 21:00	4420809	8.235	-70.062	19.423	331.735	371.281	0.179	13.102	19.423	7.409
8/19/2020 22:00	4424409	8.236	-70.078	19.162	323.743	364.376	0.176	11.585	19.162	7.372

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
8/19/2020 23:00	4428009	8.23	-69.659	19.04	329.763	372.123	0.18	16.256	19.04	7.379
8/20/2020 0:00	4431609	8.23	-69.64	18.945	329.557	372.654	0.18	10.939	18.945	7.448
8/20/2020 1:00	4435209	8.225	-69.363	18.828	328.975	372.937	0.18	11.468	18.828	7.436
8/20/2020 2:00	4438809	8.209	-68.357	18.666	327.951	373.086	0.18	10.566	18.666	7.421
8/20/2020 3:00	4442409	8.207	-68.195	18.524	327.279	373.472	0.18	10.415	18.524	7.374
8/20/2020 4:00	4446009	8.185	-66.919	18.403	326.294	373.339	0.18	10.252	18.403	7.283
8/20/2020 5:00	4449609	8.181	-66.655	18.27	325.598	373.629	0.18	8.776	18.27	7.171
8/20/2020 6:00	4453209	8.17	-65.958	18.158	324.934	373.781	0.18	9.81	18.158	7.272
8/20/2020 7:00	4456809	8.162	-65.489	18.092	324.839	374.21	0.181	9.159	18.092	7.265
8/20/2020 8:00	4460409	8.163	-65.551	18.078	325.044	374.568	0.181	60.707	18.078	7.319
8/20/2020 9:00	4464009	8.163	-65.548	18.129	325.891	375.119	0.181	8.978	18.129	7.364
8/20/2020 10:00	4467609	8.174	-66.218	18.227	327.104	375.707	0.181	8.682	18.227	7.402
8/20/2020 11:00	4471209	8.181	-66.693	18.372	328.64	376.273	0.182	8.574	18.372	7.471
8/20/2020 12:00	4474809	8.195	-67.537	18.55	330.458	376.885	0.182	10.21	18.55	7.514
8/20/2020 13:00	4478409	8.205	-68.138	18.787	332.753	377.559	0.182	8.106	18.787	7.565
8/20/2020 14:00	4482009	8.211	-68.548	18.979	334.759	378.261	0.183	14.902	18.979	7.576
8/20/2020 15:00	4485609	8.222	-69.258	19.185	336.902	378.994	0.183	7.668	19.185	7.578
8/20/2020 16:00	4489209	8.215	-68.858	19.273	337.652	379.122	0.183	8.042	19.273	7.512
8/20/2020 17:00	4492809	8.214	-68.817	19.231	338.215	380.094	0.184	7.982	19.231	7.449
8/20/2020 18:00	4496409	8.196	-67.689	19.097	337.156	379.998	0.184	7.317	19.097	7.291
8/20/2020 19:00	4500009	8.185	-67.027	18.992	336.924	380.596	0.184	8.537	18.992	7.215
8/20/2020 20:00	4503609	8.165	-65.842	18.863	336.407	381.073	0.184	9.019	18.863	7.051
8/20/2020 21:00	4507209	8.134	-63.982	18.721	335.678	381.419	0.184	8.807	18.721	6.924
8/20/2020 22:00	4510809	8.133	-63.901	18.614	336.381	383.11	0.185	9.086	18.614	6.855
8/20/2020 23:00	4514409	8.119	-63.083	18.498	335.855	383.477	0.185	8.497	18.498	6.77
8/21/2020 0:00	4518009	8.11	-62.509	18.367	335.542	384.217	0.186	8.634	18.367	6.727
8/21/2020 1:00	4521609	8.105	-62.206	18.22	335.03	384.867	0.186	9.692	18.22	6.698
8/21/2020 2:00	4525209	8.095	-61.567	18.072	334.363	385.356	0.186	9.24	18.072	6.653
8/21/2020 3:00	4528809	8.082	-60.813	17.986	334.063	385.738	0.186	9.095	17.986	6.601
8/21/2020 4:00	4532409	8.07	-60.122	17.89	333.704	386.142	0.187	9.469	17.89	6.524
8/21/2020 5:00	4536009	8.048	-58.792	17.808	333.259	386.325	0.187	10.048	17.808	6.496
8/21/2020 6:00	4539609	8.051	-58.961	17.746	333.153	386.733	0.187	10.049	17.746	6.461
8/21/2020 7:00	4543209	8.03	-57.714	17.672	332.974	387.16	0.187	8.696	17.672	6.408
8/21/2020 8:00	4546809	8.036	-58.072	17.604	332.772	387.516	0.187	8.242	17.604	6.386
8/21/2020 9:00	4550409	8.027	-57.538	17.552	329.633	384.3	0.186	9.145	17.552	6.3
8/21/2020 10:00	4554009	8.036	-58.045	17.553	333.708	389.041	0.188	11.378	17.553	6.472
8/21/2020 11:00	4557609	8.043	-58.448	17.581	334.748	390.017	0.188	8.336	17.581	6.603
8/21/2020 12:00	4561209	8.056	-59.218	17.625	335.654	390.684	0.189	9.576	17.625	6.725
8/21/2020 13:00	4564809	8.077	-60.494	17.782	337.268	391.205	0.189	8.449	17.782	6.917
8/21/2020 14:00	4568409	8.105	-62.156	18.065	340.234	392.184	0.19	8.219	18.065	7.019
8/21/2020 15:00	4572009	8.13	-63.684	18.288	342.526	392.895	0.19	7.938	18.288	7.277

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
8/21/2020 16:00	4575609	8.155	-65.212	18.622	345.76	393.72	0.19	7.579	18.622	7.417
8/21/2020 17:00	4579209	8.169	-66.059	18.808	347.603	394.226	0.191	7.557	18.808	7.345
8/21/2020 18:00	4582809	8.162	-65.658	18.768	347.487	394.435	0.191	7.78	18.768	7.394
8/21/2020 19:00	4586409	8.18	-66.769	18.949	349.273	394.913	0.191	7.182	18.949	7.448
8/21/2020 20:00	4590009	8.17	-66.133	18.925	349.312	395.166	0.191	8.046	18.925	7.309
8/21/2020 21:00	4593609	8.17	-66.111	18.836	348.563	395.079	0.191	7.919	18.836	7.171
8/21/2020 22:00	4597209	8.159	-65.427	18.64	347.103	395.095	0.191	8.077	18.64	7.111
8/21/2020 23:00	4600809	8.103	-62.072	18.206	343.747	395.004	0.191	9.473	18.206	6.8
8/22/2020 0:00	4604409	8.074	-60.351	17.92	342.029	395.515	0.191	10.252	17.92	6.638
8/22/2020 1:00	4608009	8.079	-60.623	17.819	342.063	396.433	0.192	9.814	17.819	6.69
8/22/2020 2:00	4611609	8.095	-61.514	17.754	341.618	396.488	0.192	9.168	17.754	6.727
8/22/2020 3:00	4615209	8.095	-61.479	17.662	341.19	396.801	0.192	9.748	17.662	6.727
8/22/2020 4:00	4618809	8.093	-61.359	17.611	340.876	396.889	0.192	8.856	17.611	6.712
8/22/2020 5:00	4622409	8.087	-61.033	17.515	340.248	397.007	0.192	8.911	17.515	6.683
8/22/2020 6:00	4626009	8.081	-60.625	17.405	339.613	397.237	0.192	9.467	17.405	6.639
8/22/2020 7:00	4629609	8.071	-60.005	17.311	339.069	397.433	0.192	7.881	17.311	6.559
8/22/2020 8:00	4633209	8.062	-59.488	17.276	339.185	397.884	0.192	8.372	17.276	6.569
8/22/2020 9:00	4636809	8.059	-59.302	17.268	339.402	398.213	0.193	8.118	17.268	6.574
8/22/2020 10:00	4640409	8.063	-59.593	17.39	340.948	398.934	0.193	8.713	17.39	6.665
8/22/2020 11:00	4644009	8.065	-59.693	17.48	342.277	399.683	0.193	8.962	17.48	6.714
8/22/2020 12:00	4647609	8.074	-60.272	17.555	343.348	400.269	0.194	7.55	17.555	6.811
8/22/2020 13:00	4651209	8.083	-60.754	17.555	343.947	400.962	0.194	8.489	17.555	6.892
8/22/2020 14:00	4654809	8.096	-61.543	17.66	345.191	401.474	0.194	16.526	17.66	6.977
8/22/2020 15:00	4658409	8.109	-62.375	17.906	347.643	402.128	0.195	14.533	17.906	7.137
8/22/2020 16:00	4662009	8.119	-62.993	18.207	350.624	402.9	0.195	8.625	18.207	7.233
8/22/2020 17:00	4665609	8.128	-63.591	18.31	351.765	403.294	0.195	10.36	18.31	7.193
8/22/2020 18:00	4669209	8.12	-63.066	18.25	351.876	403.955	0.195	9.774	18.25	7.325
8/22/2020 19:00	4672809	8.138	-64.139	18.175	351.71	404.431	0.196	8.864	18.175	7.312
8/22/2020 20:00	4676409	8.135	-63.915	17.991	350.392	404.547	0.196	8.393	17.991	7.237
8/22/2020 21:00	4680009	8.135	-63.899	17.875	349.834	404.94	0.196	8.968	17.875	7.124
8/22/2020 22:00	4683609	8.139	-64.077	17.805	349.394	405.062	0.196	9.262	17.805	7.187
8/22/2020 23:00	4687209	8.142	-64.28	17.743	349.076	405.25	0.196	9.538	17.743	6.992
8/23/2020 0:00	4690809	8.15	-64.728	17.682	348.711	405.369	0.196	8.43	17.682	7.205
8/23/2020 1:00	4694409	8.15	-64.704	17.607	348.532	405.842	0.196	8.984	17.607	7.203
8/23/2020 2:00	4698009	8.149	-64.638	17.521	348.171	406.198	0.197	8.582	17.521	7.17
8/23/2020 3:00	4701609	8.149	-64.592	17.452	347.861	406.462	0.197	7.777	17.452	7.132
8/23/2020 4:00	4705209	8.15	-64.626	17.387	347.67	406.828	0.197	7.352	17.387	7.103
8/23/2020 5:00	4708809	8.148	-64.504	17.332	347.502	407.127	0.197	7.266	17.332	7.037
8/23/2020 6:00	4712409	8.132	-63.565	17.26	347.331	407.59	0.197	7.736	17.26	6.96
8/23/2020 7:00	4716009	8.124	-63.102	17.183	347.055	407.966	0.197	8.24	17.183	6.872
8/23/2020 8:00	4719609	8.117	-62.673	17.094	347.026	408.747	0.198	7.259	17.094	6.846

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
8/23/2020 9:00	4723209	8.103	-61.851	17.012	346.233	408.568	0.198	7.765	17.012	6.78
8/23/2020 10:00	4726809	8.098	-61.553	17.004	343.215	405.081	0.196	8.033	17.004	6.777
8/23/2020 11:00	4730409	8.102	-61.815	17.116	347.817	409.481	0.198	7.644	17.116	6.734
8/23/2020 12:00	4734009	8.1	-61.677	17.254	349.465	410.147	0.198	8	17.254	6.757
8/23/2020 13:00	4737609	8.106	-62.079	17.354	350.818	410.81	0.199	7.698	17.354	6.869
8/23/2020 14:00	4741209	8.12	-62.914	17.442	352.116	411.52	0.199	7.761	17.442	6.975
8/23/2020 15:00	4744809	8.138	-63.999	17.703	354.939	412.418	0.2	8.016	17.703	7.175
8/23/2020 16:00	4748409	8.161	-65.398	17.967	357.265	412.702	0.2	7.1	17.967	7.278
8/23/2020 17:00	4752009	8.191	-67.327	18.713	362.944	412.474	0.2	7.321	18.713	7.46
8/23/2020 18:00	4755609	8.211	-68.541	19.016	367.346	414.747	0.201	6.875	19.016	7.552
8/23/2020 19:00	4759209	8.22	-69.063	18.89	367.144	415.649	0.201	5.938	18.89	7.626
8/23/2020 20:00	4762809	8.214	-68.638	18.628	365.742	416.426	0.202	6.323	18.628	7.582
8/23/2020 21:00	4766409	8.212	-68.467	18.353	363.88	416.795	0.202	6.811	18.353	7.538
8/23/2020 22:00	4770009	8.209	-68.245	18.068	361.74	416.94	0.202	5.979	18.068	7.522
8/23/2020 23:00	4773609	8.205	-67.928	17.808	359.864	417.174	0.202	6.16	17.808	7.493
8/24/2020 0:00	4777209	8.197	-67.444	17.591	358.393	417.473	0.202	6.644	17.591	7.437
8/24/2020 1:00	4780809	8.192	-67.053	17.386	356.88	417.615	0.202	7.818	17.386	7.426
8/24/2020 2:00	4784409	8.188	-66.779	17.194	355.472	417.752	0.202	6.962	17.194	7.373
8/24/2020 3:00	4788009	8.183	-66.452	17.036	354.43	418.015	0.202	6.817	17.036	7.351
8/24/2020 4:00	4791609	8.178	-66.14	16.897	353.42	418.131	0.202	6.636	16.897	7.325
8/24/2020 5:00	4795210	8.173	-65.846	16.768	352.22	417.928	0.202	5.783	16.768	7.282
8/24/2020 6:00	4798810	8.167	-65.451	16.642	351.019	417.698	0.202	5.882	16.642	7.241
8/24/2020 7:00	4802410	8.159	-64.948	16.544	350.102	417.537	0.202	6.298	16.544	7.204
8/24/2020 8:00	4806010	8.152	-64.557	16.456	348.802	416.827	0.202	5.604	16.456	7.159
8/24/2020 9:00	4809610	8.145	-64.147	16.414	348.592	416.968	0.202	5.894	16.414	7.122
8/24/2020 10:00	4813210	8.141	-63.913	16.409	348.547	416.962	0.202	6.211	16.409	7.108
8/24/2020 11:00	4816810	8.137	-63.684	16.397	348.747	417.32	0.202	6.07	16.397	7.1
8/24/2020 12:00	4820410	8.135	-63.529	16.407	349.241	417.817	0.202	6.836	16.407	7.111
8/24/2020 13:00	4824010	8.134	-63.519	16.431	349.575	417.99	0.202	7.157	16.431	7.13
8/24/2020 14:00	4827610	8.131	-63.357	16.53	351.336	419.148	0.203	6.912	16.53	7.154
8/24/2020 15:00	4831210	8.12	-62.776	16.822	354.66	420.31	0.203	7.088	16.822	7.143
8/24/2020 16:00	4834810	8.114	-62.42	16.798	355.531	421.574	0.204	7.711	16.798	7.139
8/24/2020 17:00	4838410	8.124	-62.997	16.892	356.697	422.059	0.204	7.879	16.892	7.219
8/24/2020 18:00	4842010	8.113	-62.354	16.832	356.693	422.629	0.205	7.1	16.832	7.248
8/24/2020 19:00	4845610	8.141	-63.98	16.822	357.033	423.13	0.205	7.703	16.822	7.311
8/24/2020 20:00	4849210	8.147	-64.318	16.699	356.083	423.174	0.205	7.915	16.699	7.323
8/24/2020 21:00	4852810	8.144	-64.099	16.574	355.418	423.59	0.205	7.882	16.574	7.302
8/24/2020 22:00	4856410	8.151	-64.49	16.49	354.511	423.322	0.205	8.678	16.49	7.217
8/24/2020 23:00	4860010	8.155	-64.688	16.431	354.163	423.47	0.205	7.106	16.431	7.329
8/25/2020 0:00	4863610	8.158	-64.883	16.431	354.132	423.436	0.205	6.888	16.431	7.364
8/25/2020 1:00	4867210	8.151	-64.454	16.347	353.577	423.585	0.205	6.645	16.347	7.283

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
8/25/2020 2:00	4870810	8.157	-64.809	16.258	352.983	423.732	0.205	6.165	16.258	7.332
8/25/2020 3:00	4874410	8.157	-64.764	16.194	352.601	423.897	0.205	6.386	16.194	7.32
8/25/2020 4:00	4878010	8.152	-64.483	16.133	352.345	424.186	0.205	6.881	16.133	7.275
8/25/2020 5:00	4881610	8.15	-64.368	16.061	351.957	424.424	0.205	6.456	16.061	7.254
8/25/2020 6:00	4885210	8.145	-64.056	15.973	351.56	424.803	0.206	6.632	15.973	7.187
8/25/2020 7:00	4888810	8.142	-63.839	15.887	351.032	425.005	0.206	6.208	15.887	7.191
8/25/2020 8:00	4892410	8.139	-63.643	15.826	350.778	425.299	0.206	6.081	15.826	7.17
8/25/2020 9:00	4896010	8.13	-63.119	15.792	350.735	425.582	0.206	6.436	15.792	7.12
8/25/2020 10:00	4899610	8.128	-63.047	15.827	351.287	425.908	0.206	6.804	15.827	7.096
8/25/2020 11:00	4903210	8.127	-63.012	16.074	353.955	426.702	0.206	6.202	16.074	7.141
8/25/2020 12:00	4906810	8.123	-62.847	16.301	356.165	427.131	0.207	6.497	16.301	7.119
8/25/2020 13:00	4910410	8.135	-63.598	16.628	359.83	428.326	0.207	6.863	16.628	7.282
8/25/2020 14:00	4914010	8.14	-63.944	16.869	362.547	429.205	0.208	7.214	16.869	7.331
8/25/2020 15:00	4917610	8.145	-64.247	17.025	364.399	429.882	0.208	8.314	17.025	7.383
8/25/2020 16:00	4921210	8.147	-64.404	17.052	365.149	430.506	0.209	7.553	17.052	7.442
8/25/2020 17:00	4924810	8.155	-64.898	17.159	366.607	431.179	0.209	7.028	17.159	7.486
8/25/2020 18:00	4928410	8.156	-64.871	16.965	365.556	431.829	0.209	7.165	16.965	7.446
8/25/2020 19:00	4932010	8.159	-65.033	16.831	364.438	431.81	0.209	7.843	16.831	7.46
8/25/2020 20:00	4935610	8.156	-64.809	16.677	363.16	431.8	0.209	9.16	16.677	7.375
8/25/2020 21:00	4939210	8.15	-64.495	16.611	362.827	432.053	0.209	8.18	16.611	7.341
8/25/2020 22:00	4942810	8.158	-64.919	16.606	363.331	432.704	0.21	9.678	16.606	7.206
8/25/2020 23:00	4946410	8.155	-64.762	16.559	363.447	433.31	0.21	8.005	16.559	7.277
8/26/2020 0:00	4950010	8.146	-64.228	16.483	363.28	433.857	0.21	9.107	16.483	7.181
8/26/2020 1:00	4953610	8.138	-63.746	16.431	362.921	433.945	0.21	7.825	16.431	7.196
8/26/2020 2:00	4957210	8.135	-63.553	16.328	362.217	434.126	0.21	10.112	16.328	7.128
8/26/2020 3:00	4960810	8.115	-62.377	16.214	361.555	434.467	0.21	7.585	16.214	7.036
8/26/2020 4:00	4964410	8.116	-62.392	16.135	359.579	432.871	0.21	7.869	16.135	6.859
8/26/2020 5:00	4968010	8.11	-62.06	16.079	360.959	435.098	0.211	8.364	16.079	7.004
8/26/2020 6:00	4971610	8.118	-62.473	15.982	360.394	435.392	0.211	8.273	15.982	7.01
8/26/2020 7:00	4975210	8.118	-62.473	15.873	359.189	435.026	0.211	6.603	15.873	6.983
8/26/2020 8:00	4978810	8.115	-62.27	15.771	358.751	435.526	0.211	7.108	15.771	6.932
8/26/2020 9:00	4982410	8.114	-62.201	15.822	359.422	435.827	0.211	7.13	15.822	6.98
8/26/2020 10:00	4986010	8.117	-62.392	15.842	359.639	435.881	0.211	7.139	15.842	7.02
8/26/2020 11:00	4989610	8.114	-62.227	15.881	360.695	436.772	0.211	6.9	15.881	6.956
8/26/2020 12:00	4993210	8.11	-62.022	15.967	361.298	436.627	0.211	7.052	15.967	7.066
8/26/2020 13:00	4996810	8.109	-62.032	16.304	365.143	437.866	0.212	7.172	16.304	7.166
8/26/2020 14:00	5000410	8.125	-62.985	16.369	365.699	437.888	0.212	7.341	16.369	7.193
8/26/2020 15:00	5004010	8.128	-63.186	16.549	367.915	438.73	0.213	7.673	16.549	7.319
8/26/2020 16:00	5007610	8.14	-63.899	16.777	370.853	439.954	0.213	7.474	16.777	7.525
8/26/2020 17:00	5011210	8.155	-64.785	16.826	371.762	440.542	0.213	7.034	16.826	7.473
8/26/2020 18:00	5014810	8.168	-65.565	16.728	370.884	440.473	0.213	7.82	16.728	7.542

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
8/26/2020 19:00	5018410	8.17	-65.629	16.556	370.365	441.584	0.214	8.057	16.556	7.492
8/26/2020 20:00	5022010	8.154	-64.64	16.293	369.103	442.73	0.214	8.056	16.293	7.317
8/26/2020 21:00	5025610	8.142	-63.91	16.122	367.209	442.189	0.214	8.558	16.122	7.161
8/26/2020 22:00	5029210	8.145	-64.063	15.981	361.059	436.2	0.211	9.58	15.981	7.081
8/26/2020 23:00	5032810	8.145	-64.037	15.983	366.418	442.654	0.214	8.639	15.983	7.223
8/27/2020 0:00	5036410	8.142	-63.891	16.02	366.665	442.571	0.214	7.273	16.02	7.207
8/27/2020 1:00	5040010	8.157	-64.731	15.958	366.369	442.851	0.214	8.381	15.958	7.205
8/27/2020 2:00	5043610	8.161	-64.945	15.87	366.269	443.631	0.215	8.581	15.87	7.268
8/27/2020 3:00	5047210	8.145	-63.972	15.76	365.274	443.557	0.215	9.209	15.76	6.853
8/27/2020 4:00	5050810	8.079	-60.105	15.56	364.226	444.343	0.215	7.71	15.56	6.266
8/27/2020 5:00	5054410	8.051	-58.506	15.452	364.136	445.351	0.216	6.642	15.452	6.135
8/27/2020 6:00	5058010	8.078	-60.036	15.39	363.231	444.893	0.215	5.675	15.39	6.225
8/27/2020 7:00	5061610	8.119	-62.389	15.242	362.222	445.199	0.216	5.475	15.242	6.72
8/27/2020 8:00	5065210	8.129	-62.947	15.174	361.845	445.447	0.216	4.864	15.174	6.932
8/27/2020 9:00	5068810	8.127	-62.783	15.129	361.57	445.575	0.216	6.043	15.129	7.118
8/27/2020 10:00	5072410	8.1	-61.245	15.087	361.642	446.111	0.216	4.589	15.087	6.917
8/27/2020 11:00	5076010	8.129	-62.954	15.158	362.442	446.344	0.216	4.873	15.158	7.118
8/27/2020 12:00	5079610	8.13	-63.052	15.366	364.167	446.286	0.216	5.252	15.366	7.228
8/27/2020 13:00	5083210	8.144	-63.922	15.771	368.105	446.878	0.216	4.767	15.771	7.3
8/27/2020 14:00	5086810	8.159	-64.898	16.268	372.737	447.344	0.217	5.24	16.268	7.482
8/27/2020 15:00	5090410	8.138	-63.794	16.632	376.046	447.582	0.217	5.523	16.632	7.561
8/27/2020 16:00	5094010	8.167	-65.534	17.033	380.389	448.665	0.218	5.347	17.033	7.697
8/27/2020 17:00	5097610	8.184	-66.643	17.435	384.189	449.078	0.218	5.483	17.435	7.669
8/27/2020 18:00	5101210	8.189	-67.005	17.808	387.867	449.635	0.218	5.297	17.808	7.655
8/27/2020 19:00	5104810	8.212	-68.312	17.752	387.63	449.919	0.218	4.936	17.752	7.575
8/27/2020 20:00	5108410	8.172	-65.973	17.57	386.784	450.756	0.219	5.087	17.57	7.603
8/27/2020 21:00	5112010	8.204	-67.773	17.369	385.65	451.45	0.219	5.312	17.369	7.385
8/27/2020 22:00	5115611	8.197	-67.272	17.057	382.954	451.441	0.219	13.881	17.057	7.288
8/27/2020 23:00	5119211	8.194	-67.036	16.805	380.967	451.664	0.219	5.536	16.805	7.004
8/28/2020 0:00	5122811	8.196	-67.132	16.567	378.693	451.405	0.219	6.348	16.567	7.225
8/28/2020 1:00	5126411	8.178	-66.018	16.318	376.595	451.461	0.219	5.934	16.318	7.024
8/28/2020 2:00	5130011	8.195	-66.955	16.048	374.183	451.357	0.219	5.067	16.048	7.112
8/28/2020 3:00	5133611	8.202	-67.263	15.742	371.572	451.389	0.219	6.476	15.742	7.243
8/28/2020 4:00	5137211	8.186	-66.321	15.535	369.603	451.162	0.219	5.455	15.535	7.013
8/28/2020 5:00	5140811	8.187	-66.333	15.32	367.616	451.005	0.218	5.605	15.32	7.111
8/28/2020 6:00	5144411	8.177	-65.665	15.081	365.916	451.438	0.219	6.672	15.081	7.104
8/28/2020 7:00	5148011	8.178	-65.708	14.901	363.797	450.744	0.218	5.187	14.901	7.12
8/28/2020 8:00	5151611	8.156	-64.404	14.852	363.415	450.786	0.218	5.174	14.852	7.024
8/28/2020 9:00	5155211	8.158	-64.521	14.843	363.382	450.845	0.218	5.03	14.843	7.156
8/28/2020 10:00	5158811	8.15	-64.056	14.888	363.629	450.676	0.218	5.105	14.888	7.24
8/28/2020 11:00	5162411	8.148	-63.989	14.946	364.31	450.891	0.218	4.721	14.946	7.125

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090	Sensor: pH/ORP SN#: 723090	Sensor: Cond SN#: 737314	Sensor: Cond SN#: 737314	Actual Conductivity ($\mu\text{S}/\text{cm}$)	Specific Conductivity ($\mu\text{S}/\text{cm}$)	Sensor: Cond SN#: 737314	Sensor: Cond SN#: 737314	Sensor: Turb SN#: 730625	Sensor: Internal SN#: 740839	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
8/28/2020 12:00	5166011	8.133	-63.112	15.013	365.293	451.403	0.219	5.054	15.013	15.013	7.047	
8/28/2020 13:00	5169611	8.154	-64.399	15.188	366.998	451.636	0.219	5.755	15.188	15.188	7.304	
8/28/2020 14:00	5173211	8.153	-64.383	15.364	368.628	451.778	0.219	4.165	15.364	15.364	7.331	
8/28/2020 15:00	5176811	8.168	-65.25	15.572	370.936	452.404	0.219	5.399	15.572	15.572	7.425	
8/28/2020 16:00	5180411	8.172	-65.534	15.682	372.122	452.687	0.219	5.795	15.682	15.682	7.279	
8/28/2020 17:00	5184011	8.171	-65.451	15.699	373.386	454.052	0.22	5.356	15.699	15.699	7.207	
8/28/2020 18:00	5187611	8.162	-64.964	15.609	373.352	454.961	0.22	4.849	15.609	15.609	7.051	
8/28/2020 19:00	5191211	8.16	-64.788	15.49	372.511	455.191	0.221	4.895	15.49	15.49	6.853	
8/28/2020 20:00	5194811	8.163	-64.926	15.285	369.609	453.818	0.22	4.719	15.285	15.285	7.138	
8/28/2020 21:00	5198411	8.132	-63.121	15.167	369.359	454.768	0.22	5.519	15.167	15.167	6.933	
8/28/2020 22:00	5202011	8.13	-62.978	15.066	368.703	455.04	0.22	7.202	15.066	15.066	6.635	
8/28/2020 23:00	5205611	8.129	-62.907	14.916	367.087	454.656	0.22	6.526	14.916	14.916	6.504	
8/29/2020 0:00	5209211	8.101	-61.264	14.79	366.099	454.786	0.22	6.427	14.79	14.79	6.597	
8/29/2020 1:00	5212811	8.11	-61.734	14.67	365.001	454.717	0.22	7.853	14.67	14.67	6.653	
8/29/2020 2:00	5216411	8.07	-59.419	14.588	364.798	455.351	0.22	10.347	14.588	14.588	6.311	
8/29/2020 3:00	5220011	8.078	-59.845	14.483	362.78	453.969	0.22	6.813	14.483	14.483	6.437	
8/29/2020 4:00	5223611	8.101	-61.147	14.396	362.918	455.09	0.22	6.258	14.396	14.396	6.487	
8/29/2020 5:00	5227211	8.109	-61.622	14.311	361.649	454.427	0.22	5.722	14.311	14.311	6.602	
8/29/2020 6:00	5230811	8.112	-61.765	14.238	361.279	454.761	0.22	7.838	14.238	14.238	6.686	
8/29/2020 7:00	5234411	8.097	-60.878	14.093	359.851	454.541	0.22	5.612	14.093	14.093	6.538	
8/29/2020 8:00	5238011	8.121	-62.232	14.07	359.72	454.627	0.22	4.551	14.07	14.07	6.944	
8/29/2020 9:00	5241611	8.131	-62.799	13.983	359.112	454.821	0.22	4.476	13.983	13.983	6.828	
8/29/2020 10:00	5245211	8.148	-63.779	13.968	359.117	454.99	0.22	4.378	13.968	13.968	7.089	
8/29/2020 11:00	5248811	8.154	-64.132	14.087	360.172	455.016	0.22	4.109	14.087	14.087	7.13	
8/29/2020 12:00	5252411	8.16	-64.552	14.423	363.105	455.027	0.22	13.071	14.423	14.423	7.23	
8/29/2020 13:00	5256011	8.179	-65.746	14.943	368.196	455.734	0.221	4.669	14.943	14.943	7.373	
8/29/2020 14:00	5259611	8.193	-66.65	15.305	372.167	456.74	0.221	4.309	15.305	15.305	7.532	
8/29/2020 15:00	5263211	8.209	-67.575	15.401	373.538	457.402	0.222	4.171	15.401	15.401	7.509	
8/29/2020 16:00	5266811	8.221	-68.307	15.424	374.072	457.804	0.222	6.495	15.424	15.424	7.672	
8/29/2020 17:00	5270411	8.222	-68.39	15.469	374.312	457.619	0.222	4.313	15.469	15.469	7.676	
8/29/2020 18:00	5274011	8.216	-68.052	15.526	375.091	457.963	0.222	4.422	15.526	15.526	7.63	
8/29/2020 19:00	5277611	8.207	-67.451	15.219	373.722	459.583	0.223	4.536	15.219	15.219	7.387	
8/29/2020 20:00	5281211	8.173	-65.463	15.022	371.283	458.704	0.222	4.385	15.022	15.022	6.92	
8/29/2020 21:00	5284811	8.142	-63.627	14.805	369.365	458.681	0.222	4.863	14.805	14.805	6.55	
8/29/2020 22:00	5288411	8.106	-61.46	14.585	368.548	460.065	0.223	5.663	14.585	14.585	6.474	
8/29/2020 23:00	5292011	8.098	-60.992	14.472	366.869	459.212	0.222	6.427	14.472	14.472	6.775	
8/30/2020 0:00	5295611	8.12	-62.239	14.406	365.876	458.696	0.222	6.955	14.406	14.406	6.943	
8/30/2020 1:00	5299211	8.096	-60.844	14.353	365.575	458.891	0.222	5.381	14.353	14.353	6.621	
8/30/2020 2:00	5302811	8.13	-62.816	14.337	365.354	458.794	0.222	4.985	14.337	14.337	6.753	
8/30/2020 3:00	5306411	8.139	-63.281	14.25	364.535	458.727	0.222	7.201	14.25	14.25	6.419	
8/30/2020 4:00	5310011	8.106	-61.417	14.183	364.058	458.867	0.222	6.087	14.183	14.183	6.78	

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
8/30/2020 5:00	5313611	8.093	-60.637	14.093	363.522	459.183	0.222	6.133	14.093	6.601
8/30/2020 6:00	5317211	8.105	-61.302	14.024	362.82	459.061	0.222	6.013	14.024	6.641
8/30/2020 7:00	5320811	8.134	-62.959	13.919	361.894	459.055	0.222	4.864	13.919	6.737
8/30/2020 8:00	5324411	8.104	-61.19	13.829	360.858	458.741	0.222	5.319	13.829	6.696
8/30/2020 9:00	5328011	8.116	-61.889	13.75	360.553	459.235	0.222	4.153	13.75	6.372
8/30/2020 10:00	5331611	8.11	-61.553	13.729	360.105	458.898	0.222	5.147	13.729	6.697
8/30/2020 11:00	5335211	8.128	-62.578	13.876	361.688	459.272	0.222	4.11	13.876	6.946
8/30/2020 12:00	5338811	8.142	-63.467	14.304	365.534	459.382	0.222	5.284	14.304	7.061
8/30/2020 13:00	5342411	8.131	-62.943	14.653	369.521	460.534	0.223	4.23	14.653	7.121
8/30/2020 14:00	5346011	8.159	-64.697	15.257	374.787	460.479	0.223	3.373	15.257	7.339
8/30/2020 15:00	5349611	8.17	-65.427	15.729	379.687	461.384	0.224	4.436	15.729	7.405
8/30/2020 16:00	5353211	8.178	-65.901	15.842	382.033	463.028	0.225	3.425	15.842	7.438
8/30/2020 17:00	5356812	8.202	-67.337	15.958	383.44	463.479	0.225	3.684	15.958	7.469
8/30/2020 18:00	5360412	8.199	-67.153	15.919	384.572	465.271	0.226	3.569	15.919	7.493
8/30/2020 19:00	5364012	8.204	-67.379	15.648	381.301	464.223	0.225	3.302	15.648	7.303
8/30/2020 20:00	5367612	8.186	-66.278	15.337	378.576	464.263	0.225	3.761	15.337	6.767
8/30/2020 21:00	5371212	8.127	-62.795	15.054	372.137	459.407	0.223	3.304	15.054	6.718
8/30/2020 22:00	5374812	8.133	-63.117	14.837	374.564	464.78	0.225	4.048	14.837	6.609
8/30/2020 23:00	5378412	8.114	-61.977	14.647	372.657	464.511	0.225	5.834	14.647	6.777
8/31/2020 0:00	5382012	8.133	-63.035	14.496	370.892	463.973	0.225	5.093	14.496	6.33
8/31/2020 1:00	5385612	8.08	-59.962	14.382	369.221	463.147	0.224	3.984	14.382	6.52
8/31/2020 2:00	5389212	8.079	-59.869	14.288	368.488	463.277	0.224	5.254	14.288	6.426
8/31/2020 3:00	5392812	8.095	-60.759	14.259	367.972	462.949	0.224	5.558	14.259	6.38
8/31/2020 4:00	5396412	8.111	-61.686	14.222	367.822	463.167	0.224	5.649	14.222	6.756
8/31/2020 5:00	5400012	8.093	-60.661	14.126	367.193	463.448	0.224	5.657	14.126	6.117
8/31/2020 6:00	5403612	8.11	-61.615	14.026	366.189	463.302	0.224	4.738	14.026	6.269
8/31/2020 7:00	5407212	8.079	-59.793	13.903	365.434	463.717	0.224	4.76	13.903	6.11
8/31/2020 8:00	5410812	8.053	-58.27	13.832	365.041	464.017	0.225	4.531	13.832	6.543
8/31/2020 9:00	5414412	8.046	-57.895	13.787	365.002	464.476	0.225	6.182	13.787	6.402
8/31/2020 10:00	5418012	8.114	-61.798	13.821	364.669	463.67	0.224	4.136	13.821	6.846
8/31/2020 11:00	5421612	8.116	-61.922	13.951	365.645	463.446	0.224	4.188	13.951	7.018
8/31/2020 12:00	5425212	8.134	-63.014	14.099	366.89	463.368	0.224	3.846	14.099	7.197
8/31/2020 13:00	5428812	8.164	-64.74	14.289	369.568	464.623	0.225	3.482	14.289	7.291
8/31/2020 14:00	5432412	8.175	-65.372	14.337	371.739	466.814	0.226	3.268	14.337	7.393
8/31/2020 15:00	5436012	8.183	-65.966	14.73	374.226	465.54	0.226	4.132	14.73	7.509
8/31/2020 16:00	5439612	8.192	-66.562	15.131	378.678	466.634	0.226	3.726	15.131	7.629
8/31/2020 17:00	5443212	8.185	-66.144	15.002	378.157	467.414	0.227	3.695	15.002	7.277
8/31/2020 18:00	5446812	8.164	-64.867	14.845	375.426	465.763	0.226	4.656	14.845	7.3
8/31/2020 19:00	5450412	8.181	-65.856	14.787	374.199	464.881	0.225	4.767	14.787	7.364
8/31/2020 20:00	5454012	8.182	-65.868	14.638	373.275	465.376	0.225	4.547	14.638	7.242
8/31/2020 21:00	5457612	8.163	-64.728	14.467	372.333	466.1	0.226	4.185	14.467	6.914

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090	Sensor: pH/ORP SN#: 723090	Sensor: Cond SN#: 737314	Sensor: Cond SN#: 737314	Actual Conductivity ($\mu\text{S}/\text{cm}$)	Specific Conductivity ($\mu\text{S}/\text{cm}$)	Sensor: Cond SN#: 737314	Sensor: Cond SN#: 737314	Sensor: Turb SN#: 730625	Sensor: Internal SN#: 740839	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
8/31/2020 22:00	5461212	8.13	-62.771	14.25	370.856	466.679	0.226	4.842	14.25	6.684		
8/31/2020 23:00	5464812	8.118	-62.046	14.116	370.21	467.37	0.226	4.478	14.116	6.281		
9/1/2020 0:00	5468412	8.111	-61.622	13.983	369.281	467.69	0.226	4.508	13.983	6.549		
9/1/2020 1:00	5472012	8.105	-61.264	13.84	367.854	467.509	0.226	4.707	13.84	6.52		
9/1/2020 2:00	5475612	8.099	-60.894	13.694	367.451	468.652	0.227	4.351	13.694	6.539		
9/1/2020 3:00	5479212	8.084	-60.01	13.579	366.569	468.845	0.227	4.343	13.579	6.38		
9/1/2020 4:00	5482812	8.087	-60.17	13.48	365.372	468.439	0.227	5.525	13.48	6.4		
9/1/2020 5:00	5486412	8.104	-61.078	13.339	364.014	468.323	0.227	4.366	13.339	6.528		
9/1/2020 6:00	5490012	8.085	-60.017	13.277	363.566	468.461	0.227	3.995	13.277	6.443		
9/1/2020 7:00	5493612	8.051	-58.017	13.231	362.911	468.148	0.226	4.062	13.231	6.441		
9/1/2020 8:00	5497212	8.095	-60.568	13.17	362.282	468.031	0.226	3.98	13.17	6.491		
9/1/2020 9:00	5500812	8.095	-60.565	13.125	376.618	487.1	0.236	5.833	13.125	6.488		
9/1/2020 10:00	5504412	8.178	-65.258	12.85	468.965	610.687	0.298	8.737	12.85	6.698		
9/1/2020 11:00	5508012	8.242	-68.827	12.65	596.09	780.097	0.383	10.421	12.65	6.728		
9/1/2020 12:00	5511612	8.222	-67.732	12.678	725.027	948.182	0.469	10.528	12.678	6.671		
9/1/2020 13:00	5515212	8.211	-67.089	12.791	781.341	1018.962	0.506	8.918	12.791	6.664		
9/1/2020 14:00	5518812	8.217	-67.568	13.327	801.62	1031.62	0.513	8.662	13.327	7.201		
9/1/2020 15:00	5522412	8.26	-70.157	13.838	800.684	1017.647	0.506	6.114	13.838	7.556		
9/1/2020 16:00	5526012	8.304	-72.725	14.031	812.228	1027.498	0.511	6.591	14.031	8.125		
9/1/2020 17:00	5529612	8.288	-71.933	14.463	660.764	827.254	0.408	4.979	14.463	7.789		
9/1/2020 18:00	5533212	8.284	-71.647	14.329	623.048	782.552	0.385	5.138	14.329	7.773		
9/1/2020 19:00	5536812	8.294	-72.215	14.148	643.718	812.021	0.4	4.904	14.148	7.716		
9/1/2020 20:00	5540412	8.259	-70.162	14.056	556.886	704.063	0.345	4.003	14.056	7.538		
9/1/2020 21:00	5544012	8.198	-66.597	13.887	479.82	609.103	0.297	4.058	13.887	7.082		
9/1/2020 22:00	5547612	8.148	-63.703	13.767	434.366	553.01	0.269	4.41	13.767	6.636		
9/1/2020 23:00	5551212	8.142	-63.357	13.647	437.491	558.618	0.272	5.034	13.647	6.483		
9/2/2020 0:00	5554812	8.136	-62.985	13.563	447.394	572.435	0.279	5.547	13.563	6.527		
9/2/2020 1:00	5558412	8.162	-64.445	13.471	505.693	648.5	0.317	4.958	13.471	6.45		
9/2/2020 2:00	5562012	8.212	-67.298	13.292	681.366	877.616	0.433	6.497	13.292	6.627		
9/2/2020 3:00	5565613	8.248	-69.277	13.051	843.502	1092.93	0.544	7.15	13.051	6.523		
9/2/2020 4:00	5569213	8.248	-69.246	12.84	890.574	1159.999	0.579	5.957	12.84	6.834		
9/2/2020 5:00	5572813	8.223	-67.799	12.792	902.711	1177.206	0.588	6.042	12.792	6.607		
9/2/2020 6:00	5576413	8.216	-67.296	12.448	909.661	1196.533	0.597	4.891	12.448	6.565		
9/2/2020 7:00	5580013	8.201	-66.44	12.322	914.927	1207.269	0.603	5.178	12.322	6.621		
9/2/2020 8:00	5583613	8.177	-65.091	12.421	912.47	1201.039	0.6	5.021	12.421	6.082		
9/2/2020 9:00	5587213	8.158	-64.011	12.383	904.8	1192.07	0.595	4.141	12.383	6.075		
9/2/2020 10:00	5590813	8.193	-65.908	12.144	887.265	1176.031	0.586	5.001	12.144	6.597		
9/2/2020 11:00	5594413	8.177	-64.981	11.985	873.729	1162.794	0.579	4.355	11.985	6.355		
9/2/2020 12:00	5598013	8.202	-66.404	12.04	870.785	1157.236	0.577	4.515	12.04	7.175		
9/2/2020 13:00	5601613	8.202	-66.524	12.429	868.425	1142.814	0.57	4.397	12.429	7.573		
9/2/2020 14:00	5605213	8.248	-69.294	12.994	876.089	1136.752	0.567	4.216	12.994	8.01		

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
9/2/2020 15:00	5608813	8.312	-73.111	13.653	897.219	1145.465	0.572	4.46	13.653	8.185
9/2/2020 16:00	5612413	8.35	-75.445	14.199	917.145	1155.542	0.578	4.804	14.199	8.973
9/2/2020 17:00	5616013	8.345	-75.243	14.673	873.538	1088.182	0.543	5.005	14.673	9.105
9/2/2020 18:00	5619613	8.371	-76.818	14.798	888.997	1104.14	0.551	5.057	14.798	8.722
9/2/2020 19:00	5623213	8.392	-78.034	14.862	883.138	1095.2	0.547	4.954	14.862	8.528
9/2/2020 20:00	5626813	8.382	-77.412	14.634	866.752	1080.731	0.539	4.724	14.634	8.019
9/2/2020 21:00	5630413	8.364	-76.294	14.373	849.537	1065.873	0.531	6.654	14.373	7.888
9/2/2020 22:00	5634013	8.33	-74.253	14.148	844.607	1065.451	0.531	11.731	14.148	7.57
9/2/2020 23:00	5637613	8.329	-74.151	13.914	837.809	1062.87	0.529	5.408	13.914	7.411
9/3/2020 0:00	5641213	8.304	-72.644	13.747	834.024	1062.365	0.529	6.969	13.747	7.226
9/3/2020 1:00	5644813	8.284	-71.483	13.521	843.018	1079.745	0.538	4.967	13.521	7.207
9/3/2020 2:00	5648413	8.266	-70.364	13.322	850.409	1094.548	0.545	5.105	13.322	6.993
9/3/2020 3:00	5652013	8.251	-69.475	13.134	858.819	1110.502	0.553	4.68	13.134	7.023
9/3/2020 4:00	5655613	8.246	-69.134	12.94	870.689	1131.269	0.564	4.728	12.94	7.073
9/3/2020 5:00	5659213	8.239	-68.698	12.723	872.948	1140.349	0.568	5.136	12.723	6.84
9/3/2020 6:00	5662813	8.232	-68.25	12.534	876.326	1150.198	0.573	4.945	12.534	6.98
9/3/2020 7:00	5666413	8.232	-68.214	12.304	878.586	1159.836	0.578	4.792	12.304	6.696
9/3/2020 8:00	5670013	8.23	-68.04	12.085	883.525	1172.831	0.585	4.702	12.085	6.957
9/3/2020 9:00	5673613	8.23	-67.995	11.947	886.75	1181.237	0.589	4.077	11.947	7.09
9/3/2020 10:00	5677213	8.223	-67.546	11.821	885.342	1183.174	0.59	4.956	11.821	7.117
9/3/2020 11:00	5680813	8.236	-68.321	11.809	890.788	1190.825	0.594	4.905	11.809	7.18
9/3/2020 12:00	5684413	8.255	-69.411	12.036	900.883	1197.372	0.597	5.996	12.036	7.633
9/3/2020 13:00	5688013	8.284	-71.163	12.416	909.168	1196.831	0.598	4.615	12.416	8.051
9/3/2020 14:00	5691613	8.292	-71.747	12.879	930.235	1210.464	0.605	4.679	12.879	8.376
9/3/2020 15:00	5695213	8.37	-76.416	13.654	948.82	1211.317	0.606	6.465	13.654	8.938
9/3/2020 16:00	5698813	8.398	-78.18	14.086	952.133	1202.893	0.602	7.837	14.086	8.932
9/3/2020 17:00	5702413	8.422	-79.584	14.291	959.308	1205.993	0.604	5.144	14.291	9.013
9/3/2020 18:00	5706013	8.432	-80.211	14.443	958.321	1200.366	0.601	5.271	14.443	9.116
9/3/2020 19:00	5709613	8.436	-80.466	14.621	959.53	1196.768	0.599	5.447	14.621	9.24
9/3/2020 20:00	5713213	8.438	-80.619	14.632	947.633	1181.628	0.592	5.056	14.632	8.852
9/3/2020 21:00	5716813	8.44	-80.693	14.604	953.275	1189.459	0.596	4.092	14.604	8.512
9/3/2020 22:00	5720413	8.414	-79.162	14.501	949.822	1188.055	0.595	5.413	14.501	8.095
9/3/2020 23:00	5724013	8.385	-77.517	14.411	940.611	1179.079	0.59	5.025	14.411	7.843
9/4/2020 0:00	5727613	8.349	-75.395	14.326	925.403	1162.393	0.581	4.557	14.326	7.252
9/4/2020 1:00	5731213	8.315	-73.402	14.211	911.679	1148.322	0.574	5.957	14.211	6.956
9/4/2020 2:00	5734813	8.319	-73.617	14.136	895.79	1130.335	0.564	4.752	14.136	6.397
9/4/2020 3:00	5738413	8.286	-71.714	14.022	876.391	1108.916	0.553	4.579	14.022	6.54
9/4/2020 4:00	5742013	8.258	-70.088	13.896	869.065	1103.008	0.55	5.585	13.896	6.515
9/4/2020 5:00	5745613	8.213	-67.461	13.857	845.851	1074.554	0.535	9.878	13.857	6.262
9/4/2020 6:00	5749214	8.157	-64.223	13.75	829.389	1056.382	0.526	5.277	13.75	6.236
9/4/2020 7:00	5752814	8.151	-63.846	13.66	800.689	1022.06	0.508	4.634	13.66	6.25

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
9/4/2020 8:00	5756414	8.123	-62.253	13.6	782.904	1000.812	0.497	3.83	13.6	5.811
9/4/2020 9:00	5760014	8.307	-72.844	13.785	862.774	1097.955	0.547	5.272	13.785	7.312
9/4/2020 10:00	5763614	8.308	-72.861	13.711	870.943	1110.357	0.554	6.424	13.711	7.425
9/4/2020 11:00	5767214	8.322	-73.676	13.748	870.554	1108.86	0.553	5.708	13.748	7.696
9/4/2020 12:00	5770814	8.33	-74.201	13.968	880.229	1115.226	0.556	8.646	13.968	8.32
9/4/2020 13:00	5774414	8.357	-75.791	14.036	888.785	1124.219	0.561	11.435	14.036	8.315
9/4/2020 14:00	5778014	8.39	-77.732	14.204	884.994	1114.883	0.556	12.044	14.204	8.989
9/4/2020 15:00	5781614	8.378	-77.155	14.554	838.78	1047.839	0.522	6.817	14.554	10.36
9/4/2020 16:00	5785214	8.378	-77.267	14.972	725.791	897.745	0.445	5.017	14.972	9.567
9/4/2020 17:00	5788814	8.366	-76.635	15.208	701.064	862.339	0.427	3.524	15.208	9.623
9/4/2020 18:00	5792414	8.395	-78.306	15.268	695.858	854.736	0.423	3.452	15.268	9.244
9/4/2020 19:00	5796014	8.379	-77.393	15.275	658.981	809.315	0.399	8.337	15.275	8.844
9/4/2020 20:00	5799614	8.369	-76.79	15.252	630.665	774.947	0.382	3.573	15.252	8.045
9/4/2020 21:00	5803214	8.337	-74.964	15.202	625.816	769.893	0.379	3.114	15.202	7.471
9/4/2020 22:00	5806814	8.255	-70.19	15.149	596.113	734.272	0.361	3.335	15.149	6.548
9/4/2020 23:00	5810414	8.219	-68.097	15.078	572.59	706.479	0.347	3.705	15.078	6.631
9/5/2020 0:00	5814014	8.231	-68.781	14.994	580.616	717.8	0.353	277.428	14.994	6.422
9/5/2020 1:00	5817614	8.227	-68.519	14.898	585.511	725.501	0.356	4.227	14.898	6.029
9/5/2020 2:00	5821214	8.179	-65.73	14.771	550.667	684.372	0.336	4.671	14.771	5.665
9/5/2020 3:00	5824814	8.183	-65.951	14.675	540.511	673.285	0.33	3.137	14.675	5.152
9/5/2020 4:00	5828414	8.194	-66.528	14.56	548	684.496	0.336	3.07	14.56	6.406
9/5/2020 5:00	5832014	8.186	-66.037	14.45	517.611	648.239	0.317	2.781	14.45	5.217
9/5/2020 6:00	5835614	8.153	-64.168	14.38	502.723	630.649	0.308	3.16	14.38	5.152
9/5/2020 7:00	5839214	8.168	-64.988	14.277	504.601	634.562	0.31	4.071	14.277	5.988
9/5/2020 8:00	5842814	8.14	-63.362	14.22	487.369	613.735	0.3	3.606	14.22	5.983
9/5/2020 9:00	5846414	8.166	-64.824	14.182	501.728	632.4	0.309	3.162	14.182	5.5
9/5/2020 10:00	5850014	8.226	-68.271	14.198	551.157	694.435	0.34	3.062	14.198	7.074
9/5/2020 11:00	5853614	8.225	-68.264	14.329	508.684	638.899	0.312	3.324	14.329	7.398
9/5/2020 12:00	5857214	8.253	-69.857	14.329	565.39	710.12	0.348	3.204	14.329	7.368
9/5/2020 13:00	5860814	8.249	-69.668	14.38	614.38	770.714	0.379	2.613	14.38	7.623
9/5/2020 14:00	5864414	8.275	-71.216	14.573	650.182	811.866	0.4	2.781	14.573	8.143
9/5/2020 15:00	5868014	8.334	-74.675	14.8	672.618	835.364	0.413	2.799	14.8	8.762
9/5/2020 16:00	5871614	8.308	-73.247	15.088	625.948	772.118	0.38	2.754	15.088	9.523
9/5/2020 17:00	5875214	8.355	-76.008	15.314	609.306	747.622	0.368	3.265	15.314	8.474
9/5/2020 18:00	5878814	8.347	-75.541	15.358	631.699	774.29	0.382	3.475	15.358	9.103
9/5/2020 19:00	5882414	8.329	-74.551	15.507	566.069	691.443	0.339	2.398	15.507	8.276
9/5/2020 20:00	5886014	8.248	-69.904	15.6	503.239	613.368	0.3	1.972	15.6	7.478
9/5/2020 21:00	5889614	8.201	-67.179	15.474	509.732	623.099	0.305	3.083	15.474	6.679
9/5/2020 22:00	5893214	8.185	-66.233	15.359	469.551	575.53	0.281	1.917	15.359	7.014
9/5/2020 23:00	5896814	8.142	-63.701	15.221	451.801	555.569	0.271	3.453	15.221	7.16
9/6/2020 0:00	5900414	8.178	-65.753	15.037	440.164	543.604	0.265	5.061	15.037	6.808

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
9/6/2020 1:00	5904014	8.178	-65.691	14.843	430.947	534.671	0.26	3.734	14.843	6.986
9/6/2020 2:00	5907614	8.131	-62.926	14.703	426.697	531.168	0.258	5.101	14.703	6.632
9/6/2020 3:00	5911214	8.154	-64.237	14.524	412.95	516.244	0.251	3.635	14.524	7.074
9/6/2020 4:00	5914814	8.166	-64.881	14.377	423.551	531.362	0.258	3.779	14.377	6.374
9/6/2020 5:00	5918414	8.154	-64.158	14.272	437.831	550.663	0.268	2.846	14.272	6.631
9/6/2020 6:00	5922014	8.131	-62.807	14.158	425.586	536.739	0.261	2.894	14.158	6.102
9/6/2020 7:00	5925614	8.126	-62.542	14.094	429.695	542.749	0.264	2.526	14.094	5.85
9/6/2020 8:00	5929214	8.096	-60.799	13.988	405.288	513.235	0.249	2.813	13.988	6.527
9/6/2020 9:00	5932814	8.107	-61.417	13.942	400.712	508.011	0.247	2.862	13.942	6.577
9/6/2020 10:00	5936414	8.127	-62.561	13.926	399.65	506.852	0.246	2.355	13.926	6.484
9/6/2020 11:00	5940014	8.135	-62.988	13.947	415.419	526.586	0.256	2.46	13.947	6.542
9/6/2020 12:00	5943614	8.174	-65.281	14.053	414.503	524.08	0.255	2.865	14.053	6.895
9/6/2020 13:00	5947214	8.142	-63.455	14.254	411.788	518.133	0.252	2.475	14.254	7.163
9/6/2020 14:00	5950814	8.106	-61.464	14.46	402.345	503.76	0.245	2.332	14.46	6.839
9/6/2020 15:00	5954414	8.144	-63.665	14.554	405.282	506.295	0.246	3.048	14.554	6.953
9/6/2020 16:00	5958014	8.15	-64.006	14.575	413.881	516.783	0.251	2.523	14.575	7.138
9/6/2020 17:00	5961614	8.144	-63.651	14.574	409.392	511.182	0.248	2.292	14.574	7.464
9/6/2020 18:00	5965214	8.16	-64.602	14.587	408.638	510.089	0.248	2.542	14.587	7.114
9/6/2020 19:00	5968815	8.177	-65.541	14.566	405.697	506.668	0.246	2.819	14.566	7.359
9/6/2020 20:00	5972415	8.168	-65.045	14.489	405.138	506.904	0.246	2.744	14.489	7.254
9/6/2020 21:00	5976015	8.176	-65.475	14.302	402.644	506.046	0.246	3.129	14.302	7.257
9/6/2020 22:00	5979615	8.151	-63.975	14.108	399.028	503.853	0.244	3.502	14.108	6.957
9/6/2020 23:00	5983215	8.161	-64.492	13.972	394.63	499.935	0.242	3.832	13.972	7.044
9/7/2020 0:00	5986815	8.131	-62.785	13.869	394.213	500.651	0.243	3.318	13.869	6.679
9/7/2020 1:00	5990415	8.118	-61.977	13.733	394.672	502.896	0.244	3.938	13.733	6.564
9/7/2020 2:00	5994015	8.102	-61.052	13.57	391.875	501.318	0.243	4.399	13.57	6.373
9/7/2020 3:00	5997615	8.075	-59.469	13.446	390.484	501.06	0.243	3.815	13.446	6.601
9/7/2020 4:00	6001215	8.014	-55.947	13.306	389.786	501.879	0.243	4.312	13.306	6.24
9/7/2020 5:00	6004815	8.056	-58.298	13.182	389.6	503.177	0.244	3.648	13.182	5.922
9/7/2020 6:00	6008415	8.06	-58.503	13.038	394.675	511.552	0.248	3.978	13.038	6.192
9/7/2020 7:00	6012015	7.987	-54.3	12.893	390.505	507.966	0.246	3.812	12.893	5.989
9/7/2020 8:00	6015615	7.987	-54.295	12.827	389.165	507.059	0.246	3.358	12.827	5.983
9/7/2020 9:00	6019215	8.003	-55.211	12.774	387.919	506.108	0.245	3.38	12.774	6.167
9/7/2020 10:00	6022815	8.026	-56.508	12.764	387.653	505.887	0.245	2.44	12.764	6.233
9/7/2020 11:00	6026415	8.03	-56.753	12.912	401.982	522.658	0.253	2.015	12.912	6.377
9/7/2020 12:00	6030015	8.056	-58.286	13.045	427.124	553.511	0.269	2.242	13.045	6.199
9/7/2020 13:00	6033615	8.102	-60.968	13.175	473.918	612.187	0.298	2.078	13.175	6.464
9/7/2020 14:00	6037215	8.118	-61.865	13.227	474.015	611.529	0.298	3.083	13.227	6.992
9/7/2020 15:00	6040815	8.187	-65.913	13.605	532.394	680.503	0.333	3.457	13.605	7.788
9/7/2020 16:00	6044415	8.169	-64.969	14.083	610.355	771.147	0.379	7.28	14.083	8.586
9/7/2020 17:00	6048015	8.157	-64.285	13.966	577.342	731.501	0.359	9.345	13.966	7.97

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090	Sensor: pH/ORP SN#: 723090	Sensor: Cond SN#: 737314	Sensor: Cond SN#: 737314	Actual Conductivity ($\mu\text{S}/\text{cm}$)	Specific Conductivity ($\mu\text{S}/\text{cm}$)	Sensor: Cond SN#: 737314	Sensor: Cond SN#: 737314	Sensor: Turb SN#: 730625	Sensor: Internal SN#: 740839	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
9/7/2020 18:00	6051615	8.135	-63.128	14.41	582.61	730.335	0.359	6.158	14.41	8.573		
9/7/2020 19:00	6055215	8.14	-63.457	14.556	571.902	714.417	0.351	4.972	14.556	9.207		
9/7/2020 20:00	6058815	8.143	-63.636	14.573	461.064	575.727	0.281	5.129	14.573	7.103		
9/7/2020 21:00	6062415	8.101	-61.166	14.529	458.252	572.809	0.279	4.826	14.529	6.995		
9/7/2020 22:00	6066015	8.07	-59.364	14.27	445.139	559.888	0.273	3.352	14.27	6.418		
9/7/2020 23:00	6069615	8.061	-58.784	13.979	415.306	526.043	0.256	4.604	13.979	6.765		
9/8/2020 0:00	6073215	8.058	-58.532	13.769	405.728	516.532	0.251	3.816	13.769	6.384		
9/8/2020 1:00	6076815	8.047	-57.864	13.609	400.421	511.765	0.248	4.018	13.609	6.413		
9/8/2020 2:00	6080415	8.064	-58.827	13.469	399.859	512.8	0.249	4.014	13.469	6.116		
9/8/2020 3:00	6084015	8.042	-57.566	13.327	395.404	508.857	0.247	4.066	13.327	6.038		
9/8/2020 4:00	6087615	8.009	-55.659	13.239	393.774	507.852	0.246	15.556	13.239	6.329		
9/8/2020 5:00	6091215	7.991	-54.605	13.135	394.128	509.623	0.247	3.662	13.135	6.229		
9/8/2020 6:00	6094815	7.956	-52.543	13.039	392.778	509.077	0.247	3.718	13.039	6.139		
9/8/2020 7:00	6098415	7.981	-53.997	12.993	391.728	508.294	0.246	3.437	12.993	5.833		
9/8/2020 8:00	6102015	7.98	-53.94	12.927	391.595	508.96	0.247	3.121	12.927	5.91		
9/8/2020 9:00	6105615	7.991	-54.526	12.931	390.087	506.949	0.246	3.285	12.931	6.234		
9/8/2020 10:00	6109215	8.004	-55.313	13.018	390.565	506.481	0.245	2.234	13.018	6.174		
9/8/2020 11:00	6112815	8	-55.075	13.056	391.51	507.227	0.246	1.955	13.056	6.066		
9/8/2020 12:00	6116415	8.036	-57.194	13.144	444.398	574.49	0.28	3.83	13.144	6.065		
9/8/2020 13:00	6120015	8.032	-56.932	13.185	441.152	569.713	0.277	2.884	13.185	6.338		
9/8/2020 14:00	6123615	8.035	-57.149	13.297	442.581	569.985	0.277	3.062	13.297	6.495		
9/8/2020 15:00	6127215	8.058	-58.529	13.779	475.983	605.822	0.296	6.879	13.779	7.172		
9/8/2020 16:00	6130815	8.041	-57.666	14.101	484.408	611.762	0.299	4.661	14.101	7.626		
9/8/2020 17:00	6134415	8.103	-61.195	14.171	466.126	587.672	0.287	4.186	14.171	7.85		
9/8/2020 18:00	6138015	8.087	-60.294	14.232	451.815	568.796	0.277	3.503	14.232	7.895		
9/8/2020 19:00	6141615	8.096	-60.859	14.458	454.314	568.85	0.277	2.938	14.458	7.739		
9/8/2020 20:00	6145215	8.11	-61.862	15.157	445.619	548.798	0.267	4.684	15.157	7.637		
9/8/2020 21:00	6148815	8.117	-62.382	15.824	446.234	541.06	0.264	2.732	15.824	7.142		
9/8/2020 22:00	6152415	8.045	-58.243	16.045	439.475	530.152	0.258	2.244	16.045	6.183		
9/8/2020 23:00	6156015	8.049	-58.498	16.086	432.413	521.139	0.254	3.865	16.086	5.878		
9/9/2020 0:00	6159615	8.122	-62.664	15.877	429.204	519.78	0.253	4.129	15.877	6.312		
9/9/2020 1:00	6163215	8.105	-61.667	15.624	426.451	519.479	0.253	3.461	15.624	6.083		
9/9/2020 2:00	6166815	8.131	-63.076	15.375	423.097	518.4	0.252	3.366	15.375	6.253		
9/9/2020 3:00	6170416	8.102	-61.347	15.111	419.795	517.552	0.252	5.15	15.111	6.457		
9/9/2020 4:00	6174016	8.092	-60.759	14.879	414.969	514.409	0.25	5.16	14.879	6.442		
9/9/2020 5:00	6177616	8.067	-59.259	14.634	412.455	514.276	0.25	3.667	14.634	6.137		
9/9/2020 6:00	6181216	8.098	-60.99	14.41	409.059	512.776	0.249	3.528	14.41	6.308		
9/9/2020 7:00	6184816	8.077	-59.755	14.185	409.427	516.02	0.251	3.765	14.185	5.878		
9/9/2020 8:00	6188416	8.05	-58.117	13.979	408.319	517.19	0.251	3.767	13.979	5.987		
9/9/2020 9:00	6192016	8.025	-56.679	13.815	405.384	515.514	0.25	2.712	13.815	5.832		
9/9/2020 10:00	6195616	7.968	-53.365	13.744	403.852	514.457	0.25	2.707	13.744	6.026		

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
9/9/2020 11:00	6199216	8.024	-56.615	13.743	401.651	511.661	0.248	2.281	13.743	6.256
9/9/2020 12:00	6202816	8.075	-59.514	13.822	412.33	524.253	0.255	2.892	13.822	6.217
9/9/2020 13:00	6206416	8.062	-58.804	13.853	409.278	519.984	0.252	2.716	13.853	6.646
9/9/2020 14:00	6210016	8.029	-56.925	13.99	408.17	516.856	0.251	1.771	13.99	6.488
9/9/2020 15:00	6213616	8.03	-57.054	14.337	455.434	571.909	0.279	3.608	14.337	6.702
9/9/2020 16:00	6217216	7.999	-55.375	14.747	474.835	590.473	0.288	4.474	14.747	7.305
9/9/2020 17:00	6220816	8.031	-57.235	14.868	452.607	561.209	0.273	3.231	14.868	7.699
9/9/2020 18:00	6224416	8.076	-59.884	15.204	455.48	560.319	0.273	2.266	15.204	7.639
9/9/2020 19:00	6228016	8.123	-62.611	15.224	457.603	562.662	0.274	3.327	15.224	7.836
9/9/2020 20:00	6231616	8.142	-63.777	15.481	468.867	573.059	0.28	3.385	15.481	7.87
9/9/2020 21:00	6235216	8.109	-61.831	15.532	484.775	591.798	0.289	3.305	15.532	7.56
9/9/2020 22:00	6238816	8.074	-59.96	16.014	478.445	577.583	0.282	4.02	16.014	6.243
9/9/2020 23:00	6242416	8.078	-60.189	16.146	473.322	569.651	0.278	2.727	16.146	5.597
9/10/2020 0:00	6246016	8.051	-58.689	16.287	470.87	564.878	0.276	1.688	16.287	5.42
9/10/2020 1:00	6249616	8.089	-60.894	16.315	447.682	536.719	0.261	2.634	16.315	6.02
9/10/2020 2:00	6253216	8.12	-62.587	15.976	438.909	530.309	0.258	3.141	15.976	6.201
9/10/2020 3:00	6256816	8.124	-62.761	15.636	430.763	524.584	0.255	4.356	15.636	6.388
9/10/2020 4:00	6260416	8.138	-63.481	15.276	426.028	523.206	0.254	2.225	15.276	6.336
9/10/2020 5:00	6264016	8.13	-62.971	14.966	420.911	520.701	0.253	2.328	14.966	6.574
9/10/2020 6:00	6267616	8.138	-63.334	14.663	417.761	520.529	0.253	2.161	14.663	6.306
9/10/2020 7:00	6271216	8.129	-62.78	14.394	415.204	520.676	0.253	2.106	14.394	6.267
9/10/2020 8:00	6274816	8.127	-62.571	14.154	412.487	520.261	0.253	3.172	14.154	6.406
9/10/2020 9:00	6278416	8.079	-59.812	13.983	409.503	518.641	0.252	1.949	13.983	6.359
9/10/2020 10:00	6282016	8.041	-57.583	13.907	408.155	517.879	0.251	1.345	13.907	6.203
9/10/2020 11:00	6285616	8.015	-56.138	13.897	407.105	516.669	0.251	1.697	13.897	6.063
9/10/2020 12:00	6289216	8.072	-59.426	13.983	409.938	519.187	0.252	2.294	13.983	6.448
9/10/2020 13:00	6292816	7.944	-52.063	14.137	501.961	633.383	0.31	3.663	14.137	5.761
9/10/2020 14:00	6296416	7.973	-53.809	14.351	492.031	617.663	0.302	3.734	14.351	6.593
9/10/2020 15:00	6300016	8.001	-55.504	14.777	502.378	624.275	0.305	4.207	14.777	6.845
9/10/2020 16:00	6303616	8.041	-57.821	14.965	479.077	592.68	0.289	4.366	14.965	7.159
9/10/2020 17:00	6307216	8.062	-59.123	15.377	482.698	591.396	0.289	3.748	15.377	7.734
9/10/2020 18:00	6310816	8.068	-59.452	15.422	470.175	575.446	0.281	4.136	15.422	7.603
9/10/2020 19:00	6314416	8.061	-59.085	15.598	481.557	586.961	0.287	2.734	15.598	7.603
9/10/2020 20:00	6318016	8.055	-58.875	16.09	469.68	566.002	0.276	1.983	16.09	7.119
9/10/2020 21:00	6321616	8.152	-64.497	16.171	451.536	543.119	0.265	2.002	16.171	7.053
9/10/2020 22:00	6325216	8.135	-63.436	15.929	443.693	536.677	0.261	2.329	15.929	6.854
9/10/2020 23:00	6328816	8.14	-63.674	15.74	439.864	534.381	0.26	2.298	15.74	6.589
9/11/2020 0:00	6332416	8.141	-63.689	15.542	431.826	527.039	0.256	2.021	15.542	6.54
9/11/2020 1:00	6336016	8.141	-63.698	15.408	425.739	521.236	0.254	2.375	15.408	6.772
9/11/2020 2:00	6339616	8.064	-59.197	15.286	425.849	522.865	0.254	2.404	15.286	6.531
9/11/2020 3:00	6343216	8.139	-63.503	15.12	422.132	520.323	0.253	1.92	15.12	6.092

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
9/11/2020 4:00	6346816	8.144	-63.772	14.936	422.44	522.967	0.254	2.459	14.936	6.276
9/11/2020 5:00	6350416	8.112	-61.872	14.728	417.085	518.893	0.252	2.161	14.728	6.128
9/11/2020 6:00	6354016	8.088	-60.449	14.574	416.513	520.075	0.253	2.024	14.574	6.302
9/11/2020 7:00	6357616	8.093	-60.732	14.449	416.804	521.995	0.254	2.888	14.449	5.964
9/11/2020 8:00	6361216	8.111	-61.738	14.322	414.728	520.987	0.253	2.283	14.322	6.265
9/11/2020 9:00	6364816	8.009	-55.857	14.273	412.638	518.966	0.252	1.554	14.273	5.828
9/11/2020 10:00	6368416	8.088	-60.372	14.274	412.458	518.729	0.252	2.02	14.274	6.465
9/11/2020 11:00	6372016	8.131	-62.857	14.289	414.249	520.797	0.253	2.873	14.289	6.643
9/11/2020 12:00	6375616	8.107	-61.481	14.404	416.033	521.595	0.253	1.705	14.404	7.072
9/11/2020 13:00	6379216	8.156	-64.342	14.617	423.394	528.129	0.257	1.89	14.617	7.288
9/11/2020 14:00	6382816	8.105	-61.445	14.797	445.046	552.761	0.269	2.829	14.797	7.326
9/11/2020 15:00	6386416	8.134	-63.188	14.915	450.382	557.839	0.272	2.594	14.915	7.672
9/11/2020 16:00	6390016	8.153	-64.278	15.075	465.599	574.5	0.28	3.747	15.075	7.858
9/11/2020 17:00	6393616	8.143	-63.765	15.244	459.907	565.238	0.276	2.584	15.244	7.869
9/11/2020 18:00	6397216	8.169	-65.274	15.332	449.592	551.42	0.269	2.897	15.332	7.554
9/11/2020 19:00	6400816	8.166	-65.138	15.434	437.845	535.722	0.261	2.182	15.434	7.816
9/11/2020 20:00	6404416	8.246	-69.706	15.303	434.895	533.758	0.26	2.045	15.303	7.678
9/11/2020 21:00	6408017	8.207	-67.399	15.106	438.766	541.001	0.263	3.212	15.106	7.185
9/11/2020 22:00	6411617	8.206	-67.306	14.83	436.433	541.652	0.264	1.662	14.83	7.266
9/11/2020 23:00	6415217	8.198	-66.772	14.544	417.221	521.334	0.253	2.786	14.544	6.865
9/12/2020 0:00	6418817	8.123	-62.394	14.352	422.17	529.955	0.258	1.881	14.352	6.705
9/12/2020 1:00	6422417	8.04	-57.633	14.186	416.106	524.422	0.255	2.071	14.186	6.41
9/12/2020 2:00	6426017	8.071	-59.378	14.069	414.109	523.375	0.254	2.234	14.069	6.054
9/12/2020 3:00	6429617	8.055	-58.441	13.947	412.236	522.548	0.254	2.126	13.947	6.213
9/12/2020 4:00	6433217	8.067	-59.071	13.844	411.068	522.375	0.254	2.426	13.844	6.158
9/12/2020 5:00	6436817	8.078	-59.717	13.73	409.377	521.675	0.253	1.862	13.73	6.222
9/12/2020 6:00	6440417	8.068	-59.116	13.627	408.4	521.73	0.253	2.384	13.627	6.242
9/12/2020 7:00	6444017	8.116	-61.855	13.547	407.014	520.981	0.253	1.79	13.547	6.195
9/12/2020 8:00	6447617	8.067	-58.999	13.495	407.149	521.813	0.253	1.787	13.495	6.168
9/12/2020 9:00	6451217	8.033	-57.07	13.462	406.869	521.876	0.253	2.032	13.462	6.215
9/12/2020 10:00	6454817	8.07	-59.164	13.421	405.282	520.37	0.253	1.772	13.421	6.508
9/12/2020 11:00	6458417	8.113	-61.629	13.494	406.231	520.645	0.253	1.342	13.494	6.889
9/12/2020 12:00	6462017	8.122	-62.175	13.627	407.607	520.72	0.253	1.479	13.627	7.659
9/12/2020 13:00	6465617	8.11	-61.514	13.718	415.432	529.544	0.257	1.779	13.718	7.194
9/12/2020 14:00	6469217	8.076	-59.588	13.846	435.468	553.361	0.269	4.108	13.846	7.446
9/12/2020 15:00	6472817	8.044	-57.79	14.073	455.376	575.477	0.28	6.29	14.073	7.468
9/12/2020 16:00	6476417	8.074	-59.636	14.634	459.192	572.557	0.279	3.854	14.634	8.401
9/12/2020 17:00	6480017	8.148	-64.225	16.053	440.876	531.739	0.259	1.656	16.053	7.711
9/12/2020 18:00	6483617	8.177	-65.765	15.493	437.127	534.114	0.26	1.716	15.493	7.256
9/12/2020 19:00	6487217	8.186	-66.278	15.457	436.462	533.754	0.26	1.4	15.457	7.189
9/12/2020 20:00	6490817	8.189	-66.454	15.343	434.042	532.213	0.259	1.368	15.343	7.105

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090	Sensor: pH/ORP SN#: 723090	Sensor: Cond SN#: 737314	Sensor: Cond SN#: 737314	Actual Conductivity ($\mu\text{S}/\text{cm}$)	Specific Conductivity ($\mu\text{S}/\text{cm}$)	Sensor: Cond SN#: 737314	Sensor: Cond SN#: 737314	Sensor: Turb SN#: 730625	Sensor: Internal SN#: 740839	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
9/12/2020 21:00	6494417	8.194	-66.688	15.149	430.6	530.391	0.258	1.4	15.149	15.149	6.867	
9/12/2020 22:00	6498017	8.196	-66.695	14.833	427.493	530.513	0.258	1.697	14.833	14.833	6.508	
9/12/2020 23:00	6501617	8.107	-61.505	14.453	443.407	555.27	0.27	3.558	14.453	14.453	6.788	
9/13/2020 0:00	6505217	8.167	-64.917	14.29	427.556	537.509	0.261	2.409	14.29	14.29	6.559	
9/13/2020 1:00	6508817	8.167	-64.898	14.08	423.404	534.994	0.26	1.982	14.08	14.08	6.445	
9/13/2020 2:00	6512417	8.087	-60.227	13.851	420.429	534.182	0.26	2.313	13.851	13.851	6.073	
9/13/2020 3:00	6516017	8.055	-58.379	13.649	416.489	531.786	0.258	2.771	13.649	13.649	6.031	
9/13/2020 4:00	6519617	7.994	-54.805	13.485	415.182	532.237	0.258	2.625	13.485	13.485	5.969	
9/13/2020 5:00	6523217	7.998	-55.017	13.349	412.453	530.507	0.258	1.983	13.349	13.349	5.89	
9/13/2020 6:00	6526817	8.095	-60.558	13.188	411.673	531.609	0.258	2.344	13.188	13.188	6.052	
9/13/2020 7:00	6530417	8.002	-55.225	13.043	410.248	531.675	0.258	3.871	13.043	13.043	4.749	
9/13/2020 8:00	6534017	8.038	-57.259	12.913	407.94	530.382	0.257	3.009	12.913	12.913	5.736	
9/13/2020 9:00	6537617	8.019	-56.162	12.86	406.509	529.216	0.257	2.881	12.86	12.86	6.123	
9/13/2020 10:00	6541217	8.067	-58.866	12.909	407.108	529.36	0.257	1.423	12.909	12.909	6.575	
9/13/2020 11:00	6544817	8.099	-60.768	13.037	408.591	529.599	0.257	1.474	13.037	13.037	6.875	
9/13/2020 12:00	6548417	8.1	-60.873	13.224	411.099	530.394	0.257	1.567	13.224	13.224	7.275	
9/13/2020 13:00	6552017	8.137	-63.031	13.393	414.057	531.998	0.258	1.999	13.393	13.393	7.266	
9/13/2020 14:00	6555617	8.158	-64.206	13.463	417.686	535.736	0.26	1.688	13.463	13.463	7.725	
9/13/2020 15:00	6559217	8.165	-64.697	13.698	422.646	538.998	0.262	2.35	13.698	13.698	7.855	
9/13/2020 16:00	6562817	8.16	-64.414	13.776	424.772	540.689	0.263	2.455	13.776	13.776	7.763	
9/13/2020 17:00	6566417	8.172	-65.062	13.71	424.051	540.634	0.263	1.999	13.71	13.71	7.628	
9/13/2020 18:00	6570017	8.184	-65.734	13.554	423.326	541.768	0.263	1.969	13.554	13.554	7.584	
9/13/2020 19:00	6573617	8.14	-63.155	13.337	418.302	538.196	0.261	1.929	13.337	13.337	7.271	
9/13/2020 20:00	6577217	8.144	-63.388	13.22	413.833	533.978	0.259	1.971	13.22	13.22	6.765	
9/13/2020 21:00	6580817	8.092	-60.403	13.213	414.043	534.342	0.259	2.215	13.213	13.213	6.771	
9/13/2020 22:00	6584417	8.12	-62.001	13.136	412.999	534.011	0.259	2.289	13.136	13.136	6.835	
9/13/2020 23:00	6588017	8.121	-61.982	12.954	411.327	534.252	0.259	2.647	12.954	12.954	6.804	
9/14/2020 0:00	6591617	8.124	-62.115	12.79	404.524	527.56	0.256	3.223	12.79	12.79	6.937	
9/14/2020 1:00	6595217	8.143	-63.179	12.682	408.48	534.158	0.259	2.56	12.682	12.682	6.771	
9/14/2020 2:00	6598817	8.131	-62.454	12.564	407.323	534.208	0.259	2.592	12.564	12.564	6.793	
9/14/2020 3:00	6602418	8.108	-61.164	12.588	407.121	533.631	0.259	2.409	12.588	12.588	6.743	
9/14/2020 4:00	6606018	8.109	-61.243	12.564	406.85	533.591	0.259	2.581	12.564	12.564	6.667	
9/14/2020 5:00	6609618	8.122	-61.913	12.425	405.426	533.583	0.259	2.952	12.425	12.425	6.717	
9/14/2020 6:00	6613218	8.082	-59.595	12.286	403.45	532.84	0.258	3.377	12.286	12.286	6.645	
9/14/2020 7:00	6616818	8.124	-62.01	12.233	402.811	532.711	0.258	2.799	12.233	12.233	6.635	
9/14/2020 8:00	6620418	8.094	-60.258	12.165	402.456	533.157	0.258	3.381	12.165	12.165	6.672	
9/14/2020 9:00	6624018	8.092	-60.174	12.079	401.073	532.479	0.258	3.262	12.079	12.079	6.493	
9/14/2020 10:00	6627618	8.077	-59.273	11.987	398.213	529.921	0.257	1.992	11.987	11.987	6.688	
9/14/2020 11:00	6631218	8.078	-59.364	12.009	398.212	529.634	0.257	2.419	12.009	12.009	6.542	
9/14/2020 12:00	6634818	8.125	-62.025	11.999	398.054	529.547	0.257	1.966	11.999	11.999	6.955	
9/14/2020 13:00	6638418	8.094	-60.225	12.012	398.88	530.475	0.257	1.64	12.012	12.012	6.776	

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
9/14/2020 14:00	6642018	8.105	-60.863	12.007	399.335	531.144	0.257	1.631	12.007	6.585
9/14/2020 15:00	6645618	8.053	-57.912	12.037	399.961	531.572	0.258	1.985	12.037	6.835
9/14/2020 16:00	6649218	8.038	-57.077	12.042	400.87	532.711	0.258	1.334	12.042	6.577
9/14/2020 17:00	6652818	8.034	-56.844	12.021	400.963	533.128	0.258	1.457	12.021	6.38
9/14/2020 18:00	6656418	8.033	-56.784	12.036	400.896	532.832	0.258	1.261	12.036	6.44
9/14/2020 19:00	6660018	8.125	-62.013	11.982	400.622	533.203	0.259	1.628	11.982	6.077
9/14/2020 20:00	6663618	7.977	-53.57	11.937	400.603	533.788	0.259	2.151	11.937	6.302
9/14/2020 21:00	6667218	8.005	-55.153	11.889	399.491	532.951	0.258	1.71	11.889	5.906
9/14/2020 22:00	6670818	7.99	-54.276	11.877	400.049	533.855	0.259	2.414	11.877	6.119
9/14/2020 23:00	6674418	7.993	-54.429	11.814	399.561	534.066	0.259	1.757	11.814	5.448
9/15/2020 0:00	6678018	8.01	-55.418	11.788	399.052	533.736	0.259	1.923	11.788	5.353
9/15/2020 1:00	6681618	8.029	-56.486	11.787	399.262	534.031	0.259	2.214	11.787	5.936
9/15/2020 2:00	6685218	7.993	-54.448	11.759	399.524	534.767	0.259	2.454	11.759	5.661
9/15/2020 3:00	6688818	7.964	-52.803	11.708	399.556	535.512	0.259	3.091	11.708	5.451
9/15/2020 4:00	6692418	7.986	-54.04	11.65	397.575	533.654	0.258	2.517	11.65	5.556
9/15/2020 5:00	6696018	7.975	-53.394	11.608	397.208	533.733	0.258	2.794	11.608	5.612
9/15/2020 6:00	6699618	8.028	-56.398	11.597	397.278	533.969	0.259	2.43	11.597	5.678
9/15/2020 7:00	6703218	7.94	-51.389	11.564	397.429	534.632	0.259	2.447	11.564	5.468
9/15/2020 8:00	6706818	7.975	-53.372	11.524	396.361	533.746	0.258	2.264	11.524	5.673
9/15/2020 9:00	6710418	7.959	-52.464	11.507	396.742	534.493	0.259	2.212	11.507	5.871
9/15/2020 10:00	6714018	8.007	-55.168	11.526	397.243	534.9	0.259	1.979	11.526	6.514
9/15/2020 11:00	6717618	8.05	-57.671	11.588	399.832	537.536	0.26	2.357	11.588	6.161
9/15/2020 12:00	6721218	8.041	-57.158	11.606	401.671	539.759	0.262	3.648	11.606	6.535
9/15/2020 13:00	6724818	8	-54.798	11.667	403.512	541.377	0.262	4.56	11.667	6.436
9/15/2020 14:00	6728418	8.034	-56.779	11.71	404.618	542.266	0.263	4.223	11.71	6.365
9/15/2020 15:00	6732018	8.053	-57.898	11.91	406.937	542.599	0.263	4.226	11.91	6.843
9/15/2020 16:00	6735618	8.068	-58.782	12.016	410.163	545.421	0.265	4.626	12.016	7.138
9/15/2020 17:00	6739218	8.116	-61.5	12.124	409.447	542.99	0.263	3.576	12.124	7.512
9/15/2020 18:00	6742818	8.077	-59.309	12.139	410.223	543.803	0.264	3.733	12.139	7.344
9/15/2020 19:00	6746419	8.1	-60.632	12.172	409.509	542.405	0.263	3.216	12.172	7.115
9/15/2020 20:00	6750019	8.061	-58.427	12.283	412.391	544.697	0.264	3.016	12.283	7.336
9/15/2020 21:00	6753619	8.066	-58.763	12.671	411.046	537.651	0.261	1.958	12.671	7.019
9/15/2020 22:00	6757219	8.138	-62.869	12.55	412.555	541.269	0.263	3.51	12.55	6.579
9/15/2020 23:00	6760819	8.117	-61.6	12.291	408.896	539.963	0.262	3.011	12.291	6.596
9/16/2020 0:00	6764419	8.061	-58.351	12.034	402.756	535.324	0.259	3.813	12.034	6.225
9/16/2020 1:00	6768019	8.012	-55.513	11.815	403.971	539.954	0.262	3.774	11.815	5.186
9/16/2020 2:00	6771619	8.096	-60.151	11.064	564.116	768.73	0.376	6.406	11.064	6.811
9/16/2020 3:00	6775219	8.168	-64.211	10.754	679.426	933.399	0.46	6	10.754	7.092
9/16/2020 4:00	6778819	8.176	-64.521	10.312	795.037	1105.055	0.548	17.247	10.312	7.089
9/16/2020 5:00	6782419	8.188	-65.06	9.56	872.314	1237.16	0.615	11.348	9.56	7.294
9/16/2020 6:00	6786019	8.192	-65.196	9.317	853.29	1218.185	0.605	8.709	9.317	7.211

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090	Sensor: pH/ORP SN#: 723090	Sensor: Cond SN#: 737314	Sensor: Cond SN#: 737314	Sensor: Cond SN#: 737314	Sensor: Cond SN#: 737314	Sensor: Turb SN#: 730625	Sensor: Internal SN#: 740839	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
		pH (pH)	pH(mV) (mV)	Temperature (C)	Actual Conductivity (μ S/cm)	Specific Conductivity (μ S/cm)	Salinity (PSU)	Turbidity (NTU)	Temperature (C)	
9/16/2020 7:00	6789619	8.207	-65.963	8.869	850.179	1228.748	0.61	9.874	8.869	7.386
9/16/2020 8:00	6793219	8.211	-66.106	8.648	847.945	1233.045	0.611	10.188	8.648	7.388
9/16/2020 9:00	6796819	8.211	-66.099	8.476	845.922	1236.037	0.613	10.334	8.476	7.599
9/16/2020 10:00	6800419	8.232	-67.286	8.415	851.748	1246.664	0.618	8.611	8.415	7.686
9/16/2020 11:00	6804019	8.242	-67.847	8.413	853.509	1249.298	0.619	8.258	8.413	7.894
9/16/2020 12:00	6807619	8.258	-68.724	8.495	858.806	1254.167	0.622	8.512	8.495	7.97
9/16/2020 13:00	6811219	8.277	-69.869	8.746	872.521	1265.35	0.628	9.906	8.746	8.149
9/16/2020 14:00	6814819	8.243	-68.042	9.186	885.565	1268.818	0.631	9.996	9.186	7.837
9/16/2020 15:00	6818419	8.239	-68.042	10.116	920.264	1285.782	0.641	8.775	10.116	8.35
9/16/2020 16:00	6822019	8.257	-69.275	10.867	950.26	1301.626	0.65	9.973	10.867	8.716
9/16/2020 17:00	6825619	8.3	-71.836	11.347	971.954	1314.833	0.658	7.828	11.347	8.939
9/16/2020 18:00	6829219	8.277	-70.61	11.605	981.369	1318.753	0.66	9.086	11.605	8.764
9/16/2020 19:00	6832819	8.295	-71.609	11.696	982.375	1317.038	0.659	8.563	11.696	8.887
9/16/2020 20:00	6836419	8.341	-74.22	11.647	978.222	1313.136	0.657	8.792	11.647	8.392
9/16/2020 21:00	6840019	8.329	-73.55	11.522	975.957	1314.312	0.658	7.455	11.522	8.342
9/16/2020 22:00	6843619	8.332	-73.69	11.423	972.701	1313.251	0.657	8.397	11.423	8.152
9/16/2020 23:00	6847219	8.319	-72.927	11.341	969.469	1311.668	0.656	11.768	11.341	7.718
9/17/2020 0:00	6850819	8.261	-69.563	11.241	965.939	1310.278	0.655	7.868	11.241	7.795
9/17/2020 1:00	6854419	8.29	-71.201	11.121	961.584	1308.435	0.654	584.259	11.121	7.102
9/17/2020 2:00	6858019	8.287	-70.975	10.971	962.37	1314.639	0.657	9.751	10.971	7.315
9/17/2020 3:00	6861619	8.286	-70.925	10.858	959.764	1314.937	0.657	10.582	10.858	7.182
9/17/2020 4:00	6865219	8.286	-70.848	10.693	959.797	1320.7	0.66	9.107	10.693	7.308
9/17/2020 5:00	6868820	8.287	-70.858	10.496	950.254	1314.361	0.656	10.618	10.496	7.146
9/17/2020 6:00	6872420	8.286	-70.775	10.241	945.079	1316.063	0.657	9.305	10.241	6.95
9/17/2020 7:00	6876020	8.279	-70.3	9.977	935.827	1312.399	0.655	10.05	9.977	7.207
9/17/2020 8:00	6879620	8.279	-70.238	9.742	933.068	1316.825	0.657	11.561	9.742	7.395
9/17/2020 9:00	6883220	8.281	-70.305	9.583	932.366	1321.484	0.659	11.196	9.583	7.632
9/17/2020 10:00	6886820	8.282	-70.324	9.398	928.389	1322.504	0.659	14.587	9.398	7.59
9/17/2020 11:00	6890420	8.279	-70.143	9.351	926.824	1321.95	0.659	15.884	9.351	7.651
9/17/2020 12:00	6894020	8.291	-70.853	9.409	929.261	1323.352	0.659	12.535	9.409	7.904
9/17/2020 13:00	6897620	8.222	-66.981	9.604	933.843	1322.855	0.66	11.35	9.604	8.291
9/17/2020 14:00	6901220	8.279	-70.312	10.047	942.026	1318.628	0.658	10.139	10.047	8.575
9/17/2020 15:00	6904820	8.331	-73.454	10.778	959.399	1317.2	0.658	12.439	10.778	9.407
9/17/2020 16:00	6908420	8.348	-74.584	11.447	974.072	1314.298	0.658	11.082	11.447	9.488
9/17/2020 17:00	6912020	8.359	-75.34	11.869	982.294	1311.14	0.657	11.826	11.869	9.751
9/17/2020 18:00	6915620	8.367	-75.834	12.137	986.922	1308.367	0.655	8.283	12.137	9.442
9/17/2020 19:00	6919220	8.373	-76.203	12.072	988.134	1312.143	0.657	8.078	12.072	9.162
9/17/2020 20:00	6922820	8.358	-75.278	11.934	987.246	1315.564	0.659	8.046	11.934	8.831
9/17/2020 21:00	6926420	8.329	-73.586	11.709	981.87	1315.926	0.659	8.419	11.709	8.147
9/17/2020 22:00	6930020	8.298	-71.783	11.71	979.594	1312.84	0.657	9.521	11.71	8.251
9/17/2020 23:00	6933620	8.298	-71.812	11.772	975.015	1304.636	0.653	6.764	11.772	8.277

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090	Sensor: pH/ORP SN#: 723090	Sensor: Cond SN#: 737314	Sensor: Cond SN#: 737314	Actual Conductivity ($\mu\text{S}/\text{cm}$)	Specific Conductivity ($\mu\text{S}/\text{cm}$)	Sensor: Cond SN#: 737314	Sensor: Cond SN#: 737314	Sensor: Turb SN#: 730625	Sensor: Internal SN#: 740839	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
9/18/2020 0:00	6937220	8.33	-73.64	11.646	975.839	1309.976	0.656	7.148	11.646	11.646	7.883	
9/18/2020 1:00	6940820	8.318	-72.896	11.493	975.477	1314.631	0.658	6.577	11.493	11.493	7.482	
9/18/2020 2:00	6944420	8.287	-71.099	11.443	973.123	1313.137	0.657	6.049	11.443	11.443	7.183	
9/18/2020 3:00	6948020	8.287	-71.068	11.168	938.226	1275.097	0.637	10.488	11.168	11.168	7.699	
9/18/2020 4:00	6951620	8.272	-70.202	11.2	940.037	1276.499	0.638	5.791	11.2	11.2	7.331	
9/18/2020 5:00	6955220	8.244	-68.55	11.058	923.474	1258.633	0.628	5.646	11.058	11.058	6.819	
9/18/2020 6:00	6958820	8.201	-66.128	11.058	909.281	1239.287	0.618	5.417	11.058	11.058	6.666	
9/18/2020 7:00	6962420	8.199	-65.925	10.724	890.924	1224.931	0.61	4.44	10.724	10.724	6.879	
9/18/2020 8:00	6966020	8.192	-65.534	10.583	873.368	1205.267	0.6	4.709	10.583	10.583	6.988	
9/18/2020 9:00	6969620	8.264	-69.656	10.717	886.053	1218.443	0.607	4.328	10.717	10.717	6.845	
9/18/2020 10:00	6973220	8.253	-69.034	10.855	904.101	1238.774	0.618	3.954	10.855	10.855	7.069	
9/18/2020 11:00	6976820	8.254	-69.134	10.946	914.969	1250.695	0.624	4.692	10.946	10.946	7.234	
9/18/2020 12:00	6980420	8.214	-66.826	10.753	757.532	1040.73	0.515	3.065	10.753	10.753	8.044	
9/18/2020 13:00	6984020	8.181	-64.979	10.981	874.404	1194.149	0.595	2.771	10.981	10.981	7.11	
9/18/2020 14:00	6987620	8.272	-70.19	11.117	918.878	1250.444	0.624	3.807	11.117	11.117	9.142	
9/18/2020 15:00	6991221	8.299	-71.714	11.168	913.378	1241.314	0.619	4.479	11.168	11.168	9.033	
9/18/2020 16:00	6994821	8.342	-74.193	11.34	925.488	1252.183	0.625	3.875	11.34	11.34	9.381	
9/18/2020 17:00	6998421	8.334	-73.805	11.569	930.344	1251.355	0.625	3.345	11.569	11.569	9.535	
9/18/2020 18:00	7002021	8.367	-75.772	11.739	935.54	1252.861	0.626	2.667	11.739	11.739	9.194	
9/18/2020 19:00	7005621	8.364	-75.636	11.857	939.031	1253.76	0.627	2.048	11.857	11.857	9.263	
9/18/2020 20:00	7009221	8.359	-75.369	11.932	942.245	1255.66	0.628	1.753	11.932	11.932	9.172	
9/18/2020 21:00	7012821	8.354	-75.076	12.022	945.857	1257.581	0.629	2.528	12.022	12.022	8.544	
9/18/2020 22:00	7016421	8.335	-74.034	12.15	934.496	1238.444	0.619	2.317	12.15	12.15	7.885	
9/18/2020 23:00	7020021	8.31	-72.596	12.077	917.381	1218.028	0.608	2.813	12.077	12.077	7.92	
9/19/2020 0:00	7023621	8.251	-69.246	12.087	913.919	1213.121	0.606	2.92	12.087	12.087	7.516	
9/19/2020 1:00	7027221	8.257	-69.587	12.08	888.984	1180.24	0.589	4.229	12.08	12.08	6.647	
9/19/2020 2:00	7030821	8.251	-69.189	11.951	852.522	1135.545	0.565	3.561	11.951	11.951	6.252	
9/19/2020 3:00	7034421	8.244	-68.767	11.893	817.202	1090.11	0.542	41.743	11.893	11.893	5.95	
9/19/2020 4:00	7038021	8.202	-66.385	11.785	808.358	1081.283	0.537	2.348	11.785	11.785	6.221	
9/19/2020 5:00	7041621	8.214	-66.993	11.702	802.62	1075.897	0.534	2.437	11.702	11.702	5.97	
9/19/2020 6:00	7045221	8.206	-66.535	11.563	800.462	1076.835	0.535	2.968	11.563	11.563	5.824	
9/19/2020 7:00	7048821	8.184	-65.253	11.494	794.508	1070.721	0.531	3.215	11.494	11.494	5.635	
9/19/2020 8:00	7052421	8.142	-62.876	11.436	770.076	1039.35	0.515	3.94	11.436	11.436	5.766	
9/19/2020 9:00	7056021	8.126	-61.936	11.388	750.995	1014.855	0.502	2.375	11.388	11.388	5.796	
9/19/2020 10:00	7059621	8.14	-62.706	11.348	680.013	919.88	0.454	1.841	11.348	11.348	6.122	
9/19/2020 11:00	7063221	8.106	-60.787	11.403	457.195	617.58	0.3	2.67	11.403	11.403	6.762	
9/19/2020 12:00	7066821	8.141	-62.79	11.399	589.814	796.808	0.391	2.443	11.399	11.399	7.406	
9/19/2020 13:00	7070421	8.2	-66.164	11.342	783.078	1059.46	0.525	3.31	11.342	11.342	6.59	
9/19/2020 14:00	7074021	8.216	-67.048	11.437	809.52	1092.557	0.542	3.315	11.437	11.437	7.605	
9/19/2020 15:00	7077621	8.246	-68.772	11.466	837.162	1129.019	0.561	3.205	11.466	11.466	7.755	
9/19/2020 16:00	7081221	8.289	-71.251	11.512	871.244	1173.586	0.585	3.036	11.512	11.512	8.688	

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
9/19/2020 17:00	7084821	8.297	-71.738	11.676	898.983	1205.86	0.601	3.082	11.676	8.774
9/19/2020 18:00	7088421	8.308	-72.503	12.24	847.41	1120.492	0.558	3.318	12.24	9.84
9/19/2020 19:00	7092021	8.306	-72.439	12.355	847.921	1117.919	0.557	2.747	12.355	8.651
9/19/2020 20:00	7095621	8.336	-74.008	11.896	930.588	1241.246	0.62	2.566	11.896	9.028
9/19/2020 21:00	7099221	8.27	-70.362	12.285	833.246	1100.515	0.547	4.965	12.285	7.927
9/19/2020 22:00	7102821	8.21	-66.941	12.443	713.581	938.723	0.464	2.627	12.443	7.559
9/19/2020 23:00	7106421	8.237	-68.479	12.356	759.237	1000.97	0.496	2.795	12.356	7.529
9/20/2020 0:00	7110021	8.242	-68.717	12.102	887.604	1177.75	0.587	3.684	12.102	7.384
9/20/2020 1:00	7113621	8.2	-66.352	12.201	736.144	974.318	0.482	3.75	12.201	7.325
9/20/2020 2:00	7117221	8.171	-64.654	12.076	601.346	798.438	0.392	2.427	12.076	6.848
9/20/2020 3:00	7120821	8.138	-62.716	11.84	542.196	724.242	0.354	2.691	11.84	6.56
9/20/2020 4:00	7124421	8.104	-60.737	11.682	464.899	623.497	0.303	1.85	11.682	6.048
9/20/2020 5:00	7128021	8.136	-62.54	11.587	554.906	746.021	0.365	4.712	11.587	5.96
9/20/2020 6:00	7131621	8.127	-62.063	11.775	752.937	1007.401	0.499	2.806	11.775	6.196
9/20/2020 7:00	7135222	8.107	-60.899	11.651	702.483	942.89	0.466	3.183	11.651	5.818
9/20/2020 8:00	7138822	8.117	-61.407	11.254	504.322	683.872	0.334	2.45	11.254	6.21
9/20/2020 9:00	7142422	8.077	-59.094	11.034	421.824	575.275	0.279	2.047	11.034	6.225
9/20/2020 10:00	7146022	8.148	-63.083	10.972	571.624	780.846	0.382	2.737	10.972	6.45
9/20/2020 11:00	7149622	8.14	-62.687	11.065	703.074	958.062	0.473	2.877	11.065	6.476
9/20/2020 12:00	7153222	8.184	-65.229	11.375	833.297	1126.443	0.56	3.048	11.375	7.023
9/20/2020 13:00	7156822	8.24	-68.483	11.586	893.667	1201.514	0.599	2.656	11.586	7.884
9/20/2020 14:00	7160422	8.249	-69.005	11.665	912.065	1223.758	0.611	3.172	11.665	8.266
9/20/2020 15:00	7164022	8.219	-67.418	12.232	842.058	1113.632	0.554	5.761	12.232	8.338
9/20/2020 16:00	7167622	8.227	-67.918	12.288	889.212	1174.343	0.586	5.027	12.288	9.188
9/20/2020 17:00	7171222	8.234	-68.371	12.685	824.412	1077.974	0.536	4.77	12.685	9.342
9/20/2020 18:00	7174822	8.21	-67.081	12.886	698.525	908.793	0.449	4.216	12.886	8.576
9/20/2020 19:00	7178422	8.219	-67.589	12.959	688.208	893.756	0.441	2.953	12.959	8.512
9/20/2020 20:00	7182022	8.192	-66.063	12.868	684.175	890.528	0.44	1.891	12.868	6.792
9/20/2020 21:00	7185622	8.153	-63.789	12.804	683.079	890.522	0.44	3.756	12.804	6.959
9/20/2020 22:00	7189222	8.088	-60.039	12.739	661.54	863.844	0.426	3.517	12.739	6.696
9/20/2020 23:00	7192822	8.122	-61.979	12.607	635.141	832.103	0.41	3.456	12.607	5.982
9/21/2020 0:00	7196422	8.186	-65.598	12.476	636.273	836.321	0.412	4.534	12.476	6.817
9/21/2020 1:00	7200022	8.142	-63.057	12.409	657.476	865.666	0.427	8.169	12.409	6.88
9/21/2020 2:00	7203622	8.143	-63.124	12.343	632.038	833.548	0.41	3.446	12.343	6.326
9/21/2020 3:00	7207222	8.109	-61.138	12.163	571.999	757.81	0.372	3.18	12.163	6.296
9/21/2020 4:00	7210822	8.135	-62.566	11.967	518.12	689.835	0.337	2.836	11.967	6.292
9/21/2020 5:00	7214422	8.122	-61.808	11.873	485.967	648.582	0.316	3.06	11.873	5.128
9/21/2020 6:00	7218022	8.102	-60.616	11.721	448.449	600.842	0.292	2.827	11.721	5.903
9/21/2020 7:00	7221622	8.061	-58.262	11.591	435.308	585.184	0.284	2.211	11.591	5.876
9/21/2020 8:00	7225222	8.07	-58.732	11.412	427.645	577.53	0.28	2.568	11.412	6.324
9/21/2020 9:00	7228822	8.093	-60.036	11.28	426.443	577.877	0.28	2.679	11.28	6.481

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (μ S/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
9/21/2020 10:00	7232422	8.164	-64.087	11.262	563.572	764.053	0.374	3.855	11.262	6.653
9/21/2020 11:00	7236022	8.155	-63.67	11.691	670.194	898.617	0.443	5.809	11.691	7.002
9/21/2020 12:00	7239622	8.151	-63.46	11.8	719.337	961.825	0.475	5.566	11.8	7.093
9/21/2020 13:00	7243222	8.126	-62.003	11.814	755.007	1009.173	0.5	7.544	11.814	7.005
9/21/2020 14:00	7246822	8.131	-62.363	11.918	694.822	926.272	0.457	5.922	11.918	8.315
9/21/2020 15:00	7250422	8.183	-65.343	12.171	596.784	790.484	0.388	8.103	12.171	8.201
9/21/2020 16:00	7254022	8.175	-64.957	12.287	613.95	810.84	0.399	7.685	12.287	8.184
9/21/2020 17:00	7257622	8.22	-67.451	12.134	580.742	769.956	0.378	8.649	12.134	8.36
9/21/2020 18:00	7261222	8.239	-68.548	12.208	581.717	769.802	0.378	7.901	12.208	8.638
9/21/2020 19:00	7264822	8.245	-69.017	12.736	594.419	776.257	0.381	5.501	12.736	8.928
9/21/2020 20:00	7268422	8.211	-67.136	12.873	548.541	713.902	0.35	8.476	12.873	7.4
9/21/2020 21:00	7272022	8.168	-64.673	12.92	508.959	661.619	0.323	2.375	12.92	7.074
9/21/2020 22:00	7275622	8.147	-63.412	12.656	469.234	614.002	0.299	1.685	12.656	6.852
9/21/2020 23:00	7279223	8.202	-66.457	12.31	447.237	590.32	0.287	3.647	12.31	7.105
9/22/2020 0:00	7282823	8.135	-62.594	12.035	439.424	584.056	0.284	3.237	12.035	7.085
9/22/2020 1:00	7286423	8.183	-65.258	11.758	426.123	570.388	0.277	3.287	11.758	6.419
9/22/2020 2:00	7290023	8.175	-64.735	11.532	409.401	551.185	0.267	2.61	11.532	6.916
9/22/2020 3:00	7293623	8.202	-66.257	11.331	419.115	567.204	0.275	2.852	11.331	6.95
9/22/2020 4:00	7297223	8.186	-65.272	11.139	418.657	569.409	0.276	3.142	11.139	6.839
9/22/2020 5:00	7300823	8.185	-65.191	10.977	415.16	567.038	0.275	2.695	10.977	6.713
9/22/2020 6:00	7304423	8.192	-65.567	10.805	413.926	567.894	0.275	2.331	10.805	6.976
9/22/2020 7:00	7308023	8.068	-58.482	10.683	413.82	569.573	0.276	3.498	10.683	6.841
9/22/2020 8:00	7311623	8.133	-62.172	10.538	410.662	567.385	0.275	3.396	10.538	6.504
9/22/2020 9:00	7315223	8.066	-58.305	10.455	408.357	565.447	0.274	2.836	10.455	6.566
9/22/2020 10:00	7318823	8.077	-58.937	10.45	407.501	564.33	0.273	2.647	10.45	6.492
9/22/2020 11:00	7322423	8.048	-57.323	10.476	407.899	564.487	0.273	2.698	10.476	6.759
9/22/2020 12:00	7326023	8.071	-58.625	10.616	409.028	563.975	0.273	2.588	10.616	6.986
9/22/2020 13:00	7329623	8.128	-61.951	10.901	411.844	563.629	0.273	2.286	10.901	8.14
9/22/2020 14:00	7333223	8.143	-62.869	11.107	431.701	587.635	0.285	2.592	11.107	7.592
9/22/2020 15:00	7336823	8.163	-64.063	11.574	427.353	574.736	0.279	1.899	11.574	7.81
9/22/2020 16:00	7340423	8.207	-66.581	11.604	445.946	599.283	0.291	2.106	11.604	8.503
9/22/2020 17:00	7344023	8.211	-66.96	12.25	435.521	575.729	0.28	2.089	12.25	9.851
9/22/2020 18:00	7347623	8.215	-67.158	11.977	455.391	606.172	0.295	7.616	11.977	8.568
9/22/2020 19:00	7351223	8.207	-66.707	12.165	457.879	606.588	0.295	2.201	12.165	7.822
9/22/2020 20:00	7354823	8.207	-66.75	12.359	459.618	605.908	0.295	2.476	12.359	7.023
9/22/2020 21:00	7358423	8.189	-65.732	12.214	482.021	637.773	0.311	2.778	12.214	7.448
9/22/2020 22:00	7362023	8.168	-64.452	11.992	478.123	636.18	0.31	2.796	11.992	6.757
9/22/2020 23:00	7365623	8.128	-62.177	11.902	469.578	626.246	0.305	2.117	11.902	6.176
9/23/2020 0:00	7369223	8.118	-61.541	11.652	457.5	614.042	0.299	3.319	11.652	6.012
9/23/2020 1:00	7372823	8.123	-61.791	11.46	443.389	598.052	0.291	2.498	11.46	6.639
9/23/2020 2:00	7376423	8.072	-58.813	11.251	433.616	588.044	0.285	2.356	11.251	6.806

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
9/23/2020 3:00	7380023	8.127	-61.929	11.055	428.736	584.385	0.284	2.628	11.055	5.64
9/23/2020 4:00	7383623	8.102	-60.487	10.91	423.663	579.659	0.281	3.956	10.91	6.365
9/23/2020 5:00	7387223	8.118	-61.357	10.756	421.38	578.871	0.281	4.247	10.756	6.505
9/23/2020 6:00	7390823	8.067	-58.413	10.631	416.841	574.519	0.278	6.393	10.631	6.532
9/23/2020 7:00	7394423	8.122	-61.495	10.5	414.338	573.044	0.278	3.397	10.5	6.229
9/23/2020 8:00	7398023	8.079	-59.073	10.417	412.804	572.178	0.277	2.705	10.417	6.612
9/23/2020 9:00	7401623	8.066	-58.308	10.373	410.576	569.745	0.276	3.096	10.373	6.066
9/23/2020 10:00	7405223	8.08	-59.128	10.42	409.615	567.714	0.275	2.625	10.42	6.912
9/23/2020 11:00	7408823	8.095	-59.981	10.531	411.172	568.201	0.275	2	10.531	6.516
9/23/2020 12:00	7412423	8.125	-61.727	10.662	416.436	573.495	0.278	2.21	10.662	7.19
9/23/2020 13:00	7416024	8.167	-64.132	10.791	429.303	589.215	0.286	2.963	10.791	7.381
9/23/2020 14:00	7419624	8.154	-63.441	10.913	438.465	599.869	0.291	3.085	10.913	8.368
9/23/2020 15:00	7423224	8.197	-65.913	11.148	436.951	594.139	0.288	2.759	11.148	7.949
9/23/2020 16:00	7426824	8.208	-66.578	11.265	478.949	649.283	0.316	2.392	11.265	8.333
9/23/2020 17:00	7430424	8.218	-67.17	11.317	490.51	664.05	0.324	2.819	11.317	9.148
9/23/2020 18:00	7434024	8.219	-67.32	11.646	482.431	647.62	0.316	2.498	11.646	8.948
9/23/2020 19:00	7437624	8.232	-68.116	11.966	473.47	630.402	0.307	2.175	11.966	8.165
9/23/2020 20:00	7441224	8.219	-67.365	11.849	477.584	637.789	0.311	3.591	11.849	7.71
9/23/2020 21:00	7444824	8.2	-66.264	11.916	493.392	657.777	0.321	3.255	11.916	6.979
9/23/2020 22:00	7448424	8.163	-64.151	11.902	505.451	674.081	0.329	2.808	11.902	6.987
9/23/2020 23:00	7452024	8.134	-62.501	11.961	484.914	645.722	0.315	2.281	11.961	6.471
9/24/2020 0:00	7455624	8.148	-63.276	11.819	467.986	625.447	0.305	2.29	11.819	5.655
9/24/2020 1:00	7459224	8.16	-63.934	11.716	459.185	615.295	0.299	2.363	11.716	6.013
9/24/2020 2:00	7462824	8.14	-62.766	11.552	453.115	609.723	0.296	2.844	11.552	6.609
9/24/2020 3:00	7466424	8.122	-61.724	11.335	441.899	597.972	0.29	37.102	11.335	6.093
9/24/2020 4:00	7470024	8.106	-60.778	11.152	434.545	590.808	0.287	2.933	11.152	6.83
9/24/2020 5:00	7473624	8.103	-60.544	11.057	428.62	584.192	0.283	2.921	11.057	6.632
9/24/2020 6:00	7477224	8.116	-61.309	10.995	423.392	578.012	0.28	3.241	10.995	6.799
9/24/2020 7:00	7480824	8.131	-62.11	10.944	421.288	575.9	0.279	2.952	10.944	6.699
9/24/2020 8:00	7484424	8.101	-60.399	10.863	420.944	576.647	0.28	2.946	10.863	6.634
9/24/2020 9:00	7488024	8.147	-63.014	10.753	459.124	630.764	0.307	3.357	10.753	6.596
9/24/2020 10:00	7491624	8.098	-60.201	10.821	482.044	661.072	0.322	3.735	10.821	7.024
9/24/2020 11:00	7495224	8.092	-59.905	10.854	464.977	637.115	0.31	4.282	10.854	7.291
9/24/2020 12:00	7498824	8.157	-63.593	10.953	444.453	607.426	0.295	3.03	10.953	7.558
9/24/2020 13:00	7502424	8.13	-62.129	11.101	543.912	740.489	0.362	4.956	11.101	7.222
9/24/2020 14:00	7506024	8.111	-61.078	11.354	525.97	711.391	0.348	3.809	11.354	7.383
9/24/2020 15:00	7509624	8.108	-60.968	11.56	508.613	684.262	0.334	3.954	11.56	7.5
9/24/2020 16:00	7513224	8.143	-62.966	11.781	489.115	654.323	0.319	4.099	11.781	7.803
9/24/2020 17:00	7516824	8.164	-64.242	11.956	493.361	657.056	0.32	3.752	11.956	7.865
9/24/2020 18:00	7520424	8.153	-63.591	11.904	483.887	645.296	0.315	4.272	11.904	7.81
9/24/2020 19:00	7524024	8.154	-63.608	11.744	463.869	621.129	0.302	3.985	11.744	7.622

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
9/24/2020 20:00	7527624	8.194	-65.82	11.468	447.125	602.972	0.293	4.84	11.468	7.524
9/24/2020 21:00	7531224	8.192	-65.67	11.225	439.063	595.831	0.289	4.038	11.225	7.405
9/24/2020 22:00	7534824	8.18	-64.943	11.013	431.07	588.208	0.285	5.266	11.013	6.908
9/24/2020 23:00	7538424	8.164	-63.972	10.937	428.821	586.302	0.284	4.027	10.937	6.99
9/25/2020 0:00	7542024	8.151	-63.255	10.814	411.749	564.778	0.274	126.984	10.814	7.004
9/25/2020 1:00	7545625	8.103	-60.477	10.719	424.326	583.485	0.283	2.978	10.719	6.736
9/25/2020 2:00	7549225	8.166	-64.015	10.612	430.972	594.29	0.288	4.631	10.612	6.675
9/25/2020 3:00	7552825	8.173	-64.442	10.58	430.729	594.458	0.288	14.901	10.58	6.75
9/25/2020 4:00	7556425	8.127	-61.779	10.441	425.823	589.849	0.286	5.22	10.441	6.006
9/25/2020 5:00	7560025	8.153	-63.262	10.304	423.547	588.826	0.285	5.089	10.304	6.474
9/25/2020 6:00	7563625	8.146	-62.814	10.158	421.421	588.143	0.285	5.119	10.158	6.59
9/25/2020 7:00	7567225	8.176	-64.502	10.046	419.294	586.941	0.284	3.951	10.046	6.637
9/25/2020 8:00	7570825	8.189	-65.21	9.936	417.998	586.842	0.284	3.71	9.936	6.578
9/25/2020 9:00	7574425	8.147	-62.804	9.88	417.242	586.66	0.284	3.895	9.88	6.933
9/25/2020 10:00	7578025	8.155	-63.252	9.953	418.072	586.681	0.284	3.35	9.953	7.207
9/25/2020 11:00	7581625	8.133	-62.068	10.037	419.009	586.674	0.284	3.123	10.037	7.371
9/25/2020 12:00	7585225	8.136	-62.232	10.189	420.627	586.564	0.284	2.861	10.189	7.978
9/25/2020 13:00	7588825	8.145	-62.807	10.411	423.432	586.996	0.284	3.383	10.411	8.127
9/25/2020 14:00	7592425	8.158	-63.555	10.551	427.184	590.009	0.286	3.454	10.551	7.414
9/25/2020 15:00	7596025	8.185	-65.136	10.619	428.995	591.45	0.287	2.744	10.619	7.393
9/25/2020 16:00	7599625	8.159	-63.651	10.715	429.731	590.982	0.287	2.234	10.715	7.386
9/25/2020 17:00	7603225	8.194	-65.687	10.74	429.639	590.459	0.286	3.935	10.74	7.694
9/25/2020 18:00	7606825	8.213	-66.752	10.769	431.827	593.013	0.288	2.834	10.769	7.472
9/25/2020 19:00	7610425	8.207	-66.428	10.785	431.651	592.527	0.287	12.044	10.785	7.491
9/25/2020 20:00	7614025	8.193	-65.577	10.689	430.448	592.357	0.287	4.619	10.689	7.398
9/25/2020 21:00	7617625	8.207	-66.35	10.517	432.12	597.375	0.29	4.069	10.517	7.15
9/25/2020 22:00	7621225	8.204	-66.133	10.352	426.787	592.569	0.287	4.184	10.352	7.011
9/25/2020 23:00	7624825	8.219	-66.938	10.256	426.009	593.011	0.287	4.836	10.256	6.505
9/26/2020 0:00	7628425	8.193	-65.451	10.157	424.815	592.911	0.287	4.722	10.157	6.758
9/26/2020 1:00	7632025	8.204	-66.068	10.005	423.577	593.584	0.288	4.133	10.005	6.68
9/26/2020 2:00	7635625	8.169	-64.056	9.917	423.119	594.345	0.288	4.021	9.917	6.621
9/26/2020 3:00	7639225	8.156	-63.288	9.843	423.396	595.914	0.289	4.26	9.843	6.927
9/26/2020 4:00	7642825	8.188	-65.112	9.782	424.636	598.636	0.29	6.433	9.782	6.546
9/26/2020 5:00	7646425	8.2	-65.742	9.678	423.624	598.887	0.29	4.444	9.678	6.697
9/26/2020 6:00	7650025	8.152	-62.993	9.603	422.319	598.262	0.29	5.798	9.603	6.768
9/26/2020 7:00	7653625	8.203	-65.877	9.534	423.343	600.823	0.291	5.511	9.534	6.823
9/26/2020 8:00	7657225	8.187	-64.988	9.473	422.8	601.056	0.291	5.544	9.473	6.844
9/26/2020 9:00	7660826	8.118	-61.059	9.417	422.118	600.995	0.291	4.931	9.417	6.819
9/26/2020 10:00	7664426	8.149	-62.799	9.386	422.697	602.332	0.291	5.415	9.386	6.999
9/26/2020 11:00	7668026	8.192	-65.217	9.425	426.586	607.231	0.294	5.499	9.425	7.241
9/26/2020 12:00	7671626	8.211	-66.376	9.591	428.591	607.345	0.294	5.595	9.591	7.464

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
9/26/2020 13:00	7675226	8.212	-66.419	9.731	430.538	607.795	0.294	5.758	9.731	7.612
9/26/2020 14:00	7678826	8.227	-67.329	9.998	438.372	614.423	0.298	6.218	9.998	7.777
9/26/2020 15:00	7682426	8.233	-67.768	10.283	445.708	619.988	0.301	6.082	10.283	7.849
9/26/2020 16:00	7686026	8.239	-68.169	10.498	449.017	621.03	0.302	5.486	10.498	7.969
9/26/2020 17:00	7689626	8.25	-68.805	10.587	447.644	617.692	0.3	5.493	10.587	8.012
9/26/2020 18:00	7693226	8.26	-69.389	10.611	446.757	616.078	0.299	5.18	10.611	7.977
9/26/2020 19:00	7696826	8.267	-69.752	10.546	446.569	616.867	0.299	5.686	10.546	7.822
9/26/2020 20:00	7700426	8.266	-69.635	10.332	444.119	616.962	0.299	5.811	10.332	7.612
9/26/2020 21:00	7704026	8.253	-68.893	10.23	443.601	617.929	0.3	5.594	10.23	7.409
9/26/2020 22:00	7707626	8.249	-68.624	10.124	435.609	608.501	0.295	5.069	10.124	7.272
9/26/2020 23:00	7711226	8.214	-66.648	10.035	428.745	600.347	0.291	4.885	10.035	7.256
9/27/2020 0:00	7714826	8.216	-66.724	9.969	439.844	616.965	0.299	4.791	9.969	6.665
9/27/2020 1:00	7718426	8.221	-66.957	9.851	438.41	616.911	0.299	6.236	9.851	6.95
9/27/2020 2:00	7722026	8.219	-66.829	9.784	434.982	613.188	0.297	5.814	9.784	6.682
9/27/2020 3:00	7725626	8.21	-66.319	9.721	438.218	618.803	0.3	4.724	9.721	6.718
9/27/2020 4:00	7729226	8.215	-66.6	9.65	436.129	617.035	0.299	5.881	9.65	6.998
9/27/2020 5:00	7732826	8.224	-67.077	9.53	434.41	616.595	0.299	5.378	9.53	7.099
9/27/2020 6:00	7736426	8.221	-66.867	9.412	432.441	615.785	0.298	5.722	9.412	7.003
9/27/2020 7:00	7740026	8.218	-66.688	9.332	432.22	616.805	0.299	6.805	9.332	7.059
9/27/2020 8:00	7743626	8.198	-65.56	9.232	430.586	616.158	0.298	4.74	9.232	7.042
9/27/2020 9:00	7747226	8.224	-66.969	9.174	429.453	615.502	0.298	5.232	9.174	6.963
9/27/2020 10:00	7750826	8.212	-66.307	9.16	428.953	615.027	0.298	5.308	9.16	7.271
9/27/2020 11:00	7754426	8.205	-65.889	9.163	428.932	614.952	0.298	5.175	9.163	7.405
9/27/2020 12:00	7758026	8.221	-66.867	9.348	430.692	614.353	0.297	4.449	9.348	7.606
9/27/2020 13:00	7761626	8.219	-66.798	9.549	433.219	614.59	0.298	2.879	9.549	7.885
9/27/2020 14:00	7765226	8.221	-66.922	9.515	434.844	617.468	0.299	6.529	9.515	7.691
9/27/2020 15:00	7768827	8.222	-66.981	9.55	434.854	616.901	0.299	4.823	9.55	8.022
9/27/2020 16:00	7772427	8.223	-67.019	9.556	435.469	617.663	0.299	5.363	9.556	7.912
9/27/2020 17:00	7776027	8.234	-67.701	9.703	439.218	620.514	0.301	5.381	9.703	7.71
9/27/2020 18:00	7779627	8.225	-67.26	9.998	441.93	619.423	0.3	4.051	9.998	7.467
9/27/2020 19:00	7783227	8.22	-67.008	10.214	444.363	619.25	0.3	3.193	10.214	7.486
9/27/2020 20:00	7786827	8.232	-67.646	10.075	432.11	604.406	0.293	5.061	10.075	7.493
9/27/2020 21:00	7790427	8.223	-67.105	9.976	444.994	624.077	0.303	5.095	9.976	7.019
9/27/2020 22:00	7794027	8.213	-66.547	9.962	446.615	626.594	0.304	4.113	9.962	7.018
9/27/2020 23:00	7797627	8.21	-66.402	9.923	446.337	626.854	0.304	4.059	9.923	6.857
9/28/2020 0:00	7801227	8.21	-66.371	9.897	447.92	629.514	0.305	4.157	9.897	7.032
9/28/2020 1:00	7804827	8.212	-66.452	9.84	446.737	628.812	0.305	4.223	9.84	6.982
9/28/2020 2:00	7808427	8.206	-66.118	9.78	445.389	627.933	0.305	4.318	9.78	6.753
9/28/2020 3:00	7812027	8.216	-66.664	9.69	444.002	627.49	0.304	4.139	9.69	6.956
9/28/2020 4:00	7815627	8.209	-66.261	9.591	442.627	627.222	0.304	4.679	9.591	6.923
9/28/2020 5:00	7819227	8.2	-65.703	9.552	441.748	626.646	0.304	6.323	9.552	6.874

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
9/28/2020 6:00	7822827	8.202	-65.839	9.511	460.327	653.731	0.317	6.065	9.511	6.913
9/28/2020 7:00	7826427	8.259	-68.922	9.042	702.894	1011.062	0.498	6.605	9.042	7.358
9/28/2020 8:00	7830027	8.286	-70.465	9.06	795.683	1143.964	0.566	18.994	9.06	7.499
9/28/2020 9:00	7833627	8.301	-71.299	9.033	872.158	1254.862	0.623	24.32	9.033	7.623
9/28/2020 10:00	7837227	8.288	-70.581	9.015	912.61	1313.694	0.654	18.017	9.015	7.725
9/28/2020 11:00	7840827	8.283	-70.302	9.05	936.481	1346.777	0.671	14.274	9.05	7.793
9/28/2020 12:00	7844427	8.284	-70.386	9.149	939.421	1347.349	0.671	12.296	9.149	7.96
9/28/2020 13:00	7848027	8.299	-71.275	9.315	929.876	1327.604	0.662	11.334	9.315	8.288
9/28/2020 14:00	7851627	8.32	-72.539	9.558	918.855	1303.24	0.649	9.337	9.558	8.527
9/28/2020 15:00	7855227	8.34	-73.714	9.829	912.943	1285.41	0.64	10.338	9.829	8.591
9/28/2020 16:00	7858827	8.357	-74.759	10.055	909.322	1272.582	0.634	8.411	10.055	8.703
9/28/2020 17:00	7862427	8.37	-75.524	10.211	905.146	1261.471	0.629	7.057	10.211	8.743
9/28/2020 18:00	7866027	8.387	-76.532	10.325	907.226	1260.539	0.628	8.089	10.325	8.695
9/28/2020 19:00	7869628	8.392	-76.816	10.358	905.89	1257.589	0.627	8.634	10.358	8.559
9/28/2020 20:00	7873228	8.395	-76.985	10.337	906.676	1259.367	0.628	7.276	10.337	8.416
9/28/2020 21:00	7876828	8.397	-77.055	10.224	901.885	1256.479	0.626	6.988	10.224	7.928
9/28/2020 22:00	7880428	8.396	-76.983	10.132	901.855	1259.549	0.627	6.477	10.132	8.176
9/28/2020 23:00	7884028	8.394	-76.83	10.037	906.956	1269.895	0.633	5.988	10.037	8.042
9/29/2020 0:00	7887628	8.366	-75.247	9.954	911.39	1278.914	0.637	6.143	9.954	7.984
9/29/2020 1:00	7891228	8.366	-75.185	9.906	918.34	1290.355	0.643	7.282	9.906	7.8
9/29/2020 2:00	7894828	8.365	-75.142	9.844	913.588	1285.813	0.641	8.375	9.844	7.605
9/29/2020 3:00	7898428	8.327	-72.992	9.801	931.872	1313.06	0.655	21.265	9.801	7.53
9/29/2020 4:00	7902028	8.312	-72.086	9.738	935.55	1320.462	0.658	10.34	9.738	7.514
9/29/2020 5:00	7905628	8.328	-73.023	9.675	937.565	1325.585	0.661	13.753	9.675	7.22
9/29/2020 6:00	7909228	8.296	-71.142	9.612	935.149	1324.401	0.66	12.918	9.612	7.278
9/29/2020 7:00	7912828	8.327	-72.916	9.537	937.468	1330.404	0.663	10.639	9.537	7.321
9/29/2020 8:00	7916428	8.323	-72.637	9.462	936.992	1332.424	0.664	11.713	9.462	7.266
9/29/2020 9:00	7920028	8.328	-72.927	9.374	939.366	1338.99	0.668	13.114	9.374	7.57
9/29/2020 10:00	7923628	8.317	-72.272	9.321	940.698	1342.849	0.669	11.596	9.321	7.712
9/29/2020 11:00	7927228	8.321	-72.522	9.341	943.102	1345.522	0.671	10.638	9.341	7.696
9/29/2020 12:00	7930828	8.333	-73.206	9.383	951.991	1356.662	0.677	12.305	9.383	7.746
9/29/2020 13:00	7934428	8.31	-71.948	9.493	957.078	1359.847	0.679	10.333	9.493	8.055
9/29/2020 14:00	7938028	8.308	-71.867	9.763	965.875	1362.351	0.68	8.849	9.763	7.87
9/29/2020 15:00	7941628	8.343	-73.974	10.263	983.724	1369.079	0.685	7.548	10.263	9.177
9/29/2020 16:00	7945228	8.355	-74.78	10.699	997.018	1371.702	0.687	7.202	10.699	9.086
9/29/2020 17:00	7948828	8.363	-75.29	10.93	1004.622	1373.823	0.688	7.959	10.93	8.958
9/29/2020 18:00	7952428	8.407	-77.784	10.929	1005.123	1374.524	0.688	6.249	10.929	9.043
9/29/2020 19:00	7956028	8.418	-78.416	10.817	1003.645	1376.542	0.689	7.609	10.817	8.657
9/29/2020 20:00	7959628	8.416	-78.266	10.648	1000.03	1377.679	0.69	7.394	10.648	8.224
9/29/2020 21:00	7963228	8.414	-78.058	10.438	997.616	1381.981	0.692	10.597	10.438	8.058
9/29/2020 22:00	7966828	8.398	-77.114	10.237	989.693	1378.359	0.689	7.549	10.237	8.164

TABLE E2

Downstream Water Quality Sonde Data

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090 pH (pH)	Sensor: pH/ORP SN#: 723090 pH(mV) (mV)	Sensor: Cond SN#: 737314 Temperature (C)	Sensor: Cond SN#: 737314 Actual Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Specific Conductivity (µS/cm)	Sensor: Cond SN#: 737314 Salinity (PSU)	Sensor: Turb SN#: 730625 Turbidity (NTU)	Sensor: Internal SN#: 740839 Temperature (C)	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
9/29/2020 23:00	7970428	8.404	-77.364	9.985	980.722	1375.085	0.687	9.212	9.985	7.949
9/30/2020 0:00	7974028	8.4	-77.083	9.688	968.039	1368.166	0.683	7.871	9.688	8.096
9/30/2020 1:00	7977629	8.391	-76.532	9.526	966.717	1372.301	0.685	6.361	9.526	7.55
9/30/2020 2:00	7981229	8.394	-76.611	9.303	953.557	1361.858	0.679	7.494	9.303	7.857
9/30/2020 3:00	7984829	8.373	-75.417	9.201	936.276	1340.918	0.668	7.024	9.201	7.822
9/30/2020 4:00	7988429	8.377	-75.591	9.051	947.48	1362.533	0.679	7.716	9.051	7.764
9/30/2020 5:00	7992029	8.357	-74.413	8.925	941.904	1359.22	0.677	6.551	8.925	7.537
9/30/2020 6:00	7995629	8.312	-71.843	8.722	923.405	1340.044	0.667	5.971	8.722	7.405
9/30/2020 7:00	7999229	8.339	-73.318	8.593	911.718	1327.838	0.66	6	8.593	7.342
9/30/2020 8:00	8002829	8.337	-73.135	8.214	881.598	1297.631	0.644	7.551	8.214	8.007
9/30/2020 9:00	8006429	8.367	-74.763	8.13	876.016	1292.467	0.641	8.083	8.13	8.091
9/30/2020 10:00	8010029	8.366	-74.766	8.271	883.762	1298.747	0.645	8.292	8.271	8.025
9/30/2020 11:00	8013629	8.369	-74.94	8.346	887.944	1302.135	0.647	8.732	8.346	8.046
9/30/2020 12:00	8017229	8.374	-75.262	8.33	891.232	1307.56	0.649	8.393	8.33	8.118
9/30/2020 13:00	8020829	8.349	-73.881	8.423	805.562	1178.784	0.583	7.243	8.423	8.113
9/30/2020 14:00	8024429	8.271	-69.673	9.277	496.174	709.14	0.345	4.895	9.277	7.762
9/30/2020 15:00	8028029	8.259	-69.067	9.684	500.084	706.863	0.344	4.645	9.684	7.954
9/30/2020 16:00	8031629	8.259	-69.199	10.032	509.071	712.872	0.347	4.604	10.032	8.037
9/30/2020 17:00	8035229	8.261	-69.339	10.132	509.544	711.624	0.347	4.107	10.132	8.171
9/30/2020 18:00	8038829	8.333	-73.309	9.883	661.764	930.4	0.458	5.851	9.883	8.623
9/30/2020 19:00	8042429	8.394	-76.687	9.611	764.941	1083.376	0.536	6.268	9.611	8.981
9/30/2020 20:00	8046029	8.428	-78.599	9.503	858.867	1219.982	0.606	7.75	9.503	8.985
9/30/2020 21:00	8049629	8.404	-77.198	9.374	876.653	1249.61	0.621	8.692	9.374	8.711
9/30/2020 22:00	8053229	8.398	-76.766	9.056	861.931	1239.342	0.615	7.523	9.056	7.852
9/30/2020 23:00	8056829	8.38	-75.734	9.011	871.429	1254.574	0.623	7.048	9.011	8.305
10/1/2020 0:00	8060429	8.374	-75.44	9.058	875.74	1259.126	0.626	14.59	9.058	8.078
10/1/2020 1:00	8064029	8.36	-74.646	9.129	876.812	1258.215	0.625	6.415	9.129	7.772
10/1/2020 2:00	8067629	8.333	-73.164	9.244	872.566	1248.199	0.62	5.404	9.244	7.952
10/1/2020 3:00	8071229	8.334	-73.223	9.294	854.177	1220.24	0.606	6.671	9.294	7.65
10/1/2020 4:00	8074829	8.333	-73.171	9.245	845.698	1209.719	0.6	5.971	9.245	7.582
10/1/2020 5:00	8078429	8.318	-72.317	9.193	834.805	1195.863	0.593	5.824	9.193	7.104
10/1/2020 6:00	8082030	8.305	-71.552	9.152	822.915	1180.146	0.585	5.165	9.152	6.623
10/1/2020 7:00	8085630	8.303	-71.421	9.112	822.05	1180.186	0.585	4.081	9.112	6.08
10/1/2020 8:00	8089230	8.304	-71.468	9.04	817.351	1175.769	0.582	4.991	9.04	6.549
10/1/2020 9:00	8092830	8.278	-69.988	9.014	812.956	1170.27	0.58	5.47	9.014	6.759
10/1/2020 10:00	8096430	8.293	-70.829	9.013	760.194	1094.343	0.54	4.63	9.013	7.12
10/1/2020 11:00	8100030	8.319	-72.293	8.854	876.377	1267.165	0.629	6.37	8.854	7.535
10/1/2020 12:00	8103630	8.331	-72.966	8.805	892.011	1291.512	0.642	6.02	8.805	7.851
10/1/2020 13:00	8107230	8.309	-71.774	9.006	856.243	1232.864	0.612	6.694	9.006	7.946
10/1/2020 14:00	8110830	8.318	-72.346	9.308	793.757	1133.478	0.561	7.892	9.308	8.275
10/1/2020 15:00	8114430	8.331	-73.099	9.424	807.153	1148.984	0.569	7.042	9.424	8.352

TABLE E2**Downstream Water Quality Sonde Data**

Mighty Peace Watershed Alliance

Beaverlodge River

Date and Time	Elapsed Time Seconds	Sensor: pH/ORP SN#: 723090	Sensor: pH/ORP SN#: 723090	Sensor: Cond SN#: 737314	Sensor: Cond SN#: 737314	Sensor: Cond SN#: 737314	Sensor: Cond SN#: 737314	Sensor: Turb SN#: 730625	Sensor: Internal SN#: 740839	Sensor: RDO SN#: 732433 Dissolved Oxygen (concentration) (mg/L)
		pH (pH)	pH(mV) (mV)	Temperature (C)	Actual Conductivity (μ S/cm)	Specific Conductivity (μ S/cm)	Salinity (PSU)	Turbidity (NTU)	Temperature (C)	
10/1/2020 16:00	8118030	8.338	-73.566	9.804	799.392	1126.28	0.558	6.849	9.804	9.424
10/1/2020 17:00	8121630	8.328	-73.085	10.119	752.006	1050.614	0.519	5.477	10.119	8.65
10/1/2020 18:00	8125230	8.496	-83.344	12.615	0.479	0.627	0	0.132	12.615	8.989
10/1/2020 18:15	8126148	8.041	-57.397	12.892	0.42	0.546	0	0.116	12.892	8.9
10/1/2020 19:15	8129748	7.874	-48.234	15.063	0	0	0	0.413	15.063	8.728
10/1/2020 19:21	8130082	7.893	-49.341	15.224	0	0	0	0.471	15.224	8.586
AEP Freshwater Aquatic Life*		6.5-9.0^{pH}	NS	narrative	NS	NS	NS	narrative	NS	6.5^{DO}

Notes:^{DO} - minimum long-term exposure guideline; see applicable guidelines for further details^{pH} - not to be altered by more than 0.5 units from background

narrative - see applicable guidelines for further details

NS - not specified

^{SO4} - guideline level is hardness dependent; hardness values greater than 250 mg/L need to be determined based on site water* - *Environmental Quality Guidelines for Alberta Surface Waters* (AEP 2018)**Italics** - values do not meet applicable guidelines