



Palliser Environmental Services Ltd.

Lesser Slave Watershed Council
c/o Meghan Payne, Executive Director
PO Box 2607, High Prairie, AB T0G 1E0

March 9, 2023

RE: 2022 Water Quality Summary

Dear Meghan,

This letter summarizes the water quality results of water samples collected by Lesser Slave Watershed Council (LSWC) staff in 2022. In 2021 a comprehensive five-year review and summary of water quality from 2017 to 2021 was completed for the LSWC with detailed reports completed each year from 2017 to 2021. In 2022 it was decided to provide a brief summary of water quality results for each year and focus on 5-year summary reports.

Grab samples (N=10) were collected twice monthly May to July and monthly in April and August to October at fifteen sites (Appendix A) and analysed for nutrients, routine parameters, fecal coliform bacteria and field measurements (*in situ*) parameters. Four of the 15 sites were new monitoring locations added in 2022: Marten Creek, Otauwau River, Saulteaux River and Driftwood River. Six of the 15 sites were monitored for total and dissolved metals with seven samples collected at each location (once monthly April to October). Water samples submitted to ALS Environmental (Edmonton) were analysed for total metals, dissolved metals, nutrients, fecal coliform bacteria and routine parameters. Field measurements were taken at each site for water temperature, pH, conductivity, dissolved oxygen and percent oxygen saturation using a HACH® HQD Portable Meter, Rugged 101 probe series.

Water quality results were compared to the provincial water quality guidelines (Protection of Aquatic Life) for compliance and for irrigation water quality where applicable (GoA 2018).

Water Quality Review

Precipitation

Total precipitation in the Lesser Slave watershed in 2022 from eight weather stations is summarized in Appendix B. The weather station Marten Hills Auto was added in 2022 due to a new water quality monitoring site at Marten Creek.

In 2022, Slave Lake RCS had the least precipitation (214.6 mm) and House Mountain Lookout had the most precipitation (545.3 mm) indicating a wide range of precipitation throughout the watershed. The seven weather stations (excludes Marten Hills Auto) had the lowest or second lowest total precipitation in 2022 since 2018 indicating that 2022 was a drier than normal year. Total precipitation was highest in 2019. In 2022, the months of May and August received the most precipitation and whereas the month of October received the least precipitation (Appendix B).

Streamflow

The 2022 daily streamflow graphs for rivers in the Lesser Slave watershed are presented in Appendix C. Peak flows at the Swan River, Driftpile River, East Prairie River and Saulteaux River generally occurred between mid-May to mid-June. Peak flows at the West Prairie River and South Heart River generally occurred between early-May to mid-May.



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pH

Median pH values at the 15 sites ranged from 7.41 (lower Driftpile River) to 8.04 (Lesser Slave River). The median pH value at the 15 monitoring sites was within the 6.5 to 9.0 range for the protection of aquatic life (Appendix D). One sample (9.10) from the Grouard Channel on September 14, 2022 exceeded the pH guideline (6.5 to 9.0).

Conductivity

Median conductivity at the 15 sites ranged from 95 µS/cm (lower Swan River) to 243 µS/cm (upper South Heart River). In 2022, the median and all individual samples of conductivity met the provincial guideline for safe irrigation ($\leq 1,000 \mu\text{S}/\text{cm}$) (Appendix D).

Dissolved Oxygen

Median dissolved oxygen concentrations at the 15 sites ranged from 7.85 mg/L (lower South Heart River) to 10.82 mg/L (upper East Prairie River). The median and all individual samples of dissolved oxygen were greater than the acute (5 mg/L) and chronic (6.5 mg/L) guidelines for protection of aquatic life at the 15 sites (Appendix D).

Water Temperature

Median water temperature at the 15 sites ranged from 9.6°C (upper East Prairie River) to 16.3°C (Grouard Channel). The median temperature at the 15 monitoring sites was less than the temperature objective of $< 22^\circ\text{C}$ for the protection of aquatic life (Appendix D). Three individual samples exceeded the temperature objective: Marten Creek (July 19: 23.1°C), Saulteaux River (July 19: 22.4 °C) and the Grouard Channel (August 17: 22.2 °C).

Total Phosphorus

Median total phosphorus concentrations at the 15 sites ranged from 0.0167 mg/L (Lesser Slave River) to 0.1270 mg/L (lower South Heart River). Maximum total phosphorus concentrations ranged from 0.0659 mg/L (Lesser Slave River) to 0.8140 mg/L (middle East Prairie River). Maximum total phosphorus concentrations can vary between years and are somewhat dependent on TSS concentrations as phosphorus will adsorb onto sediment particles (i.e., high TSS concentrations often corresponds to high total phosphorus concentrations). The highest TSS and total phosphorus concentrations in 2022 both occurred at the middle East Prairie River on April 27 (Appendix D). Box plot summaries of total phosphorus percentiles for each site are presented in Appendix F.

Total Nitrogen

Median total nitrogen concentrations at the 15 sites ranged from 0.36 mg/L (upper East Prairie River) to 1.16 mg/L (upper South Heart River) (Appendix D). Maximum total nitrogen concentrations ranged from 0.53 mg/L (upper Swan River) to 2.42 mg/L (middle West Prairie River). Maximum total nitrogen concentrations can vary between years and are somewhat dependent on TSS concentrations as nitrogen will adsorb onto sediment particles (i.e., high TSS concentrations often corresponds to high total nitrogen concentrations). In 2022, the three lowest total nitrogen concentrations (0.12 to 0.20 mg/L) corresponded to low TSS concentrations (< 3.0 to 3.6 mg/L) whereas the two highest total nitrogen concentrations (2.22 to 2.42 mg/L) corresponded to the two highest TSS concentrations (1,690 and 1,640 mg/L). Box plot summaries of total nitrogen percentiles for each site are presented in Appendix F.

Total Suspended Solids (TSS)

Median TSS concentrations at the 15 sites ranged from 3.9 mg/L (upper South Heart River) to 84.4 mg/L (lower Swan River). Maximum TSS concentrations ranged from 12.2 mg/L (upper South Heart River) to 1690 mg/L (middle East Prairie River) (Appendix D). The maximum TSS at middle East Prairie River (1690 mg/L) was the highest in seven years of monitoring since 2012 at this site. Maximum TSS concentrations vary considerably between years and are dependent

on flow conditions with high flow (i.e., flood conditions) resulting in the highest TSS. Box plot summaries of TSS percentiles for each site are presented in Appendix F.

Fecal Coliform Bacteria

Median fecal coliform bacteria counts at the 15 sites ranged from 1 cfu/100 mL (Lesser Slave River) to 80 cfu/100 mL (middle East Prairie River). The median fecal coliform bacteria counts at the 15 monitoring sites was less than the guidelines of <100 cfu/100 mL for irrigation and <320 cfu/100 mL for recreation (Appendix D). Ten individual samples (110 to 260 cfu/100 mL) exceeded the irrigation guideline: lower Swan River (1 sample), lower Driftpile River (1 sample), middle East Prairie River (4 samples), lower South Heart River (2 samples), Marten Creek (1 sample) and Saulteaux River (1 sample). Box plot summaries of total phosphorus percentiles for each site are presented in Appendix F. Box plot summaries of fecal coliform percentiles for each site are presented in Appendix F.

Metals

Appendix E contains the raw metals data for the upper and lower Swan River sites, lower Driftpile River (new site in 2022), middle West Prairie River (new site in 2022), middle East Prairie River and Marten Creek (new site in 2022). The following discussion highlights the metals that exceeded chronic or acute provincial protection of aquatic life (PAL) where guidelines have been specified (GoA 2018).

In 2022, the upper and lower Swan River sites had the second most metal exceedances (6 and 8 metals, respectively) during the period from 2017 to 2022 (Figure E-1). Metals that were exceeded in 2022 at both upper and lower Swan River were dissolved iron, dissolved aluminum, total lead, total cadmium, total copper and total mercury. In addition, total nickel and total arsenic were exceeded at lower Swan River. Within the six metals exceeded at upper Swan River there was a total of 21 individual exceedances (Appendix E). Within the eight metals exceeded at lower Swan River there was a total of 27 individual exceedances (Appendix E).

At middle East Prairie River, eight metals were exceeded in 2022 compared to five in 2021 and seven in 2020 (Figure E-1). Metals that were exceeded in all three years at middle East Prairie River were dissolved iron, total lead, total copper and total mercury. In addition, dissolved aluminum, total cadmium, total nickel and total arsenic were exceeded in 2022 at middle East Prairie River. Within the eight metals exceeded there was a total of 14 individual exceedances in 2022 (Appendix E).

In 2022, the lower Driftpile River had the same eight metals exceed guidelines as the lower Swan River and middle East Prairie River: dissolved iron, dissolved aluminum, total lead, total cadmium, total copper, total mercury, total nickel and total arsenic (Figure E-1). Within the eight metals exceeded there was a total of 24 individual exceedances (Appendix E).

The middle West Prairie River had eight metals exceeding guidelines and was nearly identical to the metals exceeded at lower Swan River, lower Driftpile and middle East Prairie River with the exception there was no exceedance of total arsenic at middle West Prairie River but there was an exceedance of dissolved manganese (Figure E-1). The exceedance of dissolved manganese was the first exceedance of this metal at any site since monitoring began in 2017. Within the eight metals exceeded there was a total of 18 individual exceedances (Appendix E).

Marten Creek had the fewest metal exceedances in 2022. Three metals exceeded guidelines: dissolved iron, dissolved aluminum and total mercury (Figure E-1). Dissolved iron and dissolved aluminum are the most commonly exceeded



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metals in the Lesser Slave watershed due to their natural abundance in the earth's crust. Within the three metals exceeded there was a total of 9 individual exceedances (Appendix E).

There were no guideline exceedances of total boron, total selenium, total silver, total uranium, total zinc, dissolved zinc or hexavalent chromium in the Lesser Slave watershed in 2022 (Appendix E).

Summary

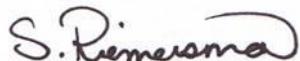
Generally, all samples met dissolved oxygen, conductivity and temperature guidelines/objectives with a few exceptions:

- pH: One sample at Grouard Channel September 14 exceeded guideline.
- Temperature: Three samples exceeded the <22°C objective, one each at Marten Creek (July 19), Saulteaux River (July 19) and Grouard Channel (August 17).
- Fecal Coliform Bacteria: Samples exceeded the irrigation guideline at lower Swan River (1 sample), lower Driftpile River (1 sample), middle East Prairie River (4 samples), lower South Heart River (2 samples), Marten Creek (1 sample) and Saulteaux River (1 sample).
- Total Phosphorus: Sites with higher median and/or maximum total phosphorus included lower Swan River, lower Driftpile River, middle East Prairie River, upper South Heart River and lower South Heart River.
- Total Nitrogen: Sites with higher median and/or maximum total nitrogen included middle East Prairie River, middle West Prairie River, upper South Heart River and lower South Heart River.
- Total Suspended Solids: Sites with higher median and/or maximum TSS included lower Swan River, lower Driftpile River, middle East Prairie River, middle West Prairie River and lower South Heart River.
- Total Metals: The number of metals exceeding guidelines at upper and lower Swan River (6 and 8, respectively) in 2022 was within the range of previous years (2017 to 2021: 2 to 10 metal exceedances). The middle East Prairie had 8 metals exceeding guidelines in 2022 which was higher compared to 2020 and 2021 (seven and five exceedances, respectively). The lower Driftpile River and middle West Prairie River each had eight metal exceedances and Marten Creek had only three metal exceedances. The six most commonly exceeded metals at all sites were dissolved iron, dissolved aluminum, total lead, total mercury, total copper and total cadmium.

We trust the information provided is sufficient to describe the water quality in the Lesser Slave watershed in 2022. If you have any questions, please do not hesitate to contact Sandi Riemersma at 403-921-5667 (sandi@palliserenvironmental.com).

Sincerely,

Palliser Environmental Services Ltd.



Sandi Riemersma, M.Sc.
Environmental Biologist

Appendix A: Water monitoring sample locations, 2017-2022.

| Location | Latitude | Longitude | Flow Gauging |
|------------------------------|---------------|----------------|------------------|
| upper Swan River | 54°59'33.05"N | 115°17'59.99"W | no |
| middle Swan River* | 55°14'38.66"N | 115°21'37.15"W | no |
| lower Swan River | 55°22'49.72"N | 115°19'59.54"W | no |
| upper Driftpile River | 55°17'53.64"N | 115°51'7.59"W | no |
| middle Driftpile River* | 55°20'45.84"N | 115°47'45.08"W | Stn. No. 07BH003 |
| lower Driftpile River | 55°22'3.04"N | 115°41'40.59"W | no |
| upper East Prairie River | 55° 6'51.26"N | 116° 5'14.94"W | no |
| middle East Prairie River | 55°25'4.98"N | 116°20'22.00"W | Stn. No. 07BF001 |
| lower East Prairie River* | 55°32'29.50"N | 116°15'6.29"W | no |
| upper West Prairie River* | 55°12'29.69"N | 116°26'7.68"W | no |
| middle West Prairie River | 55°26'55.62"N | 116°29'36.91"W | Stn. No. 07BF002 |
| upper South Heart River | 55°40'57.20"N | 116°35'44.34"W | no |
| middle South Heart River* | 55°30'31.71"N | 116°31'34.40"W | no |
| lower South Heart River | 55°34'47.24"N | 116°17'41.27"W | no |
| Grouard Channel | 55°30'48.13"N | 116° 9'54.21"W | no |
| Marten Creek ^N | 55°30'16.69"N | 114°55'8.16"W | no |
| Lesser Slave River | 55°17'41.93"N | 114°44'39.61"W | Stn. No. 07BK001 |
| Otauwau River ^N | 55° 9'50.44"N | 114°28'12.50"W | Stn. No. 07BK004 |
| Saulteaux River ^N | 55° 9'27.23"N | 114°14'22.87"W | Stn. No. 07BK005 |
| Driftwood River ^N | 55°15'20.80"N | 114°13'51.97"W | Stn. No. 07BK007 |

*: Site was not sampled in 2022
 N: A new site added in 2022.

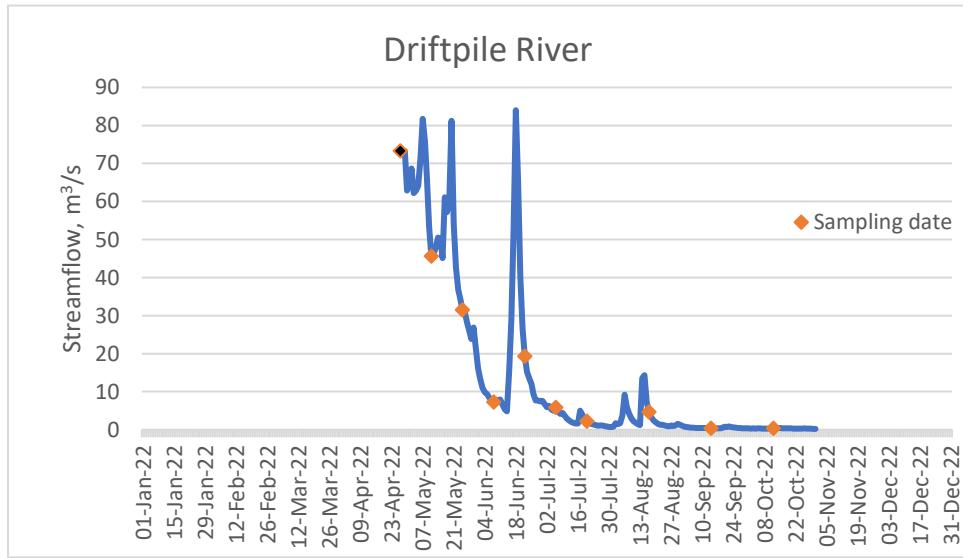
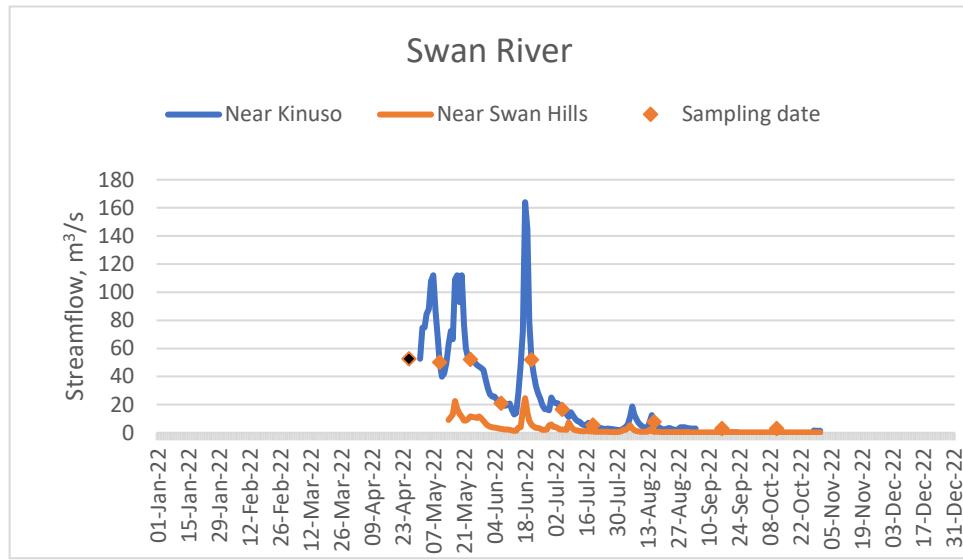
Appendix B: Monthly total precipitation (mm) at Lesser Slave watershed, April-October, 2018-2022.

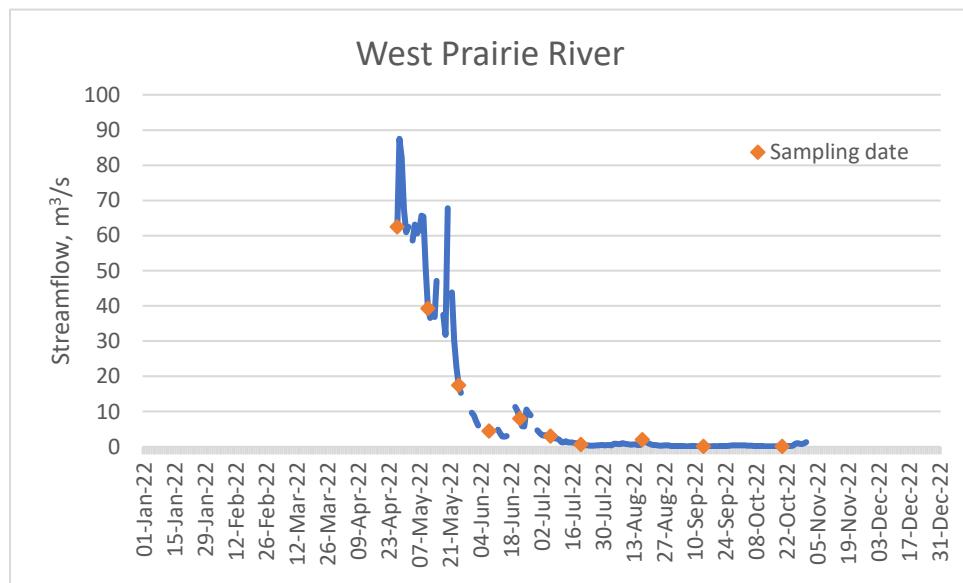
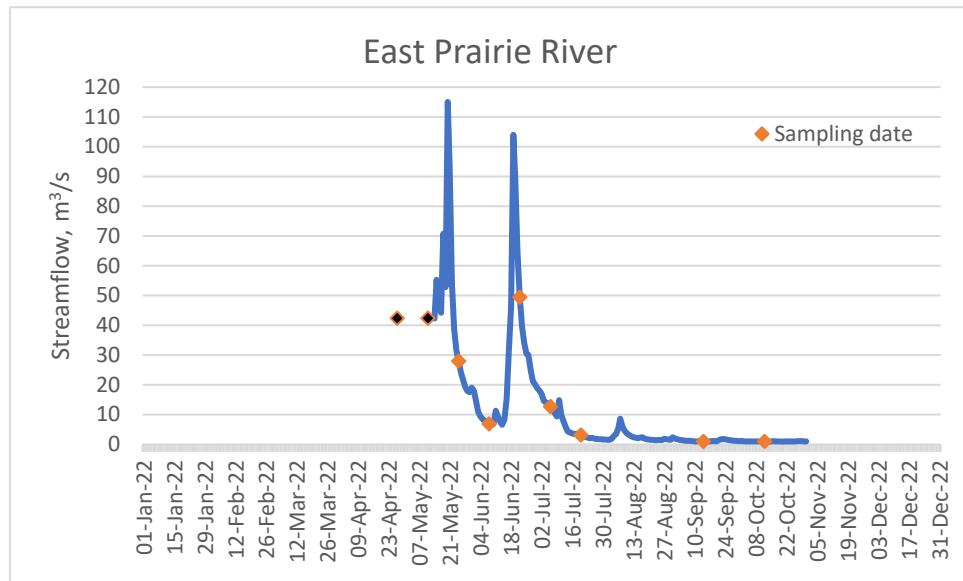
| Weather Station | Year | April | May | June | July | August | September | October | Total |
|--------------------------|------|-------|-------|-------|-------|--------|-----------|---------|--------------|
| Peavine | 2018 | 18.3 | 9.9 | 127.0 | 119.4 | 52.9 | 23.1 | 19.4 | 370.0 |
| | 2019 | 14.7 | 4.7 | 87.5 | 148.2 | 44.3 | 32.8 | 27.0 | 359.2 |
| | 2020 | 8.6 | 35.4 | 134.0 | 67.9 | 39.5 | 16.6 | 32.3 | 334.3 |
| | 2021 | 28.9 | 55.9 | 32.2 | 28.0 | 62.8 | 38.9 | 16.0 | 262.7 |
| | 2022 | 43.3 | 73.2 | 58.2 | 20.2 | 78.4 | 18.5 | 10.3 | 302.1 |
| High Prairie AGDM | 2018 | 18.9 | 14.6 | 108.5 | 119.5 | 31.5 | 26.7 | 30.3 | 350.0 |
| | 2019 | 27.7 | 17.9 | 98.6 | 120.5 | 56.4 | 44.7 | 38.4 | 404.2 |
| | 2020 | 8.9 | 62.1 | 117.3 | 93.3 | 83.2 | 10.7 | 25.6 | 401.1 |
| | 2021 | 15.3 | 72.9 | 41.8 | 26.1 | 83.1 | 40.9 | 15.1 | 295.2 |
| | 2022 | 50.4 | 47.4 | 67.2 | 19.5 | 60.5 | 10.6 | 7.2 | 262.8 |
| High Prairie Banana Belt | 2018 | 26.3 | 22.5 | 133.0 | 135.3 | 35.2 | 31.0 | 37.4 | 420.7 |
| | 2019 | 21.1 | 23.4 | 155.8 | 90.1 | 53.4 | 43.2 | 44.7 | 431.7 |
| | 2020 | 11.3 | 67.3 | 115.2 | 96.4 | 49.5 | 12.9 | 22.4 | 375.0 |
| | 2021 | 20.5 | 92.3 | 45.3 | 53.2 | 74.1 | 77.3 | 18.3 | 381.0 |
| | 2022 | 38.8 | 51.8 | 67.8 | 31.7 | 43.2 | 21.0 | 7.9 | 262.2 |
| Slave Lake RCS | 2018 | 18.5 | 9.1 | 128.7 | 76.0 | 50.4 | 38.6 | 26.3 | 347.6 |
| | 2019 | 14.2 | 4.2 | 76.6 | 130.5 | 88.6 | 37.2 | 49.2 | 400.5 |
| | 2020 | 3.9 | 50.5 | 90.1 | 86.2 | 34.2 | 10.0 | 43.1 | 318.0 |
| | 2021 | 31.6 | 98.6 | 41.2 | 32.7 | 66.0 | 19.2 | 20.8 | 310.1 |
| | 2022 | 18.7 | 63.0 | 60.4 | 10.5 | 46.6 | 11.8 | 3.6 | 214.6 |
| Slave Lake | 2018 | 13.8 | 11.3 | 134.9 | 85.4 | 56.2 | 40.3 | 21.1 | 363.0 |
| | 2019 | 12.3 | 4.9 | 91.3 | 156.3 | 105.9 | 46.5 | 49.2* | 466.4 |
| | 2020 | 3.0 | 58.8 | 104.2 | 64.8 | 44.7 | 14.1 | 38.5 | 328.1 |
| | 2021 | 22.4 | 109.8 | 44.6 | 36.4 | 73.1 | 21.0 | 19.7 | 327.0 |
| | 2022 | 15.2 | 58.9 | 63.7 | 27.4 | 101.0 | 13.3 | 3.5 | 283.0 |
| Flat Top Auto | 2018 | 29.8 | 27.3 | 169.2 | 119.1 | 60.9 | 66.8 | 45.6 | 518.7 |
| | 2019 | 25.6 | 32.2 | 103.9 | 168.5 | 81.8 | 49.8 | 71.0 | 532.8 |
| | 2020 | 26.0 | 72.9 | 132.4 | 127.3 | 37.1 | 12.0 | 69.7 | 477.4 |
| | 2021 | 52.1 | 125.7 | 64.1 | 26.8 | 69.1 | 36.0 | 33.8 | 407.6 |
| | 2022 | n/a | 80.5 | 101.5 | 37.2 | 88.2 | 24.4 | 6.8 | 338.6 |
| House Mountain Lookout | 2018 | 41.4 | 32.9 | 249.3 | 144.1 | 91.6 | 77.3 | 66.8 | 703.4 |
| | 2019 | 57.0 | 42.6 | 194.1 | 199.7 | 77.0 | 64.1 | 77.4 | 711.9 |
| | 2020 | 39.0 | 96.0 | 136.0 | 168.0 | 46.0 | 16.1 | 54.6 | 555.7 |
| | 2021 | 62.4 | 132.0 | 84.0 | 69.0 | 74.0 | 82.2 | 128.1 | 531.7 |
| | 2022 | 61.0 | 104.0 | 125.0 | 49.0 | 159.0 | 30.7 | 16.9 | 545.3 |
| Marten Hills Auto | 2022 | n/a | 96.4 | 87.6 | 24.3 | 92.5 | 16.2 | 4.0 | 321.0 |

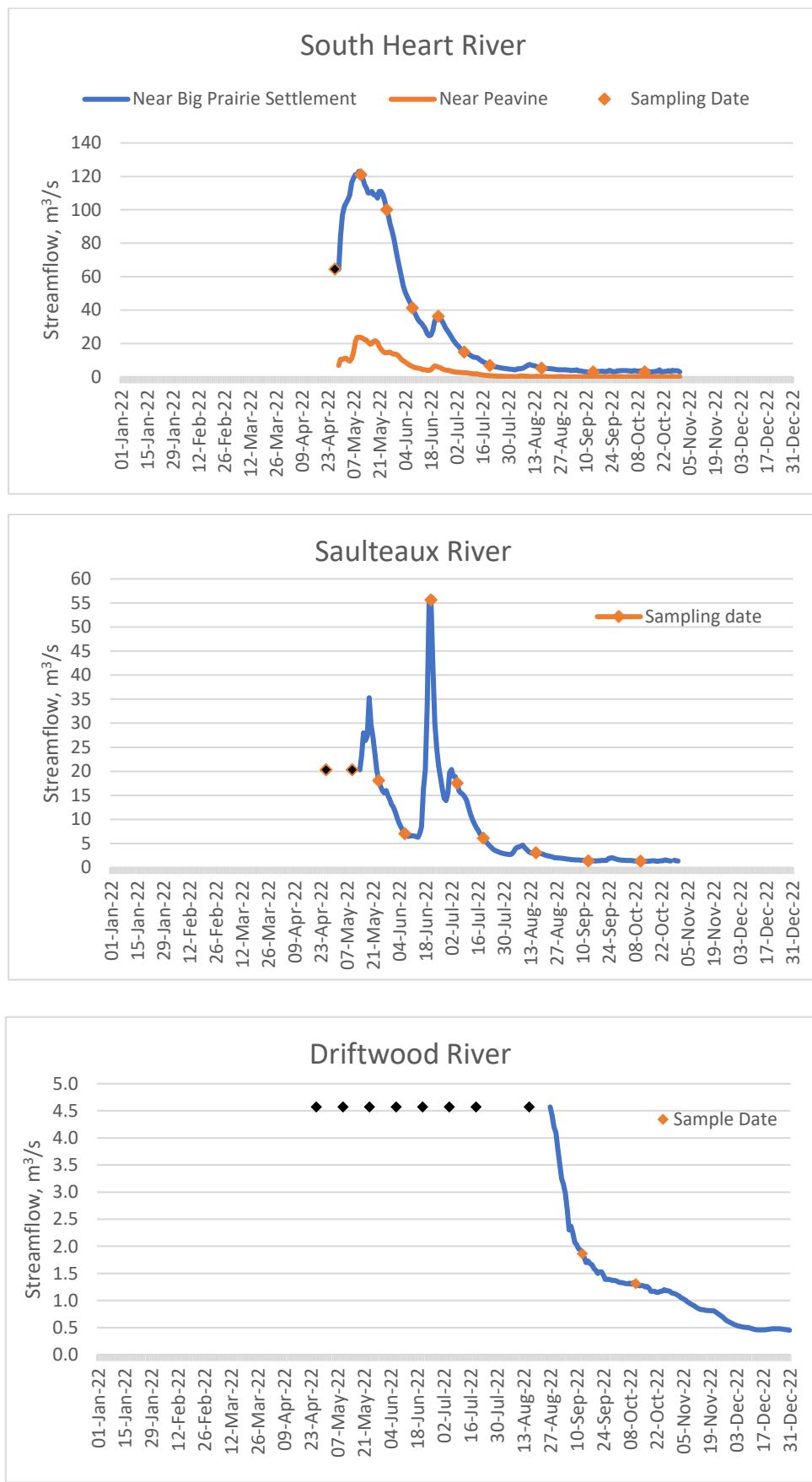
* Note: Slave Lake 2019 October data missing. Data from Slave Lake RCS 2019 October used.

Appendix C: Annual streamflow data for the 2022 water monitoring year, Lesser Slave watershed (EPA 2023).

The start-up date for the WSC gauging stations differs by site; thus, at some sites, no streamflow data is available for the corresponding sampling dates. The samples that were collected on days when streamflow data was not available are indicated by a black diamond marker, as opposed to an orange marker.







Appendix D - Routine Water Quality Data. Red values indicate an exceedance of a water quality guideline. Blue values are half the detection limit when reported values were less than the detection limit.

| Site | Date | Time | pH | Conductivity (µS/cm) | D. Oxygen (mg/L) | D. Oxygen Sat. (%) | Temp. (°C) | T. Phosphorus (mg/L) | TDP (mg/L) | NO ₃ -N (mg/L) | NO ₃ -N+NO ₂ -N (mg/L) | NO ₂ -N (mg/L) | TKN (mg/L) | TN (mg/L) | TSS (mg/L) | FC (cfu/100 mL) | Comment |
|-----------------------|-----------|-------|-------------|-------------------------|---------------------|-----------------------|-------------|-------------------------|---------------|------------------------------|---|---------------------------|---------------|-------------|---------------|--------------------|-----------------|
| upper Swan River | 26-Apr-22 | 9:45 | 7.29 | 104 | 14.81 | 102.5 | 0.4 | 0.1700 | 0.0240 | 0.035 | 0.035 | 0.005 | 0.498 | 0.533 | 189 | 30 | |
| upper Swan River | 10-May-22 | 10:00 | 7.25 | 83 | 12.5 | 97.5 | 1.2 | 0.0712 | 0.0183 | 0.022 | 0.0112 | 0.005 | 0.494 | 0.516 | 60.8 | 12 | |
| upper Swan River | 24-May-22 | 10:30 | 7.62 | 65 | 11.39 | 101.3 | 6.4 | 0.1740 | 0.0140 | 0.010 | 0.0112 | 0.005 | 0.351 | 0.351 | 235 | 8 | |
| upper Swan River | 07-Jun-22 | 9:55 | 7.67 | 95 | 10.77 | 103.1 | 9.7 | 0.0302 | 0.0095 | 0.010 | 0.0112 | 0.005 | 0.348 | 0.348 | 18.2 | 34 | |
| upper Swan River | 21-Jun-22 | 9:50 | 7.28 | 93 | 10.18 | 103.2 | 11.5 | 0.0800 | 0.0100 | 0.010 | 0.0112 | 0.005 | 0.495 | 0.495 | 103 | 64 | |
| upper Swan River | 05-Jul-22 | 10:25 | 7.53 | 121 | 9.81 | 102.7 | 13.7 | 0.0177 | 0.0186 | 0.010 | 0.0112 | 0.005 | 0.393 | 0.393 | 10.2 | 26 | |
| upper Swan River | 19-Jul-22 | 10:05 | 7.92 | 161 | 8.98 | 103.8 | 18.0 | 0.0174 | 0.0130 | 0.010 | 0.0112 | 0.005 | 0.431 | 0.431 | 4.8 | 30 | |
| upper Swan River | 16-Aug-22 | 10:00 | 7.80 | 161 | 9.3 | 107.3 | 18.2 | 0.0157 | 0.0177 | 0.010 | 0.0112 | 0.005 | 0.397 | 0.397 | 21 | 88 | |
| upper Swan River | 13-Sep-22 | 9:30 | 8.23 | 162 | 9.42 | 91.9 | 10.4 | 0.0112 | 0.0110 | 0.010 | 0.0112 | 0.005 | 0.271 | 0.271 | 12.2 | 10 | |
| upper Swan River | 11-Oct-22 | 10:00 | 8.62 | 287 | 13.11 | 115.5 | 6.0 | 0.0374 | 0.0080 | 0.010 | 0.0112 | 0.005 | 0.123 | 0.123 | 1.5 | 30 | |
| median | | | 7.65 | 113 | 10.48 | 102.9 | 10.1 | 0.0338 | 0.0135 | 0.010 | 0.0112 | 0.005 | 0.395 | 0.40 | 19.6 | 30 | |
| min | | | 7.25 | 65 | 8.98 | 91.9 | 0.4 | 0.0112 | 0.0080 | 0.010 | 0.0112 | 0.005 | 0.123 | 0.12 | 1.5 | 8 | |
| max | | | 8.62 | 287 | 14.81 | 115.5 | 18.2 | 0.1740 | 0.0240 | 0.035 | 0.035 | 0.005 | 0.498 | 0.53 | 235 | 88 | |
| upper Swan River | 16-Aug-22 | 10:15 | 7.80 | 160 | 9.3 | 107.3 | 18.2 | 0.0164 | 0.0171 | <0.020 | <0.0224 | <0.010 | 0.363 | 0.363 | 6.4 | <1 | field duplicate |
| lower Swan River | 26-Apr-22 | 9:00 | 7.44 | 84 | 13.08 | 102.2 | 4.9 | 0.4560 | 0.0260 | 0.141 | 0.141 | 0.005 | 0.493 | 0.634 | 173 | 84 | |
| lower Swan River | 10-May-22 | 9:10 | 7.78 | 63 | 11.3 | 92.9 | 4.0 | 0.1380 | 0.0217 | 0.06 | 0.060 | 0.005 | 0.741 | 0.801 | 173 | 32 | |
| lower Swan River | 24-May-22 | 9:35 | 7.44 | 61 | 9.96 | 96.0 | 11.0 | 0.1100 | 0.0168 | 0.035 | 0.035 | 0.005 | 0.522 | 0.557 | 144 | 28 | |
| lower Swan River | 07-Jun-22 | 9:00 | 7.60 | 99 | 9.56 | 98.7 | 13.2 | 0.0418 | 0.0125 | 0.010 | 0.0112 | 0.005 | 0.454 | 0.454 | 18.8 | 30 | |
| lower Swan River | 21-Jun-22 | 9:00 | 7.21 | 74 | 9.02 | 96.3 | 14.7 | 0.1410 | 0.0129 | 0.010 | 0.0112 | 0.005 | 0.682 | 0.682 | 275 | 52 | |
| lower Swan River | 05-Jul-22 | 9:40 | 7.30 | 119 | 8.87 | 97.9 | 16.9 | 0.0321 | 0.0307 | 0.010 | 0.0112 | 0.005 | 0.465 | 0.465 | 24.8 | 40 | |
| lower Swan River | 19-Jul-22 | 9:15 | 7.43 | 164 | 7.81 | 94.9 | 21.3 | 0.0391 | 0.0268 | 0.010 | 0.0112 | 0.005 | 0.497 | 0.497 | 12.6 | 32 | |
| lower Swan River | 16-Aug-22 | 9:05 | 7.40 | 91 | 8.11 | 95.0 | 19.8 | 0.1220 | 0.1210 | 0.026 | 0.026 | 0.005 | 0.857 | 0.883 | 164 | 220 | |
| lower Swan River | 13-Sep-22 | 8:35 | 7.89 | 217 | 11.79 | 116.9 | 11.8 | 0.2590 | 0.2290 | 0.010 | 0.0112 | 0.005 | 0.690 | 0.69 | 3.8 | 0.5 | |
| lower Swan River | 11-Oct-22 | 9:10 | 8.41 | 334 | 11.16 | 98.7 | 6.8 | 0.0345 | 0.0200 | 0.010 | 0.0112 | 0.005 | 0.203 | 0.203 | 3.6 | 8 | |
| median | | | 7.44 | 95 | 9.76 | 97.1 | 12.5 | 0.1160 | 0.0239 | 0.010 | 0.0112 | 0.005 | 0.510 | 0.60 | 84.4 | 32 | |
| min | | | 7.21 | 61 | 7.81 | 92.9 | 4.0 | 0.0321 | 0.0125 | 0.010 | 0.0112 | 0.005 | 0.203 | 0.20 | 3.6 | 1 | |
| max | | | 8.41 | 334 | 13.08 | 116.9 | 21.3 | 0.4560 | 0.2290 | 0.141 | 0.141 | 0.005 | 0.857 | 0.88 | 275 | 220 | |
| upper Driftpile River | 27-Apr-22 | 9:45 | 6.72 | 57 | 13.33 | 94.9 | 1.3 | 0.2470 | 0.0300 | 0.113 | 0.113 | 0.005 | 0.981 | 1.09 | 474 | 90 | |
| upper Driftpile River | 11-May-22 | 10:05 | 7.30 | 62 | 12.37 | 98.0 | 2.9 | 0.0707 | 0.0260 | 0.02 | 0.0112 | 0.005 | 0.694 | 0.694 | 96.4 | 11 | |
| upper Driftpile River | 25-May-22 | 10:00 | 7.65 | 98 | 10.96 | 100.9 | 8.2 | 0.0775 | 0.0194 | 0.010 | 0.0112 | 0.005 | 0.608 | 0.608 | 82.8 | 6 | |
| upper Driftpile River | 08-Jun-22 | 11:20 | 7.62 | 168 | 10.15 | 104.5 | 13.3 | 0.0302 | 0.0105 | 0.010 | 0.0112 | 0.005 | 0.387 | 0.387 | 19 | 12 | |
| upper Driftpile River | 22-Jun-22 | 11:35 | 7.41 | 80 | 9.69 | 102.0 | 14.4 | 0.0629 | 0.0164 | 0.010 | 0.0112 | 0.005 | 0.563 | 0.563 | 45 | 34 | |
| upper Driftpile River | 06-Jul-22 | 11:40 | 7.65 | 132 | 9.38 | 103.8 | 16.9 | 0.0288 | 0.0286 | 0.010 | 0.0112 | 0.005 | 0.510 | 0.51 | 7.6 | 38 | |
| upper Driftpile River | 20-Jul-22 | 1:45 | 7.77 | 124 | 8.89 | 104.2 | 19.4 | 0.0340 | 0.0260 | 0.010 | 0.0112 | 0.005 | 0.452 | 0.452 | 6.4 | 8 | |
| upper Driftpile River | 17-Aug-22 | 10:50 | 7.22 | 72 | 9.09 | 101.2 | 17.6 | 0.0630 | 0.0138 | 0.010 | 0.0112 | 0.005 | 0.810 | 0.81 | 25.2 | 0.5 | |
| upper Driftpile River | 14-Sep-22 | 11:50 | 8.16 | 192 | 9.05 | 90.9 | 12.4 | 0.0222 | 0.0211 | 0.010 | 0.0112 | 0.005 | 0.343 | 0.343 | 3.8 | 12 | |
| upper Driftpile River | 12-Oct-22 | 10:55 | 8.92 | 227 | 11.68 | 101.0 | 7.6 | 0.0244 | 0.0099 | 0.010 | 0.0112 | 0.005 | 0.311 | 0.311 | 1.5 | 6 | |
| median | | | 7.64 | 111 | 9.92 | 101.1 | 12.9 | 0.0485 | 0.0203 | 0.010 | 0.0112 | 0.005 | 0.537 | 0.54 | 22.1 | 12 | |
| min | | | 6.72 | 57 | 8.89 | 90.9 | 1.3 | 0.0222 | 0.0099 | 0.010 | 0.0112 | 0.005 | 0.311 | 0.31 | 1.5 | 1 | |
| max | | | 8.92 | 227 | 13.33 | 104.5 | 19.4 | 0.2470 | 0.0300 | 0.113 | 0.113 | 0.005 | 0.981 | 1.09 | 474 | 90 | |
| lower Driftpile River | 27-Apr-22 | 9:20 | 6.68 | 58 | 12.95 | 93.7 | 2.0 | 0.4580 | 0.0280 | 0.12 | 0.120 | 0.005 | 1.42 | 1.54 | 1180 | 56 | |
| lower Driftpile River | 11-May-22 | 9:25 | 7.30 | 65 | 12.05 | 95.8 | 2.9 | 0.2000 | 0.0086 | 0.024 | 0.024 | 0.005 | 0.841 | 0.865 | 291 | 20 | |
| lower Driftpile River | 25-May-22 | 9:10 | 7.39 | 104 | 10.07 | 97.6 | 10.5 | 0.1330 | 0.0188 | 0.010 | 0.0112 | 0.005 | 0.631 | 0.631 | 197 | 26 | |
| lower Driftpile River | 08-Jun-22 | 10:45 | 7.57 | 163 | 9.55 | 99.7 | 13.5 | 0.0767 | 0.0177 | 0.010 | 0.0112 | 0.005 | 0.417 | 0.417 | 63.4 | 38 | |
| lower Driftpile River | 22-Jun-22 | 11:05 | 7.12 | 78.4 | 9.1 | 97.6 | 15.3 | 0.1330 | 0.0157 | 0.010 | 0.0112 | 0.005 | 0.554 | 0.554 | 179 | 74 | |
| lower Driftpile River | 06-Jul-22 | 11:10 | 7.42 | 148 | 8.83 | 97.9 | 17.3 | 0.0378 | 0.0364 | 0.010 | 0.0112 | 0.005 | 0.542 | 0.542 | 19.6 | 16 | |
| lower Driftpile River | 20-Jul-22 | 11:10 | 7.47 | 144 | 8.4 | 95.1 | 18.1 | 0.0316 | 0.0280 | 0.010 | 0.0112 | 0.005 | 0.463 | 0.463 | 10.2 | 16 | |
| lower Driftpile River | 17-Aug-22 | 10:10 | 6.72 | 77.6 | 8.68 | 96.3 | 17.6 | 0.0959 | 0.0108 | 0.010 | 0.0112 | 0.005 | 0.990 | 0.99 | 92.6 | 120 | |
| lower Driftpile River | 14-Sep-22 | 11:45 | 7.94 | 237 | 11.81 | 115.1 | 11.2 | 0.0234 | 0.0236 | 0.010 | 0.0112 | 0.005 | 0.309 | 0.309 | 1.5 | 20 | |
| lower Driftpile River | 12-Oct-22 | 10:10 | 8.56 | 259 | 11.74 | 99.5 | 5.7 | 0.0237 | 0.0103 | 0.010 | 0.0112 | 0.005 | 0.352 | 0.352 | 4 | 0.5 | |
| median | | | 7.41 | 124 | 9.81 | 97.6 | 12.4 | 0.0863 | 0.0183 | 0.010 | 0.0112 | 0.005 | 0.548 | 0.55 | 78.0 | 23 | |
| min | | | 6.68 | 58 | 8.40 | 93.7 | 2.0 | 0.0234 | 0.0086 | 0.010 | 0.0112 | 0.005 | 0.309 | 0.31 | 1.5 | 1 | |
| max | | | 8.56 | 259 | 12.95 | 115.1 | 18.1 | 0.4580 | 0.0364 | 0.120 | 0.120 | 0.005 | 1.42 | 1.54 | 1180 | 120 | |

Appendix D - Routine Water Quality Data. Red values indicate an exceedance of a water quality guideline. Blue values are half the detection limit when reported values were less than the detection limit.

| Site | Date | Time | pH | Conductivity (µS/cm) | D. Oxygen (mg/L) | D. Oxygen Sat. (%) | Temp. (°C) | T. Phosphorus (mg/L) | TDP (mg/L) | NO ₃ -N (mg/L) | NO ₃ -N+NO ₂ -N (mg/L) | NO ₂ -N (mg/L) | TKN (mg/L) | TN (mg/L) | TSS (mg/L) | FC (cfu/100 mL) | Comment |
|---------------------------|-----------|-------|-------------|-------------------------|---------------------|-----------------------|-------------|-------------------------|---------------|------------------------------|---|---------------------------|---------------|-------------|---------------|--------------------|-----------------|
| upper East Prairie River | 27-Apr-22 | 11:25 | 6.88 | 71 | 13.55 | 93.9 | 0.5 | 0.2940 | 0.0300 | 0.143 | 0.143 | 0.005 | 1.18 | 1.32 | 404 | 84 | |
| upper East Prairie River | 11-May-22 | 11:45 | 7.54 | 90.8 | 11.93 | 98.7 | 4.1 | 0.0924 | 0.0206 | 0.031 | 0.031 | 0.005 | 0.871 | 0.902 | 110 | 14 | |
| upper East Prairie River | 25-May-22 | 11:40 | 7.47 | 63 | 10.82 | 101.0 | 9.0 | 0.1400 | 0.0156 | 0.033 | 0.033 | 0.005 | 0.437 | 0.47 | 173 | 6 | |
| upper East Prairie River | 08-Jun-22 | 9:35 | 7.87 | 102 | 10.14 | 101.9 | 12.0 | 0.0313 | 0.0157 | 0.010 | 0.0112 | 0.005 | 0.304 | 0.304 | 13.8 | 30 | |
| upper East Prairie River | 22-Jun-22 | 9:45 | 7.62 | 134 | 9.57 | 101.4 | 14.5 | 0.0518 | 0.0125 | 0.010 | 0.0112 | 0.005 | 0.361 | 0.361 | 39 | 32 | |
| upper East Prairie River | 06-Jul-22 | 10:00 | 7.78 | 195 | 9.55 | 101.2 | 14.7 | 0.0290 | 0.0255 | 0.010 | 0.0112 | 0.005 | 0.427 | 0.427 | 13 | 56 | |
| upper East Prairie River | 20-Jul-22 | 10:05 | 7.97 | 255 | 8.71 | 98.9 | 17.9 | 0.0176 | 0.0159 | 0.010 | 0.0112 | 0.005 | 0.328 | 0.328 | 8.6 | 8 | |
| upper East Prairie River | 14-Sep-22 | 10:10 | 8.11 | 268 | 12.01 | 113.5 | 9.6 | 0.0240 | 0.0220 | 0.010 | 0.0112 | 0.005 | 0.221 | 0.221 | 3.8 | 16 | |
| upper East Prairie River | 12-Oct-22 | 9:10 | 9.57 | 275 | 12.6 | 106.5 | 5.4 | 0.0280 | 0.0090 | 0.010 | 0.0112 | 0.005 | 0.258 | 0.258 | 6.2 | 14 | |
| median | | | 7.78 | 134 | 10.82 | 101.2 | 9.6 | 0.0313 | 0.0159 | 0.010 | 0.0112 | 0.005 | 0.361 | 0.36 | 13.8 | 16 | |
| min | | | 6.88 | 63 | 8.71 | 93.9 | 0.5 | 0.0176 | 0.0090 | 0.010 | 0.0112 | 0.005 | 0.221 | 0.22 | 3.8 | 6 | |
| max | | | 9.57 | 275 | 13.55 | 113.5 | 17.9 | 0.2940 | 0.0300 | 0.143 | 0.143 | 0.005 | 1.18 | 1.32 | 404 | 84 | |
| middle East Prairie River | 27-Apr-22 | 12:10 | 6.93 | 100 | 12.59 | 92.8 | 2.7 | 0.8140 | 0.0310 | 0.177 | 0.177 | 0.005 | 2.04 | 2.22 | 1690 | 60 | |
| middle East Prairie River | 11-May-22 | 12:30 | 7.28 | 91.8 | 11.5 | 97.7 | 5.6 | 0.2120 | 0.0265 | 0.043 | 0.043 | 0.005 | 0.809 | 0.809 | 362 | 6 | |
| middle East Prairie River | 25-May-22 | 12:30 | 7.36 | 149 | 8.03 | 84.3 | 14.2 | 0.2380 | 0.0520 | 0.025 | 0.025 | 0.005 | 0.806 | 0.831 | 255 | 100 | |
| middle East Prairie River | 08-Jun-22 | 8:55 | 7.62 | 225 | 9.82 | 101.6 | 13.7 | 0.0906 | 0.0528 | 0.010 | 0.0112 | 0.005 | 0.934 | 0.934 | 13.2 | 6 | |
| middle East Prairie River | 22-Jun-22 | 9:00 | 7.26 | 13 | 9.09 | 99.3 | 16.2 | 0.1650 | 0.0213 | 0.010 | 0.0112 | 0.005 | 0.711 | 0.711 | 172 | 260 | |
| middle East Prairie River | 06-Jul-22 | 9:15 | 7.71 | 196 | 9.25 | 101.0 | 16.7 | 0.0570 | 0.0426 | 0.010 | 0.0112 | 0.005 | 0.597 | 0.597 | 33.8 | 52 | |
| middle East Prairie River | 20-Jul-22 | 9:20 | 7.82 | 243 | 9.13 | 101.3 | 17.1 | 0.0436 | 0.0485 | 0.010 | 0.0112 | 0.005 | 0.428 | 0.428 | 15.6 | 34 | |
| middle East Prairie River | 17-Aug-22 | 8:30 | 7.90 | 298 | 9.14 | 100.5 | 17.9 | 0.0465 | 0.0198 | 0.010 | 0.0112 | 0.005 | 0.390 | 0.39 | 8.6 | 210 | |
| middle East Prairie River | 14-Sep-22 | 9:10 | 8.35 | 286.4 | 11.45 | 110.4 | 10.7 | 0.0171 | 0.0158 | 0.010 | 0.0112 | 0.005 | 0.289 | 0.289 | 1.5 | 110 | |
| middle East Prairie River | 12-Oct-22 | 8:30 | 8.58 | 283.4 | 12.62 | 107.5 | 5.7 | 0.0170 | 0.0082 | 0.010 | 0.0112 | 0.005 | 0.338 | 0.338 | 1.5 | 120 | |
| median | | | 7.67 | 211 | 9.54 | 100.8 | 14.0 | 0.0738 | 0.0288 | 0.010 | 0.0112 | 0.005 | 0.654 | 0.65 | 24.7 | 80 | |
| min | | | 6.93 | 13 | 8.03 | 84.3 | 2.7 | 0.0170 | 0.0082 | 0.010 | 0.0112 | 0.005 | 0.289 | 0.29 | 1.5 | 6 | |
| max | | | 8.58 | 298 | 12.62 | 110.4 | 17.9 | 0.8140 | 0.0528 | 0.177 | 0.177 | 0.005 | 2.04 | 2.22 | 1690 | 260 | |
| middle West Prairie River | 27-Apr-22 | 14:30 | 7.27 | 81 | 13.54 | 97.2 | 1.7 | 0.0200 | 0.0400 | 0.101 | 0.101 | 0.005 | 2.32 | 2.42 | 1640 | 58 | |
| middle West Prairie River | 11-May-22 | 15:00 | 7.31 | 82 | 11.75 | 99.2 | 5.2 | 0.3270 | 0.0305 | 0.027 | 0.027 | 0.005 | 1.28 | 1.31 | 654 | 18 | |
| middle West Prairie River | 25-May-22 | 14:55 | 7.30 | 92 | 9.74 | 99.2 | 12.4 | 0.1720 | 0.0251 | 0.010 | 0.0112 | 0.005 | 0.922 | 0.922 | 253 | 20 | |
| middle West Prairie River | 08-Jun-22 | 13:45 | 7.73 | 202 | 9.74 | 106.0 | 17.2 | 0.0415 | 0.0269 | 0.010 | 0.0112 | 0.005 | 0.765 | 0.765 | 13.2 | 20 | |
| middle West Prairie River | 22-Jun-22 | 14:10 | 7.69 | 135 | 8.92 | 103.1 | 19.0 | 0.0809 | 0.0259 | 0.010 | 0.0112 | 0.005 | 0.737 | 0.737 | 35.8 | 18 | |
| middle West Prairie River | 06-Jul-22 | 14:15 | 7.81 | 230 | 9.14 | 107.0 | 19.8 | 0.0460 | 0.0445 | 0.010 | 0.0112 | 0.005 | 0.784 | 0.784 | 4.6 | 0.5 | |
| middle West Prairie River | 20-Jul-22 | 14:15 | 7.77 | 308 | 9.21 | 111.2 | 21.2 | 0.0239 | 0.0246 | 0.010 | 0.0112 | 0.005 | 0.678 | 0.678 | 5.2 | 14 | |
| middle West Prairie River | 17-Aug-22 | 12:10 | 7.84 | 413 | 9.14 | 105.8 | 19.5 | 0.0227 | 0.0112 | 0.010 | 0.0112 | 0.005 | 0.760 | 0.76 | 3.4 | 34 | |
| middle West Prairie River | 14-Sep-22 | 14:35 | 8.09 | 417 | 10.41 | 109.7 | 14.6 | 0.0316 | 0.0373 | 0.010 | 0.0112 | 0.005 | 0.579 | 0.579 | 11.2 | 76 | |
| middle West Prairie River | 12-Oct-22 | 13:20 | 8.74 | 449 | 11.65 | 104.0 | 8.5 | 0.0514 | 0.0092 | 0.010 | 0.0112 | 0.005 | 0.753 | 0.753 | 25.4 | 0.5 | |
| median | | | 7.75 | 216 | 9.74 | 104.9 | 15.9 | 0.0438 | 0.0264 | 0.010 | 0.0112 | 0.005 | 0.763 | 0.76 | 19.3 | 19 | |
| min | | | 7.27 | 81 | 8.92 | 97.2 | 1.7 | 0.0200 | 0.0092 | 0.010 | 0.0112 | 0.005 | 0.579 | 0.58 | 3.4 | 1 | |
| max | | | 8.74 | 449 | 13.54 | 111.2 | 21.2 | 0.3270 | 0.0445 | 0.101 | 0.101 | 0.005 | 2.32 | 2.42 | 1640 | 76 | |
| middle West Prairie River | 25-May-22 | | 7.30 | 92 | 9.74 | 99.2 | 12.4 | 0.1030 | 0.0148 | 0.033 | 0.033 | <0.010 | 0.72 | 0.753 | 167 | 5 | field duplicate |
| middle West Prairie River | 06-Jul-22 | 14:30 | 7.81 | 14.3 | 9.14 | 107.0 | 19.8 | 0.0040 | 0.0034 | <0.020 | <0.0224 | <0.010 | <0.050 | <0.055 | <3.0 | <1 | field duplicate |
| upper South Heart River | 27-Apr-22 | 13:30 | 7.76 | 420 | 14.01 | 109.7 | 4.9 | 0.0750 | 0.0210 | 0.010 | 0.0112 | 0.005 | 1.32 | 1.32 | 3.8 | 0.5 | |
| upper South Heart River | 11-May-22 | 13:30 | 7.86 | 362 | 12.1 | 107.4 | 7.1 | 0.1020 | 0.0334 | 0.010 | 0.0112 | 0.005 | 0.951 | 0.951 | 6.4 | 8 | |
| upper South Heart River | 25-May-22 | 14:10 | 7.83 | 250 | 10.44 | 109.3 | 13.9 | 0.0763 | 0.0337 | 0.010 | 0.0112 | 0.005 | 0.998 | 0.922 | 7 | 6 | |
| upper South Heart River | 08-Jun-22 | 13:15 | 7.74 | 238 | 9.25 | 103.3 | 16.6 | 0.0977 | 0.0780 | 0.038 | 0.038 | 0.005 | 1.02 | 1.06 | 1.5 | 0.5 | |
| upper South Heart River | 22-Jun-22 | 13:30 | 7.67 | 244 | 9.15 | 105.8 | 8.2 | 0.1600 | 0.0997 | 0.072 | 0.083 | 0.011 | 0.972 | 1.06 | 1.5 | 0.5 | |
| upper South Heart River | 06-Jul-22 | 13:40 | 8.18 | 239 | 9.74 | 114.4 | 19.8 | 0.0950 | 0.0888 | 0.022 | 0.0112 | 0.005 | 1.15 | 1.17 | 4 | 68 | |
| upper South Heart River | 20-Jul-22 | 13:40 | 7.80 | 246 | 8.88 | 106.5 | 20.6 | 0.1160 | 0.0962 | 0.056 | 0.067 | 0.011 | 1.07 | 1.14 | 3.4 | 6 | |
| upper South Heart River | 17-Aug-22 | 12:50 | 7.90 | 233 | 8.72 | 105.3 | 21.5 | 0.1550 | 0.1350 | 0.010 | 0.0112 | 0.005 | 1.52 | 1.52 | 3.6 | 0.5 | |
| upper South Heart River | 14-Sep-22 | 14:00 | 8.50 | 215 | 10.06 | 108.6 | 15.5 | 0.1400 | 0.1410 | 0.010 | 0.0112 | 0.005 | 1.54 | 1.54 | 7.4 | 14 | |
| upper South Heart River | 12-Oct-22 | 12:50 | 8.29 | 243 | 10.35 | 97.5 | 10.1 | 0.1270 | 0.0496 | 0.103 | 0.114 | 0.011 | 1.74 | 1.85 | 12.2 | 22 | |
| median | | | 7.85 | 243 | 9.90 | 107.0 | 14.7 | 0.1090 | 0.0834 | 0.016 | 0.0112 | 0.005 | 1.11 | 1.16 | 3.9 | 6 | |
| min | | | 7.67 | 215 | 8.72 | 97.5 | 4.9 | 0.0750 | 0.0210 | 0.010 | 0.0112 | 0.005 | 0.951 | 0.92 | 1.5 | 1 | |
| max | | | 8.50 | 420 | 14.01 | 114.4 | 21.5 | 0.1600 | 0.1410 | 0.103 | 0.114 | 0.011 | 1.74 | 1.85 | 12.2 | 68 | |

Appendix D - Routine Water Quality Data. Red values indicate an exceedance of a water quality guideline. Blue values are half the detection limit when reported values were less than the detection limit.

| Site | Date | Time | pH | Conductivity (µS/cm) | D. Oxygen (mg/L) | D. Oxygen Sat. (%) | Temp. (°C) | T. Phosphorus (mg/L) | TDP (mg/L) | NO ₃ -N (mg/L) | NO ₃ -N+NO ₂ -N (mg/L) | NO ₂ -N (mg/L) | TKN (mg/L) | TN (mg/L) | TSS (mg/L) | FC (cfu/100 mL) | Comment |
|-------------------------|-----------|-------|-------------|-------------------------|---------------------|-----------------------|-------------|-------------------------|---------------|------------------------------|---|---------------------------|---------------|-------------|---------------|--------------------|-----------------|
| lower South Heart River | 27-Apr-22 | 12:55 | 7.01 | 171 | 10.89 | 86.6 | 5.6 | 0.1210 | 0.0350 | 0.037 | 0.037 | 0.005 | 0.889 | 0.926 | 65.2 | 42 | |
| lower South Heart River | 11-May-22 | 14:15 | 6.93 | 116 | 9.78 | 85.7 | 6.0 | 0.1390 | 0.0349 | 0.033 | 0.033 | 0.005 | 1.01 | 1.04 | 79.6 | 38 | |
| lower South Heart River | 25-May-22 | 13:20 | 7.32 | 138 | 7.86 | 80.7 | 13.2 | 0.1460 | 0.0338 | 0.010 | 0.0112 | 0.005 | 1.04 | 1.04 | 62.2 | 26 | |
| lower South Heart River | 08-Jun-22 | 12:35 | 7.47 | 223 | 7.57 | 83.1 | 16.4 | 0.0959 | 0.0569 | 0.039 | 0.039 | 0.005 | 0.934 | 0.973 | 10.2 | 30 | |
| lower South Heart River | 22-Jun-22 | 12:55 | 7.32 | 158 | 6.86 | 78.6 | 18.6 | 0.1330 | 0.0311 | 0.010 | 0.0112 | 0.005 | 0.638 | 0.638 | 33.8 | 90 | |
| lower South Heart River | 06-Jul-22 | 13:05 | 7.72 | 228 | 7.8 | 90.2 | 7.7 | 0.0964 | 0.1000 | 0.010 | 0.0112 | 0.005 | 1.03 | 1.03 | 22.6 | 0.5 | |
| lower South Heart River | 20-Jul-22 | 13:05 | 7.87 | 259 | 8.02 | 91.9 | 18.6 | 0.0961 | 0.0737 | 0.010 | 0.0112 | 0.005 | 0.969 | 0.969 | 33.2 | 30 | |
| lower South Heart River | 17-Aug-22 | 13:25 | 8.18 | 241 | 7.79 | 91.4 | 20.2 | 0.0762 | 0.0356 | 0.010 | 0.0112 | 0.005 | 0.780 | 0.78 | 14.6 | 48 | |
| lower South Heart River | 14-Sep-22 | 13:20 | 8.04 | 235 | 7.84 | 78.4 | 12.3 | 0.1360 | 0.1420 | 0.010 | 0.0112 | 0.005 | 1.22 | 1.22 | 124 | 180 | |
| lower South Heart River | 12-Oct-22 | 12:15 | 8.56 | 256 | 10.7 | 90.2 | 6.0 | 0.2880 | 0.0265 | 0.048 | 0.048 | 0.005 | 1.36 | 1.41 | 289 | 190 | |
| median | | | 7.60 | 226 | 7.85 | 86.2 | 12.8 | 0.1270 | 0.0353 | 0.010 | 0.0112 | 0.005 | 0.990 | 1.00 | 48.0 | 40 | |
| min | | | 6.93 | 116 | 6.86 | 78.4 | 5.6 | 0.0762 | 0.0265 | 0.010 | 0.0112 | 0.005 | 0.638 | 0.64 | 10.2 | 1 | |
| max | | | 8.56 | 259 | 10.89 | 91.9 | 20.2 | 0.2880 | 0.1420 | 0.048 | 0.048 | 0.005 | 1.36 | 1.41 | 289 | 190 | |
| Grouard Channel | 27-Apr-22 | 10:30 | 7.37 | 224 | 11.68 | 98.2 | 7.8 | 0.1420 | 0.0440 | 0.010 | 0.0112 | 0.005 | 1.05 | 1.05 | 58.2 | 6 | |
| Grouard Channel | 11-May-22 | 10:50 | 7.30 | 136 | 9.82 | 83.9 | 5.9 | 0.1330 | 0.0380 | 0.029 | 0.029 | 0.005 | 1.11 | 1.14 | 80.6 | 24 | |
| Grouard Channel | 25-May-22 | 11:10 | 7.39 | 66 | 10.08 | 97.6 | 10.4 | 0.1390 | 0.0320 | 0.010 | 0.0112 | 0.005 | 1.04 | 1.04 | 63 | 26 | |
| Grouard Channel | 08-Jun-22 | 12:05 | 7.70 | 108 | 8.56 | 95.0 | 16.9 | 0.0413 | 0.0173 | 0.010 | 0.0112 | 0.005 | 0.373 | 0.373 | 30.2 | 36 | |
| Grouard Channel | 22-Jun-22 | 12:20 | 7.62 | 220 | 7.91 | 92.0 | 19.5 | 0.0999 | 0.0348 | 0.010 | 0.0112 | 0.005 | 0.496 | 0.496 | 13.2 | 32 | |
| Grouard Channel | 06-Jul-22 | 12:30 | 7.71 | 224 | 8.32 | 97.7 | 20.1 | 0.0880 | 0.0981 | 0.010 | 0.0112 | 0.005 | 0.947 | 0.947 | 1.5 | 34 | |
| Grouard Channel | 20-Jul-22 | 12:35 | 8.19 | 241 | 8.37 | 98.2 | 19.7 | 0.0590 | 0.0651 | 0.010 | 0.0112 | 0.005 | 0.711 | 0.711 | 4.6 | 0.5 | |
| Grouard Channel | 17-Aug-22 | 14:00 | 8.66 | 250 | 8.73 | 106.5 | 22.2 | 0.0454 | 0.0169 | 0.010 | 0.0112 | 0.005 | 0.780 | 0.78 | 1.5 | 0.5 | |
| Grouard Channel | 14-Sep-22 | 12:40 | 9.10 | 231 | 10.84 | 116.7 | 15.7 | 0.0379 | 0.0436 | 0.010 | 0.0112 | 0.005 | 0.792 | 0.792 | 5.2 | 58 | |
| Grouard Channel | 12-Oct-22 | 11:40 | 8.42 | 257 | 8.92 | 78.7 | 7.0 | 0.1800 | 0.0263 | 0.049 | 0.049 | 0.005 | 1.63 | 1.68 | 122 | 42 | |
| median | | | 7.71 | 224 | 8.83 | 97.7 | 16.3 | 0.0940 | 0.0364 | 0.010 | 0.0112 | 0.005 | 0.870 | 0.87 | 21.7 | 29 | |
| min | | | 7.30 | 66 | 7.91 | 78.7 | 5.9 | 0.0379 | 0.0169 | 0.010 | 0.0112 | 0.005 | 0.373 | 0.37 | 1.5 | 1 | |
| max | | | 9.10 | 257 | 11.68 | 116.7 | 22.2 | 0.1800 | 0.0981 | 0.049 | 0.049 | 0.005 | 1.63 | 1.68 | 122 | 58 | |
| Marten Creek | 26-Apr-22 | 14:00 | 7.48 | 163 | 13.52 | 94.7 | 0.9 | 0.1400 | 0.0220 | 0.182 | 0.182 | 0.005 | 0.545 | 0.727 | 172 | 22 | |
| Marten Creek | 10-May-22 | 14:25 | 7.54 | 73 | 12.38 | 97.5 | 2.3 | 0.1590 | 0.0189 | 0.047 | 0.047 | 0.005 | 0.658 | 0.705 | 256 | 4 | |
| Marten Creek | 24-May-22 | 14:30 | 7.45 | 67 | 10.25 | 102.7 | 12.3 | 0.0679 | 0.0173 | 0.035 | 0.035 | 0.005 | 0.487 | 0.683 | 87 | 3 | |
| Marten Creek | 07-Jun-22 | 14:10 | 7.65 | 118 | 9.83 | 104.5 | 15.3 | 0.0315 | 0.0129 | 0.010 | 0.0112 | 0.005 | 0.396 | 0.396 | 18.2 | 4 | |
| Marten Creek | 21-Jun-22 | 14:10 | 7.33 | 87 | 9.49 | 106.1 | 17.5 | 0.0559 | 0.0104 | 0.010 | 0.0112 | 0.005 | 0.406 | 0.406 | 90.4 | 16 | |
| Marten Creek | 05-Jul-22 | 14:35 | 7.65 | 167 | 9.11 | 105.0 | 19.1 | 0.0268 | 0.0257 | 0.010 | 0.0112 | 0.005 | 0.380 | 0.38 | 5 | 42 | |
| Marten Creek | 19-Jul-22 | 14:20 | 7.96 | 196 | 8.21 | 104.7 | 23.1 | 0.0218 | 0.0254 | 0.010 | 0.0112 | 0.005 | 0.465 | 0.465 | 7.6 | 120 | |
| Marten Creek | 16-Aug-22 | 14:55 | 7.23 | 102 | 8.96 | 103.6 | 19.2 | 0.0292 | 0.0316 | 0.010 | 0.0112 | 0.005 | 0.490 | 0.49 | 7.8 | 30 | |
| Marten Creek | 13-Sep-22 | 13:10 | 8.27 | 214 | 10.64 | 111.9 | 14.4 | 0.0216 | 0.0230 | 0.010 | 0.0112 | 0.005 | 0.334 | 0.334 | 4 | 10 | |
| Marten Creek | 11-Oct-22 | 14:10 | 8.38 | 229 | 12.5 | 111.7 | 7.3 | 0.0791 | 0.0090 | 0.010 | 0.0112 | 0.005 | 0.372 | 0.372 | 26.6 | 8 | |
| median | | | 7.60 | 141 | 10.04 | 104.6 | 14.9 | 0.0437 | 0.0205 | 0.010 | 0.0112 | 0.005 | 0.436 | 0.44 | 22.4 | 13 | |
| min | | | 7.23 | 67 | 8.21 | 94.7 | 0.9 | 0.0216 | 0.0090 | 0.010 | 0.0112 | 0.005 | 0.334 | 0.33 | 4.0 | 3 | |
| max | | | 8.38 | 229 | 13.52 | 111.9 | 23.1 | 0.1590 | 0.0316 | 0.182 | 0.182 | 0.005 | 0.658 | 0.73 | 256 | 120 | |
| Lesser Slave River | 26-Apr-22 | 14:30 | 7.85 | 189 | 13.74 | 105.4 | 4.2 | 0.0100 | 0.0100 | 0.031 | 0.031 | 0.005 | 0.461 | 0.492 | 3 | 0.5 | |
| Lesser Slave River | 10-May-22 | 14:55 | 7.80 | 158 | 12.11 | 92.4 | 1.4 | 0.0233 | 0.0249 | 0.032 | 0.032 | 0.005 | 0.522 | 0.554 | 10.4 | 4 | |
| Lesser Slave River | 24-May-22 | 15:10 | 8.02 | 167 | 11.63 | 110.2 | 9.9 | 0.0222 | 0.0104 | 0.010 | 0.0112 | 0.005 | 0.683 | 0.683 | 8 | 0.5 | |
| Lesser Slave River | 07-Jun-22 | 14:55 | 8.07 | 171 | 11.29 | 107.2 | 11.1 | 0.0148 | 0.0063 | 0.010 | 0.0112 | 0.005 | 0.529 | 0.529 | 4.2 | 0.5 | |
| Lesser Slave River | 21-Jun-22 | 14:40 | 8.07 | 182 | 10.21 | 114.4 | 17.6 | 0.0185 | 0.0044 | 0.010 | 0.0112 | 0.005 | 0.365 | 0.365 | 3.2 | 0.5 | |
| Lesser Slave River | 05-Jul-22 | 15:10 | 7.79 | 180 | 8.65 | 97.5 | 17.5 | 0.0088 | 0.0091 | 0.010 | 0.0112 | 0.005 | 0.420 | 0.42 | 3.4 | 0.5 | |
| Lesser Slave River | 19-Jul-22 | 14:55 | 8.04 | 172 | 8.53 | 103.4 | 20.9 | 0.0185 | 0.0098 | 0.010 | 0.0112 | 0.005 | 0.646 | 0.646 | 20.2 | 16 | |
| Lesser Slave River | 16-Aug-22 | 15:30 | 8.03 | 172 | 9.3 | 110.4 | 20.6 | 0.0083 | 0.0096 | 0.010 | 0.0112 | 0.005 | 0.439 | 0.439 | 5.4 | 0.5 | |
| Lesser Slave River | 13-Sep-22 | 13:45 | 8.56 | 150 | 10.29 | 109.8 | 15.0 | 0.0088 | 0.0099 | 0.010 | 0.0112 | 0.005 | 0.505 | 0.505 | 1.5 | 0.5 | |
| Lesser Slave River | 11-Oct-22 | 14:45 | 8.40 | 169 | 11.42 | 109.7 | 10.3 | 0.0659 | 0.0064 | 0.010 | 0.0112 | 0.005 | 0.526 | 0.526 | 45.8 | 66 | |
| median | | | 8.04 | 172 | 10.79 | 108.5 | 13.1 | 0.0167 | 0.0097 | 0.010 | 0.0112 | 0.005 | 0.514 | 0.52 | 4.8 | 1 | |
| min | | | 7.79 | 150 | 8.53 | 92.4 | 1.4 | 0.0083 | 0.0044 | 0.010 | 0.0112 | 0.005 | 0.365 | 0.37 | 1.5 | 1 | |
| max | | | 8.56 | 189 | 13.74 | 114.4 | 20.9 | 0.0659 | 0.0249 | 0.032 | 0.032 | 0.005 | 0.683 | 0.68 | 45.8 | 66 | |
| Lesser Slave River | 19-Jul-22 | 15:00 | 8.04 | 172 | 8.53 | 103.4 | 20.9 | 0.0182 | 0.0100 | <0.020 | <0.0224 | <0.010 | 0.646 | 0.646 | 15.8 | 42 | field duplicate |

Appendix D - Routine Water Quality Data. Red values indicate an exceedance of a water quality guideline. Blue values are half the detection limit when reported values were less than the detection limit.

| Site | Date | Time | pH | Conductivity (µS/cm) | D. Oxygen (mg/L) | D. Oxygen Sat. (%) | Temp. (°C) | T. Phosphorus (mg/L) | TDP (mg/L) | NO ₃ -N (mg/L) | NO ₃ -N+NO ₂ -N (mg/L) | NO ₂ -N (mg/L) | TKN (mg/L) | TN (mg/L) | TSS (mg/L) | FC (cfu/100 mL) | Comment |
|----------------------------|-----------|-------|-------------|-------------------------|---------------------|-----------------------|-------------|-------------------------|---------------|------------------------------|---|---------------------------|---------------|-------------|---------------|--------------------|-----------------|
| Otauwau River | 26-Apr-22 | 11:55 | 7.44 | 122 | 14.1 | 100.7 | 1.5 | 0.1950 | 0.0330 | 0.052 | 0.052 | 0.005 | 0.448 | 0.5 | 198 | 10 | |
| Otauwau River | 10-May-22 | 12:20 | 7.43 | 54 | 11.85 | 96.9 | 3.2 | 0.1140 | 0.0251 | 0.021 | 0.0112 | 0.005 | 0.937 | 0.958 | 104 | 10 | |
| Otauwau River | 24-May-22 | 12:40 | 7.43 | 48 | 10.56 | 101.8 | 10.4 | 0.0590 | 0.0205 | 0.010 | 0.0112 | 0.005 | 0.722 | 0.722 | 40 | 4 | |
| Otauwau River | 07-Jun-22 | 12:20 | 7.78 | 91 | 10.02 | 107.9 | 15.7 | 0.0296 | 0.0314 | 0.010 | 0.0112 | 0.005 | 0.541 | 0.541 | 4.8 | 6 | |
| Otauwau River | 21-Jun-22 | 12:20 | 7.34 | 64 | 9.65 | 103.9 | 14.9 | 0.1360 | 0.0154 | 0.010 | 0.0112 | 0.005 | 0.661 | 0.661 | 175 | 28 | |
| Otauwau River | 05-Jul-22 | 12:45 | 7.44 | 86 | 9.48 | 104.1 | 16.5 | 0.0393 | 0.0360 | 0.010 | 0.0112 | 0.005 | 0.612 | 0.612 | 29.8 | 24 | |
| Otauwau River | 19-Jul-22 | 12:30 | 7.76 | 125 | 9.07 | 109.4 | 20.7 | 0.0341 | 0.0347 | 0.010 | 0.0112 | 0.005 | 0.666 | 0.666 | 7.2 | 36 | |
| Otauwau River | 16-Aug-22 | 12:35 | 7.86 | 138 | 9.24 | 110.3 | 20.6 | 0.0510 | 0.0525 | 0.010 | 0.0112 | 0.005 | 0.600 | 0.6 | 13.4 | 60 | |
| Otauwau River | 13-Sep-22 | 11:30 | 8.31 | 166 | 10.91 | 107.3 | 11.2 | 0.0324 | 0.0338 | 0.010 | 0.0112 | 0.005 | 0.444 | 0.444 | 8.6 | 0.5 | |
| Otauwau River | 11-Oct-22 | 12:10 | 8.60 | 183 | 12.61 | 112.0 | 6.2 | 0.0512 | 0.0191 | 0.010 | 0.0112 | 0.005 | 0.295 | 0.295 | 7.4 | 4 | |
| median | | | 7.60 | 107 | 10.29 | 105.7 | 13.1 | 0.0511 | 0.0322 | 0.010 | 0.0112 | 0.005 | 0.606 | 0.61 | 21.6 | 10 | |
| min | | | 7.34 | 48 | 9.07 | 96.9 | 1.5 | 0.0296 | 0.0154 | 0.010 | 0.0112 | 0.005 | 0.295 | 0.30 | 4.8 | 1 | |
| max | | | 8.60 | 183 | 14.10 | 112.0 | 20.7 | 0.1950 | 0.0525 | 0.052 | 0.052 | 0.005 | 0.937 | 0.96 | 198 | 60 | |
| Saulteaux River | 26-Apr-22 | 11:15 | 7.79 | 156 | 12.83 | 108.7 | 3.1 | 0.0720 | 0.0350 | 0.010 | 0.0112 | 0.005 | 0.564 | 0.564 | 9.2 | 6 | |
| Saulteaux River | 10-May-22 | 11:40 | 7.26 | 65 | 10.66 | 89.2 | 4.8 | 0.1930 | 0.0256 | 0.010 | 0.0112 | 0.005 | 1.02 | 1.02 | 265 | 42 | |
| Saulteaux River | 24-May-22 | 12:00 | 7.25 | 62 | 9.82 | 97.2 | 11.8 | 0.0734 | 0.0239 | 0.010 | 0.0112 | 0.005 | 0.844 | 0.722 | 40 | 18 | |
| Saulteaux River | 07-Jun-22 | 11:40 | 7.47 | 105 | 9.04 | 97.6 | 16.4 | 0.0444 | 0.0221 | 0.010 | 0.0112 | 0.005 | 0.486 | 0.486 | 12 | 6 | |
| Saulteaux River | 21-Jun-22 | 11:35 | 7.08 | 69 | 7.85 | 83.5 | 15.4 | 0.3010 | 0.0207 | 0.023 | 0.023 | 0.005 | 1.1 | 1.12 | 559 | 120 | |
| Saulteaux River | 05-Jul-22 | 12:15 | 7.34 | 108 | 8.75 | 95.8 | 16.6 | 0.0779 | 0.0448 | 0.010 | 0.0112 | 0.005 | 0.963 | 0.963 | 80.4 | 68 | |
| Saulteaux River | 19-Jul-22 | 11:45 | 7.49 | 158 | 7.8 | 96.7 | 22.4 | 0.0453 | 0.0454 | 0.010 | 0.0112 | 0.005 | 0.850 | 0.85 | 11.4 | 70 | |
| Saulteaux River | 16-Aug-22 | 11:55 | 7.70 | 188 | 8.11 | 98.2 | 21.5 | 0.0459 | 0.0570 | 0.010 | 0.0112 | 0.005 | 0.608 | 0.608 | 1.5 | 110 | |
| Saulteaux River | 13-Sep-22 | 10:55 | 8.23 | 162 | 9.42 | 91.9 | 10.4 | 0.0398 | 0.0407 | 0.023 | 0.0112 | 0.583 | 0.560 | 0.583 | 4.6 | 0.5 | |
| Saulteaux River | 11-Oct-22 | 11:30 | 8.30 | 349 | 11.62 | 102.6 | 6.7 | 0.0426 | 0.0164 | 0.010 | 0.0112 | 0.005 | 0.403 | 0.403 | 11.2 | 15 | |
| median | | | 7.48 | 132 | 9.23 | 97.0 | 13.6 | 0.0590 | 0.0303 | 0.010 | 0.0112 | 0.005 | 0.726 | 0.67 | 11.7 | 30 | |
| min | | | 7.08 | 62 | 7.80 | 83.5 | 3.1 | 0.0398 | 0.0164 | 0.010 | 0.0112 | 0.005 | 0.403 | 0.40 | 1.5 | 1 | |
| max | | | 8.30 | 349 | 12.83 | 108.7 | 22.4 | 0.3010 | 0.0570 | 0.023 | 0.023 | 0.583 | 1.10 | 1.12 | 559 | 120 | |
| Saulteaux River | 21-Jun-22 | 11:45 | 7.08 | 69 | 7.85 | 83.5 | 15.4 | 0.2790 | 0.0205 | <0.020 | <0.0224 | <0.010 | 1.07 | 1.07 | 695 | 140 | field duplicate |
| Driftwood River | 26-Apr-22 | 12:50 | 7.40 | 128 | 13.93 | 98.5 | 1.2 | 0.1040 | 0.0290 | 0.010 | 0.0112 | 0.005 | 0.699 | 0.699 | 68.4 | 10 | |
| Driftwood River | 10-May-22 | 13:20 | 7.51 | 103 | 12.06 | 97.1 | 3.3 | 0.1040 | 0.0199 | 0.046 | 0.046 | 0.005 | 1.18 | 1.23 | 117 | 64 | |
| Driftwood River | 24-May-22 | 13:30 | 7.89 | 118 | 10.83 | 105.0 | 10.9 | 0.0324 | 0.0164 | 0.010 | 0.0112 | 0.005 | 0.730 | 0.73 | 10.8 | 6 | |
| Driftwood River | 07-Jun-22 | 13:10 | 8.10 | 132 | 9.86 | 107.0 | 13.3 | 0.0338 | 0.0217 | 0.010 | 0.0112 | 0.005 | 0.746 | 0.746 | 8.4 | 4 | |
| Driftwood River | 21-Jun-22 | 13:10 | 7.55 | 107 | 10 | 105.7 | 15.0 | 0.0662 | 0.0141 | 0.010 | 0.0112 | 0.005 | 0.616 | 0.616 | 63.8 | 46 | |
| Driftwood River | 05-Jul-22 | 13:40 | 7.97 | 150 | 9.31 | 106.8 | 18.9 | 0.0252 | 0.0225 | 0.010 | 0.0112 | 0.005 | 0.754 | 0.754 | 5 | 20 | |
| Driftwood River | 19-Jul-22 | 13:20 | 7.94 | 144 | 8.81 | 106.7 | 21.2 | 0.0173 | 0.0180 | 0.010 | 0.0112 | 0.005 | 0.816 | 0.816 | 3.2 | 12 | |
| Driftwood River | 16-Aug-22 | 13:35 | 7.72 | 137 | 9.61 | 113.2 | 20.2 | 0.0220 | 0.0254 | 0.078 | 0.088 | 0.01 | 0.736 | 0.824 | 1.5 | 12 | |
| Driftwood River | 13-Sep-22 | 12:15 | 8.29 | 133 | 11.64 | 116.3 | 12.1 | 0.0162 | 0.0178 | 0.010 | 0.0112 | 0.005 | 0.725 | 0.725 | 3 | 0.5 | |
| Driftwood River | 11-Oct-22 | 13:10 | 7.36 | 180 | 12.47 | 110.7 | 7.1 | 0.0275 | 0.0125 | 0.010 | 0.0112 | 0.005 | 0.202 | 0.202 | 1.5 | 4 | |
| median | | | 7.81 | 132 | 10.42 | 106.8 | 12.7 | 0.0300 | 0.0190 | 0.010 | 0.0112 | 0.005 | 0.733 | 0.74 | 6.7 | 11 | |
| min | | | 7.36 | 103 | 8.81 | 97.1 | 1.2 | 0.0162 | 0.0125 | 0.010 | 0.0112 | 0.005 | 0.202 | 0.20 | 1.5 | 1 | |
| max | | | 8.29 | 180 | 13.93 | 116.3 | 21.2 | 0.1040 | 0.0290 | 0.078 | 0.088 | 0.010 | 1.18 | 1.23 | 117 | 64 | |
| Badger Creek (field blank) | 11-May-22 | 15:20 | | | 14.5 | | | 0.0049 | 0.0037 | <0.020 | <0.0224 | <0.010 | <0.050 | <0.055 | <3.0 | <1 | |
| Badger Creek (field Blank) | 14-Sep-22 | 14:40 | | | | | | <0.0020 | <0.0020 | <0.020 | <0.0224 | <0.010 | <0.050 | <0.055 | <3.0 | <1 | |

Appendix E: Total Metals Data at Lesser Slave Watershed Sites, April-October 2022.

| Site | Date | Time | TOTAL METALS | | | | | | | | | | |
|---------------------------|-----------|-------|-------------------|--------------------|--------------------|-------------------|------------------|-----------------|-------------------|-------------------|----------------------------------|--------------------|------------------|
| | | | Mercury (µg/L) | Aluminum (µg/L) | Antimony (µg/L) | Arsenic (µg/L) | Barium (µg/L) | Boron (µg/L) | Cadmium (µg/L) | Calcium (mg/L) | Hexavalent Chromium (µg/L) | Chromium (µg/L) | Copper (µg/L) |
| upper Swan River | 26-Apr-22 | 9:45 | 0.0082 | 1480 | 0.18 | 0.232 | 95.6 | <10 | 0.0960 | 13.3 | <0.5 | 2.21 | 6.46 |
| upper Swan River | 24-May-22 | 10:30 | 0.0113 | 2200 | 0.26 | 2.49 | 97.8 | <10 | 0.0990 | 11.6 | <0.5 | 3.11 | 7.45 |
| upper Swan River | 21-Jun-22 | 9:50 | 0.0115 | 5230 | 0.25 | 1.90 | 88.5 | 30 | 0.0585 | 12.2 | <0.5 | 6.03 | 5.51 |
| upper Swan River | 19-Jul-22 | 10:05 | <0.005 | 99 | 0.22 | 1.42 | 66.1 | 12 | 0.0217 | 23.0 | <0.5 | <0.5 | 1.99 |
| upper Swan River | 16-Aug-22 | 10:00 | <0.005 | 225 | 0.20 | 1.47 | 65.9 | 12 | 0.0209 | 21.5 | <0.5 | <0.5 | 2.04 |
| upper Swan River | 13-Sep-22 | 9:30 | <0.005 | 138 | 0.14 | 1.64 | 86.3 | 15 | 0.0229 | 26.5 | <0.5 | <0.5 | 1.18 |
| upper Swan River | 11-Oct-22 | 10:00 | <0.005 | 30.7 | 0.13 | 1.30 | 71.7 | 21 | 0.0089 | 29.1 | <0.5 | <0.5 | 0.69 |
| lower Swan River | 26-Apr-22 | 9:00 | 0.0185 | 5120 | 0.29 | 5.57 | 218 | 10 | 0.3470 | 13.7 | <0.5 | 7.84 | 18.3 |
| lower Swan River | 24-May-22 | 9:35 | 0.0164 | 1790 | 0.21 | 2.06 | 78.0 | 12 | 0.0706 | 10.1 | <0.5 | 2.80 | 6.78 |
| lower Swan River | 21-Jun-22 | 9:00 | 0.0077 | 8650 | 0.31 | 3.26 | 130 | 80 | 0.1130 | 10.6 | <0.5 | 10.2 | 10.0 |
| lower Swan River | 19-Jul-22 | 9:15 | <0.005 | 194 | 0.23 | 1.79 | 70.6 | 19 | 0.0293 | 22.0 | <0.5 | <0.5 | 2.71 |
| lower Swan River | 16-Aug-22 | 9:05 | 0.0054 | 2420 | 0.30 | 3.68 | 95.2 | 18 | 0.0935 | 13.8 | <0.5 | 3.58 | 11.3 |
| lower Swan River | 13-Sep-22 | 8:35 | <0.005 | 26.7 | 0.16 | 1.35 | 94.4 | 35 | 0.0182 | 33.4 | <0.5 | <0.5 | 1.24 |
| lower Swan River | 11-Oct-22 | 9:10 | <0.005 | 24.2 | 0.16 | 1.31 | 90.1 | 26 | 0.0199 | 37.6 | <0.5 | <0.5 | 0.99 |
| lower Driftpile River | 27-Apr-22 | 9:20 | <0.005 | 7550 | 0.31 | 7.34 | 263 | 12 | 0.3640 | 15.0 | <0.5 | 11.40 | 23.6 |
| upper Driftpile River | 25-May-22 | 11:40 | 0.011 | 416 | 0.16 | 1.22 | 58.7 | <10 | 0.0507 | 10.6 | <0.5 | 0.74 | 3.87 |
| lower Driftpile River | 22-Jun-22 | 1:05 | 0.0142 | 1920 | 0.21 | 2.52 | 93.3 | 14 | 0.1080 | 12.4 | <0.5 | 2.95 | 7.60 |
| lower Driftpile River | 20-Jul-22 | 11:10 | <0.005 | 176 | 0.24 | 1.63 | 72.5 | 16 | 0.0327 | 22.0 | <0.5 | <0.5 | 2.59 |
| lower Driftpile River | 17-Aug-22 | 10:10 | 0.0122 | 608 | 0.26 | 1.97 | 69.2 | 14 | 0.0759 | 11.6 | <0.5 | 1.64 | 5.60 |
| lower Driftpile River | 14-Sep-22 | 11:15 | <0.005 | 43.4 | 0.18 | 1.28 | 120 | 22 | 0.0234 | 42.6 | <0.5 | <0.5 | 1.50 |
| lower Driftpile River | 12-Oct-22 | 10:10 | <0.005 | 36.8 | 0.21 | 0.85 | 110 | 40 | 0.0204 | 47.9 | <0.5 | <0.5 | 1.13 |
| middle East Prairie River | 27-Apr-22 | 12:10 | <0.005 | 12800 | 0.40 | 13.0 | 458 | 16 | 0.7060 | 27.1 | <0.5 | 20.0 | 41.5 |
| middle East Prairie River | 25-May-22 | 9:10 | 0.0152 | 2720 | 0.28 | 3.23 | 110 | 13 | 0.0874 | 17.6 | <0.5 | 3.91 | 9.36 |
| middle East Prairie River | 22-Jun-22 | 9:00 | 0.0153 | 2240 | 0.27 | 2.98 | 99.5 | 15 | 0.0720 | 17.6 | <0.5 | 3.44 | 8.64 |
| middle East Prairie River | 20-Jul-22 | 9:20 | <0.005 | 259 | 0.30 | 2.27 | 83.7 | 16 | 0.0278 | 38.8 | <0.5 | 0.54 | 2.62 |
| middle East Prairie River | 17-Aug-22 | 8:30 | <0.005 | 94.1 | 0.30 | 2.00 | 83.1 | 17 | 0.0452 | 43.6 | <0.5 | <0.5 | 2.11 |
| middle East Prairie River | 14-Sep-22 | 9:10 | <0.005 | 30.8 | 0.21 | 0.99 | 92.7 | 17 | 0.0147 | 53.8 | <0.5 | <0.5 | 1.28 |
| middle East Prairie River | 12-Oct-22 | 8:30 | <0.005 | 33.2 | 0.39 | 0.84 | 81.3 | 42 | 0.0121 | 56.2 | <0.5 | <0.5 | 1.10 |
| middle West Prairie River | 27-Apr-22 | 14:30 | <0.005 | 12900 | 0.38 | 14.0 | 429 | 19 | 0.7080 | 25.7 | <0.5 | 21.1 | 41.1 |
| middle West Prairie River | 25-May-22 | 14:55 | 0.0112 | 2630 | 0.26 | 3.21 | 103 | 16 | 0.1020 | 17.5 | <0.5 | 4.11 | 8.80 |
| middle West Prairie River | 22-Jun-22 | 14:10 | 0.0065 | 1360 | 0.19 | 1.92 | 65.7 | 18 | 0.0424 | 19.0 | <0.5 | 2.12 | 4.94 |
| middle West Prairie River | 20-Jul-22 | 14:15 | <0.005 | 58.5 | 0.23 | 1.54 | 97.0 | 24 | 0.0279 | 48.8 | <0.5 | <0.5 | 2.37 |
| middle West Prairie River | 17-Aug-22 | 12:10 | <0.005 | 70.1 | 0.21 | 1.09 | 109 | 31 | 0.0324 | 58.9 | <0.5 | <0.5 | 1.97 |
| middle West Prairie River | 14-Sep-22 | 14:35 | 0.005 | 144 | 0.20 | 1.29 | 131 | 31 | 0.0293 | 70.9 | <0.5 | <0.5 | 2.34 |
| middle West Prairie River | 12-Oct-22 | n/a | | not sampled | | | | | | | | | |

Appendix E: Total Metals Data at Lesser Slave Watershed Sites, April-October 2022.

| Site | Date | Time | TOTAL METALS | | | | | | | | | | |
|---|-----------|-------|-------------------|------------------------|--------------------|-------------------|------------------|-----------------|-------------------|-------------------|----------------------------------|--------------------|------------------|
| | | | Mercury (µg/L) | Aluminum (µg/L) | Antimony (µg/L) | Arsenic (µg/L) | Barium (µg/L) | Boron (µg/L) | Cadmium (µg/L) | Calcium (mg/L) | Hexavalent Chromium (µg/L) | Chromium (µg/L) | Copper (µg/L) |
| Marten Creek | 26-Apr-22 | 14:00 | 0.0078 | 788 | 0.11 | 1.93 | 114 | 16 | 0.0876 | 20.0 | <0.5 | 1.32 | 4.16 |
| Marten Creek | 24-May-22 | n/a | | sample was lost at lab | | | | | | | | | |
| Marten Creek | 21-Jun-22 | 14:10 | 0.0112 | 2830 | 0.14 | 1.24 | 74.1 | 26 | 0.0518 | 11.0 | <0.5 | 3.81 | 4.83 |
| Marten Creek | 19-Jul-22 | 14:20 | <0.005 | 57.1 | 0.12 | 1.31 | 118 | 40 | 0.0285 | 34.9 | <0.5 | <0.5 | 1.62 |
| Marten Creek | 16-Aug-22 | 14:55 | <0.005 | 204 | 0.11 | 1.15 | 66.3 | 18 | 0.0412 | 14.2 | <0.5 | 0.71 | 2.40 |
| Marten Creek | 13-Sep-22 | 13:10 | <0.005 | 46.1 | 0.12 | 1.08 | 108 | 42 | 0.0142 | 34.9 | <0.5 | <0.5 | 1.05 |
| Marten Creek | 11-Oct-22 | 14:10 | <0.005 | 294 | 0.11 | 1.42 | 126 | 43 | 0.0350 | 39.4 | 0.62 | <0.5 | 1.40 |
| Notes: 0.0183 Red fill indicates exceedance of chronic and acute Protection of Aquatic Life guidelines 0.019 Red font indicates exceedance of chronic Protection of Aquatic Life guidelines 0.019 Red shading indicates exceedance of acute Protection of Aquatic Life guidelines Total cadmium, total copper, total lead, total nickel, dissolved zinc and dissolved manganese PAL guidelines vary with hardness. Total copper - chronic PAL guideline only applies to water with a hardness \geq 50 mg/L CaCO ₃ | | | | | | | | | | | | | |

Appendix E: Total Metals Data at Lesser Slave Watershed Sites, April-October 2022.

| Site | Date | Time | TOTAL METALS | | | | | | | | | | |
|---------------------------|-----------|-------|--------------|--------------|------------------|------------------|---------------|------------------|-----------------|---------------|---------------|----------------|-------------|
| | | | Iron (µg/L) | Lead (µg/L) | Magnesium (µg/L) | Manganese (µg/L) | Nickel (µg/L) | Potassium (µg/L) | Selenium (µg/L) | Silver (µg/L) | Sodium (mg/L) | Uranium (µg/L) | Zinc (µg/L) |
| upper Swan River | 26-Apr-22 | 9:45 | 3570 | 2.370 | 2980 | 271 | 7.51 | 2120 | 0.152 | 0.024 | 9.32 | 0.518 | 13.6 |
| upper Swan River | 24-May-22 | 10:30 | 3750 | 3.150 | 2670 | 170 | 8.30 | 1550 | 0.184 | 0.033 | 4.18 | 0.589 | 19.5 |
| upper Swan River | 21-Jun-22 | 9:50 | 3920 | 1.820 | 2920 | 97.7 | 6.86 | 1940 | 0.157 | 0.026 | 5.79 | 0.500 | 11.8 |
| upper Swan River | 19-Jul-22 | 10:05 | 817 | 0.233 | 4020 | 53 | 3.23 | 1510 | 0.125 | <0.01 | 10.0 | 0.320 | <3.0 |
| upper Swan River | 16-Aug-22 | 10:00 | 890 | 0.265 | 3890 | 66.6 | 3.18 | 1500 | 0.127 | 0.013 | 9.63 | 0.283 | <3.0 |
| upper Swan River | 13-Sep-22 | 9:30 | 1530 | 0.310 | 5020 | 177 | 3.54 | 1850 | 0.086 | <0.01 | 13.7 | 0.363 | 4.1 |
| upper Swan River | 11-Oct-22 | 10:00 | 1380 | 0.084 | 5620 | 87.5 | 2.58 | 1770 | 0.058 | <0.01 | 14.7 | 0.364 | <3.0 |
| lower Swan River | 26-Apr-22 | 9:00 | 12400 | 6.550 | 4180 | 740 | 21.4 | 3140 | 0.273 | 0.064 | 7.60 | 1.17 | 42.6 |
| lower Swan River | 24-May-22 | 9:35 | 3520 | 2.370 | 2290 | 98.3 | 8.03 | 1760 | 0.174 | 0.029 | 4.48 | 0.470 | 13.3 |
| lower Swan River | 21-Jun-22 | 9:00 | 6340 | 3.590 | 3260 | 150 | 13.0 | 2920 | 0.248 | 0.044 | 5.05 | 0.737 | 28.6 |
| lower Swan River | 19-Jul-22 | 9:15 | 1750 | 0.462 | 4540 | 65 | 3.99 | 2010 | 0.109 | <0.01 | 10.4 | 0.407 | <3.0 |
| lower Swan River | 16-Aug-22 | 9:05 | 5260 | 3.530 | 3180 | 156 | 10.1 | 2340 | 0.200 | 0.040 | 6.89 | 0.630 | 17.7 |
| lower Swan River | 13-Sep-22 | 8:35 | 1550 | 0.105 | 7370 | 293 | 3.72 | 3560 | 0.093 | <0.01 | 15.4 | 0.750 | 3.8 |
| lower Swan River | 11-Oct-22 | 9:10 | 2330 | 0.106 | 7110 | 348 | 3.52 | 2420 | 0.104 | <0.01 | 13.1 | 0.761 | 4.6 |
| lower Driftpile River | 27-Apr-22 | 9:20 | 14600 | 9.22 | 5240 | 747 | 25.9 | 3380 | 0.394 | 0.092 | 4.09 | 1.50 | 58.3 |
| upper Driftpile River | 25-May-22 | 11:40 | 1100 | 1.240 | 2190 | 68.6 | 4.99 | 1320 | 0.131 | <0.01 | 3.66 | 0.411 | 5.9 |
| lower Driftpile River | 22-Jun-22 | 1:05 | 3740 | 2.480 | 2850 | 111 | 10.6 | 1690 | 0.229 | 0.027 | 4.36 | 0.636 | 18.7 |
| lower Driftpile River | 20-Jul-22 | 11:10 | 1230 | 0.444 | 4220 | 59.1 | 4.35 | 1760 | 0.178 | <0.01 | 7.46 | 0.455 | <3.0 |
| lower Driftpile River | 17-Aug-22 | 10:10 | 2060 | 1.490 | 2150 | 97.3 | 8.89 | 1540 | 0.176 | 0.020 | 5.36 | 0.552 | 7.5 |
| lower Driftpile River | 14-Sep-22 | 11:15 | 1120 | 0.131 | 9170 | 134 | 4.48 | 2550 | 0.134 | <0.01 | 10.5 | 1.42 | 6.9 |
| lower Driftpile River | 12-Oct-22 | 10:10 | 1080 | 0.086 | 10400 | 221 | 3.94 | 2940 | 0.115 | <0.01 | 12.2 | 1.41 | <3.0 |
| middle East Prairie River | 27-Apr-22 | 12:10 | 26100 | 17.3 | 9520 | 1040 | 44.5 | 4560 | 0.755 | 0.184 | 5.95 | 2.25 | 110 |
| middle East Prairie River | 25-May-22 | 9:10 | 4980 | 3.96 | 3960 | 136 | 10.7 | 2520 | 0.241 | 0.040 | 6.02 | 0.764 | 21.7 |
| middle East Prairie River | 22-Jun-22 | 9:00 | 4420 | 2.87 | 3750 | 116 | 9.60 | 2080 | 0.272 | 0.030 | 5.94 | 0.635 | 26.9 |
| middle East Prairie River | 20-Jul-22 | 9:20 | 1480 | 0.535 | 6790 | 59.7 | 3.32 | 2240 | 0.227 | <0.01 | 11.1 | 1.66 | <3.0 |
| middle East Prairie River | 17-Aug-22 | 8:30 | 927 | 0.318 | 7440 | 48.8 | 2.76 | 2260 | 0.209 | 0.012 | 11.7 | 1.96 | 4.4 |
| middle East Prairie River | 14-Sep-22 | 9:10 | 431 | 0.062 | 10700 | 82.3 | 2.91 | 2660 | 0.136 | <0.01 | 14.2 | 2.58 | 3.3 |
| middle East Prairie River | 12-Oct-22 | 8:30 | 564 | 0.068 | 11000 | 108 | 2.48 | 2630 | 0.121 | <0.01 | 15.3 | 2.34 | 8.8 |
| middle West Prairie River | 27-Apr-22 | 14:30 | 28300 | 18.8 | 9730 | 884 | 46.7 | 4760 | 0.901 | 0.205 | 4.74 | 2.83 | 122 |
| middle West Prairie River | 25-May-22 | 14:55 | 5270 | 3.61 | 4000 | 109 | 11.6 | 2430 | 0.304 | 0.041 | 5.28 | 0.827 | 22.1 |
| middle West Prairie River | 22-Jun-22 | 14:10 | 2380 | 1.130 | 4200 | 53.5 | 7.09 | 1790 | 0.271 | 0.017 | 7.66 | 0.520 | 9.8 |
| middle West Prairie River | 20-Jul-22 | 14:15 | 1200 | 0.245 | 10800 | 177 | 4.77 | 2540 | 0.292 | <0.01 | 11.9 | 1.49 | <3.0 |
| middle West Prairie River | 17-Aug-22 | 12:10 | 576 | 0.128 | 13100 | 164 | 4.43 | 3130 | 0.260 | 0.011 | 12.4 | 1.81 | <3.0 |
| middle West Prairie River | 14-Sep-22 | 14:35 | 1770 | 0.336 | 17200 | 520 | 5.62 | 3070 | 0.246 | <0.01 | 15.0 | 2.16 | <3.0 |
| middle West Prairie River | 12-Oct-22 | n/a | | | | | | | | | | | |

Appendix E: Total Metals Data at Lesser Slave Watershed Sites, April-October 2022.

| Site | Date | Time | TOTAL METALS | | | | | | | | | | |
|--|-----------|-------|--------------|-------------|------------------|------------------|---------------|------------------|-----------------|---------------|---------------|----------------|-------------|
| | | | Iron (µg/L) | Lead (µg/L) | Magnesium (µg/L) | Manganese (µg/L) | Nickel (µg/L) | Potassium (µg/L) | Selenium (µg/L) | Silver (µg/L) | Sodium (mg/L) | Uranium (µg/L) | Zinc (µg/L) |
| Marten Creek | 26-Apr-22 | 14:00 | 5500 | 1.140 | 5050 | 562 | 6.55 | 1860 | 0.120 | 0.014 | 7.53 | 0.322 | 20.5 |
| Marten Creek | 24-May-22 | n/a | | | | | | | | | | | |
| Marten Creek | 21-Jun-22 | 14:10 | 2740 | 0.978 | 3110 | 85.7 | 7.29 | 1430 | 0.127 | 0.017 | 3.66 | 0.312 | 12 |
| Marten Creek | 19-Jul-22 | 14:20 | 2380 | 0.155 | 8450 | 134 | 4.12 | 1700 | 0.106 | <0.01 | 10.3 | 0.394 | 4.2 |
| Marten Creek | 16-Aug-22 | 14:55 | 1920 | 0.302 | 3520 | 70.2 | 4.90 | 911 | 0.121 | 0.012 | 4.33 | 0.180 | 3.3 |
| Marten Creek | 13-Sep-22 | 13:10 | 2390 | 0.128 | 8750 | 125 | 3.38 | 1570 | 0.093 | <0.01 | 9.76 | 0.378 | 11.6 |
| Marten Creek | 11-Oct-22 | 14:10 | 4230 | 0.421 | 8930 | 540 | 3.74 | 1670 | 0.069 | <0.01 | 10.4 | 0.379 | 15.8 |
| Notes: | | | | | | | | | | | | | |
| 0.0183 Red fill indicates exceedance of chronic and acute Protection of Aquatic Life guidelines | | | | | | | | | | | | | |
| 0.019 Red font indicates exceedance of chronic Protection of Aquatic Life guidelines | | | | | | | | | | | | | |
| 0.019 Red shading indicates exceedance of acute Protection of Aquatic Life guidelines | | | | | | | | | | | | | |
| Total cadmium, total copper, total lead, total nickel, dissolved zinc and dissolved manganese PAL guidelines vary with hardness. Total copper - chronic PAL guideline only applies to water with a hardness \geq 50 mg/L CaCO ₃ | | | | | | | | | | | | | |

Appendix E: Dissolved Metals Data at Lesser Slave Watershed Sites, April-October 2022.

| Site | Date | Time | DISSOLVED METALS | | | | | | | | | |
|---------------------------|-----------|-------|-------------------|--------------------|--------------------|-------------------|------------------|-----------------|-------------------|-------------------|--------------------|------------------|
| | | | Mercury (µg/L) | Aluminum (µg/L) | Antimony (µg/L) | Arsenic (µg/L) | Barium (µg/L) | Boron (µg/L) | Cadmium (µg/L) | Calcium (mg/L) | Chromium (µg/L) | Copper (µg/L) |
| upper Swan River | 26-Apr-22 | 9:45 | 0.0066 | 127 | 0.12 | 0.69 | 43.8 | <10 | 0.0247 | 12.0 | <0.5 | 2.21 |
| upper Swan River | 24-May-22 | 10:30 | 0.0053 | 71.2 | 0.12 | 0.55 | 38.8 | <10 | 0.0132 | 10.6 | <0.5 | 2.32 |
| upper Swan River | 21-Jun-22 | 9:50 | 0.0054 | 80.0 | 0.17 | 0.84 | 47.5 | <10 | 0.0127 | 12.4 | <0.5 | 2.71 |
| upper Swan River | 19-Jul-22 | 10:05 | <0.005 | 18.2 | 0.21 | 1.23 | 63.6 | 11 | 0.0107 | 21.4 | <0.5 | 1.78 |
| upper Swan River | 16-Aug-22 | 10:00 | <0.005 | 17.9 | 0.17 | 1.20 | 62.4 | 13 | 0.0107 | 22.4 | <0.5 | 1.49 |
| upper Swan River | 13-Sep-22 | 9:30 | <0.005 | 2.6 | 0.11 | 1.22 | 75.5 | 14 | 0.0083 | 29.3 | <0.5 | 0.66 |
| upper Swan River | 11-Oct-22 | 10:00 | <0.005 | 1.6 | <0.10 | 0.93 | 64.3 | 14 | <0.005 | 28.3 | <0.5 | 0.50 |
| lower Swan River | 26-Apr-22 | 9:00 | 0.0065 | 118 | 0.14 | 0.68 | 47.4 | <10 | 0.0376 | 9.83 | <0.5 | 3.25 |
| lower Swan River | 24-May-22 | 9:35 | 0.0051 | 84.2 | 0.16 | 0.62 | 37.9 | 11 | 0.0164 | 8.63 | 3.43 | 2.85 |
| lower Swan River | 21-Jun-22 | 9:00 | 0.0059 | 109 | 0.23 | 0.78 | 46.8 | 11 | 0.0198 | 9.62 | <0.5 | 4.13 |
| lower Swan River | 19-Jul-22 | 9:15 | <0.005 | 20.4 | 0.22 | 1.24 | 69.5 | 18 | 0.0133 | 21.0 | <0.5 | 2.12 |
| lower Swan River | 16-Aug-22 | 9:05 | <0.005 | 59.4 | 0.22 | 1.11 | 45.8 | 19 | 0.0177 | 12.6 | <0.5 | 3.42 |
| lower Swan River | 13-Sep-22 | 8:35 | <0.005 | 2.7 | 0.13 | 0.90 | 84.5 | 34 | 0.0090 | 36.0 | <0.5 | 1.01 |
| lower Swan River | 11-Oct-22 | 9:10 | <0.005 | 1.2 | <0.10 | 0.73 | 77.1 | 23 | 0.0078 | 36.2 | <0.5 | 0.72 |
| lower Driftpile River | 27-Apr-22 | 9:20 | 0.0064 | 178 | 0.15 | 0.69 | 40.5 | <10 | 0.0485 | 7.92 | <0.5 | 4.44 |
| upper Driftpile River | 25-May-22 | 11:40 | 0.0068 | 10.0 | 0.13 | 0.59 | 38.0 | <10 | 0.0202 | 9.32 | <0.5 | 2.46 |
| lower Driftpile River | 22-Jun-22 | 1:05 | 0.0069 | 105 | 0.18 | 0.87 | 47.7 | 12 | 0.0295 | 11.8 | <0.5 | 3.86 |
| lower Driftpile River | 20-Jul-22 | 11:10 | <0.005 | 35.2 | 0.22 | 1.25 | 63.7 | 16 | 0.0166 | 20.3 | <0.5 | 2.23 |
| lower Driftpile River | 17-Aug-22 | 10:10 | 0.0066 | 147 | 0.23 | 1.08 | 50.3 | 14 | 0.0238 | 10.7 | 0.60 | 4.03 |
| lower Driftpile River | 14-Sep-22 | 11:15 | <0.005 | 3.6 | 0.16 | 0.77 | 121 | 25 | 0.0110 | 45.3 | <0.5 | 1.34 |
| lower Driftpile River | 12-Oct-22 | 10:10 | <0.005 | 9.3 | <0.10 | 0.71 | 105 | 25 | 0.0076 | 45.5 | <0.5 | 0.60 |
| middle East Prairie River | 27-Apr-22 | 12:10 | <0.005 | 115 | 0.20 | 0.75 | 42.9 | <10 | 0.0430 | 13.5 | <0.5 | 4.92 |
| middle East Prairie River | 25-May-22 | 9:10 | <0.005 | 53.5 | 0.19 | 0.67 | 44.9 | 19 | 0.0132 | 15.1 | <0.5 | 3.53 |
| middle East Prairie River | 22-Jun-22 | 9:00 | 0.0051 | 44.2 | 0.22 | 0.90 | 45.1 | 13 | 0.0131 | 16.5 | <0.5 | 3.98 |
| middle East Prairie River | 20-Jul-22 | 9:20 | <0.005 | 10.7 | 0.28 | 1.70 | 73.0 | 15 | 0.0128 | 37.7 | <0.5 | 2.01 |
| middle East Prairie River | 17-Aug-22 | 8:30 | <0.005 | 3.4 | 0.27 | 1.46 | 77.6 | 18 | <0.005 | 42.8 | <0.5 | 1.66 |
| middle East Prairie River | 14-Sep-22 | 9:10 | <0.005 | 1.7 | 0.19 | 0.71 | 89.8 | 18 | 0.0061 | 56.2 | <0.5 | 1.10 |
| middle East Prairie River | 12-Oct-22 | 8:30 | <0.005 | 8.2 | 0.12 | 0.73 | 89.0 | 19 | 0.0075 | 53.4 | <0.5 | 0.53 |
| middle West Prairie River | 27-Apr-22 | 14:30 | <0.005 | 155 | 0.18 | 0.87 | 39.7 | <10 | 0.0392 | 11.0 | 0.52 | 5.49 |
| middle West Prairie River | 25-May-22 | 14:55 | 0.0057 | 70.9 | 0.14 | 0.72 | 44.3 | 16 | 0.0219 | 14.8 | <0.5 | 3.65 |
| middle West Prairie River | 22-Jun-22 | 14:10 | <0.005 | 59.0 | 0.17 | 1.01 | 47.8 | 14 | 0.0181 | 18.3 | <0.5 | 3.25 |
| middle West Prairie River | 20-Jul-22 | 14:15 | <0.005 | 8.2 | 0.22 | 1.26 | 90 | 25 | 0.0163 | 47.2 | <0.5 | 2.18 |
| middle West Prairie River | 17-Aug-22 | 12:10 | <0.005 | 2.7 | 0.19 | 0.88 | 102 | 31 | 0.0100 | 57.9 | <0.5 | 1.69 |
| middle West Prairie River | 14-Sep-22 | 14:35 | <0.005 | 2.0 | 0.17 | 0.63 | 121 | 33 | 0.0085 | 73.9 | <0.5 | 1.89 |
| middle West Prairie River | 12-Oct-22 | n/a | | | | | | | | | | |

Appendix E: Dissolved Metals Data at Lesser Slave Watershed Sites, April-October 2022.

| Site | Date | Time | DISSOLVED METALS | | | | | | | | | |
|--|-----------|-------|-------------------|--------------------|--------------------|-------------------|------------------|-----------------|-------------------|-------------------|--------------------|------------------|
| | | | Mercury (µg/L) | Aluminum (µg/L) | Antimony (µg/L) | Arsenic (µg/L) | Barium (µg/L) | Boron (µg/L) | Cadmium (µg/L) | Calcium (mg/L) | Chromium (µg/L) | Copper (µg/L) |
| Marten Creek | 26-Apr-22 | 14:00 | <0.005 | 24.1 | <0.10 | 0.50 | 72.3 | 14 | 0.0206 | 20.2 | <0.5 | 1.49 |
| Marten Creek | 24-May-22 | n/a | | | | | | | | | | |
| Marten Creek | 21-Jun-22 | 14:10 | <0.005 | 75.2 | <0.10 | 0.56 | 50.2 | 14 | 0.0131 | 11.4 | <0.5 | 2.73 |
| Marten Creek | 19-Jul-22 | 14:20 | <0.005 | 9.1 | 0.11 | 0.92 | 109 | 38 | 0.0148 | 34.9 | <0.5 | 1.30 |
| Marten Creek | 16-Aug-22 | 14:55 | <0.005 | 52.5 | <0.10 | 0.84 | 59.0 | 19 | 0.0162 | 14.6 | <0.5 | 1.79 |
| Marten Creek | 13-Sep-22 | 13:10 | <0.005 | 4.0 | <0.10 | 0.59 | 97.3 | 40 | 0.0067 | 37.6 | <0.5 | 0.86 |
| Marten Creek | 11-Oct-22 | 14:10 | <0.005 | 1.3 | <0.10 | 0.35 | 90.5 | 41 | <0.005 | 39.2 | <0.5 | 0.52 |
| Notes: 0.0183 Red fill indicates exceedance of chronic and acute Protection of Aquatic Life guidelines 0.019 Red font indicates exceedance of chronic Protection of Aquatic Life guidelines 0.019 Red shading indicates exceedance of acute Protection of Aquatic Life guidelines Total cadmium, total copper, total lead, total nickel, dissolved zinc and dissolved manganese PAL guidelines vary with hardness. Total copper - chronic PAL guideline only applies to water with a hardness \geq 50 mg/L CaCO ₃ | | | | | | | | | | | | |

Appendix E: Dissolved Metals Data at Lesser Slave Watershed Sites, April-October 2022.

| Site | Date | Time | DISSOLVED METALS | | | | | | | | | | | |
|---------------------------|-----------|-------|------------------|----------------|---------------------|---------------------|------------------|---------------------|--------------------|------------------|------------------|-------------------|----------------|--|
| | | | Iron (µg/L) | Lead (µg/L) | Magnesium (µg/L) | Manganese (µg/L) | Nickel (µg/L) | Potassium (µg/L) | Selenium (µg/L) | Silver (µg/L) | Sodium (mg/L) | Uranium (µg/L) | Zinc (µg/L) | |
| upper Swan River | 26-Apr-22 | 9:45 | 414 | 0.156 | 2340 | 72.9 | 3.54 | 1960 | 0.115 | <0.01 | 10.1 | 0.224 | 1.1 | |
| upper Swan River | 24-May-22 | 10:30 | 214 | 0.138 | 1800 | 7.17 | 2.67 | 1050 | 0.079 | <0.01 | 4.10 | 0.166 | 1.6 | |
| upper Swan River | 21-Jun-22 | 9:50 | 298 | 0.158 | 2190 | 6.68 | 3.49 | 981 | 0.171 | <0.01 | 6.08 | 0.202 | <1.0 | |
| upper Swan River | 19-Jul-22 | 10:05 | 425 | 0.066 | 4240 | 10.3 | 2.74 | 1550 | 0.090 | <0.01 | 9.51 | 0.264 | <1.0 | |
| upper Swan River | 16-Aug-22 | 10:00 | 400 | 0.069 | 3830 | 14.1 | 2.80 | 1370 | 0.134 | <0.01 | 9.52 | 0.257 | <1.0 | |
| upper Swan River | 13-Sep-22 | 9:30 | 841 | <0.05 | 5030 | 71.7 | 2.82 | 1960 | 0.084 | <0.01 | 12.6 | 0.328 | <1.0 | |
| upper Swan River | 11-Oct-22 | 10:00 | 765 | <0.05 | 5360 | 1.52 | 2.03 | 1750 | 0.057 | <0.01 | 14.0 | 0.362 | <1.0 | |
| lower Swan River | 26-Apr-22 | 9:00 | 536 | 0.210 | 2160 | 128 | 5.60 | 2240 | 0.138 | <0.01 | 7.66 | 0.212 | 1.2 | |
| lower Swan River | 24-May-22 | 9:35 | 287 | 0.163 | 1720 | 9.58 | 4.36 | 1270 | 0.133 | <0.01 | 4.58 | 0.189 | 4.0 | |
| lower Swan River | 21-Jun-22 | 9:00 | 373 | 0.218 | 1900 | 4.51 | 6.10 | 1240 | 0.214 | <0.01 | 5.12 | 0.247 | <1.0 | |
| lower Swan River | 19-Jul-22 | 9:15 | 721 | 0.133 | 4550 | 11.2 | 3.24 | 2010 | 0.169 | <0.01 | 9.72 | 0.344 | <1.0 | |
| lower Swan River | 16-Aug-22 | 9:05 | 488 | 0.292 | 2270 | 3.52 | 4.79 | 1690 | 0.181 | <0.01 | 6.51 | 0.276 | <1.0 | |
| lower Swan River | 13-Sep-22 | 8:35 | 389 | <0.05 | 7390 | 272 | 3.27 | 3820 | 0.123 | <0.01 | 14.5 | 0.709 | <1.0 | |
| lower Swan River | 11-Oct-22 | 9:10 | 744 | <0.05 | 7560 | 157 | 3.04 | 2420 | 0.075 | <0.01 | 13.0 | 0.723 | <1.0 | |
| lower Driftpile River | 27-Apr-22 | 9:20 | 473 | 0.229 | 1520 | 85.4 | 7.17 | 1500 | 0.192 | 0.015 | 3.74 | 0.266 | 1.5 | |
| upper Driftpile River | 25-May-22 | 11:40 | 351 | 0.160 | 1810 | 20.9 | 3.58 | 1220 | 0.150 | <0.01 | 3.7 | 0.238 | 1.0 | |
| lower Driftpile River | 22-Jun-22 | 1:05 | 448 | 0.192 | 2370 | 5.66 | 6.28 | 1370 | 0.163 | <0.01 | 4.57 | 0.344 | <1.0 | |
| lower Driftpile River | 20-Jul-22 | 11:10 | 707 | 0.157 | 4620 | 12.1 | 4.16 | 1740 | 0.192 | <0.01 | 8.11 | 0.427 | <1.0 | |
| lower Driftpile River | 17-Aug-22 | 10:10 | 637 | 0.267 | 2040 | 7.19 | 7.47 | 1560 | 0.172 | <0.01 | 5.71 | 0.399 | <1.0 | |
| lower Driftpile River | 14-Sep-22 | 11:15 | 388 | <0.05 | 9780 | 38.6 | 4.18 | 2770 | 0.162 | <0.01 | 11.0 | 1.41 | <1.0 | |
| lower Driftpile River | 12-Oct-22 | 10:10 | 553 | <0.05 | 10300 | 15.8 | 2.51 | 2960 | 0.116 | <0.01 | 12.0 | 1.29 | <1.0 | |
| middle East Prairie River | 27-Apr-22 | 12:10 | 416 | 0.314 | 2400 | 7.69 | 6.02 | 1460 | 0.213 | 0.014 | 5.63 | 0.316 | 1.0 | |
| middle East Prairie River | 25-May-22 | 9:10 | 268 | 0.191 | 2860 | 5.70 | 4.53 | 1890 | 0.175 | <0.01 | 5.84 | 0.290 | 1.5 | |
| middle East Prairie River | 22-Jun-22 | 9:00 | 282 | 0.131 | 3070 | 4.02 | 4.73 | 1560 | 0.235 | <0.01 | 6.10 | 0.338 | 1.6 | |
| middle East Prairie River | 20-Jul-22 | 9:20 | 577 | 0.139 | 7250 | 3.53 | 2.93 | 2150 | 0.280 | <0.01 | 12.3 | 1.69 | <1.0 | |
| middle East Prairie River | 17-Aug-22 | 8:30 | 187 | <0.05 | 7750 | 2.07 | 2.57 | 2380 | 0.240 | <0.01 | 12.5 | 1.92 | <1.0 | |
| middle East Prairie River | 14-Sep-22 | 9:10 | 30 | <0.05 | 11000 | 54.2 | 2.69 | 2750 | 0.177 | <0.01 | 14.9 | 2.31 | <1.0 | |
| middle East Prairie River | 12-Oct-22 | 8:30 | 275 | <0.05 | 11200 | 44.0 | 1.65 | 2700 | 0.122 | <0.01 | 15.7 | 2.06 | <1.0 | |
| middle West Prairie River | 27-Apr-22 | 14:30 | 542 | 0.359 | 2080 | 19.9 | 31.2 | 1780 | 0.238 | 0.016 | 4.33 | 0.350 | 1.4 | |
| middle West Prairie River | 25-May-22 | 14:55 | 355 | 0.184 | 2730 | 3.63 | 5.25 | 1830 | 0.213 | <0.01 | 4.98 | 0.381 | <1.0 | |
| middle West Prairie River | 22-Jun-22 | 14:10 | 474 | 0.175 | 3630 | 4.23 | 5.06 | 1490 | 0.238 | <0.01 | 7.70 | 0.389 | <1.0 | |
| middle West Prairie River | 20-Jul-22 | 14:15 | 774 | 0.116 | 10900 | 81.3 | 4.64 | 2450 | 0.308 | <0.01 | 12.2 | 1.53 | <1.0 | |
| middle West Prairie River | 17-Aug-22 | 12:10 | 59 | <0.05 | 13800 | 22.0 | 4.32 | 3270 | 0.348 | <0.01 | 13.1 | 1.83 | <1.0 | |
| middle West Prairie River | 14-Sep-22 | 14:35 | 49 | <0.05 | 18000 | 331 | 5.23 | 3260 | 0.314 | <0.01 | 15.9 | 2.03 | <1.0 | |
| middle West Prairie River | 12-Oct-22 | n/a | | | | | | | | | | | | |

Appendix E: Dissolved Metals Data at Lesser Slave Watershed Sites, April-October 2022.

| Site | Date | Time | DISSOLVED METALS | | | | | | | | | | |
|--------------|-----------|-------|------------------|----------------|---------------------|---------------------|------------------|---------------------|--------------------|------------------|------------------|-------------------|----------------|
| | | | Iron (µg/L) | Lead (µg/L) | Magnesium (µg/L) | Manganese (µg/L) | Nickel (µg/L) | Potassium (µg/L) | Selenium (µg/L) | Silver (µg/L) | Sodium (mg/L) | Uranium (µg/L) | Zinc (µg/L) |
| Marten Creek | 26-Apr-22 | 14:00 | 955 | 0.104 | 5090 | 305 | 3.64 | 1880 | 0.092 | <0.01 | 7.93 | 0.225 | 4.2 |
| Marten Creek | 24-May-22 | n/a | | | | | | | | | | | |
| Marten Creek | 21-Jun-22 | 14:10 | 504 | 0.121 | 2760 | 8.01 | 4.9 | 811 | 0.112 | <0.01 | 3.74 | 0.171 | <1.0 |
| Marten Creek | 19-Jul-22 | 14:20 | 1060 | <0.05 | 8780 | 80.2 | 3.52 | 1720 | 0.142 | <0.01 | 9.45 | 0.362 | <1.0 |
| Marten Creek | 16-Aug-22 | 14:55 | 1010 | 0.106 | 3570 | 14 | 4.32 | 804 | 0.121 | <0.01 | 4.18 | 0.152 | 3.4 |
| Marten Creek | 13-Sep-22 | 13:10 | 656 | <0.05 | 8880 | 112 | 3.02 | 1750 | 0.110 | <0.01 | 9.70 | 0.370 | 2.9 |
| Marten Creek | 11-Oct-22 | 14:10 | 243 | <0.05 | 9740 | 0.4 | 2.02 | 1710 | 0.053 | <0.01 | 10.7 | 0.343 | 1.4 |

Notes:

| | |
|--------|--|
| 0.0183 | Red fill indicates exceedance of chronic and acute Protection of Aquatic Life guidelines |
| 0.019 | Red font indicates exceedance of chronic Protection of Aquatic Life guidelines |
| 0.019 | Red shading indicates exceedance of acute Protection of Aquatic Life guidelines |

Total cadmium, total copper, total lead, total nickel, dissolved zinc and dissolved manganese PAL guidelines vary with hardness. Total copper - chronic PAL guideline only applies to water with a hardness \geq 50 mg/L CaCO₃

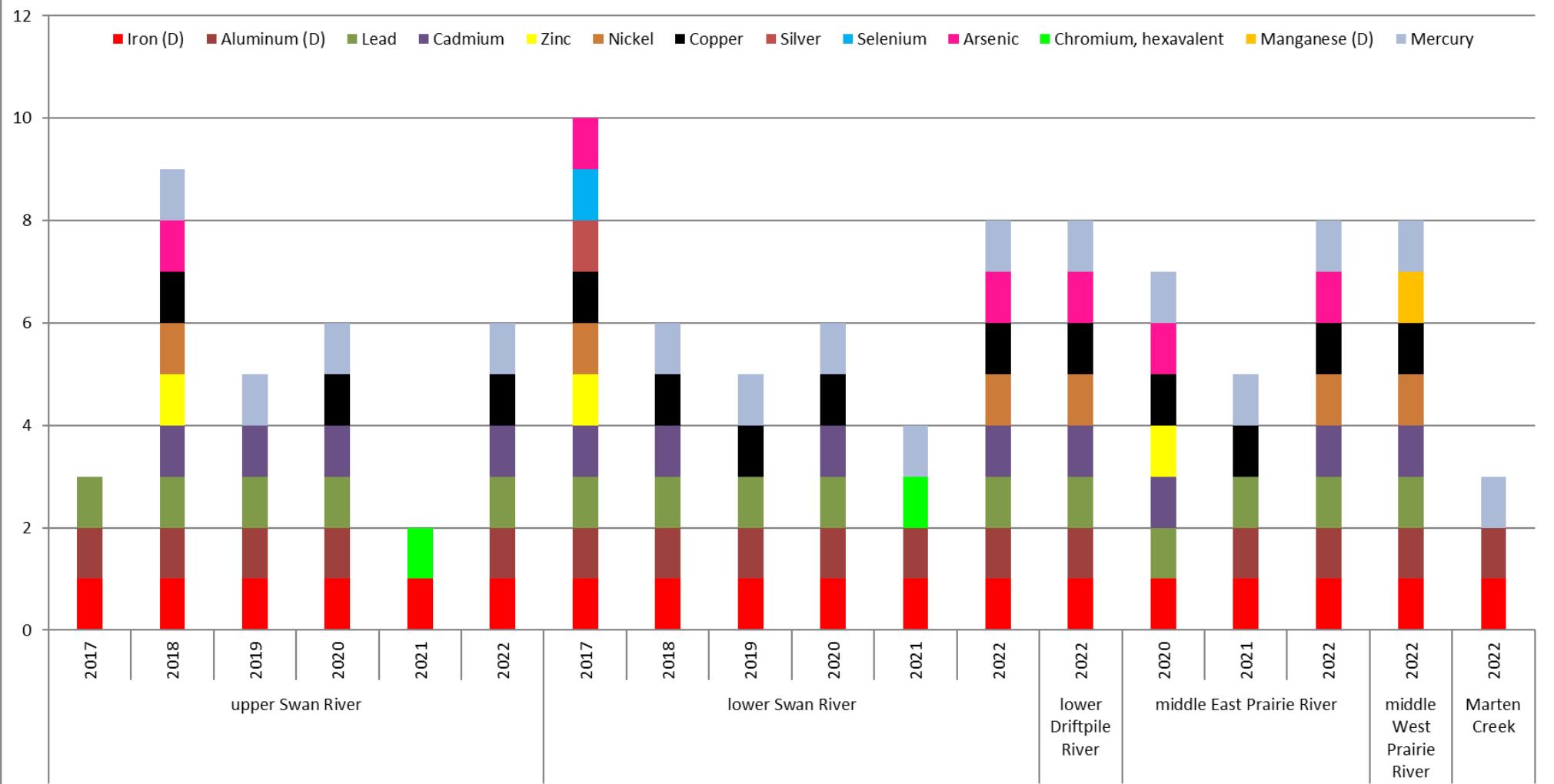
Appendix E: Other Water Quality Data at Lesser Slave Watershed Sites, April-October 2022.

| Site | Date | Time | OTHER PARAMETERS | | | | | | | Notes: |
|---------------------------|-----------|-------|-------------------------------|-----------------|-----------------|-----------------------|--------------------|-------------------------|-------------------------|---------------|
| | | | Total Dissolved Solids (mg/L) | Chloride (mg/L) | Fluoride (mg/L) | Hardness CaCO3 (mg/L) | Sulfate SO4 (mg/L) | Bicarbonate HCO3 (mg/L) | Alkalinity CaCO3 (mg/L) | |
| upper Swan River | 26-Apr-22 | 9:45 | 64.0 | 3.75 | 0.053 | 39.6 | 5.19 | 52.0 | 42.6 | |
| upper Swan River | 24-May-22 | 10:30 | 55.2 | 0.55 | 0.039 | 33.9 | 2.82 | 46.1 | 37.8 | |
| upper Swan River | 21-Jun-22 | 9:50 | 71.2 | 0.80 | 0.049 | 40.0 | 3.90 | 58.6 | 48.0 | |
| upper Swan River | 19-Jul-22 | 10:05 | 112 | 0.94 | 0.084 | 70.9 | 4.35 | 102 | 83.4 | |
| upper Swan River | 16-Aug-22 | 10:00 | 136 | 0.59 | 0.063 | 71.7 | 4.91 | 100 | 82.2 | |
| upper Swan River | 13-Sep-22 | 9:30 | 148 | 0.82 | 0.117 | 93.9 | 5.50 | 139 | 116 | |
| upper Swan River | 11-Oct-22 | 10:00 | 176 | 0.98 | 0.100 | 92.7 | 4.65 | 146 | 120 | |
| lower Swan River | 26-Apr-22 | 9:00 | 54.0 | 1.37 | 0.065 | 33.4 | 4.45 | 45.0 | 36.9 | |
| lower Swan River | 24-May-22 | 9:35 | 57.5 | 0.59 | 0.041 | 28.6 | 3.44 | 44.4 | 36.4 | |
| lower Swan River | 21-Jun-22 | 9:00 | 60.2 | 0.61 | 0.049 | 31.8 | 3.21 | 44.8 | 36.7 | |
| lower Swan River | 19-Jul-22 | 9:15 | 122 | 1.33 | 0.052 | 71.2 | 7.35 | 108 | 89.0 | |
| lower Swan River | 16-Aug-22 | 9:05 | 162 | 0.53 | 0.063 | 40.8 | 4.03 | 56.0 | 45.9 | |
| lower Swan River | 13-Sep-22 | 8:35 | 194 | 8.31 | 0.123 | 120 | 6.05 | 169 | 139 | |
| lower Swan River | 11-Oct-22 | 9:10 | 205 | 2.66 | 0.119 | 122 | 2.81 | 172 | 141 | |
| lower Driftpile River | 27-Apr-22 | 9:20 | 41.0 | <0.50 | 0.051 | 26.0 | 3.19 | 31.7 | 26.0 | |
| upper Driftpile River | 25-May-22 | 11:40 | 108 | | | | | | | |
| lower Driftpile River | 22-Jun-22 | 1:05 | 61.0 | <0.50 | 0.033 | 39.2 | 4.22 | 43.9 | 36.0 | |
| lower Driftpile River | 20-Jul-22 | 11:10 | 101 | <0.50 | 0.068 | 69.7 | 4.37 | 90.4 | 74.1 | |
| lower Driftpile River | 17-Aug-22 | 10:10 | 112 | <0.50 | 0.048 | 35.1 | 2.48 | 43.8 | 35.9 | |
| lower Driftpile River | 14-Sep-22 | 11:15 | 199 | 1.52 | 0.127 | 153 | 8.19 | 207 | 170 | |
| lower Driftpile River | 12-Oct-22 | 10:10 | 222 | 0.71 | 0.146 | 156 | 10.3 | 234 | 198 | |
| middle East Prairie River | 27-Apr-22 | 12:10 | 76.0 | 0.75 | 0.061 | 43.6 | 5.05 | 51.5 | 42.2 | |
| middle East Prairie River | 25-May-22 | 9:10 | 138 | | | | | | | |
| middle East Prairie River | 22-Jun-22 | 9:00 | 81.8 | <0.50 | 0.043 | 53.8 | 7.90 | 66.4 | 54.4 | |
| middle East Prairie River | 20-Jul-22 | 9:20 | 173 | 0.89 | 0.101 | 124 | 9.13 | 165 | 139 | |
| middle East Prairie River | 17-Aug-22 | 8:30 | 218 | 1.10 | 0.089 | 139 | 8.71 | 191 | 156 | |
| middle East Prairie River | 14-Sep-22 | 9:10 | 248 | 1.82 | 0.129 | 186 | 13.8 | 253 | 210 | |
| middle East Prairie River | 12-Oct-22 | 8:30 | 266 | 10.7 | 0.755 | 179 | 66.2 | 244 | 206 | |
| middle West Prairie River | 27-Apr-22 | 14:30 | 58.0 | 0.65 | 0.030 | 36.0 | 5.50 | 38.8 | 31.8 | |
| middle West Prairie River | 25-May-22 | 14:55 | 146 | | | | | | | |
| middle West Prairie River | 22-Jun-22 | 14:10 | 90.3 | 0.97 | 0.037 | 60.6 | 9.89 | 73.1 | 59.9 | |
| middle West Prairie River | 20-Jul-22 | 14:15 | 203 | 3.40 | 0.100 | 163 | 24.0 | 182 | 152 | |
| middle West Prairie River | 17-Aug-22 | 12:10 | 276 | 2.91 | 0.100 | 201 | 32.1 | 227 | 188 | |
| middle West Prairie River | 14-Sep-22 | 14:35 | 11.2 | 8.73 | 0.148 | 259 | 47.3 | 278 | 228 | |
| middle West Prairie River | 12-Oct-22 | n/a | | | | | | | | |

Appendix E: Other Water Quality Data at Lesser Slave Watershed Sites, April-October 2022.

| Site | Date | Time | OTHER PARAMETERS | | | | | | | Notes: | |
|--|---------------|-------------|-------------------------------|-----------------|-----------------|---|--------------------------------|-------------------------------------|-------------------------------------|--------|--|
| | | | Total Dissolved Solids (mg/L) | Chloride (mg/L) | Fluoride (mg/L) | Hardness CaCO ₃ (mg/L) | Sulfate SO ₄ (mg/L) | Bicarbonate HCO ₃ (mg/L) | Alkalinity CaCO ₃ (mg/L) | | |
| Marten Creek | 26-Apr-22 | 14:00 | 93.0 | 2.96 | 0.052 | 71.4 | 6.32 | 86.4 | 71.4 | | |
| Marten Creek | 24-May-22 | n/a | | | | | | | | | |
| Marten Creek | 21-Jun-22 | 14:10 | 61.7 | 1.32 | 0.025 | 39.8 | 4.24 | 51.2 | 42.0 | | |
| Marten Creek | 19-Jul-22 | 14:20 | 145 | 5.60 | 0.067 | 123 | 6.30 | 126 | 104 | | |
| Marten Creek | 16-Aug-22 | 14:55 | 106 | 1.76 | 0.043 | 51.2 | 2.96 | 61.7 | 50.6 | | |
| Marten Creek | 13-Sep-22 | 13:10 | 182 | 5.21 | 0.123 | 130 | 5.75 | 168 | 141 | | |
| Marten Creek | 11-Oct-22 | 14:10 | 216 | 5.41 | 0.114 | 138 | 4.46 | 173 | 142 | | |
| Provincial Protection of Aquatic Life (PAL) Guidelines for Metals (Total and Dissolved) and Other Parameters. | | | | | | | | | | | |
| Parameter | PAL Guideline | | Parameter | PAL Guideline | | Parameter | PAL Guideline | | | | |
| | Chronic | Acute | | Chronic | Acute | | Chronic | Acute | Chronic | Acute | |
| Total Mercury | 0.005 | 0.013 | Total Selenium | 2.0 | | Alkalinity (mg/L) | 20 | | | | |
| Total Arsenic | 5.0 | | Total Silver | 0.25 | | Chloride (mg/L) | 120 | | 640 | | |
| Total Boron | 1,500 | 29,000 | Total Uranium | 15 | 33 | Fluoride (mg/L) | 0.12 | | | | |
| Total Cadmium | 0.05 to 0.35 | 0.51 to 5.5 | Total Zinc | 30 | | Sulfate (SO ₄) (mg/L) | 128 to 429 | | | | |
| Hexavalent Chromium | 1.0 | | Dissolved Aluminum | 50 | 100 | Notes: 1) All guidelines are µg/L unless noted. 2) All guidelines are provincial (GoA 2018) except dissolved zinc and dissolved manganese (CCME 2018) and fluoride (CCME 2002). | | | | | |
| Total Copper | 7 | 4.1 to 41.0 | Dissolved Iron | 300 | | | | | | | |
| Total Lead | 1.0 to 7.0 | | Dissolved Manganese | 160 to 490 | 2040 to 14881 | | | | | | |
| Total Nickel | 16 to 120 | 170 to 1050 | Dissolved Zinc | 12 to 79 | 49 to 334 | | | | | | |

Figure E-1: Number of metals that exceeded protection of aquatic life (PAL) guidelines at tributaries to Lesser Slave Lake 2017 to 2022.
Fives samples collected at each site in 2017 and seven samples collected at each site 2018 to 2022.



APPENDIX F: Summary of select water quality results for the 2022 water monitoring program, Lesser Slave watershed.

| Acronym | Site Name | Acronym | Site Name |
|---------|---------------------------|---------|--------------------|
| a. MWP | middle West Prairie River | i. US | upper Swan River |
| b. UEP | upper East Prairie River | j. LS | lower Swan River |
| c. LEP | lower East Prairie River | k. SX | Saulteaux River |
| d. USH | upper South Heart River | l. O | Otauwau River |
| e. LSH | lower South Heart River | m. LSR | Lesser Slave River |
| f. GC | Grouard Channel | n. MC | Marten Creek |
| g. UDP | upper Driftpile River | o. DW | Driftwood River |
| h. LDP | lower Driftpile River | | |

