



2019 RIVERS SURVEY MONITORING REPORT

| Survey Date: June 27, 2019 | | Assiniboine River Sampling Locations | | | | Red River Sampling Locations | | | | | | |
|----------------------------|------------|--------------------------------------|----------------------------|-----------------------------------|-------------------------|------------------------------|-----------------------------|------------------------|---------------------|---------------------|------------------------------|-----------------------|
| Parameter | Unit | HEADINGLY BRIDGE (R1) | WEST PERIMETER BRIDGE (R2) | ASSINIBOINE PARK FOOT BRIDGE (R3) | MAIN STREET BRIDGE (R4) | SOUTH FLOODWAY CONTROL (R5) | SOUTH PERIMETER BRIDGE (R6) | FORT GARRY BRIDGE (R7) | NORWOOD BRIDGE (R8) | REDWOOD BRIDGE (R9) | NORTH PERIMETER BRIDGE (R10) | LOCKPORT BRIDGE (R11) |
| Sample Number | | 216694 | 216696 | 216693 | 216695 | 216697 | 216703 | 216698 | 216701 | 216702 | 216700 | 216699 |
| Temperature | ° C | 23.9 | 23.7 | 22.9 | 24.1 | 23.5 | 23.5 | 23.3 | 21.8 | 22.0 | 21.7 | 21.9 |
| Dissolved Oxygen | mg/L | 7.6 | 7.8 | 7.8 | 7.2 | 9.6 | 9.5 | 9.5 | 9.1 | 8.9 | 8.8 | 8.8 |
| Oxygen Saturation | % | 90 | 92 | 91 | 85 | 113 | 111 | 111 | 104 | 102 | 100 | 100 |
| Biochemical Oxygen Demand | mg/L | 7 | 7 | 7 | 6 | >8 | 6 | <4 | >9 | >8 | 4 | 6 |
| pH | units | NR | 8.53 | 8.47 | 8.51 | 8.42 | 8.41 | 8.36 | 8.34 | 8.36 | 8.36 | 8.23 |
| Total Solids | mg/L | 750 | 754 | 762 | 762 | 946 | 886 | 882 | 912 | 882 | 850 | 912 |
| Total Suspended Solids | mg/L | 60 | 57 | 59 | 39 | 43 | 27 | 39 | 59 | 43 | 24 | 26 |
| Turbidity | n.t.u. | 35 | 32 | 33 | 26 | 27 | 19 | 28 | 35 | 26 | 18 | 14 |
| Total Organic Carbon | mg/L | 11.4 | 11.5 | 11.2 | 11.6 | 14.7 | 14.3 | 14.9 | 16.1 | 13.4 | 14.1 | 13.7 |
| Chlorophyll a | ug/L | 22.7 | 21.4 | 25.4 | 24.0 | 25.4 | 26.7 | 29.4 | 24.0 | 29.4 | 28.0 | 24.0 |
| Ammonia Nitrogen | mg/L N | <0.003 | <0.003 | <0.003 | <0.003 | <0.003 | 0.013 | 0.342 | 0.052 | <0.003 | 0.029 | 0.292 |
| Nitrate Nitrogen | mg/L N | <0.003 | <0.003 | <0.003 | <0.003 | 0.080 | 0.078 | 0.182 | 0.173 | 0.149 | 0.105 | 0.304 |
| Total Nitrogen | mg/L N | 0.6 | 0.6 | 0.7 | 0.7 | 0.9 | 0.9 | 1.1 | 1.3 | 1.0 | 1.6 | 1.6 |
| Soluble Phosphorus | mg/L P | 0.07 | 0.09 | 0.09 | 0.10 | 0.17 | 0.14 | 0.19 | 0.16 | 0.15 | 0.16 | 0.22 |
| Total Phosphorus | mg/L P | 0.16 | 0.19 | 0.18 | 0.19 | 0.21 | 0.18 | 0.21 | 0.21 | 0.20 | 0.21 | 0.23 |
| Escherichia Coliform | MPN/100 mL | <10 | 20 | 30 | 110 | 10 | <10 | 20 | 60 | 100 | 70 | 60 |
| Fecal Coliform | MPN/100 mL | 20 | <10 | 50 | 80 | <10 | 10 | 20 | 260 | 110 | 160 | 80 |

Notes: NS - No Sample NA - Not Analyzed NR - No Result

Red River elevation at South Floodway control gates: 734 ft

Weather conditions during monitoring:

Wind Direction: N

Wind Speed: 6.4 km/h

Cloud Coverage: 30%

Precipitation: 0 mm

Air Temperature: 27°C

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