CreekWatch
Tributary Stormwater Monitoring

Muriel Lake Creek Water Quality Data Report

> Volunteers enjoying a beautiful day while learning water quality sampling techniques along a sandy stretch of Muriel Lake Creek.

CreekWatch is a program of the non-profit RiverWatch Institute of Alberta, specializing in community-based environmental monitoring and award-winning citizen science education for twenty-seven years. This 2021 Report shares our findings with the public, governments, and water quality professionals to collaboratively work towards the base-line monitoring and improvement of our stormwater creeks in Alberta.

This annual CreekWatch Report examines the state of Bonnyville's Muriel Lake Creek based on the water quality data collected with the assistance of community-based environmental monitoring groups and water quality technicians. You can view a snapshot of data in the attached graphs generated by the RiverWatch online and responsive **graphing tool**. Thank you to EPCOR, HSBC, and Edmonton Community Foundation for major funding support and to all of our dedicated volunteers who have made this sampling season possible – we couldn't have done it without you!

Muriel Lake Creek By-the-Numbers

Parameter	2021
Number of Sampling Events	10
Number of Data Points	70
Number of Sampling Hours	14

Analysis

Based on the observed median values, this first ever report shows healthy levels of dissolved oxygen, phosphorus, and ammonia nitrogen. Continued monitoring will allow greater comparisons of creek health over time to foster a better understanding of the health of this creek.

Muriel Lake Creek Water Quality Data

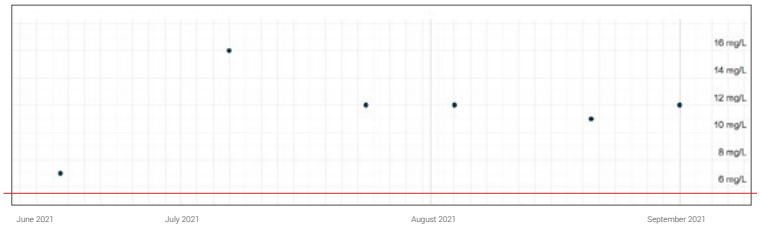
Parameter	2021
Dissolved Oxygen (mg/L)	12
Water Temperature (°C)	20
Turbidity (NTU)	11
pH	8.1
Ammonia Nitrogen (mg/L)	0.25
Phosphorus (mg/L)	0.04
Chloride (mg/L)	20

NOTE: All data collected during the open water season of the specified calendar year.

RiverWatch Institute of Alberta
Suite 433, 17008-90 Avenue
Edmonton, AB T5T 1L6

www.creekwatch.ca
science@riverwatch.ab.ca

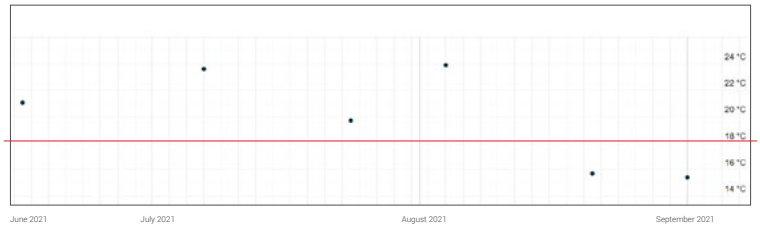
Dissolved Oxygen (mg/L)



Median **12**

Dissolved oxygen concentrations are measured using either a YSI probe or a Hach kit with a drop-by-drop titration to show a change in water colour until totally clear. Red line indicates the Environmental Quality Guidelines for Alberta Surface Waters (2018) for exceedance is minimum 5 mg/L for instantaneous value.

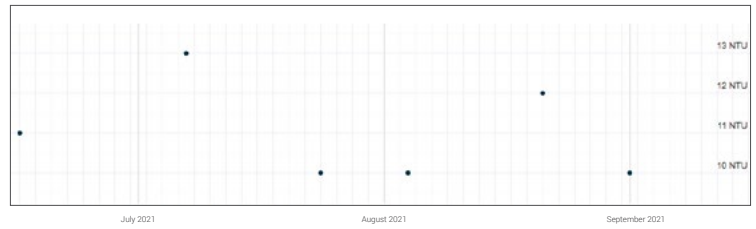
Water Temperature (°C)



Median **20**

Water temperatures are measured using a non-mercury glass thermometer or YSI probe placed in flowing, shallow water near shore. Red line indicates the Water Quality Objective identified as an ideal value according to the Bow Basin Watershed Management Plan. Values should not exceed a maximum 18°. Higher values may cause stress on aquatic life.

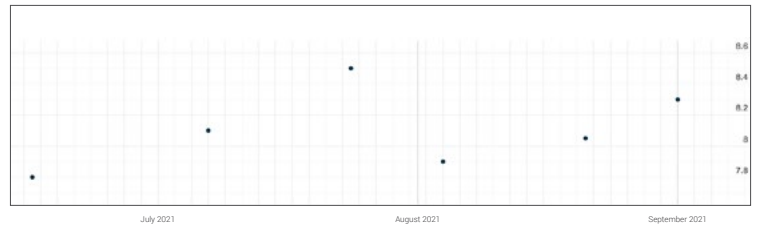
Turbidity (NTU)



Median **11**

Turbidity is measured by slowly pouring water into a type of graduated cylinder marked with "Nephelometric Turbidity Units" or NTU's.

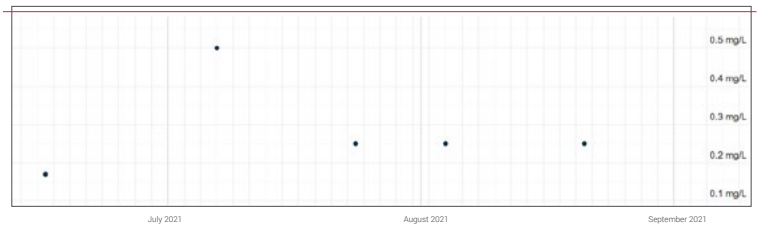
pH



Median **8.1**

Creek pH is measured using either a YSI probe or a Hach kit that compare a change in water colour. The Environmental Quality Guidelines for Alberta Surface Waters (2018) for exceedance is a pH value outside the range of 6.5 - 9.

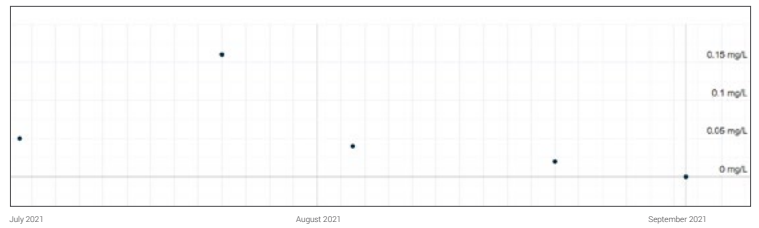
Ammonia Nitrogen (mg/L)



Median **0.25**

Ammonia nitrogen concentrations are measured by dipping Hach test strips into water and noting the colour change. Red line indicates the Environmental Quality Guidelines for Alberta Surface Waters (2018) for exceedance is maximum 1.0 mg/L at pH 8.0, 10°C.

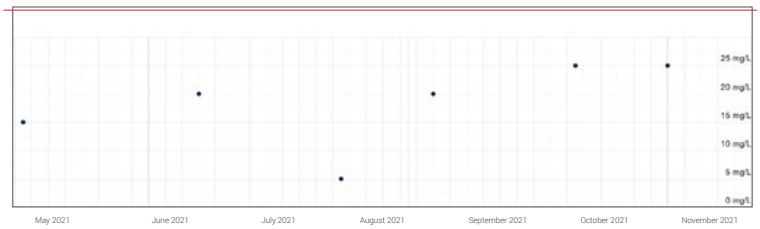
Phosphorus (mg/L)



Median **0.04**

Orthophosphate concentrations are measured with either a LaMotte colorimeter or a Hach kit that compare a change in water colour.

Chloride (mg/L)



Median **20**

Chloride concentrations are measured using Hach kits with a drop-by-drop titration to show a change in water colour from yellow to orange. Red line indicates the Environmental Quality Guidelines for Alberta Surface Waters (2018) for exceedance is maximum 120 mg/L.

To review our data reports, visit
creekwatch.ca/creekwatch-reports