



Real Time Water Quality Deployment Report

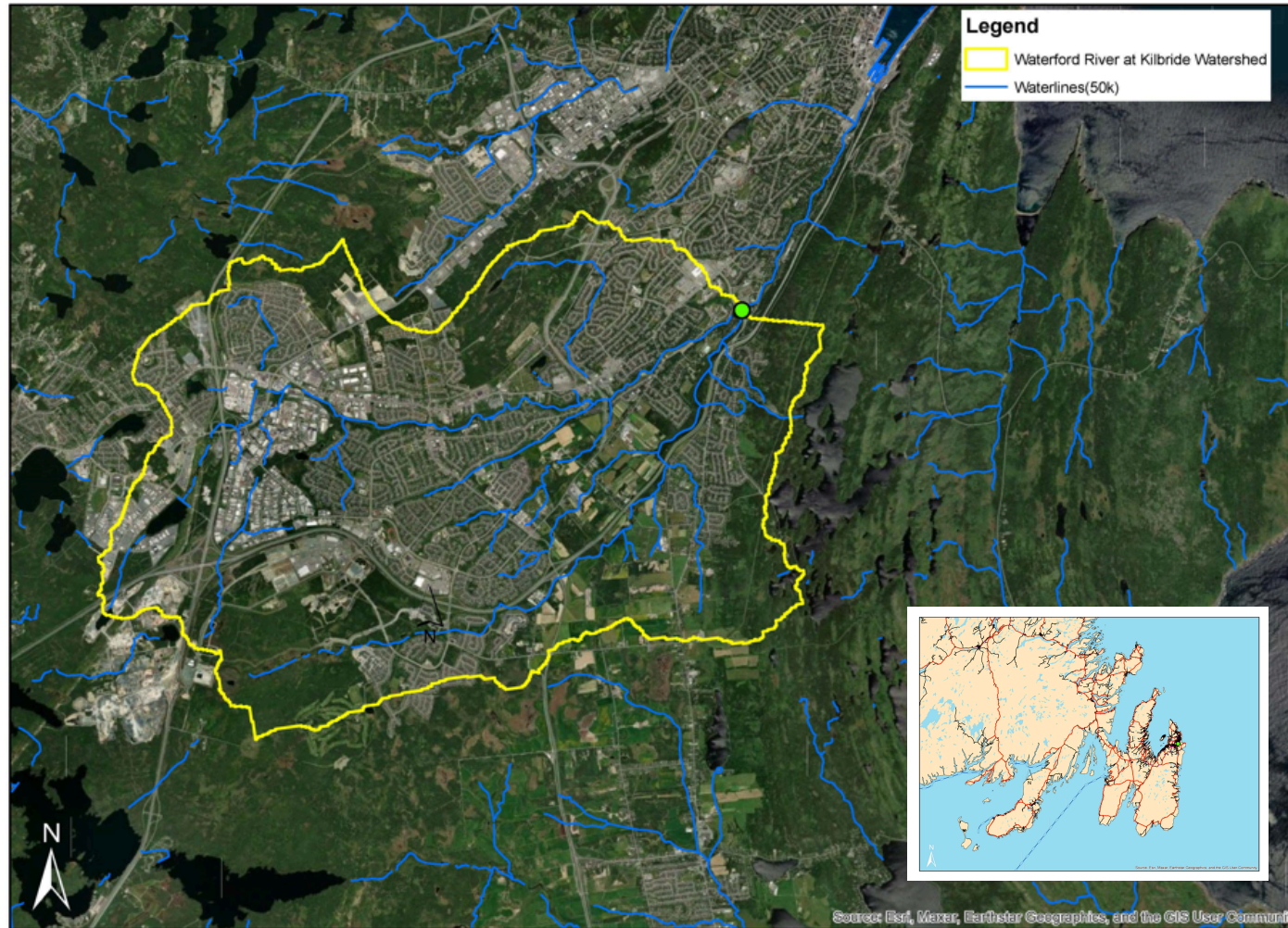
Waterford River at Kilbride - NF02ZM0009

2026-04-14 to 2026-07-16



Government of Newfoundland & Labrador
Department of Environment, Conservation & Climate

Waterford River at Kilbride NF02ZM0009



The Water Resources Management Division (WRMD), in partnership with Water Survey of Canada - Environment and Climate Change Canada (WSC-ECCC), maintain a real-time water quality and water quantity monitoring station on Waterford River at Kilbride.

The purpose of the real-time water quality station is to monitor, process and publish real-time water quality data.

On 2026-04-14, a clean and calibrated real-time water quality monitoring instrument was deployed at the station Waterford River at Kilbride. The instrument was deployed for a period of 94 days and was removed on 2026-07-16.

Waterford River at Kilbride NF02ZM0009

Quality Assurance and Quality Control

As part of the Quality Assurance and Quality Control protocol (QA/QC), an assessment of the reliability of data recorded by an instrument is made at the beginning and end of the deployment period. The procedure is based on the approach used by the United States Geological Survey. Water Survey Canada operates the hydrometric component of this station. Due to differences in protocols, Water Survey Canada hydrometric data is quality controlled on a less frequent basis than water quality data. The hydrometric data shown in this report is provisional and has not undergone quality control checks. Corrected hydrometric data can be obtained at <https://wateroffice.ec.gc.ca/> or upon request to Water Survey Canada.

Parameter	Excellent	Good	Fair	Marginal	Poor
Dissolved oxygen	$\leq \pm 0.3$ mg/L	$\leq \pm 0.31 - 0.5$ mg/L	$\leq \pm 0.51 - 0.8$ mg/L	$\leq \pm 0.81 - 1$ mg/L	$> \pm 1$ mg/L
pH	$\leq \pm 0.2$ units	$\leq \pm 0.21 - 0.5$ units	$\leq \pm 0.51 - 0.8$ units	$\leq \pm 0.81 - 1$ units	$> \pm 1$ units
Specific Conductance	$\leq \pm 3$ μ S/cm or $\leq \pm 3\%$, whichever is greater	$\leq \pm 3.1 - 10$ μ S/cm or $\leq \pm 3.1 - 10\%$, whichever is greater	$\leq \pm 10 - 15$ μ S/cm or $\leq \pm 10.1 - 15\%$, whichever is greater	$\leq \pm 15.1 - 20$ μ S/cm or $\leq \pm 15.1 - 20\%$, whichever is greater	$> \pm 20$ μ S/cm or $> \pm 20\%$, whichever is greater
Turbidity	$\leq \pm 2$ turbidity units or $\leq \pm 5\%$, whichever is greater	$\leq \pm 2.1 - 5$ turbidity units or $\leq \pm 5.1 - 10\%$, whichever is greater	$\leq \pm 5.1 - 8$ turbidity units or $\leq \pm 10.1 - 15\%$, whichever is greater	$\leq \pm 8.1 - 10$ turbidity units or $\leq \pm 15.1 - 20\%$, whichever is greater	$> \pm 10$ turbidity units or $> \pm 20\%$, whichever is greater
Water Temperature	$\leq \pm 0.2^\circ\text{C}$	$\leq \pm 0.21 - 0.5^\circ\text{C}$	$\leq \pm 0.51 - 0.8^\circ\text{C}$	$\leq \pm 0.81 - 1^\circ\text{C}$	$> \pm 1^\circ\text{C}$

At deployment and removal, a QA/QC Sonde is temporarily deployed adjacent to the Field Sonde. Values for temperature, pH, conductivity, dissolved oxygen and turbidity are compared between the two instruments. Based on the degree of difference between parameters recorded by the Field Sonde and QA/QC Sonde at deployment and at removal, a qualitative statement is made on the data quality.

There are a few circumstances which may cause QA/QC rankings below excellent, including the placement of the QA/QC sonde in relation to the field sonde, the amount of time each sonde was given to stabilize before readings were recorded, and deteriorating performance of one of the sensors.

The temperature sensor on any sonde is the most important. All other parameters can be divided into subgroups of: temperature dependent, temperature compensated, and temperature independent. Due to the temperature sensor's location on the sonde, the entire sonde must be at a constant temperature before the temperature sensor will stabilize. The values may take some time to climb to the appropriate reading; if a reading is taken too soon it may not accurately portray the water body.

QAQC Rankings

Parameter	Deployment Ranks	Grab Sample Ranks	Removal Ranks
Dissolved Oxygen (mg/l)	Fair		Excellent
pH	Good	Good	Good
Specific Conductivity (μ S/cm)	Good	Fair	Excellent
Temperature ($^\circ\text{C}$)	Poor		Excellent
Turbidity (NTU)	Good	Fair	Good

At deployment, temperature rating was observed as 'Poor'. Post deployment evaluation of the QA/QC instrument determined sensor failure had occurred. All other parameters rated as 'Fair' and 'Good' and most likely were influenced by the QA/QC temperature sensor failure. At removal, when the field sonde was compared to the QA/QC sonde, all parameters were rated as 'Good' and 'Excellent'.

Water Temperature (°C)

10.13

Average

0.83

Minimum

21.48

Maximum

9.79

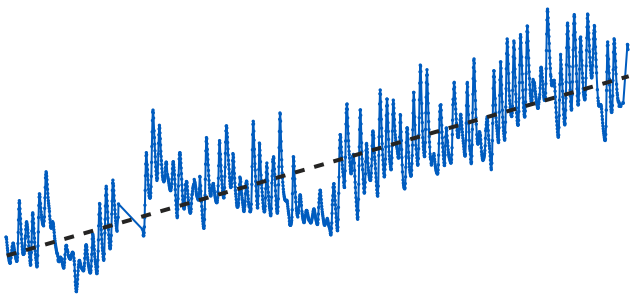
Median



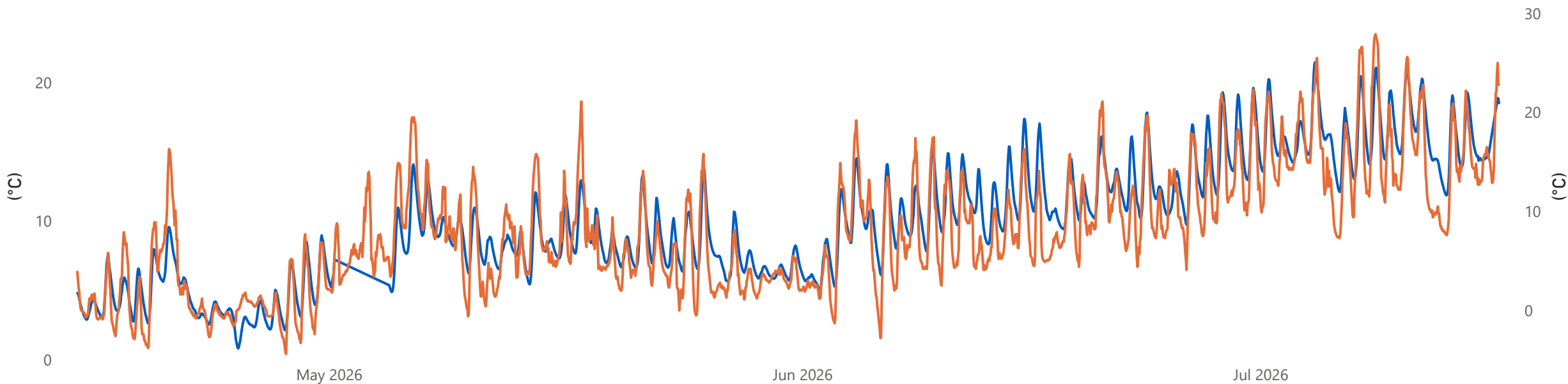
Water temperature is an important parameter for wildlife. Many organisms cannot regulate their own temperatures, and rely on surrounding air and water temperatures. Water temperature may be affected by inputs from industry or by modifying natural conditions like clearing trees and other vegetation, which eliminates the canopy protection they offer. Water temperature also affects other parameters monitored including dissolved oxygen and specific conductivity.

Water temperature at Waterford River during the monitoring period exhibited the expected seasonal pattern, with cooler conditions during the spring and progressively warmer temperatures through the summer. Water temperatures ranged from a minimum of 0.83 °C to a maximum of 21.48 °C, with an average temperature of 10.13 °C and a median of 9.79 °C. Short-term fluctuations in water temperature corresponded closely with changes in air temperature and weather conditions, while the overall trendline indicated a steady warming trend throughout the monitoring period. Temperatures remained generally below 10 °C during the early part of the deployment before increasing through June and July, reflecting seasonal heating of the river system. Overall, the data indicate typical spring-to-summer thermal conditions for the Waterford River.

Water Temperature Trendline



● WATER_TEMP ● AIR_TEMP



pH

7.42

Average pH

7.34

Median pH

7.00

Minimum pH

8.47

Maximum pH

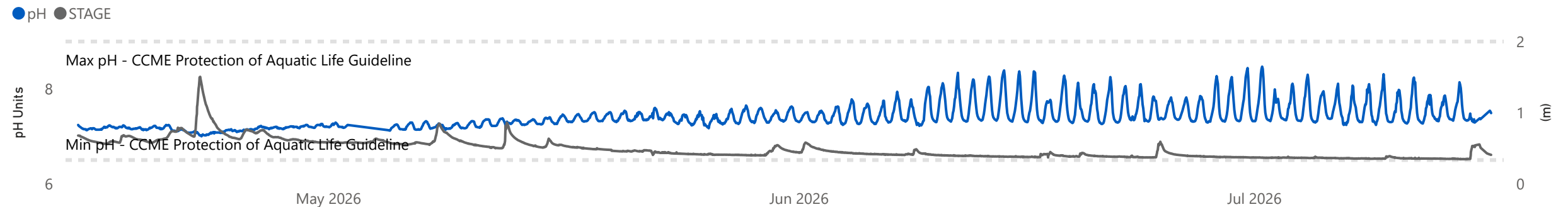
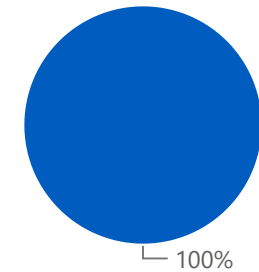


pH relates to the free hydrogen ions in water and it is a measure of acidity in water. A pH of 7 indicates a neutral pH, below 7 is considered acidic, and above 7 is considered basic. The [Canadian Council of Ministers of the Environment](#) (CCME) Freshwater Aquatic Life guideline provides a basis by which to judge the overall health of the brook. Their freshwater guidelines recommend a minimum pH of 6.5 and a maximum pH of 9.0; however, many rivers in Newfoundland and Labrador are naturally more acidic due to the local geology. Water parameter maps can be found on the [Water Resources Management website](#).

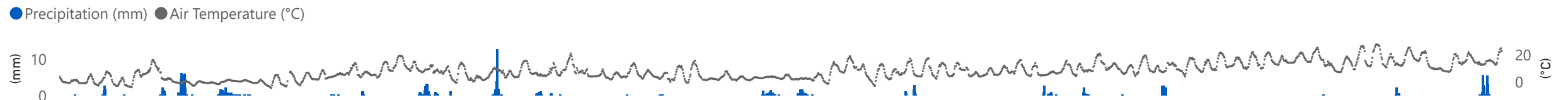
pH conditions at Waterford River remained generally stable throughout the monitoring period and were consistently within the CCME freshwater aquatic life guideline range of 6.5 to 9.0 pH units. pH values ranged from a minimum of 7.00 to a maximum of 8.47, with an average pH of 7.42 and a median pH of 7.34. Measurements indicated slightly alkaline conditions for most of the deployment, with regular short-term fluctuations likely associated with natural daily biological activity and changes in streamflow conditions. The magnitude of these diurnal fluctuations increased noticeably during the warmer summer months, with larger daily swings in pH becoming evident through June and July. This pattern is consistent with increased biological productivity, including photosynthesis during daylight hours and respiration overnight. Despite the increased variability, all recorded pH values remained within the recommended CCME guideline range for the protection of aquatic life. Overall, the pH data indicate stable water chemistry conditions and suggest a healthy freshwater system throughout the monitoring period.

CCME Freshwater Aquatic Life Guideline

● Within Guidelines



Climate data from St. John's West Climate Station



Specific Conductivity

794.88

Average $\mu\text{S}/\text{cm}$

842.83

Median $\mu\text{S}/\text{cm}$

376.19

Minumum $\mu\text{S}/\text{cm}$

1.16K

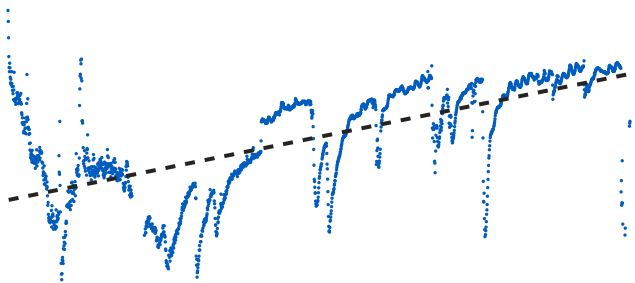
Maximum $\mu\text{S}/\text{cm}$



Conductivity relates to the ability of an electric charge to pass through a solution. Pure water has low conductance and water with dissolved ions has higher conductance. Specific conductance is corrected to 25°C to allow comparison across temperatures. Water parameter maps can be found on the [Water Resources Management website](#).

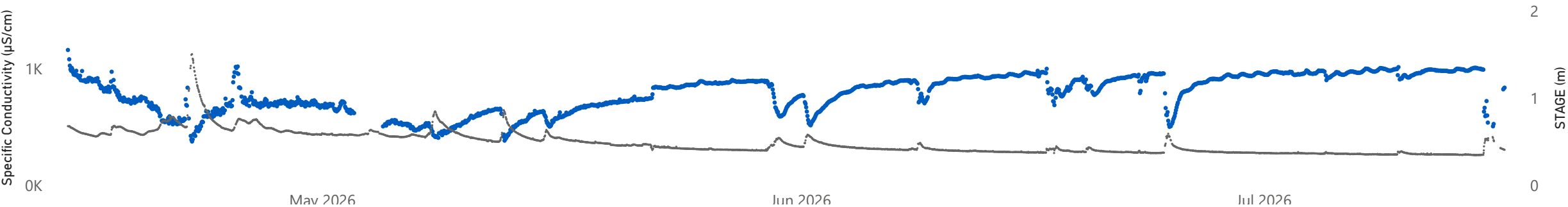
Specific conductivity at Waterford River exhibited moderate to high variability throughout the monitoring period, reflecting changes in the concentration of dissolved ions within the river. Specific conductivity values ranged from a minimum of 376.19 $\mu\text{S}/\text{cm}$ to a maximum of 1,160 $\mu\text{S}/\text{cm}$, with an average of 794.88 $\mu\text{S}/\text{cm}$ and a median of 842.83 $\mu\text{S}/\text{cm}$. Conductivity was generally lower during the early portion of the monitoring period and increased steadily through late spring and summer, as reflected by the overall upward trend in the data. Short-term decreases in conductivity frequently coincided with increases in river stage and precipitation events, indicating dilution of dissolved ions during periods of elevated flow. Conversely, higher conductivity values were typically observed during lower-flow conditions when dissolved constituents were more concentrated. Overall, the data indicate strong seasonal and flow-related influences on specific conductivity, with water chemistry remaining characteristic of an urban watershed throughout the monitoring period.

Specific Conductivity Trendline



Specific Conductivity ($\mu\text{S}/\text{cm}$) and STAGE (m) by NST_DATI

● Specific Conductivity ($\mu\text{S}/\text{cm}$) ● STAGE (m)



Climate data from St. John's West Climate Station

● Precipitation (mm) ● Air Temperature ($^{\circ}\text{C}$)



Dissolved Oxygen Concentration and Saturation

11.19
Average (mg/L)

11.34
Median (mg/L)

7.69
Minimum (mg/L)

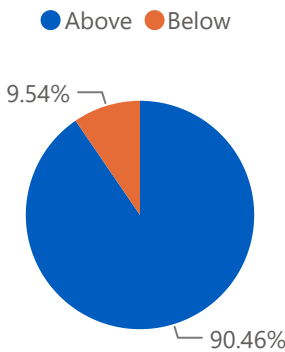
13.84
Maximum (mg/L)



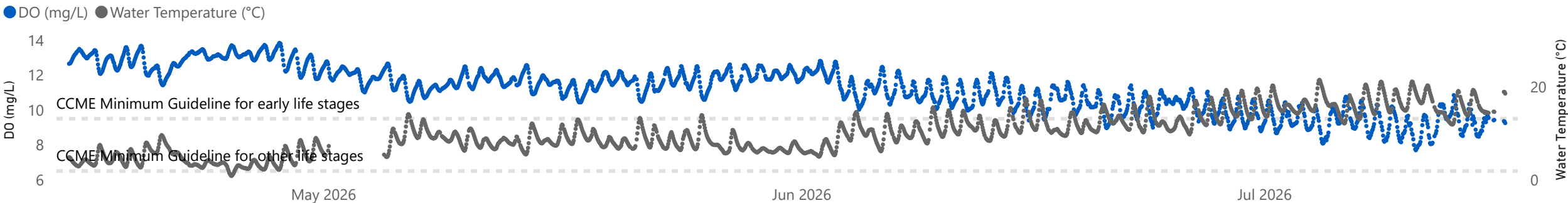
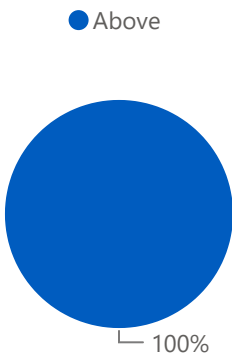
Dissolved oxygen (DO) in water is crucial for aquatic life. The [CCME \(Canadian Council of Ministers of the Environment\)](#) Freshwater Aquatic Life guidelines provide a basis by which to judge the overall health of waterways. The minimum guideline for early life stages in cold water is 9.5 mg/L and the minimum guideline for other life stages is 6.5 mg/L. DO and water temperatures are correlated; colder waters can hold higher concentrations of DO than warm waters.

Dissolved oxygen conditions at Waterford River remained generally stable and indicative of a well-oxygenated freshwater system throughout the monitoring period. Dissolved oxygen concentrations ranged from a minimum of 7.69 mg/L to a maximum of 13.84 mg/L, with an average concentration of 11.19 mg/L and a median of 11.34 mg/L. Dissolved oxygen levels were highest during the cooler spring period and gradually declined as water temperatures increased through the summer, reflecting the inverse relationship between water temperature and oxygen solubility. Short-term fluctuations in dissolved oxygen were observed throughout the deployment and were likely associated with changes in water temperature, streamflow conditions, and daily biological activity. Despite this variability, dissolved oxygen concentrations remained above the CCME guideline for the protection of other life stages (6.5 mg/L) for the entire monitoring period and above the guideline for early life stages (9.5 mg/L) approximately 90% of the time. Percent saturation remained close to 100% for most of the deployment, indicating healthy oxygen exchange and favorable conditions for aquatic life. Overall, the dissolved oxygen data suggest a healthy and productive freshwater ecosystem throughout the monitoring period.

CCME Early Life Stages Guideline



CCME Other Life Stages Guideline



Percent Saturation (%)



Turbidity

13.31
Average (NTU)

6.70
Median (NTU)

0.00
Minimum (NTU)

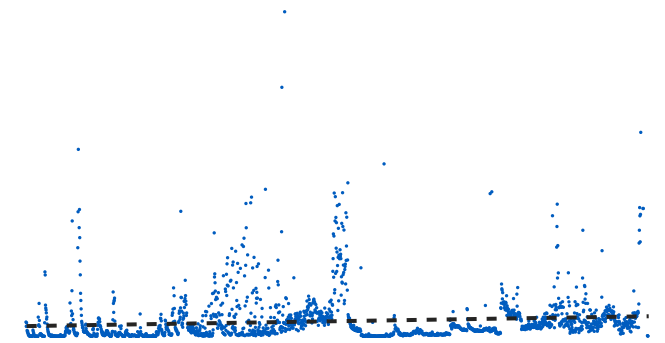
286.10
Maximum (NTU)



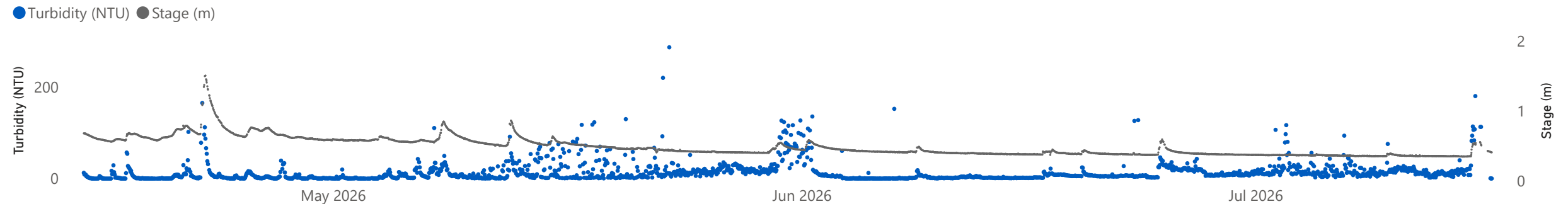
Water turbidity is characterized by the cloudiness or haziness caused by suspended particles and can significantly impact water quality. High turbidity reduces light penetration, hindering photosynthesis and affecting aquatic vegetation growth and habitat suitability. It can lead to temperature fluctuations, oxygen depletion from microbial decomposition of organic matter, and sedimentation, smothering benthic habitats and compromising biodiversity.

Turbidity conditions at Waterford River were generally low throughout the monitoring period, with occasional short-duration spikes associated with runoff events and changes in river stage. Turbidity values ranged from a minimum of 0.00 NTU to a maximum of 286.10 NTU, with an average of 13.31 NTU and a median of 6.70 NTU. The substantial difference between the average and median values indicates that baseline conditions were typically characterized by clear water, with periodic high-magnitude events elevating overall turbidity. Elevated turbidity events frequently coincided with increases in river stage and precipitation, suggesting the mobilization of sediments and other suspended materials during stormwater runoff and higher flow conditions. Most turbidity spikes were short-lived, with values returning quickly to baseline levels following runoff events. Overall, turbidity at Waterford River exhibited the event-driven variability typical of an urban river system, with generally clear conditions punctuated by temporary increases in suspended sediment concentrations during periods of elevated flow.

Turbidity Trendline



Turbidity (NTU) and Stage (m) by NST_DATI



Climate data from St. John's West Climate Station

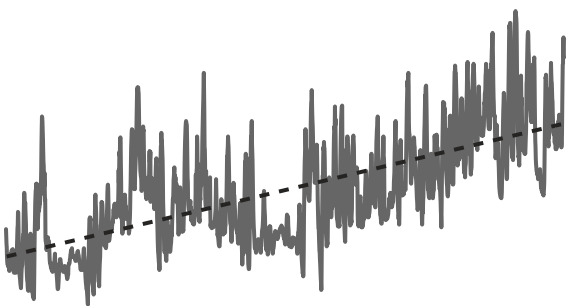


Meteorological and Hydrometric Data

*Climate data obtained from St. John's West Station



Air Temperature Trendline



8.22

Average (°C)

7.40

Median (°C)

-4.40

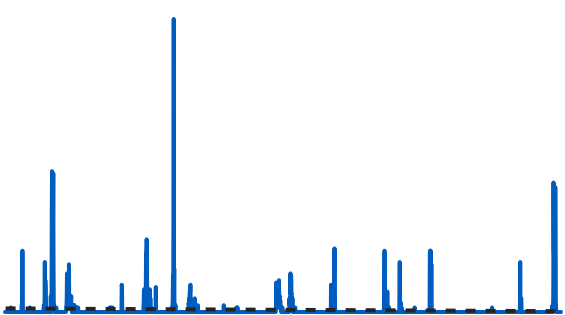
Minimum (°C)

27.90

Maximum (°C)

● Air Temperature (°C) ● Water Temperature (°C)

Precipitation Trendline



0.10

Average (mm/hr)

0.00

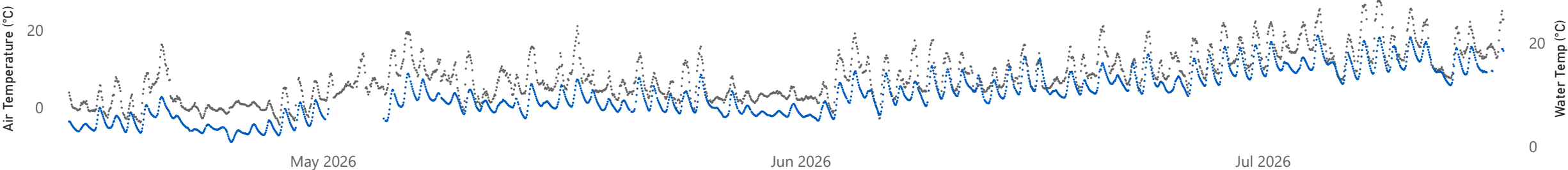
Median (mm/hr)

0.00

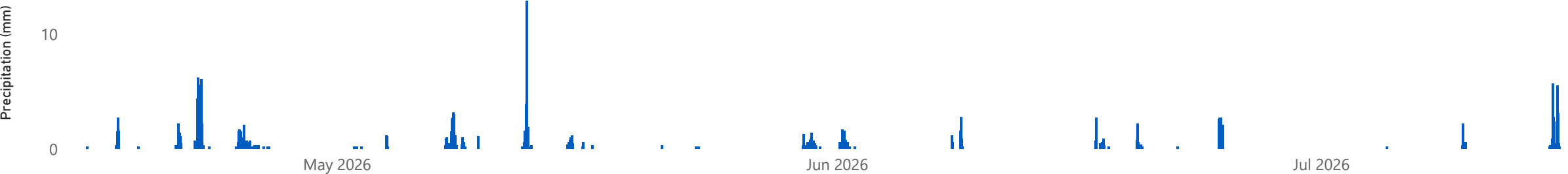
Minimum (mm/hr)

12.90

Maximum (mm/hr)



Precipitation (mm) by NST_DATI



Conclusions



A clean and calibrated real-time water quality monitoring instrument was deployed at the Waterford River at Kilbride station on 2026-04-14 and removed on 2026-07-16. The deployment successfully captured spring and summer water quality conditions within the Waterford River watershed and provided continuous monitoring during seasonal warming, precipitation events, and runoff conditions.

- **Water Temperature** ranged from 0.83 °C to 21.48 °C, with an average of 10.13 °C. Water temperatures followed the expected seasonal pattern, increasing steadily from spring into summer. Short-term fluctuations corresponded closely with changes in air temperature and weather conditions, while the overall trend reflected progressive seasonal warming of the river system.
- **pH** conditions remained stable throughout the monitoring period and consistently remained within the CCME freshwater aquatic life guideline range of 6.5 to 9.0 pH units. pH values ranged from 7.00 to 8.47, with an average of 7.42. The river exhibited generally neutral to slightly alkaline conditions. The magnitude of diurnal pH fluctuations increased through the summer months, likely reflecting increased biological productivity; however, all recorded values remained within guideline limits.
- **Specific Conductivity** exhibited moderate to high variability throughout the deployment, ranging from 376.19 $\mu\text{S}/\text{cm}$ to 1,160 $\mu\text{S}/\text{cm}$, with an average of 794.88 $\mu\text{S}/\text{cm}$. Conductivity generally increased through the monitoring period and was strongly influenced by hydrologic conditions. Short-term decreases frequently coincided with precipitation events and increases in river stage, indicating dilution during higher-flow conditions, while elevated conductivity values occurred during lower-flow periods.
- **Dissolved Oxygen** conditions remained indicative of a healthy and well-oxygenated freshwater system throughout the deployment. Dissolved oxygen concentrations ranged from 7.69 mg/L to 13.84 mg/L, with an average of 11.19 mg/L. Concentrations generally declined as water temperatures increased through the summer but remained above the CCME guideline for the protection of other life stages (6.5 mg/L) throughout the monitoring period and above the guideline for early life stages (9.5 mg/L) approximately 90% of the time.
- **Turbidity** conditions were generally low, with baseline water clarity punctuated by short-duration runoff events. Turbidity values ranged from 0.00 NTU to 286.10 NTU, with an average of 13.31 NTU. Elevated turbidity events were associated with precipitation and increases in river stage, reflecting temporary mobilization of sediments and suspended materials during higher-flow conditions.
- **Meteorological and Hydrometric** conditions demonstrated a clear transition from spring to summer. Air and water temperatures increased steadily throughout the deployment period, while periodic precipitation events resulted in temporary increases in river stage and corresponding responses in conductivity and turbidity. These hydrologic events represented the primary drivers of short-term variability in water quality parameters.

Overall, the 2026 spring–summer deployment successfully characterized seasonal water quality variability within the Waterford River watershed. Results indicate a healthy freshwater system with stable pH, generally favorable dissolved oxygen conditions, and water quality responses consistent with seasonal warming and precipitation-driven runoff events. The monitoring program continues to provide valuable long-term environmental information to support watershed assessment, trend analysis, and management of urban river systems.

Appendix 1

Grab Sample Results



Your P.O. #: 224006869-9
Your C.O.C. #: N/A, 2026-1700-SI-SP

Attention: Robert Richard Harvey

NL Department of Environment, Climate Change and Municipalities
Water Resources
PO Box 8700
St. John's, NL
CANADA A1B 4J6

Report Date: 2026/04/29
Report #: R8732156
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C639602

Received: 2026/04/15, 09:36

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity (1)	1	N/A	2026/04/28	ATL SOP 00142	SM 24 2320 B
Anions (2)	1	N/A	2026/04/24	CAM SOP-00435	SM 24 4110 B m
Colour (1)	1	N/A	2026/04/27	ATL SOP 00020	SM 24 2120C m
Organic carbon - Diss (DOC)-Lab Filtered (1, 3)	1	N/A	2026/04/22	ATL SOP 00203	SM 24 5310B m
Conductance - water (1)	1	N/A	2026/04/28	ATL SOP 00004	SM 24 2510B m
Fluoride (1)	1	N/A	2026/04/28	ATL SOP 00043	SM 24 4500-F- C m
Hardness (calculated as CaCO ₃) (1)	1	N/A	2026/04/17	ATL SOP 00048	Auto Calc
Mercury - Total (CVAA,LL) (1)	1	2026/04/21	2026/04/21	ATL SOP 00026	EPA 245.1 R3 m
Metals Water Total MS (1)	1	2026/04/16	2026/04/16	ATL SOP 00058	EPA 6020B R2 m
Nitrogen Ammonia - water (1)	1	N/A	2026/04/24	ATL SOP 00015	EPA 350.1 R2 m
Nitrogen - Nitrate + Nitrite (1)	1	N/A	2026/04/28	ATL SOP 00016	USGS I-2547-11m
Nitrogen - Nitrite (1)	1	N/A	2026/04/28	ATL SOP 00017	SM 24 4500-NO ₂ - B m
Nitrogen - Nitrate (as N) (1)	1	N/A	2026/04/28	ATL SOP 00018	ASTM D3867-16
pH (1, 4)	1	N/A	2026/04/28	ATL SOP 00003	SM 24 4500-H+ B m
Calculated TDS (DW Pkg) (1)	1	N/A	2026/04/29	N/A	Auto Calc
Total Kjeldahl Nitrogen - calculated (1)	1	2026/04/15	2026/04/28	Auto Calc	Auto Calc
Nitrogen - Total (1)	1	N/A	2026/04/24	ATL SOP-00208	ASTM D8083 m
Organic carbon - Total (TOC) (1, 3)	1	N/A	2026/04/23	ATL SOP 00203	SM 24 5310B m
Total Phosphorus Low Level Colourimetric (2)	1	2026/04/22	2026/04/22	CAM SOP-00407	SM 24 4500-P I
Total Suspended Solids (1)	1	2026/04/21	2026/04/22	ATL SOP 00007	SM 24 2540D m
Turbidity (1)	1	N/A	2026/04/29	ATL SOP 00011	EPA 180.1 R2 m

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

(1) This test was performed by Bureau Veritas Bedford, 200 Bluewater Rd Suite 105, Bedford, NS, B4B 1G9

(2) This test was performed by Bureau Veritas Mississauga, 6740 Campobello Rd, Mississauga, ON, L5N 2L8

(3) TOC / DOC present in the sample should be considered as non-purgeable TOC / DOC.

(4) The APHA Standard Method requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the APHA Standard Method holding time.



Your P.O. #: 224006869-9
Your C.O.C. #: N/A, 2026-1700-SI-SP

Attention: Robert Richard Harvey

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PO Box 8700
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Received: 2026/04/15, 09:36

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:

Gemarie Balatico, Project Manager

Email: Gemarie.Balatico@bureauveritas.com

Phone# (902)440-8951

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BUREAU
VERITAS

Bureau Veritas Job #: C639602
Report Date: 2026/04/29

NL Department of Environment, Climate Change and
Municipalities
Your P.O. #: 224006869-9
Sampler Initials: LB

Sample Details/Parameters	A	Result	RDL	UNITS	Extracted	Analyzed	By	Batch
BBTY18 WATERFORD RIVER@KILBRIDE								
Sampling Date 2026/04/14 11:25								
Matrix W								
Sample # 2026-1700-SI-SP								
Registration # SA-0000								
RESULTS OF ANALYSES OF WATER								
Calculated Parameters								
Hardness (CaCO ₃)	-	64	1.0	mg/L		2026/04/17		A132958
Total Kjeldahl Nitrogen (TKN)	-	0.31	0.10	mg/L		2026/04/28		A133308
Nitrate (N)	-	0.69	0.050	mg/L		2026/04/28		A132961
Total dissolved solids (calc., EC)	-	1100	1.0	mg/L		2026/04/29		A133464
Inorganics								
Conductivity	-	2000	1.0	uS/cm		2026/04/28	S6S	A140576
Chloride (Cl ⁻)	-	560	5.0	mg/L		2026/04/24	RSU	A138215
Dup.Chloride (Cl ⁻)	-	560	5.0	mg/L		2026/04/24	RSU	A138215
Bromide (Br ⁻)	-	<1.0	1.0	mg/L		2026/04/24	RSU	A138215
Dup.Bromide (Br ⁻)	-	<1.0	1.0	mg/L		2026/04/24	RSU	A138215
Sulphate (SO ₄)	-	27	1.0	mg/L		2026/04/24	RSU	A138215
Dup.Sulphate (SO ₄)	-	27	1.0	mg/L		2026/04/24	RSU	A138215
Total Alkalinity (Total as CaCO ₃)	-	7.0	2.0	mg/L		2026/04/28	S6S	A140577
Colour	-	14	5.0	TCU		2026/04/27	M2C	A139520
Dissolved Fluoride (F ⁻)	-	<0.10	0.10	mg/L		2026/04/28	S6S	A140579
Nitrate + Nitrite (N)	-	0.69	0.050	mg/L		2026/04/28	MCN	A139523
Nitrite (N)	-	<0.010	0.010	mg/L		2026/04/28	MCN	A139525
Nitrogen (Ammonia Nitrogen)	-	0.077	0.050	mg/L		2026/04/24	MCN	A138589
Total Nitrogen (N)	-	1.1	0.10	mg/L		2026/04/24	SSI	A138995
Dissolved Organic Carbon (C)	-	2.7	0.50	mg/L		2026/04/22	SSI	A136360
Total Organic Carbon (C)	-	3.1	0.50	mg/L		2026/04/23	SSI	A138024
pH	-	7.06		pH		2026/04/28	S6S	A140568
Total Phosphorus	-	0.029	0.004	mg/L	2026/04/22	2026/04/22	VKH	A137621
Total Suspended Solids	-	5.4	1.0	mg/L	2026/04/21	2026/04/22	AWJ	A136365
Turbidity	-	4.1	0.10	NTU		2026/04/29	S6S	A141822
MERCURY BY COLD VAPOUR AA (WATER)								
Metals								
Total Mercury (Hg)	-	<0.000013	0.000013	mg/L	2026/04/21	2026/04/21	JEP	A135960
Dup.Total Mercury (Hg)	-	<0.000013	0.000013	mg/L	2026/04/21	2026/04/21	JEP	A135960
ELEMENTS BY ICP/MS (WATER)								
Metals								
Total Aluminum (Al)	-	0.22	0.0050	mg/L	2026/04/16	2026/04/16	MOA	A133799
Total Antimony (Sb)	-	<0.0010	0.0010	mg/L	2026/04/16	2026/04/16	MOA	A133799
Total Arsenic (As)	-	<0.0010	0.0010	mg/L	2026/04/16	2026/04/16	MOA	A133799
Total Barium (Ba)	-	0.041	0.0010	mg/L	2026/04/16	2026/04/16	MOA	A133799
Total Boron (B)	-	<0.050	0.050	mg/L	2026/04/16	2026/04/16	MOA	A133799
Total Cadmium (Cd)	-	0.000080	0.000010	mg/L	2026/04/16	2026/04/16	MOA	A133799
Total Calcium (Ca)	-	21	0.10	mg/L	2026/04/16	2026/04/16	MOA	A133799
Total Chromium (Cr)	-	<0.0010	0.0010	mg/L	2026/04/16	2026/04/16	MOA	A133799
Total Copper (Cu)	-	0.0019	0.00050	mg/L	2026/04/16	2026/04/16	MOA	A133799
Total Iron (Fe)	-	0.32	0.050	mg/L	2026/04/16	2026/04/16	MOA	A133799
Total Lead (Pb)	-	<0.00050	0.00050	mg/L	2026/04/16	2026/04/16	MOA	A133799
Total Magnesium (Mg)	-	2.6	0.10	mg/L	2026/04/16	2026/04/16	MOA	A133799



BUREAU
VERITAS

Bureau Veritas Job #: C639602

Report Date: 2026/04/29

NL Department of Environment, Climate Change and
Municipalities

Your P.O. #: 224006869-9

Sampler Initials: LB

Sample Details/Parameters	A	Result	RDL	UNITS	Extracted	Analyzed	By	Batch
BBTY18 WATERFORD RIVER@KILBRIDE								
Sampling Date 2026/04/14 11:25								
Matrix W								
Sample # 2026-1700-SI-SP								
Registration # SA-0000								
ELEMENTS BY ICP/MS (WATER)								
Metals								
Total Manganese (Mn)	-	0.13	0.0020	mg/L	2026/04/16	2026/04/16	MOA	A133799
Total Nickel (Ni)	-	<0.0020	0.0020	mg/L	2026/04/16	2026/04/16	MOA	A133799
Total Phosphorus (P)	-	<0.10	0.10	mg/L	2026/04/16	2026/04/16	MOA	A133799
Total Potassium (K)	-	4.6	0.10	mg/L	2026/04/16	2026/04/16	MOA	A133799
Total Selenium (Se)	-	<0.00050	0.00050	mg/L	2026/04/16	2026/04/16	MOA	A133799
Total Sodium (Na)	-	320	0.10	mg/L	2026/04/16	2026/04/16	MOA	A133799
Total Strontium (Sr)	-	0.080	0.0020	mg/L	2026/04/16	2026/04/16	MOA	A133799
Total Uranium (U)	-	<0.00010	0.00010	mg/L	2026/04/16	2026/04/16	MOA	A133799
Total Zinc (Zn)	-	0.021	0.0050	mg/L	2026/04/16	2026/04/16	MOA	A133799



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	5.8°C
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Results relate only to the items tested.



BUREAU
VERITAS

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VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Cristina Carriere, Senior Scientific Specialist

Ernie Publicover, Scientific Specialist

Bureau Veritas Certified by Ernie Publicover, Scientific Specialist

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