Real-Time Water Quality Deployment Report

Lower Churchill River Network

September 9/12 to
October 28/29/30, 2025

Newfoundland Labrador

Government of Newfoundland & Labrador
Department of Environment, Conservation & Climate Change
Water Resources Management Division

Contents

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Department of Environment, Conservation and Climate Change
Water Resources Management Division

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Real Time Water Quality Monitoring

- Staff with the Department of Environment, Conservation and Climate Change monitor real-time water quality data on a regular basis.
- This deployment report discusses water quality related events occurring at four stations on the Lower Churchill River: Churchill River below Metchin River, Churchill River above Grizzle Rapids, Churchill River below Muskrat Falls and Churchill River at English Point.
- Real-time water quality monitoring instruments were deployed at Churchill River below Metchin River, above Grizzle Rapids and below Muskrat Falls on September 9th. The instrument was deployed at English Point on September 12th.
- The instrument at Churchill River below Metchin River was removed for the season on October 28th after a deployment of 49 days, while above Grizzle and below Muskrat Falls were removed on October 29th for equal deployments of 50 days. Churchill River at English Point was removed on October 30th after a deployment period of 48 days.

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. This procedure is based on the approach used by the United States Geological Survey.
- At deployment and removal, a QA/QC instrument is temporarily deployed adjacent to the field instrument. 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 instrument and QA/QC instrument at deployment and at removal, a qualitative statement is made on the data quality (Table 1).

Table 1: Instrument Performance Ranking classifications for deployment and removal

	Rank				
Parameter	**Excellent**	**Good**	**Fair**	**Marginal**	**Poor**
Temperature (C)	<=+/-0.2	>+/-0.2 to 0.5	>+/-0.5 to 0.8	>+/-0.8 to 1	<+/-1
pH (unit)	<=+/-0.2	>+/-0.2 to 0.5	>+/-0.5 to 0.8	>+/-0.8 to 1	>+/-1
Sp. Conductance (µS/cm)	<=+/-3	>+/-3 to 10	>+/-10 to 15	>+/-15 to 20	>+/-20
Sp. Conductance > 35µS/cm (%)	<=+/-3	>+/-3 to 10	>+/-10 to 15	>+/-15 to 20	>+/-20
Dissolved Oxygen (mg/l) (% Sat)	<=+/-0.3	>+/-0.3 to 0.5	>+/-0.5 to 0.8	>+/-0.8 to 1	>+/-1
Turbidity <40 NTU (NTU)	<=+/-2	>+/-2 to 5	>+/-5 to 8	>+/-8 to 10	>+/-10
Turbidity > 40 NTU (%)	<=+/-5	>+/-5 to 10	>+/-10 to 15	>+/-15 to 20	>+/-20

- It should be noted that the temperature sensor on any instrument is the most important. All other parameters can be broken down into three groups: temperature dependent, temperature compensated and temperature independent. Because the temperature sensor is not isolated from the rest of the instrument, the entire instrument must be at the same temperature before the 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.

- Deployment and removal comparison rankings for the Lower Churchill River stations deployed from September 9/12 to October 28/29/30, 2025 are summarized in Table 2.

Table 2: Comparison rankings for Lower Churchill River stations September 9/12 to October 28/29/30, 2025

Churchill River Station	Date	Action	Comparison Ranking				
			Temperature	pH	Conductivity	Dissolved Oxygen	Turbidity
Below Metchin River	September 9, 2025	Deployment	Excellent	Excellent	Excellent	Excellent	Excellent
	October 28, 2025	Removal	Excellent	Fair	Good	Excellent	Poor
Above Grizzle Rapids	September 9, 2025	Deployment	Excellent	Excellent	Excellent	Excellent	Excellent
	October 29, 2025	Removal	Excellent	Fair	Good	Excellent	Excellent
Below Muskrat Falls	September 9, 2025	Deployment	Excellent	Good	Excellent	Excellent	Good
	October 29, 2025	Removal	Excellent	Fair	Excellent	Excellent	Excellent
At English Point	September 12, 2025	Deployment	Excellent	Excellent	Excellent	Excellent	Excellent
	October 30, 2025	Removal	Good	Marginal	Fair	Excellent	Excellent

- **Churchill River below Metchin River**
  - At deployment, all parameters ranked 'excellent'.
  - At removal, all parameters ranked as 'fair' to 'excellent' except turbidity which was 'poor' as it was out of the water or buried.
- **Churchill River above Grizzle Rapids**
  - At deployment, all parameters ranked as 'excellent'.
  - At removal, all parameters ranked as 'fair' to 'excellent'.
- **Churchill River below Muskrat Falls**
  - At deployment, all parameters ranked as either 'excellent' or 'good'.
  - At removal, all parameters ranked as either 'excellent' except pH which was 'fair. As pH was 'fair' on removal at 3 stations, it is likely there was an issue with the QAQC sonde at that time.
- **Churchill River at English Point**
  - At deployment all parameters ranked as 'excellent'.
  - At removal, all parameters ranked as 'fair' to 'excellent'.

Data Interpretation

- The following graphs and discussion illustrate water quality related events occurring from September 9/12 to October 28/29/30, 2025 on the Lower Churchill River Network.
- Water levels through this deployment remained very low due to limited precipitation in the area. The below Metchin River station recorded extremely low stage values, resulting in limited flow data for that station.
- Water levels were low at below Muskrat Falls for this deployment, particularly September 28th to October 4th. The water quality data indicates the sonde was likely out of the water at that time, thus the data has been removed from the dataset.
- With the exception of water quantity data (stage & flow), all data used in the preparation of the graphs and subsequent discussion below adhere to stringent QA/QC protocol. Water Survey of Canada is responsible for QA/QC of water quantity data. Corrected data can be obtained upon request.

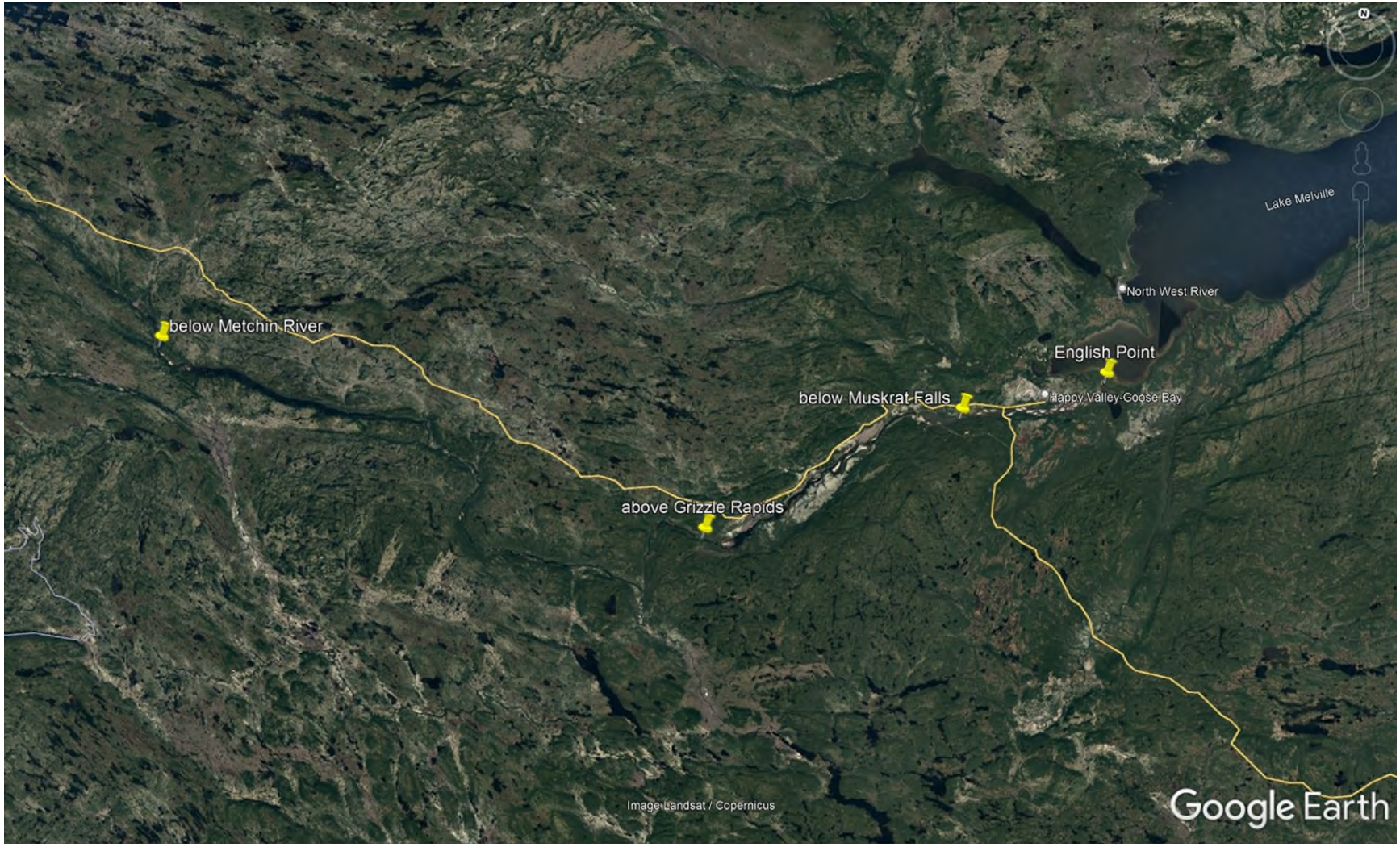

Figure 1: Lower Churchill Network of Real-Time Water Quality Stations

Churchill River below Metchin River

Water Temperature

- Over the deployment period, water temperature ranged from 6.13°C to 14.9°C, with a median value of 9.50°C (Figure 2). Air temperature data was obtained from the Metchin River near TLH Weather Station.
- Water temperature showed a steady decrease into Fall with some fluctuations related to abnormally high air temperatures. These seasonal trends are expected. Water temperature data exhibits a diurnal pattern as expected and closely correlates with ambient air temperatures.
- Water Survey of Canada (Environment and Climate Change Canada) is responsible for QA/QC of water quantity data. Corrected data can be obtained upon request.

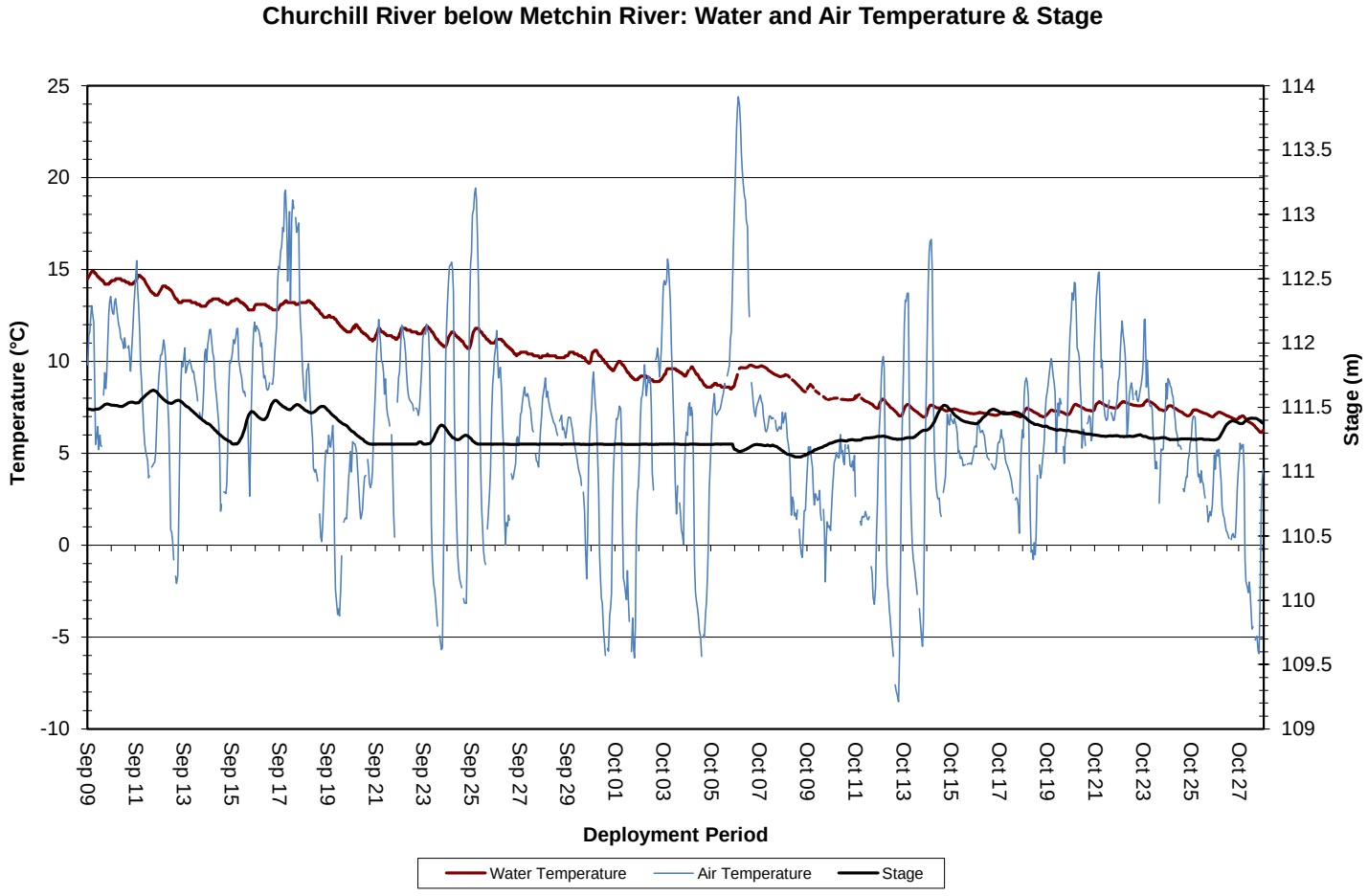

Figure 2: Water and Air Temperature & Stage at Churchill River below Metchin River

pH

- Over the deployment period, pH values ranged from 6.69 to 7.00 pH units, with a median value of 6.92 (Figure 3).
- pH values were very stable over the course of deployment with little variation, remaining within the CCME's Guidelines for the Protection of Aquatic Life for the duration of the deployment period.
- Photosynthesis uses up hydrogen molecules; this causes the concentration of hydrogen ions to decrease, which in turn causes pH to increase. For this reason, pH may be higher during daylight hours and during the growing season when photosynthesis is at a maximum. This is illustrated by the diurnal fluctuations in pH values (Figure 3).
- Water Survey of Canada (Environment and Climate Change Canada) is responsible for QA/QC of water quantity data. Corrected data can be obtained upon request.

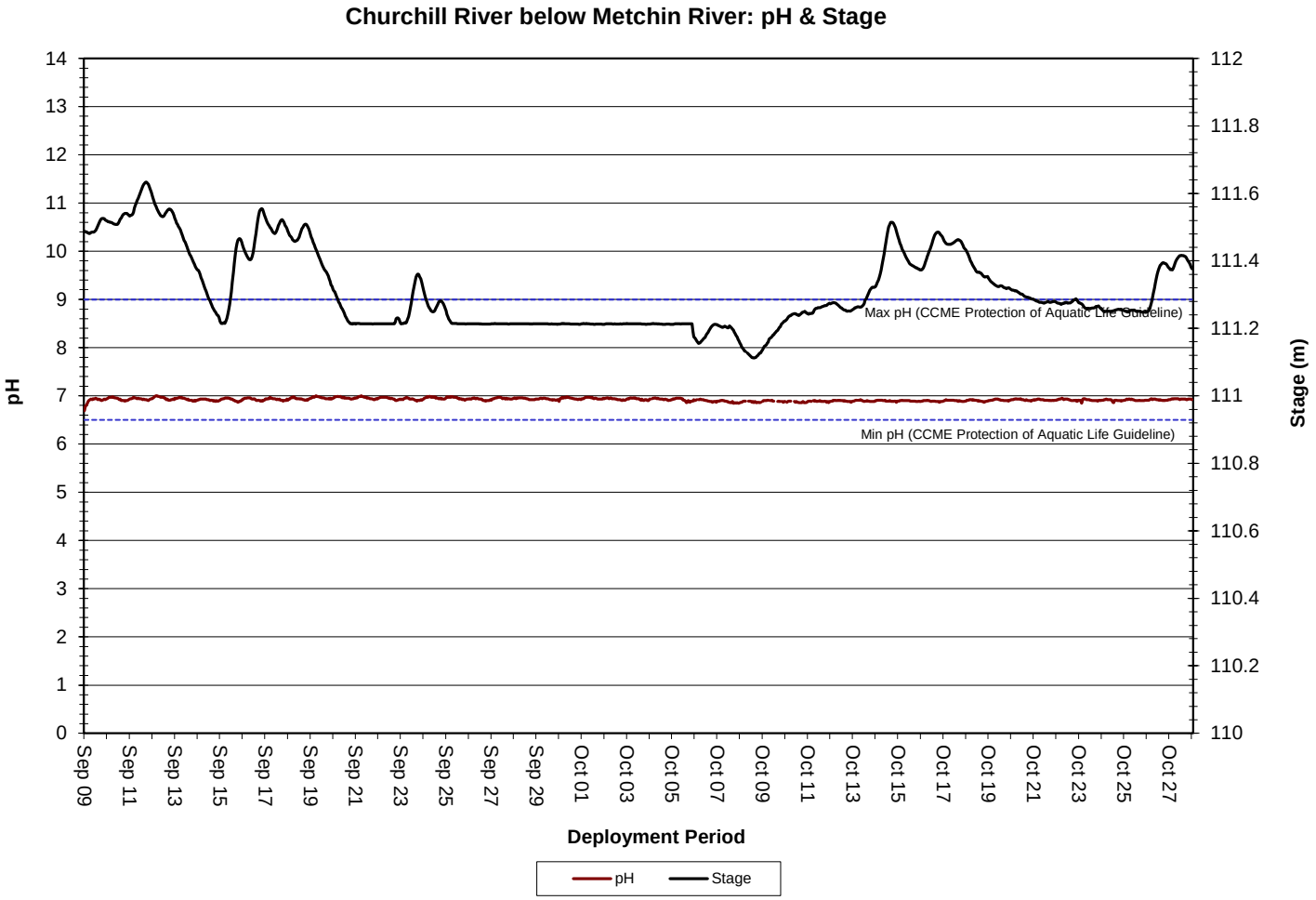

Figure 3: pH & Stage at Churchill River below Metchin River

Specific Conductivity

- Over the deployment period, specific conductivity ranged from 19.7µS/cm to 37.2µS/cm, with a median value of 23.6µS/cm (Figure 4).
- The relationship between conductivity and stage is generally inversed. When stage levels increase, specific conductivity levels decrease as the increased amount of water in the river system dilutes solids that are present. This relationship is somewhat evident in the graph below (Figure 4). It should be noted that in late September-early October, water levels were very low, thus the lack of variation in stage and conductivity. When stage began to increase in early October, conductivity exhibited more variation as water levels rose around the instrument, increasing particles in the water column.
- Water Survey of Canada (Environment and Climate Change Canada) is responsible for QA/QC of water quantity data. Corrected data can be obtained upon request.

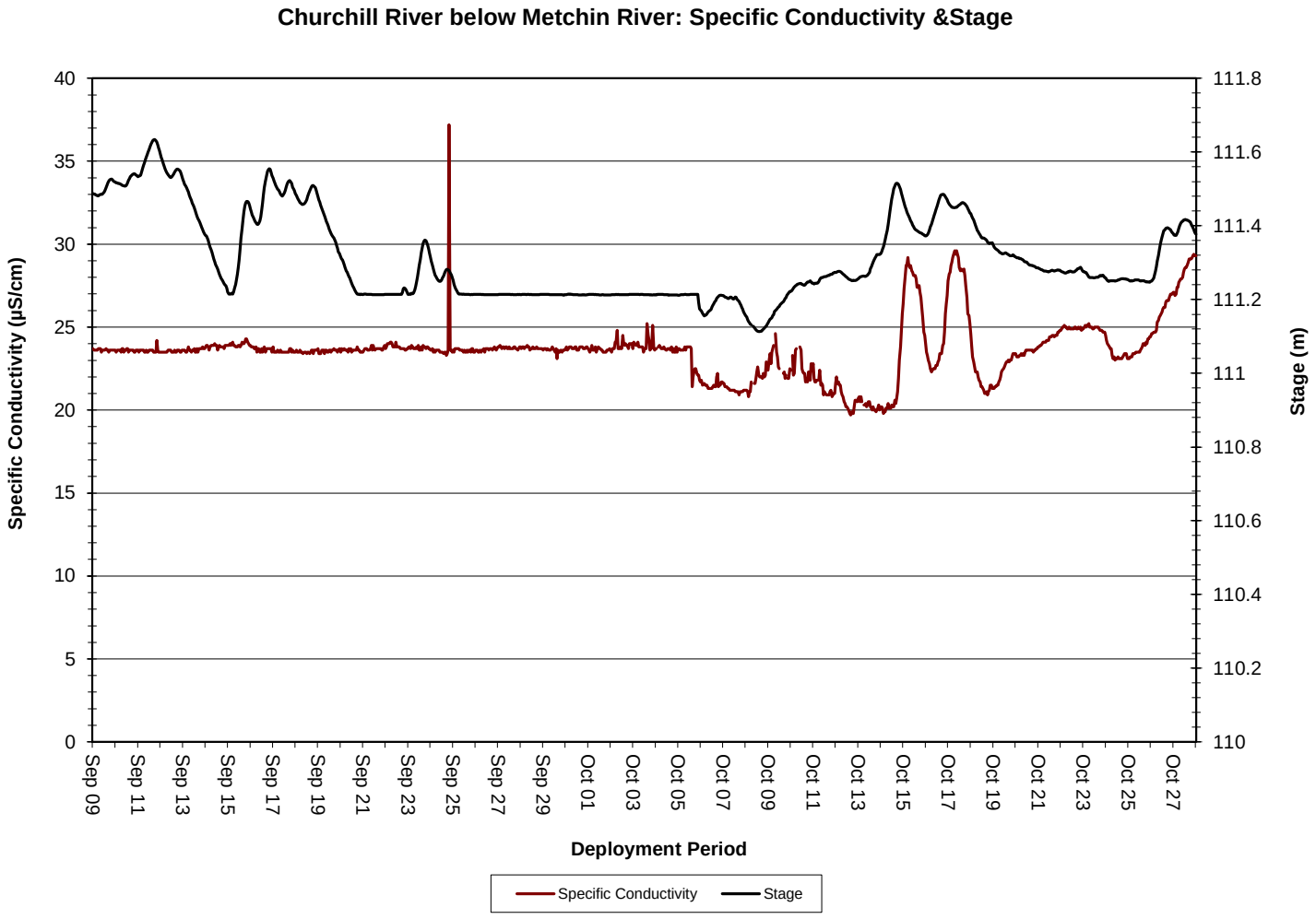

Figure 4: Specific Conductivity & Stage at Churchill River below Metchin River

Dissolved Oxygen

- Over the deployment period, dissolved oxygen content ranged from 9.57mg/L to 11.85mg/L, with a median value of 10.93mg/L. Saturation of dissolved oxygen ranged from 92.9% to 98.7%, with a median value of 95.8% (Figure 5).
- There is an evident relationship between water temperature and dissolved oxygen. Over the deployment period, dissolved oxygen levels slowly increased as water temperatures were slowly decreasing. Dissolved oxygen also follows a diurnal pattern as water temperatures rise and fall under the influence of ambient air temperatures. Generally, dissolved oxygen levels are higher in a waterbody during cooler temperatures.
- Dissolved oxygen levels remained above the CCME's Guidelines for the Protection of Early Life and Other Life Stages for the duration of deployment.

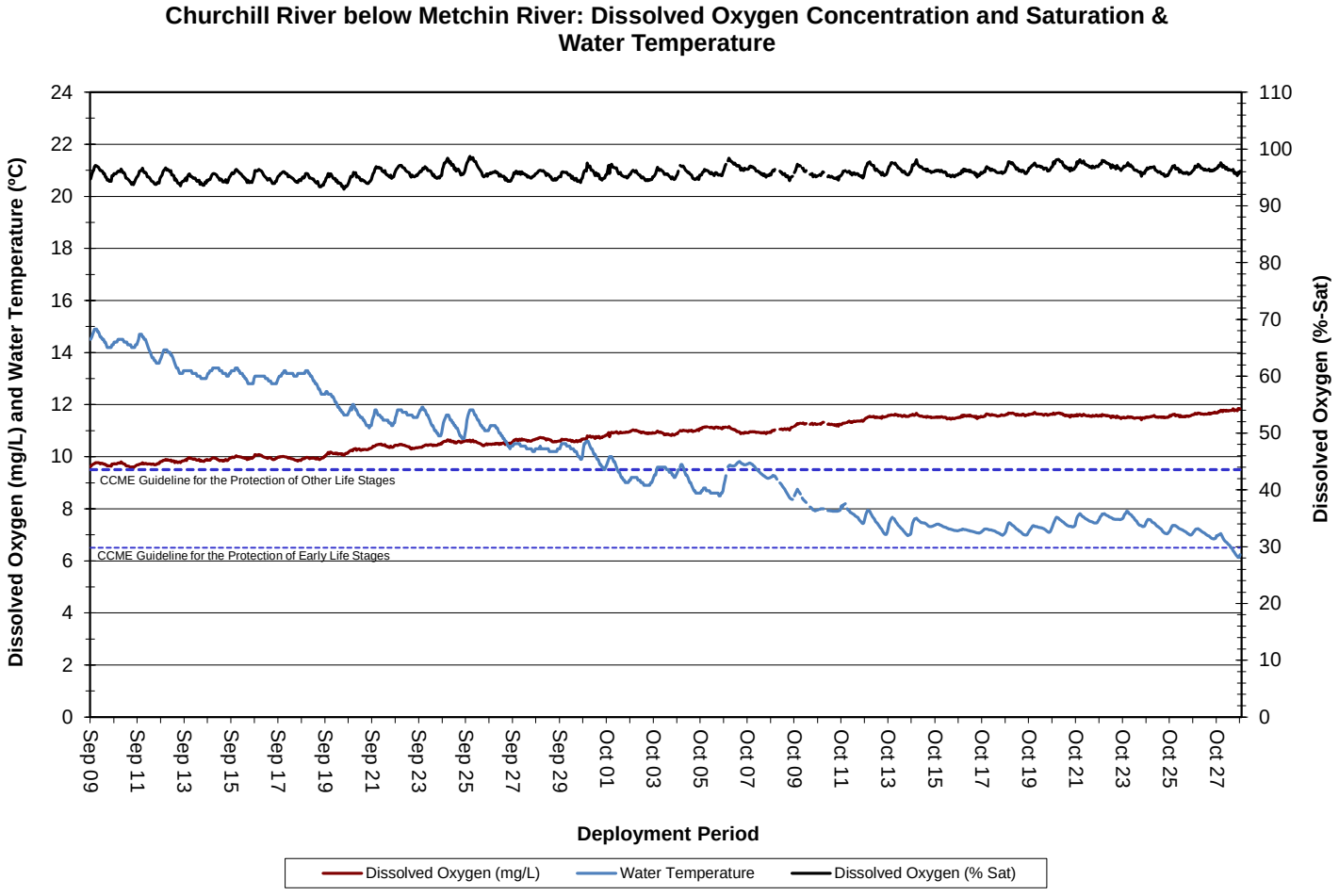

Figure 5: Dissolved Oxygen & Water Temperature at Churchill River below Metchin River

Turbidity

- Over the deployment period, turbidity ranged from 0 NTU to 87.3 NTU, with a median value of 0.3 NTU (Figure 6). A median value of 0.3 NTU indicates little natural background turbidity in the waterbody.
- Precipitation data was obtained from the Metchin River near TLH Weather Station. This station is located at a wide and deep section of the Churchill River and therefore turbidity levels are typically less susceptible to precipitation events as compared to other areas.
- While the median turbidity was low, it is evident that the turbidity sensor was fouled or buried October 9th onwards as the turbidity values steadily increased during this time without returning to background levels.
- Water Survey of Canada (Environment and Climate Change Canada) is responsible for QA/QC of water quantity data. Corrected data can be obtained upon request.

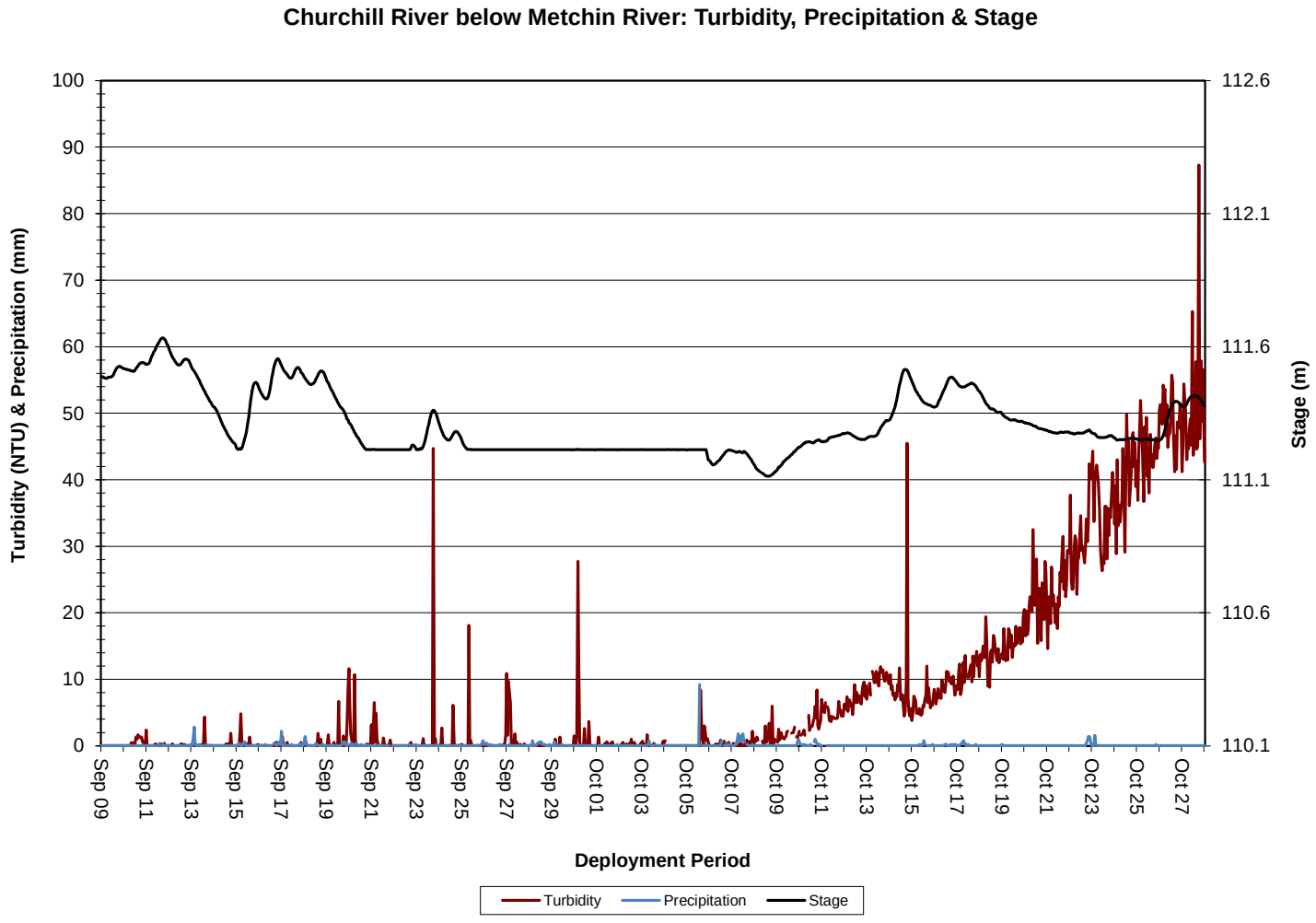

Figure 6: Turbidity, Precipitation & Stage at Churchill River below Metchin River

Stage and Flow

- Over the deployment period, stage levels ranged from 111.113m to 111.634m, with a median value of 111.264m. Flow data was mainly unavailable as the stage values were extremely low and outside the known correlated flow values.
- Stage decreased for the first portion of deployment until late September. At that point the hydrometric equipment may have been out of the water and could no longer reliably measure data. Stage began to increase again in mid-October, but not by much. Precipitation data across the same period show how little water was added into the system, resulting in the ultra-low stage levels (Figure 8).
- Water Survey of Canada (Environment and Climate Change Canada) is responsible for QA/QC of water quantity data. Corrected data can be obtained upon request.

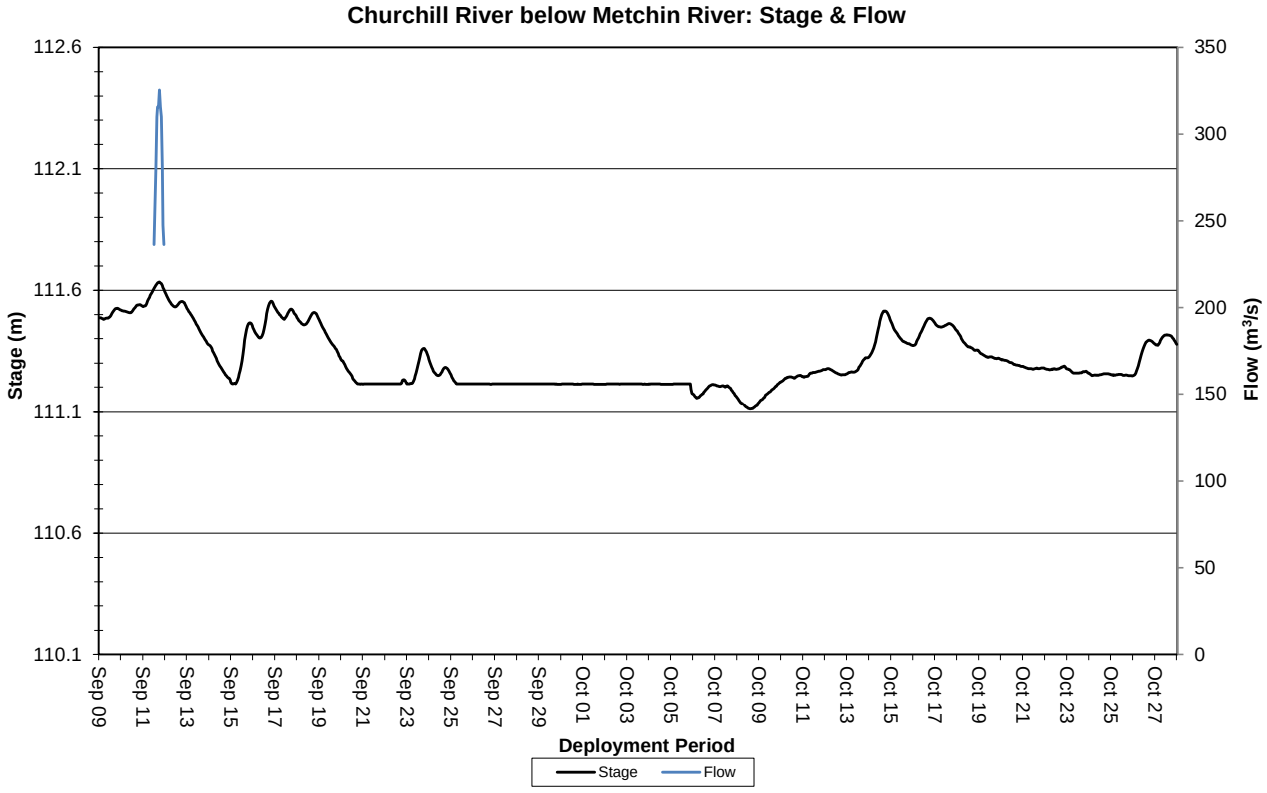

Figure 7: Stage & Flow at Churchill River below Metchin River

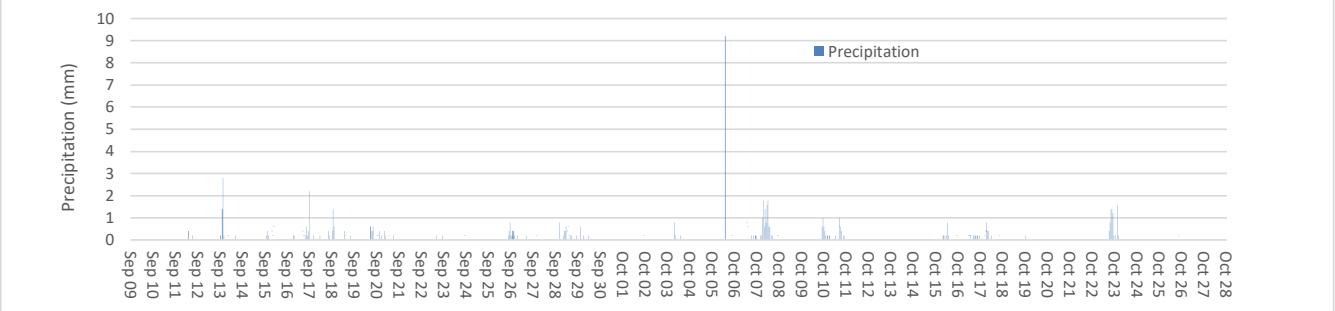

Figure 8: Precipitation at Churchill River below Metchin River

Churchill River above Grizzle Rapids

Water Temperature

- Over the deployment period, water temperature ranged from 7.1°C to 15.9°C, with a median value of 11.5°C (Figure 9). Air temperature data was obtained from the Metchin River near TLH Weather Station.
- Water temperature slowly decreased through September and October. This trend is expected as air temperatures also cooled into the Fall. Water temperature data exhibits a diurnal pattern and closely correlates with ambient air temperatures.
- Water Survey of Canada (Environment and Climate Change Canada) is responsible for QA/QC of water quantity data. Corrected data can be obtained upon request.

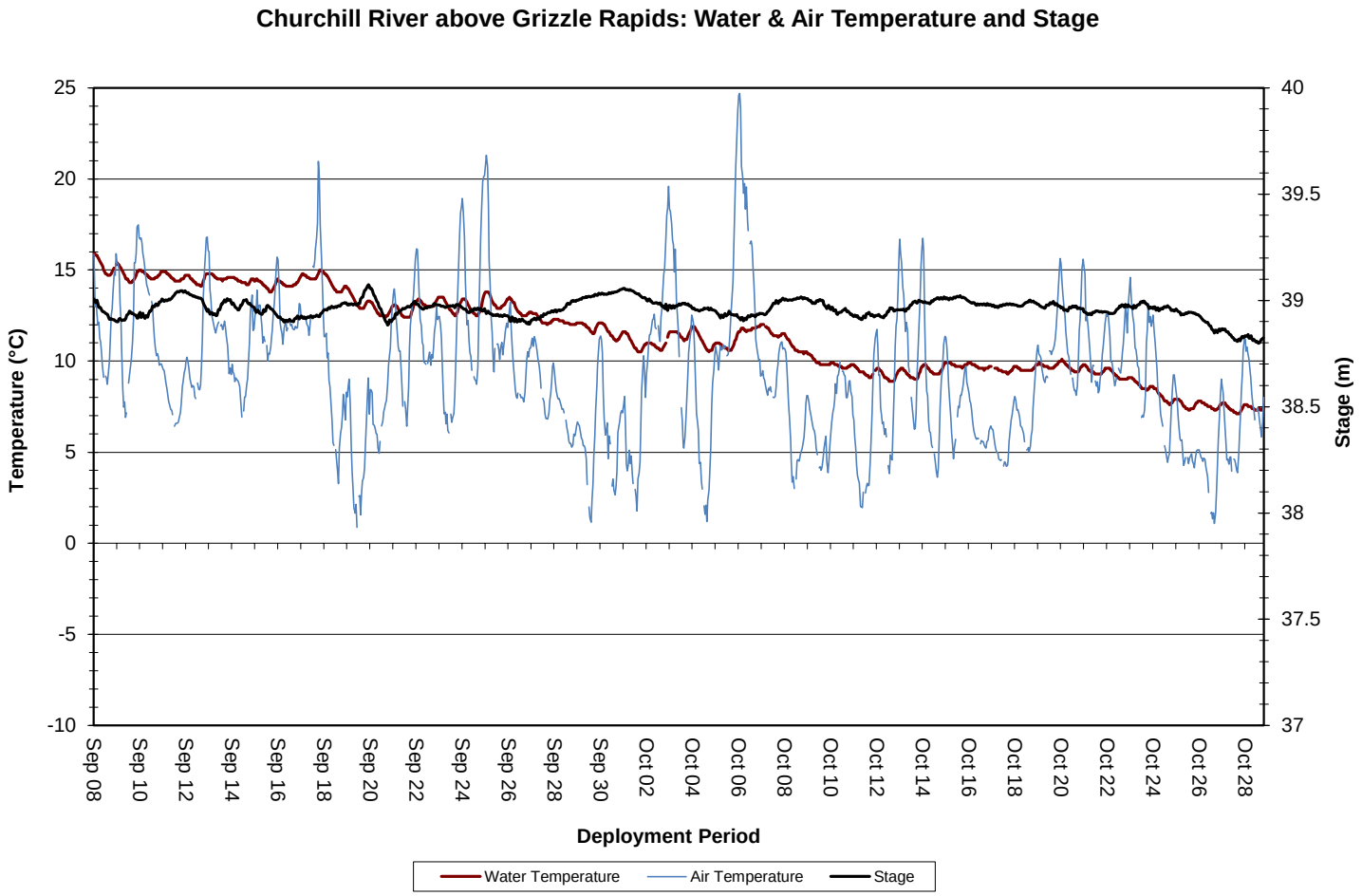

Figure 9: Water and Air Temperature & Stage at Churchill River above Grizzle Rapids

pH

- Over the deployment period, pH values ranged from 6.82 pH units to 7.16 pH units, with a median value of 6.98 (Figure 10).
- pH values were quite stable hovering around 7 pH units and remained within the CCME's Guidelines for the Protection of Aquatic Life for the duration of deployment. There is a gradual decrease visible in the data October 6th onwards.
- Photosynthesis uses up hydrogen molecules; this causes the concentration of hydrogen ions to decrease, which in turn causes pH to increase. For this reason, pH may be higher during daylight hours and during the growing season when photosynthesis is at a maximum. This is illustrated by the diurnal fluctuations in pH values (Figure 10).
- Water Survey of Canada (Environment and Climate Change Canada) is responsible for QA/QC of water quantity data. Corrected data can be obtained upon request.

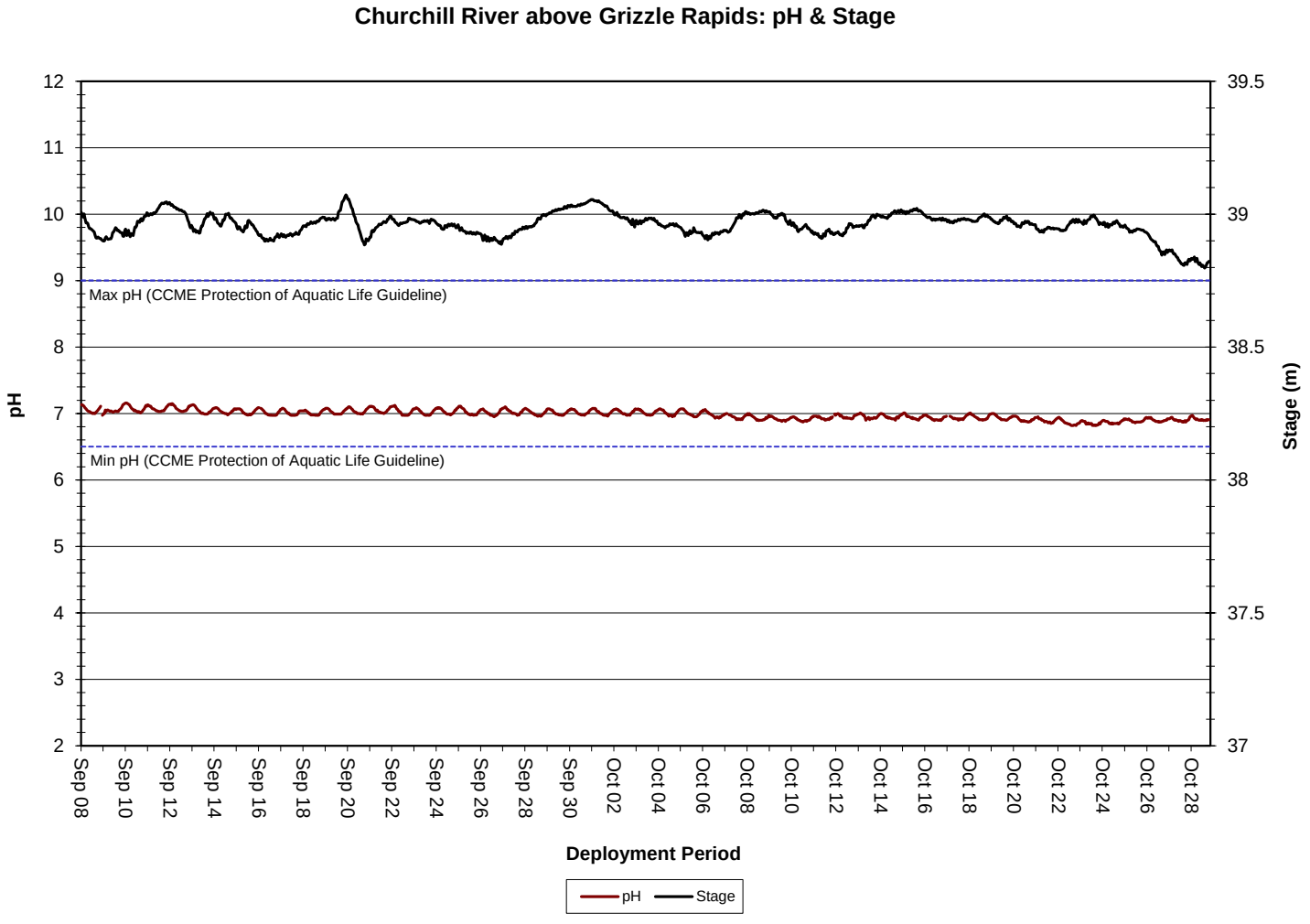

Figure 10: pH & Stage at Churchill River above Grizzle Rapids

Specific Conductivity

- Over the deployment period, specific conductivity ranged from 19.5µS/cm to 22.4µS/cm, with a median of 21.6µS/cm (Figure 11).
- The relationship between conductivity and stage is generally inversed. When stage levels increase, specific conductivity levels generally decrease as the increased amount of water in the river system dilutes solids that are present. This relationship is only somewhat evident in the graph below, likely because this station is located at a deep and wide section of the Churchill River and other factors in the water column influence conductivity levels.
- Water Survey of Canada (Environment and Climate Change Canada) is responsible for QA/QC of water quantity data. Corrected data can be obtained upon request.

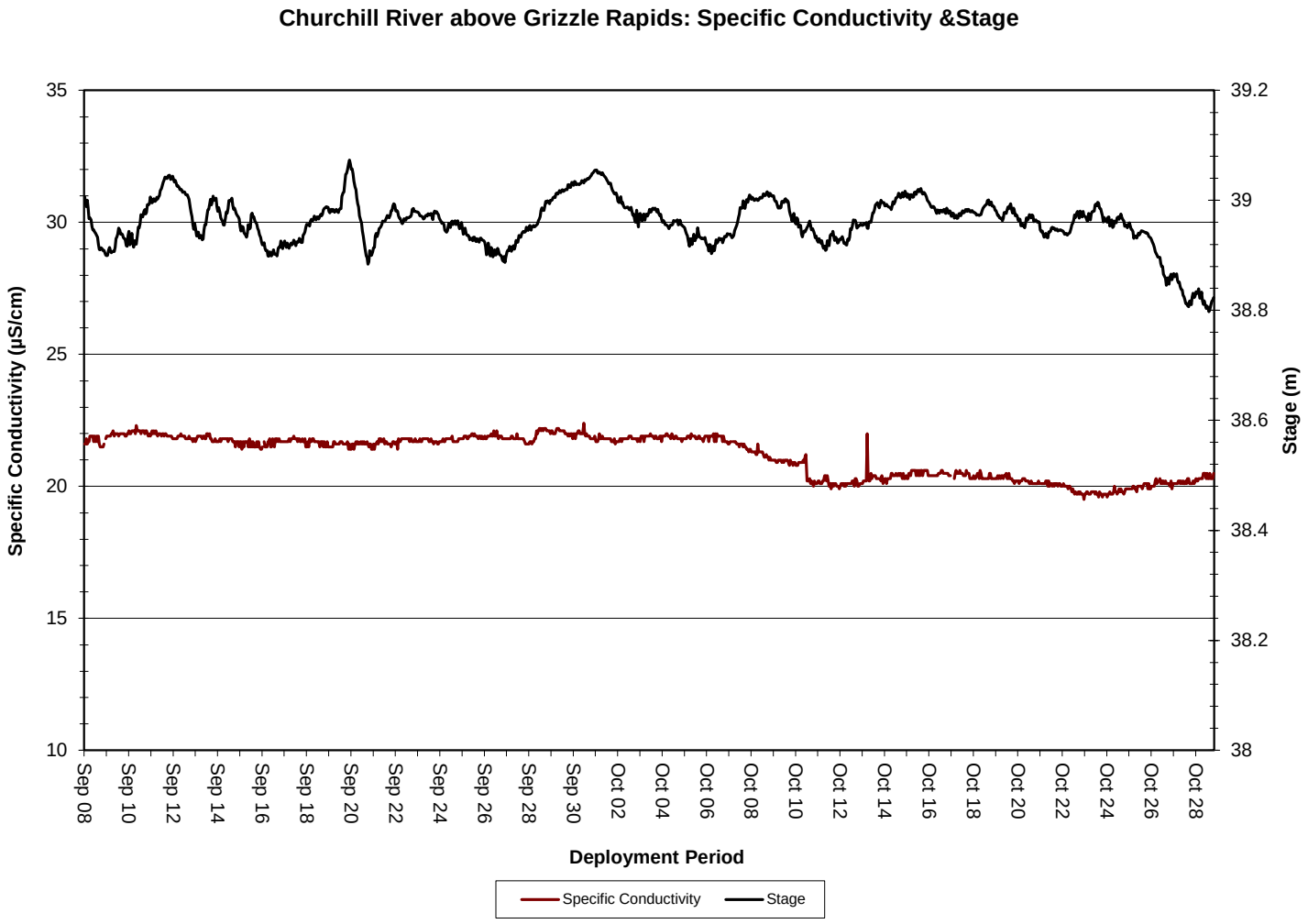

Figure 11: Specific Conductivity & Stage at Churchill River above Grizzle Rapids

Dissolved Oxygen

- Over the deployment period, dissolved oxygen content ranged from 9.73mg/L to 11.80mg/L, with a median value of 10.57mg/L. Saturation of dissolved oxygen ranged from 94.2% saturation to 101.4% saturation, with a median value of 96.9% (Figure 12).
- There is an obvious relationship between water temperature and dissolved oxygen. Over the deployment period, dissolved oxygen levels gradually increased as water temperatures decreased into Fall. Dissolved oxygen also follows a diurnal pattern as water temperatures rise and fall under the influence of ambient air temperatures. Generally, dissolved oxygen levels are higher in a waterbody during cooler temperatures.
- Dissolved oxygen levels were occasionally below the CCME's Guideline for the Protection of Early Life Stages during the deployment period at the start of deployment when water temperatures were warmest. Dissolved oxygen levels were above the CCME's Guideline for the Protection of Other Life Stages for the duration of deployment.

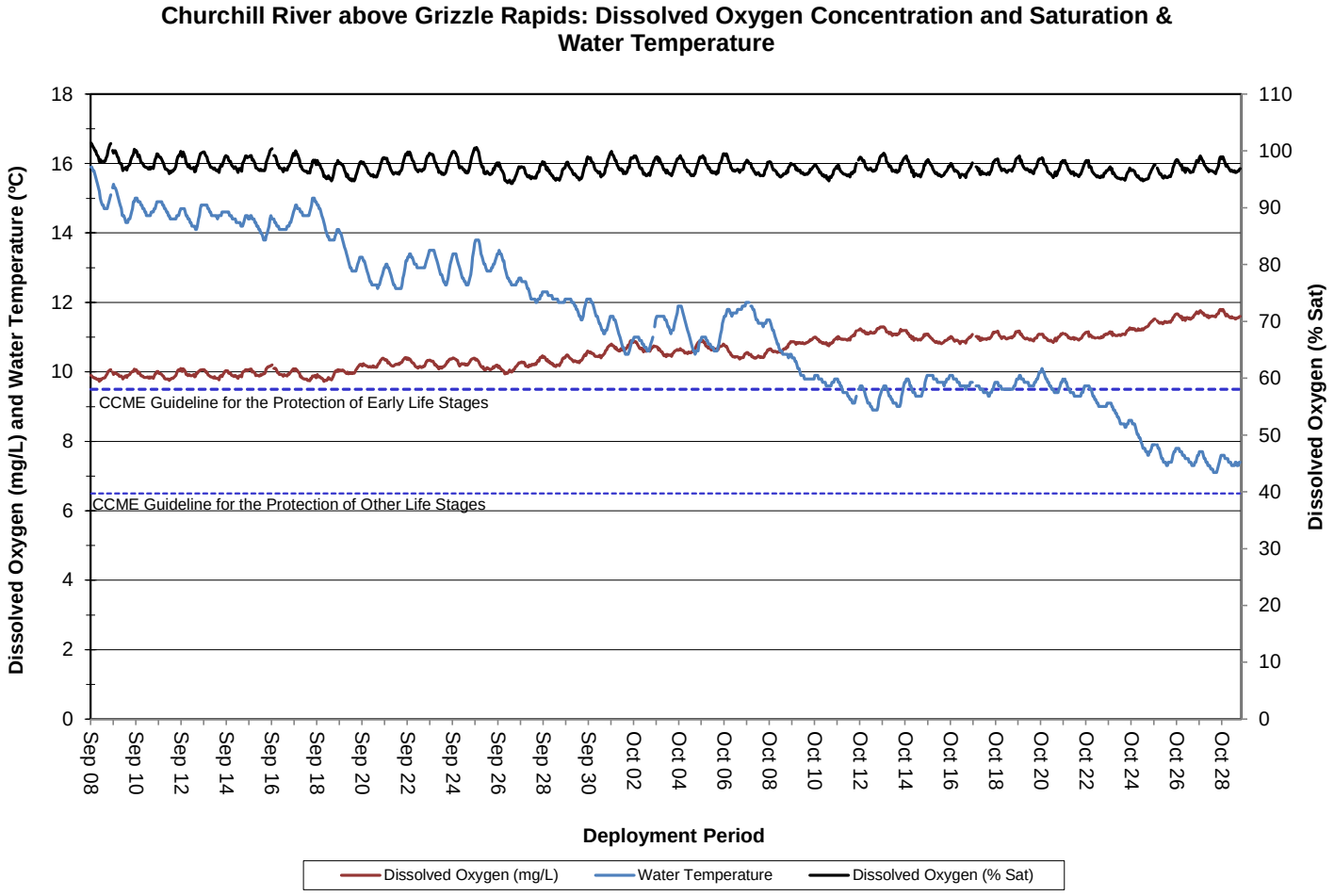

Figure 12: Dissolved Oxygen & Water Temperature at Churchill River above Grizzle Rapids

Turbidity

- Over the deployment period, turbidity was stable at 0 NTU for the entirety of the deployment (Figure 13), which indicates a very low level of natural background turbidity in the waterbody. Precipitation data was obtained from the Metchin River at TLH Weather Station.
- Water Survey of Canada (Environment and Climate Change Canada) is responsible for QA/QC of water quantity data. Corrected data can be obtained upon request.

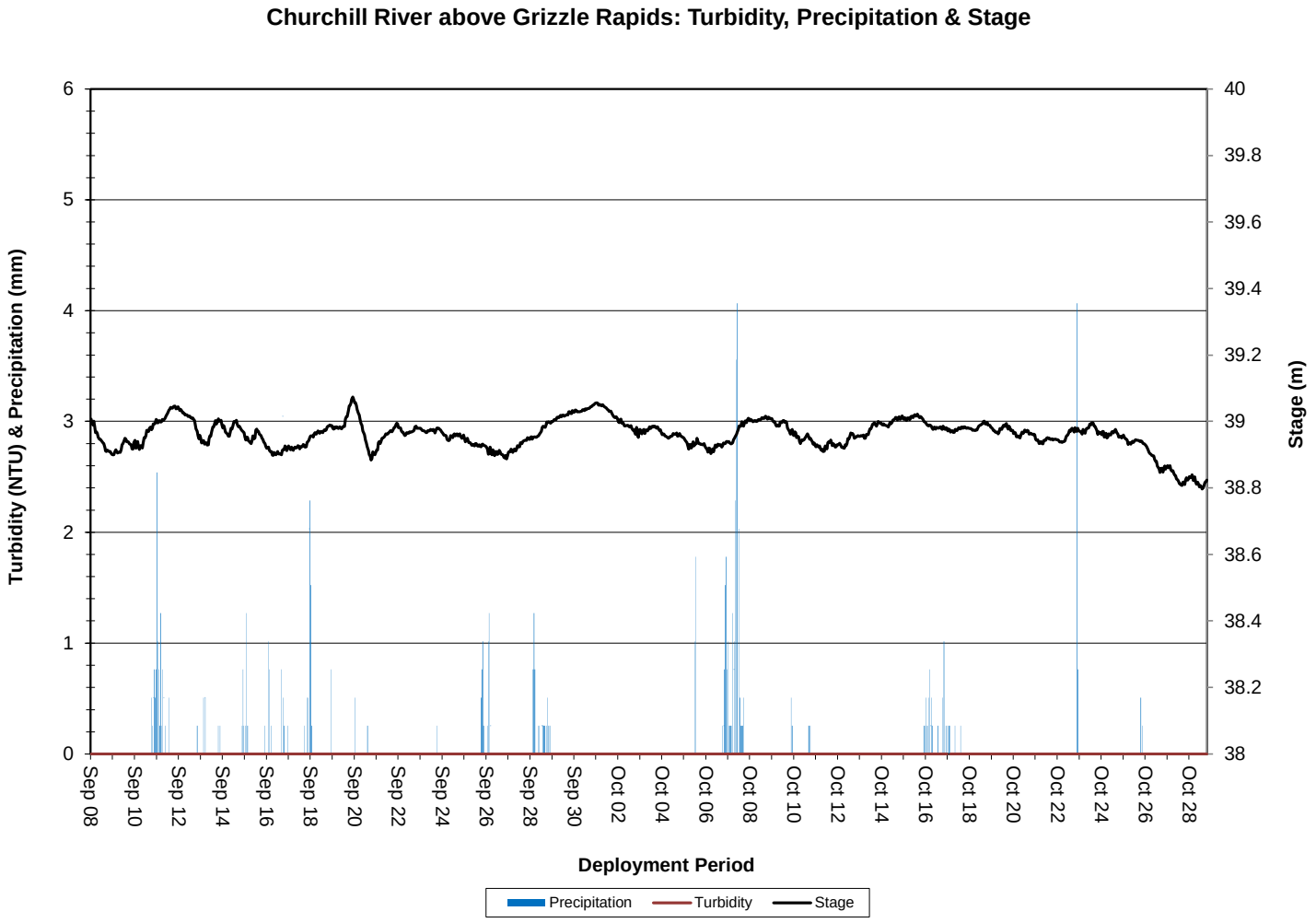

Figure 13: Turbidity, Precipitation & Stage at Churchill River above Grizzle Rapids

Stage

- Over the deployment period, stage ranged from 38.797m to 39.073m, with a median value of 38.964m (Figure 14). Precipitation data was obtained from the Metchin River near TLH Weather Station.
- Stage was somewhat variable across the deployment period, with precipitation events often correlating with increases in stage (Figure 14).
- Water Survey of Canada (Environment and Climate Change Canada) is responsible for QA/QC of water quantity data. Corrected data can be obtained upon request.

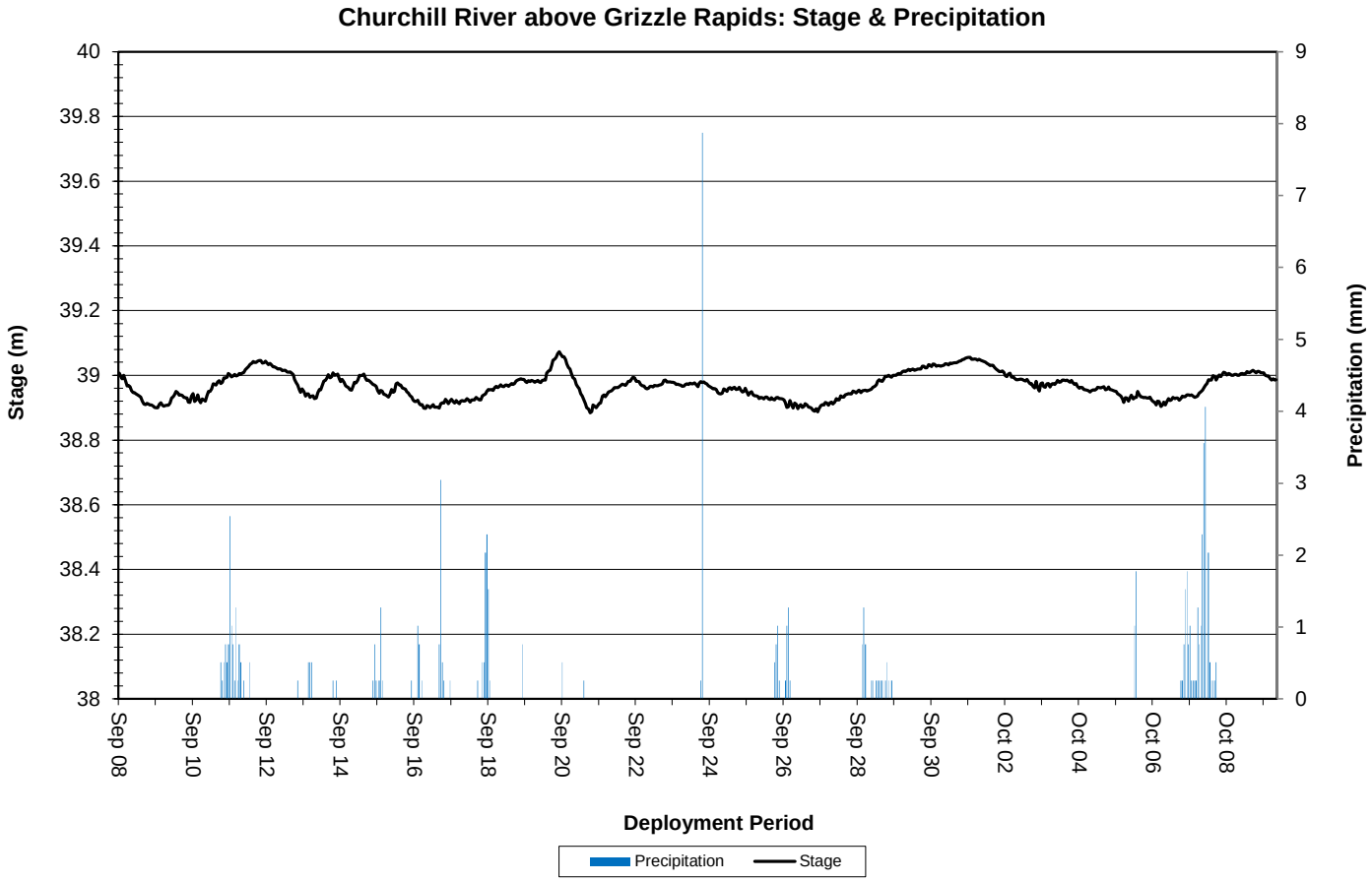

Figure 14: Stage & Precipitation at Churchill River above Grizzle Rapids

Churchill River below Muskrat Falls

Water Temperature

- Over the deployment period, water temperature ranged from 8.6°C to 16.1°C, with a median value of 11.9°C (Figure 15). Air temperature data was obtained from the Muskrat Falls MET Station.
- Water temperature showed a gradual decline throughout the deployment. This is expected as ambient air temperatures began to decrease into Fall. Water temperatures closely correlate with ambient air temperatures, fluctuating to a much lesser extent.
- Data for September 28 to October 4 was removed from the dataset as the instrument was either buried or out of the water at that time due to very low stage conditions.
- Water Survey of Canada (Environment and Climate Change Canada) is responsible for QA/QC of water quantity data. Corrected data can be obtained upon request.

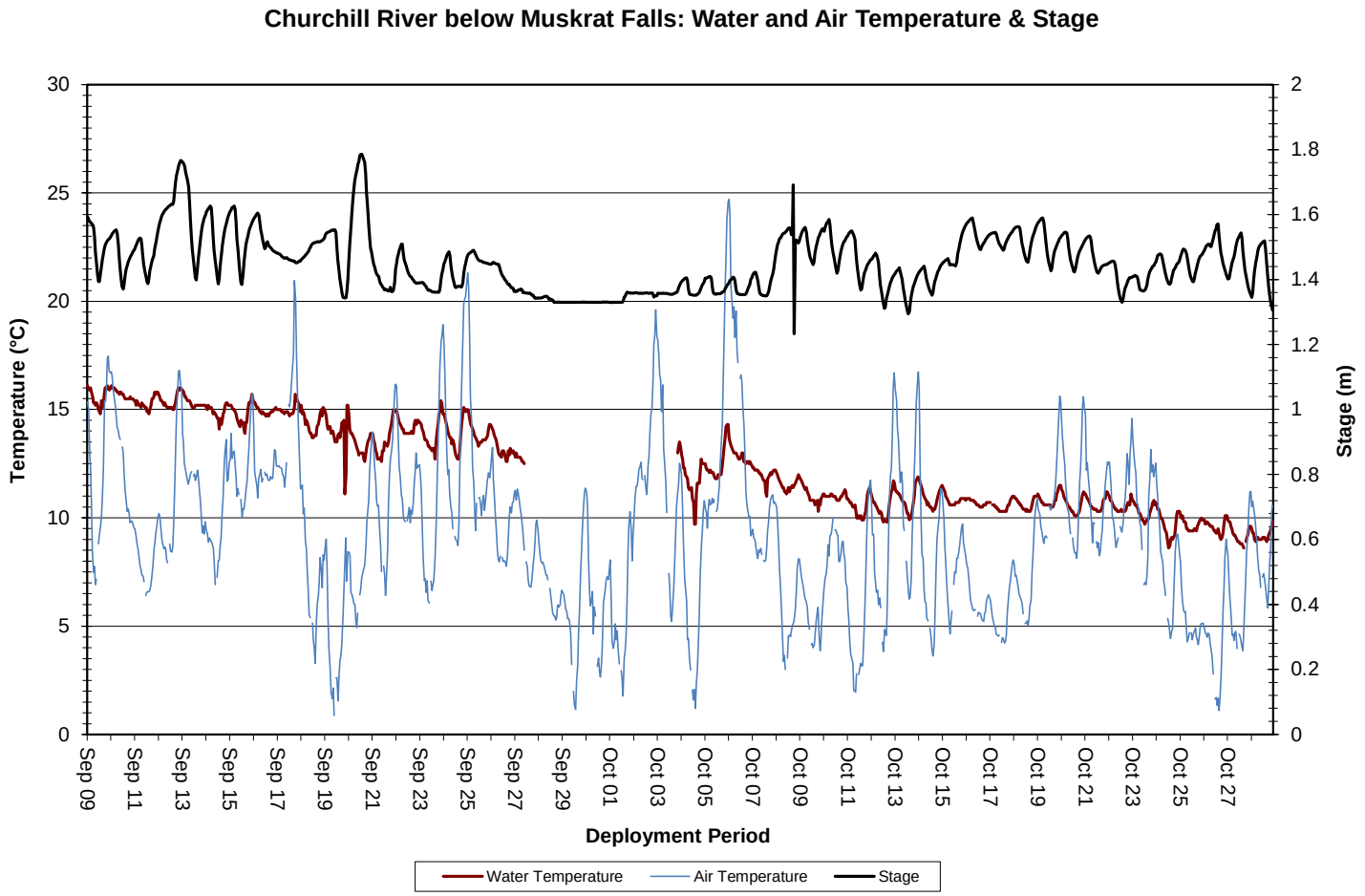

Figure 15: Water and Air Temperature & Stage at Churchill River below Muskrat Falls

pH

- Over the deployment period, pH ranged from 6.04 pH units to 7.51 pH units, with a median value of 6.95 (Figure 16).
- pH values were relatively stable over the course of deployment with some temporary variations. It is possible these sudden spikes and drops are related to the instrument being in shallow water or out of water completely at this time, based on the other collected data. pH remained within the CCME's Guidelines for the Protection of Aquatic Life for the majority of the deployment period (Figure 16).
- Data for September 28 to October 4 was removed from the dataset as the instrument was either buried or out of the water at that time due to very low stage conditions.
- Water Survey of Canada (Environment and Climate Change Canada) is responsible for QA/QC of water quantity data. Corrected data can be obtained upon request.

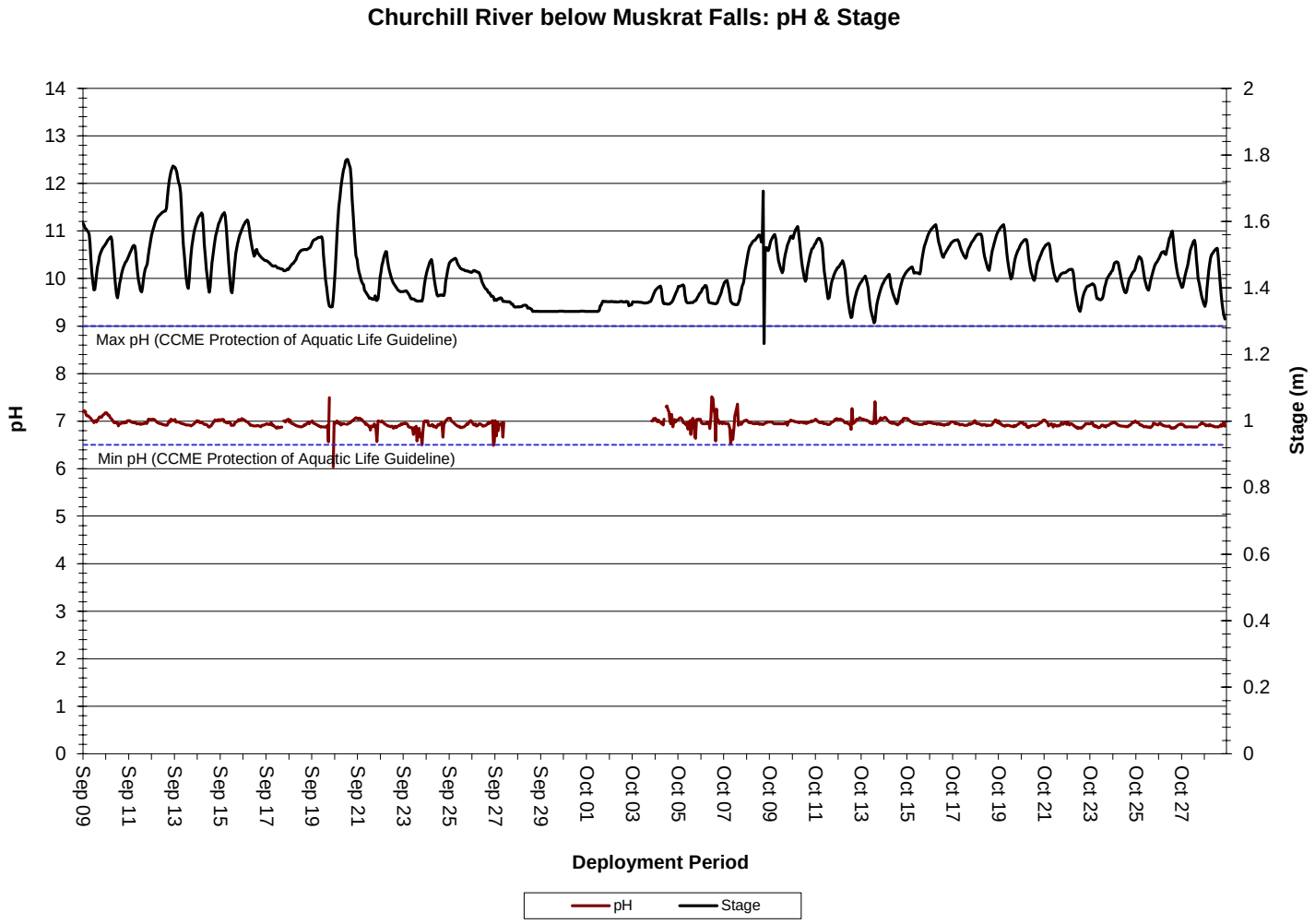

Figure 16: pH & Stage at Churchill River below Muskrat Falls

Specific Conductivity

- Over the deployment period, specific conductivity ranged from 21.5µS/cm to 27.8µS/cm, with a median value of 22.1µS/cm (Figure 17).
- The relationship between conductivity and stage is generally inversed. When stage decreases, specific conductivity increases as the decreased amount of water in the river system concentrates solids that are present, and vice versa. This relationship is only somewhat evident in the graph below, likely because this station is located at a deep and wide section of the Churchill River and other factors in the water column influence conductivity levels (Figure 17).
- Data for September 28 to October 4 was removed from the dataset as the instrument was either buried or out of the water at that time due to very low stage conditions.
- Water Survey of Canada (Environment and Climate Change Canada) is responsible for QA/QC of water quantity data. Corrected data can be obtained upon request.

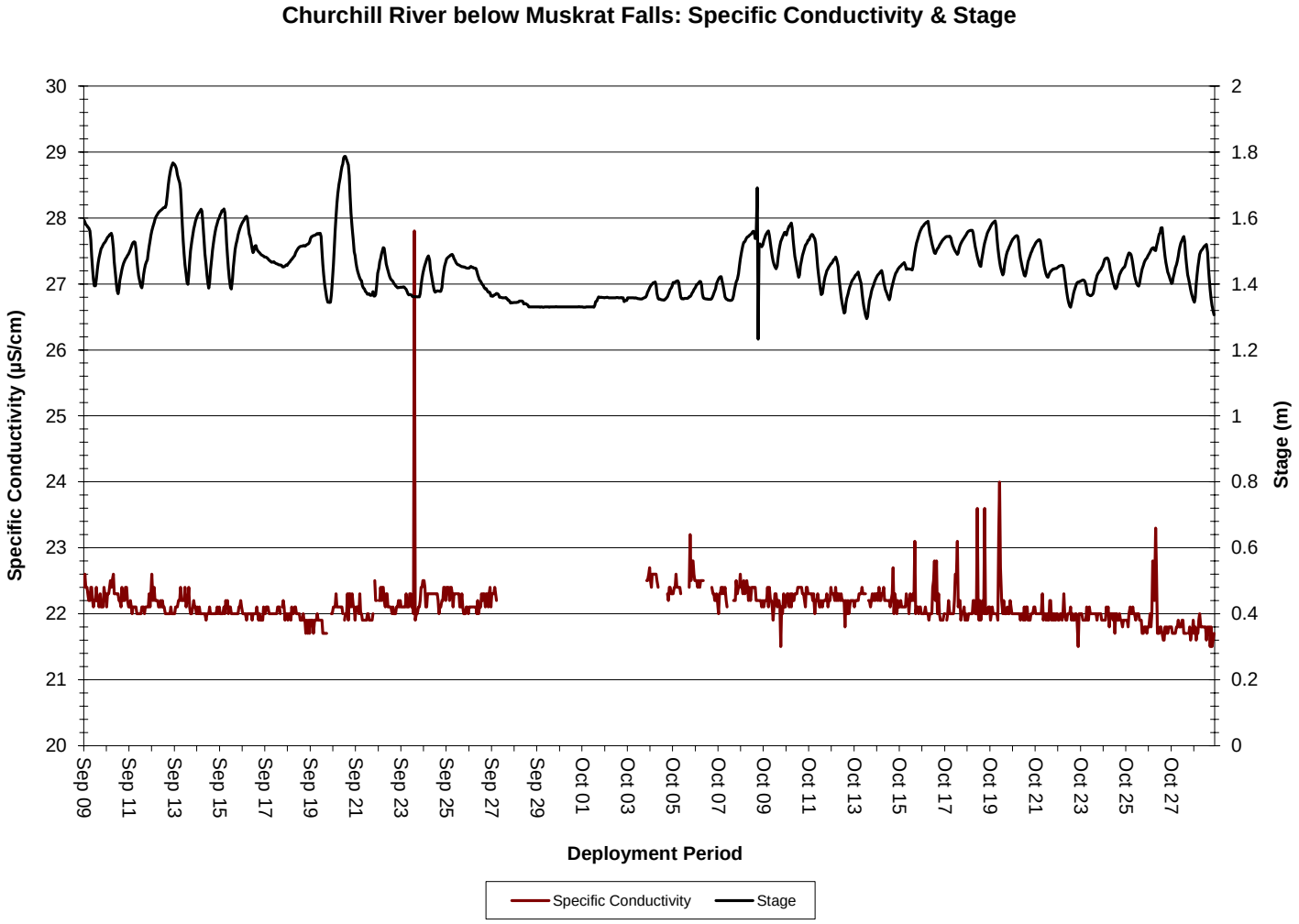

Figure 17: Specific Conductivity & Stage at Churchill River below Muskrat Falls

Dissolved Oxygen

- Over the deployment period, dissolved oxygen concentration ranged from 9.04mg/L to 11.1mg/L, with a median value of 10.1mg/L. Saturation of dissolved oxygen ranged from 90.1% to 99%, with a median value of 93.4% (Figure 18).
- Dissolved oxygen and water temperature exhibit an inverse relationship: as one parameter increases, the other decreases, and vice versa. Dissolved oxygen levels slowly increased over the course of deployment into Fall as water and air temperatures cooled. Dissolved oxygen also follows a diurnal pattern as water temperatures rise and fall under the influence of ambient air temperatures.
- Data for September 28 to October 4 was removed from the dataset as the instrument was either buried or out of the water at that time due to very low stage conditions.
- Dissolved oxygen levels were above the CCME's Guideline for the Protection of Early Life Stages for the majority of the deployment, and above the CCME's Guideline for the Protection of Other Life Stages for the duration of deployment.

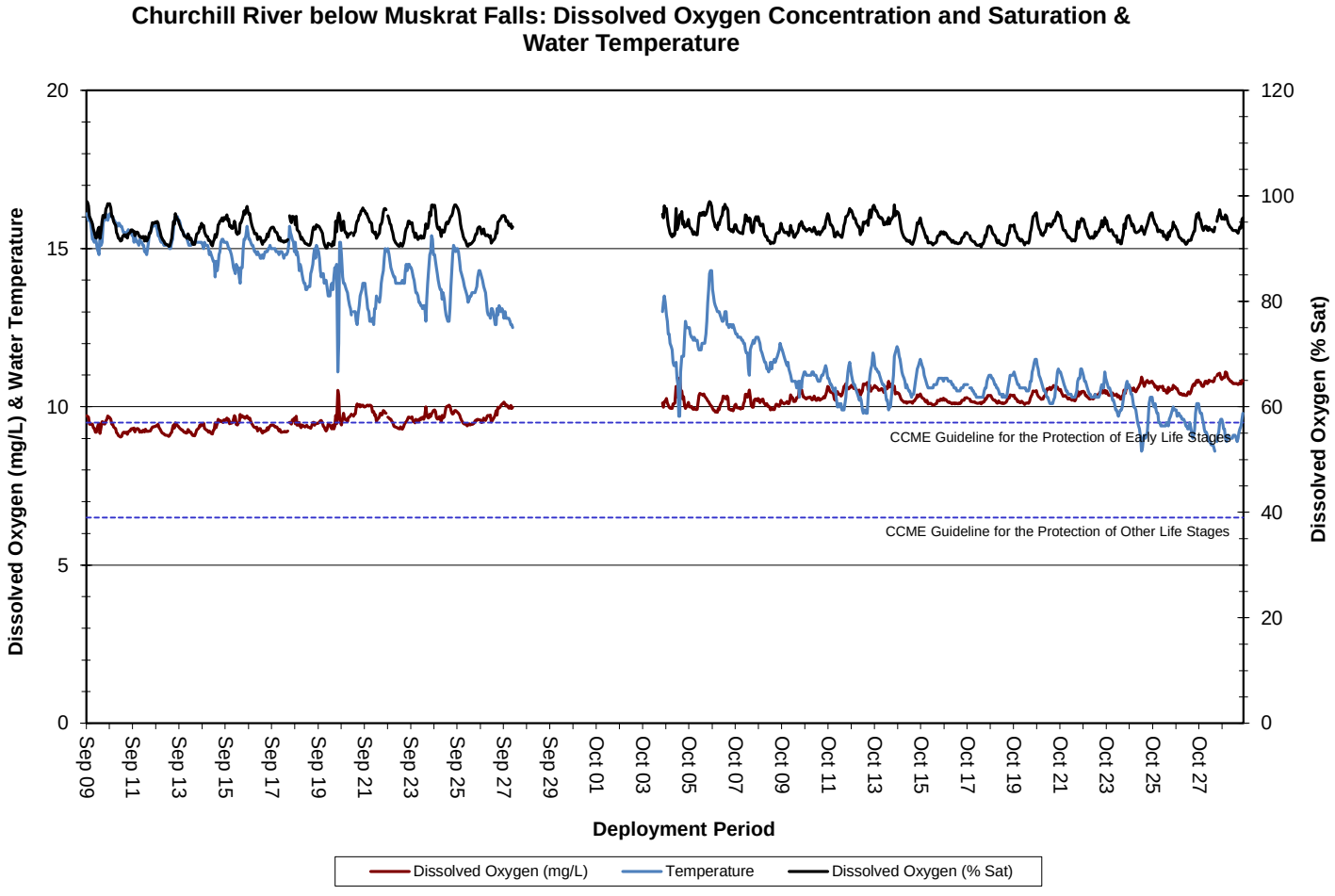

Figure 18: Dissolved Oxygen & Water Temperature at Churchill River below Muskrat Falls

Turbidity

- Over the deployment period, turbidity ranged from 0 NTU to 408 NTU, with a median value of 0 NTU. The low median indicates low background turbidity. Precipitation data was obtained from the Muskrat Falls MET Station.
- There was little correlation between turbidity events and precipitation events this deployment period as the instrument was either in shallow water, buried or out of the water for a large portion of the time, (Figure 19). Turbidity levels are often quite variable at this station, and do not always correlate with precipitation events given that this station is located on a wide and deep section of the Churchill River.
- Data for September 28 to October 4 was removed from the dataset as the instrument was either buried or out of the water at that time due to very low stage conditions.
- Water Survey of Canada (Environment and Climate Change Canada) is responsible for QA/QC of water quantity data. Corrected data can be obtained upon request.

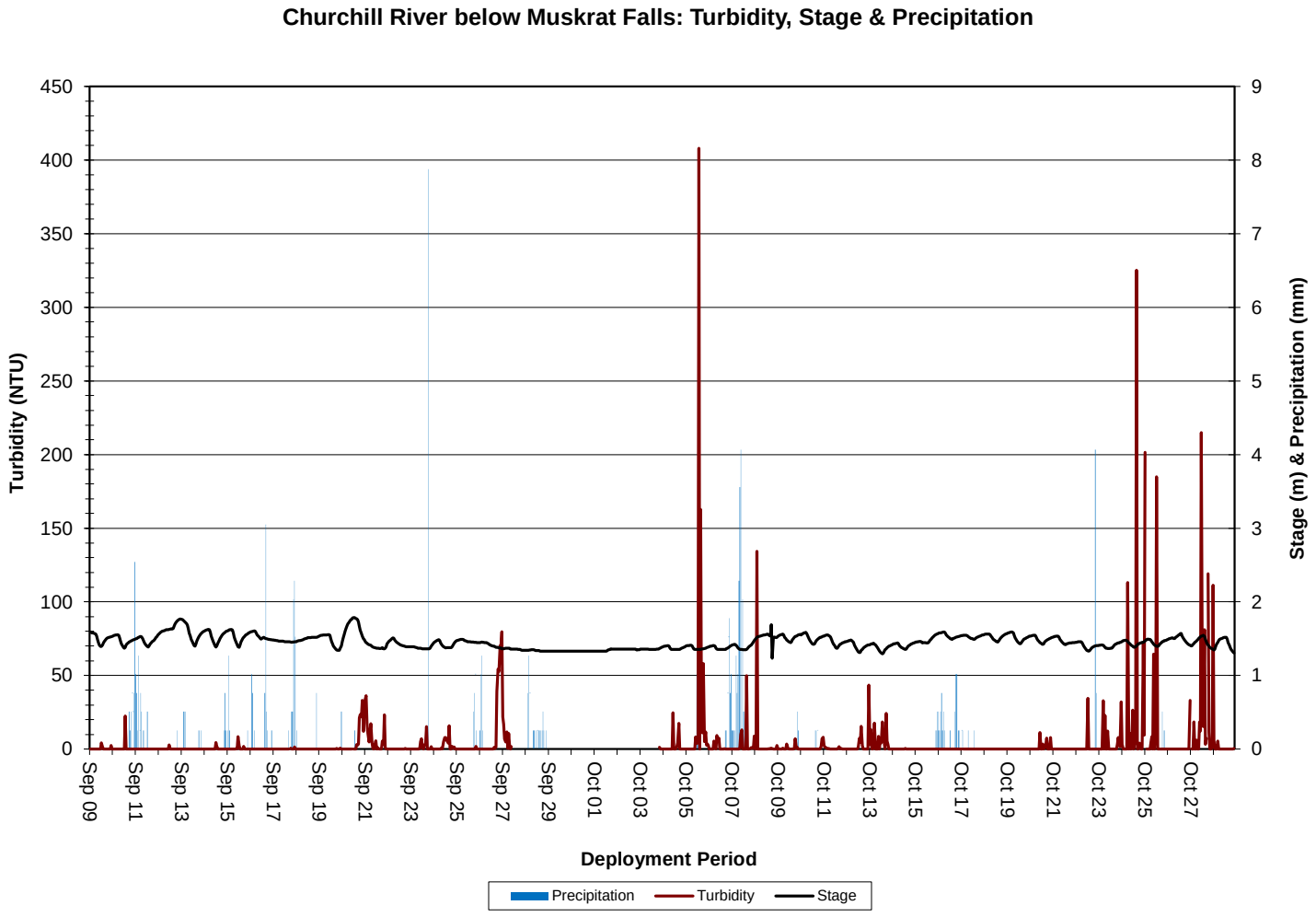

Figure 19: Turbidity, Precipitation & Stage at Churchill River below Muskrat Falls

Stage & Flow

- Over the deployment period, stage ranged from 1.233m to 1.786m, with a median value of 1.447m. Flow data was limited but ranged from 726.877m^3/s to 950.533m^3/s, with a median value of 744.011m^3/s (Figure 20). Precipitation data was obtained from the Muskrat Falls MET Station.
- Flow data is limited as the stage values are at their lowest and outside the curve of known associated flow values.
- Stage and flow were slightly variable over the course of deployment and somewhat correlated with precipitation events. This is partly related to the fact that this station is located on a very wide section of the Churchill River and therefore not as easily influenced by smaller precipitation events. Stage and flow at this station are also influenced by upstream activities at the Muskrat Falls hydroelectric project.
- Water Survey of Canada (Environment and Climate Change Canada) is responsible for QA/QC of water quantity data. Corrected data can be obtained upon request.

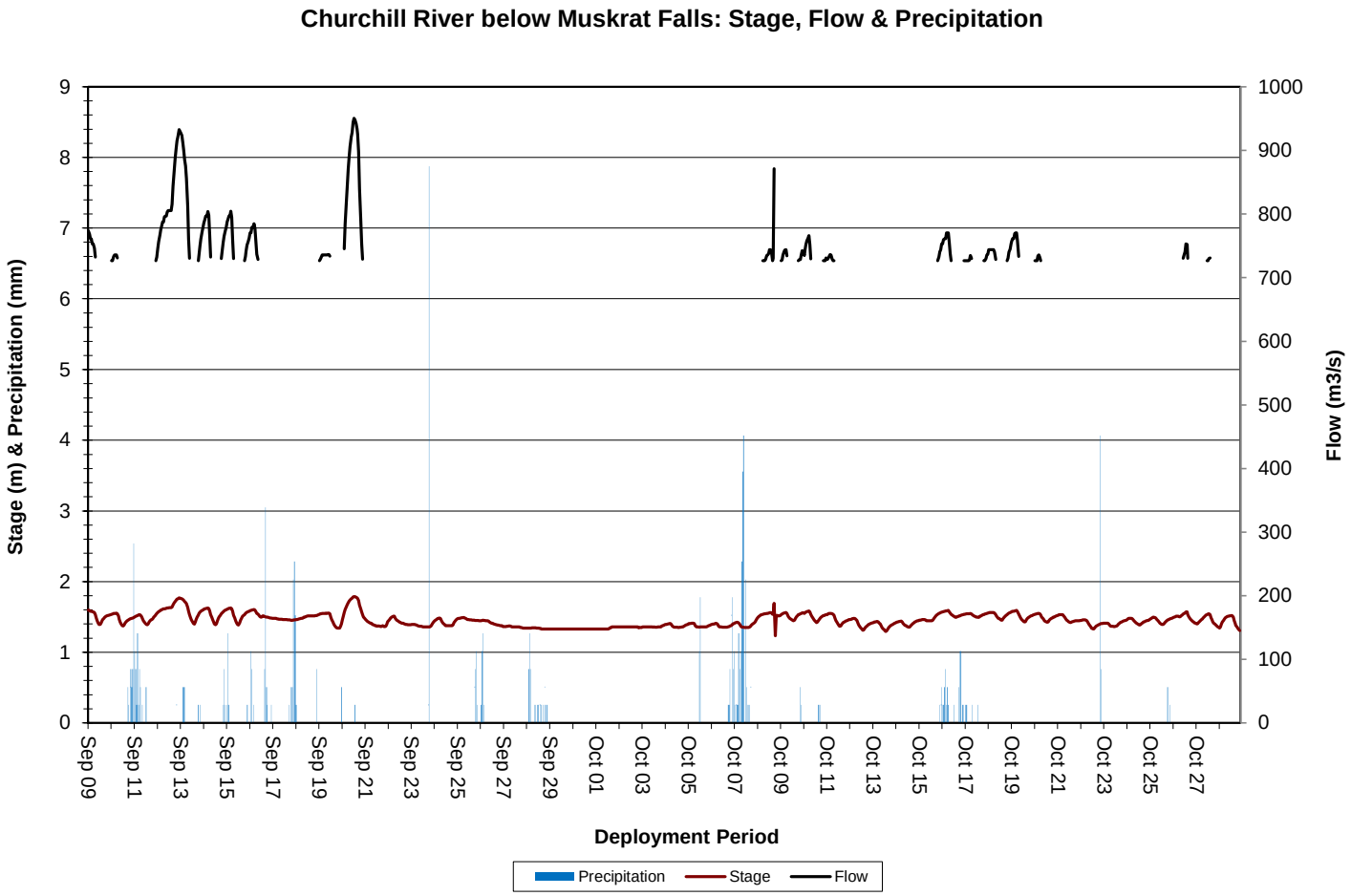

Figure 20: Stage, Flow & Precipitation at Churchill River below Muskrat Falls

Chlorophyll

- Over the deployment period, chlorophyll ranged from 0.26ug/L to 365.38ug/L, with a median value of 90.69ug/L (Figure 21).
- Chlorophyll is found within living cells of photosynthetic organisms like phytoplankton and cyanobacteria. The amount of chlorophyll found in water can be used to understand the general biological health of an ecosystem. Chlorophyll can also be used to identify algal bloom events and is an indicator of nutrient loading in ecosystems.
- As with the other water quality parameters, data from September 28-October 4 was removed from the dataset as the instrument was either buried or out of the water at those times. Those periods correspond to the lowest water levels recorded. The chlorophyll data also remains elevated after this period, thus it is possible the sensor was fouled and the data may be unreliable.
- Water Survey of Canada (Environment and Climate Change Canada) is responsible for QA/QC of water quantity data. Corrected data can be obtained upon request.

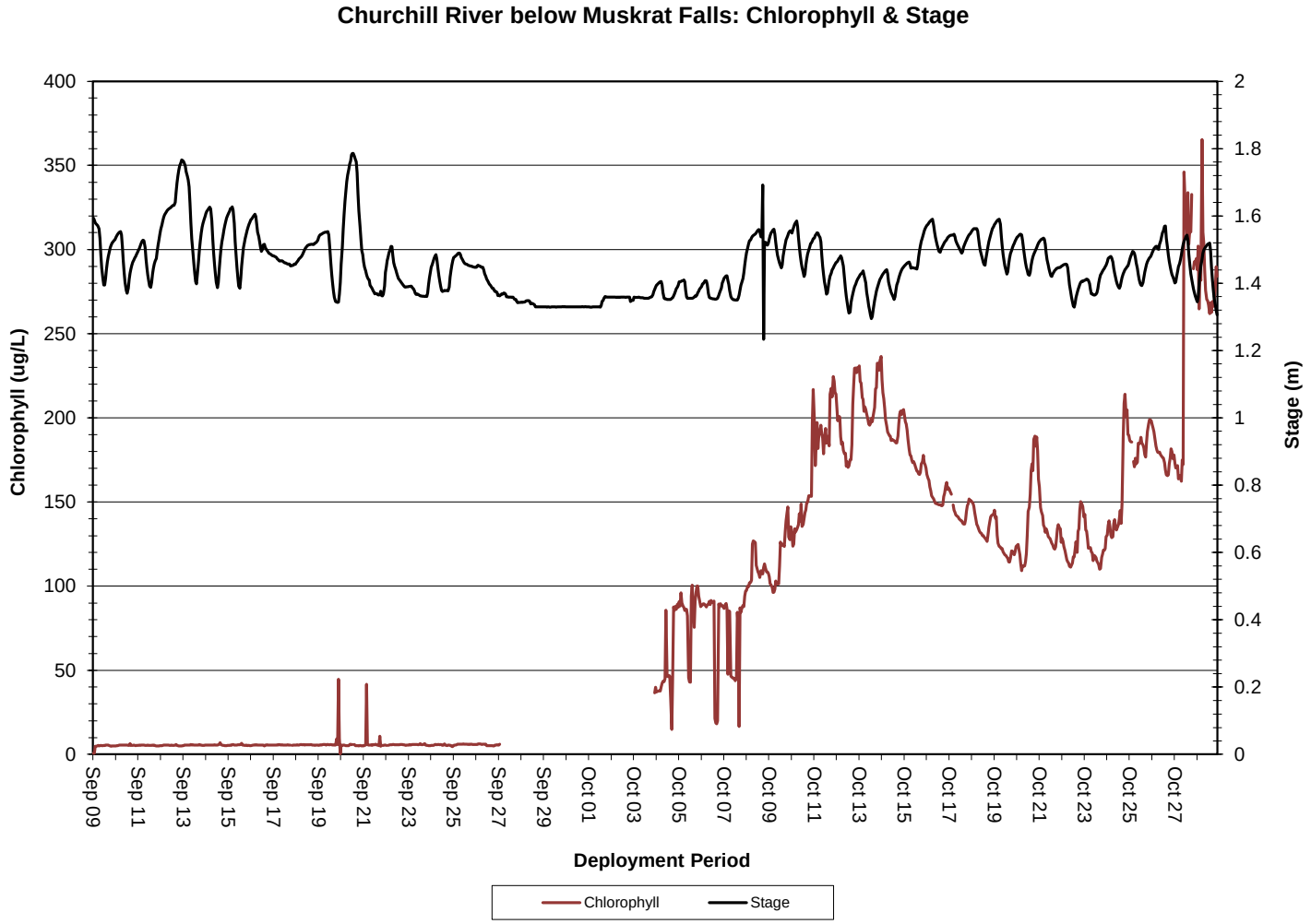

Figure 21: Chlorophyll & Stage at Churchill River below Muskrat Falls

Churchill River at English Point

Water Temperature

- Water temperature ranged from 6.68°C to 15.4°C, with a median value of 11.1°C (Figure 22). Air temperature data was obtained from the Muskrat Falls MET Weather Station due to issues with the Mud Lake Road station.
- Water temperature showed a gradual decrease across the deployment period, as is expected as Fall progresses and air temperatures cool. Ambient air temperatures followed a similar trend across the same period.
- Water Survey of Canada (Environment and Climate Change Canada) is responsible for QA/QC of water quantity data. Corrected data can be obtained upon request.

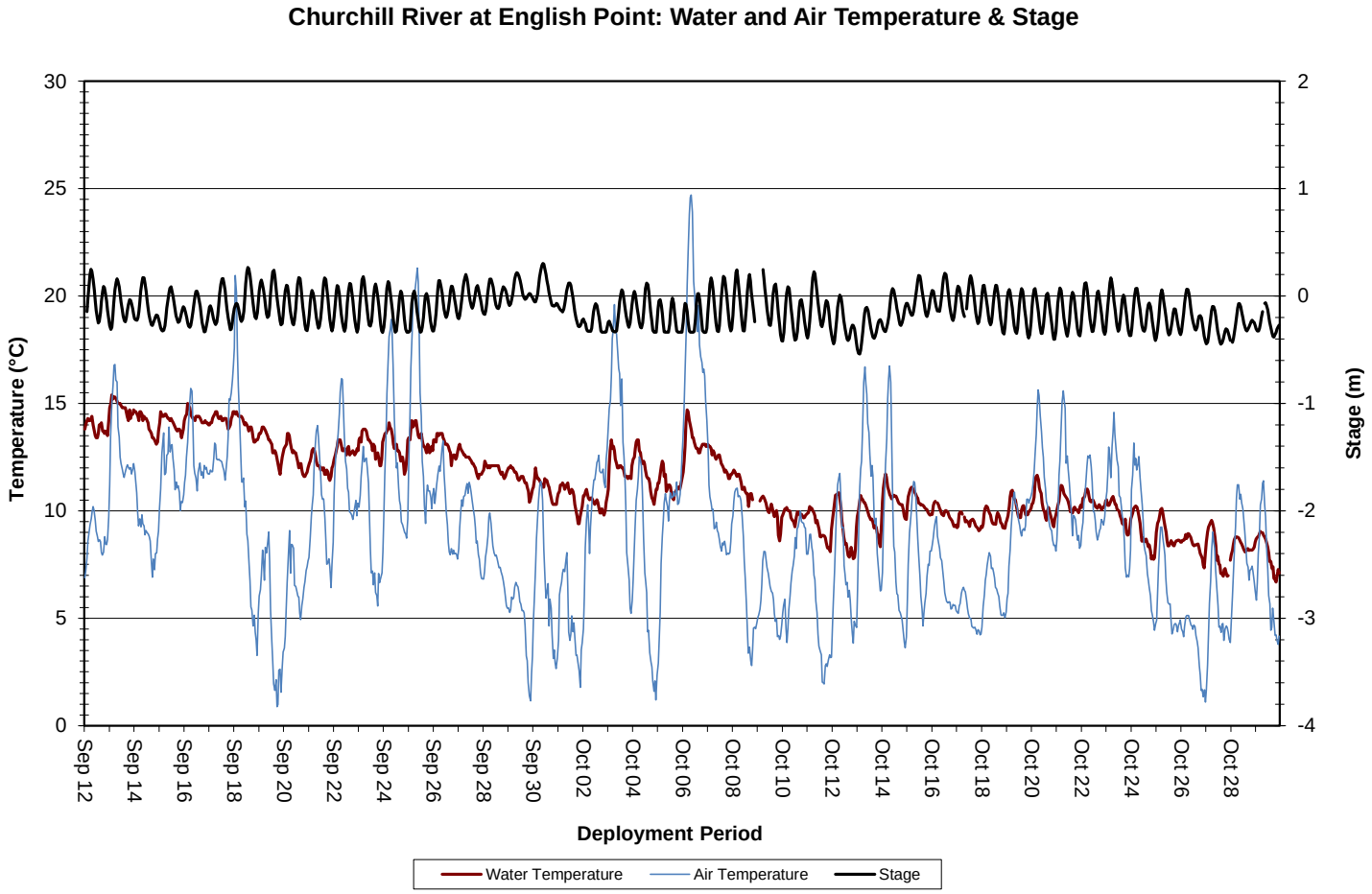

Figure 22: Water and Air Temperature & Stage at Churchill River at English Point

pH

- Over the deployment period, pH ranged from 6.77 pH units to 7.80pH units, with a median value of 7.11 (Figure 23).
- pH values were stable over the course of deployment, remaining within the CCME's Guidelines for the Protection of Aquatic Life for the duration of deployment. Some variations in values are likely associated with the changing water levels which are influenced by tides.
- Water Survey of Canada (Environment and Climate Change Canada) is responsible for QA/QC of water quantity data. Corrected data can be obtained upon request.

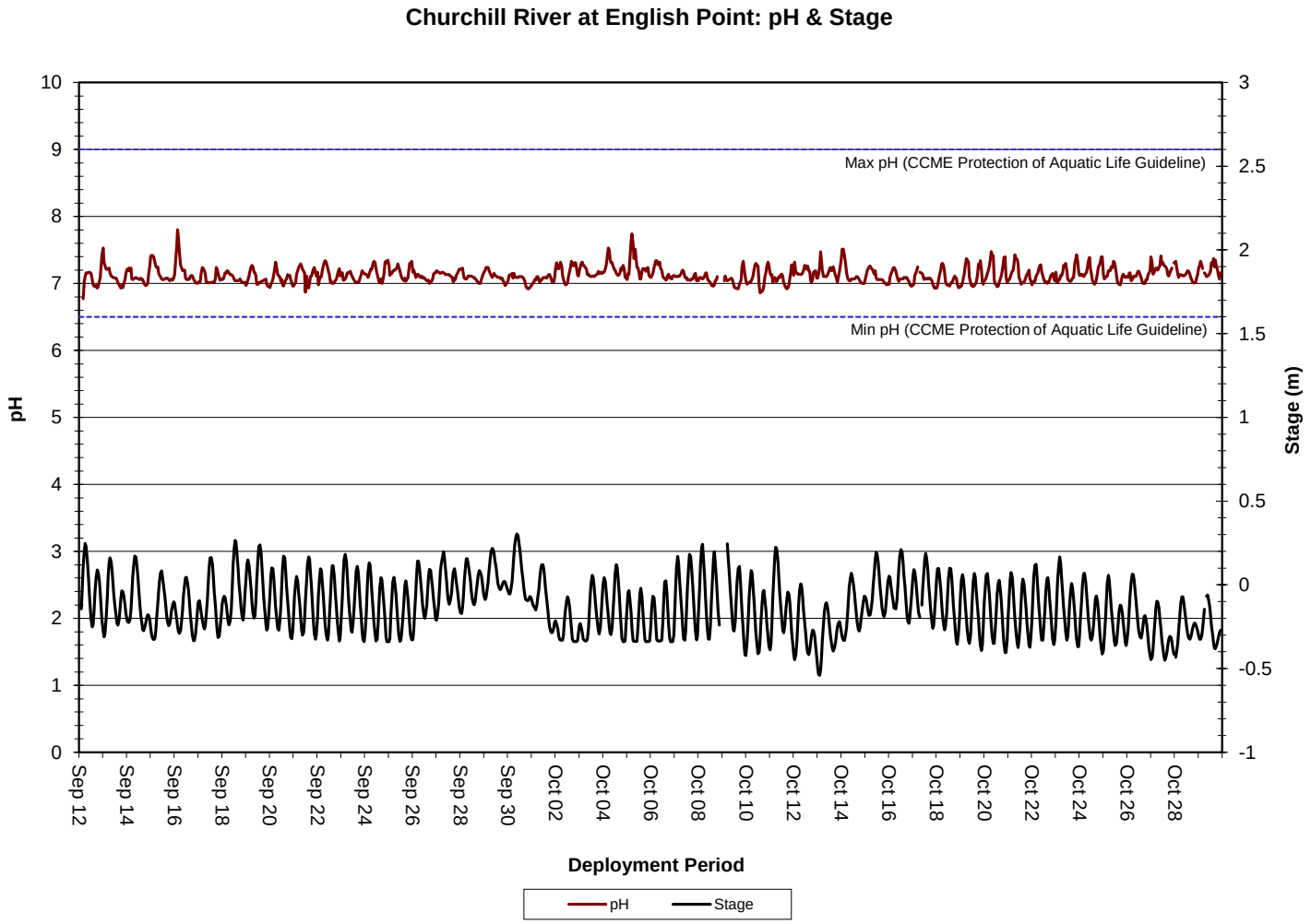

Figure 23: pH & Stage at Churchill River at English Point

Specific Conductivity

- Over the deployment period, specific conductivity ranged from 26.76µS/cm to 117.63µs/cm, with a median value of 38.68µS/cm (Figure 24).
- Specific conductivity fluctuates considerably at this location due to the tidal influences of the Atlantic Ocean on Lake Melville. As the tide comes in, specific conductivity increases as dissolved solids and salinity increase, and vice versa as the tide goes out. This increase and decrease in specific conductivity and stage occurs twice daily. This pattern is generally consistent throughout the deployment period (Figure 23).
- Water Survey of Canada (Environment and Climate Change Canada) is responsible for QA/QC of water quantity data. Corrected data can be obtained upon request.

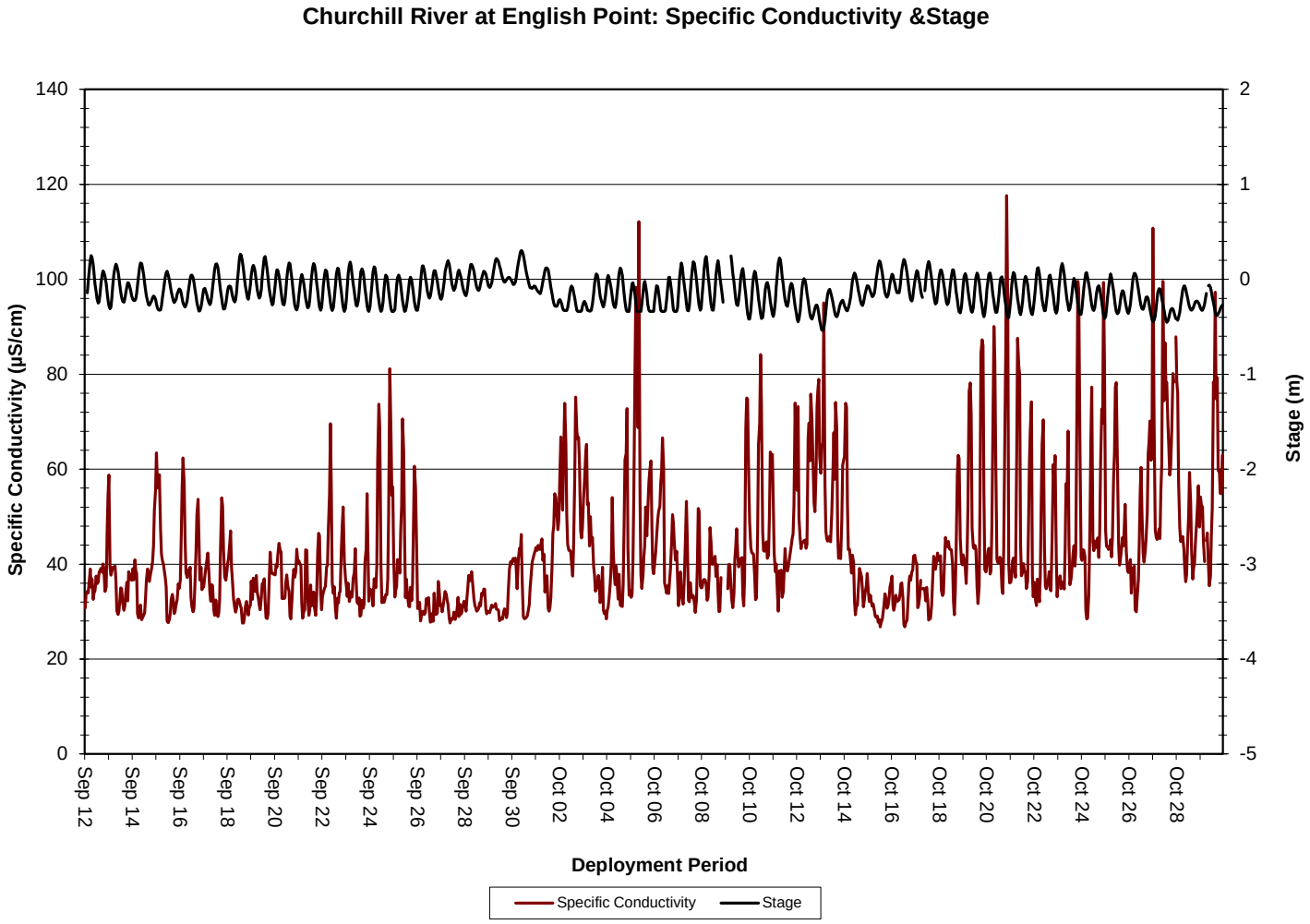

Figure 24: Specific Conductivity & Stage at Churchill River at English Point

Dissolved Oxygen

- Over the deployment period, dissolved oxygen concentration ranged from 9.25mg/L to 11.75mg/L, with a median value of 10.38mg/L. Saturation of dissolved oxygen ranged from 88.6% to 105% saturation, with a median value of 94.5% (Figure 25).
- There is an evident relationship between water temperature and dissolved oxygen. As water temperatures decreased steadily through Fall, dissolved oxygen levels increased. Dissolved oxygen levels also follow a diurnal pattern as water temperatures rise and fall under the influence of ambient air temperatures. Generally, dissolved oxygen levels are higher in a waterbody during cooler temperatures.
- Dissolved oxygen levels remained above the CCME's Guideline for the Protection of Early Life Stages for the majority of the deployment, dipping below when water temperatures were warmest. Dissolved oxygen levels were above the CCME's Guideline for the Protection of Other Life Stages for the duration of deployment (Figure 25).

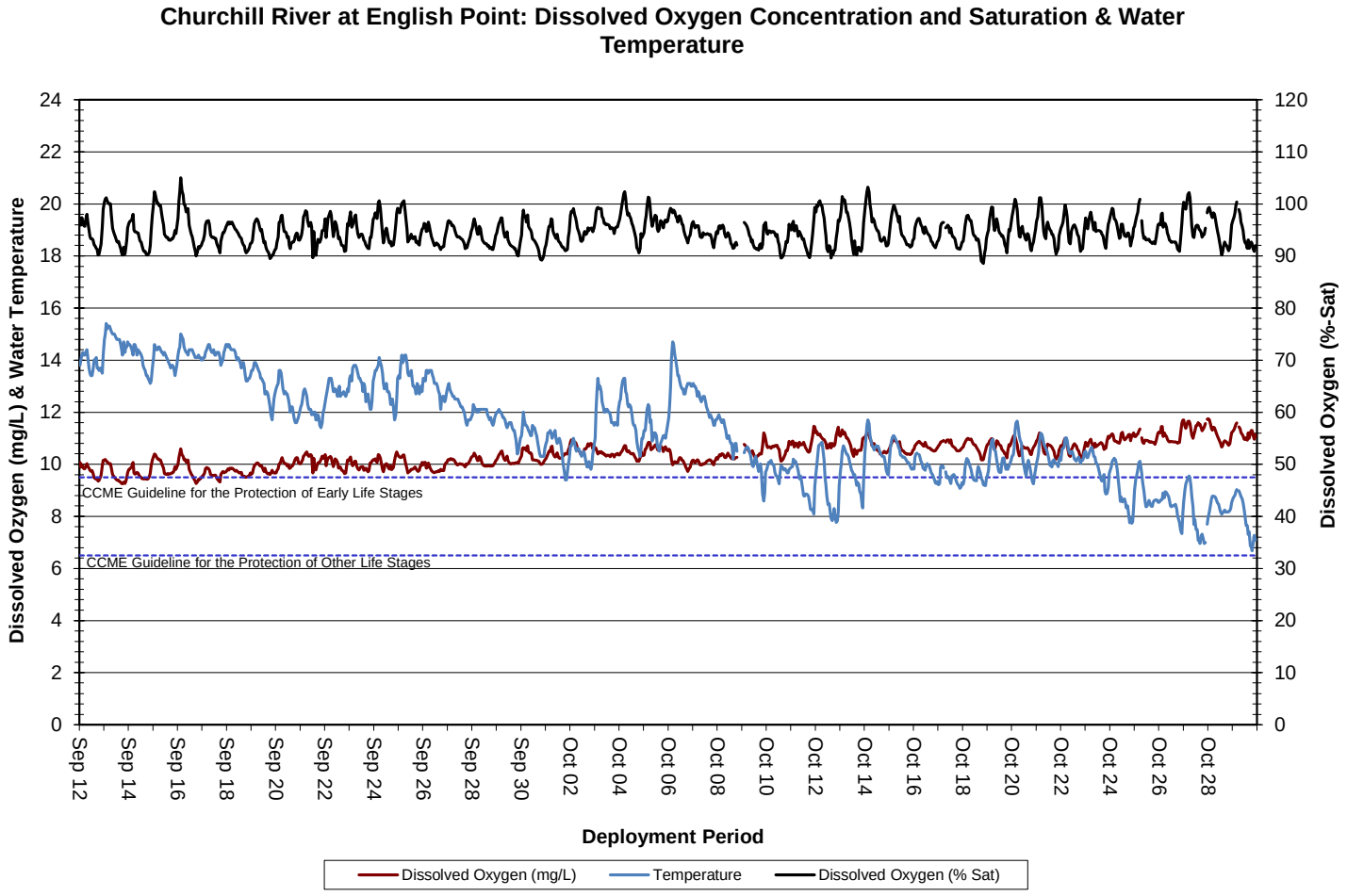

Figure 25: Dissolved Oxygen & Water Temperature at Churchill River at English Point

Turbidity

- Over the deployment period, turbidity ranged from 2.1 NTU to 130 NTU, with a median value of 4.3 NTU (Figure 26). A median value of 4.3 NTU indicates a low level of background turbidity. Precipitation and wind speed data was obtained from the Muskrat Falls MET Station due to issues with the Mud Lake Road MET station.
- Turbidity events generally correlate with precipitation events, as these can increase the presence of suspended material in water. High winds and tidal influences can also contribute to turbidity events at this station by disturbing sediment from the riverbed (Figure 26).
- Water Survey of Canada (Environment and Climate Change Canada) is responsible for QA/QC of water quantity data. Corrected data can be obtained upon request.

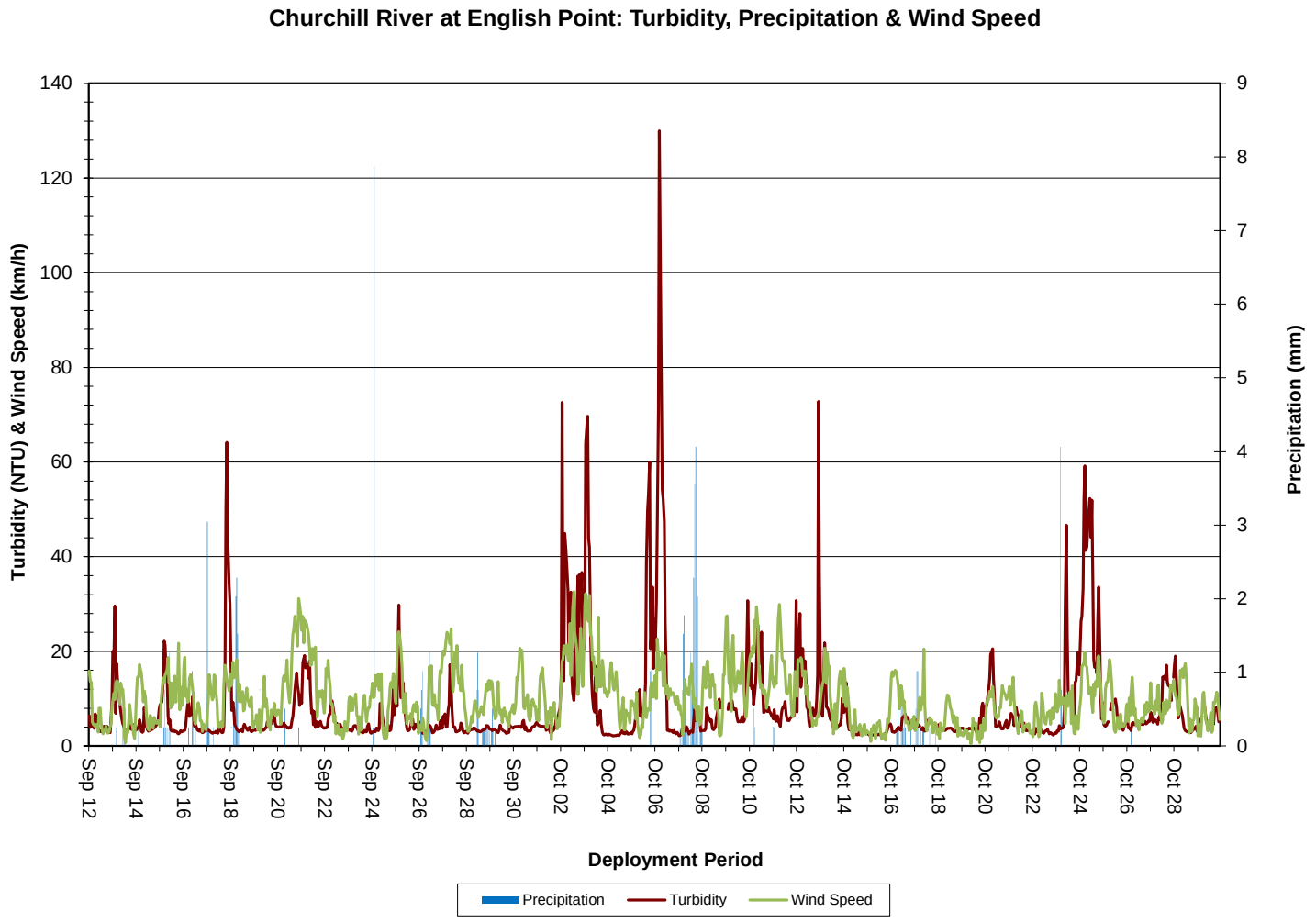

Figure 26: Turbidity, Precipitation & Wind Speed at Churchill River at English Point

Stage

- Over the deployment period, stage ranged from -0.539m to 0.304m, with a median value of -0.135m (Figure 27). Precipitation data was obtained from the Muskrat Falls MET Station.
- Stage fluctuates considerably at this location due to the tidal influences of the Atlantic Ocean. This pattern is consistent over the deployment period. Increases in stage often correlate with precipitation events. Similar to the other stations in the network, water levels were very low at this location over the deployment period. This may have impacted data from all parameters during this timeframe.
- Water Survey of Canada (Environment and Climate Change Canada) is responsible for QA/QC of water quantity data. Corrected data can be obtained upon request.

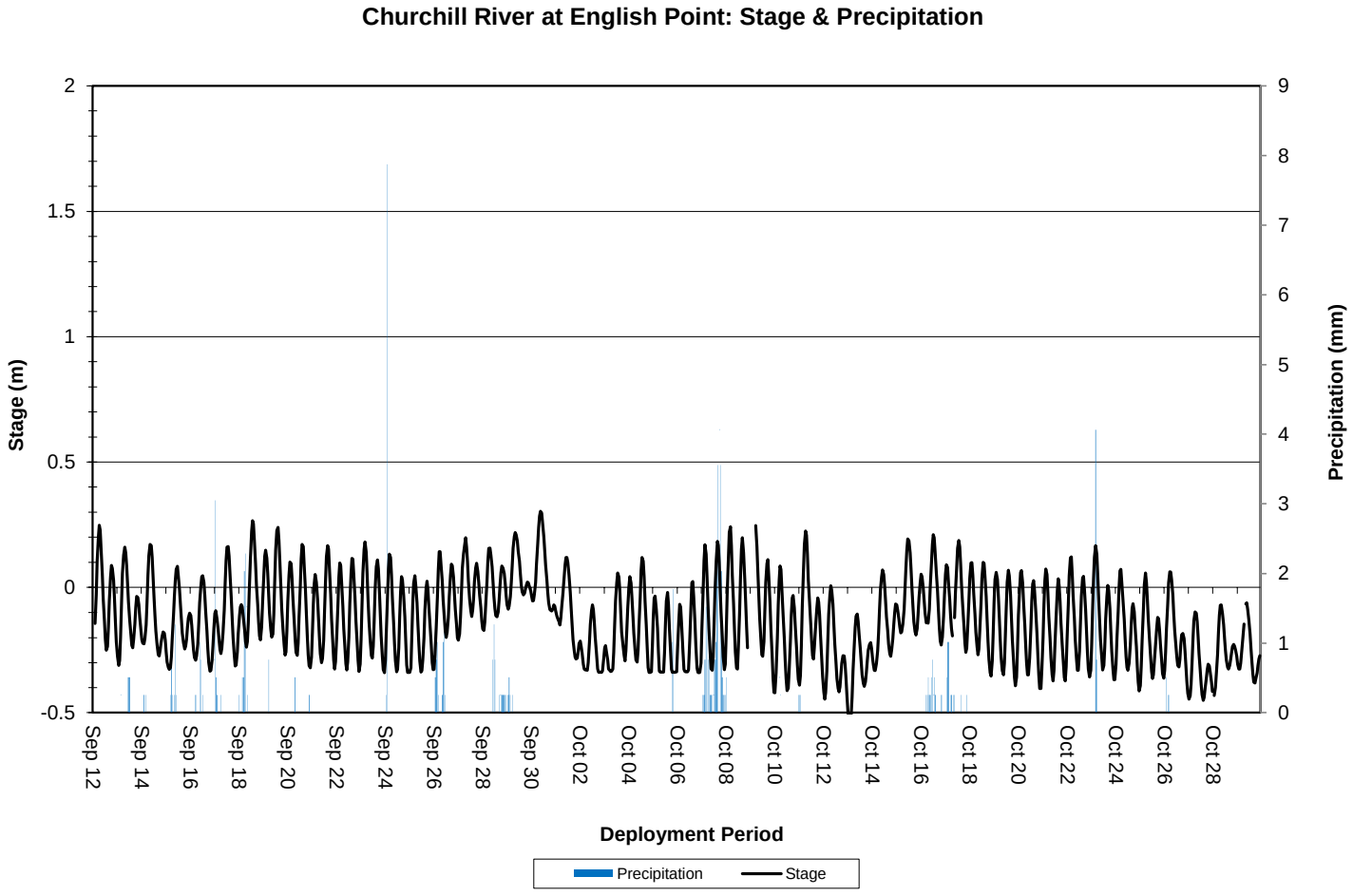

Figure 27: Stage & Precipitation at Churchill River at English Point

Conclusions

- Instruments at four water quality monitoring stations on the Lower Churchill River were deployed from September 9/12 through October 28/29/30, 2025.
- Water temperature decreased throughout September and October at all stations into Fall. This is to be expected based on ambient air temperature trends during the same period. Short term increases in air temperatures were reflected by temporary increases in water temperatures.
- pH was relatively stable at all stations over the course of deployment. pH was within the CCME's Guidelines for the Protection of Aquatic Life for the duration of deployment at Churchill River below Metchin River, above Grizzle Rapids and at English Point, and above for the majority of deployment at Churchill River below Muskrat Falls.
- Specific conductivity was stable over the course of deployment at all stations with slight increasing trends near the end of deployment at below Metchin and English Point, and slight decreasing trends at above Grizzle and below Muskrat Falls. Since English Point is influenced by tides in Lake Melville, specific conductivity values at the Churchill River at English Point station had a much wider range, which is comparable to other deployments at this location.
- Dissolved oxygen levels slowly increased at all stations through deployment as water temperatures cooled into Fall. Dissolved oxygen levels are generally higher in water at cooler temperatures. Dissolved oxygen levels fell below the CCME's Guideline for the Protection of Early Life Stages at some point during deployment at below Muskrat Falls and English Point. Dissolved oxygen levels were above the CCME's Guideline for the Protection of Other Life Stages for the duration of deployment at all stations.
- Turbidity events occurred at all stations and were generally related to precipitation, wind or tidal events. At below Metchin, turbidity steadily increased, indicating fouling or buried in sediment. The station above Grizzle Rapids recorded very clear water throughout deployment, while below Muskrat Falls and English Point were experiencing numerous events near the end of deployment, either from low water levels stirring the water column or the instruments being out of water.

References

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APPENDIX A

Water Parameter Description

Water Parameter Description

Dissolved Oxygen - The amount of Dissolved Oxygen (DO) (mg/l or % saturation) in the water is vital to aquatic organisms for their survival. The concentration of DO is affected by such things as water temperature, water depth and flow (e.g., aeration by rapids, riffles etc.), consumption by aerobic organisms, consumption by inorganic chemical reactions, consumption by plants during darkness, and production by plants during the daylight (USGS, 2017).

Flow - Flow (m3/s) is a measure of how quickly a volume of water is displaced in streams, rivers, and other channels.

pH - pH is a measure of the relative amount of free hydrogen and hydroxyl ions in water. pH is an important indicator of chemically changing water, and determines the solubility and biological availability of nutrients and heavy metals in the water (USGS, 2017).

Specific conductivity - Specific conductivity (µs/cm) is a measure of water's ability to conduct electricity, with values normalized to a water temperature of 25°C. Specific conductance indicates the concentration of dissolved solids (such as salts) in the water, which can affect the growth and reproduction of aquatic life. Specific conductivity is affected by rainfall events, the composition of inflowing tributaries and their associated geology, saline inflow (e.g., road salt), agricultural run-off and industrial inputs (Fondriest Environmental Inc, 2016).

Stage - Stage (m) is the elevation of the water surface and is often used as a surrogate for the more difficult to measure flow.

Temperature - Essential to the measurement of most water quality parameters, temperature (°C) controls most aquatic processes. Water temperature is influenced by such things as ambient air temperature, solar radiation, meteorological events, industrial effluence, wastewater, inflowing tributaries, as well as water body size and depth. In turn, water temperature has an influence on the metabolic rates and biological activity of aquatic organisms (Fondriest Environmental Inc, 2016b).

Total Dissolved Solids - Total Dissolved Solids (TDS) (g/l) is a measure of alkaline salts dissolved in water or in fine suspension and can affect the growth and reproduction of aquatic life. It is affected by rainfall events, the composition of inflowing tributaries and their associated geology, saline inflow (e.g., road salt), agricultural run-off and industrial inputs (Swenson and Baldwin, 1965).

Turbidity - Turbidity (NTU) is a measure of the translucence of water and indicates the amount of suspended material in the water. Turbidity is caused by any substance that makes water cloudy (e.g., soil erosion, micro-organisms, vegetation, chemicals, etc.) and can correspond to precipitation events, high stage, and floating debris near the sensor (Swenson and Baldwin 1965).

APPENDIX B

Grab Sample Results

Sample Details/Parameters	A	Result	RDL	UNITS	Extracted	Analyzed	By	Batch
AVEL89 CR BELOW MR								
Sampling Date 2025/09/09 11:10								
Matrix W								
Sample # 2025-6319-00-SI-SP								
Registration # SA-0000								
RESULTS OF ANALYSES OF WATER								
Calculated Parameters								
Hardness (CaCO3)	-	11	1.0	mg/L	N/A	2025/09/19		A011098
Total Kjeldahl Nitrogen (TKN)	-	ND	0.10	mg/L	N/A	2025/09/23		A011536
Nitrate (N)	-	ND	0.050	mg/L	N/A	2025/09/23		A011101
Total dissolved solids (calc., EC)	-	14	1.0	mg/L	N/A	2025/09/23		A011533
Inorganics								
Conductivity	-	25	1.0	uS/cm	N/A	2025/09/22	J1A	A015405
Chloride (Cl-)	-	ND	1.0	mg/L	N/A	2025/09/22	VP2	A014889
Bromide (Br-)	-	ND	1.0	mg/L	N/A	2025/09/22	VP2	A014889
Sulphate (SO4)	-	ND	1.0	mg/L	N/A	2025/09/22	VP2	A014889
Total Alkalinity (Total as CaCO3)	-	11	2.0	mg/L	N/A	2025/09/22	J1A	A015409
Colour	-	18	5.0	TCU	N/A	2025/09/23	M2C	A014412
Dissolved Fluoride (F-)	-	ND	0.10	mg/L	N/A	2025/09/22	J1A	A015410
Nitrate + Nitrite (N)	-	ND	0.050	mg/L	N/A	2025/09/22	MCN	A014416
Nitrite (N)	-	ND	0.010	mg/L	N/A	2025/09/22	MCN	A014417
Nitrogen (Ammonia Nitrogen)	-	ND	0.050	mg/L	N/A	2025/09/23	MCN	A015738
Total Nitrogen (N)	-	ND	0.10	mg/L	N/A	2025/09/23	S6S	A015837
Dissolved Organic Carbon (C)	-	3.4	0.50	mg/L	N/A	2025/09/23	S6S	A016398
Total Organic Carbon (C)	-	3.5	0.50	mg/L	N/A	2025/09/23	S6S	A016390
pH	-	7.27		pH	N/A	2025/09/22	J1A	A015401
Total Phosphorus	-	ND	0.004	mg/L	2025/09/23	2025/09/24	VKH	A017144
Total Suspended Solids	-	2.8	1.0	mg/L	2025/09/16	2025/09/22	DME	A011568
Turbidity	-	2.0	0.10	NTU	N/A	2025/09/21	KMC	A015253
MERCURY BY COLD VAPOUR AA (WATER)								
Metals								
Total Mercury (Hg)	-	ND	0.000013	mg/L	2025/09/20	2025/09/20	JEP	A014559
ELEMENTS BY ICP/MS (WATER)								
Metals								
Total Aluminum (Al)	-	0.028	0.0050	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Antimony (Sb)	-	ND	0.0010	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Arsenic (As)	-	ND	0.0010	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Barium (Ba)	-	0.0077	0.0010	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Boron (B)	-	ND	0.050	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Cadmium (Cd)	-	ND	0.000010	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Calcium (Ca)	-	2.8	0.10	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Chromium (Cr)	-	ND	0.0010	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Copper (Cu)	-	ND	0.00050	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Iron (Fe)	-	0.10	0.050	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Lead (Pb)	-	ND	0.00050	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Magnesium (Mg)	-	0.93	0.10	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Manganese (Mn)	-	0.021	0.0020	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Nickel (Ni)	-	ND	0.0020	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Phosphorus (P)	-	ND	0.10	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Potassium (K)	-	0.33	0.10	mg/L	2025/09/18	2025/09/18	MOA	A012979

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Sample Details/Parameters	A	Result	RDL	UNITS	Extracted	Analyzed	By	Batch
AVEL89 CR BELOW MR Sampling Date 2025/09/09 11:10 Matrix W Sample # 2025-6319-00-SI-SP Registration # SA-0000								
ELEMENTS BY ICP/MS (WATER)								
Metals								
Total Selenium (Se)	-	ND	0.00050	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Sodium (Na)	-	0.65	0.10	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Strontium (Sr)	-	0.013	0.0020	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Uranium (U)	-	ND	0.00010	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Zinc (Zn)	-	ND	0.0050	mg/L	2025/09/18	2025/09/18	MOA	A012979

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Sample Details/Parameters	A	Result	RDL	UNITS	Extracted	Analyzed	By	Batch
AVEL90 CR ABOVE GR								
Sampling Date 2025/09/09 14:15								
Matrix W								
Sample # 2025-6320-00-SI-SP								
Registration # SA-0000								
RESULTS OF ANALYSES OF WATER								
Calculated Parameters								
Hardness (CaCO3)	-	10	1.0	mg/L	N/A	2025/09/22		A011098
Total Kjeldahl Nitrogen (TKN)	-	ND	0.10	mg/L	N/A	2025/09/23		A011536
Nitrate (N)	-	ND	0.050	mg/L	N/A	2025/09/23		A011101
Total dissolved solids (calc., EC)	-	12	1.0	mg/L	N/A	2025/09/22		A011533
Inorganics								
Conductivity	-	22	1.0	uS/cm	N/A	2025/09/21	KMC	A015237
Chloride (Cl-)	-	ND	1.0	mg/L	N/A	2025/09/27	RSU	A019690
Bromide (Br-)	-	ND	1.0	mg/L	N/A	2025/09/27	RSU	A019690
Sulphate (SO4)	-	ND	1.0	mg/L	N/A	2025/09/27	RSU	A019690
Total Alkalinity (Total as CaCO3)	-	8.8	2.0	mg/L	N/A	2025/09/21	KMC	A015238
Colour	-	23	5.0	TCU	N/A	2025/09/23	M2C	A014412
Dissolved Fluoride (F-)	-	ND	0.10	mg/L	N/A	2025/09/21	KMC	A015239
Nitrate + Nitrite (N)	-	ND	0.050	mg/L	N/A	2025/09/22	MCN	A014416
Nitrite (N)	-	ND	0.010	mg/L	N/A	2025/09/22	MCN	A014417
Nitrogen (Ammonia Nitrogen)	-	ND	0.050	mg/L	N/A	2025/09/23	MCN	A015738
Total Nitrogen (N)	-	ND	0.10	mg/L	N/A	2025/09/23	S6S	A015837
Dissolved Organic Carbon (C)	-	3.6	0.50	mg/L	N/A	2025/09/22	S6S	A015567
Total Organic Carbon (C)	-	3.7	0.50	mg/L	N/A	2025/09/23	S6S	A016390
pH	-	7.24		pH	N/A	2025/09/21	KMC	A015236
Total Phosphorus	-	ND	0.004	mg/L	2025/09/22	2025/09/23	VKH	A015816
Total Suspended Solids	-	1.2	1.0	mg/L	2025/09/16	2025/09/22	DME	A011568
Turbidity	-	0.74	0.10	NTU	N/A	2025/09/21	KMC	A015258
MERCURY BY COLD VAPOUR AA (WATER)								
Metals								
Total Mercury (Hg)	-	ND	0.000013	mg/L	2025/09/20	2025/09/20	JEP	A014559
ELEMENTS BY ICP/MS (WATER)								
Metals								
Total Aluminum (Al)	-	0.024	0.0050	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Dup.Total Aluminum (Al)	-	0.023	0.0050	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Total Antimony (Sb)	-	ND	0.0010	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Dup.Total Antimony (Sb)	-	ND	0.0010	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Total Arsenic (As)	-	ND	0.0010	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Dup.Total Arsenic (As)	-	ND	0.0010	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Total Barium (Ba)	-	0.0077	0.0010	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Dup.Total Barium (Ba)	-	0.0079	0.0010	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Total Boron (B)	-	ND	0.050	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Dup.Total Boron (B)	-	ND	0.050	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Total Cadmium (Cd)	-	ND	0.000010	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Dup.Total Cadmium (Cd)	-	ND	0.000010	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Total Calcium (Ca)	-	2.7	0.10	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Dup.Total Calcium (Ca)	-	2.7	0.10	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Total Chromium (Cr)	-	0.0016	0.0010	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Dup.Total Chromium (Cr)	-	ND	0.0010	mg/L	2025/09/19	2025/09/19	MTZ	A014106

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Sample Details/Parameters	A	Result	RDL	UNITS	Extracted	Analyzed	By	Batch
AVEL90 CR ABOVE GR Sampling Date 2025/09/09 14:15 Matrix W Sample # 2025-6320-00-SI-SP Registration # SA-0000								
ELEMENTS BY ICP/MS (WATER)								
Metals								
Total Copper (Cu)	-	ND	0.00050	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Dup.Total Copper (Cu)	-	ND	0.00050	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Total Iron (Fe)	-	0.084	0.050	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Dup.Total Iron (Fe)	-	0.068	0.050	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Total Lead (Pb)	-	ND	0.00050	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Dup.Total Lead (Pb)	-	ND	0.00050	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Total Magnesium (Mg)	-	0.85	0.10	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Dup.Total Magnesium (Mg)	-	0.83	0.10	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Total Manganese (Mn)	-	0.0074	0.0020	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Dup.Total Manganese (Mn)	-	0.0070	0.0020	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Total Nickel (Ni)	-	ND	0.0020	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Dup.Total Nickel (Ni)	-	ND	0.0020	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Total Phosphorus (P)	-	ND	0.10	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Dup.Total Phosphorus (P)	-	ND	0.10	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Total Potassium (K)	-	0.30	0.10	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Dup.Total Potassium (K)	-	0.30	0.10	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Total Selenium (Se)	-	ND	0.00050	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Dup.Total Selenium (Se)	-	ND	0.00050	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Total Sodium (Na)	-	0.66	0.10	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Dup.Total Sodium (Na)	-	0.64	0.10	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Total Strontium (Sr)	-	0.013	0.0020	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Dup.Total Strontium (Sr)	-	0.013	0.0020	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Total Uranium (U)	-	ND	0.00010	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Dup.Total Uranium (U)	-	ND	0.00010	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Total Zinc (Zn)	-	ND	0.0050	mg/L	2025/09/19	2025/09/19	MTZ	A014106
Dup.Total Zinc (Zn)	-	ND	0.0050	mg/L	2025/09/19	2025/09/19	MTZ	A014106

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Bureau Veritas Job #: C5B4848
Report Date: 2025/09/29

NL Department of Environment, Climate Change and Municipalities
Site Location: LABRADOR
Your P.O. #: 224006869-5

Sample Details/Parameters	A	Result	RDL	UNITS	Extracted	Analyzed	By	Batch
AVEL91 CR BELOW MF								
Sampling Date 2025/09/09 16:15								
Matrix W								
Sample # 2025-6321-00-SI-SP								
Registration # SA-0000								
RESULTS OF ANALYSES OF WATER								
Calculated Parameters								
Hardness (CaCO3)	-	9.8	1.0	mg/L	N/A	2025/09/19		A011098
Total Kjeldahl Nitrogen (TKN)	-	ND	0.10	mg/L	N/A	2025/09/23		A011536
Nitrate (N)	-	ND	0.050	mg/L	N/A	2025/09/23		A011101
Total dissolved solids (calc., EC)	-	12	1.0	mg/L	N/A	2025/09/22		A011533
Inorganics								
Conductivity	-	22	1.0	uS/cm	N/A	2025/09/21	KMC	A015237
Chloride (Cl-)	-	ND	1.0	mg/L	N/A	2025/09/24	RSU	A017149
Bromide (Br-)	-	ND	1.0	mg/L	N/A	2025/09/24	RSU	A017149
Sulphate (SO4)	-	ND	1.0	mg/L	N/A	2025/09/24	RSU	A017149
Total Alkalinity (Total as CaCO3)	-	9.6	2.0	mg/L	N/A	2025/09/21	KMC	A015238
Colour	-	25	5.0	TCU	N/A	2025/09/23	M2C	A014412
Dissolved Fluoride (F-)	-	ND	0.10	mg/L	N/A	2025/09/21	KMC	A015239
Nitrate + Nitrite (N)	-	ND	0.050	mg/L	N/A	2025/09/22	MCN	A014416
Nitrite (N)	-	ND	0.010	mg/L	N/A	2025/09/22	MCN	A014417
Nitrogen (Ammonia Nitrogen)	-	ND	0.050	mg/L	N/A	2025/09/23	MCN	A015742
Total Nitrogen (N)	-	ND	0.10	mg/L	N/A	2025/09/23	S6S	A015837
Dissolved Organic Carbon (C)	-	3.9	0.50	mg/L	N/A	2025/09/22	S6S	A015567
Total Organic Carbon (C)	-	4.1	0.50	mg/L	N/A	2025/09/23	S6S	A016390
pH	-	7.22		pH	N/A	2025/09/21	KMC	A015236
Total Phosphorus	-	ND	0.004	mg/L	2025/09/23	2025/09/24	VKH	A016866
Total Suspended Solids	-	3.2	1.0	mg/L	2025/09/16	2025/09/22	DME	A011568
Turbidity	-	3.3	0.10	NTU	N/A	2025/09/21	KMC	A015258
MERCURY BY COLD VAPOUR AA (WATER)								
Metals								
Total Mercury (Hg)	-	ND	0.000013	mg/L	2025/09/20	2025/09/20	JEP	A014559
ELEMENTS BY ICP/MS (WATER)								
Metals								
Total Aluminum (Al)	-	0.080	0.0050	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Antimony (Sb)	-	ND	0.0010	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Arsenic (As)	-	ND	0.0010	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Barium (Ba)	-	0.0088	0.0010	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Boron (B)	-	ND	0.050	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Cadmium (Cd)	-	ND	0.000010	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Calcium (Ca)	-	2.6	0.10	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Chromium (Cr)	-	ND	0.0010	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Copper (Cu)	-	0.00058	0.00050	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Iron (Fe)	-	0.15	0.050	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Lead (Pb)	-	ND	0.00050	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Magnesium (Mg)	-	0.84	0.10	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Manganese (Mn)	-	0.012	0.0020	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Nickel (Ni)	-	ND	0.0020	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Phosphorus (P)	-	ND	0.10	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Potassium (K)	-	0.36	0.10	mg/L	2025/09/18	2025/09/18	MOA	A012979

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Sample Details/Parameters	A	Result	RDL	UNITS	Extracted	Analyzed	By	Batch
AVEL91 CR BELOW MF Sampling Date 2025/09/09 16:15 Matrix W Sample # 2025-6321-00-SI-SP Registration # SA-0000								
ELEMENTS BY ICP/MS (WATER)								
Metals								
Total Selenium (Se)	-	ND	0.00050	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Sodium (Na)	-	0.79	0.10	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Strontium (Sr)	-	0.014	0.0020	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Uranium (U)	-	ND	0.00010	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Zinc (Zn)	-	ND	0.0050	mg/L	2025/09/18	2025/09/18	MOA	A012979

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Sample Details/Parameters	A	Result	RDL	UNITS	Extracted	Analyzed	By	Batch
AVEL92 CR @ EP								
Sampling Date 2025/09/12 11:15								
Matrix W								
Sample # 2025-6322-00-SI-SP								
Registration # SA-0000								
RESULTS OF ANALYSES OF WATER								
Calculated Parameters								
Hardness (CaCO3)	-	11	1.0	mg/L	N/A	2025/09/19		A011098
Total Kjeldahl Nitrogen (TKN)	-	ND	0.10	mg/L	N/A	2025/09/23		A011536
Nitrate (N)	-	ND	0.050	mg/L	N/A	2025/09/23		A011101
Total dissolved solids (calc., EC)	-	18	1.0	mg/L	N/A	2025/09/23		A011533
Inorganics								
Conductivity	-	33	1.0	uS/cm	N/A	2025/09/22	J1A	A015405
Chloride (Cl-)	-	2.3	1.0	mg/L	N/A	2025/09/22	VP2	A014889
Bromide (Br-)	-	ND	1.0	mg/L	N/A	2025/09/22	VP2	A014889
Sulphate (SO4)	-	1.0	1.0	mg/L	N/A	2025/09/22	VP2	A014889
Total Alkalinity (Total as CaCO3)	-	10	2.0	mg/L	N/A	2025/09/22	J1A	A015409
Colour	-	26	5.0	TCU	N/A	2025/09/23	M2C	A014412
Dissolved Fluoride (F-)	-	ND	0.10	mg/L	N/A	2025/09/22	J1A	A015410
Nitrate + Nitrite (N)	-	ND	0.050	mg/L	N/A	2025/09/22	MCN	A014416
Nitrite (N)	-	ND	0.010	mg/L	N/A	2025/09/22	MCN	A014417
Nitrogen (Ammonia Nitrogen)	-	ND	0.050	mg/L	N/A	2025/09/23	MCN	A015742
Total Nitrogen (N)	-	ND	0.10	mg/L	N/A	2025/09/23	S6S	A015837
Dissolved Organic Carbon (C)	-	4.0	0.50	mg/L	N/A	2025/09/23	S6S	A016398
Total Organic Carbon (C)	-	4.0	0.50	mg/L	N/A	2025/09/23	S6S	A015791
pH	-	7.32		pH	N/A	2025/09/22	J1A	A015401
Total Phosphorus	-	0.012	0.004	mg/L	2025/09/23	2025/09/24	VKH	A016866
Total Suspended Solids	-	10	1.0	mg/L	2025/09/16	2025/09/22	DME	A011568
Turbidity	-	11	0.10	NTU	N/A	2025/09/21	KMC	A015258
MERCURY BY COLD VAPOUR AA (WATER)								
Metals								
Total Mercury (Hg)	-	ND	0.000013	mg/L	2025/09/20	2025/09/20	JEP	A014559
ELEMENTS BY ICP/MS (WATER)								
Metals								
Total Aluminum (Al)	-	0.24	0.0050	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Antimony (Sb)	-	ND	0.0010	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Arsenic (As)	-	ND	0.0010	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Barium (Ba)	-	0.010	0.0010	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Boron (B)	-	ND	0.050	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Cadmium (Cd)	-	ND	0.000010	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Calcium (Ca)	-	2.6	0.10	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Chromium (Cr)	-	ND	0.0010	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Copper (Cu)	-	0.00076	0.00050	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Iron (Fe)	-	0.36	0.050	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Lead (Pb)	-	ND	0.00050	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Magnesium (Mg)	-	1.0	0.10	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Manganese (Mn)	-	0.015	0.0020	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Nickel (Ni)	-	ND	0.0020	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Phosphorus (P)	-	ND	0.10	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Potassium (K)	-	0.47	0.10	mg/L	2025/09/18	2025/09/18	MOA	A012979

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Sample Details/Parameters	A	Result	RDL	UNITS	Extracted	Analyzed	By	Batch
AVEL92 CR @ EP Sampling Date 2025/09/12 11:15 Matrix W Sample # 2025-6322-00-SI-SP Registration # SA-0000								
ELEMENTS BY ICP/MS (WATER)								
Metals								
Total Selenium (Se)	-	ND	0.00050	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Sodium (Na)	-	2.0	0.10	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Strontium (Sr)	-	0.016	0.0020	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Uranium (U)	-	ND	0.00010	mg/L	2025/09/18	2025/09/18	MOA	A012979
Total Zinc (Zn)	-	ND	0.0050	mg/L	2025/09/18	2025/09/18	MOA	A012979

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