

Real Time Water Quality Report Peter's River near Botwood Deployment Period 2007-10-26 to 2007-11-29

General

- The Water Resources Management Division staff monitors the real-time web page on a daily basis. Any unusual observations are investigated, with site visits being carried out as warranted. Raw (uncorrected) data has been used in the preparation of the graphs and subsequent discussion below.

Maintenance and Calibration of Instrumentation

- Following regular cleaning and calibration of the Datasonde the instrument was installed at Peter's River on October 26, 2007 and remained deployed until November 29, 2007 (32 day period) where it was subsequently removed again for regular cleaning and calibration.
- In-situ* measurements of ambient water quality were undertaken with a freshly calibrated Minisonde each time a Datasonde was installed or removed.
- The comparative results between the Minisonde and Datasonde values at the beginning and end of the deployment period are shown in **Table 1**.

Table 1: QA/QC Data Comparison Rankings During Deployment Period

Station	Date (YYYY-MM-DD)	Action	Minisonde vs. Datasonde Comparison Ranking			
			Temperature	pH	Conductivity	Dissolved Oxygen
Peter's River near Botwood	2007-10-26	Installation	Excellent	Good	Marginal	Good
	2007-11-29	Removal	Excellent	Marginal	Poor	NA*

* Dissolved oxygen could no be measured with the Minisonde on 2007-22-29 due to low battery voltage.

Data Interpretation

- The water temperature (**Figure 1**) decreased slightly throughout the deployment period; this is a normal occurrence for this time of year. Temperature values ranged from 9.9°C to 0.11°C over the deployment period.

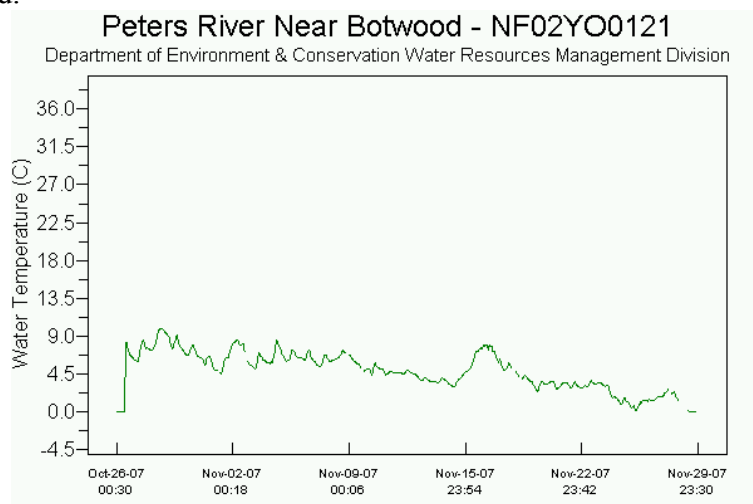


Figure 1

- pH values (**Figure 2**) decreased throughout the deployment period. The pH values ranged from 7.01 to 5.91 with most of the values falling within the recommended range (6.5 – 9.0) for the CCME *Canadian Water Quality Guidelines for the Protection of Aquatic Life*, and within the normal range for this river. The slight decrease in pH is typical of this time of the year.

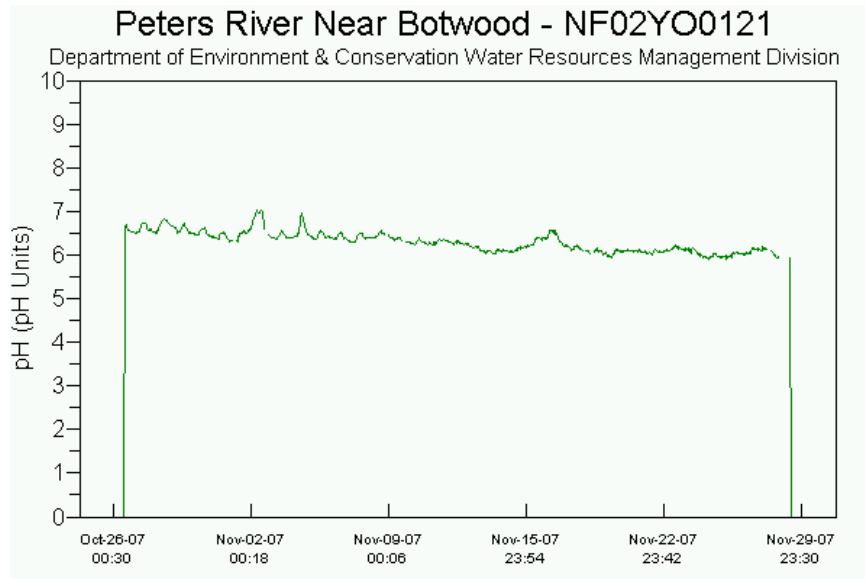


Figure 2

- The specific conductance (**Figure 3**) ranged from 45 $\mu\text{S}/\text{cm}$ to 29 $\mu\text{S}/\text{cm}$ over the deployment period. These minor fluctuations are normal for this time frame, varying with changes in streamflow.

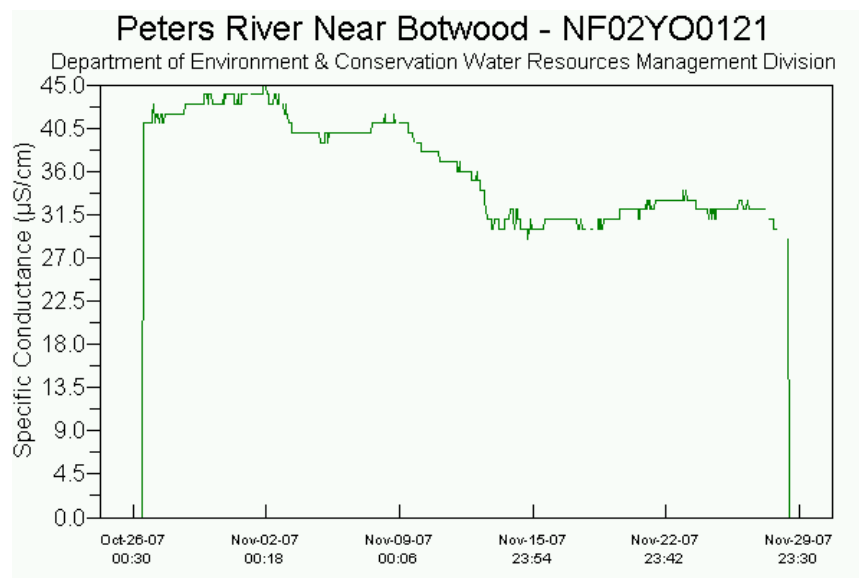


Figure 3

- The dissolved oxygen (**Figure 4**) values ranged from 10.1 mg/L to 13.37mg/L over the deployment period. All dissolved oxygen values fall within the recommended CCME *Canadian Water Quality Guidelines for the Protection of Aquatic Life* for dissolved oxygen (cold water/other life stages – above 6.5 mg/L; cold water/early life stages – above 9.5 mg/L; warm water/other life stages – above 5.5 mg/L; warm water/early life stages – above 6 mg/L). Dissolved oxygen values are generally inversely proportional to water temperatures.

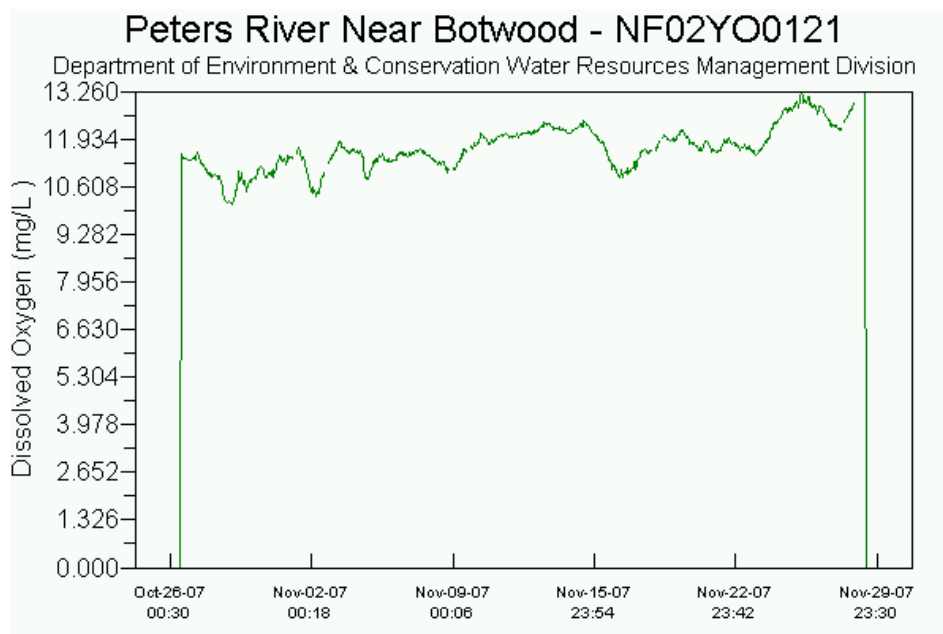


Figure 4

- The turbidity values (**Figure 5**) remained below 2 NTU for most of the deployment period which is the typical background level for this station. There were two spikes in turbidity (both 11 NTU) on November 9, 2007 and November 13, 2007 which coincided with a significant spike in streamflow, presumably the result of a precipitation event.

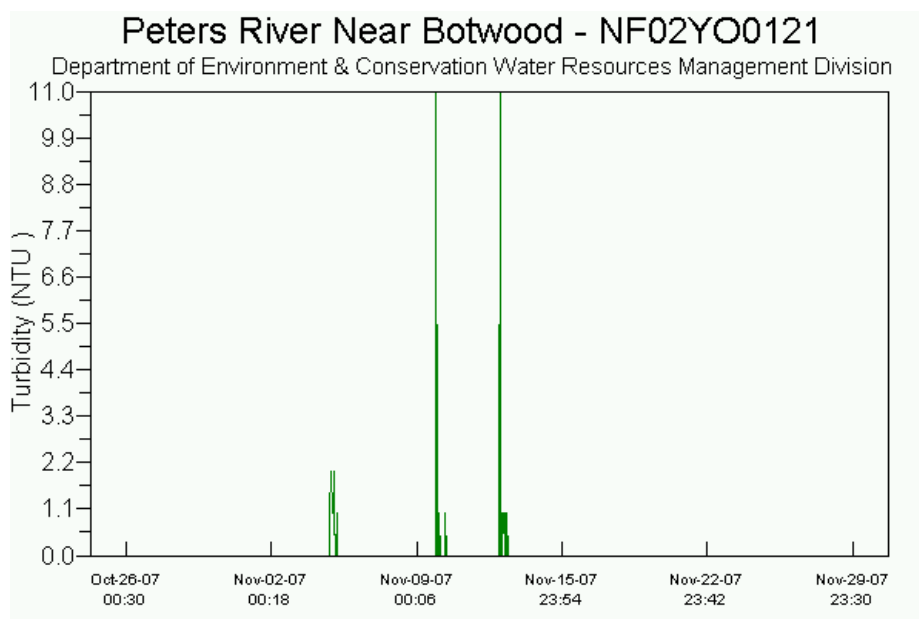


Figure 5

- The streamflow or discharge ranged from 1.43 m³/s to 14.1 m³/s (peak on November 13, 2007). This is certainly within the normal range for this stream with the rising and falling legs of the hydrograph being typical of the flashy nature of this stream.

