

**Real Time Water Quality Monthly Report
Rattling Brook below Bridge (VBNC)
July 2007 – September 2007**

General

- The Water Resources Management Division staff monitors the real-time web page on a daily basis.
- Voisey’s Bay Nickel Company (VBNC) will be informed of any significant water quality events in the future in the form of a monthly report.
- The initial installation of the RTWQ instrumentation at Rattling Brook below Bridge occurred on December 12th, 2006.

Maintenance and Calibration of Instrumentation

- The instrument was reinstalled on July 13th, 2007

Table 1: QA/QC Data Comparison Rankings upon reinstallation on July 13th, 2007

Station	Date	Action	Minisonde vs. Datasonde Comparison Ranking			
			Temperature	pH	Conductivity	Dissolved Oxygen
Rattling Brook (Long Harbour)	July 13 th	Reinstallation	Excellent	Excellent	Excellent	Excellent

- The Rattling Brook instrument was deployed until September 4th, 2007 (54-day deployment period) at which point it was removed for maintenance and calibration. It was left at the site for longer than normal due to availability of staff.

Table 2: QA/QC Data Comparison Rankings upon removal on September 4th, 2007

Station	Date	Action	Minisonde vs. Datasonde Comparison Ranking			
			Temperature	pH	Conductivity	Dissolved Oxygen
Rattling Brook (Long Harbour)	September 4 th	Removal	Excellent	Fair	Good	Excellent

Data Interpretation

- This monthly report interprets the data from the Rattling Brook RTWQ station in Long Harbour for the period of July 13th, 2007 – September 4th, 2007
- The water temperature (**Figure 1**) readings for Rattling Brook remained fairly consistent over the deployment period. This is expected at this time of the year, with a temperature range of 15.89 – 23.03°C.

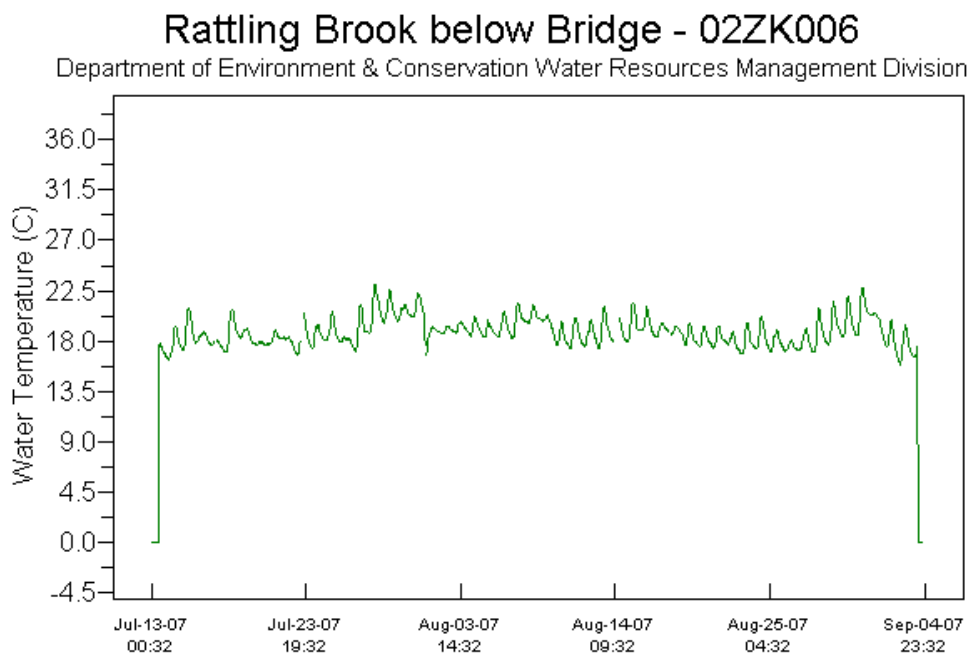


Figure 1

- The dissolved oxygen (DO) values (**Figure 2**) remained fairly consistent over the deployment period. The values are consistent with the temperatures seen in **Figure 1**. The dissolved oxygen values ranged from 8.44 mg/L to 9.68 mg/L. For the most part, these values fall within the recommended CCME Protection of Aquatic Life guidelines for dissolved oxygen (cold water/other life stages – above 6.5; warm water/other life stages – above 5.5; warm water/early life stages – above 6; cold water/early life stages – 9.5 mg/L). Some of the values were below the most conservative CCME guideline of 9.5 mg/L.

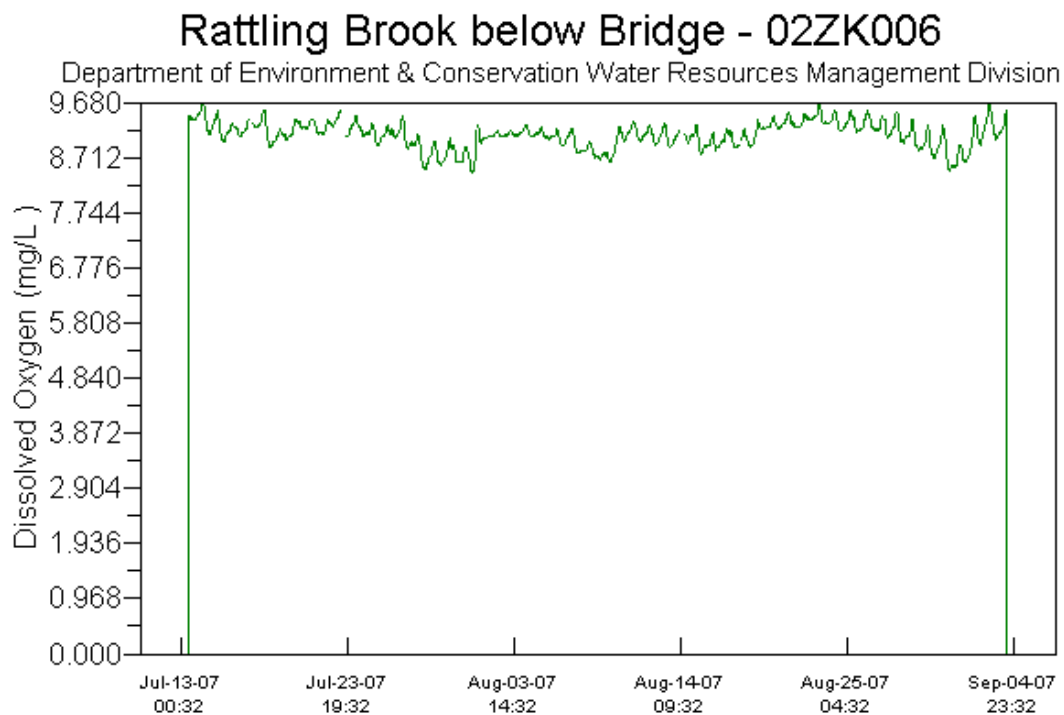


Figure 2

- The pH values (**Figure 3**) for Rattling Brook station show an abrupt lowering on August 1st, 2007. This sudden drop coincides with a sharp increase in stage (**Figure 6**). This increase in stage is likely a result of heavy rainfall on July 31st (see **Appendix A** for climatological data). The pH values after this event are lower than previously recorded, indicating that the sensor may have been affected by the event. The pH values ranged from 4.89 – 6.18 with all values falling outside the recommended range (6.5 – 9.0) for the CCME Protection of Aquatic Life guidelines. This is due to the naturally acidic nature of NL waters.

Rattling Brook below Bridge - 02ZK006

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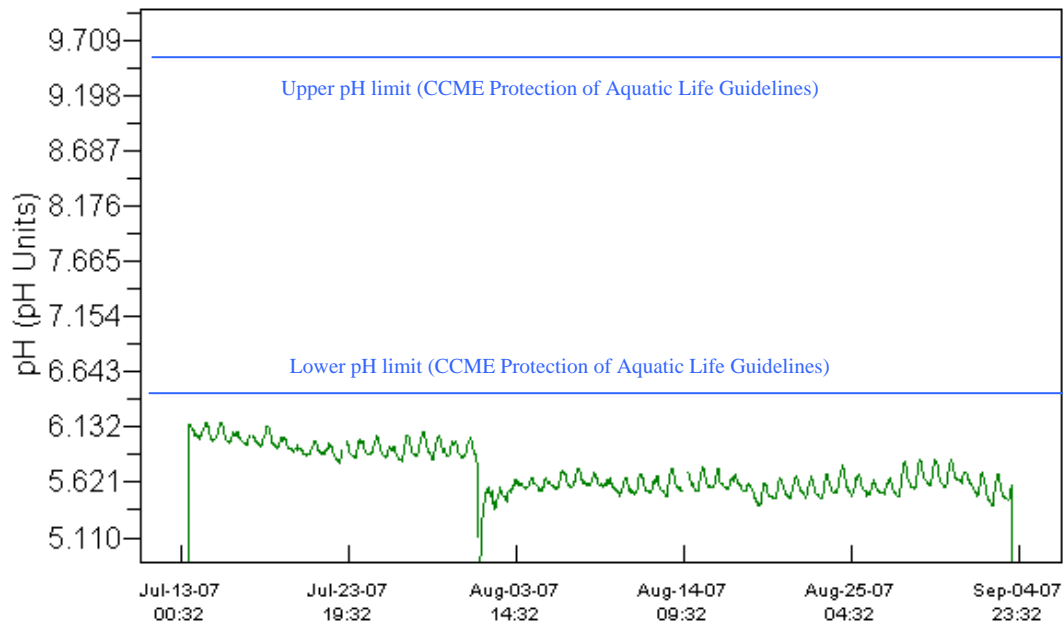


Figure 3

- The specific conductivity values (**Figure 4**) remained consistent throughout the deployment period with values ranging from 27.2– 37.0 $\mu\text{S}/\text{cm}$. An abrupt decrease in conductivity is seen on August 1st, 2007. This sudden drop coincides with a sharp increase in stage (**Figure 6**). This increase in stage is likely a result of heavy rainfall on July 31st (see **Appendix A** for climatological data). The conductivity values after this event are lower than previously recorded, indicating that the sensor may have been affected by the event.

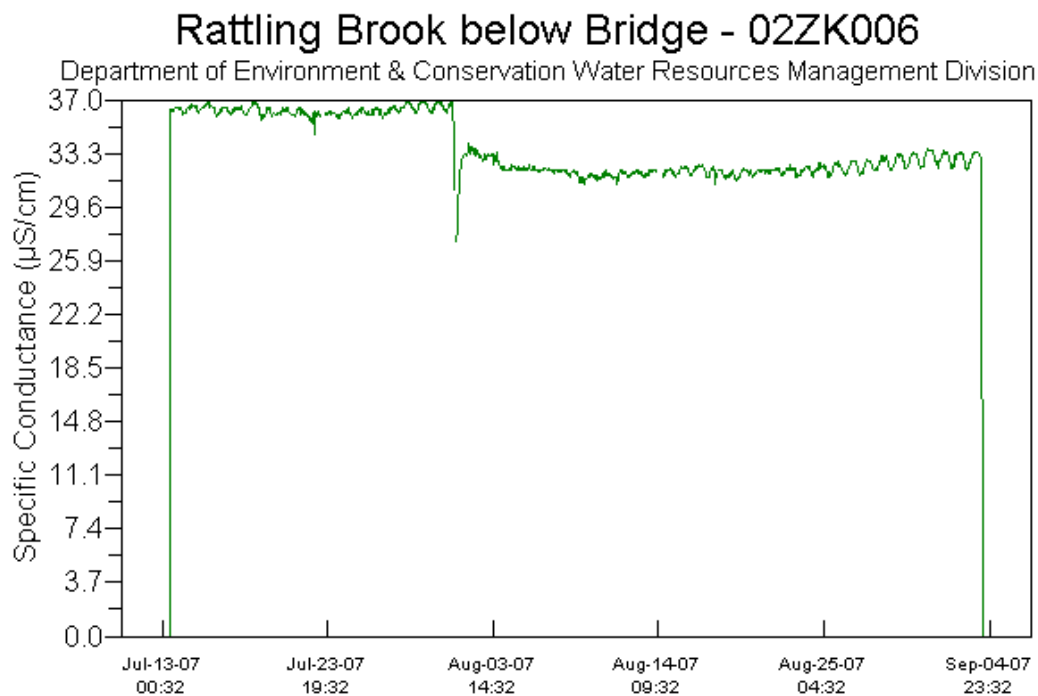


Figure 4

- The turbidity values (**Figure 5**) ranged between 0 -61.1 NTU throughout the deployment period. The increased values occur after with a sharp increase in stage (**Figure 6**). This increase in stage is likely a result of heavy rainfall on July 31st. Similar turbidity spikes continue through August, largely in response to other rainfall events (see **Appendix A** for climatological data). The majority of readings were under 50 NTU.

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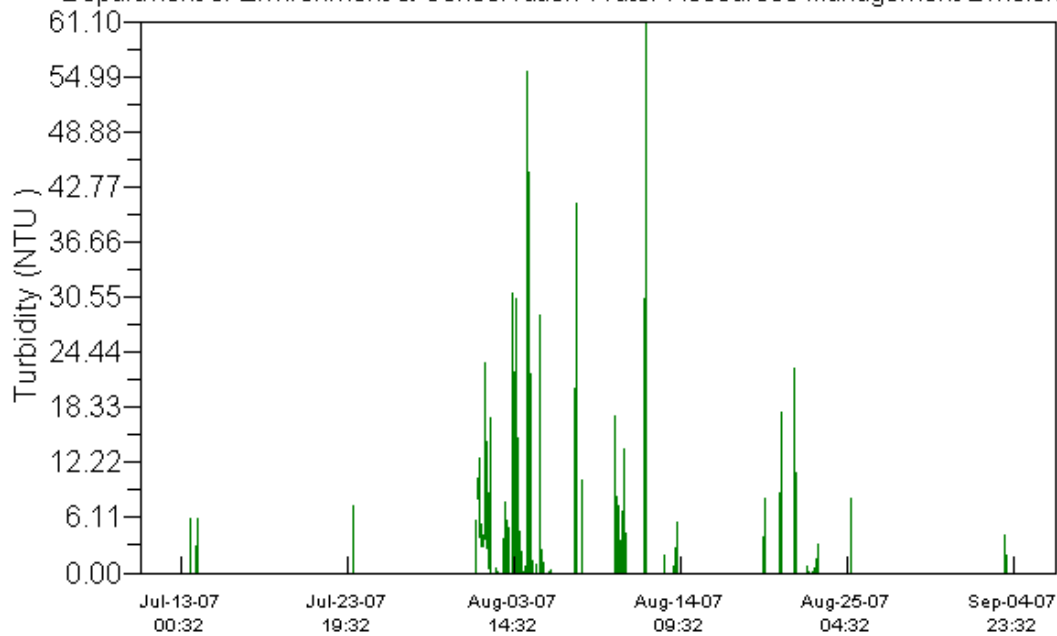


Figure 5

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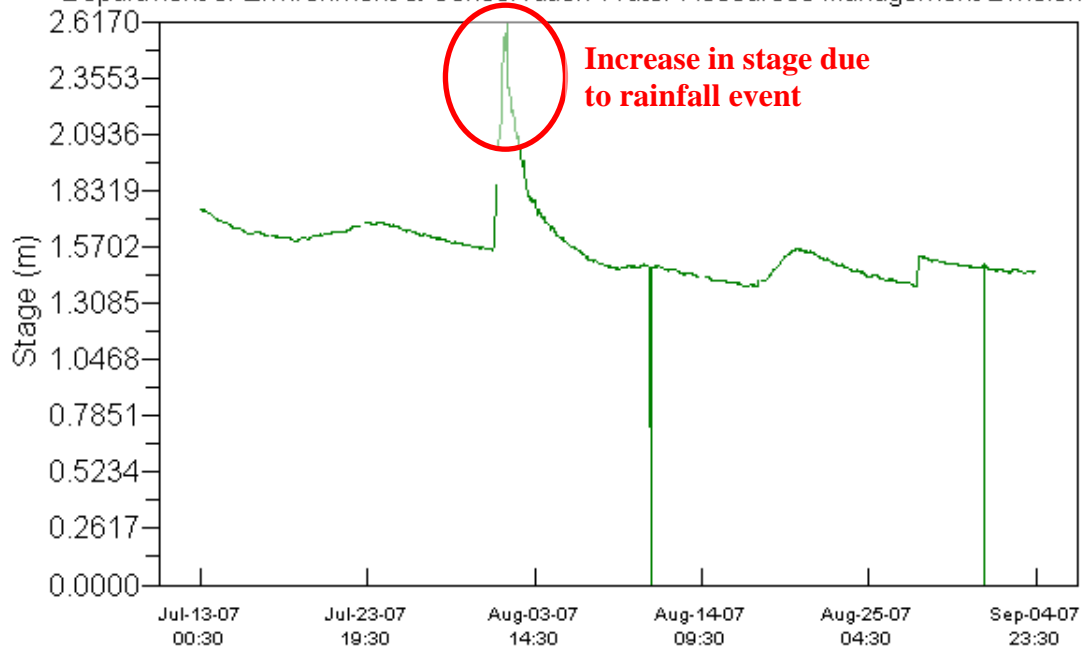


Figure 6

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