

Real Time Water Quality Monthly Report for Voisey's Bay Nickel Company Ltd. November 2003

General

- The Water Resources Management Division staff analyses the real-time web page on a regular basis.
- This will be the final monthly report of 2003. The instruments have been taken out of the water bodies in Voisey's Bay for the winter months. Monthly reports will resume in the spring when the instruments are reinstalled.

Maintenance and Calibration of Instrumentation

- The three Datasondes were removed from all three water bodies on November 11th, 2003. It was decided that the instruments would be removed for the winter months at this time due to the ice conditions within the rivers.
- The water bodies in Voisey's Bay have been known to freeze significantly, therefore the instruments were removed, maintained and stored for the winter months.
- The Datasondes will be reinstalled in the spring (possibly May or June). Reinstallation will depend largely on spring runoff and ice break-up.
- The three Datasondes are usually maintained and calibrated on a strict monthly schedule, however, it was decided to leave the instruments in the water for two extra weeks to determine how the instruments would function on a six-week maintenance/calibration schedule. The QA/QC comparison of the Minisonde and Datasonde readings did indicate drift in some of the parameters, especially dissolved oxygen. For this reason, when the instruments are reinstalled in the spring, the original plan of a strict monthly maintenance and calibration schedule will be followed to ensure accurate data.

Data Interpretation

- From mid-October to the time when the Datasonde was removed from Lower Reid Brook in early November, the temperature of the water decreased from ~2°C to just below 0°C. This led to a significant layer of ice covering the water body.
- It was reported from the staff on-site that there was approximately 4-5 inches of ice covering Lower Reid Brook by early November at the time of removal (**Figure 1**).



Figure 1

- At the Lower Reid Brook station, data for all parameters during the first two weeks of November (before the Datasondes were removed) remained at background levels with no large deviations.
- At the Camp Pond Brook station, the Datasonde lost its calibration (gave errors) for both temperature and pH during the first two weeks of November. However, the other parameters recorded data that remained at or near background levels with no large deviations. Turbidity was a major problem at this site during the previous two months, however, it appears as though the turbidity values during the first two weeks of November remained steady at approximately 18 NTU.
- At the Upper Reid Brook station, the temperature recorded an expected decrease while the dissolved oxygen increased accordingly. The other parameters recorded data that remained at or near background levels with no large deviations.

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