Real Time Water Quality Report
Southwest Brook below Southwest Pond
(Conne River)
Deployment Period 2010-01-18 to 2010-03-03

General

- This station is operated cooperatively with the Miawapukek First Nation (Conne River) as a Pilot Project for Drinking Water Source Monitoring. This is the only known application of Real Time Water Quality Monitoring for a drinking water source for any First Nations community in Canada.
- The Water Resources Management Division's (WRMD) staff monitors the real-time web page on a daily basis. Any unusual observations are investigated, with site visits being carried out as warranted.
- Operators at Conne River are informed of any significant water quality events or instrumentation problems by WRMD.
- Site visits for QA/QC purposes are conducted by WRMD approximately four times per year.
- Monthly calibration and maintenance is undertaken by operators at the Conne River Water Treatment Plant.
- 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 at Conne River, the instrument was installed in Southwest Brook for a 44 day period.
- The vertical lines on some of the graphs below correspond to times when there was a loss of data transmission, or when the instruments were removed from service.
- *In-situ* measurements of ambient water quality were undertaken with a freshly calibrated MiniSonde each time a DataSonde was installed or removed for QA/QC purposes.
- The comparative results between the MiniSonde and DataSonde values at the beginning and end of each deployment period are shown in Table 1.

Southwest Brook below Southwest Pond (NF02ZE0033)				
Date (yyyy-mm-dd)	**Parameter**	**MiniSonde® Data**	**DataSonde® Data**	**Rating**
2010-01-18 Installation	Temp (^{o}C)	-0.17	0.07	Good
	pH (units)	6.06	4.67	Poor
	Sp. Conductivity (uS/cm)	18.8	19.1	Excellent
	Dissolved Oxygen (mg/L)	13.46	13.16	Good
	Turbidity (NTU)	0.0	0.0	Excellent
2010-03-03 Removal	Temp (^{o}C)	1.75	1.71	Excellent
	pH (units)	4.47	5.67	Poor
	Sp. Conductivity (uS/cm)	18.4	18.2	Excellent
	Dissolved Oxygen (mg/L)	12.53	12.65	Excellent
	Turbidity (NTU)	0.0	0.0	Excellent

Table 1

Data Interpretation

- The water temperature (**Figure 1**) increased slightly over the deployment period. Temperature values ranged from a minimum of -0.18 ˚C to a maximum of 3.15 ˚C.

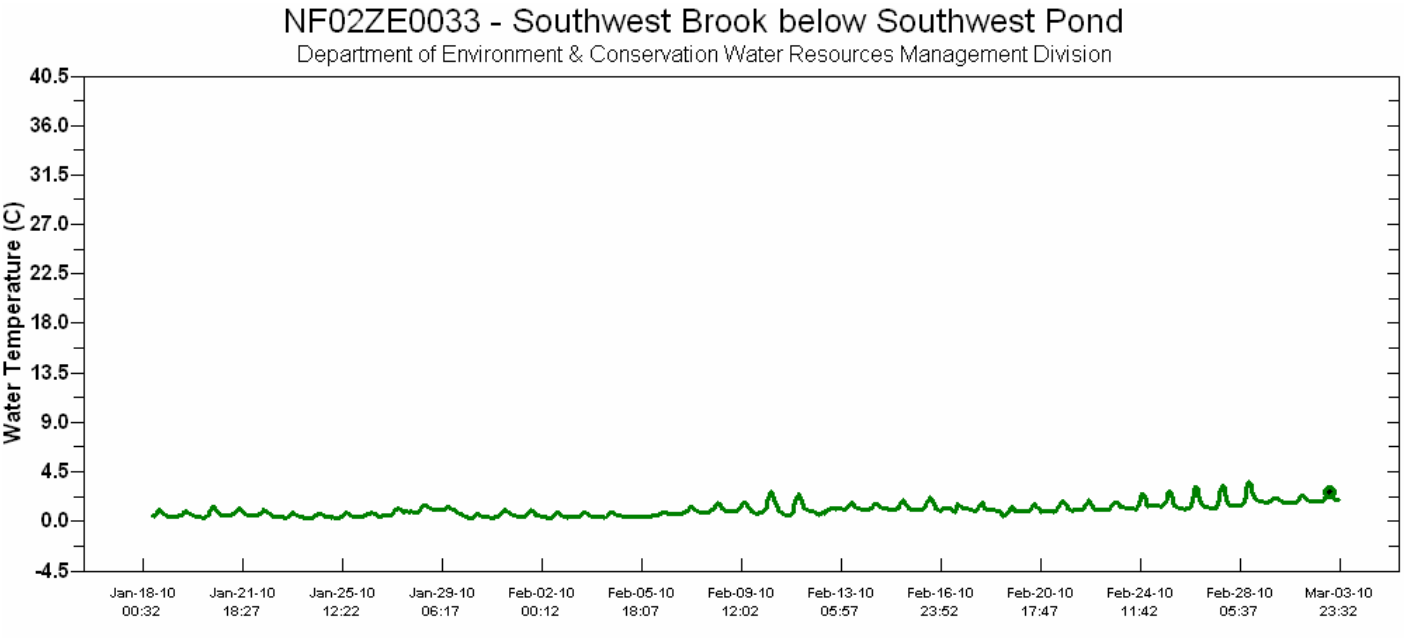

Figure 1

- Throughout the deployment period pH values (**Figure 2**) ranged from a minimum of 4.38 to a maximum of 5.15 with all values falling below the recommended range (6.5 – 9.0) for the CCME *Canadian Water Quality Guidelines for the Protection of Aquatic Life*. The background pH of this stream is normally lower than the recommended range.

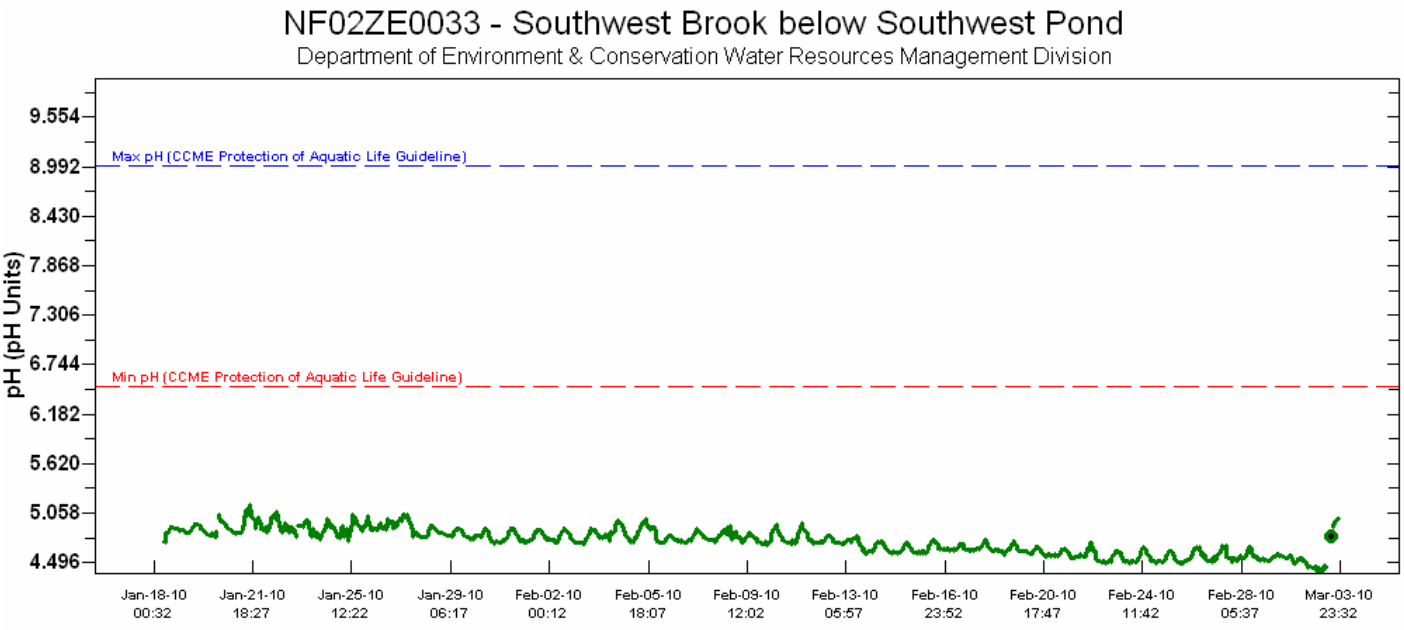

Figure 2

- The specific conductance **(Figure 3)** ranged from a minimum of 14.3 µS/cm to a maximum of 20.1 µS/cm over the deployment period.

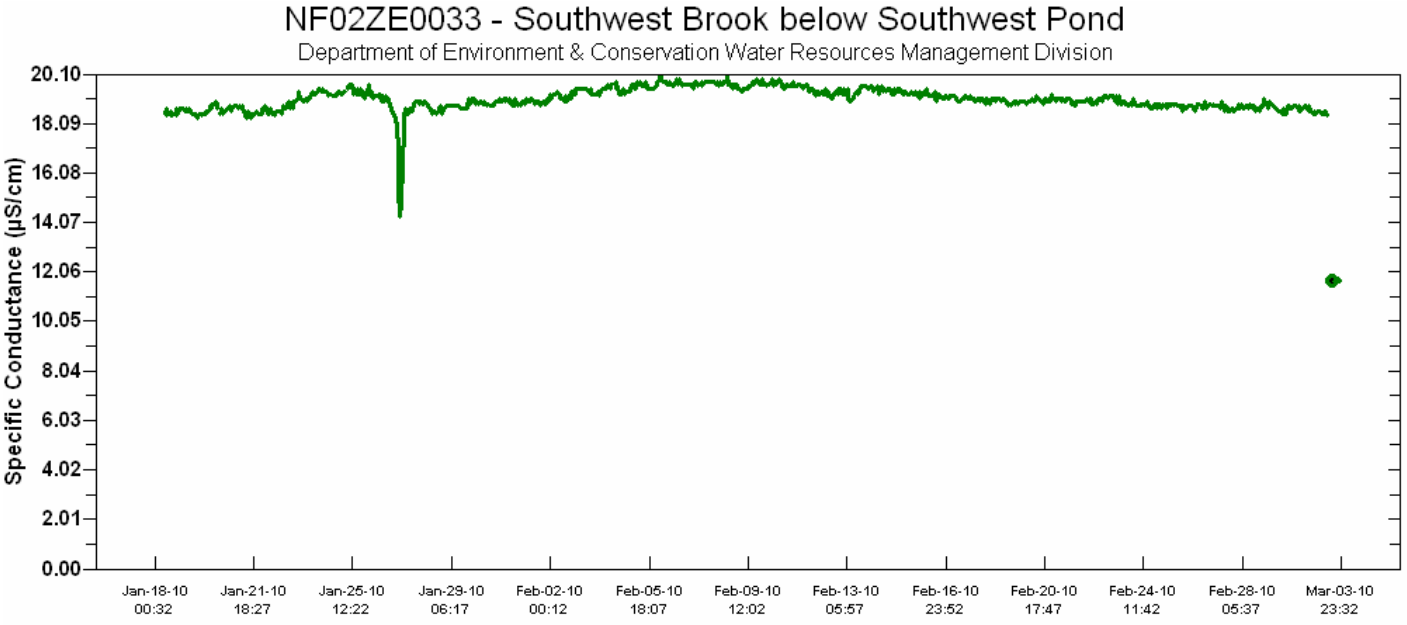

Figure 3

- The dissolved oxygen (**Figure 4**) values ranged from a minimum of 12.47 mg/L to a maximum of 13.50 mg/L over the deployment period. Dissolved oxygen is inversely proportional to water temperature. Throughout the deployment period, all dissolved oxygen values fell above the limits recommended by CCME *Canadian Water Quality Guidelines for the Protection of Aquatic Life* (cold water/other life stages – above 6.5 mg/L; cold water/early life stages – above 9.5 mg/L).

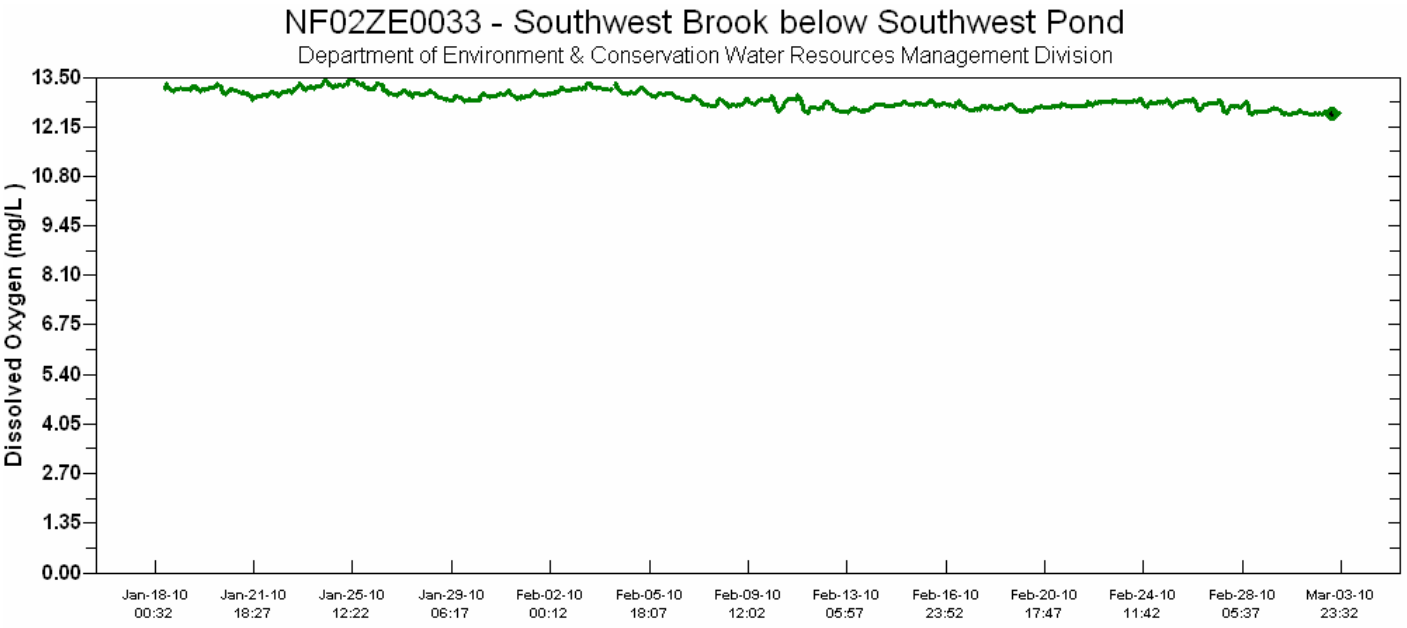

Figure 4

- The turbidity values **(Figure 5)** remained constant at 0.0 NTU throughout the deployment period.

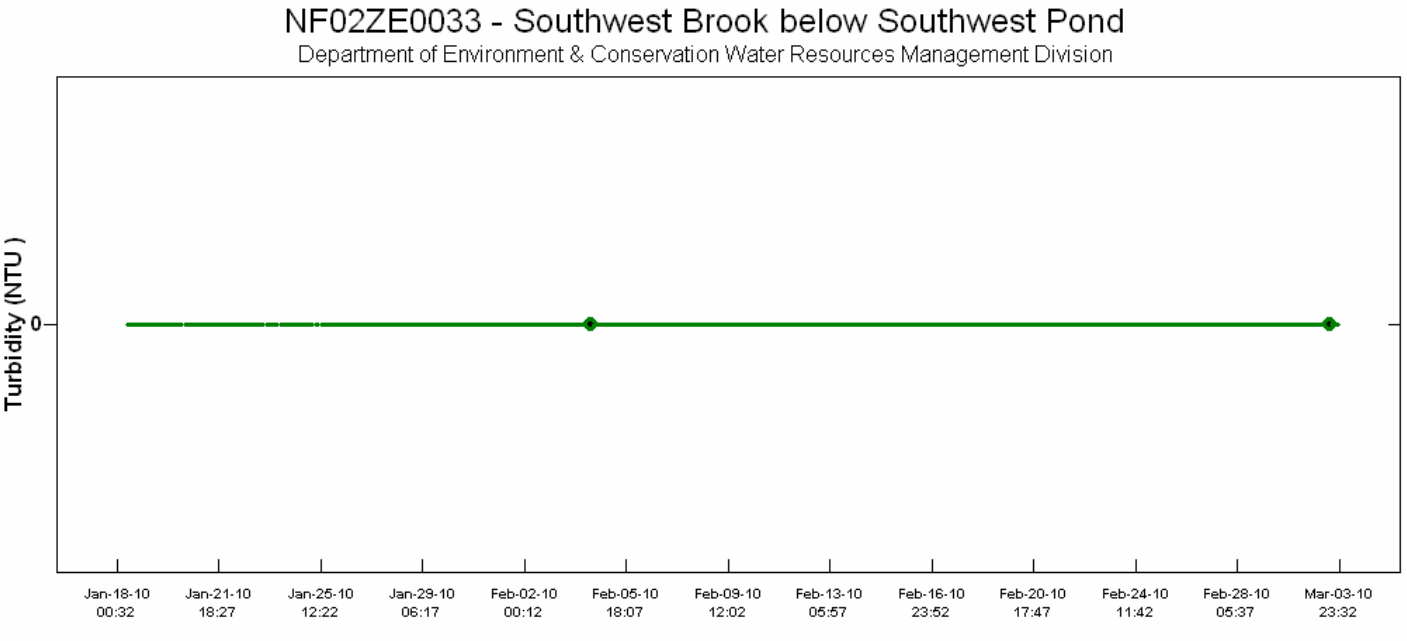

Figure 5

- The stage (**Figure 6)** or water level ranged from a minimum of 0.90 m to a maximum of 3.32 m. The high peak on January 18, 2020 is likely an error due to the backwater effect of ice formation. Under no circumstances, would water levels in this tiny stream reach 3.32 meters.

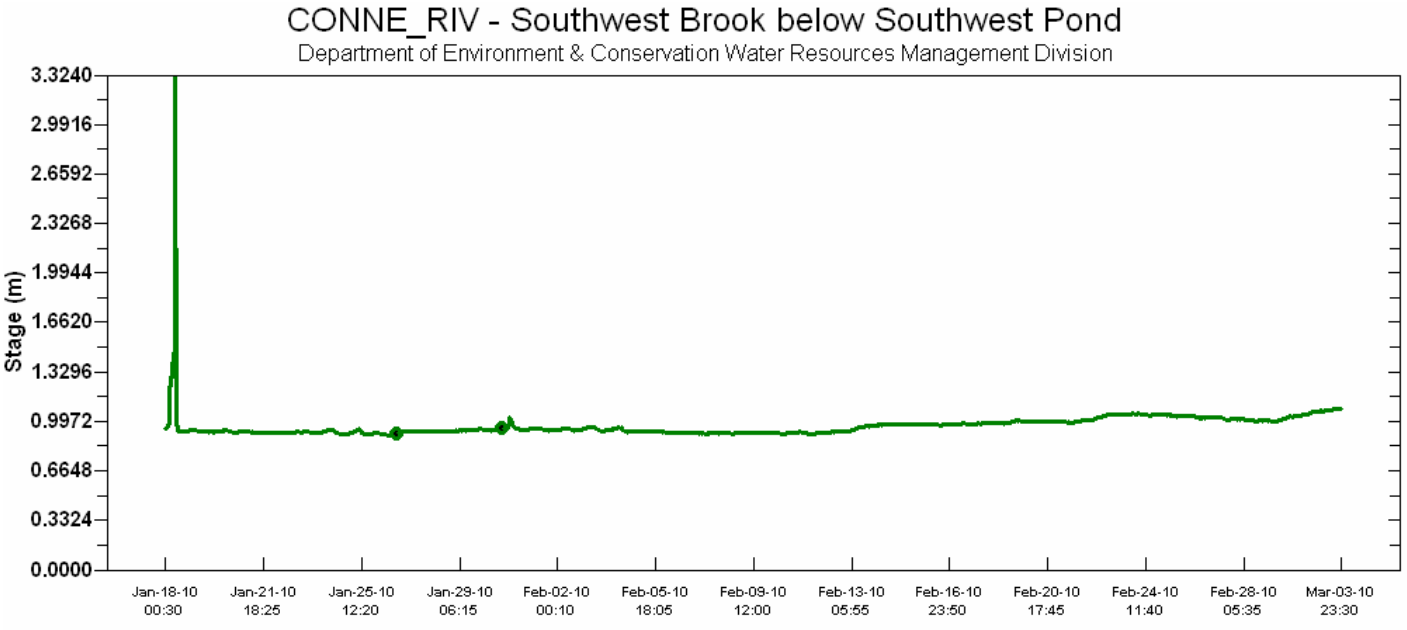

Figure 6

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