

Real Time Water Quality Deployment Report Main River October – December 2008

General

- The Water Resources Management Division staff monitors the real-time web page on a daily basis.

Maintenance and Calibration of Instrumentation

- The instrument at Main River was initially reinstalled for the second deployment of the 2008 field season on October 2nd, 2008.
- The results from comparing the Minisonde values to the Datasonde values during the reinstallation can be seen in **Table 1**. This involves a second set of data readings being collected at the time of installation, using a similar, freshly calibrated instrument. The readings from both instruments were compared and their variability was ranked, as part of QA/QC protocol. As there was a problem with data logging for conductivity there were no comparison results available for this parameter.

Table 1: QA/QC Data Comparison Rankings - Reinstallation - Oct. 2nd, 2008, Removal – Dec. 9th, 2008

Station	Date	Action	Minisonde vs. Datasonde Comparison Ranking			
			Temperature	pH	Conductivity	Dissolved Oxygen
Main River	Oct. 2 nd 2008	Installation	Good	Fair	NA	Good
	Dec. 9 th 2008	Removal	Excellent	Good	NA	Poor

- The instrument at Main River was reinstalled for the second deployment of the 2008 field season on October 2nd and removed at the end of season on December 9th, 2008. This 68 day deployment period is typical for the Main River at Paradise Pool which is only accessible by helicopter. It should be noted that while Temperature and pH reading remained comparable with the QA/QC instrument at removal the DO readings had drifted and compared poorly with the QA/QC instrument.

Data Interpretation

- The water temperature (**Figure 1**) showed normal day-to-day fluctuations during the entire deployment period with an overall decreasing trend as temperatures dropped in the late fall. There is a diurnal pattern with warmer temperatures during the day and cooling at night.
- The dissolved oxygen (**Figure 2**) shows a slight rising trend during the cooling of fall with all values falling 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). There is also a diurnal pattern, which is directly related to the diurnal temperature cycle.

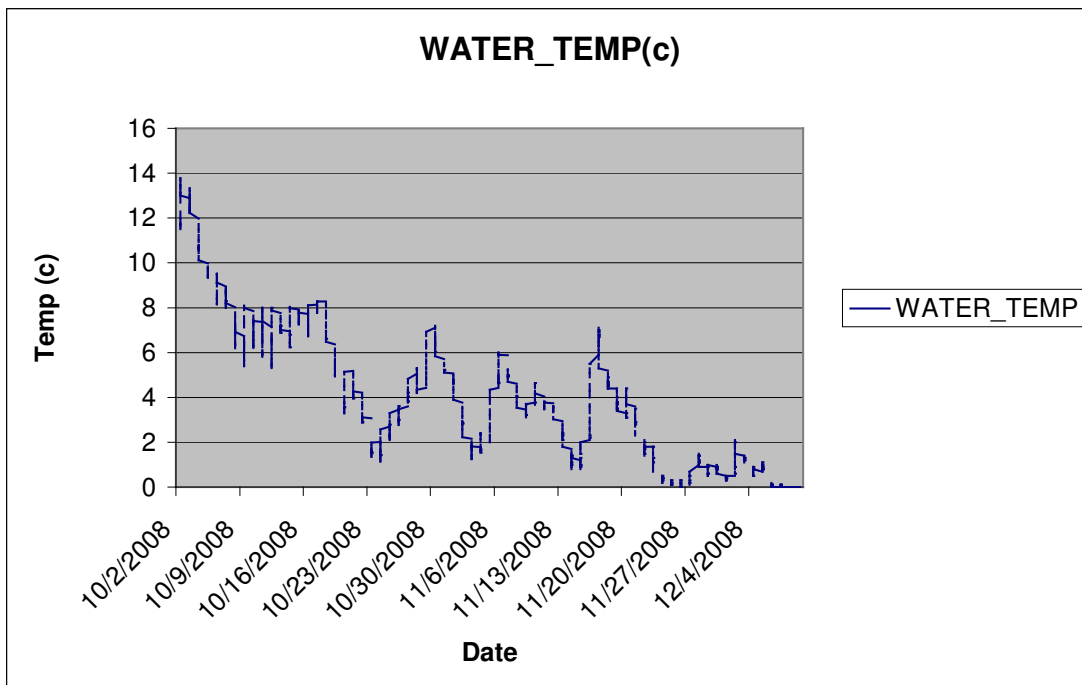


Figure 1

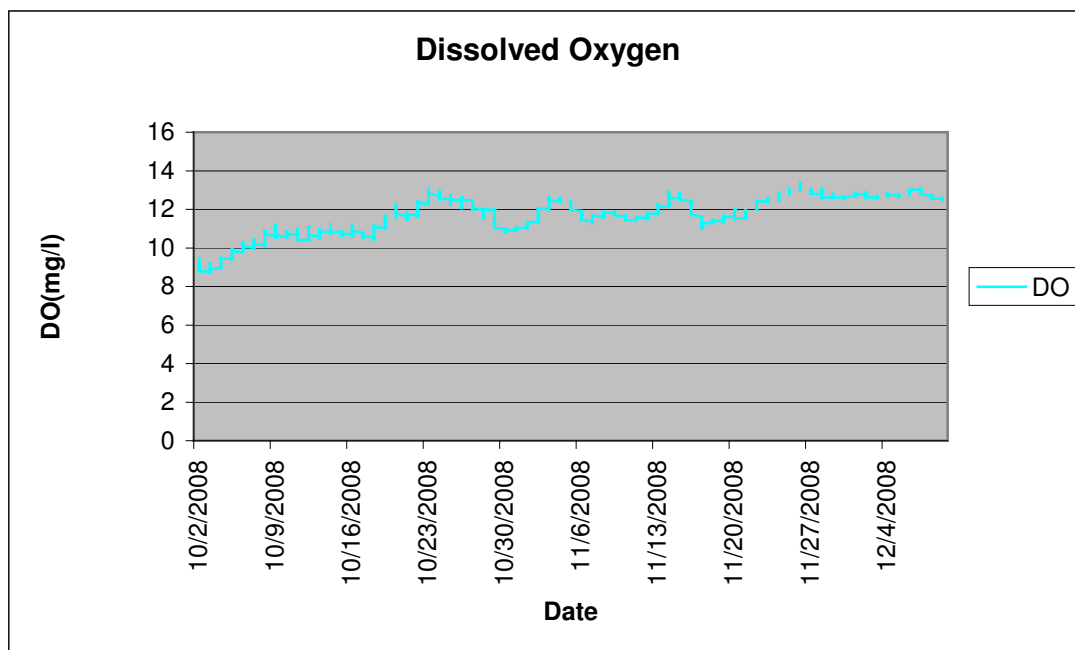


Figure 2

- The pH values (**Figure 3**) for Main River station remained fairly consistent throughout the deployment period. All pH values were slightly lower than the recommended range (6.5 – 9.0) for the CCME Protection of Aquatic Life Guidelines. Due to the pristine condition of the area upstream of this station it is likely that the low pH values are due to natural causes and they are typical of much of Newfoundland waters.

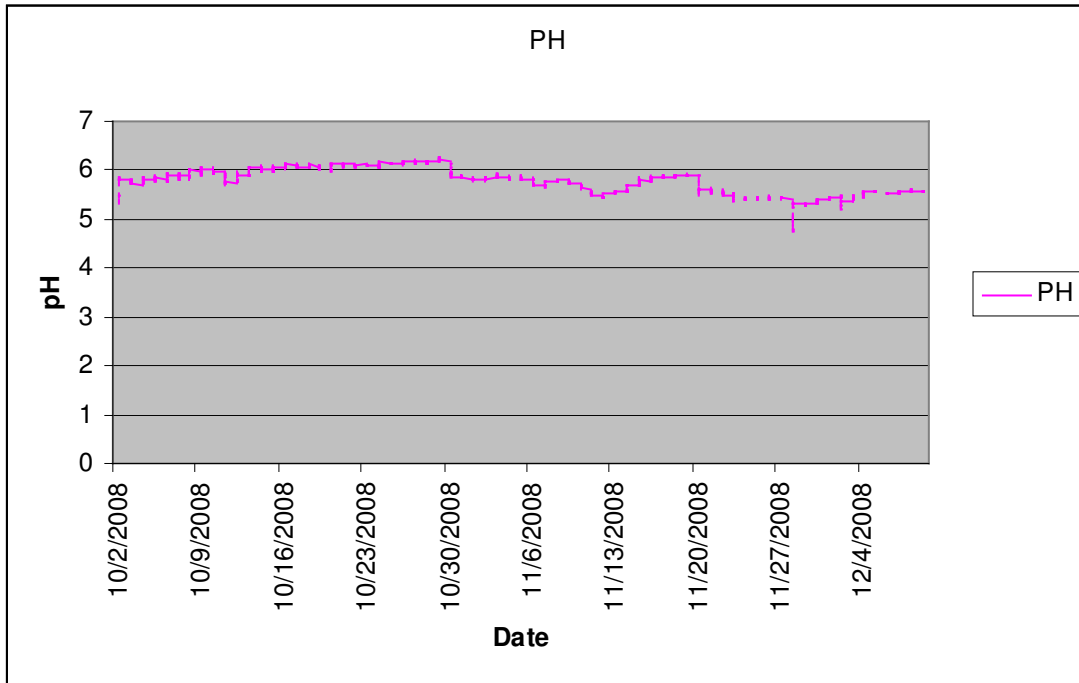


Figure 3

- There was an instrument error problem with the specific conductivity values and it was not possible to include the data in this report.
- There was a data-logging problem with the turbidity values, which make it difficult to make meaningful comments on them, and therefore they are not discussed in this deployment report.
- Stage readings (**Figure 4**) ranged from 0.595 m to 2.260 m over the deployment period and this equated to a range in flow from 4.91 m³/sec to 120 m³/sec. The stage height and corresponding flow values are typical for this station at this time of the year.

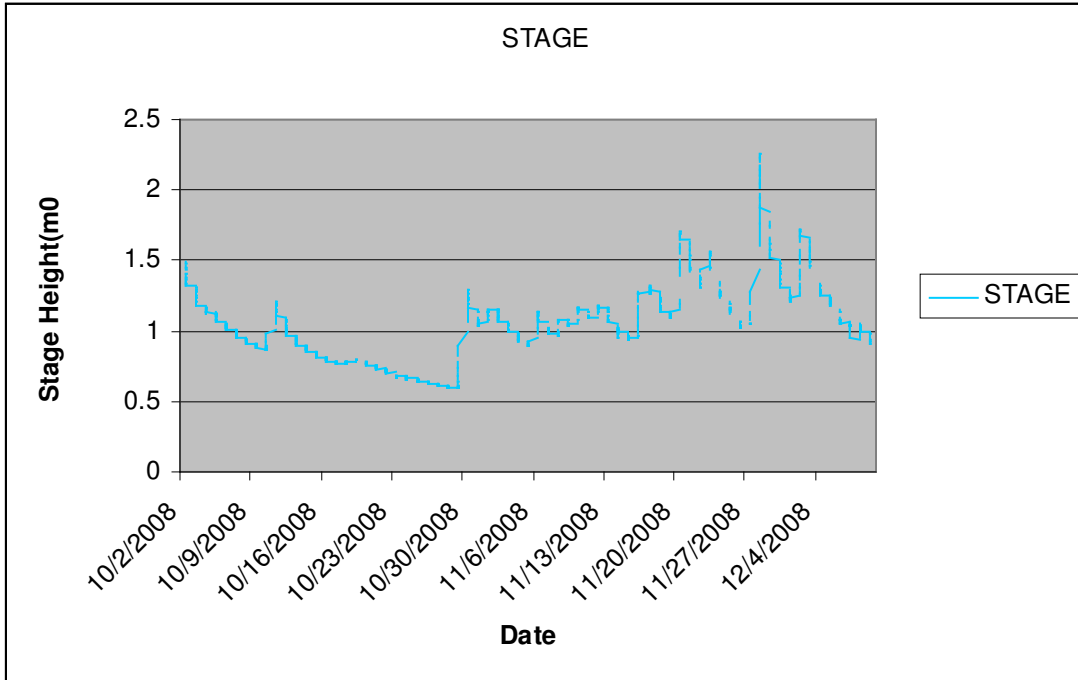


Figure 4

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