

Real Time Water Quality Monthly Report: Lower Humber River @ Humber Village Bridge November 2004

General

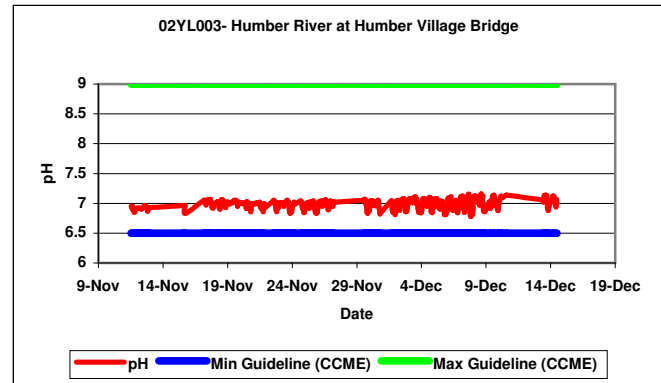
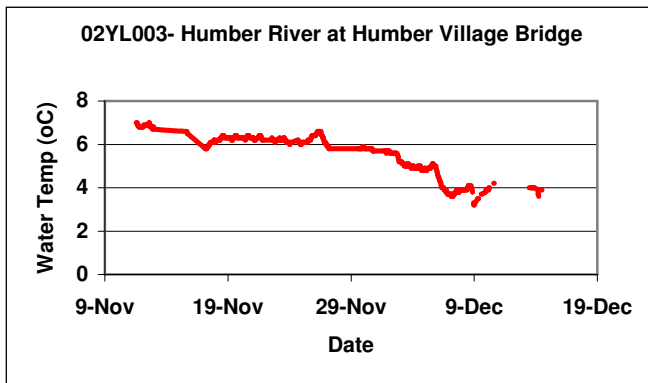
- The Water Resources Management Division staff monitor the real-time web page on a daily basis.

Maintenance and Calibration of Instrumentation

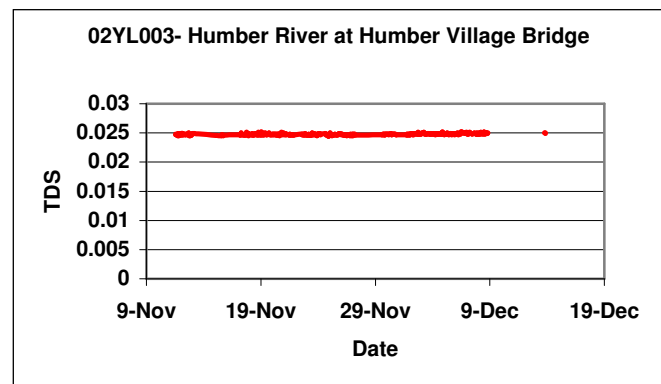
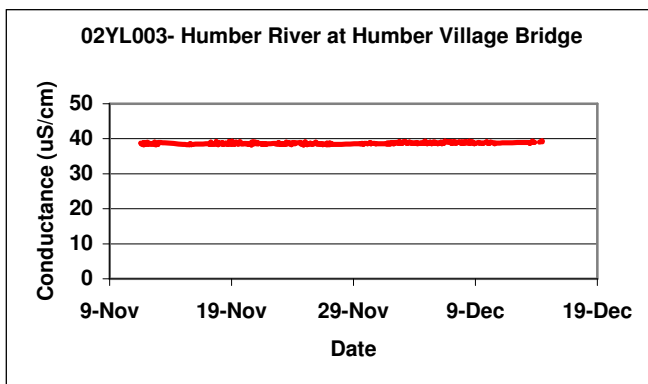
- All sensors calibrated without problem.
- Comparative water quality readings were taken with a Minisonde during the reinstallation of the Datasonde to ensure readings were correct. This procedure is also required as part of the QA/QC protocol. The Minisonde was calibrated before use.
- A water sample was taken for laboratory analysis as part of QA/QC procedures on reinstallation.

Data Interpretation

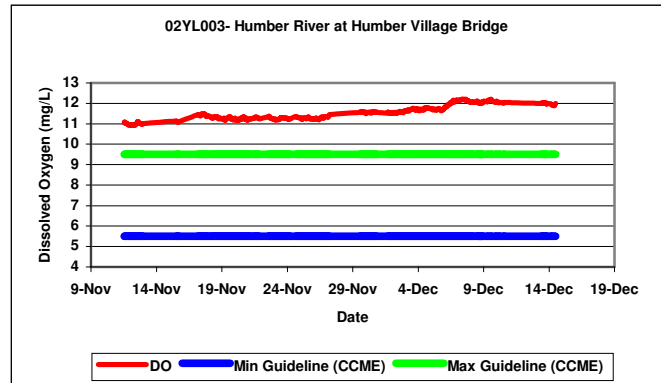
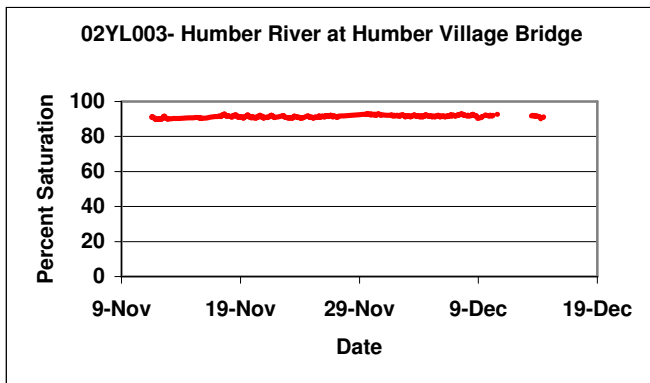
- During the period from Nov 10th, 2004 to Dec 15th, 2004 all parameters displayed normal behaviour reflective of conditions.
- Data for this period experienced both gaps (missed hourly readings) and blanks (no readings taken) due to a communication issue with the datalogger.
- Water temperature continued to decrease, coinciding with the autumnal cooling of ambient air temperature. pH displayed the usual fluctuations generally observed in pH; values were still within normal range however.
- pH fell within the CCME maximum and minimum guidelines for aquatic life.



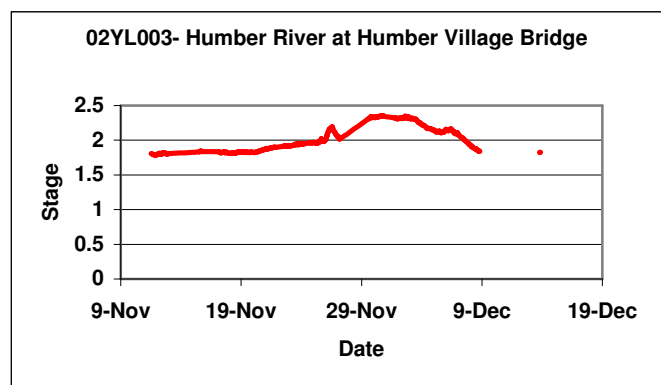
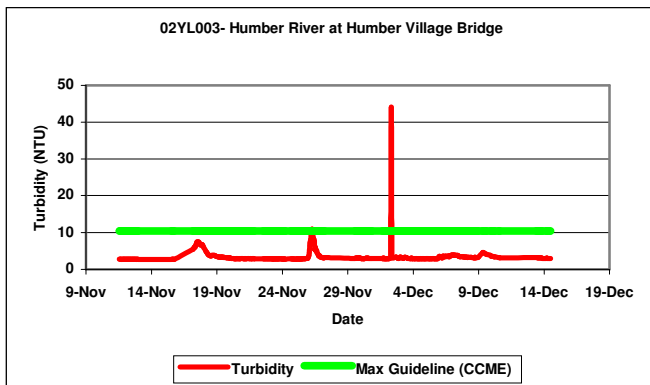
- Conductance and TDS values for this period fell within normal range for the Humber River. Both conductance and dissolved solids remained steady over this period.



- Dissolved oxygen levels increased over this period corresponding to the decrease in water temperature. Percent saturation levels also increased slightly.
- DO was above the maximum CCME guideline for dissolved oxygen, however, high DO values are normal in the Humber River especially coupled with colder water temperatures.



- Background turbidity levels stayed around 3.5 NTU throughout this entire period, except for one major peak of approximately 44 NTU and two minor peaks of around 10 NTU. The larger spike in turbidity coincides with the rise in streamflow.
- The CCME guideline for turbidity allows for an increase of 8 NTU above background levels. Background levels on the Humber River were taken as the long-term average of turbidity. Two of the observed spikes exceed the guideline.



Additional Information

- For the most part, water quality readings held steady over this period, particularly pH and conductivity. As expected, water temperature continued to decrease with the colder weather, while dissolved oxygen levels increased. There were several spikes in turbidity, the most significant of which also coincides with a rise in streamflow.
- The following table provides summary statistics on water quality parameters of the Humber River from this period.

	Temp-Water (oC)	pH	Conductance (uS/cm)	Diss-Solids (g/L)	Percent-Saturation	Diss-Oxy (mg/L)	Turbidity (NTU)
Max	7.00	6.95	38.85	0.02	98.96	13.09	44.10
Min	3.15	5.44	34.94	0.02	89.83	10.95	2.70
Average	5.53	6.25	36.83	0.02	94.81	11.99	3.49
Standard Deviation	0.99	0.42	1.00	0.00	2.29	0.60	2.15

- The following table provides long-term summary statistics on water quality parameters from the Humber River RTWQ station going back to Dec '03.

	Temp-Water		Conductance	Diss-Solids	Percent-Saturation	Diss-Oxy	Turbidity
	(oC)	pH	(uS/cm)	(g/L)		(mg/L)	(NTU)
Max	20.67	7.31	42.37	0.03	107.87	14.68	955.00
Min	-0.10	5.44	32.53	0.02	87.71	8.50	0.00
Average	7.49	6.75	36.90	0.02	97.27	11.81	2.51
Standard Deviation	5.89	0.26	2.24	0.00	3.91	1.70	11.58

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