

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

General

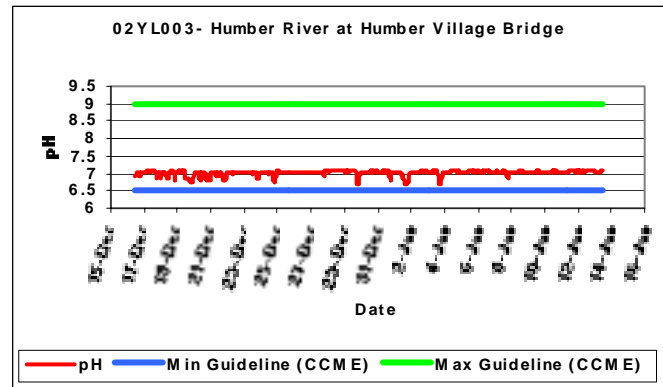
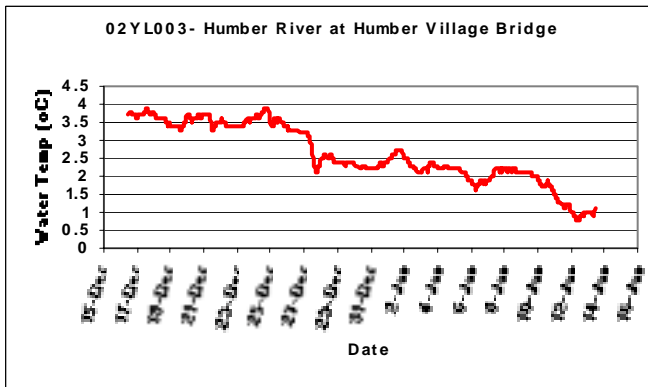
- The Water Resources Management Division staff monitor the real-time web page on a daily basis.

Maintenance and Calibration of Instrumentation

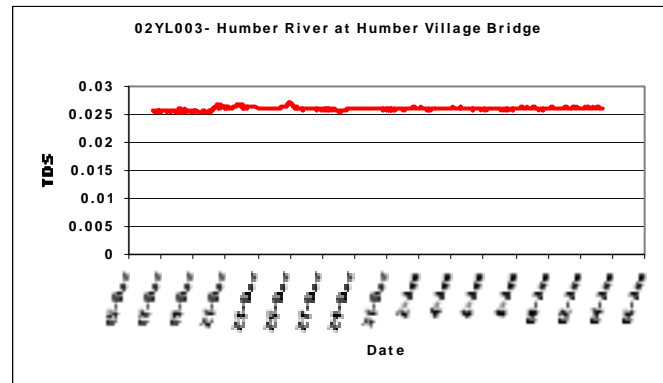
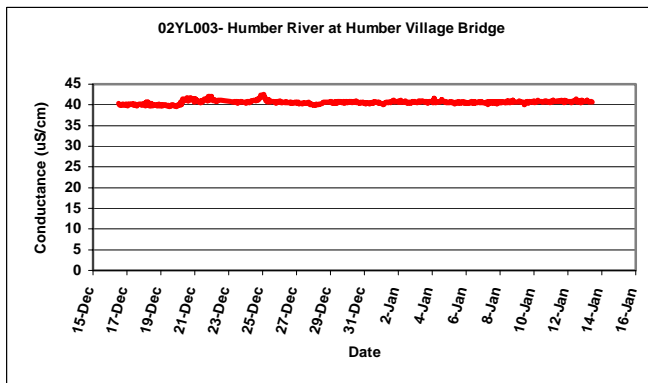
- All sensors calibrated without problem.
- Comparative water quality readings were taken with a Minisonde during the reinstallation of the Datasonde to ensure readings were correct. This procedure is also required as part of the QA/QC protocol. The Minisonde was calibrated before use.
- A water sample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

Data Interpretation

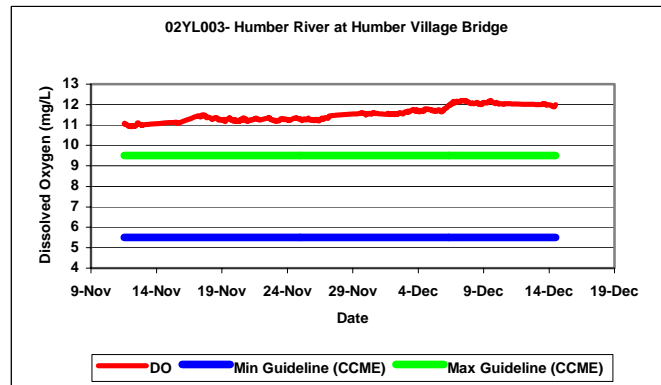
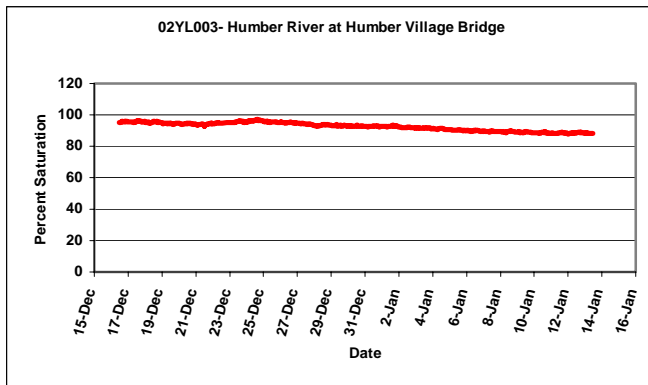
- During the period from Dec 16th, 2004 to Jan 13th, 2005 all parameters displayed normal behaviour reflective of conditions.
- Water temperature continued to decrease, coinciding with cold ambient winter air temperatures.
- pH mostly held steady in value within normal range.
- pH fell within the CCME maximum and minimum guidelines for aquatic life.



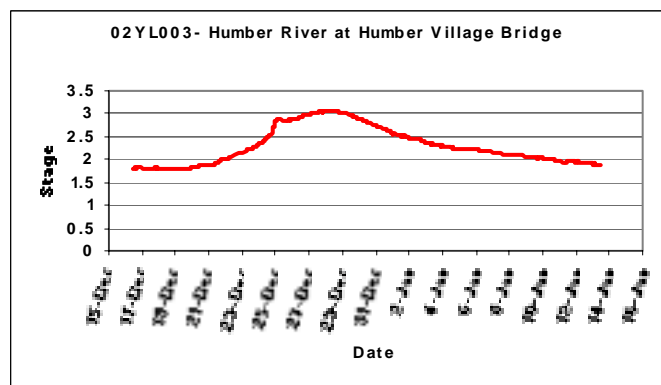
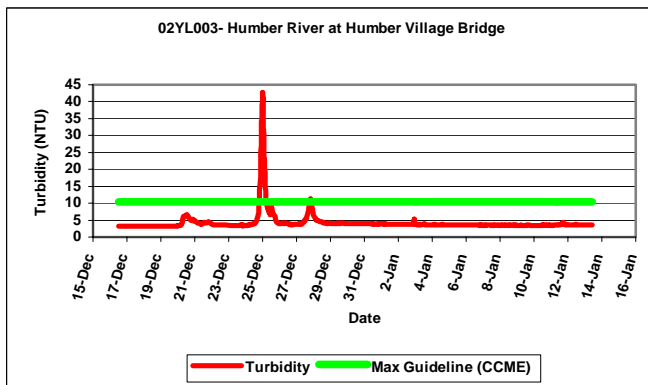
- Conductance and TDS values for this period fell within normal range for the Humber River. Both conductance and dissolved solids remained steady over this period, similar to observed pH behaviour.



- Dissolved oxygen levels increased slightly over this period corresponding to the decrease in water temperature. Percent saturation levels decreased 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 43 NTU and one minor peaks of around 11 NTU. These spikes in turbidity coincide with the rise in streamflow observed on Christmas Day due to a intense winter rainfall event.
- 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 after a Christmas Day rainstorm.
- 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	3.90	7.05	41.23	0.03	108.60	15.35	42.70
Min	0.81	6.08	36.70	0.02	95.04	12.53	3.20
Average	2.60	6.58	38.53	0.02	104.01	14.21	4.24
Standard Deviation	0.82	0.23	1.10	0.00	3.93	0.83	3.19

- 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	0.0271	108.60	15.35	955.00
Min	-0.10	5.44	32.53	0.0213	87.71	8.50	0.00
Average	7.08	6.74	37.04	0.0238	97.84	12.02	2.65
Standard Deviation	5.80	0.26	2.21	0.0013	4.34	1.77	11.13

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