

**Real Time Water Quality Deployment Report
 NF02ZK0023 - Rattling Brook below Bridge (Vale Inco)
 February - March 2008**

General

- The Water Resources Management Division staff monitors the real-time web page on a daily basis.
- Vale Inco will be informed of significant water quality events in the form of a Deployment Report.
- Deployment Report is for period February 27-March 26, 2008.

Maintenance and Calibration of Instrumentation

- WRMD staff removed the instrument at Rattling Brook on February 25th, 2008 for regular maintenance and calibration it was reinstalled on February 27th, 2008 with a clean and calibrated instrument.
- The results of comparing values from a calibrated QA instrument to the deployed instrument during removal and installation on February 25th and February 27th 2008 can be seen in **Table 1**.

Table 1: QA/QC Data Comparison Rankings upon removal on February 25th, 2008 and installation on February 27th, 2008

Station	Date	Action	Instrument Comparison Ranking			
			Temperature	pH	Conductivity	Dissolved Oxygen
Rattling Brook (Long Harbour)	Feb. 25, 2008	Removal	Excellent	Good	Excellent	Excellent
	Feb. 27, 2008	Installation	Excellent	Excellent	Good	Excellent

- The instrument was deployed until March 26th, 2008 (28-day deployment period) at which point it was removed for maintenance and calibration.
- The results of comparing values from a calibrated QA instrument to the deployed instrument values during removal on March 26th, 2008 can be seen in **Table 2**.

Table 2: QA/QC Data Comparison Rankings upon removal on March 26th, 2008

Station	Date	Action	Instrument Comparison Ranking			
			Temperature	pH	Conductivity	Dissolved Oxygen
Rattling Brook (Long Harbour)	Mar. 26, 2008	Removal	Good	Excellent	Good	Excellent

Data Interpretation

- The water temperature (**Figure 1**) remained relatively stable over the deployment period. Typical for this time of year, the temperature ranged from -0.40 to 2.77°C.

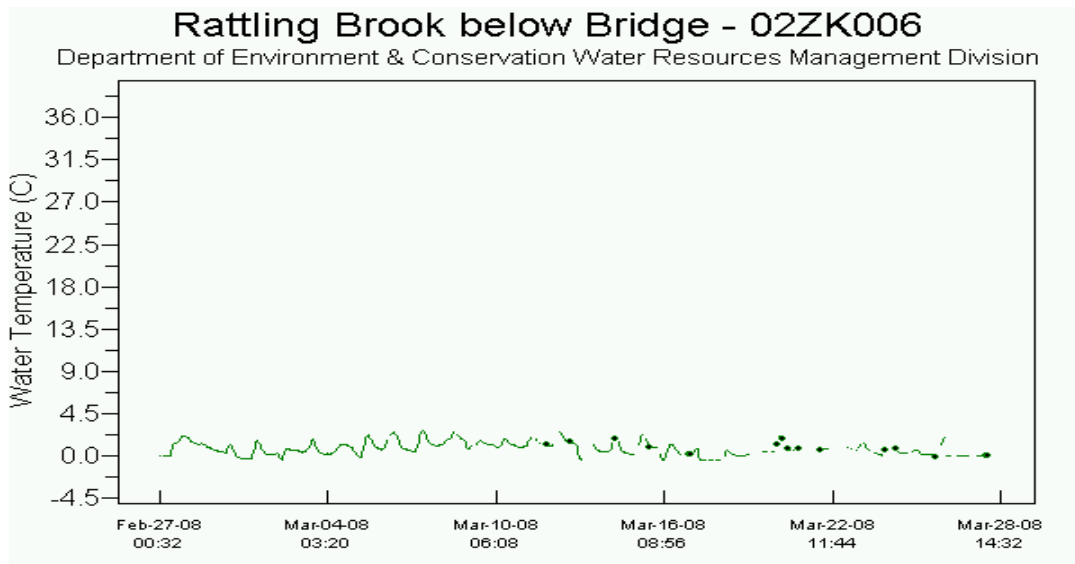


Figure 1

- The dissolved oxygen (DO) values (**Figure 2**) remained relatively stable over the deployment period. DO values ranged from 13.06 to 14.49 mg/L, all values above the most conservative values in the 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).

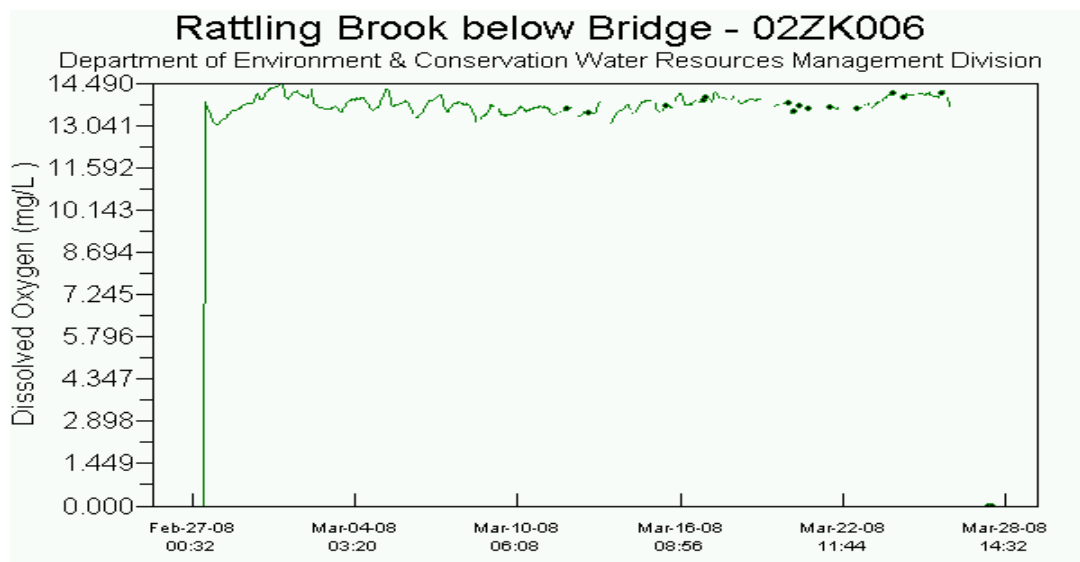


Figure 2

- The pH values (**Figure 3**) remained stable over the deployment period, ranging from 5.70 to 6.11 all below the recommended range (6.5 – 9.0) for the CCME Protection of Aquatic Life guidelines (due to the naturally acidic nature of NL waters).

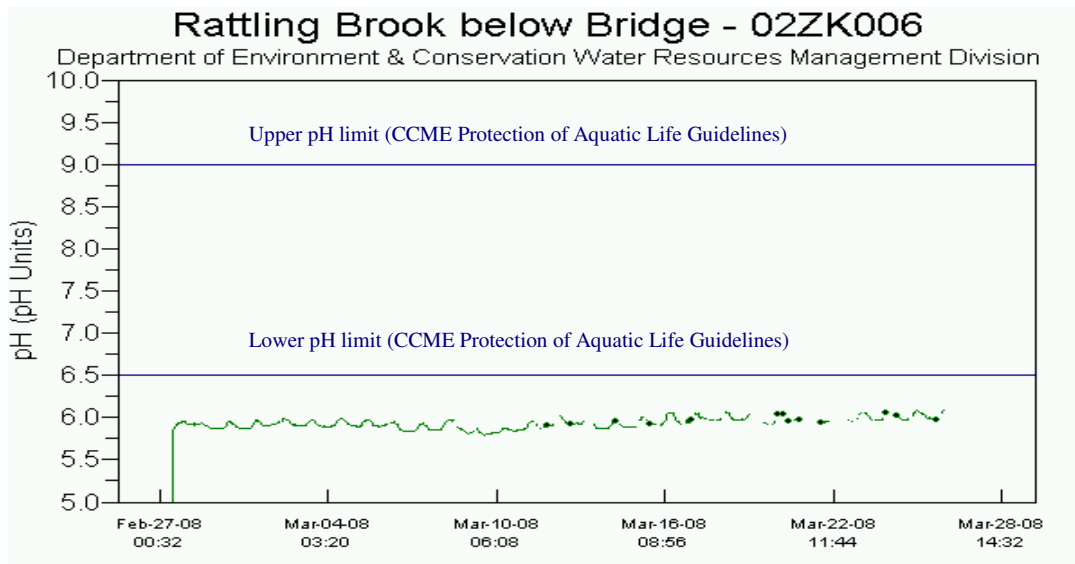


Figure 3

- The specific conductivity values (**Figure 4**) ranged from 21.6 to 32.1 μ S/cm. There was a slight decrease in values over the period.

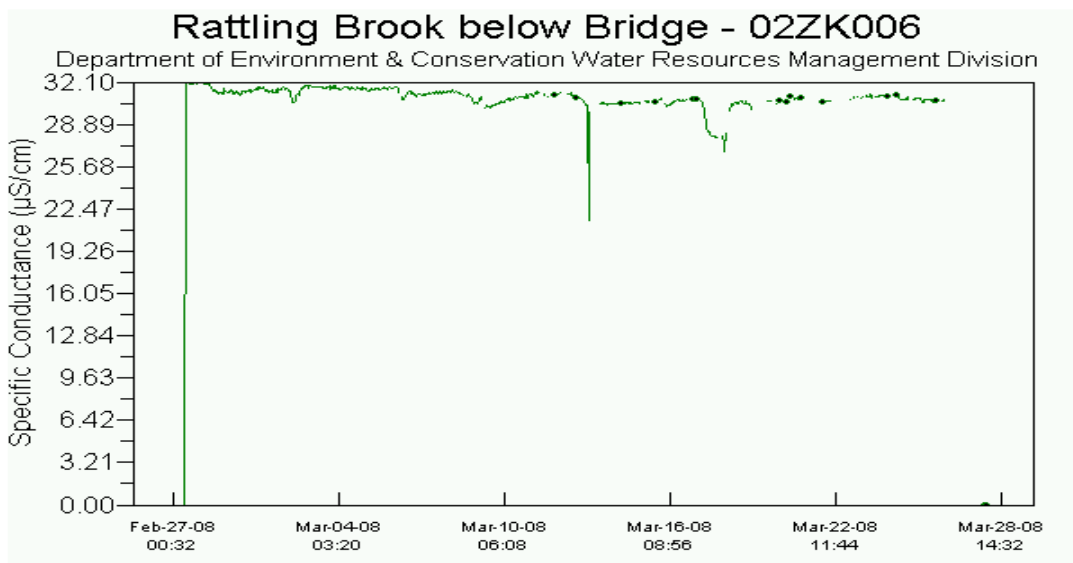


Figure 4

- Turbidity values (**Figure 5**) were mostly recorded at zero NTU during the deployment period. One reading, possibly due to interference on March 3 was recorded at 963 NTU with surrounding values at 0 NTU.

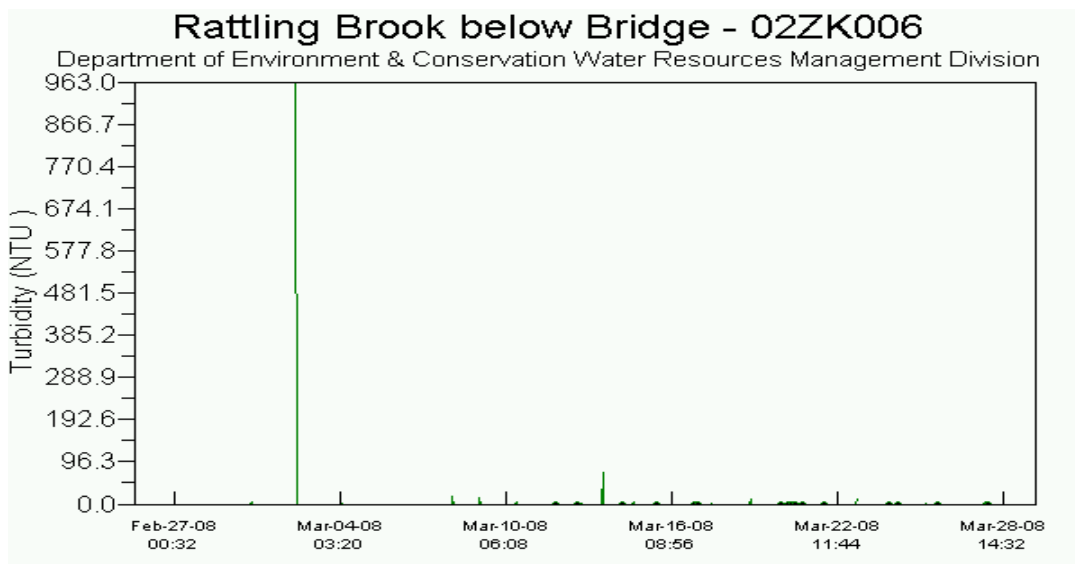


Figure 5

- Stage values (**Figure 6**) ranged from 1.577 to 1.899m during the deployment period. Stage values were variable coinciding with precipitation events (see **Appendix A** for climatological data).

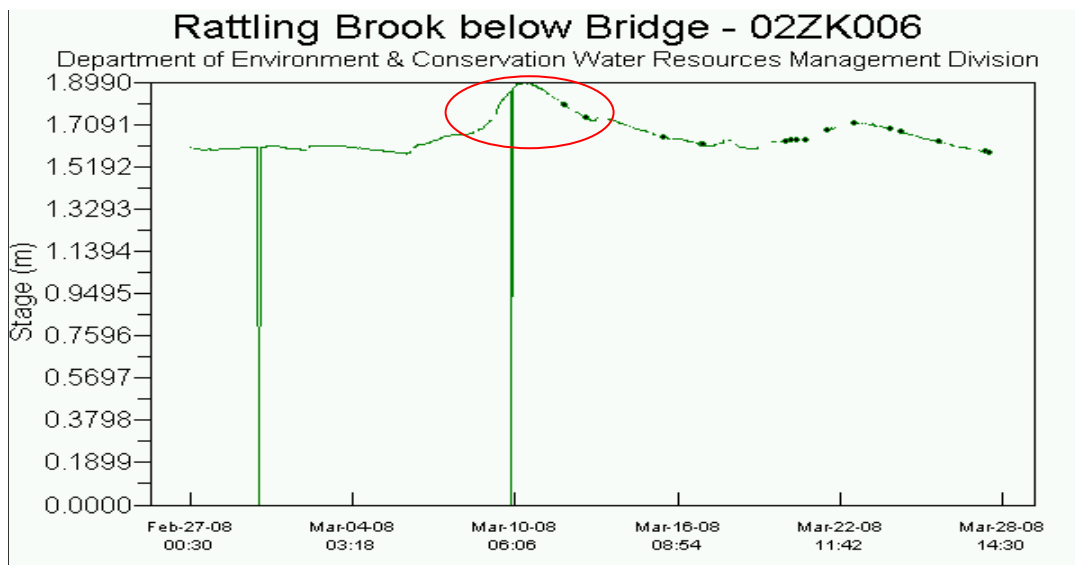


Figure 6

Prepared by: Michael Colbert
 Engineer 1
 Department of Environment and Conservation
 Phone: (709) 729-1681
 Fax: (709) 729-0320
 E-mail: michaelcolbert@gov.nl.ca

Appendix A – Climate Data for Argentina, NL (February – March, 2008)

Daily Data Report for February 2008											
Day	Max Temp °C	Min Temp °C	Mean Temp °C	Heat Deg Days °C	Cool Deg Days °C	Total Rain mm	Total Snow cm	Total Precip mm	Snow on Grnd cm	Dir of Max Gust 10's Deg	Spd of Max Gust km/h
01†	-1.7	-5.2	-3.5	21.5	0.0	M	M	0.0		27	48
02†	3.4	-6.4	-1.5	19.5	0.0	M	M	6.3		14	74
03†	0.3	-5.0	-2.4	20.4	0.0	M	M	0.0		25	72
04†	-4.1	-6.3	-5.2	23.2	0.0	M	M	0.0		33	44
05†	-4.6	-8.4	-6.5	24.5	0.0	M	M	0.0		33	39
06†	-0.6	-6.7	-3.7	21.7	0.0	M	2.0	0.6		13	44
07†	-1.0	-4.3	-2.7	20.7	0.0	M	M	0.7	2	35	50
08†	-1.2	-4.4	-2.8	20.8	0.0	M	M	0.0		3	50
09†	0.3	-4.4	-2.1	20.1	0.0	M	M	0.0		33	37
10†	-1.8	-6.9	-4.4	22.4	0.0	0.0	8.0	3.5		9	65
11†	2.4	-3.4	-0.5	18.5	0.0	M	M	2.1	4	24	98
12†	-0.7	-4.2	-2.5	20.5	0.0	M	M	0.0	4	26	96
13†	-1.4	-4.6	-3.0	21.0	0.0	M	M	0.0	4	32	39
14†	9.4	-1.4	4.0	14.0	0.0	M	M	48.0		19	115
15†	1.5	-1.7	-0.1	18.1	0.0	M	M	0.0		22	48
16†	1.6	-10.7	-4.6	22.6	0.0	M	M	0.0		29	57
17†	-7.5	-12.1	-9.8	27.8	0.0	M	M	0.0		28	54
18†	8.0	-7.7	0.2	17.8	0.0	M	M	10.6		20	93
19†	9.4	0.0	4.7	13.3	0.0	0.0	24.0	15.0		20	111
20†	1.3	-1.7	-0.2	18.2	0.0	M	M	0.0		24	82
21†	-0.5	-8.0	-4.3	22.3	0.0	M	M	0.0		27	78
22†	-4.7	-8.8	-6.8	24.8	0.0	M	1.0	0.0		28	70
23†	-3.2	-6.2	-4.7	22.7	0.0	0.0	9.0	9.3	1	4	61
24†	-2.5	-8.5	-5.5	23.5	0.0	M	M	0.0		24	48
25†	-0.1	-2.7	-1.4	19.4	0.0	M	M	0.0	7	25	50
26†	1.1	-2.6	-0.8	18.8	0.0	M	M	0.0	7		<31
27†	8.8	-2.1	3.4	14.6	0.0	0.0	M	2.7	6	20	91
28†	3.5	-1.7	0.9	17.1	0.0	M	M	0.0		21	48
29†	-1.6	-10.9	-6.3	24.3	0.0	M	M	0.0		34	37
Sum				594.1	0.0	0.0*	44.0*	98.8			
Avg	0.5	-5.4	-2.47								

Daily Data Report for March 2008

D a y	Max Temp °C 	Min Temp °C 	Mean Temp °C 	Heat Deg Days °C 	Cool Deg Days °C 	Total Rain mm 	Total Snow cm	Total Precip mm 	Snow on Grnd cm 	Dir of Max Gust 10's Deg	Spd of Max Gust km/h
01†	-2.1	-12.1	-7.1	25.1	0.0	M	M	0.0		14	59
02†	3.4	-2.2	0.6	17.4	0.0	M	M	12.5		14	85
03†	-0.9	-3.6	-2.3	20.3	0.0	M	M	0.0	1	30	54
04†	2.7	-4.0	-0.7	18.7	0.0	M	M	0.0		20	70
05†	0.9	-5.7	-2.4	20.4	0.0	M	M	0.0		12	87
06†	9.5	-2.3	3.6	14.4	0.0	M	M	12.9		19	82
07†	0.0	-4.4	-2.2	20.2	0.0	M	M	0.0		34	33
08†	9.8	-3.6	3.1	14.9	0.0	M	M	13.3		20	80
09†	3.9	-2.8	0.6	17.4	0.0	M	M	25.2		22	69
10†	0.1	-8.8	-4.4	22.4	0.0	M	M	0.8		36	50
11†	-2.3	-8.4	-5.4	23.4	0.0	M	M	0.0		26	44
12†	1.0	-2.9	-1.0	19.0	0.0	M	M	0.0		12	54
13†	3.3	-5.6	-1.2	19.2	0.0	0.0	M	14.8	20	11	93
14†	-0.8	-8.8	-4.8	22.8	0.0	M	M	0.0	2	30	78
15†	-3.9	-9.0	-6.5	24.5	0.0	M	M	0.0	2	7	41
16†	-4.2	-9.3	-6.8	24.8	0.0	M	M	3.7	2	4	74
17†	-1.7	-8.5	-5.1	23.1	0.0	M	M	9.1	2	4	106
18†	0.0	-1.7	-0.9	18.9	0.0	0.0	M	3.3	2	3	100
19†	1.0	-1.0	0.0	18.0	0.0	0.0	M	15.9		2	72
20†	0.7	-2.7	-1.0	19.0	0.0	M	M	0.0	5		<31
21†	4.9	-1.2	1.9	16.1	0.0	M	M	10.0		13	80
22†	1.8	-2.3	-0.3	18.3	0.0	M	M	3.1		21	54
23†	-1.1	-3.7	-2.4	20.4	0.0	M	M	2.7		25	76
24†	-1.8	-4.1	-3.0	21.0	0.0	M	M	2.0		24	74
25†	-4.0	-7.2	-5.6	23.6	0.0	0.0	M	1.5		4	39
26†	-3.4	-9.9	-6.7	24.7	0.0	M	M	0.0		34	44
27†	1.2	-3.9	-1.4	19.4	0.0	M	M	0.6		16	70
28†	1.4	-2.3	-0.5	18.5	0.0	M	M	0.0		25	46
29†	0.3	-4.9	-2.3	20.3	0.0	0.0	M	1.9		4	44
30†	-1.3	-7.2	-4.3	22.3	0.0	0.0	M	3.0		2	57
31†	-4.2	-9.7	-7.0	25.0	0.0	M	M	0.0		1	52
Sum				633.5	0.0	0.0*	M	136.3			
Avg	0.5	-5.3	-2.41								
Xtrm	9.8	-12.1								4	106