

**Real Time Water Quality Monthly Report
Come by Chance River
June 2007—July 2007**

General

- The Water Resources Management Division staff monitors the real-time web page on a daily basis.
- Newfoundland and Labrador Refining Company will be informed of any significant water quality events in the future in the form of a monthly report.
- The initial installation of the RTWQ instrumentation at Come by Chance River occurred on June 11th, 2007.

Maintenance and Calibration of Instrumentation

- Due to a communications error, data was not transmitted from the station until June the 18th, 2007. The datalogger was logging data from the point of installation, however, and this data was obtained in order to perform QA/QC for the installation of the Datasonde (see **Table 1**).
- Because data from the Datasonde was not available upon installation, the poor results of the QA/QC were not apparent at the time. Given the results of the QA/QC at the removal of the Datasonde (see **Table 2**), it seems highly likely that there was a problem with the Minisonde QA/QC instrument that was used for field readings on the day of installation.

Table 1: QA/QC Data Comparison Rankings upon reinstallation on June 11th, 2007

Station	Date	Action	Minisonde vs. Datasonde Comparison Ranking			
			Temperature	pH	Conductivity	Dissolved Oxygen
Come by Chance River	June 11 th	Installation	Poor	Good	Poor	Fair

- The Come by Chance instrument was deployed until July 12th, 2007 (32-day deployment period) at which point it was removed for maintenance and calibration.

Table 2: QA/QC Data Comparison Rankings upon removal on July 12th, 2007

Station	Date	Action	Minisonde vs. Datasonde Comparison Ranking			
			Temperature	pH	Conductivity	Dissolved Oxygen
Come by Chance River	July 12 th	Removal	Good	Excellent	Good	Excellent

Data Interpretation

- This monthly report interprets the data from the Come by Chance River RTWQ station for the period of June 11th, 2007 – July 12th, 2007. Only the data that was obtained via satellite was used for the graphs in this report. The period between June 11th and June 18th is not included.
- The water temperature (**Figure 1**) readings for Come by Chance River remained fairly consistent over the deployment period. Values were as expected at this time of the year with a temperature range of 13.2– 22.54°C.

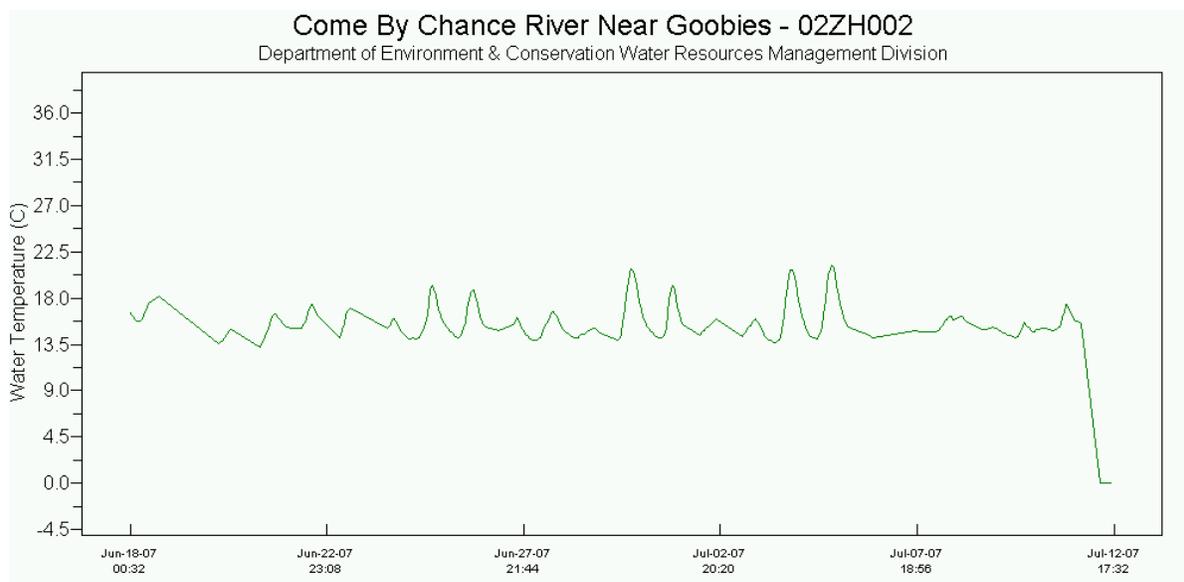


Figure 1

- The dissolved oxygen values (**Figure 2**) remained fairly consistent over the deployment period with a slight decrease in values towards the end of the period. The dissolved oxygen values ranged from 8.76 mg/L to 10.15 mg/L. Most of these values fall 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). Some values fell below the most conservative CCME guideline of 9.5 mg/L.

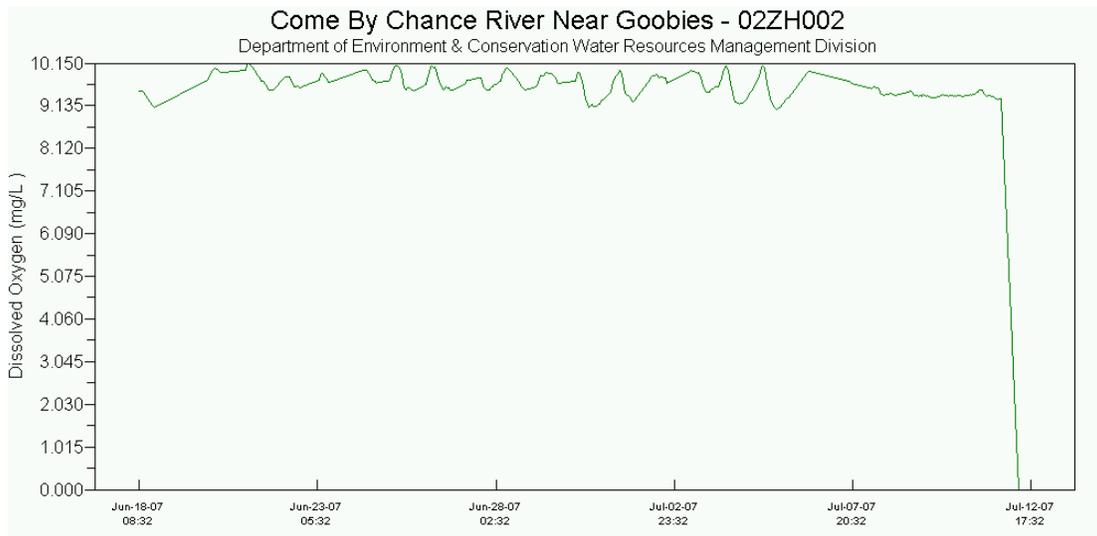


Figure 2

- The pH values (**Figure 3**) for Come by Chance River remained consistent throughout the deployment period. The pH values ranged from 6.39 – 7.5 with the majority of values falling within the recommended range (6.5 – 9.0) for the CCME Protection of Aquatic Life guidelines.

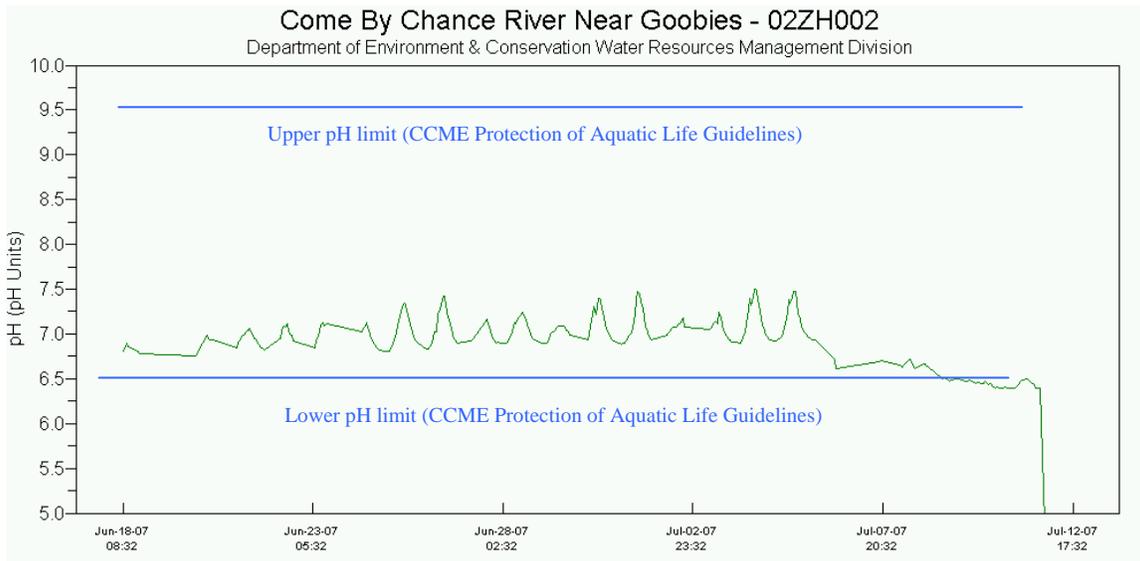


Figure 3

- The specific conductivity values (**Figure 4**) remained fairly consistent throughout the deployment period with a gradual increase to a maximum of 106.2 $\mu\text{S}/\text{cm}$. There was sharp decline in conductivity values prior to removal of the Datasonde, which was likely a result of increased flow due to increased precipitation. Values ranged from 54.7– 106.2 $\mu\text{S}/\text{cm}$.

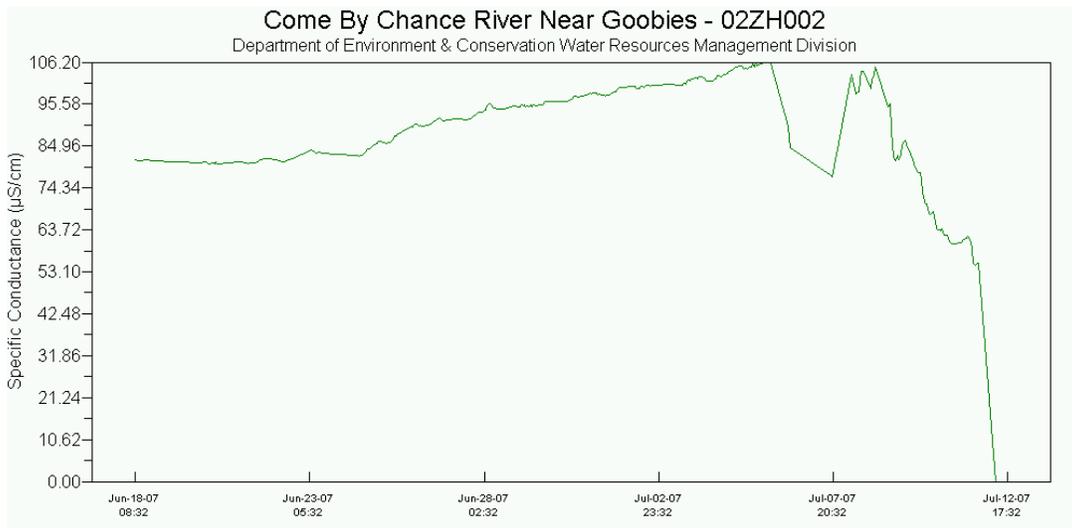


Figure 4

- . The turbidity values (**Figure 5**) remained at 0 NTU throughout the deployment period.

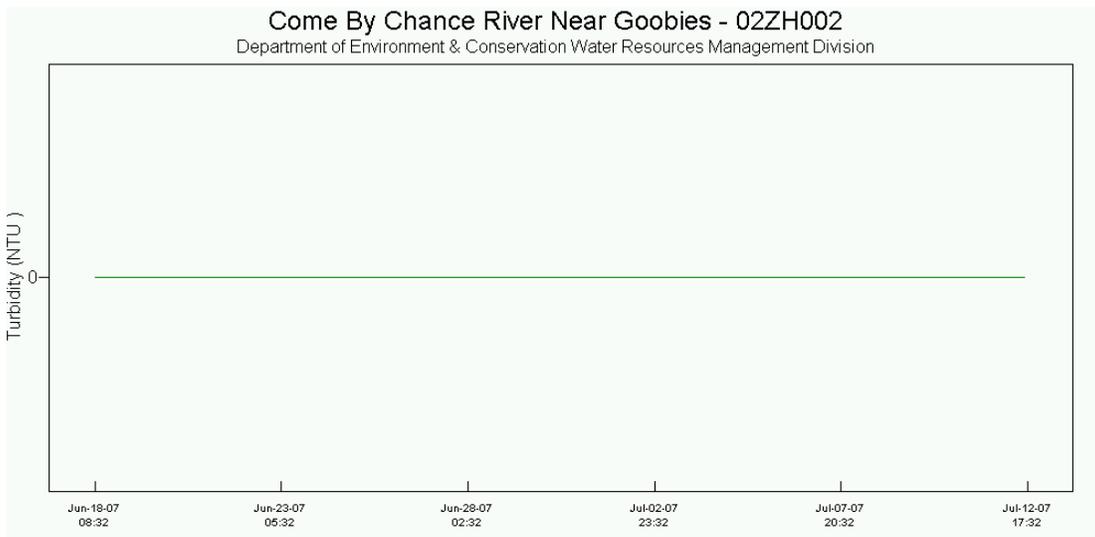


Figure 5

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Appendix A – Installation Pictures



The station hut



Site location – Datasonde is placed roughly midstream



View of river from the hut



Image of conduit running down bank to Datasonde

Daily Data Report for July 2007

<u>D</u> <u>a</u> <u>y</u>	<u>Max</u> <u>Temp</u> °C 	<u>Min</u> <u>Temp</u> °C 	<u>Mean</u> <u>Temp</u> °C 	<u>Heat Deg</u> <u>Days</u> C 	<u>Cool Deg</u> <u>Days</u> C 	<u>Total</u> <u>Rain</u> mm	<u>Total</u> <u>Snow</u> cm	<u>Total</u> <u>Precip</u> mm 	<u>Snow on</u> <u>Grnd</u> cm	<u>Dir of Max</u> <u>Gust</u> 10's Deg	<u>Spd of Max</u> <u>Gust</u> km/h
<u>01</u> †	11.8	7.6	9.7	8.3	0.0	M	M	0.7		21	39
<u>02</u> †	14.3	7.6	11.0	7.0	0.0	M	M	0.0			<31
<u>03</u> †	10.7	7.3	9.0	9.0	0.0	M	M	0.0			<31
<u>04</u> †	12.9	7.6	10.3	7.7	0.0	M	M	0.0		22	39
<u>05</u> †	14.2	8.4	11.3	6.7	0.0	M	M	0.0		23	46
<u>06</u> †	15.8	11.7	13.8	4.2	0.0	M	M	50.7		21	70
<u>07</u> †	16.2	9.5	12.9	5.1	0.0	M	M	24.8		20	61
<u>08</u> †	12.8	9.5	11.2	6.8	0.0	M	M	2.0		20	44
<u>09</u> †	12.8	8.0	10.4	7.6	0.0	M	M	13.1		4	37
<u>10</u> †	13.0	7.9	10.5	7.5	0.0	M	M	0.0		21	32
<u>11</u> †	14.7	9.5	12.1	5.9	0.0	M	M	0.0		21	32
<u>12</u> †	18.2	9.6	13.9	4.1	0.0	M	M	0.0		23	32
<u>13</u> †	19.0	11.2	15.1	2.9	0.0	M	M	2.6		21	48
<u>14</u> †	14.5	11.2	12.9	5.1	0.0	M	M	0.0		20	35
<u>15</u> †	18.5	11.6	15.1	2.9	0.0	M	M	0.0		20	33
<u>16</u> †	19.8	12.3	16.1	1.9	0.0	M	M	9.1		20	44
Sum				92.7*	0.0*	M	M	103.0*			
Avg	15*	9.4*	12.2*								
Xtrm	19.8*	7.3*								21*	70*