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REPORT ON

2005 GROUNDWATER MONITORING PROGRAM
COMMUNAL SEWAGE WORKS
NATION MUNICIPALITY
FOURNIER, ONTARIO

Submitted to:

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EXECUTIVE SUMMARY

The following Executive Summary highlights key points of the report only; for complete information, as well as limitations, it is necessary for the reader to examine the complete report.

The following report presents the results of the 2005 groundwater monitoring program at the Fournier communal sewage system located on part of Lot 1, Concession XIII, in the geographic Township of South Plantagenet, near the Village of Fournier, in The Nation Municipality, Ontario. The objectives of the 2005 monitoring program were: 1) to further define the baseline groundwater quality at the site; and 2) to provide an assessment of the Fournier Sewage System with respect to the site-specific trigger mechanisms and background groundwater quality. The Ministry of the Environment issued an amendment to the Certificate of Approval for the Fournier Septic System on December 23, 2003. Under the amended Certificate of Approval No. 1128-5S6KLC, the required groundwater monitoring program for the Fournier Sewage System consists of quarterly sampling sessions at upgradient groundwater monitoring locations MW99-6 and MW99-7 and at downgradient locations MW99-1, MW99-2 and MW99-3. Annual sampling and groundwater level measurements are also required at downgradient monitoring locations MW99-4 and MW99-5, and at reasonable use location MW99-8.

Groundwater elevation data indicates that the direction of shallow groundwater flow on the site is to the north. Based on these data, the shallow average linear groundwater flow velocity is estimated to be between 1.3 and 2.2 metres per year in 2005. Historically, the calculated flow velocity has ranged from 1 to 4 metres per year.

The following points summarize the interpretation of groundwater quality downgradient of the sewage system:

- Groundwater monitor MW99-1 (located approximately 5 metres downgradient of the sewage system) is interpreted to have been impacted by septic effluent since the end of 2001 based on elevated concentrations of typical sewage effluent parameters. The interpretation is supported by calculated average linear groundwater velocities.

- Groundwater monitor MW99-2 (located approximately 30 metres downgradient of the sewage system) is interpreted to have been impacted by septic effluent since the end of 2003 based on elevated concentrations of nitrate, and increasing conductivity and chloride values. The interpretation is not supported by calculated average linear groundwater velocities, however local variations in subsurface materials and hydrodynamic dispersion may explain the arrival of sewage effluent at this monitor earlier than expected.

- A number of parameters are elevated with respect to defined background groundwater quality in groundwater monitors MW99-4, MW99-5, and MW99-8 (located approximately 130 metres, 130 metres, and 270 metres downgradient, respectively). The elevated concentrations of these parameters are not related to impact by effluent from the sewage system.

Estimated average linear groundwater velocities suggest that the sewage-impacted groundwater may not reach MW99-3 for another 2 years (2007), and MW99-4 and MW99-5 for another 27 years (2032).

A new trigger mechanism and contingency plan does not need to be produced until the effluent impacted groundwater is one year from arriving at groundwater monitors MW99-4 and MW99-5. Since the effluent impacted groundwater is not expected to reach MW99-4 and MW99-5 for another 27 years, a new site specific trigger mechanism and contingency plan is not required at this time, and the Fournier Sewage System is in compliance in terms of effects on groundwater.

Sewage effluent impacts have not been detected at MW99-8, and are not expected to occur at MW99-8 until approximately 2067. Therefore, the Fournier Communal Sewage Works in compliance with MOE Guideline B-7.

Given that impacts due to the sewage works at MW99-4 and MW99-5 are not expected to occur until 2032, and impacts at the "Reasonable Use Monitor" (MW99-8) are not expected to occur until approximately 2067, a reduction of the monitoring program to annual monitoring at all groundwater monitors is recommended.

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1.0 INTRODUCTION

This report presents the results of the 2005 groundwater monitoring program at the Fournier Communal Sewage Works. The sewage works is located on part of Lot 1, Concession XIII, in the geographic Township of South Plantagenet, near the Village of Fournier, in The Nation Municipality, Ontario (Figure 1). It is understood that the sewage works became operational in November or December 2000.

In 2000, Golder Associates Ltd. (Golder) conducted a borehole drilling and groundwater monitor installation program at the communal sewage works. The investigation included the drilling of eight boreholes and the installation of eight groundwater monitors (MW99-1 through MW99-8), as illustrated in Figure 2. For the purpose of defining the baseline groundwater quality at the Fournier sewage system site, monthly groundwater sampling and analysis was completed from August to December 2000. The results of this monitoring program are summarized in Golder Associates (2001).

In 2001, 2002 and 2003, Golder conducted groundwater monitoring programs that included monthly sampling from all eight groundwater monitors from January to December of each year. The results of these monitoring programs are summarized in Golder Associates (2002), Golder Associates (2003) and Golder Associates (2004), respectively. Beginning in 2004, the monitoring program frequently was reduced to quarterly. The main observations noted in the most recent 2004 Monitoring Report were as follows:

- Analytical results for the background monitors (MW99-6 and MW99-7) in 2004 were similar to those in reported in 2003, with chloride and conductivity increasing in both monitors through 2004;

- Groundwater monitor MW99-1 was the only monitor interpreted to be potentially impacted by the septic system. This groundwater monitor was interpreted to have become impacted at the end of 2001, based on increased concentrations of chloride, conductivity, and nitrate;

- Elevated concentrations of ammonia, bromide, chloride, conductivity, and DOC have been consistently reported in groundwater monitor MW99-4 compared to background concentrations;

- Seasonally elevated concentrations of bromide, chloride, and conductivity were reported in groundwater monitor MW99-5 compared to background concentrations;

- Elevated concentrations of ammonia, bromide, chloride, conductivity, DOC, nitrate, nitrite, sulphate, and TKN have been consistently reported in MW99-8 compared to background concentrations; and,

- The elevated concentrations of parameters in any groundwater monitors other than MW99-1 are not interpreted to be related to septic system impact.

1.1 Certificate of Approval

The Ministry of the Environment issued a Certificate of Approval (C of A) for the Fournier Sewage Works on December 23, 2003 (Appendix A), which replaced a previous C of A. The C of A includes a monitoring program and a new site specific trigger mechanism. Under C of A No. 1128-5S6KLC, the required groundwater monitoring program for the Fournier Sewage System includes:

- quarterly sampling sessions at upgradient monitoring locations MW99-6 and MW99-7;

- quarterly sampling sessions at downgradient locations MW99-1, MW99-2 and MW99-3; and,

- annual sampling and groundwater level measurements at downgradient monitoring locations MW99-4 and MW99-5, and at reasonable use location MW99-8.

Completion of this monitoring report satisfies Condition 7 (b) and (c) of the amended C of A.

1.2 2005 Monitoring Program

The objectives of the 2005 monitoring program were as follows:

- To further define the baseline groundwater quality at the site; and,

- To provide an assessment of the impact of the Fournier Communal Sewage System on groundwater with respect to the site-specific trigger mechanisms and background quality as measured in MW99-6 and MW99-7.

2.0 FIELD PROCEDURES

The groundwater monitoring sessions were conducted quarterly in March, June, August and October of 2005. Five groundwater monitors were sampled quarterly: MW99-1, MW99-2, MW99-3, MW99-6 and MW99-7. Monitor MW99-7 was found to require repair in March 2005 and could not be sampled. Groundwater monitors MW99-4, MW99-5 and MW99-8 were sampled annually, in August 2005. Groundwater levels at each of the monitoring locations were measured during each monitoring session. The groundwater monitors were then developed by the removal of at least three standing volumes of water using dedicated samplers. Sampling of groundwater using the dedicated samplers was performed in all groundwater monitors immediately after development.

The temperature, pH, and conductivity of groundwater were measured in the field at the time of sampling. Field conductivity and pH measurements were obtained using meters calibrated in the field prior to use. All samples were entered on a Chain of Custody Form and placed in coolers with ice packs and sent via courier to Accutest Laboratories Ltd. in Ottawa, Ontario for analysis of ammonia, bromide, chloride, dissolved organic carbon (DOC), *Escherichia coli* (*E.-coli*), fluoride, nitrate, nitrite, sulphate, and total kjeldahl nitrogen (TKN). In addition, samples collected from MW99-4 and MW99-5 were analyzed for total phosphorus and dissolved reactive phosphorous (DRP).

The groundwater samples collected for the specific analyses were collected, prepared, and preserved in the field using the following protocols:

Analytical Parameters	Preparation and Preservation Protocols
E.-coli	Plastic bottle, unfiltered, preserved with $Na_2S_2O_3$
Sulphate, nitrate, nitrite, chloride, bromide, fluoride	Plastic bottle, unfiltered, unpreserved
DOC	Amber glass bottle with teflon lined cap, unfiltered, preserved to pH<2 with sulphuric acid
DRP	Plastic bottle, field filtered, unpreserved
TKN, total phosphorous, ammonia	Plastic bottle, unfiltered, preserved to pH<2 with sulphuric acid

3.0 GEOLOGICAL CONDITIONS

The geological conditions encountered during the 2000 borehole drilling and groundwater monitor installation program are shown on the Record of Boreholes in Appendix B. Details of the groundwater monitor installations for each of the boreholes are also included in the Record of Boreholes in Appendix B. It should be noted that the boundaries between strata on the Record of Borehole Sheets have been inferred from observations during drilling and non-continuous sampling; as such, their positions should be considered as transitional in nature rather than as an exact plane of geological change. Natural variations other than those encountered in the boreholes are expected to exist.

In general, the geological conditions at the site consist of a surficial topsoil layer underlain by fine sand to depths of between 0.9 and 2.7 metres. At each borehole location (except MW99-8), silty sand containing clay interbeds was present below the sand layer. At MW99-8, the sand is underlain by silty clay with sand seams. None of the boreholes at the site encountered bedrock (the maximum depth of investigation was 4.6 metres below ground surface).

4.0 PHYSICAL HYDROGEOLOGY

Groundwater levels measured in the monitors prior to each sampling event in 2005 are presented in Table 1. Elevations were referenced to a geodetic datum located at the invert of the inlet pipe at Pumping Station "B" (Figure 2).

As shown on Figure 2, groundwater elevations measured in October 2005 indicate that the shallow groundwater flow direction is to the north. This is consistent with the shallow groundwater flow direction observed in October 2004 as part of the 2004 groundwater monitoring program.

Grain size analysis completed by Neil A. Levac Engineering Ltd. (1999) on soil samples taken at the site indicate that the silty sand deposit has a hydraulic conductivity (K) of roughly 1×10^{-4} centimetres per second (based on the Hazen formula).

Horizontal hydraulic gradients (i) between groundwater monitors MW99-1 and MW99-2, MW99-1 and MW99-5, and MW99-1 and MW99-8 were calculated based on contours of 2005 groundwater elevations. The range of horizontal hydraulic gradients between selected upgradient and downgradient monitor pairs calculated using 2005 groundwater elevation data is summarized as follows:

Upgradient & Downgradient Monitors	Minimum Estimated Horizontal Hydraulic Gradient (Month)	Maximum Estimated Horizontal Hydraulic Gradient (Month)
MW99-1 & MW99-2	0.014 (March)	0.023 (August)
MW99-1 & MW99-5	0.022 (August)	0.025 (October)
MW99-1 & MW99-8	0.023 (August)	0.024 (October)
Range	**0.014**	**0.025**

NOTES:
Groundwater elevations were not measured at the following monitors in 2005: MW99-5 (March, June), MW99-8 (March, June). Hydraulic gradients could not be calculated at these monitors during these periods.

An estimate of average linear groundwater flow velocity can be calculated using the Darcy equation as follows:

$$v = \frac{-K}{n} i$$

Where v is the average linear groundwater velocity, K is the hydraulic conductivity, n is the estimated percent porosity for sand (estimated to be approximately 35%; Cherry, 1979), and i is the horizontal hydraulic gradient. Based on this equation and the 2005 groundwater elevation data for the Fournier Sewage System site, the average linear groundwater velocity through the silty sand deposit is estimated to range from 1.3 to 2.2 metres per year. These values are similar to historical velocity estimates of 1 to 4 metres per year (Golder, 2001, 2002, 2003, 2004, 2005).

5.0 GROUNDWATER QUALITY

Groundwater quality in the vicinity of the communal sewage system was assessed based on the chemical, physical, and bacteriological results obtained for groundwater collected at each of the eight monitors in 2005. Current and historical results of field and laboratory chemical, physical, and bacteriological analyses of groundwater samples, along with relevant Ontario Drinking Water Standards, Objectives, and Guidelines (MOE, 2003), are presented in Appendix C. Copies of the report of analysis sheets from Accutest Laboratories for the 2005 groundwater monitoring program are provided in Appendix D.

The following discussions regarding compliance with the Ontario Drinking Water Standards, Objectives, and Guidelines (ODWQs) relate specifically to non-health related objectives (i.e., aesthetic objectives) and health related parameters for which a Maximum Acceptable Concentration (MAC) or Interim Maximum Acceptable Concentration (IMAC) have been established.

5.1 Upgradient Groundwater Quality

The background groundwater quality upgradient (south) of the sewage system is represented by groundwater samples collected at groundwater monitors MW99-6 and MW99-7. These monitors are hydrogeolgically upgradient from the sewage system (see Figure 2) and are interpreted not to be impacted by effluent from the sewage system. Historical ranges of groundwater monitoring parameter concentrations (including 2005 data) from the upgradient monitors are summarized below:

Parameters	Ranges in Background Concentrations (mg/L)		ODWQs
	MW99-6	MW99-7	
Ammonia	0.3-1.23	0.19-0.89	n/a
Bromide	<0.05-3.12	<0.05-0.75	n/a
Chloride	32-293	11-322	250 (AO)
Conductivity	380-1200	220-1180	n/a
DOC	<0.5-3.1	1.6-7.5	5 (AO)
E-coli (per 100 mL)	0-<10[c]	0-1 (or <10[c])	0
Fluoride	0.13-0.76	<0.1-0.63	1.5[a]
Nitrate	<0.1-1.19	<0.1-0.40	10
Nitrite	<0.1-<0.2	<0.1-<0.2	1
pH	6.2-9.5	6.3-8.4	n/a
Sulphate	<3-28	18-69	500[b] (AO)
TKN	0.54-3.63	0.42-2.41	n/a

NOTES:

(AO)– Aesthetic objective

a – Where fluoride is added to drinking water, it is recommended that the concentration be adjusted to 0.5-0.8 mg/L the optimum level for control of tooth decay. Where supplies contain naturally occurring fluoride at levels higher than 1.5 mg/L but less than 2.4 mg/L the Ministry of Health and Long Term Care recommends an approach through local boards of health to raise public and professional awareness to control excessive exposure to fluoride from other sources.

b – when sulphate levels exceed 500 mg/L, water may have a laxative effect on some people.

c – the minimum detection limit for e-coli in groundwater was reported as <10 four times during the monitoring period due to high sediment content in the sample. Discussions with the lab have resulted in a change in procedure for analysis for E-coli for this site which should allow for a consistent minimum detection limit of 0 per 100 mL.

The background groundwater quality at monitors MW99-6 and MW99-7 differs with respect to some parameters: groundwater concentrations of bromide, TKN and nitrate are higher in MW99-6 than in MW99-7; concentrations of ammonia and fluoride are slightly higher in MW99-6 than in MW99-7; concentrations of DOC and sulphate are somewhat higher in MW99-7 than in MW99-6; and, concentrations of chloride are slightly higher in MW99-7 than in MW99-6. Historically, analytical results reported for chloride in both wells and for DOC in MW99-7 did not meet ODWQs criteria.

A summary of the 2005 upgradient groundwater quality is provided in Table 2. Analytical results for MW99-6 and MW99-7 in 2005 were generally similar to those reported in 2004. In 2005, analytical results indicated conductivity and chloride concentrations showed a decreasing trend during the 3rd and 4th quarterly monitoring sessions, and were within the range of previously observed concentrations at these locations. The ODWQs aesthetic objective for chloride was exceeded at MW99-6 and MW99-7. The DOC concentration at MW99-7 also exceeded the ODWQs aesthetic objective in June 2005. The remaining parameters analysed for in 2005 met the applicable ODWQs criteria at monitors MW99-6 and MW99-7. Although conductivity and chloride concentrations have been increasing since late 2002 at MW99-7, nitrate concentrations were below the laboratory detection limit in 2005 and it is concluded that this monitor is not affected by sewage system effluent. It is also concluded that MW99-6 is not affected by sewage system effluent.

5.2 Downgradient Groundwater Quality

It is understood that the Fournier Communal Sewage System became operational in November or December 2000. Groundwater monitor MW99-1C (located approximately 5 metres downgradient of the sewage works) is interpreted to have been impacted by septic effluent since the end of 2001. Based on the historical range in estimated groundwater flow velocity (1 to 4 metres per year), approximate arrival times for sewage system effluent at the downgradient monitoring wells (disregarding retardation and hydrodynamic dispersion) were determined. The following table provides the earliest expected arrival times (i.e., using the highest historical estimated groundwater flow velocity):

Location	Downgradient Distance from MW99-1 (m)	Minimum Estimated Groundwater Travel Time from MW99-1 (years)	Earliest Estimated Arrival Time	Minimum Number of Years Until Arrival
MW99-2, MW99-3	25	6	End of 2007	2
MW99-4, MW99-5	125	31	End of 2032	27
MW99-8	265	66	End of 2067	62

*Measured from the end of 2005

As illustrated in the above table, the minimum estimated time for groundwater impacted by sewage system effluent to reach downgradient monitors MW99-2 and MW99-3, MW99-4 and MW99-5, and MW99-8 is 2 years, 27 years, and 62 years, respectively.

A comparison of the downgradient groundwater quality to background conditions in groundwater monitors MW99-6 and MW99-7 and an interpretation of the 2005 monitoring data are presented in Table 3. The following points summarize the interpretation of the downgradient groundwater quality data:

- groundwater at MW99-1 is interpreted to have been impacted by sewage effluent since the end of 2001 based on elevated chloride, conductivity and nitrate concentrations, which are typically sewage effluent indicator parameters. This interpretation is supported by calculated values for groundwater flow velocity which indicates that groundwater impact by the sewage system could have started in 2001;

- groundwater at MW99-2 is interpreted to be impacted by sewage effluent since the end of 2003 based on rising chloride, conductivity and nitrate concentrations. Nitrate concentrations in 2005 were elevated above the ODWQS in monitor MW99-2;

- groundwater at MW99-3 is interpreted to not be impacted by sewage effluent based on reported groundwater quality;

- ammonia, bromide, chloride, conductivity, DOC, nitrite (slight recent increase), nitrate, sulphate, and TKN are generally elevated in monitor MW99-4 compared to background concentrations, however, the elevated concentrations of these parameters are not interpreted to be related to impact by sewage effluent. This interpretation is supported by calculated values for groundwater flow velocity which indicate that sewage system related impacts are not expected at MW99-4 until roughly 2032 (disregarding dispersion). Concentrations of most of these parameters were also elevated at MW99-4 prior to operation of the sewage system;

- concentrations of bromide, chloride, and conductivity are historically elevated at MW99-5 between fall and early spring compared to background concentrations, however, the elevated concentrations of these parameters are interpreted to not be related to impact by effluent from the sewage system. This interpretation is supported by calculated values for groundwater flow velocity which indicate sewage related impacts are not expected at MW99-5 until roughly 2032. Concentrations of most of these parameters were also elevated at MW99-5 prior to operation of the sewage system; and,

- concentrations of ammonia, bromide, chloride, conductivity, DOC, nitrate, nitrite, sulphate, and TKN are consistently elevated in monitor MW99-8 compared to background concentrations, however, the elevated concentrations of these parameters are interpreted not to be related to impact from sewage effluent. This interpretation is supported by calculated values for groundwater velocity which indicate that sewage system related impacts are not expected at MW99-8 until roughly 2067. Concentrations of these parameters were also elevated at MW99-8 prior to operation of the sewage works.

Groundwater monitor MW99-2, located approximately 30 metres downgradient of the sewage system, began to exhibit groundwater quality impacts as a result of the sewage system in late 2003. Average linear groundwater flow velocity on the site has been estimated to range between 1 and 4 metres per year. Hence, the arrival of groundwater impacted by effluent from the sewage system at MW99-2 approximately three to four years after the sewage system became operational indicates that dispersion and/or local areas of more hydraulically conductive material may be causing higher groundwater flow velocities in the vicinity of MW99-2.

6.0 GROUNDWATER COMPLIANCE ASSESSMENT

MOE Guideline B-7 (MOE, 1994), the "Reasonable Use Guideline" addresses the levels of off-site sewage effluent impact on groundwater considered acceptable by the MOE and defines the level of impact on groundwater beyond which some form of mitigation measure(s) would be warranted. MOE Guideline B-7 is applicable to the Fournier Sewage Works.

Under MOE Guideline B-7, a change in the quality of groundwater on adjacent properties will only be acceptable if the quality is not degraded in excess of fifty percent of the difference between background concentrations and established water quality criteria for aesthetic related parameters, and twenty-five percent of the difference between background conditions and established water quality criteria for health parameters.

MOE Guideline B-7 applies to groundwater quality impact at the site boundary (i.e., the point of site compliance). MW99-8 is the groundwater monitor that is nearest the downgradient site boundary, and is therefore considered to be the "Reasonable Use" compliance monitor.

The groundwater quality reported to date in monitoring wells MW99-6 and MW99-7 are assumed to represent background groundwater quality within the shallow overburden in the vicinity of the sewage works. The ODWQS standards and objectives are used to represent the established water quality criteria.

Sewage effluent impacts have not been detected at MW99-8, and are not expected to occur at MW99-8 until approximately 2067 (see section 5.2). Therefore, the Fournier Communal Sewage Works is in compliance with MOE Guideline B-7.

Condition 8 (1) of C of A for the Fournier Sewage Works states:

> *One year prior to the anticipated arrival of the septic effluent impacted groundwater plume at monitoring wells MW99-4 and MW99-5, the Owner shall conduct a comprehensive analysis of all past monitoring data and assess the impacts of the works on the groundwater and surface water and initiate the development of a trigger mechanism for the implementation of a contingency plan for the site to ensure that the Reasonable Use requirements are met and any significant impacts to the surface water are mitigated. The Owner shall submit the assessment, proposed trigger mechanism and contingency plan to the Regional Director for review and approval.*

Based on the estimated annual average linear groundwater velocity, groundwater impacted by effluent from the Fournier Sewage System is expected to reach MW99-4 and MW99-5 roughly 27 years from present (2032). Therefore, the development of a site-specific trigger mechanism will not likely be necessary in the near future.

7.0 PROPOSED 2006 MONITORING PROGRAM

The proposed 2006 monitoring program for the Fournier Sewage Works is based on Condition 4(3) in the Terms and Conditions of the C of A. The monitoring program for collection of groundwater levels and samples is required to be quarterly for upgradient and immediately downgradient monitoring locations, and annually for the further downgradient monitoring locations. The following summarizes the sampling locations, frequency, and parameters to be sampled:

Location Type	Frequency	Monitoring Locations	Parameters
Upgradient	Quarterly	MW99-6 MW99-7	TKN, total ammonia nitrogen, nitrate-nitrogen, nitrite-nitrogen, DOC, anions (chloride, bromide, fluoride, and sulphate), *E.-coli*, pH, temperature, conductivity
Immediately Downgradient		MW99-1 MW99-2 MW99-3	
Reasonable Use	Annually	MW99-8	
Downgradient		MW99-4 MW99-5	TKN, total ammonia nitrogen, nitrate-nitrogen, nitrite-nitrogen, DOC, anions (chloride, bromide, fluoride, and sulphate), *E.-coli*, total phosphorus, dissolved reactive phosphorus, pH, temperature, conductivity

Given that impacts due to the sewage works at MW99-4 and MW99-5 are not expected to occur until approximately 2032, and impacts at the "Reasonable Use Monitor" (MW99-8) are not expected to occur until approximately 2067, annual monitoring, at all groundwater monitors should be sufficient. In accordance with the C of A, monitoring frequency can be modified by the District Manager. Therefore, it is recommended that the District Manager be requested to modify the monitoring program such that annual, not quarterly monitoring is conducted at MW99-1, MW99-2, MW99-3, MW99-6 and MW99-7, and annual monitoring continue at MW99-4, MW99-5 and MW99-8.

8.0 LIMITATIONS AND USE OF REPORT

This report was prepared for the exclusive use of the Ontario Clean Water Agency and the Nation Municipality. The report, which especially includes all tables, figures, and appendices, is based on data and information collected by Golder Associates Ltd. and is based solely on the conditions of the properties at the time of the work, supplemented by historical information and data obtained by Golder Associates Ltd. as described in this report, and in the previous reports prepared by Golder Associates Ltd. (see References for list of previous reports). Each of these reports must be read and understood collectively, and can only be relied upon in their totality.

The assessment of environmental conditions and possible hazards at this site has been made using the results of physical measurements and chemical analyses of liquids from a number of locations. The site conditions between sampling locations have been inferred based on conditions observed at borehole and monitoring well locations. Subsurface conditions may vary from these sampled locations.

The services performed, as described in this report, were conducted in a manner consistent with that level of care and skill normally exercised by other members of the engineering and science professions currently practicing under similar conditions, subject to limits and financial and physical constraints applicable to the services.

Any use which a third party makes of this report, or any reliance on, or decisions to be made based on it, are the responsibilities of such third parties. Golder Associates Ltd. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

The findings and conclusions of this report are valid only as of the date of this report. If new information is discovered in future work, including excavations, borings, or other studies, Golder Associates Ltd. should be requested to re-evaluate the conclusions of this report, and to provide amendments as required.

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TABLE 1
2005 GROUNDWATER ELEVATIONS

Monitoring Well	Ground Surface Elevation (masl)	Top of Casing Elevation (masl)	Groundwater Elevation (masl)			
			Mar 17 2005	Jun 09 2005	Aug 02 2005	Oct 21 2005
MW99-1	53.5	54.1	52.4	52.3	52.0	52.5
MW99-2	53.1	53.8	52.0	51.8	51.4	52.1
MW99-3	53.7	53.7	51.9	51.7	51.3	52.1
MW99-4	52.9	51.7	n/a	n/a	48.8	49.3
MW99-5	51.5	52.3	n/a	n/a	49.2	49.5
MW99-6	52.9	53.6	51.5	51.3	51.0	52.1
MW99-7	53.4	54.1	n/a	52.3	52.0	53.0
MW99-8	47.7	48.4	n/a	n/a	45.9	46.4

Notes
n/a - data not available

TABLE 2

SUMMARY OF UPGRADIENT GROUNDWATER QUALITY DATA

Sampling Location	Location	Parameters Exceeding ODWQS in 2005	Historical Trend(s)
MW99-6	80 metres west of edge of leaching bed	chloride, pH	• Chloride concentrations slightly higher than average in 2004 and 2005; • Somewhat higher conductivity early 2003 to early 2005; late 2005 had a decreasing trend in concentrations; • Variable sulphate concentrations; • pH above ODWQS in March 2005.
MW99-7	120 metres southeast of leaching bed	chloride, DOC	• Increasing trend for chloride and conductivity since late 2002; • Increasing trend for sulphate concentrations since late 2003; • Minor increase in DOC near end of 2004 to slightly above ODWQS. Below ODWQS in late 2005.

TABLE 3

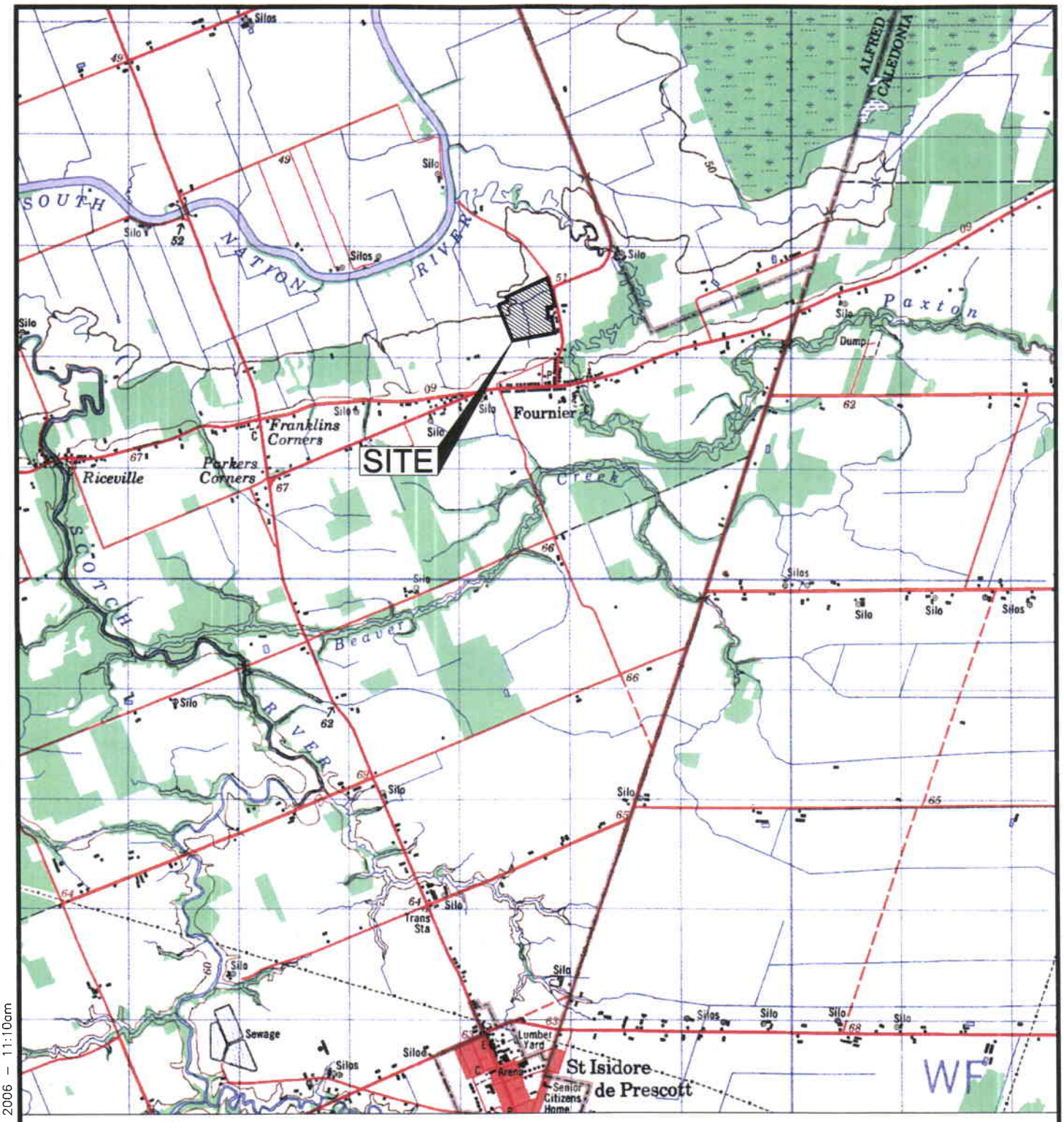
INTERPRETATION OF GROUNDWATER QUALITY DATA FROM DOWNGRADIENT GROUNDWATER MONITORS

Sampling Location	Parameters Exceeding ODWQS in 2005	Historical Trend(s)	Parameters Consistently Elevated Compared to Historical Background Concentrations at		Hydrogeological Interpretation
			MW 99-6	MW99-7	
MW99-1	chloride, nitrate	• chloride, conductivity, sulphate and nitrate concentrations increased significantly in late 2001/early 2002 and remained elevated through 2005; • nitrite increased significantly in late 2001 to 2003, and remained elevated in 2004 and 2005; • variable fluoride concentrations.	chloride, conductivity, sulphate and nitrate (since late 2001/early 2002), nitrite (late 2001-2003), DOC, sulphate	chloride, conductivity and nitrate (since late 2001/early 2002), nitrite (late 2001-2003) sulphate	• borehole MW99-1 is located approximately 5 metres downgradient from leaching beds (see Figure 2); • groundwater continues to show indications of impact by effluent from sewage system since late 2001/early 2002.
MW99-2	nitrate	• increases in nitrate, conductivity, chloride since end of 2003.	Nitrate (since end of 2003)	Nitrate (since end of 2003)	• borehole MW99-2 is located approximately 30 metres downgradient from leaching beds (see Figure 2); • groundwater interpreted to be starting to show signs of being impacted by the sewage system at this time based on increases in nitrate concentrations and an increase in conductivity.
MW99-3	none	• groundwater quality generally consistent over time; • chloride and conductivity increasing since early 2004.	Sulphate (with the exception of 2005)	Sulphate (prior to 2003)	• borehole MW99-3 is located approximately 30 metres downgradient from leaching beds (see Figure 2); • groundwater interpreted to not be impacted by sewage system at this time based on groundwater quality and flow velocity.
MW99-4	chloride	• groundwater quality variable over time; • fluctuating concentrations of ammonia, bromide, chloride, and conductivity levels.	ammonia, bromide (excluding 2005), chloride, conductivity, DOC, nitrite (prior to 2004), nitrate, sulphate, and TKN	ammonia, bromide (excluding 2005), chloride, conductivity, nitrite (prior to 2004), nitrate, and TKN	• borehole MW99-4 is located approximately 130 metres downgradient from leaching beds (see Figure 2); • groundwater interpreted to not be impacted by sewage system based on groundwater flow velocity; • source(s) of elevated ammonia, bromide, chloride, conductivity, and DOC in groundwater is/are interpreted to be other than the sewage system.

TABLE 3 – continued

INTERPRETATION OF GROUNDWATER QUALITY DATA FROM DOWNGRADIENT GROUNDWATER MONITORS

Sampling Location	Parameters Exceeding ODWQS in 2005	Historical Trend(s)	Parameters Consistently Elevated Compared to Historical Background Concentrations at		Hydrogeological Interpretation
			MW 99-6	MW99-7	
MW99-5	none	• increase in average concentrations of bromide, chloride, and conductivity (2001-2003); • bromide, chloride, and conductivity low in 2004-2005; • seasonal trends in chloride, bromide and conductivity levels are similar.	chloride (seasonally), conductivity (seasonally), sulphate	bromide (seasonally), chloride (seasonally), conductivity (seasonally)	• borehole MW99-5 is located about 130 metres downgradient from leaching beds (see Figure 2); • groundwater interpreted to not be impacted by sewage system based on groundwater flow velocity; • elevated chloride, bromide, and conductivity in groundwater are interpreted not to be related to sewage system.
MW99-8	chloride, DOC	• groundwater quality variable over time; • nitrite concentration typically greater than upgradient concentrations since mid 2002; • sulphate concentrations variable; • frequent spikes in bromide concentration; • chloride concentrations typically much greater than upgradient concentrations.	ammonia, bromide, chloride, conductivity, DOC, nitrite, nitrate, sulphate, and TKN	ammonia, bromide, chloride, conductivity, DOC, nitrate, nitrite, sulphate, and TKN	• borehole MW99-8 is located across municipal drain 270 metres downgradient from the leaching beds system (see Figure 2); • groundwater interpreted to not be impacted by sewage system based on groundwater flow velocity; • elevated ammonia, bromide, chloride, conductivity, DOC, nitrate, nitrite, sulphate, and TKN in groundwater is/are interpreted not to be related to sewage system; • groundwater quality at this location may be affected by a nearby drainage ditch (approximately 1.5 metres deep).



SPECIAL NOTE
THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ACCOMPANYING REPORT

Golder Associates
Ottawa, Ontario

SCALE	1:50,000
DATE	21/02/06
DESIGN	
CADD	J.M.
CHECK	C.A.M.C.
REVIEW	B.T.B.

FILE No. 061122029-01.dwg
PROJECT No. 06-1122-029 REV.

TITLE

KEY PLAN

FOURNIER SEWAGE

FIGURE 1

Drawing file: 06-1122-029-01.dwg Feb 21, 2006 - 11:10am

APPENDIX A

CERTIFICATE OF APPROVAL
(SEWAGE) NO. 1128-5S6KLC
DATED DECEMBER 23, 2003

Ontario

Ministry of the Environment | Ministère de l'Environnement

AMENDED CERTIFICATE OF APPROVAL
MUNICIPAL AND PRIVATE SEWAGE WORKS
NUMBER 1128-5S6KLC

The Corporation of the Municipality of The Nation
Rural Route, No. 3
Casselman, Ontario
K0A 1M0

Site Location: Village of Fournier Communal Sewage Works
Lot 1, Concession XIII
The Nation Municipality, United Counties of Prescott and Russell

You have applied in accordance with Section 53 of the Ontario Water Resources Act for approval of:

the existing municipal sewage works for the collection, transmission, treatment and disposal of domestic sewage, in the Village of Fournier, with a *Rated Capacity* of 97,600 litres per day and consisting of the following:

Sanitary Sewers

- sanitary sewers on County Road 10, St. Joseph Street, Union Street, Park Street, County Road 15, Easement, and Church Street;

Sewage Pumping Stations

- Sewage Pumping Station A comprising of a 2.4 mm diameter by 3.0 m deep underground wet well constructed on the south side of County Road 10 approximately 65 m west of St. Joseph Street, equipped with two (2) submersible pumps (one duty and one standby), each pump having a rated capacity of 2.5 L/s at a T.D.H. of 11.0 m with a 1.2 kW electrical drive with a 100 mm diameter forcemain discharging to a manhole located at the intersection of County Road 10 and County Road 15;
- Sewage Pumping Station B comprising of a 2.4 mm diameter by 6.0 m deep underground wet well constructed approximately 85 m west of County Road 15 and approximately 105 m north of Park Street, equipped with two (2) submersible pumps (one duty and one standby), each pump having a rated capacity of 5.0 L/s at a T.D.H. of 8.0 m with a 1.2 kW electrical drive with a 100 mm diameter forcemain discharging to the inlet septic tank of the Sewage Treatment System;

Sewage Treatment System

1. **Septic Tanks**

- eight (8) 45,400 litre capacity precast concrete septic tanks, installed in series approximately 155 m west of Sewage Pumping Station B, equipped with two (2) cartridge effluent filters at the outlet of the last septic tank with the effluent discharging to the recirculation tank of the biological sand filtration system;

2. **Biological Sand Filtration System**

- a biological sand filter recirculating system installed immediately west of the last septic tank, consisting of two (2) 45,400 litre capacity recirculation tank, four (4) sets of two (2) alternating dosing pumps with four (4) distributing valve assemblies, four (4) sand filter return pumps with a recirculating valve assembly, and associated recirculating timer and flow control units for dosing septic tank effluent to the recirculation sand filter and recirculating sand filter effluent back to the recirculation tank, each dosing pump having a rated capacity of 1.9 L/s at a T.D.H. of 18.9 m with a 0.37 kW electric drive with a 50 mm diameter forcemain to dose septic tank effluent onto the recirculation sand filter, each return pump having a rated capacity of 1.9 L/s at a T.D.H. of 18.9 m with a 0.37 kW electric drive with a forcemain to return sand filter effluent to the recirculation tank;
- a 28.8 m by 21.0 m recirculation biological sand filter having a hydraulic loading of 6.8 $L/m^2/hr$, constructed approximately 3.5 m south of the recirculation tank consisting of 600 mm deep sand media of effective size of 1 to 3 mm and uniformity coefficient of less than 2.0 in four (4) cells of six (6) zones, each cell having twelve (12) 25 mm diameter distribution pressure pipes of 21 m long connected to the distributing valve assembly at the front end of the sand filter and two (2) 100 mm diameter of perforated drain pipes at the bottom of the sand filter, each distribution pipe having thirty-five (35) 3.2 mm diameter orifices facing upward spaced at 600 mm interval and covered by orifice shields, installed on the sand filter surface, a pumping chamber located in the middle of each cell and connected the two perforated filter drain pipes to return the recirculation sand filter effluent to the recirculation tank;

Subsurface Disposal System

1. **Effluent Dosing Chamber**

- four (4) 86,400 litre precast concrete septic tanks, installed in series approximately 155 m west of Sewage
- a 6,000 litre, precast concrete leaching bed dosing chamber installed approximately 1 m north of the recirculation tank and equipped with two (2) sets of two (2) alternating submersible pumps, each pump having a rated capacity of 2.0 L/s at a T.D.H. of 27.3 m with a 0.75 kW electric drive, including a distribution valve assembly per pump set, liquid level and pump timer controls together with 50 mm diameter forcemains to dose recirculation sand filter effluent through the distribution boxes to a subsurface disposal system;

2. **Leaching Beds**

- ten (10) 30 m long by 14.4 m wide raised absorption trench type leaching beds of imported sand with 9 min/cm percolation rate, constructed approximately 6 m north of leaching bed pumping chamber including imported mantle of 9 min/cm percolation rate extending 15 m north from the leaching bed and, each leaching bed consisting of ten (10) 100 mm diameter perforated pipes of 30 m long at 1.6 m interval together with header pipes from the distribution box;

Emergency Power Supply

- three (3) portable stand-by engine driven generators with a minimum continuous rating of 40 kW (electrical) per generator, provided and located in the municipal garage for the Nation Municipality to provide emergency power necessary to operate Sewage Pumping Stations A and B and septic system pumps and controls during power outage;

Miscellaneous

- all other controls, electrical equipment, instrumentation, piping, pumps, valves and appurtenances

essential for the proper operation of the aforementioned sewage works;

all in accordance with the following submitted supporting documents:

1. Application for Amendment to Certificate of Approval for Fournier Communal Sewage System submitted by C. Vandelst of Golder Associates dated September 3, 2003;
2. Communal septic system design report, final plans and specifications prepared by Neil A. Levac Engineering Ltd., Consulting Engineers.

For the purpose of this Certificate of Approval and the terms and conditions specified below, the following definitions apply:

"*Act*" means the Ontario Water Resources Act, R.S.O. 1990, Chapter 0.40, as amended;

"*Average Daily Flow*" means the cumulative total sewage flow to the sewage works during a calendar year divided by the number of days during which sewage was flowing to the sewage works that year;

"*By-pass*" means any discharge from the *Works* that does not undergo any treatment or only receives partial treatment before it is discharged to the environment;

"*CBOD5*" means five day carbonaceous (nitrification inhibited) biochemical oxygen demand measured in an unfiltered sample;

"*Certificate*" means this entire certificate of approval document, issued in accordance with Section 53 of the *Act*, and includes any schedules;

"*Director*" means any *Ministry* employee appointed by the Minister pursuant to section 5 of the *Act*;

"*District Manager*" means the District Manager of the Kingston District Office of the Ministry;

"*E. Coli*" refers to the thermally tolerant forms of Escherichia that can survive at 44.5 degrees Celsius;

"*Ministry*" means the Ontario Ministry of the Environment;

"*Owner*" means the Corporation of the Municipality of The Nation and includes its successors and assignees;

"*Rated Capacity*" means the *Average Daily Flow* for which the *Works* are approved to handle;

"*Regional Director*" means the Regional Director of the Eastern Region of the Ministry;

"*Works*" means the sewage works described in the *Owner*'s application, this *Certificate* and in the supporting documentation referred to herein, to the extent approved by this *Certificate.*

You are hereby notified that this approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. GENERAL PROVISIONS

(1) The *Owner* shall ensure that any person authorized to carry out work on or operate any aspect of the *Works* is notified of this *Certificate* and the conditions herein and shall take all reasonable measures to ensure any such person complies with the same.

(2) Except as otherwise provided by these Conditions, the *Owner* shall design, build, install, operate and maintain the *Works* in accordance with the description given in this *Certificate*, the application for approval of the works and the submitted supporting documents and plans and specifications as listed in this *Certificate*.

(3) Where there is a conflict between a provision of any submitted document referred to in this *Certificate* and the Conditions of this *Certificate*, the Conditions in this *Certificate* shall take precedence, and where there is a conflict between the listed submitted documents, the document bearing the most recent date shall prevail.

(4) Where there is a conflict between the listed submitted documents, and the application, the application shall take precedence unless it is clear that the purpose of the document was to amend the application.

(5) The requirements of this *Certificate* are severable. If any requirement of this *Certificate*, or the application of any requirement of this *Certificate* to any circumstance, is held invalid or unenforceable, the application of such requirement to other circumstances and the remainder of this certificate shall not be affected thereby.

2. CHANGE OF OWNER

(1) The *Owner* shall notify the *District Manager* and the *Director*, in writing, of any of the following changes within 30 days of the change occurring:

(a) change of *Owner*;

(b) change of address of the *Owner*;

(c) change of partners where the *Owner* is or at any time becomes a partnership, and a copy of the most recent declaration filed under the Business Names Act, R.S.O. 1990, c.B17 shall be included in the notification to the *District Manager*;

(d) change of name of the corporation where the *Owner* is or at any time becomes a corporation, and a copy of the most current information filed under the Corporations Informations Act, R.S.O. 1990, c. C39 shall be included in the notification to the *District Manager*;

(2) In the event of any change in ownership of the *Works*, other than a change to a successor municipality, the *Owner* shall notify in writing the succeeding owner of the existence of this *Certificate*, and a copy of such notice shall be forwarded to the *District Manager* and the *Director*.

3. RECORD DRAWINGS

(1) A set of as-built drawings showing the works "as constructed" shall be kept up to date through revisions undertaken from time to time and a copy shall be retained at the *Works* for the operational life of the *Works*.

4. MONITORING AND RECORDING

The *Owner* shall, upon commencement of operation of the *Works*, carry out the following monitoring program:

(1) All samples and measurements taken for the purposes of this *Certificate* are to be taken at a time and in a location characteristic of the quality and quantity of the effluent stream over the time period being monitored.

(2) Samples shall be collected of the raw sewage and the effluent being discharged to the subsurface disposal system at the frequency specified, by means of the specified sample type and analyzed for each parameter listed and all results recorded:

Table 1 - Raw Sewage Monitoring	
Frequency	Quarterly
Sample Type	Grab
Parameters	*CBOD5*, Total Suspended Solids, Total Phosphorus, Total Kjeldahl Nitrogen

Table 2 - Effluent Monitoring - effluent discharged to subsurface disposal system	
Frequency	Monthly
Sample Type	Grab
Parameters	*CBOD5*, Total Suspended Solids, Total Phosphorus, Total Kjeldahl Nitrogen, Total Ammonia Nitrogen, Nitrate-Nitrogen, Nitrite-Nitrogen, Alkalinity and *E. Coli*

(3) Samples shall be collected of the groundwater in the eight existing groundwater monitoring wells MW99-1 to MW99-8 at the frequency specified, by means of the specified sample type and analyzed for each parameter listed and all results recorded:

Table 3 - **Groundwater Monitoring** - upgradient wells MW99-6 and MW99-7	
Frequency	Quarterly
Sample Type	Grab
Parameters	Total Kjeldahl Nitrogen, Total Ammonia Nitrogen, Nitrate-Nitrogen, Nitrite-Nitrogen, Dissolved Organic Carbon, Anions (chloride, bromide, fluoride and sulphate), *E. Coli*, pH, Temperature and Conductivity

Table 4 - **Groundwater Monitoring** - downgradient wells MW99-1, MW99-2 and MW99-3	
Frequency	Quarterly
Sample Type	Grab
Parameters	Total Kjeldahl Nitrogen, Total Ammonia Nitrogen, Nitrate-Nitrogen, Nitrite-Nitrogen, Dissolved Organic Carbon, Anions (chloride, bromide, fluoride and sulphate), *E. Coli*, pH, Temperature and Conductivity

Table 5 - **Groundwater Monitoring** - downgradient well MW99-8 (reasonable use)	
Frequency	Annually (subject to subsection 6)
Sample Type	Grab
Parameters	Total Kjeldahl Nitrogen, Total Ammonia Nitrogen, Nitrate-Nitrogen, Nitrite-Nitrogen, Dissolved Organic Carbon, Anions (chloride, bromide, fluoride and sulphate), *E. Coli*, pH, Temperature and Conductivity

Table 6 - **Groundwater Monitoring** - downgradient wells MW99-4 and MW99-5 (surface water impact)	
Frequency	Annually (subject to subsection 6)
Sample Type	Grab
Parameters	Total Kjeldahl Nitrogen, Total Ammonia Nitrogen, Nitrate-Nitrogen, Nitrite-Nitrogen, Dissolved Organic Carbon, Anions (chloride, bromide, fluoride and sulphate), *E. Coli*, Total Phosphorus, Dissolved Phosphorus, pH, Temperature and Conductivity

(4) The Owner shall measure or estimate and record the daily volume of effluent being discharged to subsurface disposal system.

(5) The methods and protocols for sampling, analysis and recording shall conform, in order of precedence, to the methods and protocols specified in the following:

(a) the Ministry's Procedure F-10-1, "Procedures for Sampling and Analysis Requirements for Municipal and Private Sewage Treatment Works (Liquid Waste Streams Only), as amended from time to time by more recently published editions;

(b) the Ministry's publication "Protocol for the Sampling and Analysis of Industrial/Municipal

Wastewater" (January 1999), ISBN 0-7778-1880-9, as amended from time to time by more recently published editions; and

(c) the publication "Standard Methods for the Examination of Water and Wastewater" (20th edition), as amended from time to time by more recently published editions.

(6) The monitoring frequency at monitoring wells MW99-4, MW99-5 and MW99-8 shall be increased to quarterly as the septic effluent impacted groundwater plume is within five years of anticipated arrival at MW99-4 and MW99-5.

(7) The measurement frequencies specified in subsections (2) and (3) in respect to any parameter are minimum requirements which may, after 12 months of monitoring in accordance with this Condition, be modified by the *District Manager* in writing from time to time.

5. EFFLUENT OBJECTIVES

The *Owner* shall use best efforts to design, construct and operate the *Works* with the objective that the concentrations of the materials named below as effluent parameters are not exceeded in the effluent being discharged to the subsurface disposal system.

Table 3 - Effluent Objectives

Effluent Parameter	Concentration Objective (milligrams per litre unless otherwise indicated)
CBOD5	10.0
Total Suspended Solids	10.0

6. OPERATIONS AND MAINTENANCE

(1) The *Owner* shall maintain an operations manual for the *Works*, that includes, but not necessarily limited to, the following information:

(a) operating procedures for routine operation of the *Works*; and

(b) inspection programs, including frequency of inspection, for the *Works* and the methods or tests employed to detect when maintenance is necessary.

(2) The *Owner* shall maintain the operations manual current and retain a copy at the location of the *Works* for the operational life of the *Works*. Upon request, the *Owner* shall make the manual available to *Ministry* staff.

7. REPORTING

(1) The *Owner* shall prepare, and submit upon request, a performance report, on an annual basis, within ninety (90) days following the end of the period being reported upon. The first such report shall cover the first annual period following the commencement of operation of the *Works* and subsequent reports shall be submitted to cover successive annual periods following thereafter. The reports shall contain, but shall not be limited to, the following information:

(a) a summary and interpretation of all raw sewage and effluent monitoring data and a comparison to the effluent objectives outlined in Condition 5, including an overview of the success and adequacy of the *Works*;

(b) a summary and interpretation of all groundwater monitoring data and a comparison to the established baseline background groundwater quality;

(c) a delineation of the septic effluent impacted groundwater plume and the documentation of the movement and anticipated arrival of the plume at monitoring wells MW99-4 and MW99-5;

(d) a tabulation of the daily volumes of effluent disposed through the subsurface disposal system during the reporting period;

(e) a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the *Works*; and

(f) a description of any operating problems encountered and corrective actions taken.

8. GROUNDWATER AND SURFACE WATER IMPACTS CONTINGENCY PLAN

(1) One year prior to the anticipated arrival of the septic effluent impacted groundwater plume at monitoring wells MW99-4 and MW99-5, the *Owner* shall conduct a comprehensive analysis of all past monitoring data and assess the impacts of the *works* on the groundwater and surface water and initiate the development of a trigger mechanism for the implementation of a contingency plan for the site to ensure that the Reasonable Use requirements are met and any significant impacts to the surface water are mitigated. The *Owner* shall submit the assessment, proposed trigger mechanism and contingency plan to the *Regional Director* for review and approval.

(2) The contingency plan shall be implemented within two (2) years of the setting off of the trigger mechanism.

The reasons for the imposition of these terms and conditions are as follows:

1. Condition 1 is imposed to ensure that the *Works* are built and operated in the manner in which they were described for review and upon which approval was granted. This condition is also included to emphasize the precedence of Conditions in the *Certificate* and the practice that the Approval is based on the most current document, if several conflicting documents are submitted for review. The condition also advises the Owners their responsibility to notify any person they authorized to carry out work pursuant to this *Certificate* the existence of this *Certificate.*

2. Condition 2 is included to ensure that the *Ministry* records are kept accurate and current with respect to the approved works and to ensure that subsequent owners of the *Works* are made aware of the *Certificate* and continue to operate the *Works* in compliance with it.

3. Condition 3 is included to ensure that the *Works* are constructed in accordance with the approval and that record drawings of the *Works* "as constructed" are maintained for future references.

4. Condition 4 is included to enable the *Owner* to evaluate and demonstrate the performance of the *Works*, on a continual basis, so that the *Works* are properly operated and maintained at a level which is consistent with the design objectives specified in the *Certificate* and that the *Works* does not cause any impairment to the receiving watercourse.

5. Condition 5 is imposed to establish non-enforceable effluent quality objectives which the *Owner* is obligated to use best efforts to strive towards on an ongoing basis. These objectives are to be used as a mechanism to trigger corrective action proactively and voluntarily before environmental impairment occurs.

6. Condition 6 is included to require that the *Works* be properly operated, maintained, and equipped such that the environment is protected. As well, the inclusion of an operations manual, maintenance agreement with the manufacturer for the treatment process/technology and a complete set of "as constructed" drawings governing all significant areas of operation, maintenance and repair is prepared, implemented and kept up-to-date by the owner and made available to the *Ministry*. Such a information is an integral part of the operation of the *Works*. Its compilation and use should assist the *Owner* in staff training, in proper plant operation and in identifying and planning for contingencies during possible abnormal conditions. The manual will also act as a benchmark for *Ministry* staff when reviewing the *Owner*'s operation of the work.

7. Condition 7 is included to provide a performance record for future references, to ensure that the *Ministry* is made aware of problems as they arise, and to provide a compliance record for all the terms and conditions outlined in this *Certificate,* so that the *Ministry* can work with the *Owner* in resolving any problems in a timely manner.

8. Condition 8 is included to require a contingency plan be in place and a trigger mechanism be developed to ensure that the Reasonable Use requirements are met and any significant impacts to the surface water are mitigated.

This Certificate of Approval revokes and replaces Certificate(s) of Approval No. 3-0436-99-006 issued on June 11, 1999.

In accordance with Section 100 of the Ontario Water Resources Act, R.S.O. 1990, Chapter 0.40, as amended, you may by written notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 101 of the Ontario Water Resources Act, R.S.O. 1990, Chapter 0.40, provides that the Notice requiring the hearing shall state:

1. The portions of the approval or each term or condition in the approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the works are located;

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
2300 Yonge St., 12th Floor
P.O. Box 2382
Toronto, Ontario
M4P 1E4

AND

The Director
Section 53, *Ontario Water Resources Act*
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca**

The above noted sewage works are approved under Section 53 of the Ontario Water Resources Act.

DATED AT TORONTO this 23rd day of December, 2003

THIS CERTIFICATE WAS MAILED
ON Jan 2/04
CM
(Signed)

Mohamed Dhalla, P.Eng.
Director
Section 53, *Ontario Water Resources Act*

FL/

c: District Manager, MOE Cornwall
Carolyn VanDelst, Golder Associates Ltd.
Drinking Water and Wastewater Section, MOE Standards Development Branch

APPENDIX B

RECORD OF BOREHOLE SHEETS

LIST OF ABBREVIATIONS

The abbreviations commonly employed on Records of Boreholes, on figures and in the text of the report are as follows:

I. SAMPLE TYPE

AS	Auger sample
BS	Block sample
CS	Chunk sample
DO	Drive open
DS	Denison type sample
FS	Foil sample
RC	Rock core
SC	Soil core
ST	Slotted tube
TO	Thin-walled, open
TP	Thin-walled, piston
WS	Wash sample

II. PENETRATION RESISTANCE

Standard Penetration Resistance (SPT), N:
The number of blows by a 63.5 kg. (140 lb.) hammer dropped 760 mm (30 in.) required to drive a 50 mm (2 in.) drive open Sampler for a distance of 300 mm (12 in.)

Dynamic Penetration Resistance; N_d:
The number of blows by a 63.5 kg (140 lb.) hammer dropped 760 mm (30 in.) to drive Uncased a 50 mm (2 in.) diameter, 60^0 cone attached to "A" size drill rods for a distance of 300 mm (12 in.).

PH: Sampler advanced by hydraulic pressure
PM: Sampler advanced by manual pressure
WH: Sampler advanced by static weight of hammer
WR: Sampler advanced by weight of sampler and rod

Peizo-Cone Penetration Test (CPT):
An electronic cone penetrometer with a 60^0 conical tip and a projected end area of 10 cm^2 pushed through ground at a penetration rate of 2 cm/s. Measurements of tip resistance (Q_t), porewater pressure (PWP) and friction along a sleeve are recorded Electronically at 25 mm penetration intervals.

III. SOIL DESCRIPTION

(a) Cohesionless Soils

Density Index (Relative Density)	N Blows/300 mm Or Blows/ft.
Very loose	0 to 4
Loose	4 to 10
Compact	10 to 30
Dense	30 to 50
Very dense	over 50

(b) Cohesive Soils

Consistency	C_u, S_u Kpa	C_u, S_u Psf
Very soft	0 to 12	0 to 250
Soft	12 to 25	250 to 500
Firm	25 to 50	500 to 1,000
Stiff	50 to 100	1,000 to 2,000
Very stiff	100 to 200	2,000 to 4,000
Hard	Over 200	Over 4,000

IV. SOIL TESTS

w	water content
w_p	plastic limited
w_l	liquid limit
C	consolidaiton (oedometer) test
CHEM	chemical analysis (refer to text)
CID	consolidated isotropically drained triaxial test[1]
CIU	consolidated isotropically undrained triaxial test with porewater pressure measurement[1]
D_R	relative density (specific gravity, G_s)
DS	direct shear test
M	sieve analysis for particle size
MH	combined sieve and hydrometer (H) analysis
MPC	modified Proctor compaction test
SPC	standard Proctor compaction test
OC	organic content test
SO_4	concentration of water-soluble sulphates
UC	unconfined compression test
UU	unconsolidated undrained triaxial test
V	field vane test (LV-laboratory vane test)
γ	unit weight

Note:
1. Tests which are anisotropically consolidated prior shear are shown as CAD, CAU.

LIST OF SYMBOLS

Unless otherwise stated, the symbols employed in the report are as follows:

I. GENERAL

π	= 3.1416
ln x, natural logarithm of x	
$\log_{10}$ x or log x, logarithm of x to base 10	
g	Acceleration due to gravity
t	time
F	factor of safety
V	volume
W	weight

II. STRESS AND STRAIN

γ	shear strain
Δ	change in, e.g. in stress: $\Delta\sigma'$
ε	linear strain
ε_v	volumetric strain
η	coefficient of viscosity
ν	Poisson's ratio
σ	total stress
σ'	effective stress ($\sigma' = \sigma''-u$)
σ'_{vo}	initial effective overburden stress
$\sigma_1\sigma_2\sigma_3$	principal stresses (major, intermediate, minor)
σ_{oct}	mean stress or octahedral stress $= (\sigma_1+\sigma_2+\sigma_3)/3$
τ	shear stress
u	porewater pressure
E	modulus of deformation
G	shear modulus of deformation
K	bulk modulus of compressibility

III. SOIL PROPERTIES

(a) Index Properties

$\rho(\gamma)$	bulk density (bulk unit weight*)
$\rho_d(\gamma_d)$	dry density (dry unit weight)
$\rho_w(\gamma_w)$	density (unit weight) of water
$\rho_s(\gamma_s)$	density (unit weight) of solid particles
γ'	unit weight of submerged soil ($\gamma'=\gamma-\gamma_w$)
D_R	relative density (specific gravity) of solid particles ($D_R = \rho_s/\rho_w$) formerly (G_s)
e	void ratio
n	porosity
S	degree of saturation

* Density symbol is p. Unit weight symbol is γ where $\gamma=\rho g$(i.e. mass density x acceleration due to gravity)

(a) Index Properties (cont'd.)

w	water content
w_l	liquid limit
w_p	plastic limit
I_p	plasticity Index=(w_l-w_p)
w_s	shrinkage limit
I_L	liquidity index=$(w-w_p)/I_p$
I_c	consistency index=$(w_l-w)/I_p$
e_{max}	void ratio in loosest state
e_{min}	void ratio in densest state
I_D	density index-$(e_{max}-e)/(e_{max}-e_{min})$ (formerly relative density)

(b) Hydraulic Properties

h	hydraulic head or potential
q	rate of flow
v	velocity of flow
i	hydraulic gradient
k	hydraulic conductivity (coefficient of permeability)
j	seepage force per unit volume

(c) Consolidation (one-dimensional)

C_c	compression index (normally consolidated range)
C_r	recompression index (overconsolidated range)
C_s	swelling index
C_a	coefficient of secondary consolidation
m_v	coefficient of volume change
c_v	coefficient of consolidation
T_v	time factor (vertical direction)
U	degree of consolidation
σ'_p	pre-consolidation pressure
OCR	Overconsolidation ratio=σ'_p/σ'_{vo}

(d) Shear Strength

$\tau_p\tau_r$	peak and residual shear strength
ϕ'	effective angle of internal friction
δ	angle of interface friction
μ	coefficient of friction=tan δ
c'	effective cohesion
c_u, s_u	undrained shear strength (ϕ=0 analysis)
p	mean total stress $(\sigma_1+\sigma_3)/2$
p'	mean effective stress $(\sigma'_1+\sigma'_3)/2$
q	$(\sigma_1-\sigma_3)/2$ or $(\sigma'_1-\sigma_3)/2$
q_u	compressive strength $(\sigma_1-\sigma_3)$
S_t	sensitivity

Notes: 1. $\tau=c'\sigma'\tan\phi'$

2. Shear strength=(Compressive strength)/2

PROJECT: 001-2772

RECORD OF BOREHOLE: MW 99-1

SHEET 1 OF 1

LOCATION: See Site Plan

BORING DATE: August 3, 2000

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. +, rem V. ⊕, Q - ●, U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp, W, Wl) (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0		Ground Surface		53.48							
	Power Auger 200mm Diam. Hollow Stem	TOPSOIL		0.00							Native Backfill
				53.18							
		Brown medium SAND		0.30							Bentonite Seal
				52.57							Native Backfill
1		Loose brown very fine SAND		0.91							
				51.80							Bentonite Seal
		Loose grey SILTY SAND, laminated with clay interbeds		1.68	1	SS	5				
2											Native Backfill
					2	SS	2				38mm PVC #10 Slot Screen
3											
4											Granular Filter
				48.91							
		END OF BOREHOLE		4.57							W.L.in Screen at Elev. 51.76m Aug. 10/00
5											

BOREHOLE 001-2772.GPJ HYDROGEO.GDT 3 19 01

DEPTH SCALE

1 : 25

Golder Associates

LOGGED: JFB

CHECKED: MV

PROJECT: 001-2772

RECORD OF BOREHOLE: MW 99-2

SHEET 1 OF 1

LOCATION: See Site Plan

BORING DATE: August 3, 2000

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. +, rem V. ⊕, Q - ●, U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-4} 10^{-5} 10^{-6} 10^{-7}) / WATER CONTENT PERCENT (Wp, W, Wl) (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0		Ground Surface		53.05							
		TOPSOIL		0.00							Native Backfill
				52.84							
		Loose brown very fine SAND, trace silt		0.21							Bentonite Seal
1											Native Backfill
											Bentonite Seal
				51.37							
		Loose grey SILTY SAND, with clay interbeds		1.68	1	50 DO	5				
2	Power Auger 200mm Diam. Hollow Stem										Native Backfill
					2	50 DO	4				38mm PVC #10 Slot Screen
3											
4					3	50 DO	2				Granular Filter
				48.48							
		END OF BOREHOLE		4.57							W.L.in Screen at Elev. 51.27m Aug. 10/00
5											

BOREHOLE 001-2772.GPJ HYDROGEO.GDT 3.19.01

DEPTH SCALE

1 : 25

Golder Associates

LOGGED: JFB

CHECKED: MW

PROJECT: 001-2772

LOCATION: See Site Plan

SAMPLER HAMMER, 64kg; DROP, 760mm

RECORD OF BOREHOLE: MW 99-3

BORING DATE: August 3, 2000

SHEET 1 OF 1

DATUM: Geodetic

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. +, rem V. ⊕; Q - ●, U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp, W, Wl) (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0		Ground Surface		53.67							
		TOPSOIL		0.00							Native Backfill
				53.06							Bentonite Seal
		Loose very fine brown SAND		0.61							Granular Filter
1											Native Backfill
											Bentonite Seal
				51.99							
		Loose grey SILTY SAND, with clay interbeds		1.68	1	50 DO	6				
2	Power Auger 200mm Diam. Hollow Stem										Native Backfill ▽
					2	50 DO	3				38mm PVC #10 Slot Screen
3											
					3	50 DO	2				Granular Filter
4				49.10							
		END OF BOREHOLE		4.57							
5											W.L.in Screen at Elev. 51.26m Aug. 10/00

BOREHOLE 001-2772.GPJ HYDROGEO.GDT 3 19 01

DEPTH SCALE

1 : 25

Golder Associates

LOGGED: JFB

CHECKED: .....

PROJECT: 001-2772

RECORD OF BOREHOLE: MW 99-4

SHEET 1 OF 1

LOCATION: See Site Plan

BORING DATE: August 3, 2000

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. + Q - ● / rem V. ⊕ U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp — W — Wl) (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0		Ground Surface		52.91							
		TOPSOIL		0.00							Native Backfill
				52.70							
		Loose brown very fine SAND, laminated		0.21							Bentonite Seal
1											Native Backfill
											Bentonite Seal
2	Power Auger 200mm Diam. Hollow Stem				1	SS DO	3				Native Backfill
				50.17							
		Loose grey SILTY SAND, with clay interbeds		2.74							
3					2	SS DO	4				38mm PVC #10 Slot Screen
4					3	SS DO	2				Granular Filter
				48.34							
		END OF BOREHOLE		4.57							W.L.in Screen at Elev. 48.98m Aug. 10/00
5											

DEPTH SCALE

1 : 25

Golder Associates

LOGGED: JFB

CHECKED: MV

BOREHOLE 001-2772.GPJ HYDROGEO.GDT 3.19.01

PROJECT: 001-2772

RECORD OF BOREHOLE: MW 99-5

SHEET 1 OF 1

LOCATION: See Site Plan

BORING DATE: August 8, 2000

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. + Q - ●, rem V. ⊕ U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp — W — Wl) (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0	Power Auger 200mm Diam. Hollow Stem	Ground Surface		51.50							
		TOPSOIL		0.00							Native Backfill
				51.10							Bentonite Seal
		Loose brown very fine SAND		0.40							Native Backfill
1											Bentonite Seal
					1	50 DO	4				
2											Native Backfill
				48.94							▽
		Loose grey SILTY SAND, with clay interbeds		2.56							Granular Filter
3					2	50 DO	4				38mm PVC #10 Slot Screen
4					3	50 DO	4				Granular Filter
				46.93							
		END OF BOREHOLE		4.57							W.L.in Screen at Elev. 49.31m Aug. 10/00
5											

DEPTH SCALE

1 : 25

Golder Associates

LOGGED: JFB

CHECKED: MV

BOREHOLE 001-2772.GPJ HYDROGEO.GDT 3 19 01

PROJECT: 001-2772

RECORD OF BOREHOLE: MW 99-6

SHEET 1 OF 1

LOCATION: See Site Plan

BORING DATE: August 3, 2000

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. + Q - ● rem V. ⊕ U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp — W — Wl) (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0	Power Auger 200mm Diam. Hollow Stem	Ground Surface		52.86							
		Sand (FILL)		0.00 / 52.71							
		TOPSOIL		0.15 / 52.40							Concrete
1		Loose brown very fine SAND, some silt		0.46 / 51.84							Granular Filter
		Loose grey SILTY fine SAND, with clay interbeds		1.22	1	SS DO	5				Bentonite Seal
2											Native Backfill
3					2	SS DO	2				38mm PVC #10 Slot Screen
				49.05							Granular Filter
		END OF BOREHOLE		3.81							
4											W.L.in Screen at Elev. 51.36m Aug. 10/00
5											

BOREHOLE 001-2772.GPJ HYDROGEO.GDT 3 19 01

DEPTH SCALE
1 : 25

Golder Associates

LOGGED: JFB

CHECKED: [signature]

PROJECT: 001-2772

LOCATION: See Site Plan

SAMPLER HAMMER, 64kg; DROP, 760mm

RECORD OF BOREHOLE: MW 99-7

BORING DATE: August 4, 2000

SHEET 1 OF 1

DATUM: Geodetic

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. + Q - ●, rem V. ⊕ U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp — W — Wl) (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0		Ground Surface		53.36							
		TOPSOIL		0.00 / 53.21							Native Backfill
		Loose brown very fine SAND		0.15							Bentonite Seal
				52.45							Native Backfill
1		Loose grey SILTY fine SAND, laminated with clay interbeds		0.91							Bentonite Seal
	Power Auger 200mm Diam. Hollow Stem				1	SS DO	4				Native Backfill
2											
					2	SS DO	3				38mm PVC #10 Slot Screen
3											Granular Filter
		END OF BOREHOLE		49.55 / 3.81							
4											W.L.in Screen at Elev. 52.09m Aug. 10/00
5											

BOREHOLE 001-2772.GPJ HYDROGEO.GDT 3 19 01

DEPTH SCALE

1 : 25

Golder Associates

LOGGED: JFB

CHECKED: MW

PROJECT: 001-2772

RECORD OF BOREHOLE: MW 99-8

SHEET 1 OF 1

LOCATION: See Site Plan

BORING DATE: August 8, 2000

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. +, rem V. ⊕, Q - ●, U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp, W, Wl) (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0		Ground Surface		47.72							
		Fine sand (FILL)		0.00							Native Backfill
				47.20							Bentonite Seal
		PEAT		0.52							Granular Filter
				47.01							
		TOPSOIL		46.93							
		Loose very fine brown SAND		0.79							Bentonite Seal
1											
				45.98							
		Grey SILTY CLAY, with sand seams		1.74	1	50 DO	2				
2	Power Auger 200mm Diam. Hollow Stem										Native Backfill ▽
					2	50 DO	2				Granular Filter
3											
											38mm PVC #10 Slot Screen
4					3	50 DO	2				
				43.15							
		END OF BOREHOLE		4.57							W.L.in Screen at Elev. 45.04m Aug. 10/00
5											

DEPTH SCALE

1 : 25

Golder Associates

LOGGED: JFB

CHECKED: MW

BOREHOLE 001-2772.GPJ HYDROGEO.GDT 3 19 01

APPENDIX C

GROUNDWATER CHEMICAL ANALYSES DATA

Golder Associates

FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS **Project: 051120733**

Sample Source: **MW 99-1** Sheet: 1

Date Sampled:		10-Aug-2000	13-Sep-2000	05-Oct-2000	10-Nov-2000	11-Dec-2000
Parameter	ODWQS					
Ammonia (as N)		0.17	0.18	0.08	0.09	Frozen
Bromide		<0.05	<0.05	<0.05	<0.05	
Chloride	250	12.0	11.0	7.0	6.0	
Conductivity (uS/cm)		448	441	420	280	
DOC	5	3.5	2.6	2.4	2.1	
Escherichia coli (per 100mL)	0	<10	0	0	0	
Fluoride	1.5	<0.10	0.11	0.11	0.11	
Nitrate (as N)	10	<0.10	<0.10	<0.10	<0.10	
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	
pH (pH units)	6.5-8.5	7.7	7.1	7.9	7.7	
Phosphorus (total)						
Sulphate	500	41.0	43.0	44.0	47.0	
Temperature (C)	15		11.0		6.0	
TKN		2.74	0.33	0.21	0.24	

All values reported in mg/L unless otherwise noted.

Golder Associates

FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS **Project: 051120733**

Sample Source: **MW 99-1** Sheet: 2

Date Sampled:		17-Jan-2001	19-Feb-2001	21-Mar-2001	20-Apr-2001	11-May-2001
Parameter	ODWQS					
Ammonia (as N)		Frozen	0.04	0.10	<0.02	0.12
Bromide			<0.05	<0.05	<0.05	<0.05
Chloride	250		3.0	5.0	5.0	6.0
Conductivity (uS/cm)			325	285	330	300
DOC	5		2.3	1.5	1.2	1.9
Escherichia coli (per 100mL)	0		0	<10	<10	<10
Fluoride	1.5		<0.10	0.10	0.11	0.11
Nitrate (as N)	10		0.45	0.17	<0.10	0.19
Nitrite (as N)	1		<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5		7.7	7.2	6.8	7.9
Phosphorus (total)						
Sulphate	500		36.0	37.0	32.0	35.0
Temperature (C)	15		6.0	6.0	5.5	7.5
TKN			0.21	0.21	0.17	0.15

All values reported in mg/L unless otherwise noted.

Golder Associates

FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS **Project: 051120733**

Sample Source: **MW 99-1**

Sheet: 3

Date Sampled:		15-Jun-2001	13-Jul-2001	24-Aug-2001	19-Sep-2001	18-Oct-2001
Parameter	ODWQS					
Ammonia (as N)		0.04	0.10	0.05	0.07	0.12
Bromide		<0.05	<0.05	<0.05	<0.05	<0.05
Chloride	250	6.0	7.0	12.0	18.0	44.0
Conductivity (uS/cm)		345	335	330	470	255
DOC	5	1.5	1.6	1.3	1.1	0.8
Escherichia coli (per 100mL)	0	<10	<10	0	<10	0
Fluoride	1.5	0.13	0.12	0.15	0.14	0.13
Nitrate (as N)	10	0.19	0.22	0.12	0.20	0.25
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	7.5	6.2	7.4	7.4	6.7
Phosphorus (total)						
Sulphate	500	32.0	27.0	31.0	28.0	25.0
Temperature (C)	15	8.0	7.5	12.0	8.0	10.0
TKN		0.11	0.13	0.22	0.20	0.21

All values reported in mg/L unless otherwise noted.

Golder Associates

FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS **Project: 051120733**

Sample Source: **MW 99-1** Sheet: 4

Parameter	ODWQS	Date Sampled: 13-Nov-2001	18-Dec-2001	24-Jan-2002	13-Feb-2002	15-Mar-2002
Ammonia (as N)		0.09	0.10	0.25	0.16	0.09
Bromide		<0.05	<0.05	<0.05	<0.05	<0.05
Chloride	250	116.0	218.0	296.0	312.0	332.0
Conductivity (uS/cm)		540	790	1175	1200	1100
DOC	5	0.9	1.4	1.9	1.7	2.3
Escherichia coli (per 100mL)	0	0	0	0	0	0
Fluoride	1.5	0.51	0.13	0.49	0.61	0.59
Nitrate (as N)	10	0.75	4.38	7.85	11.80	11.60
Nitrite (as N)	1	<0.10	<0.10	1.36	0.66	2.02
pH (pH units)	6.5-8.5	7.5	7.2	7.7	7.5	8.0
Phosphorus (total)						
Sulphate	500	27.0	29.0	40.0	43.0	49.0
Temperature (C)	15	8.0	7.0	7.0	5.0	5.0
TKN		0.31	0.11	0.34	0.33	0.14

All values reported in mg/L unless otherwise noted.

Golder Associates

FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-1**

Sheet: 5

Parameter	ODWQS	Date Sampled: 18-Apr-2002	15-May-2002	25-Jun-2002	23-Jul-2002	19-Aug-2002
Ammonia (as N)		0.10	0.16	0.07	0.07	0.05
Bromide		<0.05	<0.05	<0.05	<0.05	<0.05
Chloride	250	326.0	304.0	301.0	289.0	321.0
Conductivity (uS/cm)		1200	1400	1300	1400	1600
DOC	5	1.8	3.2	2.1	2.6	2.6
Escherichia coli (per 100mL)	0	0	0	0	0	0
Fluoride	1.5	0.49	0.50	0.13	0.10	0.14
Nitrate (as N)	10	11.50	14.90	16.20	23.70	22.10
Nitrite (as N)	1	2.05	1.47	1.45	2.32	1.44
pH (pH units)	6.5-8.5	7.8	6.8	7.7	7.6	7.5
Phosphorus (total)						
Sulphate	500	53.0	57.0	59.0	59.0	64.0
Temperature (C)	15	8.5	10.0	10.0	12.0	13.0
TKN		0.32	0.74	0.31	0.30	0.39

All values reported in mg/L unless otherwise noted.

Golder Associates

FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-1** Sheet: 6

Date Sampled:		26-Sep-2002	23-Oct-2002	24-Nov-2002	12-Dec-2002	16-Jan-2003
Parameter	ODWQS					
Ammonia (as N)		0.07	0.10	0.10	0.07	0.08
Bromide		<0.05	<0.05	<0.05	<0.05	<0.05
Chloride	250	280.0	289.0	280.0	304.0	291.0
Conductivity (uS/cm)		1200	1000	1100	1100	
DOC	5	1.9	2.2	3.4	2.7	2.7
Escherichia coli (per 100mL)	0	0	0	0	0	<10
Fluoride	1.5	0.10	<0.10	<0.10	<0.10	0.39
Nitrate (as N)	10	16.40	17.80	18.20	20.40	19.30
Nitrite (as N)	1	1.91	1.11	<0.10	1.68	2.77
pH (pH units)	6.5-8.5	7.6	7.9	8.0	8.0	8.1
Phosphorus (total)						
Sulphate	500	67.0	68.0	73.0	74.0	73.0
Temperature (C)	15	12.5	12.0	8.0	8.0	7.0
TKN		0.39	0.36	0.52	0.46	0.40

All values reported in mg/L unless otherwise noted.

Golder Associates

FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-1** Sheet: 7

Date Sampled:		02-Mar-2003	27-Mar-2003	25-Apr-2003	26-May-2003	26-May-2003(2)
Parameter	ODWQS					
Ammonia (as N)		0.10	0.05	0.09	0.08	0.10
Bromide		<0.05	<0.05	<0.05	<0.05	<0.05
Chloride	250	297.0	288.0	279.0	274.0	278.0
Conductivity (uS/cm)		1400	1200	1260	1050	
DOC	5	3.1	3.5	2.7	2.9	3.0
Escherichia coli (per 100mL)	0	0	0	0	0	0
Fluoride	1.5	0.43	0.48	<0.10	0.10	0.11
Nitrate (as N)	10	18.60	23.40	21.00	17.20	21.00
Nitrite (as N)	1	3.48	2.14	1.83	0.49	0.49
pH (pH units)	6.5-8.5	7.1	8.1	7.8	7.8	
Phosphorus (total)			2.930			
Sulphate	500	72.0	69.0	69.0	69.0	69.0
Temperature (C)	15	7.0	6.0	7.0	7.4	
TKN		0.49	0.37	0.39	0.44	0.46

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-1** Sheet: 8

Date Sampled:		27-Jun-2003	25-Jul-2003	27-Aug-2003	18-Sep-2003	18-Sep-2003(2)
Parameter	ODWQS					
Ammonia (as N)		0.04	0.06	0.03	<0.02	<0.02
Bromide		<0.05	<0.05	<0.05	<0.05	<0.05
Chloride	250	268.0	310.0	337.0	345.0	365.0
Conductivity (uS/cm)		1400	1590	1600	1600	
DOC	5	2.8	2.6	2.9	2.8	2.8
Escherichia coli (per 100mL)	0	0	<10	<10	<10	<10
Fluoride	1.5	0.11	0.33	0.10	0.98	0.35
Nitrate (as N)	10	22.10	20.00	17.10	21.80	23.50
Nitrite (as N)	1	<0.10	1.68	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	8.1	7.8	7.8	8.0	
Phosphorus (total)						
Sulphate	500	67.0	71.0	69.0	91.0	74.0
Temperature (C)	15	9.6		16.1	13.7	
TKN		0.36	0.41	0.38	0.44	0.40

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS **Project: 051120733**

Sample Source: **MW 99-1**

Sheet: 9

Date Sampled:		24-Oct-2003	18-Nov-2003	18-Nov-2003(2)	11-Dec-2003	25-Mar-2004
Parameter	ODWQS					
Ammonia (as N)		0.12	0.05	0.10	0.03	<0.03
Bromide		0.14	<0.05	<0.05	<0.05	<0.50
Chloride	250	309.0	330.0	330.0	326.0	275.0
Conductivity (uS/cm)		1400	1510		1400	1460
DOC	5	2.1	2.8	2.2	2.6	4.2
Escherichia coli (per 100mL)	0	0	0	0	0	<10
Fluoride	1.5	0.54	0.73	0.98	0.17	<0.10
Nitrate (as N)	10	13.90	18.00	18.40	21.90	19.90
Nitrite (as N)	1	0.22	0.25	0.30	1.17	<0.20
pH (pH units)	6.5-8.5	7.5	7.6		6.7	7.8
Phosphorus (total)						
Sulphate	500	78.0	88.0	89.0	71.0	73.6
Temperature (C)	15	10.4	9.1		8.2	5.7
TKN		0.34	0.41	0.45	0.43	0.27

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-1** Sheet: 10

Date Sampled:		01-Jun-2004	01-Jun-2004(2)	26-Aug-2004	26-Aug-2004(2)	19-Oct-2004
Parameter	ODWQS					
Ammonia (as N)		<0.03	<0.03	0.03	0.09	0.06
Bromide		<0.50	<0.50	<0.50	<0.50	<0.50
Chloride	250	264.0	273.0	287.0	304.0	334.0
Conductivity (uS/cm)		1050		1200		1330
DOC	5	3.0	2.7	4.0	3.7	4.2
Escherichia coli (per 100mL)	0					0
Fluoride	1.5	<0.10	<0.10	<0.10	<0.10	0.10
Nitrate (as N)	10	13.40	13.90	20.40	22.70	21.40
Nitrite (as N)	1	<0.20	<0.20	<0.20	<0.20	<0.20
pH (pH units)	6.5-8.5	7.5		7.0		7.6
Phosphorus (total)						
Sulphate	500	68.7	69.2	63.1	63.0	72.9
Temperature (C)	15	7.3		12.0		12.2
TKN		0.41	0.30	0.33	0.33	0.34

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-1**

Sheet: 11

Date Sampled:		17-Mar-2005	09-Jun-2005	02-Aug-2005	02-Aug-2005(2)	21-Oct-2005
Parameter	ODWQS					
Ammonia (as N)		0.02	0.05	0.04	0.09	0.08
Bromide		<0.05	0.16	<0.05	<0.05	<0.05
Chloride	250	282.0	313.0	365.0	367.0	317.0
Conductivity (uS/cm)		1650	1590	960		1500
DOC	5	3.4	3.5	3.0	3.8	2.7
Escherichia coli (per 100mL)	0	0	<10	<10	<10	<10
Fluoride	1.5	0.13	0.10	<0.10	<0.10	0.15
Nitrate (as N)	10	14.80	29.60	24.10	25.40	19.00
Nitrite (as N)	1	0.57	<0.10	0.27	0.31	<0.10
pH (pH units)	6.5-8.5	7.6	7.4	7.7		7.8
Phosphorus (total)						
Sulphate	500	78.0	59.0	70.0	70.0	67.0
Temperature (C)	15	5.3	12.0	13.0		11.0
TKN		0.43	0.47	0.46	0.50	0.42

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sheet: 12

Sample Source: **MW 99-1**

Date Sampled: 21-Oct-2005(2)

Parameter	ODWQS	
Ammonia (as N)		0.08
Bromide		<0.05
Chloride	250	320.0
Conductivity (uS/cm)		
DOC	5	3.1
Escherichia coli (per 100mL)	0	<10
Fluoride	1.5	0.14
Nitrate (as N)	10	21.80
Nitrite (as N)	1	<0.10
pH (pH units)	6.5-8.5	7.9
Phosphorus (total)		
Sulphate	500	62.0
Temperature (C)	15	
TKN		0.45

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS **Project: 051120733**

Sample Source: **MW 99-2**

Sheet: 1

Date Sampled:		10-Aug-2000	13-Sep-2000	05-Oct-2000	10-Nov-2000	11-Dec-2000
Parameter	ODWQS					
Ammonia (as N)		0.23	0.26	0.14	0.16	Frozen
Bromide		<0.05	<0.05	<0.05	<0.05	
Chloride	250	8.0	16.0	5.0	4.0	
Conductivity (uS/cm)		340	359	305	230	
DOC	5	3.7	2.4	2.4	1.8	
Escherichia coli (per 100mL)	0	<10	0	0	0	
Fluoride	1.5	0.12	0.13	0.13	0.12	
Nitrate (as N)	10	<0.10	<0.10	<0.10	<0.10	
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	
pH (pH units)	6.5-8.5	7.8	7.4	7.9	7.7	
Phosphorus (total)						
Sulphate	500	28.0	25.0	24.0	26.0	
Temperature (C)	15		11.0		6.0	
TKN		2.48	0.41	0.19	0.31	

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS **Project: 051120733**

Sample Source: **MW 99-2** Sheet: 2

Date Sampled:		17-Jan-2001	19-Feb-2001	21-Mar-2001	20-Apr-2001	11-May-2001
Parameter	ODWQS					
Ammonia (as N)		Frozen	0.16	0.11	0.02	0.12
Bromide			0.15	<0.05	<0.05	<0.05
Chloride	250		35.0	6.0	3.0	3.0
Conductivity (uS/cm)			440	325	245	230
DOC	5		2.3	1.4	1.3	1.6
Escherichia coli (per 100mL)	0		0	<10	<10	<10
Fluoride	1.5		0.11	0.10	0.12	0.12
Nitrate (as N)	10		0.30	0.13	<0.10	0.12
Nitrite (as N)	1		<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5		7.8	7.1	7.1	7.1
Phosphorus (total)						
Sulphate	500		31.0	36.0	22.0	23.0
Temperature (C)	15		6.0	5.5	6.0	7.0
TKN			0.29	0.25	0.09	0.18

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS **Project: 051120733**

Sample Source: **MW 99-2** Sheet: 3

Date Sampled:		15-Jun-2001	13-Jul-2001	24-Aug-2001	19-Sep-2001	18-Oct-2001
Parameter	ODWQS					
Ammonia (as N)		0.08	0.13	0.06	0.11	0.29
Bromide		<0.05	<0.05	<0.05	<0.05	<0.05
Chloride	250	3.0	4.0	4.0	4.0	12.0
Conductivity (uS/cm)		265	255	280	370	180
DOC	5	1.8	1.9	1.3	1.2	1.2
Escherichia coli (per 100mL)	0	<10	<10	0	<10	0
Fluoride	1.5	0.12	0.13	0.16	0.15	0.15
Nitrate (as N)	10	0.13	<0.10	<0.10	<0.10	<0.10
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	7.9	6.0	7.2	7.5	7.4
Phosphorus (total)						
Sulphate	500	23.0	25.0	26.0	26.0	24.0
Temperature (C)	15	6.5	7.5	10.0	9.0	11.0
TKN		0.18	0.13	0.27	0.18	0.33

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-2** Sheet: 4

Parameter	ODWQS	Date Sampled: 13-Nov-2001	18-Dec-2001	24-Jan-2002	13-Feb-2002	15-Mar-2002
Ammonia (as N)		0.27	0.19	0.36	0.23	0.10
Bromide		<0.05	0.13	0.09	<0.05	<0.05
Chloride	250	18.0	19.0	15.0	13.0	10.0
Conductivity (uS/cm)		270	270	290	250	220
DOC	5	0.9	1.3	1.8	1.6	1.6
Escherichia coli (per 100mL)	0	0	0	0	0	0
Fluoride	1.5	0.52	0.27	0.51	0.50	0.55
Nitrate (as N)	10	0.11	0.12	<0.10	<0.10	<0.10
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	7.8	7.4	7.9	7.8	8.2
Phosphorus (total)						
Sulphate	500	42.0	28.0	30.0	30.0	29.0
Temperature (C)	15	7.5	8.0	7.5	5.0	6.0
TKN		0.47	0.19	0.36	0.27	0.10

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-2** Sheet: 5

Date Sampled:		18-Apr-2002	15-May-2002	25-Jun-2002	23-Jul-2002	19-Aug-2002
Parameter	ODWQS					
Ammonia (as N)		0.20	0.16	0.11	0.08	0.08
Bromide		<0.05	<0.05	<0.05	<0.05	<0.05
Chloride	250	10.0	5.0	7.0	12.0	10.0
Conductivity (uS/cm)		280	290	320	300	320
DOC	5	1.5	2.7	1.3	1.5	1.9
Escherichia coli (per 100mL)	0	0	0	0	0	0
Fluoride	1.5	0.47	0.52	0.15	0.12	0.14
Nitrate (as N)	10	<0.10	<0.10	0.10	<0.10	<0.10
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	8.0	6.9	7.9	8.1	7.7
Phosphorus (total)						
Sulphate	500	27.0	32.0	27.0	26.0	26.0
Temperature (C)	15	9.0	9.5	9.5	11.5	12.0
TKN		0.26	3.00	0.32	0.17	0.20

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-2** Sheet: 6

Date Sampled:		26-Sep-2002	23-Oct-2002	24-Nov-2002	12-Dec-2002	16-Jan-2003
Parameter	ODWQS					
Ammonia (as N)		0.08	0.08	0.13	0.10	0.07
Bromide		<0.05	<0.05	<0.05	<0.05	<0.05
Chloride	250	10.0	13.0	15.0	8.0	13.0
Conductivity (uS/cm)		280	280	280	240	
DOC	5	0.8	1.0	2.3	2.1	1.7
Escherichia coli (per 100mL)	0	0	0	0	0	<10
Fluoride	1.5	0.11	<0.10	<0.10	0.43	0.46
Nitrate (as N)	10	<0.10	<0.10	<0.10	<0.10	<0.10
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	8.1	8.4	8.0	8.3	8.4
Phosphorus (total)						
Sulphate	500	26.0	27.0	26.0	30.0	35.0
Temperature (C)	15	12.0	11.0	8.0	8.5	7.0
TKN		0.22	0.19	0.48	0.17	0.18

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-2** Sheet: 7

Date Sampled:		02-Mar-2003	27-Mar-2003	25-Apr-2003	26-May-2003	27-Jun-2003
Parameter	ODWQS					
Ammonia (as N)		0.07	0.06	0.07	0.11	0.06
Bromide		<0.05	<0.05	<0.05	<0.05	<0.05
Chloride	250	12.0	6.0	4.0	7.0	8.0
Conductivity (uS/cm)		320	310	810	210	300
DOC	5	1.7	1.5	1.8	1.2	1.3
Escherichia coli (per 100mL)	0	0	0	0	0	0
Fluoride	1.5	0.44	0.62	0.13	0.13	0.14
Nitrate (as N)	10	<0.10	0.14	0.19	0.23	0.22
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	7.3	8.0	7.7	8.2	8.6
Phosphorus (total)			4.580			
Sulphate	500	30.0	37.0	27.0	26.0	27.0
Temperature (C)	15	6.5	6.0	6.0	8.1	9.8
TKN		0.17	0.12	0.69	0.22	0.23

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-2** Sheet: 8

Date Sampled:		25-Jul-2003	25-Jul-2003(2)	27-Aug-2003	18-Sep-2003	24-Oct-2003
Parameter	ODWQS					
Ammonia (as N)		0.07	0.07	0.05	<0.02	0.08
Bromide		0.07	0.15	<0.05	<0.05	0.17
Chloride	250	11.0	14.0	13.0	10.0	20.0
Conductivity (uS/cm)		319	339	270	300	340
DOC	5	0.9	1.1	1.0	1.0	0.7
Escherichia coli (per 100mL)	0	<10	<10	<10	<10	0
Fluoride	1.5	0.30	0.43	0.21	0.42	0.70
Nitrate (as N)	10	0.17	0.14	0.14	0.18	<0.10
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	7.8	7.9	8.1	8.5	7.9
Phosphorus (total)						
Sulphate	500	31.0	32.0	25.0	30.0	37.0
Temperature (C)	15			13.6	13.4	10.8
TKN		0.17	0.19	0.20	0.13	0.11

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-2** Sheet: 9

Date Sampled:		18-Nov-2003	11-Dec-2003	25-Mar-2004	01-Jun-2004	26-Aug-2004
Parameter	ODWQS					
Ammonia (as N)		0.12	0.04	0.07	0.20	0.05
Bromide		<0.05	<0.05	<0.50	<0.50	<0.50
Chloride	250	21.0	38.0	111.0	170.0	135.0
Conductivity (uS/cm)		290	410	610	610	600
DOC	5	0.5	0.8	2.0	1.7	1.6
Escherichia coli (per 100mL)	0	0	0	<10		
Fluoride	1.5	0.99	0.21	0.10	<0.10	<0.10
Nitrate (as N)	10	0.55	1.14	5.00	10.70	8.40
Nitrite (as N)	1	<0.10	<0.10	<0.20	<0.20	<0.20
pH (pH units)	6.5-8.5	7.6	7.0	8.0	7.6	6.7
Phosphorus (total)						
Sulphate	500	40.0	19.0	15.6	14.5	16.0
Temperature (C)	15	10.7	8.1	5.6	7.8	11.7
TKN		0.12	0.16	0.14	0.32	0.16

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-2** Sheet: 10

Parameter	ODWQS	Date Sampled: 19-Oct-2004	17-Mar-2005	09-Jun-2005	02-Aug-2005	21-Oct-2005
Ammonia (as N)		0.14	0.03	0.04	0.05	0.04
Bromide		<0.50	<0.05	<0.05	<0.05	<0.05
Chloride	250	166.0	195.0	232.0	200.0	250.0
Conductivity (uS/cm)		710	1090	1010	680	770
DOC	5	2.2	1.0	0.7	0.8	<0.5
Escherichia coli (per 100mL)	0	0	0	<10	<10	<10
Fluoride	1.5	0.10	0.13	<0.10	<0.10	0.13
Nitrate (as N)	10	12.10	16.40	21.50	14.60	19.40
Nitrite (as N)	1	<0.20	0.39	0.13	0.91	<0.10
pH (pH units)	6.5-8.5	7.5	7.7	7.7	7.8	7.8
Phosphorus (total)						
Sulphate	500	21.0	34.0	32.0	40.0	42.0
Temperature (C)	15	12.1	6.2	11.0	12.7	11.0
TKN		0.24	0.24	0.21	0.18	0.21

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS **Project: 051120733**

Sample Source: **MW 99-3**

Sheet: 1

Date Sampled:		10-Aug-2000	13-Sep-2000	05-Oct-2000	10-Nov-2000	11-Dec-2000
Parameter	ODWQS					
Ammonia (as N)		0.34	0.40	0.45	0.35	Frozen
Bromide		0.22	0.26	0.08	<0.05	
Chloride	250	44.0	63.0	16.0	18.0	
Conductivity (uS/cm)		545	595	447	310	
DOC	5	2.3	2.9	2.6	2.1	
Escherichia coli (per 100mL)	0	<10	0	0	0	
Fluoride	1.5	0.11	0.15	0.13	0.12	
Nitrate (as N)	10	<0.10	<0.10	<0.10	<0.10	
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	
pH (pH units)	6.5-8.5	7.4	7.3	8.0	7.4	
Phosphorus (total)						
Sulphate	500	39.0	32.0	37.0	41.0	
Temperature (C)	15		11.0		6.0	
TKN		2.02	0.77	0.45	0.53	

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-3** Sheet: 2

Parameter	ODWQS	Date Sampled: 17-Jan-2001	19-Feb-2001	21-Mar-2001	20-Apr-2001	11-May-2001
Ammonia (as N)		Frozen	0.28	0.13	0.30	0.34
Bromide			0.12	<0.05	<0.05	<0.05
Chloride	250		21.0	12.0	12.0	13.0
Conductivity (uS/cm)			390	340	360	330
DOC	5		2.3	1.2	1.5	1.7
Escherichia coli (per 100mL)	0		0	<10	<10	<10
Fluoride	1.5		0.10	0.11	0.11	0.12
Nitrate (as N)	10		0.49	<0.10	<0.10	<0.10
Nitrite (as N)	1		<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5		7.8	7.2	7.1	8.2
Phosphorus (total)						
Sulphate	500		27.0	38.0	37.0	37.0
Temperature (C)	15		5.5	6.5	6.0	7.5
TKN			0.37	0.19	1.04	0.35

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS **Project: 051120733**

Sample Source: **MW 99-3**

Sheet: 3

Date Sampled:		15-Jun-2001	13-Jul-2001	24-Aug-2001	19-Sep-2001	18-Oct-2001
Parameter	ODWQS					
Ammonia (as N)		0.29	0.30	0.15	0.19	0.28
Bromide		0.55	<0.05	<0.05	<0.05	0.14
Chloride	250	13.0	13.0	13.0	13.0	20.0
Conductivity (uS/cm)		395	370	400	470	235
DOC	5	1.4	2.0	1.6	1.3	3.3
Escherichia coli (per 100mL)	0	<10	<10	0	<10	0
Fluoride	1.5	0.13	0.13	0.16	0.14	0.14
Nitrate (as N)	10	<0.10	<0.10	<0.10	<0.10	<0.10
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	8.0	5.8	7.1	7.4	7.6
Phosphorus (total)						
Sulphate	500	37.0	37.0	38.0	38.0	35.0
Temperature (C)	15	7.5	8.0	8.0	7.0	10.5
TKN		0.31	0.38	0.27	0.45	0.33

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-3** Sheet: 4

Date Sampled:		13-Nov-2001	18-Dec-2001	24-Jan-2002	13-Feb-2002	15-Mar-2002
Parameter	ODWQS					
Ammonia (as N)		0.28	0.16	0.28	0.28	0.10
Bromide		<0.05	<0.05	<0.05	0.07	<0.05
Chloride	250	21.0	15.0	16.0	16.0	14.0
Conductivity (uS/cm)		330	300	350	320	280
DOC	5	1.0	1.1	1.5	1.5	1.7
Escherichia coli (per 100mL)	0	0	0	0	0	0
Fluoride	1.5	0.53	0.59	0.57	0.15	0.56
Nitrate (as N)	10	<0.10	<0.10	<0.10	<0.10	<0.10
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	7.8	7.1	7.6	7.8	8.2
Phosphorus (total)						
Sulphate	500	40.0	45.0	45.0	39.0	43.0
Temperature (C)	15	7.0	8.0	7.5	5.0	5.0
TKN		0.52	0.16	0.40	0.29	0.17

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-3** Sheet: 5

Date Sampled:		18-Apr-2002	15-May-2002	25-Jun-2002	23-Jul-2002	19-Aug-2002
Parameter	ODWQS					
Ammonia (as N)		0.33	0.45	0.17	0.17	0.17
Bromide		<0.05	<0.05	0.07	0.10	<0.05
Chloride	250	12.0	13.0	14.0	17.0	17.0
Conductivity (uS/cm)		320	350	360	410	440
DOC	5	1.5	2.5	2.2	1.0	1.8
Escherichia coli (per 100mL)	0	0	0	0	0	0
Fluoride	1.5	0.54	0.48	0.14	0.11	0.13
Nitrate (as N)	10	<0.10	<0.10	<0.10	<0.10	<0.10
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	8.0	6.8	7.8	8.0	7.6
Phosphorus (total)						
Sulphate	500	41.0	42.0	40.0	39.0	38.0
Temperature (C)	15	9.0	9.5	9.0	10.0	11.0
TKN		0.36	0.56	0.47	0.26	0.30

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS **Project: 051120733**

Sample Source: **MW 99-3** Sheet: 6

Date Sampled:		26-Sep-2002	23-Oct-2002	24-Nov-2002	12-Dec-2002	16-Jan-2003
Parameter	ODWQS					
Ammonia (as N)		0.21	0.21	0.20	0.18	0.22
Bromide		<0.05	<0.05	<0.05	<0.05	0.16
Chloride	250	16.0	16.0	13.0	13.0	13.0
Conductivity (uS/cm)		390	270	290	320	
DOC	5	1.0	1.5	2.4	2.2	1.5
Escherichia coli (per 100mL)	0	0	0	0	0	<10
Fluoride	1.5	0.12	<0.10	<0.10	0.54	0.54
Nitrate (as N)	10	<0.10	<0.10	<0.10	<0.10	<0.10
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	8.0	8.3	7.9	8.2	8.5
Phosphorus (total)						
Sulphate	500	38.0	39.0	37.0	38.0	37.0
Temperature (C)	15	12.5	10.5	8.0	8.0	7.0
TKN		0.26	0.36	0.40	0.27	0.22

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-3**

Sheet: 7

Date Sampled:		02-Mar-2003	27-Mar-2003	25-Apr-2003	26-May-2003	27-Jun-2003
Parameter	ODWQS					
Ammonia (as N)		0.17	0.14	0.17	0.25	0.17
Bromide		0.14	0.13	<0.05	<0.05	<0.05
Chloride	250	14.0	12.0	11.0	11.0	13.0
Conductivity (uS/cm)		440	410	500	285	420
DOC	5	1.8	1.9	2.0	1.8	1.5
Escherichia coli (per 100mL)	0	0	0	<10	0	0
Fluoride	1.5	0.57	0.55	<0.10	0.11	0.11
Nitrate (as N)	10	<0.10	<0.10	<0.10	<0.10	<0.10
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	7.3	8.1	7.9	8.2	8.5
Phosphorus (total)			4.650			
Sulphate	500	35.0	44.0	33.0	33.0	34.0
Temperature (C)	15	6.5	6.0	6.0	8.5	10.5
TKN		0.29	0.26	0.39	0.40	0.29

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS **Project: 051120733**

Sample Source: **MW 99-3**

Sheet: 8

Date Sampled:		25-Jul-2003	27-Aug-2003	18-Sep-2003	24-Oct-2003	18-Nov-2003
Parameter	ODWQS					
Ammonia (as N)		0.15	0.12	0.07	0.19	0.25
Bromide		0.21	0.19	<0.05	0.16	0.10
Chloride	250	16.0	18.0	18.0	18.0	20.0
Conductivity (uS/cm)		458	230	440	430	
DOC	5	0.8	1.1	1.0	1.2	1.0
Escherichia coli (per 100mL)	0	<10	<10	<10	0	0
Fluoride	1.5	0.44	0.68	0.73	0.60	<0.10
Nitrate (as N)	10	<0.10	<0.10	<0.10	<0.10	<0.10
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	8.0	8.1	8.5	7.8	
Phosphorus (total)						
Sulphate	500	40.0	44.0	51.0	39.0	52.0
Temperature (C)	15		13.3	12.7	9.5	
TKN		0.52	0.26	0.19	0.26	0.27

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-3** Sheet: 9

Parameter	ODWQS	Date Sampled: 11-Dec-2003	25-Mar-2004	25-Mar-2004(2)	01-Jun-2004	26-Aug-2004
Ammonia (as N)		0.16	0.16	0.20	0.27	0.22
Bromide		0.16	<0.50	<0.50	<0.50	<0.50
Chloride	250	21.0	40.6	42.4	39.8	41.6
Conductivity (uS/cm)		520	650		440	480
DOC	5	1.6	2.7	2.2	2.5	2.4
Escherichia coli (per 100mL)	0	0	<10	<10		
Fluoride	1.5	0.19	<0.10	<0.10	<0.10	<0.10
Nitrate (as N)	10	<0.10	<0.20	<0.20	<0.20	<0.20
Nitrite (as N)	1	<0.10	<0.20	<0.20	<0.20	<0.20
pH (pH units)	6.5-8.5	7.0	7.8	7.8	7.6	6.7
Phosphorus (total)						
Sulphate	500	28.0	27.5	26.5	31.1	30.9
Temperature (C)	15	7.7	6.3		7.5	10.3
TKN		0.27	0.30	0.31	0.59	0.34

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-3** Sheet: 10

Date Sampled:		19-Oct-2004	17-Mar-2005	09-Jun-2005	02-Aug-2005	21-Oct-2005
Parameter	ODWQS					
Ammonia (as N)		0.27	0.15	0.14	0.20	0.12
Bromide		<0.50	0.14	0.15	<0.05	0.12
Chloride	250	49.4	107.0	105.0	101.0	113.0
Conductivity (uS/cm)		500	840	800	560	590
DOC	5	2.6	2.3	1.1	1.8	1.0
Escherichia coli (per 100mL)	0	0	0	<10	<10	<10
Fluoride	1.5	<0.10	0.14	0.10	0.15	0.12
Nitrate (as N)	10	<0.20	<0.10	<0.10	<0.10	<0.10
Nitrite (as N)	1	<0.20	<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	7.8	7.9	7.7	7.5	7.9
Phosphorus (total)						
Sulphate	500	30.0	28.0	25.0	27.0	23.0
Temperature (C)	15	11.1	7.5	12.0	10.4	12.0
TKN		0.39	0.37	0.56	0.38	0.30

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS **Project: 051120733**

Sample Source: **MW 99-4** Sheet: 1

Date Sampled:		10-Aug-2000	13-Sep-2000	05-Oct-2000	10-Nov-2000	11-Dec-2000
Parameter	ODWQS					
Ammonia (as N)		0.89	0.29	1.28	1.61	Frozen
Bromide		3.52	6.37	5.19	<0.05	
Chloride	250	591.0	1160.0	1030.0	1030.0	
Conductivity (uS/cm)		2080	3760	3310	2550	
DOC	5	6.2	6.0	3.9	5.8	
Escherichia coli (per 100mL)	0	<10	1	0	0	
Fluoride	1.5	0.17	0.20	0.22	0.22	
Nitrate (as N)	10	0.32	<0.10	<0.10	<0.10	
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	
pH (pH units)	6.5-8.5	7.6	7.6	7.7	7.7	
Phosphorus (dissolved reactive)						
Phosphorus (total)		0.050	18.100	0.600	0.090	
Sulphate	500	36.0	8.0	8.0	5.0	
Temperature (C)	15		13.0		5.5	
TKN		2.35	1.66	1.49	1.88	

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS **Project: 051120733**

Sample Source: **MW 99-4** Sheet: 2

Date Sampled:		17-Jan-2001	19-Feb-2001	21-Mar-2001	20-Apr-2001	11-May-2001
Parameter	ODWQS					
Ammonia (as N)		Frozen	0.33	0.36	0.68	0.17
Bromide			<0.05	<0.05	<0.05	3.75
Chloride	250		20.0	23.0	205.0	497.0
Conductivity (uS/cm)			390	410	850	1600
DOC	5		2.5	1.5	2.2	2.2
Escherichia coli (per 100mL)	0		0	<10	<10	<10
Fluoride	1.5		0.10	0.11	0.23	0.22
Nitrate (as N)	10		0.44	<0.10	<0.10	0.41
Nitrite (as N)	1		<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5		7.8	7.2	7.6	8.0
Phosphorus (dissolved reactive)						
Phosphorus (total)			5.730	6.340	0.890	5.250
Sulphate	500		28.0	35.0	48.0	25.0
Temperature (C)	15		6.0	6.0	5.5	10.0
TKN			0.37	0.42	0.80	0.44

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-4** Sheet: 3

Date Sampled:		15-Jun-2001	13-Jul-2001	24-Aug-2001	19-Sep-2001	18-Oct-2001
Parameter	ODWQS					
Ammonia (as N)		1.65	1.27	1.59	1.71	1.94
Bromide		<0.05	6.23	13.40	6.75	4.46
Chloride	250	653.0	993.0	1200.0	1320.0	1130.0
Conductivity (uS/cm)		2150	2900	3200	4150	2600
DOC	5	3.5	4.1	3.3	3.2	3.4
Escherichia coli (per 100mL)	0	<10	<10	0	<10	0
Fluoride	1.5	0.19	0.23	0.26	0.23	0.21
Nitrate (as N)	10	2.23	0.40	0.28	<0.10	<0.10
Nitrite (as N)	1	<0.10	<0.10	<0.10	0.13	0.10
pH (pH units)	6.5-8.5	6.9	6.9	7.1	7.4	7.6
Phosphorus (dissolved reactive)					0.030	0.060
Phosphorus (total)		3.310	1.080	5.400	5.660	2.160
Sulphate	500	19.0	8.0	5.0	5.0	6.0
Temperature (C)	15	8.0	7.5	9.0	8.0	9.0
TKN		1.54	1.69	1.70	1.89	1.94

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-4** Sheet: 4

Date Sampled:		13-Nov-2001	18-Dec-2001	24-Jan-2002	13-Feb-2002	15-Mar-2002
Parameter	ODWQS					
Ammonia (as N)		1.43	1.29	1.45	1.30	0.60
Bromide		2.34	4.35	4.64	4.07	1.82
Chloride	250	1090.0	1000.0	1020.0	902.0	725.0
Conductivity (uS/cm)		2900	2700	3100	3350	2100
DOC	5	3.4	3.1	2.9	2.4	2.9
Escherichia coli (per 100mL)	0	0	0	0	0	0
Fluoride	1.5	0.47	0.53	0.62	0.62	0.65
Nitrate (as N)	10	0.69	0.57	0.32	1.61	0.21
Nitrite (as N)	1	0.54	1.16	0.14	0.50	0.17
pH (pH units)	6.5-8.5	7.2	7.0	7.6	7.4	7.9
Phosphorus (dissolved reactive)		0.050	0.060	0.070	0.120	0.080
Phosphorus (total)		7.780	0.310	4.200	4.040	2.190
Sulphate	500	11.0	12.0	13.0	16.0	20.0
Temperature (C)	15	4.0	7.0	6.5	5.0	6.0
TKN		1.97	1.29	1.81	1.55	1.09

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS **Project: 051120733**

Sample Source: **MW 99-4**

Sheet: 5

Date Sampled:		18-Apr-2002	15-May-2002	25-Jun-2002	23-Jul-2002	19-Aug-2002
Parameter	ODWQS					
Ammonia (as N)		0.97	1.47	0.97	1.44	1.48
Bromide		2.41	3.14	2.18	4.93	5.90
Chloride	250	583.0	824.0	570.0	1100.0	1280.0
Conductivity (uS/cm)		1750	2400	2000	2400	4000
DOC	5	1.7	3.4	2.4	3.3	3.7
Escherichia coli (per 100mL)	0	0	0	0	1	0
Fluoride	1.5	0.64	0.55	0.23	0.15	0.25
Nitrate (as N)	10	0.15	0.19	0.36	<0.10	0.35
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	7.1	7.0	7.9	7.9	7.4
Phosphorus (dissolved reactive)		0.090	0.090	0.110	0.140	0.210
Phosphorus (total)		3.400	3.340	4.900	2.740	3.440
Sulphate	500	24.0	15.0	19.0	7.0	6.0
Temperature (C)	15	9.0	9.5	10.0	12.0	11.0
TKN		1.03	1.57	1.19	1.65	1.70

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-4** Sheet: 6

Date Sampled:		26-Sep-2002	23-Oct-2002	24-Nov-2002	12-Dec-2002	16-Jan-2003
Parameter	ODWQS					
Ammonia (as N)		1.79	1.69	1.57	1.56	1.56
Bromide		<0.05	4.87	4.61	4.00	<0.05
Chloride	250	1190.0	1060.0	1050.0	997.0	1010.0
Conductivity (uS/cm)		3500	2800	2800	2700	
DOC	5	2.8	3.5	4.5	3.6	3.2
Escherichia coli (per 100mL)	0	0	0	0	0	<10
Fluoride	1.5	0.64	0.37	0.11	0.48	0.51
Nitrate (as N)	10	1.31	0.10	0.10	0.27	0.16
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	7.7	8.2	7.8	8.4	8.4
Phosphorus (dissolved reactive)		0.170	0.200	0.160	0.190	0.160
Phosphorus (total)		3.600	6.200	5.020	2.630	3.750
Sulphate	500	8.0	13.0	8.0	11.0	11.0
Temperature (C)	15	12.0	9.0	7.0	8.0	7.0
TKN		1.94	1.95	1.84	1.76	1.59

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS **Project: 051120733**

Sample Source: **MW 99-4** Sheet: 7

Date Sampled:		02-Mar-2003	27-Mar-2003	25-Apr-2003	26-May-2003	27-Jun-2003
Parameter	ODWQS					
Ammonia (as N)		1.62	1.07	0.61	0.92	1.14
Bromide		6.50	7.40	2.75	5.86	4.97
Chloride	250	1080.0	815.0	536.0	640.0	826.0
Conductivity (uS/cm)		3800	2550	2440	2050	3000
DOC	5	3.7	2.5	2.0	2.0	2.7
Escherichia coli (per 100mL)	0	0	0	0	0	0
Fluoride	1.5	0.87	0.61	0.19	0.18	0.21
Nitrate (as N)	10	0.11	0.39	0.25	<0.10	0.70
Nitrite (as N)	1	<0.10	0.26	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	7.6	8.1	8.0	7.8	8.3
Phosphorus (dissolved reactive)		0.260	0.150	0.150	0.220	0.110
Phosphorus (total)		3.080	2.100	2.850	2.010	4.100
Sulphate	500	17.0	15.0	22.0	14.0	14.0
Temperature (C)	15	7.0	5.0	7.0	8.2	8.4
TKN		1.67	1.16	0.73	1.06	1.47

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-4** Sheet: 8

Date Sampled:		25-Jul-2003	27-Aug-2003	18-Sep-2003	24-Oct-2003	18-Nov-2003
Parameter	ODWQS					
Ammonia (as N)		1.20	1.31	1.39	1.46	1.13
Bromide		4.87	5.72	11.90	<0.05	5.76
Chloride	250	945.0	1080.0	1090.0	948.0	958.0
Conductivity (uS/cm)		3370	2900	3450	3400	>2000
DOC	5	2.7	2.5	3.2	2.3	1.9
Escherichia coli (per 100mL)	0	<10	<10	<10	0	0
Fluoride	1.5	0.40	0.54	0.93	0.60	0.23
Nitrate (as N)	10	0.13	<0.10	0.34	<0.10	0.33
Nitrite (as N)	1	<0.10	<0.10	0.17	0.18	0.50
pH (pH units)	6.5-8.5	8.0	8.1	8.3	7.7	7.5
Phosphorus (dissolved reactive)		0.160	0.170	0.200	0.120	0.160
Phosphorus (total)		2.730	2.860	0.220	2.450	0.330
Sulphate	500	17.0	19.0	24.0	16.0	29.0
Temperature (C)	15		10.8	11.4	8.1	7.9
TKN		1.67	1.50	<0.05	1.53	1.21

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS

Project: 051120733

Sample Source: **MW 99-4**

Sheet: 9

Date Sampled:		11-Dec-2003	01-Jun-2004	02-Aug-2005
Parameter	ODWQS			
Ammonia (as N)		1.14	1.01	1.27
Bromide		5.59	3.50	<0.05
Chloride	250	752.0	944.0	1270.0
Conductivity (uS/cm)		3500	>1990	2060
DOC	5	1.7	2.7	3.6
Escherichia coli (per 100mL)	0	0		<10
Fluoride	1.5	0.27	0.20	0.24
Nitrate (as N)	10	0.47	1.10	0.40
Nitrite (as N)	1	0.22	<2.00	<0.10
pH (pH units)	6.5-8.5	8.1	8.2	7.6
Phosphorus (dissolved reactive)		0.090	0.123	0.170
Phosphorus (total)		1.900	1.980	0.200
Sulphate	500	15.0	12.5	6.0
Temperature (C)	15	7.5	6.6	9.3
TKN		1.40	2.24	1.61

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS **Project: 051120733**

Sample Source: **MW 99-5** Sheet: 1

Parameter	ODWQS	Date Sampled: 10-Aug-2000	13-Sep-2000	05-Oct-2000	10-Nov-2000	11-Dec-2000
Ammonia (as N)		0.59	0.29	0.32	0.51	Frozen
Bromide		0.32	0.11	0.13	<0.05	
Chloride	250	77.0	21.0	29.0	7.0	
Conductivity (uS/cm)		588	329	345	600	
DOC	5	4.5	2.3	3.0	2.1	
Escherichia coli (per 100mL)	0	10	0	0	1	
Fluoride	1.5	<0.10	0.14	0.14	0.11	
Nitrate (as N)	10	0.21	0.20	0.24	<0.10	
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	
pH (pH units)	6.5-8.5	7.8	7.7	7.8	8.0	
Phosphorus (dissolved reactive)						
Phosphorus (total)		0.040	0.050	0.080	1.360	
Sulphate	500	39.0	26.0	24.0	47.0	
Temperature (C)	15		10.0		5.0	
TKN		3.65	0.52	0.46	0.68	

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-5** Sheet: 2

Date Sampled:		17-Jan-2001	19-Feb-2001	21-Mar-2001	20-Apr-2001	11-May-2001
Parameter	ODWQS					
Ammonia (as N)		Frozen	0.37	0.34	0.02	0.15
Bromide			<0.05	0.20	<0.05	<0.05
Chloride	250		15.0	28.0	5.0	17.0
Conductivity (uS/cm)			360	415	255	310
DOC	5		2.6	1.6	1.2	1.7
Escherichia coli (per 100mL)	0		0	<10	<10	<10
Fluoride	1.5		<0.10	0.11	0.11	0.11
Nitrate (as N)	10		0.32	<0.10	<0.10	0.21
Nitrite (as N)	1		<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5		7.7	6.9	7.6	8.0
Phosphorus (dissolved reactive)						
Phosphorus (total)			6.170	7.210	4.460	0.500
Sulphate	500		35.0	35.0	23.0	28.0
Temperature (C)	15		6.0	6.0	6.0	6.0
TKN			0.62	0.42	0.14	0.31

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS **Project: 051120733**

Sample Source: **MW 99-5** Sheet: 3

Date Sampled:		15-Jun-2001	13-Jul-2001	24-Aug-2001	19-Sep-2001	18-Oct-2001
Parameter	ODWQS					
Ammonia (as N)		0.11	0.13	0.10	0.26	0.82
Bromide		0.57	0.10	<0.05	0.34	1.71
Chloride	250	16.0	22.0	20.0	62.0	360.0
Conductivity (uS/cm)		360	300	340	450	1025
DOC	5	1.7	1.4	1.1	1.0	1.1
Escherichia coli (per 100mL)	0	<10	<10	0	<10	0
Fluoride	1.5	0.12	0.13	0.14	0.14	0.16
Nitrate (as N)	10	0.25	0.22	0.19	0.12	<0.10
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	7.3	5.0	7.2	7.3	7.7
Phosphorus (dissolved reactive)					<0.010	0.020
Phosphorus (total)		5.710	1.750	4.150	2.090	2.480
Sulphate	500	27.0	26.0	25.0	27.0	19.0
Temperature (C)	15	9.0	7.0	9.0	8.5	8.0
TKN		0.27	0.13	0.29	0.45	0.98

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-5** Sheet: 4

Date Sampled:		13-Nov-2001	18-Dec-2001	24-Jan-2002	13-Feb-2002	15-Mar-2002
Parameter	ODWQS					
Ammonia (as N)		0.70	0.75	0.89	0.55	0.37
Bromide		1.43	1.90	1.75	0.89	0.65
Chloride	250	400.0	468.0	400.0	216.0	285.0
Conductivity (uS/cm)		1200	1400	1750	1300	1100
DOC	5	1.2	1.5	1.2	0.9	1.8
Escherichia coli (per 100mL)	0	0	0	0	0	0
Fluoride	1.5	0.53	0.53	0.64	0.51	0.69
Nitrate (as N)	10	0.12	0.13	<0.10	0.15	<0.10
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	7.4	7.1	8.2	7.7	8.3
Phosphorus (dissolved reactive)		0.020	0.010	<0.010	0.120	0.030
Phosphorus (total)		2.410	0.090	4.760	4.270	2.580
Sulphate	500	24.0	23.0	25.0	29.0	28.0
Temperature (C)	15	4.5	7.0	6.0	5.0	5.0
TKN		0.88	0.77	1.22	0.57	0.55

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS **Project: 051120733**

Sample Source: **MW 99-5** Sheet: 5

Date Sampled:		18-Apr-2002	15-May-2002	25-Jun-2002	23-Jul-2002	19-Aug-2002
Parameter	ODWQS					
Ammonia (as N)		0.32	0.26	0.17	0.13	0.14
Bromide		0.25	0.14	0.12	0.16	<0.05
Chloride	250	59.0	31.0	32.0	32.0	52.0
Conductivity (uS/cm)		480	400	370	420	520
DOC	5	1.4	1.9	1.5	1.2	1.5
Escherichia coli (per 100mL)	0	0	0	0	1	0
Fluoride	1.5	0.57	0.46	0.14	0.10	0.12
Nitrate (as N)	10	0.10	0.22	0.27	0.21	0.17
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	7.6	7.1	8.4	8.2	7.6
Phosphorus (dissolved reactive)		0.020	<0.010	0.070	0.030	0.120
Phosphorus (total)		1.720	0.210	4.480	6.570	14.300
Sulphate	500	30.0	30.0	26.0	25.0	26.0
Temperature (C)	15	8.0	9.5	9.5	9.0	12.0
TKN		0.36	0.93	0.36	0.22	0.14

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS **Project: 051120733**

Sample Source: **MW 99-5** Sheet: 6

Date Sampled:		26-Sep-2002	23-Oct-2002	24-Nov-2002	12-Dec-2002	16-Jan-2003
Parameter	ODWQS					
Ammonia (as N)		0.22	0.42	0.62	0.57	0.41
Bromide		<0.05	1.29	2.09	2.04	1.19
Chloride	250	85.0	270.0	406.0	415.0	244.0
Conductivity (uS/cm)		520	940	1200	1200	
DOC	5	0.5	1.1	2.0	1.9	1.4
Escherichia coli (per 100mL)	0	0	0	0	0	<10
Fluoride	1.5	0.12	0.56	0.12	0.62	0.50
Nitrate (as N)	10	<0.10	<0.10	<0.10	<0.10	<0.10
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	8.0	8.2	8.0	8.2	8.5
Phosphorus (dissolved reactive)		0.040	0.070	0.050	0.060	0.170
Phosphorus (total)		14.200	19.800	3.900	7.160	7.260
Sulphate	500	26.0	25.0	19.0	29.0	31.0
Temperature (C)	15	11.0	9.0	7.0	7.0	7.5
TKN		0.30	0.55	0.99	0.80	0.52

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS **Project: 051120733**

Sample Source: **MW 99-5** Sheet: 7

Date Sampled:		02-Mar-2003	27-Mar-2003	25-Apr-2003	26-May-2003	27-Jun-2003
Parameter	ODWQS					
Ammonia (as N)		0.22	0.28	0.48	0.20	0.14
Bromide		0.47	1.40	2.34	0.62	0.78
Chloride	250	87.0	276.0	343.0	73.0	70.0
Conductivity (uS/cm)		660	1090	1020	375	500
DOC	5	2.6	1.7	1.8	1.6	1.2
Escherichia coli (per 100mL)	0	0	0	0	0	0
Fluoride	1.5	0.55	0.55	0.14	0.12	0.14
Nitrate (as N)	10	0.13	0.10	<0.10	0.13	0.17
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	8.2	7.9	7.7	8.3	8.5
Phosphorus (dissolved reactive)		0.080	0.110	0.060	0.150	0.050
Phosphorus (total)		4.640	3.010	6.000	3.080	7.150
Sulphate	500	27.0	24.0	20.0	26.0	27.0
Temperature (C)	15	6.5	5.0	6.0	7.0	7.5
TKN		0.41	0.56	0.69	0.40	0.25

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-5** Sheet: 8

Date Sampled:		25-Jul-2003	27-Aug-2003	18-Sep-2003	24-Oct-2003	18-Nov-2003
Parameter	ODWQS					
Ammonia (as N)		0.20	0.14	0.11	0.50	0.75
Bromide		0.77	0.82	1.46	1.91	3.03
Chloride	250	129.0	153.0	169.0	409.0	514.0
Conductivity (uS/cm)		696	620	900	1700	1480
DOC	5	0.7	0.8	1.0	0.7	<0.5
Escherichia coli (per 100mL)	0	<10	<10	<10	0	0
Fluoride	1.5	0.32	0.22	0.21	0.54	0.12
Nitrate (as N)	10	<0.10	<0.10	<0.10	<0.10	0.10
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	7.8	8.1	8.6	7.8	7.8
Phosphorus (dissolved reactive)		0.050	0.060	0.060	0.030	0.090
Phosphorus (total)		4.990	1.900	0.100	4.840	0.090
Sulphate	500	30.0	36.0	31.0	24.0	34.0
Temperature (C)	15		11.1	10.2	7.5	7.8
TKN		0.39	0.24	0.42	0.59	0.77

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS **Project: 051120733**

Sample Source: **MW 99-5** Sheet: 9

Date Sampled:		11-Dec-2003	01-Jun-2004	02-Aug-2005
Parameter	ODWQS			
Ammonia (as N)		0.21	<0.03	0.07
Bromide		2.03	<0.50	0.16
Chloride	250	271.0	20.7	29.0
Conductivity (uS/cm)		1600	240	255
DOC	5	0.7	1.1	1.6
Escherichia coli (per 100mL)	0	0		<10
Fluoride	1.5	0.19	<0.10	0.14
Nitrate (as N)	10	0.28	0.40	0.35
Nitrite (as N)	1	<0.10	<0.20	<0.10
pH (pH units)	6.5-8.5	8.3	8.2	7.8
Phosphorus (dissolved reactive)		0.020	0.010	0.090
Phosphorus (total)		1.490	2.270	3.050
Sulphate	500	21.0	24.6	24.0
Temperature (C)	15	7.0	5.2	10.7
TKN		0.31	0.93	0.22

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS **Project: 051120733**

Sample Source: **MW 99-6** Sheet: 1

Date Sampled:		10-Aug-2000	13-Sep-2000	05-Oct-2000	10-Nov-2000	11-Dec-2000
Parameter	ODWQS					
Ammonia (as N)		0.77	0.81	0.95	0.89	Frozen
Bromide		<0.05	1.25	1.30	1.07	
Chloride	250	195.0	182.0	199.0	<1.0	
Conductivity (uS/cm)		847	821	838	600	
DOC	5	2.3	2.3	2.2	1.7	
Escherichia coli (per 100mL)	0	<10	0	0	0	
Fluoride	1.5	0.21	0.19	0.22	0.21	
Nitrate (as N)	10	<0.10	<0.10	<0.10	<0.10	
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	
pH (pH units)	6.5-8.5	8.0	6.9	8.1	7.7	
Sulphate	500	<3.0	4.0	3.0	21.0	
Temperature (C)	15		10.0		5.0	
TKN		2.87	1.12	1.11	1.24	

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS **Project: 051120733**

Sample Source: **MW 99-6** Sheet: 2

Parameter	ODWQS	Date Sampled: 17-Jan-2001	19-Feb-2001	21-Mar-2001	20-Apr-2001	11-May-2001
Ammonia (as N)		0.76	0.75	0.80	0.43	0.30
Bromide		1.36	0.75	2.46	<0.05	0.76
Chloride	250	215.0	150.0	189.0	32.0	136.0
Conductivity (uS/cm)		700	600	600	420	550
DOC	5	1.0	3.1	2.1	1.8	2.7
Escherichia coli (per 100mL)	0	0	0	<10	<10	<10
Fluoride	1.5	0.18	0.19	0.27	0.15	0.18
Nitrate (as N)	10	0.19	<0.10	0.18	<0.10	<0.10
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	7.0	7.6	7.3	7.2	8.1
Phosphorus (total)						
Sulphate	500	3.0	11.0	5.0	26.0	11.0
Temperature (C)	15	6.5	5.5	5.5	5.5	9.0
TKN		0.83	0.78	1.08	0.71	0.63

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS **Project: 051120733**

Sample Source: **MW 99-6** Sheet: 3

Date Sampled:		15-Jun-2001	13-Jul-2001	24-Aug-2001	19-Sep-2001	18-Oct-2001
Parameter	ODWQS					
Ammonia (as N)		0.94	0.84	0.85	0.90	1.10
Bromide		0.48	0.76	1.32	0.94	1.06
Chloride	250	194.0	208.0	196.0	197.0	201.0
Conductivity (uS/cm)		600	550	650	750	390
DOC	5	1.1	2.1	1.2	0.9	1.6
Escherichia coli (per 100mL)	0	<10	<10	0	<10	0
Fluoride	1.5	0.20	0.22	0.24	0.22	0.24
Nitrate (as N)	10	0.59	<0.10	<0.10	<0.10	<0.10
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	8.1	6.2	7.0	7.5	8.2
Phosphorus (total)						
Sulphate	500	6.0	4.0	4.0	4.0	4.0
Temperature (C)	15	11.5	7.0	10.0	9.0	9.5
TKN		0.93	0.94	0.86	1.07	1.19

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-6** Sheet: 4

Date Sampled:		13-Nov-2001	18-Dec-2001	24-Jan-2002	13-Feb-2002	15-Mar-2002
Parameter	ODWQS					
Ammonia (as N)		0.97	1.13	1.15	1.23	0.39
Bromide		0.91	1.11	1.10	1.02	0.37
Chloride	250	223.0	226.0	222.0	223.0	149.0
Conductivity (uS/cm)		600	575	520	560	380
DOC	5	1.2	1.6	1.3	1.0	2.1
Escherichia coli (per 100mL)	0	0	0	0	0	0
Fluoride	1.5	0.65	0.61	0.60	0.56	0.31
Nitrate (as N)	10	<0.10	0.25	<0.10	<0.10	<0.10
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	8.1	7.5	8.4	7.8	8.3
Phosphorus (total)						
Sulphate	500	8.0	9.0	8.0	8.0	15.0
Temperature (C)	15	7.0	6.5	6.0	5.0	4.0
TKN		1.10	1.15	1.17	1.29	0.54

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-6** Sheet: 5

Date Sampled:		18-Apr-2002	15-May-2002	25-Jun-2002	23-Jul-2002	19-Aug-2002
Parameter	ODWQS					
Ammonia (as N)		0.81	1.09	0.74	0.71	0.71
Bromide		0.34	0.34	0.69	0.93	1.03
Chloride	250	76.0	70.0	170.0	196.0	210.0
Conductivity (uS/cm)		400	380	640	800	800
DOC	5	2.7	2.9	2.6	1.1	2.0
Escherichia coli (per 100mL)	0	0	0	0	0	0
Fluoride	1.5	0.59	0.60	0.23	0.20	0.22
Nitrate (as N)	10	<0.10	0.17	<0.10	<0.10	<0.10
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	8.2	7.0	7.9	8.3	7.8
Phosphorus (total)						
Sulphate	500	25.0	28.0	12.0	7.0	5.0
Temperature (C)	15	10.0	10.0	8.0	11.5	11.0
TKN		0.88	1.44	1.00	0.72	1.01

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS **Project: 051120733**

Sample Source: **MW 99-6** Sheet: 6

Date Sampled:		26-Sep-2002	23-Oct-2002	24-Nov-2002	12-Dec-2002	16-Jan-2003
Parameter	ODWQS					
Ammonia (as N)		0.80	0.86	0.90	0.98	0.93
Bromide		<0.05	0.76	0.97	0.93	1.09
Chloride	250	222.0	223.0	235.0	239.0	244.0
Conductivity (uS/cm)		680	640	620	730	
DOC	5	0.9	1.1	2.7	2.4	1.8
Escherichia coli (per 100mL)	0	0	0	0	0	<10
Fluoride	1.5	0.13	0.18	0.29	0.76	0.61
Nitrate (as N)	10	1.19	<0.10	<0.10	<0.10	<0.10
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	8.2	8.5	7.8	8.5	0.0
Phosphorus (total)						
Sulphate	500	9.0	3.0	3.0	6.0	6.0
Temperature (C)	15	12.5	10.0	7.5	7.5	7.0
TKN		1.07	1.25	1.24	1.11	0.93

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-6** Sheet: 7

Date Sampled:		02-Mar-2003	27-Mar-2003	25-Apr-2003	26-May-2003	27-Jun-2003
Parameter	ODWQS					
Ammonia (as N)		0.81	0.77	0.86	0.94	0.72
Bromide		1.17	1.28	1.71	1.43	3.12
Chloride	250	246.0	226.0	243.0	222.0	253.0
Conductivity (uS/cm)		1000	690	710	600	950
DOC	5	1.9	1.4	2.2	1.3	1.0
Escherichia coli (per 100mL)	0	0	0	0	0	0
Fluoride	1.5	0.52	0.63	0.19	0.29	0.33
Nitrate (as N)	10	<0.10	0.15	<0.10	<0.10	0.22
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	7.9	8.3	8.1	8.3	8.9
Phosphorus (total)			1.810			
Sulphate	500	5.0	6.0	5.0	7.0	4.0
Temperature (C)	15	7.0	6.0	7.0	8.4	9.1
TKN		1.04	0.78	1.14	1.18	0.95

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-6** Sheet: 8

Date Sampled:		25-Jul-2003	27-Aug-2003	27-Aug-2003(2)	18-Sep-2003	24-Oct-2003
Parameter	ODWQS					
Ammonia (as N)		1.16	0.70	0.70	0.62	0.82
Bromide		1.46	1.50	2.03	1.88	1.35
Chloride	250	253.0	260.0	263.0	266.0	262.0
Conductivity (uS/cm)		1020	800		920	920
DOC	5	0.6	1.1	1.0	1.0	<0.5
Escherichia coli (per 100mL)	0	<10	<10	<10	<10	0
Fluoride	1.5	0.42	0.21	0.22	0.65	0.68
Nitrate (as N)	10	<0.10	<0.10	<0.10	<0.10	<0.10
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	8.2	8.3		8.8	8.1
Phosphorus (total)						
Sulphate	500	10.0	4.0	3.0	20.0	12.0
Temperature (C)	15		14.6		12.8	10.3
TKN		1.32	0.90	0.82	0.74	1.25

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-6** Sheet: 9

Parameter	ODWQS	Date Sampled: 24-Oct-2003(2)	18-Nov-2003	11-Dec-2003	11-Dec-2003(2)	25-Mar-2004
Ammonia (as N)		0.81	0.87	0.52	0.83	0.83
Bromide		1.25	<0.05	1.64	1.85	1.10
Chloride	250	264.0	251.0	229.0	233.0	273.0
Conductivity (uS/cm)			900	950		1010
DOC	5	<0.5	1.1	1.2	<0.5	2.7
Escherichia coli (per 100mL)	0	0	0	0	0	<10
Fluoride	1.5	0.62	0.19	0.28	0.28	0.20
Nitrate (as N)	10	<0.10	<0.10	0.12	0.14	0.40
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	<0.20
pH (pH units)	6.5-8.5	8.2	8.2	6.6		8.5
Phosphorus (total)						
Sulphate	500	10.0	22.0	7.0	8.0	3.8
Temperature (C)	15		8.8	7.3		5.4
TKN		0.88	3.63	0.74	0.84	0.99

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-6** Sheet: 10

Parameter	ODWQS	Date Sampled: 01-Jun-2004	26-Aug-2004	19-Oct-2004	17-Mar-2005	17-Mar-2005(2)
Ammonia (as N)		0.76	0.81	1.09	0.71	0.81
Bromide		<0.50	1.00	1.00	1.61	1.53
Chloride	250	242.0	275.0	291.0	285.0	276.0
Conductivity (uS/cm)		730	800	900	1200	
DOC	5	1.5	1.6	2.5	1.4	1.2
Escherichia coli (per 100mL)	0			0	0	
Fluoride	1.5	0.20	0.20	0.20	0.24	0.24
Nitrate (as N)	10	0.40	0.60	0.80	<0.10	<0.10
Nitrite (as N)	1	<0.20	<0.20	<0.20	<0.10	<0.10
pH (pH units)	6.5-8.5	7.7	7.5	8.0	9.5	
Phosphorus (total)						
Sulphate	500	6.1	2.2	3.9	4.0	4.0
Temperature (C)	15	7.0	11.6	10.6	7.1	
TKN		1.02	0.74	1.14	1.03	1.08

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS **Project: 051120733**

Sample Source: **MW 99-6**

Sheet: 11

Date Sampled:		09-Jun-2005	09-Jun-2005(2)	02-Aug-2005	21-Oct-2005
Parameter	ODWQS				
Ammonia (as N)		0.59	0.58	0.86	0.89
Bromide		1.36	1.53	1.31	1.52
Chloride	250	249.0	255.0	269.0	293.0
Conductivity (uS/cm)		990		700	680
DOC	5	0.6	1.4	1.3	<0.5
Escherichia coli (per 100mL)	0	<10	<10	<10	<10
Fluoride	1.5	0.18	0.18	0.21	0.22
Nitrate (as N)	10	0.15	<0.10	<0.10	<0.10
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	7.9		8.2	8.1
Phosphorus (total)					
Sulphate	500	6.0	4.0	3.0	4.0
Temperature (C)	15	11.0		10.5	10.0
TKN		0.77	0.78	1.07	0.89

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS **Project: 051120733**

Sample Source: **MW 99-7** Sheet: 1

Date Sampled:		10-Aug-2000	13-Sep-2000	05-Oct-2000	10-Nov-2000	11-Dec-2000
Parameter	ODWQS					
Ammonia (as N)		0.39	0.68	0.56	0.58	Frozen
Bromide		0.05	0.20	0.15	<0.05	
Chloride	250	28.0	52.0	29.0	21.0	
Conductivity (uS/cm)		385	451	370	270	
DOC	5	3.9	3.8	5.1	5.3	
Escherichia coli (per 100mL)	0	<10	1	0	0	
Fluoride	1.5	<0.10	0.21	0.19	0.17	
Nitrate (as N)	10	<0.10	<0.10	<0.10	0.32	
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	
pH (pH units)	6.5-8.5	7.7	7.1	7.9	7.6	
Phosphorus (total)						
Sulphate	500	29.0	18.0	21.0	30.0	
Temperature (C)	15		12.0		6.5	
TKN		2.41	0.94	0.78	0.90	

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-7** Sheet: 2

Parameter	ODWQS	Date Sampled: 17-Jan-2001	19-Feb-2001	21-Mar-2001	20-Apr-2001	11-May-2001
Ammonia (as N)		Frozen	0.60	0.56	0.33	0.30
Bromide			0.07	<0.05	0.25	<0.05
Chloride	250		29.0	22.0	17.0	21.0
Conductivity (uS/cm)			400	250	335	300
DOC	5		2.5	4.4	3.6	4.2
Escherichia coli (per 100mL)	0		0	<10	<10	<10
Fluoride	1.5		0.12	0.15	0.16	0.15
Nitrate (as N)	10		0.37	<0.10	<0.10	<0.10
Nitrite (as N)	1		<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5		7.7	7.2	7.1	8.1
Phosphorus (total)						
Sulphate	500		31.0	29.0	37.0	32.0
Temperature (C)	15		6.0	5.5	5.5	6.0
TKN			0.64	0.79	0.85	0.44

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS **Project: 051120733**

Sample Source: **MW 99-7** Sheet: 3

Date Sampled:		15-Jun-2001	13-Jul-2001	24-Aug-2001	19-Sep-2001	18-Oct-2001
Parameter	ODWQS					
Ammonia (as N)		0.58	0.57	0.37	0.46	0.66
Bromide		0.75	0.09	0.15	0.21	0.10
Chloride	250	20.0	21.0	30.0	27.0	19.0
Conductivity (uS/cm)		365	335	450	455	220
DOC	5	3.5	3.6	2.3	2.1	2.8
Escherichia coli (per 100mL)	0	<10	<10	0	<10	0
Fluoride	1.5	0.16	0.17	0.21	0.20	0.17
Nitrate (as N)	10	<0.10	<0.10	<0.10	0.14	<0.10
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	7.9	6.3	7.3	7.3	7.8
Phosphorus (total)						
Sulphate	500	31.0	27.0	22.0	22.0	24.0
Temperature (C)	15	9.0	8.5	10.0	9.5	11.5
TKN		0.73	0.71	0.57	0.65	0.74

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-7** Sheet: 4

Date Sampled:		13-Nov-2001	18-Dec-2001	24-Jan-2002	13-Feb-2002	15-Mar-2002
Parameter	ODWQS					
Ammonia (as N)		0.56	0.46	0.55	0.62	0.28
Bromide		<0.05	<0.05	<0.05	<0.05	0.07
Chloride	250	16.0	13.0	13.0	14.0	15.0
Conductivity (uS/cm)		300	260	315	300	225
DOC	5	3.0	3.4	3.4	3.4	4.0
Escherichia coli (per 100mL)	0	0	0	0	0	0
Fluoride	1.5	0.58	0.55	0.56	0.50	0.25
Nitrate (as N)	10	0.19	0.17	<0.10	<0.10	<0.10
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	7.8	7.4	7.8	7.6	8.2
Phosphorus (total)						
Sulphate	500	29.0	28.0	30.0	28.0	26.0
Temperature (C)	15	8.5	7.0	6.5	5.0	5.0
TKN		0.70	0.77	0.75	0.78	0.48

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-7** Sheet: 5

Date Sampled:		18-Apr-2002	15-May-2002	25-Jun-2002	23-Jul-2002	19-Aug-2002
Parameter	ODWQS					
Ammonia (as N)		0.56	0.78	0.48	0.40	0.44
Bromide		<0.05	<0.05	0.08	0.07	<0.05
Chloride	250	13.0	15.0	17.0	17.0	22.0
Conductivity (uS/cm)		290	300	320	360	410
DOC	5	4.8	4.8	2.0	3.2	4.3
Escherichia coli (per 100mL)	0	0	0	0	0	0
Fluoride	1.5	0.57	0.49	0.17	0.22	0.16
Nitrate (as N)	10	<0.10	<0.10	<0.10	<0.10	<0.10
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	8.2	6.7	7.9	7.9	7.6
Phosphorus (total)						
Sulphate	500	26.0	31.0	26.0	26.0	25.0
Temperature (C)	15	9.0	9.5	10.0	12.5	13.0
TKN		0.66	1.00	0.87	0.59	0.47

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS **Project: 051120733**

Sample Source: **MW 99-7**

Sheet: 6

Date Sampled:		26-Sep-2002	23-Oct-2002	24-Nov-2002	12-Dec-2002	16-Jan-2003
Parameter	ODWQS					
Ammonia (as N)		0.44	0.53	0.52	0.46	0.46
Bromide		<0.05	0.08	<0.05	<0.05	<0.05
Chloride	250	42.0	88.0	137.0	126.0	225.0
Conductivity (uS/cm)		370	420	440	540	
DOC	5	2.7	3.1	3.8	4.1	3.2
Escherichia coli (per 100mL)	0	0	0	0	0	<10
Fluoride	1.5	0.15	<0.10	0.10	0.63	0.55
Nitrate (as N)	10	<0.10	<0.10	<0.10	<0.10	<0.10
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	7.8	8.0	7.8	7.8	8.4
Phosphorus (total)						
Sulphate	500	24.0	25.0	25.0	28.0	26.0
Temperature (C)	15	12.0	11.5	7.5	8.0	7.0
TKN		0.69	0.91	0.82	0.84	0.68

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-7** Sheet: 7

Date Sampled:		02-Mar-2003	27-Mar-2003	25-Apr-2003	26-May-2003	27-Jun-2003
Parameter	ODWQS					
Ammonia (as N)		0.39	0.38	0.42	0.54	0.36
Bromide		<0.05	<0.05	<0.05	<0.05	<0.05
Chloride	250	71.0	103.0	11.0	166.0	137.0
Conductivity (uS/cm)		600	600	720	500	600
DOC	5	3.8	3.5	3.5	2.9	2.5
Escherichia coli (per 100mL)	0	0	0	0	0	0
Fluoride	1.5	0.51	0.45	0.12	0.11	0.24
Nitrate (as N)	10	<0.10	<0.10	<0.10	<0.10	<0.10
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	7.4	7.7	7.4	7.7	8.1
Phosphorus (total)			4.340			
Sulphate	500	33.0	27.0	26.0	29.0	27.0
Temperature (C)	15	7.0	7.0	8.0	7.8	10.6
TKN		0.64	0.61	0.73	0.82	0.67

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS **Project: 051120733**

Sample Source: **MW 99-7** Sheet: 8

Parameter	ODWQS	Date Sampled: 27-Jun-2003(2)	25-Jul-2003	27-Aug-2003	18-Sep-2003	24-Oct-2003
Ammonia (as N)		0.37	0.42	0.33	0.19	0.41
Bromide		<0.05	<0.05	<0.05	<0.05	<0.05
Chloride	250	152.0	101.0	170.0	213.0	231.0
Conductivity (uS/cm)			668	680	850	1100
DOC	5	2.4	2.0	2.3	2.2	1.9
Escherichia coli (per 100mL)	0	0	<10	<10	<10	0
Fluoride	1.5	0.14	0.43	0.20	0.48	0.59
Nitrate (as N)	10	<0.10	<0.10	<0.10	0.13	<0.10
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5		7.8	7.6	7.7	7.2
Phosphorus (total)						
Sulphate	500	28.0	31.0	31.0	42.0	52.0
Temperature (C)	15			15.2	15.7	11.6
TKN		0.59	0.74	0.75	0.42	0.64

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-7** Sheet: 9

Date Sampled:		18-Nov-2003	11-Dec-2003	25-Mar-2004	01-Jun-2004	26-Aug-2004
Parameter	ODWQS					
Ammonia (as N)		0.52	0.43	0.48	0.49	0.43
Bromide		<0.05	<0.05	<0.50	<0.50	<0.50
Chloride	250	219.0	235.0	221.0	271.0	314.0
Conductivity (uS/cm)		890	920	1000	950	1000
DOC	5	1.6	2.2	3.5	2.8	3.0
Escherichia coli (per 100mL)	0	0	0	<10		
Fluoride	1.5	<0.10	0.18	<0.10	<0.10	<0.10
Nitrate (as N)	10	<0.10	<0.10	0.20	0.40	0.30
Nitrite (as N)	1	<0.10	<0.10	<0.20	<0.20	<0.20
pH (pH units)	6.5-8.5	6.9	6.9	7.5	7.3	6.7
Phosphorus (total)						
Sulphate	500	61.0	39.0	39.2	49.1	55.0
Temperature (C)	15	9.4	8.9	5.4	7.1	13.7
TKN		0.63	0.66	0.60	0.79	0.57

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-7** Sheet: 10

Date Sampled:		19-Oct-2004	19-Oct-2004(2)	09-Jun-2005	02-Aug-2005	21-Oct-2005
Parameter	ODWQS					
Ammonia (as N)		0.89	0.69	0.33	0.39	0.52
Bromide		<0.50	<0.50	<0.05	<0.05	<0.05
Chloride	250	322.0	328.0	296.0	297.0	275.0
Conductivity (uS/cm)		1180		1100	910	900
DOC	5	6.6	5.6	7.5	3.6	2.9
Escherichia coli (per 100mL)	0	0		<10	<10	<10
Fluoride	1.5	<0.10	<0.10	<0.10	0.12	0.14
Nitrate (as N)	10	0.40	0.50	<0.10	<0.10	<0.10
Nitrite (as N)	1	<0.20	<0.20	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	7.2		7.4	7.1	7.7
Phosphorus (total)						
Sulphate	500	62.4	62.9	67.0	69.0	62.0
Temperature (C)	15	12.9		12.0	14.5	11.0
TKN		1.07	0.89	0.72	0.69	0.73

All values reported in mg/L unless otherwise noted.

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FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-8** Sheet: 1

Parameter	ODWQS	Date Sampled: 10-Aug-2000	13-Sep-2000	05-Oct-2000	10-Nov-2000	11-Dec-2000
Ammonia (as N)		3.58	4.19	4.41	4.07	Frozen
Bromide		12.40	10.60	10.60	0.33	
Chloride	250	3560.0	2940.0	3260.0	3800.0	
Conductivity (uS/cm)		10300	10100	10200	8200	
DOC	5	15.6	14.1	13.6	14.4	
Escherichia coli (per 100mL)	0	<10	0	0	0	
Fluoride	1.5	<0.10	<0.10	<0.10	0.30	
Nitrate (as N)	10	<0.10	<0.10	<0.10	3.45	
Nitrite (as N)	1	<0.10	<0.10	<0.10	<0.10	
pH (pH units)	6.5-8.5	7.9	7.4	7.7	7.4	
Phosphorus (total)						
Sulphate	500	90.0	113.0	100.0	203.0	
Temperature (C)	15		10.0		5.0	
TKN		9.76	4.23	4.66	5.55	

All values reported in mg/L unless otherwise noted.

Golder Associates

FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-8** Sheet: 2

Date Sampled:		17-Jan-2001	19-Feb-2001	21-Mar-2001	20-Apr-2001	11-May-2001
Parameter	ODWQS					
Ammonia (as N)		Frozen	0.47	0.20	3.58	3.88
Bromide			0.49	<0.05	<0.05	29.40
Chloride	250		129.0	13.0	3450.0	3760.0
Conductivity (uS/cm)			500	390	>5000	>5000
DOC	5		2.1	1.4	12.1	12.3
Escherichia coli (per 100mL)	0		0	<10	<10	<10
Fluoride	1.5		0.19	0.12	<0.10	<0.10
Nitrate (as N)	10		0.25	<0.10	<0.10	<0.10
Nitrite (as N)	1		<0.10	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5		7.8	6.0	7.5	7.8
Phosphorus (total)						
Sulphate	500		17.0	38.0	68.0	62.0
Temperature (C)	15		5.5	6.5	5.5	8.0
TKN			0.58	0.30	1.65	4.35

All values reported in mg/L unless otherwise noted.

Golder Associates

FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-8** Sheet: 3

Parameter	ODWQS	Date Sampled: 15-Jun-2001	13-Jul-2001	24-Aug-2001	19-Sep-2001	18-Oct-2001
Ammonia (as N)		3.94	3.35	4.19	4.48	4.08
Bromide		<0.05	20.40	30.60	16.00	16.50
Chloride	250	5100.0	3610.0	4600.0	4800.0	4570.0
Conductivity (uS/cm)		>5000	>5000	>5000	>5000	>5000
DOC	5	13.3	11.9	11.2	12.1	11.6
Escherichia coli (per 100mL)	0	<10	<10	0	<10	0
Fluoride	1.5	<0.10	<0.10	<0.10	<0.10	<0.10
Nitrate (as N)	10	<0.10	0.70	0.18	0.53	0.14
Nitrite (as N)	1	<0.10	0.27	<0.10	0.19	<0.10
pH (pH units)	6.5-8.5	7.7	6.3	6.9	7.5	7.4
Phosphorus (total)						
Sulphate	500	62.0	65.0	42.0	34.0	25.0
Temperature (C)	15	8.5	8.0	9.0	8.0	9.0
TKN		3.36	3.37	4.72	5.11	4.37

All values reported in mg/L unless otherwise noted.

Golder Associates

FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-8** Sheet: 4

Date Sampled:		13-Nov-2001	18-Dec-2001	24-Jan-2002	13-Feb-2002	15-Mar-2002
Parameter	ODWQS					
Ammonia (as N)		0.05	2.50	3.68	3.55	3.03
Bromide		<0.05	16.70	<0.05	<0.05	10.70
Chloride	250	4290.0	4100.0	3920.0	3680.0	3160.0
Conductivity (uS/cm)		>5000	>5000	>5000	>5000	>5000
DOC	5	12.3	13.2	10.8	9.8	11.9
Escherichia coli (per 100mL)	0	0	0	0	0	0
Fluoride	1.5	<0.10	<0.10	<0.10	<0.10	0.28
Nitrate (as N)	10	1.16	0.73	0.21	0.95	0.59
Nitrite (as N)	1	<0.10	<0.10	<0.10	0.26	0.23
pH (pH units)	6.5-8.5	7.3	6.9	7.1	7.8	7.1
Phosphorus (total)						
Sulphate	500	46.0	54.0	82.0	103.0	133.0
Temperature (C)	15	8.0	7.5	9.0	5.0	7.0
TKN		3.61	4.22	4.83	3.97	3.18

All values reported in mg/L unless otherwise noted.

Golder Associates

FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-8** Sheet: 5

Date Sampled:		18-Apr-2002	15-May-2002	25-Jun-2002	23-Jul-2002	19-Aug-2002
Parameter	ODWQS					
Ammonia (as N)		2.88	2.76	3.31	3.49	2.81
Bromide		17.30	11.00	0.30	12.30	13.80
Chloride	250	3060.0	3320.0	34.0	3500.0	3870.0
Conductivity (uS/cm)		>5000	8400	>5000	>5000	>10000
DOC	5	11.6	11.7	9.8	11.6	12.7
Escherichia coli (per 100mL)	0	0	0	0	0	0
Fluoride	1.5	0.26	<0.10	0.73	<0.10	<0.10
Nitrate (as N)	10	0.39	0.95	<0.10	0.31	0.95
Nitrite (as N)	1	<0.10	1.41	<0.10	<0.10	<0.10
pH (pH units)	6.5-8.5	6.8	6.9	7.4	7.6	7.3
Phosphorus (total)						
Sulphate	500	137.0	122.0	28.0	104.0	90.0
Temperature (C)	15	12.0	11.0	14.0	14.0	14.0
TKN		4.81	2.96	3.66	4.15	3.71

All values reported in mg/L unless otherwise noted.

Golder Associates

FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS **Project: 051120733**

Sample Source: **MW 99-8**

Sheet: 6

Date Sampled:		26-Sep-2002	23-Oct-2002	24-Nov-2002	12-Dec-2002	16-Jan-2003
Parameter	ODWQS					
Ammonia (as N)		4.15	3.90	2.53	2.53	3.33
Bromide		<0.05	19.20	13.10	19.60	<0.05
Chloride	250	3940.0	3920.0	4140.0	3920.0	4190.0
Conductivity (uS/cm)		>5000	>5000	>5000	>5000	
DOC	5	11.1	12.6	13.1	12.4	12.5
Escherichia coli (per 100mL)	0	0	0	0	0	<10
Fluoride	1.5	0.33	<0.10	<0.10	0.29	0.32
Nitrate (as N)	10	7.74	0.81	0.59	1.11	0.45
Nitrite (as N)	1	1.41	0.23	<0.10	0.62	0.23
pH (pH units)	6.5-8.5	7.4	7.5	7.6	7.9	7.4
Phosphorus (total)						
Sulphate	500	66.0	62.0	61.0	76.0	67.0
Temperature (C)	15	12.5	10.0	8.0	9.5	8.2
TKN		5.16	4.64	3.41	3.18	3.52

All values reported in mg/L unless otherwise noted.

Golder Associates

FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sample Source: **MW 99-8** Sheet: 7

Parameter	ODWQS	Date Sampled: 02-Mar-2003	27-Mar-2003	25-Apr-2003	26-May-2003	27-Jun-2003
Ammonia (as N)		2.67	1.55	0.64	1.67	2.64
Bromide		19.20	<0.05	13.50	13.70	10.30
Chloride	250	3880.0	3790.0	2670.0	2560.0	3190.0
Conductivity (uS/cm)		>5000	4750	4280	>5000	9000
DOC	5	11.8	11.6	10.3	9.0	9.6
Escherichia coli (per 100mL)	0	0	0	0	0	0
Fluoride	1.5	0.23	0.24	<0.10	<0.10	0.31
Nitrate (as N)	10	0.51	0.83	1.30	0.44	0.62
Nitrite (as N)	1	<0.10	0.33	0.15	0.19	1.47
pH (pH units)	6.5-8.5	7.3	7.6	7.5	7.8	7.9
Phosphorus (total)			0.070			
Sulphate	500	73.0	93.0	143.0	173.0	147.0
Temperature (C)	15	7.0	5.0	7.0	10.0	9.8
TKN		2.88	2.14	1.16	2.38	2.85

All values reported in mg/L unless otherwise noted.

Golder Associates

FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS **Project: 051120733**

Sample Source: **MW 99-8** Sheet: 8

Parameter	ODWQS	Date Sampled: 31-Jul-2003	27-Aug-2003	18-Sep-2003	24-Oct-2003	18-Nov-2003
Ammonia (as N)		0.51	2.57	1.67	2.02	0.37
Bromide		14.70	22.40	2.36	<0.05	2.31
Chloride	250	2450.0	3950.0	3310.0	3740.0	2340.0
Conductivity (uS/cm)			>10000	>5000	>10000	>2000
DOC	5	9.8	9.9	10.1	12.3	8.7
Escherichia coli (per 100mL)	0	<10	<10	<10	0	0
Fluoride	1.5	0.28	0.21	0.21	0.25	0.19
Nitrate (as N)	10	1.04	0.45	2.63	<0.10	1.58
Nitrite (as N)	1	0.23	0.62	0.36	0.38	<0.10
pH (pH units)	6.5-8.5		7.9	8.2	7.2	7.2
Phosphorus (total)						
Sulphate	500	177.0	130.0	132.0	97.0	156.0
Temperature (C)	15		15.4	13.8	7.3	8.5
TKN		1.35	3.42	2.58	2.87	0.84

All values reported in mg/L unless otherwise noted.

Golder Associates

FOURNIER SEWAGE SYSTEM (NATION MUNICIPALITY) - REPORT OF MONITORING RESULTS Project: 051120733

Sheet: 9

Sample Source: **MW 99-8**

Parameter	ODWQS	Date Sampled: 11-Dec-2003	01-Jun-2004	26-Aug-2004	02-Aug-2005
Ammonia (as N)		0.79	1.22		2.77
Bromide		13.70	7.50		16.00
Chloride	250	1830.0	1990.0		4580.0
Conductivity (uS/cm)		>5000	>1990	>5000	850
DOC	5	7.8	4.1		12.3
Escherichia coli (per 100mL)	0	0			<10
Fluoride	1.5	0.31	0.20		0.19
Nitrate (as N)	10	0.56	0.70		0.64
Nitrite (as N)	1	0.17	<2.00		0.87
pH (pH units)	6.5-8.5	7.8	7.8	7.0	6.8
Phosphorus (total)					
Sulphate	500	243.0	214.0		77.0
Temperature (C)	15	7.5	8.4	11.2	13.8
TKN		1.32	1.73		3.81

All values reported in mg/L unless otherwise noted.

APPENDIX D

REPORT OF ANALYSES SHEETS
ACCUTEST LABORATORIES LTD.

Client: **Golder Associates Ltd.**
32 Steacie Drive
Ottawa, ON
K2K 2A9
Attention: **Ms. Caitlin Martin**

Report Number: 2504603
Date: 2005-03-21
Date Submitted: 2005-03-17

Project: 051120-733

P.O. Number: 250055
Matrix: Water

			LAB ID:	375141	375142	375143	375144	375145	GUIDELINE		
			Sample Date:	2005-03-17	2005-03-17	2005-03-17	2005-03-17	2005-03-17			
			Sample ID:	MW 99-1	MW 99-2	MW 99-3	MW 99-6	MW 99-10			
PARAMETER	UNITS	MDL							TYPE	LIMIT	UNITS
Escherichia Coli	ct/100mL			0	0	0	0	0		100	ct/100mL

MDL = Method Detection Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration

Comment:

APPROVAL:

Peter Haulena
Analytical Services Manager

ACCUTEST LABORATORIES LTD

REPORT OF ANALYSIS

Client: **Golder Associates Ltd.**
32 Steacie Drive
Ottawa, ON
K2K 2A9
Attention: **Ms. Caitlin Martin**

Report Number: 2504604
Date: 2005-03-24
Date Submitted: 2005-03-17

Project: 051120-733

P.O. Number: 250055
Matrix: Water

	LAB ID:	375146	375147	375148	375149	375150	GUIDELINE		
	Sample Date:	2005-03-17	2005-03-17	2005-03-17	2005-03-17	2005-03-17			
	Sample ID:	MW 99-1	MW 99-2	MW 99-3	MW 99-6	MW 99-10			
PARAMETER	**UNITS**	**MDL**					**TYPE**	**LIMIT**	**UNITS**
Bromide	mg/L	0.05	<0.05	<0.05	0.14	1.61	1.53			
Chloride	mg/L	1	282	195	107	285	276			
Dissolved Organic Carbon	mg/L	0.5	3.4	1.0	2.3	1.4	1.2			
Fluoride	mg/L	0.10	0.13	0.13	0.14	0.24	0.24			
N-NH3 (Ammonia)	mg/L	0.02	0.02	0.03	0.15	0.71	0.81			
N-NO2 (Nitrite)	mg/L	0.10	0.57	0.39	<0.10	<0.10	<0.10			
N-NO3 (Nitrate)	mg/L	0.10	14.8	16.4	<0.10	<0.10	<0.10			
Sulphate	mg/L	1	78	34	28	4	4			
Total Kjeldahl Nitrogen	mg/L	0.05	0.43	0.24	0.37	1.03	1.08			

MDL = Method Detection Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration
Comment:

APPROVAL:
Ewan McRobbie
Inorganic Lab Supervisor

[redacted] 8-[redacted] Ottaw[redacted] K2E [redacted] 608 [redacted] Court, [redacted] h, ON, [redacted] R9 [redacted] [redacted] 1 of 2 [redacted] [redacted] Resul[redacted] only [redacted] arame[redacted] ted on [redacted] mples [redacted] ed for [redacted] s. [redacted]

Client: **Golder Associates Ltd.**
32 Steacie Drive
Ottawa, ON
K2K 2A9
Attention: **Ms. Caitlin Martin**

Report Number: 2504604
Date: 2005-03-24
Date Submitted: 2005-03-17

Project: 051120-733

P.O. Number: 250055
Matrix: Water

PARAMETER	UNITS	MDL	LAB BLANK	LAB QC % RECOVERY	QC RECOVERY RANGE	DATE ANALYSED		GUIDELINE TYPE	GUIDELINE LIMIT	GUIDELINE UNITS
Bromide	mg/L	0.05	<0.05	98	90-110	2005-03-22				
Chloride	mg/L	1	<1	97	90-110	2005-03-23				
Dissolved Organic Carbon	mg/L	0.5	<0.5	102	89-111	2005-03-19				
Fluoride	mg/L	0.10	<0.10	101	90-110	2005-03-22				
N-NH3 (Ammonia)	mg/L	0.02	<0.02	99	85-115	2005-03-18				
N-NO2 (Nitrite)	mg/L	0.10	<0.10	100	90-110	2005-03-23				
N-NO3 (Nitrate)	mg/L	0.10	<0.10	98	90-110	2005-03-22				
Sulphate	mg/L	1	<1	100	90-110	2005-03-22				
Total Kjeldahl Nitrogen	mg/L	0.05	<0.05	99	85-115	2005-03-21				

MDL = Method Detection Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration
Comment:

APPROVAL:
Ewan McRobbie
Inorganic Lab Supervisor

CHAIN OF CUSTODY RECORD

13151

ACCUTEST LABORATORIES LTD.

☐ 146 Colonnade Rd., Unit 8
Ottawa, ON K2E 7Y1
Ph: (613) 727-5692 Fax: (613) 727-5222

☐ 608 Norris Court
Kingston, ON K7P 2R9
Ph: (613) 634-9307 Fax: (613) 634-9308

LABORATORY USE ONLY:
Report # 2507607

Company Name: GOLDER ASSOCIATES	Address: 32 STEACIE DRIVE		☐ Fax Results to:
Report Attention: CAITLIN M.	City/Prov: KANATA,	Postal Code: K2K 2A9	☑ E-mail Results to: Caitlin M.
Phone: 59229600 Ext: 266	Project # 051120-733	* Quotation # 25005?	☐ Copy of Results to:
* Waterworks Name:	* Waterworks Number:		*Note that for drinking water samples, all exceedances will be reported where applicable legislation requires.*

Invoice to:
(if different from above)

SAMPLE ANALYSIS REQUIRED

⇦ Indicate: F=Filtered or P=Preserved

Sample ID	* Date/Time Collected	Sample Matrix i.e. Water, Soil, Paint	* Sample Type (see Codes below)	* MOE Reportable? Y = Yes N = No	# of Containers	** Service Required R=Rush S=Standard	Dundee # 2500555 NO Bacteria	Criteria Required (i.e. Reg.170, Reg.153, CCME, PWQO etc.)	Laboratory Identification
MW99-1	MARCH 17/05	W	RW	N	4	S	/		3751-46
MW99-2							/		147
MW99-3							/		148
MW99-6							/		149
MW99-10							/		150

Sample Type Codes for Drinking Water Systems: **RW** = Raw Water, **RWFC** = Raw Water For Consumption, **TW** = Treated Water at point of entry to distribution, **DW** = Distribution/Plumbing Water
"MOE Reportable" refers to the requirements under the SDWA for immediate reporting of results, which are indicators of adverse water quality, to the Owner/Operator, MOE, and MOH Medical Officer.

Sampled By:	Date/Time:	Relinquished By:	Date/Time:	Comments	Cooler Temp (°C) on Receipt
HAROLD CAMERON	MARCH 17/05	HAROLD CAMERON			
Work Authorized By (signature):	Date/Time:	Received By Lab:	Date/Time: MAR 17 05	7.0	

*** Indicates a required field.** If not complete, analysis will proceed only on verification of missing information. A quotation number is required, if one was provided.
**** There may be surcharges applied to "Rush" service.** Please check with lab prior to submission of samples for rush analysis to confirm availability and pricing.

Client: **Golder Associates Ltd.**
32 Steacie Drive
Ottawa, ON
K2K 2A9
Attention: **Ms. Caitlin Martin**

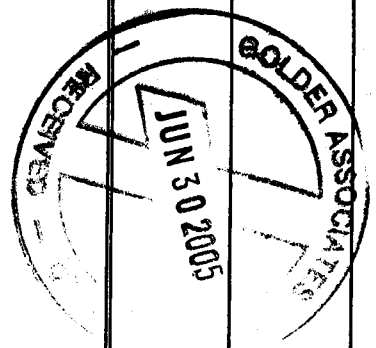
Report Number: 2510776
Date: 2005-06-17
Date Submitted: 2005-06-09

Project: 051120733

P.O. Number: 250055
Matrix: Groundwater

Chain of Custody Number: 28384

	LAB ID:	391055	391056	391057	391058	391059	GUIDELINE		
	Sample Date:	2005-06-09	2005-06-09	2005-06-09	2005-06-09	2005-06-09			
	Sample ID:	S-1	S-2	S-3	S-4	S-5			
PARAMETER	UNITS	MDL					TYPE	LIMIT	UNITS
Bromide	mg/L	0.05	0.16	0.15	<0.05	1.36	1.53			
Chloride	mg/L	1	313	105	232	249	255			
Dissolved Organic Carbon	mg/L	0.5	3.5	1.1	0.7	0.6	1.4			
Fluoride	mg/L	0.10	0.10	0.10	<0.10	0.18	0.18			
N-NH3 (Ammonia)	mg/L	0.02	0.05	0.14	0.04	0.59	0.58			
N-NO2 (Nitrite)	mg/L	0.10	<0.10	<0.10	0.13	<0.10	<0.10			
N-NO3 (Nitrate)	mg/L	0.10	29.6	<0.10	21.5	0.15	<0.10			
Sulphate	mg/L	1	59	25	32	6	4			
Total Kjeldahl Nitrogen	mg/L	0.05	0.47	0.56	0.21	0.77	0.78			



MDL = Method Detection Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration

Comment:

APPROVAL:
Ewan McRobbie
Inorganic Lab Supervisor

ACCUTEST LABORATORIES LTD

REPORT OF ANALYSIS

Client: **Golder Associates Ltd.**
32 Steacie Drive
Ottawa, ON
K2K 2A9
Attention: **Ms. Caitlin Martin**

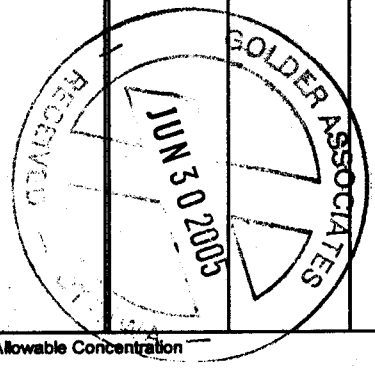
Report Number: 2510776
Date: 2005-06-17
Date Submitted: 2005-06-09

Project: 051120733

P.O. Number: 250055
Matrix: Groundwater

Chain of Custody Number: **28384**

			391060					GUIDELINE		
			2005-06-09							
			S-6							
PARAMETER	UNITS	MDL						TYPE	LIMIT	UNITS
Bromide	mg/L	0.05	<0.05							
Chloride	mg/L	1	296							
Dissolved Organic Carbon	mg/L	0.5	7.5							
Fluoride	mg/L	0.10	<0.10							
N-NH3 (Ammonia)	mg/L	0.02	0.33							
N-NO2 (Nitrite)	mg/L	0.10	<0.10							
N-NO3 (Nitrate)	mg/L	0.10	<0.10							
Sulphate	mg/L	1	67							
Total Kjeldahl Nitrogen	mg/L	0.05	0.72							



MDL = Method Detection Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration

Comment:

APPROVAL:
Ewan McRobbie
Inorganic Lab Supervisor

Client: **Golder Associates Ltd.**
32 Steacie Drive
Ottawa, ON
K2K 2A9
Attention: **Ms. Caitlin Martin**

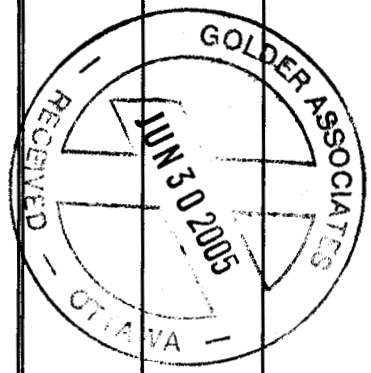
Report Number: 2510776
Date: 2005-06-17
Date Submitted: 2005-06-09

Project: 051120733

P.O. Number: 250055
Matrix: Groundwater

Chain of Custody Number: 28384

			LAB ID:					GUIDELINE		
			Sample Date:							
			Sample ID:	LAB BLANK	LAB QC % RECOVERY	QC RECOVERY RANGE	DATE ANALYSED			
PARAMETER	UNITS	MDL						TYPE	LIMIT	UNITS
Bromide	mg/L	0.05	<0.05	102	70-130	2005-06-13				
Chloride	mg/L	1	<1	100	90-110	2005-06-14				
Dissolved Organic Carbon	mg/L	0.5	<0.5	102	89-111	2005-06-14				
Fluoride	mg/L	0.10	<0.10	105	85-115	2005-06-13				
N-NH3 (Ammonia)	mg/L	0.02	<0.02	100	85-115	2005-06-10				
N-NO2 (Nitrite)	mg/L	0.10	<0.10	101	90-110	2005-06-13				
N-NO3 (Nitrate)	mg/L	0.10	<0.10	97	90-110	2005-06-14				
Sulphate	mg/L	1	<1	100	90-110	2005-06-13				
Total Kjeldahl Nitrogen	mg/L	0.05	<0.05	82	77-123	2005-06-13				



MDL = Method Detection Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration

Comment:

APPROVAL:
Ewan McRobbie
Inorganic Lab Supervisor

CHAIN OF CUSTODY RECORD

28384

ACCUTEST LABORATORIES LTD.
☐ 146 Colonnade Rd., Unit 8
Ottawa, ON K2E 7Y1
Ph: (613) 727-5692 Fax: (613) 727-5222

☐ 608 Norris Court
Kingston, ON K7P 2R9
Ph: (613) 634-9307 Fax: (613) 634-9308

LABORATORY USE ONLY
Report # 251076

Company Name: Golder Assoc	Address: 32 Steacie Dr	☐ Fax Results to:
Report Attention: C. Martin	City/Prov: Kanata ON Postal Code:	☐ E-mail Results to:
Phone: 592 9600 Ext:	Project # 05162073? * Quotation # 250055	☐ Copy of Results to:
* Waterworks Name:	* Waterworks Number:	*Note that for drinking water samples, all exceedances will be reported where applicable legislation requires.*

Invoice to:
(if different from above)

SAMPLE ANALYSIS REQUIRED

⇦ Indicate: F=Filtered or P=Preserved

Sample ID	* Date/Time Collected	Sample Matrix i.e. Water, Soil, Paint	* Sample Type (see Codes below)	* MOE Reportable? Y = Yes N = No	# of Containers	** Service Required R=Rush S=Standard	ND Bact	Criteria Required (i.e. Reg.170, Reg.153, CCME, PWQO etc.)	Laboratory Identification
S-1	June 9/05	GW		N	4	S			39105
S-2	"	"		"	"	"			1056
S-3	"	"		"	"	"			1057
S-4	"	"		"	"	"			1058
S-5	"	"		"	"	"			1059
S-6	"	"		"	"	"			1060

GOLDER ASSOCIATES JUN 30 2005 OTTAWA

Sample Type Codes for Drinking Water Systems: **RW** = Raw Water, **RWFC** = Raw Water For Consumption, **TW** = Treated Water at point of entry to distribution, **DW** = Distribution/Plumbing Water
"MOE Reportable" refers to the requirements under the SDWA for immediate reporting of results, which are indicators of adverse water quality, to the Owner/Operator, MOE, and MOH Medical Officer.

Sampled By: C. Martin	Date/Time: June 9/05	Relinquished By:	Date/Time: June 9/05	Comments	Cooler Temp (°C) on Receipt
Work Authorized By (signature):	Date/Time:	Received By Lab:	Date/Time: Jun 9/05		

*** Indicates a required field.** If not complete, analysis will proceed only on verification of missing information. A quotation number is required, if one was provided.
**** There may be surcharges applied to "Rush" service.** Please check with lab prior to submission of samples for rush analysis to confirm availability and pricing.

AFCOCR 1

Copies: White - Sampler, Yellow - Laboratory, Pink - With Report

Client: **Golder Associates Ltd.**
32 Steacie Drive
Ottawa, ON
K2K 2A9
Attention: **Ms. Caitlin Martin**

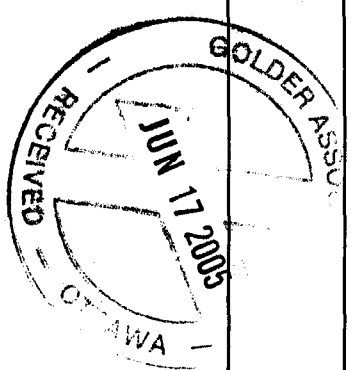
Report Number: 2510766
Date: 2005-06-10
Date Submitted: 2005-06-09

Project: 051120733

P.O. Number: 250055
Matrix: Groundwater

Chain of Custody Number: 28384

	LAB ID:	391034	391035	391036	391037	391038	GUIDELINE		
	Sample Date:	2005-06-09	2005-06-09	2005-06-09	2005-06-09	2005-06-09			
	Sample ID:	S-1	S-2	S-3	S-4	S-5			
PARAMETER	UNITS	MDL					TYPE	LIMIT	UNITS
Escherichia Coli	ct/100mL		<10	<10	<10	<10	<10			



MDL = Method Detection Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration

Comment:

APPROVED:
Krista Quantrill
Microbiology Analyst

ACCUTEST LABORATORIES LTD

REPORT OF ANALYSIS

Client: **Golder Associates Ltd.**
32 Steacie Drive
Ottawa, ON
K2K 2A9
Attention: **Ms. Caitlin Martin**

Report Number: 2510766
Date: 2005-06-10
Date Submitted: 2005-06-09

Project: 051120733

P.O. Number: 250055
Matrix: Groundwater

Chain of Custody Number: **28384**

			391039					GUIDELINE		
			2005-06-09							
			S-6							
PARAMETER	**UNITS**	**MDL**						**TYPE**	**LIMIT**	**UNITS**
Escherichia Coli	ct/100mL		<10							

MDL = Method Detection Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration

Comment:

APPROVED

Krista Quantrill
Microbiology Analyst

[redacted] 8-[redacted]onnad[redacted] Ottav[redacted]K2E 7[redacted] 608 K[redacted]ourt, K[redacted], ON, [redacted]9 [redacted] [redacted]2 of 2[redacted] [redacted]Resu[redacted] only [redacted]arame[redacted]ted on[redacted]mples [redacted]ed for [redacted]. [redacted]

Client: **Golder Associates Ltd.**
32 Steacie Drive
Ottawa, ON
K2K 2A9
Attention: **Ms. Caitlin Martin**

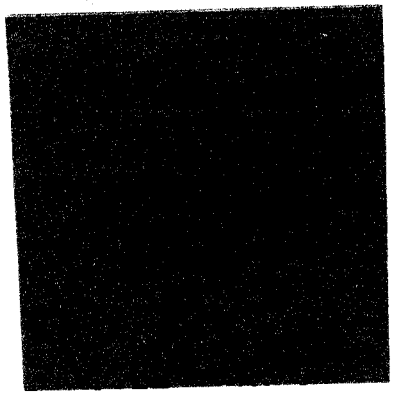
Report Number: 2515262
Date: 2005-08-12
Date Submitted: 2005-08-03

Project: 05-1120-733

P.O. Number: 250055
Matrix: Water

Chain of Custody Number: 13173

			LAB ID:	401848	401849	401850	401851	401852	GUIDELINE		
			Sample Date:	2005-08-02	2005-08-02	2005-08-02	2005-08-02	2005-08-02			
			Sample ID:	SA #1	SA #2	SA #3	SA #4	SA #7			
PARAMETER	UNITS	MDL							TYPE	LIMIT	UNITS
Bromide	mg/L	0.05		<0.05	<0.05	<0.05	<0.05	1.31			
Chloride	mg/L	1		365	367	200	101	269			
Dissolved Organic Carbon	mg/L	0.5		3.0	3.8	0.8	1.8	1.3			
Fluoride	mg/L	0.10		<0.10	<0.10	<0.10	0.15	0.21			
N-NH3 (Ammonia)	mg/L	0.02		0.04	0.09	0.05	0.20	0.86			
N-NO2 (Nitrite)	mg/L	0.10		0.27	0.31	0.91	<0.10	<0.10			
N-NO3 (Nitrate)	mg/L	0.10		24.1	25.4	14.6	<0.10	<0.10			
Sulphate	mg/L	1		70	70	40	27	3			
Total Kjeldahl Nitrogen	mg/L	0.05		0.46	0.50	0.18	0.38	1.07			



MDL = Method Detection Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration
Comment:

APPROVAL:
Ewan McRobbie
Inorganic Lab Supervisor

ACCUTEST LABORATORIES LTD

REPORT OF ANALYSIS

Client: **Golder Associates Ltd.**
32 Steacie Drive
Ottawa, ON
K2K 2A9
Attention: **Ms. Caitlin Martin**

Report Number: 2515262
Date: 2005-08-12
Date Submitted: 2005-08-03
Project: 05-1120-733
P.O. Number: 250055
Matrix: Water

Chain of Custody Number: 13173

			LAB ID:	401853	401854				GUIDELINE		
			Sample Date:	2005-08-02	2005-08-02						
			Sample ID:	SA #8	SA #9						
PARAMETER	**UNITS**	**MDL**							**TYPE**	**LIMIT**	**UNITS**
Bromide	mg/L	0.05		<0.05	16.0						
Chloride	mg/L	1		297	4580						
Dissolved Organic Carbon	mg/L	0.5		3.6	12.3						
Fluoride	mg/L	0.10		0.12	0.19						
N-NH3 (Ammonia)	mg/L	0.02		0.39	2.77						
N-NO2 (Nitrite)	mg/L	0.10		<0.10	0.87						
N-NO3 (Nitrate)	mg/L	0.10		<0.10	0.64						
Sulphate	mg/L	1		69	77						
Total Kjeldahl Nitrogen	mg/L	0.05		0.69	3.81						

MDL = Method Detection Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration
Comment:

APPROVAL:
Ewan McRobbie
Inorganic Lab Supervisor

Client: **Golder Associates Ltd.**
32 Steacie Drive
Ottawa, ON
K2K 2A9
Attention: **Ms. Caitlin Martin**

Report Number: 2515262
Date: 2005-08-12
Date Submitted: 2005-08-03

Project: 05-1120-733

P.O. Number: 250055
Matrix: Water

Chain of Custody Number: 13173

			LAB ID:					GUIDELINE		
			Sample Date:							
			Sample ID:	LAB BLANK	LAB QC % RECOVERY	QC RECOVERY RANGE	DATE ANALYSED			
PARAMETER	UNITS	MDL						TYPE	LIMIT	UNITS
Bromide	mg/L	0.05	<0.05	102	70-130	2005-08-08				
Chloride	mg/L	1	<1	97	90-110	2005-08-08				
Dissolved Organic Carbon	mg/L	0.5	<0.5	103	89-111	2005-08-04				
Fluoride	mg/L	0.10	<0.10	105	85-115	2005-08-08				
N-NH3 (Ammonia)	mg/L	0.02	<0.02	104	85-115	2005-08-04				
N-NO2 (Nitrite)	mg/L	0.10	<0.10	103	90-110	2005-08-08				
N-NO3 (Nitrate)	mg/L	0.10	<0.10	100	90-110	2005-08-08				
Sulphate	mg/L	1	<1	100	90-110	2005-08-05				
Total Kjeldahl Nitrogen	mg/L	0.05	<0.05	94	77-123	2005-08-04				

MDL = Method Detection Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration

Comment:

APPROVAL:
Ewan McRobbie
Inorganic Lab Supervisor

13173

CHAIN OF CUSTODY RECORD

ACCUTEST LABORATORIES LTD.
☑ 146 Colonnade Rd., Unit 8
Ottawa, ON K2E 7Y1
Ph: (613) 727-5692 Fax: (613) 727-5222

☐ 608 Norris Court
Kingston, ON K7P 2R9
Ph: (613) 634-9307 Fax: (613) 634-9308

LABORATORY USE ONLY
Report # 251852

Company Name: GOLDER ASSOCIATES	Address: 32 STEACIE DR.		☑ Fax Results to: 1613-592-9601
Report Attention: CAITLIN MARTEN	City/Prov: KANATA	Postal Code: ONT.	☑ E-mail Results to: CMARTIN@GOLDER.com
Phone: 613 592-9600 Ext: 266	Project # 05-1120-733	* Quotation #	☐ Copy of Results to:
* Waterworks Name:	* Waterworks Number:		*Note that for drinking water samples, all exceedances will be reported where applicable legislation requires.*

Invoice to:
(if different from above)

SAMPLE ANALYSIS REQUIRED

⇦ Indicate: F=Filtered or P=Preserved

Sample ID	* Date/Time Collected	Sample Matrix i.e. Water, Soil, Paint	* Sample Type (see Codes below)	* MOE Reportable? Y = Yes N = No	# of Containers	** Service Required R=Rush S=Standard	250055	250056	# Quotation #'s	Criteria Required (i.e. Reg.170, Reg.153, CCME, PWQO etc.)	Laboratory Identification
SA # 1	AUG 2/05 3pm	W	RW	N	4	S	//				40848
SA # 2	↓	↓	↓	↓	4	↓	//				1849
SA # 3					4		//				1850
SA # 4					4		//				1851
SA # 5					5			//			
SA # 6					5			//			
SA # 7					4		//				1852
SA # 8					4		//				1853
SA # 9					4		//				1854

Sample Type Codes for Drinking Water Systems: **RW** = Raw Water, **RWFC** = Raw Water For Consumption, **TW** = Treated Water at point of entry to distribution, **DW** = Distribution/Plumbing Water
"MOE Reportable" refers to the requirements under the SDWA for immediate reporting of results, which are indicators of adverse water quality, to the Owner/Operator, MOE, and MOH Medical Officer.

Sampled By:	Date/Time:	Relinquished By:	Date/Time:	Comments	Cooler Temp. (°C) on Receipt
TOM McCARTHY	AUG 2/05				
Work Authorized By (signature):	Date/Time:	Received By Lab:	Date/Time: AUG 3/05 7:25pm		

*** Indicates a required field.** If not complete, analysis will proceed only on verification of missing information. A quotation number is required, if one was provided.
**** There may be surcharges applied to "Rush" service.** Please check with lab prior to submission of samples for rush analysis to confirm availability and pricing.

Client: **Golder Associates Ltd.**
32 Steacie Drive
Ottawa, ON
K2K 2A9
Attention: **Ms. Caitlin Martin**

Report Number: 2515263
Date: 2005-08-12
Date Submitted: 2005-08-03

Project: 05-1120-733

P.O. Number: 250055
Matrix: Water

Chain of Custody Number: 13173

			LAB ID:	401855	401856				GUIDELINE		
			Sample Date:	2005-08-02	2005-08-02						
			Sample ID:	SA #5	SA #6						
PARAMETER	**UNITS**	**MDL**							**TYPE**	**LIMIT**	**UNITS**
Bromide	mg/L	0.05	<0.05	0.16							
Chloride	mg/L	1	1270	29							
Dissolved Organic Carbon	mg/L	0.5	3.6	1.6							
Dissolved Reactive Phosphorus	mg/L	0.01	0.17	0.09							
Fluoride	mg/L	0.10	0.24	0.14							
N-NH3 (Ammonia)	mg/L	0.02	1.27	0.07							
N-NO2 (Nitrite)	mg/L	0.10	<0.10	<0.10							
N-NO3 (Nitrate)	mg/L	0.10	0.40	0.35							
Sulphate	mg/L	1	6	24							
Total Kjeldahl Nitrogen	mg/L	0.05	1.61	0.22							
Total Phosphorus	mg/L	0.01	0.20	3.05							

MDL = Method Detection Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration
Comment:

APPROVAL:
Ewan McRobbie
Inorganic Lab Supervisor

ACCUTEST LABORATORIES LTD

REPORT OF ANALYSIS

Client: **Golder Associates Ltd.**
32 Steacie Drive
Ottawa, ON
K2K 2A9
Attention: **Ms. Caitlin Martin**

Report Number: 2515263
Date: 2005-08-12
Date Submitted: 2005-08-03

Project: 05-1120-733

P.O. Number: 250055
Matrix: Water

Chain of Custody Number: 13173

			LAB ID:					GUIDELINE		
			Sample Date:							
			Sample ID:	LAB BLANK	LAB QC % RECOVERY	QC RECOVERY RANGE	DATE ANALYSED			
PARAMETER	UNITS	MDL						TYPE	LIMIT	UNITS
Bromide	mg/L	0.05	<0.05	102	70-130	2005-08-05				
Chloride	mg/L	1	<1	97	90-110	2005-08-08				
Dissolved Organic Carbon	mg/L	0.5	<0.5	103	89-111	2005-08-04				
Dissolved Reactive Phosphorus	mg/L	0.01	<0.01	103	85-115	2005-08-10				
Fluoride	mg/L	0.10	<0.10	102	85-115	2005-08-05				
N-NH3 (Ammonia)	mg/L	0.02	<0.02	104	85-115	2005-08-04				
N-NO2 (Nitrite)	mg/L	0.10	<0.10	103	90-110	2005-08-08				
N-NO3 (Nitrate)	mg/L	0.10	<0.10	97	90-110	2005-08-09				
Sulphate	mg/L	1	<1	100	90-110	2005-08-05				
Total Kjeldahl Nitrogen	mg/L	0.05	<0.05	94	77-123	2005-08-04				
Total Phosphorus	mg/L	0.01	<0.01	102	88-112	2005-08-09				

MDL = Method Detection Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration

Comment:

APPROVAL:

Ewan McRobbie
Inorganic Lab Supervisor

[redacted] 8-[redacted] Colonna[redacted], Otta[redacted] K2E [redacted] 608 [redacted]ourt, [redacted], ON, [redacted]9 [redacted] [redacted] 2 of 2 [redacted] [redacted] Res[redacted]e only [redacted]param[redacted]ted o[redacted]mples[redacted]ed for [redacted]. [redacted]

Client: **Golder Associates Ltd.**
32 Steacie Drive
Ottawa, ON
K2K 2A9
Attention: **Ms. Caitlin Martin**

Report Number: 2515272
Date: 2005-08-05
Date Submitted: 2005-08-03

Project: 05-1120-733

P.O. Number:

Chain of Custody Number: 13173

Matrix: Surfacewater

			LAB ID:	401876	401877	401878	401879	401880	GUIDELINE		
			Sample Date:	2005-08-02	2005-08-02	2005-08-02	2005-08-02	2005-08-02			
			Sample ID:	SA #1	SA #2	SA #3	SA #4	SA #5			
PARAMETER	UNITS	MDL							TYPE	LIMIT	UNITS
Escherichia Coli	ct/100mL			<10	<10	<10	<10	<10			

MDL = Method Detection Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration

Comment:

APPROVAL:

Krista Quantrill
Microbiology Analyst

ACCUTEST LABORATORIES LTD

REPORT OF ANALYSIS

Client: **Golder Associates Ltd.**
32 Steacie Drive
Ottawa, ON
K2K 2A9
Attention: **Ms. Caitlin Martin**

Report Number: 2515272
Date: 2005-08-05
Date Submitted: 2005-08-03

Project: 05-1120-733

P.O. Number:

Chain of Custody Number: 13173

Matrix: Surfacewater

			LAB ID:	401881	401882	401883	401884		GUIDELINE		
			Sample Date:	2005-08-02	2005-08-02	2005-08-02	2005-08-02				
			Sample ID:	SA #6	SA #7	SA #8	SA #9				
PARAMETER	**UNITS**	**MDL**							**TYPE**	**LIMIT**	**UNITS**
Escherichia Coli	ct/100mL		<10	<10	<10	<10					

MDL = Method Detection Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration

Comment:

APPROVAL: Krista Quantrill

Krista Quantrill
Microbiology Analyst

[redacted] 8-[redacted]onnad[redacted], Otta[redacted] K2E [redacted] 608 [redacted]ourt, [redacted]n, ON, [redacted]9 [redacted] [redacted]2 of 2[redacted] [redacted] Resu[redacted]e only [redacted]arame[redacted]ted o[redacted]mples[redacted]ed for[redacted]s. [redacted]

Client: Golder Associates Ltd.
32 Steacie Dr
Kanata, ON
K2K 2A9
Attention: Ms. Caitlin Cooke

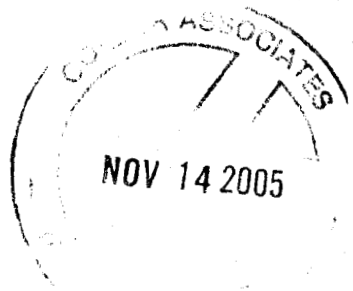
Report Number: 2521439
Date: 2005-10-24
Date Submitted: 2005-10-21

Project: 05-1120-733

P.O. Number: 250055
Matrix: Groundwater

Chain of Custody Number: 33752

			LAB ID:	419907	419908	419909	419910	419911	GUIDELINE		
			Sample Date:	2005-10-21	2005-10-21	2005-10-21	2005-10-21	2005-10-21			
			Sample ID:	G-1	G-2	G-3	G-4	G-5			
PARAMETER	UNITS	MDL							TYPE	LIMIT	UNITS
Escherichia Coli	ct/100mL			<10	<10	<10	<10	<10			



MDL = Method Detection Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration

Comment:

APPROVAL:
Tim McCooeye
QC Manager

608 Norris Court, Kingston, ON, K7P 2R9

ACCUTEST LABORATORIES LTD

REPORT OF ANALYSIS

Client: **Golder Associates Ltd.**
32 Steacie Dr.
Kanata, ON
K2K 2A9
Attention: **Ms. Caitlin Cooke**

Report Number: 2521439
Date: 2005-10-24
Date Submitted: 2005-10-21

Project: 05-1120-733

P.O. Number: 250055
Matrix: Groundwater

Chain of Custody Number: 33752

							GUIDELINE		
LAB ID:			419912						
Sample Date:			2005-10-21						
Sample ID:			G-6						
PARAMETER	UNITS	MDL					TYPE	LIMIT	UNITS
Escherichia Coli	ct/100mL		<10						

MDL = Method Detection Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration

Comment:

APPROVAL:
Tim McCooeye
QC Manager

REPORT OF ANALYSIS

Client: **Golder Associates Ltd.**
32 Steacie Dr.
Kanata, ON
K2K 2A9
Attention: **Ms. Caitlin Cooke**

Report Number: 2521451
Date: 2005-10-28
Date Submitted: 2005-10-21

Project: 05-1120-733

P.O. Number: 250055
Matrix: Groundwater

Chain of Custody Number: 33752

			LAB ID:	419944	419945	419946	419947	419948	GUIDELINE		
			Sample Date:	2005-10-21	2005-10-21	2005-10-21	2005-10-21	2005-10-21			
			Sample ID:	G-1	G-2	G-3	G-4	G-5			
PARAMETER	UNITS	MDL							TYPE	LIMIT	UNITS
Bromide	mg/L	0.05		<0.05	<0.05	<0.05	0.12	<0.05			
Chloride	mg/L	1		275	317	320	113	250			
Dissolved Organic Carbon	mg/L	0.5		2.9	2.7	3.1	1.0	<0.5			
Fluoride	mg/L	0.10		0.14	0.15	0.14	0.12	0.13			
N-NH3 (Ammonia)	mg/L	0.02		0.52	0.08	0.08	0.12	0.04			
N-NO2 (Nitrite)	mg/L	0.10		<0.10	<0.10	<0.10	<0.10	<0.10			
N-NO3 (Nitrate)	mg/L	0.10		<0.10	19.0	21.8	<0.10	19.4			
pH				7.67	7.83	7.85	7.93	7.80			
Sulphate	mg/L	1		62	67	62	23	42			
Total Kjeldahl Nitrogen	mg/L	0.05		0.73	0.42	0.45	0.30	0.21			

MDL = Method Detection Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration
Comment:

APPROVAL:
Ewan McRobbie
Inorganic Lab Supervisor

ACCUTEST LABORATORIES LTD

REPORT OF ANALYSIS

Client: **Golder Associates Ltd.**
32 Steacie Dr.
Kanata, ON
K2K 2A9
Attention: **Ms. Caitlin Cooke**

Report Number: 2521451
Date: 2005-10-28
Date Submitted: 2005-10-21

Project: 05-1120-733

P.O. Number: 250055
Matrix: Groundwater

Chain of Custody Number: 33752

								GUIDELINE		
	LAB ID:	419949								
	Sample Date:	2005-10-21								
	Sample ID:	G-6								
PARAMETER	UNITS	MDL						TYPE	LIMIT	UNITS
Bromide	mg/L	0.05	1.52							
Chloride	mg/L	1	293							
Dissolved Organic Carbon	mg/L	0.5	<0.5							
Fluoride	mg/L	0.10	0.22							
N-NH3 (Ammonia)	mg/L	0.02	0.89							
N-NO2 (Nitrite)	mg/L	0.10	<0.10							
N-NO3 (Nitrate)	mg/L	0.10	<0.10							
pH			8.10							
Sulphate	mg/L	1	4							
Total Kjeldahl Nitrogen	mg/L	0.05	0.89							

MDL = Method Detection Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration

Comment:

APPROVAL:
Ewan McRobbie
Inorganic Lab Supervisor

Client: **Golder Associates Ltd.**
32 Steacie Dr.
Kanata, ON
K2K 2A9
Attention: **Ms. Caitlin Cooke**

Report Number: 2521451
Date: 2005-10-28
Date Submitted: 2005-10-21

Project: 05-1120-733

P.O. Number: 250055
Matrix: Groundwater

Chain of Custody Number: 33752

								GUIDELINE		
LAB ID:										
Sample Date:										
Sample ID:			LAB BLANK	LAB QC % RECOVERY	QC RECOVERY RANGE	DATE ANALYSED				
PARAMETER	UNITS	MDL						TYPE	LIMIT	UNITS
Bromide	mg/L	0.05	<0.05	96	70-130	2005-10-24				
Chloride	mg/L	1	<1	101	90-110	2005-10-26				
Dissolved Organic Carbon	mg/L	0.5	<0.5	96	89-111	2005-10-25				
Fluoride	mg/L	0.10	<0.10	106	85-115	2005-10-24				
N-NH3 (Ammonia)	mg/L	0.02	<0.02	101	85-115	2005-10-25				
N-NO2 (Nitrite)	mg/L	0.10	<0.10	99	90-110	2005-10-24				
N-NO3 (Nitrate)	mg/L	0.10	<0.10	94	90-110	2005-10-24				
pH			5.69	99	95-105	2005-10-26				
Sulphate	mg/L	1	<1	100	90-110	2005-10-24				
Total Kjeldahl Nitrogen	mg/L	0.05	<0.05	95	77-123	2005-10-25				

MDL = Method Detection Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration

Comment:

APPROVAL:
Ewan McRobbie
Inorganic Lab Supervisor

CHAIN OF CUSTODY RECORD

33752

ACCUTEST LABORATORIES LTD.
☐ 146 Colonnade Rd., Unit 8
Ottawa, ON K2E 7Y1
Ph: (613) 727-5692 Fax: (613) 727-5222

☐ 608 Norris Court
Kingston, ON K7P 2R9
Ph: (613) 634-9307 Fax: (613) 634-9308

LABORATORY USE ONLY
Report #: A521453

Company Name: GOLDER ASSOCIATES	Address: 32 STEACIE DR.		☑ Fax Results to: 592-9601
Report Attention: CAITLIN COOKE	City/Prov: KANATA, ON	Postal Code: K2K 2A9	☑ E-mail Results to: ccooke@golder.com
Phone: 613 592 9600 Ext: 266	Project # 05-1120-732	Quotation # 250055	☐ Copy of Results to:
* Waterworks Name:	* Waterworks Number:		*Note that for drinking water samples, all exceedances will be reported where applicable legislation requires.*

Invoice to:
(if different from above)

SAMPLE ANALYSIS REQUIRED

⇦ Indicate: F=Filtered or P=Preserved

Sample ID	* Date/Time Collected	Sample Matrix i.e. Water, Soil, Paint	* Sample Type (see Codes below)	* MOE Reportable? Y=Yes N=No	# of Containers	** Service Required R=Rush S=Standard	Quote # 250055	pH	Criteria Required (i.e. Reg.170, Reg.153, CCME, PWQO etc.)	Laboratory Identification
G-1	Oct 21/05	W	GW	N	4	S	X	X		A19942
G-2							X	X		943
G-3							X	X		944
G-4							X	X		945
G-5							X	X		946
G-6		↓	↓	↓	↓	↓	X	X		947

Sample Type Codes for Drinking Water Systems: **RW** = Raw Water, **RWFC** = Raw Water For Consumption, **TW** = Treated Water at point of entry to distribution, **DW** = Distribution/Plumbing Water
"MOE Reportable" refers to the requirements under the SDWA for immediate reporting of results, which are indicators of adverse water quality, to the Owner/Operator, MOE, and MOH Medical Officer.

Sampled By: Caitlin Cooke	Date/Time: Oct. 21/05	Relinquished By: Caitlin Cooke	Date/Time: Oct. 21/05	Comments	Cooler Temp (°C) on Receipt
Work Authorized By (signature):	Date/Time:	Received By Lab:	Date/Time: Oct 21/05 3:45pm		

*** Indicates a required field.** If not complete, analysis will proceed only on verification of missing information. A quotation number is required, if one was provided.
**** There may be surcharges applied to "Rush" service.** Please check with lab prior to submission of samples for rush analysis to confirm availability and pricing.

Copies: White - Sampler, Yellow - Laboratory, Pink - With Report

TRANSMITTAL LETTER

Golder Associates Ltd.
32 Steacie Drive
Kanata, Ontario K2K 2A9

Telephone: 613-592-9600
Fax Access: 613-592-9601

TO: Corporation of the Nation Municipality
958 Road 500 West
RR#3
Casselman, Ontario
K0A 1M0

DATE: March 21, 2006

JOB NO.: 06-1122-029

ATTENTION: Mary McCuaig

Sent by:
- ☐ Mail
- ☒ Courier
- ☐ Hand Carried

- ☐ Under Separate Cover
- ☒ Enclosed
- ☐ Picked Up

Quantity	Item	Description
2	Report	2005 Groundwater Monitoring Program Communal Sewage Works Nation Municipality Fournier, Ontario
Remarks:		

If enclosures are not as noted, kindly notify us.

ACKNOWLEDGEMENT REQUIRED: Yes ☐ (Please mail/fax to Golder Associates)
No ☒

SENDER: C. Cooke, M.Sc.
EMAIL: ccooke@golder.com

Per: bb-m