NEEGAN BURNSIDE

National Assessment of First Nations Water and Wastewater Systems

Ontario Regional Roll-Up Report
FINAL

Department of Indian Affairs and Northern Development

January 2011

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Department of Indian and Northern Affairs Canada

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Prepared for:

Department of Indian and Northern Affairs Canada

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Statement of Qualifications and Limitations for Regional Roll-Up Reports

This regional roll-up report has been prepared by Neegan Burnside Ltd. and a team of sub-consultants (Consultant) for the benefit of Indian and Northern Affairs Canada (Client). Regional summary reports have been prepared for the 8 regions, to facilitate planning and budgeting on both a regional and national level to address water and wastewater system deficiencies and needs.

The material contained in this Regional Roll-Up report is:

- preliminary in nature, to allow for high level budgetary and risk planning to be completed by the Client on a national level.
- based on a compilation of the data and findings from the individual community reports prepared and issued for a specific region.
- not proposing to identify the preferred solution to address deficiencies for each community. Rather this report will identify possible solution(s) and probable preliminary costs associated with solution(s) presented in greater detail in the community reports. Community specific studies including more detailed evaluation will be required to identify both preferred solutions and final costs.
- based on existing conditions observed by, or reported to the Consultant. This assessment does not wholly eliminate uncertainty regarding the potential for costs, hazards or losses in connection with a facility. Conditions existing but not recorded were not apparent given the level of study undertaken.
- to be read in the context of its entirety.
- not to be used for any purpose other than that agreed to with the Client. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. Any other user specifically denies any right to claims against the Consultant, Sub-Consultants, their Officers, Agents and Employees.

Risk as it pertains to health and safety issues and building code compliance is based upon hazards readily identifiable during a simple walk through of the water and wastewater facilities, and does not constitute a comprehensive assessment with regard to health and safety regulations and or building code regulations.

The Consultant accepts no responsibility for any decisions made or actions taken as a result of this report.

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1.0 Introduction

The Government of Canada is committed to providing safe, clean drinking water in all First Nations communities, and to ensuring that wastewater services in all First Nations communities meet acceptable effluent quality standards. As part of this commitment, the Government announced the First Nations Water and Wastewater Action Plan (FNWWAP). The plan funds the construction and renovation of water and wastewater facilities, operator training, and public health activities related to water and wastewater on reserves. It also provided for a national, independent assessment – *The National Assessment of First Nations Water and Wastewater Systems* – which will inform the Government's future, long-term investment strategy. This assessment was also recommended by the Senate Standing Committee on Aboriginal Peoples.

The purpose of the *National Assessment* is to define the current deficiencies and the operational needs of water and wastewater systems, identify the long-term water and wastewater needs of each community and recommend sustainable, long-term infrastructure development strategies.

The objectives of the *National Assessment* are to:

- Identify which upgrades will be required for existing public systems to meet INAC's *Level of Service Standards*; INAC's *Protocol for Safe Drinking Water in First Nations Communities*; INAC's *Protocol for Wastewater Treatment and Disposal in First Nations Communities*; and applicable provincial regulations, codes, and standards

- Complete the Annual Inspection, Risk Assessment and Asset Condition Reporting Systems (ACRS) assessment for water and wastewater assets

- Conduct an overall community serviceability assessment of private, on-site communal and/or central systems

- Prepare Class "D" cost estimates for each of the communities visited. Class "D" estimates are preliminary, and are based on available site information. They indicate the approximate magnitude of the cost of the recommended actions, and they may be used to develop long-term capital plans. In addition, these estimates may be used in preliminary discussions of proposed capital projects.

This assessment involved collecting background data and information about each community, undertaking a site visit, and preparing individual community reports for each participating First Nation. Neegan Burnside and its sub-consultants conducted an assessment for each of the eight regions. This report summarizes the findings for the Ontario region.

1.1 Site Visits

Neegan Burnside Ltd. and its sub-consultants, R.J. Burnside & Associates Limited, XCG Consultants Ltd., and KGS Group, made site visits in the Ontario region during September and October, 2009, and during May through September, 2010. Each visit included at least two team members. In addition to the consultant staff, additional participants including the Circuit Rider Trainer (CRT), INAC Representative, Environmental Health Officer (EHO) from Health Canada and Tribal Council Representative were invited to attend the site visits. Each community report identifies the additional participants who were able to attend.

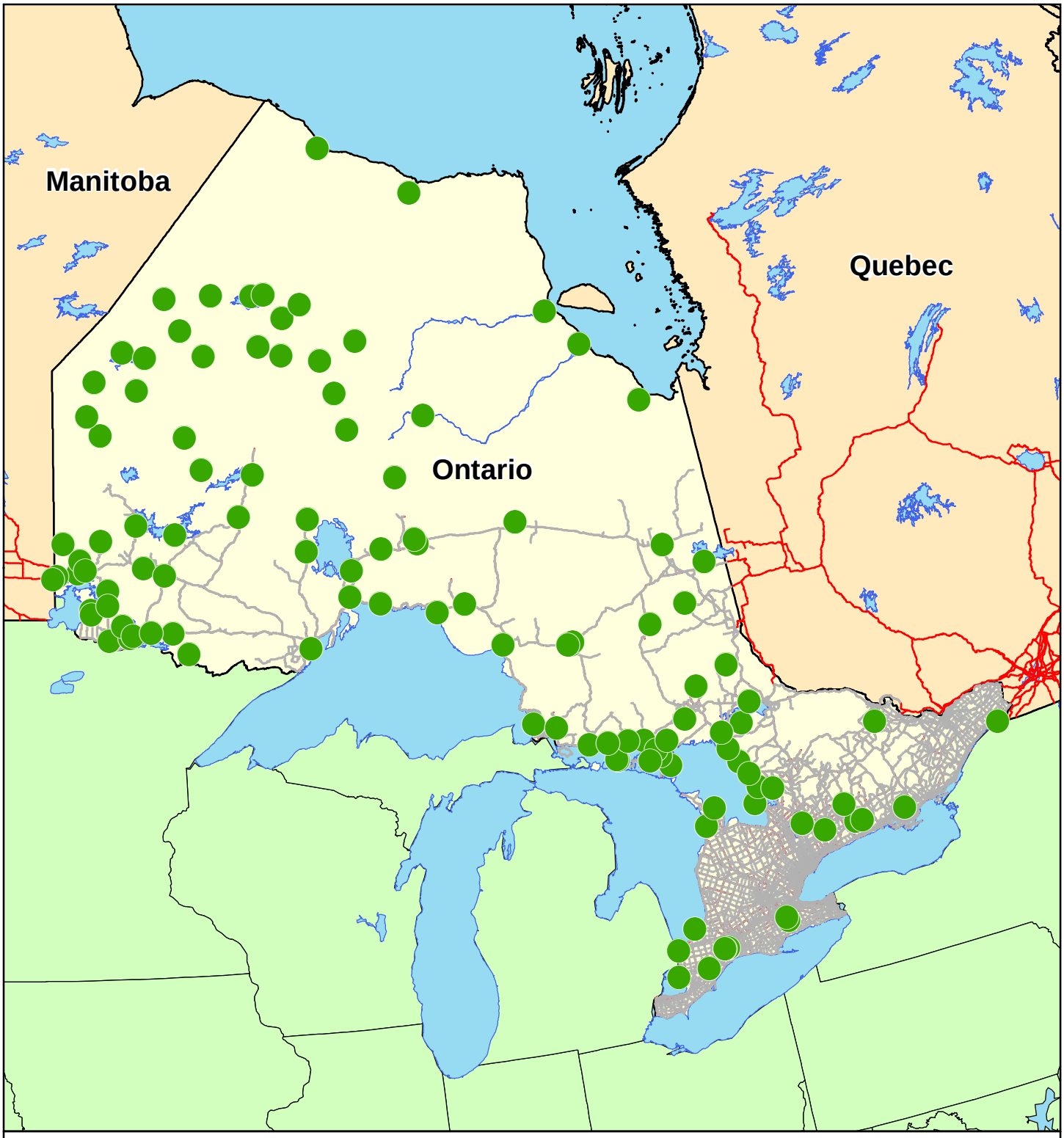
After confirming the various components that the First Nation uses to provide water and wastewater services to the community (i.e. number and types of systems, piping, individual systems, etc.) along with population and future servicing needs (planned development and population growth), an assessment was carried out of the water and wastewater systems, as well as 5% of the individual systems.

1.2 Reporting

Individual community reports have been prepared for each First Nation. In cases where the First Nation consists of multiple communities that are located in geographically distinct areas, a separate report was prepared for each community. In the Ontario Region, 120 of 121 First Nations (99%) with water/wastewater assets participated in the study, which resulted in the preparation of 122 individual community reports. Figure 1.1 indicates the location of each First Nation visited as a part of this study.

The reports include an assessment of existing communal and individual systems, identification of required upgrades to meet departmental, federal and provincial protocols and guidelines, and an assessment of existing servicing of the community along with projections of population and water and wastewater flows for future servicing for the 10 year period. Each report includes the projected costs for the recommendations to meet departmental protocol, federal and provincial guidelines, and an evaluation of servicing alternatives along with life cycle costing for each feasible alternative.

The appendices of each report also include an annual water inspection, a risk evaluation, and an Asset Condition and Reporting System inspection for each system.



NATIONAL ASSESSMENT OF FIRST NATION WATER AND WASTEWATER SYSTEMS

Figure 1.1 - Ontario First Nations Visited

- Ontario First Nations (Visited)
- Ontario Roads
- Major National Roads
- Major Lakes

N

0 50 100 150 200 250

Kilometers

NOTES

This map has been compiled with data of varying scale and accuracy.This is not a plan of survey.

SOURCES

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Geobase® Aboriginal Lands (First Nations) - Accessed from http://geobase.ca.

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2.0 Regional Overview

The Ontario region includes 121 First Nations with water and wastewater assets. 120 of these First Nations participated in the *National Assessment*. There are 158 water systems (146 First Nation systems and 12 Municipal Type Agreements) and 77 wastewater systems (71 First Nation systems and 6 Municipal Type Agreements).

A water or wastewater system considered a First Nation system, consists of INAC-funded assets, and serves five or more residences or public facilities. A Municipal Type Agreement (MTA), on the other hand, is when First Nations are supplied with treated water from or send their wastewater to a nearby municipality or neighbouring First Nation or corporate entity as outlined in a formal agreement between the two parties.

The First Nation community population ranges from 23 to 11,449 people, and household sizes range from 1.5 to 7.2 people per unit (ppu). The total number of dwellings is 23,732 and the average household size in the Ontario region is 3.9 ppu.

2.1 Water Servicing

There are a total of 158 water systems serving 115 First Nations. The remaining five First Nations are serviced solely by individual water supplies.

For water treatment, the 158 systems include:

- 12 systems that receive their water supply through a Municipal Type Agreement (MTA)
- 39 groundwater systems
- 13 GUDI (groundwater under the direct influence of surface water) systems
- 94 surface water systems.

For water distribution, the 158 systems include:

- 3 distribution systems that are maintained through a Municipal Type Agreement (MTA)
- 155 distribution systems that are maintained by the First Nation.

The following summarizes the level of service being provided to the homes within the Ontario region:

- 69% of the homes (16,354) are piped
- 9% of the homes (2,078) are on truck delivery
- 19% of the homes (4,468) are serviced by individual wells
- 3% of the homes (832) are reported to have no water service.

For the purposes of the assessment, homes without water service are typically those without plumbing within the house.

Table 2.1, below, provides an overview of the water systems by system classification, source type, treatment type and storage type.

In general, the treatment system classification reflects the complexity of the treatment process. Treatment systems labeled as “Small System” and “None” typically represent systems with either disinfection only or no treatment. The distribution classification reflects the population of the community being serviced. The classification follows Ontario’s regulations.

Ontario has recently modified the licensing of systems and the certification of operators. First Nation water systems have been evaluated as “year round municipal residential” systems. Ontario recognizes three classes of sub-system: Distribution, Distribution and Supply, and Water Treatment, each of which may be Class I,II,III or IV, and the province requires operators to be certified to the appropriate subsystem and class. The mapping of the existing treatment and distribution certifications to the three categories in the updated Ontario system is outside of the scope of this project.

Table 2.1 - Water Overview

System Classification	No.	% of Total
None	3	2%
Small System	24	15%
Level I	45	28%
Level II	62	39%
Level III	12	8%
MTA	12	8%

Source Type	No.	% of Total
Groundwater	39	25%
Surface Water	94	59%
Groundwater GUDI	13	8%
MTA	12	8%

Storage	No.	% of Total
None	47	30%
Elevated	14	9%
Standpipe	7	4%
Grade level	10	6%
Underground	80	51%

Treatment Type	No.	% of Total
None - Direct Use	4	2%
Disinfection Only	28	18%
Greensand Filtration	6	4%
Slow Sand	19	12%
Conventional	46	29%
Membrane Filtration	43	27%
MTA	12	8%

2.2 Wastewater Servicing

There are a total of 77 wastewater systems serving 67 First Nations. The remaining 53 First Nations are serviced solely by individual wastewater systems.

For wastewater treatment, the 77 systems include:

- 6 systems are provided treatment through a Municipal Type Agreement (MTA)
- 71 First Nation wastewater treatment systems, consisting of 38 systems that use either facultative or aerated lagoons, 27 systems that use a mechanical plant, 4 communal septic systems and 2 other treatment type systems.

For wastewater collection, the 77 systems include:

- 2 wastewater collection systems that are maintained through a Municipal Type Agreement (MTA)
- 75 wastewater collection systems that are maintained by the First Nation.

The following is a summary of the level of service being provided to the homes within the Ontario region:

- 35% of the homes (8,230) are piped
- 5% of the homes (1,276) are on truck haul
- 57% of the homes (13,537) are serviced by individual wastewater systems
- 3% of the homes (689) are reported to have no service.

The following table provides an overview of the wastewater systems by system classification and treatment type:

Table 2.2 - Wastewater Overview

System Classification	No.	% of Total
Small System	7	9%
Level I	46	60%
Level II	17	22%
Level III	1	1%
MTA	6	8%

Treatment Type	No.	% of Total
Aerated Lagoon	1	1%
Facultative Lagoon	37	48%
Mechanical Treatment	27	35%
MTA	6	8%
Other	2	3%
Septic System	4	5%

3.0 Preliminary Results and Trends

3.1 Per Capita Consumption and Plant Capacity

For communal water systems, the average per capita demand ranges from 31 L/p/d to 778 L/p/d, with an average per capita demand of approximately 298 L/p/d.[1]

Historical flow records are not available for approximately 50% of the First Nations with communal water systems, including five of the 12 systems serviced by a Municipal Type Agreement. For these First Nations, an average per capita flow rate of 275 to 325 L/p/d was used to evaluate the water systems.

The distribution of per capita flow is outlined in Table 3.1.

Table 3.1 - Range of Per Capita Water Usage Rates

	No. of systems 2009
Less than 250 L/c/d	40
250 L/c/d to 375 L/c/d	101
Greater than 375 L/c/d	17

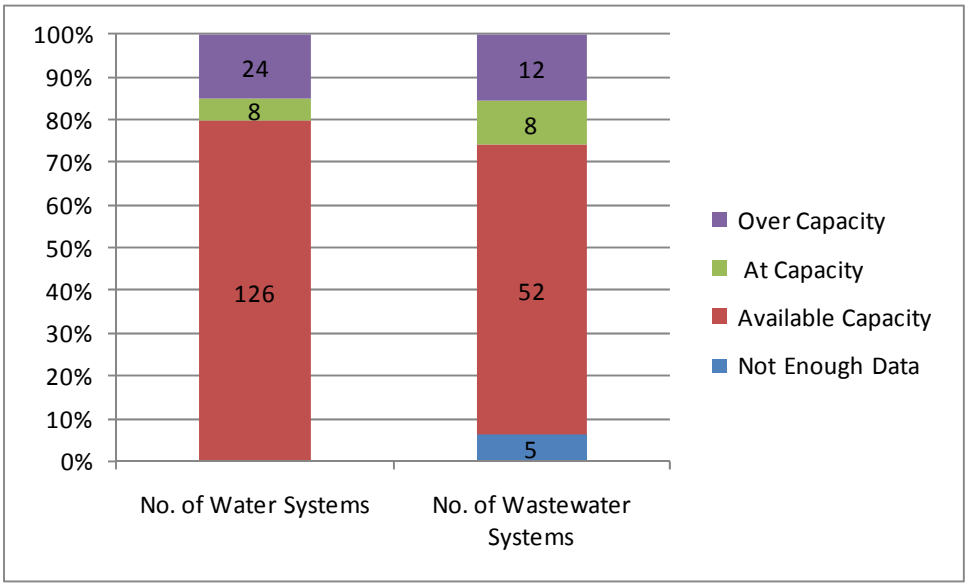
There is no historical wastewater flow data available for most of these systems. Therefore, to evaluate the ability of the existing infrastructure to meet the current and projected needs, an average daily flow was calculated based on the actual or assumed per capita water consumption, plus an infiltration allowance of 90 L/c/d for piped servicing.

The following figure provides a summary of the treatment capacity for the water and wastewater systems:

- over capacity: the existing system is unable to meet the current needs
- at capacity: the existing system is able to meet the current needs
- available capacity: the existing system has sufficient capacity to meet more than the current needs
- not enough data: insufficient data to determine the actual system capacity.

[1] By comparison, according to Environment Canada data (2004), the average per capita consumption across Canada, is 329 L/c/d.

Figure 3.1 - Water and Wastewater Treatment Capacities



The data shows that 32 water systems and 20 wastewater systems are operating at or beyond their estimated capacities. Two of these water systems have per capita demands in excess of 450 L/c/d.

3.2 Distribution and Collection

The household size for the 120 First Nations ranges from 1.5 to 7.2 people per unit (ppu), with an average of 3.9 ppu.[2] The total number of piped connections in the region is 16,354 for water and 8,230 for wastewater. The average length per connection of watermain in the region is approximately 52 m. The average length per connection of sewermain in the region is approximately 30 m.

As the table and the figures below illustrate, there is no strong correlation between the size of the community and the length of pipe per connection. The length of the watermain per connection is greater than the length of the sanitary main per connection. This difference is likely because some communities provide water service only, so the homes are farther apart to allow for the installation of private septic systems. In some cases, the data provided for watermains includes dedicated transmission main lengths (no service connections) and non-distribution mains (i.e. intake pipes, raw water pipes). As a result, the average length per connection is inflated, particularly for smaller communities where the additional pipe length is spread over a smaller number of connections. The tables and figures include only those communities for which suitable data was available.

The table below indicates the number of water and wastewater systems that have pipe lengths above and below 30 m/connection. It should be noted that this information was not available for all of the systems.

[2] By comparison, according to Stats Canada (2009), the average household size in Canada is 2.5 ppu.

Table 3.2 - Average Water Distribution and Wastewater Collection Pipe Lengths

	Watermain	Sewer
Average m/connection	52	30
No. of systems with pipe lengths above 30 m/connection	113	34
No. of systems with pipe lengths below 30 m/connection	22	29

Figure 3.2 - Water Distribution: Average Pipe Length per Connection

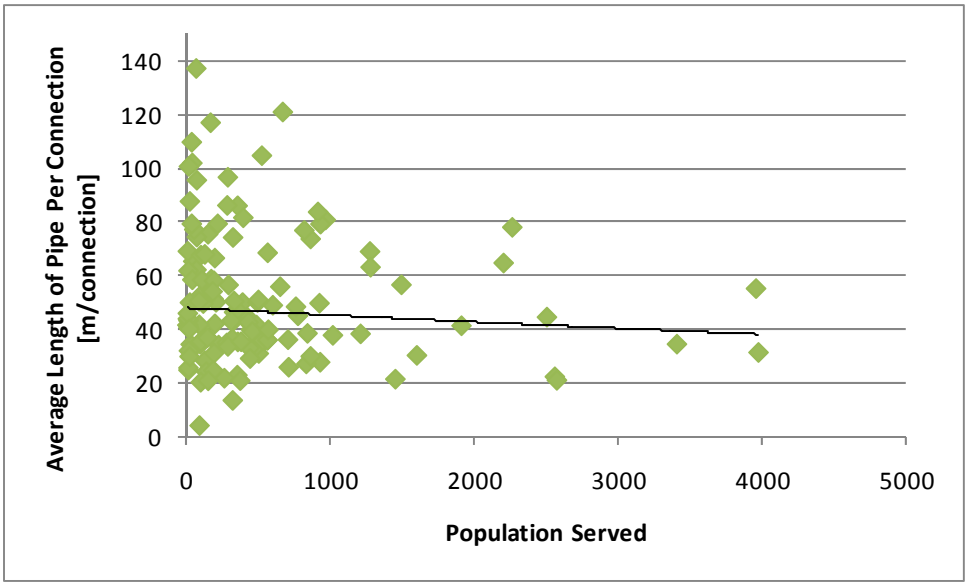
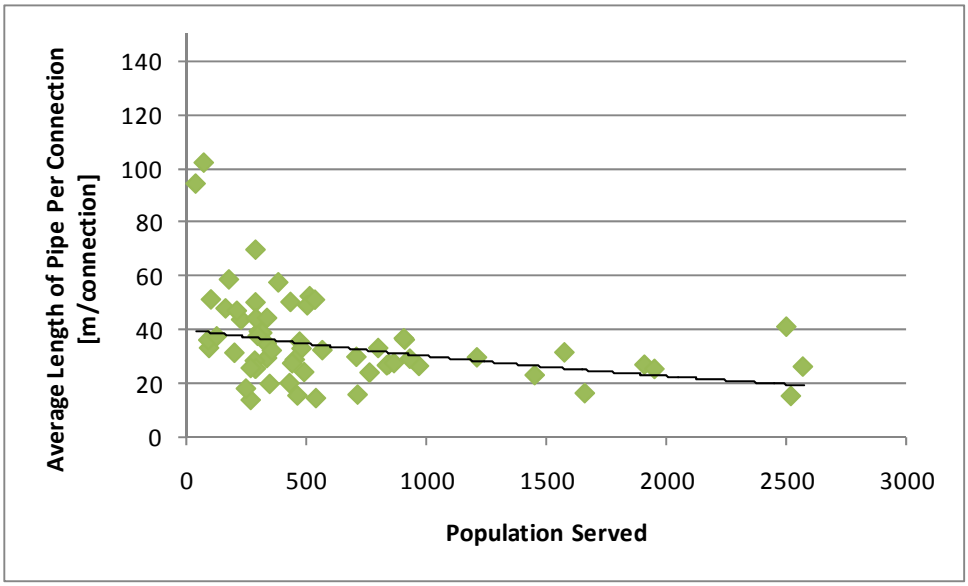


Figure 3.3 - Wastewater Collection: Average Pipe Length per Connection



3.3 Water Risk Evaluation

A risk assessment has been completed for each water system according to the INAC Risk Level Evaluation Guidelines. Each facility is ranked in risk according to the following categories: Water Source, Design, Operation (and Maintenance), Reporting and Operators. The risk levels of all five categories are then used to determine the overall risk for the system.

Each of the five risk categories, as well as the overall risk level of the entire system, is ranked numerically from 1 to 10. Low, medium and high risks are defined as follows:

- **Low Risk (1.0 to 4.0):** These are systems that operate with minor deficiencies. Low-risk systems usually meet the water quality parameters that are specified by the appropriate Canadian Guidelines for drinking water (in particular, the *Guidelines for Canadian Drinking Water Quality* (GCDWQ).
- **Medium Risk (4.1 to 7.0):** These are systems with deficiencies, which — individually or combined—pose a medium risk to the quality of water and to human health. These systems do not generally require immediate action, but the deficiencies should be corrected to avoid future problems.
- **High Risk (7.**1 to 10.0): These are systems with major deficiencies, which— individually or combined—pose a high risk to the quality of water. These deficiencies may lead to potential health and safety or environmental concerns. They could also result in water quality advisories against drinking the water (such as, but not limited to, boil water advisories), repetitive non-compliance with guidelines, and inadequate water supplies. Once systems are classified under this category, regions and First Nations must take immediate corrective action to minimize or eliminate deficiencies.

Regional Risk Summary:

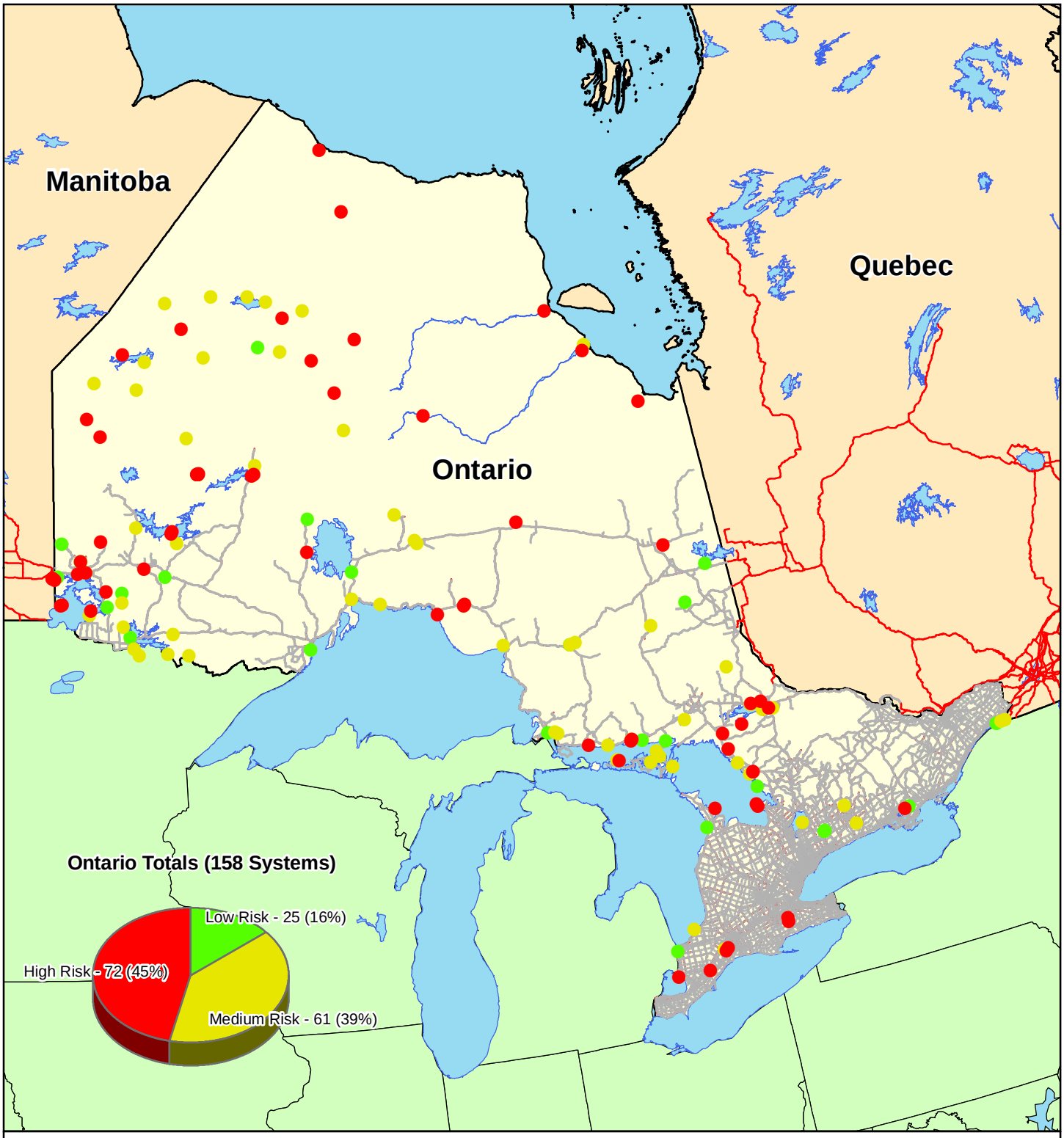
Of the 158 water systems inspected:

- 72 are categorized as high overall risk
- 61 are categorized as medium overall risk
- 25 are categorized as low overall risk.

The 25 low-risk systems include 7 groundwater systems, 7 Municipal Type Agreement (MTA) systems, and 11 surface water systems.

Appendix E.1 provides a table summarizing the correlation between component risk and overall risk. In general, MTA systems are more likely to have a lower overall risk, whereas groundwater under the influence of surface water (GUDI) systems and surface water systems are more likely to be higher risk.

Figure 3.4 provides a geographical representation of the final risk for the water systems that were inspected.



NATIONAL ASSESSMENT OF FIRST NATION WATER AND WASTEWATER SYSTEMS

Water System Risk Level

- High
- Medium
- Low
- Ontario Roads
- Major National Roads
- Major Lakes

Figure 3.4 - Ontario Water System Risk

N

0 50 100 150 200 250

Kilometers

NOTES

This map has been compiled with data of varying scale and accuracy.This is not a plan of survey.

SOURCES

United States Boundaries © ESRI

Geobase® Aboriginal Lands (First Nations) - Accessed from http://geobase.ca.

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3.3.1 Overall System Risk by Source

The following table summarizes the overall system risk by water source. In general, it is assumed that MTA systems have a lower overall risk than other systems because they operate in accordance with provincial legislation. In the Ontario region, 54% of the GUDI systems, 48% of the surface water systems, 46% of the groundwater systems and 17% of the MTA systems were high risk systems. 58% of the MTA systems, 18% of the groundwater systems, 12% of the surface water systems, and none of the GUDI systems have a low overall risk.

Table 3.3 - Summary of Overall Risk Levels by Water Source

Overall Risk Level	Groundwater	GUDI	Surface Water	MTA	TOTAL
High	18	7	45	2	**72**
Medium	14	6	38	3	**61**
Low	7	0	11	7	**25**
Total	**39**	**13**	**94**	**12**	**158**

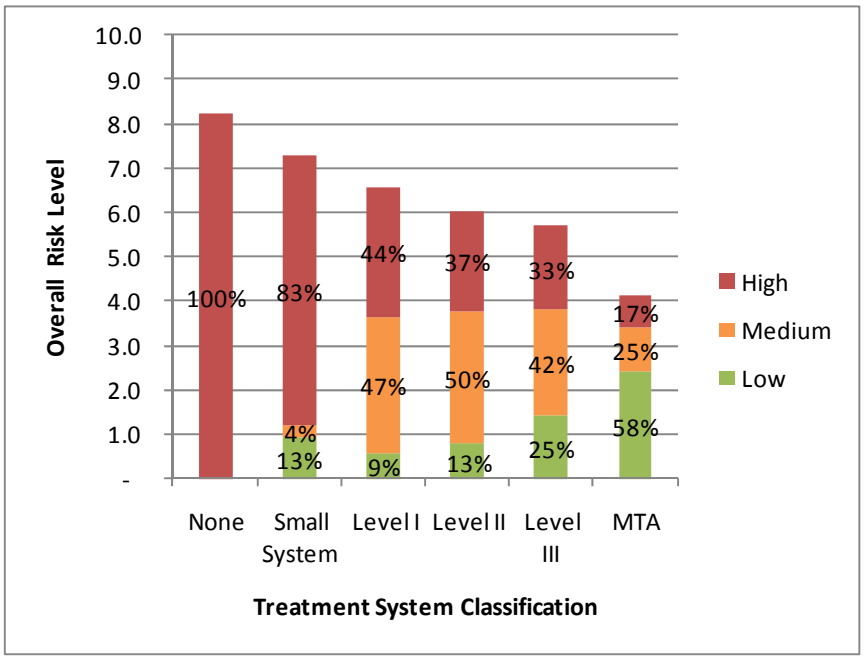
3.3.2 Overall System Risk by Treatment Classification

The following table summarizes the overall system risk by the classification level of the treatment system. System classification is based on a number of factors. Systems with no treatment and small systems are more likely to have higher overall risk scores than more complicated systems.

Table 3.4 - Summary of Overall Risk Levels by Treatment System Classification

Overall Risk Level	None	Small System	Level I	Level II	Level III	MTA	Total
High	3	20	20	23	4	2	**72**
Medium	0	1	21	31	5	3	**61**
Low	0	3	4	8	3	7	**25**
Total	**3**	**24**	**45**	**62**	**12**	**12**	**158**

Figure 3.5 - Risk Profile Based on Water Treatment System Classification



3.3.3 Overall Risk by Number of Connections

For the Ontario region, systems serving more than 100 connections have a fairly even distribution of high-, medium- and low-risk systems. Systems serving less than 100 connections are more likely to have a high- or medium-overall risk. The most likely reason for the higher risk rating for smaller systems includes:

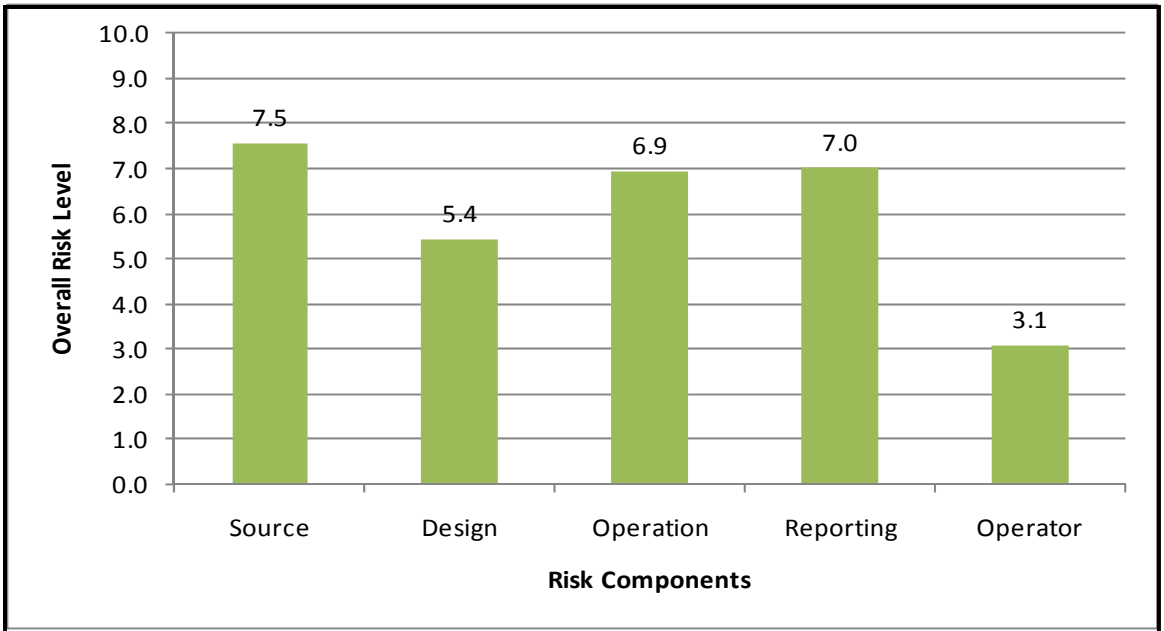
- inadequate treatment for the source water
- untrained operators
- no backup operators
- poor reporting practices.

The above factors seem to be more prevalent in smaller systems.

3.3.4 Component Risks: Water

The overall risk is comprised of five component risks: water source, design, operation, reporting and operator. Each of these component risk factors is discussed below.

Figure 3.6 - Water: Risk Profile Based on Risk Components



	Source	Design	Operation	Reporting	Operator
Risk	7.5	5.4	6.9	7.0	3.1
Minimum	1.0	1.0	1.0	1.0	1.0
Maximum	10.0	10.0	10.0	10.0	10.0
Std. Dev.	2.3	2.7	2.4	3.3	2.6

3.3.5 Component Risk - Water: Source

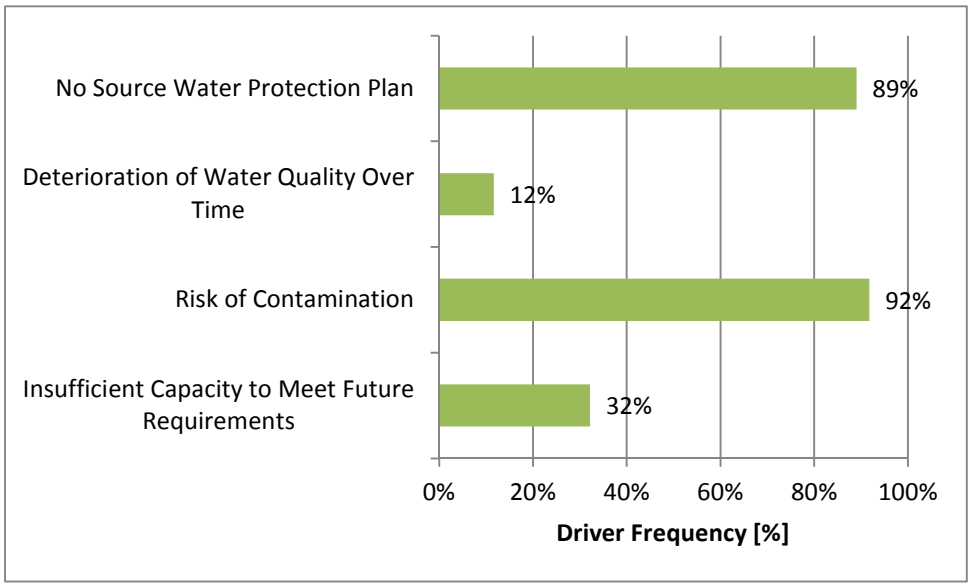
The risk associated with the source has a mean score of 7.5. The mean source risk score by type of source is:

- groundwater at 6.2
- groundwater under the direct influence of surface water (GUDI) at 9.5
- surface water at 8.6
- Municipal Type Agreement (MTA) at 1.9.

The data indicates that systems that rely on surface water or groundwater under the direct influence of surface water (GUDI) water typically have a higher component risk score than systems that rely on groundwater. The risk formula automatically assigns a higher base risk to these types of systems.

The following figure identifies the drivers that contribute to source risk scores.

Figure 3.7 - Source Risk Drivers



3.3.6 Component Risk - Water: Design

The risk associated with the design has a mean score of 5.4. The mean design risk score by type of source is:

- groundwater at 5.3
- groundwater under the direct influence of surface water (GUDI) at 7.2
- surface water at 5.5
- Municipal Type Agreement (MTA) at 3.2.

The higher design risk for the GUDI sources is associated with the relatively recent requirement for GUDI sources to meet treatment levels equivalent to those required for surface water. If the system was developed prior to this change, as a groundwater source, rather than GUDI, then it would not provide the required level of treatment. Of the 13 GUDI systems, 1 has direct use of raw water, 2 are equipped with disinfection only, and 2 additional systems do not have adequate filtration. The remaining systems use cartridge, granular media or membrane filtration, and their effectiveness varies.

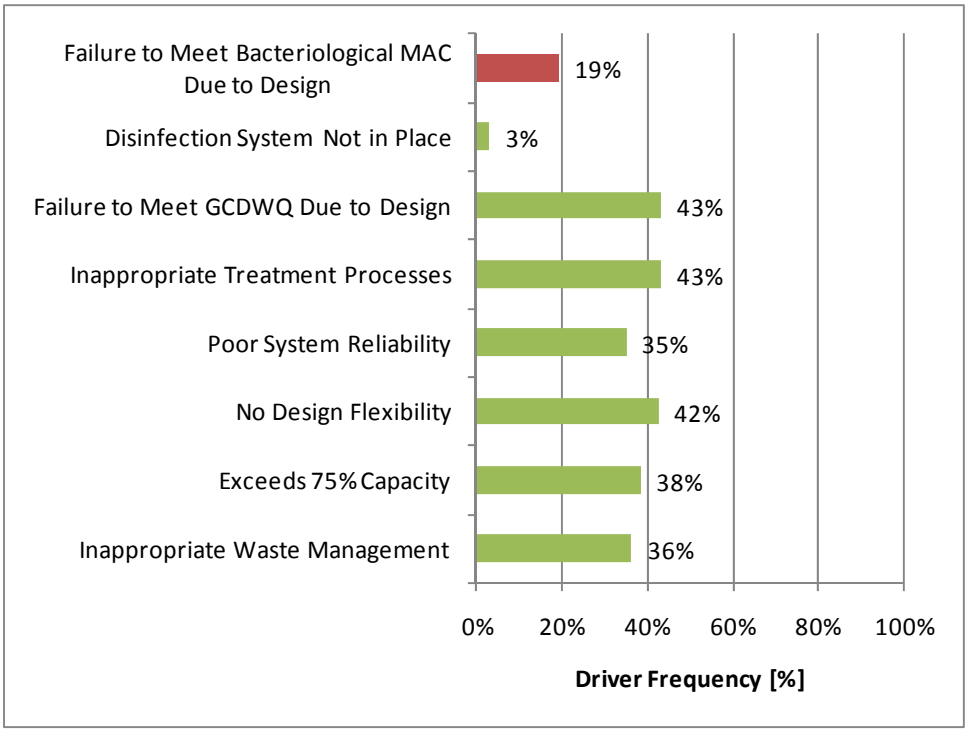
As part of the multi-barrier approach to water treatment, chlorination is now required for all water systems. Typically, a groundwater system has an increased design risk if it does not have a disinfection system in place, or if there is insufficient contact time to ensure that the chlorination process is adequate.

There are several key drivers of the region's design risk scores, including:

- failure to meet the *Guidelines for Canadian Drinking Water Quality* (GCDWQ)
- exceeding the GCDWQ Maximum Acceptable Concentration (MAC) for bacteria
- no disinfection system in place or a disinfection system that is not being used
- no appropriate treatment in place to meet INAC's Protocol requirements

- problems with system reliability
- systems approaching or exceeding design capacity
- inappropriate waste management.

Figure 3.8 - Design Risk Drivers



It should be noted that the design risk drivers in red result in the entire water system being given a high risk score, regardless of all of the other component risk scores.

3.3.7 Component Risk - Water: Operation

The risk associated with operation has a mean score of 6.9. The mean operation risk score by type of source is:

- groundwater at 7.2
- groundwater under the direct influence of surface water (GUDI) at 7.3
- surface water at 7.0
- Municipal Type Agreement (MTA) at 5.3.

Areas that increased risk include operators not maintaining records, operators not having or not using approved Operation & Maintenance manuals, and operators not scheduling and performing maintenance activities. Increased effort focused on these areas would result in lowering both the component and overall risk scores.

There are several key drivers of the region's operation risk scores, including:

- failure to meet the *Guidelines for Canadian Drinking Water Quality* (GCDWQ)
- exceeding the GCDWQ Maximum Acceptable Concentration (MAC) for bacteria
- maintenance logs being inadequately maintained
- lack of general system maintenance
- Emergency Response Plan not in place or not in use
- no Operation & Maintenance manual or Operation & Maintenance manual not being used.

Figure 3.9 - Operations Risk Drivers

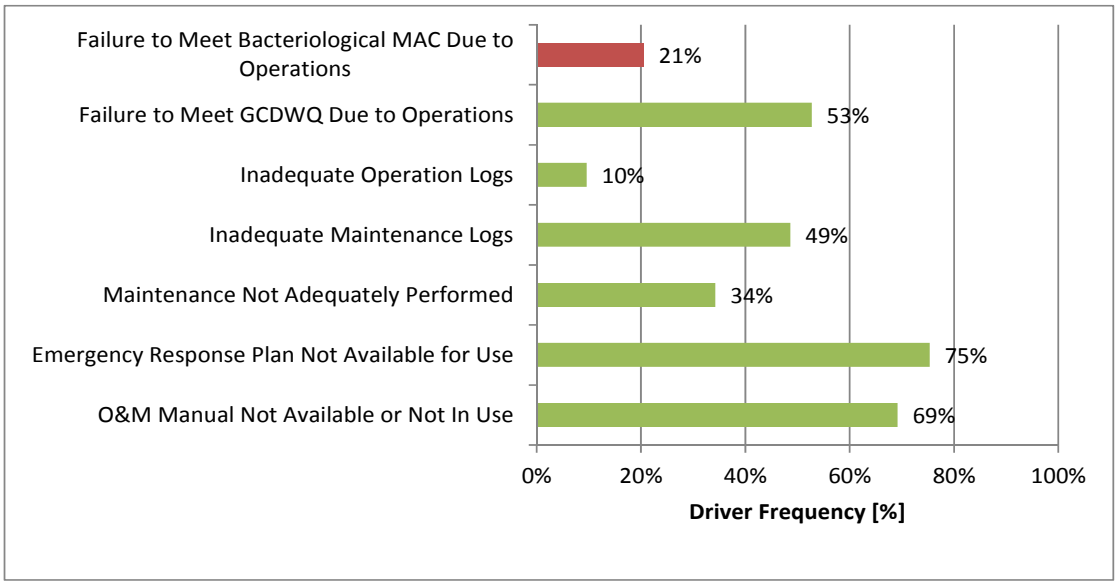
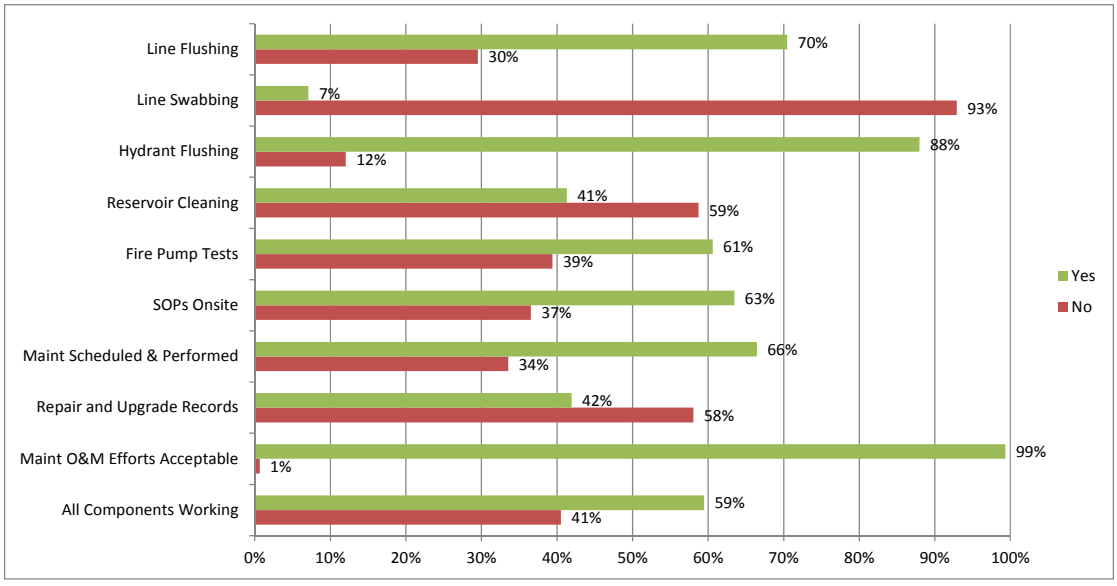


Figure 3.10 - Summary of Findings: Water Systems Operational Practices



One or more major components are not working for 41% of the systems. Although the operators for 70% of the systems practice line flushing and 88% hydrant flushing, most do not regularly swab watermains, clean reservoirs or test fire pumps. Records of system maintenance and repairs were available for only 42% of the systems.

3.3.8 Component Risk - Water: Reporting

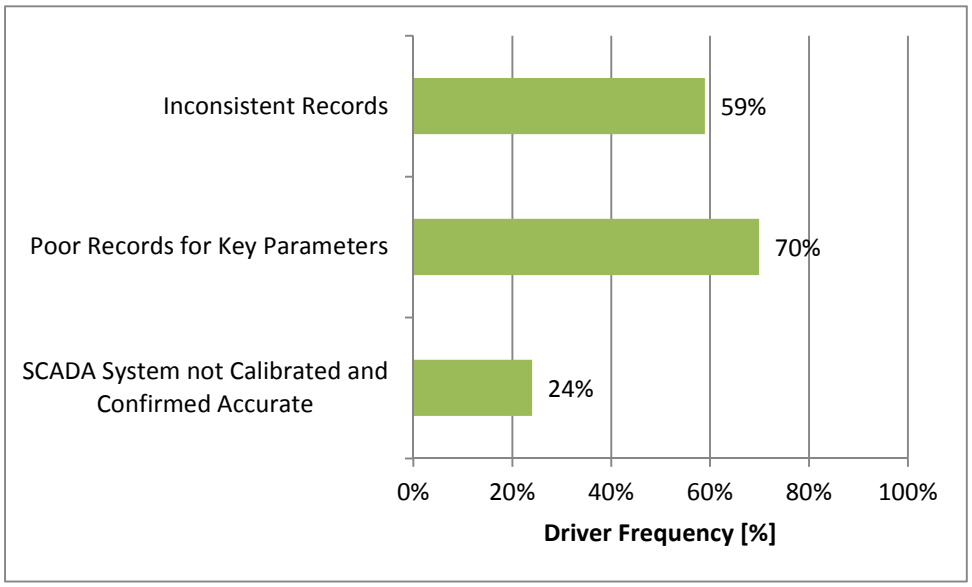
The risk associated with reporting has a mean score of 7.0. The mean reporting risk score by type of source is:

- groundwater at 7.7
- groundwater under the direct influence of surface water (GUDI) at 7.6
- surface water at 6.8
- Municipal Type Agreement (MTA) at 5.9.

Poor record keeping and reporting are significant drivers of reporting risk for all systems (70%), as is inconsistent record keeping (59%). For systems with a Supervisory Control and Data Acquisition (SCADA) system in place, an additional driver is that the instruments are not being calibrated to ensure that the information being recorded is accurate (24%).

An important consideration is that the systems were evaluated based on the requirements for monitoring and reporting as set out in INAC's Protocol. Generally, monitoring and reporting being undertaken by the operators does not meet these requirements. Operator awareness and training could have a significant impact on these risk scores.

Figure 3.11 - Reporting Risk Drivers



3.3.9 Component Risk - Water: Operator

The risk associated with the operator has a mean score of 3.1. It should be noted that a more complicated system (based on treatment classification) requires an operator with a higher level of training. Operator Risk is higher for the more complicated systems, because systems with higher classifications appear less likely to have suitably certified staff. The mean operator risk score by type of source is:

- groundwater at 2.7
- groundwater under the direct influence of surface water (GUDI) at 2.7
- surface water at 3.4
- Municipal Type Agreement (MTA) at 2.3.

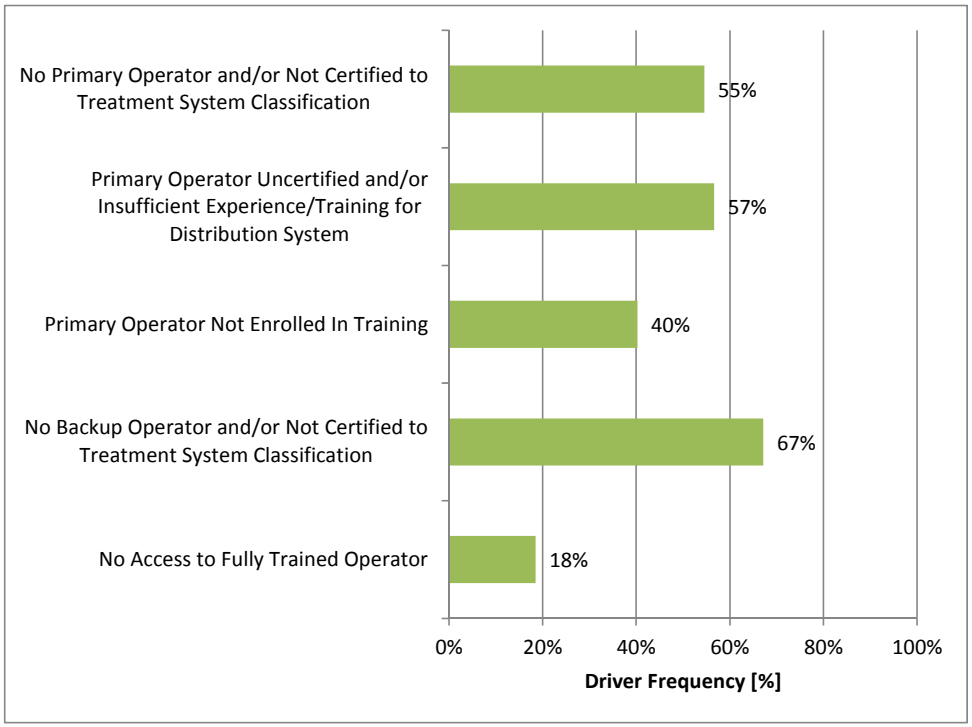
The extent to which existing systems have fully certified primary and backup operators is presented in Table 3.5. Of the 143 systems that require a certified operator for the water treatment system, 55% did not have a fully certified primary operator and 87% did not have a fully certified backup operator. Of the 150 systems that require a certified operator for the distribution system, 59% did not have a fully certified primary operator and 78% did not have a fully certified backup operator.

Table 3.5 - Water: Operator Status for Ontario Region

	Primary Operator		Backup Operator	
	Treatment	Distribution	Treatment	Distribution
No. of Systems Currently Without an Operator	3	4	17	18
No. of Systems with Operator with No Certification	55	75	79	87
No. of Systems with Operator Certified but not to the Required Level of the System	20	9	29	12
No. of Systems with Operator with Adequate Certification	65	62	18	33
No. of Systems Not Requiring Operators with Certification	15	8	15	8
Total No. of Systems	**158**	**158**	**158**	**158**

Those factors which frequently contribute to increased operator risk are identified in Figure 3.12. A lack of certification, lack of training and the lack of primary or backup operator are common drivers that increase operator risk.

Figure 3.12 - Operator Risk Drivers



3.4 Wastewater Risk Evaluation

A risk assessment was completed for each wastewater system according to INAC's *Risk Level Evaluation Guidelines*. The risk of each wastewater facility is ranked according to the following categories: effluent receiver, design, operation and maintenance, reporting, and operator. The overall risk score is a weighted average of the component risk scores.

Each of the five risk categories is ranked numerically from 1 to 10, as is the overall risk level of the entire system. A risk ranking of 1.0 to 4.0 represents a low risk, a risk ranking of 4.1 to 7.0 represents a medium risk, and a risk of 7.1 to 10.0 represents a high risk.

Of the 77 wastewater systems inspected:

- 28 are categorized as high overall risk
- 38 are categorized as medium overall risk
- 11 are categorized as low risk.

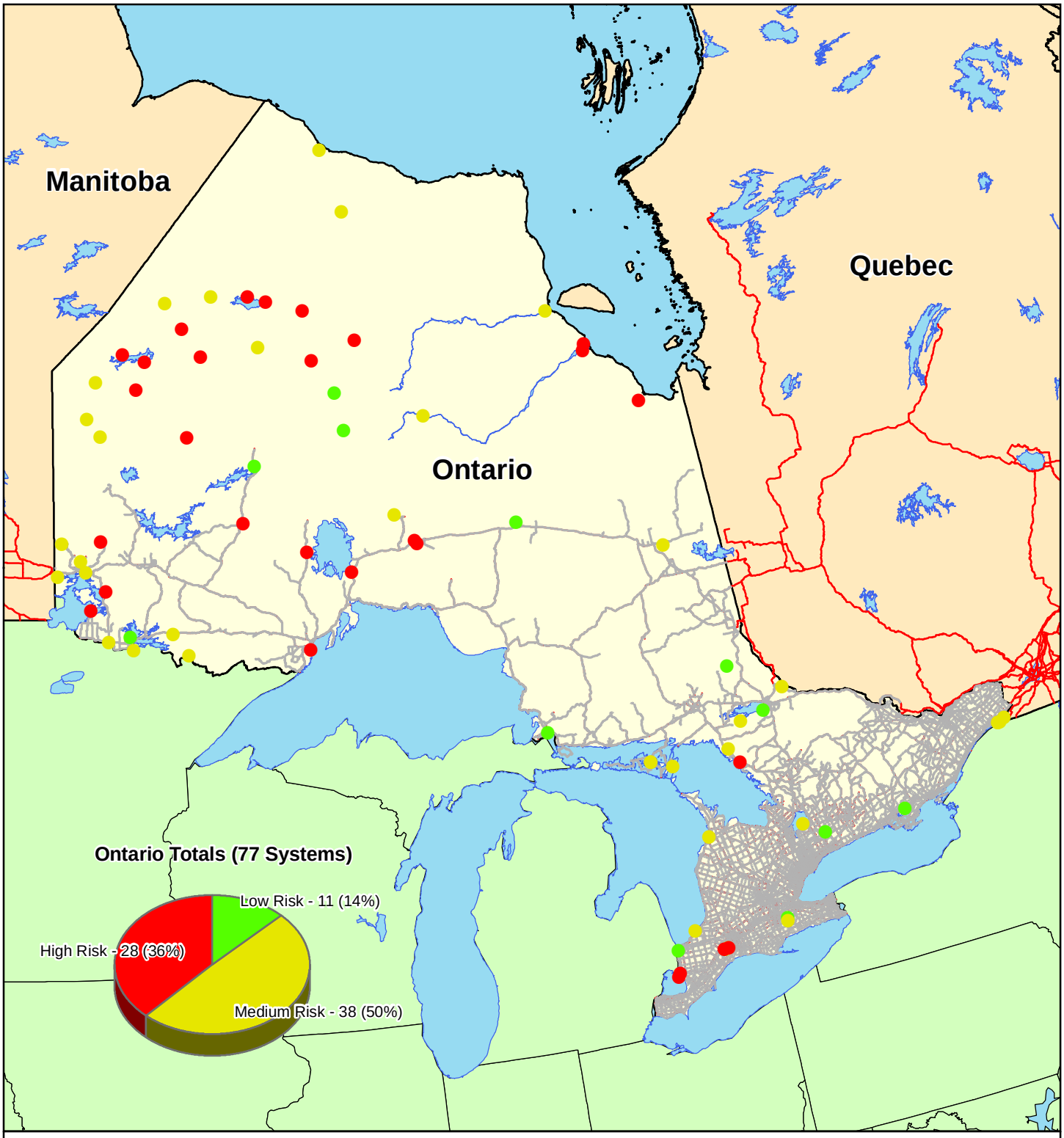
Appendix E.2 provides a table that summarizes the correlation between the component risk and the overall risk.

Figure 3.13 provides a geographical representation of the final risk for the wastewater systems that were inspected.

3.4.1 Overall System Risk by Treatment Classification

Figure 3.14 demonstrates the correlation between the mean overall system risk and the classification level of the treatment system. For MTA systems, it was assumed that the municipality operates their system in accordance with provincial legislation, which contributes to a lower overall risk for these systems.

For the Ontario region, it appears that a higher plant classification is positively correlated with a higher overall risk score, and that MTA systems have the greatest likelihood of being low risk.



NATIONAL ASSESSMENT OF FIRST NATION WATER AND WASTEWATER SYSTEMS

Wastewater System Risk Level

- High
- Medium
- Low
- Ontario Roads
- Major National Roads
- Major Lakes

Figure 3.13 - Ontario Wastewater System Risk

N

0 50 100 150 200 250

Kilometers

NOTES

This map has been compiled with data of varying scale and accuracy.This is not a plan of survey.

SOURCES

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United States Boundaries © ESRI

Geobase® Aboriginal Lands (First Nations) - Accessed from http://geobase.ca.

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Project: FGY16308
Drawn By: B. Goll

Projection: Geographic, Canada LCC

Indian and Northern Affairs Canada | Affaires indiennes et du Nord Canada

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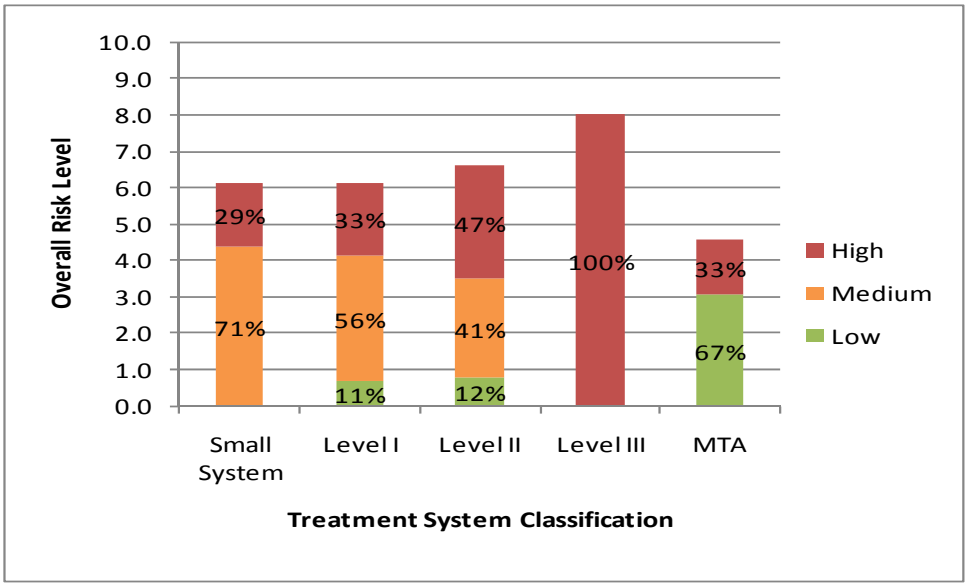
Figure 3.14 - Risk Profile Based on Wastewater Treatment System Classification



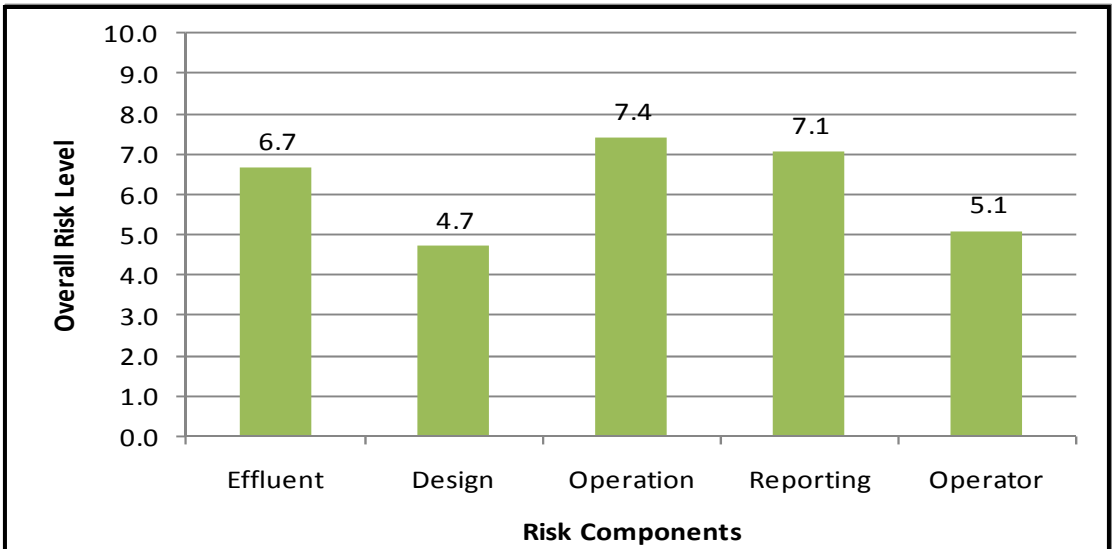
3.4.2 Overall System Risk by Number of Connections

For the Ontario region systems with less than 100 connections are more likely to be medium or high risk than systems with 100 or more connections.

3.4.3 Component Risks: Wastewater

The overall risk is comprised of five component risks: effluent receiver, design, operation, reporting and operators. Each of these component risk factors is discussed below.

Figure 3.15 - Wastewater: Risk Profile Based on Risk Components



	Effluent	Design	Operation	Reporting	Operator
Risk	6.7	4.7	7.4	7.1	5.1
Minimum	1.0	1.0	2.0	1.0	1.0
Maximum	10.0	9.0	10.0	10.0	10.0
Std. Dev.	2.7	2.2	2.1	3.5	3.4

3.4.4 Component Risk - Wastewater: Effluent Receiver

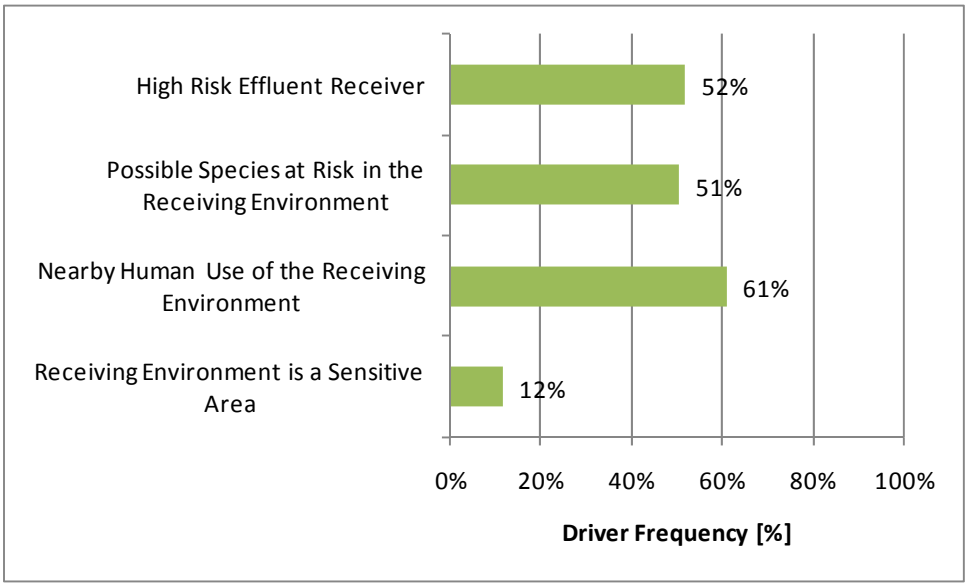
The risk associated with the effluent receiver has a mean risk score of 6.7. The mean effluent receiver risk source by treatment type is:

- Septic Systems at 4.3
- Aerated Lagoons at 8.0
- Facultative Lagoon at 6.5
- Mechanical Treatment 8.1
- Other at 5.0
- Municipal Type Agreement (MTA) at 3.0.

There are two key drivers of this risk component:

- the receiving environment
- the extent to which the receiver is required for other human uses, such as fishing, recreation or drinking water.

Figure 3.16 - Effluent Risk Drivers



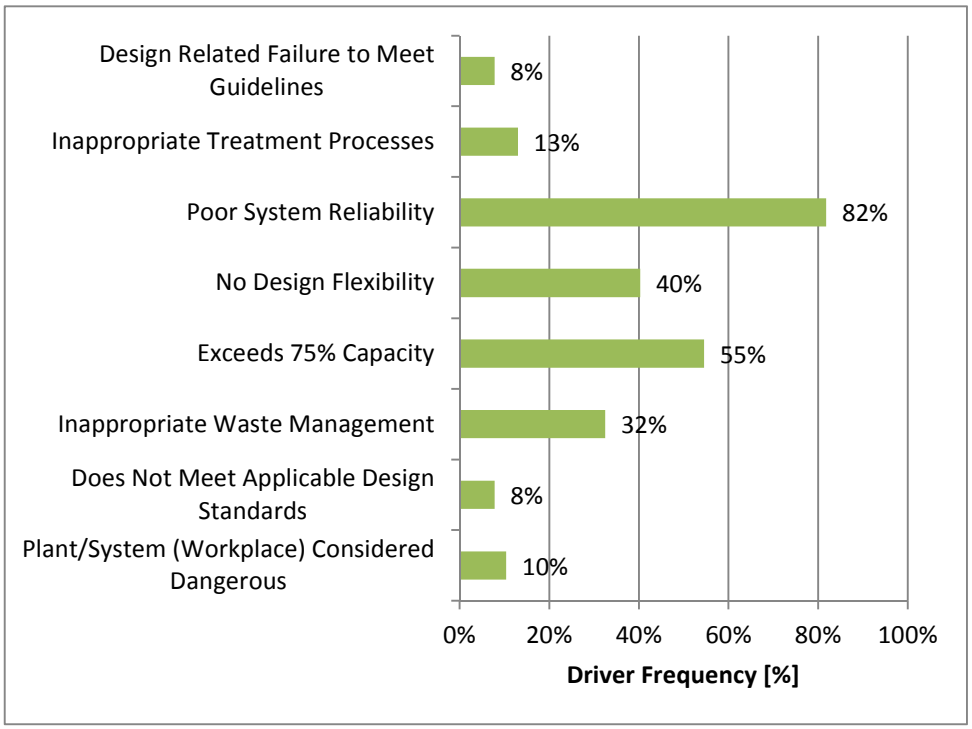
3.4.5 Component Risk - Wastewater: Design

The risk associated with the design has a mean score of 4.7. The design component risk has the lowest mean component score.

There are several key drivers of the design component risk scores in the region, including:

- failure to meet federal *Effluent Quality Guidelines*
- inappropriate treatment process
- problems with system reliability
- no design flexibility
- system at or near capacity
- inappropriate waste management
- system identified as a dangerous workplace.

Figure 3.17 - Design Risk Drivers



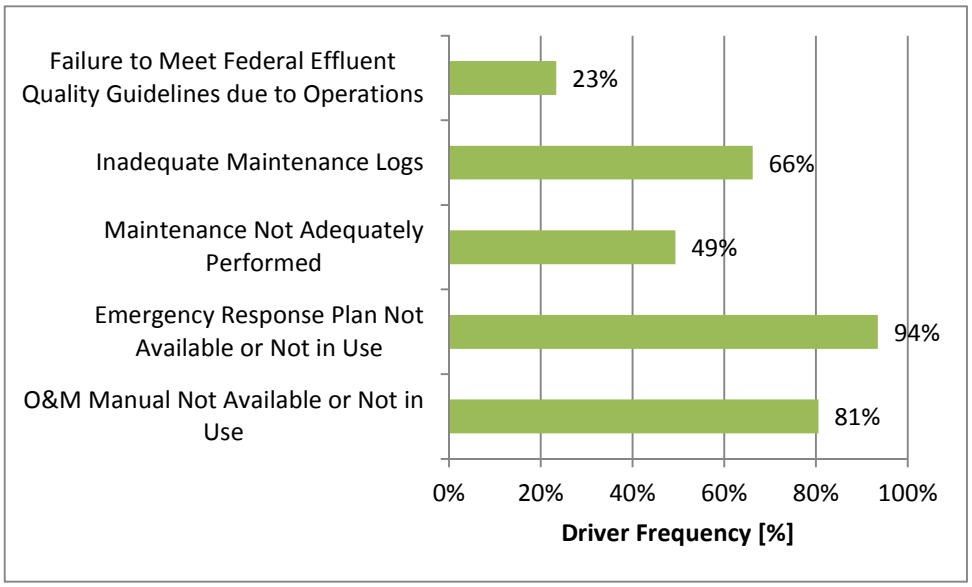
3.4.6 Component Risk - Wastewater: Operation

The risk associated with the operation has a mean score of 7.4. All of the wastewater systems have a medium- or high-risk score. As a result, operation is identified as an area of opportunity for increased risk-mitigation efforts.

There are several key drivers of the operation risk in the region, including:

- failure to meet federal *Effluent Guidelines*
- inadequate maintenance logs
- general maintenance not being performed adequately
- Emergency Response Plans not in place or not being used
- Operation & Maintenance manuals not available or not in use.

Figure 3.18 - Operation Risk Drivers



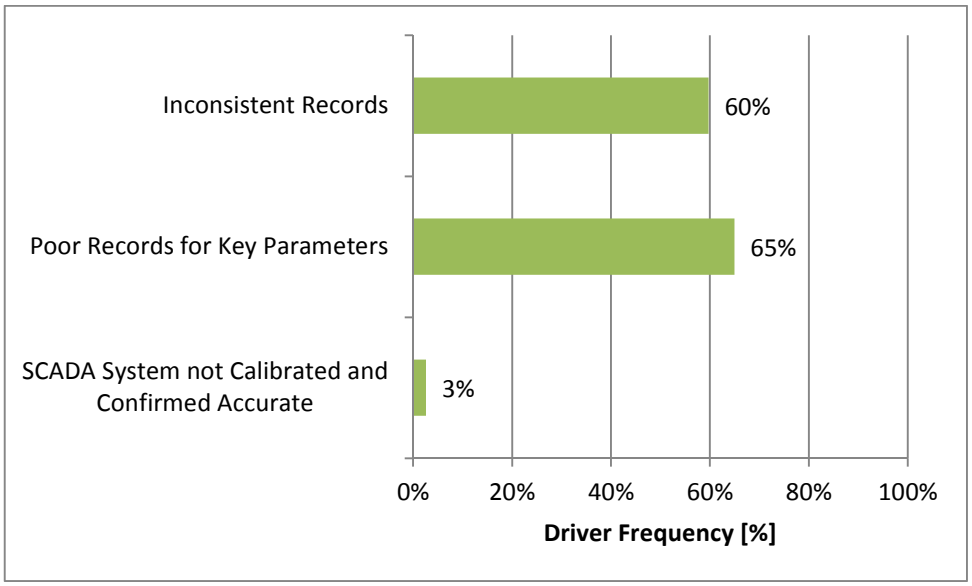
3.4.7 Component Risk - Wastewater: Reporting

The risk associated with reporting has a mean score of 7.1. The reporting risk component assesses whether operators maintain effluent-testing and system-monitoring records. Poor record keeping is a significant factor in raising the overall risk ranking for many communities in this region.

There are several key drivers of the reporting risk in the region, including:

- inconsistent record keeping
- poor records for key parameters.

Figure 3.19 - Reporting Risk Drivers



3.4.8 Component Risk - Wastewater: Operator

The risk associated with the operator has a mean score of 5.1. Operator risk is determined by whether or not the operators have adequate certification.

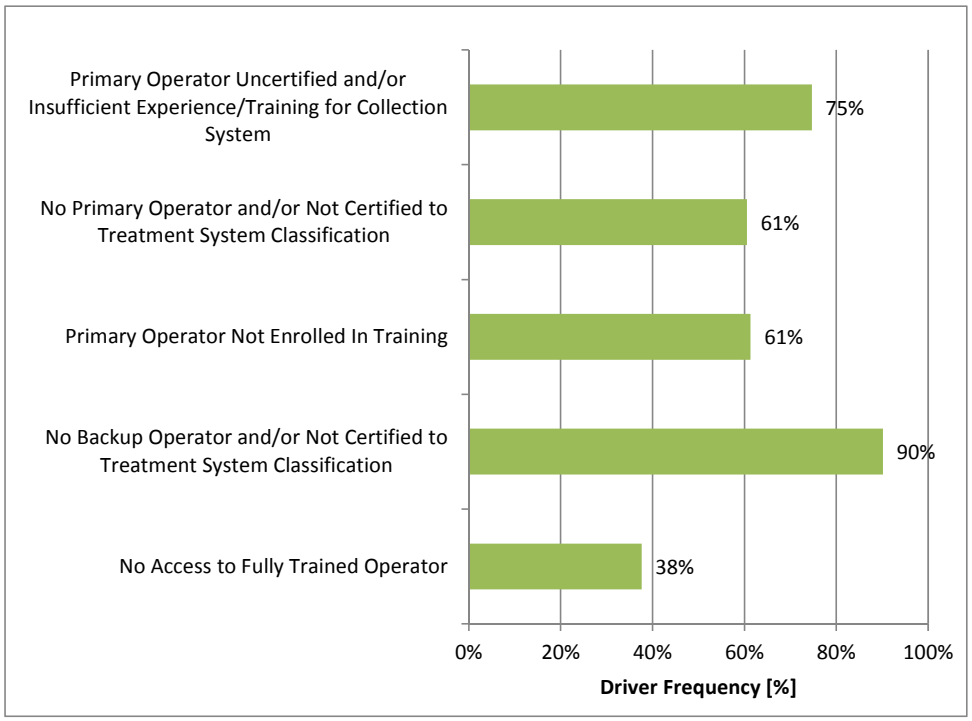
The extent to which existing wastewater systems have fully certified primary and backup operators is presented in Table 3.6. Of the 71 systems which require a certified operator for the wastewater treatment system, 75% did not have a fully certified primary operator and 93% did not have a fully certified backup operator. Of the 71 systems which require a certified operator for the collection system, 73% did not have a fully certified primary operator and 93% did not have a fully certified backup operator.

Table 3.6 - Wastewater: Operator Status for Ontario Region

	Primary Operator		Backup Operator	
	Treatment	**Collection**	**Treatment**	**Collection**
No. of Systems Currently Without an Operator	10	9	21	21
No. of Systems with Operator with No Certification	37	38	43	43
No. of Systems with Operator Certified but not to the Required Level of the System	6	5	2	2
No. of Systems with Operator with Adequate Certification	18	19	5	5
No. of Systems Not Requiring Operators with Certification	6	6	6	6
Total No. of Systems	**77**	**77**	**77**	**77**

Those factors which frequently contribute to increased wastewater operator risk are identified in Figure 3.20. A lack of certification, lack of training and the lack of primary or backup operator are common drivers that increase operator risk.

Figure 3.20 - Operator Risk Drivers



3.5 Plans

Information was collected regarding the availability of various documents, including Source Water Protection Plans (SWPP), Maintenance Management Plans (MMP), and Emergency Response Plans (ERP).

The following tables provide a summary of the percentages of First Nations that have plans in place:

Table 3.7 - Plans Summary: Water

Source	*Percentage of Water Systems that have a (an)...*		
	Source Water Protection Plan	**Maintenance Management Plan**	**Emergency Response Plan**
Groundwater	23%	33%	21%
Groundwater GUDI	8%	23%	46%
MTA	N/A	17%	42%
Surface Water	6%	21%	21%
Overall	**11%**	**24%**	**25%**

Table 3.8 - Plans Summary: Wastewater

Percentage of Wastewater Systems that have a (an)…	
Maintenance Management Plan	**Emergency Response Plan**
8%	6%

3.5.1 Source Water Protection Plans

Source water protection planning is one component of a multi-barrier approach to providing safe drinking water. Source Water Protection Plans seek to identify threats to the water source. They also establish policies and practices to prevent contamination of the water source and to ensure that the water service provider is equipped to take corrective action in the event of water contamination. Source water protection is appropriate for groundwater and surface water sources.

Only 11% of the systems reported that they had completed a Source Water Protection Plan.

3.5.2 Maintenance Management Plans

Maintenance Management Plans are intended to improve the effectiveness of maintenance activities. They focus on planning, scheduling and documenting preventative maintenance activities, and they document unscheduled maintenance efforts. The plans represent a change from reactive to proactive thinking, and—when executed properly—they optimize maintenance spending, minimize service disruption, and extend asset life.

Only 24% water systems and 8% wastewater systems indicated that they had completed a Maintenance Management Plan.

3.5.3 Emergency Response Plans

Emergency Response Plans (ERPs) are intended to be a quick reference to assist operators and other stakeholders in managing and in responding to emergency situations. Emergency Response Plans should be in place for both water and wastewater systems. They include key contact information for those who should be notified and who may be of assistance in case of emergency (agencies, contractors, suppliers, etc.), and they provide standard communication and response protocols. Emergency Response Plans identify recommended corrective actions for “foreseeable” emergencies, and they establish methodologies for addressing unforeseen situations. They are essentially the last potential “barrier” in a multi-barrier approach to protecting the drinking water supply and the natural environment, and they provide the last opportunity to mitigate damages.

Only 25% of the water systems and 6% of the wastewater systems have an Emergency Response Plan in place.

4.0 Cost Analysis

4.1 Upgrade to Meet INAC's Protocol: Water

In 2006, INAC began to develop a series of Protocol documents for centralised and decentralised water and wastewater systems in First Nations communities. The Protocols contain standards for the design, construction, operation, maintenance, and monitoring of these systems.

One of the objectives of this study was to review the existing water and wastewater infrastructure, and to identify the potential upgrade costs to meet INAC's Protocols, and federal and provincial guidelines, standards and regulations. The total estimated construction cost for water system upgrades to meet the INAC Protocol is $228 million.

Table 4.1 provides a breakdown of the estimated total construction costs. A separate line item is included for engineering and contigency. Figure 4.1 provides a comparison graph of each of the categories. Note that Treatment and Storage & Pumping comprise 62% of the estimated costs.

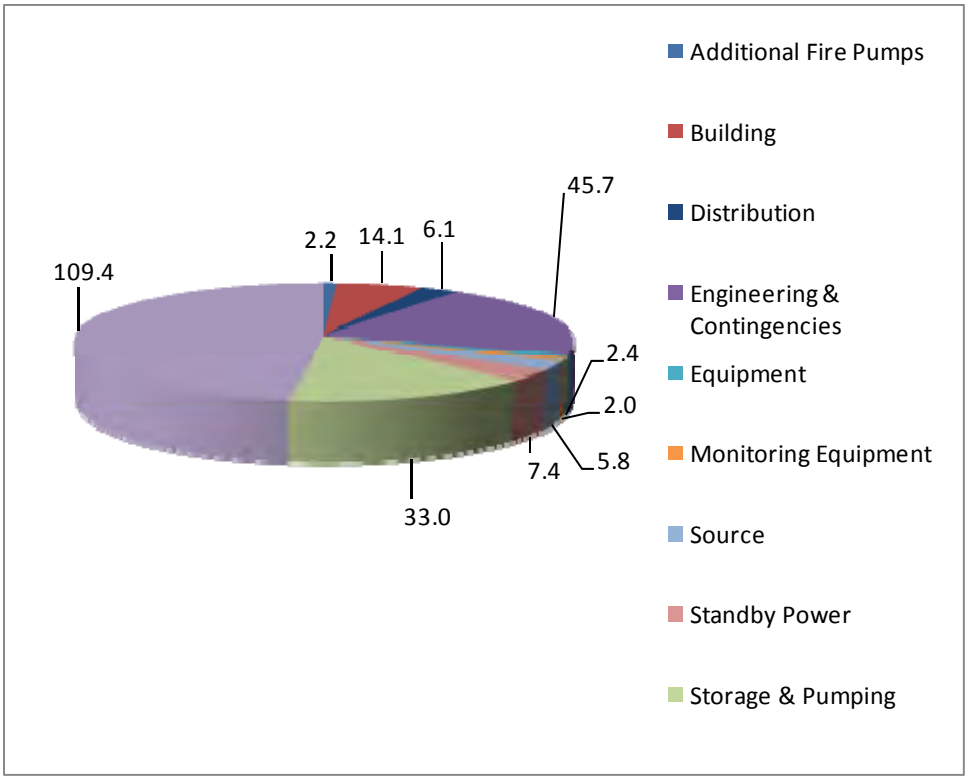
Table 4.1 - Estimated Total Construction Costs: Water

Description	Protocol - Estimated Cost	Federal - Estimated Cost	Provincial - Estimated Cost
Building	$14,121,700	$1,514,500	$8,842,800
Distribution	$6,065,000	$1,066,000	$2,160,000
Equipment	$2,370,600	$2,300,500	$2,301,800
Additional Fire Pumps	$2,231,000	$140,000	$2,181,000
Monitoring Equipment	$2,047,200	$1,695,700	$2,047,200
Source	$5,826,350	$1,191,800	$5,790,850
Storage & Pumping	$32,985,500	$32,036,500	$32,876,500
Treatment	$109,353,600	$94,187,110	$102,798,110
Standby Power	$7,423,000	$490,000	$7,423,000
Engineering & Contingencies	$45,687,500	$33,744,050	$41,686,500
Construction Total Estimate	**$228,111,450**	**$168,366,160**	**$208,107,760**

There are 27 water systems that may have groundwater-under-the-direct-influence-of-surface-water (GUDI) water supplies. Upgrade costs for these systems are estimated assuming that they will prove to be secure groundwater supplies and recommendations for GUDI studies are identified to confirm this.

If the GUDI studies indicate that these supplies should be considered to be surface water *rather than* groundwater, then additional upgrade requirements will be necessary for these systems to meet INAC's Protocols. It is estimated that, depending on system capacity and site indices, an additional $1.0 to 2.5 million will be required for each system that needs to be upgraded to surface-water treatment.

Figure 4.1 - Breakdown of the Estimated Construction Costs to Meet INAC's Protocol: Water ($ - M)



Treatment and Storage and Pumping comprise two of the major construction-cost categories.

Treatment costs include:

- Providing spare chemical feed equipment.
- Providing spare disinfection equipment.
- Providing secondary containment for treatment chemicals.
- Providing additional filter trains to meet Protocol.
- Providing treatment to meet Protocol.
- Providing secondary disinfection.
- Providing contact piping.
- Providing surge suppression/uninterruptible power supplies for critical electronic equipment.
- Upgrading capacity of existing water treatment plant.

Storage & Pumping costs include:

- Expanding storage for chlorine contact and/or fire protection and domestic flows.
- Providing screened reservoir vents.
- Providing secondary containment liners for onsite fuel storage.
- Retrofitting existing reservoirs to include baffling (concrete and/or curtain).
- Providing additional raw water pumping capacity.
- Providing additional highlift pumping capacity.
- Providing backwash pump.
- Upgrading fire pump systems.

Table 4.2 - Estimated Total Non- Construction Costs: Water

Description	Protocol - Estimated Cost	Federal - Estimated Cost	Provincial - Estimated Cost
Training	$1,740,000	$1,740,000	$1,740,000
GUDI Studies	$1,456,000	$0	$1,456,000
Plans/Documentation	$8,824,000	$6,739,000	$8,804,000
Studies	$1,558,000	$980,000	$1,455,000
Non-Construction Total Estimate	**$13,578,000**	**$9,459,000**	**$13,455,000**

Additional annual operations and maintenance costs, shown in Table 4.3, include costs that occur annually for items that are not currently being completed to meet protocols, such as calibrating monitoring equipment, additional sampling, cleaning the reservoir, and backup operator's salary.

Table 4.3 - Estimated Additional Annual Operation & Maintenance Costs: Water

Description	Estimated Cost
Sampling	$2,503,550
Operations	$562,500
Operator	$970,000
Water O&M Total Estimated Cost	**$4,036,050**

The total estimated cost, including construction and non-construction costs, for water system upgrades to meet the INAC Protocol is $242 million. This excludes costs associated with potentially GUDI systems, which prove to be GUDI systems as discussed previously.

4.2 Upgrade to Meet Protocol: Wastewater

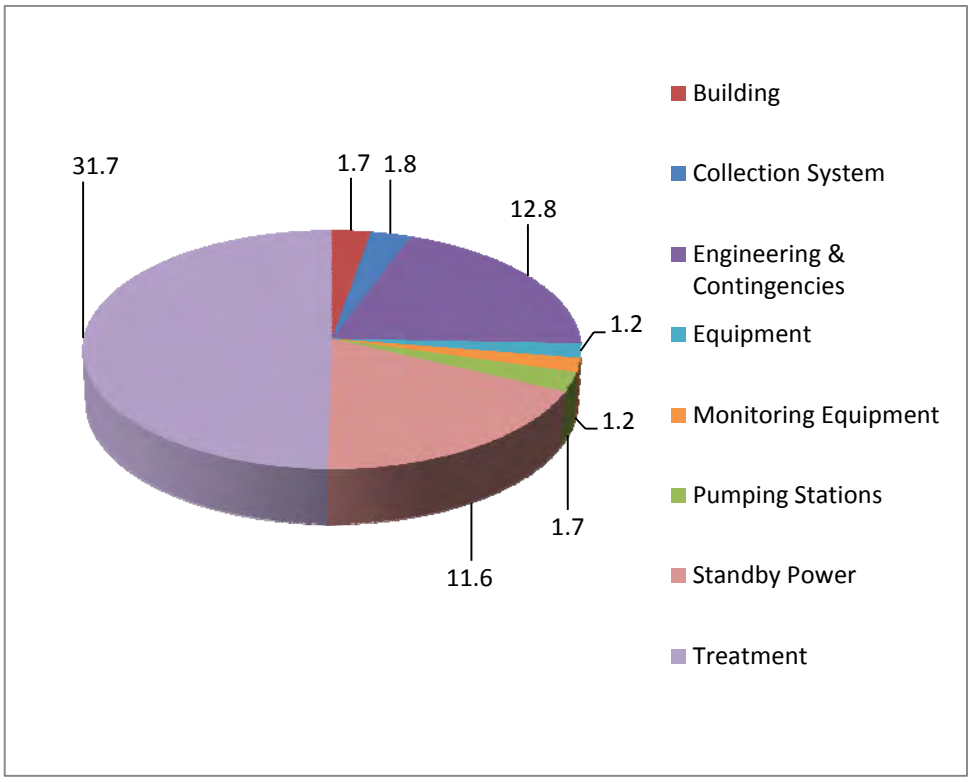
The total estimated construction cost for wastewater system upgrades to meet INAC Protocol is $64 million. Below is a list of specific needs of the systems, the number of systems impacted by upgrades,and the total cost of each need.

Upgrading treatment and providing standby power will account for over 68% of the cost of meeting INAC Protocol. Providing standby power is a widespread necessity, but the upgrades cost less than upgrading treatment.

Table 4.4 - Estimated Total Construction and Related Costs: Wastewater

Description	Protocol - Estimated Cost	Federal - Estimated Cost	Provincial - Estimated Cost
Building	$1,743,000	$185,000	$1,358,000
Collection System	$1,835,500	$1,792,500	$1,821,500
Equipment	$1,232,000	$1,227,000	$1,227,000
Monitoring Equipment	$1,208,000	$165,500	$1,189,000
Pumping Stations	$1,663,000	$1,533,000	$1,663,000
Treatment	$31,713,500	$31,058,000	$31,333,500
Standby Power	$11,582,000	$11,455,000	$11,880,500
Engineering & Contingencies	$12,752,150	$11,849,450	$12,620,350
Construction Total Estimate	**$63,729,150**	**$59,265,450**	**$63,092,850**

Figure 4.2 - Breakdown of the Estimated Construction Costs to Meet Protocol: Wastewater ($ - M)



Treatment and Standby Power comprise two of the major construction-cost categories.

Treatment costs include:

- General upgrades to existing infrastructure.
- Expanding existing system to meet current capacity.
- Providing redundant chemical feed equipment.
- Providing additional sewage pumps.
- Providing fence for security.
- Providing treatment for sludge wastes.
- Providing disinfection (UV or chlorine).

Standby Power costs include:

- Providing standby power for sewage pumping stations.
- Providing standby power for sewage treatment plant.

Table 4.5 - Estimated Total Non-Construction and Related Costs: Wastewater

Description	Protocol - Estimated Cost	Federal - Estimated Cost	Provincial - Estimated Cost
Training	$745,000	$745,000	$745,000
Plans/Documentation	$2,412,500	$1,559,500	$2,382,500
Studies	$90,000	$70,000	$70,000
Non-Construction Total Estimate	**$3,247,500**	**$2,374,500**	**$3,197,500**

Additional annual operations and maintenance costs, as shown in Table 4.6, include costs that occur annually, for items that are not currently being completed to meet protocols, such as calibrating monitoring equipment, additional sampling, and backup operator's salary.

Table 4.6 - Estimated Additional Annual Operation & Maintenance Costs: Wastewater

Description	Estimated Cost
Sampling	$316,400
Operations	$204,000
Operator	$935,000
Wastewater O&M Total Estimated Cost	**$1,455,400**

The total estimated cost, including construction and non-construction costs, for wastewater system upgrades is $67 million.

4.3 Upgrade Cost Summary

Table 4.7 provides a summary of the upgrade costs for systems to meet INAC's Protocol, and federal and provincial guidelines and standards.

Table 4.7 - Summary and Comparison of Upgrade Costs

	Total Estimated Cost	
	Water	Wastewater
Upgrade to meet Protocol	$241,689,450	$66,976,650
Upgrade to meet Federal Guidelines	$177,825,160	$61,639,950
Upgrade to meet Provincial Guidelines	$221,562,760	$66,290,350

The following tables present a breakdown of the estimated up grade costs to meet INAC Protocols by overall risk level.

Table 4.8 - Breakdown of Protocol Estimated Costs by Risk Level: Water

Risk Level	Short Term	Long Term	Total
High	$130,350,702	$0	**$130,350,702**
Medium	$99,987,349	$12,331	**$99,999,680**
Low	$11,289,744	$49,324	**$11,339,068**
Total	**$241,627,795**	**$61,655**	**$241,689,450**

Table 4.9 - Breakdown of Protocol Estimated Costs by Risk Level: Wastewater

Risk Level	Short Term	Long Term	Total
High	$28,969,135	$80,286	**$29,049,421**
Medium	$35,413,034	$0	**$35,413,034**
Low	$2,514,195	$0	**$2,514,195**
Total	**$66,896,364**	**$80,286**	**$66,976,650**

4.4 Asset Condition and Reporting System Needs

Asset Condition and Reporting System (ACRS) inspections were completed for all water- and wastewater-related assets. The following table summarizes the ACRS needs identified. For the purposes of this assessment, ACRS needs were limited to required repairs of existing facilities, and did not include any upgrade costs, in order to avoid duplication with the Upgrade to Protocol needs identified. The following two tables (Tables 4.10 and 4.11) provide a summary of the O&M repairs required broken down by asset for both water and wastewater, respectively.

Table 4.10 - Asset Condition and Reporting System Identified Operation & Maintenance Costs: Water

Asset Code	Description	Estimated Cost
A5A	Buildings	$636,750
B1B	Watermains	$1,058,100
B1C/B1D	Treatment	$2,336,950
B1E	Reservoirs	$212,770
B1G	Standpipe/Truckfill	$18,000
B1F	Community Wells	$205,600
B1I	Low Lift Pumping	$789,400
B1H	High Lift Pumping	$251,650
E4A	Trucks	$59,000
B1Z	Other	$28,750
	Water ACRS Total Estimated Cost	**$5,596,970**

Table 4.11 - Asset Condition and Reporting System Identified Operation & Maintenance Costs: Wastewater

Asset Code	Description	Estimated Cost
A5B	Buildings	$101,075
B2A	Sewers	$1,091,600
B2H/B2J	Lift Stations & Forcemains	$1,071,310
B2C/B2D	Treatment	$921,850
B2E/B2I	Lagoons	$1,530,550
B2F	Septic Systems	$6,700
E3A	Trucks	$10,200
	Wastewater ACRS Total Estimated Cost	**$4,733,285**

4.5 Community Servicing

An analysis was completed to evaluate future servicing alternatives for a 10-year design period. The analysis considers a variety of alternatives, including expanding existing systems, developing new systems, establishing local Municipal Type Agreements (if applicable), and using individual systems.

A theoretical operation and maintenance cost has been developed for each alternative, along with a 30-year life-cycle cost. The cost of the upgrades that are necessary for systems to meet INAC Protocol is included in the new servicing cost, if appropriate (i.e. for new servicing alternatives that include continued use of the existing system).

A summary of the capital cost along with the estimated total O&M cost for the recommended servicing alternatives is shown below.

Table 4.12 - Future Servicing Costs

	Total Estimated Cost		Cost Per Connection	
	Water	Wastewater	Water	Wastewater
Future Servicing Cost	$700,000,000	$440,000,000	$21,800	$13,600
Annual O&M to service future growth	$51,100,000	$42,200,000	$1,600	$1,300

The majority of communities in the Ontario region are at least partially serviced by a piped water system, and slightly more than half are at least partially serviced by a piped collection system.

The evaluation of future servicing included continuing to service the existing population with the same level of service that was currently in place and then evaluating the options for providing service to the future 10 year growth for the community. Existing servicing includes piped, trucked and individual servicing. In some cases, where future servicing resulted in the ability to provide a higher level of service to some or all of the existing homes this was also considered in the overall servicing strategy.

Predominantly, it was found that the life cycle costs for extending piped water and wastewater servicing for the future growth was the most cost effective solution. This assumes that future homes would be constructed in a compact subdivision type setting adjacent to the existing serviced area. This however will need to be confirmed through detailed studies for each community. It is realized that some residents may choose to continue to build homes in outlying areas where individual wells or truck haul servicing may be more appropriate.

5.0 Regional Summary

All but one of the 121 First Nations with water/wastewater assets in the Ontario Region were visited during the completion of this project. Of the 120 First Nations visited, 103 are serviced by community water systems, 12 are serviced by Municipal Type Agreements with neighbouring municipalities, and 5 are serviced by individual water systems. Surface water community systems are the most common (59%). All but two of the community systems include piped distribution for at least part of the community, and 69% of the overall homes are provided with piped service.

There are a total of 77 wastewater systems serving 67 First Nations. The remaining 54 First Nations are serviced solely by individual wastewater systems. 6 out of the 77 community wastewater systems are serviced by Municipal Type Agreements with neighbouring municipalities. Lagoons are the most common (49%) wastewater system. Regionally, 35% of the homes have piped collection and 57% of the homes are serviced by individual septics.

There are 72 water systems and 28 wastewater systems in the Ontario region identified as high-risk systems. While there are multiple factors contributing to risk, design and operational concerns are given the most weight, particularly when the concern is related to the protection of public health or the environment. The high risk systems in the region typically require system upgrades or improved operational procedures to meet the guidelines for treated water quality or sewage effluent quality.

The total estimated construction cost to bring the region into compliance with INAC's Protocol *for Safe Drinking Water in First Nations Communities* is $228 million. An additional $13.6 million is required to address non-construction costs. This estimate excludes the costs associated with upgrading sites that may prove to have groundwater under the direct influence of surface-water (GUDI) sources.

The total estimated construction cost to bring the region into compliance with INAC's *Protocol for Wastewater Treatment and Disposal in First Nations Communities* is $63.7 million. An additional $3.2 million is required to address non-construction costs.

In Ontario, since the Walkerton Incident in May 2000, there have been sweeping regulatory changes that affect the design, approval and operation of provincial water systems. All municipal systems have a legislated minimum level of treatment. Similarly, the Ontario Ministry of Environment Design Guidelines and INAC Protocol include increased focus on the redundancy of equipment to ensure the necessary processes are in place. According to the Ontario Ministry of the Environment's *Design Guidelines for Drinking Water Systems*,

> *"The design of water treatment plants should be based on the premise that failure of any single component must not prevent the drinking-water system from satisfying all applicable regulatory requirements and other site specific treated water quality and quantity criteria, while operating at design flows."*

Very few First Nation systems in Ontario have been designed to this level of redundancy. A number of First Nation systems have received disinfection upgrades, including the addition of chlorination systems equipped with auto-switchover and alarm capabilities. In many instances, however, this equipment was not fully functional at the time of the site visits.

Based on the data collected, a significant area to reduce risk would be to ensure that all systems are operated and maintained by trained/certified operators and that monitoring and record keeping is completed in accordance with the INAC's Protocol.

There are a significant number of surface water treatment systems in the province that require operators with higher certification levels. A number of remote (winter road only) northern communities have surface water treatment plants. The remote nature of these communities makes it more difficult for the operators to obtain the required training and to maintain appropriate supplies on hand. A number of these facilities operate under the Safe Water Operations Program (SWOP), with direct third-party oversight, which generally results in improved operations and record keeping.

The Province of Ontario has recently introduced changes in the system and operator classification. As such, operators with existing certifications may no longer be fully consistent with these changes. In addition, Ontario has introduced the concept of Overall Responsible Operator and Operator in Charge, and now requires operating authorities to be accredited, a process which includes the preparation of financial plans and the development of drinking water quality management plans.

Another area that INAC, Health Canada and Band Councils need to address is the lack of planning tools, including Source Water Protection Plans (SWPPs), Operation & Maintenance (O & M) Manuals, and to a much lesser extent Emergency Response Plans (ERPs).

The comments received from individual First Nations voice a general feeling among the First Nation communities that current Operation & Maintenance budgets are often insufficient to retain operators, to provide ongoing component replacement, and to perform all of the monitoring and recording requirements. Many site inspectors saw missing equipment or equipment in disrepair and were informed that repairs have not been completed because of a lack of funding.

Wastewater sampling prior to effluent discharge appears to be another area that INAC, Health Canada and Band Councils could address in order to reduce the overall risk significantly. Sampling, testing and recording the effluent quality and volumes prior to and during discharge would reduce the reporting risk for these systems.

NEEGAN BURNSIDE

Appendix A
Glossary

Appendix A: Glossary of Terms and Acronyms

Aeration (see also lagoon): The process of bringing air into contact with a liquid (typically water), usually by bubbling air through the liquid, spraying the liquid into the air, allowing the liquid to cascade down a waterfall, or by mechanical agitation. Aeration serves to (1) strip dissolved gases from solution, and/or (2) oxygenate the liquid. (Gowen Environmental)

Aesthetic Objective (AO): Aesthetic objectives are set for drinking water quality parameters such as colour or odour, where exceeding the objective may make the water less pleasant, but not unsafe. (INAC *Protocol for Decentralised Water and Wastewater*)

Ammonia (See also: Potable water; Effluent quality requirements): A pungent colorless gaseous alkaline compound of nitrogen and hydrogen (NH_3) that is very soluble in water and can easily be condensed to a liquid by cold and pressure (*Merriam-Webster*). Ammonia is used in several areas of water and wastewater treatment, such as pH control. It is also used in conjunction with chlorine to produce potable water. The existence of ammonia in wastewater is common in industrial sectors as a by-product of cleaning agents. This chemical impacts both human and environmental conditions. Treatment of ammonia can be completed in lagoon systems and mechanical plants.
(R.M. Technologies)

Arsenic: A metallic element that forms a number of compounds. It is found in nature at low levels, mostly in compounds with oxygen, chlorine, and sulphur; these are called inorganic arsenic compounds. Organic arsenic in plants and animals combines with carbon and hydrogen. Inorganic arsenic is a human poison. Organic arsenic is less harmful. High levels of inorganic arsenic in food or water can be fatal.
(Medicinenet.com)

Aquifer (confined): A layer of soil or rock below the land surface that is saturated with water. There are layers of impermeable material both above and below it, and it is under pressure so that when the aquifer is penetrated by a well, the water will rise above the top of the aquifer. (INAC *Protocol for Decentralised Water and Wastewater Systems*)

Aquifer (unconfined): An unconfined aquifer is one whose upper water surface (water table) is at atmospheric pressure, and thus is able to rise and fall. (INAC *Protocol for Decentralised Water and Wastewater Systems*)

As-built/record drawings: Revised set of drawing submitted by a contractor upon completion of a project or a particular job. They reflect all changes made in the specifications and working drawings during the construction process, and show the exact dimensions, geometry, and location of all elements of the work completed under the contract. Also called as-built drawings or just as-builts.

ACRS Inspection (Asset Condition Reporting System Inspection): For centralised water and wastewater systems, an ACRS (asset condition reporting system) inspection of the system is to be performed once every three (3) years by a qualified person (consulting engineer, Tribal Council engineer), who is not from the First Nation involved, to assess the condition of the asset, adequacy of maintenance efforts, and need for additional maintenance work. The ACRS inspection report will be discussed with, and submitted to, the First Nation council and the INAC regional office. Inspections will be conducted in accordance with the ACRS Manual, a copy of which can be obtained from the INAC regional office.

Bacteria (plural) bacterium (singular): Microscopic living organisms usually consisting of a single cell. Bacteria can aid in pollution control by consuming or breaking down organic matter in sewage and/or other water pollutants. Some bacteria may also cause human, animal, and plant health problems. Bacteria are predominantly found in the intestines and feces of humans and animals. The presence of *coliform* bacteria in water indicates the contamination of water by raw or partially treated sewage. (INAC *Protocol for Decentralised Water and Wastewater Systems*)

Baffle (concrete and/or curtain): Vertical/horizontal impermeable barriers in a pond or reservoir. Baffles direct the flow of water into the longest possible path through the reservoir in order to eliminate short-circuiting in the water treatment system. In potable water treatment, short-circuiting can reduce the effectiveness of disinfectants. In effluent treatment, short-circuiting may result in an increase of pollutants at the outlet. Short-circuiting occurs when water flows directly from the inlet to the outlet across a pond or reservoir. (Layfield)

BOD_5 (Biochemical Oxygen Demand): The most widely used parameter of organic pollution applied to both wastewater and surface water is the 5-day BOD (BOD_5). This determination involves the measurement of the dissolved oxygen used by microorganisms in the biochemical oxidation of organic matter. BOD test results are used to: determine the approximate quantity of oxygen that will be required to biologically stabilize the organic matter present; to determine the size of waste treatment facilities; to measure the efficiency of some treatment processes; and to determine compliance with wastewater discharge permits. (Metcalf & Eddy)

Capacity (actual vs. design): Refers to the capacity of the treatment system, with the "design capacity" being the flow rate proposed by the designer or manufacturer. If the system is not operating to design levels, the "actual capacity" could be limited by failing pumps, clogged filters or not meeting the Protocol (i.e. Protocol requires two filter trains such that one could operate while another is being cleaned/repaired and this was previously not explicitly required; therefore, the actual capacity is half of the design capacity).

Chemical feed equipment: All equipment associated with introducing chemicals to the raw water as part of the treatment process including coagulants, coagulant aids, disinfectants, etc.

Chlorine: A disinfectant used in either gas or liquid from gas that is added to water to protect the consumer from bacteria and other micro-organisms. It is widely used because it is inexpensive and easily injected into water. Because of its concentration, a gallon can treat a large amount of water. However, chlorine use does have drawbacks: when chlorine is used as a disinfectant it combines with naturally occurring decaying organic matter to form Trihalomethanes (THMs). (Vital Life Systems)

Chlorination: The application of chlorine to water, sewage or industrial wastes for disinfection (reduction of pathogens) or to oxidize undesirable compounds. (City of Toronto)

Chlorine Residual: The chlorine level in potable water immediately after it has been treated. (Ontario Ministry of the Environment)

Circuit Rider (see also Circuit Rider Training Program): Under the department's Circuit Rider Trainer Program (CRTP) INAC provides funds to engage circuit riders (third party water and wastewater system experts who provide water and wastewater system operators with on-site, mentoring, training, and emergency assistance). The third-party service providers that provide circuit rider services also provide operators with a 24/7 emergency hotline. (INAC *Protocol for Centralised Wastewater Systems in First Nations Communities*)

Circuit Rider Training Program: The main vehicle by which most First Nations operators receive the required training to operate their systems. This program provides qualified experts who rotate through a circuit of communities, providing hands-on training for the operators on their own system. Circuit rider trainers also help the First Nations with minor troubles and issues of operation and maintenance of their systems. (INAC *Plan of Action*)

Cistern: A tank for storing potable water or other liquids, usually placed above the ground. (Bow River Basin Council, cited in Alberta Environment *Glossary*)

Class "D" Cost Estimates: A preliminary estimate, for each community visited, based on available site information, which indicates the approximate magnitude (+/- 40%) of the cost of the actions recommended in the report, and which may be used in developing long-term capital plans and for a preliminary discussion of proposed capital projects.

Collection piping: Sanitary sewer collecting wastewater from individual buildings and homes, for treatment and disposal at a public facility.

Component risk / component risk factors: The overall risk is determined by five component risks: water source/effluent, design, operation, reporting, and operator.

Community Health Representatives (CHRs): Health Canada's local health representatives. They undertake bacteriological and chlorine residual sampling of distributed water within most First Nation communities.

Contact piping: Dedicated watermain to provide chlorine contact time before potable water is distributed to the first user.

Containment liners (for on-site fuel storage): A form of secondary containment used for diesel driven generators or fire pumps.

Continuous discharge to a receiving body: The release of treated wastewater effluent to a lake, river, stream, etc. where the rate of release is continuous (i.e. not batch discharge).

Conventional Wastewater Treatment: Consists of preliminary processes, primary settling to remove heavy solids and floatable materials, secondary biological aeration to metabolize and flocculate colloidal and dissolved organics, and secondary settling to remove additional solids. Tertiary treatment such as disinfection or filtration to further treat the wastewater depending on the level of treatment required for discharge. Waste sludge drawn from these operations is thickened and processed for ultimate disposal, usually either land application or landfilling. Preliminary treatment processes include coarse screening, medium screening, shredding of solids, flow measuring, pumping, grit removal, and pre-aeration. Chlorination of raw wastewater sometimes is used for odor control and to improve settling characteristics of the solids.

Conventional Water Treatment: Consists of a combination of coagulation (adding chemicals called coagulants), flocculation (particles binding together with coagulants) and sedimentation (settling of particles) to remove a large amount of organic compounds and suspended particles, filtration (water passing through porous media) to remove bacteria protozoa and viruses (slow sand filtration) or suspended particles (rapid sand filtration), and disinfection to ensure all the bacteria protozoa and viruses are removed, and provide safe drinking water.

Cross connections: A cross connection is a link between a possible source of pollution and a potable water supply. A pollutant may enter the potable water system when a) the pressure of the pollution source exceeds the pressure of the potable water source or b) when a sudden loss of pressure occurs in the water system and "backflow" occurs. The flow through a water treatment plant should have no instances of treated water coming into contact with raw or wastewater. Backflow preventers should be tested regularly and any actual physical links should be removed.

Decentralized System: A group or groups of communal (as opposed to private) on-site water or wastewater systems. (INAC *Protocol for Decentralised Water and Wastewater Systems*)

Dedicated transmission main: A length of watermain which has no service connections or hydrants; can refer to the length of raw watermain from a raw water source to the water treatment plant or in the distribution system where there are larger distances between homes.

Discharge Frequency: The frequency in which treated wastewater is discharged; could be continuous, seasonal, annual, etc.

Discharge quality data: Data acquired through the completion of a laboratory analysis of treated wastewater effluent prior to obtaining permission to discharge. Relevant parameters for testing include: 5 day Biochemical Oxygen Demand, Suspended Solids, Fecal Coliforms, pH, Phenols, Oils & Greases, Phosphorus and Temperature.

Disinfectant: A disinfectant is a chemical (commonly chlorine, chloramines, or ozone) or physical process (e.g., ultraviolet light) that inactivates or kills microorganisms such as bacteria, viruses, and protozoa. (INAC *Protocol for Decentralised Water and Wastewater Systems*)

Disinfection: A process that has as its objective destroying or inactivating pathogenic micro-organisms in water. (Government of Alberta, *Environmental Protection and Enhancement Act*, cited in Alberta Environment *Glossary*)

Disinfection By-products: Disinfection by-products are chemical, organic and inorganic substances that can form during a reaction of a disinfectant with naturally present organic or anthropogenic matter in the water. (Lenntech)

Distribution Classification > piped / trucked: Refers to the classification of the delivery of potable water leaving the water treatment plant. This can be either piped (via watermain) or trucked (via truck delivery to individual homes/cisterns). The level of classification involves the number of house connections (population served).

Domestic flows: All demands in the water system excluding fire flows.

Drinking Water: Water of sufficiently high quality that can be consumed or used without risk of immediate or long term harm.

Drinking Water Advisory (DWA): Drinking Water Advisories (DWAs) are preventive measures that are regularly issued in municipalities and communities across Canada; they protect public health from waterborne contaminants that can be present in drinking water. A DWA can be issued in any community and may include *boil water advisories, do not consume advisories* and *do not use advisories.* (INAC "Fact Sheet")

Effluent: 1. The liquid waste of municipalities/communities, industries, or agricultural operations. Usually the term refers to a treated liquid released from a wastewater treatment process. (Bow River) 2. The discharge from any *on-site sewage* treatment component. (Alberta Municipal Affairs; cited in Alberta Environment *Glossary*)

Effluent quality data: Any test results or monitoring data that describes the condition of treated wastewater effluent.

Effluent Quality Requirements: All effluents from wastewater systems in Canada must comply with all applicable federal legislation including the *Canadian Environmental Protection Act, 1999* and the *Fisheries Act,* as well as any other applicable legislation, including provincial, depending on the geographical location of the system.
In addition, all discharges from First Nations wastewater systems shall meet the quality requirements found in the *Guidelines for Effluent Quality and Wastewater Treatment at Federal Establishments* - EPS 1-EC-76-1 (1976 Guidelines).

For the purposes of determining effluent quality related to ammonia and chlorine, the *Notice Requiring the Preparation and Implementation of Pollution Prevention Plans for Inorganic Chloramines and Chlorinated Wastewater Effluents* and the *Guideline for the Release of Ammonia Dissolved in Water Found in Wastewater Effluents* contain additional and/or updated information to the requirements provided in the 1976 Guidelines.

A copy of the *Guideline for the Release of Ammonia Dissolved in Water Found in Wastewater Effluents* can be found at Environment Canada's website. (INAC *Protocol for Centralised Wastewater Systems in First Nations Communities*)

Effluent Receiver (also referred to as the receiving body; the receiving environment; the receiver) (see also Effluent and Component risks): The environment that receives treated wastewater, including lakes, rivers, wetlands, sub-surfaces, title fields, open marines, and enclosed bays. It may also refer to a community's method for dealing with wastewater (e.g. Municipal Type Agreements or evaporation).

Elevated Storage: A water tower, which is a reservoir or storage tank mounted on a tower-like structure at the summit of an area of high ground in a place where the water pressure would otherwise be inadequate for distribution at a uniform pressure. (Collins)

Emergency Response Plan (ERP): Emergency response plans for water and wastewater systems are intended to be a quick reference to assist operators and other stakeholders in managing and responding to emergency situations. They include key contact information for persons to be notified and for persons who may be of assistance (e.g. agencies, contractors, suppliers, etc.), as well as standard communication and response protocols. Emergency response plans identify recommended action for "foreseeable" emergencies, and provide methodologies for unforeseen situations.

Facultative Lagoon: The most common type of wastewater treatment lagoon used by small communities and individual households. Facultative lagoons rely on both aerobic and anaerobic decomposition of waste, can be adapted for use in most climates and require no machinery to treat wastewater.

Filter: A device used to remove solids from a mixture or to separate materials. Materials are frequently separated from water using filters. (Edwards Aquifier)

Filter train equipment: Includes all components that form part of the water filtration process from where the raw water enters the filter process to where the filtered water leaves the treatment unit. This does not refer to the disinfection equipment.

Filtration: The mechanical process which removes particulate matter by separating water from solid material, usually by passing it through sand. (Edwards Aquifier)

Fire pump tests: A monthly test for the basic operation and functionality of the fire pump.

Grade Level Storage: A treated water storage reservoir that is constructed at grade, typically with earth mounded on top to provide some frost protection.

GPS: Global Positioning System (GPS) - A navigational system involving satellites and computers that can determine the latitude and longitude of a receiver on Earth by computing the time difference for signals from different satellites to reach the receiver.

Groundwater: Groundwater is any water that is obtained from a subsurface water-bearing soil unit (called an aquifer). 1) Water that flows or seeps downward and saturates soil or rock, supplying springs and wells. The upper surface of the saturate zone is called the water table. 2) Water stored underground in rock crevices and in the pores of geologic materials that make up the Earth's crust. (INAC, *Protocol for Decentralised Water and Wastewater Systems*)

Groundwater, confined: Groundwater that is under pressure significantly greater than atmospheric, with its upper limit the bottom of a bed with hydraulic conductivity distinctly lower than that of the material in which the confined water occurs. (INAC, *Protocol for Decentralised Water and Wastewater Systems*)

Groundwater, unconfined: Water in an aquifer that has a water table that is exposed to the atmosphere. (INAC *Protocol for Decentralised Water and Wastewater Systems*)

Groundwater under the direct influence of surface water (GUDI): This term refers to groundwater sources (e.g., wells, springs, infiltration galleries, etc.) where microbial pathogens are able to travel from nearby surface water to the groundwater source. (Government of Nova Scotia)

Guidelines: Guidelines as referred to in this Assessment include all federal and provincial water and wastewater guidelines for domestic potable water and household sanitary waste. These guidelines include the "Guidelines for Canadian Drinking Water Quality" and all its recommended health and aesthetic guidelines for water quality.

Guidelines for Canadian Drinking Water Quality (GCDWQ): Water quality guidelines developed by the Federal-Provincial-Territorial Committee on Drinking Water and have been published by Health Canada since 1968.

Canadian drinking water supplies are generally of excellent quality. However, water in nature is never "pure." It picks up traces of everything it comes into contact with, including minerals, silt, vegetation, fertilizers, and agricultural run-off. While most of these substances are harmless, some may pose a health risk. To address this risk, Health Canada works with the provincial and territorial governments to develop guidelines that set out the maximum acceptable concentrations of these substances in drinking water. These drinking water guidelines are designed to protect the health of the most vulnerable members of society, such as children and the elderly. The guidelines set out the basic parameters that every water system should strive to achieve in order to provide the cleanest, safest and most reliable drinking water possible.

The Guidelines for Canadian Drinking Water Quality deal with microbiological, chemical and radiological contaminants. They also address concerns with physical and aesthetic characteristics of water, such as taste and odour. (Health Canada)

Guidelines for Effluent Quality and Wastewater Treatment at Federal Establishments, April 1976: The purpose of these guidelines is to indicate the degree of treatment and effluent quality that will be applicable to all wastewater discharged from existing and proposed Federal installations. Use of these guidelines is intended to promote a consistent wastewater approach towards the cleanup and prevention of water pollution and ensure that the best practicable control technologies used. (Government of Canada)

Highlift Pumping: Refers to pumps installed that provide treated water into the water distribution system at pressure; either directly or via water tower.

Hydrant Flushing (see line flushing and swabbing)

Influent: Water, wastewater, or other liquid flowing into a reservoir, basin or treatment plant. (Gowen)

Lagoon: A shallow pond where sunlight, bacterial action, and oxygen work to purify wastewater. Lagoons are typically used for the storage of wastewaters, sludges, liquid wastes, or spent nuclear fuel. (Edwards Aquifier)

Lagoon, aerated: See Aeration

Lagoon, facultative: See Facultative Lagoon.

L/c/d: Measurement of daily water usage as Litres per capita, per day.

Level of Service Standards (INAC): The Level of Service Standards (LOSS), determined on a national basis, are the levels of service that the Department of Indian Affairs and Northern Development (DIAND) is prepared to financially support to assist First Nations in providing community services comparable to the levels of service that would generally be available in non-native communities of similar size and circumstances.

The Level of Service Standards provide a description of criteria which will be used to establish the level of funding for safe, cost-effective, domestic water supply and wastewater disposal systems for on-reserve housing units and administrative, operative, institutional and recreational buildings. (INAC "Water and Sewage Systems")

Lift Station (also Pumping Station): A point in the sewer system where the wastewater needs to be pumped (lifted) to a higher elevation so that gravity can be used to bring the wastewater to the treatment plant. (Hailey City Hall Public Works)

Line flushing and swabbing (also referred to as watermain swabbing and flushing): Watermain swabbing entails inserting a soft material shaped like a bullet into the watermain through a fire hydrant. The diameter is slightly larger than the watermain and the bullet (swab) is pushed along the watermain by water pressure. As it passes through the watermain, the swab executes a scouring action on the sediment inside the watermain.

During watermain flushing, high velocity water flowing from hydrants is used to remove loose sediment from watermains. (City of Guelph)

L/p/d: Measurement of daily water usage as Litres per person, per day.

MAC (Maximum acceptable concentration): In the Guidelines for Canadian Drinking Water Quality (GCDWQ), Maximum Acceptable Concentrations (MACs) have been established for certain physical, chemical, radiological and microbiological parameters or substances that are known or suspected to cause adverse effects on health. For some parameters, Interim Maximum Acceptable Concentrations (IMACs) are also recommended in the guidelines.

Drinking water that continually has a substance at a greater concentration than the specified MACs will contribute significantly to consumer exposure to the substance and may, in some instances, produce harmful health effects. However, the short-term presence of substances above the MAC levels does not necessarily mean the water constitutes a risk to health. (INAC, *National Assessment Summary Report*)

Maintenance Management Plan (MMP): Maintenance management plans apply to both water and wastewater systems. They are intended to improve the effectiveness of maintenance activities and are focused on planning, scheduling, and documenting preventative maintenance activities and on documenting unscheduled maintenance.

Manganese: Manganese is a mineral that naturally occurs in rocks and soil and is a normal constituent of the human diet. In some places, it exists in well water as a naturally occurring groundwater mineral, but may also be present due to underground pollution sources. Manganese may become noticeable in tap water at concentrations greater than 0.05 milligrams per liter (mg/L) of water by imparting a colour, odour, or taste to the water. However, health effects from manganese are not a concern until concentrations are approximately 10 times higher. (Conneticut Dept. of Health)

Mechanical Plant/ Mechanical Treatment: Refers to any type of wastewater treatment plant including treatments systems consisting of rotating biological contactors (RBC), sequencing batch reactors (SBR), extended aeration (EA), etc. It does not include natural forms of wastewater treatment like lagoons or septic systems.

Metals Scan (Full): A full metal scan refers to what laboratories call Inductively Coupled Plasma Mass Spectrometry (ICP-MS) analysis for the evaluation of trace metals in water samples. This test covers a complete scan of over 20 trace metals in a single analysis.

Municipal Type Agreement (MTA): The situation where First Nations are supplied with treated water from or send their wastewater to a nearby municipality, as outlined in a formal agreement between the two parties. The term is also used in this report to describe a system where the First Nation is supplied with treated water or wastewater treatment services by another First Nation or other independent body such as a corporate entity such as a Casino etc.

Multi-Barrier Approach: Approach used to ensure that drinking water is safe. In the past, the term „multi-barrier' referred only to the barriers involved in the actual treatment of raw water to provide quality drinking water. This approach has now been expanded to include a number of key elements that are an integral part of a drinking water program to ensure delivery of safe, secure supplies of drinking water. Barriers may be physical (eg: filter) or administrative (eg: planning) in nature. (Alberta Environment, *Glossary & Alberta's Drinking Water Program*)

None: Indicates that the treatment and/or distribution/collection system has not been classified.

O & M: Operation and Maintenance.

Operational Plan (OP): An Operational Plan is the primary instrument for communicating the Community's quality management system (QMS) from the public works departments (water and wastewater) to Chief and Council, and from Council to INAC, Health Canada and the community members.

Phosphorus: A non-metallic element of the nitrogen family that occurs widely especially as phosphates (*Merriam-Webster*). Phosphorus occurs naturally in rocks, soil, animal waste, plant material, and even the atmosphere. In addition to these natural sources, phosphorus comes from human activities such as agriculture, discharge of industrial and municipal waste, and surface water runoff from residential and urban areas. Nutrients held in soil can be dissolved in water and carried off by leaching, tile drainage or surface runoff.

Phosphorus does not pose a direct threat to human health; it is an essential component of all cells and is present in bones and teeth. It does, however, pose an indirect threat to both aesthetics and to human health by affecting source waters used for drinking and recreation. For example, excessive nutrients can promote the growth of algal blooms, which can contribute to a wide range of water quality problems by affecting the potability, taste, odour, and colour of the water. (Canadian Council of Ministers of the Environment)

Piped Distribution System: A water distribution system which relies on pipes to convey water through pumping or elevated storage to the end user. Different from trucked distribution in that a trucked distribution system delivers water to end users in batch quantities to individual holding tanks (cisterns).

Potable water: Potable water is water that is destined for human consumption.
For the purposes of the *Protocol for Centralised Drinking Water Systems in First Nations Communities*, water destined for human consumption is water that is consumed directly as drinking water, water that is used in cooking, water that is used to wash food, and water that is used for bathing infants (individuals under 1 year in age). (INAC, *Protocol for Centralised Drinking Water Systems in First Nations Communities*)

PPU: People per unit. Measurement to describe housing density.

Primary Operator: The main operator of a water or wastewater system. The primary operator must be certified to the level of the treatment and distribution/collection system.

Primary Wastewater Treatment: Removal of particulate materials from domestic wastewater, usually done by allowing the solid materials to settle as a result of gravity. Typically, the first major stage of treatment encountered by domestic wastewater as it enters a treatment facility. Primary treatment plants generally remove 25 to 35 percent of the *Biological Oxygen Demand (BOD)* and 45 to 65 percent of the total suspended matter. Also, any process used for the decomposition, stabilization, or disposal of sludges produced by settling. (North American Lake Management Society; cited in Alberta Environment *Glossary*)

Protocol for Safe Drinking Water in First Nations Communities: Standards for design, construction, operation, maintenance, and monitoring of drinking water systems and is intended for use by First Nations staff responsible for water systems. It is also intended for use by Indian and Northern Affairs Canada (INAC) staff, Public Works and Government Services Canada (PWGSC) for INAC staff, and all others involved in providing advice or assistance to First Nations in the design, construction, operation, maintenance, and monitoring of their drinking water systems in their communities, in accordance with established federal or provincial standards, whichever are the most stringent.

Any water system that produces drinking water destined for human consumption, that is funded in whole or in part by INAC, and that serves five or more households or a public facility, must comply with the requirements of this protocol. (INAC *Protocol*)

Quality Assurance/Quality Control (QA/QC): A quality management system that focuses on fulfilling quality requirements and providing confidence that quality requirements will be fulfilled.

Reporting Risk: The Reporting risk level is the risk inherent with the operational method of recording data and providing the required reports. This would include both manual and automatic methods of record keeping. The reporting risk ranking is based on the adequacy of the operational records and the number of reports submitted during the year compared to the total number of records and reports required according to the appropriate legislation, standards, and operation procedures of the system in question.

Reservoir: A man-made lake that collects and stores water for future use. During periods of low river flow, reservoirs can release additional flow if water is available. (Government of Alberta, *Water for Life*, cited in Alberta *Glossary*)

Reservoir Cleaning: This involves the pump-down, clean-out, removal of settled material, disinfection and refill of a water storage reservoir. This activity requires confined space entry equipment and training.

Retrofit: 1. To furnish with new or modified parts or equipment not available or considered necessary at the time of manufacture; 2. To install (new or modified parts or equipment) in something previously manufactured or constructed; 3**.** To adapt to a new purpose or need**:** modify. (*Merriam-Webster*)

Rotating Biological Contactor (RBC): A technology used to treat wastewater classified as mechanical treatment.

Risk (Management Risk Level/Management Risk Score): Risk is defined in INAC's *Management Risk Level Evaluation Guidelines for Water and Wastewater Systems in First Nations Communities* (Revised 2010). These guidelines follow the Multi-Barrier Approach for water management. This approach, developed by the Federal-Provincial-Territorial Committee on Drinking Water and the Canadian Council of Ministers of the Environment (CCME) Water Quality Task Group, is intended to prevent the presence of water-borne contaminants in drinking water by ensuring effective safeguards are in place at each stage of a drinking water system.

Following that approach, INAC assesses five main components of a system to determine an overall system management risk score:
-Source Water (drinking water systems) or Effluent Receiver (wastewater systems)
-System Design
-Operation and Maintenance
-Records and Reporting
-Operator Training and Experience

Each of these components is assigned a risk score, which are then weighed to determine the overall management risk score of a system. The resulting score will then result in the management of the system as being classified as either high risk, medium risk, or low risk.

-High Risk: Major deficiencies in most of the components. Should a problem arise, the system and management as a whole is unlikely to be able to compensate, thus there is a high probability that any problem could result in unsafe water. Issues should be addressed as soon as possible.

-Medium Risk: Minor deficiencies in several components, or major deficiencies in one or two components. Should a problem arise, the system and management can probably compensate for the problem, but the noted deficiencies makes this uncertain, thus there is a medium probability that any problem could result in unsafe water. Issues need to be addressed.

-Low Risk: Minor or no deficiencies with the system or management. Should a problem occur, it is likely that the system and management as a whole will be able to compensate and continue to provide safe water while the issue is being resolved.

It is important to distinguish between INAC's system management risk level and drinking water quality. The actual quality of the water produced by a system is but one part of determining the overall system management risk level.

Unsafe drinking water is noted through the implementation of Drinking Water Advisories (DWA), not by the management risk level of the system. DWA come in multiple forms, the most common being the boil water advisory.

A system with a high-risk ranking under INAC's management evaluation is, because of its multiple deficiencies, likely to be unable to cope with problems that may occur in the system that result in a DWA. This means that DWA are likely to occur more frequently and to have a longer-term duration on a high-risk system. On the other hand, while problems can and do occur in low-risk systems, because of better overall risk management, these systems are more likely to address the problem in the short term, resulting in the rapid removal of problems and DWA.

This means that a high-risk drinking system can still produce perfectly safe and potable water. Deficiencies should be addressed as quickly as possible, however, before any issues arise with the water quality. (INAC, *Management Risk Level Evaluation Guidelines*)

SCADA (Supervisory Control and Data Acquisition) system: Refers to a control and/or computer system that can monitor, record and control infrastructure, or facility-based processes.

Screened reservoir vents: Reservoir vents should be screened to allow air movement and to prevent vermin from entering.

Seasonal discharge: Discharge of wastewater at times of maximum or substantial stream flow. This may vary from location to location.

Secondary containment for treatment chemicals: Secondary containment is required for the storage of all regulated hazardous materials. Secondary containment must be constructed using materials capable of containing a spill or leak for at least as long as the period between monitoring inspections. A means of providing overfill protection for any primary container may be required. This may be an overfill prevention device and/or an attention getting high level alarm. Materials that in combination may cause a fire or explosion, the production of a flammable, toxic, poisonous gas, or the deterioration of a primary or secondary container will be separated in both the primary and secondary treatment containment so as to avoid intermixing.

Secondary Treatment: involving the biological process of reducing suspended, colloidal, and dissolved organic/inorganic matter in effluent from primary treatment systems and which generally removes 80 to 95 percent of the *Biochemical Oxygen Demand (BOD)* and suspended matter. Secondary wastewater treatment may be accomplished by biological or chemical-physical methods. Activated sludge and trickling filters are two of the most common means of secondary treatment. (North American Lake Management Society, cited in Alberta *Glossary*)

Septic tank: A tank used to detain domestic wastes to allow the settling of solids prior to distribution to a leach field for soil absorption. Septic tanks are used when a piped wastewater collection system is not available to carry them to a treatment plant. A settling tank in which settled sludge is in immediate contact with sewage flowing through the tank, and wherein solids are decomposed by anaerobic bacterial action. (INAC *Protocol for Centralised Wastewater*)

Septic system: A combination of underground pipe(s) and holding tank(s) which are used to hold, decompose, and clean wastewater for subsurface disposal. (Bow River, cited in Alberta *Glossary*)

Sequencing Batch Reactor (SBR): A treatment technology used to treat wastewater classified as mechanical treatment.

Sewage treatment plant (STP) (also known as Wastewater Treatment Plant (WWTP) or Water Pollution Control Plant (WPCP)): Facility designed to treat wastewater (sewage) by removing materials that may damage water quality and threaten public health. (Ontario Ministry of Environment)

Sewage treatment systems: Facility or system designed to treat wastewater (sewage) by removing materials that may damage water quality and threaten public health. (Ontario Ministry of Environment)

Shoot-out: A septic system consisting of a septic tank with untreated wastewater effluent being discharged to the surface; this poses a health risk.

Sludge: The accumulated wet or dry solids that are separated from wastewater during treatment. This includes precipitates resulting from the chemical or biological treatment of wastewater. (Government of Alberta, *Activities*, cited in Alberta *Glossary*)

Source Classification: The determination of the water source classification in this assessment includes the options of: surface water, groundwater, GUDI or MTA. Surface water includes water from lakes or rivers; groundwater includes any well water that is not influenced by surface water infiltration; GUDI is any groundwater source under the direct influence of surface water; MTA as a source refers to the community acquiring the treated water from a municipality.

Source risk: The risk inherent in the quality and quantity of the raw source water prior to treatment.

Source Water Protection: 1. The prevention of pollution of the lakes, reservoirs, rivers, streams, and groundwater that serve as sources of drinking water. Wellhead protection would be an example of a source water protection approach that protects groundwater sources, whereas management of land around a lake or reservoir used for drinking water would be an example for surface water supplies. Source water protection programs typically include: delineating source water protection areas; identifying sources of

contamination; implementing measures to manage these changes; and planning for the future. (North American Lake Management Society, cited in Alberta *Glossary*)

2. Action taken to control or minimize the potential for introduction of chemicals or contaminants in source waters, including water used as a source of drinking water (Alberta Environment, *Standards and Guidelines*, cited in Alberta *Glossary*).

SPS: An abbreviation of the term sewage pumping station.

Standard Operating Procedures (SOPs): An SOP is a written document or instruction detailing all steps and activities of a process or procedure. This would include all procedures used in water/wastewater treatment processes that could affect the quality.

Standpipe Storage: An above-grade storage facility where the storage volume is contained within the entirety of the structure. This type of storage is most feasible for use where there is sufficient change in the topography to allow for maximum usable volume in the standpipe.

Storage Type: Refers to whether the community water storage is via grade-level, below-grade or elevated storage (including standpipes and towers). In some cases there is no storage thus the storage type would be considered "direct pump."

Surface water: Surface water is any water that is obtained from sources, such as lakes, rivers, and reservoirs that are open to the atmosphere. (INAC, *Protocol for Centralised Drinking Water*)

System Designer: A system designer is a person, such as a professional engineer, who is qualified to design a water or wastewater systems. (INAC, *Protocol for Centralised Drinking Water*)

System Operator: A system operator is a First Nation employee or third party under contract to a First Nation who is tasked with managing a water or wastewater system. (INAC, *Protocol for Centralised Drinking Water*)

System Manager: A system manager is a First Nation employee or third party under contract to a First Nation who is tasked with managing a water or wastewater system. (INAC, *Protocol for Centralised Drinking Water*)

Tertiary Treatment: Selected biological, physical, and chemical separation processes to remove organic and inorganic substances that resist conventional treatment practices. *Tertiary Treatment* processes may consist of flocculation basins, clarifiers, filters, and chlorine basins or ozone or ultraviolet radiation processes. Tertiary techniques may also involve the application of wastewater to land to allow the growth of plants to remove plant nutrients. Can include advanced nutrient removal processes. (North American Lake Management Society, cited in Alberta *Glossary*)

Trihalomethanes (THMs): Chemical compounds that can be formed when water is disinfected using chlorine or bromine as the chemical disinfection agent. These chemical compounds are formed when organic material present in the raw source water reacts with chlorine or bromine. Therefore, THMs are classified as disinfection by-products (DBPs). The primary source of organic material comes from decaying vegetation found in lakes, rivers and streams and for this reason, THMs are more commonly observed in water systems that use a surface water source. The four chemical compounds that are measured and used to calculate total THMs are: chloroform, bromoform, bromodichloromethane (BDCM) and chlorodibromomethane (CDBM). THMs are a concern in potable water because there is scientific evidence that they may pose a risk in the development of cancer.

Treatment Certification: The treatment level to which an operator is certified for water treatment and distribution and wastewater treatment and collection systems (see Treatment Classification).

Treatment Classification: The size (flow) and complexity of a water or wastewater system is used to determine the Class of a system using a point template. The knowledge and experience it takes to operate a system is closely related to its classification and is reflected in the level of certification of the operator. Systems that are small and relatively simple, are classified as Small Water or Wastewater Systems. Larger or more complex systems are ranked as Class I, II, III, and IV with the highest being Class IV. Systems should be operated under the supervision of an operator certified to at least the same level of the facility.

TSS (Total Suspended Solids): Measure of the amount of non-dissolved solid material present in water or wastewater. Total suspended solids (TSS) can cause: a) interference with light penetration (in UV applications), b) build-up of sediment and c) can carry nutrients and other toxic pollutants that cause algal blooms and potential reduction in aquatic habitat (wastewater).

Underground Storage: A water storage facility (reservoir/clearwell) which is located 100% below-grade. Often located below the water treatment plant.

Waste: Any solid or liquid material, product, or combination of them that is intended to be treated or disposed of or that is intended to be stored and then treated or disposed. This does not include recyclables. (Government of Alberta, Activities Designation Regulation, cited in Alberta *Glossary*)

Waste management plan: A Waste Management Plan identifies and describes types of waste generated during operations and how they are managed and disposed of.

Wastewater (*Industrial Wastewater, Domestic Wastewater)*: A combination of liquid and water-carried pollutants from homes, businesses, industries, or farms; a mixture of water and dissolved or suspended solids. (North American Lake Management Society, cited in Alberta *Glossary*)

Wastewater System: an organized process and associated structures for collecting, treating, and disposing of wastewater. For the purposes of this report, it is a system serving five or more houses. It includes any or all of the following:
1. Sewers and pumping stations that make up a wastewater collection system.
2. Sewers and pumping stations that transport untreated wastewater from a wastewater collection system to a wastewater treatment plant.
3. Wastewater treatment plants.
4. Facilities that provide storage for treated wastewater.
5. Wastewater sludge treatment and disposal facilities.
6. Sewers that transport treated wastewater from a wastewater treatment plant to the place where it is disposed of.
7. Treated wastewater outfall facilities, including the outfall structures to a watercourse or any structures for disposal of treated wastewater to land or to wetlands. (Government of Alberta, *Environmental Protection and Enhancement Act*, cited in Alberta *Glossary*)

Wastewater Treatment: Any of the mechanical, chemical or biological processes used to modify the quality of wastewater (sewage) in order to make it more compatible or acceptable to man and his/her environment. (North American Lake Management System, cited in Alberta *Glossary*)

Wastewater Treatment Plant: Any structure, thing, or process used for the physical, chemical, biological, or radiological treatment of wastewater before it is returned to the environment. The term also includes any structure, thing, or process used for wastewater storage or disposal, or sludge treatment, storage, or disposal. (Government of Alberta, *Activities*, cited in Alberta *Glossary*)

Watermain: A principal pipe in a system of pipes for conveying water, especially one installed underground. (*American Heritage Dictionary*)

Water quality: The term used to describe the chemical, physical, and biological characteristics of water, usually with respect to its suitability for a particular purpose. (INAC, *Protocol for Centralised Drinking Water*)

Water use: The term water use refers to water that is used for a specific purpose, such as for domestic use, irrigation, or industrial processing. Water use pertains to human interaction with and influence on the hydrolic cycle, and includes elements, such as water withdrawal from surface- and ground-water sources, water delivery to homes and businesses, consumptive use of water, water released from wastewater-treatment plans, water returned to the environment, and in-stream uses, such as using water to produce hydroelectric power. (INAC, *Protocol for Centralised Drinking Water*)

Water Well: An opening in the ground, whether drilled or altered from its natural state, that is used for the production of groundwater, obtaining data on groundwater, or recharging an underground formation from which groundwater can be recovered. By definition in the provincial Water Act, a water well also includes any related equipment, buildings, and structures. (Government of Alberta, *Water for Life*, cited in Alberta, *Glossary*)

Wellhead Protection Area: A protected surface and subsurface zone surrounding a well or well field supplying a public water system to keep contaminants from reaching the well water. (Edwards Aquifier)

Wellhead Protection Plan: A wellhead protection plan defines the wellhead protection area, identifies potential sources of contamination, manages the potential contaminant sources including properly decommissioning abandoned wells, identifies emergency and contingency plans (i.e. what to do if the well becomes contaminated or requires additional capacity) and provides overall public awareness.

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NEEGAN BURNSIDE

Appendix B

Water System Summary

NEEGAN BURNSIDE

Appendix B.1
Water System Summary

Regional Roll-Up Summary

Region: ONTARIO
Total No. of First Nations: 121
Participating No. of First Nations: 120
Participation Level: 99%
No. of Community Reports Issued: 122

Water

		Groundwater	GUDI	Surface	MTA	Totals
Total No. of Systems		**39**	**13**	**94**	**12**	**158**
System Age						
	0-5 years (2006 - 2010)	6	0	11	1	**18**
	6-10 years (2001 - 2005)	2	1	14	1	**18**
	10-15 years (1996 - 2000)	8	5	42	2	**57**
	15 -20 years (1991 - 1995)	13	4	18	0	**35**
	> 20 years (≤ 1990)	10	3	9	8	**30**
Treatment						
	None - Direct Use	3	1	0	0	**4**
	Disinfection only	17	2	8	0	**27**
	Conventional Filtration	19	10	86	0	**115**
	MTA	0	0	0	12	**12**
Classification - Treatment						
	Small system	8	0	16	0	**24**
	Level I	23	7	15	0	**45**
	Level II	6	4	52	0	**62**
	Level III	0	1	11	0	**12**
	MTA	0	0	0	12	**12**
	None	2	1	0	0	**3**

				Groundwater	GUDI	Surface	MTA	Totals
Total No. of Systems				**39**	**13**	**94**	**12**	**158**
Classification - Distribution								
	Small system			11	1	11	1	**24**
	Level I			19	8	67	7	**101**
	Level II			7	3	13	1	**24**
	MTA			0	0	0	3	**3**
	None			1	1	3	0	**5**
	Unknown			1	0	0	0	**1**
Distribution								
	Piped			39	13	71	9	**132**
Water Quality								
	Fails Health							
		Yes, fails health due to:		20	12	70	3	**105**
			Design	6	4	24	0	**34**
			Operation	11	4	33	1	**49**
			Combination	3	3	12	0	**18**
			Unknown	0	1	1	2	**4**
	Fails Aesthetic							
		Yes, fails aesthetic due to:		28	12	59	3	**102**
			Design	11	4	25	1	**41**
			Operation	13	4	22	1	**40**
			Combination	3	3	10	0	**16**
			Unknown	1	1	2	1	**5**
Primary Operator - Treatment								
	Not certified			13	3	39	0	**55**
	No operator			1	0	2	0	**3**
	Not required			2	1	0	12	**15**
	Certified to Level			23	8	34	0	**65**
	Certified			0	1	19	0	**20**

		Groundwater	GUDI	Surface	MTA	Totals	
Total No. of Systems		**39**	**13**	**94**	**12**	**158**	
Back-up Operator - Treatment							
	Not certified	14	7	58	0	**79**	
	No operator	9	1	7	0	**17**	
	Not required	2	1	0	12	**15**	
	Certified to Level	10	1	7	0	**18**	
	Certified	4	3	22	0	**29**	
Primary Operator - Distribution							
	Not certified	15	4	51	5	**75**	
	No operator	1	0	2	1	**4**	
	Not required	1	1	3	3	**8**	
	Certified to Level	19	8	32	3	**62**	
	Certified	3	0	6	0	**9**	
Back-up Operator - Distribution							
	Not certified	13	7	63	4	**87**	
	No operator	9	1	6	2	**18**	
	Not required	1	1	3	3	**8**	
	Certified to Level	9	2	19	3	**33**	
	Certified	7	2	3	0	**12**	
Risk (mean)						**Mean**	**Mean excluding MTA**
	Final	6.3	7.0	6.4	4.1	**6.2**	**6.4**
	Source	6.2	9.5	8.6	1.9	**7.5**	**8.0**
	Design	5.3	7.2	5.5	3.2	**5.4**	**5.6**
	Operations	7.2	7.3	7.0	5.3	**6.9**	**7.1**
	Reporting	7.7	7.6	6.8	5.9	**7.0**	**7.1**
	Operator	2.7	2.7	3.4	2.3	**3.1**	**3.2**

NEEGAN BURNSIDE

Appendix B.2

Wastewater System Summary

Regional Roll-Up Summary

Region: ONTARIO
Total No. of First Nations: 121
Participating No. of First Nations: 120
Participation Level: 99%
No. of Community Reports Issued: 122

Wastewater

		Septic	Aerated Lagoon	Facultative Lagoon	Mechanical	Other	MTA	Totals
Total No. of Systems		**4**	**1**	**37**	**27**	**2**	**6**	**77**
System Age								
	0-5 years (2006 - 2010)	1	0	3	1	1	0	**6**
	6-10 years (2001 - 2005)	0	0	7	5	0	0	**12**
	10-15 years (1996 - 2000)	1	0	14	11	1	4	**31**
	15 -20 years (1991 - 1995)	1	0	8	6	0	0	**15**
	> 20 years (≤ 1990)	1	1	5	4	0	2	**13**
Classification - Treatment								
	Small System	3	0	1	2	1	0	**7**
	MTA	0	0	0	0	0	6	**6**
	Level I	1	0	36	8	1	0	**46**
	Level II	0	1	0	16	0	0	**17**
	Level III	0	0	0	1	0	0	**1**
Classification - Collection								
	Small System	2	0	2	3	0	1	**8**
	Level I	1	1	26	20	1	2	**51**
	Level II	0	0	7	4	0	1	**12**
	MTA	0	0	0	0	0	2	**2**
	None	1	0	2	0	1	0	**4**
Collection								
	Piped	4	1	25	19	2	5	**56**
	Low Pressure	0	0	0	1	0	0	**1**
	Trucked	0	0	3	0	0	0	**3**
	Combined	0	0	9	7	0	1	**17**
Effluent Quality								
	No data	3	0	25	4	2	5	**39**
	Meets	1	0	9	7	0	1	**18**
	Does not meet	0	1	3	16	0	0	**20**

		Septic	Aerated Lagoon	Facultative Lagoon	Mechanical	Other	MTA	Totals
Total No. of Systems		**4**	**1**	**37**	**27**	**2**	**6**	**77**
Primary Operator - Treatment								
	Not certified	1	0	23	13	0	0	**37**
	No operator	2	1	5	2	0	0	**10**
	Not required	0	0	0	0	0	6	**6**
	Certified to Level	1	0	9	6	2	0	**18**
	Certified	0	0	0	6	0	0	**6**
Back-Up Operator - Treatment								
	Not certified	2	0	20	19	2	0	**43**
	No operator	2	1	13	5	0	0	**21**
	Not required	0	0	0	0	0	6	**6**
	Certified to Level	0	0	4	1	0	0	**5**
	Certified	0	0	0	2	0	0	**2**
Primary Operator - Collection								
	Not certified	1	0	22	12	0	3	**38**
	No operator	1	1	5	2	0	0	**9**
	Not required	1	0	2	0	1	2	**6**
	Certified to Level	1	0	5	12	1	0	**19**
	Certified	0	0	3	1	0	1	**5**
Back-Up Operator - Collection								
	Not certified	2	0	18	19	1	3	**43**
	No operator	1	1	13	5	0	1	**21**
	Not required	1	0	2	0	1	2	**6**
	Certified to Level	0	0	2	3	0	0	**5**
	Certified	0	0	2	0	0	0	**2**
Receiver								
	Large river	0	1	3	4	0	0	**8**
	Creek	0	0	4	4	0	0	**8**
	Lake, reservoir	0	0	11	9	0	0	**20**
	River	0	0	6	6	0	0	**12**
	Wetland	1	0	12	3	0	0	**16**
	Tile field	2	0	1	1	1	0	**5**
	Sub-surface / Ground	1	0	0	0	1	0	**2**
	MTA	0	0	0	0	0	6	**6**

	Septic	Aerated Lagoon	Facultative Lagoon	Mechanical	Other	MTA	Totals	
Total No. of Systems	**4**	**1**	**37**	**27**	**2**	**6**	**77**	
Risk (mean)							**Mean**	**Mean excluding MTA**
Final	5.4	8.1	6.2	6.5	4.3	4.6	**6.1**	**6.3**
Effluent Receiver	4.3	8.0	6.5	8.1	5.0	3.0	**6.7**	**7.0**
Design	3.5	6.0	4.8	5.0	3.5	4.0	**4.7**	**4.8**
Operations	8.0	8.0	7.7	7.5	5.5	5.7	**7.4**	**7.6**
Reporting	4.0	10.0	7.0	7.7	8.0	6.0	**7.1**	**7.2**
Operator	6.5	10.0	5.8	4.3	1.0	3.7	**5.1**	**5.2**

NEEGAN BURNSIDE

Appendix C
Site Visit Methodology

Site Visits

Typical Day

Arrive in Community – Lead/Senior Inspector & Technical Support

- Meet with Circuit Rider and/or DIAND representative and First Nation/Tribal Council Representatives to undergo introductions and provide a brief synopsis of the activities to be undertaken for the day. This is based on the assumption that the First Nation has been fully briefed by DIAND on the purpose, process and benefits for the First Nation to cooperate and collaborate with the project.
- Confirm the various components that the First Nation uses to provide water to the entire community (i.e. number and types of distribution systems, source types, private wells, etc.) to help build assessment form for the community.
- Pre-select areas to undertake private system evaluations on community map.
- Confirm any missing background data that may be available allowing the First Nation time during the day to have Public Works Director/Supervisor/Secretary/etc to locate such materials.

Lead/Senior – Inspector

- Meet with Chief/Housing Manager/Band Manager/Finance Manager, to identify:
    - future servicing needs (planned development and population growth)
    - servicing constraints (source availability, soils, groundwater, bedrock, topography, etc.)
    - identify the extent to which non structural solutions or optimization strategies (water conservation, leak reduction, etc) have been previously investigated or implemented
    - confirm current population and housing numbers
    - obtain financial information not previously provided
    - note community concerns related to future servicing.
- Complete a walk through of the water plant from source to storage.
- Prepare a flow schematic (internal use).
- Complete the assessment questionnaire on treatment/storage/operations/operator(s) etc. with Operator/Circuit Rider.
- Take photographs.
- Travel to main sewage pumping station and wastewater treatment facility.
- Complete a walk through of the plant from influent to effluent.
- Prepare a flow schematic (internal use).
- Complete assessment questionnaire.
- Take photographs.
- Complete ACRS update.
- Repeat for additional water or wastewater facilities.
- Review information collected by Technical Support
- Gather all background/operational data gathered by First Nation.
- Complete overall notes.

Technical Support

- Gather any relevant operational data (water and wastewater), if not already provided and arrange with the First Nation to have copied/scanned that day.
- Obtain GPS coordinates of source(s) and treatment.
- Complete the source questions on the assessment questionnaire.
- Undertake sampling of the raw and/or treated water, if necessary.
- Take photographs.
- Complete ACRS update.
- Travel around community with First Nation representative and undertake private system assessments for water and/or septic including GPS coordinates, photographs, assessment forms and sampling.
- Meet back with Lead/Senior Inspector at wastewater location and assist with sampling, if required.

Sampling Requirements

Water Sampling

The terms of reference state, *"The sampling program for public water systems should reflect the requirements of the most stringent regulations applicable in the Province in which the community is located. However, should an adequate sampling program already be in place, then existing data may be used. Bidders should assume sampling and testing will be required for 5% of total wells, septics, and cisterns identified in SW5. Septics and cisterns only require a visual inspection. All bidders are required to carry a $500,000 allowance for this purpose. Any variances should be identified in the Inception Report."*

Health Canada data is anticipated to be available for the majority of the water systems. Where data is not available, sampling will be conducted as part of the inspection.

Minimum existing data required will include:

Community systems
- bacteriological – monthly available for previous year
- general chemistry – annually (treated)
- full Volatile Organic Compound analysis – within 5 years

Private wells
- bacteriological – one sample within past year
- basic chemistry – one sample within past year

For public systems where data is not available, treated water samples will be obtained and submitted to a laboratory for testing that would include; Basic Chemistry, Full Metals Scan, Bacteria and Volatile Organic Compounds.

For public systems that include a piped distribution system and where distributed water quality data is not available, a sample will be taken from the most remote point in the distribution system and sampled for Disinfection By-Products.

For individual wells, samples will be obtained from a representative number of wells (5% of total wells) in the community. The testing will include; Basic Chemistry, Full Metals Scan and Bacteria.

Wastewater Sampling

For systems lacking existing discharge quality data, and that will be discharging at the time of the site visit, representative samples will be obtained and submitted to a laboratory for testing. This would include seasonal discharges at the time of the site visit and from plants with continuous discharge to a receiving body. Sewage treatment systems providing an equivalent to secondary treatment (lagoons, and mechanical facilities) for which effluent quality data does not include the parameters of BOD_5, TSS, and E.Coli, will be sampled in the field, if they are in fact discharging at the time of site visit. Similarly, sewage treatment systems providing an equivalent to tertiary treatment for which effluent quality data does not include BOD_5, TSS, Ammonia, Total Phosphorous and E.Coli, will be sampled in the field, if they are in fact discharging at the time of the site visit.

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Appendix D

First Nation Water Summaries

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Appendix D.1

Individual First Nation Water Summary

Table D.1 - 1: Water System Regional Summary of Water Treatment, Storage and Distribution Systems

First Nation Information		Water System Information									Storage Information		Distribution System Information						
Band #	Band Name	System #	System Name	Water Source	Treatment Class	Const Year	Design Capacity [m3/d]	Actual Capacity [m3/d]	Max Daily Volume [m3/d]	Disinfection	Storage Type	Storage Capacity	Distribution Class	Population Served	Homes Piped	Homes Trucked	Number of Trucks in Service	Pipe Length	Pipe Length / Connection
172	Aamjiwnaang	7178	Aamjiwnaang Water System	MTA	MTA	1971	751.6	751.6	751.6	MTA	None	MTA	MTA	925	225	0	0	11200	49
153	Anishinabe of Wauzhushk Onigum	15902	Bald Indian Bay Water Treatment Plant	Surface Water	Level I	2000		17	16	Yes	Grade level	1.5	Small System	26	8	0	0		
153	Anishinabe of Wauzhushk Onigum	6484	Wauzhushk Onigum Water Treatment Unit - 2nd Portage	Surface Water	Level I	1990	276	190	182	Yes	Underground	238	Level I	290	91	0	0	3075.02	33
125	Anishnaabeg of Naongashiing	6482	Saug-A-Gaw-Sing Water Treatment System	Groundwater GUDI	Level II	1997	240	240	119	Yes	Underground	457	Level I	175	30	0	0	1760	58
242	Aroland	7130	Aroland Water Treatment System	Groundwater	Level I	1993	402	380	136	Yes	Underground	154	Level I	359	119	0	0	4220	35
143	Attawapiskat	7141	Attawapiskat Water Treatment System	Surface Water	Level III	2001	2592	2592	2125	Yes	Underground	960	Level II	1909	280	0	0	11599.5	41
180	Aundeck-Omni-Kaning	7219	Sucker Creek Water Treatment System	Surface Water	Level II	2004	760	760	300	Yes	Grade level, Underground	804	Level II	397	136	2	1	11077	81
198	Batchewana First Nation	7154	Ojibways of Batchewana Water System (MTA)	MTA	MTA	1996				MTA	None	MTA	MTA	564	191	0	0	6900	36
207	Bearskin Lake	7234	Bearskin Lake Water Treatment System	Surface Water	Level II	1994	302.4	302.4	221	Yes	Underground	245	Level I	428	40	112	2	1778	44
141	Beausoleil	7159	Cedar Point Water Treatment System	Groundwater	Level I	2006	52.56	52.5	93	Yes	Underground	32.8	Level I	50	17	0	0	1110	65
141	Beausoleil	7158	Christian Island Water Treatment System	Surface Water	Level II	1999	888	888	587	Yes	Underground	640	Level I	653	221	0	0	12347	55
124	Big Grassy	6466	Big Grassy Water Treatment System	Surface Water	Level II	1997	432	350	283	Yes	Underground	294	Level I	290	84	0	0	8100	96
197	Biinjitiwaabik Zaaging Anishinaabek	7188	Rocky Bay Water Treatment System	Surface Water	Level II	2008	537	537	103.2	Yes	Underground	458	Level I	376	84	0	0	1772	21
228	Brunswick House	7228	Brunswick House Water Treatment System	Surface Water	Level I	2000	184	184	146	Yes	Underground	259	Level I	150	40	0	0	2131	53
216	Cat Lake	7236	Cat Lake Water Treatment System	Surface Water	Level III	1995	691	460.7	434	Yes	Underground	317	Level I	512	109	0	0	3738	34
221	Chapleau Cree First Nation	7139	Chapleau Cree Water Treatment System	Groundwater GUDI	Level II	1994	163	66	93	Yes	Underground	180	Level I	93	36	0	0	1880	52
229	Chapleau Ojibway	7229	Chapleau Ojibwe Water Treatment System	Groundwater	Level I	2006	233	233	86.4	Yes	None		Level I	32	11	0	0	380	34
138	Chippewas of Georgina Island	7157	Georgina Island Water Treatment System	Surface Water	Level II	1992	272	272	313	Yes	Underground	235	Level II	200	100	0	0	6649	66
171	Chippewas of Kettle and Stony Point	7177	Kettle and Stony Point Water Treatment System	Surface Water	Level II	1993	1180	1180	956	Yes	Underground	1320.5	Level I	1279	377	0	0	23798	63
122	Chippewas of Nawash	7203	Neyaashiinigmiing Water Treatment System	Surface Water	Level II	1990	720	720	517	Yes	Elevated	454	Level II	864	251	21	1	18471.2	73
166	Chippewas of the Thames First Nation	7174	Chippewas of the Thames Water Treatment System	Groundwater GUDI	Level I	1992	573	573	781	Yes	Elevated	13.6	Level I	994	300	0	0	53457.2	178
182	Constance Lake	7131	Constance Lake Water Treatment System	Surface Water	Level II	1986	518	518	572	Yes	Underground	376	Level I	842	246	0	0	9498	38
126	Couchiching First Nation	7161	Town of Fort Frances	MTA	MTA	1988	453	453	652	MTA	None	MTA	Level I	762	246	5	1	11921	48
161	Curve Lake	7201	Curve Lake Water Treatment System	Groundwater GUDI	Level I	1985	272	144	105	Yes	Underground	84	Level II	132	51	0	0	1450	28
237	Deer Lake	6545	Deer Lake Water Treatment System	Surface Water	Level II	1999	952.8	849.3		Yes	Underground	408	Level I	968	54	137	2	4354.5	80
218	Dokis	7222	Dokis Water Treatment System	Groundwater	Level I	1992	102	102	90	Yes	Underground	179	Level I	191	102	0	0	5240	51
183	Eabametoong First Nation	7132	Eabametoong Water Treatment System	Surface Water	Level II	1992	777.6	777.6	770	Yes	Underground	370	Level I	1451	267	0	0	5779.6	21
148	Eagle Lake	6529	Eagle Lake Water Treatment System	Surface Water	Level II	2000	590	590	228	Yes	Elevated, Grade level	500	Level I	333	94	0	0	4367.5	46
142	Fort Albany	7140	Fort Albany Water Treatment System	Surface Water	Level II	1998	786	786	668	Yes	Underground	380	Level I	1210	171	0	0	6572	38
215	Fort Severn	6544	Fort Severn Water Treatment System	Surface Water	Level II	2002	542	542	262	Yes	Grade level	325	Level I	602	112	0	0	5488	49
187	Fort William	7182	Thunder Bay Water Treatment System	MTA	MTA	1985	Unknown	Unknown	642	MTA	None	MTA	Level I	820	208	0	0	15960.63	76
199	Garden River First Nation	NEW001	ECHO RIVER WATER TREATMENT SYSTEM	Groundwater	Level I	1982	9	9	9	Yes	Underground	9	Level I	27	9	0	0	450	50
199	Garden River First Nation	7147	Garden River Water Treatment System	Groundwater	Level I	1992	1800	1800	671	Yes	Underground	400	Level II	1275	444	0	0	30600	68
185	Ginoogaming First Nation	7134	Town of Long Lac Water Treatment System	MTA	MTA	1983				MTA	None	MTA	Small System	208	66	0	0	3310	50
149	Grassy Narrows First Nation	6530	Grassy Narrows Water Treatment System	Surface Water	Level II	1993	460	450	371	Yes	Standpipe	1080	Level I	776	182	5	1	8213	45
188	Gull Bay (Kiashke Zaaging Anishinaabek)	7183	Gull Bay Water Treatment System	Surface Water	Level I	1970	120	120	370	Yes	Underground	170	Level I	457	73	0	0	3032	41
231	Henvey Inlet First Nation	7224	Henvey Inlet Pumphouse #2 Water Treatment System	Groundwater	Level I	2006	227	227	130	Yes	Elevated	511	Level I	153	44	0	0	3315	75
162	Hiawatha First Nation	NEW002	HIAWATHA APARTMENT COMPLEX	Groundwater	Small System	1991	82			Yes	None		Small System	20	5	0	0		
154	Iskatewizaagegan No. 39 Independent First	6533	Shoal Lake 39 Water Treatment System	Surface Water	Level II	1998	475	475	255	Yes	Underground	300	Level I	313	136	0	0	5879.7	43
210	Kasabonika Lake	7170	Kasabonika Lake Water Treatment System	Surface Water	Level II	2006	1090	1090	305	Yes	Underground	422	Level I	930	166	28	1	4634	27
243	Kashechewan	7144	Kashechewan Water Treatment System	Surface Water	Level III	1997	1390	1390	464	Yes	Underground	537	Level II	1600	252	0	0	7670.8	30
325	Kee-Way-Win First Nation	17010	Keewaywin's New Water Treatment System	Surface Water	Level II	2008	967	967	445	Yes	Underground	346	Level I	504	82	0	0	2555	31
212	Kingfisher	7171	Kingfisher Lake Water Treatment System	Surface Water	Level II	2008	403.5	403.5	94.9	Yes	Underground	398	Level I	489	79	49	2	3291	41
209	Kitchenuhmaykoosib Inninuwug	6541	Kitchenuhmaykoosib Water Treatment System	Surface Water	Level II	2002	674	674	393	Yes	Underground	573	Level I	932	148	133	3	11704.5	79
127	Lac La Croix	7162	Lac La Croix Water Treatment System	Surface Water	Level I	1994	150	150	150	Yes	Underground	225	Level I	283	81	0	0	2839.6	35
205	Lac Seul	6539	Frenchman's Head Water Treatment System	Surface Water	Level II	2000	360	360	460	Yes	Underground	440	Level I	472	130	0	0	5135	39
205	Lac Seul	15905	Kejick Bay Water Treatment System	Groundwater	Level I	1989	419	419	419	Yes	None		Level I	356	98	0	0	2265	23
205	Lac Seul	15906	Whitefish Bay Water Treatment System	Groundwater	None	1989	89	89	89	No	None		Level I	91	25	0	0	1262	50
184	Long Lake No.58 First Nation	7133	Town of Long Lac Water Treatment System	MTA	MTA	1978				MTA	None	MTA	Level I	432	116	0	0	4955	42
174	Magnetawan	7225	Magnetawan Water Treatment System	Surface Water	Level II	1998	113	113	60	Yes	Underground	198.1	Level II	92	32	0	0	1338	41
186	Martin Falls	7135	Marten Falls Water Treatment System	Surface Water	Level II	1997	224.6	190	266	Yes	Underground	232	Level I	326	103	0	0	7634	74
219	Matachewan	7226	Matachewan Water Treatment System	Groundwater	Level I	2005	212	212	69	Yes	Underground	410	Level I	71	34	0	0	4649	136
226	Mattagami	7227	Mattagami Water Treatment System	Groundwater	Level I	2008	864	432	190	Yes	Underground	440	Level I	195	85	0	0	2658	31
181	M'Chigeeng First Nation	14199	West Bay & Lakeview Water Treatment System	Surface Water	Level II	2003	1477	1477	714	Yes	Elevated, Underground	1515	Level II	1018	348	70	1	13185	37
225	Michipicoten	7180	Michipicoten Water Treatment System	Surface Water	Level II	1997	158	155	103	Yes	Underground	200	Level I	73	40	0	0	2485	62
203	Mishkeegogamang	7190	Mishkeegogamang (New Osnaburgh) Water Treatment System	Surface Water	Level II	2000	215	215	349	Yes	Underground	312	Level I	358	89	0	0	7641	85
203	Mishkeegogamang	7189	Mishkeegogamang (Ten House) Well Water Treatment System	Groundwater	Level II	1998	86.4	86.4	80	Yes	Underground	51	Level I	179	25	0	0	1351.25	54
203	Mishkeegogamang	NEW002	WELL AT ACE LAKE	Groundwater	Level I	1995	unknown	unknown	unknown	No	None		Level I	25	5	0	0	150	30
200	Mississauga	7146	Mississauga Water Treatment System	Groundwater	Level II	1998	694.8	397.4	299	Yes	Underground	559	Level II	392	146	0	0	7300	50
140	Mississaugas of Scugog Island First Nation	15899	Mississauga's of Scugog Island Pumphouse #1	Groundwater	Small System	1991	64.8	64.8		Yes	None		Small System	16	6	0	0	250	41
140	Mississaugas of Scugog Island First Nation	15900	Mississauga's of Scugog Island Pumphouse #2	Groundwater	Small System	1994	64.8			Yes	None		Small System	9	6	0	0	250	41
140	Mississaugas of Scugog Island First Nation	NEW001	MISSISSAUGAS OF SCUGOG ISLAND PUMPHOUSE #3	Groundwater	Small System	1997	64.8		5.7	Yes	None		Small System	9	5	0	0		
120	Mississaugas of the Credit	7211	New Credit Water Distribution System	MTA	MTA	1971	450	450	555	MTA	None	MTA	Level I	671	155	20	0	18691.9	120
159	Mohawks of Akwesasne	15919	Aksesasne Corwall Island West Water Treatment System	Surface Water	Level III	2006	2250	2250	610	Yes	Underground	1400	Level I	2556	355	0	0	8000	22
159	Mohawks of Akwesasne	6486	Akwesasne St. Regis Water Treatment System	Surface Water	Level III	1998	2063	2046	1054	Yes	Underground	2590	Level I	3967	551	0	0	17375	31
159	Mohawks of Akwesasne	6485	Akwesasne Wade Lafrance Rd. Pumphouse house	Groundwater GUDI	Level I	2004	51	51	22	Yes	Grade level	18	Level I	324	45	0	0	620	13

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First Nation Information		Water System Information									Storage Information		Distribution System Information						
Band #	Band Name	System #	System Name	Water Source	Treatment Class	Const Year	Design Capacity [m3/d]	Actual Capacity [m3/d]	Max Daily Volume [m3/d]	Disinfection	Storage Type	Storage Capacity	Distribution Class	Population Served	Homes Piped	Homes Trucked	Number of Trucks in Service	Pipe Length	Pipe Length / Connection
164	Mohawks of the Bay of Quinte	6528	Airport Pumphouse and Treatment Facility	Surface Water	Level I	1971	35.1	35.1	35.1	Yes		0	Level I	36	13	0	0	420	32
164	Mohawks of the Bay of Quinte	NEW001	TOWN OF DESERONTO WATER SYSTEM	MTA	MTA	0	238.6	238.6	205.9	MTA	None	MTA	Level I	707	257	0	0	9320	36
144	Moose Cree First Nation	7142	Moose Factory Water Treatment System	Surface Water	Level II	1990	1423	1423	2088	Yes	Standpipe, Underground	1356	Level I	2570	470	0	0	9982.4	21
135	Moose Deer Point	7160	King Bay & Issac Bay Pumphouse Systems	Surface Water	Level II	1998	743	743	109	Yes	Elevated, Underground	580	Level I	201	26	0	0	1095	42
167	Moravian of the Thames	7175	Moravian of the Thames Water Treatment System	Groundwater GUDI	Level I	1996	432	432	427	Yes	Elevated, Underground	1243	Level I	526	140	0	0	14622	104
168	Munsee-Delaware Nation	NEW001	WATER DISTRIBUTION	MTA	MTA	2000				MTA	None	MTA	MTA	118	25	12	0		
213	Muskrat Dam Lake	6542	Muskrat Dam Lake Water Treatment System	Surface Water	Level II	1996	346	346	276	Yes	Underground	247.4	Level I	286	87	1	1	7482	86
128	Naicatchewenin	7163	Naicatchewenin Water Treatment System	Surface Water	Level I	1985	118	118	101	Yes	Grade level	66	Level II	266	83	0	0	1826	22
158	Naotkamegwanning	6537	Whitefish Bay Water Treatment System	Surface Water	Level II	1998	812.2	346	388	Yes	Underground	490.1	Level I	565	120	0	0	4333	36
239	Neskantaga First Nation	7137	Neskantaga Water Treatment System	Surface Water	Level I	1991	250	250	245	Yes	Underground	225	Level I	333	85	0	1	3683	43
241	Nibinamik First Nation	7138	Nibinamik Water Treatment System	Surface Water	Level I	1997	544	360	345	Yes	Underground	317	Level I	354	101	0	0	4775	47
129	Nicickousemenecaning	7164	Nicickousemenecaning Water Treatment System	Surface Water	Level II	2004	188	188	62.35	Yes	Underground	210	Level I	145	40	0	0	1486	37
220	Nipissing First Nation	7191	Nipissing - Arts Lane Water System	Groundwater	Level I	1993	78.5	78.5		Yes	Underground	12	Small System	30	11	0	0		
220	Nipissing First Nation	8076	Nipissing - Beaucage Village Water Treatment System	Groundwater GUDI	Level I	1996	54.6	54.6		Yes	Underground	10.3	Small System	16	6	0	0		
220	Nipissing First Nation	7212	Nipissing - Business/School Water Treatment System	Groundwater GUDI	None	1993	109	109		No	Standpipe	275	NA	16	6	0	0		
220	Nipissing First Nation	7195	Nipissing - Dushessnay Well 1	Groundwater	Level I	1993	65.7	65.7		Yes	Underground	13	Level I	54	20	0	0		
220	Nipissing First Nation	7196	Nipissing - Dushessnay Well 2, 3 and 4	Groundwater	Level I	1993		148.9		Yes	Underground	89	Level I	216	80	0	0		
220	Nipissing First Nation	7194	Nipissing - Garden Village Water System	Groundwater GUDI	Level II	1993	820	337	331	Yes	Underground	610	Level I	286	106	0	0		
220	Nipissing First Nation	7214	Nipissing - Harry Couchie Water Treatment System	Groundwater	Level I	1993	54.5	54.5		Yes	Underground	13		27	10	0	0		
220	Nipissing First Nation	7213	Nipissing - Meadow Site Water Treatment System	Groundwater	Level I	1996		128		Yes	Underground	39.7	Small System	38	14	0	0		
220	Nipissing First Nation	7192	Nipissing - VLA Water System	Groundwater	Level I	1971	131	131		Yes	Underground	0	Small System	19	7	0	0		
204	North Caribou Lake	7233	North Caribou Lake Water Treatment System	Surface Water	Level III	2000	302.4	302.4	566	Yes	Underground	414	Level II	834	215	52	3	5868.5	27
238	North Spirit Lake	7128	North Spirit Lake Water Treatment System	Surface Water	Level I	1999	345	345	253	Yes	Underground	303	Level I	450	40	38	1	1600	40
151	Northwest Angle No.33	7126	Angle Inlet Water Treatment System	Groundwater	Level II	2010	65.4	65.4	70	Yes	Grade level	1.7	Level I	94	45	0	0	200	4
151	Northwest Angle No.33	7127	NWA 33 Dog Paw Lake Water Treatment System	Surface Water	Level III	2010	75	75	74	Yes	Grade level	68	Level I	140	33	0	0	804	24
152	Northwest Angle No.37	6483	NWA 37 Regina Bay Water Treatment System	Surface Water	Level II	2008	108.5	108.5	69	Yes	Standpipe	5.5	Level I	102	40	0	0	820	20
152	Northwest Angle No.37	15901	Windigo Island Water Treatment System	Surface Water	Level II	2002	31.2	31.2	51	Yes	Standpipe	9.5	Level I	75	15	0	0	1430	95
235	Obashkaandagaang	6532	Obashkaandagaang Water Treatment System	Groundwater	Small System	2006	162.7	162.7	83.3	Yes	None		Small System	101	35	0	0	1246	35
235	Obashkaandagaang		SOUTH END PUMPHOUSE	Groundwater	Small System	1987	Unknown	32.5	16.5	Yes	None		Small System	20	7	0	0	703	100
147	Ochiichagwebabigoining First Nation	7181	The Dalles Water Treatment System	Surface Water	Level II	2006	483.8	472	141	Yes	Underground	423.6	Level I	149	54	0	0	2000	37
131	Ojibways of Onigaming First Nation	7107	Onigaming Water Treatment System	Surface Water	Level II	1993	422	422	248	Yes	Underground	408	Level I	496	110	0	0	5505	50
192	Ojibways of the Pic River First Nation	7185	Pic River Water Treatment System	Groundwater	Level II	1996	502	502	460	Yes	Underground	332	Level II	566	160	0	0	10950	68
169	Oneida Nation of the Thames	7176	Oneida Water Treatment System	Surface Water	Level I	1998	1872	1872	1616	Yes	Elevated, Underground	1136	Level II	2261	534	0	0	41593	77
191	Pays Plat First Nation	7184	Pays Plat Water Treatment System	Surface Water	Level I	1997	110	110	73	Yes	Underground	180	Level I	75	35	0	0	2600	74
146	Peawanuck	7193	Peawanuck Water Treatment System	Groundwater GUDI	Level I	1988	245.7	245.7	228	Yes	Underground	111.4	Level I	295	70	0	0	3957	56
195	Pic Mobert	15903	Pic Mobert North New Pumphouse Water System	Groundwater GUDI	Level I	1997	362.88	207.36	185.3	Yes	None		Level I	190	64	0	0	1590	24
195	Pic Mobert	7187	Pic Mobert South Water Treatment System	Surface Water	Level I	1982	222.9	222.9	151	Yes	None		Level I	154	52	0	0	1095	21
208	Pikangikum	6540	Pikangikum Water Treatment System	Surface Water	Level II	1996	1036	345	259	Yes	Underground	175.48	NA	104	0	20	1		
236	Poplar Hill	7129	Poplar Hill Water Treatment System	Surface Water	Level II	1999	216	216	333	Yes	Underground	300	Level I	502	25	73	1	1275	51
130	Rainy River First Nations	7165	Manitou Rapids Water Treatment System	Groundwater GUDI	Level III	1996	196	196	264	Yes	Underground	307	Level II	478	80	0	0	2660	33
193	Red Rock	7186	Red Rock Water Treatment System	Surface Water	Level II	2008	518	518	312	Yes	Underground	597.0	Level I	320	99	0	0	3621.36	36
214	Sachigo Lake	7235	Sachigo Lake Water Treatment System	Surface Water	Level II	1996	544.8	544.8	508.7	Yes	Underground	351.7	Level I	534	128	37	2	4605	35
179	Sagamok Anishnawbek	7152	Sagamok Water Treatment System	Groundwater	Level I	1995	2160	1728	1091	Yes	Elevated	900	Level II	1493	307	0	0	17375	56
211	Sandy Lake First Nation	7179	Sandy Lake Water Treatment System	Surface Water	Level II	1992	1365	780	1430	Yes	Underground	760	Level I	2501	260	140	3	11601	44
123	Saugeen	7210	Town of Saugeen Shores Water Treatment System	MTA	MTA	2008	1324	925	491	MTA	Elevated, Standpipe	MTA	Level II	915	301	0	0	25150	83
132	Seine River First Nation	7166	Seine River Water Treatment System	Surface Water	Level II	1997	300	300	326	Yes	Standpipe, Underground	250	Level I	334	78	0	0	3942	50
201	Serpent River First Nation	7148	Serpent River Pumphouse #1	Groundwater	Level I	1983	95	95	121	Yes	Grade level	22.7	Level II	118	43	0	0	9896	230
201	Serpent River First Nation	7149	Serpent River Pumphouse #2	Groundwater	Level II	1995	95	95	116	Yes	None		Level II	82	30	0	0		
201	Serpent River First Nation	7150	Serpent River Pumphouse #3	Groundwater	Level I	1983	95	95	96	Yes	Grade level	22.7	Level II	124	45	0	0		
201	Serpent River First Nation	7151	Serpent River Pumphouse #5	Groundwater GUDI	Level II	1990	164	164	95	Yes	Underground	43.6	Level II	69	25	0	0		
137	Shawanaga First Nation	7198	Shawanaga Water Treatment System	Groundwater	Level II	1996	182	182	50	Yes	Underground	225.7	Level I	220	88	0	0	6968	79
176	Sheguiandah	7217	Sheguiandah Water Treatment System	Surface Water	Level II	2005	360	360	276	Yes	Grade level, Underground	495	Level II	171	54	7	1	6299.4	116
178	Sheshegwaning	7218	Sheshegwaning Water Treatment System	Surface Water	Level II	1998	130	130	70	Yes	Underground	245	Level I	104	64	0	0	4323	67
155	Shoal Lake No. 40		SHOAL LAKE 40 PUMPHOUSE 2	Surface Water	Small System	1995			12	Yes	None		Level I	40	12	0	0	1313	109
155	Shoal Lake No. 40		SHOAL LAKE 40 PUMPHOUSE 3	Surface Water	Small System	1995			40	Yes	None		Level I	57	17	0	0	1310	77
155	Shoal Lake No. 40		SHOAL LAKE 40 PUMPHOUSE 4	Surface Water	Small System	1995			28	Yes	None		Level I	40	12	0	0	950	79
155	Shoal Lake No. 40		SHOAL LAKE 40 PUMPHOUSE 5	Surface Water	Small System	1995			19	Yes	None		Level I	27	8	0	0	700	87
155	Shoal Lake No. 40		SHOAL LAKE 40 PUMPHOUSE 9	Surface Water	Small System	1995			31	Yes	None		Level I	44	13	0	0	760	58
155	Shoal Lake No. 40	6534	Shoal Lake 40 Water Treatment System	Surface Water	Small System	1995			30	Yes			Level I	44	13	0	0	1322	101
121	Six Nations of the Grand River	7173	Six Nations Water Treatment System	Surface Water	Level III	1989	1401	1401	1401	Yes	Elevated	1136	Level I	3950	395	559	0	21804.67	55
259	Slate Falls Nation		BAND OFFICE PUMPHOUSE	Surface Water	Small System	1996	104	104	7	Yes	None		Small System	9	3	0	0		
259	Slate Falls Nation		PUMPHOUSE NO. 1	Surface Water	Small System	1996	214	214	14	Yes	None		Small System	17	6	0	0	260	43
259	Slate Falls Nation		PUMPHOUSE NO. 2	Surface Water	Small System	1996	115	115	14	Yes	None		Small System	17	6	0	0	245	40
259	Slate Falls Nation		PUMPHOUSE NO. 3	Surface Water	Small System	1996	226	226	17	Yes	None		Small System	20	7	0	0	225	32
259	Slate Falls Nation		PUMPHOUSE NO. 4	Surface Water	Small System	1996	112	112	14	Yes	None		Small System	17	6	0	0	150	25
259	Slate Falls Nation		PUMPHOUSE NO. 5	Surface Water	Small System	1996	112	112	14	Yes	None		Small System	17	6	0	0	370.6	61
259	Slate Falls Nation		PUMPHOUSE NO. 6	Surface Water	Small System	1996	207	207	11	Yes	None		Small System	13	5	0	0	345	69
259	Slate Falls Nation		PUMPHOUSE NO. 7	Surface Water	Small System	1996	193	193	14	Yes	None		Small System	17	6	0	0	155	25

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First Nation Information		Water System Information									Storage Information		Distribution System Information						
Band #	Band Name	System #	System Name	Water Source	Treatment Class	Const Year	Design Capacity [m3/d]	Actual Capacity [m3/d]	Max Daily Volume [m3/d]	Disinfection	Storage Type	Storage Capacity	Distribution Class	Population Served	Homes Piped	Homes Trucked	Number of Trucks in Service	Pipe Length	Pipe Length / Connection
259	Slate Falls Nation		PUMPHOUSE NO. 8	Surface Water	Small System	1996	101	101	11	Yes	None		Small System	13	5	0	0	220	44
259	Slate Falls Nation		PUMPHOUSE NO. 9	Surface Water	Small System	1996	102	102	11	Yes	None		Small System	13	5	0	0	230	46
259	Slate Falls Nation	7232	Slate Falls Water Treatment System	Surface Water	Level III	2007	16	16	1.7	Yes	None		NA	0	0	0	0		
133	Stanjikoming First Nation	7167	Stanjikoming Water Treatment System	Surface Water	Level II	2001	282.6	282.6	33.7	Yes	Underground	232	Level I	131	30	0	0	2036	67
145	Taykwa Tagamou Nation	7143	New Post Water Treatment System	Groundwater	Level I	1987	130	130	98	Yes	Underground	192	Level I	100	24	0	0	830	34
222	Temagami First Nation	7197	Bear Island Water Treatment System	Surface Water	Level II	1998	251	251	229	Yes	Underground	260	Level I	226	68	0	0	2330	34
202	Thessalon	7153	Thessalon Water Treatment System	Groundwater	Level I	1982	327	327	440	Yes	None		Level I	111	51	0	0	2976.46	58
150	Wabaseemoong Independent Nations	6531	Wabaseemoong Water Treatment System	Surface Water	Level III	2003	1800	1800	486	Yes	Elevated, Underground	442.5	Level I	864	195	0	0	5864.42	30
156	Wabauskang First Nation	6535	Wabauskang Water Treatment System	Surface Water	Level II	2002	265	265	85.5	Yes	Underground	424	Level I	120	29	0	0	1440	49
157	Wabigoon Lake Ojibway Nation	6536	Wabigoon Lake Water Treatment System	Surface Water	Level II	1995	285	250	189	Yes	Underground	220	Level II	194	69	0	0	4007	58
233	Wahgoshig	7230	Wahgoshig Water Treatment System	Groundwater	Level I	2003	276	276	185	Yes	Underground	424	Level I	185	46	0	0	2489.2	54
170	Walpole Island	6538	Walpole Island Water Treatment System	Surface Water	Level III	2007	3456	3456	1790	Yes	Elevated, Underground	2395	Level I	2201	639	0	0	41327.09	64
206	Wapekeka	7169	Wapekeka Water Treatment System	Surface Water	Level II	2000	345	173	121	Yes	Underground	288	Level I	439	95	12	1	3153	33
136	Wasauksing First Nation		COMMUNITY WELL (SODA'S)	Groundwater	None	1970	10	10		No	None		NA	15	5	0	0		
136	Wasauksing First Nation		SIXPLEX WELL	Groundwater	Small System	2000	10	10		Yes	None		Small System	17	6	0	0		
136	Wasauksing First Nation	7199	Wasauksing (Parry Island) Water Treatment System	Surface Water	Level I	2002	55	55	50	Yes	Underground	131.1	Level I	0	0	0	0		
234	Wawakapewin	7168	Wawakapewin Water Treatment System	Groundwater	Small System	1998	164	164	11.3	Yes	None		Small System	23	15	0	0	603	40
240	Webequie First Nation	7136	Webequie Water Treatment System	Surface Water	Level II	1992	907	907	498	Yes	Underground	418	Level I	712	208	0	0	5420.4	26
224	Whitefish Lake	7145	Whitefish Lake Water System	MTA	MTA	2005	600	600	364	MTA	None	MTA	Level I	459	127	0	0	4982	39
230	Whitefish River	7215	Whitefish River Water Treatment System	Surface Water	Level II	1997	288	288	225	Yes	Standpipe	234	Level II	382	141	37	1	5006	35
190	Whitesand	17016	Whitesand Water System	MTA	MTA	1971	433	433	433	MTA	None	MTA	Level I	444	103	0	0	3017.8	29
175	Wikwemikong	7231	Wikwemikong Water Treatment System	Surface Water	Level II	2001	2592	2592	1642	Yes	evated, Grade level, Undergrou	2308	Level I	3402	530	490	4	18344.32	34
217	Wunnumin	7172	Wunnumin Lake Water Treatment System	Surface Water	Level II	2005	545	545	390	Yes	Underground	492	Level I	571	138	0	0	5511	39
173	Zhiibaahaasing First Nation	7216	Zhiibaahaasing Water Treatment System	Surface Water	Level I	1997				Yes	None		NA	94	0	18	1		

Table D.1 - 2: Regional Summary of Water Quality Information

First Nation Information		Water System Information			Water Quality Information							
Band #	Band Name	System #	System Name	Water Source	Meets/Does Not Meet GCDWQ	Cause of Failure	Fails Health Guidelines	Fails Aesthetic Guidelines	Fails MAC by Design	Fails MAC by Operation	DWA In Effect	DWA Count
172	Aamjiwnaang	7178	Aamjiwnaang Water System	MTA	Meets Requirements	N/A	N/A	N/A	No	No	No	0
153	Anishinabe of Wauzhushk Onigum	15902	Bald Indian Bay Water Treatment Plant	Surface Water	Low Freq, Low Mag	Design	No	No	Yes	No	No	0
153	Anishinabe of Wauzhushk Onigum	6484	Wauzhushk Onigum Water Treatment Unit - 2nd Portage	Surface Water	Low Freq, Low Mag	Design	Yes	Yes	No	No	No	0
125	Anishnaabeg of Naongashiing	6482	Saug-A-Gaw-Sing Water Treatment System	Groundwater GUDI	High Freq OR High Mag	Operation	Yes	Yes	No	No	No	0
242	Aroland	7130	Aroland Water Treatment System	Groundwater	Low Freq, Low Mag	Operation	Yes	Yes	No	No	Yes	1
143	Attawapiskat	7141	Attawapiskat Water Treatment System	Surface Water	High Freq AND High Mag	Both	Yes	No	No	No	Yes	1
180	Aundeck-Omni-Kaning	7219	Sucker Creek Water Treatment System	Surface Water	Low Freq, Low Mag	Operation	Yes	No	No	No	No	0
198	Batchewana First Nation	7154	Ojibways of Batchewana Water System (MTA)	MTA	Meets Requirements	N/A	N/A	N/A	No	No	No	0
207	Bearskin Lake	7234	Bearskin Lake Water Treatment System	Surface Water	High Freq OR High Mag	Operation	No	No	No	No		2
141	Beausoleil	7159	Cedar Point Water Treatment System	Groundwater	Low Freq, Low Mag	Operation	Yes	Yes	No	Yes	No	0
141	Beausoleil	7158	Christian Island Water Treatment System	Surface Water	High Freq, Low Mag	Operation	Yes	Yes	No	Yes	No	0
124	Big Grassy	6466	Big Grassy Water Treatment System	Surface Water	High Freq OR High Mag	Operation	Yes	Yes	No	No	No	0
197	Biinjitiwaabik Zaaging Anishinaabek	7188	Rocky Bay Water Treatment System	Surface Water	High Freq, Low Mag	Operation	No	No	No	No	No	0
228	Brunswick House	7228	Brunswick House Water Treatment System	Surface Water	Low Freq, Low Mag	Operation	Yes	No	No	No	No	0
216	Cat Lake	7236	Cat Lake Water Treatment System	Surface Water	High Freq, Low Mag	Operation	Yes	Yes	No	No	Yes	1
221	Chapleau Cree First Nation	7139	Chapleau Cree Water Treatment System	Groundwater GUDI	Low Freq, Low Mag	Both	Yes	Yes	No	No		3
229	Chapleau Ojibway	7229	Chapleau Ojibwe Water Treatment System	Groundwater	Meets Requirements	N/A	N/A	N/A	No	No	No	0
138	Chippewas of Georgina Island	7157	Georgina Island Water Treatment System	Surface Water	Meets Requirements	N/A	N/A	N/A	No	No	No	0
171	Chippewas of Kettle and Stony Point	7177	Kettle and Stony Point Water Treatment System	Surface Water	Low Freq, Low Mag	Operation	Yes	Yes	No	No	No	0
122	Chippewas of Nawash	7203	Neyaashiinigmiing Water Treatment System	Surface Water	Low Freq, Low Mag	Operation	Yes	No	No	Yes	Yes	1
166	Chippewas of the Thames First Nation	7174	Chippewas of the Thames Water Treatment System	Groundwater GUDI	High Freq AND High Mag	Design	Yes	Yes	No	No	Yes	1
182	Constance Lake	7131	Constance Lake Water Treatment System	Surface Water	High Freq OR High Mag	Both	Yes	Yes	No	Yes		2
126	Couchiching First Nation	7161	Town of Fort Frances	MTA	Meets Requirements	Design	No	N/A	No	No	No	0
161	Curve Lake	7201	Curve Lake Water Treatment System	Groundwater GUDI	High Freq, Low Mag	Design	No	Yes	No	No	No	0
237	Deer Lake	6545	Deer Lake Water Treatment System	Surface Water	High Freq, Low Mag	Operation	Yes	Yes	No	No	No	0
218	Dokis	7222	Dokis Water Treatment System	Groundwater	Low Freq, Low Mag	Operation	Yes	Yes	No	Yes	No	0
183	Eabametoong First Nation	7132	Eabametoong Water Treatment System	Surface Water	High Freq OR High Mag	Both	Yes	Yes	No	No	Yes	1
148	Eagle Lake	6529	Eagle Lake Water Treatment System	Surface Water	Low Freq, Low Mag	Operation	Yes	Yes	No	Yes	No	0
142	Fort Albany	7140	Fort Albany Water Treatment System	Surface Water	High Freq OR High Mag	Operation	Yes	No	No	Yes	Yes	1
215	Fort Severn	6544	Fort Severn Water Treatment System	Surface Water	High Freq AND High Mag	Unknown	Yes	Yes	No	No	Yes	1
187	Fort William	7182	Thunder Bay Water Treatment System	MTA	Meets Requirements	N/A	No	N/A	No	No	No	0
199	Garden River First Nation	NEW001	ECHO RIVER WATER TREATMENT SYSTEM	Groundwater	Meets Requirements	N/A	N/A	N/A	No	No	No	0
199	Garden River First Nation	7147	Garden River Water Treatment System	Groundwater	High Freq OR High Mag	Design	Yes	Yes	No	No	No	0
185	Ginoogaming First Nation	7134	Town of Long Lac Water Treatment System	MTA	Low Freq, Low Mag	Operation	Yes	Yes	No	No	No	0
149	Grassy Narrows First Nation	6530	Grassy Narrows Water Treatment System	Surface Water	Low Freq, Low Mag	Design	Yes	Yes	Yes	No	No	0
188	Gull Bay (Kiashke Zaaging Anishinaabek)	7183	Gull Bay Water Treatment System	Surface Water	High Freq, Low Mag	Both	Yes	Yes	Yes	Yes	Yes	1
231	Henvey Inlet First Nation	7224	Henvey Inlet Pumphouse #2 Water Treatment System	Groundwater	Low Freq, Low Mag	Operation	Yes	Yes	No	Yes	No	0
162	Hiawatha First Nation	NEW002	HIAWATHA APARTMENT COMPLEX	Groundwater	High Freq, Low Mag	Design	No	Yes	No	No	No	0
154	Iskatewizaagegan No. 39 Independent First	6533	Shoal Lake 39 Water Treatment System	Surface Water	Meets Requirements	N/A	N/A	N/A	No	No	No	0
210	Kasabonika Lake	7170	Kasabonika Lake Water Treatment System	Surface Water	Low Freq, Low Mag	Operation	Yes	Yes	No	No	No	0
243	Kashechewan	7144	Kashechewan Water Treatment System	Surface Water	High Freq OR High Mag	Operation	Yes	No	No	No	Yes	1
325	Kee-Way-Win First Nation	17010	Keewaywin's New Water Treatment System	Surface Water	High Freq AND High Mag	Operation	Yes	No	No	No	Yes	1
212	Kingfisher	7171	Kingfisher Lake Water Treatment System	Surface Water	Meets Requirements	N/A	N/A	N/A	No	No		2
209	Kitchenuhmaykoosib Inninuwug	6541	Kitchenuhmaykoosib Water Treatment System	Surface Water	Meets Requirements	N/A	N/A	N/A	No	No	Yes	1
127	Lac La Croix	7162	Lac La Croix Water Treatment System	Surface Water	High Freq, Low Mag	Operation	Yes	Yes	No	No	Yes	1
205	Lac Seul	6539	Frenchman's Head Water Treatment System	Surface Water	High Freq, Low Mag	Both	Yes	Yes	No	No	Yes	1
205	Lac Seul	15905	Kejick Bay Water Treatment System	Groundwater	High Freq, Low Mag	Both	Yes	Yes	No	No	Yes	1
205	Lac Seul	15906	Whitefish Bay Water Treatment System	Groundwater	High Freq, Low Mag	Design	Yes	Yes	No	No	Yes	1
184	Long Lake No.58 First Nation	7133	Town of Long Lac Water Treatment System	MTA	Meets Requirements	N/A	N/A	N/A	No	No	Yes	1
174	Magnetawan	7225	Magnetawan Water Treatment System	Surface Water	Low Freq, Low Mag	Operation	Yes	Yes	No	Yes	No	0

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First Nation Information		Water System Information			Water Quality Information							
Band #	Band Name	System #	System Name	Water Source	Meets/Does Not Meet GCDWQ	Cause of Failure	Fails Health Guidelines	Fails Aesthetic Guidelines	Fails MAC by Design	Fails MAC by Operation	DWA In Effect	DWA Count
186	Martin Falls	7135	Marten Falls Water Treatment System	Surface Water	High Freq OR High Mag	Both	Yes	Yes	Yes	Yes	Yes	1
219	Matachewan	7226	Matachewan Water Treatment System	Groundwater	Meets Requirements	N/A	N/A	N/A	No	No	No	0
226	Mattagami	7227	Mattagami Water Treatment System	Groundwater	Low Freq, Low Mag	Operation	No	Yes	No	No	No	0
181	M'Chigeeng First Nation	14199	West Bay & Lakeview Water Treatment System	Surface Water	High Freq, Low Mag	Operation	Yes	No	No	No	No	0
225	Michipicoten	7180	Michipicoten Water Treatment System	Surface Water	Low Freq, Low Mag	Operation	No	Yes	No	No	No	0
203	Mishkeegogamang	7190	Mishkeegogamang (New Osnaburgh) Water Treatment System	Surface Water	Low Freq, Low Mag	Design	No	Yes	No	No	Yes	1
203	Mishkeegogamang	7189	Mishkeegogamang (Ten House) Well Water Treatment System	Groundwater	Low Freq, Low Mag	Both	No	No	Yes	Yes	No	0
203	Mishkeegogamang	NEW002	WELL AT ACE LAKE	Groundwater	High Freq, Low Mag	Design	No	Yes	No	No	No	0
200	Mississauga	7146	Mississauga Water Treatment System	Groundwater	Meets Requirements	N/A	No	Yes	No	No	No	0
140	Mississaugas of Scugog Island First Nation	15899	Mississauga's of Scugog Island Pumphouse #1	Groundwater	High Freq, Low Mag	Design	No	Yes	No	No	Yes	1
140	Mississaugas of Scugog Island First Nation	15900	Mississauga's of Scugog Island Pumphouse #2	Groundwater	High Freq, Low Mag	Operation	No	Yes	No	No	Yes	1
140	Mississaugas of Scugog Island First Nation	NEW001	MISSISSAUGAS OF SCUGOG ISLAND PUMPHOUSE #3	Groundwater	High Freq, Low Mag	Operation	No	Yes	No	No	Yes	1
120	Mississaugas of the Credit	7211	New Credit Water Distribution System	MTA	Low Freq, Low Mag	Unknown	Yes	No	Yes	No	No	0
159	Mohawks of Akwesasne	15919	Aksesasne Corwall Island West Water Treatment System	Surface Water	Low Freq, Low Mag	N/A	No	Yes	No	No	No	0
159	Mohawks of Akwesasne	6486	Akwesasne St. Regis Water Treatment System	Surface Water	High Freq OR High Mag	Operation	Yes	Yes	No	No	No	0
159	Mohawks of Akwesasne	6485	Akwesasne Wade Lafrance Rd. Pumphouse house	Groundwater GUDI	High Freq OR High Mag	Both	Yes	Yes	No	No	No	0
164	Mohawks of the Bay of Quinte	6528	Airport Pumphouse and Treatment Facility	Surface Water	High Freq AND High Mag	Design	Yes	Yes	Yes	No	Yes	1
164	Mohawks of the Bay of Quinte	NEW001	TOWN OF DESERONTO WATER SYSTEM	MTA	Meets Requirements	N/A	N/A	N/A	No	No	No	0
144	Moose Cree First Nation	7142	Moose Factory Water Treatment System	Surface Water	Low Freq, Low Mag	Operation	Yes	Yes	No	Yes	No	0
135	Moose Deer Point	7160	King Bay & Issac Bay Pumphouse Systems	Surface Water	High Freq AND High Mag	Design	Yes	Yes	No	No	No	0
167	Moravian of the Thames	7175	Moravian of the Thames Water Treatment System	Groundwater GUDI	Low Freq, Low Mag	Both	Yes	Yes	Yes	Yes	Yes	1
168	Munsee-Delaware Nation	NEW001	WATER DISTRIBUTION	MTA	High Freq OR High Mag	Unknown	Yes	Yes	Yes	Yes	No	0
213	Muskrat Dam Lake	6542	Muskrat Dam Lake Water Treatment System	Surface Water	High Freq AND High Mag	Both	Yes	Yes	No	No	Yes	1
128	Naicatchewenin	7163	Naicatchewenin Water Treatment System	Surface Water	Low Freq, Low Mag	Design	Yes	Yes	No	No		3
158	Naotkamegwanning	6537	Whitefish Bay Water Treatment System	Surface Water	High Freq OR High Mag	Operation	Yes	Yes	No	No	Yes	1
239	Neskantaga First Nation	7137	Neskantaga Water Treatment System	Surface Water	High Freq OR High Mag	Unknown	N/A	N/A	No	No	Yes	1
241	Nibinamik First Nation	7138	Nibinamik Water Treatment System	Surface Water	High Freq OR High Mag	Design	Yes	Yes	No	No	Yes	1
129	Nicickousemenecaning	7164	Nicickousemenecaning Water Treatment System	Surface Water	High Freq OR High Mag	Design	Yes	Yes	No	No	No	0
220	Nipissing First Nation	7191	Nipissing - Arts Lane Water System	Groundwater	Meets Requirements	Operation	N/A	N/A	No	No	No	0
220	Nipissing First Nation	8076	Nipissing - Beaucage Village Water Treatment System	Groundwater GUDI	High Freq OR High Mag	Design	Yes	Yes	Yes	Yes	Yes	1
220	Nipissing First Nation	7212	Nipissing - Business/School Water Treatment System	Groundwater GUDI	Low Freq, Low Mag	Design	Yes	No	Yes	No	No	0
220	Nipissing First Nation	7195	Nipissing - Dushessnay Well 1	Groundwater	Low Freq, Low Mag	Design	Yes	Yes	No	No	No	0
220	Nipissing First Nation	7196	Nipissing - Dushessnay Well 2, 3 and 4	Groundwater	Meets Requirements	Design	No	Yes	No	No	No	0
220	Nipissing First Nation	7194	Nipissing - Garden Village Water System	Groundwater GUDI	High Freq OR High Mag	Design	Yes	Yes	No	No		2
220	Nipissing First Nation	7214	Nipissing - Harry Couchie Water Treatment System	Groundwater	Low Freq, Low Mag	Design	No	Yes	No	No	No	0
220	Nipissing First Nation	7213	Nipissing - Meadow Site Water Treatment System	Groundwater	High Freq AND High Mag	Design	Yes	Yes	No	Yes	No	0
220	Nipissing First Nation	7192	Nipissing - VLA Water System	Groundwater	High Freq, Low Mag	Both	Yes	Yes	No	No	No	0
204	North Caribou Lake	7233	North Caribou Lake Water Treatment System	Surface Water	Meets Requirements	Both	Yes	Yes	No	No	No	0
238	North Spirit Lake	7128	North Spirit Lake Water Treatment System	Surface Water	High Freq OR High Mag	Operation	Yes	Yes	No	No	Yes	1
151	Northwest Angle No.33	7126	Angle Inlet Water Treatment System	Groundwater	Meets Requirements	N/A	N/A	N/A	N/A	No	No	0
151	Northwest Angle No.33	7127	NWA 33 Dog Paw Lake Water Treatment System	Surface Water	Meets Requirements	N/A	N/A	N/A	No	No	Yes	1
152	Northwest Angle No.37	6483	NWA 37 Regina Bay Water Treatment System	Surface Water	Meets Requirements	Design	No	N/A	No	No	Yes	1
152	Northwest Angle No.37	15901	Windigo Island Water Treatment System	Surface Water	Low Freq, Low Mag	Operation	N/A	N/A	No	No	Yes	1
235	Obashkaandagaang	6532	Obashkaandagaang Water Treatment System	Groundwater	Low Freq, Low Mag	Design	Yes	Yes	No	Yes	Yes	1
235	Obashkaandagaang		SOUTH END PUMPHOUSE	Groundwater	High Freq, Low Mag	Both	Yes	Yes	No	No	Yes	1
147	Ochiichagwebabigoining First Nation	7181	The Dalles Water Treatment System	Surface Water	Meets Requirements	N/A	N/A	N/A	No	No	No	0
131	Ojibways of Onigaming First Nation	7107	Onigaming Water Treatment System	Surface Water	Meets Requirements	N/A	No	No	No	No	No	0
192	Ojibways of the Pic River First Nation	7185	Pic River Water Treatment System	Groundwater	Low Freq, Low Mag	Operation	Yes	Yes	No	Yes	No	0
169	Oneida Nation of the Thames	7176	Oneida Water Treatment System	Surface Water	High Freq OR High Mag	Both	Yes	Yes	Yes	Yes		2
191	Pays Plat First Nation	7184	Pays Plat Water Treatment System	Surface Water	High Freq, Low Mag	Operation	Yes	No	No	No	No	0
146	Peawanuck	7193	Peawanuck Water Treatment System	Groundwater GUDI	High Freq OR High Mag	Operation	Yes	Yes	No	Yes	Yes	1
195	Pic Mobert	15903	Pic Mobert North New Pumphouse Water System	Groundwater GUDI	High Freq OR High Mag	Operation	Yes	Yes	No	Yes	Yes	1
195	Pic Mobert	7187	Pic Mobert South Water Treatment System	Surface Water	High Freq AND High Mag	Both	Yes	Yes	No	Yes	Yes	1

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Band #	Band Name	System #	System Name	Water Source	Meets/Does Not Meet GCDWQ	Cause of Failure	Fails Health Guidelines	Fails Aesthetic Guidelines	Fails MAC by Design	Fails MAC by Operation	DWA In Effect	DWA Count
208	Pikangikum	6540	Pikangikum Water Treatment System	Surface Water	High Freq OR High Mag	Operation	Yes	No	No	No	Yes	1
236	Poplar Hill	7129	Poplar Hill Water Treatment System	Surface Water	Low Freq, Low Mag	Design	Yes	Yes	No	No	No	0
130	Rainy River First Nations	7165	Manitou Rapids Water Treatment System	Groundwater GUDI	Low Freq, Low Mag	Unknown	Yes	Yes	No	No	Yes	1
193	Red Rock	7186	Red Rock Water Treatment System	Surface Water	Low Freq, Low Mag	Operation	Yes	Yes	No	No	No	0
214	Sachigo Lake	7235	Sachigo Lake Water Treatment System	Surface Water	High Freq, Low Mag	Operation	Yes	Yes	No	No	Yes	1
179	Sagamok Anishnawbek	7152	Sagamok Water Treatment System	Groundwater	Meets Requirements	N/A	N/A	N/A	No	No	No	0
211	Sandy Lake First Nation	7179	Sandy Lake Water Treatment System	Surface Water	High Freq OR High Mag	Both	Yes	Yes	Yes	Yes	Yes	1
123	Saugeen	7210	Town of Saugeen Shores Water Treatment System	MTA	Meets Requirements	N/A	No	N/A	No	No	No	0
132	Seine River First Nation	7166	Seine River Water Treatment System	Surface Water	High Freq OR High Mag	Operation	Yes	Yes	No	No	Yes	1
201	Serpent River First Nation	7148	Serpent River Pumphouse #1	Groundwater	Low Freq, Low Mag	Operation	Yes	Yes	No	No	No	0
201	Serpent River First Nation	7149	Serpent River Pumphouse #2	Groundwater	High Freq OR High Mag	Operation	Yes	Yes	No	No	No	0
201	Serpent River First Nation	7150	Serpent River Pumphouse #3	Groundwater	High Freq OR High Mag	Operation	Yes	Yes	No	Yes	No	0
201	Serpent River First Nation	7151	Serpent River Pumphouse #5	Groundwater GUDI	High Freq OR High Mag	Operation	Yes	Yes	No	Yes	No	0
137	Shawanaga First Nation	7198	Shawanaga Water Treatment System	Groundwater	Low Freq, Low Mag	Operation	Yes	Yes	No	No	No	0
176	Sheguiandah	7217	Sheguiandah Water Treatment System	Surface Water	Meets Requirements	N/A	N/A	N/A	No	No	No	0
178	Sheshegwaning	7218	Sheshegwaning Water Treatment System	Surface Water	High Freq OR High Mag	Operation	Yes	No	No	Yes	No	0
155	Shoal Lake No. 40		SHOAL LAKE 40 PUMPHOUSE 2	Surface Water	High Freq, Low Mag	Design	Yes	Yes	Yes	No	Yes	1
155	Shoal Lake No. 40		SHOAL LAKE 40 PUMPHOUSE 3	Surface Water	High Freq, Low Mag	Design	Yes	Yes	Yes	No	Yes	1
155	Shoal Lake No. 40		SHOAL LAKE 40 PUMPHOUSE 4	Surface Water	Low Freq, Low Mag	Design	N/A	N/A	No	No	Yes	1
155	Shoal Lake No. 40		SHOAL LAKE 40 PUMPHOUSE 5	Surface Water	High Freq, Low Mag	Design	Yes	Yes	Yes	No	Yes	1
155	Shoal Lake No. 40		SHOAL LAKE 40 PUMPHOUSE 9	Surface Water	High Freq, Low Mag	Design	Yes	Yes	Yes	No	Yes	1
155	Shoal Lake No. 40	6534	Shoal Lake 40 Water Treatment System	Surface Water	High Freq, Low Mag	Design	Yes	Yes	Yes	No	Yes	1
121	Six Nations of the Grand River	7173	Six Nations Water Treatment System	Surface Water	High Freq AND High Mag	Both	Yes	No	Yes	Yes	No	0
259	Slate Falls Nation		BAND OFFICE PUMPHOUSE	Surface Water	High Freq AND High Mag	Design	Yes	Yes	Yes	No	Yes	1
259	Slate Falls Nation		PUMPHOUSE NO. 1	Surface Water	High Freq AND High Mag	Design	Yes	Yes	Yes	No	Yes	1
259	Slate Falls Nation		PUMPHOUSE NO. 2	Surface Water	High Freq AND High Mag	Design	Yes	Yes	Yes	No	Yes	1
259	Slate Falls Nation		PUMPHOUSE NO. 3	Surface Water	High Freq AND High Mag	Design	Yes	Yes	Yes	No	Yes	1
259	Slate Falls Nation		PUMPHOUSE NO. 4	Surface Water	High Freq AND High Mag	Design	Yes	Yes	Yes	No	Yes	1
259	Slate Falls Nation		PUMPHOUSE NO. 5	Surface Water	High Freq AND High Mag	Design	Yes	Yes	Yes	No	Yes	1
259	Slate Falls Nation		PUMPHOUSE NO. 6	Surface Water	High Freq AND High Mag	Design	Yes	Yes	Yes	No	Yes	1
259	Slate Falls Nation		PUMPHOUSE NO. 7	Surface Water	High Freq AND High Mag	Design	Yes	Yes	Yes	No	Yes	1
259	Slate Falls Nation		PUMPHOUSE NO. 8	Surface Water	High Freq AND High Mag	Design	Yes	Yes	Yes	No	Yes	1
259	Slate Falls Nation		PUMPHOUSE NO. 9	Surface Water	High Freq AND High Mag	Design	Yes	Yes	Yes	No	Yes	1
259	Slate Falls Nation	7232	Slate Falls Water Treatment System	Surface Water	High Freq OR High Mag	Operation	Yes	No	No	No	No	0
133	Stanjikoming First Nation	7167	Stanjikoming Water Treatment System	Surface Water	Low Freq, Low Mag	Design	Yes	Yes	No	No	Yes	1
145	Taykwa Tagamou Nation	7143	New Post Water Treatment System	Groundwater	Low Freq, Low Mag	Design	Yes	Yes	No	No		3
222	Temagami First Nation	7197	Bear Island Water Treatment System	Surface Water	Low Freq, Low Mag	Operation	No	No	No	No	No	0
202	Thessalon	7153	Thessalon Water Treatment System	Groundwater	High Freq OR High Mag	Operation	Yes	Yes	Yes	Yes	Yes	1
150	Wabaseemoong Independent Nations	6531	Wabaseemoong Water Treatment System	Surface Water	Meets Requirements	N/A	N/A	N/A	No	No	No	0
156	Wabauskang First Nation	6535	Wabauskang Water Treatment System	Surface Water	Low Freq, Low Mag	Operation	Yes	Yes	No	No	Yes	1
157	Wabigoon Lake Ojibway Nation	6536	Wabigoon Lake Water Treatment System	Surface Water	Meets Requirements	N/A	N/A	N/A	No	No	No	0
233	Wahgoshig	7230	Wahgoshig Water Treatment System	Groundwater	Low Freq, Low Mag	Operation	Yes	No	No	No	No	0
170	Walpole Island	6538	Walpole Island Water Treatment System	Surface Water	High Freq OR High Mag	Operation	Yes	No	No	Yes	No	0
206	Wapekeka	7169	Wapekeka Water Treatment System	Surface Water	Low Freq, Low Mag	Operation	Yes	Yes	No	No	No	0
136	Wasauksing First Nation		COMMUNITY WELL (SODA'S)	Groundwater	Meets Requirements	N/A	N/A	N/A	No	No	No	0
136	Wasauksing First Nation		SIXPLEX WELL	Groundwater	Meets Requirements	N/A	N/A	N/A	No	No	No	0
136	Wasauksing First Nation	7199	Wasauksing (Parry Island) Water Treatment System	Surface Water	Low Freq, Low Mag	Operation	Yes	Yes	No	No	No	0
234	Wawakapewin	7168	Wawakapewin Water Treatment System	Groundwater	Meets Requirements	N/A	N/A	N/A	No	No	Yes	1
240	Webequie First Nation	7136	Webequie Water Treatment System	Surface Water	High Freq OR High Mag	Operation	Yes	Yes	No	Yes	Yes	1
224	Whitefish Lake	7145	Whitefish Lake Water System	MTA	High Freq OR High Mag	Design	No	Yes	No	No	No	0
230	Whitefish River	7215	Whitefish River Water Treatment System	Surface Water	Meets Requirements	N/A	N/A	N/A	No	No	No	0
190	Whitesand	17016	Whitesand Water System	MTA	Meets Requirements	N/A	No	No	No	No	Yes	1
175	Wikwemikong	7231	Wikwemikong Water Treatment System	Surface Water	Low Freq, Low Mag	Operation	Yes	Yes	No	No	No	0

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Band #	Band Name	System #	System Name	Water Source	Meets/Does Not Meet GCDWQ	Cause of Failure	Fails Health Guidelines	Fails Aesthetic Guidelines	Fails MAC by Design	Fails MAC by Operation	DWA In Effect	DWA Count
217	Wunnumin	7172	Wunnumin Lake Water Treatment System	Surface Water	Meets Requirements	N/A	N/A	N/A	No	No	No	0
173	Zhiibaahaasing First Nation	7216	Zhiibaahaasing Water Treatment System	Surface Water	Meets Requirements	Design	No	No	No	No	No	0

Table D.1 - 3: Regional Summary of Water Operator Information

First Nation Information		Water System Information			Operator Information					
Band #	Band Name	System #	System Name	Water Source	Primary Operator Exists	Primary Operator Treatment Class	Primary Operator Distribution Class	Secondary Operator Exists	Secondary Operator Treatment Class	Secondary Operator Distribution Class
172	Aamjiwnaang	7178	Aamjiwnaang Water System	MTA	NR	Not Required	Not Required	No	Not Required	Not Required
153	Anishinabe of Wauzhushk Onigum	15902	Bald Indian Bay Water Treatment Plant	Surface Water	Yes	Level I	No Certification	Yes	No Certification	No Certification
153	Anishinabe of Wauzhushk Onigum	6484	Wauzhushk Onigum Water Treatment Unit - 2nd Portage	Surface Water	Yes	Level I	No Certification	Yes	No Certification	No Certification
125	Anishnaabeg of Naongashiing	6482	Saug-A-Gaw-Sing Water Treatment System	Groundwater GUDI	Yes	No Certification	No Certification	Yes	No Certification	No Certification
242	Aroland	7130	Aroland Water Treatment System	Groundwater	Yes	No Certification	No Certification	No	Not Required	No Operator
143	Attawapiskat	7141	Attawapiskat Water Treatment System	Surface Water	Yes	Level II	Level I	Yes	No Certification	No Certification
180	Aundeck-Omni-Kaning	7219	Sucker Creek Water Treatment System	Surface Water	Yes	Level II	Level II	Yes	No Certification	No Certification
198	Batchewana First Nation	7154	Ojibways of Batchewana Water System (MTA)	MTA	NR	Not Required	Not Required	No	Not Required	Not Required
207	Bearskin Lake	7234	Bearskin Lake Water Treatment System	Surface Water	Yes	Level I	No Certification	Yes	No Certification	No Certification
141	Beausoleil	7159	Cedar Point Water Treatment System	Groundwater	Yes	Level II	Level III	Yes	No Certification	No Certification
141	Beausoleil	7158	Christian Island Water Treatment System	Surface Water	Yes	Level II	Level III	Yes	No Certification	No Certification
124	Big Grassy	6466	Big Grassy Water Treatment System	Surface Water	Yes	Level I	No Certification	Yes	No Certification	No Certification
197	Biinjitiwaabik Zaaging Anishinaabek	7188	Rocky Bay Water Treatment System	Surface Water	Yes	Level II	Level II	Yes	No Certification	No Certification
228	Brunswick House	7228	Brunswick House Water Treatment System	Surface Water	No	No Certification	No Certification	Yes	Level II	Level II
216	Cat Lake	7236	Cat Lake Water Treatment System	Surface Water	No	No Certification	No Certification	No	Not Required	No Operator
221	Chapleau Cree First Nation	7139	Chapleau Cree Water Treatment System	Groundwater GUDI	Yes	Level II	Level II	Yes	Level I	Level I
229	Chapleau Ojibway	7229	Chapleau Ojibwe Water Treatment System	Groundwater	Yes	Level II	Level II	Yes	Level II	Level II
138	Chippewas of Georgina Island	7157	Georgina Island Water Treatment System	Surface Water	Yes	Level II	No Certification	Yes	Level I	No Certification
171	Chippewas of Kettle and Stony Point	7177	Kettle and Stony Point Water Treatment System	Surface Water	Yes	Level II	Level II	Yes	No Certification	No Certification
122	Chippewas of Nawash	7203	Neyaashiinigmiing Water Treatment System	Surface Water	Yes	Level I	Level I	Yes	Level II	Level I
166	Chippewas of the Thames First Nation	7174	Chippewas of the Thames Water Treatment System	Groundwater GUDI	Yes	Level I	Level I	Yes	Not Required	No Operator
182	Constance Lake	7131	Constance Lake Water Treatment System	Surface Water	Yes	Level II	Level I	Yes	Level I	Level I
126	Couchiching First Nation	7161	Town of Fort Frances	MTA	Yes	No Certification	No Certification	Yes	Not Required	No Certification
161	Curve Lake	7201	Curve Lake Water Treatment System	Groundwater GUDI	Yes	Level I	Level II	Yes	No Certification	No Certification
237	Deer Lake	6545	Deer Lake Water Treatment System	Surface Water	Yes	No Certification	No Certification	Yes	No Certification	No Certification
218	Dokis	7222	Dokis Water Treatment System	Groundwater	Yes	Level I	No Certification	Yes	Level I	No Certification
183	Eabametoong First Nation	7132	Eabametoong Water Treatment System	Surface Water	Yes	Level I	Level I	Yes	No Certification	No Certification
148	Eagle Lake	6529	Eagle Lake Water Treatment System	Surface Water	Yes	Level I	Level I	Yes	Level I	Level I
142	Fort Albany	7140	Fort Albany Water Treatment System	Surface Water	Yes	Level II	No Certification	Yes	No Certification	No Certification
215	Fort Severn	6544	Fort Severn Water Treatment System	Surface Water	Yes	No Certification	No Certification	Yes	No Certification	No Certification
187	Fort William	7182	Thunder Bay Water Treatment System	MTA	No	Not Required		No	Not Required	
199	Garden River First Nation	NEW001	ECHO RIVER WATER TREATMENT SYSTEM	Groundwater	Yes	Level I	Level I	Yes	Level I	Level I
199	Garden River First Nation	7147	Garden River Water Treatment System	Groundwater	Yes	Level I	Level I	Yes	Level I	Level I
185	Ginoogaming First Nation	7134	Town of Long Lac Water Treatment System	MTA	Yes	No Certification	No Certification	Yes	No Certification	No Certification
149	Grassy Narrows First Nation	6530	Grassy Narrows Water Treatment System	Surface Water	Yes	Level II	Level I	Yes	No Certification	No Certification
188	Gull Bay (Kiashke Zaaging Anishinaabek)	7183	Gull Bay Water Treatment System	Surface Water	Yes	No Certification	No Certification	No	Not Required	No Operator
231	Henvey Inlet First Nation	7224	Henvey Inlet Pumphouse #2 Water Treatment System	Groundwater	Yes	No Certification	No Certification	Yes	Level I	Level I
162	Hiawatha First Nation	NEW002	HIAWATHA APARTMENT COMPLEX	Groundwater	Yes	Not Required	No Operator	No	Not Required	No Operator
154	Iskatewizaagegan No. 39 Independent First Nation	6533	Shoal Lake 39 Water Treatment System	Surface Water	Yes	Level II	Level II	Yes	Level I	Level I
210	Kasabonika Lake	7170	Kasabonika Lake Water Treatment System	Surface Water	Yes	Level II	Level II	Yes	No Certification	No Certification
243	Kashechewan	7144	Kashechewan Water Treatment System	Surface Water	Yes	Level III	Level I	Yes	Level II	Level I
325	Kee-Way-Win First Nation	17010	Keewaywin's New Water Treatment System	Surface Water	Yes	No Certification	No Certification	Yes	Level I	No Certification
212	Kingfisher	7171	Kingfisher Lake Water Treatment System	Surface Water	Yes	No Certification	No Certification	Yes	No Certification	No Certification
209	Kitchenuhmaykoosib Inninuwug	6541	Kitchenuhmaykoosib Water Treatment System	Surface Water	Yes	No Certification	No Certification	Yes	No Certification	No Certification
127	Lac La Croix	7162	Lac La Croix Water Treatment System	Surface Water	Yes	Level II	Level I	No	Not Required	No Operator
205	Lac Seul	6539	Frenchman's Head Water Treatment System	Surface Water	Yes	Level I	Level I	Yes	No Certification	No Certification
205	Lac Seul	15905	Kejick Bay Water Treatment System	Groundwater	Yes	No Certification	No Certification	Yes	No Certification	No Certification
205	Lac Seul	15906	Whitefish Bay Water Treatment System	Groundwater	Yes	No Certification	No Certification	Yes	Not Required	No Certification
184	Long Lake No.58 First Nation	7133	Town of Long Lac Water Treatment System	MTA	Yes	No Certification	No Certification	No	Not Required	
174	Magnetawan	7225	Magnetawan Water Treatment System	Surface Water	Yes	Level I	Level I	No	Not Required	No Operator

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Band #	Band Name	System #	System Name	Water Source	Primary Operator Exists	Primary Operator Treatment Class	Primary Operator Distribution Class	Secondary Operator Exists	Secondary Operator Treatment Class	Secondary Operator Distribution Class
186	Martin Falls	7135	Marten Falls Water Treatment System	Surface Water	Yes	No Certification	No Certification	Yes	No Certification	No Certification
219	Matachewan	7226	Matachewan Water Treatment System	Groundwater	Yes	Level III	Level III	Yes	Level III	Level III
226	Mattagami	7227	Mattagami Water Treatment System	Groundwater	Yes	No Certification	No Certification	No	Not Required	No Operator
181	M'Chigeeng First Nation	14199	West Bay & Lakeview Water Treatment System	Surface Water	Yes	Level II	Level II	Yes	Level II	Level II
225	Michipicoten	7180	Michipicoten Water Treatment System	Surface Water	Yes	Level II	Level I	Yes	No Certification	No Certification
203	Mishkeegogamang	7190	Mishkeegogamang (New Osnaburgh) Water Treatment System	Surface Water	Yes	No Certification	No Certification	Yes	No Certification	No Certification
203	Mishkeegogamang	7189	Mishkeegogamang (Ten House) Well Water Treatment System	Groundwater	Yes	No Certification	No Certification	Yes	No Certification	No Certification
203	Mishkeegogamang	NEW002	WELL AT ACE LAKE	Groundwater	Yes	No Certification	No Certification	Yes	No Certification	No Certification
200	Mississauga	7146	Mississauga Water Treatment System	Groundwater	Yes	No Certification	No Certification	Yes	Level I	Level I
140	Mississaugas of Scugog Island First Nation	15899	Mississauga's of Scugog Island Pumphouse #1	Groundwater	Yes	Level II	Level I	Yes	No Certification	Level I
140	Mississaugas of Scugog Island First Nation	15900	Mississauga's of Scugog Island Pumphouse #2	Groundwater	Yes	Level II	Level I	Yes	No Certification	Level I
140	Mississaugas of Scugog Island First Nation	NEW001	MISSISSAUGAS OF SCUGOG ISLAND PUMPHOUSE #3	Groundwater	Yes	Level II	Level I	Yes	No Certification	Level I
120	Mississaugas of the Credit	7211	New Credit Water Distribution System	MTA	Yes	Not Required	Level I	Yes	Not Required	Level I
159	Mohawks of Akwesasne	15919	Aksesasne Corwall Island West Water Treatment System	Surface Water	Yes	Level II	Level II	Yes	No Certification	No Certification
159	Mohawks of Akwesasne	6486	Akwesasne St. Regis Water Treatment System	Surface Water	Yes	Level I	Level I	Yes	Level I	Level I
159	Mohawks of Akwesasne	6485	Akwesasne Wade Lafrance Rd. Pumphouse house	Groundwater GUDI	Yes	Level II	Level II	Yes	Level I	Level I
164	Mohawks of the Bay of Quinte	6528	Airport Pumphouse and Treatment Facility	Surface Water	Yes	No Certification	No Certification	Yes	No Certification	No Certification
164	Mohawks of the Bay of Quinte	NEW001	TOWN OF DESERONTO WATER SYSTEM	MTA	Yes	Not Required	No Certification	Yes	Not Required	No Certification
144	Moose Cree First Nation	7142	Moose Factory Water Treatment System	Surface Water	Yes	Level II	No Certification	Yes	No Certification	No Certification
135	Moose Deer Point	7160	King Bay & Issac Bay Pumphouse Systems	Surface Water	Yes	Level II	Level I	Yes	Level I	Level I
167	Moravian of the Thames	7175	Moravian of the Thames Water Treatment System	Groundwater GUDI	Yes	Level I	Level II	No	Not Required	No Operator
168	Munsee-Delaware Nation	NEW001	WATER DISTRIBUTION	MTA	NR	Not Required	Not Required	No	Not Required	Not Required
213	Muskrat Dam Lake	6542	Muskrat Dam Lake Water Treatment System	Surface Water	Yes	Level I	Level II	Yes	No Certification	No Certification
128	Naicatchewenin	7163	Naicatchewenin Water Treatment System	Surface Water	Yes	Level I	No Certification	Yes	No Certification	No Certification
158	Naotkamegwanning	6537	Whitefish Bay Water Treatment System	Surface Water	Yes	Level I	No Certification	Yes	Not Required	No Certification
239	Neskantaga First Nation	7137	Neskantaga Water Treatment System	Surface Water	Yes	No Certification	No Certification	No	Not Required	No Operator
241	Nibinamik First Nation	7138	Nibinamik Water Treatment System	Surface Water	Yes	No Certification	No Certification	Yes	No Certification	No Certification
129	Nicickousemenecaning	7164	Nicickousemenecaning Water Treatment System	Surface Water	Yes	Level II	Level II	Yes	No Certification	No Certification
220	Nipissing First Nation	7191	Nipissing - Arts Lane Water System	Groundwater	Yes	Level I	Level I	Yes	Level I	Level I
220	Nipissing First Nation	8076	Nipissing - Beaucage Village Water Treatment System	Groundwater GUDI	Yes	Level I	Level I	Yes	No Certification	No Certification
220	Nipissing First Nation	7212	Nipissing - Business/School Water Treatment System	Groundwater GUDI	Yes	No Certification	No Certification	Yes	No Certification	No Certification
220	Nipissing First Nation	7195	Nipissing - Dushessnay Well 1	Groundwater	Yes	Level I	Level I	Yes	No Certification	No Certification
220	Nipissing First Nation	7196	Nipissing - Dushessnay Well 2, 3 and 4	Groundwater	Yes	Level I	Level I	Yes	No Certification	No Certification
220	Nipissing First Nation	7194	Nipissing - Garden Village Water System	Groundwater GUDI	Yes	Level I	Level I	Yes	No Certification	No Certification
220	Nipissing First Nation	7214	Nipissing - Harry Couchie Water Treatment System	Groundwater	Yes	Level I	Level I	Yes	No Certification	No Certification
220	Nipissing First Nation	7213	Nipissing - Meadow Site Water Treatment System	Groundwater	Yes	Level I	Level I	Yes	No Certification	No Certification
220	Nipissing First Nation	7192	Nipissing - VLA Water System	Groundwater	Yes	Level I	Level I	Yes	No Certification	No Certification
204	North Caribou Lake	7233	North Caribou Lake Water Treatment System	Surface Water	Yes	Level I	No Certification	Yes	No Certification	No Certification
238	North Spirit Lake	7128	North Spirit Lake Water Treatment System	Surface Water	Yes	No Certification	No Certification	Yes	No Certification	No Certification
151	Northwest Angle No.33	7126	Angle Inlet Water Treatment System	Groundwater	Yes	Not Required	No Operator	No	Not Required	No Operator
151	Northwest Angle No.33	7127	NWA 33 Dog Paw Lake Water Treatment System	Surface Water	Yes	Level I	Level I	Yes	Level I	No Certification
152	Northwest Angle No.37	6483	NWA 37 Regina Bay Water Treatment System	Surface Water	Yes	No Certification	No Certification	Yes	Level I	Level I
152	Northwest Angle No.37	15901	Windigo Island Water Treatment System	Surface Water	Yes	No Certification	No Certification	Yes	Level I	Level I
235	Obashkaandagaang	6532	Obashkaandagaang Water Treatment System	Groundwater	Yes	Level I	Level I	No	Not Required	No Operator
235	Obashkaandagaang		SOUTH END PUMPHOUSE	Groundwater	Yes	Level I	Level I	No	Not Required	No Operator
147	Ochiichagwebabigoining First Nation	7181	The Dalles Water Treatment System	Surface Water	Yes	Level II	Level I	Yes	Level I	Level I
131	Ojibways of Onigaming First Nation	7107	Onigaming Water Treatment System	Surface Water	Yes	Level II	No Certification	Yes	Level I	No Certification
192	Ojibways of the Pic River First Nation	7185	Pic River Water Treatment System	Groundwater	Yes	Level II	Level I	Yes	Level I	Level I
169	Oneida Nation of the Thames	7176	Oneida Water Treatment System	Surface Water	Yes	Level II	Level II	Yes	Level II	Level II
191	Pays Plat First Nation	7184	Pays Plat Water Treatment System	Surface Water	Yes	No Certification	No Certification	Yes	No Certification	No Certification
146	Peawanuck	7193	Peawanuck Water Treatment System	Groundwater GUDI	Yes	No Certification	No Certification	Yes	No Certification	No Certification
195	Pic Mobert	15903	Pic Mobert North New Pumphouse Water System	Groundwater GUDI	Yes	Level I	No Certification	Yes	No Certification	No Certification
195	Pic Mobert	7187	Pic Mobert South Water Treatment System	Surface Water	Yes	Level I	No Certification	Yes	No Certification	No Certification

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Band #	Band Name	System #	System Name	Water Source	Primary Operator Exists	Primary Operator Treatment Class	Primary Operator Distribution Class	Secondary Operator Exists	Secondary Operator Treatment Class	Secondary Operator Distribution Class
208	Pikangikum	6540	Pikangikum Water Treatment System	Surface Water	Yes	Level I	Level I	Yes	No Certification	No Operator
236	Poplar Hill	7129	Poplar Hill Water Treatment System	Surface Water	Yes	No Certification	No Certification	Yes	No Certification	No Certification
130	Rainy River First Nations	7165	Manitou Rapids Water Treatment System	Groundwater GUDI	Yes	Level III	Level II	Yes	No Certification	No Certification
193	Red Rock	7186	Red Rock Water Treatment System	Surface Water	Yes	Level II	Level II	Yes	Level I	Level II
214	Sachigo Lake	7235	Sachigo Lake Water Treatment System	Surface Water	Yes	No Certification	No Certification	Yes	Level II	No Certification
179	Sagamok Anishnawbek	7152	Sagamok Water Treatment System	Groundwater	Yes	Level I	Level I	Yes	Not Required	No Operator
211	Sandy Lake First Nation	7179	Sandy Lake Water Treatment System	Surface Water	Yes	Level I	Level I	Yes	No Certification	No Certification
123	Saugeen	7210	Town of Saugeen Shores Water Treatment System	MTA	Yes	Not Required	Level II	Yes	Not Required	Level II
132	Seine River First Nation	7166	Seine River Water Treatment System	Surface Water	Yes	Level I	Level I	Yes	No Certification	Level I
201	Serpent River First Nation	7148	Serpent River Pumphouse #1	Groundwater	Yes	No Certification	No Certification	Yes	Level I	Level I
201	Serpent River First Nation	7149	Serpent River Pumphouse #2	Groundwater	Yes	No Certification	No Certification	Yes	Level I	Level I
201	Serpent River First Nation	7150	Serpent River Pumphouse #3	Groundwater	Yes	No Certification	No Certification	Yes	Level I	Level I
201	Serpent River First Nation	7151	Serpent River Pumphouse #5	Groundwater GUDI	Yes	No Certification	No Certification	Yes	Level I	Level I
137	Shawanaga First Nation	7198	Shawanaga Water Treatment System	Groundwater	Yes	Level II	No Certification	No	Not Required	No Operator
176	Sheguiandah	7217	Sheguiandah Water Treatment System	Surface Water	Yes	No Certification	No Certification	Yes	Level I	Level I
178	Sheshegwaning	7218	Sheshegwaning Water Treatment System	Surface Water	Yes	No Certification	Level I	Yes	Level I	Level I
155	Shoal Lake No. 40		SHOAL LAKE 40 PUMPHOUSE 2	Surface Water	Yes	No Certification	No Certification	Yes	No Certification	No Certification
155	Shoal Lake No. 40		SHOAL LAKE 40 PUMPHOUSE 3	Surface Water	Yes	No Certification	No Certification	Yes	No Certification	No Certification
155	Shoal Lake No. 40		SHOAL LAKE 40 PUMPHOUSE 4	Surface Water	Yes	No Certification	No Certification	Yes	No Certification	No Certification
155	Shoal Lake No. 40		SHOAL LAKE 40 PUMPHOUSE 5	Surface Water	Yes	No Certification	No Certification	Yes	No Certification	No Certification
155	Shoal Lake No. 40		SHOAL LAKE 40 PUMPHOUSE 9	Surface Water	Yes	No Certification	No Certification	Yes	No Certification	No Certification
155	Shoal Lake No. 40	6534	Shoal Lake 40 Water Treatment System	Surface Water	Yes	No Certification	No Certification	Yes	No Certification	No Certification
121	Six Nations of the Grand River	7173	Six Nations Water Treatment System	Surface Water	Yes	Level II	Level II	Yes	Level I	Level I
259	Slate Falls Nation		BAND OFFICE PUMPHOUSE	Surface Water	Yes	No Certification	No Certification	Yes	No Certification	No Certification
259	Slate Falls Nation		PUMPHOUSE NO. 1	Surface Water	Yes	No Certification	No Certification	Yes	No Certification	No Certification
259	Slate Falls Nation		PUMPHOUSE NO. 2	Surface Water	Yes	No Certification	No Certification	Yes	No Certification	No Certification
259	Slate Falls Nation		PUMPHOUSE NO. 3	Surface Water	Yes	No Certification	No Certification	Yes	No Certification	No Certification
259	Slate Falls Nation		PUMPHOUSE NO. 4	Surface Water	Yes	No Certification	No Certification	Yes	No Certification	No Certification
259	Slate Falls Nation		PUMPHOUSE NO. 5	Surface Water	Yes	No Certification	No Certification	Yes	No Certification	No Certification
259	Slate Falls Nation		PUMPHOUSE NO. 6	Surface Water	Yes	No Certification	No Certification	Yes	No Certification	No Certification
259	Slate Falls Nation		PUMPHOUSE NO. 7	Surface Water	Yes	No Certification	No Certification	Yes	No Certification	No Certification
259	Slate Falls Nation		PUMPHOUSE NO. 8	Surface Water	Yes	No Certification	No Certification	Yes	No Certification	No Certification
259	Slate Falls Nation		PUMPHOUSE NO. 9	Surface Water	Yes	No Certification	No Certification	Yes	No Certification	No Certification
259	Slate Falls Nation	7232	Slate Falls Water Treatment System	Surface Water	Yes	No Certification	No Operator	Yes	No Certification	No Operator
133	Stanjikoming First Nation	7167	Stanjikoming Water Treatment System	Surface Water	Yes	Level II	Level I	Yes	No Certification	No Certification
145	Taykwa Tagamou Nation	7143	New Post Water Treatment System	Groundwater	Yes	No Certification	No Certification	Yes	No Certification	No Certification
222	Temagami First Nation	7197	Bear Island Water Treatment System	Surface Water	Yes	Level II	No Certification	Yes	Level II	No Certification
202	Thessalon	7153	Thessalon Water Treatment System	Groundwater	Yes	No Certification	No Certification	Yes	No Certification	No Certification
150	Wabaseemoong Independent Nations	6531	Wabaseemoong Water Treatment System	Surface Water	Yes	Level I	Level II	Yes	Level I	Level I
156	Wabauskang First Nation	6535	Wabauskang Water Treatment System	Surface Water	Yes	No Certification	No Certification	Yes	No Certification	No Certification
157	Wabigoon Lake Ojibway Nation	6536	Wabigoon Lake Water Treatment System	Surface Water	Yes	Level II	Level I	No	Not Required	No Operator
233	Wahgoshig	7230	Wahgoshig Water Treatment System	Groundwater	Yes	Level I	Level I	No	Not Required	No Operator
170	Walpole Island	6538	Walpole Island Water Treatment System	Surface Water	Yes	Level III	Level II	Yes	Level I	Level I
206	Wapekeka	7169	Wapekeka Water Treatment System	Surface Water	Yes	No Certification	No Certification	Yes	No Certification	No Certification
136	Wasauksing First Nation		COMMUNITY WELL (SODA'S)	Groundwater	Yes	Level I	Level I	Yes	Level I	Level I
136	Wasauksing First Nation		SIXPLEX WELL	Groundwater	Yes	Level I	Level I	Yes	Level I	Level I
136	Wasauksing First Nation	7199	Wasauksing (Parry Island) Water Treatment System	Surface Water	Yes	Level I	Level I	Yes	Level I	Level I
234	Wawakapewin	7168	Wawakapewin Water Treatment System	Groundwater	Yes	No Certification	Level I	No	Not Required	No Operator
240	Webequie First Nation	7136	Webequie Water Treatment System	Surface Water	Yes	No Certification	No Certification	Yes	No Certification	No Certification
224	Whitefish Lake	7145	Whitefish Lake Water System	MTA	Yes	Not Required	Level I	Yes	Not Required	Level I
230	Whitefish River	7215	Whitefish River Water Treatment System	Surface Water	Yes	Level II	Level I	Yes	Level I	No Certification
190	Whitesand	17016	Whitesand Water System	MTA	Yes	Not Required	No Certification	Yes	Not Required	No Certification
175	Wikwemikong	7231	Wikwemikong Water Treatment System	Surface Water	Yes	Level II	Level I	Yes	Level I	Level I

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First Nation Information		Water System Information			Operator Information					
Band #	Band Name	System #	System Name	Water Source	Primary Operator Exists	Primary Operator Treatment Class	Primary Operator Distribution Class	Secondary Operator Exists	Secondary Operator Treatment Class	Secondary Operator Distribution Class
217	Wunnumin	7172	Wunnumin Lake Water Treatment System	Surface Water	Yes	Level II	No Certification	Yes	No Certification	No Certification
173	Zhiibaahaasing First Nation	7216	Zhiibaahaasing Water Treatment System	Surface Water	Yes	Level II	Level I	No	Not Required	No Operator

NEEGAN BURNSIDE

Appendix D.2

Individual First Nation Wastewater Summary

Table D.2 - 1: Regional Summary of Wastewater Treatment

First Nation Information				Wastewater System Information											
Band #	Band Name	System #	System Name	Const Year	Receiver Name	Treatment Class	Design Capacity [m3/d]	Max Daily Volume [m3/d]	Wastewater System Type	Wastewater Treatment Level	Wastewater Disinfection Chlorine	Wastewater Disinfection UV	Discharge Frequency	Wastewater Sludge Treatment
172	Aamjiwnaang	7735	Aamjiwnaang Wastewater System	1997	MTA	MTA	377.2	377.2	MTA	MTA	MTA	MTA	MTA	MTA
153	Anishinabe of Wauzhushk Onigum	7260	Bald Indian Bay Wastewater System	2000	Lake, Reservoir	Level I	171	67	RBC	Secondary	Yes	No	Continuous	Yes
125	Anishnaabeg of Naongashiing	7259	Saug-A-Gaw-Sing Wastewater Treatment System	2000	Lake, Reservoir	Level I	77.6	77.6	RBC	Tertiary	No	Yes	Continuous	Yes
242	Aroland	7714	Aroland Wastewater System	1995	Wetland	Level I			Faculative lagoon	Secondary	No	No	Spring, fall	No
143	Attawapiskat	7717	Attawapiskat Wastewater System	2001	Large River	Level I	1238	1021	Faculative lagoon	Secondary	No	No	Spring, fall	No
198	Batchewana First Nation	7721	Batchewana Sanitary Main	1996	MTA	MTA			MTA	MTA	MTA	MTA	MTA	MTA
207	Bearskin Lake	7749	Bearskin Lake Wastewater System	1994	Lake, Reservoir	Level I	135	170	Faculative lagoon	Secondary	No	No	Spring, fall	No
197	Biinjitiwaabik Zaaging Anishinaabek	7739	Rocky Bay Wastewater System	1987	Lake, Reservoir	Level II	195.8	156	Mechanical	Tertiary	Yes	No	Continuous	Yes
216	Cat Lake	7751	Cat Lake Wastewater System	1995	Lake, Reservoir	Level I	108	212.5	Faculative lagoon	Secondary	No	No	Spring	Yes
138	Chippewas of Georgina Island		GEORGINA ISLAND FIRST NATION WASTEWATER TREATMENT SYSTEM	1992	Tile Field	Small System	1.3		Faculative lagoon	Secondary	No	No	Continuous	Yes
171	Chippewas of Kettle and Stony Point	7734	Kettle and Stony Point Wastewater System	2000	Creek	Level II	240	107	RBC	Secondary	No	Yes	Continuous	No
166	Chippewas of the Thames First Nation	NEW001	ANTLER RIVER SENIORS COMPLEX WWTP	2007	Tile Field	Small System	9.75	9.75	Other	Secondary	No	No	Other	No
166	Chippewas of the Thames First Nation	7732	Chippewas of the Thames Wastewater System	2001	Creek	Level III	99.6	49.8	SBR	Tertiary	No	Yes	Continuous	Yes
182	Constance Lake	7708	Constance Lake Wastewater System	1997	Wetland	Level I	685	431	Faculative lagoon	Secondary	No	No	Spring, fall	No
126	Couchiching First Nation	7724	Town of Fort Frances	1998	MTA	MTA	453	329	MTA	MTA	MTA	MTA	MTA	MTA
237	Deer Lake	7705	Deer Lake Wastewater System	2001	Lake, Reservoir	Level II	284		RBC	Secondary	Yes		Continuous	Yes
218	Dokis	NEW001	DOKIS WASTEWATER TREATMENT SYSTEM	2008	Wetland	Level I	6.8		Faculative lagoon	Secondary	No	No	Fall	No
183	Eabametoong First Nation	7709	Eabametoong Wastewater System	1995	Wetland	Level I	548	548	Faculative lagoon	Secondary	No	No	Spring	No
142	Fort Albany	7716	Fort Albany Wastewater System	1997	Creek	Level I	730	493	Faculative lagoon	Secondary	No	No	Continuous	No
215	Fort Severn	17014	Fort Severn Wastewater System	1995	Wetland	Level I	84	133	Faculative lagoon	Secondary	No	No	Fall	No
187	Fort William	7737	Fort William First Nation Wastewater System	1998	Wetland	Level I	190	125	Faculative lagoon	Secondary	No	No	Spring, fall	No
185	Ginoogaming First Nation	7711	Town of Long Lac	1977	MTA	MTA			MTA	MTA	MTA	MTA	MTA	MTA
149	Grassy Narrows First Nation	7694	Grassy Narrows Wastewater System	2004	Lake, Reservoir	Level II	256	294	RBC	Secondary	Yes	No	Continuous	Yes
188	Gull Bay (Kiashke Zaaging Anishinaabek)	7738	Gull Bay Wastewater System	1996	River	Level I	180	195	Faculative lagoon	Secondary	No	No	Spring, fall	No
154	Iskatewizaagegan No. 39 Independent First Nation	7696	Shoal Lake 39 Wastewater System	2000	Lake, Reservoir	Level II	255	80	ActivatedSludgePlant	Tertiary	Yes	Yes	Continuous	Yes
210	Kasabonika Lake	7729	Kasabonika Lake Wastewater System	1993	Lake, Reservoir	Level II	200	230	RBC	Secondary	Yes	No	Continuous	Yes
243	Kashechewan	7720	Kashechewan Wastewater System	1997	Creek	Level I	780	564	Faculative lagoon	Secondary	No	No	Spring, fall	No
325	Kee-Way-Win First Nation	7704	Keewaywin Wastewater System	2001	Lake, Reservoir	Level I	164	134	Faculative lagoon	Secondary	No	No	Spring	No
212	Kingfisher	7730	Kingfisher Lake Wastewater System	1996	Wetland	Level I	339	126	Faculative lagoon	Secondary	No	No	Fall	Yes
209	Kitchenuhmaykoosib Inninuwug	7700	Big Trout Lake Wastewater System	2002	Lake, Reservoir	Level I	205	160	Faculative lagoon	Secondary			Fall	No
127	Lac La Croix	7725	Lac La Croix Wastewater System	2004	River	Level I	86.7	83	Faculative lagoon	Secondary	No	No	Spring, fall	No
184	Long Lake No.58 First Nation	7710	Town of Long Lac	1985	MTA	MTA			MTA	MTA	MTA	MTA	MTA	MTA
174	Magnetawan	7746	Magnetawan Wastewater System	1998	River	Level II	70		RBC	Secondary	No	No	Continuous	No
186	Martin Falls	7715	Marten Falls Wastewater System	1997	Wetland	Level I	128	104	Faculative lagoon	Secondary			Spring	No
181	M'Chigeeng First Nation	7744	Lakeview Communal Sewage System	1990	Lake, Reservoir	Level I	450	200	Faculative lagoon	Secondary	No	No	Spring, fall	No
181	M'Chigeeng First Nation	7745	M'Chigeeng Village Communal Sewage System	1990	Lake, Reservoir	Level I	391	700	Faculative lagoon	Secondary	No	No	Spring, fall	No
203	Mishkeegogamang		Teacherage and Nursing Residence Septic System	2000	Tile Field	Small System	unknown	unknown	Septic	Primary	No	No	Continuous	No
140	Mississaugas of Scugog Island First Nation		APARTMENT COMPLEX	1991	Sub-Surface/Ground	Small System	8		Septic	Primary	No	No	Continuous	No
120	Mississaugas of the Credit	7742	New Credit Wastewater System	1997	Creek	Level I	446.5	160	Faculative lagoon	Tertiary	No	No	Other	No
159	Mohawks of Akwesasne	7486	Akwesasne Block 97 RBC	1990	Large River	Level I	200	163	RBC	Secondary	No	Yes	Continuous	Yes
159	Mohawks of Akwesasne	NEW001	AKWESASNE CHAPMAN ROAD WETLAND TREATMENT SYSTEM	2006	Wetland	Level I	45	45	Septic	Primary	No	No	Continuous	No
159	Mohawks of Akwesasne	15920	Akwesasne Cornwall Island Arena RBC	1995	Large River	Level I	30	23	RBC	Secondary	No	Yes	Continuous	Yes
159	Mohawks of Akwesasne	7294	AKWESASNE NO. 59 - Daycare (ARCHIVE)	2000	Sub-Surface/Ground	Level I	4.7	2.9	Other	Primary	No	No	Continuous	No
159	Mohawks of Akwesasne	7298	Akwesasne Syne RBC/Lagoon	1991	Wetland	Level I	68	110	RBC	Secondary	No	Yes	Continuous	Yes
159	Mohawks of Akwesasne	7297	Cornwall Island Akwesasne Mohawk School RBC	1990	Large River	Level I	60	52.6	RBC	Secondary	No	Yes	Continuous	No
159	Mohawks of Akwesasne	7293	St.Regis Wastewater Treatment Plant	1991	Large River	Level II	3685	994	RBC	Secondary	No	Yes	Continuous	No
164	Mohawks of the Bay of Quinte	7649	Town of Deseronto Wastewater System	1997	MTA	MTA	238.6	219.4	MTA	MTA	MTA	MTA	MTA	MTA
144	Moose Cree First Nation	7718	Moose Factory Wastewater System	1987	Large River	Level II	1875	1660	Aerated lagoon	Secondary			Continuous	No
213	Muskrat Dam Lake	7702	Muskrat Dam Lake Wastewater System	2007	Lake, Reservoir	Level I	159	118.7	Faculative lagoon	Secondary	No	No	Fall	No
128	Naicatchewenin	7726	Naicatchewenin Wastewater System	1996	Lake, Reservoir	Level I	115.86	80.3	Faculative lagoon	Secondary	No	No	Spring, fall	No
158	Naotkamegwanning	7693	Whitefish Bay Wastewater System	1998	Lake, Reservoir	Level I	180	206	RBC	Secondary	Yes	No	Continuous	Yes
239	Neskantaga First Nation	17015	Neskantaga Wastewater System	2003	Wetland	Level I	250	122	Faculative lagoon	Secondary	No	No	Spring, fall	No
241	Nibinamik First Nation	7712	Nibinamik Wastewater System	1997	Lake, Reservoir	Level I	175	147	Faculative lagoon	Secondary	No	No	Spring, fall	No
220	Nipissing First Nation	NEW001	GARDEN VILLAGE STP	2009	Wetland	Level II	380	69	Mechanical	Tertiary	No	Yes	Other	No
204	North Caribou Lake	7748	North Caribou Lake Wastewater System	1997	Lake, Reservoir	Level I	208	257	Faculative lagoon	Secondary	No	No	Other	No
238	North Spirit Lake	7706	North Spirit Lake Wastewater System	1999	River	Level II	150.0	116	RBC	Secondary	Yes		Continuous	No
147	Ochiichagwebabigoining First Nation	7736	The Dalles Wastewater System	2001	River	Level I	164.8	49.7	Faculative lagoon	Secondary	No	No	Other	Yes
169	Oneida Nation of the Thames	NEW001	ONEIDA COLLIN RUSSELL WASTEWATER SYSTEM	1994	Creek	Level II	150	36.9	Mechanical	Tertiary	No	Yes	Other	No
169	Oneida Nation of the Thames	7733	Oneida Village Wastewater System	2000	Creek	Level I	66.8	66.8	SBR	Tertiary	No	Yes	Other	Yes
146	Peawanuck	7743	Peawanuck Wastewater System	1988	Large River	Level I	98.3	76	Faculative lagoon	Secondary	No	No	Spring	No
208	Pikangikum	7703	Pikangikum Wastewater System	1985	Wetland	Level I	190	135.4	Faculative lagoon	Secondary	No	No	Spring	No
236	Poplar Hill	7707	Poplar Hill Wastewater System	1999	River	Level II	218	123	RBC	Secondary	Yes	No	Continuous	No
130	Rainy River First Nations	7727	Manitou Rapids Wastewater System	1995	River	Level I	143	140	Faculative lagoon	Secondary	No	No	Spring, fall	No
214	Sachigo Lake	7750	Sachigo Lake Wastewater System	2003	Lake, Reservoir	Level I	223	241	Faculative lagoon	Secondary	No	No	Spring, fall	No
211	Sandy Lake First Nation	7740	Sandy Lake Wastewater System	1992	River	Level I	770	754	Faculative lagoon	Secondary	No	No	Spring, fall	No

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First Nation Information				Wastewater System Information										
Band #	Band Name	System #	System Name	Const Year	Receiver Name	Treatment Class	Design Capacity [m3/d]	Max Daily Volume [m3/d]	Wastewater System Type	Wastewater Treatment Level	Wastewater Disinfection Chlorine	Wastewater Disinfection UV	Discharge Frequency	Wastewater Sludge Treatment
123	Saugeen	NEW001	SAUGEEN WASTEWATER SYSTEM	0	Tile Field	Small System	21	21	Mechanical	Secondary	No	No	Continuous	No
132	Seine River First Nation	7723	Seine River Wastewater System	1996	Wetland	Level I	361	138.6	Faculative lagoon	Secondary	No	No	Spring, fall	No
137	Shawanaga First Nation		TEN-PLEX SEPTIC SYSTEM	0	Tile Field	Small System			Septic	Primary	No	No	Continuous	No
121	Six Nations of the Grand River	7731	Six Nations of the Grand River Wastewater System	1999	Creek	Level I	947	900	Faculative lagoon	Secondary	No	No	Spring, fall	No
145	Taykwa Tagamou Nation	7719	New Post Wastewater System	2009	Large River	Level I	52	42	Faculative lagoon	Secondary	No	No	Continuous	No
222	Temagami First Nation	7741	Bear Island Wastewater System	1998	Wetland	Level I	95	67	Faculative lagoon	Secondary	No	No	Spring	Yes
150	Wabaseemoong Independent Nations	7695	Wabaseemoong Wastewater System	2001	River	Level II	908	272	RBC	Secondary	No	Yes	Continuous	Yes
170	Walpole Island	NEW001	ARENA WASTEWATER SYSTEM	1996	River	Small System	unknown	unknown	Mechanical	Tertiary	No	Yes	Continuous	No
170	Walpole Island	7698	Walpole Island Residential Wastewater System	1994	Wetland	Level II	36	36	Mechanical	Tertiary	No	Yes	Continuous	No
206	Wapekeka	7728	Wapekeka Wastewater System	1990	River	Level I	102	141	Faculative lagoon	Secondary	No	No	Spring, fall	No
240	Webequie First Nation	7713	Webequie Wastewater System	2001	River	Level II	400	263	RBC	Secondary	No	Yes	Continuous	Yes
175	Wikwemikong	7747	Wikwemikong Wastewater System	1997	Lake, Reservoir	Level II	1970	635	RBC	Secondary	Yes	No	Continuous	Yes

Table D.2 - 2: Regional Summary of Wastewater Collection Systems, Effluent Quality and Operators

First Nation Information				Collection System Information										Effluent Quality		Operator Information					
Band #	Band Name	System #	System Name	Collection Type	Collection Class	Pop. Served	Homes Piped	Homes Trucked	No. of Trucks in Service	Pipe Length	Pipe Length / Connection	Low Pressure Sewer	No. of Pumping Stations	Meets Federal Guidelines (1976)	Cause of Failure	Primary Operator Exists	Primary Operator Treatment Class	Primary Operator Collection Class	Secondary Operator Exists	Secondary Operator Treatment Class	Secondary Operator Collection Class
172	Aamjiwnaang	7735	Aamjiwnaang Wastewater System	Piped, Low Pressure	MTA	909	221	0	0	8000	36	Yes	3	MTA	MTA	NR	Not Required	Not Required	No	Not Required	Not Required
153	Anishinabe of Wauzhushk Onigum	7260	Bald Indian Bay Wastewater System	Piped, Trucked	Level I	285	58	15	1	1471.5	25	No	2	Meets Requirements	Unknown	Yes	No Certification	No Certification	Yes	No Certification	No Certification
125	Anishnaabeg of Naongashiing	7259	Saug-A-Gaw-Sing Wastewater Treatment System	Piped	Level I	175	30	0	0	1760	58	No	1	High Freq OR High Mag	Operation	Yes	No Certification	No Certification	No	No Operator	No Operator
242	Aroland	7714	Aroland Wastewater System	Piped	Small System	334	111	0	0	3262	29	No	0	Meets Requirements	Unknown	Yes	No Certification	No Certification	No	No Operator	No Operator
143	Attawapiskat	7717	Attawapiskat Wastewater System	Piped	Level I	1909	280	0	0	7526	26	No	2	Meets Requirements	Unknown	Yes	No Certification	No Certification	No	No Operator	No Operator
198	Batchewana First Nation	7721	Batchewana Sanitary Main	Piped	MTA	538	182	0	0	2625	14	No		MTA	MTA	NR	Not Required	Not Required	No	Not Required	Not Required
207	Bearskin Lake	7749	Bearskin Lake Wastewater System	Piped, Trucked	Level I	428	40	112	2	800.4	20	No	1	Meets Requirements	Unknown	Yes	No Certification	No Certification	Yes	No Certification	No Certification
197	Biinjitiwaabik Zaaging Anishinaabek	7739	Rocky Bay Wastewater System	Piped, Trucked	Level II	345	78	0		1537	19	No	1	Low Freq, Low Mag	Operation	Yes	No Certification	No Certification	Yes	No Certification	No Certification
216	Cat Lake	7751	Cat Lake Wastewater System	Piped	Level I	512	109	0	0	5715.3	52	No	2	Unknown	Unknown	No	No Operator	No Operator	No	No Operator	No Operator
138	Chippewas of Georgina Island		GEORGINA ISLAND FIRST NATION WASTEWATER TREATMENT SYSTEM	Trucked	Small System	202	0	0	2			No		Unknown	Unknown	Yes	No Certification	No Certification	No	No Operator	No Operator
171	Chippewas of Kettle and Stony Point	7734	Kettle and Stony Point Wastewater System	Piped	Level I	288	85	0	0	3753.1	44	No	1	Meets Requirements	Unknown	Yes	No Certification	Level I	Yes	No Certification	No Certification
166	Chippewas of the Thames First Nation	NEW001	ANTLER RIVER SENIORS COMPLEX WWTP	Piped	NA	30	1	0	0			No	1	Unknown	Unknown	Yes	Level II	Level I	Yes	No Certification	No Certification
166	Chippewas of the Thames First Nation	7732	Chippewas of the Thames Wastewater System	Piped	Level I	70	21	0	0	2146.5	102	No	2	High Freq, Low Mag	Unknown	Yes	Level II	Level I	Yes	No Certification	No Certification
182	Constance Lake	7708	Constance Lake Wastewater System	Piped	Level II	842	246	0	0	6666	27	No	4	Unknown	Unknown	Yes	Level I	Level I	Yes	Level I	Level I
126	Couchiching First Nation	7724	Town of Fort Frances	Piped, Trucked	Level I	762	225	1	0	5386	23	No	3	MTA	MTA	Yes	Not Required	Not Required	Yes	Not Required	Not Required
237	Deer Lake	7705	Deer Lake Wastewater System	Piped, Trucked	Level I	968	54	137	2	1427	26	No	4	High Freq OR High Mag	Unknown	Yes	No Certification	No Certification	Yes	No Certification	No Certification
218	Dokis	NEW001	DOKIS WASTEWATER TREATMENT SYSTEM	Trucked	NA	178	0	95	1			No		Unknown	Unknown	Yes	No Certification	No Operator	Yes	No Certification	No Operator
183	Eabametoong First Nation	7709	Eabametoong Wastewater System	Piped	Level I	1451	267	0	0	6139	22	No	4	Meets Requirements	Unknown	Yes	Level I	Level I	Yes	No Certification	No Certification
142	Fort Albany	7716	Fort Albany Wastewater System	Piped	Level I	1210	171	0	0	5065.7	29	No	3	Unknown	Unknown	No	No Operator	No Operator	No	No Operator	No Operator
215	Fort Severn	17014	Fort Severn Wastewater System	Trucked	NA	602	0	112	2			No		Unknown	Unknown	Yes	No Certification	No Certification	Yes	No Certification	No Certification
187	Fort William	7737	Fort William First Nation Wastewater System	Piped	Level II	300	79	0	0	3102.4	39	No	2	High Freq OR High Mag	Operation	No	No Operator	No Operator	No	No Operator	No Operator
185	Ginoogaming First Nation	7711	Town of Long Lac	Piped	Small System	208	66	0	0	3100	46	No	2	MTA	MTA	Yes	Not Required	Not Required	Yes	Not Required	Not Required
149	Grassy Narrows First Nation	7694	Grassy Narrows Wastewater System	Piped	Level II	798	187	0	0	6189	33	No	5	Low Freq, Low Mag	Operation	Yes	No Certification	No Certification	Yes	No Certification	No Certification
188	Gull Bay (Kiashke Zaaging Anishinaabek)	7738	Gull Bay Wastewater System	Piped	Level I	470	75	0	0	2661.2	35	No	1	Unknown	Unknown	Yes	No Certification	No Certification	No	No Operator	No Operator
154	Iskatewizaagegan No. 39 Independent First Nation	7696	Shoal Lake 39 Wastewater System	Piped	Level I	198	78	8	0	2444	31	No	2	Meets Requirements	Unknown	Yes	Level I	Level I	Yes	No Certification	No Certification
210	Kasabonika Lake	7729	Kasabonika Lake Wastewater System	Piped, Trucked	Level I	930	166	28	1	4835	29	No	4	High Freq OR High Mag	Design & Operation	Yes	No Certification	No Certification	Yes	No Certification	No Certification
243	Kashechewan	7720	Kashechewan Wastewater System	Piped	Level I	1575	248	0	0	7807.2	31	No	3	Unknown	Unknown	Yes	No Certification	No Certification	No	No Operator	No Operator
325	Kee-Way-Win First Nation	7704	Keewaywin Wastewater System	Piped, Low Pressure	Level I	504	82	0	0			Yes	1	Unknown	Unknown	No	No Operator	No Operator	No	No Operator	No Operator
212	Kingfisher	7730	Kingfisher Lake Wastewater System	Piped, Trucked	Level I	489	79	49	1	1907	24	No	1	Unknown	Unknown	Yes	No Certification	No Certification	Yes	No Certification	No Certification
209	Kitchenuhmaykoosib Inninuwug	7700	Big Trout Lake Wastewater System	Piped, Trucked	Level I	905	87	186	3	3196.1	36	No	5	Unknown	Unknown	Yes	No Certification	No Certification	Yes	No Certification	No Certification
127	Lac La Croix	7725	Lac La Croix Wastewater System	Piped, Low Pressure	Level I	283	81	0	0	2298.5	28	Yes	1	Unknown	Unknown	Yes	No Certification	No Certification	No	No Operator	No Operator
184	Long Lake No.58 First Nation	7710	Town of Long Lac	Piped	Level I	432	116	0	0	5834	50	No	2	MTA	MTA	Yes	Not Required	Not Required	No	Not Required	Not Required
174	Magnetawan	7746	Magnetawan Wastewater System	Piped, Low Pressure	Level I	92	32	0	0	1060	33	Yes	1	Low Freq, Low Mag	Unknown	Yes	Level I	Level I	No	No Operator	No Operator
186	Martin Falls	7715	Marten Falls Wastewater System	Piped	Level I	288	91	0	0	2320	25	No	2	Unknown	Unknown	Yes	No Certification	No Certification	No	No Operator	No Operator
181	M'Chigeeng First Nation	7744	Lakeview Communal Sewage System	Piped, Low Pressure	Level II	246	101	0	0	1815	17	Yes	1	Unknown	Unknown	Yes	Level II	Level II	Yes	Level II	Level II
181	M'Chigeeng First Nation	7745	M'Chigeeng Village Communal Sewage System	Piped, Low Pressure	Level II	314	132	0	0	5118.4	38	Yes	1	Unknown	Unknown	Yes	Level II	Level II	Yes	Level II	Level II
203	Mishkeegogamang		Teacherage and Nursing Residence Septic System	Piped	Small System	36	9	0	0			No	1	Meets Requirements	Unknown	No	No Certification	No Certification	No	No Operator	No Operator
140	Mississaugas of Scugog Island First Nation		APARTMENT COMPLEX	Piped	Small System	9	0	0	0			No	0	Unknown	Unknown	Yes	No Certification	No Certification	Yes	No Certification	No Certification
120	Mississaugas of the Credit	7742	New Credit Wastewater System	Piped	Level II	381	71	17	0	4088	57	No	3	Meets Requirements	Unknown	Yes	Level I	Level I	Yes	Level I	Level I
159	Mohawks of Akwesasne	7486	Akwesasne Block 97 RBC	Piped	Level I	461	64	0	0	985	15	No	1	High Freq AND High Mag	Operation	Yes	Level I	Level I	Yes	No Certification	No Certification
159	Mohawks of Akwesasne	NEW001	AKWESASNE CHAPMAN ROAD WETLAND TREATMENT SYSTEM	Piped	Level I	108	15	0	0			No	0	Unknown	Unknown	Yes	Level I	Level I	Yes	No Certification	No Certification
159	Mohawks of Akwesasne	15920	Akwesasne Cornwall Island Arena RBC	Piped	Level I	7	1	0	0			No	1	Meets Requirements	Unknown	Yes	Level I	Level I	Yes	No Certification	No Certification
159	Mohawks of Akwesasne	7294	AKWESASNE NO. 59 - Daycare (ARCHIVE)	Piped, Low Pressure	Level I	7	1	0	0			Yes	1	Unknown	Unknown	Yes	Level I	Level I	Yes	No Certification	No Certification
159	Mohawks of Akwesasne	7298	Akwesasne Syne RBC/Lagoon	Piped, Low Pressure	Level I	266	37	0	0	508	13	Yes	2	High Freq AND High Mag	Operation	Yes	Level II	Level II	Yes	No Certification	No Certification
159	Mohawks of Akwesasne	7297	Cornwall Island Akwesasne Mohawk School RBC	Piped, Low Pressure	Level I	36	5	0	0	472	94	Yes	1	High Freq AND High Mag	Operation	Yes	Level I	Level I	Yes	No Certification	No Certification
159	Mohawks of Akwesasne	7293	St.Regis Wastewater Treatment Plant	Piped	Level II	2520	350	0	0	5328	15	No	4	Meets Requirements	Unknown	Yes	Level I	Level I	Yes	No Certification	No Certification
164	Mohawks of the Bay of Quinte	7649	Town of Deseronto Wastewater System	Piped	Level II	707	257	0	0	7662	29	No	9	MTA	MTA	Yes	Not Required	Not Required	Yes	Not Required	Not Required
144	Moose Cree First Nation	7718	Moose Factory Wastewater System	Piped	Level I	2570	469	0	0	12275	26	No	4	High Freq, Low Mag	Operation	No	No Operator	No Operator	No	No Operator	No Operator
213	Muskrat Dam Lake	7702	Muskrat Dam Lake Wastewater System	Piped	Level I	286	88	0	0	6139	69	No	5	Unknown	Unknown	No	No Certification	No Certification	No	No Certification	No Certification
128	Naicatchewenin	7726	Naicatchewenin Wastewater System	Piped	Level I	266	83	0	0	2130	25	No	2	Meets Requirements	Unknown	Yes	No Certification	No Certification	Yes	No Certification	No Certification
158	Naotkamegwanning	7693	Whitefish Bay Wastewater System	Piped	Level I	565	120	0	0	3877	32	No	2	Low Freq, Low Mag	Design & Operation	Yes	No Certification	No Certification	Yes	No Certification	No Certification
239	Neskantaga First Nation	17015	Neskantaga Wastewater System	Piped	Level I	333	85	0	0	2950	34	No	2	Meets Requirements	Unknown	Yes	No Certification	No Certification	No	No Operator	No Operator
241	Nibinamik First Nation	7712	Nibinamik Wastewater System	Piped	Level I	354	101	0	0	3250	32	No	2	Unknown	Unknown	Yes	No Certification	No Certification	Yes	No Certification	No Certification
220	Nipissing First Nation	NEW001	GARDEN VILLAGE STP	Piped	Level I	286	106	0	0	5313	50	No	1	Meets Requirements	Unknown	Yes	Level I	Level I	Yes	No Certification	No Certification
204	North Caribou Lake	7748	North Caribou Lake Wastewater System	Piped, Trucked	Level I	834	179	88	2	4773.8	26	No	4	High Freq AND High Mag	Design & Operation	Yes	Level I	No Certification	Yes	No Certification	No Certification
238	North Spirit Lake	7706	North Spirit Lake Wastewater System	Piped, Trucked	Level I	450	40	38	1	1152	28	No	3	High Freq AND High Mag	Operation	Yes	No Certification	No Certification	Yes	No Certification	No Certification
147	Ochiichagwebabigoining First Nation	7736	The Dalles Wastewater System	Piped	Level I	124	45	0	0	1685	37	No	2	Unknown	Unknown	Yes	No Certification	No Certification	Yes	No Certification	No Certification
169	Oneida Nation of the Thames	NEW001	ONEIDA COLLIN RUSSELL WASTEWATER SYSTEM	Piped	Level I	89	21	0	0	758.03	36	No	3	Unknown	Unknown	Yes	Level I	Level II	Yes	Level I	Level II
169	Oneida Nation of the Thames	7733	Oneida Village Wastewater System	Piped	Level I	161	38	0	0	1819.1	47	No	1	Unknown	Unknown	Yes	Level I	Level II	Yes	Level I	Level II
146	Peawanuck	7743	Peawanuck Wastewater System	Piped	Level II	295	70	0	0	2635	37	No	1	Unknown	Unknown	Yes	No Certification	No Certification	Yes	No Certification	No Certification
208	Pikangikum	7703	Pikangikum Wastewater System	Piped, Trucked	Level I	104	3	20	1	744	248	No	2	Meets Requirements	Unknown	Yes	No Certification	No Certification	Yes	No Certification	No Certification
236	Poplar Hill	7707	Poplar Hill Wastewater System	Piped, Trucked	Level I	502	25	73	1	1225	49	No	0	High Freq AND High Mag	Operation	Yes	No Certification	No Certification	Yes	No Certification	No Certification
130	Rainy River First Nations	7727	Manitou Rapids Wastewater System	Piped	Level I	478	80	0	0	2633	32	No	3	High Freq OR High Mag	Unknown	Yes	Level I	Level II	Yes	No Certification	No Certification
214	Sachigo Lake	7750	Sachigo Lake Wastewater System	Piped, Trucked	Level I	534	128	37	1	6543	51	No	2	Unknown	Unknown	Yes	No Certification	No Certification	Yes	No Certification	No Certification
211	Sandy Lake First Nation	7740	Sandy Lake Wastewater System	Piped, Trucked	Level I	2501	260	140	3	10673	41	No	5	Unknown	Unknown	Yes	No Certification	No Certification	Yes	No Certification	No Certification
123	Saugeen	NEW001	SAUGEEN WASTEWATER SYSTEM	Piped	Small System	51	17	0	0			No	0	Unknown	Unknown	Yes	No Certification	No Certification	Yes	No Certification	No Certification
132	Seine River First Nation	7723	Seine River Wastewater System	Piped	Level II	334	78	0	0	3456.9	44	No	1	Unknown	Unknown	Yes	Level I	Level I	Yes	No Certification	No Certification
137	Shawanaga First Nation		TEN-PLEX SEPTIC SYSTEM	Piped	NA	25	10	0	0			No	0	Unknown	Unknown	No	No Operator	No Operator	No	No Operator	No Operator
121	Six Nations of the Grand River	7731	Six Nations of the Grand River Wastewater System	Piped, Trucked	Level I	1660	301	100	3	4891.3	16	No	6	Unknown	Unknown	Yes	Level I	Level I	Yes	No Certification	No Certification
145	Taykwa Tagamou Nation	7719	New Post Wastewater System	Piped	Level I	100	24	0	0	1229	51	No	0	Unknown	Unknown	Yes	No Certification	No Certification	Yes	No Certification	No Certification
222	Temagami First Nation	7741	Bear Island Wastewater System	Piped, Low Pressure	Level I	226	68	0	0	2973	43	Yes	1	Meets Requirements	Unknown	Yes	No Certification	No Certification	Yes	No Certification	No Certification
150	Wabaseemoong Independent Nations	7695	Wabaseemoong Wastewater System	Piped	Level II	864	195	0	0	5356.4	27	No	7	Low Freq, Low Mag	Operation	Yes	No Certification	No Certification	No	No Operator	No Operator
170	Walpole Island	NEW001	ARENA WASTEWATER SYSTEM	Piped	Small System	0	2	0	0			No	0	Meets Requirements	Unknown	No	No Operator	No Operator	No	No Operator	No Operator
170	Walpole Island	7698	Walpole Island Residential Wastewater System	Low Pressure	Small System	86	25	0	0			Yes	0	Unknown	Unknown	No	No Operator	No Operator	No	No Operator	No Operator
206	Wapekeka	7728	Wapekeka Wastewater System	Piped, Trucked	Level I	439	95	12	1	2603	27	No	2	Unknown	Unknown	Yes	No Certification	No Certification	Yes	No Certification	No Certification
240	Webequie First Nation	7713	Webequie Wastewater System	Piped, Trucked	Level I	712	200	8	1	3144	15	No	2	High Freq AND High Mag	Operation	Yes	No Certification	No Certification	Yes	No Certification	No Certification
175	Wikwemikong	7747	Wikwemikong Wastewater System	Piped	Level I	1951	585	0	0	14801	25	No	2	High Freq AND High Mag	Design & Operation	Yes	Level II	Level I	Yes	Level I	Level I

NEEGAN BURNSIDE

Appendix E
Risk Summary

NEEGAN BURNSIDE

Appendix E.1

Individual First Nation Water Risk Summary

Table E.1: Individual First Nation Water Risk Summary

Legend: High Risk | Medium Risk | Low Risk

Band #	Band Name	System #	System Name	Water Source	Treatment Class	Source Risk	Design Risk	Operations Risk	Report Risk	Operator Risk	Final Risk Score
242	Aroland	7130	Aroland Water Treatment System	Groundwater	Level I	4.0	1.0	8.0	6.0	7.0	5.1
141	Beausoleil	7159	Cedar Point Water Treatment System	Groundwater	Level I	6.0	1.0	8.0	10.0	1.0	8.0
229	Chapleau Ojibway	7229	Chapleau Ojibwe Water Treatment System	Groundwater	Level I	6.0	2.0	3.0	5.0	1.0	2.8
218	Dokis	7222	Dokis Water Treatment System	Groundwater	Level I	9.0	6.0	8.0	8.0	1.0	8.0
199	Garden River First Nation	NEW001	ECHO RIVER WATER TREATMENT SYSTEM	Groundwater	Level I	7.0	5.0	7.0	8.0	1.0	5.3
199	Garden River First Nation	7147	Garden River Water Treatment System	Groundwater	Level I	7.0	8.0	6.0	6.0	1.0	5.7
231	Henvey Inlet First Nation	7224	Henvey Inlet Pumphouse #2 Water Treatment System	Groundwater	Level I	6.0	2.0	8.0	7.0	4.0	8.0
162	Hiawatha First Nation	NEW002	HIAWATHA APARTMENT COMPLEX	Groundwater	Small System	6.0	8.0	5.0	4.0	1.0	5.1
205	Lac Seul	15905	Kejick Bay Water Treatment System	Groundwater	Level I	7.0	8.0	9.0	10.0	9.0	8.6
205	Lac Seul	15906	Whitefish Bay Water Treatment System	Groundwater	None	7.0	8.0	8.0	10.0	8.0	8.1
219	Matachewan	7226	Matachewan Water Treatment System	Groundwater	Level I	4.0	2.0	1.0	1.0	1.0	1.6
226	Mattagami	7227	Mattagami Water Treatment System	Groundwater	Level I	3.0	3.0	8.0	10.0	6.0	5.8
203	Mishkeegogamang	7189	Mishkeegogamang (Ten House) Well Water Treatment System	Groundwater	Level II	6.0	8.0	8.0	4.0	6.0	8.0
203	Mishkeegogamang	NEW002	WELL AT ACE LAKE	Groundwater	Level I	8.0	8.0	8.0	10.0	6.0	8.0
200	Mississauga	7146	Mississauga Water Treatment System	Groundwater	Level II	7.0	4.0	6.0	10.0	4.0	5.5
140	Mississaugas of Scugog Island First Nation	15899	Mississauga's of Scugog Island Pumphouse #1	Groundwater	Small System	4.0	8.0	2.0	1.0	1.0	3.7
140	Mississaugas of Scugog Island First Nation	15900	Mississauga's of Scugog Island Pumphouse #2	Groundwater	Small System	4.0	1.0	8.0	1.0	1.0	3.4
140	Mississaugas of Scugog Island First Nation	NEW001	MISSISSAUGAS OF SCUGOG ISLAND PUMPHOUSE #3	Groundwater	Small System	4.0	2.0	8.0	1.0	1.0	3.7
220	Nipissing First Nation	7191	Nipissing - Arts Lane Water System	Groundwater	Level I	7.0	3.0	5.0	9.0	1.0	4.2
220	Nipissing First Nation	7195	Nipissing - Dushessnay Well 1	Groundwater	Level I	7.0	8.0	7.0	9.0	1.0	6.3
220	Nipissing First Nation	7196	Nipissing - Dushessnay Well 2, 3 and 4	Groundwater	Level I	6.0	4.0	8.0	10.0	1.0	5.4
220	Nipissing First Nation	7214	Nipissing - Harry Couchie Water Treatment System	Groundwater	Level I	9.0	8.0	6.0	9.0	1.0	6.2
220	Nipissing First Nation	7213	Nipissing - Meadow Site Water Treatment System	Groundwater	Level I	7.0	8.0	8.0	9.0	1.0	8.0
220	Nipissing First Nation	7192	Nipissing - VLA Water System	Groundwater	Level I	9.0	8.0	8.0	9.0	1.0	6.8
151	Northwest Angle No.33	7126	Angle Inlet Water Treatment System	Groundwater	Level II	6.0	7.0	8.0	1.0	1.0	8.0
235	Obashkaandagaang	6532	Obashkaandagaang Water Treatment System	Groundwater	Small System	6.0	8.0	8.0	10.0	1.0	8.0
235	Obashkaandagaang		SOUTH END PUMPHOUSE	Groundwater	Small System	6.0	8.0	10.0	10.0	1.0	8.0
192	Ojibways of the Pic River First Nation	7185	Pic River Water Treatment System	Groundwater	Level II	5.0	5.0	8.0	10.0	1.0	8.0
179	Sagamok Anishnawbek	7152	Sagamok Water Treatment System	Groundwater	Level I	5.0	2.0	4.0	9.0	1.0	3.4
201	Serpent River First Nation	7148	Serpent River Pumphouse #1	Groundwater	Level I	8.0	4.0	8.0	10.0	3.0	6.0
201	Serpent River First Nation	7149	Serpent River Pumphouse #2	Groundwater	Level II	7.0	4.0	10.0	10.0	3.0	6.5
201	Serpent River First Nation	7150	Serpent River Pumphouse #3	Groundwater	Level I	6.0	4.0	10.0	10.0	3.0	8.0
137	Shawanaga First Nation	7198	Shawanaga Water Treatment System	Groundwater	Level II	10.0	5.0	8.0	10.0	3.0	6.5
145	Taykwa Tagamou Nation	7143	New Post Water Treatment System	Groundwater	Level I	3.0	8.0	8.0	9.0	5.0	8.0
202	Thessalon	7153	Thessalon Water Treatment System	Groundwater	Level I	9.0	8.0	8.0	6.0	5.0	8.0
233	Wahgoshig	7230	Wahgoshig Water Treatment System	Groundwater	Level I	2.0	1.0	8.0	9.0	1.0	4.0
136	Wasauksing First Nation		COMMUNITY WELL (SODA'S)	Groundwater	None	6.0	8.0	8.0	10.0	1.0	8.0
136	Wasauksing First Nation		SIXPLEX WELL	Groundwater	Small System	5.0	4.0	8.0	10.0	1.0	8.0
234	Wawakapewin	7168	Wawakapewin Water Treatment System	Groundwater	Small System	7.0	7.0	6.0	10.0	8.0	7.2
125	Anishnaabeg of Naongashiing	6482	Saug-A-Gaw-Sing Water Treatment System	Groundwater GUDI	Level II	8.0	4.0	10.0	8.0	7.0	7.2
221	Chapleau Cree First Nation	7139	Chapleau Cree Water Treatment System	Groundwater GUDI	Level II	10.0	8.0	8.0	5.0	1.0	6.5
166	Chippewas of the Thames First Nation	7174	Chippewas of the Thames Water Treatment System	Groundwater GUDI	Level I	9.0	9.0	3.0	5.0	1.0	5.2
161	Curve Lake	7201	Curve Lake Water Treatment System	Groundwater GUDI	Level I	10.0	8.0	5.0	10.0	1.0	6.1
159	Mohawks of Akwesasne	6485	Akwesasne Wade Lafrance Rd. Pumphouse house	Groundwater GUDI	Level I	10.0	8.0	8.0	10.0	1.0	7.0
167	Moravian of the Thames	7175	Moravian of the Thames Water Treatment System	Groundwater GUDI	Level I	10.0	8.0	8.0	7.0	1.0	8.0
220	Nipissing First Nation	8076	Nipissing - Beaucage Village Water Treatment System	Groundwater GUDI	Level I	10.0	8.0	8.0	10.0	1.0	8.0
220	Nipissing First Nation	7212	Nipissing - Business/School Water Treatment System	Groundwater GUDI	None	9.0	8.0	8.0	9.0	10.0	8.6
220	Nipissing First Nation	7194	Nipissing - Garden Village Water System	Groundwater GUDI	Level II	10.0	8.0	1.0	4.0	2.0	4.5
146	Peawanuck	7193	Peawanuck Water Treatment System	Groundwater GUDI	Level I	8.0	5.0	9.0	10.0	4.0	8.0
195	Pic Mobert	15903	Pic Mobert North New Pumphouse Water System	Groundwater GUDI	Level I	10.0	8.0	10.0	10.0	2.0	8.0
130	Rainy River First Nations	7165	Manitou Rapids Water Treatment System	Groundwater GUDI	Level III	9.0	8.0	8.0	1.0	1.0	6.0
201	Serpent River First Nation	7151	Serpent River Pumphouse #5	Groundwater GUDI	Level II	10.0	4.0	9.0	10.0	3.0	8.0
172	Aamjiwnaang	7178	Aamjiwnaang Water System	MTA	MTA	2.0	2.0	1.0	10.0	1.0	2.3

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					Legend:	High Risk		Medium Risk		Low Risk	
Band #	**Band Name**	**System #**	**System Name**	**Water Source**	**Treatment Class**	**Source Risk**	**Design Risk**	**Operations Risk**	**Report Risk**	**Operator Risk**	**Final Risk Score**
198	Batchewana First Nation	7154	Ojibways of Batchewana Water System (MTA)	MTA	MTA	2.0	1.0	3.0	1.0	1.0	1.7
126	Couchiching First Nation	7161	Town of Fort Frances	MTA	MTA	1.0	2.0	2.0	7.0	1.0	2.2
187	Fort William	7182	Thunder Bay Water Treatment System	MTA	MTA	3.0	1.0	6.0	8.0	1.0	3.4
185	Ginoogaming First Nation	7134	Town of Long Lac Water Treatment System	MTA	MTA	1.0	1.0	8.0	10.0	6.0	5.0
184	Long Lake No.58 First Nation	7133	Town of Long Lac Water Treatment System	MTA	MTA	2.0	1.0	8.0	10.0	10.0	5.9
120	Mississaugas of the Credit	7211	New Credit Water Distribution System	MTA	MTA	1.0	8.0	8.0	8.0	1.0	8.0
164	Mohawks of the Bay of Quinte	NEW001	TOWN OF DESERONTO WATER SYSTEM	MTA	MTA	1.0	3.0	6.0	1.0	1.0	3.1
168	Munsee-Delaware Nation	NEW001	WATER DISTRIBUTION	MTA	MTA	1.0	8.0	10.0	1.0	1.0	8.0
123	Saugeen	7210	Town of Saugeen Shores Water Treatment System	MTA	MTA	5.0	1.0	2.0	1.0	1.0	1.7
224	Whitefish Lake	7145	Whitefish Lake Water System	MTA	MTA	1.0	8.0	4.0	4.0	1.0	4.3
190	Whitesand	17016	Whitesand Water System	MTA	MTA	3.0	2.0	5.0	10.0	2.0	3.8
153	Anishinabe of Wauzhushk Onigum	15902	Bald Indian Bay Water Treatment Plant	Surface Water	Level I	7.0	8.0	6.0	10.0	1.0	8.0
153	Anishinabe of Wauzhushk Onigum	6484	Wauzhushk Onigum Water Treatment Unit - 2nd Portage	Surface Water	Level I	9.0	8.0	4.0	10.0	1.0	5.7
143	Attawapiskat	7141	Attawapiskat Water Treatment System	Surface Water	Level III	9.0	8.0	10.0	10.0	2.0	7.7
180	Aundeck-Omni-Kaning	7219	Sucker Creek Water Treatment System	Surface Water	Level II	8.0	2.0	8.0	1.0	1.0	4.1
207	Bearskin Lake	7234	Bearskin Lake Water Treatment System	Surface Water	Level II	8.0	5.0	8.0	8.0	2.0	5.9
141	Beausoleil	7158	Christian Island Water Treatment System	Surface Water	Level II	7.0	2.0	8.0	5.0	1.0	8.0
124	Big Grassy	6466	Big Grassy Water Treatment System	Surface Water	Level II	8.0	2.0	8.0	8.0	1.0	4.8
197	Biinjitiwaabik Zaaging Anishinaabek	7188	Rocky Bay Water Treatment System	Surface Water	Level II	8.0	1.0	8.0	1.0	1.0	3.8
228	Brunswick House	7228	Brunswick House Water Treatment System	Surface Water	Level I	8.0	1.0	8.0	10.0	9.0	6.3
216	Cat Lake	7236	Cat Lake Water Treatment System	Surface Water	Level III	8.0	4.0	8.0	6.0	10.0	7.0
138	Chippewas of Georgina Island	7157	Georgina Island Water Treatment System	Surface Water	Level II	9.0	6.0	2.0	5.0	9.0	5.6
171	Chippewas of Kettle and Stony Point	7177	Kettle and Stony Point Water Treatment System	Surface Water	Level II	10.0	5.0	8.0	2.0	1.0	5.3
122	Chippewas of Nawash	7203	Neyaashiinigmiing Water Treatment System	Surface Water	Level II	8.0	3.0	8.0	8.0	2.0	8.0
182	Constance Lake	7131	Constance Lake Water Treatment System	Surface Water	Level II	10.0	8.0	8.0	1.0	1.0	8.0
237	Deer Lake	6545	Deer Lake Water Treatment System	Surface Water	Level II	10.0	5.0	8.0	3.0	4.0	6.0
183	Eabametoong First Nation	7132	Eabametoong Water Treatment System	Surface Water	Level II	8.0	8.0	8.0	2.0	2.0	6.2
148	Eagle Lake	6529	Eagle Lake Water Treatment System	Surface Water	Level II	10.0	3.0	8.0	9.0	1.0	8.0
142	Fort Albany	7140	Fort Albany Water Treatment System	Surface Water	Level II	8.0	3.0	8.0	7.0	1.0	8.0
215	Fort Severn	6544	Fort Severn Water Treatment System	Surface Water	Level II	8.0	8.0	9.0	5.0	4.0	7.2
149	Grassy Narrows First Nation	6530	Grassy Narrows Water Treatment System	Surface Water	Level II	9.0	8.0	2.0	8.0	1.0	8.0
188	Gull Bay (Kiashke Zaaging Anishinaabek)	7183	Gull Bay Water Treatment System	Surface Water	Level I	9.0	8.0	9.0	9.0	6.0	8.1
154	Iskatewizaagegan No. 39 Independent First Nat	6533	Shoal Lake 39 Water Treatment System	Surface Water	Level II	7.0	3.0	3.0	1.0	1.0	2.8
210	Kasabonika Lake	7170	Kasabonika Lake Water Treatment System	Surface Water	Level II	8.0	4.0	8.0	4.0	1.0	5.0
243	Kashechewan	7144	Kashechewan Water Treatment System	Surface Water	Level III	10.0	4.0	8.0	6.0	1.0	5.4
325	Kee-Way-Win First Nation	17010	Keewaywin's New Water Treatment System	Surface Water	Level II	7.0	3.0	8.0	2.0	3.0	4.8
212	Kingfisher	7171	Kingfisher Lake Water Treatment System	Surface Water	Level II	8.0	2.0	4.0	2.0	6.0	4.0
209	Kitchenuhmaykoosib Inninuwug	6541	Kitchenuhmaykoosib Water Treatment System	Surface Water	Level II	8.0	2.0	8.0	6.0	6.0	5.6
127	Lac La Croix	7162	Lac La Croix Water Treatment System	Surface Water	Level I	8.0	6.0	9.0	10.0	1.0	6.5
205	Lac Seul	6539	Frenchman's Head Water Treatment System	Surface Water	Level II	9.0	8.0	8.0	4.0	1.0	6.3
174	Magnetawan	7225	Magnetawan Water Treatment System	Surface Water	Level II	10.0	3.0	8.0	10.0	4.0	8.0
186	Martin Falls	7135	Marten Falls Water Treatment System	Surface Water	Level II	9.0	8.0	8.0	4.0	9.0	8.0
181	M'Chigeeng First Nation	14199	West Bay & Lakeview Water Treatment System	Surface Water	Level II	8.0	3.0	8.0	10.0	1.0	5.3
225	Michipicoten	7180	Michipicoten Water Treatment System	Surface Water	Level II	8.0	3.0	8.0	8.0	1.0	5.1
203	Mishkeegogamang	7190	Mishkeegogamang (New Osnaburgh) Water Treatment System	Surface Water	Level II	8.0	8.0	4.0	2.0	6.0	5.8
159	Mohawks of Akwesasne	15919	Aksesasne Corwall Island West Water Treatment System	Surface Water	Level III	9.0	1.0	1.0	4.0	1.0	2.1
159	Mohawks of Akwesasne	6486	Akwesasne St. Regis Water Treatment System	Surface Water	Level III	9.0	1.0	8.0	3.0	2.0	4.3
164	Mohawks of the Bay of Quinte	6528	Airport Pumphouse and Treatment Facility	Surface Water	Level I	9.0	8.0	8.0	10.0	5.0	8.0
144	Moose Cree First Nation	7142	Moose Factory Water Treatment System	Surface Water	Level II	10.0	3.0	8.0	9.0	1.0	8.0
135	Moose Deer Point	7160	King Bay & Issac Bay Pumphouse Systems	Surface Water	Level II	6.0	8.0	1.0	3.0	1.0	3.8
213	Muskrat Dam Lake	6542	Muskrat Dam Lake Water Treatment System	Surface Water	Level II	8.0	10.0	10.0	8.0	2.0	8.0
128	Naicatchewenin	7163	Naicatchewenin Water Treatment System	Surface Water	Level I	9.0	8.0	6.0	4.0	1.0	5.7
158	Naotkamegwanning	6537	Whitefish Bay Water Treatment System	Surface Water	Level II	9.0	6.0	10.0	10.0	1.0	8.0
239	Neskantaga First Nation	7137	Neskantaga Water Treatment System	Surface Water	Level I	9.0	8.0	8.0	6.0	8.0	7.9
241	Nibinamik First Nation	7138	Nibinamik Water Treatment System	Surface Water	Level I	9.0	9.0	6.0	9.0	6.0	7.5
129	Nicickousemenecaning	7164	Nicickousemenecaning Water Treatment System	Surface Water	Level II	9.0	8.0	3.0	3.0	1.0	4.7

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						High Risk		Medium Risk		Low Risk	
					Legend:						
Band #	**Band Name**	**System #**	**System Name**	**Water Source**	**Treatment Class**	**Source Risk**	**Design Risk**	**Operations Risk**	**Report Risk**	**Operator Risk**	**Final Risk Score**
204	North Caribou Lake	7233	North Caribou Lake Water Treatment System	Surface Water	Level III	9.0	4.0	8.0	10.0	4.0	6.3
238	North Spirit Lake	7128	North Spirit Lake Water Treatment System	Surface Water	Level I	8.0	6.0	8.0	8.0	2.0	6.2
151	Northwest Angle No.33	7127	NWA 33 Dog Paw Lake Water Treatment System	Surface Water	Level III	10.0	2.0	3.0	8.0	3.0	3.9
152	Northwest Angle No.37	6483	NWA 37 Regina Bay Water Treatment System	Surface Water	Level II	9.0	4.0	3.0	5.0	8.0	5.1
152	Northwest Angle No.37	15901	Windigo Island Water Treatment System	Surface Water	Level II	9.0	8.0	8.0	10.0	6.0	7.9
147	Ochiichagwebabigoining First Nation	7181	The Dalles Water Treatment System	Surface Water	Level II	8.0	1.0	3.0	1.0	1.0	2.3
131	Ojibways of Onigaming First Nation	7107	Onigaming Water Treatment System	Surface Water	Level II	7.0	1.0	1.0	7.0	1.0	2.2
169	Oneida Nation of the Thames	7176	Oneida Water Treatment System	Surface Water	Level I	10.0	9.0	9.0	10.0	1.0	8.0
191	Pays Plat First Nation	7184	Pays Plat Water Treatment System	Surface Water	Level I	8.0	3.0	8.0	10.0	4.0	5.9
195	Pic Mobert	7187	Pic Mobert South Water Treatment System	Surface Water	Level I	10.0	10.0	10.0	10.0	2.0	8.4
208	Pikangikum	6540	Pikangikum Water Treatment System	Surface Water	Level II	9.0	5.0	9.0	7.0	1.0	8.0
236	Poplar Hill	7129	Poplar Hill Water Treatment System	Surface Water	Level II	10.0	8.0	5.0	10.0	6.0	7.1
193	Red Rock	7186	Red Rock Water Treatment System	Surface Water	Level II	8.0	1.0	8.0	4.0	1.0	4.1
214	Sachigo Lake	7235	Sachigo Lake Water Treatment System	Surface Water	Level II	9.0	6.0	8.0	6.0	4.0	6.5
211	Sandy Lake First Nation	7179	Sandy Lake Water Treatment System	Surface Water	Level II	9.0	8.0	10.0	10.0	1.0	8.0
132	Seine River First Nation	7166	Seine River Water Treatment System	Surface Water	Level II	8.0	6.0	8.0	7.0	1.0	5.9
176	Sheguiandah	7217	Sheguiandah Water Treatment System	Surface Water	Level II	9.0	4.0	3.0	5.0	4.0	4.3
178	Sheshegwaning	7218	Sheshegwaning Water Treatment System	Surface Water	Level II	8.0	5.0	8.0	7.0	4.0	8.0
155	Shoal Lake No. 40		SHOAL LAKE 40 PUMPHOUSE 2	Surface Water	Small System	9.0	8.0	7.0	10.0	5.0	8.0
155	Shoal Lake No. 40		SHOAL LAKE 40 PUMPHOUSE 3	Surface Water	Small System	9.0	8.0	8.0	10.0	5.0	8.0
155	Shoal Lake No. 40		SHOAL LAKE 40 PUMPHOUSE 4	Surface Water	Small System	9.0	8.0	8.0	10.0	5.0	7.7
155	Shoal Lake No. 40		SHOAL LAKE 40 PUMPHOUSE 5	Surface Water	Small System	9.0	8.0	7.0	10.0	5.0	8.0
155	Shoal Lake No. 40		SHOAL LAKE 40 PUMPHOUSE 9	Surface Water	Small System	9.0	8.0	7.0	10.0	5.0	8.0
155	Shoal Lake No. 40	6534	Shoal Lake 40 Water Treatment System	Surface Water	Small System	9.0	8.0	8.0	10.0	5.0	8.0
121	Six Nations of the Grand River	7173	Six Nations Water Treatment System	Surface Water	Level III	9.0	8.0	8.0	1.0	1.0	8.0
259	Slate Falls Nation		BAND OFFICE PUMPHOUSE	Surface Water	Small System	8.0	8.0	8.0	10.0	7.0	8.0
259	Slate Falls Nation		PUMPHOUSE NO. 1	Surface Water	Small System	8.0	8.0	8.0	10.0	7.0	8.0
259	Slate Falls Nation		PUMPHOUSE NO. 2	Surface Water	Small System	8.0	8.0	8.0	10.0	7.0	8.0
259	Slate Falls Nation		PUMPHOUSE NO. 3	Surface Water	Small System	8.0	8.0	8.0	10.0	7.0	8.0
259	Slate Falls Nation		PUMPHOUSE NO. 4	Surface Water	Small System	8.0	8.0	8.0	10.0	7.0	8.0
259	Slate Falls Nation		PUMPHOUSE NO. 5	Surface Water	Small System	8.0	8.0	8.0	10.0	7.0	8.0
259	Slate Falls Nation		PUMPHOUSE NO. 6	Surface Water	Small System	8.0	8.0	8.0	10.0	7.0	8.0
259	Slate Falls Nation		PUMPHOUSE NO. 7	Surface Water	Small System	8.0	8.0	8.0	10.0	7.0	8.0
259	Slate Falls Nation		PUMPHOUSE NO. 8	Surface Water	Small System	8.0	8.0	8.0	10.0	7.0	8.0
259	Slate Falls Nation		PUMPHOUSE NO. 9	Surface Water	Small System	8.0	8.0	8.0	10.0	7.0	8.0
259	Slate Falls Nation	7232	Slate Falls Water Treatment System	Surface Water	Level III	8.0	4.0	10.0	10.0	6.0	7.2
133	Stanjikoming First Nation	7167	Stanjikoming Water Treatment System	Surface Water	Level II	10.0	8.0	5.0	9.0	1.0	6.0
222	Temagami First Nation	7197	Bear Island Water Treatment System	Surface Water	Level II	8.0	2.0	8.0	6.0	1.0	4.6
150	Wabaseemoong Independent Nations	6531	Wabaseemoong Water Treatment System	Surface Water	Level III	8.0	2.0	1.0	1.0	3.0	2.4
156	Wabauskang First Nation	6535	Wabauskang Water Treatment System	Surface Water	Level II	8.0	2.0	8.0	10.0	7.0	6.2
157	Wabigoon Lake Ojibway Nation	6536	Wabigoon Lake Water Treatment System	Surface Water	Level II	9.0	4.0	1.0	1.0	1.0	2.7
170	Walpole Island	6538	Walpole Island Water Treatment System	Surface Water	Level III	9.0	3.0	8.0	4.0	1.0	8.0
206	Wapekeka	7169	Wapekeka Water Treatment System	Surface Water	Level II	8.0	4.0	8.0	2.0	4.0	5.4
136	Wasauksing First Nation	7199	Wasauksing (Parry Island) Water Treatment System	Surface Water	Level I	8.0	6.0	8.0	10.0	1.0	6.2
240	Webequie First Nation	7136	Webequie Water Treatment System	Surface Water	Level II	8.0	3.0	10.0	1.0	6.0	8.0
230	Whitefish River	7215	Whitefish River Water Treatment System	Surface Water	Level II	9.0	5.0	2.0	1.0	1.0	3.3
175	Wikwemikong	7231	Wikwemikong Water Treatment System	Surface Water	Level II	10.0	4.0	8.0	4.0	1.0	5.2
217	Wunnumin	7172	Wunnumin Lake Water Treatment System	Surface Water	Level II	8.0	2.0	6.0	8.0	1.0	4.2
173	Zhiibaahaasing First Nation	7216	Zhiibaahaasing Water Treatment System	Surface Water	Level I	10.0	8.0	6.0	7.0	1.0	6.1

NEEGAN BURNSIDE

Appendix E.2

Individual First Nation Wastewater Risk Summary

Table E.2: Individual First Nation Wastewater Risk Summary

Legend: High Risk | Medium Risk | Low Risk

Band #	Band Name	System #	System Name	Receiver Type	Treatment Class	Effluent Risk	Design Risk	Operations Risk	Report Risk	Operator Risk	Final Risk Score
171	Chippewas of Kettle and Stony Point	7734	Kettle and Stony Point Wastewater System	Creek	Level II	10.0	2.0	5.0	4.0	5.0	5.1
166	Chippewas of the Thames First Nation	7732	Chippewas of the Thames Wastewater System	Creek	Level III	8.0	8.0	8.0	10.0	1.0	8.0
142	Fort Albany	7716	Fort Albany Wastewater System	Creek	Level I	9.0	4.0	9.0	10.0	10.0	8.0
243	Kashechewan	7720	Kashechewan Wastewater System	Creek	Level I	7.0	4.0	9.0	10.0	9.0	7.4
120	Mississaugas of the Credit	7742	New Credit Wastewater System	Creek	Level I	10.0	2.0	5.0	4.0	1.0	4.3
169	Oneida Nation of the Thames	NEW001	ONEIDA COLLIN RUSSELL WASTEWATER SYSTEM	Creek	Level II	8.0	8.0	5.0	10.0	1.0	8.0
169	Oneida Nation of the Thames	7733	Oneida Village Wastewater System	Creek	Level I	9.0	5.0	7.0	10.0	1.0	6.0
121	Six Nations of the Grand River	7731	Six Nations of the Grand River Wastewater System	Creek	Level I	8.0	4.0	2.0	1.0	1.0	3.4
153	Anishinabe of Wauzhushk Onigum	7260	Bald Indian Bay Wastewater System	Lake, reservoir	Level I	9.0	3.0	5.0	10.0	5.0	5.8
125	Anishnaabeg of Naongashiing	7259	Saug-A-Gaw-Sing Wastewater Treatment System	Lake, reservoir	Level I	10.0	2.0	10.0	10.0	8.0	7.6
207	Bearskin Lake	7749	Bearskin Lake Wastewater System	Lake, reservoir	Level I	10.0	5.0	6.0	5.0	6.0	6.4
197	Biinjitiwaabik Zaaging Anishinaabek	7739	Rocky Bay Wastewater System	Lake, reservoir	Level II	10.0	5.0	8.0	8.0	6.0	7.2
216	Cat Lake	7751	Cat Lake Wastewater System	Lake, reservoir	Level I	10.0	6.0	6.0	4.0	10.0	7.4
237	Deer Lake	7705	Deer Lake Wastewater System	Lake, reservoir	Level II	10.0	5.0	7.0	10.0	5.0	7.0
149	Grassy Narrows First Nation	7694	Grassy Narrows Wastewater System	Lake, reservoir	Level II	10.0	4.0	8.0	10.0	6.0	7.2
154	Iskatewizaagegan No. 39 Independent First Nation	7696	Shoal Lake 39 Wastewater System	Lake, reservoir	Level II	9.0	2.0	5.0	10.0	3.0	5.1
210	Kasabonika Lake	7729	Kasabonika Lake Wastewater System	Lake, reservoir	Level II	9.0	9.0	10.0	10.0	6.0	8.7
325	Kee-Way-Win First Nation	7704	Keewaywin Wastewater System	Lake, reservoir	Level I	9.0	6.0	10.0	10.0	10.0	8.8
209	Kitchenuhmaykoosib Inninuwug	7700	Big Trout Lake Wastewater System	Lake, reservoir	Level I	8.0	6.0	9.0	8.0	5.0	7.1
181	M'Chigeeng First Nation	7744	Lakeview Communal Sewage System	Lake, reservoir	Level I	10.0	6.0	8.0	8.0	1.0	6.5
181	M'Chigeeng First Nation	7745	M'Chigeeng Village Communal Sewage System	Lake, reservoir	Level I	10.0	6.0	9.0	10.0	1.0	6.9
213	Muskrat Dam Lake	7702	Muskrat Dam Lake Wastewater System	Lake, reservoir	Level I	8.0	6.0	9.0	4.0	10.0	7.7
128	Naicatchewenin	7726	Naicatchewenin Wastewater System	Lake, reservoir	Level I	8.0	2.0	7.0	4.0	4.0	5.0
158	Naotkamegwanning	7693	Whitefish Bay Wastewater System	Lake, reservoir	Level I	10.0	8.0	8.0	10.0	5.0	8.0
241	Nibinamik First Nation	7712	Nibinamik Wastewater System	Lake, reservoir	Level I	8.0	6.0	8.0	10.0	5.0	7.1
204	North Caribou Lake	7748	North Caribou Lake Wastewater System	Lake, reservoir	Level I	9.0	8.0	10.0	4.0	5.0	7.7
214	Sachigo Lake	7750	Sachigo Lake Wastewater System	Lake, reservoir	Level I	8.0	5.0	4.0	4.0	5.0	5.2
175	Wikwemikong	7747	Wikwemikong Wastewater System	Lake, reservoir	Level II	10.0	8.0	8.0	4.0	1.0	6.6
143	Attawapiskat	7717	Attawapiskat Wastewater System	Large river	Level I	8.0	3.0	7.0	10.0	9.0	6.9
159	Mohawks of Akwesasne	7486	Akwesasne Block 97 RBC	Large river	Level I	8.0	5.0	8.0	4.0	1.0	5.4
159	Mohawks of Akwesasne	15920	Akwesasne Cornwall Island Arena RBC	Large river	Level I	10.0	3.0	4.0	2.0	1.0	4.1
159	Mohawks of Akwesasne	7297	Cornwall Island Akwesasne Mohawk School RBC	Large river	Level I	10.0	5.0	10.0	6.0	1.0	6.5
159	Mohawks of Akwesasne	7293	St.Regis Wastewater Treatment Plant	Large river	Level II	10.0	2.0	4.0	2.0	1.0	3.9
144	Moose Cree First Nation	7718	Moose Factory Wastewater System	Large river	Level II	8.0	6.0	8.0	10.0	10.0	8.1
146	Peawanuck	7743	Peawanuck Wastewater System	Large river	Level I	6.0	5.0	9.0	10.0	6.0	6.9
145	Taykwa Tagamou Nation	7719	New Post Wastewater System	Large river	Level I	4.0	4.0	9.0	10.0	6.0	6.2
172	Aamjiwnaang	7735	Aamjiwnaang Wastewater System	MTA	MTA	4.0	2.0	5.0	10.0	1.0	3.7
198	Batchewana First Nation	7721	Batchewana Sanitary Main	MTA	MTA	1.0	1.0	3.0	1.0	1.0	1.5
126	Couchiching First Nation	7724	Town of Fort Frances	MTA	MTA	2.0	2.0	7.0	1.0	1.0	2.9
185	Ginoogaming First Nation	7711	Town of Long Lac	MTA	MTA	1.0	8.0	7.0	10.0	8.0	8.0
184	Long Lake No.58 First Nation	7710	Town of Long Lac	MTA	MTA	5.0	8.0	9.0	10.0	10.0	8.2
164	Mohawks of the Bay of Quinte	7649	Town of Deseronto Wastewater System	MTA	MTA	5.0	3.0	3.0	4.0	1.0	3.1
188	Gull Bay (Kiashke Zaaging Anishinaabek)	7738	Gull Bay Wastewater System	River	Level I	7.0	5.0	8.0	10.0	10.0	7.6
127	Lac La Croix	7725	Lac La Croix Wastewater System	River	Level I	7.0	7.0	8.0	10.0	5.0	7.1
174	Magnetawan	7746	Magnetawan Wastewater System	River	Level II	9.0	5.0	7.0	10.0	4.0	6.6
238	North Spirit Lake	7706	North Spirit Lake Wastewater System	River	Level II	6.0	7.0	10.0	10.0	5.0	7.4
147	Ochiichagwebabigoining First Nation	7736	The Dalles Wastewater System	River	Level I	7.0	3.0	9.0	10.0	6.0	6.6
236	Poplar Hill	7707	Poplar Hill Wastewater System	River	Level II	6.0	1.0	8.0	10.0	10.0	6.4
130	Rainy River First Nations	7727	Manitou Rapids Wastewater System	River	Level I	7.0	8.0	8.0	4.0	1.0	6.0
211	Sandy Lake First Nation	7740	Sandy Lake Wastewater System	River	Level I	7.0	5.0	9.0	10.0	6.0	7.1
150	Wabaseemoong Independent Nations	7695	Wabaseemoong Wastewater System	River	Level II	7.0	3.0	8.0	10.0	6.0	6.3
170	Walpole Island	NEW001	ARENA WASTEWATER SYSTEM	River	Small System	9.0	8.0	8.0	10.0	10.0	8.8
206	Wapekeka	7728	Wapekeka Wastewater System	River	Level I	7.0	6.0	8.0	10.0	7.0	7.3

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Legend: High Risk | Medium Risk | Low Risk

Band #	Band Name	System #	System Name	Receiver Type	Treatment Class	Effluent Risk	Design Risk	Operations Risk	Report Risk	Operator Risk	Final Risk Score
240	Webequie First Nation	7713	Webequie Wastewater System	River	Level II	5.0	8.0	10.0	1.0	7.0	8.0
140	Mississaugas of Scugog Island First Nation	0	APARTMENT COMPLEX	Sub-surface / Ground	Small System	4.0	3.0	8.0	1.0	5.0	4.6
159	Mohawks of Akwesasne	7294	AKWESASNE NO. 59 - Daycare (ARCHIVE)	Sub-surface / Ground	Level I	5.0	3.0	7.0	6.0	1.0	4.3
138	Chippewas of Georgina Island	0	GEORGINA ISLAND FIRST NATION WASTEWATER TREATMENT SYSTEM	Tile field	Small System	5.0	4.0	9.0	10.0	9.0	7.0
166	Chippewas of the Thames First Nation	NEW001	ANTLER RIVER SENIORS COMPLEX WWTP	Tile field	Small System	5.0	4.0	4.0	10.0	1.0	4.2
203	Mishkeegogamang	0	Teacherage and Nursing Residence Septic System	Tile field	Small System	4.0	1.0	7.0	1.0	10.0	4.9
123	Saugeen	NEW001	SAUGEEN WASTEWATER SYSTEM	Tile field	Small System	3.0	5.0	9.0	10.0	6.0	6.3
137	Shawanaga First Nation	0	TEN-PLEX SEPTIC SYSTEM	Tile field	Small System	3.0	5.0	9.0	10.0	10.0	7.1
242	Aroland	7714	Aroland Wastewater System	Wetland	Level I	3.0	1.0	9.0	10.0	7.0	5.5
182	Constance Lake	7708	Constance Lake Wastewater System	Wetland	Level I	2.0	5.0	2.0	1.0	1.0	2.4
218	Dokis	NEW001	DOKIS WASTEWATER TREATMENT SYSTEM	Wetland	Level I	6.0	2.0	9.0	10.0	10.0	6.9
183	Eabametoong First Nation	7709	Eabametoong Wastewater System	Wetland	Level I	2.0	6.0	6.0	2.0	1.0	3.8
215	Fort Severn	17014	Fort Severn Wastewater System	Wetland	Level I	4.0	7.0	10.0	10.0	5.0	7.0
187	Fort William	7737	Fort William First Nation Wastewater System	Wetland	Level I	4.0	4.0	10.0	10.0	10.0	7.3
212	Kingfisher	7730	Kingfisher Lake Wastewater System	Wetland	Level I	4.0	7.0	9.0	6.0	7.0	6.8
186	Martin Falls	7715	Marten Falls Wastewater System	Wetland	Level I	2.0	6.0	8.0	1.0	8.0	5.6
159	Mohawks of Akwesasne	NEW001	AKWESASNE CHAPMAN ROAD WETLAND TREATMENT SYSTEM	Wetland	Level I	6.0	5.0	8.0	4.0	1.0	5.0
159	Mohawks of Akwesasne	7298	Akwesasne Syne RBC/Lagoon	Wetland	Level I	6.0	6.0	10.0	4.0	1.0	5.8
239	Neskantaga First Nation	17015	Neskantaga Wastewater System	Wetland	Level I	2.0	3.0	6.0	1.0	6.0	3.9
220	Nipissing First Nation	NEW001	GARDEN VILLAGE STP	Wetland	Level II	5.0	1.0	3.0	2.0	1.0	2.4
208	Pikangikum	7703	Pikangikum Wastewater System	Wetland	Level I	4.0	3.0	8.0	10.0	7.0	5.9
132	Seine River First Nation	7723	Seine River Wastewater System	Wetland	Level I	6.0	4.0	7.0	4.0	1.0	4.5
222	Temagami First Nation	7741	Bear Island Wastewater System	Wetland	Level I	5.0	2.0	5.0	4.0	4.0	3.9
170	Walpole Island	7698	Walpole Island Residential Wastewater System	Wetland	Level II	4.0	8.0	9.0	10.0	10.0	8.0

NEEGAN BURNSIDE

Appendix F

Protocol and Servicing Costs

REGION: ONTARIO
January 2011

Table F: Protocol and Servicing Costs *(Water & Wastewater Combined)*

Band #	Band Name	Community Name	Current Population	Current Homes	Forecast Population	Forecast Homes	Zone Markup	Upgrade To Protocol	Per Lot Upgrades to Protocol (Current Homes)	Recommended Servicing	Per Lot Reccomended Servicing (Forecast Homes)	Recommended O&M	Per Lot O&M (Forecast Homes)
172	Aamjiwnaang	Sarnia No. 45	925	225	1267	310	0.990	$ 325,000	$ 1,400	$ 5,360,000	$ 17,300	$ 890,000	$ 2,900
160	Alderville First Nation	Alderville First Nation No. 160	397	237	515	355	1.000	$ -	$ -	$ 1,600,000	$ 4,500	$ 930,000	$ 2,600
163	Algonquins of Pikwakanagan	Algonquins of Pikwakanagan	513	150	647	194	1.204	$ -	$ -	$ 3,400,000	$ 17,500	$ 680,000	$ 3,500
153	Anishinabe of Wauzhushk Onigum	Kenora No. 38B	334	104	421	133	0.918	$ 2,798,000	$ 26,900	$ 5,320,000	$ 40,000	$ 380,000	$ 2,900
125	Anishnaabeg of Naongashiing	Big Island	187	32	223	41	1.310	$ 2,334,500	$ 73,000	$ 4,670,000	$ 113,900	$ 400,000	$ 9,800
242	Aroland	Aroland	359	119	384	127	1.354	$ 265,500	$ 2,200	$ 400,000	$ 3,100	$ 420,000	$ 3,300
143	Attawapiskat	Attawapiskat	1909	280	2356	391	2.656	$ 12,654,600	$ 45,200	$ 26,000,000	$ 66,500	$ 770,000	$ 2,000
180	Aundeck-Omni-Kaning	Sucker Creek	403	140	480	178	1.333	$ 1,491,500	$ 10,700	$ 2,890,000	$ 16,200	$ 660,000	$ 3,700
198	Batchewana First Nation	Rankin Location No. 15D	847	262	1052	330	1.134	$ 66,600	$ 300	$ 4,225,000	$ 12,800	$ 645,000	$ 2,000
207	Bearskin Lake	Bearskin Lake	428	152	509	192	2.071	$ 8,684,000	$ 57,100	$ 17,460,000	$ 90,900	$ 1,120,000	$ 5,800
141	Beausoleil	Beausoleil	703	238	792	282	1.100	$ 2,229,000	$ 9,400	$ 4,140,000	$ 14,700	$ 810,000	$ 2,900
124	Big Grassy	Big Grassy River	290	84	336	99	1.310	$ 2,180,500	$ 26,000	$ 3,380,000	$ 34,100	$ 460,000	$ 4,600
197	Biinjitiwaabik Zaaging Anishinaabek	Rocky Bay No. 1	376	84	446	101	1.310	$ 608,000	$ 7,200	$ 1,960,000	$ 19,400	$ 480,000	$ 4,800
228	Brunswick House	Duck Lake No. 76B	150	40	223	64	1.333	$ 554,500	$ 13,900	$ 2,470,000	$ 38,600	$ 315,000	$ 4,900
216	Cat Lake	Cat Lake	512	109	607	132	1.548	$ 4,483,500	$ 41,100	$ 9,160,000	$ 69,400	$ 520,000	$ 3,900
221	Chapleau Cree First Nation	Chapleau No. 75	98	38	138	58	1.333	$ 740,500	$ 19,500	$ 1,620,000	$ 27,900	$ 275,000	$ 4,700
229	Chapleau Ojibway	Chapleau No. 74A	32	11	40	15	1.333	$ 518,500	$ 47,100	$ 440,000	$ 29,300	$ 195,000	$ 13,000
138	Chippewas of Georgina Island	Chippewas of Georgina Island First Nation No.138	202	101	268	134	1.100	$ 5,076,500	$ 50,300	$ 8,360,000	$ 62,400	$ 560,000	$ 4,200
171	Chippewas of Kettle and Stony Point	Kettle Point No. 44	1320	389	1984	610	1.089	$ 1,942,200	$ 5,000	$ 12,330,000	$ 20,200	$ 1,220,000	$ 2,000
122	Chippewas of Nawash	Cape Croker	877	276	1037	329	1.180	$ 719,500	$ 2,600	$ 4,860,000	$ 14,800	$ 1,040,000	$ 3,200
166	Chippewas of the Thames First Nation	Chippewa Of The Thames First Nation No. 42	997	301	1175	360	0.990	$ 616,500	$ 2,000	$ 4,040,000	$ 11,200	$ 940,000	$ 2,600
182	Constance Lake	Constance Lake	842	249	1055	320	1.220	$ 6,829,500	$ 27,400	$ 13,600,000	$ 42,500	$ 620,000	$ 1,900
237	Deer Lake	Deer Lake	968	191	1191	246	1.900	$ 4,716,400	$ 24,700	$ 10,790,000	$ 43,900	$ 1,610,000	$ 6,500
218	Dokis	Dokis No. 9	191	102	208	119	1.333	$ 6,569,500	$ 64,400	$ 6,870,000	$ 57,700	$ 600,000	$ 5,000
183	Eabametoong First Nation	Fort Hope	1451	267	1851	367	1.548	$ 12,850,000	$ 48,100	$ 26,290,000	$ 71,600	$ 580,000	$ 1,600
148	Eagle Lake	Eagle Lake No. 27	354	100	590	178	0.918	$ 619,000	$ 6,200	$ 2,170,000	$ 12,200	$ 480,000	$ 2,700
142	Fort Albany	Fort Albany	1210	171	1595	267	2.463	$ 4,807,000	$ 28,100	$ 25,610,000	$ 95,900	$ 630,000	$ 2,400
215	Fort Severn	Fort Severn	602	112	785	157	2.518	$ 6,303,000	$ 56,300	$ 15,550,000	$ 99,000	$ 740,000	$ 4,700
187	Fort William	Fort William No. 52	820	213	1640	486	1.199	$ 517,000	$ 2,400	$ 10,060,000	$ 20,700	$ 1,260,000	$ 2,600
199	Garden River First Nation	Garden River	1320	459	1597	597	1.134	$ 1,125,700	$ 2,500	$ 7,170,000	$ 12,000	$ 1,250,000	$ 2,100
185	Ginoogaming First Nation	Ginoogaming First Nation	208	66	219	69	1.199	$ 105,000	$ 1,600	$ 1,670,000	$ 24,200	$ 270,000	$ 3,900
149	Grassy Narrows First Nation	English River	917	215	1331	318	1.037	$ 5,925,000	$ 27,600	$ 17,300,000	$ 54,400	$ 620,000	$ 1,900
188	Gull Bay (Kiashke Zaaging Anishinaabek)	Gull River No. 55	539	86	650	113	1.310	$ 7,124,500	$ 82,800	$ 12,320,000	$ 109,000	$ 460,000	$ 4,100
231	Henvey Inlet First Nation	Henvey Inlet First Nation	195	56	239	70	1.333	$ 269,500	$ 4,800	$ 1,020,000	$ 14,600	$ 360,000	$ 5,100
162	Hiawatha First Nation	Hiawatha First Nation No.162	257	107	341	149	1.000	$ 219,000	$ 2,000	$ 1,880,000	$ 12,600	$ 620,000	$ 4,200
154	Iskatewizaagegan No. 39 Independent First Nation	Shoal Lake No. 39A	320	139	352	155	1.003	$ 581,000	$ 4,200	$ 3,270,000	$ 21,100	$ 480,000	$ 3,100
210	Kasabonika Lake	Kasabonika Lake	930	194	1162	252	2.071	$ 8,676,000	$ 44,700	$ 25,830,000	$ 102,500	$ 870,000	$ 3,500
243	Kashechewan	Kashechewan	1600	252	2179	396	2.463	$ 9,514,500	$ 37,800	$ 43,080,000	$ 108,800	$ 700,000	$ 1,800
325	Kee-Way-Win First Nation	Kee-Way-Win First Nation	504	82	617	110	1.900	$ 218,000	$ 2,700	$ 3,290,000	$ 29,900	$ 520,000	$ 4,700
212	Kingfisher	Kingfisher Lake	489	128	588	161	1.900	$ 11,443,000	$ 89,400	$ 16,770,000	$ 104,200	$ 660,000	$ 4,100
209	Kitchenuhmaykoosib Inninuwug	Kitchenuhmaykoosib Inninuwug	978	295	1176	361	2.071	$ 2,364,500	$ 8,000	$ 11,680,000	$ 32,400	$ 1,550,000	$ 4,300
127	Lac La Croix	Lac La Croix	307	88	330	95	1.310	$ 4,424,500	$ 50,300	$ 6,470,000	$ 68,100	$ 410,000	$ 4,300
205	Lac Seul	Lac Seul No. 28	999	275	1244	356	1.665	$ 2,157,000	$ 7,800	$ 10,195,000	$ 28,600	$ 3,075,000	$ 8,600
184	Long Lake No.58 First Nation	Long Lake No. 58	432	116	542	152	1.199	$ 342,000	$ 2,900	$ 3,500,000	$ 23,000	$ 520,000	$ 3,400
174	Magnetawan	Magnetawan	103	36	138	53	1.333	$ 2,331,000	$ 64,800	$ 3,810,000	$ 71,900	$ 450,000	$ 8,500
186	Martin Falls	Martin Falls First Nation	326	103	378	120	1.548	$ 6,692,500	$ 65,000	$ 8,260,000	$ 68,800	$ 440,000	$ 3,700
219	Matachewan	Matachewan No. 72	71	34	89	43	1.333	$ 115,500	$ 3,400	$ 275,000	$ 6,400	$ 255,000	$ 5,900
226	Mattagami	Mattagami No. 71	195	85	305	140	1.333	$ 125,500	$ 1,500	$ 1,330,000	$ 9,500	$ 370,000	$ 2,600
181	M'Chigeeng First Nation	M'Chigeeng	1023	420	1198	507	1.333	$ 472,000	$ 1,100	$ 9,880,000	$ 19,500	$ 1,750,000	$ 3,500
225	Michipicoten	Michipicoten	73	40	108	75	1.239	$ 2,266,500	$ 56,700	$ 2,860,000	$ 38,100	$ 295,000	$ 3,900
203	Mishkeegogamang	Osnaburgh No. 63A	179	34	255	53	1.354	$ 2,131,800	$ 62,700	$ 3,020,000	$ 57,000	$ 290,000	$ 5,500
203	Mishkeegogamang	Osnaburgh No. 63B	406	101	578	144	1.354	$ 329,000	$ 3,300	$ 7,460,000	$ 51,800	$ 510,000	$ 3,500

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Band #	Band Name	Community Name	Current Population	Current Homes	Forecast Population	Forecast Homes	Zone Markup	Upgrade To Protocol	Per Lot Upgrades to Protocol (Current Homes)	Recommended Servicing	Per Lot Reccomended Servicing (Forecast Homes)	Recommended O&M	Per Lot O&M (Forecast Homes)
200	Mississauga	Mississagi River No. 8	438	163	488	188	1.239	$ 1,613,000	$ 9,900	$ 2,660,000	$ 14,100	$ 540,000	$ 2,900
140	Mississaugas of Scugog Island First Nation	Mississaugas Of Scugog Island First Nation	60	40	84	64	1.000	$ 793,000	$ 19,800	$ 1,030,000	$ 16,100	$ 480,000	$ 7,500
120	Mississaugas of the Credit	Mississaugas of New Credit	1021	236	1286	302	1.000	$ 129,000	$ 500	$ 14,060,000	$ 46,600	$ 910,000	$ 3,000
159	Mohawks of Akwesasne	Akwesasne	10808	1501	14523	2429	1.069	$ 4,569,600	$ 3,000	$ 62,150,000	$ 25,600	$ 4,870,000	$ 2,000
164	Mohawks of the Bay of Quinte	Tyendinega Mohawk Territory	2502	910	2980	1149	1.000	$ 3,134,000	$ 3,400	$ 10,240,000	$ 8,900	$ 2,740,000	$ 2,400
144	Moose Cree First Nation	Moose Cree First Nation	1870	470	2240	593	2.260	$ 7,412,500	$ 15,800	$ 30,490,000	$ 51,400	$ 800,000	$ 1,300
135	Moose Deer Point	Moose Deer Point First Nation	201	77	283	118	1.220	$ 70,000	$ 900	$ 1,210,000	$ 10,300	$ 660,000	$ 5,600
167	Moravian of the Thames	Moravian of the Thames	612	163	783	220	0.990	$ 1,887,500	$ 11,600	$ 4,280,000	$ 19,500	$ 670,000	$ 3,000
168	Munsee-Delaware Nation	Munsee-Delaware Nation	191	60	219	69	0.990	$ -	$ -	$ 1,900,000	$ 27,500	$ 210,000	$ 3,000
213	Muskrat Dam Lake	Muskrat Dam Lake	286	88	298	92	1.900	$ 4,735,500	$ 53,800	$ 5,020,000	$ 54,600	$ 590,000	$ 6,400
128	Naicatchewenin	Naicatchewenin First Nation	266	83	322	101	1.310	$ 1,168,500	$ 14,100	$ 6,450,000	$ 63,900	$ 360,000	$ 3,600
158	Naotkamegwanning	Whitefish Bay	828	176	996	218	1.003	$ 2,575,500	$ 14,600	$ 13,920,000	$ 63,900	$ 570,000	$ 2,600
239	Neskantaga First Nation	Landsdowne House	333	85	402	108	1.729	$ 3,029,000	$ 35,600	$ 9,130,000	$ 84,500	$ 410,000	$ 3,800
241	Nibinamik First Nation	Summer Beaver Settlement	368	105	411	119	2.232	$ 1,775,000	$ 16,900	$ 6,730,000	$ 56,600	$ 460,000	$ 3,900
129	Nicickousemenecaning	Nicickousemenecaning First Nation	145	40	172	49	1.310	$ 219,000	$ 5,500	$ 830,000	$ 16,900	$ 300,000	$ 6,100
220	Nipissing First Nation	Nipissing First Nation	1121	415	1467	588	1.220	$ 2,604,500	$ 6,300	$ 5,610,000	$ 9,500	$ 1,300,000	$ 2,200
204	North Caribou Lake	North Caribou Lake	834	267	993	320	1.900	$ 5,482,000	$ 20,500	$ 10,730,000	$ 33,500	$ 970,000	$ 3,000
238	North Spirit Lake	North Spirit Lake	456	79	689	137	1.900	$ 4,438,000	$ 56,200	$ 19,540,000	$ 142,600	$ 890,000	$ 6,500
151	Northwest Angle No.33	Northwest Angle	234	79	297	110	1.232	$ 385,000	$ 4,900	$ 2,820,000	$ 25,600	$ 420,000	$ 3,800
152	Northwest Angle No.37	Lake Of The Woods No. 37	75	24	101	32	1.003	$ 70,000	$ 2,900	$ 1,850,000	$ 57,800	$ 275,000	$ 8,600
152	Northwest Angle No.37	Whitefish Bay No. 34A	102	40	138	58	1.003	$ 285,000	$ 7,100	$ 500,000	$ 8,600	$ 290,000	$ 5,000
235	Obashkaandagaang	Rat Portage No. 38A	159	55	203	77	0.918	$ 844,000	$ 15,300	$ 3,320,000	$ 43,100	$ 215,000	$ 2,800
147	Ochiichagwebabigoining First Nation	Dalles	149	54	174	66	0.918	$ 164,000	$ 3,000	$ 1,460,000	$ 22,100	$ 360,000	$ 5,500
258	Ojibway Nation of Saugeen	Ojibway Nation Of Saugeen	110	35	125	40	1.354	$ -	$ -	$ 640,000	$ 16,000	$ 250,000	$ 6,300
131	Ojibways of Onigaming First Nation	Sabaskong Bay	518	115	682	156	1.310	$ 317,500	$ 2,800	$ 4,290,000	$ 27,500	$ 630,000	$ 4,000
192	Ojibways of the Pic River First Nation	Pic River	566	160	681	198	1.310	$ 2,667,500	$ 16,700	$ 7,130,000	$ 36,000	$ 650,000	$ 3,300
169	Oneida Nation of the Thames	Oneida	2265	535	2602	619	0.990	$ 8,458,000	$ 15,800	$ 14,140,000	$ 22,800	$ 1,590,000	$ 2,600
191	Pays Plat First Nation	Pays Plat First Nation	75	35	86	40	1.310	$ 1,332,000	$ 38,100	$ 6,120,000	$ 153,000	$ 380,000	$ 9,500
146	Peawanuck	Peawanuck	295	70	374	89	2.994	$ 2,141,500	$ 30,600	$ 14,310,000	$ 160,800	$ 440,000	$ 4,900
195	Pic Mobert	Pic Mobert	350	118	380	133	1.310	$ 1,989,000	$ 16,900	$ 5,310,000	$ 39,900	$ 620,000	$ 4,700
208	Pikangikum	Pikangikum	2348	453	2867	582	1.729	$ 3,674,500	$ 8,100	$ 70,080,000	$ 120,400	$ 660,000	$ 1,100
236	Poplar Hill	Poplar Hill First Nation	502	98	655	136	1.729	$ 4,948,000	$ 50,500	$ 13,000,000	$ 95,600	$ 950,000	$ 7,000
130	Rainy River First Nations	Rainy River First Nations	478	100	633	138	1.310	$ 638,800	$ 6,400	$ 8,940,000	$ 64,800	$ 560,000	$ 4,100
193	Red Rock	Lake Helen No. 53A	320	99	412	129	1.310	$ 161,000	$ 1,600	$ 1,100,000	$ 8,500	$ 450,000	$ 3,500
214	Sachigo Lake	Sachigo Lake	534	165	702	221	2.071	$ 8,115,700	$ 49,200	$ 16,760,000	$ 75,800	$ 830,000	$ 3,800
179	Sagamok Anishnawbek	Sagamok First Nation	1576	324	1929	412	1.333	$ 388,000	$ 1,200	$ 7,110,000	$ 17,300	$ 1,010,000	$ 2,500
211	Sandy Lake First Nation	Sandy Lake First Nation	2501	400	3254	588	1.900	$ 5,040,500	$ 12,600	$ 38,990,000	$ 66,300	$ 1,920,000	$ 3,300
123	Saugeen	Saugeen	915	301	1136	374	1.100	$ 165,000	$ 500	$ 3,170,000	$ 8,500	$ 630,000	$ 1,700
132	Seine River First Nation	Seine River First Nation	343	80	377	88	1.310	$ 3,881,000	$ 48,500	$ 6,330,000	$ 71,900	$ 410,000	$ 4,700
201	Serpent River First Nation	Serpent River First Nation No. 201	396	144	496	194	1.239	$ 1,406,200	$ 9,800	$ 8,890,000	$ 45,800	$ 610,000	$ 3,100
137	Shawanaga First Nation	Shawanaga First Nation	245	98	347	149	1.333	$ 2,050,200	$ 20,900	$ 3,480,000	$ 23,400	$ 560,000	$ 3,800
176	Sheguiandah	Sheguiandah	171	61	211	81	1.333	$ 100,000	$ 1,600	$ 360,000	$ 4,400	$ 460,000	$ 5,700
178	Sheshegwaning	Sheshegwaning	107	66	117	76	1.333	$ 1,080,500	$ 16,400	$ 1,250,000	$ 16,400	$ 360,000	$ 4,700
155	Shoal Lake No. 40	Shoal Lake No. 40	276	82	328	99	1.232	$ 4,052,000	$ 49,400	$ 9,430,000	$ 95,300	$ 360,000	$ 3,600
121	Six Nations of the Grand River	Six Nations of the Grand River	11449	2767	16080	3924	1.000	$ 1,900,000	$ 700	$ 88,760,000	$ 22,600	$ 5,680,000	$ 1,400
259	Slate Falls Nation	Slate Falls	153	55	194	75	1.665	$ 18,581,500	$ 337,800	$ 13,460,000	$ 179,500	$ 370,000	$ 4,900
133	Stanjikoming First Nation	Stanjikoming First Nation	131	30	194	45	1.310	$ 209,000	$ 7,000	$ 1,390,000	$ 30,900	$ 340,000	$ 7,600
145	Taykwa Tagamou Nation	New Post	100	24	177	43	1.672	$ 616,000	$ 25,700	$ 3,910,000	$ 90,900	$ 260,000	$ 6,000
222	Temagami First Nation	Temagami First Nation	316	95	453	140	1.638	$ 2,496,000	$ 26,300	$ 11,290,000	$ 80,600	$ 540,000	$ 3,900
202	Thessalon	Thessalon	113	52	146	68	1.239	$ 1,184,500	$ 22,800	$ 1,790,000	$ 26,300	$ 280,000	$ 4,100
150	Wabaseemoong Independent Nations	Whitedog	873	197	1011	231	1.037	$ 171,000	$ 900	$ 2,320,000	$ 10,000	$ 720,000	$ 3,100
156	Wabauskang First Nation	Wabauskang First Nation	120	29	208	51	1.037	$ 411,000	$ 14,200	$ 1,010,000	$ 19,800	$ 305,000	$ 6,000
157	Wabigoon Lake Ojibway Nation	Wabigoon Lake No. 27	194	69	246	95	1.003	$ 1,420,000	$ 20,600	$ 2,230,000	$ 23,500	$ 315,000	$ 3,300
233	Wahgoshig	Abitibi No. 70	185	46	275	68	1.333	$ 141,500	$ 3,100	$ 1,000,000	$ 14,700	$ 280,000	$ 4,100
232	Wahnapitae	Wahnapitae First Nation	74	32	125	57	1.220	$ -	$ -	$ 1,390,000	$ 24,400	$ 250,000	$ 4,400

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Band #	Band Name	Community Name	Current Population	Current Homes	Forecast Population	Forecast Homes	Zone Markup	Upgrade To Protocol	Per Lot Upgrades to Protocol (Current Homes)	Recommended Servicing	Per Lot Reccomended Servicing (Forecast Homes)	Recommended O&M	Per Lot O&M (Forecast Homes)
134	Wahta Mohawk	Wahta Mohawk Territory	236	79	320	121	1.333	$ -	$ -	$ 2,260,000	$ 18,700	$ 440,000	$ 3,600
170	Walpole Island	Walpole Island	2201	639	3702	1139	0.990	$ 1,525,000	$ 2,400	$ 13,950,000	$ 12,200	$ 2,120,000	$ 1,900
206	Wapekeka	Wapekeka	439	107	548	134	2.071	$ 1,306,000	$ 12,200	$ 21,510,000	$ 160,500	$ 380,000	$ 2,800
136	Wasauksing First Nation	Parry Island First Nation	448	156	526	195	1.220	$ 2,150,500	$ 13,800	$ 2,980,000	$ 15,300	$ 780,000	$ 4,000
234	Wawakapewin	Wawakapewin	23	15	42	34	2.071	$ 1,644,000	$ 109,600	$ 1,540,000	$ 45,300	$ 205,000	$ 6,000
240	Webequie First Nation	Webequie	712	208	819	243	1.900	$ 1,722,000	$ 8,300	$ 5,470,000	$ 22,500	$ 680,000	$ 2,800
224	Whitefish Lake	Whitefish Lake	473	131	623	181	1.220	$ 35,000	$ 300	$ 2,330,000	$ 12,900	$ 540,000	$ 3,000
230	Whitefish River	Whitefish River First Nation	382	178	427	200	1.333	$ 495,000	$ 2,800	$ 4,530,000	$ 22,700	$ 810,000	$ 4,100
190	Whitesand	Whitesand	444	103	545	128	1.354	$ 50,000	$ 500	$ 2,650,000	$ 20,700	$ 450,000	$ 3,500
175	Wikwemikong	Wikwemikong	3468	1040	4085	1245	1.333	$ 5,250,000	$ 5,000	$ 16,980,000	$ 13,600	$ 3,810,000	$ 3,100
217	Wunnumin	Wunnumin	571	138	687	167	1.900	$ 317,500	$ 2,300	$ 3,570,000	$ 21,400	$ 770,000	$ 4,600
173	Zhiibaahaasing First Nation	Cockburn Island	94	18	147	31	1.333	$ 5,618,000	$ 312,100	$ 7,210,000	$ 232,600	$ 330,000	$ 10,600