REQUEST FOR PROPOSAL (RFP)
OPERATION OF WATER TREATMENT PLANT AND LOW LIFT PUMPING FACILITY
and
OVERALL RESPONSIBLE OPERATOR AND OPERATOR IN CHARGE FOR CLASS 1
WATER DISTRIBUTION SYSTEM AND CLASS 1 SEWAGE SYSTEM

THE CORPORATION OF THE TOWNSHIP OF TERRACE BAY
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P0T 2W0
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1.0 BACKGROUND

1.1 General

The Township of Terrace Bay is located on the Trans-Canada Highway (Hwy. 17) on the north shore of Lake Superior, 215 km east of Thunder Bay and 475 km west of Sault Ste. Marie. Terrace Bay has a population of 1,471 and 903 households. The source of water for the slow sand Water Treatment Plant is Lake Superior.

Municipal water and wastewater facilities are present in the urban sectors of the community. There are no municipal water and wastewater facilities in the rural sectors.

Terrace Bay has its own independent municipal water supply system and wastewater collection network. The wastewater collected is treated at the secondary treatment plant.

The basic objective of the Municipality in issuing this Request for Proposal (RFP) is to encourage a competition among pre-selected firms to determine the most cost effective manner of providing for the operation, maintenance and management of the water and wastewater treatment facilities located in and owned by the Municipality. Cost is an important factor in this competition but it will not be the sole determining factor. The Municipality is seeking the most advantageous overall approach to providing for the reliable operations, maintenance and management of the Municipal facilities whose proper operation, maintenance and management is critical in the health, safety and welfare of the citizens of Terrace Bay.

The Municipality intends to negotiate an operation, maintenance and management services agreement (Services Agreement) with the Preferred Proponent for an initial five (5) year term with an option for further five (5) year terms at the Municipality’s discretion.

The objective of the municipality is to have the anniversary date of the Services Agreement be established as of December 31st of each year.

The Municipality is strongly committed to an equitable competition among the pre-selected firms and will make every effort to ensure that the requirements, as well as the information made available, are consistent, accurate and unbiased.

1.2 Works Included

The works to be included in the proposed contract consist of the following:

1.2.1 Water Distribution System

The Class 1 Water Distribution System has approximately 17 km of piping consisting of cast iron, ductile iron, P.V.C. and H.D.P.E. ranging in size from 150mm to 350mm. There are approximately 110 hydrants, 720 residential and 55 commercial connections, with approximately 30% of those connections being lead pipe.

1.2.2 Sewage System
The Class 1 Sewage System is a gravity system with approximately 18 km of pipe consisting of clay, asbestos cement, PVC, and H.D.P.E., 213 manholes, four concrete sedimentation tanks and two exfiltration lagoons.

There is currently no mechanical or chemical treatment required with this system.

Seven monitoring wells have been established within the perimeter of the sewage lagoons which are sampled by the Municipality on a quarterly basis.

1.2.3 Water Treatment Plant and Low Lift Pumping System

The Low Lift Pumping Station pumps water from Lake Superior and through a 250mm transmission line to the Water Treatment Plant.

The Water Treatment Plant uses a slow sand filtering system. For a more detailed description of the facilities, refer to the attached License and Works Permit.

The Water Treatment plant was commissioned in November of 2005. The Low Lift Pumping Station was commissioned in March of 2009.

1.3 Information Dossier

The Municipality has not compiled a detailed dossier of information of the facilities. Specific information, related to any of the facilities, in the possession of the Municipality, may be provided upon request, to assist Proponents with the preparation of the proposal. DWQMS documents containing more detailed information is available on our website.

1.4 Mandatory Site Visit

A mandatory briefing and site visit meeting has been scheduled for March 4, 2015 at 9:00 a.m. The pre-tour briefing will be held at the Terrace Bay Council Chambers, 1 Selkirk Avenue, Terrace Bay, Ontario. Failure to attend the site visit may result in disqualification of any submitted proposal.

2.0 OVERVIEW OF PROCESS AND PROPOSALS

2.1 Evaluation Team

All proposals submitted in response to this RFP will be reviewed and evaluated by an Evaluation Team which may consist of members of the Municipal Council and Staff. Engineering consultants and legal advisors may also be utilized for respective expertise/technical support. The proposal review and evaluation process is described later in this RFP.

2.2 Conditions

All proposals submitted must strictly adhere to the conditions and format outlined and described in this RFP as the failure by the Proponent to comply, as indicated, may be grounds to dismiss a particular proposal from further consideration.

2.3 Base Proposal
Each responding Proponent must submit one Base Proposal and may submit any number of Alternative Proposals.

2.4 **Conforming**

All proposals, in their entirety, must conform to this Request for Proposals and the final operations, maintenance and management service agreement and their schedules.

2.5 **Alternative Proposals**

Proponents who elect to provide (along with their Base Proposal) Alternative Proposals may wish to vary the technical approach or the contractual terms and conditions reflected in the Base Proposal. Proponents should incorporate, in such Alternative Proposals, those aspects that can be demonstrated as being beneficial to the Municipality, while keeping the Base Proposal entirely consistent with the terms and conditions of the RFP.

3.0 **PROPRIETARY PROPOSALS**

If any portion of the proposal contains or involves any propriety right(s), the Proponent must clearly identify any and all such portions of the proposal and set forth in an Appendix to the proposal, the complete basis for the Proponent's assertion of such proprietary rights, including but not limited to, identifying the person and/or entity who owns such rights.

4.0 **MUNICIPAL RIGHTS AND DISCLAIMERS**

4.1 **Municipal Rights**

The Municipality, in its sole discretion, reserves the following rights:

- to reject any or all responses, proposals or information received pursuant to this RFP;
- to cancel this RFP with or without the substitution of another RFP;
- to issue additional requests for information or for proposals;
- to take any action affecting the RFP, the RFP process or the services or facilities subject to this RFP that would be in the best interests of the Municipality;
- to consider any alternative approach or proposal that meets the basic needs of the Municipality;
- to require one or more Proponents to supplement, clarify or provide additional information in order for the Municipality to evaluate any proposal submitted;
- to waive any defect or technicality in any proposal received;
- to require that all submissions made pursuant to this RFP shall be in accordance with the laws of the Province of Ontario and Canada applicable thereto;
- the Municipality is under no obligation to confirm whether any Proponent's submissions are complete or to request a Proponent to provide additional detail or clarification of any material provided pursuant to this RFP process;
- to negotiate with the Preferred Proponent, the final terms and conditions of the draft Services Agreement.

4.2 **Withdrawal of RFP**

If this RFP process is withdrawn or cancelled by the Municipality at any time, the Municipality shall not be liable for any Proponent's costs, losses, damages, or expenses incurred in the preparation and submission of a response to this RFP.
4.3 Municipal Due Diligence

The Municipality retains the right throughout the RFP process to conduct all due diligence that may be necessary to confirm the representations made by Proponent in a submission in response to this RFP. The Municipality makes no warranties as to the accuracy of the information provided to Proponents at any time during the conduct of the RFP.

4.4 Modification of Scope of Service

The Municipality does not intend to modify the project described herein or the scope of the services to be provided by the Preferred Proponent. Notwithstanding this intention, the Municipality reserves the right to modify, amend, substitute or supplement any part of this RFP at any time upon notice in writing to the Proponents. The Municipality will provide Proponents with sufficient time to respond to such modifications including, without limitation, the opportunity to make necessary revisions to their respective submissions.

4.5 Proponent Expenses

The Municipality will not be responsible for any expense incurred by any Proponent in preparing or submitting a submission in response to this RFP or in providing any additional information necessary for the evaluation of the submissions made under this RFP. In submitting a response to this RFP, the Proponent waives any right of action or claim against the Municipality and its employees, advisors and consultants.

4.6 Engineering and Legal Council

The Municipality may retain, at its discretion, the services of an engineering firm as well as a legal firm to assist with the review and evaluation of all the Proposals submitted in response to this RFP.

5.0 PUBLIC DISCLOSURE

The public disclosure of the contents of a proposal submitted in response to this RFP is governed by the regulations as outlined in the Municipal Freedom of Information and Protection of Privacy Act in the Province of Ontario.

6.0 ACCESS TO DATA

6.1 Providing Access

To assist Proponents in preparing proposals, the Municipality will provide them with access to certain information with respect to the water and wastewater systems during regular office hours and as outlined in Section 8.0.

6.2 Property of Municipality

All requirements, designs, documentation, plans and other information obtained from the Municipality by the Proponents in connection with this request for proposals are the property of the Municipality and must be treated as confidential and not used for any other purpose.
than replying to this RFP and the fulfilment of any subsequent contract. Upon request of the Municipality, all such designs, documents, plans and information, including any photocopies, shall be returned to the Municipality. All material and information, prepared, conceived of or produced and delivered in the performance of the submission by the Proponents and delivered to the Municipality shall be the sole property of the Municipality. While the Municipality will endeavor to provide the requested information to the Proponents, at the Municipality’s sole discretion, the Municipality does not represent and warrant that all information relevant to this RFP has been identified or disclosed.

7.0 **NO LOBBYING AND SINGLE POINT CONTACT**

Questions regarding this process are to be in writing via email and are to be directed to both of the following individuals:

**Terry Hanley**  
Public Works Supervisor  
t.hanley@terracebay.ca

**Jon Hall**  
CAO/Clerk  
cao@terracebay.ca

Questions will be responded to in writing and distributed to all proponents. Lobbying or contact with other Town of Terrace Bay staff, officials or advisers, including Councillors, about this RFP is prohibited and can be considered grounds for disqualification from the process.

8.0 **SCHEDULE OF EVENTS**

The schedule of events for the RFP and associated deadlines is as follows:

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<thead>
<tr>
<th>Event</th>
<th>Dates</th>
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<tbody>
<tr>
<td><strong>FEBRUARY, 2015</strong></td>
<td></td>
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<tr>
<td>Request issued</td>
<td>February 11, 2015</td>
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<tr>
<td><strong>MARCH 2015</strong></td>
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<tr>
<td>Briefing and Mandatory Site Visit</td>
<td>March 4, 2015</td>
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<tr>
<td>Submission of Round # 1 Questions</td>
<td>March 11, 2015</td>
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<tr>
<td>Answers to Round # 1 Questions</td>
<td>March 18, 2015</td>
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<tr>
<td>Submission of Proposals</td>
<td>March 31, 2015</td>
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<td><strong>APRIL &amp; MAY 2015</strong></td>
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<tr>
<td>Notify/provide Written Questions to Qualifying Proponents for Presentation</td>
<td>April 7, 2015</td>
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<tr>
<td>Proponent Presentations and Interview</td>
<td>April 21, 2015</td>
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<tr>
<td>Notification of Successful Proponent pending Council Agreement</td>
<td>April 23, 2015</td>
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<tr>
<td>Report to Council</td>
<td>April 24 - May 4, 2015</td>
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<td>Transition Period Begins</td>
<td>Early May</td>
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<tr>
<td><strong>JUNE, 2015</strong></td>
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<tr>
<td>Initiation of new Service Agreement</td>
<td>June 1, 2015</td>
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9.0 **PROJECT OBJECTIVES**

9.1 **General**

The following represent, in no particular order, the Municipality’s objective in pursuing a public/private partnership in delivering the water and wastewater services. In preparing responses to the RFP, Proponents should ensure that their proposals address and meet the Municipality’s objectives as described herein.

9.2 **Effective Management**

The Municipality requires a level of service that is at least commensurate with that currently provided and which complies with all applicable provincial legislation and regulations in effect at the time of RFP submission, and as amended from time to time. It is intended that the Preferred Proponent will demonstrate its ability to exceed these minimum expectations, enhance the performance of the facilities, demonstrate efficiency and reduce costs while delivering the services in the manner suggested in this RFP. It is also intended that this level of service would be maintained throughout the term of the Services Agreement and through any transition period to any future provider of the services. The Preferred Proponent will assume responsibilities for the position of Overall Responsible Operator (ORO) and Operator in Charge (OIC) for the water treatment and pumping facilities and distribution system and wastewater services as detailed in O. Reg. 128/04 (as amended to 256/05) Sec 22 & 23, and O.Reg 129/04 Sec 15 & 17, respectively.

9.3 **Control and Accountability**

The Municipality will retain the user rate-setting function in any proposed partnership relating to the services. The Municipality will expect the contractor to employ systems that provide complete and comprehensive financial and operating details for the operation and maintenance activities related to plant functions. The Municipality will require immediate and complete access to all available information relating to the facilities as well as regular reporting and input into material decisions relating to the facilities. It is intended that the Preferred Proponent will recognize their role as a full partner in the servicing of the Municipality’s residents and address itself to meeting the information needs of the Municipality and public in connection with providing the services.

9.4 **Cost of Services (Innovation and Improvement)**

The Municipality is seeking the best value for each dollar expended in connection with the delivery of the services. It is anticipated the Proponent will have the initiative and ability to optimize the Plant’s operating costs. The Proponent should take an active role in highlighting innovative strategies to the Municipality for enhancing performance and reducing the overall costs of the Plant operation without impacting health and safety or acceptable operating standards.

9.5 **Capital Improvements**

The Municipality expects that the Preferred Proponent will propose capital projects and introduce innovations to the facilities, subject in each case, for the Municipality’s consent. The Proponent will identify capital projects that will serve to optimize plant operation and
preserve the Municipality's assets. The Municipality will retain the right to make capital improvements to the facilities of its own initiative and at its sole discretion during the term of the Services Agreement. The Municipality will at no time during the term of the Services Agreement be under any obligation to make such improvements.

The Proponent will be required to assist the Municipality, their Consultant, and their Contractor in any capital upgrading of the pumping, treatment, and distribution and collection infrastructure by providing advice from an operational, maintenance, and practical operating perspective. However, any and all capital projects shall be subject to the approval of the Municipality.

9.6 Asset Protection

The successful Proponent will be a steward of the facilities on the Municipality’s and its resident’s behalf and will accept, preserve and return the facilities in accordance with the terms of the Services Agreement between it and the Municipality. At a minimum, it is intended that the facilities will be maintained to an acceptable standard of care and will be returned to the Municipality in as good or better condition than their condition at the start of the Service Agreement, normal wear and tear excepted.

The Municipality will expect the Proponent to employ a computerized maintenance management system to control and document all maintenance activities such as; preventative, scheduled and emergency maintenance.

9.7 Compliance Responsibility

The successful Proponent must ensure complete and timely compliance with all applicable legislation and directives from the Ministry of the Environment (MOE) and all other governing Ministries and agencies as amended from time to time.

The successful Proponent shall, as part of the Base Proposal, provide proof of accreditation as the operating authority for a municipal drinking water system based on Ontario Regulation 188/07 – Licensing of Municipal Drinking-Water Systems Regulation (DWQMS) adopted under the Safe Drinking Water Act, 2002. The Proponent will be required to implement its own QMS.

9.8 Liability

The Municipality is seeking the optimum balance of risk and benefit throughout the term of its contractual relationship with the successful Proponent.

9.9 Future Expansion

The Municipality anticipates limited population growth in the community served by the facilities during the initial term of the Service Agreement. The Proponent must, however, include in their proposal, a method to acknowledge any significant increase or decrease in treatment requirements, through the term of the Services Agreement.

10.0 SCOPE OF SERVICES

10.1 General
The services include the operation, routine maintenance and management, including asset protection of the facilities. The description of the services in this RFP is for general purposes only and does not necessarily reflect the entire scope of the services to be provided by the Preferred Proponent.

Proponents should nevertheless address these general descriptions in their response to this RFP. Capital improvements may be funded wholly by the Municipality, wholly by the Proponent, or pursuant to some other financing structure to be agreed by the Municipality and the Proponent. The Municipality will have final approval for any capital projects proposed by the Preferred Proponent during the term of the Service Agreement.

The Municipality does not intend to transfer any of the facilities at this time. All property, capital improvements, trademarks, manuals, software and all documents and records required to operate the facilities shall belong to the Municipality. It is intended that, where applicable, the Proponent shall provide the Municipality with a license to use any software, design, or process to be used at any of the facilities.

10.2 The Municipality’s Role

The Public Works Supervisor will manage the water and wastewater operations and maintenance contract and be the project manager for capital projects undertaken by the municipality. The Supervisor (or his designate) will provide daily contact between the municipality and the Proponent.

It is expected that the Business, Operations and Maintenance Plans required below will reflect the Municipality’s role in the following manner:

- provision for up-to-date monitoring and reporting of operations including, without limitation, ensuring asset maintenance, technological currency, customer concerns resolution and compliance with the terms of the Services Agreement;
- provision for review of budgets, expenditures, and updated business planning;
- provision for review of annual fees if applicable;
- provision for Municipality’s approval of capital projects and other innovations; and
- approval of maintenance items over a certain minimum dollar limit.

10.3 General Description of Services

The successful Proponent will use trained and certified operators to properly operate and maintain the wastewater treatment and water supply systems so as to:

- comply with all applicable Certificates of Approval and other relevant government and agency regulations and standards;
- provide insurance coverage for all facilities and Proponent owned vehicles;
- have in place adequate contingency and emergency plans acceptable to the Municipality and a Workplace Safety Program that meets provincial standards;
- Properly handle and dispose of treatment process residuals including Biosolids management;
- Properly handle and dispose of all debris and materials that may accumulate from time to time in grit channels and other operating areas of the facilities.
- deliver frequent and detailed reports, to the Municipality, that demonstrate compliance and support all future planning;
• manage all human resource functions such as payroll, recruitment, termination and employee relations;
• provide combined operator coverage of one (1) fully trained, certified and dedicated operator, Monday to Friday and physical inspections only on Saturday, Sunday and holidays. Maintenance and special circumstances may require additional qualified personnel;
• provide for 24-hour 7-day per week on-call coverage at the facilities. Provide details as to how 24/7 on-call coverage will be accomplished and when overtime provisions will be invoked;
• provide all sampling requirements in accordance to regulations and standards.

All of the above shall be done in a manner that gives the Municipality confidence in the operation and future of the facilities and ensures appropriate interaction with regulatory bodies and customers of the systems.

Some specific details are as follows:

10.3.1 Capital Improvements

The successful Proponent will record information on the frequency of equipment breakdown and repair costs to determine replacements needs. Parts of the facilities requiring upgrading or improvement will be identified and brought to the attention of the Municipality.

10.3.2 Optimization and Compliance of Operation

The successful Proponent will, as part of their daily operations regime, continually investigate and implement measures to improve the effectiveness and efficiency of all facilities.

10.3.3 Reporting

The successful Proponent will be responsible for providing, at a minimum, formal quarterly, or as regulated by the Ministry, performance reports to the Municipality by the end of the month following each quarter.

The formal reports will identify, as a minimum, the following criteria:

For water:
• flows (average, maximums);
• facility and equipment repair and maintenance details;
• related water distribution system issues i.e. water main breaks etc.;
• complaints and other public inquiries received and action taken;
• regulatory issues - inspections, orders, reports filed with regulators;
• adverse water quality responses;
• health and safety issues; and
• status of capital projects.

For wastewater: as necessary per legislation and regulation and/or at the Township’s request.
Other parameters may be added from time to time by the Municipality or successful Proponent. The Municipality expects to have immediate and complete read only access to any SCADA system the Proponent uses, as well as operations and maintenance databases, via an on-line terminal.

10.3.4 Regulatory Matters

The successful Proponent will handle day-to-day regulatory requirements and contacts with regulatory authorities in respect of operating issues concerning the facilities. The Proponent will review any inspection reports prepared by regulatory authorities that are provided to the Proponent or the Municipality. Subject to any approvals of the Municipality, the Proponent will either correct all deficiencies identified in such inspection reports or negotiate changes with the regulatory authorities.

10.3.5 Operational and Maintenance Duties

The successful Proponent will perform regularly scheduled inspections and carry out associated operational and maintenance duties at the facility, including all related equipment, buildings and property to ensure that the facility is operated and maintained efficiently and effectively.

11.0 PROPOSAL FORMAT

11.1 Structure of Response

Proponents are required to submit the following documents in response to this RFP:

- Covering letter;
- Business plan;
- Operations plan;
- Maintenance plan;
- Transition plan; and
- Price proposal (to be submitted in a separate sealed envelope).

Submissions must be signed and sealed by an authorized representative of the Proponent.

The Proponent shall disclose a full relationship, if any, between any Council person or other officer, employee or person who is employed by or on contract or otherwise compensated by the Town of Terrace Bay if any such person has or had any direct or indirect personal interest in the Proponent within the current calendar year.

It is essential that the Proponent has the capabilities, within their own corporate structure to operate and maintain both water and waste water facilities.

11.2 Covering Letter

The covering letter shall confirm the Proponent's contact person as well as its address, e-mail address, telephone and facsimile numbers. The covering letter shall also contain a clear statement that the response constitutes a firm and binding offer to the Municipality, which shall remain effective until May 31, 2015. Note: The Proponent information is to be
submitted for the Proponent and not its parent company, joint venture partners or other corporate affiliate.

11.3 Business, Operations, Maintenance and Transition Plans

As indicated above, the Municipality intends to negotiate an agreement with an initial five (5) year term with a potential five (5) year renewal option that may be exercised at the Municipality’s sole discretion. After forty-two (42) months (18 months prior to expiry) of the initial five year term, the Municipality and Proponent will review the success of the contract with a view of whether either or both wish to continue or terminate the arrangement at the end of five years.

With this time frame in mind, the Municipality requires each Proponent to develop and submit Business, Operations and Maintenance Plans (“Plans”) for at least a five (5) year period following the Preferred Proponent's assumption of the duty to provide the services on the Municipality’s behalf. It is expected that the first year of the Plans will be detailed with the second and subsequent years containing less detail. The Municipality will expect the Proponent to review and update (as required) these Plans on an annual basis and the Plans may form part of the Services Agreement between the Municipality and the Proponent.

The Plans portion should generally outline the objectives of each Proponent in delivering the services as well as the strategies for meeting these and the Municipality’s objectives within the appropriate time frame. The Plans should also address the Proponent’s proposals for providing the residents of the Municipality with the best value as regards the provision of the services.

Specifically, the Plans should address the items set out below. The items are listed in no particular order and Proponents should feel free to organize this aspect of the response in any manner they see fit.

11.4 Business Plan

11.4.1 Objectives

Specifically, describe the objectives of the Proponent during the first five years (and beyond, if relevant) of the Services Agreement. Include statements regarding assumption of risk, future years’ price adjustments, repair and replacement, capital improvements and guarantees.

11.4.2 Corporate and Operating Philosophy

Provide a brief but definitive statement of the Proponent’s corporate philosophy and operational approach pertaining to the water and waste water facilities and related services.

11.4.3 Reporting

Detail the manner in which the Proponent will facilitate the Municipality’s active role in monitoring the operations. This section should address how the Proponents propose to develop a thorough process for regular formal and informal reporting to Municipality staff and/or Council. The Proponent should provide suggestions for changes to SCADA implementation as a means of improving monitoring functions. It should be noted that the current remote monitoring system (SCADA) is not owned by the Municipality, however,
some of the facilities do have stand-alone systems that may be utilized by the Proponent for monitoring purposes. Any adaptation of existing equipment or acquisition of equipment for monitoring purposes will be at the cost of the Proponent.

**11.4.4 Public Relations**

Proponents should address the manner in which they will provide a convenient and consistent process to respond to inquiries from residents and to effectively deal with their questions and concerns. It is the intent of the Municipality that the citizens will have a satisfactory level of comfort with the successful Proponent.

**11.4.5 Regulatory Compliance**

The Proponent shall be responsible for regulatory compliance and ensure that the wastewater effluent and water supply meets the quantity/quality parameters identified in the applicable Certificate of Approval and any amendments that may be forthcoming.

**11.4.6 Environmental Management System**

Proponents shall detail their environmental management system. More specifically, a plan for complete compliance with environmental regulations and the Occupational Health and Safety Act shall be described. A program for health and safety practices within the workplace shall be provided.

**11.4.7 Insurance and Liability**

The Proponents shall outline the method to indemnify and save the Municipality harmless from all costs, expenses, damages and claims of third parties. Proponents shall detail the general and environmental liability, boiler and machinery, and automobile insurances provided for the following minimum insurance requirements:

**Commercial General Liability Insurance**

The Contractor shall provide, maintain and pay for Commercial General Liability insurance. The policy shall remain in place for the entire duration of the Contract.

Commercial General Liability insurance shall have limits of not less than ten (10) million dollars per occurrence of bodily harm, death, damage to property, etc.

**Automobile Liability Insurance**

The Contractor shall provide, maintain and pay for Automobile Liability Insurance for the entire duration of the Contract.

Automobile Liability Insurance shall have a minimum of not less than two (2) million dollars per occurrence of bodily harm, death, damage to property, etc.

**Property Insurance**

The Contractor shall provide, maintain and pay for Property Liability Insurance for the entire duration of the Contract.

All risk property insurance shall be in the names of both the Contractor and the Owner, insuring not less than the replacement cost of all building structures and property.
Boiler and Machinery Insurance
The Contractor shall provide, maintain and pay for Boiler and Machinery Insurance for the entire duration of the Contract.

All risk Boiler and Machinery insurance shall be in the names of both the Contractor and the Owner, insuring not less than two (2) million dollars per occurrence of damage or loss of machinery.

11.4.8 Performance Guarantees

Describe the method and amount (at a minimum the amount of the Services Agreement annual operating price proposal) by which the Proponent will provide service guarantee to the Municipality.

11.5 Operations Plan

11.5.1 Staffing, Training and Corporate Resources

Detail the corporate structure of the Proponent and its related or affiliated companies by means of an organizational chart. Describe the management structure to be implemented at the facilities including any potential interaction with Municipal staff and/or elected officials. Provide details on individuals that will be performing managerial functions on the Proponent’s behalf. Discuss staffing levels at the facilities, training, salary/wage/benefits in relation to industry standards and any other matters relating to the human resources aspects of the Services Agreement. A detailed list of proposed operations and maintenance personnel (including number of staff, duties to be performed and an estimation of time that the Proponents staff would be performing work related specifically to the Town’s facilities each week), categorized by license, is to be provided. Details should include but not be limited to, current or desired qualifications and relevant operation experience of all staff to be used in performing the work included in this Service Agreement. Proponents and their staff shall be certified as required by Regulation 435/93 under the Ontario Water Resources Act and Regulation 128/04 under the Safe Drinking Water Act.

11.5.2 Operations Procedures

Describe, in detail, the specific services to be provided by the Proponent to the Municipality. These shall include any additions or specific exclusions the Proponent may feel are necessary. The outline should include sections dealing with operations procedures and systems at the facilities and any other services to be provided by the Proponent. Any specific changes that are proposed to the current operating procedures employed by the Municipality or present Service Provider in connection with its operation of the facilities should be described with a rationale for their inclusion.

11.5.3 Residuals Management

The Proponent will be responsible for the safe disposal of any and all solid and liquid waste materials produced by the water and waste treatment processes.

11.5.4 Disaster, Contingency and Emergency Programs

The Proponent should detail the content of any and all plans that relate to disaster recovery, emergency situations and other operational contingencies. The details should include
discussions on potential problems and their solutions that normally may be expected to occur.

11.5.5 Participation in Municipal Emergency Plan

It is expected that the Proponent will identify one contact person and one alternative to participate as an active member of the municipal Emergency Management Program Committee over the life of the contract to establish site specific disaster, contingency and emergency programs in accordance to legislative requirements. (May include, but not be limited to, the Town’s Emergency Community Control Group or CCG.) In the event an emergency is declared, it is expected that a competent person of the Proponent is available to provide assistance to the Emergency CCG.

11.6 Maintenance Plan

11.6.1 Overview

The Proponent shall provide the Municipality with full documentation validating that the appropriate maintenance procedures are being performed on all municipally-owned equipment in accordance with manufacturers’ recommendations and best practices. The documentation should indicate the defined service intervals and a description of the service activities in sufficient detail to satisfy the interest of the Municipality. Such a maintenance program must include documentation of maintenance and include a spare parts inventory.

Except for capital expenditures as defined in the Services Agreement, the Proponent shall provide all personnel, materials, parts, equipment, supplies and services necessary to maintain the Municipal facility structures, process equipment, buildings, HVAC systems, electrical equipment, instrumentation and controls, to maintain high efficiency operations, long-term reliability and preservation of capital investment as may be outlined in the price proposals.

Maintenance categories are as follows:

11.6.2 Routine Maintenance

Maintenance and care of all facilities including all cleaning/janitorial, equipment adjustments, lubrication, repairs and painting to preserve the condition and appearance of all facilities.

11.6.3 Preventive Maintenance

Regularly scheduled and follow-up maintenance activities, as recommended by equipment manufacturers or using best practices, including routine inspections, warranty maintenance activities, and calibration. This maintenance should also include lubricants, testing, vibration analysis, motor winding, other electrical equipment testing and load testing, including all MCC panels and emergency standby generators.

Routine and Preventive Maintenance costs are the Proponent’s responsibility and the cost of labour, services, materials, supplies and replacement parts including lubricants, filters, belts and all other consumable materials must be included in the price of proposals.

11.6.4 Breakdown Maintenance

Breakdown maintenance is defined as repair, replacement or renewal of equipment or other capital items that have failed or when failure is deemed to be imminent.
The Proponent shall submit an Expenditure Request to the Municipality for all Breakdown Maintenance items in advance of conducting any work to ensure such maintenance is properly approved. If delay in any such repair, replacement or renewal of equipment would immediately compromise the applicable Certificate of Approval, the Public Works Supervisor must be consulted prior to any work being performed and an Expenditure Request must be submitted within seventy-two (72) hours of approved repairs being completed.

Where applicable, costs for repairs and/or parts and materials by competitive quotations will be obtained by the Proponent and provided to the Municipality prior to consultation and approval.

11.6.5 Emergency Plan

As previously noted, the Proponent is required to prepare and provide an Emergency Plan to the Municipality for approval. When measures are required due to systems failure, the Proponent is responsible to ensure all necessary actions are performed including those specified in the Emergency Plan. The costs associated are to be extra to the Services Agreement with the Municipality paying all invoicing, e.g., if there is a need to provide potable water to residences within the Municipality’s supply system due to water system failure.

The Proponent must monitor and enforce all equipment warranties, and perform all activities in accordance with manufacturer recommendations to preserve such warranties both those in effect on the date of the execution of the Services Agreement and those for new equipment purchased during the term of the Services Agreement. Within ninety (90) days of the effective date of the Services Agreement, the Proponent shall provide a complete and detailed schedule of all routine and preventive maintenance activities, for approval by the Municipality. Threshold values for preventive maintenance testing along with appropriate justification shall also be provided to the Municipality for approval. Upon approval by the Municipality, the Proponent shall diligently perform maintenance according to such a schedule.

Notwithstanding the above time frame, the Proponent will perform all the necessary maintenance at the facilities as per regulations or established industry standards and best practices from the effective date of the Services Agreement.

The Proponent is required to supply and implement a computerized maintenance management system for the Municipal facilities. This computerized system will identify all equipment and indicate all maintenance schedules. In addition, the program will identify all labour, material, and the cost for all parts for each individual maintenance function or repair to each piece of equipment or facility. It is preferred that any proposed computerized maintenance management system be non-proprietary. All data in the system will become the property of the Municipality either via electronic, print or similar acceptable media.

The Proponent will supply, at a minimum, quarterly summaries of maintenance activities and related costs by the end of the month following each quarter. A yearly summary is also required (may include 4th quarter summary). The Municipality will have unimpeded “read only” access to the database to review maintenance activities and costs. The Proponent will detail the types of reports that will be available from the maintenance software. All reports will be in duplicate, with one copy for the Municipality.

11.6.6 Innovation

Detail the improvements to be immediately implemented and those considered for implementation in the future to address any identified deficiencies in the operations and maintenance of the facilities or that may increase the efficiency and effectiveness of the
11.6.7 Capital Investment Recommendations

Detail any capital improvement projects that the Proponent would recommend during the term of the Services Agreement.

11.6.8 Any Additional Matters Identified by Proponent

Identify on an individual basis.

11.7 Transition Plan

Each Proponent should prepare and submit a Transition Plan with two aspects. The first aspect (the “Initial Transition Plan”) will deal with transition issues associated with the Proponent commencing operation of the facilities and provision of the services as of the effective date. The Municipality expects this period to last approximately four (4) weeks from May 1, 2015 to June 1, 2015.

The second aspect (the “Ending Transition Plan”) shall deal with transition issues associated with the Proponent ceasing to operate the facilities upon the termination of the Services Agreement. The Initial Transition Plan shall address the following issues in addition to any other issues identified by the Proponent:

- execution of the Services Agreement;
- transition time table;
- conduct of initial condition survey;
- issues that the Proponent will deal with during the transition period;
- issues that the Municipality will deal with during the transition period;
- cost to Municipality and requirements for staff resources to deal with issues;
- issues relating to immediate implementation of suggested improvements; and
- procurement policies (e.g. contracts for bio-solids handling, chemicals, utilities, etc.).

The Ending Transition Plan shall identify and describe in sufficient detail the Proponent’s estimate of the costs associated with the transition at the conclusion of the Services Agreement. The Ending Transition Plan should further identify any other issues which would be required to be addressed in order to ensure the smooth transition back to the Municipality or to a new Proponent upon termination of the Services Agreement including, without limitation, staffing issues and the licensing or transfer of any software, designs, or processes used at any of the facilities.

Proponents should ensure that the costs associated with the initial and ending transition periods are set out in the Price Proposals during the appropriate years.

12.0 PRICE PROPOSALS

12.1 Base Price Proposal and Alternative Proposals

The price proposals shall be submitted in separate sealed envelopes marked as “Base Price Proposal” and “Alternative Proposals”, as applicable.

12.2 Base Proposal
The fixed price Base Proposal, in Canadian Dollars, shall be for the balance of the year 2015 and each of the subsequent four years. These subsequent years may be at an established fixed price or on an annual adjustment as detailed in the Base Proposal. The Base Proposal shall also include the methodology for the fixed or annual price adjustment for the subsequent five-year renewal option. The proposal should include any terms and conditions.

The Base Proposal shall include a fixed price for the overall operating, maintenance and management for each separate water and wastewater facility, itemized in the following suggested categories. The Base Proposal may set maximum costs for items such as maintenance with any cost savings being passed on to the Municipality.

The price proposals shall be submitted in accordance with the following format and shall be complete in every detail. The Proposal shall identify all terms and conditions associated with the price proposal. All pricing exceptions will be noted. Failure to do so would be considered cause for disqualification. Following definitions shall be applicable to the price items requested in this section:

12.2.1 Personnel Services

Includes, but is not limited to, salaries, wages, overtime, pay differential, longevity, unemployment compensation, holiday pay, meal allowance, education assistance, hospital, medical, dental plans, life insurance, retirement contributions, sick leave and other costs directly attributable to employees.

12.2.2 Utilities

Utility costs which include electricity, propane, water and heating fuels will be the responsibility of the Municipality.

12.2.3 Chemical

Ordering shall be the responsibility of the Proponent, with the understanding that the Municipality and Proponent will work together on maximizing savings for the Municipality.

12.2.4 Equipment

Includes, but is not limited to, office equipment, laboratory equipment, safety equipment, tools, communication equipment, maintenance equipment, vehicles, mechanical equipment and manually operated equipment. An inventory of municipally owned equipment is to be provided by the Proponent, to the Municipality, during the Initial Transition period.

12.2.5 Materials and Supplies

Includes, but is not limited to, office supplies, duplicating and photo supplies, medical supplies, chemicals, laboratory supplies, clothing, uniforms, cleaning, personal hygiene, janitorial and maintenance supplies and other materials and supplies.

12.2.6 Outside Services

Includes, but is not limited to, equipment rentals, temporary and/or part time help, legal fees, registrations, telephone, internet, courier service, dues, subscriptions postage and freight
charges, advertising, printing and binding, insurance and other professional services.

12.2.7 Other

Includes amortization of Proponent furnished capital and start-up costs and any and all expenses not identified in any other specific category (must be detailed separately and attached).

12.2.8 Maintenance and Repair

Includes the total of all maintenance and repair expenditures including, but not limited to, repair parts, maintenance equipment, maintenance supplies, outside maintenance services, oil and grease, janitorial, grit removal, packing and maintenance equipment rental. Proponent’s on-site labour shall not be included.

12.2.9 Included

a) Any cost that is required to adhere to the applicable Certificate of Approval; and
b) Any cost that is required as a result of a Ministry or other regulatory inspection and Order that relates to the responsibilities of the operator.

12.2.10 Excluded

a) Any cost that is required to comply with new legislation or regulation; and
b) Anything that results in an amendment or replacement of the Certificate of Approval.

12.3 Alternative Proposals

The Municipality will consider Alternative Proposals in addition to the required Base Proposal provided the Proponent clearly identifies the proposal(s) as an Alternative Proposal and otherwise provides the responses required by this RFP. Proponents should ensure that the Alternative Proposals are capable of being assessed against the other responses in the manner provided herein. Any Alternative Proposal should contain all relevant information (including, where applicable, all relevant cost/benefit analyses, financial and other assumptions, and related calculations) as are necessary to properly understand and evaluate the Alternative Proposal. The format for an Alternative Proposal should adhere to the prescribed format as closely as possible and should address the objectives of the Municipality as set out above.

12.4 Transition Costs

The Proponent is to outline and include the costs associated with the Initial Transition and the Ending Transition as detailed in the Transition Plan. Specifically, costs associated with transferring information and data from the existing or future SCADA, maintenance database and operations database to the new software programs proposed by the Proponent.

12.5 Value Added Services

The Proponent is to outline any value added services that may be provided annually to the Municipality at no additional fees.
12.6 **Suggested Fixed Price Base Proposal**

<table>
<thead>
<tr>
<th>Description</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
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</thead>
<tbody>
<tr>
<td><strong>1.0 Base Proposal</strong></td>
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<tr>
<td>1.1 Personal Service</td>
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<td>1.2 Materials/Supplies</td>
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<td>1.3 Outside Services</td>
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<td>(including Insurance)</td>
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<td>1.4 Plant Operational</td>
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<td>Maintenance</td>
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<tr>
<td>1.5 Transition Costs</td>
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<tr>
<td>1.6 Other (Identify)</td>
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</table>

**GRAND TOTAL:**

Note: All applicable taxes will be extra to the above noted Total.

13.0 **EVALUATION AND NEGOTIATION PROCESS**

13.1 **General**

The Municipality will carry out the evaluation of the proposals by an Evaluation Team consisting of Municipal Council and Staff. Engineering consultants and legal advisors may also be utilized for respective expertise/technical support if required. The evaluation will be on a points scoring of the criteria as outlined below.

13.2 **Due Diligence Period**

Proponents are solely responsible for conducting their own independent research, due diligence or other work necessary for the preparation of responses to this RFP. The Municipality will use its best efforts to make relevant information available to Proponents in connection with their preparation of responses to this RFP. To this end, the Municipality invites Proponents to make requests for information in writing to Jon Hall CAO/Clerk, as provided in Clause 7 above, during the period of February 11, 2015 to March 11, 2015. All questions must be tabled on or before 4:00 p.m. on March 11, 2015. The Municipality will use its best efforts to respond to such requests as they are received with final comments on or before March 18, 2015 and will make available to each of the Proponents copies of all such requests and responses thereto. It is expected that Proponents will use the full period to ask questions and not leave them to the very last to allow sufficient time for a response. Proponents shall not rely on any oral statements made by the Municipality, its employees, or its advisors. All questions must be in writing and all responses will be in writing.

Commencing at 9:00 a.m., March 4, 2015 in Council Chambers (1 Selkirk Ave.), an information session will be conducted for all Proponents followed by a tour of the facilities. The tour will be guided by the Public Works Supervisor. All questions from the session will be recorded and subsequently answered, in writing, by the Municipality.
By contacting the Municipality, periods can be scheduled by each Proponent to review reports, records, drawings and other material. Copies of this material, within reason and at the Municipality’s discretion, can be viewed or made and taken by the Proponent, if desired.

Notwithstanding the foregoing, the Municipality is under no obligation to provide additional information requested by any Proponent. In addition, the Municipality shall have the right to disregard any request for additional information by the Municipality after the deadline noted above. All requirements, designs, documentation, plans or other information obtained from the Municipality by the Proponents in connection with this RFP are the property of the Municipality and shall be treated as confidential and not used for any purpose other than responding to this RFP or for the fulfilment of the Services Agreement.

13.3 Submission Deadline

Submissions must be received no later than 4:00 p.m. (local time) on Tuesday, March 31, 2015, at the following location:

Township of Terrace Bay
1 Selkirk Avenue, P.O. Box 40
Terrace Bay, ON P0T 2W0

Attn: Jonathan Hall, CAO/Clerk

All packages containing proposals must be clearly marked REQUEST FOR PROPOSAL (RFP) OPERATION OF WATER TREATMENT PLANT AND LOW LIFT PUMPING FACILITY and OVERALL RESPONSIBLE OPERATOR AND OPERATOR IN CHARGE FOR CLASS 1 WATER DISTRIBUTION SYSTEM AND CLASS 1 SEWAGE SYSTEM

One (1) original and four (4) copies must be submitted.

Submissions must be signed and sealed by an authorized representative of the Proponent.

The Proponent shall disclose all full relationship, if any, between any Council person or other officer, employee or person who is employed by or on contract or otherwise compensated by the Town of Terrace Bay if any such person has or had any direct or indirect personal interest in the Proponent within the current calendar year.

The covering letter shall confirm the Proponent’s contact person as well as its address, e-mail address, telephone and facsimile numbers. The covering letter shall also contain a clear statement that the response constitutes a firm and binding offer to the Municipality, which shall remain effective until December 31, 2015. Note: the Proponent information is to be submitted for the Proponent and not its parent company, joint venture partners or other corporate affiliate.
13.4 Evaluation and Selection Process

The evaluation of the proposals will be based on a scoring system using points as outlined below:

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Maximum Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Proponent Profile</td>
<td></td>
</tr>
<tr>
<td>- Years in business</td>
<td>3</td>
</tr>
<tr>
<td>- Years in business in Ontario</td>
<td>3</td>
</tr>
<tr>
<td>- Financial Capability</td>
<td>4</td>
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<tr>
<td>2. Proponent Experience in Water and Wastewater</td>
<td></td>
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<tr>
<td>- Number of current water o/m/m projects</td>
<td>5</td>
</tr>
<tr>
<td>- Number of current wastewater o/m/m projects</td>
<td>5</td>
</tr>
<tr>
<td>- Legal action, prosecution and orders (previous three years)</td>
<td>3</td>
</tr>
<tr>
<td>- References</td>
<td>3</td>
</tr>
<tr>
<td>3. Proponent Business Plan</td>
<td>8</td>
</tr>
<tr>
<td>4. Proponent Operating Plan</td>
<td>8</td>
</tr>
<tr>
<td>5. Proponent Maintenance Plan</td>
<td>8</td>
</tr>
<tr>
<td>6. Proponent Transition Plan</td>
<td>5</td>
</tr>
<tr>
<td>7. Personnel Assigned to this Project</td>
<td></td>
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<tr>
<td>- Management &amp; staff qualifications and experience plus any additional information provided in the Proposal.</td>
<td>10</td>
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<tr>
<td>8. Asset Protection</td>
<td>5</td>
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<tr>
<td>9. Price</td>
<td></td>
</tr>
<tr>
<td>- Base Proposal</td>
<td>20</td>
</tr>
<tr>
<td>- Value Added Services Offered</td>
<td>10</td>
</tr>
<tr>
<td>10. Total</td>
<td>100</td>
</tr>
</tbody>
</table>

The Municipality reserves the right to reduce points scored for price proposal based on terms and conditions associated with price proposal or exceptions taken which in the Municipality's view would be unfavorable.

Selection of a respondent to perform these professional services will be based on qualifications, experience, historical performance record, financial capability, understanding of needs, and suggestions for improvements, price, suggested innovations and the respondent's proven technical capabilities. In addition to the data and documentation being submitted by the respondent in response to this request, the Municipality reserves the right to make an on-site inspection and evaluation of any facility at which operation, maintenance and management services are currently being performed by the respondent.

If the Municipality chooses to exercise this right, the respondents shall provide a representative, with sufficient notice, to accompany the Municipality or its designated representatives on any on-site inspection. The inspection is not limited to only one facility. All costs for transportation and subsistence to inspect any facilities incurred by Municipality personnel shall be borne by the Municipality.

The Municipality reserves the right to reject any and all proposals and is under no obligation to
award a partnership.

13.5 Invitation to Interview and Presentation

The Municipality reserves the right in its sole discretion to conduct interviews with any or all of the Proponents at such times and dates and in such order as the Municipality may determine. Proponents may be invited to a presentation and interview session with the Evaluation Committee. The Committee will use scoring criteria only as a guide to select a successful proponent, however, the Council is not bound by using the scoring criteria.

The purpose of the presentation and interview shall be to:

- determine in greater detail the qualifications, relevant experience and communication skills of the Proponent's proposed Operations Manager and support team;
- explore in further detail the proposed methodology for operation of the Municipality's Water Treatment Plant and transmission system;
- Address any questions the Evaluation Committee may have for clarification purposes only.

Proponents selected for interviews will be requested to prepare a PowerPoint or similar presentation consisting of three slides on the Company profile and experience with contract operation and one slide for each response to the questions sent with the invitation for interview;

A maximum of three (3) representatives from the qualified Proponent will attend the presentation and interview session with the Evaluation Committee;

The Proponent’s proposed operations manager will conduct the presentation which will have a maximum duration of 45 minutes (30 minutes presentation and 15 minutes for follow-up questions by the Municipality).

14.0 DRAFT SERVICES AGREEMENT

The Municipality requests that the proponent include in their response a draft Services Agreement that will form the basis for negotiating a final Services Agreement based on the requirements in this RFP and the Preferred Proponents proposal. The acceptance and incorporation of the options and opportunities outlined in the Proponent’s proposal and in the Alternative Proposal pricing will be at the sole discretion of the Municipality.

It is intended that the Council of the Township of Terrace Bay will select a Proponent (the “Preferred Proponent”) at a meeting between April 24 - May 4, 2015 (to be determined). The Municipality intends to immediately commence negotiations with the Preferred Proponent to reach a final Services Agreement. Notwithstanding the foregoing, it is not the Municipality’s intention to engage in price negotiations with the Preferred Proponent. The materials contained in the Preferred Proponents response to this RFP may be attached to any Services Agreement executed between the parties.

The Municipality intends to negotiate a Services Agreement with the Preferred Proponent in good faith and, at least initially, on an exclusive basis. Notwithstanding the foregoing, the Municipality may, at any time in its sole discretion, cease negotiations with the Preferred Proponent and commence negotiations with another Proponent. In addition, the Municipality may elect, at any time in its sole discretion, to cancel the entire process without liability for the
cost or expenses incurred by the Preferred Proponent or any other Proponent in conducting negotiations with the Municipality or in responding to this RFP.

The Municipality expects the Preferred Proponent to negotiate a final Services Agreement in good faith in a timely and efficient fashion. The Municipality shall not be under any obligation whatsoever to any Proponent until such time as the Municipality has executed a Services Agreement between the parties.

15.0 TERMINATION OF AGREEMENT

15.1 Condition for Termination

The Operations and Maintenance Services Agreement may only be terminated during the term of the contract either by the Municipality or the Contractor under the following conditions:

(a) At least eighteen (18) months before the expiry of the Initial Term, the Municipality or the Proponent shall notify the other party in writing whether it wishes to renew or terminate this Agreement at the end of the Initial Term;

(b) During the Initial Term or any Renewal Term, this Agreement may be terminated by either the Municipality or Contractor ("Termination for Cause") if:
   
   (i) there has been a material breach of the Agreement; and
   
   (ii) the party complaining of the breach has given written notice of the breach to the other party; and
   
   (iii) the other party does not correct the breach within thirty (30) days of receiving the notice.

(c) Where there is a material breach and:

   (i) such material breach has not been corrected within the thirty (30) day time period;

   (ii) the material breach has not been referred to mediation; or

   (iii) the Parties have not otherwise agreed in writing, then the complaining party may terminate this Agreement by giving at least six (6) months’ notice in writing to the other Party.

(d) If either Party disputes the existence of a breach or that the breach is material, the dispute may be referred to mediation.

(e) After the Initial Term of this Agreement, notwithstanding the term of any renewal, either the Municipality or Contractor may terminate this Agreement as follows:

   (iv) for any reason, upon twelve months prior written notice; or
(v) if there has been a material breach of the Agreement, in accordance with the procedure described in Paragraphs 15.1(b) and (c) above and Section 15.2 below.

15.2 Early Termination

If there has been Termination for Cause, then the terminating party shall be paid its actual costs up to the date of termination. Such costs may include, on the part of the Municipality, the costs of reissuing the RFP or hiring a replacement and temporary operator until a permanent operator can be retained, and in the case of Contractor, the costs of demobilization.

16.0 TRANSITION PERIOD

16.1 Equipment Owned by the Municipality

All land, buildings, improvements and permanent equipment which are presently in place or new facilities that may be added by future construction projects, shall remain or become the property of the Township of Terrace Bay. Should the Proponent fund any facilities improvement at the request and approval of the Municipality, such facilities shall become the Municipality’s after the completion of a repayment schedule. All existing facilities shall be made available to the Preferred Proponent for its use in providing the services under the Services Agreement.

Expendable supplies and spare parts, which are on hand on the date of the commencement of the contract, shall be inventoried for review and agreement by the Municipality. The Proponent shall assume responsibility for such inventory and at the end of the contract period, the inventory shall be returned to the Municipality with a value equal to the beginning value, less normal wear and tear.

The Proponent shall maintain all lands, buildings, improvements, vehicles and permanent equipment that are within the scope of the contract. Equipment and vehicle maintenance shall be performed by the Proponent in accordance with manufacturer’s recommendations or good industry practices and the Proponent will be required to provide proof thereof to the satisfaction of the Municipality.

17.0 CONTRACTOR INFORMATION

The Contractor information shall include the audited financial reports for the year 2013, or most recent corresponding fiscal year, available at time of submission.
Appendix A – Terrace Bay Permit to Take Water
AMENDED PERMIT TO TAKE WATER
Surface and Ground Water
NUMBER 5887-8JHPXU

Pursuant to Section 34 of the Ontario Water Resources Act, R.S.O. 1990 this Permit To Take Water is hereby issued to:

The Corporation of the Township of Terrace Bay
1 Selkirk Ave P.O. Box 40
Terrace Bay, Ontario, P0T 2W0
Canada

For the water taking from:
1) PW1 / Back-up Supply
2) PW2 / Back-up Supply
3) PW3 / Back-up Supply
4) PW4 / Back-up Supply
5) Lake Superior
6) PW1 / Maintenance
7) PW2 / Maintenance
8) PW3 / Maintenance
9) PW4 / Maintenance

Located at:
17 A Ridgewood Dr JK 300, Original Geographic Township of Strey Terrace Bay, District of Thunder Bay

For the purposes of this Permit, and the terms and conditions specified below, the following definitions apply:

DEFINITIONS

(a) "Director" means any person appointed in writing as a Director pursuant to section 5 of the OWRA for the purposes of section 34, OWRA.

(b) “Provincial Officer” means any person designated in writing by the Minister as a Provincial Officer pursuant to section 5 of the OWRA.

(c) "Ministry" means Ontario Ministry of the Environment.

(d) "District Office" means the Thunder Bay District Office.
(e) "Permit" means this Permit to Take Water No. 5887-8JHPXU including its Schedules, if any, issued in accordance with Section 34 of the OWRA.

(f) "Permit Holder" means The Corporation of the Township of Terrace Bay.

(g) "OWRA " means the *Ontario Water Resources Act*, R.S.O. 1990, c. O. 40, as amended.

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

**TERMS AND CONDITIONS**

1. **Compliance with Permit**

1.1 Except where modified by this Permit, the water taking shall be in accordance with the application for this Permit To Take Water, dated May 5, 2011 and signed by Carmelo Notarbartolo, and all Schedules included in this Permit.

1.2 The Permit Holder shall ensure that any person authorized by the Permit Holder to take water under this Permit is provided with a copy of this Permit and shall take all reasonable measures to ensure that any such person complies with the conditions of this Permit.

1.3 Any person authorized by the Permit Holder to take water under this Permit shall comply with the conditions of this Permit.

1.4 This Permit is not transferable to another person.

1.5 This Permit provides the Permit Holder with permission to take water in accordance with the conditions of this Permit, up to the date of the expiry of this Permit. This Permit does not constitute a legal right, vested or otherwise, to a water allocation, and the issuance of this Permit does not guarantee that, upon its expiry, it will be renewed.

1.6 The Permit Holder shall keep this Permit available at all times at or near the site of the taking, and shall produce this Permit immediately for inspection by a Provincial Officer upon his or her request.

1.7 The Permit Holder shall report any changes of address to the Director within thirty days of any such change. The Permit Holder shall report any change of ownership of the property for which this Permit is issued within thirty days of any such change. A change in ownership in the property shall cause this Permit to be cancelled.

2. **General Conditions and Interpretation**

2.1 Inspections
The Permit Holder must forthwith, upon presentation of credentials, permit a Provincial Officer
2.2 Other Approvals
The issuance of, and compliance with this Permit, does not:

(a) relieve the Permit Holder or any other person from any obligation to comply with any other applicable legal requirements, including the provisions of the *Ontario Water Resources Act*, and the *Environmental Protection Act*, and any regulations made thereunder; or

(b) limit in any way any authority of the Ministry, a Director, or a Provincial Officer, including the authority to require certain steps be taken or to require the Permit Holder to furnish any further information related to this Permit.

2.2.1 Prior to the taking of any water under the authorization of the Permit to Take Water, the Permit Holder shall ensure full compliance with the *Safe Drinking Water Act*, 2002 and its regulations. At no time does this permit authorize the taking of water when out of compliance with the *Safe Drinking Water Act*, 2002 and its regulations.

2.3 Information
The receipt of any information by the Ministry, the failure of the Ministry to take any action or require any person to take any action in relation to the information, or the failure of a Provincial Officer to prosecute any person in relation to the information, shall not be construed as:

(a) an approval, waiver or justification by the Ministry of any act or omission of any person that contravenes this Permit or other legal requirement; or

(b) acceptance by the Ministry of the information's completeness or accuracy.

2.4 Rights of Action
The issuance of, and compliance with this Permit shall not be construed as precluding or limiting any legal claims or rights of action that any person, including the Crown in right of Ontario or any agency thereof, has or may have against the Permit Holder, its officers, employees, agents, and contractors.

2.5 Severability
The requirements of this Permit are severable. If any requirements of this Permit, or the application of any requirements of this Permit to any circumstance, is held invalid or unenforceable, the application of such requirements to other circumstances and the remainder of this Permit shall not be affected thereby.

2.6 Conflicts
Where there is a conflict between a provision of any submitted document referred to in this Permit, including its Schedules, and the conditions of this Permit, the conditions in this Permit shall take precedence.

3. Water Takings Authorized by This Permit
3.1 **Expiry**

This Permit expires on **February 6, 2019**. No water shall be taken under authority of this Permit after the expiry date.

3.2 **Amounts of Taking Permitted**

The Permit Holder shall only take water from the source, during the periods and at the rates and amounts of taking specified in Table A. Water takings are authorized only for the purposes specified in Table A.

### Table A

<table>
<thead>
<tr>
<th>Source Name / Description:</th>
<th>Source: Type:</th>
<th>Taking Specific Purpose:</th>
<th>Taking Major Category:</th>
<th>Max. Taken per Minute (litres):</th>
<th>Max. Num. of Hrs Taken per Day:</th>
<th>Max. Taken per Day (litres):</th>
<th>Max. Num. of Days Taken per Year:</th>
<th>Zone/ Easting/ Northing:</th>
</tr>
</thead>
<tbody>
<tr>
<td>PW1 (Back-Up Supply)</td>
<td>Well Drilled</td>
<td>Municipal</td>
<td>Water Supply</td>
<td>900</td>
<td>24</td>
<td>972,000</td>
<td>10</td>
<td>16 493515 5402597</td>
</tr>
<tr>
<td>PW2, (Back-Up Supply)</td>
<td>Well Drilled</td>
<td>Municipal</td>
<td>Water Supply</td>
<td>900</td>
<td>24</td>
<td>972,000</td>
<td>10</td>
<td>16 493537 5402539</td>
</tr>
<tr>
<td>PW3, (Back-Up Supply)</td>
<td>Well Drilled</td>
<td>Municipal</td>
<td>Water Supply</td>
<td>900</td>
<td>24</td>
<td>972,000</td>
<td>10</td>
<td>16 493522 5402538</td>
</tr>
<tr>
<td>PW4, (Back-Up Supply)</td>
<td>Well Drilled</td>
<td>Municipal</td>
<td>Water Supply</td>
<td>900</td>
<td>24</td>
<td>972,000</td>
<td>10</td>
<td>16 493534 5402535</td>
</tr>
<tr>
<td>Lake Superior</td>
<td>Lake</td>
<td>Municipal</td>
<td>Water Supply</td>
<td>2,700</td>
<td>24</td>
<td>3,888,000</td>
<td>365</td>
<td>16 493526 5402535</td>
</tr>
<tr>
<td>PW1 (Maintenance)</td>
<td>Well Drilled</td>
<td>Other - Miscellaneous</td>
<td>Miscellaneous</td>
<td>900</td>
<td>1</td>
<td>9,000</td>
<td>365</td>
<td>16 493515 5402597</td>
</tr>
<tr>
<td>PW2 (Maintenance)</td>
<td>Well Drilled</td>
<td>Other - Miscellaneous</td>
<td>Miscellaneous</td>
<td>900</td>
<td>1</td>
<td>9,000</td>
<td>365</td>
<td>16 493537 5402539</td>
</tr>
<tr>
<td>PW3 (Maintenance)</td>
<td>Well Drilled</td>
<td>Other - Miscellaneous</td>
<td>Miscellaneous</td>
<td>900</td>
<td>1</td>
<td>9,000</td>
<td>365</td>
<td>16 493522 5402538</td>
</tr>
<tr>
<td>PW4 (Maintenance)</td>
<td>Well Drilled</td>
<td>Other - Miscellaneous</td>
<td>Miscellaneous</td>
<td>900</td>
<td>1</td>
<td>9,000</td>
<td>365</td>
<td>16 493534 5402535</td>
</tr>
</tbody>
</table>

| Total Taking:             | 3,924,000     |

3.3 **As noted in Table A above,** this Permit authorizes the taking of water from Lake Superior (Source 5) as the main municipal water supply and Wells PW1, PW2, PW3 and PW4 (Sources 1, 2, 3, and 4 respectively) as the back-up municipal water supplies, only in the
event of problems with the main municipal water supply from Lake Superior.

3.4 Notwithstanding Condition 3.3 above, this Permit authorize the daily taking of water from Wells PW1, PW2, PW3 and PW4 (Sources 6, 7, 8, and 9 respectively) for maintenance purposes on those days when Lake Superior (Source 5) is being used for the municipal water supply.

4. Monitoring

4.1 The Permit Holder shall, on each day water is taken under the authorization of this Permit, record the date, the volume of water taken on that date and the rate at which it was taken. The daily volume of water taken shall be measured by a flow meter or calculated in accordance with the method described in the application for this Permit or as otherwise accepted by the Director. A separate record shall be maintained for each source. The Permit Holder shall keep all records required by this condition current and available at or near the site of the taking and shall produce the records immediately for inspection by a Provincial Officer upon his or her request. The Permit Holder, unless otherwise required by the Director, shall submit, on or before March 31st in every year, the daily water taking data collected and recorded for the previous year to the ministry’s Water Taking Reporting System.

5. Impacts of the Water Taking

5.1 Notification
The Permit Holder shall immediately notify the local District Office of any complaint arising from the taking of water authorized under this Permit and shall report any action which has been taken or is proposed with regard to such complaint. The Permit Holder shall immediately notify the local District Office if the taking of water is observed to have any significant impact on the surrounding waters. After hours, calls shall be directed to the Ministry’s Spills Action Centre at 1-800-268-6060.

5.2 For Surface-Water Takings
The taking of water (including the taking of water into storage and the subsequent or simultaneous withdrawal from storage) shall be carried out in such a manner that streamflow is not stopped and is not reduced to a rate that will cause interference with downstream uses of water or with the natural functions of the stream.

For Groundwater Takings
If the taking of water is observed to cause any negative impact to other water supplies obtained from any adequate sources that were in use prior to initial issuance of a Permit for this water taking, the Permit Holder shall take such action necessary to make available to those affected, a supply of water equivalent in quantity and quality to their normal takings, or shall compensate such persons for their reasonable costs of so doing, or shall reduce the rate and amount of taking to prevent or alleviate the observed negative impact. Pending permanent restoration of the affected supplies, the Permit Holder shall provide, to those affected, temporary water supplies adequate to meet their normal requirements, or shall compensate such persons for their reasonable costs of doing so.
If permanent interference is caused by the water taking, the Permit Holder shall restore the water supplies of those permanently affected.

6.  **Director May Amend Permit**

The Director may amend this Permit by letter requiring the Permit Holder to suspend or reduce the taking to an amount or threshold specified by the Director in the letter. The suspension or reduction in taking shall be effective immediately and may be revoked at any time upon notification by the Director. This condition does not affect your right to appeal the suspension or reduction in taking to the Environmental Review Tribunal under the *Ontario Water Resources Act*, Section 100 (4).

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

1. Condition 1 is included to ensure that the conditions in this Permit are complied with and can be enforced.

2. Condition 2 is included to clarify the legal interpretation of aspects of this Permit.

3. Conditions 3 through 6 are included to protect the quality of the natural environment so as to safeguard the ecosystem and human health and foster efficient use and conservation of waters. These conditions allow for the beneficial use of waters while ensuring the fair sharing, conservation and sustainable use of the waters of Ontario. The conditions also specify the water takings that are authorized by this Permit and the scope of this Permit.
In accordance with Section 100 of the Ontario Water Resources Act, R.S.O. 1990, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 101 of the Ontario Water Resources Act, R.S.O. 1990, as amended, provides that the Notice requiring the hearing shall state:

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

In addition to these legal requirements, the Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Permit to Take Water number;
6. The date of the Permit to Take Water;
7. The name of the Director;
8. The municipality within which the works are located;

This notice must be served upon:

The Secretary
Environmental Review Tribunal
655 Bay Street, 15th Floor
Toronto ON
M5G 1E5

The Director, Section 34
Ministry of the Environment
331-435 James St S
Thunder Bay ON P7E 6S7
Fax: (807) 475-1754

Further information on the Environmental Review Tribunal’s requirements for an appeal can be obtained directly from the Tribunal:

by telephone at (416) 314-4600
by fax at (416) 314-4506
by e-mail at www.ert.gov.on.ca

This Permit cancels and replaces Permit Number 5108-84XQPX, issued on 2010/05/05.

Dated at Thunder Bay this 6th day of July, 2011.

Patrick Morash
Director, Section 34
Ontario Water Resources Act, R.S.O. 1990
Schedule A

This Schedule “A” forms part of Permit To Take Water 5887-8JHPXU, dated July 6, 2011.
MUNICIPAL DRINKING WATER LICENCE

Licence Number: 237-101
Issue Number: 1

Pursuant to the Safe Drinking Water Act, 2002, S.O. 2002, c. 32, and the regulations made thereunder and subject to the limitations thereof, this municipal drinking water licence is issued under Part V of the Safe Drinking Water Act, 2002, S.O. 2002, c. 32 to:

The Corporation of the Township of Terrace Bay
1 Selkirk Ave.
Box 40
Terrace Bay ON
P0T 2W0

For the following municipal residential drinking water system:

Terrace Bay Drinking Water System

This municipal drinking water licence includes the following:

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schedule A</td>
<td>Drinking Water System Information</td>
</tr>
<tr>
<td>Schedule B</td>
<td>General Conditions</td>
</tr>
<tr>
<td>Schedule C</td>
<td>System-Specific Conditions</td>
</tr>
<tr>
<td>Schedule D</td>
<td>Conditions for Relief from Regulatory Requirements</td>
</tr>
</tbody>
</table>

DATED at TORONTO this 23rd day of August, 2011

Signature

Indra R. Prashad, P.Eng.
Director
Part V, Safe Drinking Water Act, 2002
Schedule A: Drinking Water System Information

<table>
<thead>
<tr>
<th>System Owner</th>
<th>The Corporation of the Township of Terrace Bay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Licence Number</td>
<td>237-101</td>
</tr>
<tr>
<td>Drinking Water System Name</td>
<td>Terrace Bay Drinking Water System</td>
</tr>
<tr>
<td>Schedule A Issue Date</td>
<td>August 23rd, 2011</td>
</tr>
</tbody>
</table>

The following information is applicable to the above drinking water system and forms part of this licence:

**Licence**

<table>
<thead>
<tr>
<th>Licence Issue Date</th>
<th>August 23, 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Licence Expiry Date</td>
<td>August 21, 2016</td>
</tr>
<tr>
<td>Application for Licence Renewal Date</td>
<td>February 20, 2016</td>
</tr>
</tbody>
</table>

**Drinking Water Works Permit**

<table>
<thead>
<tr>
<th>Drinking Water System Name</th>
<th>Permit Number</th>
<th>Issue Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terrace Bay Drinking Water System</td>
<td>237-201</td>
<td>August 18, 2011</td>
</tr>
</tbody>
</table>

**Permits to Take Water**

<table>
<thead>
<tr>
<th>Water Taking Location</th>
<th>Permit Number</th>
<th>Issue Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backup Wells PW1, PW2, PW3 &amp; PW4; Lake Superior</td>
<td>3488-7NYP3J</td>
<td>February 6, 2009</td>
</tr>
</tbody>
</table>

**Financial Plans**

The Financial Plan Number for the Financial Plan required to be developed for this drinking water system in accordance with O. Reg. 453/07 shall be: 237-301

Alternately, if one Financial Plan is developed for all drinking water systems owned by the owner, the Financial Plan Number shall be: 237-301A

**Accredited Operating Authority**

<table>
<thead>
<tr>
<th>Drinking Water System or Operational Subsystems</th>
<th>Accredited Operating Authority</th>
<th>Operational Plan Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terrace Bay Drinking Water System</td>
<td>Ontario Clean Water Agency</td>
<td>237-401</td>
</tr>
</tbody>
</table>
1.0 Definitions

1.1 Words and phrases not defined in this licence and the associated drinking water works permit shall be given the same meaning as those set out in the SDWA and any regulations made in accordance with that act, unless the context requires otherwise.

1.2 In this licence and the associated drinking water works permit:

"adverse effect", "contaminant" and "natural environment" shall have the same meanings as in the EPA;

"alteration" may include the following in respect of this drinking water system:

(a) An addition to the system,
(b) A modification of the system,
(c) A replacement of part of the system, and
(d) An extension of the system;

"compound of concern" means a contaminant that, based on generally available information, may be emitted from a component of the drinking water system to the atmosphere in a quantity that is significant either in comparison to the relevant point of impingement limit or if a point of impingement limit is not available for the compound, then based on generally available toxicological information, the compound has the potential to cause an adverse effect as defined by the EPA at a point of impingement;

"Director" means a Director appointed pursuant to section 6 of the SDWA for the purposes of Part V of the SDWA;

"drinking water works permit" means the drinking water works permit for the drinking water system as identified in Schedule A of this licence;

"emergency" means a situation when the rate of flow through the plant exceed 3,888 cu.m/d and when the Terrace Bay community is declared as a state of emergency by the Mayor of the Corporation of the Township of Terrace Bay and authorizing an "emergency by pass";

"emergency by pass" means by passing the slow sand filter, after following "emergency protocol" defined in Schedule "D" of this Licence;
"emergency protocol" means series of steps undertaken by the Owner before operating an "emergency by pass" and resuming normal operations, after the "emergency";

"emission summary table" means the table that was prepared by a Professional Engineer in accordance with O. Reg. 419/05 and the procedure document listing the appropriate point of impingement concentrations of each compound of concern emitted from a component of the drinking water system and providing comparison to the corresponding point of impingement limit;

"EPA" means the Environmental Protection Act, R.S.O. 1990, c. E.19;

"financial plan" means the financial plan required by O. Reg. 453/07 and the conditions of this licence;

"licence" means this municipal drinking water licence for the municipal drinking water system identified in Schedule A of this licence;

"operational plan" means an operational plan developed in accordance with the Director's Directions – Minimum Requirements for Operational Plans made under the authority of subsection 15(1) of the SDWA;

"owner" means the owner of the drinking water system as identified in Schedule A of this licence;

"point of impingement" means any point in the natural environment that is not on the same property as the source of the contaminant and as defined by section 2 of O. Reg. 419/05;

"point of impingement limit" means the appropriate standard from Schedule 1, 2 or 3 of O. Reg. 419/05 and if a standard is not provided for a compound of concern, the appropriate criteria listed in the Ministry of the Environment publication titled "Summary of Standards and Guidelines to support Ontario Regulation 419: Air Pollution – Local Air Quality (including Schedule 6 of O. Reg. 419 on Upper Risk Thresholds)", dated February 2008, as amended;


"Professional Engineer" means a Professional Engineer who has been licenced to practice in the Province of Ontario;

"provincial officer" means a provincial officer appointed pursuant to section 8 of the SDWA;

"publication NPC-205" means the Ministry of the Environment publication titled "Sound Level Limits for Stationary Sources in Class 1 & 2 Areas (Urban)" dated October 1995, as amended;

"publication NPC-232" means the Ministry of the Environment publication titled "Sound Level Limits for Stationary Sources in Class 3 Areas (Rural)" dated October 1995, as amended;

"SDWA" means the Safe Drinking Water Act, 2002, S.O. 2002, c. 32;

"sensitive populations" means any one or a combination of the following locations where the health effects of nitrogen oxides emissions from emergency generator(s) shall be considered using the point of impingement limit instead of the Ministry of the Environment screening level for emergency generator(s):

(a) health care units (e.g., hospitals and nursing homes),
(b) primary/junior public schools,
(c) day-care facilities, and
(d) playgrounds;

2.0 Applicability

2.1 In addition to any other requirements, the drinking water system identified above shall be established, altered and operated in accordance with the conditions of the drinking water works permit and this licence.

3.0 Licence Expiry

3.1 This licence expires on the date identified as the licence expiry date in Schedule A of this licence.

4.0 Licence Renewal

4.1 Any application to renew this licence shall be made on or before the date identified as the application for licence renewal date set out in Schedule A of this licence.

5.0 Compliance

5.1 The owner and operating authority shall ensure that any person authorized to carry out work on or to operate any aspect of the drinking water system has been informed of the SDWA, all applicable regulations made in accordance with that act, the drinking water works permit and this licence and shall take all reasonable measures to ensure any such person complies with the same.

6.0 Licence and Drinking Water Works Permit Availability

6.1 At least one copy of this licence and the drinking water works permit shall be stored in such a manner that they are readily viewable by all persons involved in the operation of the drinking water system.
7.0 Permits to Take Water

7.1 A permit to take water identified in Schedule A of this licence is associated with the taking of water for purposes of the operation of the drinking water system and is the applicable permit on the date identified as the Schedule A Issue Date.

8.0 Financial Plan

8.1 The owner of the drinking water system, by the later of July 1, 2010 and the date that is six months after the date the first licence for the system is issued, shall prepare and approve financial plans for the system that satisfy the requirements prescribed under section 3 of O. Reg. 453/07.

8.2 The owner of the drinking water system shall ensure that every financial plan prepared in accordance with subsections 2 (1) and 3 (1) of O. Reg. 453/07 contains on the front page of the financial plan, the appropriate financial plan number as set out in Schedule A of this licence.

9.0 Interpretation

9.1 Where there is a conflict between the provisions of this licence and any other document, the following hierarchy shall be used to determine the provision that takes precedence:

9.1.1 The SDWA;

9.1.2 A condition imposed in this licence that explicitly overrides a prescribed regulatory requirement;

9.1.3 A condition imposed in the drinking water works permit that explicitly overrides a prescribed regulatory requirement;

9.1.4 Any regulation made under the SDWA;

9.1.5 Any provision of this licence that does not explicitly override a prescribed regulatory requirement;

9.1.6 Any provision of the drinking water works permit that does not explicitly override a prescribed regulatory requirement;

9.1.7 Any application documents listed in this licence, or the drinking water works permit from the most recent to the earliest; and

9.1.8 All other documents listed in this licence, or the drinking water works permit from the most recent to the earliest.

9.2 If any requirement of this licence or the drinking water works permit is found to be invalid by a court of competent jurisdiction, the remaining requirements of this licence and the drinking water works permit shall continue to apply.
9.3 The issuance of and compliance with the conditions of this licence and the drinking water works permit does not:

9.3.1 Relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement, including the Environmental Assessment Act, R.S.O. 1990, c. E.18; and

9.3.2 Limit in any way the authority of the appointed Directors and provincial officers of the Ministry of the Environment to require certain steps be taken or to require the owner to furnish any further information related to compliance with the conditions of this licence or the drinking water works permit.

9.4 For greater certainty, nothing in this licence or the drinking water works permit shall be read to provide relief from regulatory requirements in accordance with section 46 of the SDWA, except as expressly provided in the licence or the drinking water works permit.

10.0 Adverse Effects

10.1 Nothing in this licence or the drinking water works permit shall be read as to permit:

10.1.1 The discharge of a contaminant into the natural environment that causes or is likely to cause an adverse effect; or

10.1.2 The discharge of any material of any kind into or in any waters or on any shore or bank thereof or into or in any place that may impair the quality of the water of any waters.

10.2 All reasonable steps shall be taken to minimize and ameliorate any adverse effect on the natural environment or impairment of the quality of water of any waters resulting from the operation of the drinking water system including such accelerated or additional monitoring as may be necessary to determine the nature and extent of the effect or impairment.

10.3 Fulfillment of one or more conditions imposed by this licence or the drinking water works permit does not eliminate the requirement to fulfill any other condition of this licence or the drinking water works permit.

11.0 Change of Owner or Operating Authority

11.1 This licence is not transferable without the prior written consent of the Director.

11.2 The owner shall notify the Director in writing of a change of any operating authority identified in Schedule A of this licence.

12.0 Information to be Provided

12.1 Any information requested by a Director or a provincial officer concerning the drinking water system and its operation, including but not limited to any records required to be kept by this licence or the drinking water works permit, shall be provided upon request.
13.0 Records Retention

13.1 Except as otherwise required in this licence or the drinking water works permit, any records required by or created in accordance with this licence or the drinking water works permit, other than the records specifically referenced in section 12 of O. Reg. 170/03, shall be retained for at least 5 years and made available for inspection by a provincial officer, upon request.

14.0 Chemicals and Materials

14.1 All chemicals and materials used in the alteration or operation of the drinking water system that come into contact with water within the system shall meet all applicable standards set by both the American Water Works Association ("AWWA") and the American National Standards Institute ("ANSI") safety criteria standards NSF/60 and NSF/61.

14.2 The most current chemical and material product registration documentation from a testing institution accredited by either the Standards Council of Canada or by the American National Standards Institution ("ANSI") shall be available at all times for each chemical and material used in the operation of the drinking water system that comes into contact with water within the system.

14.3 Conditions 14.1 and 14.2 do not apply in the case of the following:

14.3.1 Water pipe and pipe fittings meeting AWWA specifications made from ductile iron, cast iron, PVC, fibre and/or steel wire reinforced cement pipe or high density polyethylene (HDPE);

14.3.2 Articles made from stainless steel, glass, HDPE or Teflon®;

14.3.3 Cement mortar for watermain lining and for water contacting surfaces of concrete structures made from washed aggregates and Portland cement;

14.3.4 Food grade oils and lubricants; or

14.3.5 Any particular chemical or material where the owner has written documentation signed by the Director that indicates that the Ministry of the Environment is satisfied that the chemical or material is acceptable for use within the drinking water system and the chemical or material is only used as permitted by the documentation.

15.0 Drawings

15.1 All drawings and diagrams in the possession of the owner that show any treatment subsystem as constructed shall be retained by the owner unless the drawings and diagrams are replaced by a revised or updated version showing the subsystem as constructed subsequent to the alteration.
15.2 Any alteration to any treatment subsystem shall be incorporated into process flow diagrams, process and instrumentation diagrams, and record drawings and diagrams within one year of the substantial completion of the alteration.

15.3 Process flow diagrams and process and instrumentation diagrams for any treatment subsystem shall be kept in a place, or made available in such a manner, that they may be readily viewed by all persons responsible for all or part of the operation of the drinking water system.

16.0 Operations and Maintenance Manual

16.1 An up-to-date operations and maintenance manual or manuals shall be maintained and applicable parts of the manual or manuals shall be made available for reference by all persons responsible for all or part of the operation or maintenance of the drinking water system.

16.2 The operations and maintenance manual or manuals, shall include at a minimum:

16.2.1 The requirements of this licence and associated procedures;

16.2.2 The requirements of the drinking water works permit for the drinking water system;

16.2.3 Procedures for monitoring and recording the in-process parameters necessary for the control of any treatment subsystem and for assessing the performance of the drinking water system;

16.2.4 Procedures for the operation and maintenance of monitoring equipment;

16.2.5 Contingency plans and procedures for the provision of adequate equipment and material to deal with emergencies, upset conditions and equipment breakdown;

16.2.6 Procedures for dealing with complaints related to the drinking water system, including the recording of the nature of the complaint and any investigation and corrective action taken in respect of the complaint;

16.2.7 An inspection schedule for all wells associated with the drinking water system, including all production wells, standby wells, test wells and monitoring wells;

16.2.8 Well inspection and maintenance procedures for the entire well structure of each well including all above and below grade well components; and

16.2.9 Remedial action plans for situations where an inspection indicates non-compliance with respect to regulatory requirements and/or risk to raw well water quality

16.3 Procedures necessary for the operation and maintenance of any alterations to the drinking water system shall be incorporated into the operations and maintenance manual or manuals prior to those alterations coming into operation.
Schedule C: System-Specific Conditions

System Owner: The Corporation of the Township of Terrace Bay
Licence Number: 237-101
Drinking Water System Name: Terrace Bay Drinking Water System
Schedule C Issue Date: August 23rd, 2011

1.0 Performance Limits

Rated Capacity

1.1 For each treatment subsystem listed in column 1 of Table 1, the maximum daily volume of treated water that flows from the treatment subsystem to the distribution system shall not exceed the value identified as the rated capacity in column 2 of the same row.

<table>
<thead>
<tr>
<th>Column 1</th>
<th>Column 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment Subsystem Name</td>
<td>Rated Capacity (m$^3$/day)</td>
</tr>
<tr>
<td>Terrace Bay Water Treatment Plant</td>
<td>3,888</td>
</tr>
</tbody>
</table>

1.2 Despite condition 1.1, a treatment subsystem may be operated temporarily at a daily volume above the value set out in column 2 of Table 1 for the purposes of fighting a large fire or for the maintenance of the drinking water system.

1.3 Condition 1.2 does not authorize the discharge into the distribution system of any water that does not otherwise meet all of the requirements of this licence and all other regulatory requirements, including compliance with the Ontario Drinking Water Quality Standards.

Maximum Flow Rates

1.4 For each treatment subsystem listed in column 1 of Table 2, the maximum flow rate of water that flows into a treatment subsystem component listed in column 2 shall not exceed the value listed in column 3 of the same row.

<table>
<thead>
<tr>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment Subsystem Name</td>
<td>Treatment Subsystem Component</td>
<td>Maximum Flow Rate (L/s)</td>
</tr>
<tr>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>
Residue Management

1.5  In respect of an effluent discharged into the natural environment from a treatment subsystem or treatment subsystem component listed in column 1 of Table 3:

1.5.1 The annual average concentration of a test parameter identified in column 2 shall not exceed the value in column 3 of the same row; and

1.5.2 The maximum concentration of a test parameter identified in column 2 shall not exceed the value in column 4 of the same row.

<table>
<thead>
<tr>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 3</th>
<th>Column 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment Subsystem or Treatment Subsystem Component Name</td>
<td>Test Parameter</td>
<td>Annual Average Concentration (mg/L)</td>
<td>Maximum Concentration (mg/L)</td>
</tr>
<tr>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

UV Disinfection Equipment Performance

1.6  For each treatment subsystem or treatment subsystem component listed in column 1 of Table 4, the UV disinfection equipment shall be operated such that a continuous pass-through UV dose is maintained throughout the life time of the UV lamp(s) that is at least the minimum continuous pass-through UV dose set out in column 2 of the same row.

<table>
<thead>
<tr>
<th>Column 1</th>
<th>Column 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment Subsystem or Treatment Subsystem Component Name</td>
<td>Minimum Continuous Pass-Through UV Dose (mJ/cm²)</td>
</tr>
<tr>
<td>UV Reactors</td>
<td>40</td>
</tr>
</tbody>
</table>

2.0  Flow Measurement and Recording Requirements

2.1  For each treatment subsystem identified in column 1 of Table 1 and in addition to any other flow measurement and recording that may be required, continuous flow measurement and recording shall be undertaken for:

2.1.1 The flow rate and daily volume of treated water that flows from the treatment subsystem to the distribution system.

2.1.2 The flow rate and daily volume of water that flows into the treatment subsystem.

2.2  For each treatment subsystem component identified in column 2 of Table 2 and in addition to any other flow measurement and recording that may be required, continuous flow measurement and recording shall be undertaken for the flow rate and daily volume of water that flows into the treatment subsystem component.
2.3 Where a rated capacity from Table 1 or a maximum flow rate from Table 2 is exceeded, the following shall be recorded:

2.3.1 The difference between the measured amount and the applicable rated capacity or maximum flow rate specified in Table 1 or Table 2;

2.3.2 The time and date of the measurement;

2.3.3 The reason for the exceedance; and

2.3.4 The duration of time that lapses between the applicable rated capacity or maximum flow rate first being exceeded and the next measurement where the applicable rated capacity or maximum flow rate is no longer exceeded.

3.0 Calibration of Flow Measuring Devices

3.1 All flow measuring devices must be checked and calibrated in accordance with the manufacturer's instructions.

3.2 If the manufacturer's instructions do not indicate how often to check and calibrate a flow measuring device, the equipment must be checked and calibrated at least once every year during which the drinking water system is in operation.

4.0 Additional Sampling, Testing and Monitoring

Drinking Water Health and Non-Health Related Parameters

4.1 For each treatment subsystem or treatment subsystem component identified in column 1 of Tables 5 and 6 and in addition to any other sampling, testing and monitoring that may be required, sampling, testing and monitoring shall be undertaken for a test parameter listed in column 2 at the sampling frequency listed in column 3 and at the monitoring location listed in column 4 of the same row.

<table>
<thead>
<tr>
<th>Table 5: Drinking Water Health Related Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Column 1</td>
</tr>
<tr>
<td>Treatment Subsystem or Treatment Subsystem Component Name</td>
</tr>
<tr>
<td>Not Applicable</td>
</tr>
</tbody>
</table>
Table 6: Drinking Water Non-Health Related Parameters

<table>
<thead>
<tr>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 3</th>
<th>Column 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment Subsystem or Treatment Subsystem Component Name</td>
<td>Test Parameter</td>
<td>Sampling Frequency</td>
<td>Monitoring Location</td>
</tr>
<tr>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

Environmental Discharge Parameters

4.2 For each treatment subsystem or treatment subsystem component identified in column 1 of Table 7 and in addition to any other sampling, testing and monitoring that may be required, sampling, testing and monitoring shall be undertaken for a test parameter listed in column 2 using the sample type identified in column 3 at the sampling frequency listed in column 4 and at the monitoring location listed in column 5 of the same row.

4.3 For the purposes of Table 7:

4.3.1 Manual Composite means the mean of at least three grab samples taken during a discharge event, with one sample being taken immediately following the commencement of the discharge event, one sample being taken approximately at the mid-point of the discharge event and one sample being taken immediately before the end of the discharge event; and

4.3.2 Automated Composite means samples must be taken during a discharge event by an automated sampler at a minimum sampling frequency of once per hour.

4.4 Any sampling, testing and monitoring for the test parameter Total Suspended Solids shall be performed in accordance with the requirements set out in the publication "Standard Methods for the Examination of Water and Wastewater", 21st Edition, 2005, or as amended from time to time by more recently published editions.

Table 7: Environmental Discharge Parameters

<table>
<thead>
<tr>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 3</th>
<th>Column 4</th>
<th>Column 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment Subsystem or Treatment Subsystem Component Name</td>
<td>Test Parameter</td>
<td>Sample Type</td>
<td>Sampling Frequency</td>
<td>Monitoring Location</td>
</tr>
<tr>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>
UV Disinfection Equipment

4.5 For each treatment subsystem or treatment subsystem component listed in column 1 of Table 8 and in addition to any other sampling, analysis and recording that may be required, continuous monitoring and recording with a minimum testing/reading and recording frequency of every four (4) hours shall be carried out for the test parameters set out in column 3 of the same row.

<table>
<thead>
<tr>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment Subsystem or Treatment Subsystem Component Name</td>
<td>Control Strategy</td>
<td>Test Parameter</td>
</tr>
<tr>
<td>UV Reactors</td>
<td>UV Intensity Set Point</td>
<td>Flow Rate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>UV Intensity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>UV Lamp Status</td>
</tr>
</tbody>
</table>

5.0 Studies Required

5.1 Not Applicable
Schedule D: Conditions for Relief from Regulatory Requirements

System Owner: The Corporation of the Township of Terrace Bay
Licence Number: 237-101
Drinking Water System Name: Terrace Bay Drinking Water System
Schedule D Issue Date: August 23rd, 2011

1.0 Lead Regulatory Relief

1.1 Any relief from regulatory requirements previously authorized by the Director in respect of the drinking water system under section 38 of the SDWA in relation to the sampling, testing or monitoring requirements contained in Schedule 15.1 of O. Reg. 170/03 shall remain in force until such time as Schedule 15.1 of O. Reg. 170/03 is amended after June 1, 2009.

2.0 Temporary Relief from regulatory requirements during an Emergency

2.1 Notwithstanding the provisions of O.Reg. 170/03 and Condition 1.3 of Schedule "C", the Owner is not required to comply with the following during an "emergency" as defined in Schedule "B" and during an emergency relief period specified in Condition 2.4 of this Schedule:

- Provide filtration and primary disinfection appropriate for a surface water raw water supply in accordance with O.Reg. 170/03, Schedule 1, section 1-4

2.2 Subject to Condition 2.3 below, the following provisions of O.Reg. 170/03 do not apply to the drinking water system with respect a result of a drinking water test in respect of turbidity in a sample of drinking water:

i. Paragraph 6 of Section 16-3 of Schedule 16 (reporting Adverse test Results and Other Problems);

ii. Section 17-3 of Schedule 17 (Corrective Action)

Conditions in exchange for relief from regulatory requirements

2.3 The Owner shall, during the emergency relief period, activate the "Municipal Emergency Plan" and implement the actions described in the document entitled "Protocol for issuing and lifting a Boil Water Advisory in the event of activating the filter by pass" dated September 24, 2007. The protocol includes:

- Public notification about Boil Water Advisory by the Thunder Bay District Health Unit;
- Activation of "Emergency By Pass" either by the Emergency Operations Coordinator or by the Mayor of the Corporation of the Township of Terrace Bay;
- Deactivation of "Emergency By Pass";
- Disinfection of water treatment plant and the distribution system and
- Public notification at the end of the emergency period.

**Emergency Relief Period**

2.4 The period of temporary relief from treatment requirement is for a period commencing when the Mayor of the Corporation of the Township of Terrace Bay has declared a state of emergency and ending when the state of emergency is lifted. The state of emergency may be declared for an event that threatens the safety of the Terrace bay community, and in accordance with the provisions of Condition 1.2 of Schedule "C" for fighting a major fire.

**3.0 Raw well water sampling Relief**

3.1 Notwithstanding the provisions of O.Reg. 170/03, Schedule 10, section 10-4 (2) the Owner is not required to comply with the following:

- If the drinking water system obtains water from a raw water supply that is ground water, or is deemed under section 2 to obtain water from a raw water supply that is surface water, the owner of the system and the operating authority for the system shall ensure that a sample is taken under subsection (1) from each well in the system.

**Conditions in exchange for relief from regulatory requirements**

3.2 The owner shall ensure that the raw water sample is taken at a location where the well water and surface water blending has taken place.
Appendix C – Terrace Bay Drinking Water Works Permit
DRINKING WATER WORKS PERMIT

Permit Number: 237-201
Issue Number: 2

Pursuant to the Safe Drinking Water Act, 2002, S.O. 2002, c. 32, and the regulations made thereunder and subject to the limitations thereof, this drinking water works permit is issued under Part V of the Safe Drinking Water Act, 2002, S.O. 2002, c. 32 to:

The Corporation of the Township of Terrace Bay
1 Selkirk Ave.
Box 40
Terrace Bay ON
P0T 2W0

For the following municipal residential drinking water system:

Terrace Bay Drinking Water System

This drinking water works permit includes the following:

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schedule A</td>
<td>Drinking Water System Description</td>
</tr>
<tr>
<td>Schedule B</td>
<td>General</td>
</tr>
<tr>
<td>Schedule C</td>
<td>All documents issued as Schedule C to this drinking water works permit which authorize alterations to the drinking water system</td>
</tr>
</tbody>
</table>

DATED at TORONTO this 6th day of July, 2012

Aziz Ahmed, P.Eng.
Director
Part V, Safe Drinking Water Act, 2002
1.0 System Description

1.1 The following is a summary description of the works comprising the above drinking water system:

Overview

The Terrace Bay Drinking Water System consists of an intake in Jackfish Channel within Lake Superior, four standby ground water wells, a water treatment plant, storage reservoir, high lift pumping and approximately 17 kilometers of distribution watermains.

Surface Water Supply

Intake Pipe

<table>
<thead>
<tr>
<th>Description</th>
<th>300 mm diameter and 170 m long intake pipe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment</td>
<td>Stainless steel screen at the inlet structure</td>
</tr>
<tr>
<td>Notes</td>
<td>Intake in Jackfish Channel within Lake Superior</td>
</tr>
</tbody>
</table>

Low Lift Works

Low Lift Pumping Station

<table>
<thead>
<tr>
<th>Description</th>
<th>11.3 m x 6.1 m Low lift pump station with three (3) submersible turbine pumps</th>
</tr>
</thead>
<tbody>
<tr>
<td>UTM Coordinates</td>
<td>NAD27: UTM Zone 16: 493527.579 m E., 5402543.007 m N.</td>
</tr>
<tr>
<td>Capacity</td>
<td>Each pump rated at 22.5 L/s at a TOH of 137.2 m</td>
</tr>
<tr>
<td>Standby Power</td>
<td>One 150 kW standby propane generator in a weatherproof enclosure</td>
</tr>
<tr>
<td>Notes</td>
<td>2.5 km long by 250 mm diameter raw water transmission main from the low lift pump station to the Terrace bay Water Treatment Plant.</td>
</tr>
</tbody>
</table>
Treatment Plant

<table>
<thead>
<tr>
<th>Name</th>
<th>Terrace Bay Water Treatment Plant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Street Address</td>
<td>11 Beaver Creek Road</td>
</tr>
<tr>
<td>UTM Coordinates</td>
<td>NAD27: UTM Zone 16: 492830.00 m E., 5404100.00 m N.</td>
</tr>
<tr>
<td>System Type</td>
<td>Surface water source with standby wells</td>
</tr>
<tr>
<td>Notes</td>
<td>Treatment consists of slow sand filtration and disinfection with UV and chlorine</td>
</tr>
</tbody>
</table>

Filtration

Filters

<table>
<thead>
<tr>
<th>Description</th>
<th>Four (4) slow sand filters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>Each 23.0 m x 9.2 m x 4.3 m with 1.2 m thickness of filter sand, 600 mm gravel and perforated underdrain system discharging into an underground reservoir</td>
</tr>
<tr>
<td></td>
<td>Dual media pressure filtration system consisting of anthracite and silica rated at 53 L/s (for emergency use only)</td>
</tr>
<tr>
<td>Notes</td>
<td></td>
</tr>
</tbody>
</table>

Disinfection

Ultra Violet

<table>
<thead>
<tr>
<th>Description</th>
<th>Two (2) UV reactors (duty and standby)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>Each unit rated at a peak flow rate of 45 L/s and providing a minimum dosage of 40 mJ/cm²</td>
</tr>
<tr>
<td>Notes</td>
<td>UV to filtered water entering the reservoir prior to chlorine injection</td>
</tr>
</tbody>
</table>

Instrumentation and Control

SCADA System

<table>
<thead>
<tr>
<th>Description</th>
<th>A central programmable Logic Controller (PLC) provides control to the system and unit processes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment</td>
<td>• One (1) flow meter to monitor the raw water flow</td>
</tr>
<tr>
<td></td>
<td>• Four (4) flow meters to monitor filter effluent flow, one per filter</td>
</tr>
<tr>
<td></td>
<td>• One (1) flow meter to monitor flow to waste from the Recirculation chamber</td>
</tr>
<tr>
<td></td>
<td>• One (1) flow meter to monitor treated water flow to distribution</td>
</tr>
<tr>
<td></td>
<td>• Four (4) online turbidity analyzers, one per filter</td>
</tr>
<tr>
<td></td>
<td>• One (1) chlorine residual analyzer on the plant discharge</td>
</tr>
<tr>
<td>Notes</td>
<td></td>
</tr>
</tbody>
</table>
Waste Residual Management

Infiltration Pond

| Description | An infiltration pond for receiving emergency gravity overflows and backwash flows from the emergency pressure filtration system |
| Capacity | 57.5 m x 56.3 m |
| Notes | |

High Lift Works

High Lift Pumps

| Description | Six (6) vertical turbine pumps |
| Capacity | Three (3) pumps each rated at 63.1 L/s at a TDH of 70.4 m |
| | Two (2) pumps each rated at 31.5 L/s at a TDH of 70.4 m |
| | One (1) pump rated at 6.3 L/s at a TDH of 70.4 m |
| Notes | |

On-Site Storage

Reservoir

| Description | An underground reservoir consisting of four (4) interconnected chambers with baffles |
| Dimensions | 5,193 m³ storage volume |
| Notes | A recirculation chamber with two (2) pumps each rated at 27.3 L/s |

Emergency Power

Backup Power Supply

| Description | One (1) standby propane powered generator |
| Notes | |
Chemical Addition

Sodium Hypochlorite

<table>
<thead>
<tr>
<th>Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Two (2) metering pumps (duty and standby) for primary disinfection and two (2) metering pumps (duty and standby) for secondary disinfection</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Feed Point</th>
<th>Injection point prior to reservoir and for post chlorination</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Equipment</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Two metering pumps for primary disinfection each rated at 24.6 L/hr</td>
<td></td>
</tr>
<tr>
<td>Two metering pumps for secondary disinfection each rated at 1.7 L/hr</td>
<td></td>
</tr>
<tr>
<td>two (2) 1500 L capacity chemical storage tanks</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Notes</th>
</tr>
</thead>
</table>

Standby Wells

Wells DW-1, DW-2, DW-3 & DW-4

<table>
<thead>
<tr>
<th>Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Four (4) Emergency standby wells each 250 mm diameter and 17.0 m deep</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>UTM Coordinates</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Well DW-1, NAD27: UTM Zone 16: 493515.7 m E., 5402540.0 m N.</td>
<td></td>
</tr>
<tr>
<td>Well DW-2, NAD27: UTM Zone 16: 493527.0 m E., 5402540.0 m N.</td>
<td></td>
</tr>
<tr>
<td>Well DW-3, NAD27: UTM Zone 16: 493532.4 m E., 5402540.0 m N.</td>
<td></td>
</tr>
<tr>
<td>Well DW-4, NAD27: UTM Zone 16: 493541.5 m E., 5402540.0 m N.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Equipment</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Four (4) submersible well pumps each rated at 15 L/s at a TDH of 24 m</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Notes</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Well pumps discharging to low lift pump station</td>
<td></td>
</tr>
</tbody>
</table>

Watermains

1.2 Watermains within the distribution system comprise:

1.2.1 Watermains that have been set out in each document or file identified in column 1 of Table 1.

| Table 1: Watermains                                                       |
|----------------------------------------------------------------------------|------------------------------------------------------------------|
| Column 1 Document or File Name                                            | Column 2 Date                                                                 |

1.2.2 Watermains that have been added, modified, replaced or extended further to the provisions of Schedule C of this drinking water works permit on or after the date identified in column 2 of Table 1 for each document or file identified in column 1.

1.2.3 Watermains that have been added, modified, replaced or extended further to an authorization by the Director on or after the date identified in column 2 of Table 1 for each document or file identified in column 1.
1.0 Applicability

1.1 In addition to any other requirements, the drinking water system identified above shall be altered and operated in accordance with the conditions of this drinking water works permit and the licence.

1.2 The definitions and conditions of the licence shall also apply to this drinking water works permit.

2.0 Alterations to the Drinking Water System

2.1 Any document issued by the Director as a Schedule C to this drinking water works permit shall provide authority to alter the drinking water system in accordance, where applicable, with the conditions of this drinking water works permit and the licence.

2.2 All Schedule C documents issued by the Director for the drinking water system shall form part of this drinking water works permit.

2.3 All parts of the drinking water system in contact with drinking water which are:

2.3.1 Added, modified, replaced, extended; or

2.3.2 Taken out of service for inspection, repair or other activities that may lead to contamination,

shall be disinfected before being put into service in accordance with the provisions of the AWWA C651 – Standard for Disinfecting Water Mains; AWWA C652 – Standard for Disinfection of Water-Storage Facilities; AWWA C653 – Standard for Disinfection of Water Treatment Plants; or AWWA C654 – Standard for Disinfection of Wells; or an equivalent procedure.

2.4 The owner shall notify the Director within thirty (30) days of the placing into service or the completion of any addition, modification, replacement or extension of the drinking water system which had been authorized through:

2.4.1 Schedule B to this drinking water works permit which would require an alteration of the description of a drinking water system component described in Schedule A of this drinking water works permit;

2.4.2 Any Schedule C to this drinking water works permit respecting works other than watermains; or
2.4.3 Any approval issued prior to the issue date of the first drinking water works permit respecting works other than watermains which were not in service at the time of the issuance of the first drinking water works permit.

2.5 For greater certainty, the notification requirements set out in condition 2.4 do not apply to any addition, modification, replacement or extension in respect of the drinking water system which:

2.5.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.2 of O. Reg. 170/03;

2.5.2 Constitutes maintenance or repair of the drinking water system; or

2.5.3 Is a watermain authorized by condition 3.1 of Schedule B of this drinking water works permit.

2.6 The owner shall notify the legal owner of any part of the drinking water system that is prescribed as a municipal drinking water system by section 2 of O. Reg. 172/03 of the requirements of the licence and this drinking water works permit as applicable to the prescribed system.

2.7 For greater certainty, any alteration to the drinking water system made in accordance with this drinking water works permit may only be carried out after other legal obligations have been complied with including those arising from the Environmental Assessment Act, Niagara Escarpment Planning and Development Act, Oak Ridges Moraine Conservation Act, 2001 and Greenbelt Act, 2005.

3.0 Watermain Additions, Modifications, Replacements and Extensions

3.1 The drinking water system may be altered by adding, modifying, replacing or extending a watermain within the distribution system subject to the following conditions:

3.1.1 The design of the watermain addition, modification, replacement or extension:

a) Has been prepared by a Professional Engineer;

b) Has been designed only to transmit water and has not been designed to treat water;

c) Satisfies the design criteria set out in the Ministry of the Environment publication "Watermain Design Criteria for Future Alterations Authorized under a Drinking Water Works Permit – March 2009", as amended from time to time; and

d) Is consistent with or otherwise addresses, the design objectives contained within the Ministry of the Environment publication "Design Guidelines for Drinking Water Systems, 2008", as amended from time to time.

3.1.2 The maximum demand for water exerted by consumers who are serviced by the addition, modification, replacement or extension of the watermain will not result in an exceedance of the rated capacity of a treatment subsystem or the maximum flow rate for a treatment subsystem component as specified in the licence, or the creation of adverse conditions within the drinking water system.
3.1.3 The watermain addition, modification, replacement or extension will not adversely affect the distribution system's ability to maintain a minimum pressure of 140 kPa at ground level at all points in the distribution system under maximum day demand plus fire flow conditions.

3.1.4 Secondary disinfection will be provided to water within the added, modified, replaced or extended watermain to meet the requirements of O. Reg. 170/03.

3.1.5 The watermain addition, modification, replacement or extension is wholly located within the municipal boundary over which the owner has jurisdiction.

3.1.6 The owner of the drinking water system consents to the watermain addition, modification, replacement or extension.

3.1.7 A Professional Engineer has verified in writing that the watermain addition, modification, replacement or extension meets the requirements of condition 3.1.1.

3.1.8 The owner of the drinking water system has verified in writing that the watermain addition, modification, replacement or extension meets the requirements of conditions 3.1.2 to 3.1.6.

3.2 The authorization for the addition, modification, replacement or extension of a watermain provided for in condition 3.1 does not include the addition, modification, replacement or extension of a watermain that:

3.2.1 Passes under or through a body of surface water, unless trenchless construction methods are used;

3.2.2 Has a nominal diameter greater than 750 mm;

3.2.3 Connects to another drinking water system; or

3.2.4 Results in the fragmentation of the drinking water system.

3.3 The verifications required in conditions 3.1.7 and 3.1.8 shall be:

3.3.1 Recorded on "Form 1 – Record of Watermains Authorized as a Future Alteration" as published by the Ministry of the Environment; and

3.3.2 Retained for a period of ten (10) years by the owner.

3.4 For greater certainty, the verification requirements set out in condition 3.3 do not apply to any addition, modification, replacement or extension in respect of the drinking water system which:

3.4.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03; or

3.4.2 Constitutes maintenance or repair of the drinking water system.
3.5 The document or file referenced in Column 1 of Table 1 of Schedule A of this drinking water works permit that sets out watermains shall be retained by the owner and shall be updated to include watermain additions, modifications, replacements and extensions within 12 months of the addition, modification, replacement or extension.

3.6 The updates required by condition 3.5 shall include watermain location relative to named streets or easements and watermain diameter.

4.0 **Minor Modifications to the Drinking Water System**

4.1 The drinking water system may be altered by modifying or replacing the following components:

   4.1.1 Raw water, treatment process or treated water pumps;
   4.1.2 Chemical metering or chemical handling pumps;
   4.1.3 Valves;
   4.1.4 Instrumentation and controls;
   4.1.5 Cathodic corrosion protection; or
   4.1.6 Spill containment works.

4.2 The drinking water system may be altered by replacing the following:

   4.2.1 Raw water, treatment process or treated water piping within the treatment subsystem.

4.3 The modification or replacement of a drinking water system component set out in condition 4.1 or the replacement of a drinking water system component set out in condition 4.2 must not result in:

   4.3.1 An exceedance of a treatment subsystem rated capacity or a treatment subsystem component maximum flow rate as specified in the licence;
   4.3.2 The bypassing of any unit process within a treatment subsystem;
   4.3.3 A deterioration in the quality of drinking water provided to consumers;
   4.3.4 A reduction in the reliability or redundancy of any component of the drinking water system;
   4.3.5 A negative impact on the ability to undertake compliance and other monitoring; or
   4.3.6 An adverse effect on the environment.

4.4 The owner shall verify in writing that the modification or replacement of drinking water system components in accordance with conditions 4.1 and 4.2 has met the requirements of the conditions listed in condition 4.3.

4.5 The verifications required in condition 4.4 shall be:
4.5.1 Recorded on "Form 2 – Record of Minor Modifications or Replacements to the Drinking Water System" as published by the Ministry of the Environment; and

4.5.2 Retained for a period of ten (10) years by the owner.

4.6 For greater certainty, the verification requirements set out in conditions 4.4 and 4.5 do not apply to any modification or replacement in respect of the drinking water system which:

4.6.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03; or

4.6.2 Constitutes maintenance or repair of the drinking water system.

4.7 The owner shall update any drawings maintained for the drinking water system to reflect the modification or replacement of the works, where applicable.

5.0 Equipment with Emissions to the Air

5.1 The drinking water system may be altered by adding, modifying or replacing any of the following drinking water system components that may discharge or alter the rate or manner of a discharge of a compound of concern to the atmosphere:

5.1.1 Any equipment, apparatus, mechanism or thing that is used for the transfer of outdoor air into a building or structure that is not a cooling tower;

5.1.2 Any equipment, apparatus, mechanism or thing that is used for the transfer of indoor air out of a space used for the production, processing, repair, maintenance or storage of goods or materials, including chemical storage;

5.1.3 Laboratory fume hoods used for drinking water testing, quality control and quality assurance purposes;

5.1.4 Low temperature handling of compounds with a vapor pressure of less than 1 kilopascal;

5.1.5 Maintenance welding stations;

5.1.6 Minor painting operations used for maintenance purposes;

5.1.7 Parts washers for maintenance shops;

5.1.8 Emergency chlorine and ammonia gas scrubbers;

5.1.9 Venting for activated carbon units for drinking water taste and odour control;

5.1.10 Venting for a stripping unit for methane removal from a groundwater supply;

5.1.11 Natural gas or propane fired boilers, water heaters, space heaters and make-up air units with a total facility-wide heat input rating of less than 20 million kilojoules per hour, and with an individual fuel energy input of less than or equal to 10.5 gigajoules per hour; and
5.1.12 Emergency generators that fire No. 2 fuel oil (diesel fuel) with a sulphur content of 0.5 per cent or less measured by weight, natural gas, propane, gasoline or biofuel, and that are used for emergency duty only with periodic testing.

5.2 The owner shall not add, modify or replace a drinking water system component set out in condition 5.1 for an activity that is not directly related to the treatment and distribution of drinking water.

5.3 The emergency generators identified in condition 5.1.12 shall not be used for non-emergency purposes including the generation of electricity for sale or for peak shaving purposes.

5.4 The owner shall prepare an emission summary table for nitrogen oxide emissions only, for each addition, modification or replacement of emergency generators identified in condition 5.1.12.

Performance Limits

5.5 The owner shall ensure that a drinking water system component identified in conditions 5.1.1 to 5.1.12 is operated at all times to comply with the following limits:

5.5.1 For equipment other than emergency generators, the maximum concentration of any compound of concern at a point of impingement shall not exceed the corresponding point of impingement limit;

5.5.2 For emergency generators, the maximum concentration of nitrogen oxides at sensitive populations shall not exceed the applicable point of impingement limit, and at non-sensitive populations shall not exceed the Ministry of the Environment half-hourly screening level of 1880 ug/m$^3$ as amended;

5.5.3 The noise emissions comply at all times with the limits set out in publication NPC-205 and/or publication NPC-232, as applicable; and

5.5.4 The vibration emissions comply at all times with the limits set out in publication NPC-207.

5.6 The owner shall verify in writing that any addition, modification or replacement of works in accordance with condition 5.1 has met the requirements of the conditions listed in condition 5.5.

5.7 The owner shall document how compliance with the performance limits outlined in 5.5.3 and 5.5.4 is being achieved, through noise abatement equipment and/or operational procedures.

5.8 The verifications required in condition 5.6 shall be:

5.8.1 Recorded on "Form 3 – Record of Addition, Modification or Replacement of Equipment Discharging a Contaminant of Concern to the Atmosphere" as published by the Ministry of the Environment.

5.8.2 Retained for a period of ten (10) years by the owner.
5.9 For greater certainty, the verification requirements set out in conditions 5.6 and 5.8 do not apply to any addition, modification or replacement in respect of the drinking water system which:

5.9.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03; or

5.9.2 Constitutes maintenance or repair of the drinking water system.

5.10 The owner shall update any drawings maintained for the works to reflect the addition, modification or replacement of the works, where applicable.

6.0 Previously Approved Works

6.1 The owner may add, modify, replace or extend, and operate part of a municipal drinking water system if:

6.1.1 An approval was issued after January 1, 2004 under section 36 of the SDWA in respect of the addition, modification replacement or extension and operation of that part of the municipal drinking water system;

6.1.2 The approval expired by virtue of subsection 36(4) of the SDWA; and

6.1.3 The addition, modification, replacement or extension commenced within five years of the date that activity was approved by the expired approval.

7.0 System-Specific Conditions

7.1 The following are authorized under this permit:

Not Applicable
Pursuant to the Safe Drinking Water Act, 2002, S.O. 2002, c. 32 and the regulations made thereunder and subject to the limitations thereof, this schedule is being issued under Part V of the Safe Drinking Water Act, 2002, S.O., c. 32 to the owner of the drinking water system to amend the drinking water works permit to authorize alterations to the drinking water system as follows:

**Proposed Alterations**

The proposed work includes a chemical feed system for corrosion control purposes, all in accordance with the applications, plans and supporting documentation listed in Table 1 of this schedule.

**Chemical Feed System**

| Description | Phosphate blend corrosion inhibitor feed system:  
|-------------|--------------------------------------------------|
|             | - Two (duty and standby) chemical metering pumps  
|             | - Storage drum, feed tubing and injection point  |

Notes 1
Licence Amendments

In consideration of the proposed alterations, the licence will be amended as follows:

Not applicable

Applications, Plans and Supporting Documentation

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Notes

The conditions of the drinking water works permit and the licence apply, as applicable, to the alterations of the drinking water system authorized by the issuance of this schedule to the drinking water works permit.

Except as otherwise provided by the drinking water works permit and the licence, the proposed alterations described in this schedule shall be designed, developed, built, operated and maintained in accordance with this schedule and the documentation listed in Table 1.

DATED at TORONTO this 6th day of July, 2012

Signature

Aziz Ahmed, P.Eng.
Director
Part V, Safe Drinking Water Act, 2002
February 3, 2014

The Corporation of the Township
Of Terrace Bay
I Selkirk Ave.,
P.O. Box 40
Terrace Bay, ON P0T 2W0

Attention: Mr. Terry Hanley,
Public Works Supervisor

Dear Mr. Hanley:

Re: Terrace Bay Water Treatment Plant 2013-14 Annual Inspection Report

Please find attached the 2013/14 Municipal water works Inspection Report. The inspection was initiated on December 16th, 2013. This inspection was completed under the Ministry of the Environment inspection protocol for municipal water treatment plants.

Treated water samples were taken at the time of the inspection. Bacteriological audit sample results did not indicate the presence of bacteria. The microbiology results are attached at the back of the inspection report.

Section 19 of the Safe Drinking Water Act (Standard of Care) creates a number of obligations for individuals who exercise decision-making authority over municipal drinking water systems. Please be aware that the Ministry has encouraged such individuals, particularly municipal councillors, to take steps to be better informed about the drinking water systems over which they have decision-making authority. These steps could include asking for a copy of this inspection report and a review of its findings. Further information about Section 19 can be found in “Taking Care of Your Drinking Water: A guide for members of municipal council” found under “Resources” on the Drinking Water Ontario website at www.ontario.ca/drinkingwater.

In order to measure individual inspection results, the Ministry has established an inspection compliance risk framework based on the principles of the Inspection, Investigation & Enforcement (II&E) Secretariat and advice of internal/external risk experts. The Inspection Summary Rating Record (IRR), included as Appendix C of the inspection report, provides the Ministry, the system owner and the local Public Health Units with a summarized quantitative measure of the drinking water
system’s annual inspection and regulated water quality testing performance.

Please note the attached IRR methodology memo describing how the risk rating model has improved to better reflect the health related and administrative non-compliance found in an inspection report. IRR ratings are published (for the previous inspection year) in the Ministry’s Chief Drinking Water Inspector’s Annual Report. If you have any questions or concerns regarding the rating, please contact Arnold Laine, Drinking Water Program Supervisor, at 807-475-1689.

Should you have any questions or comments in regards to this inspection, please feel free to contact me at 807-475-1514.

Yours truly,

Pamela Cowie
Water Inspector
Thunder Bay District Office

cc.: Ontario Clean Water Agency
PO Box 819
Longlac, Ontario, P0T 2AO
Attention: Jamie McPherson, Operations Manager
jmcpherent@ocwa.com

Thunder Bay Bay District Health Unit
999 Balmoral Ave.
Thunder Bay, Ontario, P7B 6E7
Attention: Mr. Abby Mackie, Senior Public Health Inspector
abby.mackie@TBDHU.COM

Ministry of Natural Resources
P.O. Box 970,
Nipigon, Ontario, P0T 2J0
Attention: Mr. Jim Fry, District Manager
Jim.Fry2@ontario.ca
ONTARIO MINISTRY OF THE ENVIRONMENT

TERRACE BAY DRINKING WATER SYSTEM
Inspection Report

Site Number: 250001769
Inspection Number: 1-AQDLH
Date of Inspection: Dec 16, 2013
Inspected By: Pamela Cowie
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Appendix A – Stakeholder Appendix
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Appendix C – Inspection Rating Record
OWNER INFORMATION:

Company Name: TERRACE BAY, THE CORPORATION OF THE TOWNSHIP OF
Street Number: 1
Street Name: SELKIRK Ave
City: TERRACE BAY
Province: ON
Postal Code: P0T 2W0

CONTACT INFORMATION

Type: Main Contact
Name: Terry Hanley
Phone: (807) 825-9016
Fax: (807) 825-1182
Email: t.hanley@terracebay.ca
Title: Public Works Supervisor - Terrace Bay

Type: Operating Authority
Name: Jamie McPherson
Phone: (807) 876-1141
Fax: (807) 876-2560
Email: jmcperson@ocwa.com
Title: Senior Operations Manager - North West Hub, OCWA

Type: Operator
Name: Gene Ross
Phone: (807) 825-2547
Fax: (807) 825-2548
Email: gross@ocwa.com
Title: Senior Operator/Mechanic/ORQ, OCWA

INSPECTION DETAILS:

Site Name: TERRACE BAY DRINKING WATER SYSTEM
Site Address: 11 BEAVER CREEK RD TERRACE BAY ON P0T 2W0
County/District: Terrace Bay
MOE District/Area Office: Thunder Bay District
Health Unit: THUNDER BAY DISTRICT HEALTH UNIT
Conservation Authority: N/A
MNR Office: Terrace Bay Regional Office
Category: Large Municipal Residential
Site Number: 250001769
Inspection Type: Unannounced
Inspection Number: 1-AQDLH
Date of Inspection: Dec 16, 2013
Date of Previous Inspection: Jan 16, 2013

COMPONENTS DESCRIPTION
The Terrace Bay distribution system has approximately 720 residential service connections and 55 commercial service connections, supplying a population of approximately 1,850 people. The distribution system consists of mainly 150 mm to 300 mm diameter watermains, hydrants, shutoff valves and pressure reducing valves at key locations. The majority of the network is comprised of cast iron pipe, with only a small portion of the industrial/commercial area constructed of PVC piping. The distribution system is approximately 12 kilometres in length. There are 114 fire hydrants located throughout the distribution system.

Water is delivered to the distribution system via six (6) vertical turbine distribution pumps, three (3) pumps rated at 63.1 L/s at 70.4 TDH (total dynamic head) each, two (2) pumps rated at 31.5 L/s at 70.4 TDH each and one (1) rated at 6.30 L/s at 70.4 TDH.

Due to elevated levels of lead in the drinking water system, a corrosion control program was implemented in July 2013 with the introduction of a blended phosphate. For the first year of implementation the program includes frequent testing of the water quality and "coupon racks" with metal samples.

The main raw water supply for the Township of Terrace Bay is Jackfish Channel in Lake Superior. Up until April of 2009, the water intake and raw water supply system used to supply the water treatment plant was owned and operated by Terrace Bay Pulp Incorporated (formerly Neenah Paper Company of Canada (formerly Kimberly-Clark of Canada Inc.), who owned and operated a kraft mill in the community of Terrace Bay.

As of April of 2009, the Township of Terrace Bay started using their own intake and pumphouse. The new intake is located approximately 75 m to the west of the intake owned by the mill. Lake Superior water gravity feeds to a wet well in the pumphouse. Three submersible vertical turbine pumps, rated at 22.5 L/s, are available to pump water through the 2.5 km long by 250 mm transmission main to the Terrace Bay water treatment plant.

Aside from the new intake in Lake Superior, there are four groundwater wells on the shore of Lake Superior, that were used for dewatering during the construction of the new pumphouse. The groundwater wells are listed on the PTTW as back-up supplies to Lake Superior. The ground water wells are 250 mm in diameter and 17 m deep. Each has a submersible pump rated at 15 L/s and discharge to the wet well in the low lift pump station.
Comments:
Prior to switching to the Municipal Drinking Water Works Licence and Permit, the Certificate of Approval included an emergency water supply system taking water from Hays Lake. Equipment provided pre-treatment before the slow sand filters and included:

- polymer addition system consisting of two (2) chemical pumps each capable of pumping 410 ml/min of Aluminex-2 polymer and Nalclear flocculant, two (2) 1,040 L chemical solution tanks complete with mixers and piping necessary to add polymer at the Hays Lake raw water influent line and the influent line to the pressure filtration;
- a recirculation chamber with two (2) pumps each rated at 27.3 L/s;
- a dual media pressure filtration system consisting of anthracite and silica, 3.35 m in diameter, rated at 53 L/s.

The Township of Terrace Bay now uses their own intake from Lake Superior and the Hays Lake system is no longer used.

The equipment remains in the water treatment plant. Recently the chemical metering pumps were modified to be used as part of the corrosion control program.

Site (Name):  TREATED WATER - SLOW SAND FILTRATION
Type:  Treated Water POE  Sub Type:  Treatment Facility
Comments:
The present water treatment plant was commissioned in November of 2005. A filter by-pass, for use in emergency situations, was completed at the end of May 2008.

Raw water entering the plant is directed to four (4) slow sand filter units, each with 1.2 m thickness of filter sand, 600 mm gravel and a perforated pipe underdrain system.

Filtered water then passes through two (2) ultraviolet disinfection units (one duty, one standby) providing a minimum ultraviolet dosage of 40 millijoules/cm² at a peak flow rate of 45 L/sec.

UV disinfected water entering the reservoir feed pipe is injected with a sodium hypochlorite solution.

Chlorinated water is then directed to an underground 5193 m³ concrete reservoir, consisting of four (4) interconnected chambers with baffles providing chlorine contact time.

Post chlorination with sodium hypochlorite takes place after the reservoir when the continuous chlorine residual analyzer monitoring primary disinfection measures a residual of less than 1.0 mg/L.
INSPECTION SUMMARY

INTRODUCTION

- The primary focus of this inspection is to confirm compliance with Ministry of the Environment legislation and control documents, as well as conformance with Ministry drinking water related policies for the inspection period. The Ministry is implementing a rigorous and comprehensive approach in the inspection of water systems that focuses on the source, treatment, and distribution components as well as water system management practices.

This drinking water system is subject to the legislative requirements of the Safe Drinking Water Act, 2002 (SDWA) and regulations made therein, including Ontario Regulation 170/03, "Drinking Water Systems" (O.Reg.170/03). This inspection has been conducted pursuant to Section 81 of the SDWA.

SOURCE

- There were no obvious potential sources of pollution or activities in or around the source that could impair source water quality.

PERMIT TO TAKE WATER

- The owner had a valid PTTW for all of the production sources.

Permit to Take Water No. 5887-8JHPXU was issued on July 6, 2011. The permit allows for the taking of water from five sources; Lake Superior and the four groundwater wells as back up supply to be used for a maximum of 10 days in a year. As the four groundwater wells run for 10 minutes each day to exercise the well pumps, and thereby delivering water into the clear well, the permit also includes the daily maintenance water being delivered to the clear well. The permit, lists the following:

1) PW1 / Back-up Supply
2) PW2 / Back-up Supply
3) PW3 / Back-up Supply
4) PW4 / Back-up Supply
5) Lake Superior
6) PW1 / Maintenance
7) PW2 / Maintenance
8) PW3 / Maintenance
9) PW4 / Maintenance

The permit expires on February 6, 2019.

- The maximum water takings were in accordance with those allowed under the PTTW.

The permit authorizes the following water takings:

1) PW1 / Back-up Supply: a maximum of 675 L/min; a maximum of 972,000 L/day; a maximum of 10 days per year.
2) PW2 / Back-up Supply: a maximum of 675 L/min; a maximum of 972,000 L/day; a maximum of 10 days per year.
PERMIT TO TAKE WATER

3) PW3 / Back-up Supply: a maximum of 675 L/min; a maximum of 972,000 L/day; a maximum of 10 days per year.

4) PW4 / Back-up Supply: a maximum of 675 L/min; a maximum of 972,000 L/day; a maximum of 10 days per year.

5) Lake Superior / Main Supply: a maximum of 2,700 L/min; a maximum of 3,888,000 L/day; a maximum of 365 days per year.

6) PW1 / Maintenance: a maximum of 675 L/min; a maximum of 6,750 L/day.

7) PW2 / Maintenance: a maximum of 675 L/min; a maximum of 6,750 L/day.

8) PW3 / Maintenance: a maximum of 675 L/min; a maximum of 6,750 L/day.

9) PW4 / Maintenance: a maximum of 675 L/min; a maximum of 6,750 L/day.

The permit also states: "The Permit Holder shall maintain a record of all water takings. This record shall include the dates and times of water takings, and the total measured or calculated amounts of water pumped per day for each day that water is taken under the authorization of this Permit. A separate record shall be maintained for each source."

The four groundwater wells run daily for 10 minutes each. The raw groundwater is pumped to the wet well. The volume of water delivered to the wet well from each groundwater well is a calculated amount.

The first flow measuring device is at the inlet to the water treatment facility. Dependant on the cycling schedule of the groundwater pumps, the volume of water delivered to the water treatment plant from the wet well is a combination of the daily raw groundwater and the gravity feed from Lake Superior.

A review of raw water flow meter records from January to December 2013, found raw water flows in excess of 45 L/sec in six of the months. The operating authority explained that these were for various reasons such as: a power transfer test, refilling of filters, and plugged screens on regulating filter valves.

The greatest peak flow was 57.11 L/sec on March 7, 2013, when the OIC tested the simultaneous operation of two raw water pumps.

CAPACITY ASSESSMENT

• There was sufficient monitoring of flow as required by the Permit and Licence or Approval issued under Part V of the SDWA

Schedule A of the Drinking Water Works Permit #237-201, Issue Number 2, lists the following flow meters:
- One (1) flow meter to monitor the raw water flow
- Four (4) flow meters to monitor filter effluent flow, one per filter
- One (1) flow meter to monitor flow to waste from the Recirculation chamber
- One (1) flow meter to monitor treated water flow to distribution

Aside from the flow meters identified in the permit there is also a flow meter on the inlet to the pressure filter system, on the backwash supply line for the pressure filter system and on the line supplying the mill.

The SCADA system records the flow from the meters.

No flow meters are associated with the wells and flow data for these is a calculated value.
CAPACITY ASSESSMENT

- Flow measuring devices were calibrated or verified in accordance with the requirements of a Permit and Licence or Approval issued under Part V of the SDWA.

Flow meter verification certificates are available for the flow meters and indicate that the meters passed the verifications that were performed in July 2013.

A "Monthly Process Data Report" provided by OCWA with treated water peak flow rates for each month presented maximum values that indicate that values are incorrect. For the month of January 2013, the maximum treated flow rate was recorded as 50.0 L/s. Other records for the month of January indicate that flows were as high as 84 L/s. Data for 6 other months is recorded as 50.0 L/s on the report provided by OCWA. The OIC reports that these values are generated by the computer system.

(I am waiting for information from Gene/Joe regarding the data and then I can decide how to include this in the report.)

- The owner was in compliance with the conditions associated with maximum flow rate or the rated capacity conditions in the Permit and Licence or Approval issued under Part V of the SDWA.

The Drinking Water Works Licence lists the rated capacity in Schedule C, Condition 1.1. The licence states that the maximum daily volume of treated water that flows from the treatment subsystem to the distribution system shall not exceed 3,888 m³/day.

A review of a computer generated report showing monthly summaries for 2013 did not indicate any capacity exceedances. The report shows that the month of February had a day with the highest maximum flow of 3274.0 m³/day of treated water.

TREATMENT PROCESSES

- The owner had ensured that all equipment was installed in accordance with Schedule A and Schedule C of the Drinking Water Works Permit.

The Drinking Water Works Permit, lists 2 -1500 L sodium hypochlorite solution tanks. Only one is installed in the chemical room. The second tank is available for times when the main tank is being cleaned.

- The owner had evidence that all required Director Notifications under Condition 2.4 of Schedule B of the Permit were made during the inspection period.

A "Director Notification Form, Alterations to a Drinking Water System" was prepared on July 10, 2013, for work identified in Schedule C of the Drinking Water Works Permit. The form documented that on July 2, 2013, the phosphate blend corrosion inhibitor feed system was placed into service.

- Records did not indicate that the treatment equipment was operated in a manner that achieved the design capabilities required under Ontario Regulation 170/03 or a Permit, Licence or Approval issued under Part V of the SDWA at all times that water was being supplied to consumers.

PRIMARY DISINFECTION:

Between the evening of February 22 and 23, 2013, trending information indicates that the chlorine residual dropped to 0.71 ppm before recovering without operator intervention. At the time the chlorine residual alarm was programmed to alarm at a low chlorine residual of 0.7 ppm. A CT calculation was not done.

In February of 2013 two documents were available with respect to achieving CT at the Terrace Bay drinking water system: the "CT Calculation Table" dated 7-May-10 and the Standard Operating Procedure "CT Calculations" issued March 20, 2012.
TREATMENT PROCESSES

The "CT Calculations" document states that 1.0 mg/L is the amount of chlorine residual required. The "CT Calculation Table" documentation also lists 1.00 mg/L as the free disinfectant concentration.

SLOW SAND FILTRATION:

Over the past few inspections it has been discussed that one key factor to establishing a biological layer is to have longer filter runs with minimal disruption to biological activity of the filter. Past performance of the filters has shown that frequent cleaning of the filters is required due to the fine sediment ("rock flour") which forms a crust on the filters. This cleaning involves removal of the surface layer using a shovel.

The Ministry has encouraged longer filter cycles and improved maintenance procedures. A review of maintenance procedures indicates that there has been improvement as removal of the surface layer is being completed more quickly allowing water to be returned to the filter sooner. The operating authority is now discussing whether the filters can be maintained without removing the top surface of the filters and raking the surface instead.

Operating the slow sand filters with the maximum number in service is the preferred method to lengthen filter runs. The current operating practise is to have two of the four filters in service at a time.

Following maintenance activities and prior to returning the filters to service, there are no tests conducted, such as a measure of organics before and after the filter, to evaluate the filter ripening or to confirm that the biological layer has been maintained.

- Records confirmed that the water treatment equipment which provides chlorination or chloramination for secondary disinfection purposes was operated so that at all times and all locations in the distribution system the chlorine residual was never less than 0.05 mg/l free or 0.25 mg/l combined.

A review of records indicates that free chlorine residuals were maintained above 0.05 mg/l within the distribution system.

- The primary disinfection equipment was equipped with alarms or shut-off mechanisms that satisfied the standards described in Section 1-6 (1) of Schedule 1 of Ontario Regulation 170/03.

Upon the failure of the standby sodium hypochlorite pump for primary disinfection, the treatment process shuts down and an alarm is activated for an operator to respond.

- The owner had evidence indicating that all chemicals and materials that come in contact with water within the drinking water system met the AWWA and ANSI standards in accordance with the Permit and Licence issued under Part V of the SDWA.

- Up-to-date plans for the drinking-water system were available in accordance with the Permit and Licence issued under Part V of the SDWA.

At the time of the inspection an "as built" diagram for the "Process and Instrument Schematic" was provided. With the exception of the recent changes to incorporate the corrosion control program, the document is reported to accurately reflect the water treatment system.

- The facility and equipment appeared to be maintained and in a fit state of repair.

A number of activities indicate that the facility and equipment are being maintained. For example, the UV units were serviced on August 28, 2013. In July, #2 slow sand filter was topped-up with media. The owner hopes to top-up media in the other filters over the next three years.

A few issues have been identified that require further investigation, maintenance or replacement. These include ensuring continued operation of the high lift pumps during periods of power loss or fluctuation, ensuring the start-up of the standby generator and addressing aging valves in the distribution system.
TREATMENT PROCESSES

On August 25, 2013, the failure of a high lift pump resulted in no water being supplied for a period of seventeen minutes. This is not the first time that the pumps have failed to deliver water to the town. Previously a pressure switch had been installed to ensure the continued operation of one pump during periods when power changes would result in the computer controlled system shutting down the pumps. A contractor is reviewing the operation of the pressure switch to address the most recent failure of the pumps delivering treated water to the distribution system. A final report with possible solutions and recommendations is expected to be available soon.

During a routine test of the standby diesel generator at the water treatment plant it was discovered that the generator failed to start when the propane tank was partially full in the winter time. Propane tank levels are monitored and a tank fill had been requested but not yet delivered. One potential solution is to have a propane tank that is dedicated to the generator and not being used on a daily basis to heat the water treatment plant. Alternatively, closer monitoring of the propane tank level and the receipt of deliveries may be needed.

The distribution system contains aging valves with packing that requires replacement. Problems have arisen when trying to isolate sections of water mains to allow for the repair of breaks. Valves have failed to operate and valves further from the break have been used to restrict the flow of water. This has resulted in larger areas of the distribution system being without water while the watermain is repaired and a larger area being placed under a Boil Water Advisory (BWA). The town is faced with repairing existing valves or the replacement of valves.

- The Operator-in-Charge had ensured that all equipment used in the processes was monitored, inspected, and evaluated.

As part of the daily routine, the operator conducts rounds and inspects the equipment within the plant. The daily round sheets include: flow meter readings, daily UV readings, sodium hypochlorite readings, and miscellaneous readings (which captures everything else in the plant). As well, the operator reviews data that was recorded on the PLC/SCADA and the pumphouse is visited several times a week.

- Where a potential bypass of primary or secondary treatment equipment existed, measures were taken to ensure that raw or partially treated water was not directed to the distribution system.

A bypass around the slow sand filters is available. The bypass was installed for emergency purposes only (ex: fighting a large fire). A bypass cannot be initiated without first obtaining permission from council or its designate. A flange in the piping is capped and would have to be physically removed by an operator in order to use the bypass piping.

Condition 2 of Schedule D of the Municipal Drinking Water Licence, number 237-101, discusses temporary relief from regulatory requirements during an Emergency and the conditions for this relief.

There have been no bypasses since the past inspection.

Schedule B of the Drinking Water Works Licence defines "emergency by pass" as a by passing of the slow sand filter. This differs from Schedule D which indicates that the temporary relief from regulatory requirements during an Emergency is from the provision of filtration and primary disinfection. As mentioned above, the bypass is designed such that only the slow sand filters are bypassed and the water is then directed back into the treatment process prior to the UV units.

- Based on information provided by the owner/operator, it was not likely that contaminants entering the floor drains would have come in contact with the source water or treated water.

The floor drains are connected to a septic holding tank outside of the water treatment plant.

- Measures were taken to ensure that pesticides were not applied, stored, or mixed in the immediate vicinity of source(s), treatment, and storage facilities.

The owner and operating authority are not aware of any pesticides being applied in the vicinity of the water works.
TREATMENT PROCESS MONITORING

- Primary disinfection chlorine monitoring was being conducted at a location approved by Permit, Licence or Approval issued under Part V of the SDWA, or at/near a location where the intended CT had just been achieved.

Primary disinfection monitoring is being conducted from a location after water exits the Clearwell.

Aside from the chlorine analyzer measuring primary disinfection, another analyzer is being used to measure the chlorine residual of the water entering the Reservoirs. Initially the analyzer had only been programmed to alarm when a low chlorine residual was measured. This serves to shutdown the treatment process and notify the operators of a problem with the injection of sodium hypochlorite.

On August 3, 2013, the sodium hypochlorite pump had been turned-up to clear air from the line and was accidentally left at this setting, resulting in extremely high chlorine residuals. Following this the "injection point" chlorine analyzer, used to monitor the treatment process, was programmed to alarm at a high free chlorine residual to notify operators of a similar problem.

- Operators were aware of the operational criteria necessary to achieve primary disinfection within the drinking water system.

- Continuous monitoring of each filter effluent line was being performed for turbidity.

- The secondary disinfectant residual was measured as required for the distribution system.

- Records did not confirm that the maximum free chlorine residual in the distribution system was less than 4.0 mg/L or the combined chlorine residual was less than 3.0 mg/L.

On Friday August 2, 2013, the pump that adds sodium hypochlorite to treat the water was left operating at a high setting and the chlorine residual in the drinking water continued to increase until detected on Saturday August 3, 2013. Analysis of diluted samples indicate that the chlorine residual was approximately 11 mg/L.

This incident is further discussed in the "Reporting & Corrective Actions" section of this inspection report.

- Operators were examining continuous monitoring test results and they were examining the results within 72 hours of the test.

Records indicate that continuous monitoring results are being examined within 72 hours of the test. Records also indicate that a review of monthly turbidities to assess filtration performance is done as required.

- Samples for chlorine residual analysis were tested using an acceptable portable device.

- All continuous monitoring equipment utilized for sampling and testing required by O. Reg. 170/03, or approval or order, were equipped with alarms or shut-off mechanisms that satisfied the standards described in Schedule 6.

Schedule 6 of O. Reg. 170/03 contains a Table that lists the minimum alarm standard for an analyzer used to measure free chlorine residual required to achieve primary disinfection. Item 1. of the Table states: "The minimum alarm standard is 0.1 milligrams per litre less than the concentration of free chlorine residual that is required to achieve primary disinfection."

Schedule 6-5(2) also states that for the purposes of the Table, the concentration of free chlorine residual that is required to achieve primary disinfection for the drinking water system shall be...
TREATMENT PROCESS MONITORING

determined in accordance with the Ministry's "Procedure for Disinfection of Drinking Water in Ontario".

For the Terrace Bay drinking water system, two documents address the "CT Calculation Table" dated 7-May-10 and the Standard Operating Procedure "CT Calculations" issued March 20, 2012.

The "CT Calculations" document states that 1.0 mg/L is the amount of chlorine residual required. The "CT Calculation Table" documentation also lists 1.00 mg/L as the free disinfectant concentration.

Since March 1, 2013, the alarm setpoint for the continuous chlorine analyzer monitoring primary disinfection has been programmed to alarm at 0.9 mg/L. This alarm setpoint meets the requirement of the regulation.

- Continuous monitoring equipment that was being utilized to fulfill O. Reg. 170/03 requirements was performing tests for the parameters with at least the minimum frequency specified in the Table in Schedule 6 of O. Reg. 170/03 and recording data with the prescribed format.

The operator indicated that data readings are being made at one minute intervals.

- All continuous analysers were calibrated, maintained, and operated, in accordance with the manufacturer's instructions or the regulation.

Records indicate that the chlorine residual analyzers and the turbidimeters are being maintained and calibrated.

PROCESS WASTEWATER

- The process wastewater and residual solids/sludges were being treated, handled and disposed of in accordance with the design requirements approved under the Permit and Licence or Approval issued under Part V of the SDWA.

Waste water is collected in the recirculation chamber and once a certain level is reached the water is pumped to an infiltration pond located behind the water treatment plant. Waste water that is collected in the recirculation chamber includes filter-to-waste water and emergency gravity overflows from the slow sand filters and overflow from the reservoir.

DISTRIBUTION SYSTEM

- The owner did not have up-to-date documents describing the distribution components as required.

The document that was submitted with the application for the Municipal Drinking Water Works Permit is date November 13, 1998. The document is a layout of the town streets and lots.

Guidance information for the submission of documents with the application state that the document should identify streets and critical information including, as a minimum, a linear representation of the watermains showing its approximate location within the street, pipe diameter, street name, valving and hydrant locations.

Discussions with township staff indicates that diagrams showing this level of detail are available for some parts of town but not for some of the older sections.

- There is no backflow prevention program, policy and/or bylaw in place.

- Existing parts of the distribution system that were taken out of service for inspection, repair or other activities that may lead to contamination, and all new parts of the distribution system that came in contact with drinking water, were disinfected in accordance with Schedule B, Condition 2.3 of the Drinking Water Works Permit.

The distribution system logbook kept by OCWA at the water treatment plant is the location where records of maintenance on the distribution system are made.
The records indicate that repairs are being sprayed and wiped with disinfectant. Actions such as flushing of the watermains is also recorded. Records of chlorine residuals measured following flushing was recorded for one of the two repairs that were reviewed as part of the inspection.

The OCWA certified operators have received training related to maintenance of the distribution system. It would also be beneficial for public works staff to receive the same training.

* The owner had not implemented a program for the flushing of watermains as per industry standards.

In the fall the hydrants are normally operated and inspected and this maintenance activity involves some flushing of the distribution system.

The operating authority hopes to develop a plan for directional flushing of the distribution this spring.

* Records confirmed that disinfectant residuals were routinely checked at the extremities and "dead ends" of the distribution system.

* A program for inspecting and exercising valves did not exist.

Valves are being used as little as possible due to problems with the age of the valves and the packing. Valves have been unreliable and have resulted in larger areas having to be isolated to complete repairs of the distribution system. The owner needs to conduct a review to ensure that key valves are operational or considered for replacement. As of yet, valve replacement has been minimal.

* There was a program in place for inspecting and operating hydrants.

The hydrants are usually inspected/operated in the fall in conjunction with flushing.

The Township of Terrace Bay has started replacing fire hydrants. For the past two years, six hydrants have been replaced each summer.

* There was a by-law or policy in place limiting access to hydrants.

Bylaw no. 21-2006 requires the consent of the Corporation of the Township of Terrace Bay for persons to open or close any hydrant.

* The owner has not undertaken efforts to identify, quantify and reduce sources of apparent water loss.

* The distribution system pressure was monitored to alert the operator of conditions which may have lead to loss of pressure below the value under which the system is designed to operate.

The system pressure of water entering the distribution system is measured at the water treatment plant and monitored with an alarm. A reading is recorded manually by the operator each day.

A pressure gauge is available at the municipal community centre as part of the ice plant for the rink. At the time of the inspection the pressure at this location was 84 psi.
**DISTRIBUTION SYSTEM**

- Based on the records available the owner was not able to maintain proper pressures in the distribution system.

  During normal operation the owner and operating authority are able to maintain proper pressures in the distribution. The water leaves the water treatment plant at 60 psi. At the mid-point in town the pressure is 85 psi and at the end of town the pressure reaches 100 psi.

  On August 25, 2014, the pump delivering treated water to the distribution system shutdown during a lightning storm and the pump that is supposed to be initiated by a pressure switch failed to operate. The immediate problem was resolved at the time by an operator being called to the plant and initiating a pump. The incident is still being investigated to understand why the pressure switch did not activate the operation of a pump.

**OPERATIONS MANUALS**

- Operators and maintenance personnel had ready access to operations and maintenance manuals.

- The operations and maintenance manuals contained plans, drawings and process descriptions sufficient for the safe and efficient operation of the system.

  A SOP is available, "Propane Generator Failure". At the time of the inspection it was discussed that additional information could be added to the SOP to document that generator failure can be due to a propane tank level of 45% or less.

- The operations and maintenance manuals did not meet the requirements of the Permit and Licence or Approval issued under Part V of the SDWA.

**DRAWINGS:**

Condition 15 of Schedule B of the Drinking Water Works Licence states the requirements for drawings. 15.2 states:

"Any alteration to any treatment subsystem shall be incorporated into process flow diagrams, process and instrumentation diagrams, and record drawings and diagrams within one year of the substantial completion of the alteration."

The current Process and Instrumentation Schematic for the water treatment plant is dated October 31, 2005. A number of alterations have been made since that time. For example, the filter bypass was completed in 2008. Other changes include changes to the post chlorination injection point and more recently the alterations for the injection of blended phosphates for corrosion control.

Information to update the schematic has recently been provided to the engineering company. No date was available as to when an updated document will be available. As an interim measure a copy of the current schematic with changes marked on it is available at the water treatment plant.

**PRIMARY DISINFECTION SOP:**

Following the previous inspection the SOP "CT Determination" was revised, dated March 4, 2013, and is available at the water treatment plant.

**LOGBOOKS**
**LOGBOOKS**

- Logs for the drinking water subsystem(s) contained the required information.
  
  A logbook is available at the water treatment plant. The operators also use various check sheets to record readings.
  
  A logbook is available at the pumphouse and contains entries relating to the propane tank level, pump changes, generator and transfer power testing.
  
  At the public works office a binder is available with distribution records. As OCWA is the operating authority for the Terrace Bay distribution system, a logbook for the distribution system is maintained at the water treatment plant.
  
- Logbook entries were made in chronological order.
  
- The record system allowed the reader to unambiguously identify the person who made the logbook entry.
  
- Entries in the logbook were made only by appropriate and authorized personnel.
  
- Records or other record keeping mechanisms confirmed that operational testing not performed by continuous monitoring equipment was being done by a certified operator, water quality analyst, or person who suffices the requirements of O. Reg. 170/03 7-5.
  
  Records indicate that operational testing is being conducted by appropriately certified operators.
  
- For every required operational test and every required sample, a record was made of the date, time, location, name of the person conducting the test and result of the test.
  
- The operator-in-charge ensured that records were maintained of all adjustments made to the processes within his or her responsibility.
  
- Logs or other record keeping mechanisms were available for at least five (5) years.
  
  All documentation is maintained at the water treatment plant.

**CONTINGENCY/EMERGENCY PLANNING**

- Spill containment was provided for process chemicals and/or standby power generator fuel.
  
  The chemicals at the water treatment plant are located in a room with a grated floor above a concrete containment. Any spills will collect in this area and must be manually pumped for removal.
  
- Clean-up equipment and materials were in place for the clean up of spills.
  
  A spill clean-up kit is available at the water treatment plant.
CONTINGENCY/EMERGENCY PLANNING

- Standby power generators were tested under normal load conditions.

  The standby generators at the water treatment plant and pumphouse are routinely tested without a normal load.

  A contractor completed an annual load test of the generator at the water treatment plant on October 9, 2013 and of the pumphouse generator on October 8, 2013.

SECURITY

- All storage facilities were completely covered and secure.

  The reservoir is located beneath the water treatment plant floor.

- Air vents and overflows associated with reservoirs and elevated storage structures were equipped with screens.

  Screens on vents and overflows were not reviewed during this inspection.

- The owner had provided security measures to protect components of the drinking-water system.

  The plant is located within a gated and locked area. The building is security alarmed and locked.

  The Lake Superior Pumphouse is fenced, locked, and visited by an operator on Mondays, Wednesdays and Fridays.

CONSUMER RELATIONS

- Water conservation was being practiced by the owner or operating authority.

  By-law No. 21-2006 restricts the use of water from March 1st to November 13th each year, through the implementation of measures such as odd/even watering days based on the street number and calendar day.

- Required documents were available free-of-charge during normal business hours at a location accessible to the public.

  Records are available at the township office and at the public works garage.

- The owner did take effective steps to advise users of the water system of the availability of Annual Reports, including posting a copy on a web site, if applicable.

  Availability of reports is advertised on the Township of Terrace Bay website and copies are placed at the municipal office counter.

CERTIFICATION AND TRAINING

- The overall responsible operator had been designated for each subsystem.

  The designated overall responsible operator (ORO) for the water treatment plant and the distribution system is Gene Ross, with Rob Desjaradins, located in Beardmore, as the back-up ORO.

- Operators in charge had been designated for all subsystems which comprised the drinking-water system.

  Linda McBride and Gene Ross are the designated operators in charge (OIC’s) for the Terrace Bay drinking water system.
CERTIFICATION AND TRAINING

- All activities that were undertaken by uncertified persons in the DW subsystems were overseen by persons having the prescribed qualifications.

  The operating authority reports that work by Terrace Bay Public Works staff in the distribution system is overseen by a certified operator.

- All operators possessed the required certification.

- Only certified operators made adjustments to the treatment equipment.

  At the time of the inspection there was nothing that indicated that adjustments were being made by uncertified individuals.

- Operator certificates or water quality analyst certificates were displayed in a conspicuous location at the workplace or at the premises from which the subsystem was managed.

- The subsystem had been replaced or altered, since the issuance of the existing subsystem certificate of classification and the owner applied for the re-determination of the type and class of the subsystem or had determined that the alteration(s) was not sufficient to trigger an application.

  The water treatment plant is currently a Class 2 subsystem.

  The distribution subsystem is a Class 1.

  The system has undergone some recent changes with the new Lake Superior pumphouse. The use of the Hays Lake supply has also changed. Recent changes occurred as a result of implementing the corrosion control plan. The Township of Terrace Bay has committed to conducting a review to assess whether the class of the subsystem appears to have changed and whether an application for a re-determination should be submitted.

- The classification certificates of the subsystems were conspicuously displayed at the workplace or at premises from which the subsystem was managed.

- An adequately licenced operator was designated to act in place of the overall responsible operator when the overall responsible operator was unable to act.

- The owner/operating authority was aware of the operator training and record keeping requirements, and they were taking reasonable steps to ensure that all operators receive the required training.

WATER QUALITY MONITORING

- All microbiological water quality monitoring requirements for raw water samples were being met.

  Lake Superior is the main source of raw water supply. Four ground water wells also serve as a backup to the Lake Superior supply. For maintenance purposes, the four well pumps are exercised each day of the week. When these pumps are exercised, water drawn from the wells is directed to the wet well in the pumphouse.

  Reg. 170/03, Schedule 10-4(1) requires water to be sampled every week prior to any treatment. Schedule 10-4(2), requires samples to be collected from each well in the system.
WATER QUALITY MONITORING

The pumphouse wet well delivers raw water to the treatment plant. The sample point for raw water is at the treatment plant, prior to any treatment being applied. Due to both Lake Superior and the four groundwater wells each supplying water to the wet well, the raw water supplied to the plant is a blended source.

Schedule D of the Municipal Drinking Water Works Licence provides relief for raw well water sampling on the condition that raw water sampling is taken at a location where the well water and surface water blending has taken place.

- **All microbiological water quality monitoring requirements for distribution samples were being met.**

  Records reviewed for the period of January 1, 2013 to December 9, 2013, indicate that weekly distribution samples were collected and analyzed as prescribed.

- **All microbiological water quality monitoring requirements for treated samples were being met.**

  Records reviewed for the inspection period indicate that weekly treated water samples were collected and analyzed as prescribed.

- **All inorganic water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**

  Sampling for inorganic parameter water quality monitoring was conducted on January 21, 2013. The sampling frequency for inorganic parameters is every 12 months.

- **All organic water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**

  Sampling for organic parameter water quality monitoring was conducted on January 21, 2013. The sampling frequency for organic parameters is every 12 months.

- **All trihalomethanes water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**

  Collection dates and values for this inspection period are as follows:
  - January 7/13 - 13.9 µg/L
  - April 8/13 - 17.7 µg/L
  - July 22/13 - 29.4 µg/L
  - October 7/13 - 32.6 µg/L

  Trihalomethane samples were being collected from a point in the distribution system or connected plumbing system that was likely to have an elevated potential for the formation of trihalomethanes.

  Quarterly THM samples have been collected from the MNR/Service Ontario building.

- **All nitrate/nitrite water quality monitoring requirements prescribed by legislation were conducted within the required frequency for the DWS.**

  Quarterly samples for this inspection period were collected on January 7/13, April 8/13, July 22/13, and October 7/13.

- **All sodium water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**

  Samples were collected on January 11, 2011. The sampling frequency for sodium is every 60 months (five years). The next sample will be required in 2016.
WATER QUALITY MONITORING

- All fluoride water quality monitoring requirements prescribed by legislation were conducted within the required frequency.

  Samples were collected on January 11, 2011. The sampling frequency for non-fluoridating systems is every 60 months (five years). The next sample will be required in 2016.

- The owner ensured that water samples were taken at the prescribed location.

- All water quality monitoring requirements imposed by the Permit and Licence or Approval issued under Part V of the SDWA were being met.

  Schedule C of the Municipal Drinking Water Works licence references the "Township of Terrace Bay Water Distribution System Corrosion Control Plan", dated February 2011. The Schedule states that the alteration to implement corrosion control shall be designed, developed, built, operated and maintained in accordance with the schedule and the document described above.

  Table 7-2, "Sampling Frequency for Post-Implementation Monitoring" of the Corrosion Control Plan details the sampling locations, parameters and frequency of sampling. The sampling locations are at the point-of-entry, the distribution system, and from residential and non-residential taps. Parameters, such as lead, alkalinity, pH, and orthophosphate, were monitored weekly for the first month, which was July. Sampling continues monthly for the rest of the first year.

- All sampling requirements for lead prescribed by schedule 15.1 of O. Reg. 170/03 were being met.

  Lead sampling is being completed to meet the requirements of O. Reg. 170/03, and additional sampling is being done as part of the implementation of the corrosion control program.

- The owner was conducting sampling beyond the minimum legislative requirements.

  The Township of Terrace Bay participates in the Ministry of Environment Drinking Water Surveillance Program (DWSP).

- Records confirmed that chlorine residual tests were being conducted at the same time and at the same location that microbiological samples were obtained.

- The drinking water system owner had submitted written notices to the Director that identified the laboratories that were conducting tests for parameters required by legislation, Order Certificate of Approval (OWRA) or a Permit, Licence or Approval issued under Part V of the SDWA.

  The Lab Services Notification form was submitted on October 31, 2003.

- Based on information provided by the owner/operator, samples were being taken and handled in accordance with instructions provided by the drinking-water system's laboratories.

- The owner indicated that the required records are kept and will be kept for the required time period.

WATER QUALITY ASSESSMENT
WATER QUALITY ASSESSMENT

- The audit samples collected by the inspector met the applicable Ontario Drinking Water Quality Standards and/or the aesthetic objectives or operation guidelines. The results of the audit sampling are summarized as follows:

  Audit samples were collected for the analysis of chlorine residuals and the presence of bacteria from the Service Ontario building, the hospital, and from the treated water entering the distribution system. Chlorine residuals met the requirements of the regulation. The sample results did not indicate bacteriological contamination.

- Records show that water sample results taken during the review period met the Ontario Drinking Water Quality Standards (O. Reg. 169/03), with the following exceptions:

  A number of the plumbing samples, collected and analyzed for lead, exceeded the Ontario Drinking Water Quality standard of 0.010 mg/L (10 ug/L).

  Samples from the distribution system also exceeded the standard for lead. For example, a sample collected from a hydrant on Terrace Heights Drive in April 2013 was found to contain 187 ug/L of lead.

REPORTING & CORRECTIVE ACTIONS

- Corrective actions (as per Schedule 17) had been taken to address adverse conditions, including any other steps that were directed by the Medical Officer of Health.

  The following Adverse Water Quality Incidents (AWQI's) were reported during the inspection period:

  - February 7, 2013, for a broken watermain on Cavanagh Cres.. A Boil Water Advisory (BWA) was issued. AWQI #109914
  - February 11, 2013, for a watermain break on Lakeview Dr.. A BWA was issued. AWQI #109952
  - April 22, 2013, for a lead exceedance (187 ug/L) from a hydrant on Terrace Heights Dr.. AWQI #110717
  - July 25, 2013, for a lead exceedance (12 ug/L) from the Selkirk hydrant. AWQI #112871
  - August 3, 2013, for high chlorine (5 mg/L) in the treated water. AWQI #113162
  - August 25, 2013, for loss of pressure to the distribution system. A BWA was issued. AWQI #113604
  - October 17, 2013, for a service break that required isolation to a larger area which included the hospital. A BWA was issued. AWQI #114609

  Numerous reports were also made for elevated lead in samples collected from the residential plumbing.

  It appears that corrective actions were taken as required for the AWQI's and BWA's.

- Corrective actions as directed by the Medical Officer of Health had been taken by the owner and operating authority to address exceedances of the lead standard.

  The Thunder Bay District Health Unit does not require resampling following adverse results of elevated lead in either the standing or flushed plumbing samples. The Township of Terrace Bay provides information to residents at the locations of elevated lead results.

- All required notifications of adverse water quality incidents were immediately provided as per O. Reg. 170/03 16-6.

  During the course of the inspection, there was nothing that indicated that verbal notification of adverse water quality incidents was not immediately provided.
REPORTING & CORRECTIVE ACTIONS

- All required written notices of adverse water quality incidents were provided as per O. Reg. 170/03 16-7.

- In instances where written notice of issue resolution was required by regulation, the notice was provided as per O. Reg. 170/03 16-9.

- All reporting requirements for lead sampling were not complied with as per schedule 15.1-9 of O. Reg. 170/03.
  
  Letters with the required information and sample results are provided by the Township of Terrace Bay to the occupants of the premises where lead sampling has taken place.

  The End of Period Reports for lead testing were requested as part of the inspection review. The End of Period Report was submitted as required on October 16, 2013, following the summer sampling period. The report for the 2013 winter sampling period was not submitted within 30 days after the end of the sampling period. This omission was discovered during the inspection process and the report was submitted at that time.

- Where required continuous monitoring equipment used for the monitoring of chlorine residual and/or turbidity triggered an alarm or an automatic shut-off, a qualified person responded in a timely manner and took appropriate actions.

  For the primary sodium hypochlorite system, if the duty chemical feed pump fails, the standby chemical feed pump is automatically initiated. An alarm is activated at the plant but not remotely to call-in an operator. If both the duty and standby chemical feed pumps fail, the water treatment plant stops producing water, initiates an alarm and continues to supply the distribution system from the treated water in the clearwell.

  During times when an operator is scheduled to work and an alarm requires an operator to be notified, the first call is to the water treatment plant, the next call is to the operator's cell phone and the third call is to the home of the operator.

  The calling sequence for alarms outside of work hours is first to the home of the operator on call, next to the operators cell phone, and then to the water treatment plant.

- The Annual Report containing the required information was prepared by February 28th of the following year.
  
  A detailed review of the report was not completed as part of this inspection.

- Summary Reports for municipal council were completed on time, included the required content, and were distributed in accordance with the regulatory requirements.
  
  The 2012 report was reviewed by Council on March 4, 2013, resolution number CR56-2013.
  
  A detailed review of the report was not completed as part of this inspection.

- All changes to the system registration information were not provided within ten (10) days of the change.
  
  The "Operator Alternate Contact" lists a person who is not involved with the Terrace Bay drinking water system while neither of the plant operators are listed as a contact.

  The Township of Terrace Bay is in the process of updating the system registration information.


NON-COMPLIANCE WITH REGULATORY REQUIREMENTS AND ACTIONS REQUIRED

This section provides a summary of all non-compliance with regulatory requirements identified during the inspection period, as well as actions required to address these issues. Further details pertaining to these items can be found in the body of the inspection report.

1. Records did not indicate that the treatment equipment was operated in a manner that achieved the design capabilities required under Ontario Regulation 170/03 or a Permit, Licence or Approval issued under Part V of the SDWA at all times that water was being supplied to consumers.

PRIMARY DISINFECTION:

Between the evening of February 22 and 23, 2013, trending information indicates that the chlorine residual dropped to 0.71 ppm before recovering without operator intervention. At the time the chlorine residual alarm was programmed to alarm at a low chlorine residual of 0.7 ppm. A CT calculation was not done.

In February of 2013 two documents were available with respect to achieving CT at the Terrace Bay drinking water system: the "CT Calculation Table" dated 7-May-10 and the Standard Operating Procedure "CT Calculations" issued March 20, 2012.

The "CT Calculations" document states that 1.0 mg/L is the amount of chlorine residual required. The "CT Calculation Table" documentation also lists 1.00 mg/L as the free disinfectant concentration.

SLOW SAND FILTERS:

One key factor to establishing a biological layer is to have longer filter runs with minimal disruption to biological activity of the filter. Past performance of the filters has shown that frequent cleaning of the filters is required due to the fine sediment ("rock flour") which forms a crust on the filters. This cleaning involves removal of the surface layer using a shovel.

The Ministry has encouraged longer filter cycles and improved maintenance procedures. A review of maintenance procedures indicates that there has been improvement as removal of the surface layer is being completed more quickly allowing water to be returned to the filter sooner. The operating authority is now discussing whether the filters can be maintained without removing the top surface of the filters and raking the surface instead.

The current operating practise is to have two of the four filters in service at a time.

Following maintenance activities and prior to returning the filters to service, there are no tests conducted, to evaluate the filter ripening or to confirm that the biological layer has been maintained.

Action(s) Required:
PRIMARY DISINFECTION:

Actions have been taken to help prevent a similar occurrence. On March 1, 2013, the low alarm setpoint for the chlorine residual alarm was changed to 0.9 mg/L. A procedure "CT Determination" was issued on March 4, 2013. This document directs operators to calculate CT if an alarm has been activated at 0.9 mg/L. This actions are an improvement on the previous situation. However, it is important for operators to realize that the low chlorine residual for ensuring that CT has been met was identified by the engineer consultant to be 1.0 mg/L.

SLOW SAND FILTERS:

A less disruptive method of cleaning the filter, as the operating authority is already investigating, would be beneficial for the promotion of an active biological layer.

If this is not an option, consideration should be given to finding a method to remove the fine sediment before it reaches the slow sand filters. This in turn should enable longer filter runs and promote the development of a biological layer on the filters.

Operating the slow sand filters with the maximum number in service is the preferred method to lengthen filter runs and promote an active biological layer.
A second slow sand filter effluent quality study could be undertaken to evaluate the presence of a biological layer over a filter cycle. Measuring the amount of organics removed by the slow sand filter is one method that can be used.

The Township of Terrace Bay is encouraged to explore any funding/grant opportunities that would provide funds to improve the operation or monitoring of the slow sand filters.

2. The owner did not have up-to-date documents describing the distribution components as required.

The document that was submitted with the application for the Municipal Drinking Water Works Permit is date November 13, 1998. The document is a layout of the town streets and lots. Guidance information for the submission of documents with the application state that the document should identify streets and critical information including, as a minimum, a linear representation of the watermains showing its approximate location within the street, pipe diameter, street name, valving and hydrant locations.

Discussions with township staff indicates that diagrams showing this level of detail are available for some parts of town but not for some of the older sections.

Action(s) Required:
Electronic copies of documents that identify streets and critical information including, as a minimum, a linear representation of the watermains showing its approximate location within the street, pipe diameter, street name, valving and hydrant locations are to be provided to the Ministry of Environment at the time of the next licence renewal. The pdf's can be emailed to mdwp@ontario.ca

For the areas of town that do not have diagrams with the distribution components, the owner must develop a document with what information is available and expand on this over time as more becomes known from conducting work such as watermain repairs and valve repairs.

3. The operations and maintenance manuals did not meet the requirements of the Permit and Licence or Approval issued under Part V of the SDWA.

DRAWINGS:
Condition 15 of Schedule B of the Drinking Water Works Licence states the requirements for drawings. 15.2 states:

"Any alteration to any treatment subsystem shall be incorporated into process flow diagrams, process and instrumentation diagrams, and record drawings and diagrams within one year of the substantial completion of the alteration."

The current Process and Instrumentation Schematic for the water treatment plant is dated October 31, 2005. A number of alterations have been made since that time. For example, the filter bypass was completed in 2008. Other changes include changes to the post chlorination injection point and more recently the alterations for the injection of blended phosphates for corrosion control.

Action(s) Required:
Information to update the schematic has recently been provided to the engineering company. No date was available as to when an updated document will be available. As an interim measure a copy of the current schematic with changes marked on it is available at the water treatment plant.

UPDATE: The updated process diagram was received January 28, 2014. No further action is required.

4. All reporting requirements for lead sampling were not complied with as per schedule 15.1-9 of O. Reg. 170/03.

Letters with the required information and sample results are provided by the Township of Terrace Bay to the occupants of the premises where lead sampling has taken place.

The End of Period Reports for lead testing were requested as part of the inspection review. The End of Period Report was submitted as required on October 16, 2013, following the summer sampling period.
The report for the 2013 winter sampling period was not submitted within 30 days after the end of the sampling period.

**Action(s) Required:**
This omission was discovered during the inspection process and the report was submitted at that time.
No further actions are required.

5. **All changes to the system registration information were not provided within ten (10) days of the change.**

   The "Operator Alternate Contact" lists a person who is not involved with the Terrace Bay drinking water system while neither of the plant operators are listed as a contact.

**Action(s) Required:**
The Township of Terrace Bay is in the process of updating the system registration information.
SUMMARY OF RECOMMENDATIONS AND BEST PRACTICE ISSUES

This section provides a summary of all recommendations and best practice issues identified during the inspection period. Details pertaining to these items can be found in the body of the inspection report. In the interest of continuous improvement in the interim, it is recommended that owners and operators develop an awareness of the following issues and consider measures to address them.

1. Records did not confirm that the maximum free chlorine residual in the distribution system was less than 4.0 mg/L or the combined chlorine residual was less than 3.0 mg/L.

   On Friday August 2, 2013, the pump that adds sodium hypochlorite to treat the water was left operating at a high setting and the chlorine residual in the drinking water continued to increase until detected on Saturday August 3, 2013. Analysis of diluted samples indicate that the chlorine residual was approximately 11 mg/L.

   This incident is further discussed in the "Reporting & Corrective Actions" section of this inspection report.

   Recommendation:
   The "process" chlorine analyzer has now been programmed with an alarm to notify the operator of high levels of chlorine being injected. No further action is required at this time.

2. There is no backflow prevention program, policy and/or bylaw in place.

   Recommendation:
   Periodically the owner could review whether there is a need to implement a backflow prevention bylaw.

3. The owner had not implemented a program for the flushing of watermains as per industry standards.

   In the fall the hydrants are normally operated and inspected and this maintenance activity involves some flushing of the distribution system.

   Recommendation:
   The operating authority hopes to develop a plan for directional flushing of the distribution this spring.

4. A program for inspecting and exercising valves did not exist.

   Valves are being used as little as possible due to problems with the age of the valves and the packing. Valves have been unreliable and have resulted in larger areas having to be isolated to complete repairs of the distribution system.

   Recommendation:
   The owner needs to conduct a review to ensure that key valves are operational or considered for replacement.

5. The owner has not undertaken efforts to identify, quantify and reduce sources of apparent water loss.

   Recommendation:
   Periodically the owner and operating authority can review whether there appears to be a need for specific actions to identify sources of water loss.
6. Based on the records available the owner was not able to maintain proper pressures in the distribution system.

During normal operation the owner and operating authority are able to maintain proper pressures in the distribution. The water leaves the water treatment plant at 60 psi. At the mid-point in town the pressure is 85 psi and at the end of town the pressure reaches 100 psi.

On August 25, 2014, the pump delivering treated water to the distribution system shutdown during a lightning storm and the pump that is supposed to be initiated by a pressure switch failed to operate.

**Recommendation:**
The immediate problem was resolved at the time by an operator being called to the plant and initiating a pump. The incident is still being investigated to understand why the pressure switch did not activate the operation of a pump.
SIGNATURES

Inspected By: Pamela Cowie

Reviewed & Approved By: Arnold Laine

Review & Approval Date: 03/02/2014 (dd/mm/yyyy)

Note: This inspection does not in any way suggest that there is or has been compliance with applicable legislation and regulations as they apply or may apply to this facility. It is, and remains, the responsibility of the owner and/or operating authority to ensure compliance with all applicable legislative and regulatory requirements.
Key Reference and Guidance Material for Municipal Residential Drinking Water Systems

Many useful materials are posted on the Ministry of the Environment's Drinking Water Ontario website at www.ontario.ca/drinkingwater to help in the operation of your drinking water system.

Below is a list of key materials frequently used by owners and operators of municipal drinking water systems. To read or download these materials, go to Drinking Water Ontario and search in the Resources section by Publication Number.

Visit Drinking Water Ontario for more useful materials. Contact the Public Information Centre if you need assistance or have questions at 1-800-565-4923/416-325-4000 or picemail.moe@ontario.ca.

<table>
<thead>
<tr>
<th>PUBLICATION NUMBER</th>
<th>PUBLICATION TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>4448e01</td>
<td>Procedure for Disinfection of Drinking Water in Ontario</td>
</tr>
<tr>
<td>7152e</td>
<td>Strategies for Minimizing the Disinfection Products Trihalomethanes and Haloacetic Acids</td>
</tr>
<tr>
<td>7467</td>
<td>Filtration Processes Technical Bulletin</td>
</tr>
<tr>
<td>7685</td>
<td>Ultraviolet Disinfection Technical Bulletin</td>
</tr>
<tr>
<td>8215</td>
<td>Total Trihalomethane (TTHM) Reporting Requirements Technical Bulletin (February 2011)</td>
</tr>
<tr>
<td>2601e</td>
<td>Overview Guide: Municipal Drinking Water Licensing Program</td>
</tr>
<tr>
<td>0000</td>
<td>Municipal Drinking Water Licensing Program Bulletin, Issue 1, January 2011</td>
</tr>
<tr>
<td>0000</td>
<td>Certification Guide for Operators and Water Quality Analysts</td>
</tr>
<tr>
<td>6560e</td>
<td>Taking Samples for the Community Lead Testing Program</td>
</tr>
<tr>
<td>7423e</td>
<td>Community Sampling and Testing for Lead: Standard and Reduced Sampling and Eligibility for Exemption</td>
</tr>
<tr>
<td>7128e</td>
<td>Drinking Water System Contact List</td>
</tr>
<tr>
<td>4449e01</td>
<td>Technical Support Document for Ontario Drinking Water Quality Standards</td>
</tr>
</tbody>
</table>

ontario.ca/drinkingwater
Principaux guides et documents de référence sur les réseaux résidentiels municipaux d'eau potable

Beaucoup de documentation sur le fonctionnement d'un réseau d'eau potable se trouve sur le site Web du ministère de l'Environnement.

Vous trouverez ci-dessous la liste des principaux documents que les propriétaires et les exploitants de réseaux municipaux d'eau potable utilisent fréquemment. Pour lire ou télécharger ces documents, allez sur le site Web du Ministère, et effectuez une recherche par numéro de publication dans la section RÉSSOURCES.

Consultez le site d'Eau potable Ontario pour obtenir d'autre documentation. Communiquez avec le Centre d'information du public au 1 800 565-4923 ou au 416 325-4000, ou encore à picemail.moe@ontario.ca si vous avez des questions ou besoin d'aide.

<table>
<thead>
<tr>
<th>NUMÉRO DE PUBLICATION</th>
<th>TITRE DE LA PUBLICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>4448f01</td>
<td>Marche à suivre pour désinfecter l'eau potable en Ontario</td>
</tr>
<tr>
<td>7152e</td>
<td>Strategies for Minimizing the Disinfection Products Trihalomethanes and Haloacetic Acids (en anglais seulement)</td>
</tr>
<tr>
<td>7467</td>
<td>Filtration Processes Technical Bulletin (en anglais seulement)</td>
</tr>
<tr>
<td>7685</td>
<td>Ultraviolet Disinfection Technical Bulletin (en anglais seulement)</td>
</tr>
<tr>
<td>8215</td>
<td>Total Trihalomethane (THM) Reporting Requirements Technical Bulletin (février 2011) (en anglais seulement)</td>
</tr>
<tr>
<td>2601f</td>
<td>Guide général - Programme de délivrance des permis de réseaux municipaux d'eau potable</td>
</tr>
<tr>
<td>0000</td>
<td>Bulletin du Programme des permis de réseaux municipaux d'eau potable, numéro 1, janvier 2011</td>
</tr>
<tr>
<td>0000</td>
<td>Guide sur l'accréditation des exploitants de réseaux d'eau potable et des analystes de la qualité de l'eau de réseaux d'eau potable</td>
</tr>
<tr>
<td>6560f</td>
<td>Prélèvement d'échantillons dans le cadre du programme d'analyse de la teneur en plomb de l'eau dans les collectivités</td>
</tr>
<tr>
<td>7423f</td>
<td>Échantillonnage et analyse du plomb dans les collectivités : échantillonnage normalisé ou réduit et admissibilité à l'exemption</td>
</tr>
<tr>
<td>7128f</td>
<td>Liste des personnes-ressources du réseau d'eau potable</td>
</tr>
<tr>
<td>4449f01</td>
<td>Document d'aide technique pour les normes, directives et objectifs associés à la qualité de l'eau potable en Ontario</td>
</tr>
</tbody>
</table>

ontario.ca/drinkingwater
APPENDIX B

MOE AUDIT SAMPLE RESULTS
Certificate of Analysis

Lab Work Order #: L1405145
Project P.O. #: OSS61002
Job Reference: 250001769
C of C Numbers:
Legal Site Desc: MOE AUDIT SAMPLES FOR TERRACE BAY

Christine Paradis
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]
<table>
<thead>
<tr>
<th>Sample ID Description</th>
<th>Sampled Date</th>
<th>Sampled Time</th>
<th>Client ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1405145-1 TREATED</td>
<td>18-DEC-13</td>
<td>11:40</td>
<td>TREATED WATER</td>
</tr>
<tr>
<td>L1405145-2 DISTRIBUTION</td>
<td>18-DEC-13</td>
<td>13:10</td>
<td>SERVICE ONTARIO</td>
</tr>
<tr>
<td>L1405145-3 DISTRIBUTION</td>
<td>18-DEC-13</td>
<td>13:25</td>
<td>20A CARTIER HOSPITAL</td>
</tr>
</tbody>
</table>

### Grouping: WATER

#### Bacteriological Tests

- Presence/Absence: E. coli (p/a/100mL)
- Presence/Absence: Total coliform (p/a/100mL)

- Presence/Absence: E. coli (p/a/100mL)
  - Absent

- Presence/Absence: Total coliform (p/a/100mL)
  - Absent

- Presence/Absence: Total coliform (p/a/100mL)
  - Absent
Reference Information

Test Method References:

<table>
<thead>
<tr>
<th>ALS Test Code</th>
<th>Matrix</th>
<th>Test Description</th>
<th>Method Reference**</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA18-QT-TB</td>
<td>Water</td>
<td>Presence / Absence</td>
<td>APHA 9223 B C18</td>
</tr>
</tbody>
</table>

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

<table>
<thead>
<tr>
<th>Laboratory Definition Code</th>
<th>Laboratory Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB</td>
<td>ALS ENVIRONMENTAL - THUNDER BAY, ONTARIO, CANADA</td>
</tr>
</tbody>
</table>

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

mg/kg - milligrams per kilogram based on dry weight of sample.

mg/kg wwt - milligrams per kilogram based on wet weight of sample.

mg/kg lwat - milligrams per kilogram based on lipid-adjusted weight of sample.

mg/L - milligrams per litre.

< - Less than.

D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.
**DRINKING WATER CHAIN OF CUSTODY**

**PLEASE CIRCLE APPLICABLE REGULATION:**
Reg 170/03
Reg 318/08
Reg 319/08
Reg 243
C of A

Is this a resample from an adverse water quality incident?  Yes ☐ No ☐

<table>
<thead>
<tr>
<th>Works Name</th>
<th>Work Phone</th>
<th>After Hours Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terrace Bay DWS</td>
<td>705-1544</td>
<td>1-800-668-6060</td>
</tr>
<tr>
<td>Jamie Conway</td>
<td>475-1161</td>
<td></td>
</tr>
</tbody>
</table>

**REPORTING ADDRESS**

<table>
<thead>
<tr>
<th>Works Address/Physical</th>
<th>Health Unit Phone/Fax</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terrace Bay, ON.</td>
<td>7.60</td>
</tr>
<tr>
<td>435 James St. S. Thunder Bay</td>
<td></td>
</tr>
<tr>
<td>2500 1769</td>
<td></td>
</tr>
</tbody>
</table>

**SAMPLE DESCRIPTION**

(This description will appear on the report)

<table>
<thead>
<tr>
<th>Sample Date</th>
<th>Sample Time</th>
<th>Reg. Requested Service (Circle One)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec 11/13</td>
<td>11:40</td>
<td>T</td>
</tr>
<tr>
<td>Dec 11/13</td>
<td>13:10</td>
<td>D</td>
</tr>
<tr>
<td>Dec 11/13</td>
<td>13:25</td>
<td>D</td>
</tr>
</tbody>
</table>

**ANALYSES REQUESTED**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Reqd (100%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrate/Nitrite</td>
<td></td>
</tr>
<tr>
<td>Chloride</td>
<td></td>
</tr>
<tr>
<td>Sodium</td>
<td></td>
</tr>
<tr>
<td>Lead</td>
<td></td>
</tr>
<tr>
<td>Alkalinity</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
<tr>
<td>pH (&lt; 6)</td>
<td></td>
</tr>
<tr>
<td>Volume (L)</td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td></td>
</tr>
</tbody>
</table>

**SAMPLE TYPE**

- T - Treated Source
- D - Distribution Sample
- P - Plumbing
- PS - Plumbing Standpipe
- PF - Plumbing Flushed

**CHECK TO LIST ON REPORT**

- MDE Audit Samples
- For Terrace Bay

**REPORTING AUTHORITY**

- Jamie Conway

**SUBMISSION NO.**

- U40SM5

**LOGGED BY**

- 600739

**DATE**

- 19 Dec 13

**TIME**

- 9:00

**TEMPERATURE AT RECEIPT (C)**

- 5.1

**FIELD pH**

- 8.5

**Volume (L)**

- 1

**Time Check**

- Field Check
### Inspection Summary Rating Record (Reporting Year - 2013-2014)

**DWS Name:** TERRACE BAY DRINKING WATER SYSTEM  
**DWS Number:** 250001769  
**DWS Owner:** Terrace Bay, The Corporation Of The Township Of  
**Municipal Location:** Terrace Bay  
**Regulation:** O.REG 170/03  
**Category:** Large Municipal Residential System  
**Type Of Inspection:** Detailed  
**Inspection Date:** December 16, 2013  
**Ministry Office:** Thunder Bay District

---

**Maximum Question Rating:** 795

<table>
<thead>
<tr>
<th>Inspection Module</th>
<th>Non-Compliance Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permit To Take Water</td>
<td>0 / 18</td>
</tr>
<tr>
<td>Capacity Assessment</td>
<td>0 / 38</td>
</tr>
<tr>
<td>Treatment Processes</td>
<td>21 / 128</td>
</tr>
<tr>
<td>Process Wastewater</td>
<td>0 / 10</td>
</tr>
<tr>
<td>Distribution System</td>
<td>4 / 25</td>
</tr>
<tr>
<td>Operations Manuals</td>
<td>14 / 42</td>
</tr>
<tr>
<td>Logbooks</td>
<td>0 / 42</td>
</tr>
<tr>
<td>Consumer Relations</td>
<td>0 / 8</td>
</tr>
<tr>
<td>Certification and Training</td>
<td>0 / 73</td>
</tr>
<tr>
<td>Water Quality Monitoring</td>
<td>0 / 160</td>
</tr>
<tr>
<td>Reporting &amp; Corrective Actions</td>
<td>12 / 110</td>
</tr>
<tr>
<td>Treatment Process Monitoring</td>
<td>0 / 141</td>
</tr>
</tbody>
</table>

**TOTAL**  51 / 795

**Inspection Risk Rating** 6.42%

**FINAL INSPECTION RATING:** 93.58%

---

Inspection Rating Record Generated On 03-FEB-14 (Inspection ID: 1-AQDLH).
Ministry of the Environment - Detailed Inspection Rating Record (Reporting Year - 2013-2014)

DWS Name: TERRACE BAY DRINKING WATER SYSTEM
DWS Number: 250001769
DWS Owner: Terrace Bay, The Corporation Of The Township Of
Municipal Location: Terrace Bay
Regulation: O.REG 170/03
Category: Large Municipal Residential System
Type Of Inspection: Detailed
Inspection Date: December 16, 2013
Ministry Office: Thunder Bay District

Non-compliant Question(s) | Question Rating
---|---
Distribution System
Has the owner updated the document describing the distribution components within 12 months of completion of alterations to the system? | 4
Operations Manuals
Do the operations and maintenance manuals meet the requirements of the Permit and Licence or Approval issued under Part V of the SDWA? | 14
Reporting & Corrective Actions
Have all changes to the system registration information been provided to the Ministry within ten (10) days of the change? | 4
Were all reporting requirements for lead sampling complied with as per schedule 15.1-9 of O. Reg. 170/03? | 8
Treatment Processes
Do records indicate that the treatment equipment was operated in a manner that achieved the design capabilities required under Ontario Regulation 170/03 or a Permit, Licence or Approval issued under Part V of the SDWA at all times that water was being supplied to consumers? | 21

TOTAL QUESTION RATING 51

Maximum Question Rating: 795
Inspection Risk Rating 6.42%
FINAL INSPECTION RATING: 93.58%

Inspection Rating Record Generated On 03-FEB-14 (Inspection ID: 1-AQDLH).
The Ministry of the Environment (MOE) has a rigorous and comprehensive inspection program for municipal residential drinking water systems (MRDWS). Its objective is to determine the compliance of MRDWS with requirements under the Safe Drinking Water Act and associated regulations. It is the responsibility of the municipal residential drinking water system owner to ensure their drinking water systems are in compliance with all applicable legal requirements.

This document describes the risk rating methodology, which has been applied to the findings of the Ministry’s MRDWS inspection results since fiscal year 2008-09. The primary goals of this assessment are to encourage ongoing improvement of these systems and to establish a way to measure this progress.

MOE reviews the risk rating methodology every three years to account for legislative and societal changes that affect acceptable risk levels. As a result of the most recent review, the methodology has been modified to present an improved metric for the evaluation of the risk/safety of MRDWS operations.

The Ministry’s Municipal Residential Drinking Water Inspection Protocol contains up to 14 inspection modules and consists of approximately 120 regulatory questions. Those protocol questions are also linked to definitive guidance that
ministry inspectors use when conducting MRDWS inspections. The questions address a wide range of regulatory issues, from administrative procedures to drinking water quality monitoring. Additionally, the inspection protocol contains a number of non-regulatory questions.

A team of drinking water specialists in the ministry have assessed each of the inspection protocol regulatory questions to determine the risk (not complying with the regulation) to the delivery of safe drinking water. This assessment was based on established provincial risk assessment principles, with each question receiving a risk rating referred to as the Question Risk Rating. Based on the number of areas where a system is deemed to be non-compliant during the inspection, and the significance of these areas to administrative, environmental, and health consequences, a risk-based inspection rating is calculated by the ministry for each drinking water system.

It is important to be aware that an inspection rating that is less than 100 per cent does not mean that the drinking water from the system is unsafe. It shows areas where a system’s operation can improve. To that end, the ministry works with owners and operators of systems to make sure they know what they need to do to achieve full compliance.

The inspection rating reflects the inspection results of the specific drinking water system for the reporting year. Since the methodology is applied consistently over a period of years, it serves as a comparative measure both provincially and in relation to the individual system. Both the drinking water system and the public are able to track the performance over time, which encourages continuous improvement and allows systems to identify specific areas requiring attention.

The ministry’s annual inspection program is an important aspect of our drinking water safety net. The ministry and its partners share a common commitment to excellence and we continue to work toward the goal of 100 per cent regulatory compliance.

Determining Potential to Compromise the Delivery of Safe Water

The risk management approach used for MRDWS is aligned with the Government of Ontario’s Risk Management Framework. Risk management is a systematic approach to identifying potential hazards; understanding the likelihood and consequences of the hazards; and taking steps to reduce their risk if necessary and as appropriate.

The Risk Management Framework provides a formula to be used in the determination of risk:

\[
\text{RISK} = \text{LIKELIHOOD} \times \text{CONSEQUENCE}
\]

Every regulatory question in the inspection protocol possesses a likelihood value (L) for an assigned consequence value (C) as described in Table 1 and Table 2.
The consequence values (0 through 8) are selected to align with other risk-based programs and projects currently under development or in use within the ministry as outlined in Table 2.

The Question Risk Rating for each regulatory inspection question is derived from an evaluation of every identified consequence and its corresponding likelihood of occurrence:

- All levels of consequence are evaluated for their potential to occur
- Greatest of all the combinations is selected.

Table 3 presents a sample question showing the risk rating determination process.

### Table 3:

<table>
<thead>
<tr>
<th>Does the Operator in Charge ensure that the equipment and processes are monitored, inspected and evaluated?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Risk = Likelihood × Consequence</strong></td>
</tr>
<tr>
<td>C=1, C=2, C=3, C=4, C=5, C=6, C=7, C=8</td>
</tr>
<tr>
<td><strong>Administrative</strong></td>
</tr>
<tr>
<td><strong>Medium</strong></td>
</tr>
<tr>
<td><strong>Major</strong></td>
</tr>
<tr>
<td><strong>Minor</strong></td>
</tr>
<tr>
<td><strong>Consequence</strong></td>
</tr>
<tr>
<td>L=1 (Unlikely)</td>
</tr>
<tr>
<td>L=2 (Possible)</td>
</tr>
<tr>
<td>L=3 (Likely)</td>
</tr>
<tr>
<td>L=4 (Almost Certain)</td>
</tr>
<tr>
<td><strong>Risk</strong></td>
</tr>
<tr>
<td>R=4</td>
</tr>
<tr>
<td>R=2</td>
</tr>
<tr>
<td>R=6</td>
</tr>
<tr>
<td>R=12</td>
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<tr>
<td>R=15</td>
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<tr>
<td>R=6</td>
</tr>
<tr>
<td>R=21</td>
</tr>
<tr>
<td>R=16</td>
</tr>
</tbody>
</table>

**Application of the Methodology to Inspection Results**

Based on the results of a MRDWS inspection, an overall inspection risk rating is calculated. During an inspection, inspectors answer the questions that relate to regulatory compliance and input their responses as "yes", "no" or "not applicable" into the Ministry's Laboratory and Waterworks Inspection System (LWIS) database. A "no" response indicates non-compliance. The maximum number of regulatory questions asked by an inspector varies by: system (i.e., distribution, stand-alone), type of inspection (i.e., focused, detailed), and source type (i.e., groundwater, surface water).

The risk ratings of all non-compliant answers are summed and divided by the sum of the risk ratings of all questions asked (maximum question rating). The resulting inspection risk rating (as a percentage) is subtracted from 100 per cent to arrive at the final inspection rating.
Application of the Methodology for Public Reporting

The individual MRDWS Total Inspection Ratings are published with the ministry’s Chief Drinking Water Inspector’s Annual Report.

Figure 1 presents the distribution of MRDWS ratings for a sample of annual inspections. Individual drinking water systems can compare against all the other inspected facilities over a period of inspection years.

Reporting Results to MRDWS Owners/Operators

A summary of inspection findings for each system is generated in the form of an Inspection Rating Record (IRR). The findings are grouped into the 14 possible modules of the inspection protocol, which would provide the system owner/operator with information on the areas where they need to improve. The 14 modules are:

1. Source
2. Permit to Take Water
3. Capacity Assessment
4. Treatment Processes
5. Process Wastewater
6. Distribution System
7. Operations Manuals
8. Logbooks
9. Contingency and Emergency Planning
10. Consumer Relations
11. Certification and Training
12. Water Quality Monitoring
13. Reporting, Notification and Corrective Actions
14. Other Inspection Findings

For further information, please visit www.ontario.ca/drinkingwater
The Corporation of the Township of Terrace Bay  
12 Simcoe Plaza, P.O. Box 40,  
Terrace Bay, Ontario  
P0T 2W0

Site Location: Part 9, Plan 55R-3612, in the Corporation of the Township of Terrace Bay,  
District of Thunder Bay

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

decommissioning of the existing extended aeration sewage treatment plant by eliminating mechanical  
and electrical works and retaining the aeration, clarifier and chlorine contact tanks as primary  
sedimentation for sewage treatment capable of handling 454 m$^3$/d (100,000 IGPD) prior to discharging  
effluent to the exfiltration lagoon;

all in accordance with the Application of Municipal and Private Water and Sewage Works, Ministry of  
the Environment, Communal Sewage Inspection Report, Township of Terrace Bay, dated October 22,  
1999 and a study report entitled "Abandonment of the Existing Sewage Treatment Plant", dated July 24,  
1998, as prepared by Wardrop Engineering Inc.

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

(a) "certificate" means this entire certificate of approval document, issued in accordance with  
Section 53 of the Ontario Water Resources Act;
(b) "Director" means any Ministry employee appointed by the Minister pursuant the Section 5 of the  
Ontario Water Resources Act;
(c) "Ministry" means the Ontario Ministry of the Environment;
(d) "District Manager" means the District Manager of the Thunder Bay District Office;
(e) "Regional Director" means the Regional Director of the Northern Region of the Ministry;
(f) "Owner" means the Corporation of the Township of Terrace Bay;
(g) "BOD$_5$" means five day carbonaceous biochemical oxygen demand measured in an unfiltered  
sample;
(h) "m$^3$/d" means cubic metres per day;
(i) "IGPD" means Imperial gallons per day;
(j) "L/d" means litres per day;
You are hereby notified that this approval is issued to you subject to the terms and conditions outlined below:

**TERMS AND CONDITIONS**

1. **PERFORMANCE**

1.1 The Owner shall ensure that the average daily flow of sewage into the sewage system does not exceed 454,000 L/d for any period of time greater than one (1) calendar month.

2. **MONITORING, RECORDING AND REPORTING**

2.1 The Owner shall ensure that the following monitoring program is carried out during the operation of the works:

(a) Daily quantities of effluent being disposed of through the exfiltration disposal system shall be measured or estimated, and recorded.

(b) Grab samples of effluent ahead of the exfiltration disposal lagoon shall be collected for a period of one year (4 samples) during the operation of the works and analyzed for at least the following parameters during the months of May, July, August and October.

<table>
<thead>
<tr>
<th>Effluent to Exfiltration Lagoon Parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBOD</td>
</tr>
<tr>
<td>Suspended Solids</td>
</tr>
<tr>
<td>Total Phosphorus</td>
</tr>
<tr>
<td>(Ammonia + Ammonium) Nitrogen</td>
</tr>
<tr>
<td>Nitrates</td>
</tr>
<tr>
<td>Nitrites</td>
</tr>
</tbody>
</table>

(c) A monitoring well shall be established by the Owner at a location agreed upon by the District Manager, approximately 40m down-gradient of the exfiltration disposal lagoon system or at the property limit.

Grab samples of groundwater shall be collected from the monitoring well for a period of three (3) years after the issuance of this amended Certificate for the operation of the works and analyzed for at least the following parameters at the indicated frequency:

<table>
<thead>
<tr>
<th>Groundwater Parameter</th>
<th>Minimum Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Ammonia + Ammonium) Nitrogen</td>
<td>quarterly</td>
</tr>
</tbody>
</table>
The sampling and analyses required by clauses (b) and (c) above shall be performed in accordance with the Ministry's Procedure F-10-1 (formerly Policy No. 08-06); "Procedure for Sampling and Analysis Requirements for Municipal and Private Sewage Treatment Works (Liquid Waste Streams Only)"; Ministry of Environment and Energy, December 31, 1994; or as described in the American Public Health Association's publication "Standard Methods for Examination of Water and Wastewater", 20th Edition, 1998, or a more recently published edition.

2.2 The Owner shall retain for a minimum of three years from the date of their creation, all records and information related to or resulting from the monitoring activities required by this certificate.

3. OPERATION AND MAINTENANCE

3.1 The Owner shall use best effort to operate the sewage treatment facilities with the objective that the concentrations of the materials named below as effluent parameters are not exceeded in the effluent ahead of the subsurface disposal system:

<table>
<thead>
<tr>
<th>Effluent to Exfiltration Lagoon Parameters</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBOD</td>
<td>200 mg/L</td>
</tr>
<tr>
<td>Suspended Solids</td>
<td>125 mg/L</td>
</tr>
</tbody>
</table>

3.2 Based on the operational objectives stipulated above in Condition 4.1, the Owner shall prepare an operation and maintenance manual and a complete set of the record drawings, incorporating any amendments made from time to time, shall be kept by the Owner for as long as the sewage works are kept in operation. Upon request, the Owner shall make the manual and record drawings available for inspection by the Ministry personnel.

4. REPORTING

4.1 The Owner shall prepare, and upon request, submit it to the District Manager, annual performance reports for the sewage system. The first such report shall cover the year 2001 period of operation of the sewage works and shall be prepared within the following ninety (90) calendar days. Each subsequent annual report shall be prepared within ninety (90) calendar days following the completion of the calendar year being reported upon. The reports shall contain the following information in a format acceptable to the District Manager:

(a) a tabulation of all monitoring, analytical results and interpretation of data obtained during the reporting period, including sampling/monitoring locations and dates;
(b) a tabulation of daily volumes of effluent disposed of through the subsurface disposal system during the reporting period;

(c) a record of system maintenance undertaken during the reporting period; and

(d) an account of any environmental and operating problems encountered at the site and the mitigative measures taken during the reporting period.

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

1. Condition 1.1 is included to ensure that the flow of sewage to the sewage system is within the approved treatment capacity of the works.

2. Conditions 2.1 and 2.2 relating to monitoring and recording the quality and quantity of treated effluent discharged to the exfiltration lagoon, and the quality of the groundwater are required to enable the Owner to evaluate the performance of the works and to ensure that it is operated and maintained at a level which is consistent with the design objectives and other requirements of this certificate.

3. Conditions 3.1 through 3.2 are included to ensure that the works will be operated and maintained in a manner enabling compliance with the terms and conditions of this certificate, such that the environment is protected and deterioration, loss, injury or damage to any person or property is prevented.

4. Conditions 4.1 and 4.2 are included to ensure that all pertinent information is available for the evaluation of the performance of the sewage works.

This Certificate of Approval revokes and replaces Certificate(s) of Approval No. 3-1339-75-006 issued on November 6, 1975 and its amendment issued on September 13, 1983..

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

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

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the works are located;
And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Appeal Board
2300 Yonge St., 12th Floor
P.O. Box 2382
Toronto, Ontario
M4P 1B4

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

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

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

DATED AT TORONTO this 22nd day of December, 2000

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

PF/  
c: District Manager, MOE Thunder Bay - District  
M. Heather Adams, Township of Terrace Bay
Appendix F – Treatment Expansion Facilities Certificate of Approval
November 18, 1980

Township of Terrace Bay
P. O. Box 40, Simcoe Plaza
Terrace Bay, Ontario

Attention: Mr. W.J. Hanley, Clerk

Dear Sir:

Re: Township of Terrace Bay
Expansion of Sewage Treatment Facilities

Enclosed herewith is the Ministry's Certificate of Approval No.3-1043-80-006 for the construction of sedimentation tank and appurtenances in the Township of Terrace Bay.

Based on the information on the C.S.C.P. application and supporting information, it would appear that the above works are also eligible for Community Services Contribution Program grant in the amount of $11,064.66.

This of course is an eligibility ruling only and does not signify a commitment of funds nor a guarantee that funds will be available at the time of formal application for grant.

Copies of this advisory letter and the attached Certificate are being forwarded to the persons indicated.

Yours very truly,

J. R. McMurray, Supervisor
Municipal & Private Approvals Section
Environmental Approvals Branch

JB/ec
Encl.

cc:-Mr. R. Cornfield, Township Engineer
-Mr. R. Gotts, MOE NW Regional Director
-Mr. A. Forsyth, Project Co-ordination
-W. L. Wardrop & Associates Ltd.
Certificate of Approval
(Sewage)

Whereas ................................ TOWNSHIP OF TERRACE BAY ................................

... has applied in accordance with Section 42 of The Ontario Water Resources Act for approval of:

expansion of the existing Terrace Bay sewage treatment facilities consisting of construction of a sedimentation tank to be located adjacent to east sedimentation tank on Beach Road, together with an inlet and outfall sewers and appurtenances, all in accordance with the plans and specifications prepared by W. L. Wardrop and Associates Limited, Consulting Engineers, at a total estimated cost, including engineering and contingencies, of SIXTY EIGHT THOUSAND ONE HUNDRED SIXTY SIX DOLLARS AND TWENTY FIVE CENTS ($68,166.25).

Now therefore this is to certify that after due enquiry the said proposed works have been approved under Section 42 of The Ontario Water Resources Act.

DATED AT TORONTO this 18th day of November 1980

Attn:-Mr. W.J. Hanley, Clerk, Twp. of Terrace Bay
cc:-Mr. R. Cornfield, Twp. Engr.
-Mr. R. Gotts, MOE NW Reg. Dir.
-W.L. Wardrop & Assoc. Ltd.
-Mr. A. Forsyth, Project Co-ord.

/sig
MINISTRY OF THE ENVIRONMENT
APPLICATION
FOR THE APPROVAL OF
SEWAGE WORKS

Return to: MINISTRY OF THE ENVIRONMENT
Director, Environmental Approvals Branch
135 St. Clair Avenue West
Toronto, Ontario
M4V 1P5

IMPORTANT
The installation of sewage works shall not be undertaken without the approval of the Director, Environmental Approvals Branch of the Ministry of the Environment. Such approval will be made through the issuance of a certificate upon satisfactory compliance by the applicant with the policies and requirements of the Ministry.

This form must be accompanied by the information requested in A GUIDE ON APPLYING FOR THE APPROVAL OF SEWAGE WORKS.
Application is hereby made to the Director for approval to construct a sedimentation tank and outfall sewer to the exfiltration lagoon.

(Describe type of sewers, pumping stations and miscellaneous structures)

and sewage treatment works as follows: N/A.

(Describe type and capacity of major works)

LOCATION OF WORKS

The proposed sewage works to be located in the Township of Terrace Bay, adjacent to the existing east sedimentation tank on Beach Road. will outlet to existing exfiltration lagoon.

(Sewer system or name of receiving stream or lake)

This application is made under the provisions of Section 42, Ontario Water Resources Act, and such other statute as relate to sewage works.

The applicant agrees that no changes in or deviations from the approved plans and specifications will be made except with the consent and approval of the Director and agrees, if requested, to submit as-built drawings and cost figures to the Director upon completion of the project.

SIGNATURES REQUIRED

APPLICANT

Township of Terrace Bay

(Applicant)

(Address)

Tel. No. Date

ENGINEER

Preparation of engineering documents certified by:

(W. L. Wadsworth Associates Ltd.

(Name of engineer or engineering firm)

(Address)

Date

MUNICIPALITY

Required if applicant is not the municipality.

Township of Terrace Bay

(Name and title of municipal authority)

(Address)

Tel. No. Date

OPERATING AUTHORITY

To be completed if operating authority is not the applicant.

Township of Terrace Bay

(Name of operating authority)

(Address)

Date
### Sewers and Appurtenances
- **Payment by:** Loans
- **Type of Financing:** Municipal

### Building Sewer Connections
- **Payment by:** Loans
- **Type of Financing:** Municipal

### Pumping Stations and Foremains
- **Payment by:** Loans
- **Type of Financing:** Municipal

### Treatment Works and Outfalls
- Total: $50,100.00

### Engineering and Contingencies @15%
- Total: $8,891.25

### Land Charges

<table>
<thead>
<tr>
<th>ITEM</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sewers and Appurtenances</td>
<td>$9,175.00</td>
</tr>
<tr>
<td>Building sewer connections</td>
<td>-</td>
</tr>
<tr>
<td>Pumping stations and foremains</td>
<td>-</td>
</tr>
<tr>
<td>Treatment works and outfalls</td>
<td>$50,100.00</td>
</tr>
<tr>
<td>Engineering and contingencies</td>
<td>$8,891.25</td>
</tr>
<tr>
<td>Land charges</td>
<td>-</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$68,166.25</strong></td>
</tr>
</tbody>
</table>

### Scheduling
- **Construction to Begin:** September 1980
- **Construction Period:** 2 Months

### Ministry of Housing File Number or Registered Plan Number
- T. or Registered Plan Number...

### Certificate of Approval

- **Certificate of Approval** will be issued to the Applicant and a copy of the Certificate will be sent to the Clerks of any affected municipalities who are not Applicants.

- **List Names and Addresses for Any Additional Copies:**
  1. W. L. WARDROP & ASSOCIATES LTD., 595 Squier Street, Thunder Bay, Ontario P7B 4A7
  2. ...

### Application Checked by:

| [ ] | [ ] | [ ] |

### Application Recommended for Approval

- **Date:**

---

**Supervisor,**
Municipal & Private Approvals Section

**Ministry Use**