

Wabaseemoong Independent First Nation (Band No. 150)

Date of Visit: March 1, 2001

by Peter Fox (OCWA) and Jody Knibbs (Bimose)

Site Address: Whitedog, ON P0X 1P0

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Tribal Council Affiliation: Bimose Tribal Council

Operators: Phillip Kent, Tom Land

Location: The Wabaseemoong Independent First Nation community is located on the English River system, approximately 60 km northwest of Kenora. Road access is by Hwys. 596 and 525

Population: 930 people in community (November 2000 – INAC)

No. of Units: 175 housing units (CAIS)

1.0 Description of the Community Water Supply

Based on the CAIS report, water to the houses in the Wabaseemoong community is treated as follows:

- 845 people use piped water
- 85 people have no service

- 159 houses are serviced by a communal water system; and
- 16 homes have no service.

2.0 Description of the Community Sewage Facilities

Based on the CAIS report, sewage from the houses in the Wabaseemoong community is treated as follows:

- 845 people use piped sewage
- 85 people have no service

- 159 houses serviced by a communal sewage system; and
- 16 homes have no service.

3.0 Overall Assessment for Communal Water Treatment Supply

The questionnaire developed by PWGSC required OCWA to undertake a risk assessment of the Water Source, Design, Operation, Reporting, and Operators. To properly assess these areas, a revisit to the water treatment facilities would be required.

OCWA was requested to undertake the evaluation without a visit to the site. With the available information, OCWA has undertaken the requested assessment of the facilities.

The ranking system used is as follows:

- 0 = Not enough information to assess
- 1-4 = Low Risk
- 5-7 = Medium Risk
- 8-10 = High Risk

For more detailed information on the Risk Assessment used see the Terms of Reference, Appendix B.

SECTION Water	SECTION RANKING Water	RISK Water
A. Water Source		
Biological	0	No lab
Chemical	0	No lab
Physical	0	No lab
Overall Ranking for Water Source	0	No lab
B. Design		
Biological	5	7 exceedances
Chemical	10	Turbidity
Physical	6	Low hardness, color, dissolved organic carbon exceedance
Risk to Public Health	10	At least two boil water advisories per year; issued periodically
Condition of Laboratory Equipment	0	Not inspected
Overall Ranking for Design	10	No filtration, boil water advisories
C. Operations		
Reservoir Cleanliness	0	Not inspected
Emergency Plan	0	Unknown
Overall Ranking for Operations	5	No operation and maintenance manuals, no as-built drawings
D. Reporting		
Ranking for Laboratories and Testing	2	Health Canada, monthly
Ranking for Boil Water Advisories	10	At least 2 boil water advisories per year; issued periodically

SECTION Water	SECTION RANKING Water	RISK Water
Overall Ranking for Reporting	6	
E. Operators		
Overall Ranking for Operators	2	Some training and confidence
F. Statistical Data		
Overall Ranking for Individual Wells	0	No individual well info
Overall Ranking for the System	10	High Risk

4.0 Overall Assessment for Communal Sewage Treatment Facilities

The questionnaire developed by PWGSC required OCWA to undertake a risk assessment of the Effluent Receiver, Design, Operation, Reporting, and Operators. To properly assess these areas, a revisit to the sewage treatment facility would be required.

OCWA was requested to undertake the evaluation without a visit to the site. With the available information, OCWA has undertaken the requested assessment of the facilities.

The ranking system used is as follows:

- 0 = Not enough information to assess
- 1-4 = Low Risk
- 5-7 = Medium Risk
- 8-10 = High Risk

For more detailed information on the Risk Assessment used see the Terms of Reference, Appendix B.

SECTION Sewage	SECTION RANKING Sewage	RISK Sewage
A. Effluent Receiver		
Overall Ranking for Effluent Receiver	8	If overflow at lift station occurs, it would discharge close to water intake
B. Design		
Quality of Treated Effluent	0	
Ranking of Design of Sewage Plant	6	No back up power
Ranking of Concerns and Hazards within the Plant	7	No confined space entry equipment
Condition of Laboratory Equipment	0	Not inspected
Overall Ranking for Design	7	
C. Operations		
Ranking for Emergency Plan	0	
Overall Ranking for Operations	5	Inadequate spare parts, no operational manuals or as-built drawings
D. Reporting		
Overall Ranking for Reporting	7	No effluent testing
E. Operators		
Overall Ranking for Operators	2	Some training and confidence
F. Statistical Data		
Overall Ranking for Individual Septic Tanks	0	
Overall Ranking for the Systems	7	Medium Risk

5.0 Communal Water Treatment Plant (159 houses)

5.1 Water Source

Water from the Winnipeg River flows by gravity through the intake pipe to a wet well directly below the pump house.

5.2 Design

The community is serviced by a surface water treatment facility constructed in 1981. Two high lift pumps pump water to the distribution system. Pressure is maintained in the distribution system via four pressure tanks. The only treatment provided is disinfection by the addition of chlorine. There is no filtration system at this plant.

The following table summarizes the treated water data available from Health Canada, which does not meet GCDWQ:

Date	Location	Exceedances	Result	GCDWQ limit
Aug. 11, 1998	Treated	Colour	20 TCU	15 mg/L (AO)
		Turbidity	1.2 NTU	1.0 NTU
		Dissolved Organic Carbon	8.0 mg/L	5.0 mg/L (AO)
		Hardness	41.9 mg/L	80 to 100 mg/L (OG)
Feb. 1, 2000	Band Office	Colour	28 TCU	15 TCU (AO)
		Dissolved Organic Carbon	12 mg/L	5.0 mg/L (AO)
		Turbidity	1.4 mg/L	1.0 NTU
		Hardness	55.6 mg/L	80 to 100 mg/L (OG)

AO = aesthetic objective, OG = operational guideline

There are inadequate laboratory and office/filing areas. There is no backup power.

There was no safety equipment observed on site however no safety hazards or safety concerns were observed with the facilities. There is an adequate area for a workshop, with no tools on-site, but reportedly tools were available. There are pipe repair materials, along with a service line thaw machine, stored in the pump house.

Adequate ventilation is available. The water treatment plant has a diesel driven fire pump but no record of it being run on a regular basis. The battery condition is questionable. Local tradesmen were available and can respond within two hours. As-built drawings and operation and maintenance manuals were not available on site.

5.3 Operations

There are no on-line continuous monitors for chlorine residual and turbidity, however chlorine residuals are sampled daily with a hand held unit. Sodium hypochlorite (12%) is used for disinfection, and the pump was functioning at the time of the OCWA visit. About twenty five-gallon containers were onsite with a variety of shipment dates. There was a spare chlorine pump available.

For the water distribution system, the operators were unaware of any annual flushing program, and there are no main valve or fire-hydrant and maintenance program. OCWA was informed that some of the hydrants are not operational.

5.4 Reporting

The operator of the water treatment plant takes chlorine residual samples on a daily basis. However no records were available at time of our visit. Health Canada takes samples for bacteriological tests monthly and submits them to the Thunder Bay laboratory. Sample results are transmitted to the operators by letter.

Sampling for chemical analyses is conducted yearly by Health Canada. Colour and turbidity have exceeded GCDWQ guidelines.

Boil water advisories are issued periodically and at least twice during the past year.

The following table summarizes the bacteriological sample results available from Health Canada:

Period	Frequency	Regularity	Exceedances
Oct. 06/99 to Sept. 27/2001	4 - 8 times/month from different locations	<ul style="list-style-type: none"> ▪ 1 month missing in 1999 ▪ 5 months missing in 2000 ▪ 2 months missing in 2001 	<ul style="list-style-type: none"> ▪ 1 total coliform exceedance at water treatment plant at 2000/07/13 ▪ 6 exceedances in the distribution system. All were on 2000/09/25.

5.5 Operators

The principle operator at the water treatment plant is Phillip Kent. He was supposed to be available for our visit but was away on Band business. Tom Land, a backup operator, was on site during our visit.

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re [redacted] Tom has duties other than backup operator, but there appear to be at least two backup operators.

6.0 Deficiencies in the Communal Water Supply

1. There is no filtration.
2. There is no on-line continuous monitoring of chlorine residual and turbidity.
3. Colour and turbidity have exceeded the GCDWQ.
4. There was no safety equipment observed on site however no safety hazards or safety concerns were observed with the facilities.
5. There were inadequate laboratory and office/filing areas.
6. There was an adequate area for a workshop, with no tools on site, but reportedly tools were available.

7. The water treatment plant has a diesel driven fire pump but no record of running on a regular basis. There is no backup power.
8. As built drawings and operation and maintenance manuals were not available on-site.
9. There is no annual flushing and main valve and fire hydrant maintenance program.
9. Some hydrants are not operational.

7.0 **Communal Sewage Treatment Facilities (159 houses)**

7.1 Effluent Receiver

The Wabaseemoong community is serviced by a sewage collection system, which incorporates seven sewage lift stations and discharges to a three-cell lagoon. The effluent is not disinfected.

7.2 Design

There is no backup power for any of the seven pumping stations on the system. The lift stations were last cleaned in August of 2000. There is one spare replacement pump for the lift stations but pump sizes are different for the different stations.

There was no safety equipment for confined space entries. There are no operating or maintenance manuals or as-built drawings available on-site.

7.3 Operation

Should an overflow occur at the main sewage lift station, it would discharge in close proximity to the existing water treatment plant intake.

The sewage lagoons are to be replaced by a new RBC treatment plant, which is currently under construction.

7.4 Reporting

There is no monitoring of the sewage influent or effluent.

7.5 Operators

The principle operator at the water treatment plant is Phillip Kent. He was supposed to be available for our visit but was away on Band business. Tom Land, a backup operator, was on site during our visit.

Other than backup operator, but there appear to be at least two backup operators. Tom has duties

8.0 **Deficiencies in the Communal Sewage Treatment Facilities**

1. There is no backup power.
2. There is a spare pump but it is not sized for pumping stations.

3. We are not told whether there is a regular maintenance program for the pumps.
4. There is no safety equipment.
5. There are no operating or maintenance manuals or as-built drawings on-site.
6. The sewage lagoons are being replaced by an RBC treatment plant now under construction.
7. Effluent from the lagoons is not monitored.
8. Should an overflow occur at the main sewage lift station, it would discharge in close proximity to the existing water treatment plant intake.

9.0 Recommendations

- Install water filtration system.
- Implement a training program that can lead to operator certification.
- Establish and implement a protocol for taking water samples, including raw and treated water samples, and sewage influent and effluent.
- Implement proper record keeping.
- Consider using a colilert unit.
- Monitor turbidity.
- Develop and implement a plan to return the hydrants into an operational basis.
- Provide standby power at both water and sewage facilities.
- Implement an annual valve testing and hydrant maintenance program, together with an annual flushing program.
- Fire pump should be run on a regular basis to ensure it is kept operable.
- Obtain as-build drawings and operations and maintenance manuals.
- Develop a comprehensive contingency plan to address boil water advisories, operational problems, breakdowns, vacations, illnesses, main breaks, sewer backups, sewer over flows etc.
- Install a high level alarm at the sewage lift stations.
- Implement a regular preventive maintenance program for the pumps.
- Implement a sewage system cleaning program.
- Obtain confined space entry equipment and train the operators in confined space procedures.
- Obtain an inventory of spare parts, including various sizes of pumps.

10.0 Plant Classification

Based upon the Terms of Reference – Appendix I – Plant Classification Guideline developed by Public Works and Government Services Canada and with discussions with the Ontario Ministry of the Environment Classification Group, OCWA classified these plants as follows:

Water Treatment Facility - Class I
Sewage Treatment Facility - Class I

11.0 Overall Community Risk Assessment

Water Category – High Risk

- **High Risk because of the following:**
 - Boil water advisories;
 - No filtration;

- Continuous turbidity exceedances;
- Location of lift station overflow too near WTP intake; and
- Poor state of distribution system.

Note: Information within this report is based on discussions with the plant operators and a quick visual walkthrough of the facilities. No detailed review was undertaken by OCWA.