

Naokamegwanning (Whitefish Bay) First Nation (Band No. 158)

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By Keith Lusignan (OCWA) and Jody Knibbs (Service Advisor)

Site Address: c/o Pawitik Post Office

Pawitik, ON P0X 1L0

Phone No.: 807-226-5411

Fax No.: 807-226-5389

Tribal Council Affiliation: Bimose Tribal Council

Operators: Murphy Paypompee (sewage), Leroy Paypompee (water)

Location: The Naokamegwanning (Whitefish Bay) community is located approximately 8 km east of Sioux Narrows and 65 km southeast of Kenora

Population: 689 people in the community (November 2000 – INAC)

No. of Units: 158 housing units (CAIS)

1.0 Description of the Community Water Supply

Based on the CAIS report, water to the houses in the Naokamegwanning (Whitefish Bay) community is treated as follows:

- 488 people use piped water
- 70 people are serviced by other systems
- 131 people are not identified in the CIAS report

- 112 houses are serviced by a communal water system;
- 16 houses are serviced by other systems; and
- 30 houses are not identified in the CAIS report.

2.0 Description of the Community Sewage Facilities

Based on the CAIS report, sewage from the houses in the Naokamegwanning (Whitefish Bay) community is treated as follows:

- 488 people use piped sewage
- 201 people use septic tanks

- 112 houses are serviced by a communal sewage system; and
- 46 houses are serviced by individual septic tanks.

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	
Chemical	0	
Physical	0	
Overall Ranking for Water Source	0	No lab data available
B. Design		
Biological	0	No lab
Chemical	10	Turbidity exceedance
Physical	6	Total organic carbon exceedance
Risk to Public Health	10	Turbidity exceedance and Boil Water Advisory
Condition of Laboratory Equipment	0	Not inspected
Overall Ranking for Design	10	Turbidity and Boil Water Advisory
C. Operations		
Reservoir Cleanliness	0	Not inspected
Emergency Plan	0	Unknown
Overall Ranking for Operations	10	Chlorine residual analyzer not calibrated, malfunctioning equipment, no backup
D. Reporting		
Ranking for Laboratories and Testing	2	Health Canada monthly
Ranking for Boil Water Advisories	8	One boil water advisory

SECTION Water	SECTION RANKING Water	RISK Water
Overall Ranking for Reporting	8	Boil water advisory
E. Operators		
Overall Ranking for Operators	2	Not certified but trained and has confidence
F. Statistical Data		
Overall Ranking for Individual Wells	6	3 exceedances out of 5 samples in individual wells
Overall Ranking for the System	8	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	0	
B. Design		
Quality of Treated Effluent	0	
Ranking of Design of Sewage Plant	4	Demand capacity is met but no backup power
Ranking of Concerns and Hazards within the Plant	1	No concerns
Condition of Laboratory Equipment	0	Not inspected
Overall Ranking for Design	4	
C. Operations		
Ranking for Emergency Plan	0	
Overall Ranking for Operations	8	Sewage bypasses, no manuals, service disruptions, malfunction of RBC unit, basement flooding
D. Reporting		
Overall Ranking for Reporting	8	No testing
E. Operators		
Overall Ranking for Operators	8	No training and no confidence
F. Statistical Data		
Overall Ranking for Individual Septic Tanks	0	No data
Overall Ranking for the Systems	8	High Risk

5.0 Communal Water Supply (112 houses)

5.1 Water Source

The raw water source is drawn from Lobstick Bay on Lake of the Woods.

5.2 Design

The Whitefish Bay community water supply is taken from Lobstick Bay on Lake of the Woods. The plant was upgraded in 1998 with two used gravel filters purchased from the Rama First Nation community.

A 950 m³ water reservoir is on the plant site. There is a diesel generator for power failures and a diesel pump for fire protection. The diesel generator for backup power is tested regularly. There was only 42.7 hours over three years of run time on the meter. The generator has failed to start when needed during the past two years.

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

Date	Location	Exceedances	Result	GCDWQ limit
May 26, 1998	Child Care Centre	Turbidity	1.8 NTU	1.0 NTU
		Dissolved Organic Carbon	8.0 mg/L	5.0 mg/L (AO)
		Hardness	68.4 mg/L	80 to 100 mg/L (OG)
Oct. 19, 1999	Treated	Hardness	72 mg/L	80 to 100 mg/L (OG)

AO = aesthetic objective, OG = operational guideline

Ventilation is adequate for the plant and for chemical storage. The plant has adequate laboratory, office and filing space with a sufficient workshop for maintenance. The plant is neat and tidy and appears to be well looked after.

5.2 Operations

Sodium hypochlorite is used for disinfection. The plant also uses PASS to chemically treat the water. The disinfection equipment is functional. Sodium hypochlorite used for disinfection has been on site for one week and there is sufficient test reagent with sufficient shelf life. Chemicals are properly stored.

There is an on-line chlorine residual analyzer on site, but is not calibrated and not working properly. Therefore the chlorine residual is manually checked every day.

There is one ongoing operational problem with the backwash pump, which continually trips off.

There is an annual flushing and fire hydrant maintenance program. There is no annual main valve operation/maintenance program. There are emergency repair parts available on site.

There are as-built drawings in the Band Office, and operating and maintenance manuals are on site. Design criteria were not available at the time of the inspection. There is a list of service contacts and the response time is one day.

There was one service disruption during the past two years when vandals broke into the plant and the backup power failed to start.

5.4 Reporting

The operators report that Health Canada conducts bacteriological tests monthly. The results are kept at the plant, at the Band Office and at the Health Canada office in Kenora. Bacteriological tests results from the communal water system were not available from Health Canada. There is no colilert unit or incubator. There has been one boil water advisory in the past two years.

The chlorine residual and the water turbidity are checked daily. There have been no turbidity exceedances.

OCWA was informed that a chemical analysis of the water was not performed.

Health Canada has issued one boil water advisory on the communal water distribution system.

5.5 Operators

s.19(1)

Leroy Paypompee operates the water system and has no backup.
Instructions have been provided in the past, but additional training is suggested.

6.0 Deficiencies in the Communal Water Supply

1. The chlorine residual analyzer is not operational.
2. Turbidity in one out of the two treated water sample, has exceeded the GCDWQ.
3. The water treatment plant has a diesel backup, but the backup power unit has failed to start in the past.
4. The operator performs an annual flushing and hydrant maintenance program, but there is no main valve maintenance program.
5. There is an ongoing problem with the backwash pump, which frequently trips out.
6. The operator is confident in operating the water treatment plant, but is interested in additional training. Operator's goal should be to become certified.
7. The operator has no backup personnel to fill in during vacations and sickness.

7.0 Communal Sewage Facilities (112 houses)

7.1 Effluent Receiver

The effluent from the RBC unit is pumped to a polishing lagoon near the plant, then by gravity through a final RBC. The effluent is chlorinated using chlorine pucks before being discharged to Lobstick Bay on Lake of the Woods.

7.2 Design

The Naokamegwaning (Whitefish Bay) communal sewage system is a gravity collection system with two sewage pumping stations. The plant was constructed in 1992. The sewage passes through rotating biological contact (RBC) units for primary treatment.

The plant does have adequate ventilation and workshop for maintenance. There is no adequate laboratory, office and filing areas.

7.3 Operating

There are no operations and maintenance manuals or as-built drawings on site. As-built drawings are kept at the Band Office.

There is some safety equipment, a harness and gas detector. No specific safety hazards have been identified, although manholes and wet wells are confined spaces that may have to be entered.

There is an ongoing operational problem on one RBC drive that is full of water.

The pumping stations are cleaned once a year. The pumps are routinely maintained.

There is a list of service contacts and the response time is one day. There is one spare pump for the pumping stations, but no other spare parts.

The plant is not kept neat and tidy.

The plant has experienced power failures that have caused sewage backup, basement flooding and improper discharges. There is no backup power in case of hydro loss.

7.4 Reporting

There have been no disease or health outbreaks in the last two years.

Effluent tests are not conducted for BOD, suspended solids, and total phosphorous.

7.5 Operators

s.19(1)

Murphy Paypompee is the operator responsible for operating the sewage treatment system and Brian Copenance is the backup operator. [REDACTED] Instruction has been provided in the past, but additional training is suggested. The operator of the sewage plant [REDACTED]

8.0 Deficiencies in the Communal Sewage Treatment Facilities

1. [REDACTED] **s.19(1)**
2. The sewage plant and pumping stations do not have backup power and there has been sewage backup overflow, and basement flooding.
3. Some safety equipment is available on site. No other spare parts are available.
4. The sewage plant does not have adequate laboratory or office and filing space.

5. There are no operations or maintenance manuals on site.
6. The drive on one RBC is full with water.
7. The plant is not kept clean and tidy.
8. Effluent tests are not conducted.

9.0 **Recommendations**

- Investigate boil water advisory.
- Monitor turbidity.
- Repair backwash pump malfunction.
- Repair on-line chlorine analyzer.
- Implement a training program that can lead to operator certification.
- Routinely test backup generator.
- Establish a protocol for taking water samples, including raw water samples.
- Consider obtaining colilert and incubator equipment to conduct weekly bacteriological testing.
- Consider adding laboratory, office and filing area at sewage treatment plant.
- Provide backup power at sewage treatment plant to alleviate sewage bypassing and basement flooding.
- Remove water from RBC drive and service unit to prevent water entry.
- Obtain operations and maintenance manuals.
- Obtain a full inventory of spare parts.
- Obtain a complete inventory of confined space entry equipment.
- Develop a comprehensive maintenance program for all equipment and structures.
- Implement general house cleaning and maintenance at sewage treatment plant.
- Implement a septic tank inspection program.
- Implement a regular sampling protocol for effluent.

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 discussion with the Ontario Ministry of the Environment Classification, OCWA classified these plants as follows:

Water Treatment Facility - Class II
Sewage Treatment Facility - Class II

11.0 **Overall Community Risk Assessment**

Water Category – High Risk

- **High Risk because of the following:**
 - One boil water advisory; and
 - Equipment malfunctioning.

Sewage Category – High Risk

- **High Risk because of the following:**
 - Bypassing/basement flooding;
 - Inadequate training;
 - Malfunction of RBC unit; and

- No effluent testing.

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.