

Stanjikoming First Nation (Band No. 133)

Date of Visit: March 13, 2001

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Tribal Council Affiliation: Pwi-di-goo-zing Ne-yaa-zhing Tribal Council

Operator: Desmond Jourdain

Location: The Stanjikoming First Nation community is located approximately 10 km north of Fort Frances on Rainy Lake

Population: 83 people in the community (November 2000 - INAC)

No. of Units: 26 housing units (CAIS)

1.0 Description of the Community Water Supply System

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

- 80 people use piped water
- 3 people have no service

- 25 houses are serviced by a communal water system; and
- 1 house has no service (located on remote island).

2.0 Description of the Community Sewage System

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

- 83 people use septic tanks

- 26 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	No data
Chemical	0	No data
Physical	0	No data
Overall Ranking for Water Source	0	
B. Design		
Biological	2	5 exceedances out of 99 samples
Chemical	10	Turbidity, phenolics exceedances
Physical	6	Color, iron, manganese, hardness, dissolved organic carbon exceedance
Risk to Public Health	8	Turbidity, phenolics, boil water advisories
Condition of Laboratory Equipment	0	
Overall Ranking for Design	6	
C. Operations		
Reservoir Cleanliness	0	
Emergency Plan	10	No plan
Overall Ranking for Operations	8	Chlorinator not working, re-occurring problem with water hammer
D. Reporting		
Ranking for Laboratories and Testing	2	

SECTION Water	SECTION RANKING Water	RISK Water
Ranking for Boil Water Advisories	8	Boil water advisories
Overall Ranking for Reporting	5	
E. Operators		
Overall Ranking for Operators	6	No training or certification
F. Statistical Data		
Overall Ranking for Individual Wells	0	
Overall Ranking for the System	8	High Risk

4.0 Communal Water Treatment Plant (25 houses)

4.1 Water Source

The Stanjikoming community water supply consists of a lake intake from Rainy Lake

4.2 Design

The plant that was constructed in 1988 with a very small set of pressure filters that uses sodium hypochlorite for disinfection. A new slow sand filter plant is under construction and is expected to be completed in July 2001. The plant will have two low lift pumps, three high lift pumps with on-site 232 m³ water storage (present reservoir is 2.5m³). An electric fire pump with diesel generator is available for fire protection.

The plant is having problems with water hammer within the plant piping. This will presumably cease when the new plant comes into operation. The existing plant office area, laboratory area, spaces for filing and workshop for maintenance are not adequate.

The following table summarizes the treated water exceedance data available from Health Canada:

Date	Location	Exceedances	Result	GCDWQ Limit
July 20, 1999	Health Centre	Colour	78 TCU	15 TCU (AO)
		Hardness	32.7 mg/L	80 to 100 mg/L (OG)
		Turbidity	2.4 NTU	1 NTU (HL)
		Dissolved Organic Carbon	11 mg/L	5 mg/L (AO)
		Iron	1.81 mg/L	0.3 mg/L (AO)
		Manganese	0.162 mg/L	0.05 mg/L (AO)
Aug. 10, 2001	Water Treatment Plant	Hardness	37 mg/L	80 to 100 mg/L (OG)
		Turbidity	1.47 NTU	1 NTU (HL)
		Phenolics	0.007 mg/L	0.005 mg/L (HL)

AO - aesthetic objective; OG - operational guideline; HL - health limit

The plant does not have a backup generator to provide backup power for power failures. Power failures have occurred in the past two years. We have not been told if a diesel generator will be provided in the new plant.

Design criteria were not available at the time of inspection.

There is no annual flushing program, or fire hydrant maintenance program, or annual main valve operating/maintenance program.

No safety hazard was noted but some additional safety equipment is needed.

4.3 Operations

The disinfection equipment was not functional at the time of our visit. This was reportedly a temporary problem as a new valve is on order. Sodium hypochlorite has been on site for one month and there is sufficient test reagent with sufficient shelf life. Potassium permanganate is used in the process. Chemicals are properly stored.

There are as-built drawings, and operating and maintenance manuals on site.

There is a list of technician and trade people. The average response time is one day.

4.4 Reporting

Health Canada conducts bacteriological tests. The results are kept at the Band Office and the Health Canada office on Agency 1 land. There has been more than one boil water advisory issued.

The chlorine residual is checked daily. Turbidity is not checked. There is no on-line chlorine residual analyzer.

The chemical analysis is performed once a year. There have been more than one boil water advisories reported on this system.

The following table summarizes the bacteriological data available from Health Canada:

Period	Frequency	Regularity	Exceedances
99/11/09 to 2001/10/04	1 to 13 times per month	<ul style="list-style-type: none">▪ 1 month missing in 1999▪ 2 months missing in 2000▪ 2 months missing in 2001	<ul style="list-style-type: none">▪ Total coliform exceedances were noted on 2000/01/13, 2000/06/26, 2000/09/07 and 2000/09/12.

4.5 Operators

Desmond Jourdain is the operator responsible for operating the old water treatment plant and water distribution system. Desmond appears confident in his ability to manage the existing plant. Roy Morrison and Jay Calder are the backup operators.

No formal instruction has been provided. Training will be required to efficiently operate the new plant.

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5.0 Deficiencies in the Community Water Supply

1. A spare chlorine pump needs to be purchased and kept on site.
2. The operator does not perform a hydrant flushing and maintenance program, or a valve operating and maintenance program on the water distribution system.
3. There is no written contingency plan available.
4. The chlorine equipment was not working when OCWA was on site. The operator is waiting for a replacement valve to be shipped and installed. There is no on line chlorine analyzer.
5. There is no turbidity meter.
6. There has been more than one boil water advisory issued on the communal water system.
7. Colour, dissolved organic carbon, iron and manganese have exceeded the GCDWQ aesthetic objectives.
8. Turbidity and phenolics have exceeded the GCDWQ health limits.

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9. [REDACTED] The operator should get more training. The operator has two backup staff to fill in during vacations and sickness.

6.0 Recommendations

- Implement a training program that can lead to certification of the operator.
- Establish and implement a protocol for taking water samples at the water treatment plants, including raw water samples.
- Develop a comprehensive operating and maintenance program on the water distribution system to address valve and hydrant maintenance.
- Develop a comprehensive contingency plan to address operational problems, breakdowns, vacations and illnesses, main breaks and boil water advisories.
- Monitor previous boil water advisories and chemical analyses exceeding Health Canada guidelines (i.e. turbidity and phenolics; colour, DOC) to ensure the source of the contamination has been addressed adequately.
- Consider installation of on-line turbidity meter and chlorine residual analyzer at new plant.
- Consider installation of SCADA system with dial-out alarms at new plant.

7.0 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 this plant as follows:

Water Treatment Facility - Class II

8.0 Overall Community Risk Assessment**Water Category – High Risk (current water plant)**

- **High Risk because of the following:**
 - Chlorinator not working; and
 - More than one boil water advisory has been issued.

Note: When new plant is on-line by middle of Summer 2001, Risk will be reduced

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