

## Shawanaga First Nation (Band No. 191)

**Date of Visit:** March 6, 2001

By Mike Bell (OCWA)

**Site Address:** R.R. #1

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**Tribal Council Affiliation:** Toronto Services Centre - Unaffiliated First Nations (South)

**Operator:** Alfred Jones, Joe Pamajewan (part-time)

**Location:** The Shawanaga First Nation community is located on approximately 30 km northwest of Parry Sound

**Population:** 121 people in the community (December 2000 – INAC)

**No. of Units:** 73 housing units (CAIS)

### 1.0 Description of the Community Water Supply

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

- 101 people use piped water
- 18 people are not identified in CAIS
- 2 people have no services
  
- 61 houses are serviced by a communal water system;
- 11 houses are not identified in CAIS; and
- 1 house has no service.

### 2.0 Description of the Community Sewage Facilities

Based on the CAIS report and information supplied to OCWA, sewage from the houses in the Shawanaga community is treated as follows:

- 17 people use septic tanks
- 101 people are not identified in CAIS
- 3 people have no services
  
- 10 houses are serviced by individual septic tanks;
- 61 houses are not identified in CAIS; and
- 2 houses have no services.

### 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
<b>A. Water Source</b>		
Biological	1	No exceedances
Chemical	0	No lab data available
Physical	0	No lab data available
Overall Ranking for Water Source	1	
<b>B. Design</b>		
Biological	1	No exceedances
Chemical	8	Sodium, phenol
Physical	6	Hardness
Risk to Public Health	5	Phenols, no boil water advisory
Condition of Laboratory Equipment	0	Not inspected
Overall Ranking for Design	5	
<b>C. Operations</b>		
Reservoir Cleanliness	0	Not inspected
Emergency Plan	0	Unknown
Overall Ranking for Operations	8	Chlorine residual analyzer not calibrated, re-occurring problem with power failures which requires pumps to be reset manually
<b>D. Reporting</b>		
Ranking for Laboratories and Testing	2	Bimonthly by Charles Lofhs
Ranking for Boil Water Advisories	1	No boil water advisory

<b>SECTION Water</b>	<b>SECTION RANKING Water</b>	<b>RISK Water</b>
Overall Ranking for Reporting	2	
<b>E. Operators</b>		
Overall Ranking for Operators	2	Trained and confident
<b>F. Statistical Data</b>		
Overall Ranking for Individual Wells	1	No exceedance
Overall Ranking for the System	4	Low Risk

## 4.0 Communal Water Supply (61 houses)

### 4.1 Water Source

The water supply is from a deep well, and there appears to be source water protection in place.

### 4.2 Design

The community is serviced with a water treatment plant constructed in 1995. The rated design capacity is approximately 60 m<sup>3</sup>/day and the usage requirement is met except for fire protection.

The treatment consists of chlorinating groundwater and discharging to an on-site water reservoir with a capacity of 280 m<sup>3</sup>.

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

Date	Location	Exceedances	Result	GCDWQ Limit
Apr. 7, 1999	Treated Well Water Supply	Hardness	111 mg/L	80 to 100 mg/L (OG)
		Sodium	20.2 mg/L	20 mg/L (AO)
Feb. 1, 2001	Treated Well Water Supply	Hardness	151 mg/L	80 to 100 mg/L (OG)
		Phenol	0.007 mg/L	0.005 mg/L (HL)
		Sodium	38.2 mg/L	20 mg/L (AO)

AO = aesthetic objective, HL = health limit, OG = operational guideline

There is adequate ventilation for the plant and chemical storage. There is also sufficient space for office/filing/maintenance but no designated area for laboratory. There is no backup power generator for water treatment plant but there is a diesel operated pump for fire protection, which is tested on a regular basis. There is adequate safety equipment at the plant with no other safety hazards or concerns.

There is an annual hydrant flushing program and maintenance program for hydrants and main valve. In the last two years, there have been no service disruptions. There is a re-occurring operational problem after power failures, which requires that the operator manually reset the pumps. There is no auto restart.

### 4.3 Operations

Sodium hypochlorite is used for disinfection. The disinfection equipment is functional with sufficient chlorine available. There is an on-line chlorine residual analyzer, which needs to be calibrated. There is no colilert unit. Chlorine residual is manually checked once per day. The chemicals are stored in accordance with MOE guidelines and a test reagent with a current shelf life is available.

There are operating and maintenance manuals for plant equipment and as-built drawings on site. There are some spare emergency parts readily available on site and there is also a contact listing of technicians/trades people available. The response for such personnel is two to four hours.

#### 4.4 Reporting

Health Canada conducts bacteriological testing twice per month on the communal water system. The results are recorded and kept at the plant.

Last year, Health Canada issued no boil water advisory on the communal water system. In the last two years, there have been no disease or health related outbreaks.

The turbidity of the treated water is recorded once a week and here have been no exceedances in readings. A chemical analysis of the treated water is conducted once per year.

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

Period	Frequency	Regularity	Exceedances
99/10/14 to 2001/10/03	3 to 8 times per month from different locations	<ul style="list-style-type: none"><li>▪ No months missing in 1999</li><li>▪ 2 months missing in 2000</li><li>▪ No months missing in 2001</li></ul>	<ul style="list-style-type: none"><li>▪ No exceedances</li></ul>

#### 4.5 Operators

##### s.19(1)

Alfred Jones operates the treatment plant. [REDACTED] has received training to operate and maintain the plant. The operator is familiar with calibrating and maintaining the disinfection equipment [REDACTED]

[REDACTED] Joe Pamajewan, the original operator of the facility, can replace the current operator in case of vacation or sickness.

#### 5.0 Deficiencies in the Community Water Supply

1. The water treatment plant does have a backup pump for fire protection but no backup power supply for the plant.
2. There is adequate storage/office/workshop area but no lab space.
3. Power failures cause pumps to shutoff and require operator to manually restart the pump.
4. There is no written contingency plan available.
5. There is an on-line chlorine residual analyzer but it has not been calibrated.
6. A chemical analysis of the treated water is conducted once per year. Hardness, sodium and phenol in water was found to be above GCDWQ.  
**s.19(1)**
7. [REDACTED] have received training on operation and maintenance of the facility.

## 6.0 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 I

## 7.0 Recommendations

- Implement a training program that can lead to certification of the operator.
- Address pump startup issue during power failure/surge.
- Acquire additional laboratory area for testing.
- Investigate options to deal with hardness in water supply.
- Establish and implement a protocol for taking water samples at the water treatment plants, including raw water samples.
- Consider backup power for the water treatment plant.
- Calibrate on-line chlorine residual analyzer.
- Obtain a colilert unit.
- Develop a comprehensive contingency plan to address operational problems, breakdowns, vacations and illnesses, main breaks and boil water advisories.
- Implement a sewage septic tank inspection program to inspect all septic tanks in the community for proper operations and meeting the required standards.

## 8.0 Overall Community Risk Assessment

**Water Category – Low Risk**

**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.**