

Wahta Mohawk (Gibson) First Nation (Band No. 134)

Date of Visit: April 4, 2001

By George Culhane (OCWA)

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

Operator: Bart Holmes, Tom Stock

Location: The Wahta Mohawk (Gibson) First Nation community is located 44 km northwest of Orillia

Population: 131 people in the community (November 2000 - INAC)

No. of Units: 76 housing units (CAIS)

1.0 Description of Community Water Supply

Based on the CAIS report, and information provided to OCWA, water to the houses in the Wahta Mohawk (Gibson) community is treated as follows:

- 1 administration building is serviced by a water treatment plant; and
- 131 people are serviced by individual wells.

- 1 administration building is serviced by a water treatment plant; and
- 76 houses are serviced by individual wells.

2.0 Description of Community Sewage Facilities

Based on the CAIS report, sewage from the houses in the Wahta Mohawk (Gibson) community is treated as follows:

- 131 people are serviced by individual septic tanks.

- 76 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 lab data available
Chemical	0	
Physical	0	
Overall Ranking for Water Source	0	
B. Design		
Biological	0	
Chemical	0	
Physical	0	
Risk to Public Health	0	
Condition of Laboratory Equipment	0	
Overall Ranking for Design	0	No information is available
C. Operations		
Reservoir Cleanliness	0	
Emergency Plan	0	
Overall Ranking for Operations	8	No annual hydrant flushing, no spare parts on-site, reoccurring problem: drinking water ban
D. Reporting		
Ranking for Laboratories and Testing	0	
Ranking for Boil Water Advisories	10	Currently under a drinking water ban
Overall Ranking for Reporting	10	

SECTION Water	SECTION RANKING Water	RISK Water
E. Operators		
Overall Ranking for Operators	4	Trained but not certified
F. Statistical Data		
Overall Ranking for Individual Wells	9	11 exceedances out of 46 samples (24%) Chemical exceedances
Overall Ranking for the System	10	High Risk

4.0 Communal Water Treatment Plant (Administration Building)

4.1 Water Source

The potable water treatment system is a surface water supply from Lake Webster.

4.2 Design

The administration building in the community is serviced by a water treatment plant constructed in 1997. There is a pump house and a room in the administration building with green sand filters, two pressure tanks and a disinfection system. There are two pumps in the distribution system, having a total power of ¾ hp. This meets the usage of the building. There has been a ban on drinking water in the administration building since 1997. The water is for sanitary use only, and bottled water is being provided.

- Chemical sample data for the administration building system was not available from Health Canada.

The plant has no backup power supply or diesel pump for fire protection. Safety equipment is lacking. An eyewash station, eye protection and gloves need to be acquired for the plant. Operating and maintenance manuals for the equipment and plant are onsite, as well as as-built drawings.

4.3 Operations

There are no emergency spare parts available, and no contact listing of technicians/trades people.

Hypochlorite (12%) is used for disinfection. The equipment is functional and there is sufficient chlorine available. There is no on-line chlorine residual analyzer, however a portable chlorine residual analyzer is available. There is a colilert unit and incubator available, but the operator stopped using it when the ban on the water at the administration building was issued.

4.4 Reporting

There is an IDEXX unit on site. The operators could not provide recent records of bacteriological testing. There is no record of free chlorine residual testing results or documentation. The rationale behind no information being recorded and tests not being conducted was because of the water-drinking ban at the administration building.

The operator reported that the raw water is high in colour, and there have been exceedances in turbidity readings.

4.5 Operators

Bart Holmes and Tom Stock operate the treatment plant. They have received training from *Client's Representative*

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Operators need a workshop course to train them in disinfection techniques. There should be consideration to confined space training.

5.0 Individual Well Systems

The following table summarizes the bacteriological data available from Health Canada for the individual well systems in this community.

Period	Frequency	Exceedances
00/07/01 to 01/09/14	Unknown from different loactions	▪ 11 total coliform exceedances out of 46 samples (24%)

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

Date	Location	Exceedances	Result	GCDWQ Limit
Oct. 22, 1999	Private Home	pH	6.39	6.5 to 8.5 (OG)
		Turbidity	15.8 NTU	1 NTU (HL)
		Iron	1.59 mg/L	0.3 mg/L (AO)
		Manganese	0.064 mg/L	0.05 mg/L (AO)
Apr. 4, 2000	Sixplex	Manganese	0.127 mg/L	0.05 mg/L (AO)
Jun. 3, 2000	Private Home	Turbidity	3.3 NTU	1 NTU (HL)
		Iron	0.53 mg/L	0.3 mg/L (AO)
Jun. 5, 2000	Private Home	Turbidity	9.1 NTU	1 NTU (HL)
		Iron	1.1 mg/L	0.3 mg/L (AO)
		Manganese	0.326 mg/L	0.05 mg/L (AO)
		Aluminum	0.16 mg/L	0.1 mg/L (OG)

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

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Date	Location	Exceedances	Result	GCDWQ Limit
February 24, 1999	Individual Home A	No exceedances		
March 24, 1999	Individual Home B	Colour	22 TCU	15 TCU (AO)
		Manganese	0.354 mg/L	0.05 mg/L (AO)
July 5, 1999	Individual Home C	Manganese	0.082 mg/L	0.05 mg/L (O)
		Sodium	20.1 mg/L	20 mg/L*
May 23, 2000	Individual Home D	Aluminum	0.30 mg/L	0.1 mg/L (OG)
April 18, 2001	Individual Home E	Hardness	2074 mg/L	80 – 100 mg/L (OG)
		Manganese	0.195 mg/L	0.05 mg/L (AO)
		Sodium	587 mg/L	20 mg/L*
		Fluoride	1.7 mg/L	1.5 mg/L (HL)
		Chloride	1,920 mg/L	250 mg/L (AO)
September 26, 2001	Individual Home F	Sulphate	962 mg/L	500 mg/L (AO)
		Sodium	31 mg/L	20 mg/L*
		Hardness	103.1 mg/L	80 – 100 mg/L (OG)

OG = operational guideline; AO = aesthetic objective; HL = Health Limit

* Note: Although the aesthetic objective for sodium is 200 mg/L, the local Medical Officer of Health should be notified when the sodium concentration exceeds 20 mg/L.

6.0 Deficiencies in the Communal Water Supply

1. The water supply system supplies to the administration building only. The houses in the community are serviced by individual wells.
2. The water in the administration building has been under a drinking water ban since 1997. The water is for sanitary use only.
3. The water treatment plant does not have a backup power or a diesel operated pump for fire protection.
4. There is inadequate safety equipment including lack of an eyewash station, eye protection and gloves.
5. No record keeping for bacteriological or chlorine testing was done since the drinking water ban.
6. There are no emergency spare parts readily available and no contact listing of technicians/trades people.
7. There are exceedances in turbidity levels.
8. The operators **s.19(1)** need additional training.

7.0 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

8.0 Recommendations

- Implement a training program leading to operator certification.
- Purchase an on-line chlorine analyzer and turbidity monitoring.
- Inspect, maintain and/or replace filters.
- Conduct bacteriological testing and analysis on a weekly basis.
- Discontinue the practice of disconnecting the chlorine during lawn watering.
- Maintain up-to-date records.
- Address and resolve the present water treatment problem to provide safe potable water.
- Establish and implement a protocol for taking water samples at the water treatment plant, including raw water samples.
- Acquire backup power for the water treatment plant.
- Review safety equipment that is available on site at the Administration Building.
- Develop a comprehensive contingency plan to address operational problems, breakdowns, vacations and illnesses and boil water advisories.
- Implement a well inspection program to inspect all wells in the community for proper operations and making sure they meet the required standards.
- Implement a sewage septic tank inspection program to inspect all septic tanks in the community for proper operations and making sure they meet the required standards.

9.0 Overall Community Risk Assessment

Water Category – Administration Building - High Risk

High Risk because of the following:

- Water is not potable; and
- No bacteriological 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.