Dokis First Nation (Band No. 218)

Date of Visit: July 2001
By Mike Bell (OCWA)
Site Address: via Monetville, ON P0M 2K0
Phone No.: 705-763-2200 **Fax No.:** 705-763-2087
Tribal Council Affiliation: Waabnoong Bemjiwang Association of First Nations
Operators: Gilbert Dokis and Earl Restoule
Location: The Dokis First Nation community is located approximately 50 km southwest of North Bay.
Population: 167 people in the community (December 2000 - INAC)
No. of Units: 86 housing units (CAIS)

1.0 Description of Community Water Supply

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

- 165 people are serviced by a communal water system; and
- 2 people have no service.

- 85 houses are serviced by a communal water system; and
- 1 house has no service.

2.0 Description of Community Sewage Facilities

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

- 45 people are serviced by holding tanks with trucked sewage; and
- 122 people are not recorded in CAIS.

- 23 houses are serviced by holding tanks with trucked sewage; and
- 63 houses are not recorded in CAIS.

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	8	Phenol, iron, and sulphide exceedances
Physical	6	Hardness exceedance
Overall Ranking for Water Source	7	
B. Design		
Biological	3	1 exceedance in 303 samples
Chemical	0	No data available
Physical	6	Hardness exceedance
Risk to Public Health	0	
Condition of Laboratory Equipment	6	
Overall Ranking for Design	6	
C. Operations		
Reservoir Cleanliness	0	
Emergency Plan	0	
Overall Ranking for Operations	7	No chlorine residual analyzer, no turbidity meter.
D. Reporting		
Ranking for Laboratories and Testing	1	Testing conducted weekly
Ranking for Boil Water Advisories	1	No boil water advisories
Overall Ranking for Reporting	1	

SECTION Water	SECTION RANKING Water	RISK Water
E. Operators		
Overall Ranking for Operators	2	Received training and appear confident
F. Statistical Data		
Overall Ranking for Individual Wells	7	One exceedance in eight available samples
Overall Ranking for the System	5	Medium Risk

4.0 Communal Water Supply (85 houses)

4.1 Water Source

The raw water is drawn from a groundwater well.

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

Date	Location	Exceedance	Result	GCDWQ
Jan. 20, 2000	Raw Water	Hardness	166 mg/L	80 – 100 mg/L
		Phenol	0.003 mg/L	0.001 mg/L
		Sulphide	0.007 mg/L	0.005 mg/L
		Iron	0.37 mg/L	0.30 mg/L

4.2 Design

The community is serviced by a water treatment plant constructed in 1992. The rated design capacity is 182 m^3/day, and the present demand is met with room for more housing expansion. The water treatment plant is not classified.

The treatment plant consists of a groundwater source, chlorine addition for disinfection, pressure tanks, an on-site water reservoir and water distribution system. The disinfection equipment is functional with sufficient chlorine available. There is no on-line chlorine residual analyzer, but chlorine residual is manually checked everyday. However, the chemicals are not stored in accordance with MOE guidelines. Chemicals are stored in barrels with no secondary containment. A colilert unit and incubator are also unavailable on-site.

The OCWA inspector noted some deficiencies with the treatment plant, which include undersized pumps from the three groundwater wells to the pump house, undersized piping from the groundwater pumps to the pumphouse, an undersized clearwell and low pressure in the distribution system. Also, fire protection is limited to 10 minutes with the fire pump.

4.3 Operations

There is an electric fire pump and a diesel generator to supply backup power for the water treatment plant. The generator is tested on a regular basis. There is inadequate safety equipment at the plant; it requires gas detection equipment for confined space entry. There is adequate ventilation and maintenance area but there is no designated laboratory or office area, within the plant.

Housekeeping of the pump house needs improvement, as it is cluttered and untidy.

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

There is an annual hydrant flushing and maintenance program but no operating and maintenance program for the main valve has been set up. In the last two years, there have been no service disruptions. However, there is a re-occurring problem of freezing pipes from the pumps to the high lift pump house because of not being buried according to specifications.

4.4 Reporting

Bacteriological testing is conducted weekly and sent to a lab in Sudbury for analysis. The results are recorded and kept at the Band Office.

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

Period	Frequency	Regularity	Exceedances
99/10/12 to 01/10/04	1 – 6 times per month from different locations	▪ Months missing 2000: Nov., Dec.	▪ 00/05/18 – one exceedance; total coliform

In the last year, there have been no boil water advisories issued on the communal water system and in the last two years, there have been no disease or health related outbreaks.

According to the operator the turbidity of the treated water is not recorded and chemical analyses of the treated water are not conducted. Only one raw water chemical analysis (January 2000) is available from the Health Canada.

4.5 Operators **s.19(1)**

Gilbert Dokis and Earl Restoule (foreman) are the operators at the water treatment plant. [redacted] Additional training on sampling protocol, water treatment, and confined space entry is recommended.

Gary Dokis operates the plant to cover for vacation or sickness.

5.0 Deficiencies in the Communal Water Supply

1. Chlorine residual is checked manually. On-line chlorine residual analyzer and colilert unit are not available.

2. The pump house is cluttered and untidy and housekeeping needs improvement.

3. Turbidity tests and chemical analyses of the treated water are not conducted.

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4. [redacted] have received training to operate and maintain the facility, however, their confidence in operations is limited.

5. The plant has no designated laboratory or office area.

6. The operator does perform hydrant flushing and maintenance, but there is no main valve operation and maintenance program in place.

7. Safety equipment is insufficient on-site. Gas detection equipment for confined space entry is required.

8. The treatment plant has a number of design problems, which include undersized pumps from the three groundwater wells to the pump house. Undersized piping from the groundwater pumps to the pump house, an undersized clear well and low pressure in the distribution system.

9. There have been no service disruptions, however, there is a re-occurring problem of freezing pipe from the well pumps to the high lift pump house because the pipe was not buried according to specifications.

10. Chemicals are stored in barrels with no secondary containment.

11. The fire protection system only lasts 10 minutes with the fire pump on.

6.0 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

7.0 Recommendations

- Consider installing an on-line chlorine residual analyzer and a turbidity meter.
- Implement a house cleaning and general maintenance program.
- Implement a training program for operators leading to certification.
- Establish a protocol for taking water samples at the water treatment plants, including raw water samples.
- Implement turbidity and chemical analysis testing.
- Implement an annual main valve-testing program.
- Develop and implement a comprehensive contingency plan to address operational problems, breakdowns, vacations and illnesses, main breaks and boil water advisories.
- Obtain confined space entry equipment and train the operators in confined space procedures.
- Allocate office and laboratory space for operations.
- Dokis First Nation communal water supply needs a Professional Engineer to undertake a complete review of the water supply system, to address freezing problem with pipes from well pumps to high lift pump house, sizing of pumps, clear well and piping, low pressure in the distribution system and review the water system for fire protection.
- Review containment of chemicals.
- Purchase adequate spare parts.
- Implement a sewage holding tank inspection program to inspect all holding tanks in the community for proper operations and meeting the required standards.

8.0 Overall Community Risk Assessment

Water Category - Medium Risk

- **Medium Risk because of the following:**
  - No chlorine residual analyzer
  - No turbidity meter

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