
Aroland First Nation (Band No. 242)

Date of Visit: April 3, 2001

By Roger Beauvais (OCWA)

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Tribal Council Affiliation: Matawa First Nations Management Inc.

Operators: Ann Marie Magaiskan, Shelley Meshake and Jason Rueben

Location: The Aroland First Nation community is located directly south of the Town of Aroland, along Hwy. 584 north from Geraldton or West from Nakina and exit Hwy. 643

Population: 382 people in the community (November 2000 – INAC)

No. of Units: 88 houses in the community (CAIS)

1.0 Description of the Community Water Supply

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

- 382 people use piped water
- 88 houses are serviced by a communal water system.

2.0 Description of the Community Sewage Facilities

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

- 382 people use piped sewage
- 88 houses are serviced by a communal sewage system.

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	3	5 exceedances out of 84 (6%)
Chemical	8	Manganese exceedance
Physical	6	Hardness
Risk to Public Health	10	Three boil water advisories
Condition of Laboratory Equipment	0	Not inspected
Overall Ranking for Design	8	No backup power, re-occurring water shortage
C. Operations		
Reservoir Cleanliness	0	Not inspected
Emergency Plan	0	Unknown
Overall Ranking for Operations	7	No operation and maintenance manuals
D. Reporting		
Ranking for Laboratories and Testing	2	Monthly by operator
Ranking for Boil Water Advisories	10	Three boil water advisories
Overall Ranking for Reporting	10	

SECTION Water	SECTION RANKING Water	RISK Water
E. Operators		
Overall Ranking for Operators	2	Trained and confident
F. Statistical Data		
Overall Ranking for Individual Wells	6	1 exceedance out of 5 samples (20%)
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	1	No reported problems
B. Design		
Quality of Treated Effluent	0	No data
Ranking of Design of Sewage Plant	0	No data available
Ranking of Concerns and Hazards within the Plant	7	Inadequate ventilation
Condition of Laboratory Equipment	7	
Overall Ranking for Design	7	
C. Operations		
Ranking for Emergency Plan	0	
Overall Ranking for Operations	8	No operational and maintenance manuals or as-built drawings. Berm is breached.
D. Reporting		
Overall Ranking for Reporting	4	Odor complaints
E. Operators		
Overall Ranking for Operators	4	Trained and confident
F. Statistical Data		
Overall Ranking for Individual Septic Tanks	0	
Overall Ranking for the Systems	8	High Risk

5.0 Communal Water Treatment Supply (88 houses)

5.1 Water Source

The water source is three from wells in the community.

5.2 Design

The community is serviced by a water treatment plant, which was constructed in 1993. The system consists of three wells with water softeners and chlorination, which feeds water to a reservoir and is pumped to the distribution system. The capacity of the reservoir is unknown.

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

Date	Location	Exceedances	Result	GCDWQ limit
May 12, 1999	Treated	Hardness	202 mg/L	80 to 100 mg/L (OG)
		Manganese	0.237 mg/L	0.05 mg/L (AO)
June 21, 2001	Treated	Hardness	213 mg/L	80 to 100 mg/L (OG)
		Manganese	0.281 mg/L	0.05 mg/L (AO)

AO = aesthetic objective, OG = operational guideline

There is plenty of ventilation for the system. The system does not have a back up generator for power failure and no pump is available for fire protection. There is safety equipment on site, and at the time of the OCWA inspection, no safety hazards were observed. There is no laboratory, but an office and maintenance workshop is available for doing routine maintenance.

5.3 Operations

The disinfection equipment is functional, hypochlorite is used for disinfection and there is a sufficient supply available. The residuals on the system are checked daily but no chlorine residual analyzer is available. There is no colilert unit available for use by the operator.

The operator does daily chlorine residual sampling on the system. Neither the operating manuals nor as-built drawings are available on site. There have been several service disruptions in the past two years due to water shortages since only two of three wells are running. No annual hydrant flushing and maintenance program is in place. There are no emergency spare parts available, and the operator is unaware how long it would take for a trained technician to get on-site. There is a re-occurring problem with water shortage as mentioned earlier.

5.4 Reporting

Regular tests are being performed on the water distribution system. The operator performs biological tests and the results are sent by bus to Geraldton every month and are stored at Health Canada.

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

Period	Frequency	Regularity	Exceedances
Nov. 17/99 to Oct. 24/01	3 - 10 times/month from different locations	<ul style="list-style-type: none">▪ 0 months missing in 1999▪ 5 months missing in 2000▪ 5 months missing in 2001	<ul style="list-style-type: none">▪ 1 total coliform exceedance at the pumphouse on 2000/05/16▪ 3 total coliform exceedances in the distribution system on 2000/05/16.▪ 1 total coliform exceedance in the distribution system on 2001/09/27.

There have been no health related outbreaks in the past two years, but Health Canada has issued three boil water advisories during that time. The third boil water advisory was still in place at the time of the OCWA visit. The turbidity of the treated water is tested monthly.

5.5 Operators

s.19(1)

There are three operators for both the well water system and the lagoon. Ann Marie Magiskan is the senior operator, and Shelley Meshake and Jason Ruben are trainees. [REDACTED] They are familiar with calibrating and maintaining equipment. Ann Marie Magiskan s [REDACTED]

6.0 Deficiencies in the Communal Water Supply

1. The capacity of the reservoir is unknown.
2. The system does not have a back up generator in case of power failures, and no pump is available for fire protection.
3. There is no laboratory area, but an office and maintenance workshop is available to carry out routine maintenance.
4. The chlorine residuals on the system are checked daily, but no online chlorine residual analyzer is available.
5. There is no colilert unit available for use by the operator.
6. No operations and maintenance manuals or as-built drawings are available on site.
7. There have been several service disruptions in the past two years when water shortages occur, since only two of the three wells are operational.
8. No annual hydrant flushing and maintenance program is in place on the distribution system.
9. There are no emergency spare parts available, and the operator is unaware how long it would take for a trained technician to get on-site.

10. There is a re-occurring problem with water shortage as mentioned earlier.

7.0 Communal Sewage Treatment Facilities (88 houses)

7.1 Effluent Receiver

The effluent receiver is the Kowkash River.

7.2 Design

The community is serviced by a gravity collection system, no pumping stations and a lagoon. The facility was constructed in 1995. The system has adequate ventilation. Safety equipment is available, and at the time of OCWA visit, there were no safety concerns. There are no buildings associated with the system, so there are no maintenance, laboratory, or office areas.

7.3 Operation

There is no disinfection on the sewage system. Operation and maintenance manuals and as-built drawings are not available on site.

No service disruptions have occurred on the sewage system, but there is a reoccurring problem with clogging of the effluent pipe from the last manhole and before the lagoon.

The discharge frequency on the system is annually. The berm for cell # 1 is breached at the high-level discharge pipe. There is an ongoing concern with odor throughout the year.

7.4 Reporting

Health Canada conducts effluent tests on the lagoon system annually before discharge. The results of these tests are kept at the Health Canada office OCWA did not receive any effluent results from Health Canada. There have been no health related outbreaks in the last two years. The community complains regularly about odor in the spring, but the source of the odor has not yet been identified. No back ups or basement flooding have occurred on the system.

7.5 Operators

s.19(1)

There are three operators for both the well water system and the lagoon. Ann Marie Magiskan is the senior operator, and Shelley Meshake and Jason Ruben are trainees. [REDACTED] They are familiar with calibrating and maintaining equipment. [REDACTED]

8.0 Deficiencies in the Communal Sewage Treatment Facilities

1. The community is serviced with a gravity sewage collection system and a lagoon with no pumping stations.
2. There is no disinfection on the sewage system.
3. No operations and maintenance manuals, or as-built drawings available on-site.

4. No service disruptions have occurred on the sewage system but there is a re-occurring problem with clogging of the effluent pipe from the last manhole and before the lagoon.
5. The berm for cell #1 is breached at the high-level discharge pipe.
6. There is an ongoing concern with odour through out the year.

9.0 Recommendations

- Investigate boil water advisories to ensure the source of contamination is being addressed adequately.
- Address water shortage problem.
- Repair well that is out of service.
- Implement a training program that can lead to operator certification.
- Implement a regular water-sampling program.
- Implement regular record keeping.
- Develop a contingency plan in case of emergencies for the complete water supply system.
- Consider purchasing a back up generator in case of power failure.
- Purchase necessary safety equipment.
- Obtain operations and maintenance manuals and as-built drawings for the plant.
- Purchase an on-line chlorine residual analyzer.
- Purchase colilert unit and incubator.
- Repair leaking berms.
- Implement a method for disinfecting sewage lagoon facility.
- Address issue of odour associated with the lagoon system.

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

Water Treatment Facility - Class I
Sewage Treatment Facility - Class I

11.0 Overall Community Risk Assessment

Water Category – High Risk

- **High Risk because of the following:**
 - Under a boil water advisory; and
 - Re-occurring water shortage

Sewage Category – High Risk

- **High Risk because of the following:**
 - Repair to berm is needed; and
 - Address odour problem.

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.