

**BAKER LAKE**

---

**OPERATION AND MAINTENANCE MANUAL  
FOR  
SEWAGE AND SOLID WASTE DISPOSAL FACILITIES**

Date: \_\_\_\_\_

Prepared by: \_\_\_\_\_

Submitted to: Nunavut Water Board

Approved by: \_\_\_\_\_

## **TABLE OF CONTENTS**

### **TABLE OF CONTENTS**

#### **LIST OF MAPS/DRAWINGS**

- A. INTRODUCTION
- B. BACKGROUND
  - Water Supply
  - Sewage Disposal
  - Solid Waste Disposal
- C. OPERATION AND MAINTENANCE OF SEWAGE DISPOSAL FACILITY
- D. OPERATION AND MAINTENANCE OF SOLID WASTE DISPOSAL FACILITY
- E. HAZARDOUS WASTE MANAGEMENT
- F. ANY ADDITION DETAILS RELEVANT TO THE OPERATION AND MAINTENANCE OF BAKER LAKE FACILITIES.
- G. REFERENCES

Appendix I

Appendix II

## LIST OF MAPS/DRAWINGS

1. IE: ...General Site Map
2. Etc.

## A. INTRODUCTION

Should include:

- Purpose of the manual: *refer to page 3 of the O&M guidelines.*
- Location of the community: *refer to N.W.T. DATA Book 1990/91 pg 114, 115 & Baker Lake data provided by MACA Rankin Inlet.*
- Basic geophysical information, such as general geological information mean precipitation data, extent of permafrost and general hydrological information: *refer to Baker Lake data and N.W.T. Data Book information.*
- Maps or drawing of the community and the location of sewage and solid waste sites (existing, abandoned or reclaimed): *Site, topographical maps ariel photograph can be obtained from TGIT Geomatics Ltd. Contact Terry Hauff  
Phone: 403-873-8448 Fax: 403-873-8439*
- Population projections: *Contact Northwest Territories Bureau of Statistics for Census results for 1996 Phone 403-873-7147  
Twenty year population projections can be estimated as follows: Confirm with Bureau of Statistics Growth rate is 2.26%.*

$$P_{\text{new}} = P_{\text{curr}}(1+r)^n$$

$P_{\text{new}}$  = Population at a future date

$P_{\text{curr}}$  = Current population

$r$  = Number of year to  $P_{\text{new}}$  from  $P_{\text{curr}}$

$n$  = Growth rate, %

## B. BACKGROUND

Water Supply: *for each system piped or trucked*

- Where the community obtains its water
- How drinking water is distributed
- History of existing site such as when site was constructed, time in use, when new facility is planned for and recent changes to facility or upcoming changes to the facility.

*refer to Data Book and Baker Lake data information supplied. Ensure that the data is current.*

Sewage: *for each system piped or trucked*

- how sewage is collected
- sewage generation, composition projections and related tables and charts
- sewage treatment and disposal
- History of existing site such as when site was constructed, time in use, when new facility is planned for and recent changes to facility or upcoming changes to the facility.

*refer to Data Book and Baker Lake data information supplied. Ensure that the data is current.*

Solid waste:

- how solid waste are collected
- solid waste generation, composition projections and related tables and charts
- solid waste management and disposal
- History of existing site such as when site was constructed, time in use, when new facility is planned for and recent changes to facility or upcoming changes to the facility.

*refer to Data Book and Baker Lake data information supplied confirm that the data is current.*

Hazardous waste:

- how hazardous waste are collected
- hazardous waste generation, composition projections and related tables and charts
- hazardous waste management and disposal
- History of existing site such as when site was constructed, time in use, when new facility is planned for and recent changes to facility or upcoming changes to the facility.

## C. OPERATION AND MAINTENANCE OF SEWAGE DISPOSAL FACILITY

*For each type of sewage disposal facility: Wetland, or honey bag.*

- Site Description: showing specific location of sewage treatment facility, drainage and distance to water bodies by means of maps and drawings *refer to the wetlands study to obtain maps, distances, etc.*
- Type of Wetland: Engineered or natural
- Discharge method for wetland and honey bag pit: continuous, intermittent or zero
- List of people by positions and their phone numbers who are responsible for the operation

and maintenance of the Wetland and HB pit.

- Description of normal O&M procedures for the Wetland and HB pit.
- Frequency of each of the O&M steps carried out, whether it be daily, weekly, monthly, seasonally or annually.
- Sampling procedures and an example of a completed sample sheet *refer to SNP requirement of your current water licence. Sampling protocols refer to Quality Assurance Quality control guideline enclosed.*
- Site records are necessary to assist in the planning of site operations and meeting regulatory requirements. Information that must be included is:
  - Volumes of any effluent discharged to the environment
  - sewage volume collected
  - details of any maintenance undertaken at site
  - record sheets
- Safety procedures for the operator
- weed and insect control
- methods of controlling access to site such as signs and fencing
- list of chemicals used in the treatment process, if any

#### D. OPERATION AND MAINTENANCE OF SOLID WASTE DISPOSAL FACILITY

Should include the following:

- site description including maps of the area showing: *maps from TGIT*
  - location of the solid waste disposal facility
  - dimensions of facility
  - distance to water bodies and drainage paths
  - distance and bearing the airport runway
  - prevailing wind
  - segregation of solid wastes into sections such as bulky waste, waste oil, honey bag, refuse are, hazardous waste, recyclable and reusable waste.
- list of people by position and their phone numbers who are responsible for the normal operation and maintenance of the solid waste site

- classification of the solid wastes including hazardous waste which are expected to be generated by the community
- disposal procedures for all solid waste generated by the community
- basic maintenance procedures of the solid waste site and frequency of maintenance activities including
  - waste compaction
  - waste collection
  - methods of preventing windblown debris
  - fencing and signs
  - odor control
  - burning
- conditions that hinder the normal operation of the solid waste site such as permafrost and access to cover material *access to necessary machinery to perform O&M*
- safety procedures for the operator
- methods of controlling access to site such as signs and fencing
- site records including
  - date, description, estimated volume and generator of waste places in compound
  - any maintenance activities done at site
  - visits by regulatory authorities or other activities at site
  - sampling and analysis of run off and leachate
- alternatives to burning wastes.

## E. HAZARDOUS WASTE MANAGEMENT

*refer to O&M Guidelines*

The following should be included

- handling of hazardous wastes
- segregation
- storage
- classification of different types of hazardous waste found in the community
- collection

- Site records:
  - Date of hazardous waste collection
  - Date wastes placed in compound
  - Generator of the waste: *(Incl. name, address and telephone #)*
  - Description and Volume of waste received:
  - Method of Storage
  - Name of Carrier removing wastes from the compound: *(Incl. Address of the contact person and telephone number)*
  - Copies of forms for Transport of Dangerous Goods from persons removing wastes from site. *Sample of form used by First Air enclosed. Training is available on the handling and transportation of hazardous materials if you require further information contact the NWB office. Person with Transport of Dangerous Goods Training or authorization*
- safety procedures for the operator to follow when dealing with hazardous wastes such as Workplace Hazardous materials Information System (WHIMS) *Provide Workplace Hazardous Materials Information System sheets for known hazardous materials. Person with WHIMS Training: Name, address, phone #.*

#### F. EMERGENCY RESPONSES

##### Fire:

- procedures to follow in case of this event
- persons and department to notify and their phone numbers

##### Spill:

- Contingency plan for spills *refer to Guidelines for contingency planning Appendix II*
- Reporting procedure for spills *refer to Guidelines for contingency planning (recommend including copy of form of spill report form)*

#### G. ANY ADDITION DETAILS RELEVANT TO THE OPERATION AND MAINTENANCE OF BAKER LAKE FACILITIES.

#### H. REFERENCES

Northwest Territories Data Book 1990/91. Outcrop The Northern Publisher, Yellowknife, N.W.T.



*Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities.* 1996.  
Municipal and Community Affairs, Government of the N.W.T., Yellowknife, N.W.T.

*ETC.*