

Attention: *Joanne Green, Communications*

*Fax: (204) 983-0964*

Executive Summary  
Application for Water License  
Environment Canada  
High Arctic Weather Station  
Eureka, NWT

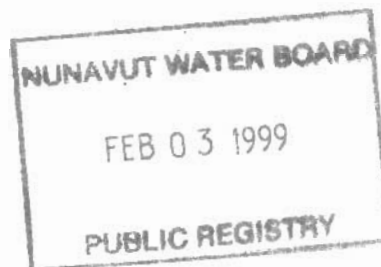
The Eureka High Arctic Weather Station (HAWS) is located on the north side of Slidre Fjord, at the northwestern tip of Fosheim Peninsula, Ellesmere Island. Eureka station coordinates are 79.59.41N and 85.48.48W.

The Eureka HAWS site occupies a federal DIAND land reserve No. 1021 of area 1125 ha. The station has been operated by Environment Canada since April 7<sup>th</sup> 1947. Environment Canada recently celebrated the fiftieth anniversary of the Station and plans to continue operations there for the foreseeable future.

The primary purpose of the Eureka station is to collect weather information in order to produce public weather forecasts. In addition, the Eureka station provides support to the Arctic aviation community. Eureka also serves as a staging location for other science based activities in the High Arctic.

Environment Canada provides all the necessary infrastructure to support its activities at Eureka. This includes, accommodations, electrical power, transportation, aircraft landing strip, mess operations, and water and sewage services.

This application is submitted by Environment Canada for approval to continue to divert Station Creek, once per year to replenish the Eureka weather station water reservoir. Included in the application is a request to continue using a sewage lagoon. Approximately 10,000 m<sup>3</sup> of water is diverted annually to the water reservoir while 3,000 m<sup>3</sup> of waste water is returned from the sewage lagoon to Slidre Fjord.







P.O. Box 119  
GJOA HAVEN, NT XOE 1J0  
TEL: (867) 360-6338  
FAX: (867) 360-6369

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NUNAVUT WATER BOARD  
NUNAVUT IMALIRIYIN KATIMAYINGI

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January 27, 1999

Mr. Brock Goalen  
A/Head, Facilities & Projects  
Prairie & Northern Region  
Environment Canada  
123 Main St. Suite 150  
Winnipeg, Man, R3C 4W2

Re: Water Licence application.

Dear Mr. Goalen,

The Nunavut Water Board have finally received the applicable \$30.00 application fee and can now process with your August 28, 1998 letter, along with your submission of the following

- i. Water licence application for the weather station in Eureka;
- ii. Supplementary Questionnaire;
- iii. Application fee, and maps

This project is subject to screening by the Nunavut Impact Review Board and have been sent for their determination as to whether they require further review or if it can be processed by the Nunavut Water Board. We ask you to make available to the public, free of charge, copies of all documents pertaining to this application. Enclosed for records is receipt number C 101085 to cover the water licence application fee.

You will be contacted should additional information or clarification be required.

Sincerely,

David Porter  
Licence Administrator



P.O. Box 119  
GJOA HAVEN, NT XOE 1J0  
TEL: (867) 360-6338  
FAX: (867) 360-6369

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NUNAVUT WATER BOARD  
NUNAVUT IMALIRIYIN KATIMAYINGI

October 26, 1998

Mr. Brock Goalen  
A/Head, Facilities & Projects  
Prairie & Northern Region  
Environment Canada  
123 Main Street, Suite 150  
Winnipeg, Manitoba  
R3C 4W2

Dear Mr. Goalen,

Re: Application for Water Licence.

**FAXED**  
Pg 1 Date 27 Oct, 1998

The Nunavut Water Board (NWB) acknowledges receipt of your letter dated August 28, 1998 with attached Water licence application form, Municipal Questionnaire and associated documents related to your water licence submission. However in accordance to the Interim Procedures and Information Guide for Applicants, article 5. Procedures in the Processing of a Water Licence Applications. Item 2.x states that an executive summary of the project in English and Inuktitut. And article 4. States that the appropriate \$30.00 application fee should be paid.

Please submit an Executive summary in Inuktitut and a \$30.00 cheque to cover the application fee payable to: Receiver General for Canada, and send to my attention for processing.

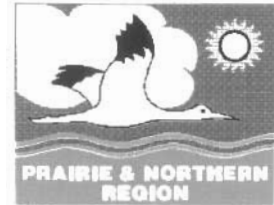
If you should require assistance or clarification, please do not hesitate to contact either myself or Dionne Filiatrault at (867) 360-6338 or by fax at (867) 360-6369.

Thank you,

David Porter  
Licence Administrator.



Environment Canada  
Environnement Canada

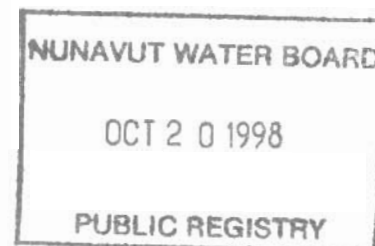


123 Main St. Suite 150  
Winnipeg, Manitoba  
R3C 4W2

Friday, August 28, 1998

file: 8001-132-E40

Dionne Filiatrault, MIT  
Technical Advisor  
Nunavut Water Board  
P.O. Box 119  
Gjoa Haven, NT  
X0E 1J0



Dear Dionne Filiatrault;

Attached is an application for a water licence for the Environment Canada weather station, Eureka. A number of photographs have been enclosed to assist your Board in understanding the facility.

I may be reached at telephone number 204-983-3837 or fax 204-984-2072.

Regards,

Mr. Brock Goalen  
A/Head, Facilities & Projects  
Prairie & Northern Region

attach

<b>APPLICATION/LICENSE NO:</b> (Amendment or renewal only) <span style="float: right; font-family: cursive; font-size: 1.2em;">NW B3 EUR</span>	
<b>1. NAME AND MAILING ADDRESS OF APPLICANT/LICENSEE</b> Officer-in-Charge Eureka Weather Station Eureka, NT X0A 0G0 Phone: [204]984-6376 ext 460 Fax: [613]945-0145 ext 455	<b>2. ADDRESS OF HEAD OFFICE IN CANADA IF INCORPORATED</b> Brian Kahler Suite 150 - 123 Main St. Winnipeg, Manitoba R3C 9Z9 Phone: [204]983-4385 Fax: [204]984-2072
<b>3. LOCATION OF UNDERTAKING</b> (describe and attach a map, indicating watercourse and location of any proposed waste deposits)   <div style="display: flex; justify-content: space-between;"> <span>Latitude: <u>80°00' North</u></span> <span>Longitude: <u>85°56' West</u></span> </div>	
<b>4. DESCRIPTION OF UNDERTAKING</b> (DESCRIBE AND ATTACH PLANS AND DRAWINGS) To continue to divert Station Creek once a year to replenish water reservoir which contains approximately 17,550 m <sup>3</sup> of water when full. Normally the reservoir is approximately 2/3 full when it is topped up in July. To continue to dispose of waste water and effluent into sewage lagoon and to drain sewage lagoon into Slider Fiord annually. Lagoon contains approximately 3400 m <sup>3</sup> .	
<b>5. TYPE OF UNDERTAKING</b> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <input type="checkbox"/> Industrial  <input type="checkbox"/> Mining and Milling  <input type="checkbox"/> Municipal  <input checked="" type="checkbox"/> Other (describe): <u>Weather Station</u> </div> <div style="width: 48%;"> <input type="checkbox"/> Power  <input type="checkbox"/> Conservation  <input type="checkbox"/> Agriculture  <input type="checkbox"/> Recreation           </div> </div>	
<b>6. WATER USE</b> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <input type="checkbox"/> To obtain water  <input type="checkbox"/> To cross a watercourse  <input type="checkbox"/> To modify the bed or bank of a water  <input type="checkbox"/> Other (describe): _____           </div> <div style="width: 48%;"> <input type="checkbox"/> Flood control  <input type="checkbox"/> To divert water  <input checked="" type="checkbox"/> To alter the flow of, or store, water           </div> </div>	
<b>7. QUANTITY OF WATER INVOLVED</b> (liters per second, liters per day or cubic meters per year, including both quantity to be used and quality to be returned to source.) Approximately 10,000 m <sup>3</sup> of water is diverted annually to Water reservoir Approximately 3,000 m <sup>3</sup> of water is returned from sewage Lagoon to Slider Fiord annually.	

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OCT 20 1998

PUBLIC REGISTRY

NUNAVUT WATER BOARD

OCT 20 1998

PUBLIC REGISTRY

## Type:Waste water effluent and raw sewage

Quantity: Approximately 3,000 cubic meters of waste water and raw sewage

**Disposal:** the lagoon is decanted into Slider Fiord annually.

## mailing address and location; attach if necessary)

## 10. PREDICTED ENVIRONMENTAL IMPACTS OF UNDERTAKING AND PROPOSED

attached

Not Applicable

See Attached Supplementary Questionnaire

## Land use permit

☒ Yes ☐ No

Date Expected\_\_\_\_\_

☐ Yes ☒ No

Date Expected \_\_\_\_\_

☒ Yes ☐ No

Date Expected\_\_\_\_\_

☐ Yes ☒ No

Date Expected\_\_\_\_\_

☒ Yes ☐ No

(with camp, drill sites etc.)

Date Expected\_\_\_\_\_

## Start Date: ongoing

Completion Date:Unknown

**Title (Print)**

Signature

Date \_\_\_\_\_

APPLICATION FEE

Amount: \$30.00

Receipt No.: C101085

WATER USE REPORT

Amount: \$\_\_\_\_\_

Receipt No.: \_\_\_\_\_

**9. OTHER PERSONS OR PROPERTIES AFFECTED BY THIS UNDERTAKING** (give name,  
mailing address and location; attach if necessary)

**Atmospheric Environment Services Research Branch**  
**Attn: Hans Fast ARQD**  
**4905 Dufferin Strret**  
**Downsveiw, Ontario**  
**M3H 9Z9**

**Department of National Defense**  
**CFCC/HQ**  
**Tunney's Pasture**  
**Ottawa, ON K1A 0K0**  
**Attn:n Senior Officer OP Hurricane**



#### **10. PREDICTED ENVIRONMENTAL IMPACTS OF UNDERTAKING AND PROPOSED MITIGATION MEASURES**

Environmental impacts as a result of diverting Station Creek are negligible.  
Station creek is not used for spawning and drains a relatively small geographical area.

Environmental impacts as a result of decanting the sewage lagoon into Slider Fiord has not been scientifically evaluated.  
Environment Canada proposes to undertake an assessment of sewage treatment options during the 1999 Summer season.

**11. CONTRACTORS AND SUB-CONTRACTORS** (name, address and functions)

none

**STUDIES UNDERTAKEN TO DATE**

Environmental Audit of the Eureka High Arctic Weather Station  
prepared March 1998.

P.O. Box 1500  
Yellowknife, N.W.T.  
X1A 2R3

June 29, 1983

Public Works Canada  
Real Estate Services  
9925 - 109th Street  
P.O. Box 488  
EDMONTON, Alberta  
T5J 2K1

ATTENTION: Dallas Maynard  
Senior Property Agent

Dear Sir:

RE: A.E.S. Reserve #1021, A.E.S. Weather Station  
EUREKA, N.W.T.

This letter is to advise you that we have established new boundaries for Reserve #1021 at Eureka as shown on attached maps.

By copy of this letter to our Land Management Office in Ottawa we are requesting that they adjust their records to show these new boundaries.

Yours truly,

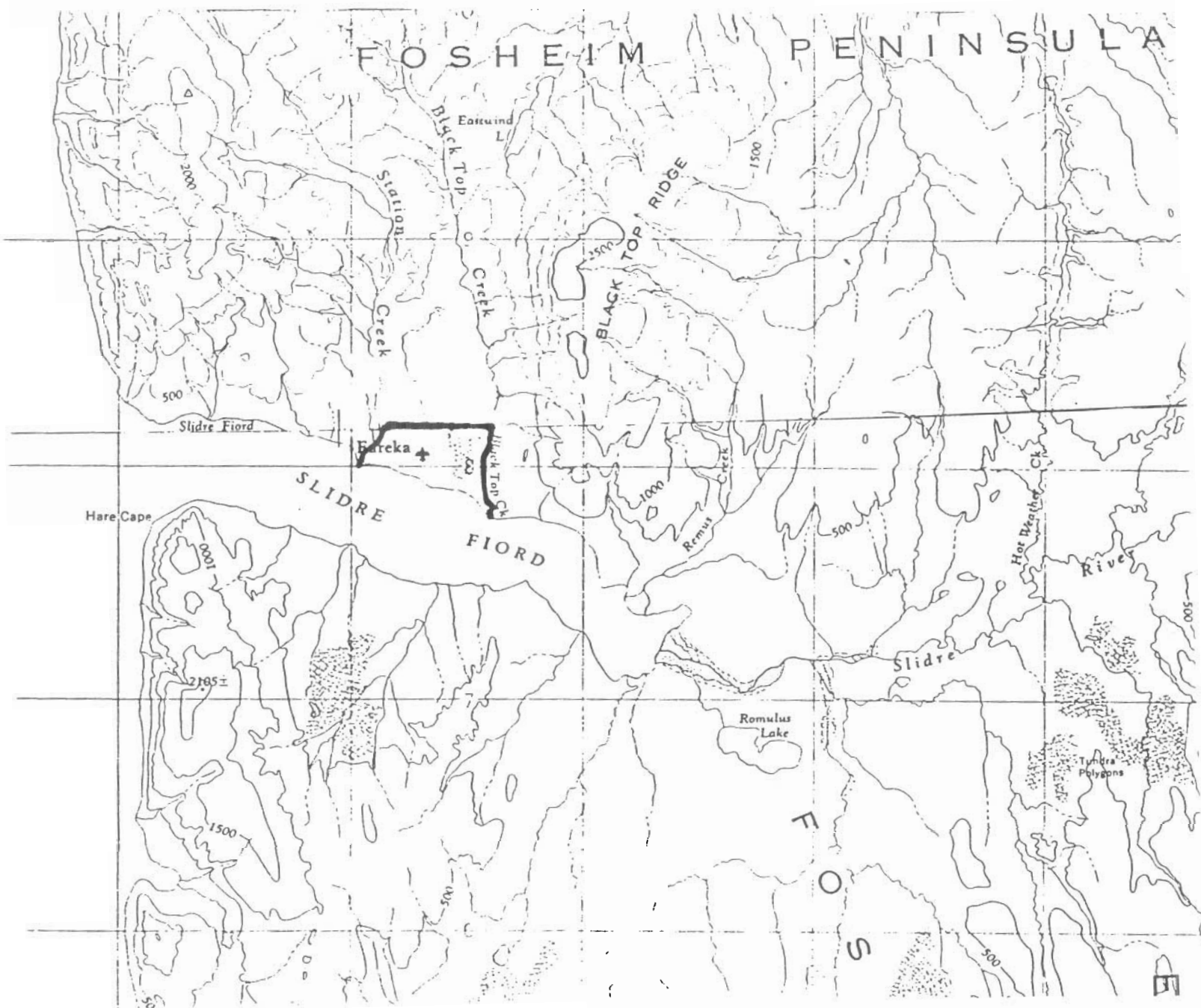
ORIGINAL SIGNED BY  
J.P.W. DUNLOP

J.P.W. Dunlop  
Regional Manager  
Land Resources

cc: Chief,  
Land Management Division

B.M. McVean  
Chief Administrative Services

PROULX/sd



**Water Licence Application  
Supplementary Questionnaire  
for Municipalities**

## GENERAL

1. Date: August 5, 1998
2. Applicant: Eureka Weather Station (Environment Canada)  
Municipality
3. Contacts: Brock Goalen  
Contact  
  
Supervisor, Atmospheric Monitoring, Facilities and Projects  
Position  
  
[204] 983-3837  
Telephone  
  
204] 984-2072  
Fax
4. Municipal Status: ☐ Village ☐ Town  
☐ Hamlet ☐ Settlement Corporation
5. Is this a ?  
☒ New Application  
☐ Renewal ---- } Water Licence# \_\_\_\_\_

## ATTACHMENTS

1. Attach up- to- date detailed map(s) showing the locations of the:
  - a. Water intake; **photos 1 & 2**
  - b. Water storage and treatment facilities; **photo 1**
  - c. Fuel and chemical storage; **photo 1**
  - d. Sewage treatment facilities (lagoon, honey bag pit, wetland); **photo 3, Map 5**
  - e. Wastewater treatment area and discharge outlets; **photo 3**
  - f. Solid waste disposal areas and drainage patterns; **photo 4 and Maps 3 & 4**
  - g. Hazardous waste disposal area; **photo 6**
  - h. Access roads; Not Applicable
  - i. Existing water bodies/courses and any changes to these water bodies/courses that have or may occur as a result of water use or waste disposal facilities, locations of environmental monitoring sites. (Outline drainage basin); **Map 6, Photo 9**
  - j. Areas around the community used for recreation, camping, fishing, etc. **N/A**
  - k. Abandoned and/or restored water treatment, sewage, and solid waste disposal facilities. **Photos 7 & 8, Map 3**

Are maps attached? ☒ Yes ☐ No  
If no, please indicate when they will be available.

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Who has provided or prepared these maps ?  
Photo's and maps prepared by Dick Wasacase, Officer-In-Charge.

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### III. WATER SUPPLY

#### **Water Source**

1. Type of source: Lake ☒ River ☐ Well ☐ Other ☐

2. Name of water source and alternative, if any.

Station Creek

Primary Source

Secondary Source

3. Usual break-up & freeze-up period: Late June Late September  
Break-up Freeze-up

#### **Water Storage**

1. Type of water storage facility. (check where applicable)

☒ Reservoir/Pond

☒ Storage tank

None

Other \_\_\_\_\_  
Description

2. If "reservoir" checked:  
Is the reservoir lined? Yes ☒ No

What type of liner? Not Applicable When was it installed? Not Applicable

#### **Water Treatment**

1. What is the quality of the water, and provide water quality results.

Summer:	<input checked="" type="checkbox"/> good	fair	poor
Fall:	<input checked="" type="checkbox"/> good	fair	poor
Winter:	good	<input checked="" type="checkbox"/> fair	poor
Spring:	good	<input checked="" type="checkbox"/> fair	poor

Describe.

The quality of the water deteriorates over time as the reservoir is only replenished once per year, usually in early July.

3. Type of water treatment.



Filtration and chlorination

☒ Chlorination only

None

Other

The Reverse Osmosis process is used on any water used in food preparation and drinking.

### Water Use And Distribution

1. Volume of water use.

Distribution	Estimated number of people on the system <b>A</b>	Estimated average water consumption (Litres/capita/day) <b>B</b>	Total water consumption (Litres/day) <b>A x B</b>
Piped	8 - 50	125	1000 - 6250
Trucked	20 - 100	125	2500 - 12500
<b>TOTAL</b>			3500 - 7500

### General Condition of the water supply facilities

1. General condition of the:

A. Water supply facility  
☒ Satisfactory      ☐ Unsatisfactory  
If unsatisfactory, explain.

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B. Storage facility  
☒ Satisfactory      ☐ Unsatisfactory  
If unsatisfactory, explain.

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C. Distribution system  
☒ Satisfactory      ☐ Unsatisfactory  
If unsatisfactory, explain.

---

### Modifications

1. Are there any changes *planned* for the water supply system?

☒ No ☐ Yes

If yes, please attach a copy of the plan, or describe changes. Provide information on the implementation schedule.

Not Applicable

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2. Are changes needed to the water supply, storage or treatment facilities? Describe.

Changes not required at this time

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### Identification

Are there signs identifying drinking water sources presently used by the municipality ?

☒ No ☐ Yes

## IV. SEWAGE DISPOSAL

1. What type(s) of sewage treatment is used ?

☒ Lagoon

☐ Mechanical system

☐ Wetland

☐ Honey bag

☐ Combination/Other: describe

### Lagoon (if applicable)

1. Has there been any operating problems with the lagoon?

☐ Yes ☒ No

If yes, describe

NOT APPLICABLE

---

### Mechanical System (if applicable)

1. Describe (type, specifications, operation and maintenance program for the mechanical wastewater treatment system).

NOT APPLICABLE

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2. Are sludge's produced ?

☐ Yes ☒ No

NOT APPLICABLE

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**Wetland(if applicable)**

I . Describe the Wetland wastewater treatment system.

NOT APPLICABLE

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**Honey Bag Pit**

I . Does the municipality use a honey bag pit?

☐ Yes ☒ No

If yes, describe the location, drainage, and operation/maintenance of the site:

NOT APPLICABLE

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**Commercial, Industrial and/or Hazardous Wastes**

1. Are there any sources of commercial or industrial liquid waste being discharged or deposited to the wastewater treatment system that may affect the quality of the effluent or leachate produced? *(The municipality should be aware that any commercial or industrial discharge has to be approved by the municipality)*

Yes ☐ No ☒

If yes, indicate sources, types and quantities.

**Sewage Discharge**

1. Are fish, shell fish and other wildlife harvested in or near the discharge area ?

☐ Yes ☒ No

If yes, indicate species harvested, and level of harvest.

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**General Condition of the sewage treatment facilities**

I . General condition of the:

a. Sewage collection system

☒ Satisfactory ☐ Unsatisfactory

If unsatisfactory, explain.

NOT APPLICABLE

---

b. Discharge control system

☒ Satisfactory ☐ Unsatisfactory

If unsatisfactory, explain.  
NOT APPLICABLE

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C. Dams, diversion dikes, berms  
☒ Satisfactory ☐ Unsatisfactory

If unsatisfactory, explain.  
NOT APPLICABLE

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### Modifications

1. Are there any changes planned in the sewage treatment facilities?  
☒ No ☐ Yes  
If yes, please attach a copy of the plan, or describe changes. Provide information on the implementation schedule.  
An environmental audit will be scheduled for 1999.
- 

2. Does the municipality or residents believe changes are needed to the sewage treatment facilities? Describe.  
Yes but audit required to determine degree of change.
- 

### Abandonment and Restoration

1. List and describe abandoned or restored sewage treatment facilities. Indicate their location on a map.  
NOT APPLICABLE
- 

### Identification

Are there signs identifying past and present sewage disposal sites ?  
☒ No ☐ Yes

### V. SOLID WASTE DISPOSAL