1. Briefly describe how solid wastes are collected and delivered to the disposal area.

The solid wastes are collected and delivered to the incinerator building where they are burnt. The remaining ash is collected in drums and stored at a temporary site until completion of a Waste Management Strategy in accordance with the Environmental Assessment Act.

2. Is the solid waste site fenced? X No __ Yes

3. Is the fence adequate? No Yes
If no, describe
NOT APPLICABLE

Waste Reduction

1. Does the municipality burn garbage ?
__ No X Yes
If yes, describe how and when is this done.

Household garbage from the Eureka Weather Station is burnt in an incinerator every two or three days as required.

2. Has the municipality considered measures for waste reduction such as recycling or reuse?
__ No _X_ Yes
If yes, describe

We are in the process of completing a Waste Management Strategy which will identify alternative uses of waste. Possible solutions include use of used motor oil as an alternative heating fuel.

Animal Carcasses Pit

1. Does the municipality have an area for the disposal of animal carcasses ?
X No __ Yes
If yes, describe the location, drainage and operation/maintenance of the site

NOT APPLICABLE

Bulky Scrap Metal Waste Disposal Area

I Does the municipality have a scrap metal or bulky waste disposal area?

__ No X Yes

If yes, briefly describe its location and operation plan.

Scrap metal and bulk garbage is co-located with the landfill site near the airstrip and capped as identified in our Waste Management Strategy.

Commercial, Industrial and/or Hazardous Wastes Disposal Area

1. Are there any commercial or industrial waste being discharged or deposited in the solid waste disposal area? *(The municipality should be aware that any discharge of commercial or industrial waste has to be approved by the municipality)*
__X__ No __ Yes
If yes, please indicate sources, types and quantity.
Not Applicable

2. Will the municipality use a hazardous waste disposal area?
__ No X Yes
If yes, describe its:

a. Location
One mile Northeast of Eureka Weather station (on east side of Airstrip Road)

b. Structure
Leveled area approximately 200 ft x 200 ft

c. Operation and maintenance (describe special handling/disposal methods for these wastes)

Temporary storage area for incinerator ash, waste oil (sealed 205 liter drums) and old lead/zinc batteries. It is anticipated that alternative uses or environmentally friendly means can be developed to dispose of these articles.

General Condition of the Solid Waste Disposal Area

1. General condition of the:

a. Solid waste disposal area
X Satisfactory __ Unsatisfactory

If unsatisfactory, explain.

Modifications

1. Are there any changes planned for the solid waste disposal area?
X_ No Yes

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

2. Are changes needed to the solid waste disposal area? Describe.

New landfill cell locations have been identified along existing cell located on southeast side of runway. These new cells will become operational as existing cells become filled.

Abandonment and Restoration

1. List and describe abandoned or restored solid waste facilities. Indicate their location on a map.

DND battery landfill site which is located on the northeast side of runway. Characterization of this site is expected during the summer of 1998 by DND. Abandoned landfill used by the weather station is located on the northwest side of the runway. **Map 3**

Identification

Are there signs identifying past and present solid waste disposal sites ?
X No __ Yes

VI. INSPECTION AND MONITORING

1. When were municipal facilities inspected by:

X Indian and Northern Affairs Inspector	Date: June, 1996
Municipal and Community Affairs	Date:
Other	Date:

2. Is there a system in place for reporting spills?
X Yes __ No
If yes, describe.

There is a flow chart that is used outlining procedures and emergency telephone numbers, Appendix B.

3. Is there a contingency plan for clean up of spills?
X Yes __ No
If yes, describe.

The basic initial response is to contain spill if possible and notify proper authorities.

4. Have any spills occurred in the past five years?
X Yes __ No
If yes, describe and show on a map the locations of the spills. What action has been taken to clean the affected areas?

July 30, 1997, an automatic fuel filling device failed and approximately 1040 liters of diesel fuel spilled on the ground at the northwest corner of the powerhouse. The fuel settled into a depression and staff recovered 1290 liters of fuel/water. Sump holes were dug in the area of the spill with no noticeable seepage occurring.

Monitoring Program

1. Is water sampling and analysis done ?
X Yes __ No If Yes, answer the questions a to e

a. Briefly describe how samples are taken and sent to the laboratory.

Department of National Defense samples the water during the summer months when the reservoir is replenished.
Samples are flown to the "Environmental Engineering Research Group" laboratory.

b. Briefly describe any monitoring done for wastewater effluent and leachate.

NOT APPLICABLE

c. Who is responsible for water sampling ?

Name: B. Meyerhoffer
Position: Major, Department of National Defense
Telephone:[613] 990-8161
Fax #: [613] 998-7978
Level of training: Not known

d. Laboratory performing analysis of samples.

Name:Environmental Engineering Research Group

Address: Not known
Telephone: Not known
Fax: [613]541-6599

e. Are any changes planned in the water quality monitoring program?
__ Yes X No

If yes, describe.

NOT APPLICABLE

VII. PUBLIC CONCERNS

1. What concerns does the municipality or residents have regarding the municipal water supply or waste disposal facilities? List the concerns and describe what steps have been taken to address those concerns.

There is some concern in regards to bacteria and coliforms in water reservoir. The OIC does a pH analysis with a pH analysis kit each time the holding tanks are filled (once a month). Chlorine is added to water and pH checked.

VIII. PUBLIC HEALTH *(To be filled by the Regional Environmental Health Officer)*

1. Date: April 8, 1998

2. Municipality: Calgary, Alberta

3. Contact: Gordon Wm. Allen
Environmental Health Officer Contact
403-292-5568
Telephone
403-221-7998
Fax #

4. Have there been any problems or health/environmental concerns with drinking water ?
__ Yes X No
If yes, describe

NOT APPLICABLE

5. Have there been any problems or health/environmental concerns with sewage disposal/treatment?
X No Yes
If yes, describe

NOT APPLICABLE

6. Have there been any problems or health/environmental concerns with solid waste disposal?

X No Yes If yes, describe

Monitoring Program

1. Does the Regional Health Board perform water quality sampling? X No Yes
If yes, answer questions (a) to (e)

a. Briefly describe the sampling methodology.

NOT APPLICABLE

b. Briefly describe any monitoring of wastewater effluent and leachate.

NOT APPLICABLE, monitoring of wastewater effluent and leachate not done.

C. Who is responsible for sampling ?

Name: NOT APPLICABLE

Position: NOT APPLICABLE

Telephone: NOT APPLICABLE

Fax: NOT APPLICABLE

Level of training: NOT APPLICABLE

D. Laboratory performing analysis of samples.

NOT APLLICABLE

Name

NOT APLLICABLE

Address

NOT APLLICABLE

Telephone

NOT APLLICABLE

Fax #

E. Are any changes planned in the water quality monitoring program?

__ Yes X No

If yes, describe.

NOT APLLICABLE

IX. TECHNICAL INFORMATION *(Assistance from the Regional Municipal and Community Affairs Office)*

1. Date: **NOT APPLICABLE**

2. Municipality:

3. Contact:

MACA Representative/Position

Telephone

Fax #

4. Population (according to most recent census results): 10 people

5. Estimated growth rate over next 5 years: Zero Growth expected

6. Has any baseline data collection and evaluation been undertaken with respect to the physical, biological, and chemical characteristics of the main water bodies in the area?

___ Yes X No

If yes, provide details below:

Not Applicable

Prepared by Title Completion Date

NOT APLLICABLE

If no, are such studies being planned?

X No __ Yes (If yes, when and by whom):
NOT APLLICABLE

7. Have Elders been consulted in the collection of baseline data on main water bodies in the area?
__ Yes X No.
If yes, specify.
NOT APLLICABLE

8. Has any baseline data collection and evaluation been undertaken with respect to the various biophysical components of the environment potentially affected by the project?

X Yes __ No
If yes, provide details below.

Prepared by	Title	Completion Date
PWGSC	Environmental Assessment, Abandoned Landfill	May 1995
PWGSC	Detailed Site Characterization and Monitoring	Nov. 1995
PWGSC	Initial Environmental Assessment Eureka 2000	March 1997

If no, are such studies being planned?
__ Yes No If yes, specify: NOT APLLICABLE

Attachments

1. Attach detailed plan or drawing(s) of the present *solid waste disposal area*. Include the following information:
   a. details of pond size and elevation; Lagoon approximately 23 x 76 M. Map 5.
   b. details of all retaining structures (dimensions, materials of construction, etc.); Not Applicable.
   c. details of the drainage basin, and existing and proposed drainage modifications; Landfill drainage see map 4.
   d. details of all decant, siphon mechanisms etc., including sewage treatment facilities; decanting of sewage lagoon performed once per year. No decanting of solid waste site.
   e. details regarding direction and path of wastewater flow from the area; Landfill site see Map 4, sewage lagoon drains directing into Slidre Fiord/Arctic Ocean.

f. distance from watercourses and fish bearing waters; Landfill is approximately 1.5 kilometers from Slidre Fiord. Sewage lagoon is adjacent to Slidre Fiord.
g. location and construction of liners. Not Applicable.
h. leachate and groundwater collection systems; and control structures. Not Applicable.

2. Attach detailed plan or drawing(s) of the present *sewage treatment system.* The drawing(s) should include the following:

a. details of all retaining structures (dimensions, materials of construction, etc.);
b. details of the drainage basin, and existing and proposed drainage modifications; Lagoon is adjacent to Slidre Fiord. Photo 3.
c. details regarding direction and path of wastewater flow from the area; Discharge point is at the southwest corner of lagoon, falling directly into Slidre Fiord. Photo 3
d. indications of the distance from watercourses and fish bearing waters; Adjacent.
e. all sources of seepage presently encountered near these areas, including volumes (m'/day) and directions. Not applicable.

Are drawings for the solid waste disposal area and sewage treatment system attached?
X Yes No
If Yes. who has provided them ?
Public Works & Government Services and the former Northern Technology Centre of EPS.

If no, indicate when they will be available
Unknown

Hydrology

I Effects on surface water flow:

Are any stream channels altered?	X Yes	__ No
Is the natural storage or water level of any lake or pond changed?	__ Yes	X No
Are there changes in water flow downstream of the project?	__ Yes	X No
Is a storage reservoir created in a natural channel?	X Yes	__ No

If yes to any of the above, briefly describe the expected change in flow or storage:
Station Creek is dammed diverting flow of water up a man made channel into the reservoir.
The reservoir was built approximately 30 years ago east of Station Creek and west of the Weather Station.

2. Drainage Area:
What is the drainage area? 100 Km^2
What is the average elevation of the drainage basin 1,000 Meters.
Is the drainage basin outlined on an attached map? X Yes__ No (**Map 6)**

Describe the drainage basin characteristics, (vegetation, general soil type, lakes, swamps and permafrost areas, etc.)

The drainage basin consists of rolling hills(elevation not exceeding 300 meters A.S.L) covered with little vegetation other than lichens, mosses and grasses. The depth of permafrost is from several hundred meters to a few meters. Soils are mainly sands, silts and clays.

3. Channel characteristics:

Is the course of any channel changed? X Yes ___ No
If yes, describe measures to maintain stream bed and bank stability,

The stream bed nor natural stream banks are changed during the annual replenishment of water reservoir. Instead, a man made channel is opened at the stream bed which allows water to be diverted to reservoir. The channel is closed at conclusion of diversion.

4. Will the cross-section of any watercourse be changed? X Yes ___ No
describe the change and its effect on the flow capacity of the channel.
The flow capacity of Station creek is altered during the annual water reservoir replenishment exercise. Although data is not available, the water flow of the creek is decreased during replenishment exercise.

Water Supply

1. What is the rate of withdrawal from the source? Unknown M^3/day.
2. Is water drawn from the source X intermittently ____continuously
3. If it is drawn intermittently, during what month(s) is it drawn? Early July
4. For what period is it drawn (days/weeks/months)? 2-4 hours/year
5. What is the rate of flow of source (if river) or size (if lake)? Unknown
6. At the intended rate of water usage, describe the effects on the river or lake from which water will be drawn.

As far as we know, affects of water usage have negligible effects on stream.

Water Intake

1. Please provide short descriptions of the following:

a. freshwater intake facility
Consists of a water reservoir which is filled annually by partially diverting Station

Creek. A pump house is located at reservoir which pumps water to holding tanks.

b. operating capacity of the pumps
82 GPH

c. intake screen size
4 inch

Water Storage

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

X Reservoir/Pond X Storage tank ___None

___Other_____
Description

2. If "reservoir":
Is the reservoir lined? ___Yes X No

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

3. Is a dam or dike being used to store or alter the flow of water? X Yes ___No

4. What are the dimensions of the dam or dike?
Length: ___3 meters____Width: ___2 meters____Height:
U/S slope:___N/A_____ D/S slope:__N/A_____
Dam is built each year for diversion and removed immediately following.

5. Does the proposed dam create a reservoir in a natural watercourse? X Yes ___No
If yes, what is the storage capacity arid surface area of the reservoir?
Volume 17,550 m^3 Area 6,750 m^2.

6. Will the dam or dike affect fish migration or movement ?
____Yes X No
If yes, describe all measures for compensation of fish habitat lost due to the dam or dike, and mitigation's for fish migration or movement.

Water Treatment

1. Indicate the capacity of the treatment facility. Not Applicable L/min

2. What is the capacity of the water storage facility_____437_____ m^3

3. Describe the method of water treatment (i.e., backwash, flocculation, sedimentation, chemicals used), and provide the results of the most recent bacteriological and chemical analysis. Attach a diagram, if possible.

The water is pumped from the water reservoir into storage holding tanks. Chlorine is added to water at this point in accordance with recommendations. The water is allowed to settle for at least 2 weeks before being pumped to storage tanks. The water used for cooking and drinking is treated using a reverse osmosis system.

4. Are there any changes planned in the water treatment facilities?
X No ____ Yes
If yes, attach a copy of the plan or indicate changes and include an implementation schedule. Include excerpt from MACA Capital Plan if available.
Not Applicable

Sewage Disposal

1. Indicate the level of sewage treatment:
_X__ primary ___secondary ___ tertiary

Pre-treatment (if applicable): _____ screening __X__ maceration

Lagoons (if applicable): _X__ anaerobic ____ aerobic ____ facultative

2. Indicate the capacity of the sewage treatment facility. Approximately 3,400m^3

3. Based on current population projections, the facility will meet the needs of the community until the year 2015.

4. Average depth of the wastewater lagoon is 7 feet or 96 inches.

5. What is the design freeboard? _____0.5_____M.

6. Indicate the retention time of the sewage while in the treatment facility __305_days.

7. Indicate the estimated rate of discharge of wastewater __Not Available__L/sec.

8. Indicate the location of the discharge point. Please see photo 3

9. Is the discharge: __X__ seasonal ____ continuous
If the discharge is seasonal, during what month(s) is it done? _____July_____
What is the duration of the discharge (days/weeks/months) ? _____One Day_____

10. Are there any changes planned in the sewage disposal facilities?
__X__ No ____ Yes
If yes, attach a copy of the plan or indicate changes and include an implementation schedule.

Include excerpt from MACA Capital Plan if available.

Solid Waste Disposal

1. Indicate the capacity of the disposal area: exceeds 50 years as detailed in the environmental management plan.

2. *The average* depth of the solid waste disposal site 1.5 M.

3. The current facility will meet community needs until the year 2050+

4. Do any natural watercourse enter the solid waste disposal area? What methods are used to decrease the amount of runoff water entering these areas?
The disposal area is located in a small valley and as such is a natural drainage area.

No methods are used to decrease amount of runoff entering this area. See attached photo 4 and maps 3 & 4

5. Indicate the volume of water that may enter these areas from any source(s) and attach all pertinent details of the diversions.

Source	Volume (m^3/day)
natural drainage	Unknown

6. Please describe any diversions of watercourses:
Not applicable

7. Are there any changes planned in the solid waste disposal facilities?
____ No __X__ Yes

If yes, attach a copy of the plan or indicate changes and include an implementation schedule, Include excerpt from NACA Capital Plan if available.
AES, DND and PWGSC have discussed a 5 year landfill strategy.

PWGSC have completed the Environmental Audit of the Weather Station and provided a waste management strategy. Implementation of the plan is an ongoing activity.

Other

1. Describe any additional details on the existing municipal facilities which should be considered by the Nunavut Water Board during it review.

Appendices:

APPENDIX A

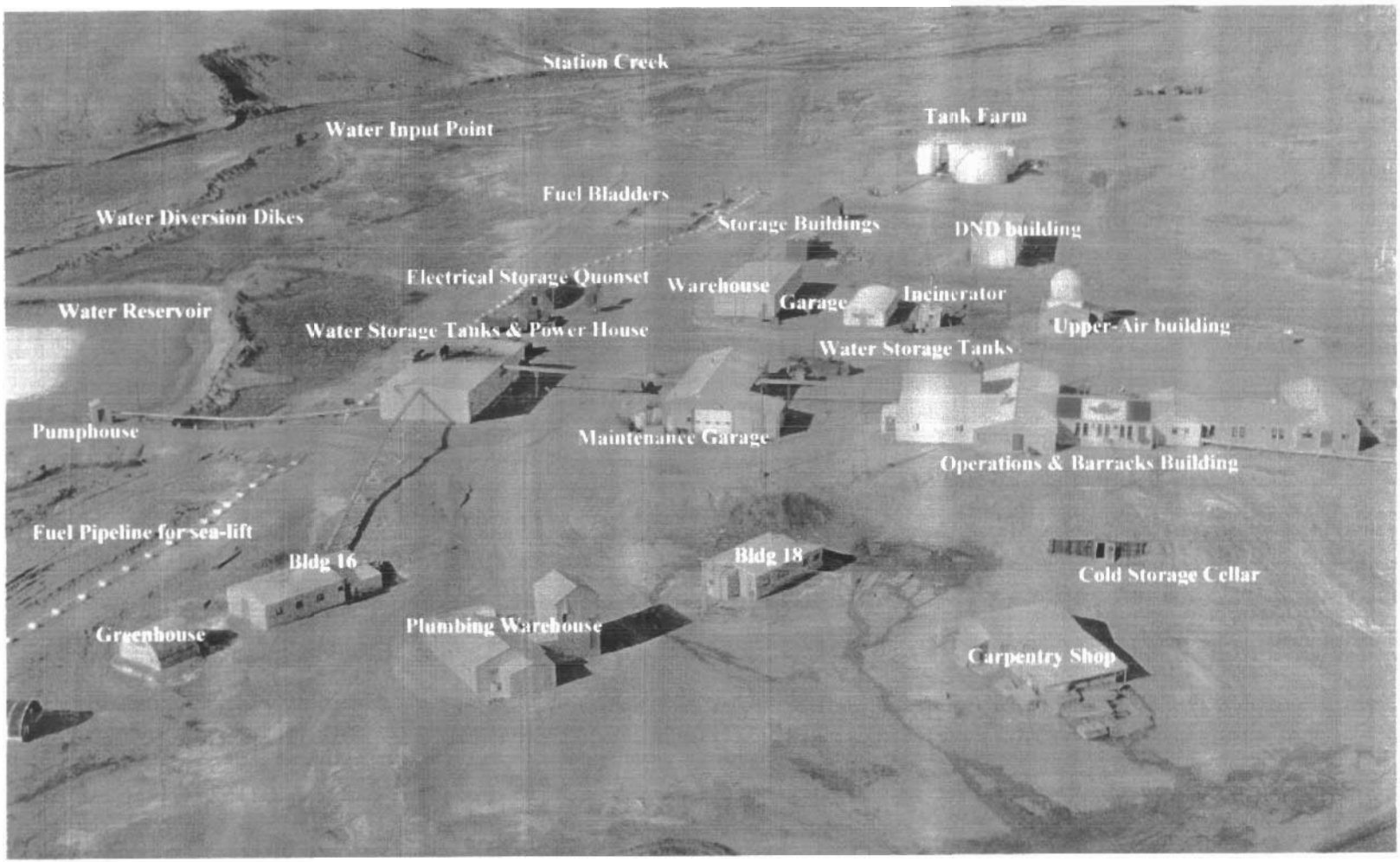
Station Creek
Water Input Point
Tank Farm
Fuel Bladders
Water Diversion Dikes
Storage Buildings
DND building
Electrical Storage Quonset
Warehouse
Garage
Incinerator
Water Reservoir
Water Storage Tanks & Power House
Upper-Air building
Water Storage Tanks
Pumphouse
Maintenance Garage
Operations & Barracks Building
Fuel Pipeline for sea-lift
Bldg 16
Bldg 18
Cold Storage Cellar
Greenhouse
Plumbing Warehouse
Carpentry Shop

Photo 1

Eureka Water Reservoir & Creek

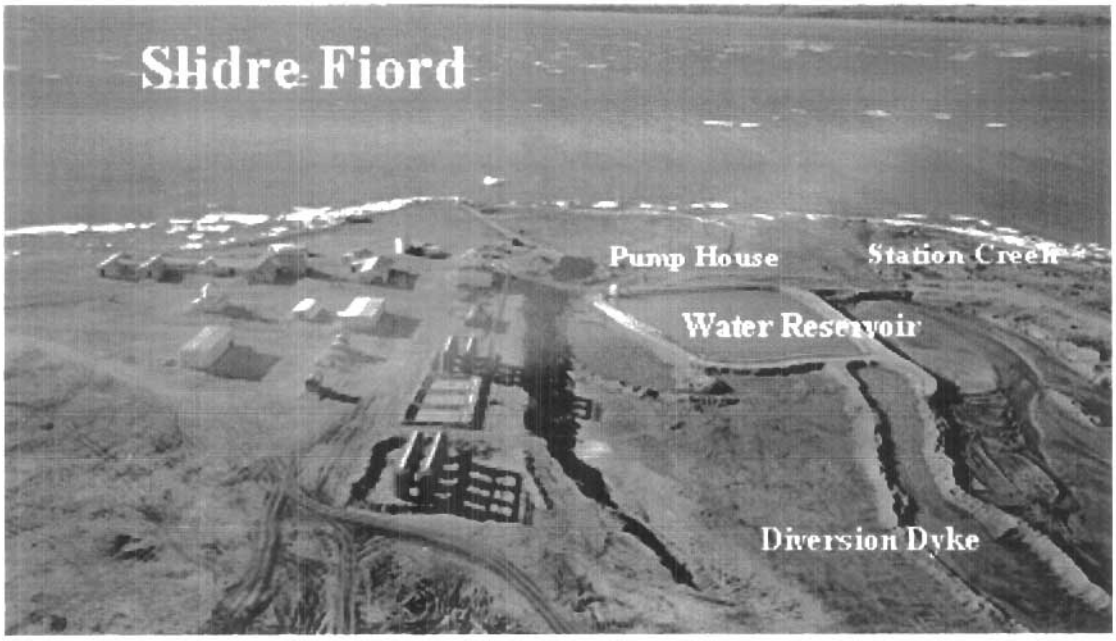

Photo 2

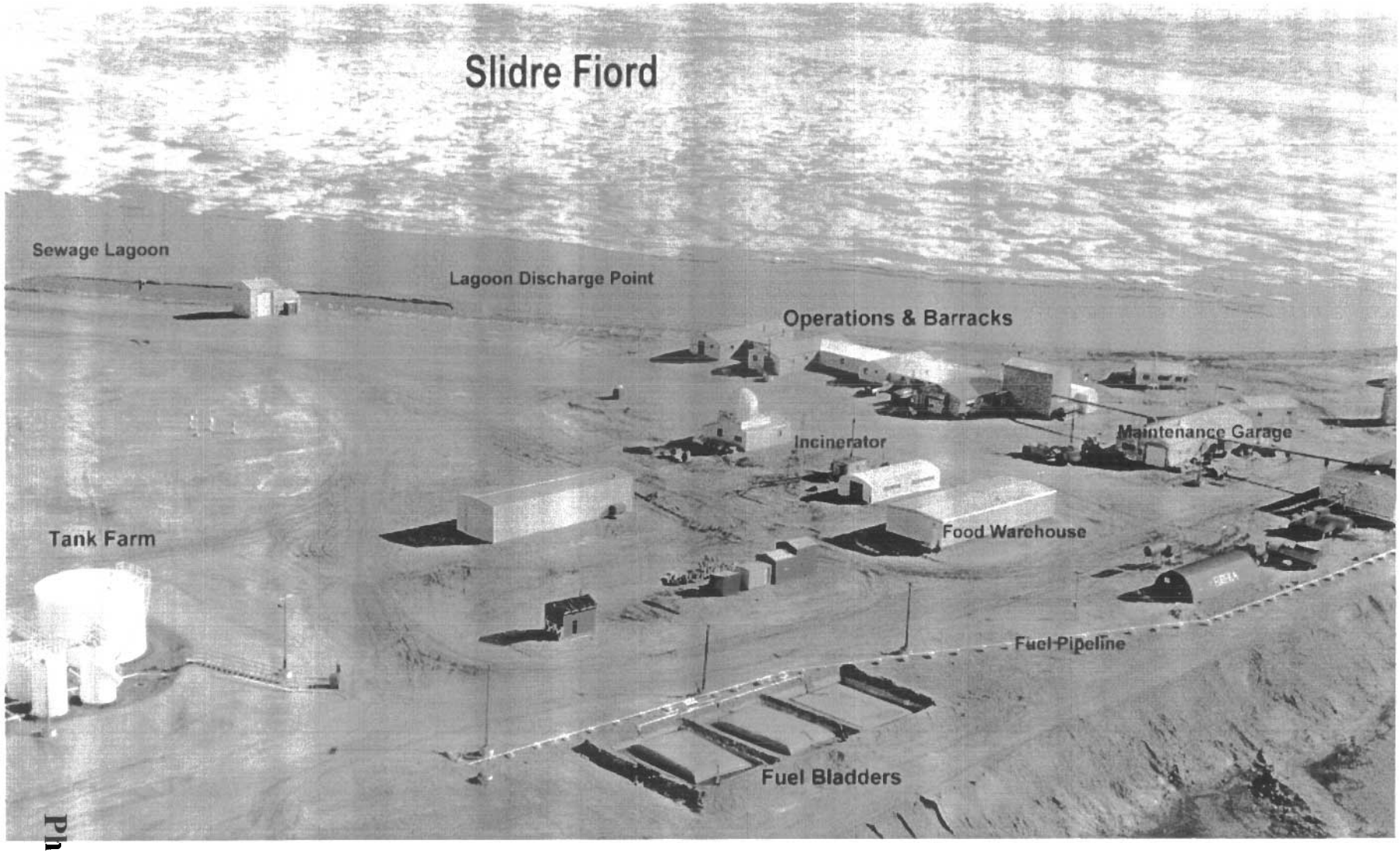
Slidre Fiord
Sewage Lagoon
Lagoon Discharge Point
Operations & Barracks
Incinerator
Maintenance Garage
Tank Farm
Food Warehouse
Fuel Pipeline
Fuel Bladders

Photo 3

Landfill Southeast of Airstrip

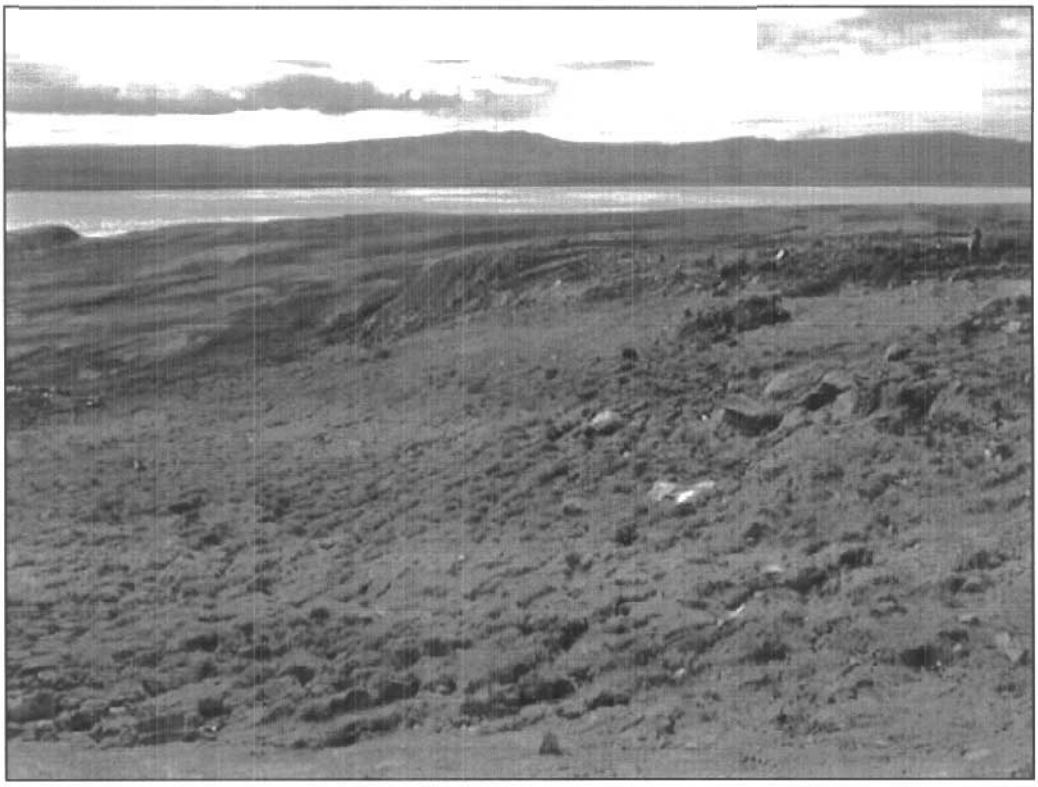

Photo 4