

INITIAL ENVIRONMENTAL EVALUATION  
OF THE  
NORTH WARNING SYSTEM PROJECT  
ELEVEN LONG RANGE RADAR SITES  
AND THE  
SHORT RANGE RADAR DEVELOPMENT SITE  
VOLUME ONE

MONENCO-EYRETECHNICS GROUP

OCTOBER 1987

ANNEX G

FOX-3

DEWAR LAKES, N.W.T.

ANNEX G

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## PART 1

### INTRODUCTION

- 1.1 The Dewar Lakes station, (FOX-3), is the site of an original DEW Line auxiliary station built between 1955-57. FOX-3 will become a LRR for the NWS when renovations are completed in 1988.

## PART 2

### PROJECT DESCRIPTION

2.1 The exact location of FOX-3 is  $68^{\circ}40'48''$  N and  $71^{\circ}41'48''$  W which is almost the geographic centre of Baffin Island.

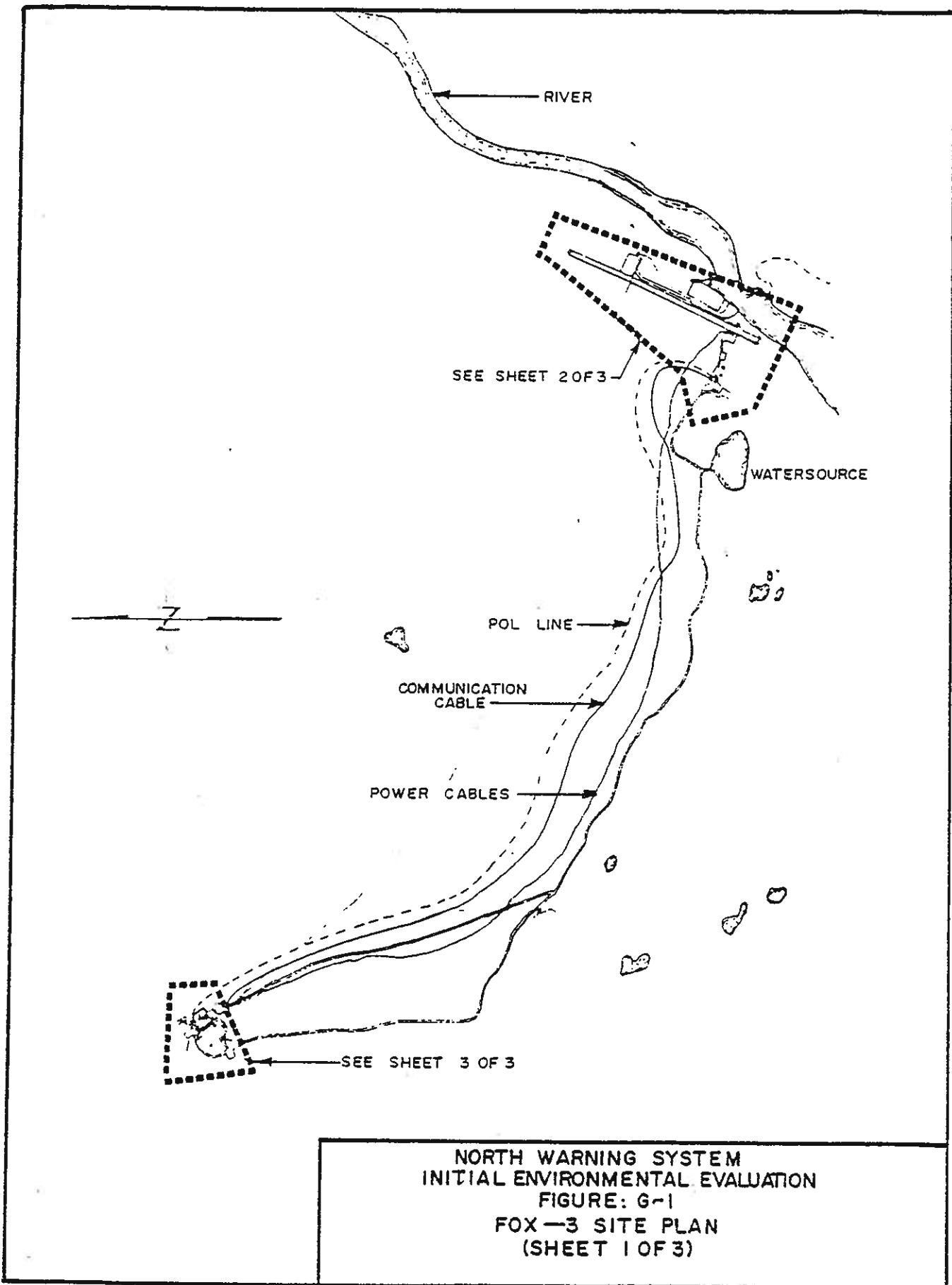
2.2 Access to the station is by aircraft only: the site is landlocked.

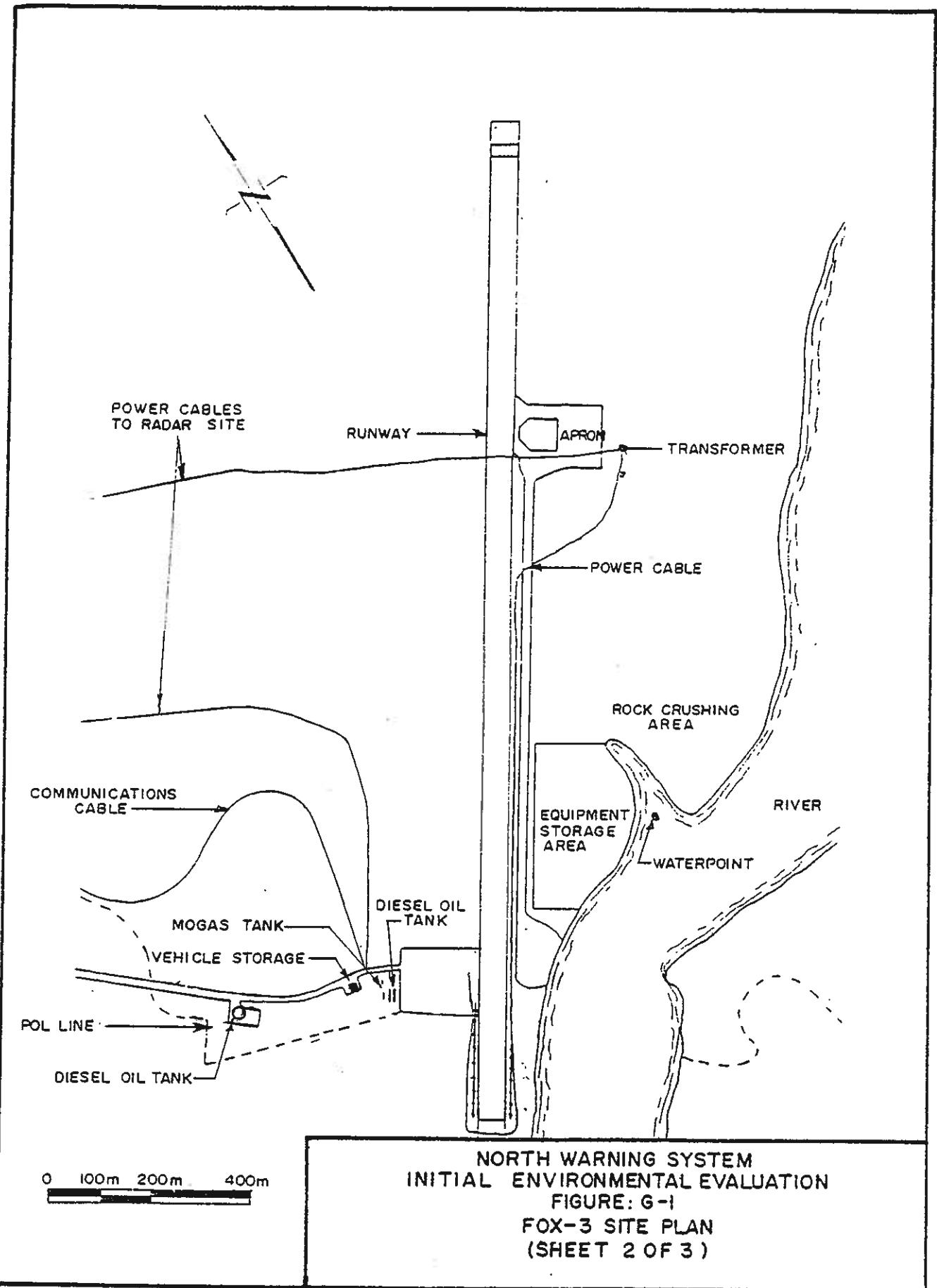
2.3 The specific layout of the station is presented in the Figure G-1. The present station which occupies an area of 1643 hectares, consists of 9 buildings. The facility is self-sufficient and includes a 25 module accommodation and service train. An auxiliary accommodation train to house construction workers is also located on site.

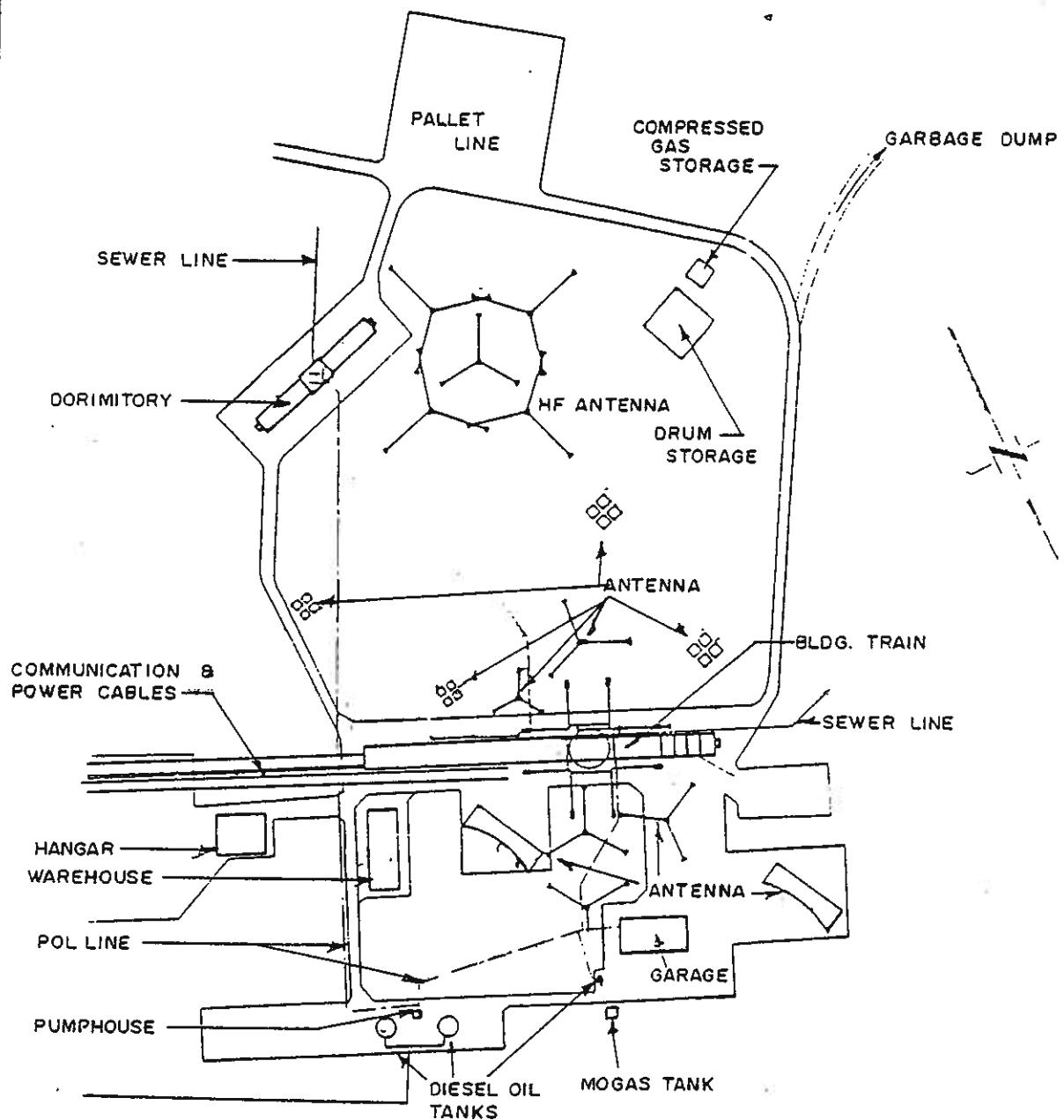
2.4 Present staff requirements are 18 but this will be reduced to 10 for NWS O&M.

2.5 The site is in two parts with the airport located just north of one of the Dewar Lakes and the main buildings at an elevation of 525 m above sea level and 6.5 km west on an adjacent hill.

2.6 The radome atop the module train as well as support C&E will be updated and modified to convert the station into a LRR. A new, more powerful electric power generation system, two







NORTH WARNING SYSTEM  
INITIAL ENVIRONMENTAL EVALUATION  
FIGURE: G-1  
FOX-3 SITE PLAN  
(SHEET 3 OF 3)

SGTs, radome modifications and internal renovations to the electronics and communications modules will be required.

2.7 The construction activities during the summers of 1986 and 1987 would be the source of any environmental disturbance. Approximately 20 additional persons will be on site at the peak of the construction season in mid-summer.

## PART 3

### EXISTING ENVIRONMENT

#### 3.1 Biophysical Resources

3.1.1 FOX-3 is located adjacent to Dewar Lakes, an extensive chain of lakes, a kilometre or more wide and about 50 kilometres long, in central Baffin Island. Baffin Island is about 200 km across at this point and the Dewar Lakes are about equidistant from each coast. The terrain slopes downward from east to west with high rugged mountains and long fiords to the east and low lying plains, glaciated hills and lakes to the west. The chain of lakes is in a valley at 150 m above sea level.

3.1.2 Evidence of glaciation is seen throughout the region in the form of pronounced scouring on the hills.

3.1.3 Total annual precipitation is 23 cm including 115 cm of snow. Maximum and minimum temperatures recorded at the station are 19°C and -46°C respectively. These temperatures are neither as cold nor as warm as those experienced close to the ocean on either coast of Baffin Island.

3.1.4 Wildlife is not common in the area. Vegetation is sparse and more suitable habitat for birds and caribou occurs nearer the ocean. However, the FOX-3 site is frequented by wolves and

caribou from the Baffin Island herd. Although the herd is generally located farther west, small groups of caribou occasionally wander through the Dewar Lakes area.

3.2 Socio-economic Setting

3.2.1 FOX-3 is one of the more isolated DEW Line sites. It is accessible by air only and there are no Inuit communities in the region. Hall Beach is over 400 km west across Fox Basin whereas the community of Broughton Island is in the opposite direction about 350 km east. The Dewar Lakes region is not frequented by Inuit and the station is not used as a distribution centre for visitors enroute to other DEW Line sites.

3.3 Land Use

3.3.1 FOX-3, including two sites 6.5 km apart, occupies about 1643 ha. There are no other formal commitments of land in the region. Auyuittuq National Park is 150 km to the southeast.

3.4 Heritage Resources

3.4.1 The reason why Inuit do not frequent the Dewar Lakes region today, lack of wildlife resources, is perhaps consistent with

the absence of known archaeological sites. There are no known heritage resources in the vicinity of FOX-3. This may reflect the actual lack of sites but more likely indicates that no detailed surveys have been conducted.

3.4.2 Although FOX-3 is east of major concentrations of caribou from the central Baffin Island herd, the herd nevertheless is considered an important heritage resource of northern Canada and in particular of Baffin Island.

## PART 4

### PROJECT IMPACTS AND MITIGATIVE MEASURES

#### 4.1 Potential Impacts

4.1.1 It is anticipated that although there will be an increase in the level of activity at FOX-3 due to summer construction activity there will be no appreciable environmental impacts.

4.1.2 The following discussion of potential impacts is predicated upon the assumption that FOX-3 is presently operated in an environmentally acceptable manner. Thus the evaluation addresses the incremental effects of construction activities required to convert the existing DEW Line station to a LRR and the effects of subsequent O&M over the expected 20-year lifespan.

4.1.3 Aircraft will utilize the airport in direct proportion to the level of construction activity either to bring supplies or to ferry men and equipment into and out of the site. FOX-3, unlike most other DEW Line sites, is not accessible by sea, consequently all construction personnel and equipment have to arrive by aircraft.

4.1.4 The limited wildlife in the region should not be disturbed by this temporary increase in aircraft activity due to construction activity.

4.1.5 Any potential sources of environmental impact other than aircraft activity will result from the presence of construction noise and activity. This activity is limited to modifications to existing buildings and installation of two SGTs. All activities will be within the area presently occupied by the upper station.

4.1.6 In the future, the site size is expected to remain constant and although the numbers of personnel are expected to be reduced from 18 to 10 the activities should remain consistent with what has occurred over the past 30 years. Consequently, the O&M and decommissioning and abandonment activities at FOX-3 do not represent significant sources of environmental disturbance.

4.1.7 The following table lists the site alterations which will be required to upgrade FOX-3 to a LRR.

EXISTING SITE COMPONENTS	EXPECTED ALTERATIONS	NET CHANGES
<b>1. TERRAIN</b>		
General Features	. No change	None
Prominent Features		
Roads/Culverts	. No change	None
Surface Drainage		
<b>2. AIRPORT/RUNWAY</b>		
Buildings	. Increase in aircraft movements	. Use frequency up during 2 summers of construction activities
Landing Strip	. No change	
Cut & Fill		
Refuelling Facility		
<b>3. CAMP SYSTEMS</b>		
General Site Buildings	. Modification to 2 modules and radome	. Internal modifications to communications and electronics modules . Strengthen, stiffen radome tower
Construction Buildings	. Existing facilities adequate	. No change
Water Supply/Source	. Source adequate	. Increase use rate expected during two summers
Water Treatment		
Sewage Disposal	. Adequate services	. Increased requirements during two summers
Sewage Treatment		
Garbage/Waste Disposal		
Heating System	. Larger power plant required	. Install increased generation capacity.
Power Systems		
<b>4. STORAGE</b>		
Fuel Tanks/Berms	. Adequate	. Increased use rate expected
Drums/Pipelines		
Other Liquids		
<b>5. SCRAP</b>		
Materials/Vehicles	. Scrap from building renovations	. Dispose of debris by landfill

EXISTING SITE COMPONENTS	EXPECTED ALTERATIONS	NET CHANGES
6. HARBOUR/BEACH		
Shoreline	. Not applicable	. Not applicable
Dock/Landing Area		
Staging Area		
Boats, Other Vessels		
7. QUARRIES/GRAVEL SOURCE		
Land Use	. Existing source.	. None
Stock Pile	adequate	
8. NOISE SOURCES		
Machinery/Buildings	. Construction activity	. Minor increase in
Vehicles/Aircraft	. Vehicle traffic	noise during two
Activities		summers of
9. WILDLIFE		construction
Animals/Habitat	. No change	. None
Birds/Habitat		
Marine Animals		
10. VEGETATION		
General Features	. No change	. None
Plants etc.		
11. ASTHETIC/VISUAL		
Towers	. No change	. None
Lights		
12. COMMUNITY		
Village	. No close communities	. No change
Resource Use		
Activities		
Other		
13. PEOPLE		
NWS	. Seasonal increase	. Increase of
Others	during construction	10 - 20 construction
	for two summers	staff for 2 summers
	. Reduced staff for O&M	. Reduction of regular
		staff from 18 to 10
		for O&M
14. HISTORICAL RESOURCES		
Archaeological Sites	. None known to exist	. No change
Artifacts		

Site: DEWAR LAKES

FOX-3

EXISTING SITE COMPONENTS	EXPECTED ALTERATIONS	NET CHANGES
15. PROTECTED AREAS Parks etc.	. None in region	. No change
16. ENVIR./SOCIO-ECONOMIC ISSUES Type	. No change	. None
17. OTHER	. None	. None

#### 4.1.1 Biophysical Resources

4.1.1.1 A review of the Valued Ecosystem Components and potential issues in Table 3-1 suggest that no biophysical resources will be affected by the construction activities to convert FOX-3 to a LRR. Similarly, O & M activities by a reduced staff will have negligible effect.

#### 4.1.2 Socio-economics

4.1.2.1 Dewar Lakes is distant from any regional communities. All construction personnel will be brought to site by the contractor: no supplies will be purchased from northern communities, nor will residents be hired for construction. There will be no direct socio-economic impact from construction activities.

4.1.2.2 There is a potential for northern residents to be hired for O&M but hiring practices will be the responsibility of the O&M contractor.

4.1.3 Heritage Resources

4.1.3.1 There are no known heritage sites near the FOX-3 site and all construction activities will be restricted to the existing site area so there is no potential for disturbance of archaeological sites.

4.2 Residual Effects

4.2.1 It is not anticipated that there will be any incremental residual impacts from the FOX-3 LRR construction or operation. Except for a reduction in staff, there will be no significant change in the size or layout of the site, nor in the daily O&M activities.

4.3 Monitoring Programs

4.3.1 As part of current ongoing site O&M equipment is maintained at a high level of reliability including fuel transfer and storage facilities and waste disposal facilities. These procedures will continue and also be refined by the implementation of an environmental protection plan for the NWS. No monitoring programs are anticipated at this time

but, as required by future circumstances, appropriate programs could be implemented to define unanticipated environmental changes or monitor the success of some mitigative efforts.

4.4 Trade-offs and Alternatives

4.4.1 Site location and standard operating procedures will be maintained consequently there are no relevant alternatives to the proposed facility modifications at Dewar Lakes.