



March 31, 2004

Project No.: FOX-M (3.6)

Ms. Phyllis Beaulieu
Licensing Administrator
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0A 1J0

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BS	
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TA1	
TA2	
RC	
ED	
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BRD	
EXT.	



Dear Ms. Beaulieu:

RE: 2003 Annual Report for Water Use License #NWB5HAL0308

UMA Engineering Ltd. is submitting the following annual report as per the requirements of Part B.1 of the above noted water use license. The report is being submitted on behalf of Defence Construction Canada and the Department of National Defence.

The contractor arrived at the FOX-M site in August 2003. The following is a summary of the work completed at FOX-M in 2003:

- Most of the construction camp and supporting facilities were set up.
- The Temporary PCB Storage Area was established.
- Gravel hauling began in preparation of the construction of the Tier II Soil Disposal Facility, Non-Hazardous Waste Landfill and the Landfarm.

The work plan for 2004 will be to continue with the clean up activities as described in the project description. An overall site plan is included to show the locations of the various work areas described in this report.

The contractor is using municipal facilities for water and sewage disposal. Therefore, no quantities of water used or sewage discharged were recorded. Also, there were no unauthorized spill incidents at FOX-M to report.

A community meeting was held in Hall Beach on March 11, 2003 to discuss the clean up program at FOX-M. A copy of the presentation and meeting notes is attached to this report.

J:\General\Earth & Water\Eva Schulz\DEWLINE\2004\FOX-M\2003 reports\L-NWB-01.doc

March 31, 2004
Ms. Phyllis Beaulieu
Nunavut Water Board
Page 2



We trust the information provided is consistent with the requirements of Water Use Licence #NWB5HAL0308. Please feel free to contact the undersigned if you have any questions or comments.

Sincerely,

UMA ENGINEERING LTD.

A handwritten signature in black ink, appearing to read 'Eva Schulz', is placed over the typed name and email address.

Eva Schulz, P.Ag.
Environmental Scientist
eschulz@umagroup.com




Encl. Overall Site Plan
Community Meeting Notes

cc: Jim Wall/Philippe di Pizzo, NWB
Phil Warren, DCC

General Notes:

1. BORROW AREAS #1 AND #5 ARE THE ONLY REMAINING AVAILABLE BORROW AREAS FOR FOX HAN. BORROW AREAS #1, #2 AND #4 ARE NO LONGER AVAILABLE TO THE CONTRACTOR.
2. THE EXTENT OF BORROW AREAS #3 AND #5 IS APPROXIMATE.

Legend:

-  BODY OF WATER
-  PROPERTY LINE
-  BORROW AREA

No.	DATE	REASON	REVISION	APPROV.



THE ASSOCIATION OF
PROFESSIONAL ENGINEERS
OF CANADA
PERMIT NUMBER
P 151
505 ACRES LIMITED

UMA **SMI**

SCALE - EQUAL 200 100 0 200 400 600m

PROJECT - PROJECT
FOX-M HALL BEACH

DEW LINE CLEAN UP

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HER MAJESTY THE QUEEN IN RIGHT OF
CANADA
MINISTER OF NATIONAL DEFENCE

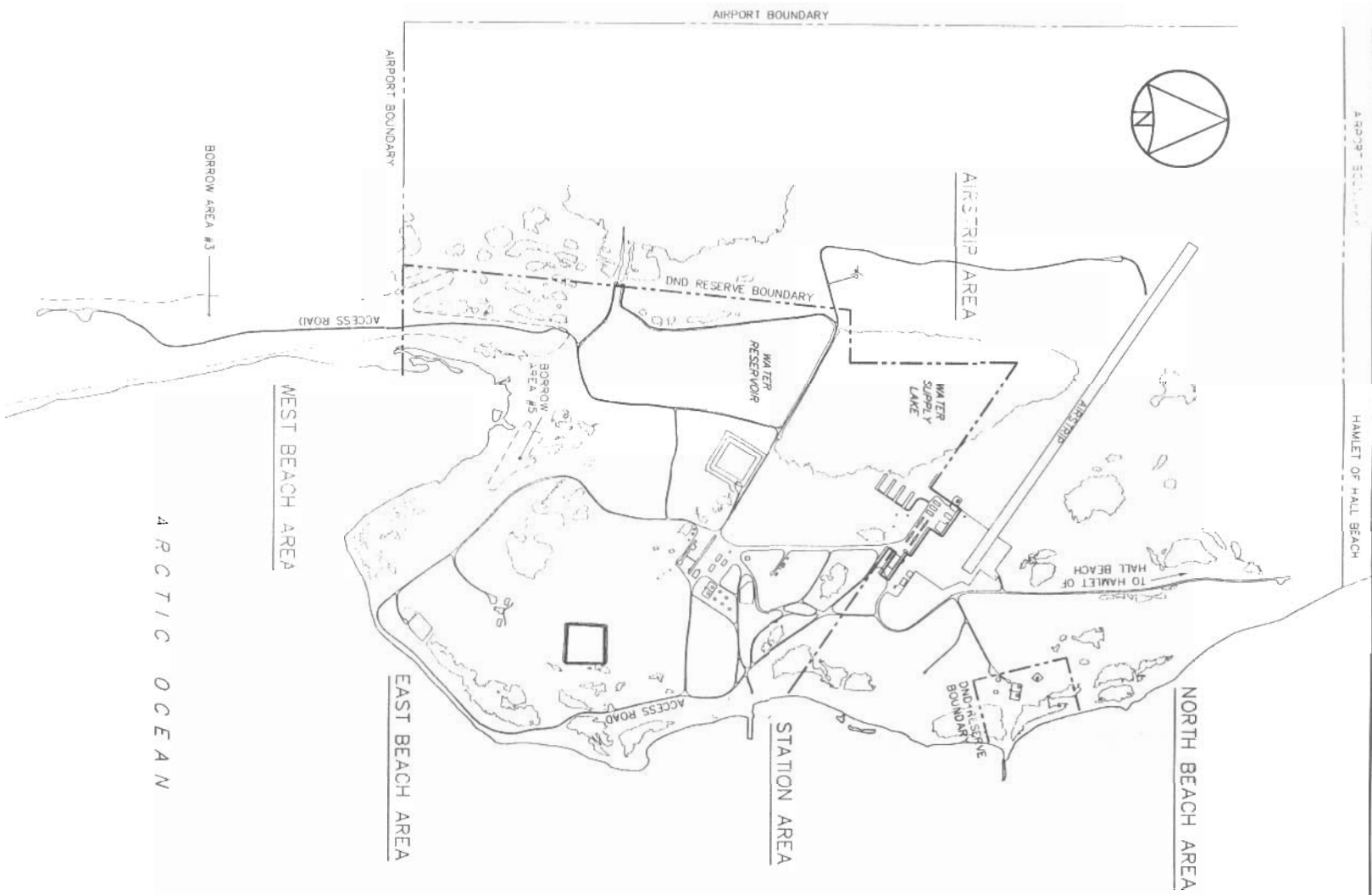
TRACED - WATER	SITING	DATE
		2003-04-28

SUBJECT - SUBJECT

OVERALL SITE PLAN

BORROW TABLE			
DESIGNATION	TYPE	VOLUME (m ³)	
AREA #3	3	AS REQUIRED	
AREA #5	2	18,000 *	

* NOTE:
TYPE 2 MATERIAL REQUIRED ABOVE THE VOLUME
IN AREA # 5 WILL HAVE TO BE CRUSHED TYPE
1 MATERIAL FROM BORROW AREA #3



**DEW Line Clean Up Project
Community Meetings 2003**

March 11th- 12th 2003

Hall Beach (FOX-M)

Gjoa Haven (CAM-2)

July 3rd, 2003

Qikiqtarjuaq (FOX-5)

Community Meetings 2003

Community Meetings

March 11th – 12th, 2003

Hall Beach (FOX-M)

Gjoa Haven (CAM-2)

July 3rd, 2003

Qikiqtarjuaq (FOX-5)

Representatives:

Suzanne Belanger-Fontaine, Department of National Defence

Allison Lobsinger- Department of National Defence

Scott Hamilton, Defence Construction Canada

Nick Monteiro, Defence Construction Canada

Wayne Ingham, Environmental Sciences Group

Daniela Looock, Environmental Sciences Group

Roland Merkosky, UMA Group

Barry Fedorak, UMA Group

Randy Wheeler, SGE-Acres Group

Tania Guty, Public Works and Government Services Canada

Community Meetings for the New Starts in 2003

During the week of March 10th, 2003, public meetings were held at Hall Beach and Gjoa Haven, followed by a public meeting in Qikiqtarjuaq on July 3, 2003. The purpose of these meetings was to update the communities on our site work plan for the summer of 2003. This document contains a copy of each presentation delivered, the minutes of the meetings, as well as pictures of the events and the communities themselves.

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Trip Itinerary

Hall Beach –March 11th, 2003

Meeting at 7 pm - Hamlet Council Chambers, Hall Beach

Presenters: Scott Hamilton, Nick Monteiro, Wayne Ingham, Randy Wheeler

Support: Daniela Looock,

Gjoa Haven – March 12th, 2003

Meeting at 7 pm – Community Hall, Gjoa Haven

Presenters: Scott Hamilton, Daniela Looock, Roland Merkosky

Support: Nick Monteiro, Wayne Ingham, Randy Wheeler

Qikiqtarjuaq – July 3rd, 2003

Meeting at 7:00- Avviuujaq Gymnasium

Presenters: Suzanne Belanger-Fontaine, Scott Hamilton, Wayne Ingham, Barry Fedorak, Tania Guty.

Support: Daniela Looock, Allison Lobsinger

Hall Beach Community Meeting (FOX-M)

Hamlet Council Chambers, March 11th, 2003

7:00pm –12:00pm

Attendance

There were approximately 35-40 members of the community in attendance, as people entered the chambers they signed an attendance sheet, the following is a list of those of those people.

Jopie Kaernerck (Mayor), Elijah Kaernerck (Deputy Mayor), Peter Kadlutsiak (Councilor), Solomon Qanatsiak (Councilor), David Iqittuq (Councilor), Peter Nuvviaq (Councilor), Jayko Simoni (Translator), Bill Buckle (SAO), Jason Kaernerck, Simonie Kaernerck, Joe Curley, Albert Nuvviaq, Abigail Kaernerck, Abraham Qammaniq, Valerie Curley, Nagleena Innuksuk, Jonah Anguilianuk, Elizabeth Ikeperiar, Itani Issigaitok, Leo Innuksuk, Lou Nattuk, Billy Kamatsiak, Andrew Allianaq, Goola Paaneak, Diane Anguilianuk, Bob Mulhern

In addition approximately 10 residents and elders of Hall Beach who did not sign in

Translator: Jayko Simoni

Brief Agenda

1. Introduction and prayer by Mayor Jopie Kaernerck
2. Presentations:
 - General introduction to the DLCU Project - Scott Hamilton (DCC)
 - Summary of due diligence work conducted at FOX-M in 2002 - Nick Monteiro (DCC)
 - Overview of environmental investigations conducted at FOX-M - Dr. Wayne Ingham (ESG)
 - Overview of engineering component of the cleanup at FOX-M - Randy Wheeler (SGE/UMA)


Door prize: A pair of binoculars was awarded as a door prize at the end of the meeting.

3. Group Discussion Highlights
4. Detailed meeting notes can be found in Appendix A
5. Pictures taken at the meeting and of the community, as well as aerial views of the Hall Beach Dew Line Site can be found in Appendix B

2.Presentations

DEW LINE CLEAN UP (DLCU)

HALL BEACH PUBLIC MEETING FOR FOX-M DEW LINE SITE
MARCH 11, 2003

Defence Construction Canada Construction de Défense Canada National Defence Défense nationale

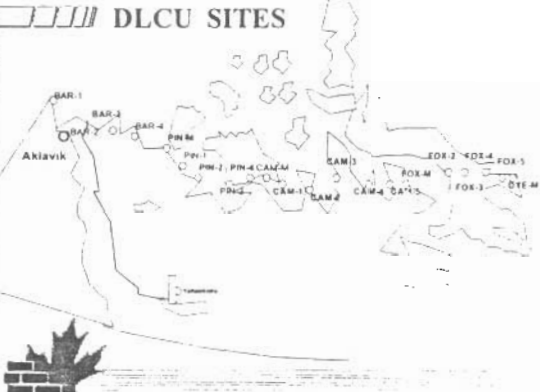
Purpose of the meeting

- To inform the residents of Hall Beach about the status of the DEW Line Clean-Up project
- To provide information on the work to be done near Hall Beach over the next few years

Presentation Outline

- DEW Line Clean up:
 - The Project Team and Typical Clean up Activities
 - Work Performed To Date- Nick Monteiro
 - Site Investigation Findings- Dr. Wayne Ingham
 - Clean Up Plans - Roland Merkosky, P.Eng/Randy Wheeler, P. Eng
 - Expected Timelines For Clean up-Scott Hamilton
- Questions

DLCU SITES



Who we are

DEPARTMENT OF NATIONAL DEFENSE
DIRECTOR GENERAL ENVIRONMENT
Ginger Storrer, Director General
Hélène Belthiaume, Project Director

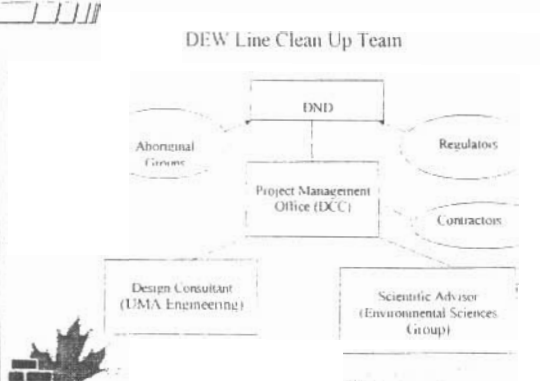
DEFENCE CONSTRUCTION CANADA
DEW Line Clean-Up Project
Lt Colonel Daniel Paquet, Project Manager

Environmental Sciences Group (ESG)
Royal Military College, Kingston
Dr. Wayne Ingham, Project Manager

DEFENCE CONSTRUCTION CANADA
Project Management Office (PMO)
Scott Hamilton-Environment Officer
Nick Monteiro-Associate Project Manager


UMA Engineering Group
Roland Merkosky, P. Eng
SCE A-001
Randy Wheeler, P. Eng

DEW Line Clean Up Team




Project Management Office (PMO)

- Responsible to DND for overall implementation of the project
- PMO consists of a project manager, 3 associate project managers, project engineers, a contract manager and an environmental/ quality assurance officer
- Generates and oversees implementation of project (from start to finish)



Project Team

- Environmental Sciences Group
 - RMC (DND organization)
 - lead in protocol development
 - act as scientific advisor
 - conduct on site delineation work
 - confirmatory testing
- UMA Engineering Limited
 - engineering consultant/ advisor
 - on site surveys of landfills and infrastructure
 - prepare site specific designs and cost estimates
 - support during implementation




PROJECT AIM
At 21 DEW sites;

- Return sites to an environmentally safe condition
- Stop migration of contamination from the sites into the food chain
- Dispose of surplus infrastructure
- Remediate existing landfills

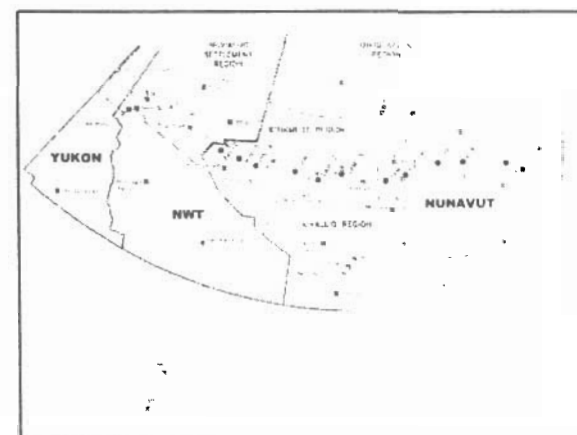


The Distant Early Warning (DEW) radar line

- Replaced by the North Warning System
- 42 sites constructed in the late 50's
- 21 sites were decommissioned in the early 1960's and are the responsibility of the Department of Indian Affairs and Northern Development (DIAND)
- 21 other sites were decommissioned between 1989 and 1993 and are the responsibility of the Department of National Defense (DND)



All the sites are located within Aboriginal land claim areas. The project is a cooperative project with the Aboriginal People.

1998: Environmental agreement signed by DND and NTI in Cambridge Bay -
Addresses environmental issues and how the clean-up will be carried out
within Nunavut.

- Landfill containment
- Hazardous materials
- Asbestos
- Contaminated soils
- Testing to ensure the clean-up has been done properly
- Restoration (grading, erosion protection, limiting disturbance when obtaining gravel, soils, seedings when required...)
- Monitoring landfills
- Schedule for the clean-up




Economic Agreement - signed in August 2001 in Iqaluit

- Economic benefits by ensuring Inuit economic participation
- Jobs, training and business opportunities addressed
- Training allocation (\$750,000. For Nunavut sites) in support of NTI training plan
- Competitive contracts specify Inuit content and participation




Economic Agreement - signed in August 2001 in Iqaluit

- Increase access by Inuit to career training, on the job training, apprenticeship
- Increase opportunities for Inuit to receive training and experience to create, operate and manage Inuit owned businesses in Nunavut
- Establish a mechanism whereby contractors fulfill their agreements on levels of Inuit participation.




HIGHLIGHTS

- DND retains long term environmental responsibility
- Monitoring program
- Cooperation Agreements with IRC and NTI
- 10 year implementation plan
- 25 year monitoring program




Members of the Steering Committee

- James Ertsonlook - NTI
- Charlie Evalik - KIA
- Ihomasse Alikatuktuk - QIA
- Ginger Stones - DND
- Holmer Hesthaume - DND
- Project Manager - DND

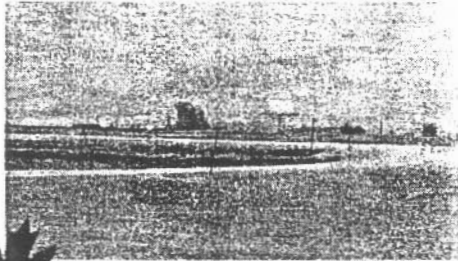



Impact of the clean up on communities

- Overall positive impact on wildlife, fish and marine mammals as contamination sources will be removed
- Remove safety hazards
- Clean up of the land around the site
- Economic, employment and training opportunities for area residents


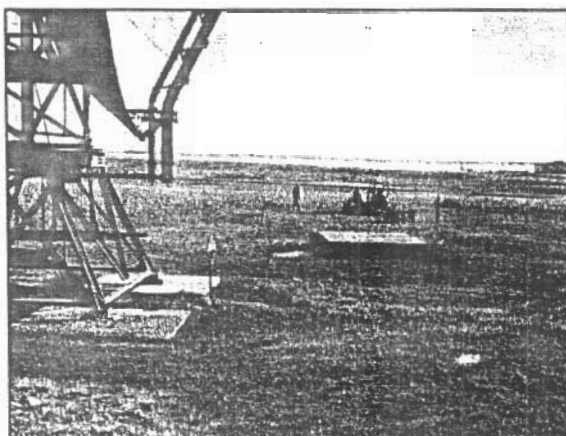
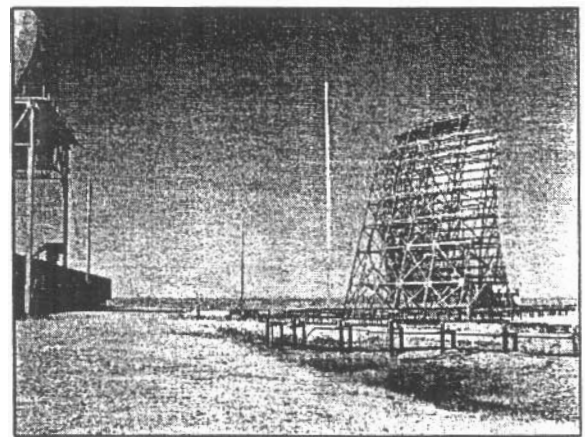


FOX-M is the 2nd largest DEW Line site.

Typical DEW Line Clean up Activities

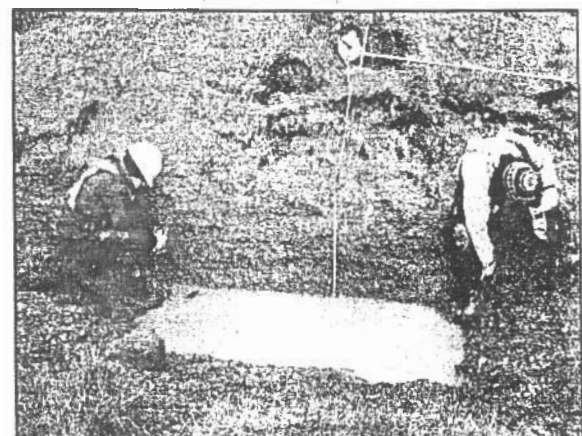
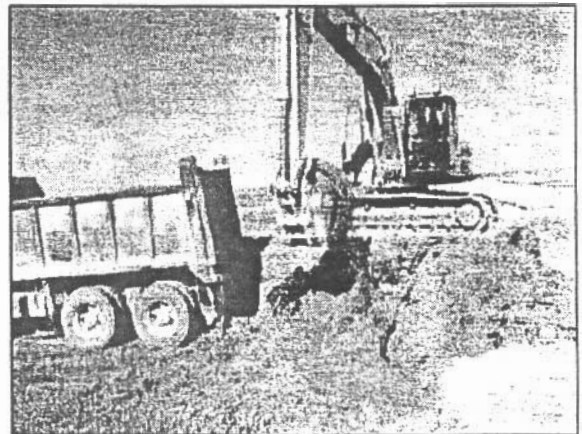
- Demolition of Surplus Infrastructure
- Clean up of Contaminated Soils
- Clean up of Old Landfills
- Construction of New Landfills

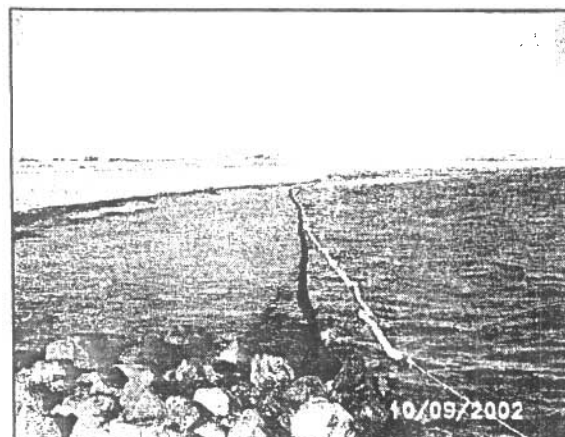
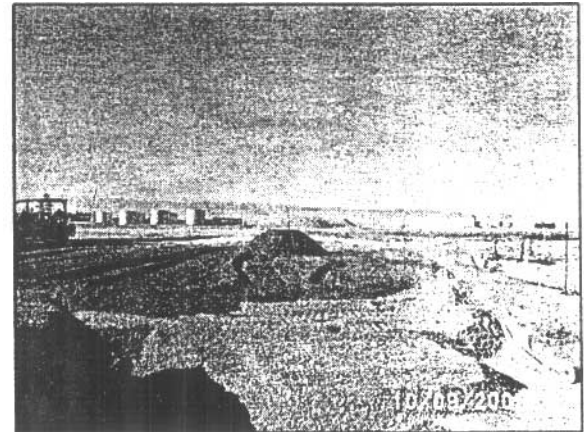
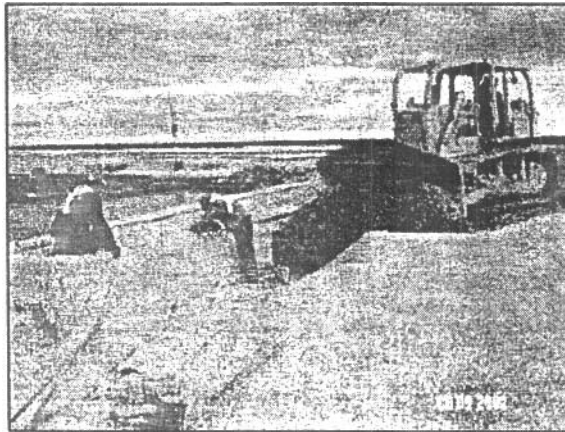
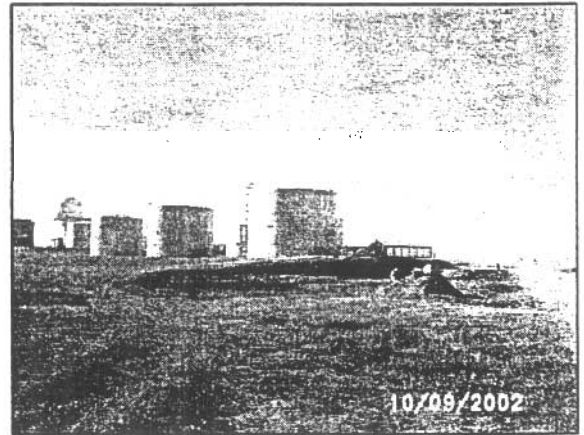
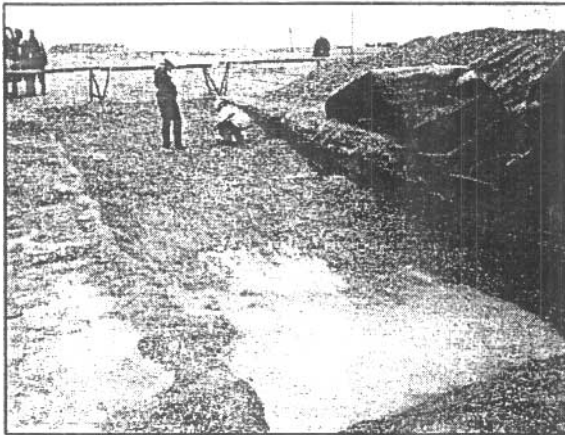



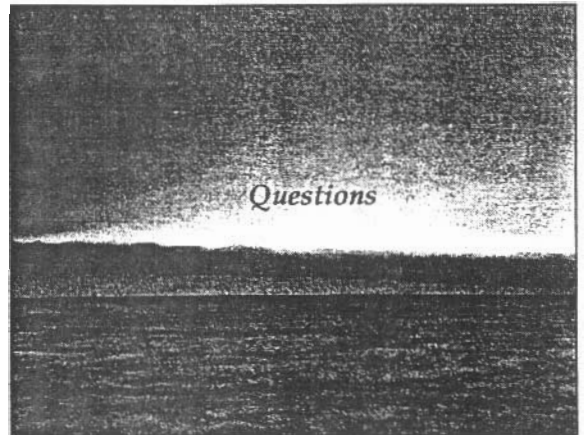
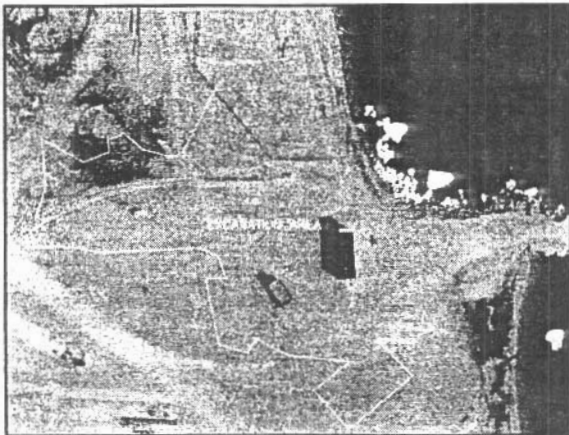


Work Completed at FOX-M in 2002

- Due Diligence Issue - Beach POL Area
- 2002 Scope of Work - secure soil storage area, contaminated soil excavation, environmental protection measures




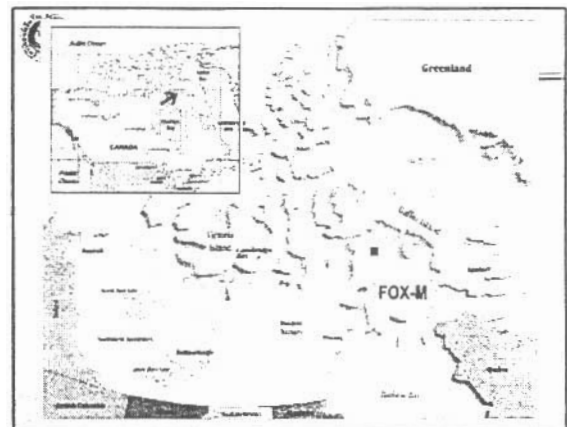




**Environmental Cleanup at the Hall Beach
(FOX-M) DEW Line Site**

Dr. Wayne Ingham
&
Dr. Daniela Loock

Environmental
Sciences Group
Kingston, Ontario
Canada


Role of ESG

- To carry out an environmental investigation of the site
- To provide scientific advice for the cleanup
- To ensure appropriate removal of contaminated soils and materials during the cleanup

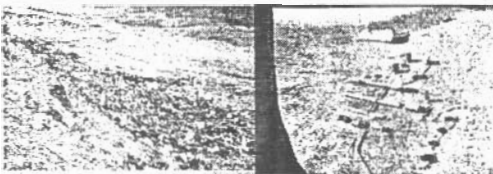

Activity Phases of the DLCU

Sampling Phases

Assessment Investigation Construction Monitoring



Assessment

Initial Assessment

1989:
Initial assessments sponsored by DND/DIAND/USAF



The DEW Line Clean Up Protocol

- To restore sites to an environmentally safe condition
- To prevent migration of contaminants into the ecosystem
- Includes the *DEW Line Cleanup Criteria (DCC)*
- Cleanup plans for individual sites



The DEW Line Clean Up Criteria (DCC):

Contaminant	DCC Tier I (ppm)	DCC Tier II (ppm)
Arsenic		30
Cadmium		5.0
Chromium		250
Cobalt		50
Copper		100
Lead	200	500
Mercury		2.0
Nickel		100
Zinc		500
Polychlorinated Biphenyls (PCBs)	1.0	5.0

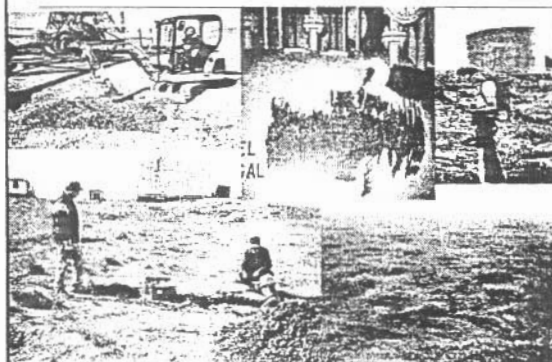


The DEW Line Clean Up Protocol: Acceptance

- Protocol was reviewed by several Canadian government agencies, and accepted in 1991.
- Was subsequently reviewed and revised at meetings in 1993 and 1994.



Investigation

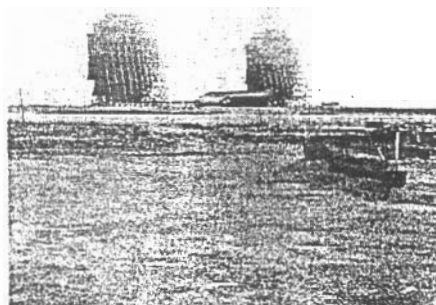


Investigation Phase

- Determine the extent of contamination
- Assess landfills
- Survey of infrastructure and debris
- Quantify gravel sources

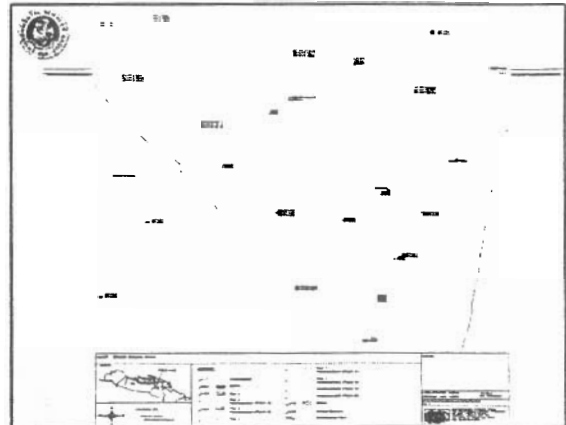


The FOX-M DEW Line Site

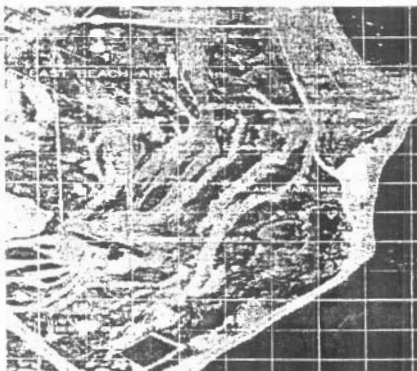
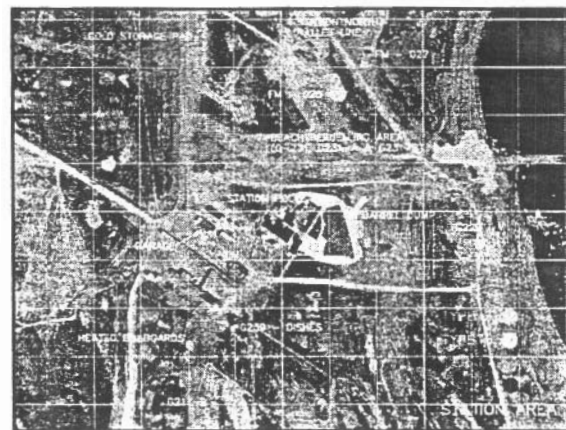


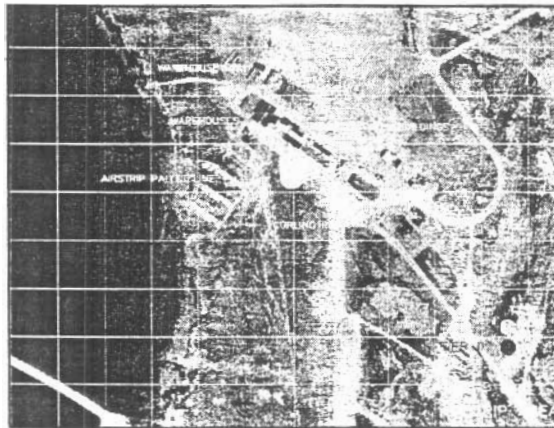
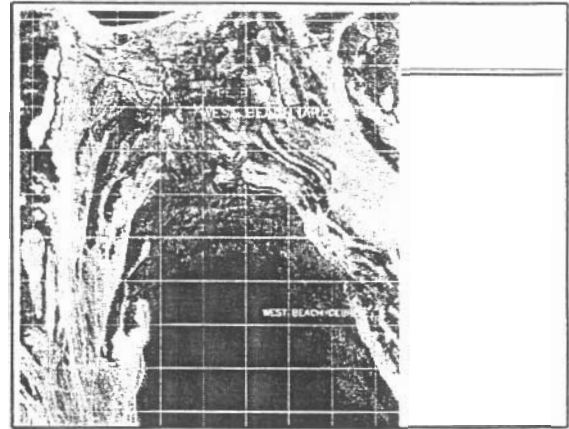
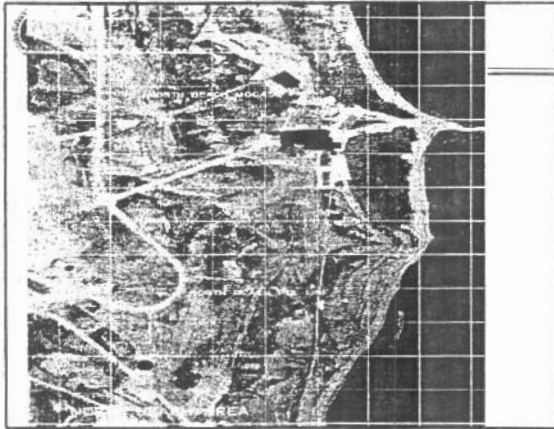



- 1989 and 1990 initial site investigation
- 1999, 2000 and 2001 detailed site investigation
- 2002 present during construction work



- Contaminants found:
TPH, PCBs, arsenic, cadmium, chromium, cobalt, copper, lead, mercury, nickel and zinc
- Contamination is consistent with patterns at other DEW Line sites









Landfill Evaluations

- Environmental Working Group (DND/NTI) evaluates landfills in a consistent manner using a matrix approach
- Source, Pathway and Receptors are taken into account for risk evaluation



Landfill Remediation

- High Risk Landfills
 - Excavate
- Moderate Risk Landfills
 - Leachate contain or excavate (monitoring)
- Low Risk Landfills
 - Regrade (monitoring)



Landfills at FOX-M

- Barrel Dump → Low Risk
- Communications North Landfill → Low Risk
- Communications Northwest Landfill → Low Risk
- East Landfill → Moderate risk