

March 31, 2010

Phyllis Beaulieu  
Licensing Manager  
Nunavut Water Board  
P.O. Box 119  
Gjoa Haven, NU X0B 1J0

Dear Phyllis:

**Project No: Water Use License No.: 1BR-JEN0712**

**Regarding: CAM-1, Jenny Lind Island DEW Line Site**

AECOM Canada Ltd. is providing the attached annual report form as per Section 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.

In addition to the annual report form, we are providing a summary of the work completed to date at the site. The following is a summary of the work completed and of the samples collected as part of the wastewater monitoring and sewage effluent monitoring:

**Work Completed**

**Non-Hazardous Waste Landfill:** Non-hazardous waste material was placed in the facility throughout the 2009 season. When all materials had been disposed of in the facility, it was closed by placing a 1.15 m granular material cap and a 0.5 m layer of granular materials on the berms.

**Tier II Disposal Facility:** Placement of Tier II contaminated soil was completed in August 2009. The facility was then closed by placing a granular material and geomembrane cap.

**Landfarm:** Construction of the landfarm was completed in July 2008 and placement of hydrocarbon impacted soils was completed in June 2009. By the end of the 2009 season, the impacted soils had been remediated to below the applicable criteria. The landfarm was then decommissioned by flattening the berms, removing the liner, and grading the surface to promote positive drainage and minimize standing water.

**Demolition:** Demolition of the warehouse, module train and garage was completed.

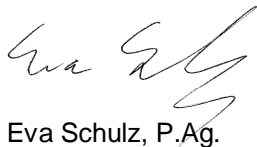
**Community Consultations:** The results of the community meetings held by DCC were submitted with the Project Description. The contractor typically held a project start up meeting prior to each season.

**Spill Incidences:** None.

**Monitoring Results:** The results of the samples collected and analysed in July and August, as required for the monitoring program, are attached. The reports were prepared by the Environmental Sciences Group from Kingston, ON, who serve as the scientific advisors for the clean up work and are on-site for the duration of the work.

We trust the information provided is sufficient. Please feel free to contact the undersigned if you require any additional information.

Sincerely,  
**AECOM Canada Ltd.**



Eva Schulz, P.Ag.  
Eva.Schulz@aecom.com

EMS.  
Encl. Annual Report Form; Site Figures; Monitoring Reports  
cc: Douglas Craig, DCC

NWB Annual Report

Year being reported: 2009 ▼

License No: 1BR-JEN0712

Issued Date: July 23, 2007

Expiry Date: Dec. 31, 2012

Project Name: CAM-1, Jenny Lind Island DEW Line Site Clean Up

Licensee: Defence Construction Canada

Mailing Address: Constitution Square, Suite 1700  
350 Albert Street  
Ottawa, ON K1A 0K3

Name of Company filing Annual Report (if different from Name of Licensee  
please clarify relationship between the two entities, if applicable):

AECOM  
Project Engineer and Regulatory Support

General Background Information on the Project (\*optional):

Military site clean up

Licence Requirements: the licensee must provide the following information in  
accordance with

Part B ▼

Item 1 ▼

**A summary report of water use and waste disposal activities, including, but not limited to:  
methods of obtaining water; sewage and greywater management; drill waste management; solid  
and hazardous waste management.**

Water Source(s): water supply lake

Water Quantity:

55 per day

Quantity Allowable Domestic (cu.m)

976/72 days

Actual Quantity Used Domestic (cu.m)

n/a

Quantity Allowable Drilling (cu.m)

n/a

Total Quantity Used Drilling (cu.m)

Waste Management and/or Disposal

☒ Solid Waste Disposal☒ Sewage 781 cu.m. of effluent and greywater discharged to lagoon☐ Drill Waste☒ Greywater☒ Hazardous☒ Other:

Additional Details:

Details of the waste management and disposal were provided in the application.  
See attached summary for details regarding quantities in 2008.

**A list of unauthorized discharges and a summary of follow-up actions taken.**

Spill No.: (as reported to the Spill Hot-line)

Date of Spill:

Date of Notification to an Inspector:

Additional Details: (impacts to water, mitigation measures, short/long term monitoring, etc)

### Revisions to the Spill Contingency Plan

SCP submitted and approved - no revision required or proposed

Additional Details:

### Revisions to the Abandonment and Restoration Plan

Other: (see additional details)

Additional Details:

The entire project is an abandonment and restoration plan.

### Progressive Reclamation Work Undertaken

Additional Details (i.e., work completed and future works proposed)

### Results of the Monitoring Program including:

**The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where sources of water are utilized;**

Details attached

Additional Details:

**The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where wastes associated with the licence are deposited;**

Details attached

Additional Details:

**Results of any additional sampling and/or analysis that was requested by an Inspector**

No additional sampling requested by an Inspector or the Board

Additional Details: (date of request, analysis of results, data attached, etc)

**Any other details on water use or waste disposal requested by the Board by November 1 of the year being reported.**

No additional sampling requested by an Inspector or the Board ▼

Additional Details: (Attached or provided below)

**Any responses or follow-up actions on inspection/compliance reports**

No inspection and/or compliance report issued by INAC ▼

Additional Details: (Dates of Report, Follow-up by the Licensee)

**Any additional comments or information for the Board to consider**

<b>Date Submitted:</b>	March 31, 2010						
<b>Submitted/Prepared by:</b>	Eva Schulz						
<b>Contact Information:</b>	<table> <tr> <td><b>Tel:</b></td> <td>403-270-9220</td> </tr> <tr> <td><b>Fax:</b></td> <td>403-270-0399</td> </tr> <tr> <td><b>email:</b></td> <td><a href="mailto:eva.schulz@aecom.com">eva.schulz@aecom.com</a></td> </tr> </table>	<b>Tel:</b>	403-270-9220	<b>Fax:</b>	403-270-0399	<b>email:</b>	<a href="mailto:eva.schulz@aecom.com">eva.schulz@aecom.com</a>
<b>Tel:</b>	403-270-9220						
<b>Fax:</b>	403-270-0399						
<b>email:</b>	<a href="mailto:eva.schulz@aecom.com">eva.schulz@aecom.com</a>						

### GPS Coordinates for water sources utilized

Source Description	UTM Zone 14N, NAD83	
	Northing	Easting
Water Supply Lake	7618514	387849

### GPS Locations of areas of waste disposal

Location Description (type)	UTM Zone 14N, NAD83	
	Northing	Easting
Non-Hazardous Waste Landfill Berm Stn 801	7620942.9	389241.1
Non-Hazardous Waste Landfill Berm Stn 802	7620982	389281.8
Non-Hazardous Waste Landfill Berm Stn 803	7620937.1	389322.8
Non-Hazardous Waste Landfill Berm Stn 804	7620896.9	389279.7
Tier II Facility Stn 901	7620736.7	389083.4
Tier II Facility Stn 902	7620788.9	389112.9
Tier II Facility Stn 903	7620769.3	389147.7
Tier II Facility Stn 904	7620717	389118.2
Landfarm (centre)	7620350	389000
Sewage Lagoon (Corner 1)	7618832	388165
Sewage Lagoon (Corner 2)	7619049	388163
Sewage Lagoon (Corner 3)	7619050	388141
Sewage Lagoon (Corner 4)	7619020	388128

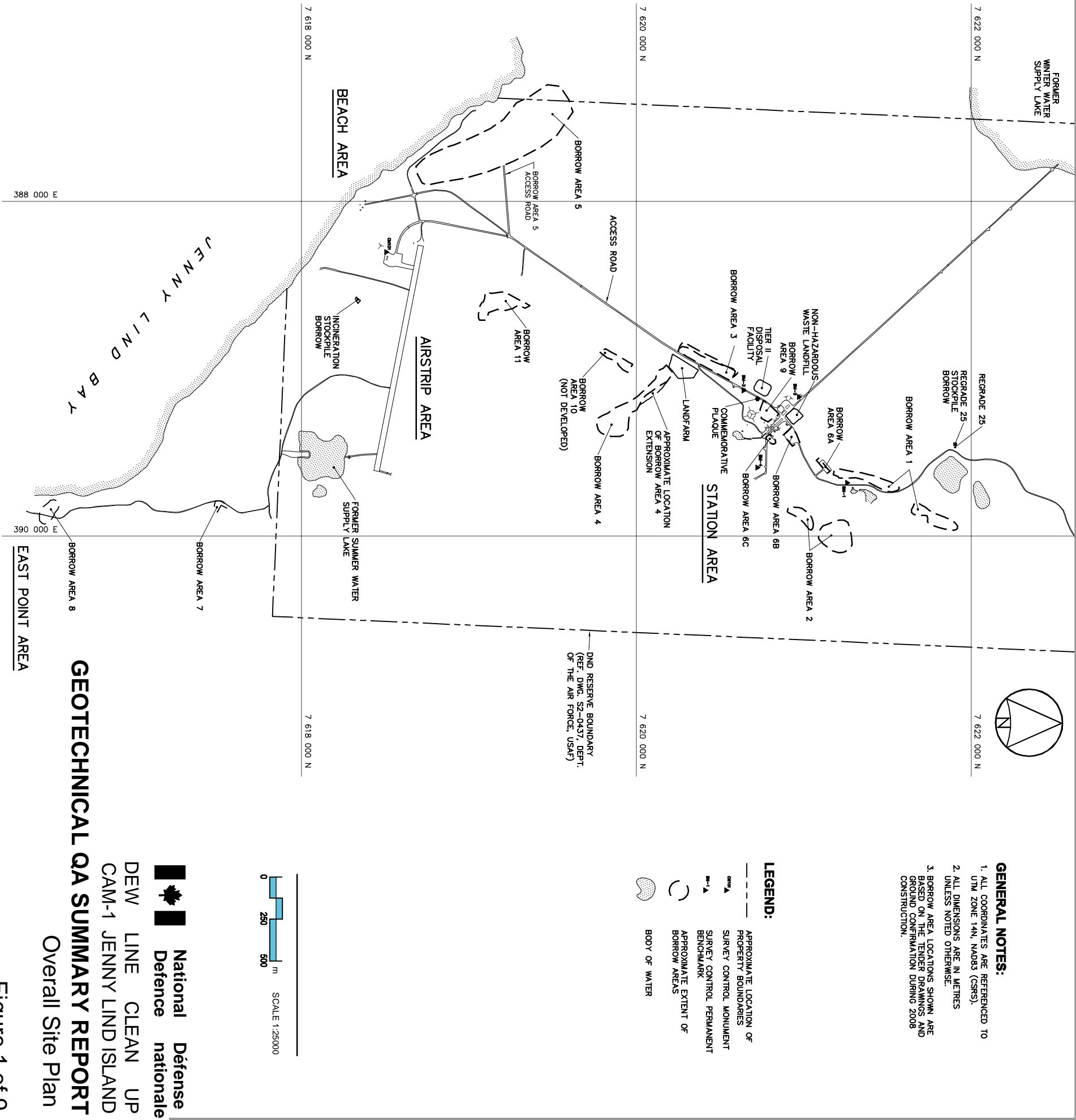
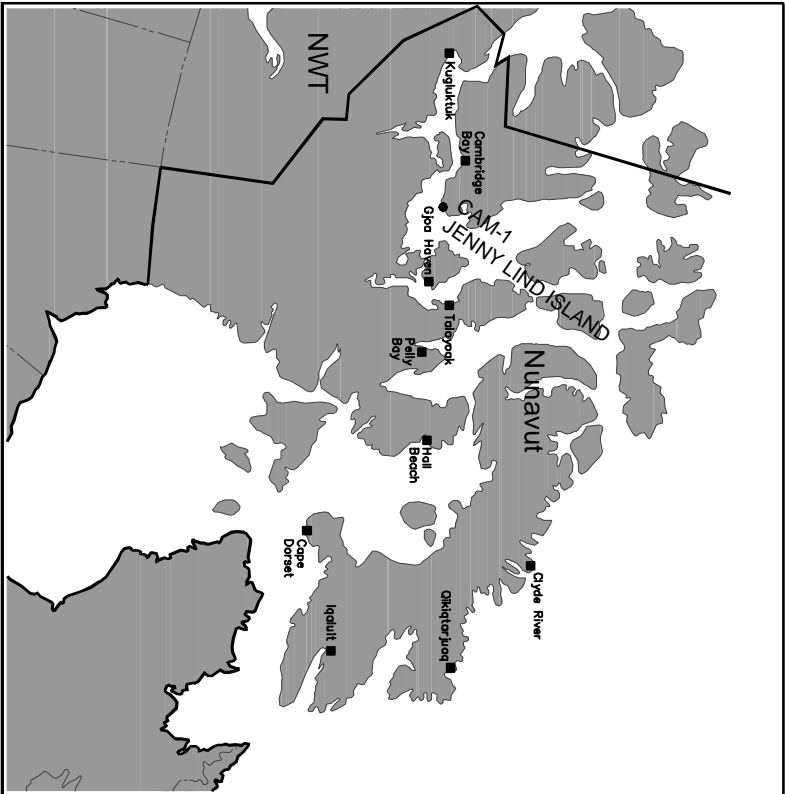
# Attachments

Updated Site Figures

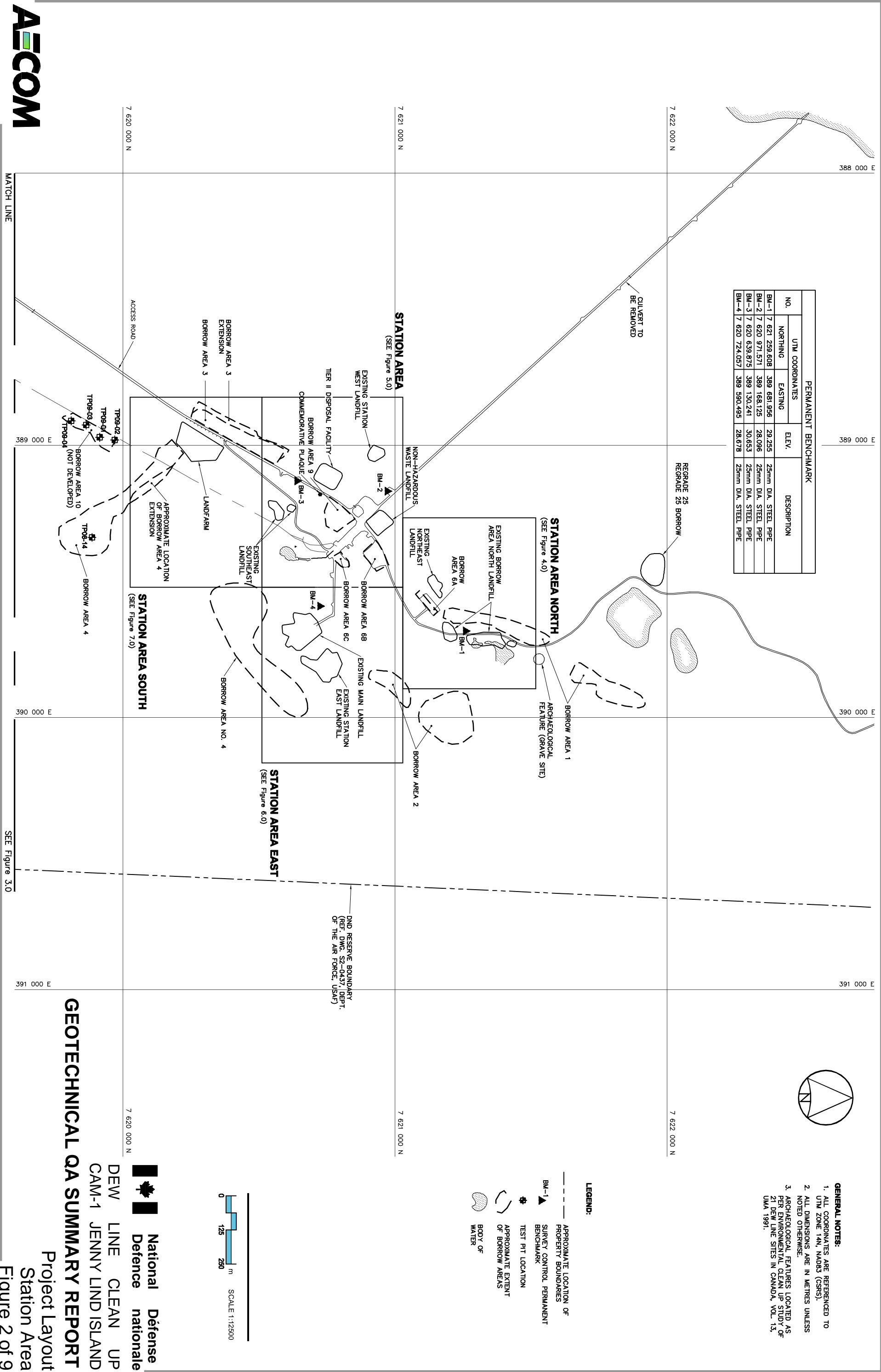
SOURCES FOR GRANULAR MATERIALS						
BORROW AREA	GRANULAR TYPE (SEE SECTION 02226 IN SPECIFICATION)					
	TYPE 2A	TYPE 2	TYPE 3	TYPE 4	TYPE 5	TYPE 6
1	✓	✓	✓			✓
2	✓	✓	✓			✓
3		✓	✓			✓
4	✓	✓	✓		✓*	
5				✓	✓	
6			✓			✓
7		✓	✓			✓
8		✓	✓	✓		✓
9			✓			
10						
11					✓*	
INCINERATOR STOCKPILE	✓					
REGRADE 25 STOCKPILE		✓				

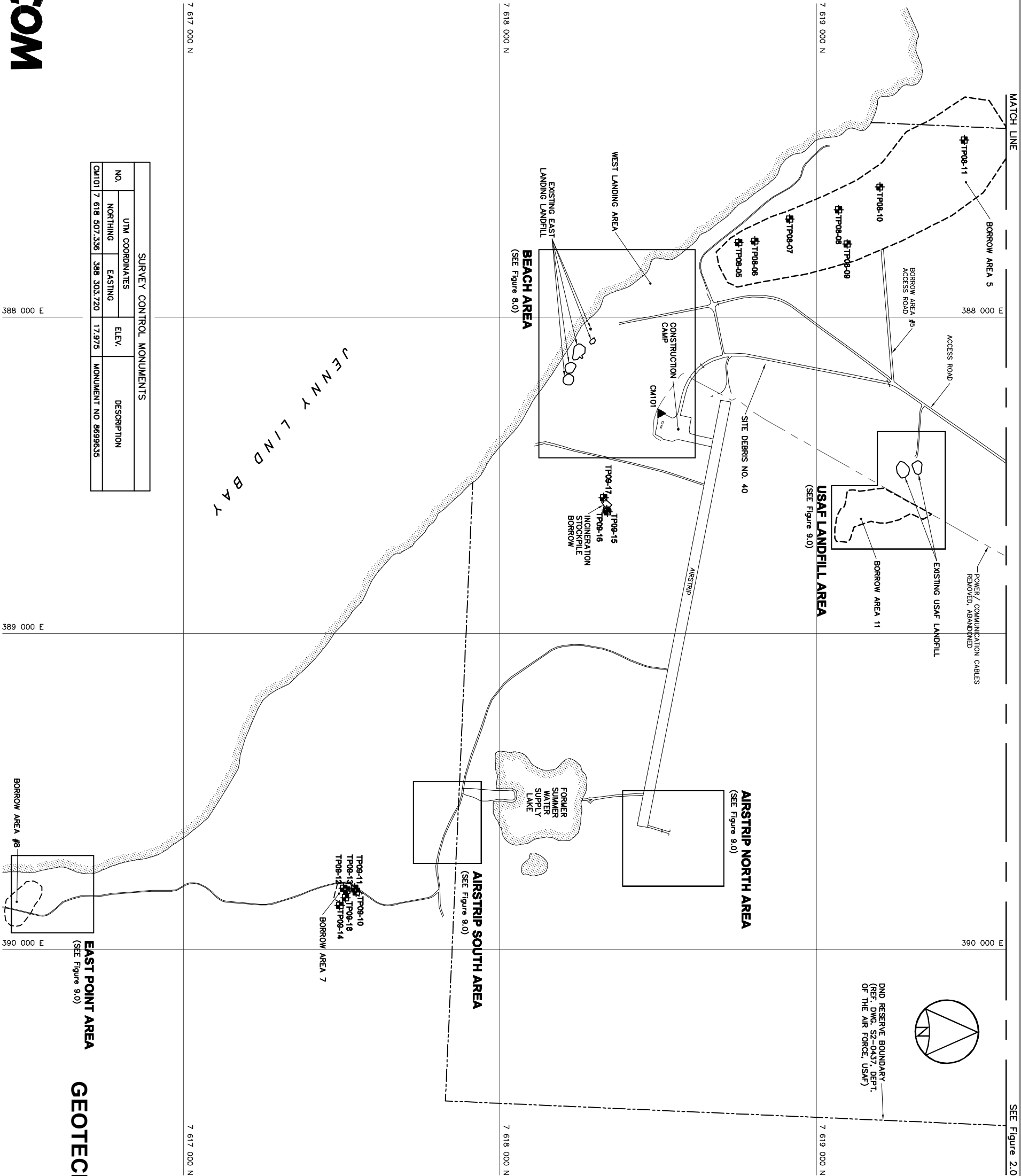
\* MATERIAL WAS SCREENED TO PRODUCE TYPE 5 GRANULAR FILL

SURVEY CONTROL MONUMENTS				
NO.	UTM COORDINATES		ELEV.	DESCRIPTION
	NORTHING	EASTING		
CAT01	7 618 507.336	388 303.720	17.975	MONUMENT NO 8699635
PERMANENT BENCHMARK				
NO.	UTM COORDINATES		ELEV.	DESCRIPTION
	NORTHING	EASTING		
BM-1	7 621 259.608	389 681.956	29.255	25mm DIA. STEEL PIPE
BM-2	7 620 971.571	389 168.128	28.086	25mm DIA. STEEL PIPE
BM-3	7 620 639.875	389 130.241	30.653	25mm DIA. STEEL PIPE
BM-4	7 620 724.057	389 590.495	28.678	25mm DIA. STEEL PIPE



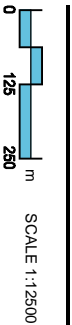






- GENERAL NOTES:**
1. ALL COORDINATES ARE REFERENCED TO UTM ZONE 14N, NAD83 (CSRS).
  2. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
  3. ARCHAEOLOGICAL FEATURES LOCATED AS PER ENVIRONMENTAL CLEAN UP STUDY OF 21 DEW LINE SITES IN CANADA, VOL. 13, UMA 1991.

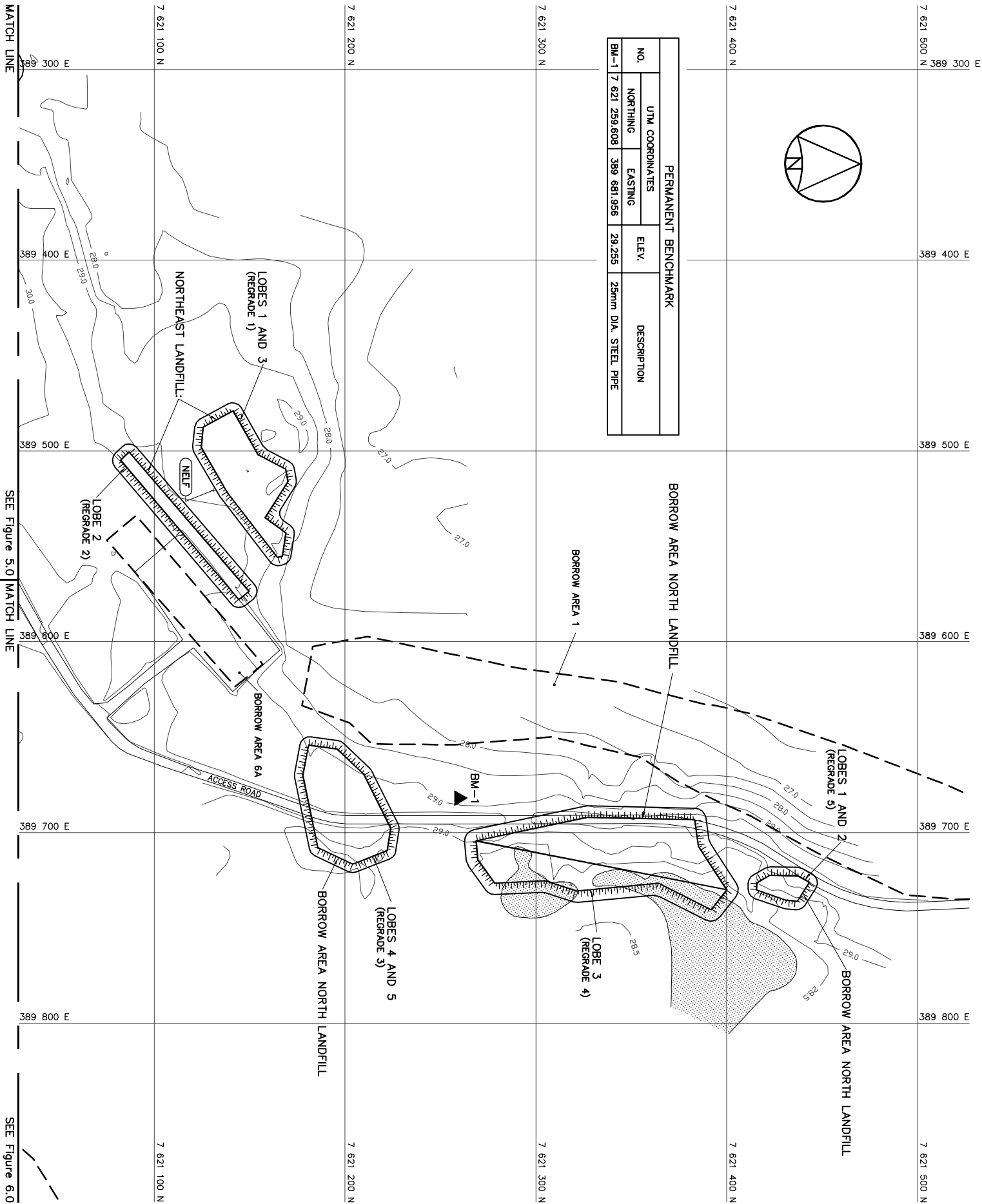
- LEGEND:**
- ▲ CM101 TEST PIT LOCATION
  - APPROXIMATE LOCATION OF PROPERTY BOUNDARIES
  - SURVEY CONTROL MONUMENT
  - # TEST PIT LOCATION
  - - - APPROXIMATE EXTENT OF BORROW AREAS
  - BODY OF WATER



SURVEY CONTROL MONUMENTS			
NO.	UTM COORDINATES		DESCRIPTION
	NORTHING	EASTING	
CM101	7 618 507.336	388 303.720	MONUMENT NO 8699635

EAST POINT AREA  
(SEE Figure 9.0)

## GEOTECHNICAL QA SUMMARY REPORT



- GENERAL NOTES:**
1. ALL COORDINATES ARE REFERENCED TO UTM ZONE 14N, NAD83 (CSRS).
  2. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
  3. REGRADES AND FACILITIES LOCATIONS SHOWN ARE BASED ON THE TENDER DRAWINGS. (THIS IS NOT AN AS-BUILT DRAWING.)

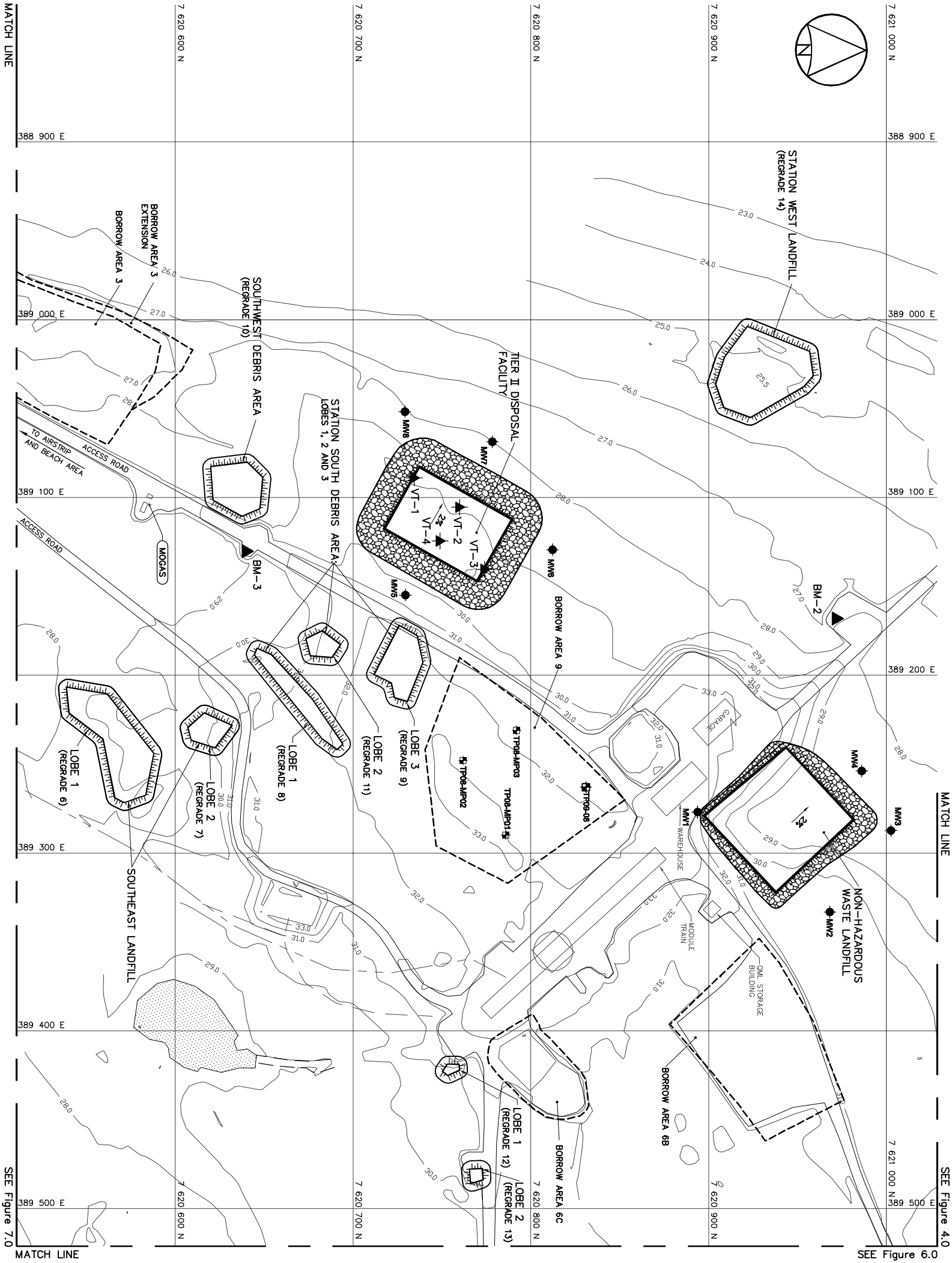


 **National Défense**  
**Defence nationale**

**DEW LINE CLEAN UP**  
**CAM-1 JENNY LIND ISLAND**

## GEOTECHNICAL QA SUMMARY REPORT

Station Area North  
Site Plan



- GENERAL NOTES:**
1. ALL COORDINATES ARE REFERENCED TO UTM ZONE 14N, NAD83 (CSRS).
  2. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
  3. REGRADES AND FACILITIES LOCATIONS SHOWN ARE BASED ON THE TENDER DRAWINGS. (THIS IS NOT AN AS-BUILT DRAWING.)
  4. MONITORING WELL LOCATIONS SHOWN ARE BASED ON ACTUAL SURVEYED LOCATION.

- LEGEND:**
- MONITORING WELL LOCATION (6)
  - BACKGROUND MONITORING WELL LOCATION (2)
  - ▲ VERTICAL THERMISTOR LOCATION
  - ⊕ TEST PIT LOCATION
  - ▲ BM-3 PERMANENT BENCHMARK
  - APPROXIMATE EXTENT OF BORROW AREA



**National Défense**  
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DEW LINE CLEAN UP  
CAM-1 JENNY LIND ISLAND

# GEOTECHNICAL QA SUMMARY REPORT

## Station Area Site Plan

Figure 5 of 9

- GENERAL NOTES:**
1. ALL COORDINATES ARE REFERENCED TO UTM ZONE 14N, NAD83 (CSRS).
  2. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
  3. REGRADES AND FACILITIES LOCATIONS SHOWN ARE BASED ON THE TENDER DRAWINGS. (THIS IS NOT AN AS-BUILT DRAWING.)

- LEGEND:**
- BM-3 ▲ PERMANENT BENCHMARK
  - ⬮ APPROXIMATE EXTENT OF BORROW AREA



 **National Défense**  
**Defence nationale**

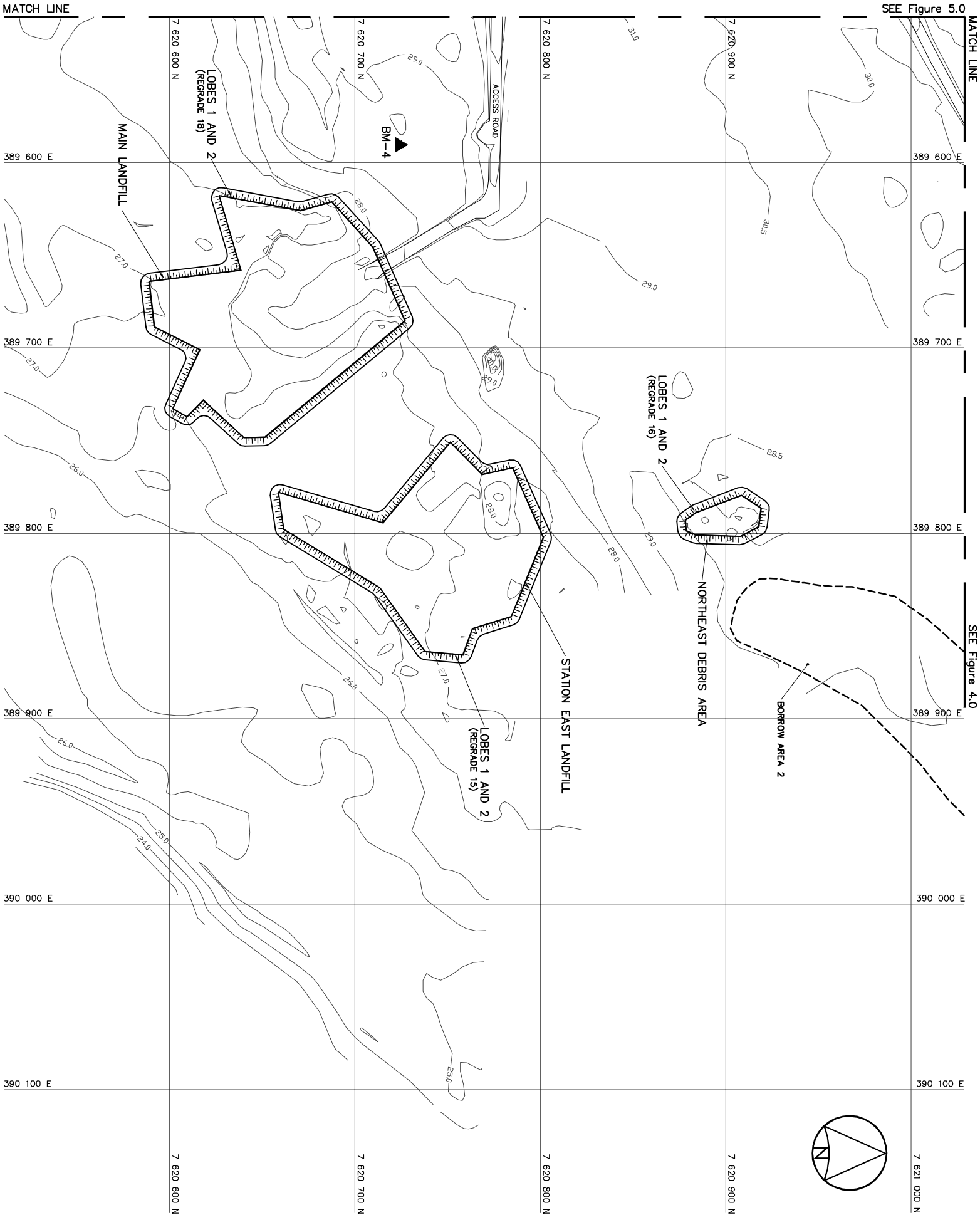
DEW LINE CLEAN UP  
CAM-1 JENNY LIND ISLAND

# GEOTECHNICAL QA SUMMARY REPORT

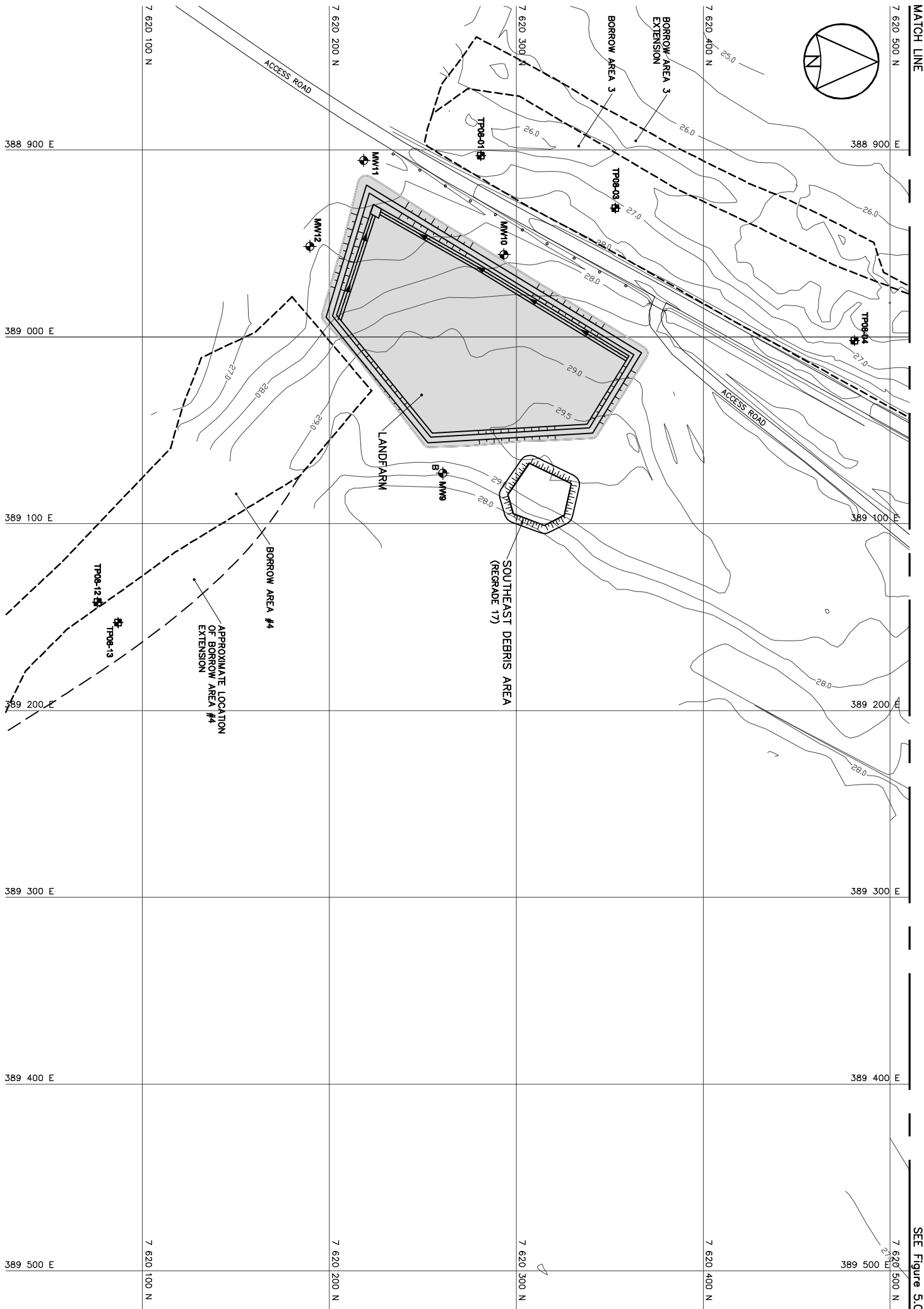
## Station Area East Site Plan

Figure 6 of 9

PERMANENT BENCHMARK				
NO.	UTM COORDINATES		ELEV.	DESCRIPTION
	NORTHING	EASTING		
BM-4	7 620 724.057	389 590.495	28.678	25mm DIA. STEEL PIPE







- GENERAL NOTES:**
1. ALL COORDINATES ARE REFERENCED TO UTM ZONE 14N, NAD83 (CSRS).
  2. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
  3. MONITORING WELL LOCATIONS SHOWN ARE BASED ON ACTUAL SURVEYED LOCATION.

- LEGEND:**
- DECOMMISSIONED MONITORING WELL LOCATION (4)
  - TEST PIT LOCATION
  - LANDFARM BERM REMOVED & AREA RESHAPED



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**Defence nationale**

DEW LINE CLEAN UP  
CAM-1 JENNY LIND ISLAND

**GEOTECHNICAL QA SUMMARY REPORT**


Station Area South  
Site Plan

Figure 7 of 9





**GENERAL NOTES:**  
1. ALL COORDINATES ARE REFERENCED TO UTM ZONE 14N, NAD83 (CSRS).  
2. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.  
3. REGRADES AND FACILITIES LOCATIONS SHOWN ARE BASED ON THE TENDER DRAWINGS. (THIS IS NOT AN AS-BUILT DRAWING.)

**LEGEND:**  
 BODY OF WATER

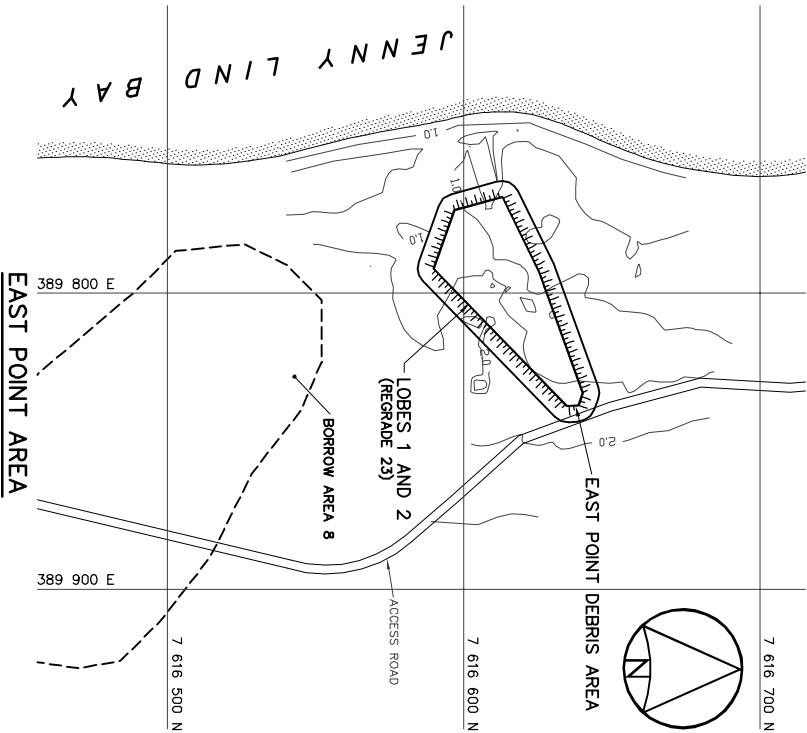
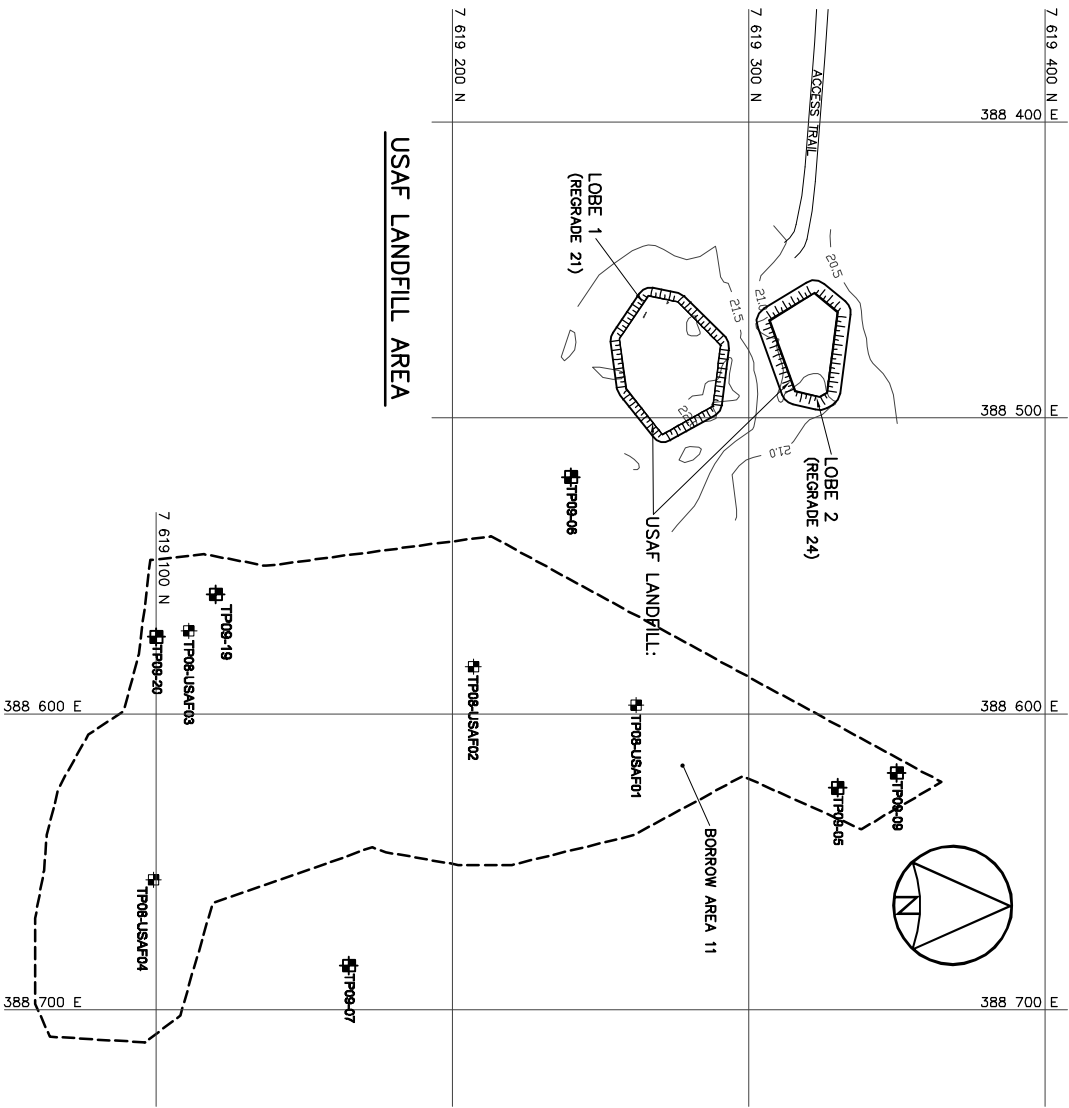


 **National Défense**  
**Defence nationale**  
DEW LINE CLEAN UP  
CAM-1 JENNY LIND ISLAND

**GEOTECHNICAL QA SUMMARY REPORT**

Beach Area  
Site Plan  
Figure 8 of 9



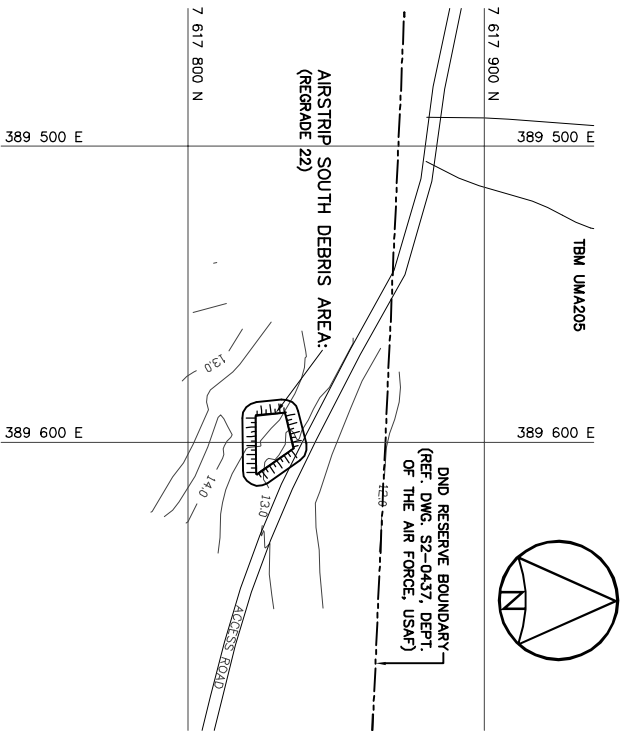


- GENERAL NOTES:**
1. ALL COORDINATES ARE REFERENCED TO UTM ZONE 14N, NAD83 (CSRS).
  2. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
  3. REGRADES AND FACILITIES LOCATIONS SHOWN ARE BASED ON THE TENDER DRAWINGS. (THIS IS NOT AN AS-BUILT DRAWING.)

**LEGEND:**

✕ TEST PIT LOCATION

☁ BODY OF WATER



 **National Défense**  
**Defence nationale**

DEW LINE CLEAN UP  
CAM-1 JENNY LIND ISLAND

## GEOTECHNICAL QA SUMMARY REPORT

### USAF Landfill Area, Airstrip Areas and East Point Area Site Plans

Figure 9 of 9





# Attachments

## Monitoring Reports

**Tricia Cammaart  
Environmental Sciences Group  
The Royal Military College of Canada  
PO Box 17000 Stn. Forces  
Kingston, ON K7K 7B4**



**Douglas Craig  
Environmental Officer  
Defence Construction Canada  
DEW Line Cleanup PMO  
350 Albert Street, Suite 1720  
Ottawa ON K1A 0K3**

**Friday, August 14, 2009**

**RE: July 2009 Monthly Report for Water Use License Number: 1BR-JEN0712**

The following results of the Monitoring Program (MP) and/or Water Use License are provided by the Environmental Sciences Group to meet the requirements of the above-noted license for *CAM-1 (Jenny Lind Island)*.

**1. CAMP SEWAGE LAGOON**

A sewage lagoon was constructed to service the CAM-1 construction camp in June of 2009. The GPS coordinates that are required by the Water Use License for the sewage lagoon location are 7618548.9N 388460.6E.

**2. SEWAGE EFFLUENT SAMPLES**

The Water Use License and MP require that samples from treated sewage lagoon effluent at the point of discharge to the receiving water be collected prior to each discharge event. One sewage effluent sample was collected in July 2009 from CAM-1 sewage lagoon. A summary of the details of these results follows.

<b>Sample Number</b>	<b>Sample Location</b>	<b>GPS Coordinates</b>	<b>Sampling Date</b>
09-25811	Ponding Water West of Sewage Lagoon	7618548.9N 388460.6E	July 10, 2009

A summary of the results for the parameters tested is provided below. Laboratory results and photographs are provided in Appendices A and B, respectively.

**LOCATION: PONDING WATER WEST OF SEWAGE LAGOON**

GPS COORDINATES: 7618548.9N 388460.6E

<b>Parameter</b>	<b>Allowable Maximum Average Concentration</b>	<b>Units</b>	<b>09-25811 (July 10, 2009)</b>
<b>pH</b>	6.0 to 9.0	pH units	N/A
<b>Oil &amp; Grease</b>	None Visible	-	None Visible
<b>Total Suspended Solids (TSS)</b>	180	mg/L	5
<b>BOD</b>	120	mg/L	<2
<b>Faecal Coliforms</b>	10,000	CFU/dL	1
<b>Total Coliforms</b>	-	CFU/ 100 mL	N/A

The sample collected from ponding water west of sewage lagoon met discharge criteria. The water was not discharged to land as this was suspected snow melt water and was not interfering with camp activities.

We trust that the information provided meets current requirements. Please contact the undersigned if you have any questions or concerns.

Sincerely,



Tricia Cammaart  
Environmental Sciences Group

cc: Eva Schulz (UMA)  
Daniela Loock, Kat White, Shari Reed, Maria Vavro, Tracey Bullock (ESG)

# APPENDIX A LABORATORY RESULTS

**Client : ESG**

12 Verite Ave  
Dept. of Chem. / Chem. Eng., RMC  
P.O. Box 17000, Stn. Forces  
Kingston, Ontario K7K 7B4  
(613) 541-6000 ext 6567  
Fax: (613) 541-6596

ASG Login No: 19453  
Site: CAM-1  
Client Login No: 09-105  
Samples Received: 15-Jul-09  
Date of analysis: 20-Jul-09  
Method No: ASG039  
Date Reported: 20-Jul-09  
Sheet: 1 of 1

**RESULTS OF TOTAL SUSPENDED SOLIDS ANALYSIS**

Sample I.D.	Sample Type <sup>A</sup>	Unit	Total Suspended Solids
25811*	SE	mg/L	5.0

**LABORATORY QA/QC**

Blank	Control	mg/L	< 1.0
Control	Control	mg/L	200
Control Target	Control	mg/L	200

<sup>A</sup>SW =Surface Water, SI = Sewage Influent SE = Sewage Effluent

\*Insufficient sample available for duplicate analysis



Taiga Environmental Laboratory  
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3  
Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.:  
290382

- CERTIFICATE OF ANALYSIS -

Client Sample ID: 25811

Taiga Sample ID: 002

Client Project: ESG No: 09-751

Sample Type: Wastewater

Received Date: 10-Jul-09

Sampling Date: 10-Jul-09

Sampling Time: 13:30

Location: CAM-1-conf-DLCU

Report Status: Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifier
<u>Inorganics - Nutrients</u>						
Biochemical Oxygen Demand	< 2	2	mg/L	10-Jul-09	SM5210:B	
<u>Microbiology</u>						
Coliforms, Fecal	1	1	CFU/100mL	10-Jul-09	SM9222:D	

ReportDate: Thursday, July 16, 2009

Print Date: Thursday, July 16, 2009

Page 3 of 7

## APPENDIX B PHOTOGRAPHS

**Photo 1 (DSC00355):** Sample 09-25811 water ponding west of sewage lagoon facing east. Samples were taken to ensure that the water was not leaching from the lagoon



Tricia Cammaart  
Environmental Sciences Group  
The Royal Military College of Canada  
PO Box 17000 Stn. Forces  
Kingston, ON K7K 7B4



Douglas Craig  
Environmental Officer  
Defence Construction Canada  
DEW Line Cleanup PMO  
350 Albert Street, Suite 1720  
Ottawa ON K1A 0K3

Friday, August 14, 2009

**RE: Analytical Results for Wastewater Samples Collected at CAM-1 in July, 2009**

The following report summarizes results of the analysis of wastewater samples as per the CAM-1 (Jenny Lind Island) DEW Line Cleanup Project (DLCU) Specifications.

The CAM-1 specifications require that “wash water, melt water collection, rinse water resulting from the cleaning of fuel tanks and pipelines, and/or any other liquid effluent stream” meet the following guidelines prior to their discharge to land (01560.4.1):

Parameter	Maximum Allowable Concentration	Units
pH	6-9	pH units
Total arsenic (As)	0.100	mg/L
Dissolved cadmium (Cd)	0.010	mg/L
Total chromium (Cr)	0.100	mg/L
Dissolved cobalt (Co)	0.050	mg/L
Dissolved copper (Cu)	0.200	mg/L
Dissolved lead (Pb)	0.050	mg/L
Total mercury (Hg)	0.6	µg/L
Dissolved nickel (Ni)	0.200	mg/L
Total zinc (Zn)	1.000	mg/L
Oil & grease	5 mg/L and None visible	mg/L
PCBs	0.050* 0.005**	mg/L
Phenols	0.020	mg/L

\*Discharge to barren land, \*\*Discharge to vegetated land

*Phenols*

The wastewater samples collected by ESG at CAM-1 in July, 2009 were not analyzed for phenols but they were analyzed for oil and grease. Research conducted by ESG<sup>1</sup> has determined that a) no federal, territorial or provincial criteria exist for the discharge of

<sup>1</sup> Environmental Sciences Group. *DEW Line Clean Up Project – Phenols in Wastewater*. June, 2007.

wastewater containing phenols to land at a minimum distance of 30-m from natural drainage courses b) the maximum concentration of phenols in DLCU wastewater to date (2.44 mg/L) is below the LC<sub>50</sub> for freshwater fish and crustaceans and below the oral and dermal LD<sub>50</sub>s for rats and rodents and c) phenols in excess of the maximum allowable concentration (MAC) have historically co-occurred with a visible oil & grease sheen and/or with an exceedance of the MAC for oil & grease. This information, and a subsequent decision to not test for phenols, has been presented to the NWB. To date, verbal agreement from the NWB has been received, but the project is awaiting written confirmation of the decision to suspend testing for phenols.

#### WASTEWATER SAMPLES

Thirteen wastewater samples were collected at CAM-1 and analyzed in July 2009. A summary of the details of these results follows.

<b>Sample Number</b>	<b>Sample Location</b>	<b>GPS Coordinates</b>	<b>Sampling Date</b>
09-25725	Land Farm	7620223.4N 388929.1E	July 2, 2009
09-25726	Tier II Disposal Facility	7620717.6N 389117.5E	July 2, 2009
09-25727	West Landing Debris Area	7618514.2N 387827.3E	July 2, 2009
09-26157	West Landing Debris Area	7618514.2N 387827.3E	July 16, 2009
09-25728	Former POL Tank #2	7618719.5N 388053.5E	July 2, 2009
09-25802	Blue Bin #1 at Barrel Processing Area Before Filtering	7618719.5N 388053.5E	July 5, 2009
09-25804	Blue Bin #1 at Barrel Processing Area After Filtering	7618719.5N 388053.5E	July 5, 2009
09-25803	Blue Bin (with ramp) #2 at Barrel Processing Area Before Filtering	7618719.5N 388053.5E	July 5, 2009
09-25805	Blue Bin (with ramp) #2 at Barrel Processing Area After Filtering	7618719.5N 388053.5E	July 5, 2009
09-25806	Former POL Tank #1 Before Filtering Barrel Processing Area	7618719.5N 388053.5E	July 5, 2009
09-25807	Former POL Tank #1 After Filtering Barrel Processing Area	7618719.5N 388053.5E	July 5, 2009
09-26182	Barrel Processing Area – POL tank with consolidated filtered barrel water	7618719.5N 388053.5E	July 18, 2009
09-26243	East Point Debris Area Regrade	761665N 389776E	July 20, 2009

A summary of the results for the parameters tested is provided below. Laboratory results and photographs are provided in Appendices A and B, respectively.



**LOCATION: LAND FARM**

GPS COORDINATES: 7620223.4N 388929.1E

Parameter	Maximum Allowable Concentration	Units	Sample # 09-25725
pH	6-9	pH units	N/A
Total Arsenic	0.100	mg/L	N/A
Dissolved Cadmium	0.010	mg/L	N/A
Total Chromium	0.100	mg/L	N/A
Dissolved Cobalt	0.050	mg/L	N/A
Dissolved Copper	0.200	mg/L	N/A
Dissolved Lead	0.050	mg/L	N/A
Total Mercury	0.6	µg/L	N/A
Dissolved Nickel	0.200	mg/L	N/A
Total Zinc	1.0	mg/L	N/A
Oil & Grease	None Visible and 5 mg/L	mg/L	None visible <2.0
PCBs	50* 5**	µg/L	N/A
Phenols	20	µg/L	N/A

\*Discharge to barren land, \*\*Discharge to vegetated land

The analytical results for the Land farm met the wastewater discharge criteria. The water has been discharged to land in accordance to the water use license.

**LOCATION: TIER II DISPOSAL FACILITY**

GPS COORDINATES: 7620717.6N 389117.5E

Parameter	Maximum Allowable Concentration	Units	Sample # 09-25726
pH	6-9	pH units	N/A
Total Arsenic	0.100	mg/L	<0.003
Dissolved Cadmium	0.010	mg/L	<0.001
Total Chromium	0.100	mg/L	<0.005
Dissolved Cobalt	0.050	mg/L	<0.003
Dissolved Copper	0.200	mg/L	<0.005
Dissolved Lead	0.050	mg/L	<0.010
Total Mercury	0.6	µg/L	N/A
Dissolved Nickel	0.200	mg/L	<0.005
Total Zinc	1.0	mg/L	<0.010
Oil & Grease	None Visible and 5 mg/L	mg/L	None visible <2.0
PCBs	50* 5**	µg/L	<3.0
Phenols	20	µg/L	N/A

\*Discharge to barren land, \*\*Discharge to vegetated land

The analytical results for the Tier II Disposal Facility met the wastewater discharge criteria. The water has been discharged to land in accordance to the water use license.

**LOCATION: WEST LANDING DEBRIS AREA**

GPS COORDINATES: 7618514.2N 387827.3E

Parameter	Maximum Allowable Concentration	Units	Sample # 09-25727
pH	6-9	pH units	N/A
Total Arsenic	0.100	mg/L	<0.003
Dissolved Cadmium	0.010	mg/L	<0.001
Total Chromium	0.100	mg/L	<0.005
Dissolved Cobalt	0.050	mg/L	<0.003
Dissolved Copper	0.200	mg/L	<0.005
Dissolved Lead	0.050	mg/L	<0.010
Total Mercury	0.6	µg/L	N/A
Dissolved Nickel	0.200	mg/L	<0.005
Total Zinc	1.0	mg/L	<0.010
Oil & Grease	None Visible and 5 mg/L	mg/L	None visible <2.0
PCBs	50* 5**	µg/L	<3.0
Phenols	20	µg/L	N/A

\*Discharge to barren land, \*\*Discharge to vegetated land

**LOCATION: WEST LANDING DEBRIS AREA**

GPS COORDINATES: 7618514.2N 387827.3E

Parameter	Maximum Allowable Concentration	Units	Sample # 09-26157
pH	6-9	pH units	Analyzed on site
Total Arsenic	0.100	mg/L	<0.003
Dissolved Cadmium	0.010	mg/L	<0.001
Dissolved Chromium	0.100	mg/L	<0.005
Dissolved Cobalt	0.050	mg/L	<0.003
Dissolved Copper	0.200	mg/L	<0.005
Dissolved Lead	0.050	mg/L	<0.010
Total Mercury	0.6	µg/L	<0.4
Dissolved Nickel	0.200	mg/L	<0.005
Total Zinc	1.0	mg/L	<0.010
Oil & Grease	None Visible and 5 mg/L	mg/L	None Visible, <2.0
PCBs	50* 5**	µg/L	<3.0
Phenols	20	µg/L	N/A

\*Discharge to barren land, \*\*Discharge to vegetated land

The analytical results for the west landing debris area met the wastewater discharge criteria.  
The water has been discharged to land in accordance to the water use license.

**LOCATION: FORMER POL TANK #2**

GPS COORDINATES: 7618719.5N 388053.5E

Parameter	Maximum Allowable Concentration	Units	Sample # 09-25728
<b>pH</b>	6-9	pH units	N/A
<b>Total Arsenic</b>	0.100	mg/L	<0.003
<b>Dissolved Cadmium</b>	0.010	mg/L	<0.001
<b>Total Chromium</b>	0.100	mg/L	<0.005
<b>Dissolved Cobalt</b>	0.050	mg/L	<0.003
<b>Dissolved Copper</b>	0.200	mg/L	<0.005
<b>Dissolved Lead</b>	0.050	mg/L	<0.010
<b>Total Mercury</b>	0.6	µg/L	N/A
<b>Dissolved Nickel</b>	0.200	mg/L	<0.005
<b>Total Zinc</b>	1.0	mg/L	<0.010
<b>Oil &amp; Grease</b>	None Visible and 5 mg/L	mg/L	None visible <2.0
<b>PCBs</b>	50* 5**	µg/L	<3.0
<b>Phenols</b>	20	µg/L	N/A

\*Discharge to barren land, \*\*Discharge to vegetated land

The analytical results for the former POL tank #2 met the wastewater discharge criteria.

The water has been discharged to land in accordance to the water use license.

**LOCATION: BLUE BIN #1 AT BARREL PROCESSING AREA BEORE FILTERING**

GPS COORDINATES: 7618719.5N 388053.5E

Parameter	Maximum Allowable Concentration	Units	Sample # 09-25802
<b>pH</b>	6-9	pH units	N/A
<b>Total Arsenic</b>	0.100	mg/L	<0.003
<b>Dissolved Cadmium</b>	0.010	mg/L	<0.001
<b>Dissolved Chromium</b>	0.100	mg/L	<0.005
<b>Dissolved Cobalt</b>	0.050	mg/L	<0.003
<b>Dissolved Copper</b>	0.200	mg/L	<0.005
<b>Dissolved Lead</b>	0.050	mg/L	<0.010
<b>Total Mercury</b>	0.6	µg/L	<0.4
<b>Dissolved Nickel</b>	0.200	mg/L	<0.005
<b>Total Zinc</b>	1.0	mg/L	0.11
<b>Oil &amp; Grease</b>	None Visible and 5 mg/L	mg/L	<b>Visible, 19.3</b>
<b>PCBs</b>	50* 5**	µg/L	<3.0
<b>Phenols</b>	20	µg/L	N/A

\*Discharge to barren land, \*\*Discharge to vegetated land

**LOCATION: BLUE BIN #1 AT BARREL PROCESSING AREA AFTER FILTERING**  
**GPS COORDINATES: 7618719.5N 388053.5E**

Parameter	Maximum Allowable Concentration	Units	Sample # 09-25804
<b>pH</b>	6-9	pH units	N/A
<b>Total Arsenic</b>	0.100	mg/L	<0.003
<b>Dissolved Cadmium</b>	0.010	mg/L	<0.001
<b>Dissolved Chromium</b>	0.100	mg/L	<0.005
<b>Dissolved Cobalt</b>	0.050	mg/L	<0.003
<b>Dissolved Copper</b>	0.200	mg/L	<0.005
<b>Dissolved Lead</b>	0.050	mg/L	<0.010
<b>Total Mercury</b>	0.6	µg/L	<0.4
<b>Dissolved Nickel</b>	0.200	mg/L	<0.005
<b>Total Zinc</b>	1.0	mg/L	0.09
<b>Oil &amp; Grease</b>	None Visible and 5 mg/L	mg/L	<b>Visible, 25.1</b>
<b>PCBs</b>	50* 5**	µg/L	<3.0
<b>Phenols</b>	20	µg/L	N/A

\*Discharge to barren land, \*\*Discharge to vegetated land

**LOCATION: BLUE BIN (WITH RAMP) #2 AT BARREL PROCESSING AREA BEFORE  
 FILTERING**  
**GPS COORDINATES: 7618719.5N 388053.5E**

Parameter	Maximum Allowable Concentration	Units	Sample # 09-25803
<b>pH</b>	6-9	pH units	N/A
<b>Total Arsenic</b>	0.100	mg/L	<0.003
<b>Dissolved Cadmium</b>	0.010	mg/L	0.001
<b>Dissolved Chromium</b>	0.100	mg/L	<0.005
<b>Dissolved Cobalt</b>	0.050	mg/L	0.005
<b>Dissolved Copper</b>	0.200	mg/L	0.007
<b>Dissolved Lead</b>	0.050	mg/L	<0.010
<b>Total Mercury</b>	0.6	µg/L	<0.4
<b>Dissolved Nickel</b>	0.200	mg/L	0.012
<b>Total Zinc</b>	1.0	mg/L	<b>1.83</b>
<b>Oil &amp; Grease</b>	None Visible and 5 mg/L	mg/L	<b>Visible, 16.7</b>
<b>PCBs</b>	50* 5**	µg/L	<0.3
<b>Phenols</b>	20	µg/L	N/A

\*Discharge to barren land, \*\*Discharge to vegetated land

**LOCATION: BLUE BIN (WITH RAMP) #2 AT BARREL PROCESSING AREA AFTER FILTERING**

GPS COORDINATES: 7618719.5N 388053.5E

Parameter	Maximum Allowable Concentration	Units	Sample # 09-25805
pH	6-9	pH units	N/A
Total Arsenic	0.100	mg/L	<0.003
Dissolved Cadmium	0.010	mg/L	0.001
Dissolved Chromium	0.100	mg/L	<0.005
Dissolved Cobalt	0.050	mg/L	0.004
Dissolved Copper	0.200	mg/L	<0.005
Dissolved Lead	0.050	mg/L	<0.010
Total Mercury	0.6	µg/L	<0.4
Dissolved Nickel	0.200	mg/L	0.011
Total Zinc	1.0	mg/L	1.78
Oil & Grease	None Visible and 5 mg/L	mg/L	Visible, 22.6
PCBs	50* 5**	µg/L	<3.0
Phenols	20	µg/L	N/A

\*Discharge to barren land, \*\*Discharge to vegetated land

**LOCATION: FORMER POL TANK #1 BEFORE FILTERING BARREL PROCESSING AREA**

GPS COORDINATES: 7618719.5N 388053.5E

Parameter	Maximum Allowable Concentration	Units	Sample # 09-25806
pH	6-9	pH units	N/A
Total Arsenic	0.100	mg/L	<0.003
Dissolved Cadmium	0.010	mg/L	<0.001
Dissolved Chromium	0.100	mg/L	<0.005
Dissolved Cobalt	0.050	mg/L	<0.003
Dissolved Copper	0.200	mg/L	<0.005
Dissolved Lead	0.050	mg/L	<0.010
Total Mercury	0.6	µg/L	<0.4
Dissolved Nickel	0.200	mg/L	<0.005
Total Zinc	1.0	mg/L	0.13
Oil & Grease	None Visible and 5 mg/L	mg/L	Visible, 48.5
PCBs	50* 5**	µg/L	<3.0
Phenols	20	µg/L	N/A

\*Discharge to barren land, \*\*Discharge to vegetated land

**LOCATION: FORMER POL TANK #1 AFTER FILTERING BARREL PROCESSING AREA**

GPS COORDINATES: 7618719.5N 388053.5E

Parameter	Maximum Allowable Concentration	Units	Sample # 09-25807
pH	6-9	pH units	N/A
Total Arsenic	0.100	mg/L	<0.003
Dissolved Cadmium	0.010	mg/L	<0.001
Dissolved Chromium	0.100	mg/L	<0.005
Dissolved Cobalt	0.050	mg/L	<0.003
Dissolved Copper	0.200	mg/L	<0.005
Dissolved Lead	0.050	mg/L	<0.010
Total Mercury	0.6	µg/L	<0.4
Dissolved Nickel	0.200	mg/L	<0.005
Total Zinc	1.0	mg/L	0.24
Oil & Grease	None Visible and 5 mg/L	mg/L	<b>Visible, 4.5</b>
PCBs	50* 5**	µg/L	<3.0
Phenols	20	µg/L	N/A

\*Discharge to barren land, \*\*Discharge to vegetated land

**LOCATION: BARREL PROCESSING AREA – POL TANK WITH CONSOLIDATED FILTERED BARREL WATER**

GPS COORDINATES: 7618719.5N 388053.5E

Parameter	Maximum Allowable Concentration	Units	Sample # 09-26182
pH	6-9	pH units	N/A
Total Arsenic	0.100	mg/L	N/A
Dissolved Cadmium	0.010	mg/L	N/A
Dissolved Chromium	0.100	mg/L	N/A
Dissolved Cobalt	0.050	mg/L	N/A
Dissolved Copper	0.200	mg/L	N/A
Dissolved Lead	0.050	mg/L	N/A
Total Mercury	0.6	µg/L	N/A
Dissolved Nickel	0.200	mg/L	N/A
Total Zinc	1.0	mg/L	N/A
Oil & Grease	None Visible and 5 mg/L	mg/L	<b>Visible, &lt;2.0</b>
PCBs	50* 5**	µg/L	N/A
Phenols	20	µg/L	N/A

\*Discharge to barren land, \*\*Discharge to vegetated land

Wastewater from the barrel processing area has been consolidated and is undergoing an evaporation procedure with the remaining residue to be containerized and shipped off-site. We suspect there was a mix up in the results for oil and grease results between 09-26243 and 09-26182. We re-sampled 09-26182 (26392), the results supported the theory. Oil and grease was 9.5.

**LOCATION: EAST POINT DEBRIS AREA REGRADE**

GPS COORDINATES: 7616645N 389776E

Parameter	Maximum Allowable Concentration	Units	Sample # 09-26243
pH	6-9	pH units	Analyzed on site
Total Arsenic	0.100	mg/L	<0.003
Dissolved Cadmium	0.010	mg/L	<0.001
Dissolved Chromium	0.100	mg/L	<0.005
Dissolved Cobalt	0.050	mg/L	<0.003
Dissolved Copper	0.200	mg/L	<0.005
Dissolved Lead	0.050	mg/L	<0.010
Total Mercury	0.6	µg/L	<0.4
Dissolved Nickel	0.200	mg/L	<0.005
Total Zinc	1.0	mg/L	<0.010
Oil & Grease	None Visible and 5 mg/L	mg/L	<b>None Visible, 18.6</b>
PCBs	50* 5**	µg/L	<3.0
Phenols	20	µg/L	N/A

\*Discharge to barren land, \*\*Discharge to vegetated land

Sample 09-26243 was from an area that had no know hydrocarbon contamination and water was discharged immediately. We suspect there was a mix up in the results for oil and grease results between 26243 and 26182. We re-sampled 26182 (26392), the results supported the theory.

We trust that the information provided meets current requirements. Please contact the undersigned if you have any questions or concerns.

Sincerely,



Tricia Cammaart  
Environmental Sciences Group

cc: Eva Schulz (UMA)  
Daniela Loock, Kat White, Shari Reed, Maria Vavro, Tracey Bullock (ESG)

APPENDIX A  
LABORATORY RESULTS

<b>ASU #</b>	12029		<b>Report ID:</b>	Cam-1 W1
<b>Client:</b>	ASG 19381		<b>Date Submitted:</b>	6-Jul-09
			<b>Date tested:</b>	7-Jul-09
<b>Site:</b>	Cam-1		<b>Date:</b>	8-Jul-09
	09-075		<b>Matrix:</b>	water
Preliminary Report of Analysis				
Sample	Oil & Grease			
	mg/L			
09-25725	<2.0			
09-25726	<2.0			
09-25727	<2.0			
09-25728	<2.0			
Blank	<2.0			
Control	17.0			
Control Target	16.1			



Client: **ESG**  
 12 Verite Ave  
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 P.O. Box 17000, Stn. Forces  
 Kingston, Ontario K7K 7B4  
 (613) 541-6000 ext 6567  
 Fax: (613) 541-6596

ASG Login No: 19381  
 Site: Cam-1  
 Client No: 09-075  
 Samples Received: 6-Jul-09  
 Date of analysis: 8-Jul-09  
 Method No: ASG 015  
 Date Reported: 9-Jul-09  
 Sheet No: 1 of 1

## RESULTS OF PCB IN WATER ANALYSIS

Sample Type **	Sample I.D.	Unit	Aroclor 1248	Aroclor 1254	Aroclor 1260
W	25726*	µg/L	< 3.0	< 3.0	< 3.0
W	25727	µg/L	< 3.0	< 3.0	< 3.0
W	25728	µg/L	< 3.0	< 3.0	< 3.0

\* Average result of duplicate

## LABORATORY QA/QC

	Blank	µg/L	< 3.0	< 3.0	< 3.0
	Duplicate ; 25726*	µg/L	< 3.0 ; < 3.0	< 3.0 ; < 3.0	< 3.0 ; < 3.0
	Control Sample	µg/L	< 3.0	< 3.0	11
	Control Sample Target	µg/L	< 3.0	< 3.0	15

\*\* S = Soil , C = Concrete , PC = Paint Chip , SW = Swab , P = Plant , W = Water

All results corrected for the recovery of the surrogate decachlorobiphenyl

Preliminary Report of Analysis									
Total Metals	Results in mg/L								
SAMPLE	Cu	Ni	Co	Cd	Pb	Zn	Cr	As	
09-25726	-	-	-	-	-	<0.010	-	<0.003	
09-25727	-	-	-	-	-	<0.010	-	<0.003	
09-25728	-	-	-	-	-	<0.010	-	<0.003	*
Blank	-	-	-	-	-	<0.010	-	<0.003	
Control	-	-	-	-	-	2.94	-	0.80	
Control Target	-	-	-	-	-	3.00	-	0.80	
09-25728	-	-	-	-	-	<0.010	-	<0.003	
09-25728	-	-	-	-	-	<0.010	-	<0.003	
Dissolved Metals									
SAMPLE	Cu	Ni	Co	Cd	Pb	Zn	Cr	As	
09-25726	<0.005	<0.005	<0.003	<0.001	<0.010	-	<0.005	-	
09-25727	<0.005	<0.005	<0.003	<0.001	<0.010	-	<0.005	-	
09-25728	<0.005	<0.005	<0.003	<0.001	<0.010	-	<0.005	-	*
Blank	<0.005	<0.010	<0.003	<0.001	<0.010	-	<0.005	-	
Control	1.50	1.59	1.57	0.78	7.94	-	0.87	-	
Control Target	1.60	1.60	1.60	0.80	8.00	-	0.80	-	
09-25728	<0.005	<0.005	<0.003	<0.001	<0.010	-	<0.005	-	
09-25728	<0.005	<0.005	<0.003	<0.001	<0.010	-	<0.005	-	

<b>ASU #</b>	12042		<b>Report ID:</b>	Cam-1 W5
<b>Client:</b>	ASG 19424		<b>Date Submitted:</b>	9-Jul-09
			<b>Date tested:</b>	9-Jul-09
<b>Site:</b>	Cam-1		<b>Date:</b>	10-Jul-09
	09-091		<b>Matrix:</b>	water
Preliminary Report of Analysis				
<b>Sample</b>	<b>Oil &amp; Grease</b>			
	mg/L			
09-25802	19.3			
09-25803	16.7			
09-25804	25.1			
09-25805	22.6			
09-25806	48.5			
09-25807	4.5			
<b>Blank</b>	<2.0			
<b>Control</b>	16.1			
<b>Control Target</b>	16.1			

Dept. of Chem. / Chem. Eng., RMC  
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Client No: 09-091  
Samples Received: 9-Jul-09  
Date of analysis: 13-Jul-09  
Method No: ASG 006  
Date Reported: 15-Jul-09  
Sheet No: 1 of 1

## RESULTS OF PCB IN WATER ANALYSIS

Sample Type **	Sample I.D.	Unit	Aroclor 1248	Aroclor 1254	Aroclor 1260
W	25802*	µg/L	< 3.0	< 3.0	< 3.0
W	25803	µg/L	< 3.0	< 3.0	< 3.0
W	25804	µg/L	< 3.0	< 3.0	< 3.0
W	25805	µg/L	< 3.0	< 3.0	< 3.0
W	25806	µg/L	< 3.0	< 3.0	< 3.0
W	25807	µg/L	< 3.0	< 3.0	< 3.0

\* Average result of duplicate

## LABORATORY QA/QC

	Blank	µg/L	< 3.0	< 3.0	< 3.0
	Duplicate ; 25802	µg/L	< 3.0 ; < 3.0	< 3.0 ; < 3.0	< 3.0 ; < 3.0
	Control Sample	µg/L	< 3.0	< 3.0	18
	Control Sample Target	µg/L	< 3.0	< 3.0	16

\*\* S = Soil , C = Concrete , PC = Paint Chip , SW = Swab , P = Plant , W = Water

All results corrected for the recovery of the surrogate decachlorobiphenyl

**Client : ESG**  
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Fax: (613) 541-6596

ASG Login No: 19424  
Site: CAM-1  
Client No: 09-091  
Samples Received: 9-Jul-09  
Date of analysis: 15-Jul-09  
Method No: ASG 021  
Date Reported: 15-Jul-09  
Sheet: 1 of 1

## RESULTS OF MERCURY IN WATER ANALYSIS

Sample I.D.	Unit	Mercury <sup>^</sup>
09-25802	µg/L	< 0.4
09-25803	µg/L	< 0.4
09-25804	µg/L	< 0.4
09-25805	µg/L	< 0.4
09-25806	µg/L	< 0.4
09-25807*	µg/L	< 0.4

\*Results of duplicate analysis.

<sup>^</sup> Acid digestion performed.

# Reported at 0.4 µg/L detection limit.

## LABORATORY QA/QC

Sample I.D.	Unit	Mercury <sup>^</sup>
Duplicate ; 09-25807*	µg/L	< 0.4 ; < 0.4
Blank	µg/L	< 0.4
Control Target	µg/L	4.0
Control Sample	µg/L	3.8

ASU #	12042		Report ID:	Cam-1 W4					
Client:	ASG 19424		Date Submitted:	9-Jul-09					
			Date tested:	10-Jul-09					
Site:	Cam-1		Date:	10-Jul-09					
	09-091		Matrix:	Water					
Preliminary Report of Analysis									
Total Metals	Results in mg/L								
SAMPLE	Cu	Ni	Co	Cd	Pb	Zn	Cr	As	
09-25802	-	-	-	-	-	0.11	-	<0.003	
09-25803	-	-	-	-	-	1.83	-	<0.003	
09-25804	-	-	-	-	-	0.09	-	<0.003	
09-25805	-	-	-	-	-	1.78	-	<0.003	
09-25806	-	-	-	-	-	0.13	-	<0.003	
09-25807	-	-	-	-	-	0.24	-	<0.003	*
Blank	-	-	-	-	-	<0.010	-	<0.003	
Control	-	-	-	-	-	2.77	-	0.73	
Control Target	-	-	-	-	-	3.00	-	0.80	
09-25807	-	-	-	-	-	0.23	-	<0.003	
09-25807	-	-	-	-	-	0.25	-	<0.003	
Dissolved Metals									
SAMPLE	Cu	Ni	Co	Cd	Pb	Zn	Cr	As	
09-25802	<0.005	<0.005	<0.003	<0.001	<0.010	-	<0.005	-	
09-25803	0.007	0.012	0.005	0.001	<0.010	-	<0.005	-	
09-25804	<0.005	<0.005	<0.003	<0.001	<0.010	-	<0.005	-	
09-25805	0.007	0.011	0.004	0.001	<0.010	-	<0.005	-	
09-25806	<0.005	<0.005	<0.003	<0.001	<0.010	-	<0.005	-	
09-25807	<0.005	<0.005	<0.003	<0.001	<0.010	-	<0.005	-	*
Blank	<0.005	<0.010	<0.003	<0.001	<0.010	-	<0.005	-	
Control	1.50	1.49	1.51	0.75	7.64	-	0.92	-	
Control Target	1.60	1.60	1.60	0.80	8.00	-	0.80	-	
09-25807	<0.005	<0.005	<0.003	<0.001	<0.010	-	<0.005	-	
09-25807	<0.005	<0.005	<0.003	<0.001	<0.010	-	<0.005	-	

ASU #	12080		Report ID:	Cam-1 W7				
Client:	ASG 19491		Date Submitted:	22-Jul-09				
			Date tested:	23-Jul-09				
Site:	Cam-1		Date:	23-Jul-09				
	09-111		Matrix:	Water				
Preliminary Report of Analysis								
<b>Total Metals</b>	Results in mg/L							
SAMPLE	Cu	Ni	Co	Cd	Pb	Zn	Cr	As
09-26157	-	-	-	-	-	<0.010	-	<0.003
Blank	-	-	-	-	-	<0.010	-	<0.003
Control	-	-	-	-	-	3.1	-	0.86
Control Target	-	-	-	-	-	3.0	-	0.80
09-26157	-	-	-	-	-	<0.010	-	<0.003
09-26157	-	-	-	-	-	<0.010	-	<0.003
<b>Dissolved Metals</b>								
SAMPLE	Cu	Ni	Co	Cd	Pb	Zn	Cr	As
09-26157	<0.005	<0.005	<0.003	<0.001	<0.010	-	<0.005	-
Blank	<0.005	<0.010	<0.003	<0.001	<0.010	-	<0.005	-
Control	1.6	1.7	1.7	0.83	8.3	-	0.76	-
Control Target	1.6	1.6	1.6	0.80	8.0	-	0.80	-
09-26157	<0.005	<0.005	<0.003	<0.001	<0.010	-	<0.005	-
09-26157	<0.005	<0.005	<0.003	<0.001	<0.010	-	<0.005	-

## RESULTS OF PCB IN WATER ANALYSIS

Sample Type **	Sample I.D.	Unit	Aroclor 1248	Aroclor 1254	Aroclor 1260
W	26157*	µg/L	< 3.0	< 3.0	< 3.0

\* Average result of Duplicate

## LABORATORY QA/QC

	Blank	µg/L	< 3.0	< 3.0	< 3.0
	26157 ; Duplicate	µg/L	< 3.0 ; < 3.0	< 3.0 ; < 3.0	< 3.0 ; < 3.0
	Control Sample	µg/L	< 3.0	< 3.0	12
	Control Sample Target	µg/L	< 3.0	< 3.0	16

\*\* S = Soil , C = Concrete , PC = Paint Chip , SW = Swab , P = Plant , W = Water

All results corrected for the recovery of the surrogate decachlorobiphenyl

<b>ASU #</b>	12080		<b>Report ID:</b>	Cam-1 W6
<b>Client:</b>	ASG 19491		<b>Date Submitted:</b>	22-Jul-09
			<b>Date tested:</b>	22-Jul-09
<b>Site:</b>	Cam-1		<b>Date:</b>	23-Jul-09
	09-111		<b>Matrix:</b>	water
Preliminary Report of Analysis				
Sample	Oil & Grease			
	mg/L			
09-26157	2.8			
Blank	<2.0			
Control	16.2			
Control Target	16.1			

**Client : ESG**  
 12 Verite Ave  
 Dept. of Chem. / Chem. Eng., RMC  
 P.O. Box 17000, Stn. Forces  
 Kingston, Ontario K7K 7B4  
 (613) 541-6000 ext 6567  
 Fax: (613) 541-6596

ASG Login No: 19491  
 Site: Cam-1  
 Client No: 09-111  
 Samples Received: 22-Jul-09  
 Date of analysis: 23-Jul-09  
 Method No: ASG 021  
 Date Reported: 24-Jul-09  
 Sheet: 1 of 1

## RESULTS OF MERCURY IN WATER ANALYSIS

Sample I.D.	Unit	Mercury <sup>^</sup>
26157	µg/L	< 0.4

\*Results of duplicate analysis.

<sup>^</sup> Acid digestion performed.

# Reported at 0.4 µg/L detection limit.

## LABORATORY QA/QC

Sample I.D.	Unit	Mercury <sup>^</sup>
Blank	µg/L	< 0.4
Control Target	µg/L	4.0
Control Sample	µg/L	3.9

<b>ASU #</b>	12097		<b>Report ID:</b>	Cam-1 W8
<b>Client:</b>	ASG 19525		<b>Date Submitted:</b>	27-Jul-09
			<b>Date tested:</b>	28-Jul-09
<b>Site:</b>	Cam-1		<b>Date:</b>	29-Jul-09
	09-126		<b>Matrix:</b>	water
Preliminary Report of Analysis				
Sample	Oil & Grease			
	mg/L			
09-26182	<2.0			
Blank	<2.0			
Control	15.9			
Control Target	16.1			

<b>ASU #</b>	12096		<b>Report ID:</b>	Cam-1 W10				
<b>Client:</b>	ASG 19515		<b>Date Submitted:</b>	27-Jul-09				
			<b>Date tested:</b>	28-Jul-09				
<b>Site:</b>	Cam-1		<b>Date:</b>	29-Jul-09				
	09-131		<b>Matrix:</b>	Water				
Preliminary Report of Analysis								
<b>Total Metals</b>	Results in mg/L							
SAMPLE	Cu	Ni	Co	Cd	Pb	Zn	Cr	As
09-26243	-	-	-	-	-	<0.010	-	<0.003
Blank	-	-	-	-	-	<0.010	-	<0.003
Control	-	-	-	-	-	3.1	-	0.83
Control Target	-	-	-	-	-	3.0	-	0.80
<b>Dissolved Metals</b>								
SAMPLE	Cu	Ni	Co	Cd	Pb	Zn	Cr	As
09-26243	<0.005	<0.005	<0.003	<0.001	<0.010	-	<0.005	-
Blank	<0.005	<0.010	<0.003	<0.001	<0.010	-	<0.005	-
Control	1.6	1.7	1.7	0.81	8.3	-	0.85	-
Control Target	1.6	1.6	1.6	0.80	8.0	-	0.80	-

Client: **ESG**  
 12 Verite Ave  
 Dept. of Chem. / Chem. Eng., RMC  
 P.O. Box 17000, Stn. Forces  
 Kingston, Ontario K7K 7B4  
 (613) 541-6000 ext 6567  
 Fax: (613) 541-6596

ASG Login No: 19515  
 Site: Cam-1  
 Client No: 09-131  
 Samples Received: 27-Jul-09  
 Date of analysis: 29-Jul-09  
 Method No: ASG 015  
 Date Reported: 30-Jul-09  
 Sheet No: 1 of 1

### RESULTS OF PCB IN WATER ANALYSIS

Sample Type **	Sample I.D.	Unit	Aroclor 1254	Aroclor 1260
W	26243*	µg/L	< 3.0	< 3.0

\* Average result of Duplicate

### LABORATORY QA/QC

	Blank	µg/L	< 3.0	< 3.0
	26243* : Duplicate	µg/L	< 3.0 ; < 3.0	< 3.0 ; < 3.0
	Control Sample	µg/L	< 3.0	14
	Control Sample Target	µg/L	< 3.0	15

\*\* S = Soil , C = Concrete , PC = Paint Chip , SW = Swab , P = Plant , W = Water

All results corrected for the recovery of the surrogate decachlorobiphenyl

<b>ASU #</b>	12096		<b>Report ID:</b>	Cam-1 W9
<b>Client:</b>	ASG 19515		<b>Date Submitted:</b>	27-Jul-09
			<b>Date tested:</b>	28-Jul-09
<b>Site:</b>	Cam-1		<b>Date:</b>	29-Jul-09
	09-131		<b>Matrix:</b>	water
Preliminary Report of Analysis				
Sample	Oil & Grease			
	mg/L			
09-26243	18.6			
Blank	<2.0			
Control	15.9			
Control Target	16.1			



<b>ASU #</b>	12120		<b>Report ID:</b>	Cam-1 W11
<b>Client:</b>	ASG 19576		<b>Date Submitted:</b>	3-Aug-09
			<b>Date tested:</b>	3-Aug-09
<b>Site:</b>	Cam-1		<b>Date:</b>	4-Aug-09
	09-174		<b>Matrix:</b>	water
Preliminary Report of Analysis				
Sample	Oil & Grease			
	mg/L			
09-26392	9.5			
Blank	<2.0			
Control	13.5			
Control Target	16.1			

## APPENDIX B PHOTOGRAPHS

**Photo 1 (DSC00252): Sample 09-25725 waste water in landfarm, southwest corner, extending to the eastern corner.**



**Photo 2 (DSC00099): Sample 09-25726 tier II facility facing north. Wastewater sample will be collected for the next flight.**



**Photo 3 (DSC00110): Sample 09-25727 west landing debris area facing southwest.**



**Photo 4 (DSC00433): Sample 09-26157 west landing debris area facing west.**





**Photo 5 (DSC00231):** Sample 09-25728 empty former POL tank, not used for barrel storage, facing south, view from hole in the side of tank.



**Photo 6 (DSC00232):** Sample 09-25728 former POL tank, not used for barrel storage (forefront) facing south.



**Photo 7 (DSC00228):** Sample 09-25802 and 09-25804 consolidated water from barrel processing in blue bin #1 facing west.



**Photo 8 (DSC00231):** Sample 09-25803, 09-25805, 09-25806 and 09-25807 consolidated water from barrel processing in blue bin (with ramp) #2 facing west.





**Photo 9 (DSC00450): Sample 09-26182 former POL filter pack.**



**Photo 10 (DSC00458): Sample 09-26243 north edge of east point debris regrade with sampled wastewater facing northwest.**



Tricia Cammaart  
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The Royal Military College of Canada  
PO Box 17000 Stn. Forces  
Kingston, ON K7K 7B4



Douglas Craig  
Environmental Officer  
Defence Construction Canada  
DEW Line Cleanup PMO  
350 Albert Street, Suite 1720  
Ottawa ON K1A 0K3

Tuesday, September 22, 2009

**RE: August 2009 Monthly Report for Water Use License Number: 1BR-JEN0712**

The following results of the Monitoring Program (MP) and/or Water Use License are provided by the Environmental Sciences Group to meet the requirements of the above-noted license for *CAM-1 (Jenny Lind Island)*.

1. CAMP SEWAGE LAGOON

A sewage lagoon was constructed to service the CAM-1 construction camp in June of 2009. The GPS coordinates that are required by the Water Use License for the sewage lagoon location are 7618548.9N 388460.6E.

2. SEWAGE EFFLUENT SAMPLES

There were no sewage effluent samples collected in August 2009 from the CAM-1 sewage lagoon.

We trust that the information provided meets current requirements. Please contact the undersigned if you have any questions or concerns.

Sincerely,

Tricia Cammaart  
Environmental Sciences Group

cc: Eva Schulz (UMA)  
Daniela Loock, Kat White, Shari Reed, Maria Vavro, Tracey Bullock (ESG)

Tricia Cammaart  
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Douglas Craig  
Environmental Officer  
Defence Construction Canada  
DEW Line Cleanup PMO  
350 Albert Street, Suite 1720  
Ottawa ON K1A 0K3

Tuesday, September 22, 2009

**RE: Analytical Results for Wastewater Samples Collected at CAM-1 in August, 2009**

The following report summarizes results of the analysis of wastewater samples as per the CAM-1 (Jenny Lind Island) DEW Line Cleanup Project (DLCU) Specifications.

The CAM-1 specifications require that “wash water, melt water collection, rinse water resulting from the cleaning of fuel tanks and pipelines, and/or any other liquid effluent stream” meet the following guidelines prior to their discharge to land (01560.4.1):

Parameter	Maximum Allowable Concentration	Units
pH	6-9	pH units
Total arsenic (As)	0.100	mg/L
Dissolved cadmium (Cd)	0.010	mg/L
Total chromium (Cr)	0.100	mg/L
Dissolved cobalt (Co)	0.050	mg/L
Dissolved copper (Cu)	0.200	mg/L
Dissolved lead (Pb)	0.050	mg/L
Total mercury (Hg)	0.6	µg/L
Dissolved nickel (Ni)	0.200	mg/L
Total zinc (Zn)	1.000	mg/L
Oil & grease	5 mg/L and None visible	mg/L
PCBs	0.050* 0.005**	mg/L
Phenols	0.020	mg/L

\*Discharge to barren land, \*\*Discharge to vegetated land

*Phenols*

The wastewater samples collected by ESG at CAM-1 in August 2009 were not analyzed for phenols but they were analyzed for oil and grease. Research conducted by ESG<sup>1</sup> has determined that a) no federal, territorial or provincial criteria exist for the discharge of

<sup>1</sup> Environmental Sciences Group. *DEW Line Clean Up Project – Phenols in Wastewater*. June, 2007.



wastewater containing phenols to land at a minimum distance of 30-m from natural drainage courses b) the maximum concentration of phenols in DLCU wastewater to date (2.44 mg/L) is below the LC<sub>50</sub> for freshwater fish and crustaceans and below the oral and dermal LD<sub>50</sub>s for rats and rodents and c) phenols in excess of the maximum allowable concentration (MAC) have historically co-occurred with a visible oil & grease sheen and/or with an exceedance of the MAC for oil & grease. This information, and a subsequent decision to not test for phenols, has been presented to the NWB. To date, verbal agreement from the NWB has been received, but the project is awaiting written confirmation of the decision to suspend testing for phenols.

#### WASTEWATER SAMPLES

One wastewater sample was collected at CAM-1 and analyzed in August 2009. A summary of the details of these results follows.

Sample Number	Sample Location	GPS Coordinates	Sampling Date
09-26555	Landfarm	388929.1E 7620223.4N	August 6, 2009

A summary of the results for the parameters tested is provided below. Laboratory results and photographs are provided in Appendices A and B, respectively.

#### **LOCATION: LAND FARM**

GPS COORDINATES: 388929.1E 7620223.4N

Parameter	Maximum Allowable Concentration	Units	Sample # 09-26555
<b>pH</b>	6-9	pH units	N/A
<b>Total Arsenic</b>	0.100	mg/L	N/A
<b>Dissolved Cadmium</b>	0.010	mg/L	N/A
<b>Total Chromium</b>	0.100	mg/L	N/A
<b>Dissolved Cobalt</b>	0.050	mg/L	N/A
<b>Dissolved Copper</b>	0.200	mg/L	N/A
<b>Dissolved Lead</b>	0.050	mg/L	N/A
<b>Total Mercury</b>	0.6	µg/L	N/A
<b>Dissolved Nickel</b>	0.200	mg/L	N/A
<b>Total Zinc</b>	1.0	mg/L	N/A
<b>Oil &amp; Grease</b>	None Visible and 5 mg/L	mg/L	None visible <2.0
<b>PCBs</b>	50* 5**	µg/L	N/A
<b>Phenols</b>	20	µg/L	N/A

\*Discharge to barren land, \*\*Discharge to vegetated land

KPI discharged the water on August 28<sup>th</sup> to a previously approved location within the requirements of the specifications and the WUL. Discharge of the water occurred prior to receipt of the analytical results in order to complete the closure and regarding of the landfarm prior to site closeout.

A sample collected earlier in the year, sample 09-25725, taken on July 2<sup>nd</sup>, was below criteria with no visible sheen, and no additional material had been added to the landfarm since these sampling events.

Analytical results for the water sample were below criteria for oil and grease.

We trust that the information provided meets current requirements. Please contact the undersigned if you have any questions or concerns.

Sincerely,

A handwritten signature in black ink, reading "Tricia Cammaart". The signature is written in a cursive style with a large, stylized 'T' and a long, sweeping horizontal line at the end.

Tricia Cammaart  
Environmental Sciences Group

cc: Eva Schulz (UMA)  
Daniela Loock, Kat White, Shari Reed, Maria Vavro, Tracey Bullock (ESG)

APPENDIX A  
LABORATORY RESULTS

<b>ASU #</b>	12159		<b>Report ID:</b>	Cam-1 W13
<b>Client:</b>	ASG 19654		<b>Date Submitted:</b>	12-Aug-09
			<b>Date tested:</b>	13-Aug-09
<b>Site:</b>	Cam-1		<b>Date:</b>	14-Aug-09
	09-207		<b>Matrix:</b>	water
Preliminary Report of Analysis				
Sample	Oil & Grease			
	mg/L			
09-26555	<2.0			
Blank	<2.0			
Control	14.6			
Control Target	16.1			

## APPENDIX B PHOTOGRAPHS

**Photo 1 (DSC00662):** Sample 09-26555 southwest corner inside land farm with sampled waste water facing southwest.

