AECOM
2540 Kensington Road NW
Calgary, AB, Canada T2N 3S3
www.aecom.com

403 270 9200 tel
403 270 0399 fax

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 1BR-FOD813

Regarding: FOX-3, Dewar Lakes 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 at the site in 2009:

Summary of Work Completed

Non-Hazardous Waste Landfill: Construction of the perimeter berms is 50% complete. A small volume of debris was placed in the landfill at the end of the 2009 season and covered with intermediate fill for the winter.

Tier II Disposal Facility: Construction of the key trench was completed. There was no placement of Tier II soils in 2009.

Landfarm: Construction of the berms began but was not completed in 2009. There was no placement of hydrocarbon-impacted soils in 2009.

Landfill and Buried Debris Area Remediation: The Station Construction Camp Debris Area Lobes C and D were excavated.

Groundwater Monitoring Well Installation: 12 monitoring wells were installed in 2009 – 4 at the Landfarm; 4 at the Non-Hazardous Waste Landfill; and 4 at the Tier II Disposal Facility.

Debris Removal: On-going.

Demolition: Removal of asbestos from the buildings and facilities to be demolished was completed in 2009.

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

Spill Incidences: There was one spill reported on Aug. 31, 2009. A copy of the spill report is attached.

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.
cc: Douglas Craig, DCC
Encl: Updated Site Figures and Selected Site Photos
Monitoring Results , Spill Report

NWB Annual Report **Year being reported:** 2009

License No: 1BR-FOD0813 **Issued Date:** July 18, 2008
Expiry Date: July 30, 2013

Project Name: FOX-3, Dewar Lakes 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
Engineering Design Consultant

General Background Information on the Project (*optional):

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

Part B | Item 1

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

Water Source(s):	water supply lake	
Water Quantity:	55 for all purposes	Quantity Allowable Domestic (cu.m)
	1271/173 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 715 cu.m. of sewage and greywater disposed of in lagoon.
- [ ] Drill Waste
- [ ] Greywater
- [ ] Hazardous
- [ ] Other:

Additional Details:
Details of the waste management and disposal were provided with the application form.

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: Aug. 29, 2009
Date of Notification to an Inspector: Aug. 31, 2009
Additional Details: (impacts to water, mitigation measures, short/long term monitoring, etc)
See attached spill report.

Revisions to the Spill Contingency Plan

SCP submitted and approved - no revision required or proposed

Additional Details:

Revisions to the Abandonment and Restoration Plan

N/A - not applicable

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)

n/a

Results of the Monitoring Program including:

The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each 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 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 bein 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

Date Submitted:	March 31, 2010	
Submitted/Prepared by:	Eva Schulz	
Contact Information:	**Tel:**	403-270-9220
	Fax:	403-270-0399
	email:	eva.schulz@aecom.com

taining
gement.

location

location

ng

GPS Coordinates for water sources utilized

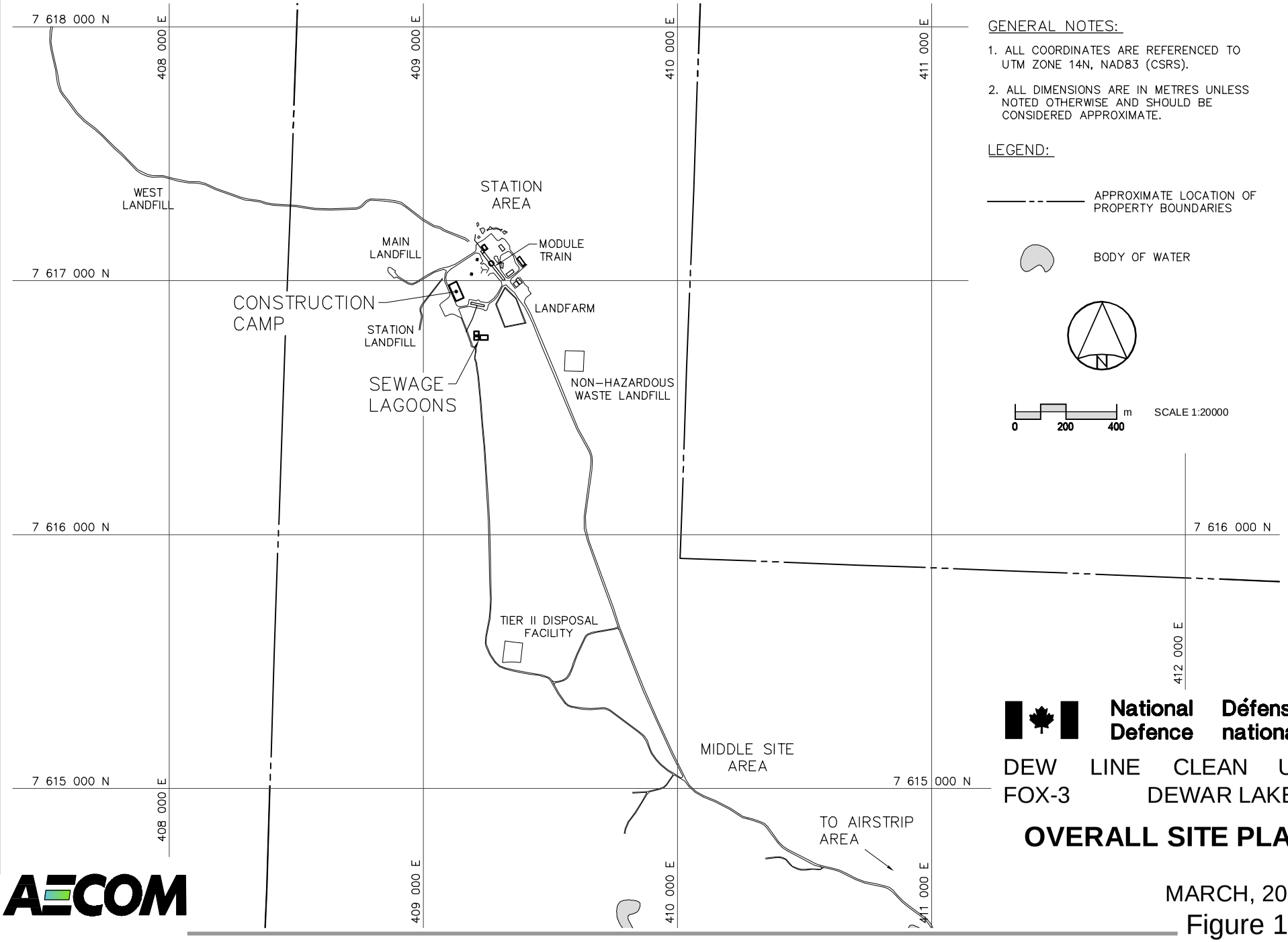
Source Description	UTM Zone 19N, NAD83	
	Northing	Easting
water supply lake	7614050	412400

GPS Locations of areas of waste disposal

Location Description (type)	UTM Zone 19N, NAD83	
	Northing	Easting
Landfarm (F01)	7616970	409322.3
Landfarm (F02)	7616929.4	409363.2
Landfarm (F04)	7616834.8	409400.1
Landfarm (F05)	7616819.1	409321.5
Landfarm (F07)	7616906.8	409287.2
Non-Hazardous Waste Landfill (G01)	7616725.5	409558.2
Non-Hazardous Waste Landfill (G02)	7616722.6	409633.2
Non-Hazardous Waste Landfill (G03)	7616642.7	409630.1
Non-Hazardous Waste Landfill (G04)	7616645.5	409555.2
Tier II Landfill (H01)	7615581.4	409321.8
Tier II Landfill (H02)	7615573	409391.2
Tier II Landfill (H03)	7615496.7	409382
Tier II Landfill (H04)	7615497	409311.5
Sewage Lagoon	exact coordinates to be collected in 2010	

Attachments

Updated Site Figures



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PLOT: Tuesday, March 30, 2010 7:47:29 AM

Saved by: Hassler, Brad

AECOM FILE NO.:FIGURE 1.DWG

AECOM

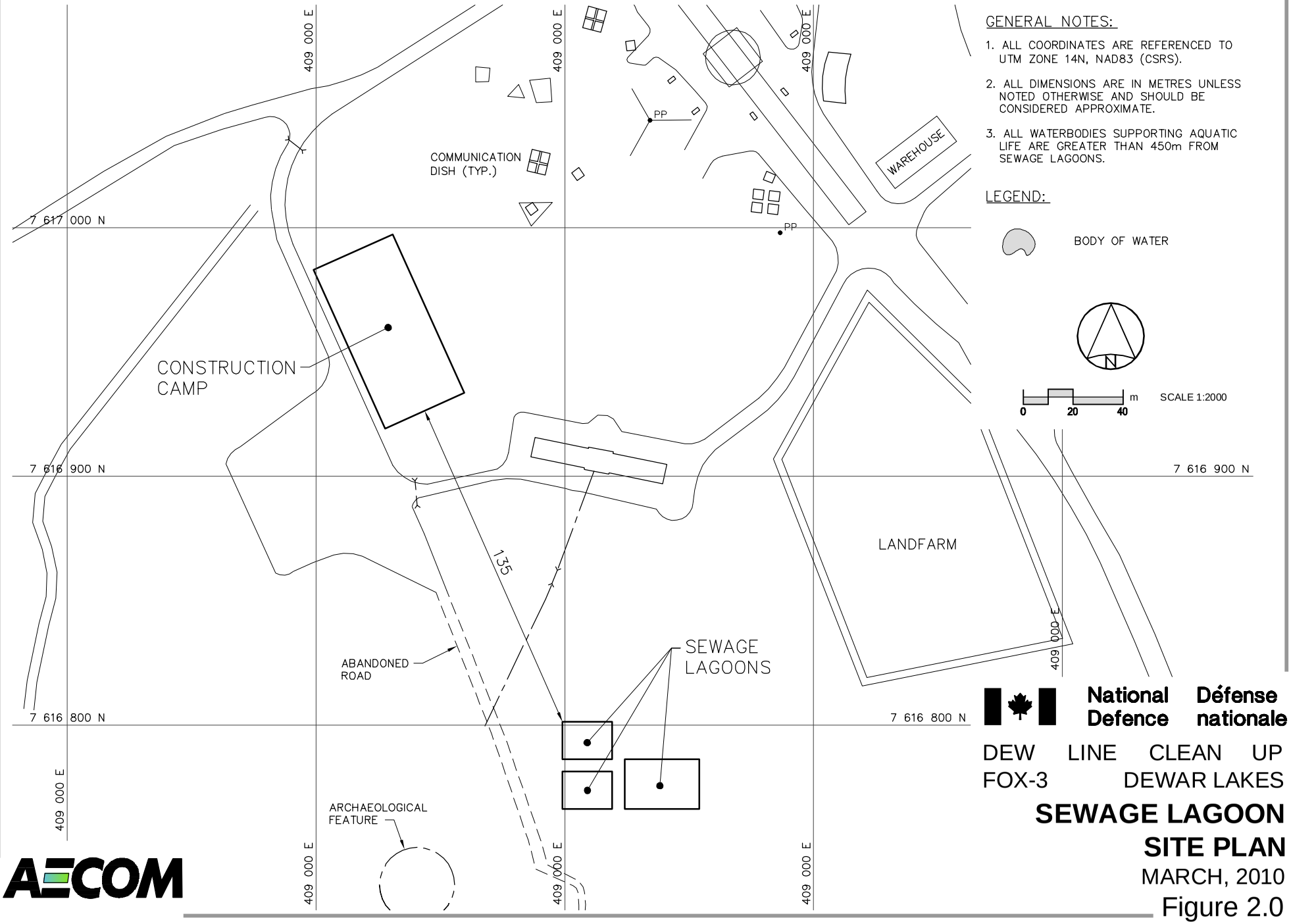
National Defence / Défense nationale

DEW LINE CLEAN UP
FOX-3 DEWAR LAKES

OVERALL SITE PLAN

MARCH, 2010

Figure 1.0



National Defence / Défense nationale

DEW LINE CLEAN UP
FOX-3 DEWAR LAKES

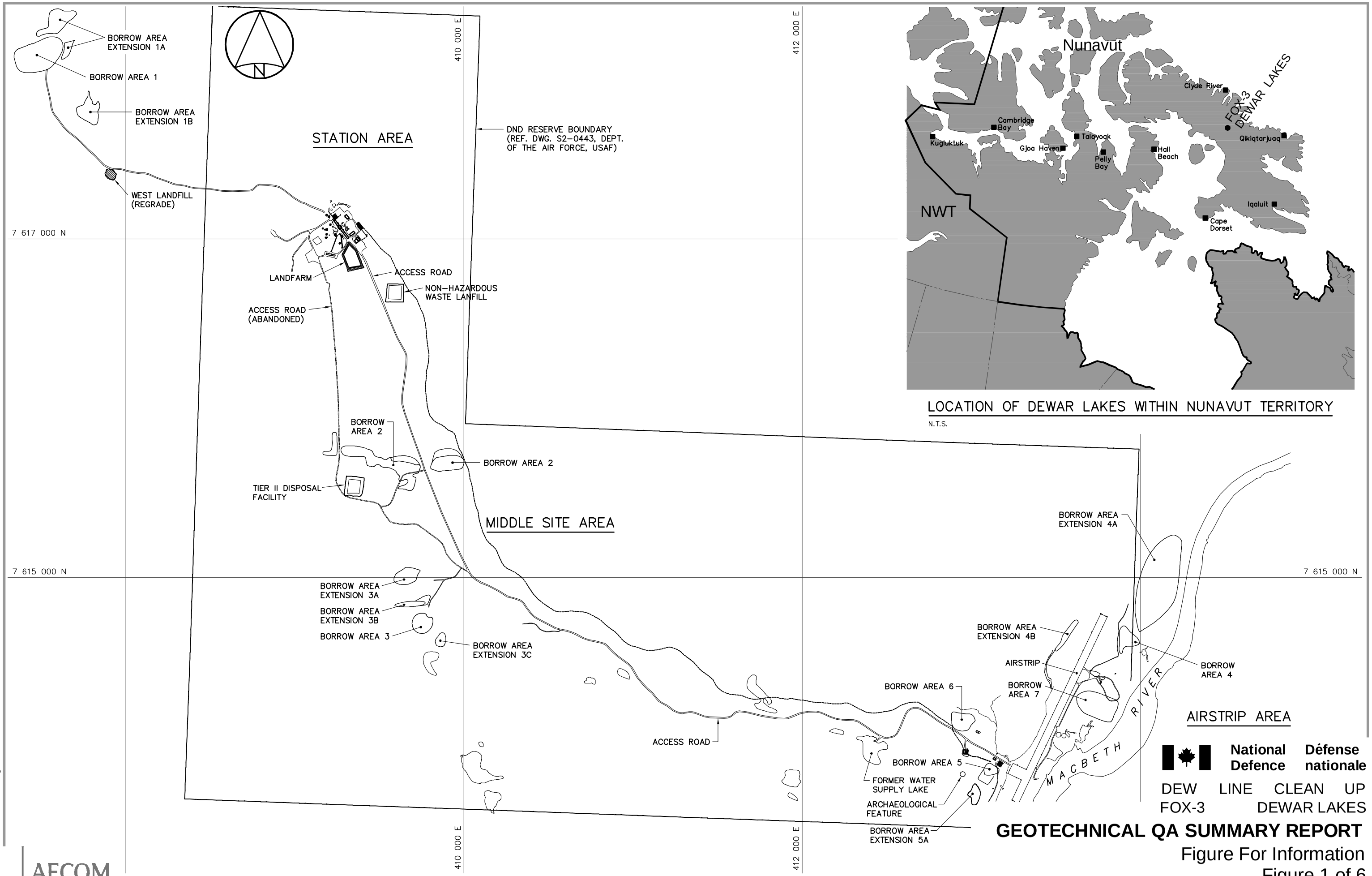
SEWAGE LAGOON SITE PLAN

MARCH, 2010

Figure 2.0

AECOM

Sheet Size: Letter (279mm x 216mm)
PLOT: Tuesday, March 30, 2010 8:47:47 AM
Saved by: Hassler, Brad
AECOM FILE NO.:FIGURE 2.DWG



LOCATION OF DEWAR LAKES WITHIN NUNAVUT TERRITORY

N.T.S.

National Defence / Défense nationale

DEW LINE CLEAN UP
FOX-3 DEWAR LAKES

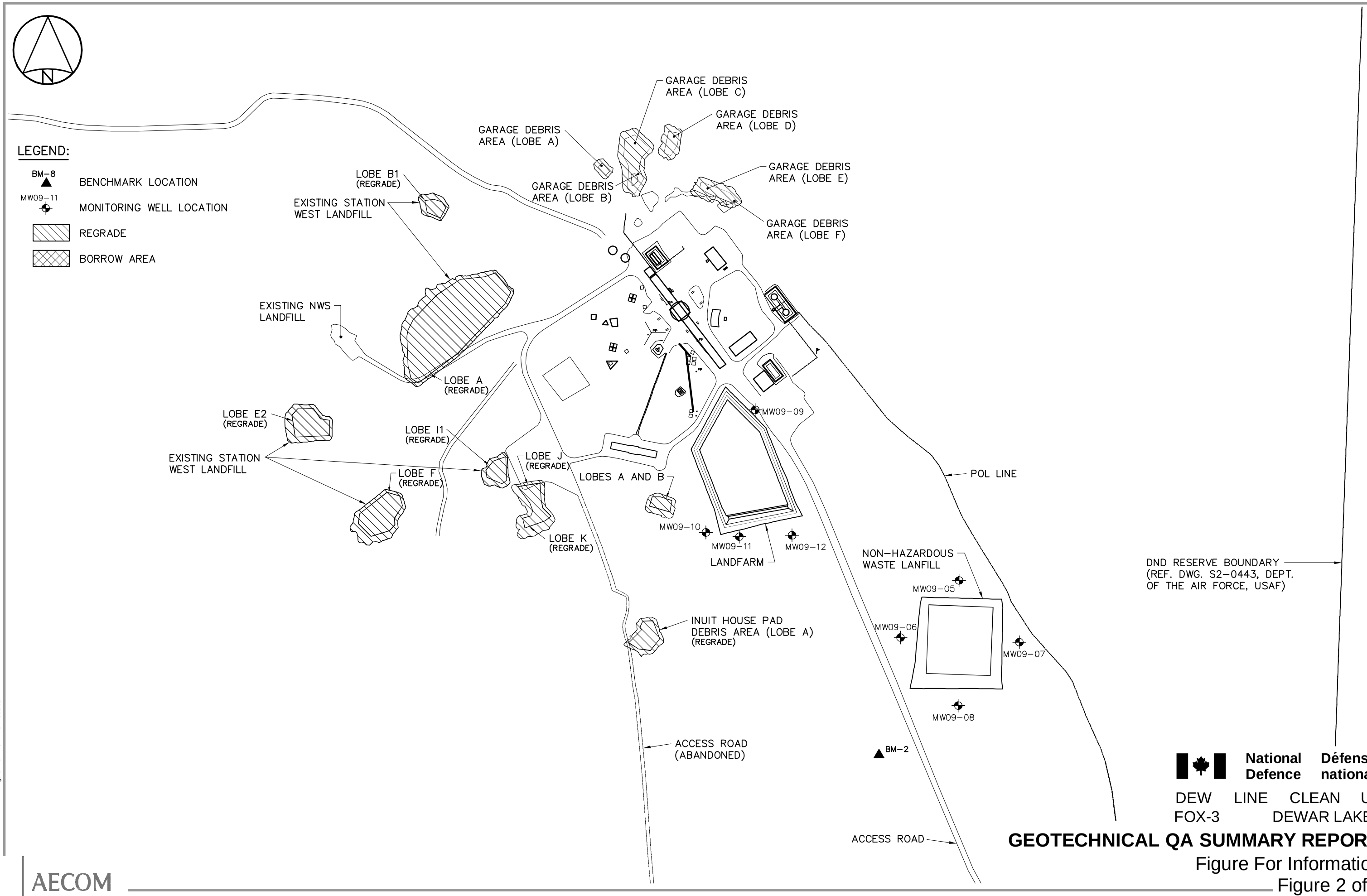
GEOTECHNICAL QA SUMMARY REPORT

Figure For Information

Figure 1 of 6

AECOM

FILE NAME: P4-Figure-Info.DWG IC - 2009/05/11



National Defence / Défense nationale

DEW LINE CLEAN UP
FOX-3 DEWAR LAKES

GEOTECHNICAL QA SUMMARY REPORT

Figure For Information

Figure 2 of 6

AECOM

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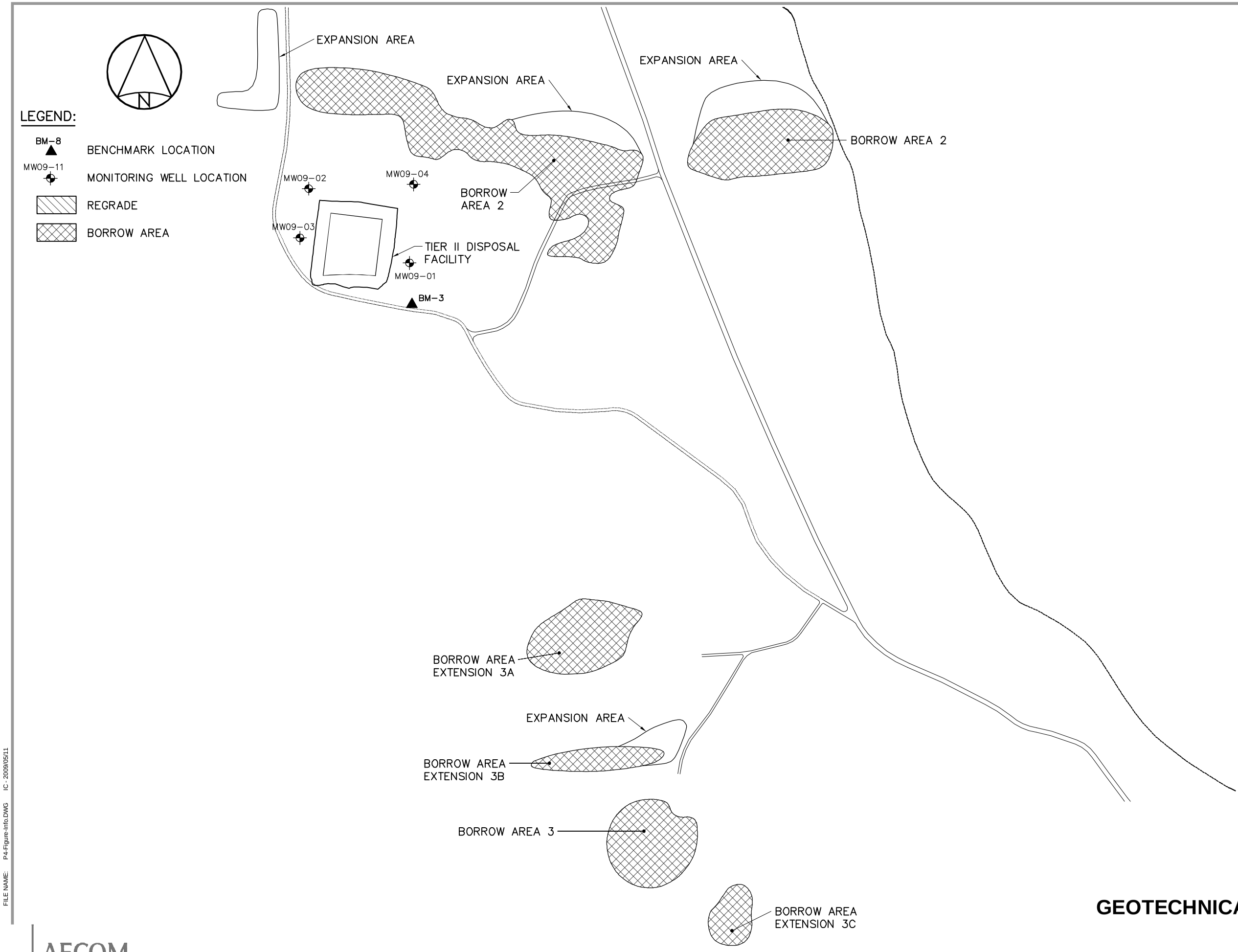


FILE NAME: P4-Figure-Info.DWG IC - 2009/05/11

National Défense
Defence nationale

DEW LINE CLEAN UP
FOX-3 DEWAR LAKES

GEOTECHNICAL QA SUMMARY REPORT

Figure For Information

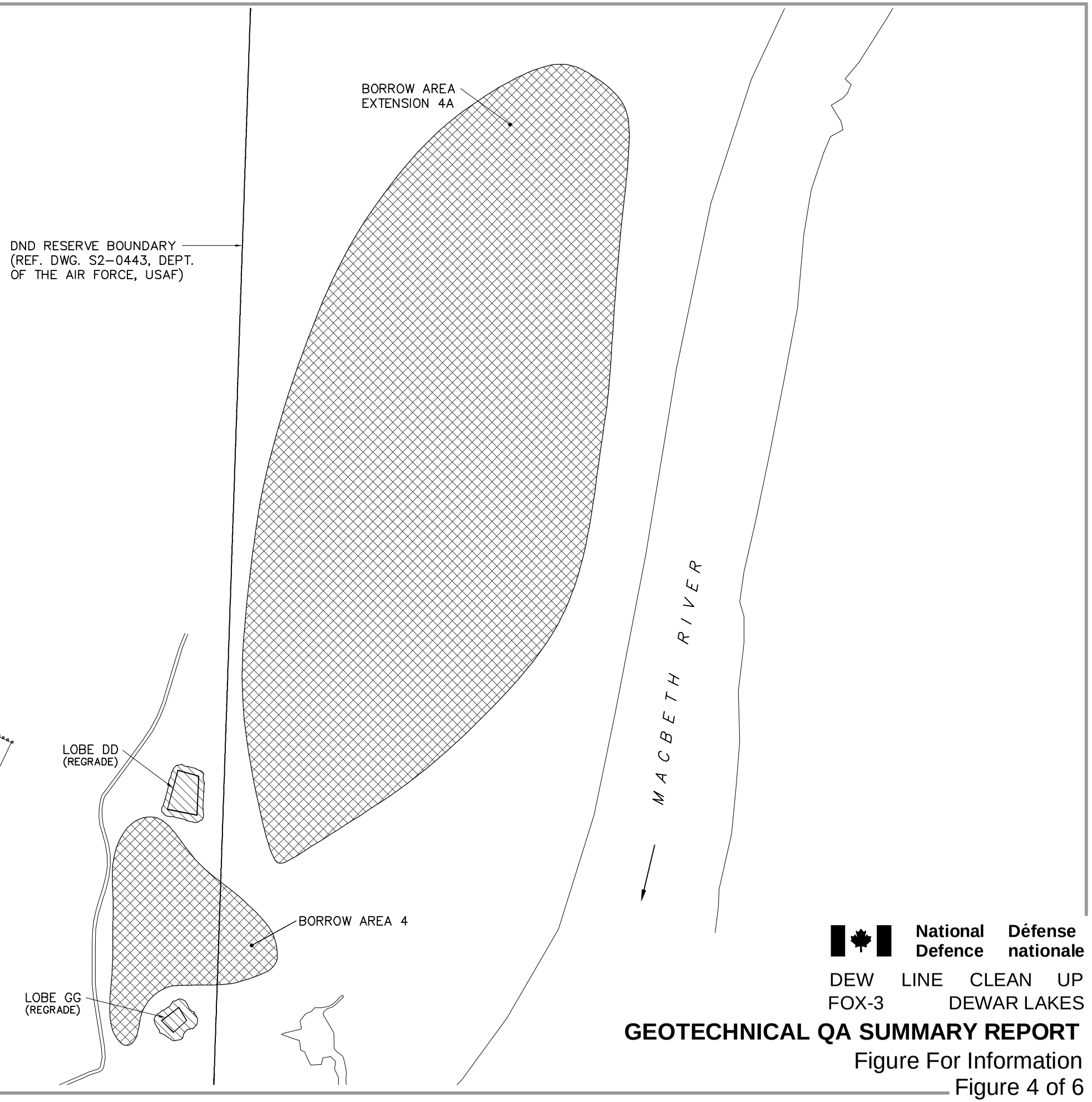
AECOM

LEGEND:

BM–8 ▲ BENCHMARK LOCATION

REGRADE

BORROW AREA



FILE NAME: P4-Figure-Info.DWG IC - 2009/05/11

AECOM

National Défense
Defence nationale

DEW LINE CLEAN UP
FOX-3 DEWAR LAKES

GEOTECHNICAL QA SUMMARY REPORT

Figure For Information

Figure 4 of 6

LEGEND:

BM-8 ▲ BENCHMARK LOCATION

REGRADE

BORROW AREA

N

DND RESERVE BOUNDARY
(REF. DWG. S2-0443, DEPT.
OF THE AIR FORCE, USAF)

LOBE EE
(REGRADE)

LOBE Q
(REGRADE)

LOBE R
(REGRADE)

LOBE K
(REGRADE)

LOBE S
(REGRADE)

LOBE M
(REGRADE)

LOBE L
(REGRADE)

BORROW AREA 7

LOBE I
(REGRADE)

THERMOKARST
POND

LOBE G
(REGRADE)

LOBE F
(REGRADE)

AIRSTRIP

MACBETH RIVER

BORROW AREA 6

EXISTING ASBESTOS
LANDFILL

DRAINAGE COURSE

BORROW AREA 5

EXPANSION AREA

BM-4

BORROW AREA 5 DEBRIS
AREA (LOBE B)
(REGRADE)

FILE NAME: P4-Figure-Info.DWG IC - 2009/05/11

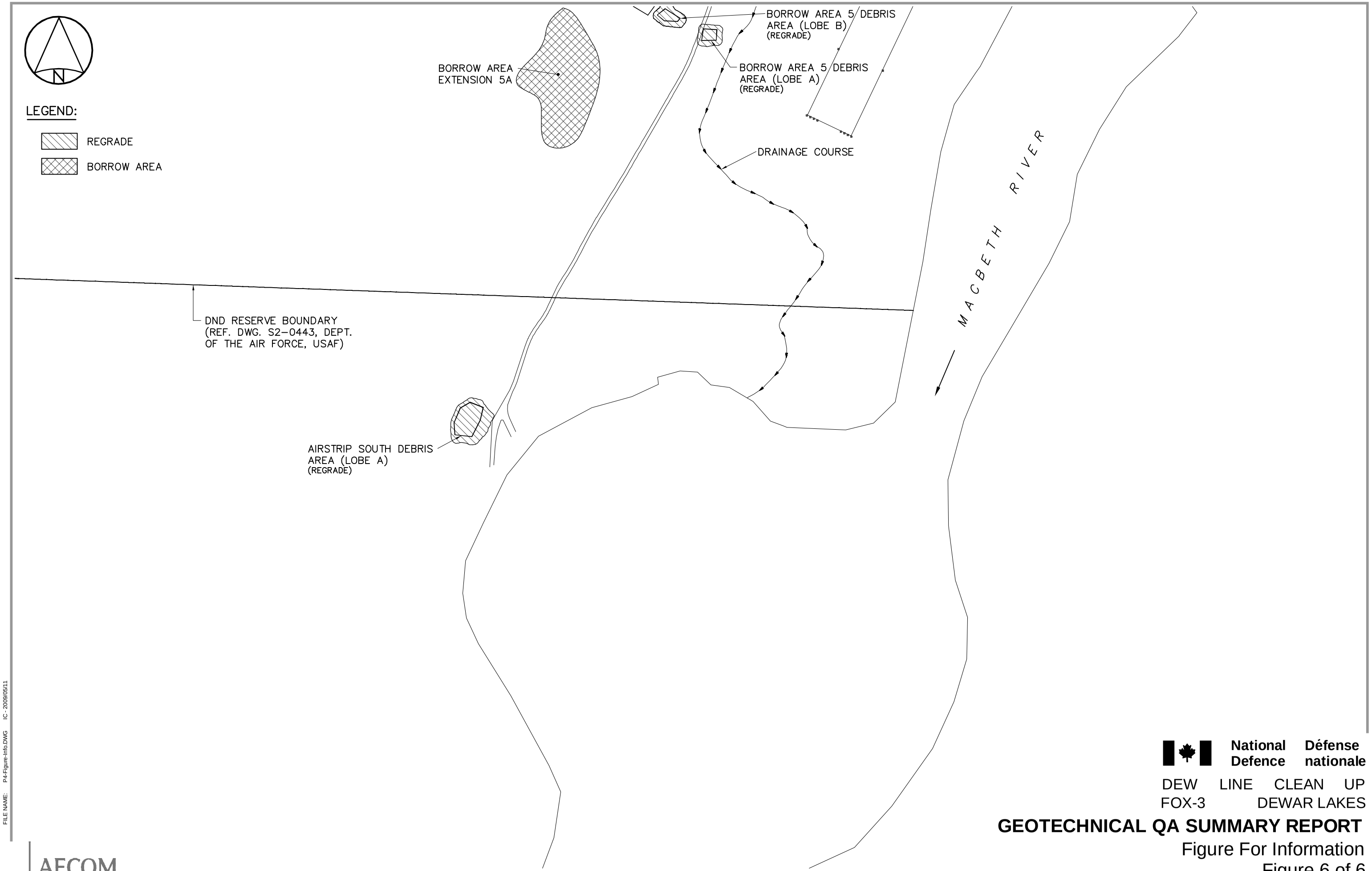
AECOM

National Défense
Defence nationale

DEW LINE CLEAN UP
FOX-3 DEWAR LAKES

GEOTECHNICAL QA SUMMARY REPORT

Figure For Information



FILE NAME: P4-Figure-Info.DWG IC - 2009/05/11

AECOM

National Défense
Defence nationale

DEW LINE CLEAN UP
FOX-3 DEWAR LAKES

GEOTECHNICAL QA SUMMARY REPORT

Figure For Information

Figure 6 of 6

Attachments

Selected Site Photos

Photograph 1
Sewage Lagoon

Photograph 2
Landfarm

Photograph 3
Non-Hazardous Waste Landfill

Photograph 4
Tier II Disposal Facility

Attachments

Spill Report

NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

NT-NU 24-HOUR SPILL REPORT LINE
TEL: (867) 920-8130
FAX: (867) 873-6924
EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

A	REPORT DATE: MONTH – DAY – YEAR **August 31, 2009**	REPORT TIME **14:00**	[X] ORIGINAL SPILL REPORT, OR ☐ UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER _____-_____
B	OCCURRENCE DATE: MONTH – DAY – YEAR **August 29, 2009**	OCCURRENCE TIME **night shift**		

C	LAND USE PERMIT NUMBER (IF APPLICABLE) **N2007X0038**	WATER LICENCE NUMBER (IF APPLICABLE) **1BR-FOD0813**
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION **FOX-3, Dewar Lakes**	REGION ☐ NWT [X] NUNAVUT ☐ ADJACENT JURISDICTION OR OCEAN
E	LATITUDE DEGREES **68** MINUTES **40** SECONDS	LONGITUDE DEGREES **71** MINUTES **14** SECONDS
F	RESPONSIBLE PARTY OR VESSEL NAME **Defence Construction Canada**	RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION **350 Albert Street, Suite 1720, Ottawa, ON K1A 0K3**
G	ANY CONTRACTOR INVOLVED **Biogenie**	CONTRACTOR ADDRESS OR OFFICE LOCATION **350, rue Franquet, QUÉBEC, Quebec G1P 4P3**

H	PRODUCT SPILLED **Hydraulic fluid (new)**	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES **200-L (maximum)**	U.N. NUMBER
	SECOND PRODUCT SPILLED (IF APPLICABLE)	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER

I	SPILL SOURCE **Drum of new hydraulic fluid**	SPILL CAUSE **Punctured drum**	AREA OF CONTAMINATION IN SQUARE METRES **250 square meters (max)**
J	FACTORS AFFECTING SPILL OR RECOVERY **none**	DESCRIBE ANY ASSISTANCE REQUIRED **none**	HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT **none**

K — ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS

A 200 liter barrel containing new hydraulic fluid was punctured during moving. Exact time of incident is unknown; expected to have occurred during night shift in the early hours of 29Aug09. The operator was unaware of the puncture and the spill was not discovered until the following shift (during the day of 29Aug09). In the time between the spill and the discovery there was some traffic through the spill area. Two (2) levels of contamination occurred. Level one is localized to an area of approximately 45 square meters, in close proximity to the punctured barrel. Level two is defined by the area that was impacted by traffic through the spill. Level two encompasses an area of approximately 100 meters long by 2 meters wide, with light contamination sporadically spread throughout.

Sorbent pads were used to collect the free product, which had settled in small puddles. Impacted soil was excavated to a maximum depth of 0.5 meters and taken to the appropriate disposal facility.

L	REPORTED TO SPILL LINE BY **Douglas Craig**	POSITION **Environmental Officer**	EMPLOYER **DCC**	LOCATION CALLING FROM **Ottawa**	TELEPHONE **(613) 998-7288**
M	ANY ALTERNATE CONTACT **Don Beattie**	POSITION **Assoc. Proj. Manager**	EMPLOYER **DCC**	ALTERNATE CONTACT LOCATION **Ottawa**	ALTERNATE TELEPHONE **(613) 998-9540**

REPORT LINE USE ONLY

N	RECEIVED AT SPILL LINE BY	POSITION STATION OPERATOR	EMPLOYER	LOCATION CALLED YELLOWKNIFE, NT	REPORT LINE NUMBER (867) 920-8130

LEAD AGENCY ☐ EC ☐ CCG ☐ GNWT ☐ GN ☐ ILA ☐ INAC ☐ NEB ☐ TC | SIGNIFICANCE ☐ MINOR ☐ MAJOR ☐ UNKNOWN | FILE STATUS ☐ OPEN ☐ CLOSED

AGENCY	CONTACT NAME	CONTACT TIME	REMARKS
LEAD AGENCY			
FIRST SUPPORT AGENCY			
SECOND SUPPORT AGENCY			
THIRD SUPPORT AGENCY			

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-FOD813

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 FOX-3 *(Dewar Lakes)*.

1. CAMP SEWAGE LAGOON

A 2 cell sewage lagoon was constructed to service the FOX-3 construction camp in 2009. The sewage lagoon is located approximately 100 m from the contractor's camp, 100 m away from drainage channels and any bodies of water supporting aquatic life. The GPS coordinates that are required by the Water Use License for the sewage lagoon location are 049186E 7616767N.

2. SEWAGE EFFLUENT SAMPLES

The Water Use License and MP require that samples be collected from treated sewage lagoon effluent at the point of discharge prior to each discharge event. Four sewage effluent samples were collected in July 2009 from the FOX-3 sewage lagoon. A summary of the details of these results follows.

Sample Number	Sample Location	GPS Coordinates	Sampling Date
09-27149	FOD-2: Sewage pumped to the Sewage Discharge Disposal Facility Cell 1	0409194E 7616770N	July 25, 2009
09-27236	FOD-2: Sewage pumped to the Sewage Discharge Disposal Facility Cell 1	0409194E 7616770N	July 25, 2009
09-27237	FOD-2: Sewage pumped to the Sewage Discharge Disposal Facility Cell 2	0409220E 7616798N	July 25, 2009
09-27238	FOD-2: Sewage pumped to the Sewage Discharge Disposal Facility Cell 2	0409220E 7616798N	July 25, 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: FOD 2 SEWAGE PUMPED TO THE SEWAGE DISPOSAL FACILITY CELL 1
GPS COORDINATES: E0409194 N7616770N

Parameter	**Allowable Maximum Average Concentration**	**Units**	**09-27149** (July 25, 2009)
pH	6.0 to 9.0	pH units	8.57
Oil & Grease	None Visible	-	N/A
Total Suspended Solids (TSS)	180	mg/L	31
BOD	120	mg/L	18
Faecal Coliforms	10,000	CFU/dL	N/A
Total Coliforms	-	CFU/ 100 mL	N/A

LOCATION: FOD 2 SEWAGE PUMPED TO THE SEWAGE DISPOSAL FACILITY CELL 1
GPS COORDINATES: E0409194 N7616770N

Parameter	**Allowable Maximum Average Concentration**	**Units**	**09-27236** (July 25, 2009)
pH	6.0 to 9.0	pH units	N/A
Oil & Grease	None Visible	-	N/A
Total Suspended Solids (TSS)	180	mg/L	N/A
BOD	120	mg/L	N/A
Faecal Coliforms	10,000	CFU/dL	210
Total Coliforms	-	CFU/ 100 mL	N/A

The water inside the sewage lagoon cell 1 met water discharge criteria as of July 25, 2009. The water was discharged to land on August 10, 2009 in accordance to the water use license, to the discharge location approved by the INAC Environmental Inspector.

LOCATION: FOD 2 SEWAGE PUMPED TO THE SEWAGE DISPOSAL FACILITY CELL 2
GPS COORDINATES: E0409220 N7616798N

Parameter	Allowable Maximum Average Concentration	Units	09-27237 (July 25, 2009)
pH	6.0 to 9.0	pH units	7.14
Oil & Grease	None Visible	-	N/A
Total Suspended Solids (TSS)	180	mg/L	13
BOD	120	mg/L	**134**
Faecal Coliforms	10,000	CFU/dL	N/A
Total Coliforms	-	CFU/ 100 mL	N/A

LOCATION: FOD 2 SEWAGE PUMPED TO THE SEWAGE DISPOSAL FACILITY CELL 2
GPS COORDINATES: E0409220 N7616798N

Parameter	Allowable Maximum Average Concentration	Units	09-27238 (July 25, 2009)
pH	6.0 to 9.0	pH units	N/A
Oil & Grease	None Visible	-	N/A
Total Suspended Solids (TSS)	180	mg/L	N/A
BOD	120	mg/L	N/A
Faecal Coliforms	10,000	CFU/dL	**>200000**
Total Coliforms	-	CFU/ 100 mL	N/A

The water inside sewage lagoon cell 2 exceeds water discharge criteria for BOD and Faecal Coliforms. The water was not discharged to land. Treatment and sampling will resume in August.

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

Sincerely,

Tricia Cammaart

Tricia Cammaart
Environmental Sciences Group

cc: Eva Schulz (UMA)
Daniela Loock, Kat White, Darren White, Jenna Morrish, Allison Wood (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: 19508
Site: Fox-3
Client Login No: 09-149
Samples Received: 26-Jul-09
Date of analysis: 31-Jul-09
Method No: ASG 042
Date Reported: 31-Jul-09
Page: 1 of 1

RESULTS OF BOD ANALYSIS

Sample I.D.	Unit	BOD
27149*	mg/L	18
27237	mg/L	134

*Averaged result of duplicates

LABORATORY QA/QC

Sample I.D.	Unit	BOD
Duplicate ; 27149*	mg/L	18 ; 17
Blank	mg/L	< 3
Control	mg/L	160
Control Target	mg/L	165

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: 19508
Site: Fox 3
Client Login No: 09-149
Samples Received: 26-Jul-09
Date of analysis: 30-Jul-09
Method No: ASG 039
Date Reported: 30-Jul-09
Sheet: 1 of 1

RESULTS OF TOTAL SUSPENDED SOLIDS ANALYSIS

Sample I.D.	Sample Type^	Unit	Total Suspended Solids
27149*	SE	mg/L	31
27237	SE	mg/L	13

LABORATORY QA/QC

Blank	Control	mg/L	< 1
Control	Control	mg/L	200
Control Target	Control	mg/L	200
27149* ; Duplicate	SE ; SE	mg/L	31 ; 31

^SW =Surface Water, SI = Sewage Influent SE = Sewage Effluent, GW = Ground Water
*Average result of duplicate

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: 19508
Site: FOX-3
Client No: 09-149
Samples Received: 26-Jul-09
Date of analysis: 30-Jul-09
Method No: ASG 037
Date Reported: 30-Jul-09

RESULTS OF pH ANALYSIS

Sample I.D.	pH
09-27149	8.57
09-27237*	7.14

*Averaged result of duplicates.

LABORATORY QA/QC

Sample I.D.	pH
Duplicate ; 09-27237*	7.14 ; 7.14
Control	7.02
Control Target	7.00

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: 19508
Site: Fox-3
Client No: 09-149
Samples Received: 26-Jul-09
Date of analysis: 26-Jul-09
Date Reported: 28-Jul-09

RESULTS OF MICROBIOLOGICAL ANALYSIS

Sample Identification	Method: ASG 036 **Total Coliforms** (CFU/100 mL)	Method: ASG 036 **E. coli** (CFU/100 mL)	Method: ASG 036 **Background** (CFU/100 mL)	Method: ASG 044 **Fecal Coliforms** (CFU/100 mL)
27236**	14000	500	> 20000	210
27238**	> 200000	55000	> 200000	> 200000

LABORATORY QA/QC

Sample Identification	Method: ASG 036 **Total Coliforms** (CFU/100 mL)	Method: ASG 036 **E. coli** (CFU/100 mL)	Method: ASG 036 **Background** (CFU/100 mL)	Method: ASG 044 **Fecal Coliforms** (CFU/100 mL)
Blank	0	0	0	0
Control Sample	60	60	0	51
Control Sample Target	51	51	0	51

* Duplicate analysis completed on dilution not required
**Significant background colonies (> 200 per dilution) could potentially inhibit the growth of target colonies.

APPENDIX B
PHOTOGRAPHS

Photo 1: Sample 09-27149 FOD 2 sewage lagoon cell 1. Photograph taken facing south.

Photo 2: Sample 09-27236 FOD 2 close up of sample bottles used for sampling cell 1.

Photo 3: Sample 09-27237 FOD 2 sewage lagoon cell 2. Photograph taken facing southeast.

Photo 4: Sample 09-27238 FOD 2 close up of sample bottles used for sampling cell 2.

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 FOX-3 in July, 2009

The following report summarizes results of the analysis of wastewater samples as per the FOX-3 (Dewar Lakes) DEW Line Cleanup Project (DLCU) Specifications.

The FOX-3 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 FOX-3 in July, 2009 were not analyzed for phenols but they were analyzed for oil and grease. Research conducted by ESG[1] has determined that a) no federal, territorial or provincial criteria exist for the discharge of

[1] 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_{50} for freshwater fish and crustaceans and below the oral and dermal LD_{50}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

Eleven wastewater samples were collected at FOX-3 and analyzed in July 2009. A summary of the details of these results follows.

Sample Number	**Sample Location**	**GPS Coordinates**	**Sampling Date**
09-26920	FOD-1: Raw Water Supply Intake at the Water Supply Lake	E 0412431 N7614037	June 27, 2009
09-26921	FOD-1: Raw Water Supply Intake at the Water Supply Lake	E 0412431 N7614037	June 27, 2009
09-26922	FOD-1: Raw Water Supply Intake at the Water Supply Lake	E 0412431 N7614037	June 27, 2009
09-26923	FOD-1: Raw Water Supply Intake at the Water Supply Lake	E 0412431 N7614037	June 27, 2009
09-26927	FOD-1: Raw Water Supply Intake at the Water Supply Lake	E 0412431 N7614037	June 27, 2009
09-26963	MacBeth River Up Gradient of Airstrip East (FOD 10)	E 0414166 N 7614627	July 2, 2009
09-26964	MacBeth River Up Gradient of Airstrip East (FOD 10)	E 0414166 N 7614627	July 2, 2009
09-26965	MacBeth River Up Gradient of Airstrip East (FOD 10)	E 0414166 N 7614627	July 2, 2009
09-26966	MacBeth River Down Gradient of Airstrip East (FOD 11)	E 0413363 N 7613751	July 2, 2009
09-26967	MacBeth River Down Gradient of Airstrip East (FOD 11)	E 0413363 N 7613751	July 2, 2009
09-26968	MacBeth River Down Gradient of Airstrip East (FOD 11)	E 0413363 N 7613751	July 2, 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: FOD-1 RAW WATER SUPPLY INTAKE AT THE WATER SUPPLY LAKE
GPS COORDINATES: E04112431 N7614037

Parameter	Maximum Allowable Concentration	Units	Sample # 09-26920
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	N/A
PCBs	50* 5**	µg/L	N/A
Phenols	20	µg/L	N/A

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

LOCATION: FOD-1 RAW WATER SUPPLY INTAKE AT THE WATER SUPPLY LAKE
GPS COORDINATES: E04112431 N7614037

Parameter	Maximum Allowable Concentration	Units	Sample # 09-26921
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	N/A
PCBs	50* 5**	µg/L	N/A
Phenols	20	µg/L	N/A

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

LOCATION: FOD-1 RAW WATER SUPPLY INTAKE AT THE WATER SUPPLY LAKE
GPS COORDINATES: E04112431 N7614037

Parameter	Maximum Allowable Concentration	Units	Sample # 09-26922
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	<0.4
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	N/A
PCBs	50* 5**	µg/L	<3.0
Phenols	20	µg/L	N/A

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

LOCATION: FOD-1 RAW WATER SUPPLY INTAKE AT THE WATER SUPPLY LAKE
GPS COORDINATES: E04112431 N7614037

Parameter	Maximum Allowable Concentration	Units	Sample # 09-26923
pH	6-9	pH units	6.74
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	N/A
PCBs	50* 5**	µg/L	N/A
Phenols	20	µg/L	N/A

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

LOCATION: FOD-1 RAW WATER SUPPLY INTAKE AT THE WATER SUPPLY LAKE
GPS COORDINATES: E04112431 N7614037

Parameter	Maximum Allowable Concentration	Units	Sample # 09-26927
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	<0.4
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	N/A
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 water collected from the raw water supply intake at the Water Supply Lake met the wastewater discharge criteria.

LOCATION: MACBETH RIVER UP GRADIENT OF AIRSTRIP EAST (FOD 10)
GPS COORDINATES: E0414166 N7614627

Parameter	Maximum Allowable Concentration	Units	Sample # 09-26963
pH	6-9	pH units	6.74
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	N/A
PCBs	50* 5**	µg/L	N/A
Phenols	20	µg/L	N/A

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

LOCATION: MACBETH RIVER UP GRADIENT OF AIRSTRIP EAST (FOD 10)
GPS COORDINATES: E0414166 N7614627

Parameter	Maximum Allowable Concentration	Units	Sample # 09-26964
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	<2.0 mg/L
PCBs	50* 5**	µg/L	N/A
Phenols	20	µg/L	N/A

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

LOCATION: MACBETH RIVER UP GRADIENT OF AIRSTRIP EAST (FOD 10)
GPS COORDINATES: E0414166 N7614627

Parameter	Maximum Allowable Concentration	Units	Sample # 09-26965
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	<0.4
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	N/A
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 water collected from the MacBeth River up gradient FOD 10 met the wastewater discharge criteria.

LOCATION: MACBETH RIVER DOWN GRADIENT OF AIRSTRIP EAST (FOD 11)
GPS COORDINATES: E0413363 N7613751

Parameter	Maximum Allowable Concentration	Units	Sample # 09-26966
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	<0.4
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	N/A
PCBs	50* 5**	µg/L	<3.0
Phenols	20	µg/L	N/A

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

LOCATION: MACBETH RIVER DOWN GRADIENT OF AIRSTRIP EAST (FOD 11)
GPS COORDINATES: E0413363 N7613751

Parameter	Maximum Allowable Concentration	Units	Sample # 09-26967
pH	6-9	pH units	6.13
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	N/A
PCBs	50* 5**	µg/L	N/A
Phenols	20	µg/L	N/A

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

LOCATION: MACBETH RIVER DOWN GRADIENT OF AIRSTRIP EAST (FOD 11)
GPS COORDINATES: E0413363 N7613751

Parameter	Maximum Allowable Concentration	Units	Sample # 09-26968
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	<2.0 mg/L
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 water collected from the MacBeth River (FOD 11) met the wastewater discharge criteria.

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

Sincerely,

Tricia Cammaart

Tricia Cammaart
Environmental Sciences Group

cc: Eva Schulz (UMA)
Daniela Loock, Kat White, Darren White, Allison Wood, Jenna Morrish (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: 19329
Site: Fox-3
Client No: 09-830
Samples Received: 28-Jun-09
Date of analysis: 29-Jun-09
Method No: ASG 021
Date Reported: 30-Jun-09
Sheet: 1 of 1

RESULTS OF MERCURY IN WATER ANALYSIS

Sample I.D.	Unit	Mercury^
26922*	µg/L	< 0.4

*Results of duplicate analysis.
^ Acid digestion performed.
# Reported at 0.4 µg/L detection limit.

LABORATORY QA/QC

Sample I.D.	Unit	Mercury^
Duplicate ; 26922	µg/L	< 0.4 ; < 0.4
Blank	µg/L	< 0.4
Control Target	µg/L	4.0
Control Sample	µg/L	3.2

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: 19329
Site: FOX-3
Client No: 09-830
Samples Received: 28-Jun-09
Date of analysis: 29-Jun-09
Method No: ASG 037
Date Reported: 29-Jun-09
Page: 1 of 1

RESULTS OF pH ANALYSIS

Sample I.D.	pH
26922*	7.39

* Averaged result of duplicates

LABORATORY QA/QC

Sample I.D.	pH
26922* ; Duplicate	7.39 ; 7.40
Control	7.02
Control Target	7.00

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: 19329
Site: Fox-3
Client No: 09-830
Samples Received: 28-Jun-09
Date of analysis: 29-Jun-09
Method No: ASG 015
Date Reported: 2-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	26922*	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 ; 26922*	µg/L	< 3.0 ; < 3.0	< 3.0 ; < 3.0	< 3.0 ; < 3.0
	Control Sample	µg/L	< 3.0	< 3.0	16
	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

ASU #	12010		**Report ID:**	Fox-3 W2					
Client:	ASG 19329		**Date Submitted:**	30-Jun-09					
			Date tested:	3-Jul-09					
Site:	Fox-3		**Date:**	3-Jul-09					
	09-830		**Matrix:**	Water					
Preliminary Report of Analysis									
Total Metals	Results in mg/L								
SAMPLE	Cu	Ni	Co	Cd	Pb	Zn	Cr	As	
09-26920	-	-	-	-	-	<0.010	<0.005	<0.003	
09-26921	-	-	-	-	-	<0.010	<0.005	<0.003	*
Blank	-	-	-	-	-	<0.010	<0.005	<0.003	
Control	-	-	-	-	-	2.8	0.88	0.73	
Control Target	-	-	-	-	-	3.0	0.80	0.80	
09-26921	-	-	-	-	-	<0.010	<0.005	<0.003	
09-26921	-	-	-	-	-	<0.010	<0.005	<0.003	
Dissolved Metals									
SAMPLE	Cu	Ni	Co	Cd	Pb	Zn	Cr	As	
09-26920	<0.005	<0.005	<0.003	<0.001	<0.010	-	-	-	
09-26921	<0.005	<0.005	<0.003	<0.001	<0.010	-	-	-	*
Blank	<0.005	<0.010	<0.003	<0.001	<0.010	-	-	-	
Control	1.48	1.53	1.46	0.77	7.62	-	-	-	
Control Target	1.60	1.60	1.60	0.80	8.00	-	-	-	
09-26921	<0.005	<0.005	<0.003	<0.001	<0.010	-	-	-	
09-26921	<0.005	<0.005	<0.003	<0.001	<0.010	-	-	-	
						-	-	-	

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: 19329
Site: FOX-3
Client No: 09-830
Samples Received: 28-Jun-09
Date of analysis: 30-Jun-09
Method No: ASG 037
Date Reported: 30-Jun-09
Page: 1 of 1

RESULTS OF pH ANALYSIS

Sample I.D.	pH
26927*	6.70

* Averaged result of duplicates

LABORATORY QA/QC

Sample I.D.	pH
26927* ; Duplicate	6.70 ; 6.70
Control	7.01
Control Target	7.00

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: 19388
Site: FOX-3
Client No: 09-083
Samples Received: 7-Jul-09
Date of analysis: 8-Jul-09
Method No: ASG 021
Date Reported: 8-Jul-09
Sheet: 1 of 1

RESULTS OF MERCURY IN WATER ANALYSIS

Sample I.D.	Unit	Mercury^
09-26965	µg/L	< 0.4
09-26966	µg/L	< 0.4
09-26971*	µg/L	< 0.4

*Results of duplicate analysis.
^ Acid digestion performed.
# Reported at 0.4 µg/L detection limit.

LABORATORY QA/QC

Sample I.D.	Unit	Mercury^
Duplicate ; 09-26971*	µg/L	< 0.4 ; < 0.4
Blank	µg/L	< 0.4
Control Target	µg/L	4.0
Control Sample	µg/L	3.7

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: 19388
Site: Fox-3
Client No: 09-083
Samples Received: 7-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	26965	µg/L	< 3.0	< 3.0	< 3.0
W	26966	µg/L	< 3.0	< 3.0	< 3.0
W	26971	µg/L	< 3.0	< 3.0	< 3.0

LABORATORY QA/QC

	Blank	µg/L	< 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

ASU #	12030		**Report ID:**	Fox-3 W3					
Client:	ASG 19388		**Date Submitted:**	7-Jul-09					
			Date tested:	8-Jul-09					
Site:	Fox-3		**Date:**	8-Jul-09					
	09-083		**Matrix:**	Water					
Preliminary Report of Analysis									
Total Metals	Results in mg/L								
SAMPLE	Cu	Ni	Co	Cd	Pb	Zn	Cr	As	
09-26963	-	-	-	-	-	<0.010	<0.005	<0.003	
09-26967	-	-	-	-	-	<0.010	<0.005	<0.003	*
Blank	-	-	-	-	-	<0.010	<0.005	<0.003	
Control	-	-	-	-	-	2.94	0.87	0.80	
Control Target	-	-	-	-	-	3.00	0.80	0.80	
09-26967	-	-	-	-	-	<0.010	<0.005	<0.003	
09-26967	-	-	-	-	-	<0.010	<0.005	<0.003	
Dissolved Metals									
SAMPLE	Cu	Ni	Co	Cd	Pb	Zn	Cr	As	
09-26963	<0.005	<0.005	<0.003	<0.001	<0.010	-	-	-	
09-26967	<0.005	<0.005	<0.003	<0.001	<0.010	-	-	-	*
Blank	<0.005	<0.010	<0.003	<0.001	<0.010	-	-	-	
Control	1.50	1.59	1.57	0.78	7.94	-	-	-	
Control Target	1.60	1.60	1.60	0.80	8.00	-	-	-	
09-26967	<0.005	<0.005	<0.003	<0.001	<0.010	-	-	-	
09-26967	<0.005	<0.005	<0.003	<0.001	<0.010	-	-	-	

ASU #	12030		**Report ID:**	Fox-3 W4
Client:	ASG 19388		**Date Submitted:**	7-Jul-09
			Date tested:	7-Jul-09
Site:	Fox-3		**Date:**	8-Jul-09
	09-083		**Matrix:**	water
Preliminary Report of Analysis				
Sample	Oil & Grease			
	mg/L			
09-26964	<2.0			
09-26968	<2.0			
Blank	<2.0			
Control	17.0			
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: 19388
Site: FOX-3
Client No: 09-083
Samples Received: 7-Jul-09
Date of analysis: 10-Jul-09
Method No: ASG 037
Date Reported: 10-Jul-09

RESULTS OF pH ANALYSIS

Sample I.D.	pH
09-26963	6.74
09-26967*	6.13

* Averaged result of duplicates

LABORATORY QA/QC

Sample I.D.	pH
09-26967* ; Duplicate	6.13 ; 6.13
Control	7.01
Control Target	7.00

APPENDIX B
PHOTOGRAPHS

Photo 1: Samples 09-26920, 09-26921, 09-26922, 09-26923 and 09-26927 FOD 1 raw water supply intake at the Water Supply Lake. Photograph taken facing northwest, Water Supply Lake extends south.

Photo 2: Samples 09-26963 close up of storage mediums used for samples (FOD 10).

Photo 3: Sample 09-26964 view of shore where up gradient (FOD 10) samples were obtained.

Photo 4: Sample 09-26965 view of MacBeth River where up gradient (FOD 10) samples were taken.

Photo 5: Samples 09-26966 close up of storage mediums used for samples and shore where (FOD 11) samples were taken.

Photo 6: Sample 09-26967 using Teflon 1L on scoop sampler to fill Amber Glass 1L (FOD 11).

Photo 7: Sample 09-26968 view of MacBeth River where down gradient (FOD 11) samples were taken.

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

Tuesday, September 29, 2009

RE: August 2009 Monthly Report for Water Use License Number: 1BR-FOD813

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 FOX-3 *(Dewar Lakes).*

1. CAMP SEWAGE LAGOON

A 2 cell sewage lagoon was constructed to service the FOX-3 construction camp in 2009. The sewage lagoon is located approximately 100 m from the contractor's camp, 100 m away from drainage channels and any bodies of water supporting aquatic life. The GPS coordinates that are required by the Water Use License for the sewage lagoon location are 049186E, 7616767N.

2. SEWAGE EFFLUENT SAMPLES

The Water Use License and MP require that samples be collected from treated sewage lagoon effluent at the point of discharge prior to each discharge event. Eight sewage effluent samples were collected in August 2009 from the FOX-3 sewage lagoon. A summary of the details of these results follows.

Sample Number	Sample Location	GPS Coordinates	Sampling Date
09-27320	FOD-2: Sewage pumped to the Sewage Discharge Disposal Facility Cell 2	0409220E 7616798N	August 1, 2009
09-27321	FOD-2: Sewage pumped to the Sewage Discharge Disposal Facility Cell 2	0409220E 7616798N	August 1, 2009
09-27322	FOD-2: Sewage pumped to the Sewage Discharge Disposal Facility Cell 2	0409220E 7616798N	August 1, 2009
09-27354	FOD-2: Sewage pumped to the Sewage Discharge Disposal Facility	0409220E 7616798N	August 8, 2009

	Cell 2		
09-27653	FOD-2: Sewage pumped to the Sewage Discharge Disposal Facility Cell 2	0409220E 7616798N	August 29, 2009
09-27654	FOD-2: Sewage pumped to the Sewage Discharge Disposal Facility Cell 2	0409220E 7616798N	August 29, 2009
09-27655	FOD-2: Sewage pumped to the Sewage Discharge Disposal Facility Cell 3	0409206E 7616816N	August 29, 2009
09-27656	FOD-2: Sewage pumped to the Sewage Discharge Disposal Facility Cell 3	0409206E 7616816N	August 29, 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: FOD 2 SEWAGE PUMPED TO THE SEWAGE DISPOSAL FACILITY CELL 2
GPS COORDINATES: 0409220E 7616798N

Parameter	**Allowable Maximum Average Concentration**	**Units**	**09-27320** (August 1, 2009)
pH	6.0 to 9.0	pH units	7.32
Oil & Grease	None Visible	-	N/A
Total Suspended Solids (TSS)	180	mg/L	13
BOD	120	mg/L	85
Faecal Coliforms	10,000	CFU/dL	N/A
Total Coliforms	-	CFU/ 100 mL	N/A

LOCATION: FOD 2 SEWAGE PUMPED TO THE SEWAGE DISPOSAL FACILITY CELL 2
GPS COORDINATES: 0409220E 7616798N

Parameter	**Allowable Maximum Average Concentration**	**Units**	**09-27321** (August 1, 2009)
pH	6.0 to 9.0	pH units	7.32
Oil & Grease	None Visible	-	N/A
Total Suspended Solids (TSS)	180	mg/L	13
BOD	120	mg/L	84
Faecal Coliforms	10,000	CFU/dL	N/A
Total Coliforms	-	CFU/ 100 mL	N/A

LOCATION: FOD 2 SEWAGE PUMPED TO THE SEWAGE DISPOSAL FACILITY CELL 2
GPS COORDINATES: 0409220E 7616798N

Parameter	**Allowable Maximum Average Concentration**	**Units**	**09-27322** (August 1, 2009)
pH	6.0 to 9.0	pH units	N/A
Oil & Grease	None Visible	-	N/A
Total Suspended Solids (TSS)	180	mg/L	N/A
BOD	120	mg/L	N/A
Faecal Coliforms	10,000	CFU/dL	Sample Expired
Total Coliforms	-	CFU/ 100 mL	N/A

LOCATION: FOD 2 SEWAGE PUMPED TO THE SEWAGE DISPOSAL FACILITY CELL 2
GPS COORDINATES: 0409220E 7616798N

Parameter	**Allowable Maximum Average Concentration**	**Units**	**09-27354** (August 8, 2009)
pH	6.0 to 9.0	pH units	N/A
Oil & Grease	None Visible	-	N/A
Total Suspended Solids (TSS)	180	mg/L	N/A
BOD	120	mg/L	N/A
Faecal Coliforms	10,000	CFU/dL	**176,000**
Total Coliforms	-	CFU/ 100 mL	**>200,000**

LOCATION: FOD 2 SEWAGE PUMPED TO THE SEWAGE DISPOSAL FACILITY CELL 2
GPS COORDINATES: 0409220E 7616798N

Parameter	**Allowable Maximum Average Concentration**	**Units**	**09-27653** (August 29, 2009)
pH	6.0 to 9.0	pH units	7.21
Oil & Grease	None Visible	-	N/A
Total Suspended Solids (TSS)	180	mg/L	64
BOD	120	mg/L	42
Faecal Coliforms	10,000	CFU/dL	N/A
Total Coliforms	-	CFU/ 100 mL	N/A

LOCATION: FOD 2 SEWAGE PUMPED TO THE SEWAGE DISPOSAL FACILITY CELL 2
GPS COORDINATES: 0409220E 7616798N

Parameter	Allowable Maximum Average Concentration	Units	**09-27654** (August 29, 2009)
pH	6.0 to 9.0	pH units	N/A
Oil & Grease	None Visible	-	N/A
Total Suspended Solids (TSS)	180	mg/L	N/A
BOD	120	mg/L	N/A
Faecal Coliforms	10,000	CFU/dL	7,000
Total Coliforms	-	CFU/ 100 mL	>200,000

As of August 29th, 2009 the water inside sewage lagoon cell 2 met the water discharge criteria. The water was discharged to land.

LOCATION: FOD 2 SEWAGE PUMPED TO THE SEWAGE DISPOSAL FACILITY CELL 3
GPS COORDINATES: 0409206E 7616816N

Parameter	Allowable Maximum Average Concentration	Units	**09-27655** (August 29, 2009)
pH	6.0 to 9.0	pH units	7.22
Oil & Grease	None Visible	-	N/A
Total Suspended Solids (TSS)	180	mg/L	96
BOD	120	mg/L	**125**
Faecal Coliforms	10,000	CFU/dL	N/A
Total Coliforms	-	CFU/ 100 mL	N/A

LOCATION: FOD 2 SEWAGE PUMPED TO THE SEWAGE DISPOSAL FACILITY CELL 3
GPS COORDINATES: 0409206E 7616816N

Parameter	Allowable Maximum Average Concentration	Units	**09-27656** (August 29, 2009)
pH	6.0 to 9.0	pH units	N/A
Oil & Grease	None Visible	-	N/A
Total Suspended Solids (TSS)	180	mg/L	N/A
BOD	120	mg/L	N/A
Faecal Coliforms	10,000	CFU/dL	**>200,000**
Total Coliforms	-	CFU/ 100 mL	>200,000

The water inside sewage lagoon cell **3** exceeds water discharge criteria for BOD and Faecal Coliforms. The water was not discharged to land. Treatment and sampling will resume in September.

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, Darren White, Allison Wood (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: 19573
Site: Fox-3
Client Login No: 09-187
Samples Received: 4-Aug-09
Date of analysis: 10-Aug-09
Method No: ASG 042
Date Reported: 10-Aug-09
Page: 1 of 1

RESULTS OF BOD ANALYSIS

Sample I.D.	Unit	BOD
09-27320	mg/L	85
09-27321*	mg/L	84

*Averaged result of duplicates

LABORATORY QA/QC

Sample I.D.	Unit	BOD
Duplicate ; 09-27321*	mg/L	87 ; 83
Blank	mg/L	< 3
Control	mg/L	156
Control Target	mg/L	165

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: 19573
Site: Fox 3
Client Login No: 09-187
Samples Received: 4-Aug-09
Date of analysis: 6-Aug-09
Method No: ASG 039
Date Reported: 6-Aug-09
Sheet: 1 of 1

RESULTS OF TOTAL SUSPENDED SOLIDS ANALYSIS

Sample I.D.	Sample Type^	Unit	Total Suspended Solids
09-27320	SE	mg/L	13
09-27321	SE	mg/L	13

LABORATORY QA/QC

Blank	Control	mg/L	< 1
Control	Control	mg/L	200
Control Target	Control	mg/L	210

^SW =Surface Water, SI = Sewage Influent SE = Sewage Effluent, GW = Ground Water
*Average result of duplicate

Client: ESG
12 Verite Ave
Dept of Chem/Chem Eng
RMC, PO Box 17000
Kingston, Ontario
613-541-6000 # 6567

ASG Login No: 19573
Site: Fox-3
Client No: 09-187
Samples Received: 4-Aug-09
Date of analysis: 6-Aug-09
Method No: ASG 037
Date Reported: 6-Aug-09

RESULTS OF pH ANALYSIS

Sample I.D.	pH
09-27320	7.32
09-27321*	7.32

* Averaged result of duplicates

LABORATORY QA/QC

Sample I.D.	pH
Control	7.01
Control Target	7.00
Duplicate ; 09-27321*	7.32 ; 7.32

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: 19605
Site: Fox-3
Client No: 09-213
Samples Received: 9-Aug-09
Date of analysis: 9-Aug-09
Date Reported: 12-Aug-09
Sheet: 1 of 1

RESULTS OF MICROBIOLOGICAL ANALYSIS

Sample Identification	Method: ASG 036 **Total Coliforms** (CFU/100 mL)	Method: ASG 036 **E. coli** (CFU/100 mL)	Method: ASG 036 **Background** (CFU/100 mL)	Method: ASG 044 **Fecal Coliforms** (CFU/100 mL)
27354	> 200 000	170 000	> 200 000	176 000

LABORATORY QA/QC

Sample Identification	Method: ASG 036 **Total Coliforms** (CFU/100 mL)	Method: ASG 036 **E. coli** (CFU/100 mL)	Method: ASG 036 **Background** (CFU/100 mL)	Method: ASG 044 **Fecal Coliforms** (CFU/100 mL)
Blank	0	0	0	0
Control Sample	40	40	0	41
Control Sample Target	38	38	0	38

* Duplicate analysis completed on dilution not required
**Significant background colonies (> 200 per dilution) could potentially inhibit the growth of target colonies.

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: 19784
Site: FOX-3
Client No: 09-290
Samples Received: 31-Aug-09
Date of analysis: 31-Aug-09
Date Reported: 2-Sep-09
Sheet: 1 of 1

RESULTS OF MICROBIOLOGICAL ANALYSIS

Sample Identification	Method: ASG 036 **Total Coliforms** (CFU/100 mL)	Method: ASG 036 **E. coli** (CFU/100 mL)	Method: ASG 036 **Background** (CFU/100 mL)	Method: ASG 044 **Fecal Coliforms** (CFU/100 mL)
27654**	> 200 000	7 000	> 200 000	7 000
27656**	> 200 000	51 000	> 200 000	> 200 000

LABORATORY QA/QC

Sample Identification	Method: ASG 036 **Total Coliforms** (CFU/100 mL)	Method: ASG 036 **E. coli** (CFU/100 mL)	Method: ASG 036 **Background** (CFU/100 mL)	Method: ASG 044 **Fecal Coliforms** (CFU/100 mL)
Blank	0	0	0	0
Control Sample	34	34	0	32
Control Sample Target	37	37	0	37

* Duplicate analysis completed on dilution not required
**Significant background colonies (> 200 per dilution) could potentially inhibit the growth of target colonies.

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: 19784
Site: Fox-3
Client No: 09-290
Samples Received: 31-Aug-09
Date of analysis: 3-Sep-09
Method No: ASG 037
Date Reported: 3-Sep-09
Page: 1 of 1

RESULTS OF pH ANALYSIS

Sample I.D.	**pH**
27653*	7.21
27655	7.22

* Averaged result of duplicates

LABORATORY QA/QC

Sample I.D.	**pH**
27653* ; Duplicate	7.21 ; 7.21
Control	7.01
Control Target	7.00

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: 19784
Site: Fox-3
Client Login No: 09-290
Samples Received: 31-Aug-09
Date of analysis: 3-Sep-09
Method No: ASG 039
Date Reported: 3-Sep-09
Sheet: 1 of 1

RESULTS OF TOTAL SUSPENDED SOLIDS ANALYSIS

Sample I.D.	Sample Type^	Unit	Total Suspended Solids
27653*	SE	mg/L	64
27655	SE	mg/L	96

LABORATORY QA/QC

Blank	Control	mg/L	< 1.0
27653* ; Duplicate	SE	mg/L	65 ; 62
Control	Control	mg/L	210
Control Target	Control	mg/L	200

^SW =Surface Water, SI = Sewage Influent SE = Sewage Effluent, GW = Ground Water
*Average result of duplicate

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: 19784
Site: Fox-3
Client Login No: 09-290
Samples Received: 31-Aug-09
Date of analysis: 8-Sep-09
Method No: ASG 042
Date Reported: 8-Sep-09
Page: 1 of 1

RESULTS OF BOD ANALYSIS

Sample I.D.	Unit	BOD
27653*	mg/L	42
27655	mg/L	125

*Averaged result of duplicates

LABORATORY QA/QC

Sample I.D.	Unit	BOD
Duplicate ; 27653*	mg/L	41 ; 43
Blank	mg/L	< 3
Control	mg/L	179
Control Target	mg/L	165

APPENDIX B
PHOTOGRAPHS

Photo 1: Sample 09-27320, 09-27321 and 09-27322 FOD 2 sewage lagoon cell 2. Photograph was taken facing southeast.

Photo 2: Sample 09-27320, 09-27321, and 09-27322 FOD 2 close up of sample bottles used for sampling cell 2.

Photo 3: Sample 09-27354 FOD 2 sewage lagoon cell 2. Close up of sample bottles used for sewage lagoon sampling of cell 2.

Photo 4: Samples 09-27653 and 09-27654. Sewage Lagoon Cell 2 after pipe removal. Photograph was taken facing east.

Photo 5: Samples 09-27653 and 09-27654. FOD-2 Close up of sample bottles used for sampling Cell 2.

Photo 6: Samples 09-27655 and 09-27656. FOD-2 Sewage Lagoon Cell 3. Photograph was taken facing east.

Photo 7: Samples 09-27655 and 09-27656 close up of sample bottle used for sewage lagoon sampling of cell 3.

Candice Casucci
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

Monday, March 29, 2010

RE: September, 2009 Monthly Report for Water Use License Number: 1BR-FOD813

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 FOX-3 *(Dewar Lakes).*

1. CAMP SEWAGE LAGOON

A 2 cell sewage lagoon was constructed to service the FOX-3 construction camp in 2009. The sewage lagoon is located approximately 100 m from the contractor's camp, 100 m away from drainage channels and any bodies of water supporting aquatic life. The GPS coordinates that are required by the Water Use License for the sewage lagoon location are 049186E 7616767N.

2. SEWAGE EFFLUENT SAMPLES

The Water Use License and MP require that samples be collected from treated sewage lagoon effluent at the point of discharge prior to each discharge event. Five sewage effluent samples were collected in September 2009 from the FOX-3 sewage lagoon. A summary of the details of these results follows.

Sample Number	Sample Location	GPS Coordinates	Sampling Date
09-27718	FOD-2: Sewage pumped to the Sewage Discharge Disposal Facility Cell 2	0409220E 7616798N	September 4th 2009
09-27719	FOD-2: Sewage pumped to the Sewage Discharge Disposal Facility Cell 2	0409220E 7616798N	September 4th 2009
09-27720	FOD-2: Sewage pumped to the Sewage Discharge Disposal Facility Cell 3	0409206E 7616816N	September 4th 2009
09-27721	FOD-2: Sewage pumped to the Sewage Discharge Disposal Facility Cell 3	0409206E 7616816N	September 4th 2009
09-27722	FOD-2: Sewage pumped to the Sewage Discharge Disposal Facility Cell 3	0409206E 7616816N	September 4th 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: FOD 2 SEWAGE PUMPED TO THE SEWAGE DISPOSAL FACILITY CELL 2
GPS COORDINATES: 0409220E 7616798N

Parameter	Allowable Maximum Average Concentration	Units	09-27718 (September 4th, 2009)
pH	6.0 to 9.0	pH units	N/A
Oil & Grease	None Visible	-	N/A
Total Suspended Solids (TSS)	180	mg/L	N/A
BOD	120	mg/L	N/A
Faecal Coliforms	10,000	CFU/dL	3,000
Total Coliforms	-	CFU/ 100 mL	>200,000

LOCATION: FOD 2 SEWAGE PUMPED TO THE SEWAGE DISPOSAL FACILITY CELL 2
GPS COORDINATES: 0409220E 7616798N

Parameter	**Allowable Maximum Average Concentration**	**Units**	**09-27719** (September 4th, 2009)
pH	6.0 to 9.0	pH units	7.30
Oil & Grease	None Visible	-	N/A
Total Suspended Solids (TSS)	180	mg/L	70
BOD	120	mg/L	31
Faecal Coliforms	10,000	CFU/dL	N/A
Total Coliforms	-	CFU/ 100 mL	N/A

As of September 4th, 2009 the water inside Sewage Lagoon Cell 2 was below the maximum allowable concentration for all tested parameters. Cell 2 was not discharged prior to the end of the season and will be resampled and tested prior to discharge in 2010,

LOCATION: FOD 2 SEWAGE PUMPED TO THE SEWAGE DISPOSAL FACILITY CELL 3
GPS COORDINATES: 0409206E 7616816N

Parameter	**Allowable Maximum Average Concentration**	**Units**	**09-27720** (September 4th, 2009)
pH	6.0 to 9.0	pH units	N/A
Oil & Grease	None Visible	-	N/A
Total Suspended Solids (TSS)	180	mg/L	N/A
BOD	120	mg/L	N/A
Faecal Coliforms	10,000	CFU/dL	**>200,000**
Total Coliforms	-	CFU/ 100 mL	>200,000

LOCATION: FOD 2 SEWAGE PUMPED TO THE SEWAGE DISPOSAL FACILITY CELL 3
GPS COORDINATES: 0409206E 7616816N

Parameter	Allowable Maximum Average Concentration	Units	**09-27721** (September 4th, 2009)
pH	6.0 to 9.0	pH units	N/A
Oil & Grease	None Visible	-	N/A
Total Suspended Solids (TSS)	180	mg/L	N/A
BOD	120	mg/L	N/A
Faecal Coliforms	10,000	CFU/dL	**>200,000**
Total Coliforms	-	CFU/ 100 mL	>200,000

LOCATION: FOD 2 SEWAGE PUMPED TO THE SEWAGE DISPOSAL FACILITY CELL 3
GPS COORDINATES: 0409506E 7616816N

Parameter	Allowable Maximum Average Concentration	Units	**09-27722** (August 29, 2009)
pH	6.0 to 9.0	pH units	7.13
Oil & Grease	None Visible	-	N/A
Total Suspended Solids (TSS)	180	mg/L	78
BOD	120	mg/L	59
Faecal Coliforms	10,000	CFU/dL	N/A
Total Coliforms	-	CFU/ 100 mL	N/A

The water inside FOD 2 Sewage Lagoon Cell **3** (samples #09-27720 /721/722) exceeds water discharge criteria for Faecal Coliforms and therefore was not discharged to land.

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

Sincerely,

Candice Casucci
Environmental Sciences Group

cc: Eva Schulz (UMA)
Daniela Loock, Kat White, Darren White, Allison Wood (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: 19833
Site: Fox-3
Client Login No: 09-328
Samples Received: 6-Sep-09
Date of analysis: 14-Sep-09
Method No: ASG 042
Date Reported: 14-Sep-09
Page: 1 of 1

RESULTS OF BOD ANALYSIS

Sample I.D.	Unit	BOD
27719*	mg/L	31
27722	mg/L	59

*Averaged result of duplicates

LABORATORY QA/QC

Sample I.D.	Unit	BOD
Duplicate ; 27719*	mg/L	31 ; 31
Blank	mg/L	< 3
Control	mg/L	142
Control Target	mg/L	165

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: 19833
Site: Fox-3
Client Login No: 09-328
Samples Received: 6-Sep-09
Date of analysis: 10-Sep-09
Method No: ASG 039
Date Reported: 11-Sep-09
Sheet: 1 of 1

RESULTS OF TOTAL SUSPENDED SOLIDS ANALYSIS

Sample I.D.	Sample Type^	Unit	Total Suspended Solids
27719*	SE	mg/L	70
27722	SE	mg/L	78

*Average results of duplicates.

LABORATORY QA/QC

Blank	Control	mg/L	< 1
27719* ; Duplicate	SE ; SE	mg/L	68 ; 71
Control	Control	mg/L	190
Control Target	Control	mg/L	200

^SW =Surface Water, SI = Sewage Influent SE = Sewage Effluent

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: 19833
Site: Fox-3
Client No: 09-328
Samples Received: 6-Sep-09
Date of analysis: 10-Sep-09
Method No: ASG 037
Date Reported: 10-Sep-09

RESULTS OF pH ANALYSIS

Sample I.D.	pH
27719*	7.30
27722	7.13

* Averaged result of duplicates

LABORATORY QA/QC

Sample I.D.	pH
27719* ; Duplicate	7.30 ; 7.30
Control	7.00
Control Target	7.00

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: 19833
Site: Fox-3
Client No: 09-328
Samples Received: 6-Sep-09
Date of analysis: 6-Sep-09
Date Reported: 8-Sep-09
Sheet: 1 of 1

RESULTS OF MICROBIOLOGICAL ANALYSIS

Sample Identification	Method: ASG 036 **Total Coliforms** (CFU/100 mL)	Method: ASG 036 **E. coli** (CFU/100 mL)	Method: ASG 036 **Background** (CFU/100 mL)	Method: ASG 044 **Fecal Coliforms** (CFU/100 mL)
27718*~	> 200 000	2000	> 200 000	3000
27720~	> 200 000	> 200 000	> 200 000	> 200 000
27721~	> 200 000	> 200 000	> 200 000	> 200 000

LABORATORY QA/QC

Sample Identification	Method: ASG 036 **Total Coliforms** (CFU/100 mL)	Method: ASG 036 **E. coli** (CFU/100 mL)	Method: ASG 036 **Background** (CFU/100 mL)	Method: ASG 044 **Fecal Coliforms** (CFU/100 mL)
Blank	0	0	0	0
Duplicate ; 27718	> 200 000 ; > 200 000	2000 ; 2000	> 200 000 ; > 200 000	3000 ; 3000
Control Sample	37	37	0	36
Control Sample Target	38	38	0	38

* Average result of duplicate
~Significant background colonies (> 200 per dilution) could potentially inhibit the growth of target colonies.

APPENDIX B
PHOTOGRAPHS

Photo 1: Sample 09-22718 FOD 2 Sewage lagoon cell 2. Photograph was taken facing southeast.

Photo 2: Sample 09-27719 FOD 2 close up of sample bottles used for sampling cell 2.

Photo 3: Sample 09-27720 , 09-27721 FOD Sewage lagoon Cell 3. Photograph taken facing east

Photo 4: Samples 09-27722 FOD-2 Close up of sample bottle used for sampling of sewage lagoon Cell 3.