



August 13, 2003

Project No.: CAM-4 (3.6)

Mr. Jim Wall
Technical Advisor
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1J0

Dear Mr. Wall:

RE: July Surveillance Network Program Report for Licence NWB5PEL0104

UMA Engineering Ltd. is submitting the attached Surveillance Network Program – July Report as per the requirements of water use licence NWB5PEL0104. The report is being submitted on behalf of Defence Construction Canada and the Department of National Defence.

We trust the report meets the requirements outlined in the Surveillance Network Program.

Please feel free to contact the undersigned if you have any questions or require further information.

Sincerely,

UMA ENGINEERING LTD.

A handwritten signature in black ink, appearing to read "Eva Schulz", with a stylized flourish at the end.

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

EMS:mv

Encl. July Surveillance Network Program Results and Discussion from ESG

cc: Scott Hamilton, DCC
Phyllis Beaulieu, NWB

J:\General\F&W\Eva Schulz\L-NWB2-081303.doc

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Amy Dumoulin-Jerome
The Royal Military College of Canada
PO Box 17000 Stn. Forces
Kingston, ON K7K 7B4



Eva Schulz
Environmental Scientist
UMA Engineering Ltd.
2540 Kensington Road NW
Calgary, AB T2N 3S3

Tuesday August 5, 2003

RE: July 2003 Monthly Report for Water Use License Number: NWB5PEL0104

Dear Eva:

The following results of the Surveillance Network Program (SNP) and/or Water Use License are provided by the Environmental Sciences Group to meet the requirements of the above-noted license for *CAM-4 (Pelly Bay)*.

1. LANDFARM EFFLUENT

The SNP requires that any effluent from the Landfarm Facility or from its associated perimeter collection trench be analyzed prior to disposal to the environment for the effluent parameters listed below. No landfarm effluent samples were collected at CAM-4 during the month of July 2003:

2. LANDFILL RUNOFF

The SNP requires that any runoff from the Tier II Soil Disposal Facility, Upper Site Landfill, Lower Site Landfill, Abandoned Camp Landfill, Barrow Lake Landfill and USAF Landfill be analyzed for the parameters listed below. The following landfill runoff sample was collected at CAM-4 during the month of July 2003:

Sample Number	Sample Location	UTM Coordinates	Sampling Date
03-17512	Upper Site Landfill	16389023 E 7594173 N	14 July 2003

A summary of the results for the parameters tested is provided below. Laboratory results are provided in Appendix A.

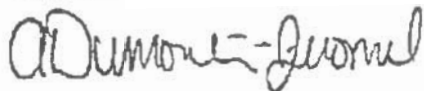
LOCATION: UPPER SITE LANDFILL

UTM COORDINATES: 16389023 E, 7594173 N

Parameter	Units	03-17512 (14 July 2003)
pH	pH units	6.61
Sodium ¹	mg/L	1.2
Potassium ¹	mg/L	0.39
Calcium ¹	mg/L	1.4
Magnesium ¹	mg/L	0.38
Iron ¹	mg/L	-
Manganese ¹	mg/L	<0.05
Conductivity	uS-cm	16
Total Arsenic	mg/L	<0.003
Dissolved Cadmium	mg/L	<0.001
Total Chromium	mg/L	<0.005
Dissolved Cobalt	mg/L	<0.003
Dissolved Copper	mg/L	<0.005
Dissolved Lead	mg/L	<0.010
Total Mercury	ug/L	<0.4
Dissolved Nickel	mg/L	<0.005
Total Zinc	mg/L	0.010
Total Suspended Solid: (TSS)	mg/L	<2
Hardness	mg/L	5.1
Total Petroleum Hydrocarbons (TPH)	mg/L	<1.0
PCBs	ug/L	<0.02

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

Sincerely,



ENVIRONMENTAL SCIENCES GROUP

APPENDIX A
LABORATORY RESULTS

Notes:

1. Sample 03-17512 was collected from a runoff channel located downgradient (i.e. east of) the Main Lobe of the Upper Site Landfill on 14 July 2003.



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ASG Login No: 9615
Site: Cam-4
Client No: 03-039
Samples Received: 23-Jul-03
Date of analysis: 24-Jul-03
Method No: ASG 037
Date Reported: 24-Jul-03
Page: 1 of 1

RESULTS OF pH ANALYSIS

Sample I.D.	pH
03-17512*	6.61

* Averaged result of duplicates

LABORATORY QA/QC

Sample I.D.	pH
03-17512; Duplicate	6.60; 6.62
control	4.00
control target	4.00

The results reported here relate only to the items tested.

Prepared By: _____
Jovie Velasco, Analyst

Authorization: _____
David Kelly, Research Associate



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ASG Login No: 9515
 Site: Cam-4
 Client Login No: 03-039
 Samples Received: 23-Jul-03
 Date of analysis: 24-Jul-03
 Method No: ASG 038
 Date Reported: 24-Jul-03
 Page: 1 of 1

RESULTS OF CONDUCTIVITY ANALYSIS

Sample I.D.	Unit	Conductivity
2003-17512*	$\mu\text{S/cm}$	16

* Averaged result of duplicates

LABORATORY QA/QC

Sample I.D.	Unit	Conductivity
2003-17512; Duplicate	$\mu\text{S/cm}$	16; 15
Control	$\mu\text{S/cm}$	148
Control Target	$\mu\text{S/cm}$	147

The results reported here relate only to the items tested.

Prepared By: _____
 Jovie Velasco, Analyst

Authorization: _____
 Erin Ma, Research Associate
 Cond9515r1



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ASG Login No: 9515
Site: Cam-4
Client No: 03-039
Samples Received: 23-Jul-03
Date of analysis: 24-Jul-03
Method No: ASG 015
Date Reported: 28-Jul-03
Sheet No: 1 of 1

RESULTS OF PCB IN WATER ANALYSIS

Sample Type	Sample I.D.	Unit	Aroclor 1254	Aroclor 1260
W	03-17512	µg/L	< 0.02	< 0.02
W	03-17513	µg/L	< 0.02	< 0.02
W	03-17514	µg/L	< 0.02	< 0.02

LABORATORY QA/QC

Blank	µg/L	< 0.02	< 0.02
Control Sample	µg/L	< 0.02	0.09
Control Sample Target	µg/L	< 0.02	0.10

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

All results corrected for the recovery of the surrogate decachlorobiphenyl

The results reported here relate only to the items tested.

Prepared By: _____
Kim Morin, Analyst

Authorization: _____
David Kelly, Assistant Director



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ASG Login No: 9515

Site: Cam-4

Client Login No: 03-039

Samples Received: 23-Jul-03

Date of analysis: 24-Jul-03

Method No: ASG 011

Date Reported: 25-Jul-03

Sheet: 1 of 1

RESULTS OF TPH IN WATER ANALYSIS

Sample I.D.	Unit	TPH (Total ppm)	% Fuel	% Lubricating Oils, Grease
03-17514	mg/L	< 1.0	N/A	N/A
03-17513*	mg/L	< 1.0	N/A	N/A
03-17512	mg/L	< 1.0	N/A	N/A

LABORATORY QA/QC

Duplicate : 03-17513	mg/L	< 1.0 ; < 1.0	N/A ; N/A	N/A ; N/A
Blank	mg/L	< 1.0	N/A	N/A
Diesel Spike	mg/L	4.9	100	0
Diesel Spike Target	mg/L	5.3	100	0

* Averaged result of duplicates

The results reported here relate only to the items tested.

Prepared By:

Nelson Melo; Analyst

Authorization:

Steve White; Senior Analyst



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 Fax: (613) 541-6598

ASG Login No: 9515
 Site: Cam-4
 ESG No: 03-039
 Samples Received: 23-Jul-03
 Date of analysis: 03-Aug-03
 Method No: ASG 014 & ASG 021
 Date Reported: 03-Aug-03
 Sheet: 1 of 1

RESULTS OF MERCURY IN WATER ANALYSIS#

Sample ID.	Unit	Total Mercury*	Dissolved Mercury
03-17512	µg/L	< 0.4	< 0.1
03-17513*	µg/L	< 0.4	< 0.1
03-17514	µg/L	< 0.4	< 0.1

LABORATORY QA/QC

Duplicate: 03-17513	µg/L	< 0.4 ; < 0.4	< 0.1 ; < 0.1
Blank	µg/L	< 0.4	< 0.1
Control Target	µg/L	4.0	2.0
Control	µg/L	4.1	2.2

* Averaged result of duplicates.

* Acid digestion performed.

Reported at 0.4 µg/L detection limit.

The results reported here relate only to the items tested.

Prepared By: Nelson Melo, Analyst

Authorization: Dr. David Kelly, Assistant Director

ASU #	6295	Report ID:	Cam-4 W2					
Client:	ASG 9515	Date Submitted:	23-Jul-03					
		Date Tested:	25-Jul-03					
Site:	Cam-4	Date:	25-Jul-03					
	03-039	Matrix:	Water					
Preliminary Report of Analysis								
Total Metals:	Results in mg/L							
SAMPLE	Cu	Ni	Co	Cd	Pb	Zn	Cr	As
03-17512	<0.005	<0.005	<0.003	<0.001	<0.010	0.010	<0.005	<0.003
03-17513	<0.005	<0.005	<0.003	<0.001	<0.010	0.017	<0.005	<0.003
03-17514	0.018	<0.005	<0.003	<0.001	<0.010	0.015	<0.005	<0.003
Blank	<0.005	<0.005	<0.003	<0.001	<0.010	<0.010	<0.005	<0.003
Control	2.18	2.25	2.09	0.40	2.24	1.28	0.40	1.21
Control Target	2.20	2.20	2.20	0.40	2.20	1.20	0.40	1.20
Dissolved Metals:								
Results in mg/L								
SAMPLE	Cu	Ni	Co	Cd	Pb	Zn	Cr	As
03-17512	<0.005	<0.005	<0.003	<0.001	<0.010	<0.010	<0.005	<0.003
03-17513	<0.005	<0.005	<0.003	<0.001	<0.010	<0.010	<0.005	<0.003
03-17514	0.016	<0.005	<0.003	<0.001	<0.010	<0.010	<0.005	<0.003
Blank	<0.005	<0.005	<0.003	<0.001	<0.010	<0.010	<0.005	<0.003
Control	2.18	2.25	2.09	0.40	2.24	1.28	0.40	1.21
Control Target	2.20	2.20	2.20	0.40	2.20	1.20	0.40	1.20

ASU #	6295	Report ID:		Cam-4W1					
Client:	ASG 9515	Date Submitted:		23-Jul-03					
		Date:		25-Jul-03					
Site:	Cam-4	Matrix:		Water					
	03-039								
Preliminary report of Analysis									
Parameter	Units	03-17512	03-17513	03-17514	Blank	QC	QC	Date of Analysis	
							Target		
pH	-	-	6.0	7.0	-	-	-	25-Jul-03	
Conductivity	uS-cm	-	19	104	<1	-	-	24-Jul-03	
Sodium	mg/L	1.2	1.3	2.9	-	13.6	15.0	24-Jul-03	
Potassium	mg/L	0.39	0.43	0.49	-	13.5	15.0	24-Jul-03	
Magnesium	mg/L	0.38	0.44	4.3	-	6.1	6.0	24-Jul-03	
Calcium	mg/L	1.4	1.5	9.7	-	5.9	6.0	24-Jul-03	
Hardness	mg/L	5.1	5.6	42	-	-	-	24-Jul-03	
Iron	mg/L	-	<0.05	<0.05	-	16.3	16.0	24-Jul-03	
Manganese	mg/L	<0.05	<0.05	<0.05	-	15.9	16.0	24-Jul-03	
Chloride	mg/L	-	1.7	6.1	<0.05	5.2	5.0	24-Jul-03	
Nitrate(N)	mg/L	-	0.30	<0.05	<0.05	1.00	1.00	24-Jul-03	
Nitrite(N)	mg/L	-	<0.05	<0.05	<0.05	1.00	1.00	24-Jul-03	
Sulphate	mg/L	-	1.0	1.0	<0.10	10.5	10.0	24-Jul-03	



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ASG Login No: 6515

Site: Cam-4

Client Login No: 03-039

Samples Received: 23-Jul-03

Date of analysis: 24-Jul-03

Method No: ASG 030

Date Reported: 25-Jul-03

Sheet: 1 of 1

RESULTS OF TOTAL SUSPENDED SOLIDS ANALYSIS

Sample I.D.	Sample Type*	Unit	Total Suspended Solids
03-17512	N/A	mg/L	< 2.0

LABORATORY QA/QC

Blank	Control	mg/L	< 2.0
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*SW = Surface Water, SI = Sewage Influent SE = Sewage Effluent

The results reported here relate only to the items tested.

Prepared By:

Sarah Walsh, Analyst

Authorization:

Erin Ma, Research Associate