



Department of National Defence - Royal
Military College
ATTN: CANDICE CASUCCI
Environmental Sciences Group
Kingston ON K7K7B4

Date Received: 23-AUG-12
Report Date: 31-AUG-12 13:36 (MT)
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Client Phone: 613-541-6000

Certificate of Analysis

Lab Work Order #: L1198712
Project P.O. #: BP15RE
Job Reference: PIN-2-MON-DLCU.RQ.12-137
C of C Numbers: 1, 2, 3
Legal Site Desc:

Gayle Braun
Senior Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1198712-1	19313							
Sampled By: CLIENT on 11-AUG-12								
Matrix: WATER								
Total Metals								
Aluminum (Al)-Total		0.555		0.010	mg/L	24-AUG-12	29-AUG-12	R2426023
Antimony (Sb)-Total		<0.0050		0.0050	mg/L	24-AUG-12	29-AUG-12	R2426023
Arsenic (As)-Total		0.0011		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Barium (Ba)-Total		0.021		0.010	mg/L	24-AUG-12	29-AUG-12	R2426023
Beryllium (Be)-Total		<0.0010		0.0010	mg/L	24-AUG-12	30-AUG-12	R2427064
Bismuth (Bi)-Total		<0.0010		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Boron (B)-Total		<0.050		0.050	mg/L	24-AUG-12	30-AUG-12	R2427064
Cadmium (Cd)-Total		<0.000090		0.000090	mg/L	24-AUG-12	29-AUG-12	R2426023
Calcium (Ca)-Total		67.0		0.50	mg/L	24-AUG-12	29-AUG-12	R2426023
Chromium (Cr)-Total		0.0148		0.00050	mg/L	24-AUG-12	29-AUG-12	R2426023
Cobalt (Co)-Total		<0.00050		0.00050	mg/L	24-AUG-12	29-AUG-12	R2426023
Copper (Cu)-Total		0.0036		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Iron (Fe)-Total		0.701		0.050	mg/L	24-AUG-12	29-AUG-12	R2426023
Lead (Pb)-Total		<0.0010		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Magnesium (Mg)-Total		28.7		0.50	mg/L	24-AUG-12	29-AUG-12	R2426023
Manganese (Mn)-Total		0.0216		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Mercury (Hg)-Total		<0.00010		0.00010	mg/L	24-AUG-12	24-AUG-12	R2423673
Molybdenum (Mo)-Total		0.0141		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Nickel (Ni)-Total		0.0115		0.0020	mg/L	24-AUG-12	29-AUG-12	R2426023
Phosphorus (P)-Total		<0.050		0.050	mg/L	24-AUG-12	29-AUG-12	R2426023
Potassium (K)-Total		3.0		1.0	mg/L	24-AUG-12	29-AUG-12	R2426023
Selenium (Se)-Total		0.00091		0.00040	mg/L	24-AUG-12	29-AUG-12	R2426023
Silicon (Si)-Total		2.1		1.0	mg/L	24-AUG-12	29-AUG-12	R2426023
Silver (Ag)-Total		<0.00010		0.00010	mg/L	24-AUG-12	29-AUG-12	R2426023
Sodium (Na)-Total		18.5		0.50	mg/L	24-AUG-12	29-AUG-12	R2426023
Strontium (Sr)-Total		0.114		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Thallium (Tl)-Total		<0.00030		0.00030	mg/L	24-AUG-12	29-AUG-12	R2426023
Tin (Sn)-Total		<0.0010		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Titanium (Ti)-Total		0.0211		0.0020	mg/L	24-AUG-12	29-AUG-12	R2426023
Tungsten (W)-Total		<0.010		0.010	mg/L	24-AUG-12	29-AUG-12	R2426023
Uranium (U)-Total		0.0079		0.0050	mg/L	24-AUG-12	29-AUG-12	R2426023
Vanadium (V)-Total		0.0011		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Zinc (Zn)-Total		0.0122		0.0030	mg/L	24-AUG-12	29-AUG-12	R2426023
Zirconium (Zr)-Total		<0.0040		0.0040	mg/L	24-AUG-12	29-AUG-12	R2426023
Hydrocarbons								
F1 (C6-C10)		<25		25	ug/L		27-AUG-12	R2424495
F2 (C10-C16)		<100		100	ug/L	24-AUG-12	27-AUG-12	R2424429
F3 (C16-C34)		<250		250	ug/L	24-AUG-12	27-AUG-12	R2424429
F4 (C34-C50)		<250		250	ug/L	24-AUG-12	27-AUG-12	R2424429
Total Hydrocarbons (C6-C50)		<250		250	ug/L		27-AUG-12	
Chrom. to baseline at nC50		YES				24-AUG-12	27-AUG-12	R2424429

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1198712-1 19313 Sampled By: CLIENT on 11-AUG-12 Matrix: WATER Hydrocarbons Surrogate: 2-Bromobenzotrifluoride Surrogate: 3,4-Dichlorotoluene Surrogate: Octacosane Polychlorinated Biphenyls Aroclor 1242 Aroclor 1248 Aroclor 1254 Aroclor 1260 Total PCBs Surrogate: d14-Terphenyl								
		61.0		60-140	%	24-AUG-12	27-AUG-12	R2424429
		92.9		50-140	%		27-AUG-12	R2424495
		80.4		60-140	%	24-AUG-12	27-AUG-12	R2424429
		<0.020		0.020	ug/L	27-AUG-12	27-AUG-12	R2426788
		<0.020		0.020	ug/L	27-AUG-12	27-AUG-12	R2426788
		<0.020		0.020	ug/L	27-AUG-12	27-AUG-12	R2426788
		<0.020		0.020	ug/L	27-AUG-12	27-AUG-12	R2426788
		<0.040		0.040	ug/L	27-AUG-12	27-AUG-12	R2426788
		134.6		50-150	%	27-AUG-12	27-AUG-12	R2426788
L1198712-2 19315 Sampled By: CLIENT on 11-AUG-12 Matrix: WATER Total Metals Aluminum (Al)-Total Antimony (Sb)-Total Arsenic (As)-Total Barium (Ba)-Total Beryllium (Be)-Total Bismuth (Bi)-Total Boron (B)-Total Cadmium (Cd)-Total Calcium (Ca)-Total Chromium (Cr)-Total Cobalt (Co)-Total Copper (Cu)-Total Iron (Fe)-Total Lead (Pb)-Total Magnesium (Mg)-Total Manganese (Mn)-Total Mercury (Hg)-Total Molybdenum (Mo)-Total Nickel (Ni)-Total Phosphorus (P)-Total Potassium (K)-Total Selenium (Se)-Total Silicon (Si)-Total Silver (Ag)-Total Sodium (Na)-Total Strontium (Sr)-Total Thallium (Tl)-Total Tin (Sn)-Total								
		2.58		0.010	mg/L	24-AUG-12	29-AUG-12	R2426023
		<0.0050		0.0050	mg/L	24-AUG-12	29-AUG-12	R2426023
		0.0062		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
		0.041		0.010	mg/L	24-AUG-12	29-AUG-12	R2426023
		<0.0010		0.0010	mg/L	24-AUG-12	30-AUG-12	R2427064
		<0.0010		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
		0.132		0.050	mg/L	24-AUG-12	30-AUG-12	R2427064
		0.000092		0.000090	mg/L	24-AUG-12	29-AUG-12	R2426023
		138		0.50	mg/L	24-AUG-12	29-AUG-12	R2426023
		0.0309		0.00050	mg/L	24-AUG-12	29-AUG-12	R2426023
		0.00165		0.00050	mg/L	24-AUG-12	29-AUG-12	R2426023
		0.0123		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
		2.85		0.050	mg/L	24-AUG-12	29-AUG-12	R2426023
		0.0049		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
		59.8	DLM	5.0	mg/L	24-AUG-12	29-AUG-12	R2426023
		0.0791		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
		<0.00010		0.00010	mg/L	24-AUG-12	24-AUG-12	R2423673
		0.0153		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
		0.0274		0.0020	mg/L	24-AUG-12	29-AUG-12	R2426023
		0.120		0.050	mg/L	24-AUG-12	29-AUG-12	R2426023
		4.6		1.0	mg/L	24-AUG-12	29-AUG-12	R2426023
		0.00089		0.00040	mg/L	24-AUG-12	29-AUG-12	R2426023
		6.1		1.0	mg/L	24-AUG-12	29-AUG-12	R2426023
		<0.00010		0.00010	mg/L	24-AUG-12	29-AUG-12	R2426023
		28.5		0.50	mg/L	24-AUG-12	29-AUG-12	R2426023
		0.150		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
		<0.00030		0.00030	mg/L	24-AUG-12	29-AUG-12	R2426023
		<0.0010		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1198712-2 19315 Sampled By: CLIENT on 11-AUG-12 Matrix: WATER								
Total Metals								
Titanium (Ti)-Total		0.0656		0.0020	mg/L	24-AUG-12	29-AUG-12	R2426023
Tungsten (W)-Total		<0.010		0.010	mg/L	24-AUG-12	29-AUG-12	R2426023
Uranium (U)-Total		0.0085		0.0050	mg/L	24-AUG-12	29-AUG-12	R2426023
Vanadium (V)-Total		0.0064		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Zinc (Zn)-Total		0.102		0.0030	mg/L	24-AUG-12	29-AUG-12	R2426023
Zirconium (Zr)-Total		<0.0040		0.0040	mg/L	24-AUG-12	29-AUG-12	R2426023
Hydrocarbons								
F1 (C6-C10)		<25		25	ug/L		27-AUG-12	R2424495
F2 (C10-C16)		<100		100	ug/L	24-AUG-12	27-AUG-12	R2424429
F3 (C16-C34)		<250		250	ug/L	24-AUG-12	27-AUG-12	R2424429
F4 (C34-C50)		<250		250	ug/L	24-AUG-12	27-AUG-12	R2424429
Total Hydrocarbons (C6-C50)		<250		250	ug/L		27-AUG-12	
Chrom. to baseline at nC50		YES				24-AUG-12	27-AUG-12	R2424429
Surrogate: 2-Bromobenzotrifluoride		67.0		60-140	%	24-AUG-12	27-AUG-12	R2424429
Surrogate: 3,4-Dichlorotoluene		93.0		50-140	%		27-AUG-12	R2424495
Surrogate: Octacosane		90.1		60-140	%	24-AUG-12	27-AUG-12	R2424429
Polychlorinated Biphenyls								
Aroclor 1242		<0.020		0.020	ug/L	27-AUG-12	27-AUG-12	R2426788
Aroclor 1248		<0.020		0.020	ug/L	27-AUG-12	27-AUG-12	R2426788
Aroclor 1254		<0.020		0.020	ug/L	27-AUG-12	27-AUG-12	R2426788
Aroclor 1260		<0.020		0.020	ug/L	27-AUG-12	27-AUG-12	R2426788
Total PCBs		<0.040		0.040	ug/L	27-AUG-12	27-AUG-12	R2426788
Surrogate: d14-Terphenyl		130.7		50-150	%	27-AUG-12	27-AUG-12	R2426788
L1198712-3 19316 Sampled By: CLIENT on 11-AUG-12 Matrix: WATER								
Total Metals								
Aluminum (Al)-Total		3.57		0.010	mg/L	24-AUG-12	29-AUG-12	R2426023
Antimony (Sb)-Total		<0.0050		0.0050	mg/L	24-AUG-12	29-AUG-12	R2426023
Arsenic (As)-Total		0.0227		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Barium (Ba)-Total		0.056		0.010	mg/L	24-AUG-12	29-AUG-12	R2426023
Beryllium (Be)-Total		<0.0010		0.0010	mg/L	24-AUG-12	30-AUG-12	R2427064
Bismuth (Bi)-Total		<0.0010		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Boron (B)-Total		0.121		0.050	mg/L	24-AUG-12	30-AUG-12	R2427064
Cadmium (Cd)-Total		0.000224		0.000090	mg/L	24-AUG-12	29-AUG-12	R2426023
Calcium (Ca)-Total		437		0.50	mg/L	24-AUG-12	29-AUG-12	R2426023
Chromium (Cr)-Total		0.0424		0.00050	mg/L	24-AUG-12	29-AUG-12	R2426023
Cobalt (Co)-Total		0.00430		0.00050	mg/L	24-AUG-12	29-AUG-12	R2426023
Copper (Cu)-Total		0.0275		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Iron (Fe)-Total		6.54		0.050	mg/L	24-AUG-12	29-AUG-12	R2426023
Lead (Pb)-Total		0.0111		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Magnesium (Mg)-Total		227	DLM	5.0	mg/L	24-AUG-12	29-AUG-12	R2426023

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1198712-3 19316 Sampled By: CLIENT on 11-AUG-12 Matrix: WATER								
Total Metals								
Manganese (Mn)-Total		0.257		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Mercury (Hg)-Total		<0.00010		0.00010	mg/L	24-AUG-12	24-AUG-12	R2423673
Molybdenum (Mo)-Total		0.0128		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Nickel (Ni)-Total		0.0229		0.0020	mg/L	24-AUG-12	29-AUG-12	R2426023
Phosphorus (P)-Total		0.233		0.050	mg/L	24-AUG-12	29-AUG-12	R2426023
Potassium (K)-Total		4.1		1.0	mg/L	24-AUG-12	29-AUG-12	R2426023
Selenium (Se)-Total		<0.00040		0.00040	mg/L	24-AUG-12	29-AUG-12	R2426023
Silicon (Si)-Total		7.2		1.0	mg/L	24-AUG-12	29-AUG-12	R2426023
Silver (Ag)-Total		0.00010		0.00010	mg/L	24-AUG-12	29-AUG-12	R2426023
Sodium (Na)-Total		22.8		0.50	mg/L	24-AUG-12	29-AUG-12	R2426023
Strontium (Sr)-Total		0.234		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Thallium (Tl)-Total		<0.00030		0.00030	mg/L	24-AUG-12	29-AUG-12	R2426023
Tin (Sn)-Total		<0.0010		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Titanium (Ti)-Total		0.0754		0.0020	mg/L	24-AUG-12	29-AUG-12	R2426023
Tungsten (W)-Total		<0.010		0.010	mg/L	24-AUG-12	29-AUG-12	R2426023
Uranium (U)-Total		0.0113		0.0050	mg/L	24-AUG-12	29-AUG-12	R2426023
Vanadium (V)-Total		0.0150		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Zinc (Zn)-Total		0.0870		0.0030	mg/L	24-AUG-12	29-AUG-12	R2426023
Zirconium (Zr)-Total		<0.0040		0.0040	mg/L	24-AUG-12	29-AUG-12	R2426023
Hydrocarbons								
F1 (C6-C10)		<25		25	ug/L		25-AUG-12	R2424342
F2 (C10-C16)		<100		100	ug/L	24-AUG-12	27-AUG-12	R2424429
F3 (C16-C34)		<250		250	ug/L	24-AUG-12	27-AUG-12	R2424429
F4 (C34-C50)		<250		250	ug/L	24-AUG-12	27-AUG-12	R2424429
Total Hydrocarbons (C6-C50)		<250		250	ug/L		27-AUG-12	
Chrom. to baseline at nC50		YES				24-AUG-12	27-AUG-12	R2424429
Surrogate: 2-Bromobenzotrifluoride		62.5		60-140	%	24-AUG-12	27-AUG-12	R2424429
Surrogate: 3,4-Dichlorotoluene		98.4		50-140	%		25-AUG-12	R2424342
Surrogate: Octacosane		95.7		60-140	%	24-AUG-12	27-AUG-12	R2424429
Polychlorinated Biphenyls								
Aroclor 1242		<0.020		0.020	ug/L	27-AUG-12	27-AUG-12	R2426788
Aroclor 1248		<0.020		0.020	ug/L	27-AUG-12	27-AUG-12	R2426788
Aroclor 1254		<0.020		0.020	ug/L	27-AUG-12	27-AUG-12	R2426788
Aroclor 1260		<0.020		0.020	ug/L	27-AUG-12	27-AUG-12	R2426788
Total PCBs		<0.040		0.040	ug/L	27-AUG-12	27-AUG-12	R2426788
Surrogate: d14-Terphenyl		129.6		50-150	%	27-AUG-12	27-AUG-12	R2426788
L1198712-4 19317 Sampled By: CLIENT on 11-AUG-12 Matrix: WATER								
Total Metals								
Aluminum (Al)-Total		4.75		0.010	mg/L	24-AUG-12	29-AUG-12	R2426023
Antimony (Sb)-Total		<0.0050		0.0050	mg/L	24-AUG-12	29-AUG-12	R2426023

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1198712-4	19317							
Sampled By: CLIENT on 11-AUG-12								
Matrix: WATER								
Total Metals								
Arsenic (As)-Total		0.0274		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Barium (Ba)-Total		0.166		0.010	mg/L	24-AUG-12	29-AUG-12	R2426023
Beryllium (Be)-Total		<0.0010		0.0010	mg/L	24-AUG-12	30-AUG-12	R2427064
Bismuth (Bi)-Total		<0.0010		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Boron (B)-Total		0.090		0.050	mg/L	24-AUG-12	30-AUG-12	R2427064
Cadmium (Cd)-Total		0.000290		0.000090	mg/L	24-AUG-12	29-AUG-12	R2426023
Calcium (Ca)-Total		604		0.50	mg/L	24-AUG-12	29-AUG-12	R2426023
Chromium (Cr)-Total		0.0418		0.00050	mg/L	24-AUG-12	29-AUG-12	R2426023
Cobalt (Co)-Total		0.00502		0.00050	mg/L	24-AUG-12	29-AUG-12	R2426023
Copper (Cu)-Total		0.0670		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Iron (Fe)-Total		8.33		0.050	mg/L	24-AUG-12	29-AUG-12	R2426023
Lead (Pb)-Total		0.0133		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Magnesium (Mg)-Total		336	DLM	5.0	mg/L	24-AUG-12	29-AUG-12	R2426023
Manganese (Mn)-Total		0.312		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Mercury (Hg)-Total		<0.00010		0.00010	mg/L	24-AUG-12	24-AUG-12	R2423673
Molybdenum (Mo)-Total		0.0198		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Nickel (Ni)-Total		0.0530		0.0020	mg/L	24-AUG-12	29-AUG-12	R2426023
Phosphorus (P)-Total		0.257		0.050	mg/L	24-AUG-12	29-AUG-12	R2426023
Potassium (K)-Total		4.3		1.0	mg/L	24-AUG-12	29-AUG-12	R2426023
Selenium (Se)-Total		0.00089		0.00040	mg/L	24-AUG-12	29-AUG-12	R2426023
Silicon (Si)-Total		11.7		1.0	mg/L	24-AUG-12	29-AUG-12	R2426023
Silver (Ag)-Total		0.00013		0.00010	mg/L	24-AUG-12	29-AUG-12	R2426023
Sodium (Na)-Total		57.9	DLM	5.0	mg/L	24-AUG-12	29-AUG-12	R2426023
Strontium (Sr)-Total		0.451		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Thallium (Tl)-Total		<0.00030		0.00030	mg/L	24-AUG-12	29-AUG-12	R2426023
Tin (Sn)-Total		<0.0010		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Titanium (Ti)-Total		0.100		0.0020	mg/L	24-AUG-12	29-AUG-12	R2426023
Tungsten (W)-Total		<0.010		0.010	mg/L	24-AUG-12	29-AUG-12	R2426023
Uranium (U)-Total		0.0077		0.0050	mg/L	24-AUG-12	29-AUG-12	R2426023
Vanadium (V)-Total		0.0177		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Zinc (Zn)-Total		1.15		0.0030	mg/L	24-AUG-12	29-AUG-12	R2426023
Zirconium (Zr)-Total		0.0041		0.0040	mg/L	24-AUG-12	29-AUG-12	R2426023
Hydrocarbons								
F1 (C6-C10)		<25		25	ug/L		25-AUG-12	R2424342
F2 (C10-C16)		<100		100	ug/L	24-AUG-12	27-AUG-12	R2424429
F3 (C16-C34)		<250		250	ug/L	24-AUG-12	27-AUG-12	R2424429
F4 (C34-C50)		<250		250	ug/L	24-AUG-12	27-AUG-12	R2424429
Total Hydrocarbons (C6-C50)		<250		250	ug/L		27-AUG-12	
Chrom. to baseline at nC50		YES				24-AUG-12	27-AUG-12	R2424429
Surrogate: 2-Bromobenzotrifluoride		64.1		60-140	%	24-AUG-12	27-AUG-12	R2424429
Surrogate: 3,4-Dichlorotoluene		95.1		50-140	%		25-AUG-12	R2424342

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1198712-4 19317 Sampled By: CLIENT on 11-AUG-12 Matrix: WATER Hydrocarbons Surrogate: Octacosane Polychlorinated Biphenyls Aroclor 1242 Aroclor 1248 Aroclor 1254 Aroclor 1260 Total PCBs Surrogate: d14-Terphenyl		90.4		60-140	%	24-AUG-12	27-AUG-12	R2424429
		<0.020		0.020	ug/L	27-AUG-12	27-AUG-12	R2426788
		<0.020		0.020	ug/L	27-AUG-12	27-AUG-12	R2426788
		<0.020		0.020	ug/L	27-AUG-12	27-AUG-12	R2426788
		<0.020		0.020	ug/L	27-AUG-12	27-AUG-12	R2426788
		<0.040		0.040	ug/L	27-AUG-12	27-AUG-12	R2426788
		132.3		50-150	%	27-AUG-12	27-AUG-12	R2426788
L1198712-5 19318 Sampled By: CLIENT on 11-AUG-12 Matrix: WATER Total Metals Aluminum (Al)-Total Antimony (Sb)-Total Arsenic (As)-Total Barium (Ba)-Total Beryllium (Be)-Total Bismuth (Bi)-Total Boron (B)-Total Cadmium (Cd)-Total Calcium (Ca)-Total Chromium (Cr)-Total Cobalt (Co)-Total Copper (Cu)-Total Iron (Fe)-Total Lead (Pb)-Total Magnesium (Mg)-Total Manganese (Mn)-Total Mercury (Hg)-Total Molybdenum (Mo)-Total Nickel (Ni)-Total Phosphorus (P)-Total Potassium (K)-Total Selenium (Se)-Total Silicon (Si)-Total Silver (Ag)-Total Sodium (Na)-Total Strontium (Sr)-Total Thallium (Tl)-Total Tin (Sn)-Total Titanium (Ti)-Total Tungsten (W)-Total		1.89		0.010	mg/L	24-AUG-12	29-AUG-12	R2426023
		<0.0050		0.0050	mg/L	24-AUG-12	29-AUG-12	R2426023
		0.0100		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
		0.046		0.010	mg/L	24-AUG-12	29-AUG-12	R2426023
		<0.0010		0.0010	mg/L	24-AUG-12	30-AUG-12	R2427064
		<0.0010		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
		0.106		0.050	mg/L	24-AUG-12	30-AUG-12	R2427064
		0.000159		0.000090	mg/L	24-AUG-12	29-AUG-12	R2426023
		141		0.50	mg/L	24-AUG-12	29-AUG-12	R2426023
		0.0131		0.00050	mg/L	24-AUG-12	29-AUG-12	R2426023
		0.00284		0.00050	mg/L	24-AUG-12	29-AUG-12	R2426023
		0.0137		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
		3.32		0.050	mg/L	24-AUG-12	29-AUG-12	R2426023
		0.0053		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
		86.2	DLM	5.0	mg/L	24-AUG-12	29-AUG-12	R2426023
		0.104		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
		<0.00010		0.00010	mg/L	24-AUG-12	24-AUG-12	R2423673
		0.0077		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
		0.0135		0.0020	mg/L	24-AUG-12	29-AUG-12	R2426023
		0.152		0.050	mg/L	24-AUG-12	29-AUG-12	R2426023
		2.7		1.0	mg/L	24-AUG-12	29-AUG-12	R2426023
		<0.00040		0.00040	mg/L	24-AUG-12	29-AUG-12	R2426023
		4.6		1.0	mg/L	24-AUG-12	29-AUG-12	R2426023
		<0.00010		0.00010	mg/L	24-AUG-12	29-AUG-12	R2426023
		26.2		0.50	mg/L	24-AUG-12	29-AUG-12	R2426023
		0.131		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
		<0.00030		0.00030	mg/L	24-AUG-12	29-AUG-12	R2426023
		<0.0010		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
		0.0574		0.0020	mg/L	24-AUG-12	29-AUG-12	R2426023
		<0.010		0.010	mg/L	24-AUG-12	29-AUG-12	R2426023

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1198712-5 19318 Sampled By: CLIENT on 11-AUG-12 Matrix: WATER								
Total Metals								
Uranium (U)-Total		0.0059		0.0050	mg/L	24-AUG-12	29-AUG-12	R2426023
Vanadium (V)-Total		0.0066		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Zinc (Zn)-Total		0.0264		0.0030	mg/L	24-AUG-12	29-AUG-12	R2426023
Zirconium (Zr)-Total		<0.0040		0.0040	mg/L	24-AUG-12	29-AUG-12	R2426023
Hydrocarbons								
F1 (C6-C10)		<25		25	ug/L		25-AUG-12	R2424342
F2 (C10-C16)		<100		100	ug/L	24-AUG-12	27-AUG-12	R2424429
F3 (C16-C34)		<250		250	ug/L	24-AUG-12	27-AUG-12	R2424429
F4 (C34-C50)		<250		250	ug/L	24-AUG-12	27-AUG-12	R2424429
Total Hydrocarbons (C6-C50)		<250		250	ug/L		27-AUG-12	
Chrom. to baseline at nC50		YES				24-AUG-12	27-AUG-12	R2424429
Surrogate: 2-Bromobenzotrifluoride		64.9		60-140	%	24-AUG-12	27-AUG-12	R2424429
Surrogate: 3,4-Dichlorotoluene		90.3		50-140	%		25-AUG-12	R2424342
Surrogate: Octacosane		87.8		60-140	%	24-AUG-12	27-AUG-12	R2424429
Polychlorinated Biphenyls								
Aroclor 1242		<0.020		0.020	ug/L	27-AUG-12	27-AUG-12	R2426788
Aroclor 1248		<0.020		0.020	ug/L	27-AUG-12	27-AUG-12	R2426788
Aroclor 1254		<0.020		0.020	ug/L	27-AUG-12	27-AUG-12	R2426788
Aroclor 1260		<0.020		0.020	ug/L	27-AUG-12	27-AUG-12	R2426788
Total PCBs		<0.040		0.040	ug/L	27-AUG-12	27-AUG-12	R2426788
Surrogate: d14-Terphenyl		139.8		50-150	%	27-AUG-12	27-AUG-12	R2426788
L1198712-6 19319 Sampled By: CLIENT on 11-AUG-12 Matrix: WATER								
Total Metals								
Aluminum (Al)-Total		1.65		0.010	mg/L	24-AUG-12	29-AUG-12	R2426023
Antimony (Sb)-Total		<0.0050		0.0050	mg/L	24-AUG-12	29-AUG-12	R2426023
Arsenic (As)-Total		0.0052		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Barium (Ba)-Total		0.037		0.010	mg/L	24-AUG-12	29-AUG-12	R2426023
Beryllium (Be)-Total		<0.0010		0.0010	mg/L	24-AUG-12	30-AUG-12	R2427064
Bismuth (Bi)-Total		<0.0010		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Boron (B)-Total		0.120		0.050	mg/L	24-AUG-12	30-AUG-12	R2427064
Cadmium (Cd)-Total		0.000092		0.000090	mg/L	24-AUG-12	29-AUG-12	R2426023
Calcium (Ca)-Total		116		0.50	mg/L	24-AUG-12	29-AUG-12	R2426023
Chromium (Cr)-Total		0.0157		0.00050	mg/L	24-AUG-12	29-AUG-12	R2426023
Cobalt (Co)-Total		0.00119		0.00050	mg/L	24-AUG-12	29-AUG-12	R2426023
Copper (Cu)-Total		0.0090		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Iron (Fe)-Total		1.77		0.050	mg/L	24-AUG-12	29-AUG-12	R2426023
Lead (Pb)-Total		0.0042		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Magnesium (Mg)-Total		52.6	DLM	5.0	mg/L	24-AUG-12	29-AUG-12	R2426023
Manganese (Mn)-Total		0.0401		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Mercury (Hg)-Total		<0.00010		0.00010	mg/L	24-AUG-12	24-AUG-12	R2423673

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1198712-6	19319							
Sampled By:	CLIENT on 11-AUG-12							
Matrix:	WATER							
Total Metals								
Molybdenum (Mo)-Total		0.0160		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Nickel (Ni)-Total		0.0161		0.0020	mg/L	24-AUG-12	29-AUG-12	R2426023
Phosphorus (P)-Total		0.108		0.050	mg/L	24-AUG-12	29-AUG-12	R2426023
Potassium (K)-Total		4.2		1.0	mg/L	24-AUG-12	29-AUG-12	R2426023
Selenium (Se)-Total		0.00091		0.00040	mg/L	24-AUG-12	29-AUG-12	R2426023
Silicon (Si)-Total		4.7		1.0	mg/L	24-AUG-12	29-AUG-12	R2426023
Silver (Ag)-Total		<0.00010		0.00010	mg/L	24-AUG-12	29-AUG-12	R2426023
Sodium (Na)-Total		30.0		0.50	mg/L	24-AUG-12	29-AUG-12	R2426023
Strontium (Sr)-Total		0.150		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Thallium (Tl)-Total		<0.00030		0.00030	mg/L	24-AUG-12	29-AUG-12	R2426023
Tin (Sn)-Total		<0.0010		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Titanium (Ti)-Total		0.0446		0.0020	mg/L	24-AUG-12	29-AUG-12	R2426023
Tungsten (W)-Total		<0.010		0.010	mg/L	24-AUG-12	29-AUG-12	R2426023
Uranium (U)-Total		0.0087		0.0050	mg/L	24-AUG-12	29-AUG-12	R2426023
Vanadium (V)-Total		0.0044		0.0010	mg/L	24-AUG-12	29-AUG-12	R2426023
Zinc (Zn)-Total		0.0281		0.0030	mg/L	24-AUG-12	29-AUG-12	R2426023
Zirconium (Zr)-Total		<0.0040		0.0040	mg/L	24-AUG-12	29-AUG-12	R2426023
Hydrocarbons								
F2 (C10-C16)		<100		100	ug/L	24-AUG-12	27-AUG-12	R2424429
F3 (C16-C34)		<250		250	ug/L	24-AUG-12	27-AUG-12	R2424429
F4 (C34-C50)		<250		250	ug/L	24-AUG-12	27-AUG-12	R2424429
Chrom. to baseline at nC50		YES				24-AUG-12	27-AUG-12	R2424429
Surrogate: 2-Bromobenzotrifluoride		64.1		30-120	%	24-AUG-12	27-AUG-12	R2424429
Surrogate: Octacosane		87.5		50-120	%	24-AUG-12	27-AUG-12	R2424429
Polychlorinated Biphenyls								
Aroclor 1242		<0.020		0.020	ug/L	27-AUG-12	27-AUG-12	R2426788
Aroclor 1248		<0.020		0.020	ug/L	27-AUG-12	27-AUG-12	R2426788
Aroclor 1254		<0.020		0.020	ug/L	27-AUG-12	27-AUG-12	R2426788
Aroclor 1260		<0.020		0.020	ug/L	27-AUG-12	27-AUG-12	R2426788
Total PCBs		<0.040		0.040	ug/L	27-AUG-12	27-AUG-12	R2426788
Surrogate: d14-Terphenyl		136.4		50-150	%	27-AUG-12	27-AUG-12	R2426788

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Matrix Spike	Aluminum (Al)-Total	MS-B	L1198712-1, -2, -3, -4, -5, -6
Matrix Spike	Calcium (Ca)-Total	MS-B	L1198712-1, -2, -3, -4, -5, -6
Matrix Spike	Magnesium (Mg)-Total	MS-B	L1198712-1, -2, -3, -4, -5, -6
Matrix Spike	Potassium (K)-Total	MS-B	L1198712-1, -2, -3, -4, -5, -6
Matrix Spike	Sodium (Na)-Total	MS-B	L1198712-1, -2, -3, -4, -5, -6
Matrix Spike	Strontium (Sr)-Total	MS-B	L1198712-1, -2, -3, -4, -5, -6

Sample Parameter Qualifier key listed:

Qualifier	Description
DLM	Detection Limit Adjusted For Sample Matrix Effects
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
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F1-511-WT Water F1-O.Reg 153/04 (July 2011) MOE DECPH-E3421/CCME TIER 1
Fraction F1 is determined by purging a volume of a ground water sample followed by GC/FID analysis.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F1-F4-511-CALC-WT Water F1-F4 Hydrocarbon Calculated CCME CWS-PHC DEC-2000 - PUB# 1310-L
Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:

1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:

1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-F4-CALC-WT Water CCME Total Hydrocarbons CCME CWS-PHC DEC-2000 - PUB# 1310-L
Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:

1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:

1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F2-F4-511-WT Water F2-F4-O.Reg 153/04 (July 2011) MOE DECPH-E3398/CCME TIER 1
Fractions F2, F3 and F4 are determined by liquid/liquid extraction with a solvent. The solvent recovered from the extracted sample is dried and treated to remove polar material. The extract is then analyzed by GC/FID.

Protection Act (July 1, 2011).

F2-F4-WT	Water	F2-F4 (O.Reg.153/04)	MOE DECPH-E3421/CCME TIER 1
The petroleum hydrocarbons are extracted from the aqueous samples using solvent partition. The extracts are treated with silica gel to remove polar contaminants. The final concentrated extract is analyzed by gas chromatography (GC) using flame ionization detection (FID) and a 100% polydimethylsiloxane column.			
The F2 fraction is determined by integrating the area in the chromatogram from the apex of nC10 to the apex nC16 and quantitating using external calibration using a standard mix containing nC10, nC16 and nC34. Similarly, the F3 fraction extends from the apex of nC16 to the apex nC34 and the F4 fraction covers the area from the apex nC34 to the apex nC50. If the chromatogram does not return to the baseline by the time nC50 elutes, a gravimetric determination of the F4 is performed.			
HG-TOT-WT	Water	Mercury (Hg)-Total	SW846 7470A
MET-TOT-WT	Water	Metal Scan-Total	EPA 6020A
The concentration of metals is determined on an unfiltered aqueous sample. The sample is digested with nitric acid and then analyzed directly by ICP-MS.			
PCB-WT	Water	Polychlorinated Biphenyls	EPA 8082
PCBs are extracted from an aqueous sample at neutral pH with aliquots of dichloromethane using a modified separatory funnel technique. The extracts are analyzed by GC/MSD.			

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

1	2	3
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GLOSSARY OF REPORT TERMS
Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L1198712

Report Date: 31-AUG-12

Page 1 of 10

Client: Department of National Defence - Royal Military College
Environmental Sciences Group
Kingston ON K7K7B4

Contact: CANDICE CASUCCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-511-WT		Water						
Batch	R2424342							
WG1533645-1	CVS							
F1 (C6-C10)			91		%		80-120	25-AUG-12
WG1533645-4	DUP	WG1533645-3						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	25-AUG-12
WG1533645-2	MB							
F1 (C6-C10)			<25		ug/L		25	25-AUG-12
Surrogate: 3,4-Dichlorotoluene			107.7		%		50-140	25-AUG-12
Batch	R2424495							
WG1533181-1	CVS							
F1 (C6-C10)			105		%		80-120	27-AUG-12
WG1533181-4	DUP	WG1533181-3						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	27-AUG-12
WG1533181-2	MB							
F1 (C6-C10)			<25		ug/L		25	27-AUG-12
Surrogate: 3,4-Dichlorotoluene			114.7		%		50-140	27-AUG-12
WG1533181-5	MS	WG1533181-3						
F1 (C6-C10)			87.7		%		60-140	27-AUG-12
F2-F4-511-WT		Water						
Batch	R2424429							
WG1534577-1	CVS							
F2 (C10-C16)			102.2		%		65-135	27-AUG-12
F3 (C16-C34)			103.4		%		65-135	27-AUG-12
F4 (C34-C50)			100.3		%		65-135	27-AUG-12
WG1533048-2	LCS							
F2 (C10-C16)			83.0		%		65-135	27-AUG-12
F3 (C16-C34)			81.4		%		65-135	27-AUG-12
F4 (C34-C50)			81.6		%		65-135	27-AUG-12
WG1533048-3	LCSD	WG1533048-2						
F2 (C10-C16)		83.0	81.3		%	2.0	50	27-AUG-12
F3 (C16-C34)		81.4	80.2		%	1.5	50	27-AUG-12
F4 (C34-C50)		81.6	80.5		%	1.3	50	27-AUG-12
WG1533048-1	MB							
F2 (C10-C16)			<100		ug/L		100	27-AUG-12
F3 (C16-C34)			<250		ug/L		250	27-AUG-12
F4 (C34-C50)			<250		ug/L		250	27-AUG-12
Surrogate: Octacosane			87.7		%		60-140	27-AUG-12

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Client: Department of National Defence - Royal Military College
Environmental Sciences Group
Kingston ON K7K7B4

Contact: CANDICE CASUCCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-511-WT	Water							
Batch	R2424429							
WG1533048-1 MB								
Surrogate: 2-Bromobenzotrifluoride			67.7		%		60-140	27-AUG-12
F2-F4-WT	Water							
Batch	R2424429							
WG1534577-1 CVS								
F2 (C10-C16)			102.2		%		80-120	27-AUG-12
F3 (C16-C34)			103.4		%		80-120	27-AUG-12
F4 (C34-C50)			100.3		%		80-120	27-AUG-12
WG1533048-2 LCS								
F2 (C10-C16)			83.0		%		65-135	27-AUG-12
F3 (C16-C34)			81.4		%		65-135	27-AUG-12
F4 (C34-C50)			81.6		%		65-135	27-AUG-12
WG1533048-3 LCSD		WG1533048-2						
F2 (C10-C16)		83.0	81.3		%	2.0	50	27-AUG-12
F3 (C16-C34)		81.4	80.2		%	1.5	50	27-AUG-12
F4 (C34-C50)		81.6	80.5		%	1.3	50	27-AUG-12
WG1533048-1 MB								
F2 (C10-C16)			<100		ug/L		100	27-AUG-12
F3 (C16-C34)			<250		ug/L		250	27-AUG-12
F4 (C34-C50)			<250		ug/L		250	27-AUG-12
Surrogate: Octacosane			87.7		%		50-120	27-AUG-12
Surrogate: 2-Bromobenzotrifluoride			67.7		%		30-120	27-AUG-12
HG-TOT-WT	Water							
Batch	R2423673							
WG1533421-4 DUP		WG1533421-3						
Mercury (Hg)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	24-AUG-12
WG1533421-2 LCS								
Mercury (Hg)-Total			97.5		%		80-120	24-AUG-12
WG1533421-1 MB								
Mercury (Hg)-Total			<0.00010		mg/L		0.0001	24-AUG-12
WG1533421-6 MS		WG1533421-5						
Mercury (Hg)-Total			90.2		%		70-130	24-AUG-12
MET-TOT-WT	Water							



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Client: Department of National Defence - Royal Military College
Environmental Sciences Group
Kingston ON K7K7B4

Contact: CANDICE CASUCCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-TOT-WT	Water							
Batch	R2426023							
WG1535211-2 CVS								
Aluminum (Al)-Total			103.5		%		80-120	29-AUG-12
Antimony (Sb)-Total			103.0		%		80-120	29-AUG-12
Arsenic (As)-Total			99.1		%		80-120	29-AUG-12
Barium (Ba)-Total			105.4		%		80-120	29-AUG-12
Bismuth (Bi)-Total			108.0		%		80-120	29-AUG-12
Cadmium (Cd)-Total			107.9		%		80-120	29-AUG-12
Calcium (Ca)-Total			100.5		%		80-120	29-AUG-12
Chromium (Cr)-Total			100.8		%		80-120	29-AUG-12
Cobalt (Co)-Total			99.2		%		80-120	29-AUG-12
Copper (Cu)-Total			102.3		%		80-120	29-AUG-12
Iron (Fe)-Total			90.2		%		70-130	29-AUG-12
Lead (Pb)-Total			103.9		%		80-120	29-AUG-12
Magnesium (Mg)-Total			104.1		%		80-120	29-AUG-12
Manganese (Mn)-Total			104.9		%		80-120	29-AUG-12
Molybdenum (Mo)-Total			99.6		%		90-110	29-AUG-12
Nickel (Ni)-Total			99.2		%		80-120	29-AUG-12
Phosphorus (P)-Total			100.4		%		70-130	29-AUG-12
Potassium (K)-Total			99.2		%		80-120	29-AUG-12
Selenium (Se)-Total			98.2		%		80-120	29-AUG-12
Silicon (Si)-Total			107.7		%		70-130	29-AUG-12
Silver (Ag)-Total			108.6		%		80-120	29-AUG-12
Sodium (Na)-Total			97.4		%		80-120	29-AUG-12
Strontium (Sr)-Total			104.1		%		80-120	29-AUG-12
Thallium (Tl)-Total			113.9		%		80-120	29-AUG-12
Tin (Sn)-Total			100.6		%		70-130	29-AUG-12
Titanium (Ti)-Total			93.6		%		80-120	29-AUG-12
Tungsten (W)-Total			99.6		%		70-130	29-AUG-12
Uranium (U)-Total			113.3		%		80-120	29-AUG-12
Vanadium (V)-Total			94.3		%		80-120	29-AUG-12
Zinc (Zn)-Total			96.0		%		80-120	29-AUG-12
Zirconium (Zr)-Total			98.6		%		80-120	29-AUG-12
WG1534337-4 DUP		WG1534337-3						
Aluminum (Al)-Total		0.527	0.538		mg/L	2.1	20	29-AUG-12
Antimony (Sb)-Total		<0.0050	<0.0050	RPD-NA	mg/L	N/A	20	29-AUG-12

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Client: Department of National Defence - Royal Military College
Environmental Sciences Group
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Contact: CANDICE CASUCCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-TOT-WT		Water						
Batch	R2426023							
WG1534337-4	DUP	WG1534337-3						
Arsenic (As)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	29-AUG-12
Barium (Ba)-Total		0.019	0.020		mg/L	5.6	20	29-AUG-12
Bismuth (Bi)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	29-AUG-12
Cadmium (Cd)-Total		<0.000090	<0.000090	RPD-NA	mg/L	N/A	20	29-AUG-12
Calcium (Ca)-Total		65.7	68.3		mg/L	3.9	20	29-AUG-12
Chromium (Cr)-Total		0.0131	0.0129		mg/L	1.0	20	29-AUG-12
Cobalt (Co)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	29-AUG-12
Copper (Cu)-Total		0.0031	0.0032		mg/L	3.3	20	29-AUG-12
Iron (Fe)-Total		0.619	0.584		mg/L	5.7	20	29-AUG-12
Lead (Pb)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	29-AUG-12
Magnesium (Mg)-Total		27.6	29.2		mg/L	5.5	20	29-AUG-12
Manganese (Mn)-Total		0.0194	0.0177		mg/L	8.8	20	29-AUG-12
Molybdenum (Mo)-Total		0.0136	0.0140		mg/L	3.1	20	29-AUG-12
Nickel (Ni)-Total		0.0102	0.0101		mg/L	1.9	20	29-AUG-12
Phosphorus (P)-Total		<0.050	<0.050	RPD-NA	mg/L	N/A	20	29-AUG-12
Potassium (K)-Total		2.9	3.0		mg/L	5.0	20	29-AUG-12
Selenium (Se)-Total		0.00065	0.00048	J	mg/L	0.00018	0.0008	29-AUG-12
Silicon (Si)-Total		2.0	2.1		mg/L	3.9	20	29-AUG-12
Silver (Ag)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	29-AUG-12
Sodium (Na)-Total		17.8	19.0		mg/L	6.6	20	29-AUG-12
Strontium (Sr)-Total		0.109	0.112		mg/L	2.9	20	29-AUG-12
Thallium (Tl)-Total		<0.00030	<0.00030	RPD-NA	mg/L	N/A	20	29-AUG-12
Tin (Sn)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	29-AUG-12
Titanium (Ti)-Total		0.0197	0.0189		mg/L	4.3	20	29-AUG-12
Tungsten (W)-Total		<0.010	<0.010	RPD-NA	mg/L	N/A	20	29-AUG-12
Uranium (U)-Total		0.0075	0.0077		mg/L	1.9	20	29-AUG-12
Vanadium (V)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	29-AUG-12
Zinc (Zn)-Total		0.0111	0.0113		mg/L	2.3	20	29-AUG-12
Zirconium (Zr)-Total		<0.0040	<0.0040	RPD-NA	mg/L	N/A	20	29-AUG-12
WG1534337-2	LCS							
Aluminum (Al)-Total			101.0		%		80-120	29-AUG-12
Antimony (Sb)-Total			90.2		%		70-130	29-AUG-12
Arsenic (As)-Total			100.7		%		70-130	29-AUG-12

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Environmental Sciences Group
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Contact: CANDICE CASUCCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-TOT-WT	Water							
Batch	R2426023							
WG1534337-2 LCS								
Barium (Ba)-Total			91.5		%		70-130	29-AUG-12
Bismuth (Bi)-Total			94.8		%		70-130	29-AUG-12
Cadmium (Cd)-Total			92.8		%		70-130	29-AUG-12
Calcium (Ca)-Total			105.5		%		70-130	29-AUG-12
Chromium (Cr)-Total			100.1		%		70-130	29-AUG-12
Cobalt (Co)-Total			96.9		%		70-130	29-AUG-12
Copper (Cu)-Total			98.2		%		70-130	29-AUG-12
Iron (Fe)-Total			98.1		%		70-130	29-AUG-12
Lead (Pb)-Total			93.5		%		70-130	29-AUG-12
Magnesium (Mg)-Total			95.7		%		70-130	29-AUG-12
Manganese (Mn)-Total			100.5		%		70-130	29-AUG-12
Molybdenum (Mo)-Total			98.1		%		70-130	29-AUG-12
Nickel (Ni)-Total			95.9		%		70-130	29-AUG-12
Phosphorus (P)-Total			104.4		%		70-130	29-AUG-12
Potassium (K)-Total			101.6		%		70-130	29-AUG-12
Selenium (Se)-Total			102.4		%		70-130	29-AUG-12
Silicon (Si)-Total			94.2		%		70-130	29-AUG-12
Silver (Ag)-Total			92.8		%		70-130	29-AUG-12
Sodium (Na)-Total			95.2		%		70-130	29-AUG-12
Strontium (Sr)-Total			97.6		%		70-130	29-AUG-12
Thallium (Tl)-Total			92.5		%		70-130	29-AUG-12
Tin (Sn)-Total			87.0		%		70-130	29-AUG-12
Titanium (Ti)-Total			101.0		%		70-130	29-AUG-12
Tungsten (W)-Total			92.9		%		70-130	29-AUG-12
Uranium (U)-Total			91.2		%		70-130	29-AUG-12
Vanadium (V)-Total			100.2		%		70-130	29-AUG-12
Zinc (Zn)-Total			87.1		%		70-130	29-AUG-12
Zirconium (Zr)-Total			94.3		%		70-130	29-AUG-12
WG1534337-1 MB								
Aluminum (Al)-Total			<0.010		mg/L		0.01	29-AUG-12
Antimony (Sb)-Total			<0.0050		mg/L		0.005	29-AUG-12
Arsenic (As)-Total			<0.0010		mg/L		0.001	29-AUG-12
Barium (Ba)-Total			<0.010		mg/L		0.01	29-AUG-12
Bismuth (Bi)-Total			<0.0010		mg/L		0.001	29-AUG-12

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Client: Department of National Defence - Royal Military College
Environmental Sciences Group
Kingston ON K7K7B4

Contact: CANDICE CASUCCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-TOT-WT	Water							
Batch	R2426023							
WG1534337-1 MB								
Cadmium (Cd)-Total			<0.000090		mg/L		0.00009	29-AUG-12
Calcium (Ca)-Total			<0.50		mg/L		0.5	29-AUG-12
Chromium (Cr)-Total			<0.00050		mg/L		0.0005	29-AUG-12
Cobalt (Co)-Total			<0.00050		mg/L		0.0005	29-AUG-12
Copper (Cu)-Total			<0.0010		mg/L		0.001	29-AUG-12
Iron (Fe)-Total			<0.050		mg/L		0.05	29-AUG-12
Lead (Pb)-Total			<0.0010		mg/L		0.001	29-AUG-12
Magnesium (Mg)-Total			<0.50		mg/L		0.5	29-AUG-12
Manganese (Mn)-Total			<0.0010		mg/L		0.001	29-AUG-12
Molybdenum (Mo)-Total			<0.0010		mg/L		0.001	29-AUG-12
Nickel (Ni)-Total			<0.0020		mg/L		0.002	29-AUG-12
Phosphorus (P)-Total			<0.050		mg/L		0.05	29-AUG-12
Potassium (K)-Total			<1.0		mg/L		1	29-AUG-12
Selenium (Se)-Total			<0.00040		mg/L		0.0004	29-AUG-12
Silicon (Si)-Total			<1.0		mg/L		1	29-AUG-12
Silver (Ag)-Total			<0.00010		mg/L		0.0001	29-AUG-12
Sodium (Na)-Total			<0.50		mg/L		0.5	29-AUG-12
Strontium (Sr)-Total			<0.0010		mg/L		0.001	29-AUG-12
Thallium (Tl)-Total			<0.00030		mg/L		0.0003	29-AUG-12
Tin (Sn)-Total			<0.0010		mg/L		0.001	29-AUG-12
Titanium (Ti)-Total			<0.0020		mg/L		0.002	29-AUG-12
Tungsten (W)-Total			<0.010		mg/L		0.01	29-AUG-12
Uranium (U)-Total			<0.0050		mg/L		0.005	29-AUG-12
Vanadium (V)-Total			<0.0010		mg/L		0.001	29-AUG-12
Zinc (Zn)-Total			<0.0030		mg/L		0.003	29-AUG-12
Zirconium (Zr)-Total			<0.0040		mg/L		0.004	29-AUG-12
WG1534337-5 MS		WG1534337-3						
Aluminum (Al)-Total			N/A	MS-B	%		-	29-AUG-12
Antimony (Sb)-Total			85.3		%		70-130	29-AUG-12
Arsenic (As)-Total			102.4		%		70-130	29-AUG-12
Barium (Ba)-Total			92.7		%		70-130	29-AUG-12
Bismuth (Bi)-Total			91.7		%		70-130	29-AUG-12
Cadmium (Cd)-Total			91.1		%		70-130	29-AUG-12
Calcium (Ca)-Total			N/A	MS-B	%		-	29-AUG-12

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Client: Department of National Defence - Royal Military College
Environmental Sciences Group
Kingston ON K7K7B4

Contact: CANDICE CASUCCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-TOT-WT		Water						
Batch	R2426023							
WG1534337-5 MS		WG1534337-3						
Chromium (Cr)-Total			93.6		%		70-130	29-AUG-12
Cobalt (Co)-Total			93.9		%		70-130	29-AUG-12
Copper (Cu)-Total			94.7		%		70-130	29-AUG-12
Iron (Fe)-Total			94.1		%		70-130	29-AUG-12
Lead (Pb)-Total			92.6		%		70-130	29-AUG-12
Magnesium (Mg)-Total			N/A	MS-B	%		-	29-AUG-12
Manganese (Mn)-Total			94.6		%		70-130	29-AUG-12
Molybdenum (Mo)-Total			100.8		%		70-130	29-AUG-12
Nickel (Ni)-Total			91.9		%		70-130	29-AUG-12
Phosphorus (P)-Total			104.3		%		70-130	29-AUG-12
Potassium (K)-Total			N/A	MS-B	%		-	29-AUG-12
Selenium (Se)-Total			102.7		%		70-130	29-AUG-12
Silicon (Si)-Total			116.3		%		70-130	29-AUG-12
Silver (Ag)-Total			85.0		%		70-130	29-AUG-12
Sodium (Na)-Total			N/A	MS-B	%		-	29-AUG-12
Strontium (Sr)-Total			N/A	MS-B	%		-	29-AUG-12
Thallium (Tl)-Total			90.9		%		70-130	29-AUG-12
Tin (Sn)-Total			83.4		%		70-130	29-AUG-12
Titanium (Ti)-Total			101.2		%		70-130	29-AUG-12
Tungsten (W)-Total			93.7		%		70-130	29-AUG-12
Uranium (U)-Total			89.2		%		70-130	29-AUG-12
Vanadium (V)-Total			99.8		%		70-130	29-AUG-12
Zinc (Zn)-Total			83.6		%		70-130	29-AUG-12
Zirconium (Zr)-Total			97.4		%		70-130	29-AUG-12
Batch	R2427064							
WG1537269-2 CVS								
Beryllium (Be)-Total			106.5		%		80-120	30-AUG-12
Boron (B)-Total			104.2		%		70-130	30-AUG-12
WG1534337-4 DUP		WG1534337-3						
Beryllium (Be)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	30-AUG-12
Boron (B)-Total		<0.050	<0.050	RPD-NA	mg/L	N/A	20	30-AUG-12
WG1534337-2 LCS								
Beryllium (Be)-Total			92.4		%		70-130	30-AUG-12
Boron (B)-Total			90.0		%		70-130	30-AUG-12

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Environmental Sciences Group
Kingston ON K7K7B4

Contact: CANDICE CASUCCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-TOT-WT								
Water								
Batch	R2427064							
WG1534337-1 MB								
Beryllium (Be)-Total			<0.0010		mg/L		0.001	30-AUG-12
Boron (B)-Total			<0.050		mg/L		0.05	30-AUG-12
WG1534337-5 MS		WG1534337-3						
Beryllium (Be)-Total			97.6		%		70-130	30-AUG-12
Boron (B)-Total			112.1		%		70-130	30-AUG-12
PCB-WT								
Water								
Batch	R2426788							
WG1534656-1 CVS								
Aroclor 1242			88.1		%		70-130	27-AUG-12
Aroclor 1248			99.6		%		70-130	27-AUG-12
Aroclor 1254			94.9		%		70-130	27-AUG-12
Aroclor 1260			92.8		%		70-130	27-AUG-12
WG1533079-2 LCS								
Aroclor 1242			81.6		%		65-130	27-AUG-12
Aroclor 1248			95.6		%		65-130	27-AUG-12
Aroclor 1254			83.6		%		65-130	27-AUG-12
Aroclor 1260			82.3		%		65-130	27-AUG-12
WG1533079-3 LCSD		WG1533079-2						
Aroclor 1242		81.6	87.1		%	6.5	50	27-AUG-12
Aroclor 1248		95.6	95.6		%	0.0	50	27-AUG-12
Aroclor 1254		83.6	89.1		%	6.3	50	27-AUG-12
Aroclor 1260		82.3	87.5		%	6.2	50	27-AUG-12
WG1533079-1 MB								
Aroclor 1242			<0.020		ug/L		0.02	27-AUG-12
Aroclor 1248			<0.020		ug/L		0.02	27-AUG-12
Aroclor 1254			<0.020		ug/L		0.02	27-AUG-12
Aroclor 1260			<0.020		ug/L		0.02	27-AUG-12
Surrogate: d14-Terphenyl			123.4		%		50-150	27-AUG-12

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Workorder: L1198712

Report Date: 31-AUG-12

Client: Department of National Defence - Royal Military College
Environmental Sciences Group
Kingston ON K7K7B4

Page 9 of 10

Contact: CANDICE CASUCCI

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Quality Control Report

Workorder: L1198712

Report Date: 31-AUG-12

Client: Department of National Defence - Royal Military College
Environmental Sciences Group
Kingston ON K7K7B4
Contact: CANDICE CASUCCI

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Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Hydrocarbons							
F1-O.Reg 153/04 (July 2011)	1	11-AUG-12	27-AUG-12 12:46	14	16	days	EHT
	2	11-AUG-12	27-AUG-12 14:04	14	16	days	EHT

Legend & Qualifier Definitions:

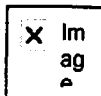
EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
EHTR: Exceeded ALS recommended hold time prior to sample receipt.
EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
EHT: Exceeded ALS recommended hold time prior to analysis.
Rec. HT: ALS recommended hold time (see units).

Notes*:
Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L1198712 were received on 23-AUG-12 14:31.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.



ANALYTICAL REQUEST: PIN-2-mon-DLCU.RQ.12-137

L1198712

ESG Request Number: 12-137
 Project Code: PIN-2-mon-DLCU
 Site Name: PIN-2, CAPE YOUNG
 Prepared By: Partridge, Tom
 Report Results To: Partridge, Tom

Environmental Sciences Group
 The Royal Military College of Canada
 PO Box 17000, Stn. Forces
 12 Verite Avenue, Bldg #62
 Kingston, ON K7K 7B4
 Tel: (613) 541-6000, Ext: 6818/6819



L1198712-COFC

Date (yyyymmdd)/Time Stamp: 20120821 / 3:56:53 PM Fax: (613) 541-6820

Request By:	Partridge, Tom
Signature/Date:	2012/ / (yyyymmdd)
Program Manager (Print Name):	
Signature/Date:	2012/ / (yyyymmdd)
Processed By (Print Name):	
Signature/Date:	2012/ / (yyyymmdd)

Analytical Request Summary

Analysis Type	ESG Request No.	Comments	Detection Limit	Cu	Ni	Co	Cd	Pb	Zn	Cr	As	Other1	Other2	Priority	Return Date	Quantity
CCME PHC (no BTEX or PAH) - RMC	12-137	Detection limit: <1.0 ppm												Medium	20120924	21
Inorganics - QU	12-137	Detection limits: Cu, Co, Zn, Cr <0.005 ppm, Ni, Pb <0.010 ppm, Cd <0.001 ppm, As <0.05 ppm	Total	X	X	X	X	X	X	X	X			Medium	20120924	6
Mercury - RMC	12-137	Detection limit: <0.001 ppm	Total											Medium	20120924	6
PCB - RMC	12-137	Detection limit: <0.003 ppm	Regular											Medium	20120924	6

Sample Analysis Requests

OUT	IN	TN	Storage Medium	Sample Matrix	Date Collected	Analysis Type	Detection Limit	Cu	Ni	Co	Cd	Pb	Zn	Cr	As	Other1	Other2	Priority	Cooler ID
		19313	Bottle 1L Teflon	Groundwater	20120811	Mercury - RMC	Total											Medium	001
						PCB - RMC	Regular											Medium	001
		19315	Bottle 1L Teflon	Groundwater	20120811	Mercury - RMC	Total											Medium	001
						PCB - RMC	Regular											Medium	001
		19316	Bottle 1L Teflon	Groundwater	20120811	Mercury - RMC	Total											Medium	002
						PCB - RMC	Regular											Medium	002
		19317	Bottle 1L Teflon	Groundwater	20120811	Mercury - RMC	Total											Medium	002
						PCB - RMC	Regular											Medium	002
		19318	Bottle 1L Teflon	Groundwater	20120811	Mercury - RMC	Total											Medium	002
						PCB - RMC	Regular											Medium	002
			Bottle 1L			Mercury -													



L1198712-COFC

		19319	Teflon	Groundwater	20120811	RMC	Total												um	001
						PCB - RMC	Regular												Medium	001

Sample Analysis Requests

OUT	IN	TN	Storage Medium	Sample Matrix	Date Collected	Analysis Type	Detection Limit	Cu	Ni	Co	Cd	Pb	Zn	Cr	As	Other1	Other2	Priority	Cooler ID
		19313	Bottle 1L Plastic	Groundwater	20120811	Inorganics - QU	Total	X	X	X	X	X	X	X	X			Medium	001
		19315	Bottle 1L Plastic	Groundwater	20120811	Inorganics - QU	Total	X	X	X	X	X	X	X	X			Medium	001
		19316	Bottle 1L Plastic	Groundwater	20120811	Inorganics - QU	Total	X	X	X	X	X	X	X	X			Medium	002
		19317	Bottle 1L Plastic	Groundwater	20120811	Inorganics - QU	Total	X	X	X	X	X	X	X	X			Medium	002
		19318	Bottle 1L Plastic	Groundwater	20120811	Inorganics - QU	Total	X	X	X	X	X	X	X	X			Medium	002
		19319	Bottle 1L Plastic	Groundwater	20120811	Inorganics - QU	Total	X	X	X	X	X	X	X	X			Medium	001

Sample Analysis Requests

OUT	IN	TN	Storage Medium	Sample Matrix	Date Collected	Analysis Type	Detection Limit	Cu	Ni	Co	Cd	Pb	Zn	Cr	As	Other1	Other2	Priority	Cooler ID
		19313	Bottle 1L Glass	Groundwater	20120811	CCME PHC (no BTEX or PAH) - RMC												Medium	001
		19315	Bottle 1L Glass	Groundwater	20120811	CCME PHC (no BTEX or PAH) - RMC												Medium	001
		19316	Bottle 1L Glass	Groundwater	20120811	CCME PHC (no BTEX or PAH) - RMC												Medium	002
		19317	Bottle 1L Glass	Groundwater	20120811	CCME PHC (no BTEX or PAH) - RMC												Medium	002
		19318	Bottle 1L Glass	Groundwater	20120811	CCME PHC (no BTEX or PAH) - RMC												Medium	002
		19319	Bottle 1L Glass	Groundwater	20120811	CCME PHC (no BTEX or PAH) - RMC												Medium	001

Sample Analysis Requests

OUT	IN	TN	Storage Medium	Sample Matrix	Date Collected	Analysis Type	Detection Limit	Cu	Ni	Co	Cd	Pb	Zn	Cr	As	Other1	Other2	Priority	Cooler ID
		19313	Vial - 40ml Glass	Groundwater	20120811	CCME PHC (no BTEX or PAH) - RMC												Medium	001
						CCME PHC (no BTEX or PAH) - RMC												Medium	001
						CCME PHC (no BTEX or PAH) - RMC												Medium	001
		19315	Vial - 40ml Glass	Groundwater	20120811	CCME PHC (no BTEX or PAH) - RMC												Medium	001
						CCME PHC (no BTEX or PAH) - RMC												Medium	001



L1198712-COFC

ASU #	14326		Report ID:	PIN-2 S1					
Client:	ESG		Date Submitted:	27-Aug-12					
			Date Tested:	04-Sep-12					
Site:	PIN-2		Date Reported:	05-Sep-12					
ESG#	12-138		Matrix:	Soil					
Report of Analysis by ICP/OES and ICP/MS			All results in ug/g						
Results relate only to the items tested									
Sample	Cu	Ni	Co	Cd	Pb	Zn	Cr	As	
12-19151	6.1	<5.0	<5.0	<1.0	<10	17	<20	0.9	
12-19155	9.6	6.3	<5.0	<1.0	<10	25	<20	4.5	
12-19169	9.6	<5.0	<5.0	<1.0	<10	32	<20	0.7	
12-19175	7.3	5.2	<5.0	<1.0	<10	41	<20	1.6	*
12-19183	5.3	<5.0	<5.0	<1.0	<10	16	<20	1.5	
12-19195	9.0	5.9	<5.0	<1.0	<10	22	<20	1.9	
12-19225	<3.0	<5.0	<5.0	<1.0	<10	<15	<20	1.6	
12-19233	10.5	<5.0	<5.0	<1.0	<10	29	<20	3.3	
Blank	<3.0	<5.0	<5.0	<1.0	<10	<15	<20	<0.2	
Blank	<3.0	<5.0	<5.0	<1.0	<10	<15	<20	<0.2	
MESS-3	29.7	38.8	11.2	<1.0	19	123	39	19.6	
MESS-3	29.0	33.5	10.8	<1.0	18	116	35	16.4	
12-19175	7.3	5.0	<5.0	<1.0	<10	41	<20	1.7	
12-19175	7.3	5.3	<5.0	<1.0	<10	40	<20	1.5	

ANALYTICAL SCIENCES GROUP AND SLOWPOKE-2 FACILITY AT RMC
GROUP DES SCIENCES ANALYTIQUES ET FACILITÉ SLOWPOKE-2 AU CMR

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(613) 541-6000 ext 6567

Fax: (613) 541-6596

ASG Login No: 22960

Site: Pin-2

Client No: 12-138

Samples Received: 27-Aug-12

Date of analysis: 06-Sep-12

Method No: ASG 014

Date Reported: 06-Sep-12

Sheet: 1 of 1

RESULTS OF MERCURY IN SOIL ANALYSIS

Sample ID	Mercury µg/g
19151	< 0.1
19155*	< 0.1
19169	< 0.1
19175	< 0.1
19183	< 0.1
19195	< 0.1
19225	< 0.1
19233	< 0.1

LABORATORY QA/QC

Sample ID	Mercury µg/g
Duplicate ; 19155	< 0.1 ; < 0.1
Blank	< 0.1
Control Target	0.44
Control Sample	0.46

* Averaged result of duplicates

The results reported here relate only to the items tested.

Prepared By: _____
Curtis McDonald;
Analyst

Authorization: _____
Julie McDonald;
Laboratory Manager
Test Report I.D: Hgs22960r1.xls

**ANALYTICAL SCIENCES GROUP AND SLOWPOKE-2 FACILITY AT RMC
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Fax: (613) 541-6596

ASG Login No: 22960

Site: Pin-2

Client No: 12-138

Samples Received: 27-Aug-12

Date of analysis: 4-Sep-12

Method No: ASG 005C

Date Reported: 6-Sep-12

Sheet No: 1 of 1

RESULTS OF PCB ANALYSIS

Sample Type **	Sample I.D.	Unit	Aroclor 1254	Aroclor 1260
S	19151	µg/g	< 0.05	< 0.05
S	19155	µg/g	< 0.05	< 0.05
S	19169	µg/g	< 0.05	< 0.05
S	19175	µg/g	< 0.05	< 0.05
S	19183^	µg/g	< 0.05	< 0.05
S	19195	µg/g	< 0.05	< 0.05
S	19225	µg/g	< 0.05	< 0.05
S	19233	µg/g	< 0.05	< 0.05

** O = Oil, S = Soil, C = Concrete, PC = Paint Chips, SW = Swabs, W = Water, P = Plants

^ Low surrogate recovery

LABORATORY QA/QC

	Blank	µg/g	< 0.05	< 0.05
	Control Sample	µg/g	5.4	< 0.05
	Control Sample Target	µg/g	5.0	< 0.05

All results corrected for the recovery of the surrogate decachlorobiphenyl

The results reported here relate only to the items tested.

Prepared By: _____
Kate Campbell, Analyst

Authorization: _____
Julie McDonald, Lab Manager
PCBs22960r1.xls

ANALYTICAL SCIENCES GROUP AND SLOWPOKE-2 FACILITY AT RMC
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Client : Andrew Wollin
 Base Environmental Officer
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 (613) 541-5010 ext 4373
 Fax: (613) 541-5017

ASG Login No: 22960
 Site: Pin-2
 Client Login No: 12-138
 Date Sampled: 08-Aug-12
 Samples Received: 27-Aug-12
 Date of analysis: 28-Aug-12
 Method No: ASG 053 ~
 Date Reported: 21-Sep-12
 Sheet: 1 of 1

RESULTS OF PHC IN SOIL ANALYSIS - F1 FRACTION^

Sample I.D.	Unit	F1 Fraction (ppm)
19155*	mg/kg	20
19175	mg/kg	27
19195	mg/kg	< 10
19225	mg/kg	< 10
19150	mg/kg	21
19168	mg/kg	20
19182	mg/kg	< 10
19232	mg/kg	< 10

LABORATORY QA/QC SECTION

Blank	mg/kg	< 10
Duplicate ; 19155*	mg/kg	21 ; 19
Gasoline Control Sample	mg/kg	27
Gasoline Control Target	mg/kg	29

^ BTEX contribution to F1 fraction not subtracted from reported values

* Averaged result of duplicates

~ This method complies with the reference method for the CWS PHC and is validated for use in the laboratory.
 Linearity of calibration standards is within 15%.
 Extraction and analysis holding times for samples were met.

The results reported here relate only to the items tested

Prepared by: _____
 Chad Hind, Analyst

Authorization: _____
 Julie McDonald, Laboratory Manager

**ANALYTICAL SCIENCES GROUP AND SLOWPOKE-2 FACILITY AT RMC
GROUP DES SCIENCES ANALYTIQUES ET FACILITÉ SLOWPOKE-2 AU CMR**

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(613) 541-6000 ext 6567
Fax: (613) 541-6596

ASG Login No: 22960
Site: Pin-2
Client Login No: 12-138
Samples Received: 27-Aug-12
Date of analysis: 13-Sep-12
Date Sampled: 8-Aug-12
Method No: ASG 053
Date Reported: 24-Sep-12
Sheet: 1 of 1

RESULTS OF PHC IN SOIL ANALYSIS^

Sample I.D.	Unit	F2 Fraction (ppm)	F3 Fraction (ppm)	F4 Fraction (ppm)	F4G (ppm)
19155*	mg/kg	5.1	71	53	N/A
19175	mg/kg	4.9	53	40	N/A
19195	mg/kg	< 4.0	36	37	N/A
19225	mg/kg	< 4.0	49	28	N/A
19150	mg/kg	6.3	55	39	N/A
19168	mg/kg	5.2	170	89	N/A
19182	mg/kg	< 4.0	10	10	N/A
19232	mg/kg	< 4.0	27	23	N/A

LABORATORY QA/QC FOR F2-F4 FRACTIONS

Sample I.D.	Unit	F2 Fraction (ppm)	F3 Fraction (ppm)	F4 Fraction (ppm)	F4G (ppm)
Duplicate ; 19155*	mg/kg	6.0 ; 4.1	66 ; 76	45 ; 61	N/A
Blank	mg/kg	< 4.0	< 9.0	< 8.0	N/A

Diesel Spike	mg/kg	38
Diesel Spike Target	mg/kg	50
Control Standard	mg/kg	2500
Control Standard Target	mg/kg	2500

^PAH contributions to F2-F4 not subtracted from reported values.

~The method used complies with the Reference Method for the CWS PHC.

*Averaged result of duplicate

Gravimetric heavy hydrocarbons cannot be added to the C6-C50 hydrocarbons.
The chromatogram descended to baseline by the C50 retention time.
Average response factors for C10, C16, C34 were within 10% of each other.
C50 response factor was within 70% of the C10, C16, C34 average response factor.
Linearity of calibration standards was within 15%.
Extraction and analysis holding times for samples were met.

The results reported here relate only to the items tested.

Prepared By: _____
Julie McDonald ; Laboratory Manager

Authorization: _____
Steve White ; Senior Analyst
Test Report I.D: PHCs22960r1(F2-F4).xls