



Nunavut - Community & Government Services
- Rankin Inlet

ATTN: MEGAN LUSTY

BAG 002

BOX 490

Rankin Inlet NU X0C 0G0

Date Received: 07-OCT-14

Report Date: 14-OCT-14 15:12 (MT)

Version: FINAL

Client Phone: 867-645-8176

Certificate of Analysis

Lab Work Order #: L1529266

Project P.O. #: NOT SUBMITTED

Job Reference: 3AM - GRA1015

C of C Numbers:

Legal Site Desc:

Barb Bayer
General Manager, Winnipeg

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ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1529266-1 LOWER LANDING LAKE							
Sampled By: MEGAN LUSTY on 07-OCT-14 @ 09:50							
Matrix: WATER							
BTEX plus F1-F4							
BTX plus F1 by GCMS							
Benzene	<0.00050		0.00050	mg/L		08-OCT-14	R2976408
Toluene	<0.0010		0.0010	mg/L		08-OCT-14	R2976408
Ethyl benzene	<0.00050		0.00050	mg/L		08-OCT-14	R2976408
o-Xylene	<0.00050		0.00050	mg/L		08-OCT-14	R2976408
m+p-Xylenes	<0.00050		0.00050	mg/L		08-OCT-14	R2976408
F1 (C6-C10)	<0.10		0.10	mg/L		08-OCT-14	R2976408
Surrogate: 4-Bromofluorobenzene (SS)	100.7		70-130	%		08-OCT-14	R2976408
CCME Total Hydrocarbons							
F1-BTEX	<0.10		0.10	mg/L		09-OCT-14	
F2-Naphth	<0.25		0.25	mg/L		09-OCT-14	
F3-PAH	<0.25		0.25	mg/L		09-OCT-14	
Total Hydrocarbons (C6-C50)	<0.44		0.44	mg/L		09-OCT-14	
F2-F4 PHC method							
F2 (C10-C16)	<0.25		0.25	mg/L	08-OCT-14	08-OCT-14	R2978314
F3 (C16-C34)	<0.25		0.25	mg/L	08-OCT-14	08-OCT-14	R2978314
F4 (C34-C50)	<0.25		0.25	mg/L	08-OCT-14	08-OCT-14	R2978314
Surrogate: 2-Bromobenzotrifluoride	113.8		60-140	%	08-OCT-14	08-OCT-14	R2978314
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.0015		0.0015	mg/L		09-OCT-14	
Miscellaneous Parameters							
Ammonia, Total (as N)	0.037		0.010	mg/L		09-OCT-14	R2978517
Biochemical Oxygen Demand	<6.0		6.0	mg/L		08-OCT-14	R2983575
Fecal Coliforms	<3		3	MPN/100mL		11-OCT-14	R2984771
Phosphorus (P)-Total	<0.010		0.010	mg/L		09-OCT-14	R2978911
Total Kjeldahl Nitrogen	0.27		0.20	mg/L	08-OCT-14	09-OCT-14	R2979096
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.000020		0.000020	mg/L	08-OCT-14	09-OCT-14	R2978719
2-Methyl Naphthalene	<0.000020		0.000020	mg/L	08-OCT-14	09-OCT-14	R2978719
Acenaphthene	<0.000020		0.000020	mg/L	08-OCT-14	09-OCT-14	R2978719
Acenaphthylene	<0.000020		0.000020	mg/L	08-OCT-14	09-OCT-14	R2978719
Anthracene	<0.000010		0.000010	mg/L	08-OCT-14	09-OCT-14	R2978719
Acridine	<0.000020		0.000020	mg/L	08-OCT-14	09-OCT-14	R2978719
Benzo(a)anthracene	<0.000010		0.000010	mg/L	08-OCT-14	09-OCT-14	R2978719
Benzo(a)pyrene	<0.000050		0.000050	mg/L	08-OCT-14	09-OCT-14	R2978719
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	08-OCT-14	09-OCT-14	R2978719
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	08-OCT-14	09-OCT-14	R2978719
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	08-OCT-14	09-OCT-14	R2978719
Chrysene	<0.000020		0.000020	mg/L	08-OCT-14	09-OCT-14	R2978719
Dibenzo(a,h)anthracene	<0.000050		0.000050	mg/L	08-OCT-14	09-OCT-14	R2978719
Fluoranthene	<0.000020		0.000020	mg/L	08-OCT-14	09-OCT-14	R2978719
Fluorene	<0.000020		0.000020	mg/L	08-OCT-14	09-OCT-14	R2978719
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	08-OCT-14	09-OCT-14	R2978719
Naphthalene	<0.000050		0.000050	mg/L	08-OCT-14	09-OCT-14	R2978719
Phenanthrene	<0.000050		0.000050	mg/L	08-OCT-14	09-OCT-14	R2978719
Pyrene	<0.000010		0.000010	mg/L	08-OCT-14	09-OCT-14	R2978719
Quinoline	<0.000020		0.000020	mg/L	08-OCT-14	09-OCT-14	R2978719
B(a)P Total Potency Equivalent	<0.000030		0.000030	mg/L	08-OCT-14	09-OCT-14	R2978719
Surrogate: Acenaphthene d10	90.5		40-130	%	08-OCT-14	09-OCT-14	R2978719
Surrogate: Acridine d9	93.9		40-130	%	08-OCT-14	09-OCT-14	R2978719
Surrogate: Chrysene d12	77.9		40-130	%	08-OCT-14	09-OCT-14	R2978719

* 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
L1529266-1 LOWER LANDING LAKE							
Sampled By: MEGAN LUSTY on 07-OCT-14 @ 09:50							
Matrix: WATER							
Polyaromatic Hydrocarbons (PAHs)							
Surrogate: Naphthalene d8	90.0		40-130	%	08-OCT-14	09-OCT-14	R2978719
Surrogate: Phenanthrene d10	89.8		40-130	%	08-OCT-14	09-OCT-14	R2978719
Routine Soluble + Metal scan							
Alkalinity							
Alkalinity, Total (as CaCO3)	23		20	mg/L		08-OCT-14	R2978494
Bicarbonate (HCO3)	28		24	mg/L		08-OCT-14	R2978494
Carbonate (CO3)	<12		12	mg/L		08-OCT-14	R2978494
Hydroxide (OH)	<6.8		6.8	mg/L		08-OCT-14	R2978494
Chloride by Ion Chromatography							
Chloride	24.2		0.50	mg/L		08-OCT-14	R2978909
Conductivity							
Conductivity	151		20	umhos/cm		08-OCT-14	R2978494
Hardness Calculated							
Hardness (as CaCO3)	32.1		0.30	mg/L		09-OCT-14	
Nitrate as N by Ion Chromatography							
Nitrate-N	<0.050		0.050	mg/L		08-OCT-14	R2978909
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.071		0.071	mg/L		09-OCT-14	
Nitrite as N by Ion Chromatography							
Nitrite-N	<0.050		0.050	mg/L		08-OCT-14	R2978909
Sulfate by Ion Chromatography							
Sulfate	7.89		0.50	mg/L		08-OCT-14	R2978909
TDS calculated							
TDS (Calculated)	73.8		5.0	mg/L		09-OCT-14	
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.020		0.020	mg/L	08-OCT-14	08-OCT-14	R2978241
Antimony (Sb)-Total	<0.0010		0.0010	mg/L	08-OCT-14	08-OCT-14	R2978241
Arsenic (As)-Total	<0.0010		0.0010	mg/L	08-OCT-14	08-OCT-14	R2978241
Barium (Ba)-Total	0.0134		0.00050	mg/L	08-OCT-14	08-OCT-14	R2978241
Beryllium (Be)-Total	<0.0010		0.0010	mg/L	08-OCT-14	08-OCT-14	R2978241
Bismuth (Bi)-Total	<0.00050		0.00050	mg/L	08-OCT-14	08-OCT-14	R2978241
Boron (B)-Total	<0.030		0.030	mg/L	08-OCT-14	08-OCT-14	R2978241
Cadmium (Cd)-Total	<0.00020		0.00020	mg/L	08-OCT-14	08-OCT-14	R2978241
Calcium (Ca)-Total	8.62		0.20	mg/L	08-OCT-14	08-OCT-14	R2978241
Cesium (Cs)-Total	<0.00050		0.00050	mg/L	08-OCT-14	08-OCT-14	R2978241
Chromium (Cr)-Total	<0.0020		0.0020	mg/L	08-OCT-14	08-OCT-14	R2978241
Cobalt (Co)-Total	<0.00050		0.00050	mg/L	08-OCT-14	08-OCT-14	R2978241
Copper (Cu)-Total	<0.0020		0.0020	mg/L	08-OCT-14	08-OCT-14	R2978241
Iron (Fe)-Total	<0.10		0.10	mg/L	08-OCT-14	08-OCT-14	R2978241
Lead (Pb)-Total	<0.0010		0.0010	mg/L	08-OCT-14	08-OCT-14	R2978241
Lithium (Li)-Total	<0.0020		0.0020	mg/L	08-OCT-14	08-OCT-14	R2978241
Magnesium (Mg)-Total	2.58		0.050	mg/L	08-OCT-14	08-OCT-14	R2978241
Manganese (Mn)-Total	0.0039		0.0010	mg/L	08-OCT-14	08-OCT-14	R2978241
Molybdenum (Mo)-Total	0.00055		0.00050	mg/L	08-OCT-14	08-OCT-14	R2978241
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	08-OCT-14	08-OCT-14	R2978241
Phosphorus (P)-Total	<0.50		0.50	mg/L	08-OCT-14	08-OCT-14	R2978241
Potassium (K)-Total	1.59		0.10	mg/L	08-OCT-14	08-OCT-14	R2978241
Rubidium (Rb)-Total	0.00195		0.00050	mg/L	08-OCT-14	08-OCT-14	R2978241
Selenium (Se)-Total	<0.0050		0.0050	mg/L	08-OCT-14	08-OCT-14	R2978241
Silicon (Si)-Total	<0.30		0.30	mg/L	08-OCT-14	08-OCT-14	R2978241
Silver (Ag)-Total	<0.0010		0.0010	mg/L	08-OCT-14	08-OCT-14	R2978241
Sodium (Na)-Total	15.2		0.050	mg/L	08-OCT-14	08-OCT-14	R2978241

* 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
L1529266-1 LOWER LANDING LAKE							
Sampled By: MEGAN LUSTY on 07-OCT-14 @ 09:50							
Matrix: WATER							
Total Metals by ICP-MS							
Strontium (Sr)-Total	0.0514		0.00050	mg/L	08-OCT-14	08-OCT-14	R2978241
Tellurium (Te)-Total	<0.0010		0.0010	mg/L	08-OCT-14	08-OCT-14	R2978241
Thallium (Tl)-Total	<0.0050		0.0050	mg/L	08-OCT-14	08-OCT-14	R2978241
Thorium (Th)-Total	<0.0010		0.0010	mg/L	08-OCT-14	08-OCT-14	R2978241
Tin (Sn)-Total	<0.00060		0.00060	mg/L	08-OCT-14	08-OCT-14	R2978241
Titanium (Ti)-Total	<0.0010		0.0010	mg/L	08-OCT-14	08-OCT-14	R2978241
Tungsten (W)-Total	<0.0020		0.0020	mg/L	08-OCT-14	08-OCT-14	R2978241
Uranium (U)-Total	<0.00050		0.00050	mg/L	08-OCT-14	08-OCT-14	R2978241
Vanadium (V)-Total	<0.0020		0.0020	mg/L	08-OCT-14	08-OCT-14	R2978241
Zinc (Zn)-Total	<0.020		0.020	mg/L	08-OCT-14	08-OCT-14	R2978241
Zirconium (Zr)-Total	<0.0010		0.0010	mg/L	08-OCT-14	08-OCT-14	R2978241
pH							
pH	7.62		0.10	pH units		08-OCT-14	R2978494
L1529266-2 NIPISSAR LAKE							
Sampled By: MEGAN LUSTY on 07-OCT-14 @ 10:25							
Matrix: WATER							
BTEX plus F1-F4							
BTX plus F1 by GCMS							
Benzene	<0.00050		0.00050	mg/L		08-OCT-14	R2976408
Toluene	<0.0010		0.0010	mg/L		08-OCT-14	R2976408
Ethyl benzene	<0.00050		0.00050	mg/L		08-OCT-14	R2976408
o-Xylene	<0.00050		0.00050	mg/L		08-OCT-14	R2976408
m+p-Xylenes	<0.00050		0.00050	mg/L		08-OCT-14	R2976408
F1 (C6-C10)	<0.10		0.10	mg/L		08-OCT-14	R2976408
Surrogate: 4-Bromofluorobenzene (SS)	102.3		70-130	%		08-OCT-14	R2976408
CCME Total Hydrocarbons							
F1-BTEX	<0.10		0.10	mg/L		09-OCT-14	
F2-Naphth	<0.25		0.25	mg/L		09-OCT-14	
F3-PAH	<0.25		0.25	mg/L		09-OCT-14	
Total Hydrocarbons (C6-C50)	<0.44		0.44	mg/L		09-OCT-14	
F2-F4 PHC method							
F2 (C10-C16)	<0.25		0.25	mg/L	08-OCT-14	08-OCT-14	R2978314
F3 (C16-C34)	<0.25		0.25	mg/L	08-OCT-14	08-OCT-14	R2978314
F4 (C34-C50)	<0.25		0.25	mg/L	08-OCT-14	08-OCT-14	R2978314
Surrogate: 2-Bromobenzotrifluoride	93.4		60-140	%	08-OCT-14	08-OCT-14	R2978314
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.0015		0.0015	mg/L		09-OCT-14	
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.000020		0.000020	mg/L	08-OCT-14	09-OCT-14	R2978719
2-Methyl Naphthalene	<0.000020		0.000020	mg/L	08-OCT-14	09-OCT-14	R2978719
Acenaphthene	<0.000020		0.000020	mg/L	08-OCT-14	09-OCT-14	R2978719
Acenaphthylene	<0.000020		0.000020	mg/L	08-OCT-14	09-OCT-14	R2978719
Anthracene	<0.000010		0.000010	mg/L	08-OCT-14	09-OCT-14	R2978719
Acridine	<0.000020		0.000020	mg/L	08-OCT-14	09-OCT-14	R2978719
Benzo(a)anthracene	<0.000010		0.000010	mg/L	08-OCT-14	09-OCT-14	R2978719
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	08-OCT-14	09-OCT-14	R2978719
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	08-OCT-14	09-OCT-14	R2978719
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	08-OCT-14	09-OCT-14	R2978719
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	08-OCT-14	09-OCT-14	R2978719
Chrysene	<0.000020		0.000020	mg/L	08-OCT-14	09-OCT-14	R2978719

* 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
L1529266-2 NIPISSAR LAKE							
Sampled By: MEGAN LUSTY on 07-OCT-14 @ 10:25							
Matrix: WATER							
Polyaromatic Hydrocarbons (PAHs)							
Dibenzo(a,h)anthracene	<0.0000050		0.0000050	mg/L	08-OCT-14	09-OCT-14	R2978719
Fluoranthene	<0.000020		0.000020	mg/L	08-OCT-14	09-OCT-14	R2978719
Fluorene	<0.000020		0.000020	mg/L	08-OCT-14	09-OCT-14	R2978719
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	08-OCT-14	09-OCT-14	R2978719
Naphthalene	0.000061		0.000050	mg/L	08-OCT-14	09-OCT-14	R2978719
Phenanthrene	<0.000050		0.000050	mg/L	08-OCT-14	09-OCT-14	R2978719
Pyrene	<0.000010		0.000010	mg/L	08-OCT-14	09-OCT-14	R2978719
Quinoline	<0.000020		0.000020	mg/L	08-OCT-14	09-OCT-14	R2978719
B(a)P Total Potency Equivalent	<0.000030		0.000030	mg/L	08-OCT-14	09-OCT-14	R2978719
Surrogate: Acenaphthene d10	89.9		40-130	%	08-OCT-14	09-OCT-14	R2978719
Surrogate: Acridine d9	99.0		40-130	%	08-OCT-14	09-OCT-14	R2978719
Surrogate: Chrysene d12	82.4		40-130	%	08-OCT-14	09-OCT-14	R2978719
Surrogate: Naphthalene d8	88.5		40-130	%	08-OCT-14	09-OCT-14	R2978719
Surrogate: Phenanthrene d10	93.4		40-130	%	08-OCT-14	09-OCT-14	R2978719
L1529266-3 CHAR RIVER							
Sampled By: MEGAN LUSTY on 07-OCT-14 @ 10:10							
Matrix: WATER							
BTEX plus F1-F4							
BTX plus F1 by GCMS							
Benzene	<0.00050		0.00050	mg/L		08-OCT-14	R2976408
Toluene	<0.0010		0.0010	mg/L		08-OCT-14	R2976408
Ethyl benzene	<0.00050		0.00050	mg/L		08-OCT-14	R2976408
o-Xylene	<0.00050		0.00050	mg/L		08-OCT-14	R2976408
m+p-Xylenes	<0.00050		0.00050	mg/L		08-OCT-14	R2976408
F1 (C6-C10)	<0.10		0.10	mg/L		08-OCT-14	R2976408
Surrogate: 4-Bromofluorobenzene (SS)	103.6		70-130	%		08-OCT-14	R2976408
CCME Total Hydrocarbons							
F1-BTEX	<0.10		0.10	mg/L		09-OCT-14	
F2-Naphth	<0.25		0.25	mg/L		09-OCT-14	
F3-PAH	<0.25		0.25	mg/L		09-OCT-14	
Total Hydrocarbons (C6-C50)	<0.44		0.44	mg/L		09-OCT-14	
F2-F4 PHC method							
F2 (C10-C16)	<0.25		0.25	mg/L	08-OCT-14	08-OCT-14	R2978314
F3 (C16-C34)	<0.25		0.25	mg/L	08-OCT-14	08-OCT-14	R2978314
F4 (C34-C50)	<0.25		0.25	mg/L	08-OCT-14	08-OCT-14	R2978314
Surrogate: 2-Bromobenzotrifluoride	95.4		60-140	%	08-OCT-14	08-OCT-14	R2978314
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.0015		0.0015	mg/L		09-OCT-14	
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.010		0.010	mg/L		09-OCT-14	R2978517
Biochemical Oxygen Demand	<6.0		6.0	mg/L		08-OCT-14	R2983575
Fecal Coliforms	<3		3	MPN/100mL		11-OCT-14	R2984771
Phosphorus (P)-Total	<0.010		0.010	mg/L		09-OCT-14	R2978911
Total Kjeldahl Nitrogen	0.27		0.20	mg/L	08-OCT-14	09-OCT-14	R2979096
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.000020		0.000020	mg/L	08-OCT-14	09-OCT-14	R2978719
2-Methyl Naphthalene	<0.000020		0.000020	mg/L	08-OCT-14	09-OCT-14	R2978719
Acenaphthene	<0.000020		0.000020	mg/L	08-OCT-14	09-OCT-14	R2978719
Acenaphthylene	<0.000020		0.000020	mg/L	08-OCT-14	09-OCT-14	R2978719
Anthracene	<0.000010		0.000010	mg/L	08-OCT-14	09-OCT-14	R2978719
Acridine	<0.000020		0.000020	mg/L	08-OCT-14	09-OCT-14	R2978719

* 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
L1529266-3 CHAR RIVER							
Sampled By: MEGAN LUSTY on 07-OCT-14 @ 10:10							
Matrix: WATER							
Polyaromatic Hydrocarbons (PAHs)							
Benzo(a)anthracene	<0.000010		0.000010	mg/L	08-OCT-14	09-OCT-14	R2978719
Benzo(a)pyrene	<0.000050		0.000050	mg/L	08-OCT-14	09-OCT-14	R2978719
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	08-OCT-14	09-OCT-14	R2978719
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	08-OCT-14	09-OCT-14	R2978719
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	08-OCT-14	09-OCT-14	R2978719
Chrysene	<0.000020		0.000020	mg/L	08-OCT-14	09-OCT-14	R2978719
Dibenzo(a,h)anthracene	<0.000050		0.000050	mg/L	08-OCT-14	09-OCT-14	R2978719
Fluoranthene	<0.000020		0.000020	mg/L	08-OCT-14	09-OCT-14	R2978719
Fluorene	<0.000020		0.000020	mg/L	08-OCT-14	09-OCT-14	R2978719
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	08-OCT-14	09-OCT-14	R2978719
Naphthalene	<0.000050		0.000050	mg/L	08-OCT-14	09-OCT-14	R2978719
Phenanthrene	<0.000050		0.000050	mg/L	08-OCT-14	09-OCT-14	R2978719
Pyrene	<0.000010		0.000010	mg/L	08-OCT-14	09-OCT-14	R2978719
Quinoline	<0.000020		0.000020	mg/L	08-OCT-14	09-OCT-14	R2978719
B(a)P Total Potency Equivalent	<0.000030		0.000030	mg/L	08-OCT-14	09-OCT-14	R2978719
Surrogate: Acenaphthene d10	82.7		40-130	%	08-OCT-14	09-OCT-14	R2978719
Surrogate: Acridine d9	90.8		40-130	%	08-OCT-14	09-OCT-14	R2978719
Surrogate: Chrysene d12	74.1		40-130	%	08-OCT-14	09-OCT-14	R2978719
Surrogate: Naphthalene d8	82.5		40-130	%	08-OCT-14	09-OCT-14	R2978719
Surrogate: Phenanthrene d10	85.6		40-130	%	08-OCT-14	09-OCT-14	R2978719
Routine Soluble + Metal scan							
Alkalinity							
Alkalinity, Total (as CaCO3)	25		20	mg/L		08-OCT-14	R2978494
Bicarbonate (HCO3)	30		24	mg/L		08-OCT-14	R2978494
Carbonate (CO3)	<12		12	mg/L		08-OCT-14	R2978494
Hydroxide (OH)	<6.8		6.8	mg/L		08-OCT-14	R2978494
Chloride by Ion Chromatography							
Chloride	22.4		0.50	mg/L		08-OCT-14	R2978909
Conductivity							
Conductivity	150		20	umhos/cm		08-OCT-14	R2978494
Hardness Calculated							
Hardness (as CaCO3)	35.7		0.30	mg/L		09-OCT-14	
Nitrate as N by Ion Chromatography							
Nitrate-N	<0.050		0.050	mg/L		08-OCT-14	R2978909
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.071		0.071	mg/L		09-OCT-14	
Nitrite as N by Ion Chromatography							
Nitrite-N	<0.050		0.050	mg/L		08-OCT-14	R2978909
Sulfate by Ion Chromatography							
Sulfate	8.99		0.50	mg/L		08-OCT-14	R2978909
TDS calculated							
TDS (Calculated)	73.8		5.0	mg/L		09-OCT-14	
Total Metals by ICP-MS							
Aluminum (Al)-Total	<0.020		0.020	mg/L	08-OCT-14	08-OCT-14	R2978241
Antimony (Sb)-Total	<0.0010		0.0010	mg/L	08-OCT-14	08-OCT-14	R2978241
Arsenic (As)-Total	<0.0010		0.0010	mg/L	08-OCT-14	08-OCT-14	R2978241
Barium (Ba)-Total	0.0149		0.00050	mg/L	08-OCT-14	08-OCT-14	R2978241
Beryllium (Be)-Total	<0.0010		0.0010	mg/L	08-OCT-14	08-OCT-14	R2978241
Bismuth (Bi)-Total	<0.00050		0.00050	mg/L	08-OCT-14	08-OCT-14	R2978241
Boron (B)-Total	<0.030		0.030	mg/L	08-OCT-14	08-OCT-14	R2978241
Cadmium (Cd)-Total	<0.00020		0.00020	mg/L	08-OCT-14	08-OCT-14	R2978241
Calcium (Ca)-Total	10.2		0.20	mg/L	08-OCT-14	08-OCT-14	R2978241

* 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
L1529266-3 CHAR RIVER							
Sampled By: MEGAN LUSTY on 07-OCT-14 @ 10:10							
Matrix: WATER							
Total Metals by ICP-MS							
Cesium (Cs)-Total	<0.00050		0.00050	mg/L	08-OCT-14	08-OCT-14	R2978241
Chromium (Cr)-Total	<0.0020		0.0020	mg/L	08-OCT-14	08-OCT-14	R2978241
Cobalt (Co)-Total	<0.00050		0.00050	mg/L	08-OCT-14	08-OCT-14	R2978241
Copper (Cu)-Total	<0.0020		0.0020	mg/L	08-OCT-14	08-OCT-14	R2978241
Iron (Fe)-Total	<0.10		0.10	mg/L	08-OCT-14	08-OCT-14	R2978241
Lead (Pb)-Total	<0.0010		0.0010	mg/L	08-OCT-14	08-OCT-14	R2978241
Lithium (Li)-Total	<0.0020		0.0020	mg/L	08-OCT-14	08-OCT-14	R2978241
Magnesium (Mg)-Total	2.49		0.050	mg/L	08-OCT-14	08-OCT-14	R2978241
Manganese (Mn)-Total	0.0054		0.0010	mg/L	08-OCT-14	08-OCT-14	R2978241
Molybdenum (Mo)-Total	<0.00050		0.00050	mg/L	08-OCT-14	08-OCT-14	R2978241
Nickel (Ni)-Total	<0.0020		0.0020	mg/L	08-OCT-14	08-OCT-14	R2978241
Phosphorus (P)-Total	<0.50		0.50	mg/L	08-OCT-14	08-OCT-14	R2978241
Potassium (K)-Total	1.60		0.10	mg/L	08-OCT-14	08-OCT-14	R2978241
Rubidium (Rb)-Total	0.00203		0.00050	mg/L	08-OCT-14	08-OCT-14	R2978241
Selenium (Se)-Total	<0.0050		0.0050	mg/L	08-OCT-14	08-OCT-14	R2978241
Silicon (Si)-Total	<0.30		0.30	mg/L	08-OCT-14	08-OCT-14	R2978241
Silver (Ag)-Total	<0.0010		0.0010	mg/L	08-OCT-14	08-OCT-14	R2978241
Sodium (Na)-Total	13.4		0.050	mg/L	08-OCT-14	08-OCT-14	R2978241
Strontium (Sr)-Total	0.0547		0.00050	mg/L	08-OCT-14	08-OCT-14	R2978241
Tellurium (Te)-Total	<0.0010		0.0010	mg/L	08-OCT-14	08-OCT-14	R2978241
Thallium (Tl)-Total	<0.0050		0.0050	mg/L	08-OCT-14	08-OCT-14	R2978241
Thorium (Th)-Total	<0.0010		0.0010	mg/L	08-OCT-14	08-OCT-14	R2978241
Tin (Sn)-Total	<0.00060		0.00060	mg/L	08-OCT-14	08-OCT-14	R2978241
Titanium (Ti)-Total	<0.0010		0.0010	mg/L	08-OCT-14	08-OCT-14	R2978241
Tungsten (W)-Total	<0.0020		0.0020	mg/L	08-OCT-14	08-OCT-14	R2978241
Uranium (U)-Total	<0.00050		0.00050	mg/L	08-OCT-14	08-OCT-14	R2978241
Vanadium (V)-Total	<0.0020		0.0020	mg/L	08-OCT-14	08-OCT-14	R2978241
Zinc (Zn)-Total	<0.020		0.020	mg/L	08-OCT-14	08-OCT-14	R2978241
Zirconium (Zr)-Total	<0.0010		0.0010	mg/L	08-OCT-14	08-OCT-14	R2978241
pH							
pH	7.63		0.10	pH units		08-OCT-14	R2978494

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

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-TOT-WP	Water	Alkalinity	APHA 2320B
Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. It is determined by titration with a standard solution of strong mineral acid to the successive HCO ₃ ⁻ and H ₂ CO ₃ endpoints indicated electrometrically.			
BOD-WP	Water	Biochemical Oxygen Demand (BOD)	APHA 5210 B
The sample is incubated for 5 days at 20 degrees Celcius. Comparison of dissolved oxygen content at the beginning and end of incubation provides a measure of biochemical oxygen demand. If carbonaceous BOD is requested, TCMP is added to the sample to chemically inhibit nitrogenous oxygen demand. If soluble BOD is requested, the sample is filtered prior to analysis. Surface waters have a DL of 1 mg/L. Effluents are diluted according to their history and will have a sample DL of 6 mg/L or greater, depending on the dilutions used.			
BTEX+F1-HSMS-WP	Water	BTX plus F1 by GCMS	EPA 8260C / EPA 5021A
The water sample, with added reagents, is heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.			
CL-IC-WP	Water	Chloride by Ion Chromatography	EPA 300.1 (Modified)
Anions in aqueous matrices are analyzed using ion chromatography with conductivity and/or UV absorbance detectors.			
EC-WP	Water	Conductivity	APHA 2510B
Conductivity of an aqueous solution refers to its ability to carry an electric current. Conductance of a solution is measured between two spatially fixed and chemically inert electrodes.			
ETL-HARDNESS-TOT-WP	Water	Hardness Calculated	HARDNESS CALCULATED
ETL-SOLIDS-CALC-WP	Water	TDS calculated	CALCULATION
F1-F4-CALC-WP	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-FID-WP	Water	F2-F4 PHC method	CWS (CCME)
Petroleum Hydrocarbons (F2-F4) in Water Method is adapted from US EPA Method 3511: Organic Compounds in Water by Micro-extraction" (Nov 2002) with instrumental analysis as per the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method" (CCMS, Dec 2000) Water samples (in their entirety) are extracted using hexane prior to capillary column gas chromatography with flame ionization detection (GC/FID).			
FC-MPN-WP	Water	Fecal Coliform	APHA 9221E
The Most Probable Number (MPN) method is based on the Multiple Tube Fermentation technique. The results of examination of replicate tubes and dilutions of a sample are reported after confirmations specific to total coliform, fecal coliform and E. coli are performed. Results are reported in MPN/100 mL for water and MPN/gram for food and solid samples.			
IONBALANCE-CALC-WP	Water	Ion Balance Calculation	APHA 1030E
MET-T-MS-WP	Water	Total Metals by ICP-MS	APHA 3030E/EPA 6020A-T
This analysis involves preliminary sample treatment by hotblock acid digestion (APHA 3030E). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).			

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
N-TOTKJ-WP	Water	Total Kjeldahl Nitrogen	Quickchem method 10-107-06-2-E Lachat
Samples are digested with a sulphuric acid solution, cooled, diluted with water, and analyzed for ammonia. Total Kjeldahl nitrogen is the sum of free-ammonia and organic nitrogen compounds which are converted to ammonium sulphate through this digestion process. Analysis is performed by Flow Injection Analysis (FIA). The pH of the digested sample is raised to a known, basic pH by neutralization with a concentrated buffer solution. This neutralization converts the ammonium cation to ammonia. The ammonia produced is heated with salicylate and hypochlorite to produce blue colour which is proportional to the ammonia concentration.			
NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F
Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.			
NO2+NO3-CALC-WP	Water	Nitrate+Nitrite	CALCULATION
NO2-IC-WP	Water	Nitrite as N by Ion Chromatography	EPA 300.1 (Modified)
Anions in aqueous matrices are analyzed using ion chromatography with conductivity and/or UV absorbance detectors.			
NO3-IC-WP	Water	Nitrate as N by Ion Chromatography	EPA 300.1 (Modified)
Anions in aqueous matrices are analyzed using ion chromatography with conductivity and/or UV absorbance detectors.			
P-T-COL-WP	Water	Phosphorus, Total	APHA 4500 P PHOSPHORUS
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorus is determined colourmetrically after persulphate digestion of the sample.			
PAH,PANH-WP	Water	Polyaromatic Hydrocarbons (PAHs)	EPA SW 846/8270-GC/MS
Water is spiked with a surrogate spike mix and extracted using solvent extraction techniques. Analysis is performed by GC/MS in the selected ion monitoring (SIM) mode.			
PH-WP	Water	pH	APHA 4500H
The pH of a sample is the determination of the activity of the hydrogen ions by potentiometric measurement using a standard hydrogen electrode and a reference electrode.			
SO4-IC-WP	Water	Sulfate by Ion Chromatography	EPA 300.1 (Modified)
Anions in aqueous matrices are analyzed using ion chromatography with conductivity and/or UV absorbance detectors.			
XYLENES-SUM-CALC-WP	Water	Sum of Xylene Isomer Concentrations	CALCULATED RESULT
Total xylenes represents the sum of o-xylene and m&p-xylene.			

** 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
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA

Chain of Custody Numbers:

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
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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.

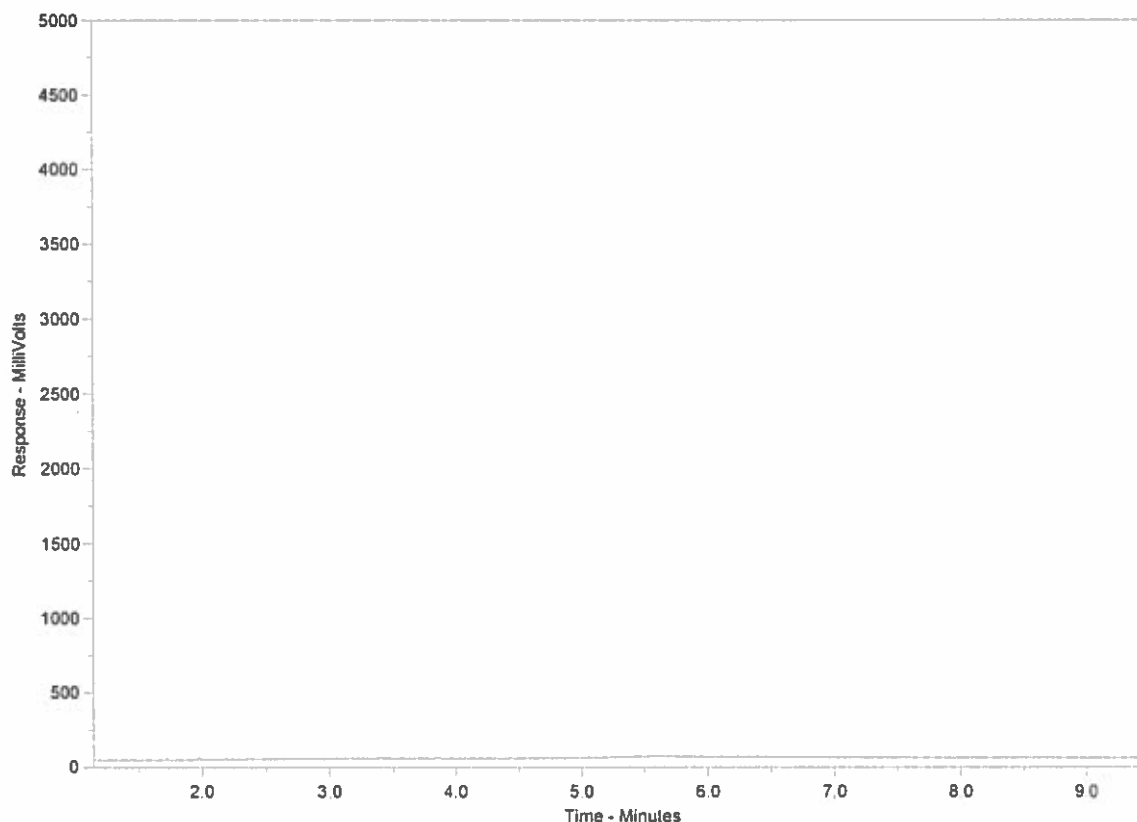
- mg/kg - milligrams per kilogram based on dry weight of sample
- mg/kg ww - milligrams per kilogram based on wet weight of sample
- mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
- mg/L - unit of concentration based on volume, parts per million.
- < - Less than.
- D.L. - The reporting 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.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L1 529266-1
Client Sample ID: LOWER LANDING LAKE



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
345°F	549°F		898°F		1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →			
← Diesel/ Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

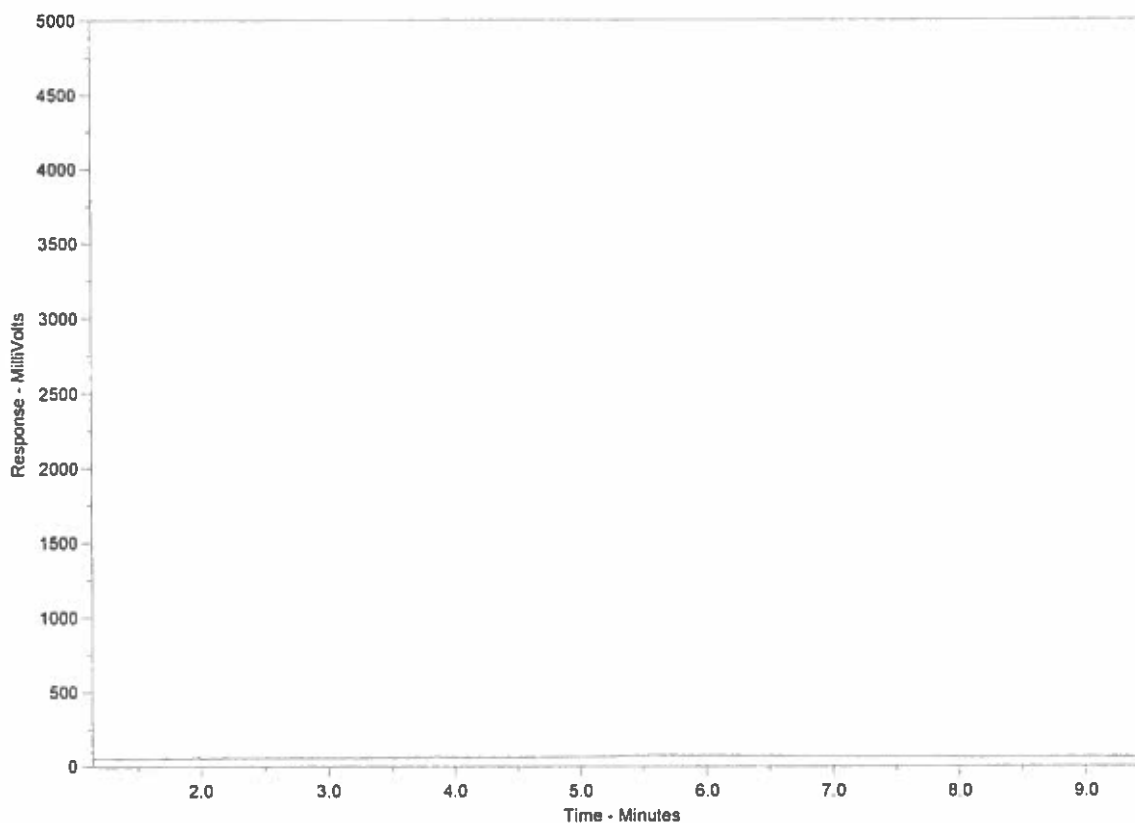
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L1529266-2
Client Sample ID: NIPISSAR LAKE



← F2 →		F3 →		← F4 →	
nC10	nC16		nC34		nC50
174 °C	287 °C		481 °C		575 °C
346 °F	549 °F		898 °F		1067 °F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →			
← Diesel/ Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

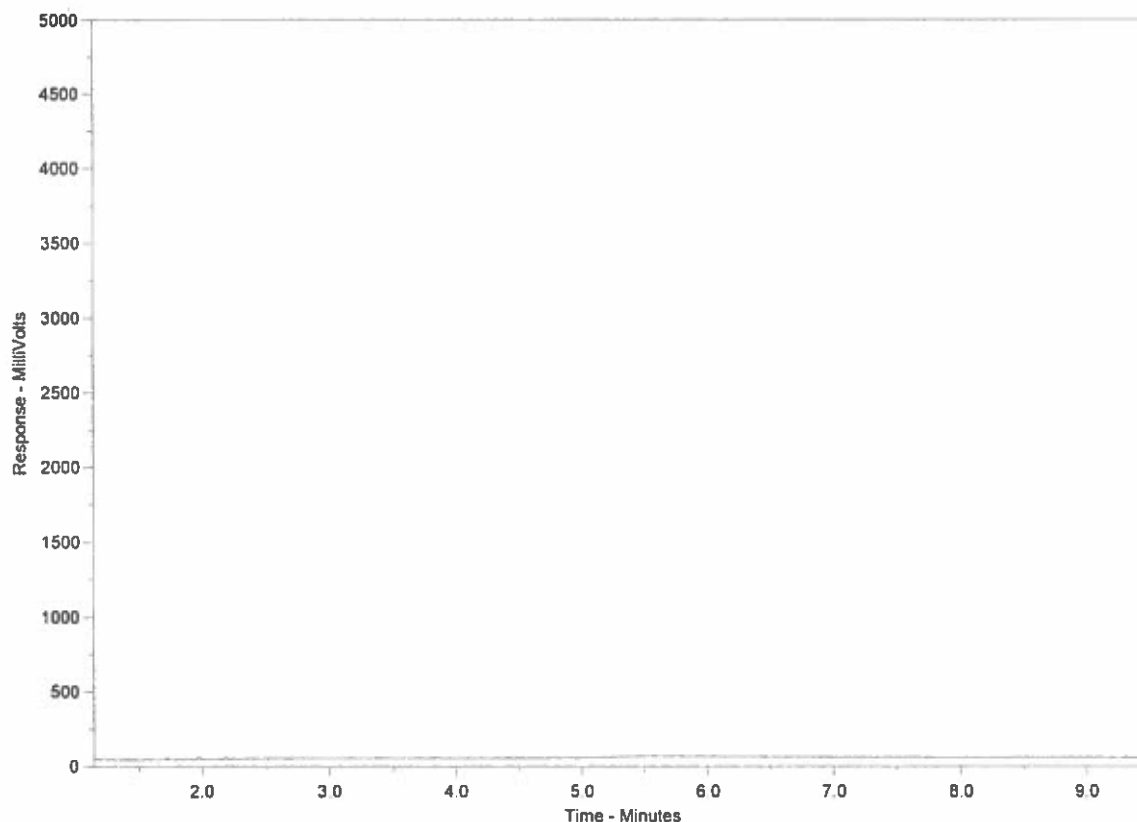
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L1529266-3
Client Sample ID: CHAR RIVER



← F2 →		F3		F4 →	
nC10	nC18		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
← Gasoline →		← Motor Oils/ Lube Oils/ Grease →			
← Diesel/ Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

10-313239



L1529266-COFC

Page 1 of 1

Report To			Report Format / Distribution			Service Request (Rush subject to availability - Contact ALS to confirm TAT)												
Company: GN-CGS			Standard: ☒ Other (specify):			Regular (Standard Turnaround Times - Business Days)												
Contact: Megan Lusty			Select: PDF ☒ Excel ☐ Digital ☐ Fax ☒			☒ Priority (2-4 Business Days) - 50% surcharge - Contact ALS to confirm TAT												
Address: P.O. Box 490			Email 1: mlusty@gov.nu.ca			Emergency (1-2 Business Days) - 100% Surcharge - Contact ALS to confirm TAT												
Rankin Inlet, Nu XPC 060			Email 2:			Same Day or Weekend Emergency - Contact ALS to confirm TAT												
Phone: 867-645-8176 Fax: 867-645-8196						Analysis Request												
Invoice To Same as Report? (circle) Yes ☒ or No (if No, provide details)			Client / Project Information			(Indicate Filtered or Preserved, F/P)												
Copy of Invoice with Report? (circle) Yes ☐ or No ☐			Job #: 3AM - GRAINIS															
Company:			PO / AFE:															
Contact:			LSD:															
Address:			Quote #:															
Phone:			Fax:															
Lab Work Order # (lab use only)			ALS Contact: Craig Riddell			Sampler: Megan Lusty												
Sample #	Sample Identification (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type	PAH	BTEX,F	FZ-FY	BOD	Routine	Total Metals	Total Nutrients	Bacteria				Number of Containers		
	Lower Landing Lake	07-10-14	9:50AM	Water	☒	☒	☒	☒	☒	☒	☒	☒				11		
	Nipissar Lake	07-10-14	10:25AM	Water	☒	☒	☒	☒	☒	☒	☒	☒				6		
	Char River	07-10-14	10:10AM	Water	☒	☒	☒	☒	☒	☒	☒	☒				11		
Special Instructions / Regulation with water or land use (CCME-Freshwater Aquatic Life/BC CSR-Commercial/AB Tier 1-Nature/ETC) / Hazardous Details																		
Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.																		
By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.																		
SHIPMENT RELEASE (client use)			SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)											
Released by:	Date:	Time:	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations								
Megan Lusty	07-10-14	10:35	[Signature]	7-10-14	4:25	3 °C					Yes / No ?							
REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION																		
WHITE - LABORATORY COPY YELLOW - CLIENT COPY GENF 18.01 Front																		

Summary of Water Chemistry Analysis

Parameters	Units	Detection Limit	24-Jun-14		07-Oct-14		Guidelines for Canadian Drinking Water Quality
			Nipissar Lake	Char River	Char River	Lower Landing Lake	
Miscellaneous Parameters							
Ammonia, Total (as N)	mg/L	0.010	<0.010	<0.010	<0.010	0.037	None required
Biochemical Oxygen Demand	mg/L	6.0			<6.0	<6.0	
Phosphorus (P)-Total	mg/L	0.010	0.02	0.013	<0.010	<0.010	
Total Kjeldahl Nitrogen	mg/L	0.20			0.27	0.27	
Fecal Coliforms	MPN/100mt.	3	<3	<3	<3	<3	
Total Suspended Solids	mg/L	5	8	<5.0			
Alkalinity							
Alkalinity, Total (as CaCO3)	mg/L	20	41	20	25	23	
Bicarbonate (HCO3)	mg/L	24	50	25	30	28	
Carbonate (CO3)	mg/L	12	<12	<12	<12	<12	
Hydroxide (OH)	mg/L	6.8	<6.8	<6.8	<6.8	<6.8	
Chloride by Ion Chromatography							
Chloride	mg/L	0.50	30.5	15.7	22.4	24.2	AO: ≤ 250 mg/L
Conductivity							
Conductivity	umhos/cm	20	210	104	150	151	
Hardness Calculated							
Hardness (as CaCO3)	mg/L	0.30	54.9	24.3	35.7	32.1	None required
Nitrate as N by Ion Chromatography							
Nitrate-N	mg/L	0.05	<0.050	<0.050	<0.050	<0.050	
Nitrate+Nitrite							
Nitrate and Nitrite as N	mg/L	0.071	<0.071	<0.071	<0.071	<0.071	10 mg/L as nitrate-nitrogen
Nitrite as N by Ion Chromatography							
Nitrite-N	mg/L	0.050	<0.050	<0.050	<0.050	<0.050	
Sulfate by Ion Chromatography							
Sulfate	mg/L	0.50	11	4.75	8.99	7.89	AO: ≤ 500 mg/L
TDS Calculated							
TDS (Calculated)	mg/L	5.0	105	50.3	73.8	73.8	AO: < 500 mg/L
Total Metals by ICP-MS							
Aluminum (Al)-Total	mg/L	0.02	0.075	<0.020	<0.020	0.020	OG: <0.1 mg/L (conventional); <0.2 mg/L (other treatment types)
Antimony (Sb)-Total	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010	MAC: 0.006 mg/L
Arsenic (As)-Total	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010	MAC: 0.010 mg/L
Barium (Ba)-Total	mg/L	0.0005	0.01444	0.0102	0.0149	0.0134	MAC: 1.0 mg/L
Beryllium (Be)-Total	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010	
Bismuth (Bi)-Total	mg/L	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	
Boron (B)-Total	mg/L	0.03	0.037	<0.030	<0.030	<0.030	MAC: 5 mg/L
Cadmium (Cd)-Total	mg/L	0.0002	<0.00020	<0.00020	<0.00020	<0.00020	MAC: 0.005 mg/L
Calcium (Ca)-Total	mg/L	0.2	16.6	7.3	10.2	8.62	None required
Cesium (Cs)- Total	mg/L	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	
Chromium (Cr)-Total	mg/L	0.002	<0.0020	<0.0020	<0.0020	<0.0020	MAC: 0.05 mg/L
Cobalt (Co)-Total	mg/L	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	
Copper (Cu)-Total	mg/L	0.002	<0.0020	<0.0020	<0.0020	<0.0020	AO: ≤ 1.0 mg/L
Iron (Fe)-Total	mg/L	0.1	<0.10	<0.10	<0.10	<0.10	AO: ≤ 0.3 mg/L
Lead (Pb)-Total	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010	MAC: 0.010 mg/L
Lithium (Li)-Total	mg/L	0.002	<0.0020	<0.0020	<0.0020	<0.0020	

Magnesium (Mg)-Total	mg/L	0.05	3.24	1.47	2.49	2.58	None required
Manganese (Mn)-Total	mg/L	0.001	0.006	0.0043	0.0054	0.0039	AO: ≤ 0.05 mg/L
Molybdenum (Mo)-Total	mg/L	0.0005	0.00067	<0.00050	<0.00050	0.00055	
Nickel (Ni)-Total	mg/L	0.002	<0.0020	<0.0020	<0.0020	<0.0020	
Phosphorus (P)-Total	mg/L	0.5	<0.50	<0.50	<0.50	<0.50	
Potassium (K)-Total	mg/L	0.1	1.86	1.03	1.60	1.59	
Rubidium (Rb)-Total	mg/L	0.0005	0.00164	0.00144	0.00203	0.00195	
Selenium (Se)-Total	mg/L	0.005	<0.0050	<0.0050	<0.0050	<0.0050	MAC: 0.01 mg/L
Silicon (Si)-Total	mg/L	0.3	<0.30	<0.30	<0.30	<0.30	
Silver (Ag)-Total	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010	None required
Sodium (Na)-Total	mg/L	0.05	16.6	7.98	13.4	15.2	AO: ≤ 200 mg/L
Strontium (Sr)-Total	mg/L	0.0005	0.0826	0.0426	0.0547	0.0514	
Tellurium (Te)-Total	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010	
Thallium (Tl)-Total	mg/L	0.005	<0.0050	<0.0050	<0.0050	<0.0050	
Thorium (Th)-Total	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010	
Tin (Sn)-Total	mg/L	0.0006	<0.00060	<0.00060	<0.00060	<0.00060	
Titanium (Ti)-Total	mg/L	0.001	0.0029	<0.0010	<0.0010	<0.0010	
Tungsten (W)-Total	mg/L	0.002	<0.0020	<0.0020	<0.0020	<0.0020	
Uranium (U)-Total	mg/L	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	MAC: 0.02 mg/L
Vanadium (V)-Total	mg/L	0.002	<0.0020	<0.0020	<0.0020	<0.0020	
Zinc (Zn)-Total	mg/L	0.02	<0.020	<0.020	<0.020	<0.020	AO: ≤ 5.0 mg/L
Zirconium (Zr)-Total	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010	
pH							
pH	pH Units	0.1	7.77	7.46	7.63	7.62	6.5-8.5

MAC = Maximum acceptable concentrations (health based)

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Summary of Hydrocarbon Contamination Analysis

Parameters	Units	Detection Limit	07-Oct-14			Guidelines for Canadian Drinking Water Quality
			Nipissar Lake	Char River	Lower Landing Lake	
BTX plus F1 by GCMS						
Benzene	mg/L	0.00050	<0.00050	<0.00050	<0.00050	MAC: 0.005 mg/L
Toluene	mg/L	0.0010	<0.0010	<0.0010	<0.0010	AO: ≤ 0.024 mg/L ¹
Ethylbenzene	mg/L	0.00050	<0.00050	<0.00050	<0.00050	AO: ≤ 0.0024 mg/L ²
o-Xylene	mg/L	0.00050	<0.00050	<0.00050	<0.00050	
m+p-Xylenes	mg/L	0.00050	<0.00050	<0.00050	<0.00050	
F1 (C6-C10)	mg/L	0.10	<0.10	<0.10	<0.10	
CCME Total Hydrocarbons						
F1-BTEX	mg/L	0.10	<0.10	<0.10	<0.10	
F2-Naphth	mg/L	0.25	<0.25	<0.25	<0.25	
F3-PAH	mg/L	0.25	<.025	<.025	<.025	
Total Hydrocarbons (C6-C50)	mg/L	0.44	<0.44	<0.44	<0.44	
F2-F4 PHC Method						
F2 (C10-C16)	mg/L	0.25	<0.25	<0.25	<0.25	
F3 (C16-C34)	mg/L	0.25	<0.25	<0.25	<0.25	
F4 (C34-C50)	mg/L	0.25	<0.25	<0.25	<0.25	
Sum of Xylene Isomer Concentrations						
Xylenes (Total)	mg/L	0.0015	<0.0015	<0.0015	<0.0015	AO: ≤ 0.3 mg/L ³
Polyaromatic Hydrocarbons (PAHs)						
1-Methyl Naphthalene	mg/L	0.000020	<0.000020	<0.000020	<0.000020	
2-Methyl Naphthalene	mg/L	0.000020	<0.000020	<0.000020	<0.000020	
Acenaphthene	mg/L	0.000020	<0.000020	<0.000020	<0.000020	
Acenaphthylene	mg/L	0.000020	<0.000020	<0.000020	<0.000020	
Anthracene	mg/L	0.000010	<0.000010	<0.000010	<0.000010	
Acridine	mg/L	0.000020	<0.000020	<0.000020	<0.000020	
Benzo(a)anthracene	mg/L	0.000010	<0.000010	<0.000010	<0.000010	
Benzo(a)pyrene	mg/L	0.0000050	<0.0000050	<0.0000050	<0.0000050	MAC: 0.00001 mg/L
Benzo(b&j)fluoranthene	mg/L	0.000010	<0.000010	<0.000010	<0.000010	
Benzo(g,h,i)perylene	mg/L	0.000020	<0.000020	<0.000020	<0.000020	
Benzo(k)fluoranthene	mg/L	0.000010	<0.000010	<0.000010	<0.000010	
Chrysene	mg/L	0.000020	<0.000020	<0.000020	<0.000020	
Dibenzo(a,h)anthracene	mg/L	0.0000050	<0.0000050	<0.0000050	<0.0000050	

Fluoranthene	mg/L	0.000020	<0.000020	<0.000020	<0.000020	
Fluorene	mg/L	0.000020	<0.000020	<0.000020	<0.000020	
Indeno(1,2,3-cd)pyrene	mg/L	0.000010	<0.000010	<0.000010	<0.000010	
Naphthalene	mg/L	0.000050	0.000061	<0.000050	<0.000050	
Phenanthrene	mg/L	0.000050	<0.000050	<0.000050	<0.000050	
Pyrene	mg/L	0.000010	<0.000010	<0.000010	<0.000010	
Quinoline	mg/L	0.000020	<0.000020	<0.000020	<0.000020	
B(a)P Total Potency Equivalent	mg/L	0.000030	<0.000030	<0.000030	<0.000030	

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¹ AO based on odour

³ AO based on odour; levels above the AO would render drinking water unpalatable

³ AO based on taste and odour; levels above the AO would render water unpalatable