NORTH COAL LIMITED
ATTN: Bill Arling
652 F Sparwood Drive
PO Box 576
Sparwood BC V0B 2G0

Date Received: 01-JUN-21
Report Date: 21-JUN-21 11:28 (MT)
Version: FINAL

Client Phone: 250-423-8854

Certificate of Analysis

Lab Work Order #: L2594950

Project P.O. #: NOT SUBMITTED
Job Reference: 18CANA02
C of C Numbers:
Legal Site Desc:

Patryk Wojciak, B.Sc., P.Chem.
Account Manager

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L2594950-1	L2594950-2	L2594950-3	L2594950-4	L2594950-5
Description	WATER	WATER	WATER	WATER	WATER
Sampled Date	31-MAY-21	31-MAY-21	31-MAY-21	31-MAY-21	31-MAY-21
Sampled Time	08:30	10:20	11:10	08:30	10:00
Client ID	MICH-13.0	MICH-33.8	AND 1	DUPLICATE	FIELD BLANK
Grouping / **Analyte**					
WATER					
Physical Tests Colour, True (CU)	12.0	7.9	<5.0	11.8	<5.0
Hardness (as CaCO3) (mg/L)	97.6	179	106	92.4	<0.50
Total Suspended Solids (mg/L)	22.8	19.8	<3.0 RRV	21.0 HTD	<3.0 HTD
Total Dissolved Solids (mg/L)	199	174	85	97	<10
Turbidity (NTU)	12.2	3.58	0.56	10.5	<0.10
Anions and Nutrients Alkalinity, Total (as CaCO3) (mg/L)	81.2	119	116	82.6	<2.0
Ammonia as N (mg/L)	0.0089	0.0083	0.0136	<0.0050	<0.0050
Bicarbonate (HCO3) (mg/L)	99.1	145	141	101	<5.0
Bromide (Br) (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
Carbonate (CO3) (mg/L)	<5.0	<5.0	<5.0	<5.0	<5.0
Chloride (Cl) (mg/L)	<0.50	<0.50	<0.50	<0.50	<0.50
Conductivity (EC) (uS/cm)	202	336	210	203	<2.0
Fluoride (F) (mg/L)	0.088	0.133	0.181	0.087	<0.020
Hydroxide (OH) (mg/L)	<5.0	<5.0	<5.0	<5.0	<5.0
Nitrate (as N) (mg/L)	0.169	0.431	0.150	0.165	<0.0050
Nitrite (as N) (mg/L)	<0.0010	0.0020	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen (mg/L)	0.155	0.117	<0.050	0.065	<0.050 RRV
pH (pH)	7.94	8.15	8.12	7.95	5.21
Orthophosphate-Dissolved (as P) (mg/L)	0.0127	0.0026	<0.0010	0.0126	<0.0010
Phosphorus (P)-Total (mg/L)	0.039 DLM	0.0075	0.0023	0.0407	<0.0020
Sulfate (SO4) (mg/L)	26.4	62.2	5.26	26.4	<0.30
Organic / Inorganic Carbon Dissolved Organic Carbon (mg/L)	3.19	1.69	1.08	2.92	<0.50
Total Organic Carbon (mg/L)	3.54	1.73	1.13	3.30	<0.50
Total Metals Aluminum (Al)-Total (mg/L)	0.230	0.0818	0.0110	0.265	<0.0030
Antimony (Sb)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Total (mg/L)	0.00033	0.00030	0.00046	0.00031	<0.00010
Barium (Ba)-Total (mg/L)	0.0542	0.0316	0.0121	0.0537	<0.00010
Beryllium (Be)-Total (mg/L)	0.000022	<0.000020	<0.000020	0.000023	<0.000020
Bismuth (Bi)-Total (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron (B)-Total (mg/L)	<0.010	0.011	<0.010	<0.010	<0.010
Cadmium (Cd)-Total (mg/L)	0.0000633	0.0000436	0.0000135	0.0000591	<0.0000050
Calcium (Ca)-Total (mg/L)	29.3	49.0	37.9	31.7	<0.050
Chromium (Cr)-Total (mg/L)	0.00043	0.00029	0.00027	0.00049	<0.00010
Cobalt (Co)-Total (mg/L)	0.00027	0.00060	<0.00010	0.00026	<0.00010
Copper (Cu)-Total (mg/L)	0.00069	<0.00050	<0.00050	0.00072	<0.00050
Iron (Fe)-Total (mg/L)	0.269	0.068	<0.010	0.304	<0.010

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2594950-6				
	Description	WATER				
	Sampled Date	31-MAY-21				
	Sampled Time	11:45				
	Client ID	MICH-39.1				
Grouping	**Analyte**					
WATER						
Physical Tests	Colour, True (CU)	5.2				
	Hardness (as CaCO3) (mg/L)	264				
	Total Suspended Solids (mg/L)	7.5				
	Total Dissolved Solids (mg/L)	331				
	Turbidity (NTU)	5.61				
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	150				
	Ammonia as N (mg/L)	0.0180				
	Bicarbonate (HCO3) (mg/L)	183				
	Bromide (Br) (mg/L)	<0.050				
	Carbonate (CO3) (mg/L)	<5.0				
	Chloride (Cl) (mg/L)	0.64				
	Conductivity (EC) (uS/cm)	531				
	Fluoride (F) (mg/L)	0.093				
	Hydroxide (OH) (mg/L)	<5.0				
	Nitrate (as N) (mg/L)	0.967				
	Nitrite (as N) (mg/L)	0.0048				
	Total Kjeldahl Nitrogen (mg/L)	0.271				
	pH (pH)	8.18				
	Orthophosphate-Dissolved (as P) (mg/L)	<0.0010				
	Phosphorus (P)-Total (mg/L)	0.0070				
	Sulfate (SO4) (mg/L)	147				
Organic / Inorganic Carbon	Dissolved Organic Carbon (mg/L)	2.27				
	Total Organic Carbon (mg/L)	2.34				
Total Metals	Aluminum (Al)-Total (mg/L)	0.146				
	Antimony (Sb)-Total (mg/L)	0.00013				
	Arsenic (As)-Total (mg/L)	0.00020				
	Barium (Ba)-Total (mg/L)	0.0371				
	Beryllium (Be)-Total (mg/L)	<0.000020				
	Bismuth (Bi)-Total (mg/L)	<0.000050				
	Boron (B)-Total (mg/L)	0.022				
	Cadmium (Cd)-Total (mg/L)	0.0000856				
	Calcium (Ca)-Total (mg/L)	70.9				
	Chromium (Cr)-Total (mg/L)	0.00038				
	Cobalt (Co)-Total (mg/L)	0.00192				
	Copper (Cu)-Total (mg/L)	<0.00050				
	Iron (Fe)-Total (mg/L)	0.169				

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ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2594950-1	L2594950-2	L2594950-3	L2594950-4	L2594950-5
	Description	WATER	WATER	WATER	WATER	WATER
	Sampled Date	31-MAY-21	31-MAY-21	31-MAY-21	31-MAY-21	31-MAY-21
	Sampled Time	08:30	10:20	11:10	08:30	10:00
	Client ID	MICH-13.0	MICH-33.8	AND 1	DUPLICATE	FIELD BLANK
Grouping	**Analyte**					
WATER						
Total Metals	Lead (Pb)-Total (mg/L)	0.000201	0.000071	<0.000050	0.000203	<0.000050
	Lithium (Li)-Total (mg/L)	0.0030	0.0050	<0.0010	0.0030	<0.0010
	Magnesium (Mg)-Total (mg/L)	8.66	15.2	6.09	8.88	<0.0050
	Manganese (Mn)-Total (mg/L)	0.00926	0.00622	0.00027	0.00841	<0.00010
	Mercury (Hg)-Total (mg/L)	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
	Molybdenum (Mo)-Total (mg/L)	0.000536	0.000578	0.000396	0.000536	<0.000050
	Nickel (Ni)-Total (mg/L)	0.00204	0.00460	<0.00050	0.00211	<0.00050
	Phosphorus (P)-Total (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Total (mg/L)	0.53	0.58	0.19	0.55	<0.10
	Selenium (Se)-Total (mg/L)	0.00115	0.00243	0.000618	0.00118	<0.000050
	Silicon (Si)-Total (mg/L)	2.06	1.74	1.18	2.16	<0.050
	Silver (Ag)-Total (mg/L)	0.000010	<0.000010	<0.000010	0.000011	<0.000010
	Sodium (Na)-Total (mg/L)	1.95	3.65	0.285	2.00	<0.050
	Strontium (Sr)-Total (mg/L)	0.0831	0.146	0.0843	0.0845	<0.00020
	Sulfur (S)-Total (mg/L)	9.58	23.3	2.11	9.78	<0.50
	Thallium (Tl)-Total (mg/L)	0.000018	0.000026	0.000055	0.000019	<0.000010
	Tin (Sn)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Titanium (Ti)-Total (mg/L)	0.00319	0.00134	<0.00030	0.00313	<0.00030
	Uranium (U)-Total (mg/L)	0.000344	0.000717	0.000343	0.000358	<0.000010
	Vanadium (V)-Total (mg/L)	0.00129	0.00053	<0.00050	0.00147	<0.00050
	Zinc (Zn)-Total (mg/L)	0.0034	0.0035	<0.0030	0.0030	<0.0030
	Zirconium (Zr)-Total (mg/L)	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.0136	0.0043	0.0027	0.0119	<0.0010
	Antimony (Sb)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Arsenic (As)-Dissolved (mg/L)	0.00022	0.00030	0.00045	0.00023	<0.00010
	Barium (Ba)-Dissolved (mg/L)	0.0520	0.0337	0.0122	0.0468	<0.00010
	Beryllium (Be)-Dissolved (mg/L)	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
	Bismuth (Bi)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Boron (B)-Dissolved (mg/L)	<0.010	0.011	<0.010	<0.010	<0.010
	Cadmium (Cd)-Dissolved (mg/L)	0.0000267	0.0000272	0.0000110	0.0000247	<0.0000050
	Calcium (Ca)-Dissolved (mg/L)	25.5	47.2	33.3	24.6	0.053 RRV
	Chromium (Cr)-Dissolved (mg/L)	0.00012	0.00019	0.00023	0.00012	<0.00010
	Cobalt (Co)-Dissolved (mg/L)	<0.00010	0.00050	<0.00010	<0.00010	<0.00010
	Copper (Cu)-Dissolved (mg/L)	0.00033	<0.00020	<0.00020	0.00029	<0.00020
	Iron (Fe)-Dissolved (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010

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ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2594950-6				
	Description	WATER				
	Sampled Date	31-MAY-21				
	Sampled Time	11:45				
	Client ID	MICH-39.1				
Grouping	**Analyte**					
WATER						
Total Metals	Lead (Pb)-Total (mg/L)	0.000139				
	Lithium (Li)-Total (mg/L)	0.0117				
	Magnesium (Mg)-Total (mg/L)	29.1				
	Manganese (Mn)-Total (mg/L)	0.0170				
	Mercury (Hg)-Total (mg/L)	<0.0000050				
	Molybdenum (Mo)-Total (mg/L)	0.000824				
	Nickel (Ni)-Total (mg/L)	0.0129				
	Phosphorus (P)-Total (mg/L)	<0.050				
	Potassium (K)-Total (mg/L)	1.06				
	Selenium (Se)-Total (mg/L)	0.00553				
	Silicon (Si)-Total (mg/L)	2.11				
	Silver (Ag)-Total (mg/L)	<0.000010				
	Sodium (Na)-Total (mg/L)	8.35				
	Strontium (Sr)-Total (mg/L)	0.241				
	Sulfur (S)-Total (mg/L)	56.9				
	Thallium (Tl)-Total (mg/L)	0.000017				
	Tin (Sn)-Total (mg/L)	<0.00010				
	Titanium (Ti)-Total (mg/L)	0.00208				
	Uranium (U)-Total (mg/L)	0.00138				
	Vanadium (V)-Total (mg/L)	0.00057				
	Zinc (Zn)-Total (mg/L)	0.0067				
	Zirconium (Zr)-Total (mg/L)	<0.00030				
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD				
	Dissolved Metals Filtration Location	FIELD				
	Aluminum (Al)-Dissolved (mg/L)	0.0048				
	Antimony (Sb)-Dissolved (mg/L)	0.00013				
	Arsenic (As)-Dissolved (mg/L)	0.00015				
	Barium (Ba)-Dissolved (mg/L)	0.0360				
	Beryllium (Be)-Dissolved (mg/L)	<0.000020				
	Bismuth (Bi)-Dissolved (mg/L)	<0.000050				
	Boron (B)-Dissolved (mg/L)	0.020				
	Cadmium (Cd)-Dissolved (mg/L)	0.0000744				
	Calcium (Ca)-Dissolved (mg/L)	61.4				
	Chromium (Cr)-Dissolved (mg/L)	0.00022				
	Cobalt (Co)-Dissolved (mg/L)	0.00172				
	Copper (Cu)-Dissolved (mg/L)	0.00023				
	Iron (Fe)-Dissolved (mg/L)	<0.010				

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L2594950-1	L2594950-2	L2594950-3	L2594950-4	L2594950-5
Description	WATER	WATER	WATER	WATER	WATER
Sampled Date	31-MAY-21	31-MAY-21	31-MAY-21	31-MAY-21	31-MAY-21
Sampled Time	08:30	10:20	11:10	08:30	10:00
Client ID	MICH-13.0	MICH-33.8	AND 1	DUPLICATE	FIELD BLANK
Grouping / **Analyte**					
WATER					
Dissolved Metals					
Lead (Pb)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	0.000181 RRV
Lithium (Li)-Dissolved (mg/L)	0.0028	0.0056	<0.0010	0.0027	<0.0010
Magnesium (Mg)-Dissolved (mg/L)	8.22	14.8	5.52	7.54	0.0106 RRV
Manganese (Mn)-Dissolved (mg/L)	0.00108	0.00285	<0.00010	0.00100	0.00020 RRV
Mercury (Hg)-Dissolved (mg/L)	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum (Mo)-Dissolved (mg/L)	0.000468	0.000587	0.000355	0.000470	<0.000050
Nickel (Ni)-Dissolved (mg/L)	0.00153	0.00451	<0.00050	0.00135	<0.00050
Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Dissolved (mg/L)	0.45	0.55	0.17	0.40	<0.10
Selenium (Se)-Dissolved (mg/L)	0.00142	0.00313	0.000730	0.00149	<0.000050
Silicon (Si)-Dissolved (mg/L)	1.79	1.67	1.12	1.75	<0.050
Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Dissolved (mg/L)	1.98	3.83	0.329	1.85	<0.050
Strontium (Sr)-Dissolved (mg/L)	0.0762	0.146	0.0770	0.0741	<0.00020
Sulfur (S)-Dissolved (mg/L)	9.41	24.1	2.00	9.51	<0.50
Thallium (Tl)-Dissolved (mg/L)	<0.000010	0.000025	0.000056	<0.000010	<0.000010
Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Dissolved (mg/L)	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Uranium (U)-Dissolved (mg/L)	0.000334	0.000769	0.000343	0.000313	<0.000010
Vanadium (V)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Zinc (Zn)-Dissolved (mg/L)	<0.0010	0.0024	0.0024	<0.0010	<0.0010
Zirconium (Zr)-Dissolved (mg/L)	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Aggregate Organics					
Chemical Oxygen Demand (mg/L)	21	13	15	26	<10
Volatile Organic Compounds					
Acetone (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
Acrolein (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
Acrylonitrile (mg/L)	<0.020	<0.020	<0.020	<0.020	<0.020
Benzene (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bromobenzene (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Bromochloromethane (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Bromodichloromethane (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bromoform (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bromomethane (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
2-Butanone (MEK) (mg/L)	<0.020	<0.020	<0.020	<0.020	<0.020
n-Butylbenzene (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
sec-Butylbenzene (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
tert-Butylbenzene (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010

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ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2594950-6				
	Description	WATER				
	Sampled Date	31-MAY-21				
	Sampled Time	11:45				
	Client ID	MICH-39.1				
Grouping	**Analyte**					
WATER						
Dissolved Metals	Lead (Pb)-Dissolved (mg/L)	<0.000050				
	Lithium (Li)-Dissolved (mg/L)	0.0111				
	Magnesium (Mg)-Dissolved (mg/L)	26.8				
	Manganese (Mn)-Dissolved (mg/L)	0.00909				
	Mercury (Hg)-Dissolved (mg/L)	<0.0000050				
	Molybdenum (Mo)-Dissolved (mg/L)	0.000792				
	Nickel (Ni)-Dissolved (mg/L)	0.0125				
	Phosphorus (P)-Dissolved (mg/L)	<0.050				
	Potassium (K)-Dissolved (mg/L)	0.98				
	Selenium (Se)-Dissolved (mg/L)	0.00609				
	Silicon (Si)-Dissolved (mg/L)	1.82				
	Silver (Ag)-Dissolved (mg/L)	<0.000010				
	Sodium (Na)-Dissolved (mg/L)	8.21				
	Strontium (Sr)-Dissolved (mg/L)	0.222				
	Sulfur (S)-Dissolved (mg/L)	53.1				
	Thallium (Tl)-Dissolved (mg/L)	0.000013				
	Tin (Sn)-Dissolved (mg/L)	<0.00010				
	Titanium (Ti)-Dissolved (mg/L)	<0.00030				
	Uranium (U)-Dissolved (mg/L)	0.00143				
	Vanadium (V)-Dissolved (mg/L)	<0.00050				
	Zinc (Zn)-Dissolved (mg/L)	0.0050				
	Zirconium (Zr)-Dissolved (mg/L)	<0.00030				
Aggregate Organics	Chemical Oxygen Demand (mg/L)	16				
Volatile Organic Compounds	Acetone (mg/L)	<0.050				
	Acrolein (mg/L)	<0.050				
	Acrylonitrile (mg/L)	<0.020				
	Benzene (mg/L)	<0.00050				
	Bromobenzene (mg/L)	<0.0010				
	Bromochloromethane (mg/L)	<0.0010				
	Bromodichloromethane (mg/L)	<0.00050				
	Bromoform (mg/L)	<0.00050				
	Bromomethane (mg/L)	<0.0010				
	2-Butanone (MEK) (mg/L)	<0.020				
	n-Butylbenzene (mg/L)	<0.0010				
	sec-Butylbenzene (mg/L)	<0.0010				
	tert-Butylbenzene (mg/L)	<0.0010				

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L2594950-1	L2594950-2	L2594950-3	L2594950-4	L2594950-5
Description	WATER	WATER	WATER	WATER	WATER
Sampled Date	31-MAY-21	31-MAY-21	31-MAY-21	31-MAY-21	31-MAY-21
Sampled Time	08:30	10:20	11:10	08:30	10:00
Client ID	MICH-13.0	MICH-33.8	AND 1	DUPLICATE	FIELD BLANK
Grouping / **Analyte**					
WATER					
Volatile Organic Compounds / Carbon disulfide (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Carbon tetrachloride (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Chlorobenzene (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Dibromochloromethane (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Chloroethane (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Chloroform (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Chloromethane (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
2-Chlorotoluene (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
4-Chlorotoluene (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
1,2-Dibromo-3-chloropropane (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Ethylene dibromide (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Dibromomethane (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
cis-1,4-Dichloro-2-butene (mg/L)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
trans-1,4-Dichloro-2-butene (mg/L)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
1,2-Dichlorobenzene (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
1,3-Dichlorobenzene (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
1,4-Dichlorobenzene (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Dichlorodifluoromethane (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
1,1-Dichloroethane (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
1,2-Dichloroethane (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
1,1-Dichloroethene (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
cis-1,2-Dichloroethene (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
trans-1,2-Dichloroethene (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Methylene chloride (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
1,2-Dichloropropane (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
1,3-Dichloropropane (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
2,2-Dichloropropane (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
1,1-Dichloropropene (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
cis-1,3-Dichloropropene (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
trans-1,3-Dichloropropene (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Ethanol (mg/L)	<0.20	<0.20	<0.20	<0.20	<0.20
Ethyl methacrylate (mg/L)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Ethylbenzene (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Hexachlorobutadiene (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
2-Hexanone (mg/L)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Iodomethane (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Isopropylbenzene (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2594950-6				
	Description	WATER				
	Sampled Date	31-MAY-21				
	Sampled Time	11:45				
	Client ID	MICH-39.1				
Grouping	**Analyte**					
WATER						
Volatile Organic Compounds	Carbon disulfide (mg/L)	<0.0010				
	Carbon tetrachloride (mg/L)	<0.00050				
	Chlorobenzene (mg/L)	<0.00050				
	Dibromochloromethane (mg/L)	<0.00050				
	Chloroethane (mg/L)	<0.0010				
	Chloroform (mg/L)	<0.00050				
	Chloromethane (mg/L)	<0.0010				
	2-Chlorotoluene (mg/L)	<0.0010				
	4-Chlorotoluene (mg/L)	<0.0010				
	1,2-Dibromo-3-chloropropane (mg/L)	<0.0010				
	Ethylene dibromide (mg/L)	<0.00050				
	Dibromomethane (mg/L)	<0.00050				
	cis-1,4-Dichloro-2-butene (mg/L)	<0.0050				
	trans-1,4-Dichloro-2-butene (mg/L)	<0.0050				
	1,2-Dichlorobenzene (mg/L)	<0.00050				
	1,3-Dichlorobenzene (mg/L)	<0.00050				
	1,4-Dichlorobenzene (mg/L)	<0.00050				
	Dichlorodifluoromethane (mg/L)	<0.00050				
	1,1-Dichloroethane (mg/L)	<0.00050				
	1,2-Dichloroethane (mg/L)	<0.0010				
	1,1-Dichloroethene (mg/L)	<0.00050				
	cis-1,2-Dichloroethene (mg/L)	<0.0010				
	trans-1,2-Dichloroethene (mg/L)	<0.00050				
	Methylene chloride (mg/L)	<0.0010				
	1,2-Dichloropropane (mg/L)	<0.00050				
	1,3-Dichloropropane (mg/L)	<0.0010				
	2,2-Dichloropropane (mg/L)	<0.0010				
	1,1-Dichloropropene (mg/L)	<0.0010				
	cis-1,3-Dichloropropene (mg/L)	<0.00050				
	trans-1,3-Dichloropropene (mg/L)	<0.0010				
	Ethanol (mg/L)	<0.20				
	Ethyl methacrylate (mg/L)	<0.0050				
	Ethylbenzene (mg/L)	<0.00050				
	Hexachlorobutadiene (mg/L)	<0.0010				
	2-Hexanone (mg/L)	<0.0050				
	Iodomethane (mg/L)	<0.0010				
	Isopropylbenzene (mg/L)	<0.0010				

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2594950-1	L2594950-2	L2594950-3	L2594950-4	L2594950-5
	Description	WATER	WATER	WATER	WATER	WATER
	Sampled Date	31-MAY-21	31-MAY-21	31-MAY-21	31-MAY-21	31-MAY-21
	Sampled Time	08:30	10:20	11:10	08:30	10:00
	Client ID	MICH-13.0	MICH-33.8	AND 1	DUPLICATE	FIELD BLANK
Grouping	**Analyte**					
WATER						
Volatile Organic Compounds	p-Isopropyltoluene (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	4-Methyl-2-pentanone (MIBK) (mg/L)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Methyl-t-butyl ether (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	n-Propylbenzene (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Styrene (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	1,1,1,2-Tetrachloroethane (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,1,2,2-Tetrachloroethane (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Tetrachloroethylene (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Toluene (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	1,2,3-Trichlorobenzene (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,2,4-Trichlorobenzene (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,3,5-Trichlorobenzene (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,1,1-Trichloroethane (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	1,1,2-Trichloroethane (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Trichloroethene (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Trichlorofluoromethane (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,2,3-Trichloropropane (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	1,2,4-Trimethylbenzene (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,3,5-Trimethylbenzene (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Vinyl chloride (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	o-Xylene (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	m+p-Xylenes (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Xylenes (mg/L)	<0.00071	<0.00071	<0.00071	<0.00071	<0.00071
	Surrogate: 4-Bromofluorobenzene (%)	81.0	79.3	72.0	80.4	76.6
	Surrogate: 3,4-Dichlorotoluene (%)	110.4	115.8	116.9	115.3	106.0
	Surrogate: 1,4-Difluorobenzene (%)	94.4	94.9	93.1	94.0	93.4
Hydrocarbons	EPH10-19 (ug/L)	<100	<100	<100	<100	<100
	EPH19-32 (ug/L)	<100	<100	<100	<100	<100
	Surrogate: 2-Bromobenzotrifluoride (%)	97.0	94.0	98.0	95.0	106.0

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2594950-6				
	Description	WATER				
	Sampled Date	31-MAY-21				
	Sampled Time	11:45				
	Client ID	MICH-39.1				
Grouping	**Analyte**					
WATER						
Volatile Organic Compounds	p-Isopropyltoluene (mg/L)	<0.0010				
	4-Methyl-2-pentanone (MIBK) (mg/L)	<0.0050				
	Methyl-t-butyl ether (mg/L)	<0.00050				
	n-Propylbenzene (mg/L)	<0.0010				
	Styrene (mg/L)	<0.00050				
	1,1,1,2-Tetrachloroethane (mg/L)	<0.0010				
	1,1,2,2-Tetrachloroethane (mg/L)	<0.00050				
	Tetrachloroethylene (mg/L)	<0.00050				
	Toluene (mg/L)	<0.00050				
	1,2,3-Trichlorobenzene (mg/L)	<0.0010				
	1,2,4-Trichlorobenzene (mg/L)	<0.0010				
	1,3,5-Trichlorobenzene (mg/L)	<0.0010				
	1,1,1-Trichloroethane (mg/L)	<0.00050				
	1,1,2-Trichloroethane (mg/L)	<0.00050				
	Trichloroethene (mg/L)	<0.00050				
	Trichlorofluoromethane (mg/L)	<0.0010				
	1,2,3-Trichloropropane (mg/L)	<0.00050				
	1,2,4-Trimethylbenzene (mg/L)	<0.0010				
	1,3,5-Trimethylbenzene (mg/L)	<0.0010				
	Vinyl chloride (mg/L)	<0.00050				
	o-Xylene (mg/L)	<0.00050				
	m+p-Xylenes (mg/L)	<0.00050				
	Xylenes (mg/L)	<0.00071				
	Surrogate: 4-Bromofluorobenzene (%)	78.6				
	Surrogate: 3,4-Dichlorotoluene (%)	112.1				
	Surrogate: 1,4-Difluorobenzene (%)	94.1				
Hydrocarbons	EPH10-19 (ug/L)	<100				
	EPH19-32 (ug/L)	<100				
	Surrogate: 2-Bromobenzotrifluoride (%)	103.0				

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Matrix Spike	Chemical Oxygen Demand	MS-B	L2594950-1, -2, -3, -4, -5, -6
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L2594950-1, -2, -3, -4, -5, -6
Matrix Spike	Manganese (Mn)-Dissolved	MS-B	L2594950-1, -2, -3, -4, -5, -6
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L2594950-1, -2, -3, -4, -5, -6
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L2594950-1, -2, -3, -4, -5, -6

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
HTD	Hold time exceeded for re-analysis or dilution, but initial testing was conducted within hold time.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RRV	Reported Result Verified By Repeat Analysis

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BE-D-L-CCMS-CL	Water	Diss. Be (low) in Water by CRC ICPMS	APHA 3030B/6020A (mod)

Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

BE-T-L-CCMS-CL	Water	Total Be (Low) in Water by CRC ICPMS	EPA 200.2/6020A (mod)

Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

BR-L-IC-N-CL	Water	Bromide in Water by IC (Low Level)	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

C-DIS-ORG-LOW-CL	Water	Dissolved Organic Carbon	APHA 5310 B-Instrumental

This method is applicable to the analysis of ground water, wastewater, and surface water samples. The form detected depends upon sample pretreatment: Unfiltered sample = TC, 0.45um filtered = TDC. Samples are injected into a combustion tube containing an oxidation catalyst. The carrier gas containing the combustion product from the combustion tube flows through an inorganic carbon reactor vessel and is then sent through a halogen scrubber into a sample cell set in a non-dispersive infrared gas analyzer (NDIR) where carbon dioxide is detected. For total inorganic carbon and dissolved inorganic carbon, the sample is injected into an IC reactor vessel where only the IC component is decomposed to become carbon dioxide.

The peak area generated by the NDIR indicates the TC/TDC or TIC/DIC as applicable. The total organic carbon content of the sample is calculated by subtracting the TIC from the TC.
TOC = TC-TIC, DOC = TDC-DIC, Particulate = Total - Dissolved.

C-TOT-ORG-LOW-CL	Water	Total Organic Carbon	APHA 5310 TOTAL ORGANIC CARBON (TOC)

This method is applicable to the analysis of ground water, wastewater, and surface water samples. The form detected depends upon sample pretreatment: Unfiltered sample = TC, 0.45um filtered = TDC. Samples are injected into a combustion tube containing an oxidation catalyst. The carrier gas containing the combustion product from the combustion tube flows through an inorganic carbon reactor vessel and is then sent through a halogen scrubber into a sample cell set in a non-dispersive infrared gas analyzer (NDIR) where carbon dioxide is detected. For total inorganic carbon and dissolved inorganic carbon, the sample is injected into an IC reactor vessel where only the IC component is decomposed to become carbon dioxide.

The peak area generated by the NDIR indicates the TC/TDC or TIC/DIC as applicable. The total organic carbon content of the sample is calculated by subtracting the TIC from the TC.
TOC = TC-TIC, DOC = TDC-DIC, Particulate = Total - Dissolved.

CL-IC-N-CL	Water	Chloride in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

COD-T-COL-CL	Water	Chemical Oxygen Demand (COD)	APHA 5220 D Colorimetry

Samples are analyzed using the closed reflux colourimetric method

COLOUR-TRUE-CL	Water	Colour (True) by Spectrometer	APHA 2120 Color

True Colour is measured spectrophotometrically by comparison to platinum-cobalt standards using the single wavelength method (450 - 465 nm) after filtration of sample through a 0.45 um filter. Colour measurements can be highly pH dependent, and apply to the pH of the sample as received (at time of testing), without pH adjustment. Concurrent measurement of sample pH is recommended.

Reference Information

EPH-L-ME-FID-CL	Water	EPH (C10-C19) & EPH (C19-C32)	BC Lab manual

EPH is extracted from water using a hexane micro-extraction technique, with analysis by GC-FID, as per the BC Lab Manual. EPH results include PAHs and are therefore not equivalent to LEPH or HEPH.

F-IC-N-CL	Water	Fluoride in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

HARDNESS-CALC-CL	Water	Hardness	APHA 2340 B

Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.

HG-D-CVAA-CL	Water	Dissolved Mercury in Water by CVAAS	APHA 3030B/EPA 1631E (mod)

Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.

HG-T-CVAA-CL	Water	Total Mercury in Water by CVAAS	EPA 1631E (mod)

Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.

MET-D-CCMS-CL	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020A (mod)

Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

MET-T-CCMS-CL	Water	Total Metals in Water by CRC ICPMS	EPA 200.2/6020A (mod)

Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

MTBE-ADD-CL	Water	MTBE - additional to BTEX	EPA 8260C/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. MTBE Target compound concentration is measured using mass spectrometry detection.

NH3-L-F-CL	Water	Ammonia, Total (as N)	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

NO2-L-IC-N-CL	Water	Nitrite in Water by IC (Low Level)	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

NO3-L-IC-N-CL	Water	Nitrate in Water by IC (Low Level)	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

P-T-L-COL-CL	Water	Phosphorus (P)-Total	APHA 4500-P PHOSPHORUS

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorus is determined colourimetrically after persulphate digestion of the sample.

PH/EC/ALK-CL	Water	pH, Conductivity and Total Alkalinity	APHA 4500H,2510,2320

All samples analyzed by this method for pH will have exceeded the 15 minute recommended hold time from time of sampling (field analysis is recommended for pH where highly accurate results are needed)
pH measurement is determined from the activity of the hydrogen ions using a hydrogen electrode and a reference electrode.
Alkalinity measurement is based on the sample's capacity to neutralize acid
Conductivity measurement is based on the sample's capacity to convey an electric current

PO4-DO-L-COL-CL	Water	Orthophosphate-Dissolved (as P)	APHA 4500-P PHOSPHORUS

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter.

SO4-IC-N-CL	Water	Sulfate in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

SOLIDS-TDS-CL	Water	Total Dissolved Solids	APHA 2540 C

A well-mixed sample is filtered through a glass fibre filter paper. The filtrate is then evaporated to dryness in a pre-weighed vial and dried at 180 – 2 °C. The increase in vial weight represents the total dissolved solids (TDS).

TKN-L-F-CL	Water	Total Kjeldahl Nitrogen	APHA 4500-NORG (TKN)

This analysis is carried out using procedures adapted from APHA Method 4500-Norg D. "Block Digestion and Flow Injection Analysis". Total Kjeldahl Nitrogen is determined using block digestion followed by Flow-injection analysis with fluorescence detection.

TSS-CL	Water	Total Suspended Solids	APHA 2540 D-Gravimetric

Reference Information

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total suspended solids (TSS) are determined by filtering a sample through a glass fibre filter, and by drying the filter at 104 deg. C.

TURBIDITY-CL	Water	Turbidity	APHA 2130 B-Nephelometer

This analysis is carried out using procedures adapted from APHA Method 2130 "Turbidity". Turbidity is determined by the nephelometric method.

VOC-HS-MS-CL	Water	VOCs in Water	EPA 8260C/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. VOC Target compound concentrations are measured using mass spectrometry detection.

XYLENES-CALC-CL	Water	Sum of Xylene Isomer Concentrations	CALCULATION

Calculation of Total Xylenes

Total Xylenes is the sum of the concentrations of the ortho, meta, and para Xylene isomers. Results below detection limit (DL) are treated as zero. The DL for Total Xylenes is set to a value no less than the square root of the sum of the squares of the DLs of the individual Xylenes.

** 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
CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA

Chain of Custody Numbers:

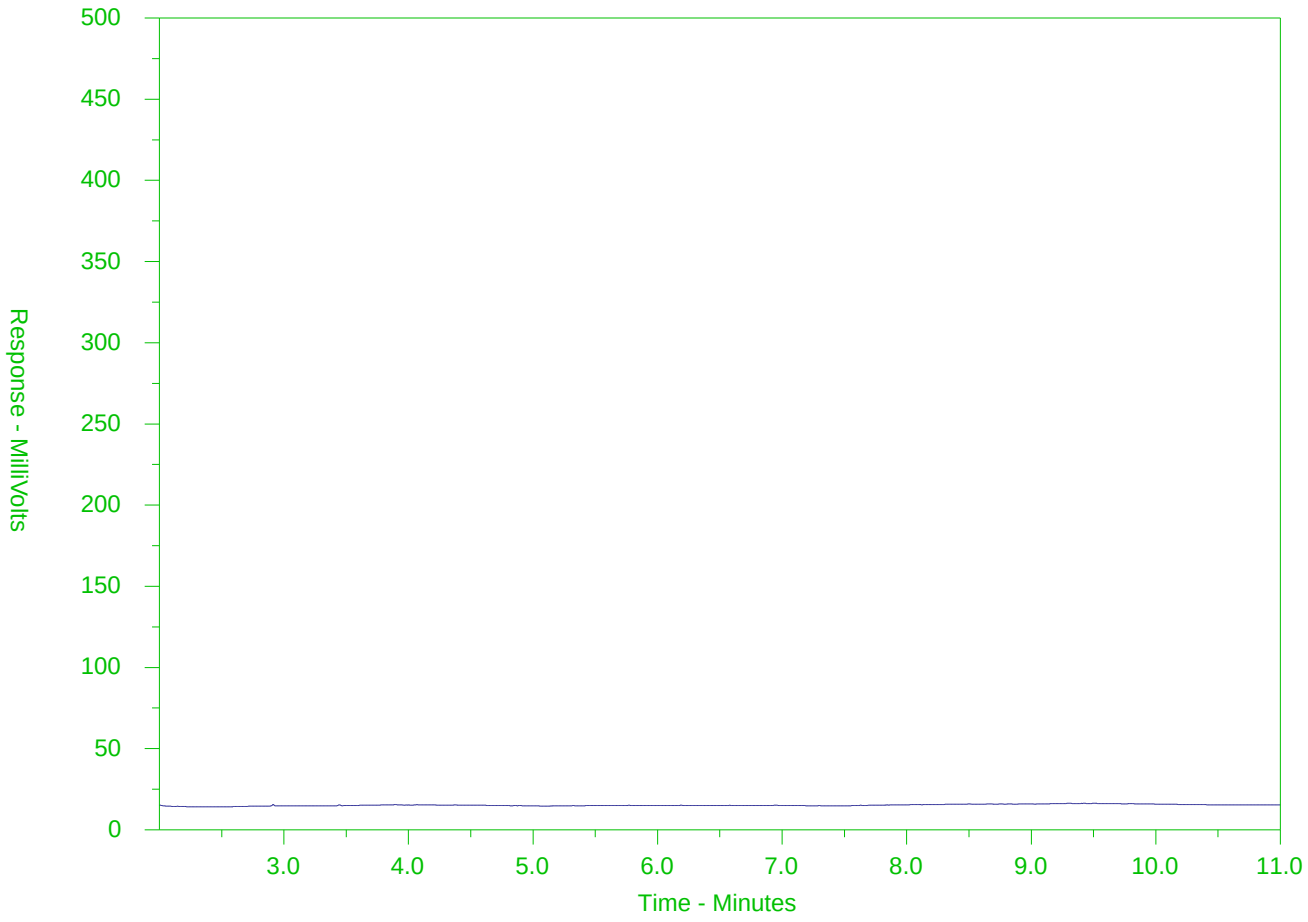
GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.
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-adjusted weight of sample.
mg/L - milligrams per litre.
< - Less than.
D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).
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.

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2594950-1
Client Sample ID: MICH-13.0



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

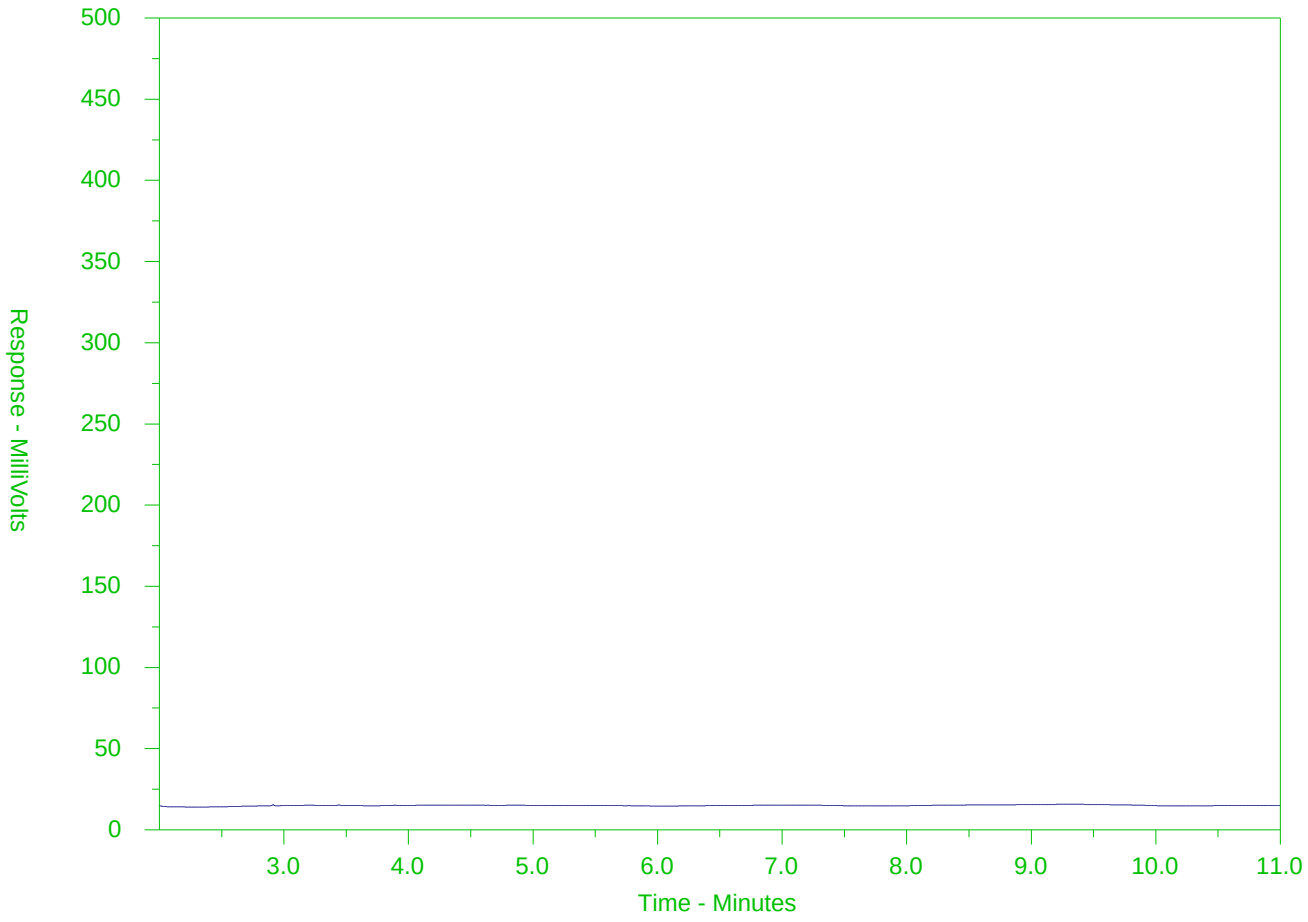
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2594950-2
Client Sample ID: MICH-33.8



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

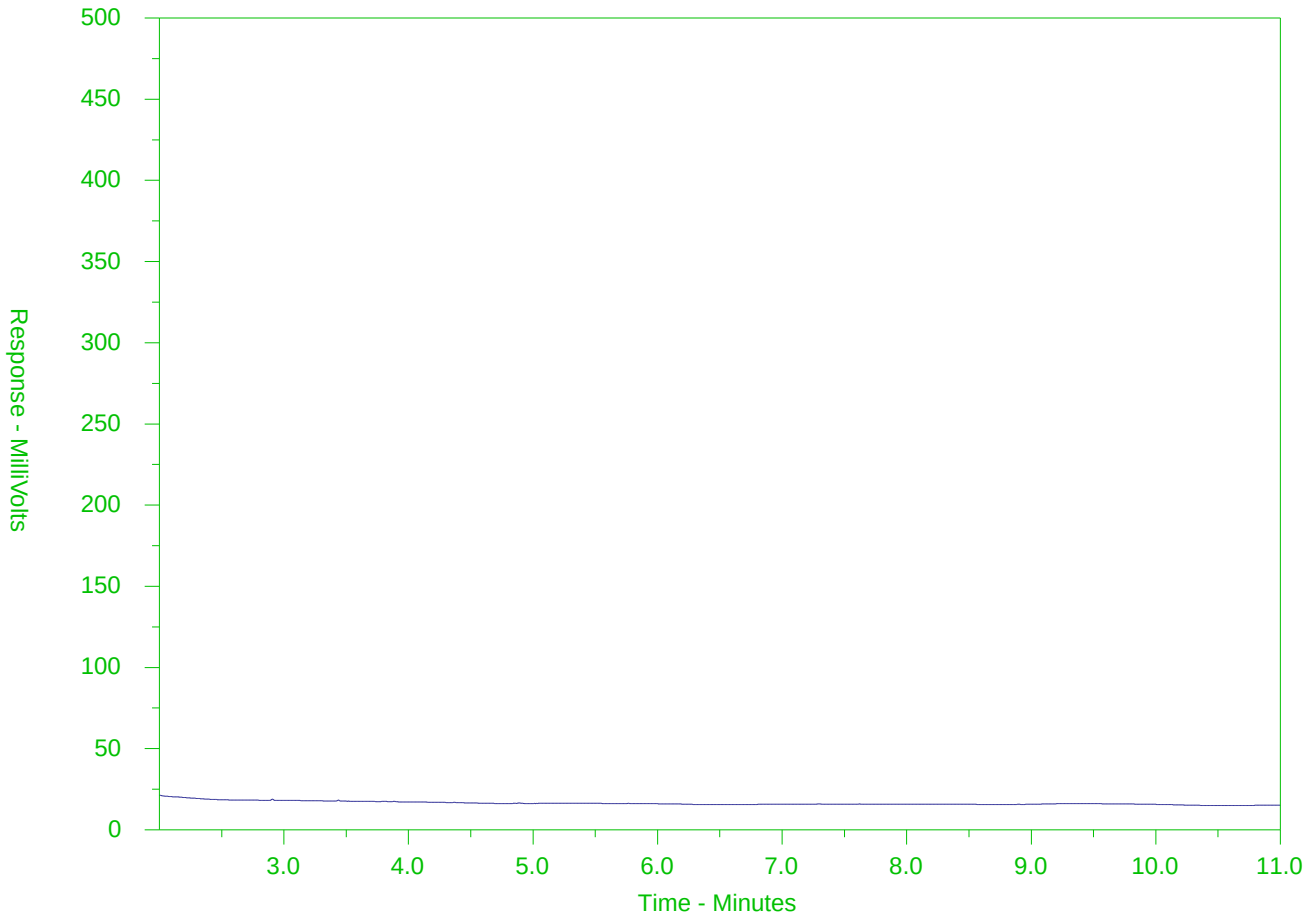
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2594950-3
Client Sample ID: AND 1



← EPH10-19 →	← EPH19-32 →	
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

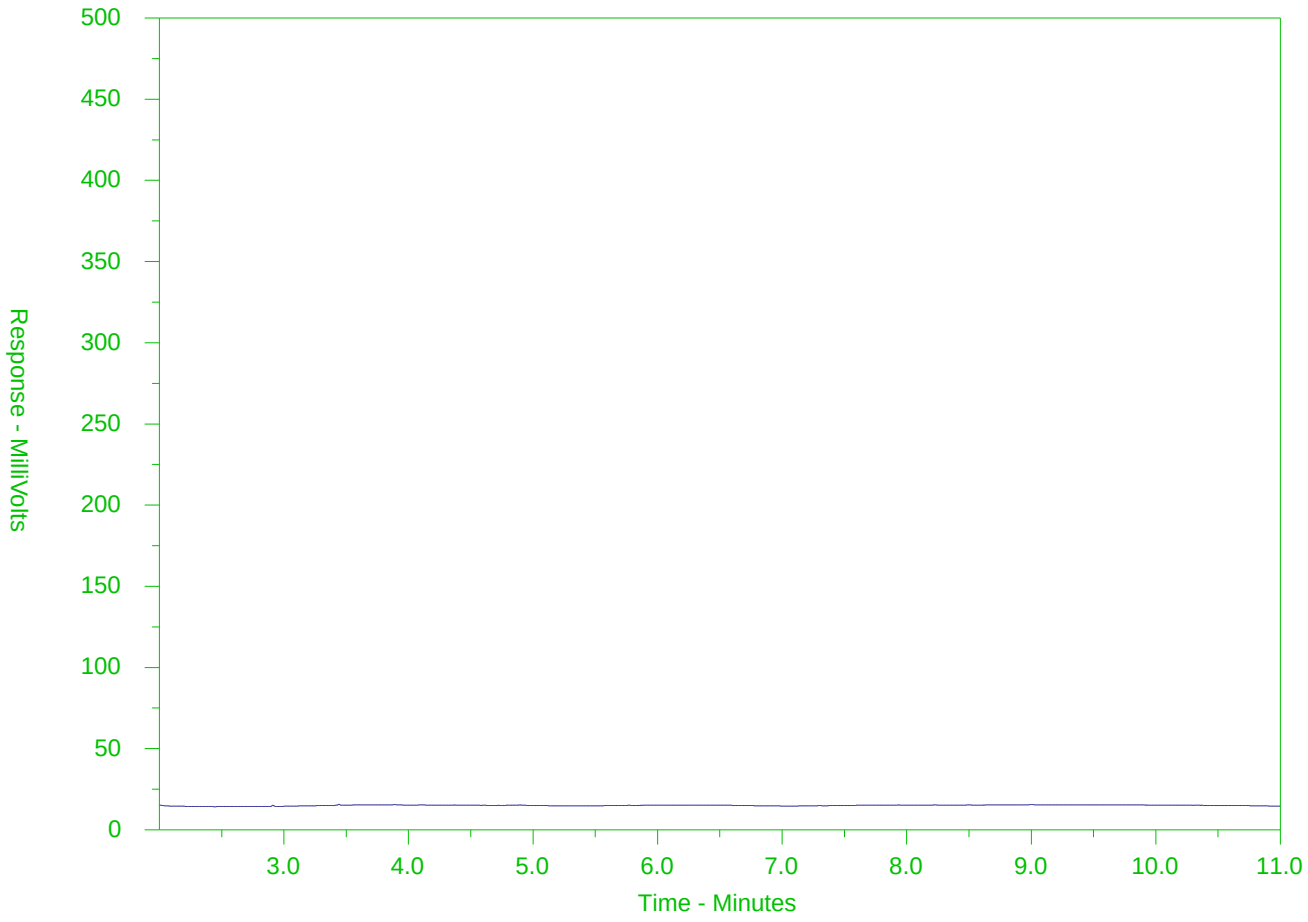
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2594950-4
Client Sample ID: DUPLICATE



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

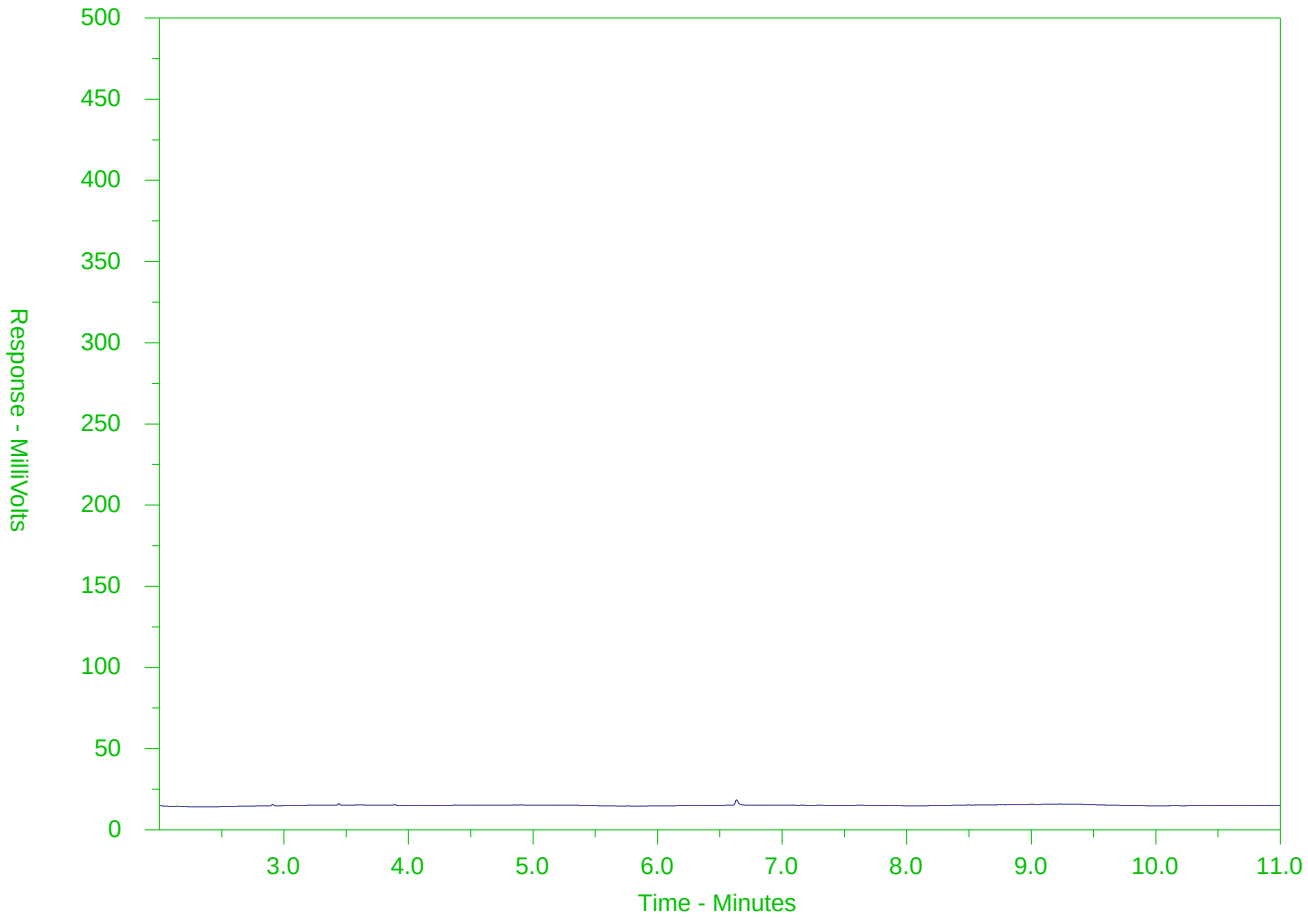
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2594950-5
Client Sample ID: FIELD BLANK



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

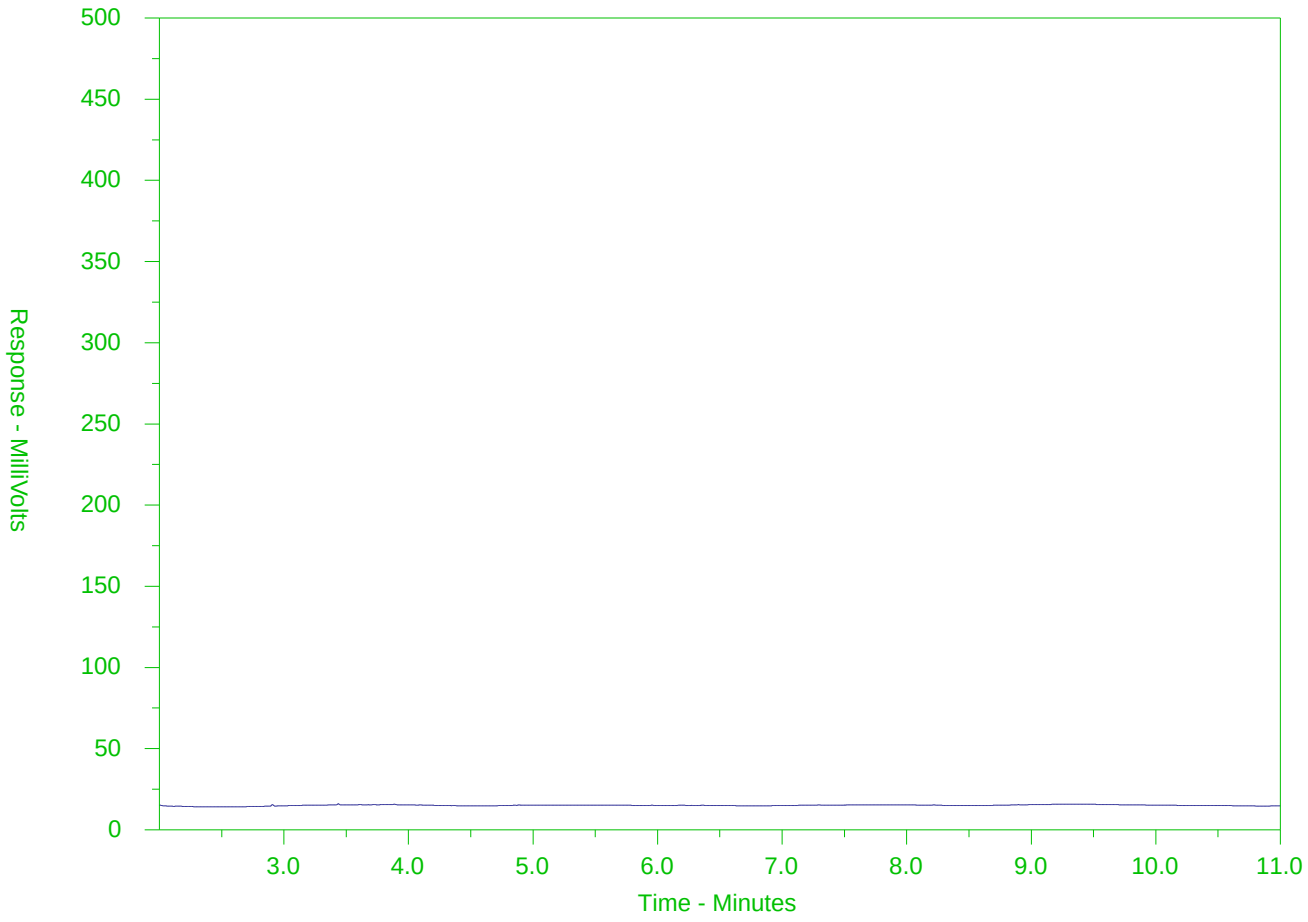
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

BC EPH HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2594950-6
Client Sample ID: MICH-39.1



← EPH10-19 →		← EPH19-32 →
nC10	nC19	nC32
174°C	330°C	467°C
346°F	626°F	873°F
← Gasoline →	← Motor Oils/ Lube Oils/ Grease →	
← Diesel/ Jet Fuels →		

The BC EPH 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 three 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.

A "-L-" in the sample ID denotes a low level sample. A "-S-" denotes a silica gel cleaned sample.

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

L2594950-COFC

Chain of Custody / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

COC # _____

Page 1 of 1

Report To		Report Format / Distribution		Service Requested (Rush for routine analysis subject to availability)
Company:	North Coal Limited	☑ Standard ☐ Other		◉ Regular (Standard Turnaround Times - Business Days)
Contact:		☑ PDF ☑ Excel ☑ Digital ☐ Fax		○ Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT
Address:	#5000 Hwy 43	Email 1: barling@northcoal.ca		○ Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm TAT
	Sparwood, BC, V0B 2G1	Email 2: mike.robinson@lotic.co		○ Same Day or Weekend Emergency - Contact ALS to Confirm TAT
Phone:	Fax:	Email 3: mia.otto@lotic.co		
Invoice To	Same as Report ? ☑ Yes ☐ No	**Client / Project Information**		**Analysis Request**
Hardcopy of Invoice with Report?	☑ Yes ☐ No	Job #: 18CANA02		Please indicate below Filtered, Preserved or both (F, P, F/P)
Company:	Same as Report	PO / AFE:		
Contact:	Same as Report	LSD:		
Address:	Same as Report			
Phone:	Fax:	Quote #: Q75701		
Lab Work Order # (lab use only)		**ALS Contact:** Patryk Wojciak	**Sampler:** Rick Smit	

Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	General	EPH x2	DOC	COD/NH3/TKN/TOC	Total Metals	Dissolved Metals	Dissolved mercury	Total Mercury	VOCx2				Number of Containers
						P		P	P	F/P	P	P	P				
	MICH-13.0	31-05-21	08:30	Surface Water	X	X	X	X	X	X	X	X	X				11
	MICH-33.8	31-05-21	10:20	Surface Water	X	X	X	X	X	X	X	X	X				11
	AND1	31-05-21	11:10	Surface Water	X	X	X	X	X	X	X	X	X				11
	Duplicate	31-05-21	08:30	Surface Water	X	X	X	X	X	X	X	X	X				11
	Field Blank	31-05-21	10:00	Surface Water	X	X	X	X	X	X	X	X	X				11
	MICH-39.1	31-05-21	11:45	Surface Water	X	X	X	X	X	X	X	X	X				11

Special Instructions / Regulations with water or land use (CCME-Freshwater Aquatic Life/BC CSR - Commercial/AB Tier 1 - Natural, etc) / Hazardous Details

Both VOCs and DOC for duplicate not preserved.

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 provided on a separate Excel tab.

Also provided on another Excel tab are the ALS location addresses, phone numbers and sample container / preservation / holding time table for common analyses.

SHIPMENT RELEASE (client use)			SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)			
Released by:	Date (dd-mmm-yy)	Time (hh-mm)	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF
Rick Smit	31-05-21	14:00	DK	6/1	0840	1 °C				