

Client Project #: 20368099-6000-1001 Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

### AT1 BTEX AND F1-F4 IN SOIL (VIALS)

Bureau Veritas ID		AEO150	AEO151	AEO152		AEO153	AEO153		
Sampling Date		2021/08/19	2021/08/19	2021/08/19		2021/08/19	2021/08/19		
Janipinig Date		14:19	14:20	14:27		11:25	11:25		
COC Number		644511-24-01	644511-24-01	644511-24-01		644511-24-01	644511-24-01		
	UNITS	TP21-138-01	TP21-138-03	TP21-138-06	QC Batch	DUPJ	DUPJ Lab-Dup	RDL	QC Batch
Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	130	<10	<10	A335207	<10	N/A	10	A335207
F3 (C16-C34 Hydrocarbons)	mg/kg	300	<50	<50	A335207	<50	N/A	50	A335207
F4 (C34-C50 Hydrocarbons)	mg/kg	99	<50	<50	A335207	<50	N/A	50	A335207
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	A335207	Yes	N/A	N/A	A335207
Physical Properties									
Moisture	%	13	5.3	17	A335210	15	14	0.30	A335214
Volatiles									
Xylenes (Total)	mg/kg	<0.045	<0.045	<0.045	A333395	<0.045	N/A	0.045	A333395
F1 (C6-C10) - BTEX	mg/kg	<10	<10	<10	A333395	<10	N/A	10	A333395
Field Preserved Volatiles	•	•	•	•	•		•	•	-
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	A334575	<0.0050	N/A	0.0050	A334575
Toluene	mg/kg	<0.050	<0.050	<0.050	A334575	0.36	N/A	0.050	A334575
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	A334575	<0.010	N/A	0.010	A334575
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	A334575	<0.040	N/A	0.040	A334575
o-Xylene	mg/kg	<0.020	<0.020	<0.020	A334575	<0.020	N/A	0.020	A334575
F1 (C6-C10)	mg/kg	<10	<10	<10	A334575	<10	N/A	10	A334575
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	94	96	94	A334575	95	N/A	N/A	A334575
4-Bromofluorobenzene (sur.)	%	97	97	97	A334575	99	N/A	N/A	A334575
D10-o-Xylene (sur.)	%	106	104	105	A334575	104	N/A	N/A	A334575
D4-1,2-Dichloroethane (sur.)	%	105	104	102	A334575	106	N/A	N/A	A334575
O-TERPHENYL (sur.)	%	100	89	97	A335207	93	N/A	N/A	A335207
BDI - Banartable Detection Lie	i+					· -		-	

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate



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Sampler Initials: PT

# AT1 BTEX AND F1-F4 IN SOIL (VIALS)

Bureau Veritas ID		AEO183		AEO184	AEO184	AEO185	AEO186		
Sampling Date		2021/08/19		2021/08/19	2021/08/19	2021/08/19	2021/08/19		
Janipinig Date		15:04		15:05	15:05	15:08	09:39		
COC Number		644511-25-01		644511-25-01	644511-25-01	644511-25-01	644511-25-01		
	UNITS	TP21-146-02	QC Batch	TP21-146-03	TP21-146-03 Lab-Dup	TP21-146-05	TP21-114-01	RDL	QC Batch
Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	19	A335377	3700	N/A	<10	32	10	A335377
F3 (C16-C34 Hydrocarbons)	mg/kg	160	A335377	1100	N/A	<50	250	50	A335377
F4 (C34-C50 Hydrocarbons)	mg/kg	55	A335377	130	N/A	<50	<50	50	A335377
Reached Baseline at C50	mg/kg	Yes	A335377	Yes	N/A	Yes	Yes	N/A	A335377
Physical Properties									
Moisture	%	14	A335403	4.6	N/A	5.1	7.6	0.30	A335403
Volatiles									
Xylenes (Total)	mg/kg	<0.045	A333395	<0.045	N/A	<0.045	<0.045	0.045	A333395
F1 (C6-C10) - BTEX	mg/kg	<10	A333395	270	N/A	<10	<10	10	A333395
Field Preserved Volatiles	•	•	•	•	•	•	•	•	•
Benzene	mg/kg	<0.0050	A334575	<0.0050	<0.0050	0.010	<0.0050	0.0050	A334583
Toluene	mg/kg	<0.050	A334575	<0.050	<0.050	<0.050	<0.050	0.050	A334583
Ethylbenzene	mg/kg	<0.010	A334575	<0.010	<0.010	0.020	<0.010	0.010	A334583
m & p-Xylene	mg/kg	<0.040	A334575	<0.040	<0.040	<0.040	<0.040	0.040	A334583
o-Xylene	mg/kg	<0.020	A334575	<0.020	<0.020	0.026	<0.020	0.020	A334583
F1 (C6-C10)	mg/kg	<10	A334575	270	240	<10	<10	10	A334583
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	94	A334575	96	91	92	93	N/A	A334583
4-Bromofluorobenzene (sur.)	%	100	A334575	109	105	101	101	N/A	A334583
D10-o-Xylene (sur.)	%	102	A334575	136	125	119	101	N/A	A334583
D4-1,2-Dichloroethane (sur.)	%	104	A334575	116	113	112	114	N/A	A334583
O-TERPHENYL (sur.)	%	91	A335377	96	N/A	94	95	N/A	A335377
BDI - Banartable Detection Lie	i+					· -	· -	-	

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate



Client Project #: 20368099-6000-1001 Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

### AT1 BTEX AND F1-F4 IN SOIL (VIALS)

Bureau Veritas ID		AEO187		AEO188	AEO189	AEO189		
Campling Date		2021/08/19		2021/08/19	2021/08/19	2021/08/19		
Sampling Date		09:41		09:42	09:57	09:57		
COC Number		644511-25-01		644511-25-01	644511-25-01	644511-25-01		
	UNITS	TP21-114-04	RDL	TP21-114-06	TP21-13-02	TP21-13-02 Lab-Dup	RDL	QC Batch
Ext. Pet. Hydrocarbon								
F2 (C10-C16 Hydrocarbons)	mg/kg	29	10	<10	270	N/A	10	A335377
F3 (C16-C34 Hydrocarbons)	mg/kg	270	50	<50	74	N/A	50	A335377
F4 (C34-C50 Hydrocarbons)	mg/kg	78	50	<50	<50	N/A	50	A335377
Reached Baseline at C50	mg/kg	Yes	N/A	Yes	Yes	N/A	N/A	A335377
Physical Properties								
Moisture	%	40	0.30	12	6.6	6.3	0.30	A335404
Volatiles								
Xylenes (Total)	mg/kg	<0.13	0.13	<0.045	0.12	N/A	0.045	A333395
F1 (C6-C10) - BTEX	mg/kg	<19	19	<10	31	N/A	10	A333395
Field Preserved Volatiles								
Benzene	mg/kg	<0.013 (1)	0.013	<0.0050	<0.0050	N/A	0.0050	A334583
Toluene	mg/kg	0.18 (2)	0.14	<0.050	<0.050	N/A	0.050	A334583
Ethylbenzene	mg/kg	<0.023 (1)	0.023	<0.010	0.014 (3)	N/A	0.010	A334583
m & p-Xylene	mg/kg	<0.12 (2)	0.12	<0.040	0.071	N/A	0.040	A334583
o-Xylene	mg/kg	<0.058 (2)	0.058	<0.020	0.053	N/A	0.020	A334583
F1 (C6-C10)	mg/kg	<19 (1)	19	<10	31	N/A	10	A334583
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	92	N/A	91	92	N/A	N/A	A334583
4-Bromofluorobenzene (sur.)	%	105	N/A	104	102	N/A	N/A	A334583
D10-o-Xylene (sur.)	%	122	N/A	117	117	N/A	N/A	A334583
D4-1,2-Dichloroethane (sur.)	%	113	N/A	111	112	N/A	N/A	A334583
O-TERPHENYL (sur.)	%	95	N/A	92	88	N/A	N/A	A335377

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate

- (1) Detection limit reported based on MDL and sample weight used for analysis.
- (2) Detection limits raised based on sample weight used for analysis.
- (3) Qualifying ion outside of acceptance criteria. Results are tentatively identified and potentially biased high.



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Sampler Initials: PT

### AT1 BTEX AND F1-F4 IN SOIL (VIALS)

Bureau Veritas ID		AEO190		AEO191		AEO192		AEO218		
Sampling Date		2021/08/19		2021/08/19		2021/08/19		2021/08/19		
Sampling Date		09:58		10:02		14:27		10:23		
COC Number		644511-25-01		644511-25-01		644511-25-01		644511-26-01		
	UNITS	TP21-13-03	RDL	TP21-13-05	RDL	DUP K	QC Batch	TP21-18-01	RDL	QC Batch
Ext. Pet. Hydrocarbon										
F2 (C10-C16 Hydrocarbons)	mg/kg	180 (1)	32	140	10	13	A335377	180	10	A335451
F3 (C16-C34 Hydrocarbons)	mg/kg	3100 (1)	160	110	50	<50	A335377	390	50	A335451
F4 (C34-C50 Hydrocarbons)	mg/kg	1100 (1)	160	<50	50	<50	A335377	100	50	A335451
Reached Baseline at C50	mg/kg	No	N/A	Yes	N/A	Yes	A335377	Yes	N/A	A335451
Physical Properties	-	•				•		•	•	-
Moisture	%	69	0.30	21	0.30	9.8	A335403	17	0.30	A335403
Volatiles										
Xylenes (Total)	mg/kg	9.5	0.22	130	0.10	<0.045	A333395	<0.045	0.045	A333395
F1 (C6-C10) - BTEX	mg/kg	<49	49	5600	23	<10	A333395	<10	10	A333395
Field Preserved Volatiles										
Benzene	mg/kg	2.7 (2)	0.024	0.55 (3)	0.011	<0.0050	A334583	<0.0050	0.0050	A334583
Toluene	mg/kg	0.70 (2)	0.24	6.3 (2)	0.11	<0.050	A334583	0.072	0.050	A334583
Ethylbenzene	mg/kg	1.6 (2)	0.049	27 (2)	0.023	<0.010	A334583	<0.010	0.010	A334583
m & p-Xylene	mg/kg	6.3 (2)	0.19	75 (2)	0.090	<0.040	A334583	<0.040	0.040	A334583
o-Xylene	mg/kg	3.2 (2)	0.097	59 (2)	0.045	<0.020	A334583	<0.020	0.020	A334583
F1 (C6-C10)	mg/kg	63 (2)	49	5700 (2)	23	<10	A334583	<10	10	A334583
Surrogate Recovery (%)										
1,4-Difluorobenzene (sur.)	%	92	N/A	92	N/A	92	A334583	88	N/A	A334583
4-Bromofluorobenzene (sur.)	%	102	N/A	94	N/A	102	A334583	101	N/A	A334583
D10-o-Xylene (sur.)	%	118	N/A	127	N/A	118	A334583	109	N/A	A334583
D4-1,2-Dichloroethane (sur.)	%	113	N/A	112	N/A	115	A334583	112	N/A	A334583
O-TERPHENYL (sur.)	%	91	N/A	91	N/A	90	A335377	101	N/A	A335451

RDL = Reportable Detection Limit

- (1) Detection limits raised due to high moisture content, sample contains => 50% moisture.
- (2) Detection limits raised based on sample weight used for analysis.
- (3) Qualifying ion outside of acceptance criteria. Results are tentatively identified and potentially biased high. Detection limits raised based on sample weight used for analysis.



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# AT1 BTEX AND F1-F4 IN SOIL (VIALS)

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Bureau Veritas ID		AEO219	AEO220		AEO221	AEO222	AEO223		
Sampling Date		2021/08/19 10:24	2021/08/19 10:25		2021/08/19 10:36	2021/08/19 10:37	2021/08/19 10:38		
COC Number		644511-26-01	644511-26-01		644511-26-01	644511-26-01	644511-26-01		
	UNITS	TP21-18-03	TP21-18-06	QC Batch	TP21-43-01	TP21-43-03	TP21-43-05	RDL	QC Batch
Ext. Pet. Hydrocarbon		•	•	•	•		•	•	<u> </u>
F2 (C10-C16 Hydrocarbons)	mg/kg	80	<10	A335451	82	150	<10	10	A335377
F3 (C16-C34 Hydrocarbons)	mg/kg	590	<50	A335451	320	330	<50	50	A335377
F4 (C34-C50 Hydrocarbons)	mg/kg	200	<50	A335451	83	96	<50	50	A335377
Reached Baseline at C50	mg/kg	Yes	Yes	A335451	Yes	Yes	Yes	N/A	A335377
Physical Properties									
Moisture	%	25	20	A335403	17	12	15	0.30	A335403
Volatiles									
Xylenes (Total)	mg/kg	0.11	0.55	A333395	<0.045	0.091	<0.045	0.045	A333395
F1 (C6-C10) - BTEX	mg/kg	<10	13	A333395	<10	<10	<10	10	A333395
Field Preserved Volatiles	•								
Benzene	mg/kg	0.78	0.59	A334583	<0.0050	0.0076	<0.0050	0.0050	A334583
Toluene	mg/kg	0.85	<0.050	A334583	<0.050	0.10	<0.050	0.050	A334583
Ethylbenzene	mg/kg	0.037	0.31	A334583	<0.010	0.017	<0.010	0.010	A334583
m & p-Xylene	mg/kg	0.064	0.13	A334583	<0.040	0.063	<0.040	0.040	A334583
o-Xylene	mg/kg	0.046	0.42	A334583	<0.020	0.028	<0.020	0.020	A334583
F1 (C6-C10)	mg/kg	<10	14	A334583	<10	<10	<10	10	A334583
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	90	92	A334583	90	90	92	N/A	A334583
4-Bromofluorobenzene (sur.)	%	101	102	A334583	101	101	101	N/A	A334583
D10-o-Xylene (sur.)	%	119	127	A334583	118	115	115	N/A	A334583
D4-1,2-Dichloroethane (sur.)	%	112	112	A334583	116	115	114	N/A	A334583
O-TERPHENYL (sur.)	%	113	99	A335451	98	102	99	N/A	A335377
RDL = Reportable Detection Lin	mit			· —			·		



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Sampler Initials: PT

# AT1 BTEX AND F1-F4 IN SOIL (VIALS)

Bureau Veritas ID		AEO224	AEO225	AEO226	AEO227		AEO229		
Sampling Date		2021/08/19	2021/08/19	2021/08/19	2021/08/19		2021/08/19		
Janipinig Date		11:04	11:05	11:06	11:07		15:08		
COC Number		644511-26-01	644511-26-01	644511-26-01	644511-26-01		644511-28-01		
	UNITS	TP21-49-02	TP21-49-03	TP21-49-06	TP21-49-05	QC Batch	DUP L	RDL	QC Batch
Ext. Pet. Hydrocarbon		<u> </u>	<u> </u>	<u> </u>	<u> </u>	·	·	<u>-                                    </u>	
F2 (C10-C16 Hydrocarbons)	mg/kg	66	55	11	23	A335451	<10	10	A335377
F3 (C16-C34 Hydrocarbons)	mg/kg	190	160	<50	760	A335451	<50	50	A335377
F4 (C34-C50 Hydrocarbons)	mg/kg	52	50	<50	260	A335451	<50	50	A335377
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes	A335451	Yes	N/A	A335377
Physical Properties									
Moisture	%	17	14	14	37	A335403	5.3	0.30	A335403
Volatiles						•			
Xylenes (Total)	mg/kg	<0.045	<0.045	<0.045	<0.045	A333395	0.049	0.045	A333395
F1 (C6-C10) - BTEX	mg/kg	<10	<10	<10	<10	A333395	<10	10	A333395
Field Preserved Volatiles	•							•	
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	A334583	0.012	0.0050	A334583
Toluene	mg/kg	<0.050	<0.050	<0.050	<0.050	A334583	<0.050	0.050	A334583
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	<0.010	A334583	0.034	0.010	A334583
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	A334583	0.049	0.040	A334583
o-Xylene	mg/kg	<0.020	<0.020	<0.020	<0.020	A334583	<0.020	0.020	A334583
F1 (C6-C10)	mg/kg	<10	<10	<10	<10	A334583	<10	10	A334583
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	92	92	91	90	A334583	92	N/A	A334583
4-Bromofluorobenzene (sur.)	%	104	101	101	104	A334583	105	N/A	A334583
D10-o-Xylene (sur.)	%	125	137	110	121	A334583	114	N/A	A334583
D4-1,2-Dichloroethane (sur.) %		114	115	114	114	A334583	115	N/A	A334583
O-TERPHENYL (sur.)	%	100	105	100	109	A335451	89	N/A	A335377
RDL = Reportable Detection Li	mit	·	·	·	·	·	· ———		
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Sampler Initials: PT

# AT1 BTEX AND F1-F4 IN SOIL (VIALS)

	AEO229								
	2021/08/19								
	15:08								
	644511-28-01								
LINUTC	DUP L	DDI	OC Datab						
UNITS	Lab-Dup	KDL	QC Batch						
mg/kg	<10	10	A335377						
mg/kg	<50	50	A335377						
mg/kg	<50	50	A335377						
mg/kg	Yes	N/A	A335377						
%	89	N/A	A335377						
RDL = Reportable Detection Limit									
Duplica	te								
N/A = Not Applicable									
	mg/kg mg/kg mg/kg	2021/08/19   15:08   644511-28-01   DUP L   Lab-Dup   mg/kg   <10   mg/kg   <50   mg/kg   <50   mg/kg   Yes	2021/08/19   15:08						



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# PETROLEUM HYDROCARBONS (CCME)

Bureau Veritas ID		AEO129		AEO134	AEO134	AEO187		
Sampling Date		2021/08/19 15:35		2021/08/19 11:25	2021/08/19 11:25	2021/08/19 09:41		
COC Number		644511-27-01		644511-27-01	644511-27-01	644511-25-01		
	UNITS	TP21-147-01	QC Batch	TP21-TP19-24-05	TP21-TP19-24-05 Lab-Dup	TP21-114-04	RDL	QC Batch
Ext. Pet. Hydrocarbon								
F3 (C16-C34 Hydrocarbons)	mg/kg	380	A454255	N/A	N/A	N/A	71	A454255
F3A (C16-C22)	mg/kg	<50	A457151	<50	<50	<50	50	A335211
F3B (C22-C34)	mg/kg	380	A457151	<50	<50	230	50	A335211
F2% (BIC)	mg/kg	1.3	A454255	NC	N/A	NC	N/A	A333320
Reached Baseline at C50	mg/kg	N/A	N/A	Yes	Yes	Yes	N/A	A335211
Surrogate Recovery (%)	<u>-</u>	•	•	•		•	-	-
O-TERPHENYL (sur.)	%	84	A457151	N/A	N/A	N/A	N/A	N/A
RDL = Reportable Detection Limit Lab-Dup = Laboratory Initiated Dup N/A = Not Applicable	licate							

	AEO190		AEO222		AEO227		
	2021/08/19 09:58		2021/08/19 10:37		2021/08/19 11:07		
	644511-25-01		644511-26-01		644511-26-01		
UNITS	TP21-13-03	RDL	TP21-43-03	QC Batch	TP21-49-05	RDL	QC Batch
				·		•	
mg/kg	N/A	71	N/A	A454255	760	71	A454259
mg/kg	310 (1)	160	110	A335211	68	50	A457151
mg/kg	2800 (1)	160	220	A335211	690	50	A457151
mg/kg	NC	N/A	NC	A333320	3.2	N/A	A454259
mg/kg	No	N/A	Yes	A335211	N/A	N/A	N/A
mg/kg	13000	500	N/A	A337167	N/A	N/A	N/A
%	N/A	N/A	N/A	N/A	109	N/A	A457151
	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	mg/kg N/A mg/kg 310 (1) mg/kg NC mg/kg NC mg/kg NO mg/kg 13000	2021/08/19 09:58 644511-25-01 UNITS TP21-13-03 RDL  mg/kg N/A 71 mg/kg 310 (1) 160 mg/kg 2800 (1) 160 mg/kg NC N/A mg/kg No N/A mg/kg No N/A	2021/08/19	2021/08/19	2021/08/19	2021/08/19

RDL = Reportable Detection Limit

N/A = Not Applicable

(1) Detection limits raised due to high moisture content, sample contains => 50% moisture.



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Sampler Initials: PT

# **VOLATILE ORGANICS BY GC-MS (SOIL)**

Bureau Veritas ID		AEO131	AEO144		
Sampling Date		2021/08/19	2021/08/19		
Sampling Date		15:10	13:47		
COC Number		644511-27-01	644511-24-01		
	UNITS	TP21-147-05	TP21-136-01	RDL	QC Batch
Volatiles					
Benzene	mg/kg	<0.0050	<0.0050	0.0050	A335767
Toluene	mg/kg	<0.050	<0.050	0.050	A335767
Ethylbenzene	mg/kg	<0.010	<0.010	0.010	A335767
m & p-Xylene	mg/kg	<0.040	<0.040	0.040	A335767
o-Xylene	mg/kg	<0.020	<0.020	0.020	A335767
F1 (C6-C10)	mg/kg	<10	<10	10	A335767
Surrogate Recovery (%)	•				
1,4-Difluorobenzene (sur.)	%	99	98	N/A	A335767
4-Bromofluorobenzene (sur.)	%	97	98	N/A	A335767
D10-o-Xylene (sur.)	%	103	102	N/A	A335767
D4-1,2-Dichloroethane (sur.)	%	116	115	N/A	A335767
RDL = Reportable Detection Li	nit			•	
N/A = Not Applicable					



Client Project #: 20368099-6000-1001 Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

### **GENERAL COMMENTS**

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	5.7°C
Package 2	4.0°C
Package 3	7.3°C
Package 4	5.0°C
Package 5	7.0°C

Version #2: Report reissued to include results for F3A/F3B/Chromatogram on samples listed below as per client request received 2021/12/16.

TP21-49-05/AEO227 TP21-147-01/AEO129

#### HYDROCARBON RESEMBLANCE

The reported hydrocarbon resemblance was obtained by visual comparison of the sample chromatogram with a library of reference product chromatograms. Since variables such as the degree and type of weathering and the presence of non-petrogenic hydrocarbons cannot be duplicated in reference spectra, the resemblance information must be regarded as approximate and qualitative and as such, Bureau Veritas Laboratories can assume no liability for any conclusions drawn from these data.

Sample AEO129 [TP21-147-01]: The CCME F2-F4 chromatographic peak profile is consistent with a lubricating oil product (e.g. motor oil). Chromatograms of soils contaminated by heavier petroleum hydrocarbons (lubricating oils, crude oils, etc.) are typically characterized by one or more unresolved complex mixtures (UCMs or "humps"), eluting in the F3 (C16-C34), F4 (C34-C50) and sometimes greater than F4 (C50+) hydrocarbon ranges.

Sample AEO131 [TP21-147-05]: Sample received was not in compliance with CCME sampling requirements for VOC/BTEX/F1 in soil.

Sample AEO144 [TP21-136-01]: Sample received was not in compliance with CCME sampling requirements for VOC/BTEX/F1 in soil.

Results relate only to the items tested.



Client Project #: 20368099-6000-1001 Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

# **QUALITY ASSURANCE REPORT**

QA/QC								
Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
A334567	JNG	Matrix Spike	1,4-Difluorobenzene (sur.)	2021/08/30		95	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/08/30		100	%	50 - 140
			D10-o-Xylene (sur.)	2021/08/30		107	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/30		105	%	50 - 140
			Benzene	2021/08/30		87	%	50 - 140
			Toluene	2021/08/30		94	%	50 - 140
			Ethylbenzene	2021/08/30		98	%	50 - 140
			m & p-Xylene	2021/08/30		93	%	50 - 140
			o-Xylene	2021/08/30		89	%	50 - 140
			F1 (C6-C10)	2021/08/30		104	%	60 - 140
A334567	JNG	Spiked Blank	1,4-Difluorobenzene (sur.)	2021/08/30		82	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/08/30		88	%	50 - 140
			D10-o-Xylene (sur.)	2021/08/30		92	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/30		99	%	50 - 140
			Benzene	2021/08/30		74	%	60 - 130
			Toluene	2021/08/30		82	%	60 - 130
			Ethylbenzene	2021/08/30		81	%	60 - 130
			m & p-Xylene	2021/08/30		80	%	60 - 130
			o-Xylene	2021/08/30		70	%	60 - 130
			F1 (C6-C10)	2021/08/30		107	%	60 - 140
A334567	JNG	Method Blank	1,4-Difluorobenzene (sur.)	2021/08/30		93	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/08/30		99	%	50 - 140
			D10-o-Xylene (sur.)	2021/08/30		97	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/30		107	%	50 - 140
			Benzene	2021/08/30	<0.0050		mg/kg	
			Toluene	2021/08/30	<0.050		mg/kg	
			Ethylbenzene	2021/08/30	< 0.010		mg/kg	
			m & p-Xylene	2021/08/30	< 0.040		mg/kg	
			o-Xylene	2021/08/30	<0.020		mg/kg	
			F1 (C6-C10)	2021/08/30	<10		mg/kg	
A334567	JNG	RPD	Benzene	2021/08/30	NC		%	50
			Toluene	2021/08/30	NC		%	50
			Ethylbenzene	2021/08/30	NC		%	50
			m & p-Xylene	2021/08/30	NC		%	50
			o-Xylene	2021/08/30	NC		%	50
			F1 (C6-C10)	2021/08/30	NC		%	30
A334575	RSU	Matrix Spike [AEO130-02]	1,4-Difluorobenzene (sur.)	2021/08/30		97	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/08/30		98	%	50 - 140
			D10-o-Xylene (sur.)	2021/08/30		118	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/30		102	%	50 - 140
			Benzene	2021/08/30		104	%	50 - 140
			Toluene	2021/08/30		107	%	50 - 140
			Ethylbenzene	2021/08/30		109	%	50 - 140
			m & p-Xylene	2021/08/30		112	%	50 - 140
			o-Xylene	2021/08/30		112	%	50 - 140
			F1 (C6-C10)	2021/08/30		76	%	60 - 140
A334575	RSU	Spiked Blank	1,4-Difluorobenzene (sur.)	2021/08/30		94	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/08/30		98	%	50 - 140
			D10-o-Xylene (sur.)	2021/08/30		91	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/30		107	%	50 - 140
			Benzene	2021/08/30		87	%	60 - 130
			Toluene	2021/08/30		91	%	60 - 130
			Ethylbenzene	2021/08/30		91	%	60 - 130



Client Project #: 20368099-6000-1001 Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

# QUALITY ASSURANCE REPORT(CONT'D)

QA/QC								
Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			m & p-Xylene	2021/08/30		92	%	60 - 130
			o-Xylene	2021/08/30		86	%	60 - 130
			F1 (C6-C10)	2021/08/30		90	%	60 - 140
A334575	RSU	Method Blank	1,4-Difluorobenzene (sur.)	2021/08/30		94	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/08/30		99	%	50 - 140
			D10-o-Xylene (sur.)	2021/08/30		101	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/30		101	%	50 - 140
			Benzene	2021/08/30	<0.0050		mg/kg	
			Toluene	2021/08/30	<0.050		mg/kg	
			Ethylbenzene	2021/08/30	<0.010		mg/kg	
			m & p-Xylene	2021/08/30	<0.040		mg/kg	
			o-Xylene	2021/08/30	<0.020		mg/kg	
			F1 (C6-C10)	2021/08/30	<10		mg/kg	
A334575	RSU	RPD [AEO130-02]	Benzene	2021/08/30	NC		%	50
			Toluene	2021/08/30	NC		%	50
			Ethylbenzene	2021/08/30	NC		%	50
			m & p-Xylene	2021/08/30	NC		%	50
			o-Xylene	2021/08/30	NC		%	50
			F1 (C6-C10)	2021/08/30	NC		%	30
A334583	DO1	Matrix Spike [AEO184-02]	1,4-Difluorobenzene (sur.)	2021/08/30		92	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/08/30		102	%	50 - 140
			D10-o-Xylene (sur.)	2021/08/30		130	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/30		115	%	50 - 140
			Benzene	2021/08/30		97	%	50 - 140
			Toluene	2021/08/30		105	%	50 - 140
			Ethylbenzene	2021/08/30		108	%	50 - 140
			m & p-Xylene	2021/08/30		103	%	50 - 140
			o-Xylene	2021/08/30		98	%	50 - 140
			F1 (C6-C10)	2021/08/30		102	%	60 - 140
A334583	DO1	Spiked Blank	1,4-Difluorobenzene (sur.)	2021/08/30		83	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/08/30		96	%	50 - 140
			D10-o-Xylene (sur.)	2021/08/30		103	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/30		107	%	50 - 140
			Benzene	2021/08/30		81	%	60 - 130
			Toluene	2021/08/30		92	%	60 - 130
			Ethylbenzene	2021/08/30		91	%	60 - 130
			m & p-Xylene	2021/08/30		89	%	60 - 130
			o-Xylene	2021/08/30		79	%	60 - 130
			F1 (C6-C10)	2021/08/30		105	%	60 - 140
A334583	DO1	Method Blank	1,4-Difluorobenzene (sur.)	2021/08/30		93	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/08/30		104	%	50 - 140
			D10-o-Xylene (sur.)	2021/08/30		103	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/30		113	%	50 - 140
			Benzene	2021/08/30	<0.0050		mg/kg	
			Toluene	2021/08/30	<0.050		mg/kg	
			Ethylbenzene	2021/08/30	<0.010		mg/kg	
			m & p-Xylene	2021/08/30	< 0.040		mg/kg	
			o-Xylene	2021/08/30	<0.020		mg/kg	
			F1 (C6-C10)	2021/08/30	<10		mg/kg	
A334583	DO1	RPD [AEO184-02]	Benzene	2021/08/30	NC		///g/kg %	50
	501	111 D [ALO10+02]	Toluene	2021/08/30	NC		%	50
			Ethylbenzene	2021/08/30	NC		%	50
			m & p-Xylene	2021/08/30	NC		%	50



Client Project #: 20368099-6000-1001 Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

# QUALITY ASSURANCE REPORT(CONT'D)

QA/QC								
Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
		••	o-Xylene	2021/08/30	NC	•	%	50
			F1 (C6-C10)	2021/08/30	11		%	30
A335207	GG3	Matrix Spike [AEO134-01]	O-TERPHENYL (sur.)	2021/08/30		98	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/30		84	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/08/30		97	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/08/30		95	%	60 - 140
A335207	GG3	Spiked Blank	O-TERPHENYL (sur.)	2021/08/30		101	%	60 - 140
		·	F2 (C10-C16 Hydrocarbons)	2021/08/30		93	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/08/30		102	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/08/30		98	%	60 - 140
A335207	GG3	Method Blank	O-TERPHENYL (sur.)	2021/08/30		105	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/30	<10		mg/kg	
			F3 (C16-C34 Hydrocarbons)	2021/08/30	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2021/08/30	<50		mg/kg	
A335207	GG3	RPD [AEO134-01]	F2 (C10-C16 Hydrocarbons)	2021/08/31	NC		%	40
			F3 (C16-C34 Hydrocarbons)	2021/08/31	NC		%	40
			F4 (C34-C50 Hydrocarbons)	2021/08/31	NC		%	40
A335210	SNA	Method Blank	Moisture	2021/08/29	<0.30		%	
A335210	SNA	RPD [AEO133-01]	Moisture	2021/08/29	10		%	20
A335211	GG3	Matrix Spike [AEO134-01]	F3A (C16-C22)	2021/08/30		89	%	60 - 140
		, .,	F3B (C22-C34)	2021/08/30		88	%	60 - 140
A335211	GG3	Spiked Blank	F3A (C16-C22)	2021/08/30		95	%	60 - 140
			F3B (C22-C34)	2021/08/30		93	%	60 - 140
A335211	GG3	Method Blank	F3A (C16-C22)	2021/08/30	<50		mg/kg	
			F3B (C22-C34)	2021/08/30	<50		mg/kg	
A335211	GG3	RPD [AEO134-01]	F3A (C16-C22)	2021/08/30	NC		%	40
	000	5 [2010 . 01]	F3B (C22-C34)	2021/08/30	NC		%	40
A335214	RIL	Method Blank	Moisture	2021/08/29	<0.30		%	
A335214	RIL	RPD [AEO153-01]	Moisture	2021/08/29	6.8		%	20
A335377	GG3	Matrix Spike [AEO229-01]	O-TERPHENYL (sur.)	2021/08/30	0.0	103	%	60 - 140
	000		F2 (C10-C16 Hydrocarbons)	2021/08/30		85	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/08/30		84	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/08/30		88	%	60 - 140
A335377	GG3	Spiked Blank	O-TERPHENYL (sur.)	2021/08/30		113	%	60 - 140
	000	opined sidin	F2 (C10-C16 Hydrocarbons)	2021/08/30		95	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/08/30		93	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/08/30		96	%	60 - 140
A335377	GG3	Method Blank	O-TERPHENYL (sur.)	2021/08/30		98	%	60 - 140
7.000077	005	Wethod Blank	F2 (C10-C16 Hydrocarbons)	2021/08/30	<10	30	mg/kg	00 110
			F3 (C16-C34 Hydrocarbons)	2021/08/30	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2021/08/30	<50		mg/kg	
A335377	GG3	RPD [AEO229-01]	F2 (C10-C16 Hydrocarbons)	2021/08/30	NC		%	40
A333311	005	11 D [ALO225 01]	F3 (C16-C34 Hydrocarbons)	2021/08/30	NC		%	40
			F4 (C34-C50 Hydrocarbons)	2021/08/30	NC		%	40
A335403	SVI	Method Blank	Moisture	2021/08/30	<0.30		%	40
A335403	SVI	RPD	Moisture	2021/08/30	9.1		%	20
A335403	SVI	Method Blank	Moisture	2021/08/30	<0.30		% %	20
A335404 A335404	SVI	RPD [AEO189-01]	Moisture	2021/08/30	<0.30 4.7		% %	20
A335404 A335451		Matrix Spike			4./	101		
A333451	EC0	ічантх эріке	O-TERPHENYL (sur.)	2021/08/31		101	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/31		97 105	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/08/31		105	%	60 - 140
A 2 2 5 4 5 4	F.C.2	Called District	F4 (C34-C50 Hydrocarbons)	2021/08/31		106	%	60 - 140
A335451	EC0	Spiked Blank	O-TERPHENYL (sur.)	2021/08/31		96	%	60 - 140



Client Project #: 20368099-6000-1001

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Sampler Initials: PT

# QUALITY ASSURANCE REPORT(CONT'D)

QA/QC								
Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			F2 (C10-C16 Hydrocarbons)	2021/08/31		93	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/08/31		99	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/08/31		99	%	60 - 140
A335451	EC0	Method Blank	O-TERPHENYL (sur.)	2021/08/31		103	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/31	<10		mg/kg	
			F3 (C16-C34 Hydrocarbons)	2021/08/31	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2021/08/31	<50		mg/kg	
A335451	EC0	RPD	F2 (C10-C16 Hydrocarbons)	2021/08/31	10		%	40
			F3 (C16-C34 Hydrocarbons)	2021/08/31	10		%	40
			F4 (C34-C50 Hydrocarbons)	2021/08/31	8.9		%	40
A335767	DO1	Matrix Spike	1,4-Difluorobenzene (sur.)	2021/08/30		96	%	50 - 140
		,	4-Bromofluorobenzene (sur.)	2021/08/30		99	%	50 - 140
			D10-o-Xylene (sur.)	2021/08/30		104	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/30		115	%	50 - 140
			Benzene	2021/08/30		109	%	50 - 140
			Toluene	2021/08/30		106	%	50 - 140
			Ethylbenzene	2021/08/30		109	%	50 - 140
			m & p-Xylene	2021/08/30		108	%	50 - 140
			o-Xylene	2021/08/30		107	%	50 - 140
			F1 (C6-C10)	2021/08/30		82	%	60 - 140
A335767	DO1	Spiked Blank	1,4-Difluorobenzene (sur.)	2021/08/30		96	%	50 - 140
		-r	4-Bromofluorobenzene (sur.)	2021/08/30		97	%	50 - 140
			D10-o-Xylene (sur.)	2021/08/30		97	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/30		119	%	50 - 140
			Benzene	2021/08/30		98	%	60 - 130
			Toluene	2021/08/30		98	%	60 - 130
			Ethylbenzene	2021/08/30		99	%	60 - 130
			m & p-Xylene	2021/08/30		97	%	60 - 130
			o-Xylene	2021/08/30		89	%	60 - 130
			F1 (C6-C10)	2021/08/30		109	%	60 - 140
A335767	DO1	Method Blank	1,4-Difluorobenzene (sur.)	2021/08/30		100	%	50 - 140
, 1333707	501	Weemod Blank	4-Bromofluorobenzene (sur.)	2021/08/30		99	%	50 - 140
			D10-o-Xylene (sur.)	2021/08/30		99	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/30		116	%	50 - 140
			Benzene	2021/08/30	<0.0050		mg/kg	50 1.0
			Toluene	2021/08/30	<0.050		mg/kg	
			Ethylbenzene	2021/08/30	<0.010		mg/kg	
			m & p-Xylene	2021/08/30	<0.040		mg/kg	
			o-Xylene	2021/08/30	<0.020		mg/kg	
			F1 (C6-C10)	2021/08/30	<10		mg/kg	
A335767	DO1	RPD	Benzene	2021/08/30	NC		///g/ Kg %	50
A333707	DOI	III D	Toluene	2021/08/30	NC		%	50
			Ethylbenzene	2021/08/30	NC		%	50
			m & p-Xylene	2021/08/30	NC		%	50
			o-Xylene	2021/08/30	NC		%	50
			F1 (C6-C10)	2021/08/30	NC		%	40
A337167	JB9	Spiked Blank	F4G-SG (Heavy Hydrocarbons-Grav.)	2021/08/30	IVC	109	% %	60 - 140
A337167 A337167	JB9	Method Blank	F4G-SG (Heavy Hydrocarbons-Grav.)	2021/08/31	<500	103	mg/kg	00 - 140
A337167 A457151	MHF	Spiked Blank	O-TERPHENYL (sur.)	2021/08/31	<b>\</b> 300	106	111g/kg %	60 - 140
V47\T2T	ıVI∏F	Shiven Diglik	F3A (C16-C22)	2021/08/24		106	% %	60 - 140
								60 - 140
Λ <i>Λ</i> Ε71Γ1	<b>LALIE</b>	Mothod Blank	F3B (C22-C34)	2021/08/24		112	%	
A457151	MHF	Method Blank	O-TERPHENYL (sur.)	2021/08/24	<b>~</b> FO	103	% ma/ka	60 - 140
			F3A (C16-C22)	2021/08/24	<50		mg/kg	



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Sampler Initials: PT

### QUALITY ASSURANCE REPORT(CONT'D)

QA/QC								
Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			F3B (C22-C34)	2021/08/24	<50		mg/kg	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).



Client Project #: 20368099-6000-1001 Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

### **VALIDATION SIGNATURE PAGE**

The analytical data and all QC contained in this report were reviewed and validated by:

Cita
Gita Pokhrel, Laboratory Supervisor
Junzhi Gas
Janet Gao, B.Sc., QP, Supervisor, Organics
l stywershovs20-
Luba Shymushovska, B.Sc., QP, Senior Analyst, Organics
Mercicafelk

Veronica Falk, B.Sc., P.Chem., QP, Scientific Specialist, Organics

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.





# ADDITIONAL COOLER TEMPERATURE RECORD

CHAIN-OF-CUSTODY RECORD

CHAIN OF CUSTODY #	COOLER OBSERV	ATION	S:					MAXXAM JOB#:	***************************************		COLA STRUCTURE	everonicie se	i a	
е	CUSTODY SEAL	YES	NO	COOLER	RID	-		CUSTODY SEAL	The same	7				
of	PRESENT	1	-			1		d formation	YES	NO	COOLER	ID		
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of	ICE PRESENT	1	-	-	IT	1 9	13	INTACT	4	- Incomment	TEMP	9	1	56
e	CUSTODY SEAL	YES	NO	COOLER	ND +	1	1 3	ICE PRESENT	-	-	1	1	2	3
of	PRESENT	1	1	COULE	1	N.	77	CUSTODY SEAL	YES	NO	COOLER	ID		-
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	CUSTODY SEAL	YES	NO	COOLER	ID I	2		ICE PRESENT		C. CASSES		1	2	E- 1
of	PRESENT	1	110	COOLER	1	N .	-	CUSTODY SEAL	YES	NO	COOLER	D		
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	CUSTODY SEAL	V.	-		1	2	3	ICE PRESENT				1	2	3
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of	CUSTODY SEAL :	YES	NO	COOLER IE	)			CUSTODY SEAL	YES	NO B	COOLER ID	-	The same of	-
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of	INTACT			TEMP		II.	1	INTACT			TEMP	- Carrier	100	
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	RECEIVED BY (SIG	N & P	RINT	)			Water Bridger	DATE (YY	YY/M	M/Dr	01 1-	TIME (H	Hilana	APPENDICTOR OF THE PARTY OF THE
	NOTALLA		THE REAL PROPERTY.	1		1	7	Dritt (II	. 1/141	141/ 171	-)	HALL (F	TTIVITY	)
	NATAJHA	VICI	19		A	1	Flor	2021	100	2/9	24	10	:5	0



# ADDITIONAL COOLER TEMPERATURE RECORD

### CHAIN-OF-CUSTODY RECORD

PRESENT  INTACT ICE PRESENT  CUSTODY SEAL  CUST	YES YES YES YES YES YES	NO NO	TEMP COOLER ID TEMP COOLER ID TEMP	7. 5.	(2) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4	3 4 7	CUSTODY SEAL  PRESENT  ICE PRESENT  CUSTODY SEAL  PRESENT  CUSTODY SEAL  PRESENT  ICE PRESENT  CUSTODY SEAL  CUSTODY SEAL  CUSTODY SEAL  CUSTODY SEAL  CUSTODY SEAL  CUSTODY SEAL	YES YES	NO NO	TEMP COOLER IC TEMP COOLER IC	1	2	3
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CUSTODY SEAL PRESENT INTACT ICE PRESENT CUSTODY SEAL	YES YES YES YES YES	ON	TEMP COOLER ID	2	(2) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4	3 // <sub>3</sub> 7 3	ICE PRESENT CUSTODY SEAL PRESENT INTACT ICE PRESENT CUSTODY SEAL PRESENT ICE PRESENT CUSTODY SEAL CUSTODY SEAL	YES	NO	COOLER IC	1		
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	163	NU	COOLER D	-	-			YES	NO	COOLER ID			
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(A)		Bureau Veritas Laboratories 4000 19st N.E. Calgary, Alberta Ca	anada T2E 6P8	8 Tel:(403) 291-3	1077 Toll-free:800-56	3-6266 Fax:(	403) 29	11-9468 ·v	ww bylabs i	com	10	)   -	7	-	7		C	HAIN C	of CUSTODY RECORD	Page of
AXERDOASI		INVOICE TO:		1		REPOR	TTO:							PROJECT	INFORMA	TION:			Laboratory Use	Only:
	#254 GOLDE	ER ASSOCIATES LTD.		Company Nar	#6340 GO			TES L	TD.			Quotation#		C0048	)				BV Labs Job #:	Bottle Order #:
Company Name	ACCOUNTS F			Attention.	Aurelie Bela	CONTRACTOR COLUMN						P.O.#:		203680	99-7000	-1001	20 Mari		C162608	
Attention	2800, 700 -2nd			Address	2800, 700 -2	2nd Street	SW					Project.		203680	99-6000	-1001			(162500	644511
Address:	CALGARY AB			- Nadioco.	CALGARY	AB T2P 2V	V2					Project Name	r.	-					COC #:	Project Manager:
Tei	(905) 567-610		-5606	Tel.	(403) 299-5	600		Fax:				Site #:								Carmen McKay
Email:	canadaaccour	ntspayableinvoices@golder.com	m	Email:	abellavance	e@golder.	com					Sampled By:							C#644511-27-01	
		The second of th	1	Speci	al Instructions					ANA	LYSIS R	EQUESTED	(PLEASE	BE SPECI	FIC)	V			Turnaround Time (TAT) R	equired:
Regulatory Cri  ATI  CCMI	E						Fittered ? ( Y / N )	Regulated Metals - Soils	and F1-F4 in Soil	BIC SCALE Analysis (F2/F2+F3B) in soil	Sulphate / nitrate	ICP using Fusion (True Barium)	CCME BTEX and F1-F2 in Water	ater	Regulated Metals (CCME/AT1) - Dissolved	PAH in Water by GC/MS	Sample	(will be a Standard Please no details	Please provide advance notice for (Standard) TAT: pplied if Rush TAT is not specified): ITAT = 5-7 Working days for most lests. ote: Standard TAT for certain lests are > 5 days ciffic Rush TAT (if applies to entire submiss quired.	- contact your Project Manager for
reconnected over the production of							Field	egula	(Vials)	CALE 2+F3	ate /	Barium on Extraction	BTE	Routine Water	ated	eW n	d Sa	Rush Cont	firmation Number	(call lab for #)
7	AMPLES MUST BE	REPECCOL ( = 1000) FROM TIME OF	SAMPLING U	INTIL DELIVERY	TO BV LABS		Metals		als)	C SI	lphs	riun	ME	l if	guli	-= -=	Limited	# of Bottle		
1	е Ваковы і авы	Sample (Lucation) identification		Date Sampled	Time Sampled	Matrix	Me	*	37	B (F)	Su	E B	SS	8	Re d	Ρ	: <u>`</u>		Confinen	ils.
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NA				(Holla)	1538	2010			1									3		
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3	<u>}</u>	1721-144-06	)		1540							+		-					Received in	Yellowknife
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		110 / IEII OI			1525		-		V									7	Temp:	7
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-	RELINQUISHED BY		Date: (YY/NiM/				D BY:	(Signatu		110		Date: (YY/M	M/DD)	Time	-	rs used and submitted		Sensitive	Laboratory Use Only Temperature (°C) on Receipt	Custody Seal Intact on Cooler?
A	12.		100/						RUCI		-						[		ACTA	Yes No
* IT IS THE RESPO	M/TERMS-AND-CONDIT NSIBILITY OF THE REL	RITING, WORK SUBMITTED ON THIS CHAIN I TIONS. INQUISHER TO ENSURE THE ACCURACY OF S AFTER SAMPLE RECEIPT, FOR SPECIAL RI	F THE CHAIN OF	F CUSTODY RECOR	D. AN INCOMPLETE CH							MENT IS ACK	NOWLEDG	MENT AND A	CCEPTANC	E OF OUR TE	ERMS WHIC	H ARE AVA	ILABLE FOR VIEWING AT	White BV Labs Yellow Client

HERUER SKAUN

Bureau Veritas Laboratories 4000 19st N.E., Calgary. Alberta Canada T2E 6P8 Tel.(403) 291-3077 Toll-free:800-563-6266 Fax:(403) 291-9468 www.bvlabs.com

### CHAIN OF CUSTODY RECORD

Page	of
1	10
d	015

VERITAS																				
		INVOICE TO:				REPORT	TO:						F	PROJECT	INFORMA	TION:			Laboratory Use	
Company Name:	#254 GOLDE	R ASSOCIATES LTD.		Company Na	me: #6340 GC	LDER ASS	OCI	ATES L	TD.			uotation#		C00480					BV Labs Job #:	Bottle Order #:
Attention:	ACCOUNTS P	AYABLE		Attention:	Aurelie Bela	avance					P	.O. #:		203680	99-7000	-1001			2162508	
	2800, 700 -2nd	Street SW		Address:	2800, 700 -						P	roject:		203680	99-6000	-1001		-		644511
	CALGARY AB				CALGARY	Section Section Penning	12				P	roject Name	91						COC #:	Project Manager:
		Ext: 1167 Fax: (403)		Tel:	(403) 299-5			Fax:			s	ite#:								Carmen McKay
Email:	canadaaccoun	tspayableinvoices@golde	r.com	Email:	abellavano	e@golder.c	com				S	ampled By:							C#644511-24-01	
Regulatory Crit	eria:			Spec	ial Instructions					ANA	LYSIS RE	QUESTED	(PLEASE I	BE SPECIF	IC)				Turnaround Time (TAT) Re	The same of the sa
								(0	İ						£		0	Daniel of C	Please provide advance notice for Standard) TAT:	rush projects
ATI			ŀ				Î	Soils	Soil			Fusion um)	.⊑		(CCME/AT1)	escari.			olied if Rush TAT is not specified):	
CCME							Y/N)	1	.⊑			Fus m)	F1-F2		CME	(MS		Standard 7	TAT = 5-7 Working days for most tests	
			}				5 (	Metals	F1-F4	Sis		using Fusi e Barium)	丘		0)	PAH in Water by GC/MS		Please note	e: Standard TAT for certain tests are > 5 days -	contact your Project Manager for
Other							Itered		iL D	nal)	ate	us ne E	and		tals	by	<u>o</u>	Job Speci	fic Rush TAT (if applies to entire submiss	ion)
						_	Ħ	Regulated	and	E A	n <u>i</u> t	ICP us (True	BTEX	ate	M Me	ater	m d	Date Requ	ired:	
				All the late of th			-ielo	luga	l ĕ	F3H	te/	noi	BT	3	ted	Š	S	Rush Confin	mation Number:	
S/	AMPLES MUST BE K	EPT COOL ( < 10°C ) FROM TIM	E OF SAMPLING U	NTIL DELIVERY	TO BV LABS		als		B (SIS)	BIC SCALE Analysis (F2/F2+F3B) in soil	Sulphate / nitrate	Barium on I Extraction (	CCME E Water	Routine Water	Regulated Metals - Dissolved	.⊆ T	Limited Sample	# of Bottles		(call lab for #)
Sample	Barcode Label	Sample (Location) Identifi	cation D	Date Sampled	Time Sampled	Matrix	Metals	E	AT BTEX (Vials)		Sul	Bar	S ∨ Na	Rol	Re-	P.	-5	r or Bottles	Comment	s
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,		TP21-136-1			1349				1/			F.						3		
					(		_		V									3		0 1 :- : - : -
		TP21-137-			1358		-		V										Received in Ye	
5		1P2 (-137 -	03		1359				V									3	By: J. Mercy	mr
18-18-18-18-18-18-18-18-18-18-18-18-18-1		TP21-137 -	05		1409				1									3	QS:	30 1
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10		DUPJ			11:35		~		V									3		
	RELINQUISHED BY:	(Signature/Print)	Date: (YY/MM/D	DD) Time		RECEIVE				n		Date: (YY/N		Time		s used and submitted		Sensitive	Laboratory Use Only Temperature (°C) on Receipt	Custody Seal Intact on Cooler?
	/- /	PETER TAN	21/08/1	17 18:	O NATA.	1119		VIVA	VCH.	H		4/08	104	15:5	-		Г	7	ACTR	Yes No
		TING, WORK SUBMITTED ON THIS C	HAIN OF CUSTORY IS	SUBJECT TO BY	ARS' STANDARD TERM	AS AND CONDITI	ONS	SIGNING C	E THIS CHA	IN OF CUSTO	DY DOCU	MENT IS ACK	NOWLEDGA	IENT AND A	CCEPTANCE	OF OUR TE	RMS WHICH	ARE AVAIL	110	
WWW.BVLABS.COM	/TERMS-AND-CONDITION	ONS.																	V	White: BV Labs Yellow: Client
* IT IS THE RESPON	SIBILITY OF THE RELI	QUISHER TO ENSURE THE ACCURA	CY OF THE CHAIN OF	CUSTODY RECOF	O. AN INCOMPLETE CH	TAIN OF CUSTO	JY MAY	RESULT	IN ANALYTIC	AL TAT DEL	H13.									

Bureau Veritas Canada (2019) Inc.

BUREAU VERITAS		Bureau Veritas Laboratories 4000 19st N.E. Calgary, Alberta Canada	a T2E 6P8	Tel:(403) 291-	3077 Toll-free:800-5	63-6266 Fax:	(403) 2	291-9468	www.bvlabs	.com							CH	AIN OF	CUSTODY RECORD	Page 3 A	
W.WW.L.W.WWW.		INVOICE TO:				REPOR	T TO:							PROJECT	INFORMA	TION:			Laboratory Use	Only:	
Company Name:	#254 GOLDE	ER ASSOCIATES LTD.		Company Na	#6340 GC	LDER AS	SOCI	ATES	LTD.			Quotation #:	40	C0048	0				BV Labs Job #:	Bottle Orde	er #:
Attention:	ACCOUNTS F			Attention:	Aurelie Bel	avance						P.O. #.		203680	99-7000	-1001					
Address:	2800, 700 -2n	d Street SW		Address:	2800, 700 -	2nd Street	sw					Project:		203680	99-6000	-1001				644511	
	CALGARY AE	3 T2P 2W2		100000000000000000000000000000000000000	CALGARY	AB T2P 2	N2					Project Nam	e:						COC #:	Project Mana	ager:
Tel:	(905) 567-610	0 Ext: 1167 Fax: (403) 299-560	)6	Tel:	(403) 299-5			Fax:				Site #:								Carmen Mc	Kay
Email:	canadaaccou	ntspayableinvoices@golder.com		Email:	abellavano	e@golder	.com					Sampled By:							C#644511-25-01		
Regulatory Crit	teria:			Spec	ial Instructions		1			ANA	ALYSIS F	REQUESTED	(PLEASE	BE SPECI	FIC)				Turnaround Time (TAT) R		27 - 27 60 10 10 10 10 10 10 10 10 10 10 10 10 10
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Other							5	Metals	F1-F4	/sis		using Fusi e Barium)	Ė		00	GC/		ease note tails	e: Standard TAT for certain tests are > 5 days	contact your Project N	lanager for
Uther							Itered	Ž	LL.	nal) n so	ate	o us	and		tals	by		350000	fic Rush TAT (if applies to entire submiss	ion)	
							TI.	ate	and	E A	nitr	의 F	X	Water	™ Me	ater	g D	ite Requ	ired:		
anne metamone to a 146. A			***********				Field	Regulated	Ä	F3F	te /	no i	BT	3	ated	×	S R	sh Confir	mation Number:		
ŝ/	AMPLES MUST BE	KEPT COOL ( < 10°C ) FROM TIME OF SAM	PLING UN	TIL DELIVERY	TO BV LABS		Metals		AT4 BTEX (Vials)	BIC SCALE Analysis (F2/F2+F3B) in soil	Sulphate / nitrate	Barium on ICP us Extraction (True E	CCME BTEX and F1-F2 Water	Routine	Regulated Metals (CCME/AT1) - Dissolved	PAH in Water by GC/MS	Limited Sample	f Bottles		(call lab for #)	
Sample	Barcode Label	Sample (Location) Identification	Da	ite Sampled	Time Sampled	Matrix	Me	E	3\$	BIC (F2	Sul	Bai	S ⊗	Ro	Re . D	A	Lir	ii botties	Commen	S	
NA	1	TP21-146-02	196	16/21H	1504	SOIL			18									3			
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3		TP21-146-05	-		1508				V.									3			
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8		TP21-114-06			0942				V									3	AUG 23 Z	171	
2		TP21-13-00			0957				V									3	STR	ACTR	
8		tP21-13-03		1	0958					V								3		/	
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16	V	DUPK		A	1427	4			1/									3			
.1	RELINQUISHED BY		YY/MM/DE				ED BY		ure/Print)			Date: (YY/N	/M/DD)	Time	-	s used and			Laboratory Use Only		
	1/2	/ PETER TAN 211	08/1	19 18:0	0 WATP	JHA		MUI	YUC 17	P		21/08	124	15:5	O not	submitted	Time Se	nsitive	Temperature (°C) on Receipt	Custody Seal Intact or	
	-/		/			200							97	Mrs. Col.					ACTR	L Yes	No
* IT IS THE RESPON	TERMS-AND-CONDIT	RITING, WORK SUBMITTED ON THIS CHAIN OF CU IONS. INQUISHER TO ENSURE THE ACCURACY OF THE AFTER SAMPLE RECEIPT, FOR SPECIAL REQUES	CHAIN OF C	USTODY RECOR	RD. AN INCOMPLETE CH							IMENT IS ACK	NOWLEDG	MENT AND A	CCEPTANC	E OF OUR TE	RMS WHICH A	RE AVAIL	ABLE FOR VIEWING AT	/hite: BV Labs You	ellow: Client

Bureau Veritas Laboratories 4000 19st N E. Calgary, Alberta Canada T2E 6P8 Tet (403) 291-3077 Toll-free 800-563-6266 Fax (403) 291-9468 www.bvlabs.com											CHAIN OF CUSTODY RECORD						4	Page of			
MACHINE MACHINE	INVOICE TO:						REPORT TO:				PROJECT INFORMATION:							Laboratory Use Only:			
Company Name:	#254 GOLDE	ER ASSOCIATES LTD.		Company Na	me: #6340 GC	DLDER AS	SOCI	ATES	TD.			Quotation# C00480							BV Labs Job #:	Bottle	Order #:
Attention	<b>ACCOUNTS F</b>	PAYABLE		A C. Data						P.O. # 20368099-7000-1001							C162508				
Address:	2800, 700 -2n			Address: 2800, 700 -2nd Street SW						Project: 20368099-6000-1001						(			4511		
	CALGARY AE	Stored to be because to be because the stored to be a second to be		CALGARY AB T2P 2W2							Project Name:							COC #:	Project	Manager:	
	(905) 567-610		06	Tel:	(403) 299-	STATE STATE OF THE	0001000	Fax: _	· ne			Site #:								Carme	n McKay
Email:	canadaaccour	ntspayableinvoices@golder.com		Email: abellavance@golder.com							Sampled By:							C#644511-26-01			
Regulatory Crit	eria:			Spec	ial Instructions		-			ANA	ALYSIS F	REQUESTED (PLEASE BE SPECIFIC)						Turnaround Time (TAT) Required:			
☐ ATI								S	_						Ξ			ander (S	Please provide advance notice for a Standard) TAT:	rush projects	alta Referen
							Î	Soils	Soil			nois	.⊆		E/A				olied if Rush TAT is not specified):		
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Other												sing	Ŧ.		0	99		Please note: Standard TAT for certain tests are > 5 days - contact your Project Manager for details			
				Metals Field Filtered ? ( Metals							nitrate	P us	anc	Routine Water Regulated Metals (CCME/AT1)	etals		<u>a</u> 1	b Specific Rush TAT (if applies to entire submission)			
					Is Fled Filter Regulated SSALE Ani SCALE Ani hate / nitrat					/ nit	Barium on ICP using Fus Extraction (True Barium) CCME BTEX and F1-F2 Water	M P	ate		Sample	ate Requ	ired:				
					TO DVI 400		Fie	egu	18_	CAL	ate	n or	BT	<u>Φ</u>	atec	in Water by	S R	sh Confin	mation Number:		
S/	AMPLES MUST BE	KEPT COOL ( < 10°C ) FROM TIME OF SAM	PLING UNI	IL DELIVERY	TO BV LABS		Metals		AT4 BTEX (Vials)	C S 2/F;	Sulphate /	ariun	SME	Routine	egul	PAH ii	Limited #	of Bottles		(call lab for #)	
Sample	Barcode Label	Sample (Location) Identification	Dat	te Sampled	Time Sampled	Matrix	ž	F	2 E	E F	S	8 0	ŏ≥	N.	R.	P.	Ē		Comment	15	
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	V		-				$\vdash$		·/			-						2			
20		Tr21-49-05			1107	1			V				L		L,_			5			
**RELINQUISHED BY: (Signature/Print) Date: (YY/MM/DD) Time RECEIVED BY: (Signature/Print) Date: (YY/MM/DD) Time # jars used and not submitted not submitted Time Sensitive Temperature (°C) on Receipt Custody. Seal In									Custody Seal Int	act on Cooler?											
101EK 1HV 21/08/11			10.0	10.00 INDITAL INTOCHA					- 3	7 1081	24	15.50				1	A ( TR	Ves Yes	No No		
* UNLESS OTHERWIS	SE AGREED TO IN WE	RITING, WORK SUBMITTED ON THIS CHAIN OF CU	STODY IS SU	JBJECT TO BV L	ABS' STANDARD TER	MS AND CONDI	TIONS.	SIGNING C	F THIS CHAI	N OF CUSTO	DY DOCL	MENT IS ACK	NOWLEDGE	MENT AND A	CCEPTANO	E OF OUR TE	RMS WHICH A	RE AVAILA	ABLE FOR VIEWING AT		Yellow: Client
WWW.WLABS.COM/LENDS-AND-COM/LINDS.  "INISTITE LENDS-AND-COM/LINDS-AND-CO																					
" ALL SAMPLES ARI	** ALL SAMPLES ARE HELD FOR 60 DAYS AFTER SAMPLE RECEIPT, FOR SPECIAL REQUESTS CONTACT YOUR PROJECT MANAGER																				

NVOICE TO:   REPORT TO:   PROJECT INFORMATION:   Laboratory Use Company Name   #254   GOLDER ASSOCIATES LTD.   Company Name   #254   GOLDER ASSOCIATES LTD.   GOLDER ASSOCIATES LTD.   GOLDER ASSOCIATES LTD.   Company Name   #6340   GOLDER ASSOCIATES LTD.   Golden # COUNTS PAYABLE   Attention:   Aurelie Belavance   P.O. #:   20368099-7000-1001   COUNTS PAYABLE   20368099-7000-1001   COUNTS PAYABLE   CALGARY AB T2P ZW2   Project   Project Name:   CALGARY AB T2P ZW2   Project Name:   COUNTS PAYABLE   COUNTS PAYABLE   COUNTS PAYABLE   Project Name:   CALGARY AB T2P ZW2   Project Name:   CALGARY AB T2P ZW2   Project Name:   COUNTS PAYABLE   COUNTS PAYABLE   COUNTS PAYABLE   Project Name:   CALGARY AB T2P ZW2   Project Name:   CALGARY AB T2P ZW2   Project Name:   CALGARY AB T2P ZW2   Project Name:   COUNTS PAYABLE   COUNTS PAYABLE   Project Name:   CALGARY AB T2P ZW2   Project Name:   CALGAR	Bottle Order #:  Bottle Order #:  644511  Project Manager:  Carmen McKay										
Company Name	644511 Project Manager:										
Address: 2800, 700 -2nd Street SW 20368099-6000-1001 CALGARY AB T2P 2W2 Project Name: Coc #:	644511 Project Manager:										
CALGARY AB T2P 2W2  CALGARY AB T2P 2W2  CALGARY AB T2P 2W2  Project Name:  COC #:	Project Manager:										
T Ujett Halle.											
	Carmen McKay										
Tel: (905) 567-6100 Ext: 1167 Fax: (403) 299-5606 Tel: (403) 299-5600 Fax: Site #: Site #: Sampled By: C#644511-28-01											
Regulatory Criteria: Special Instructions ANALYSIS REQUESTED (PLEASE BE SPECIFIC) Turnaround Time (TAT) Req											
Please provide advance notice for rus  ATI  ATI  Regular (Standard) TAT:	h projects										
CCME  Regular (Standard) TAT:  (viil be applied if Rush TAT is not specified):  Standard TAT = 5-7 Working days for most lests.	X										
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Other Sign Sign Sign Sign Sign Sign Sign Sign	Please note: Standard TAT for certain tests are > 5 days - contact your Project Manager for details										
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ieled Filtern  AALE Ana  AALE Ana  On ICP L  And E Ana  On ICP L  Ana  On ICP											
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*RELINQUISHED BY: (Signature/Print) Date: [YY/MM/DD] Time RECEIVED BY: (Signature/Print) Date: [YY/MM/DD] Time # jars used and Laboratory Use Only											
TEIST TOTAL	ustody Seal Intact on Cooler?										
	Yes No										
* UNILESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BY LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT White: BV Labs' Yellow; Client, VIII IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD, AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.  ** ALL SAMPLES ARE HELD FOR 60 DAYS AFTER SAMPLE RECEIPT, FOR SPECIAL REQUESTS CONTACT YOUR PROJECT MANAGER											

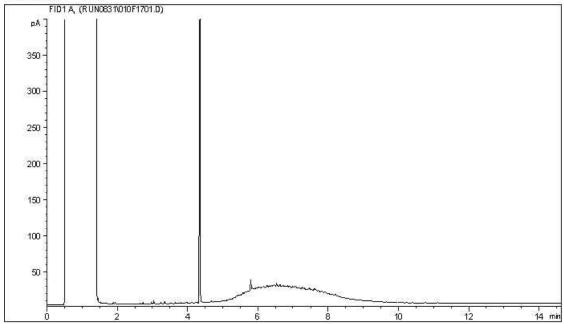
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

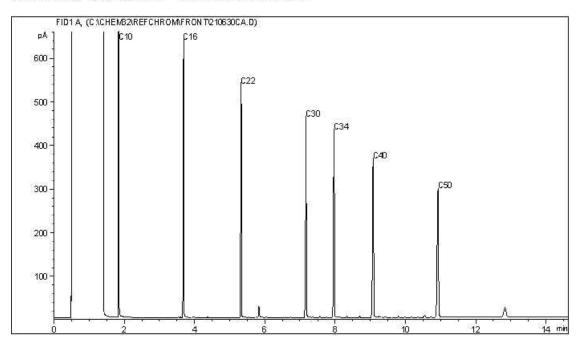
Client ID: TP21-147-01

### CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC12



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

GOLDER ASSOCIATES LTD.

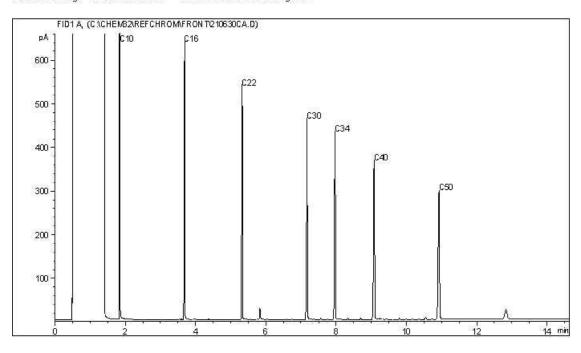
Client Project #: 20368099-6000-1001

14 min

Client ID: TP21-147-01

### CCME Hydrocarbons (F2-F4)+F3A/B in soil Chromatogram

Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

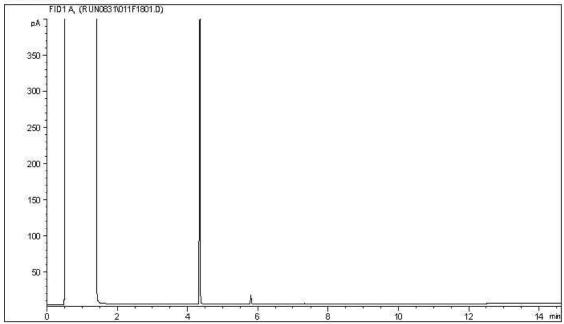
 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

GOLDER ASSOCIATES LTD. Client Project #: 20368099-6000-1001

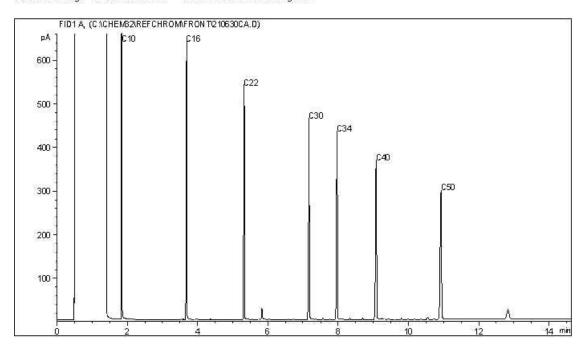
Client ID: TP21-147-03

### CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC12



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: c4 - c12 Diesel: c8 - c22 Varsol: c8 - c12 Lubricating Oils: c20 - c40 c7 - c16 Crude Oils: c3 - c60+ Kerosene:

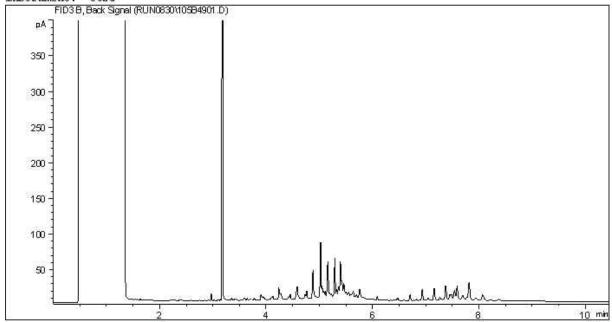
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Client Project #: 20368099-6000-1001

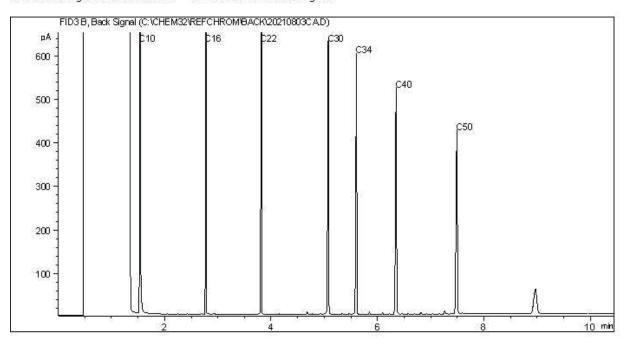
Client ID: TP21-147-05

### CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC20



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

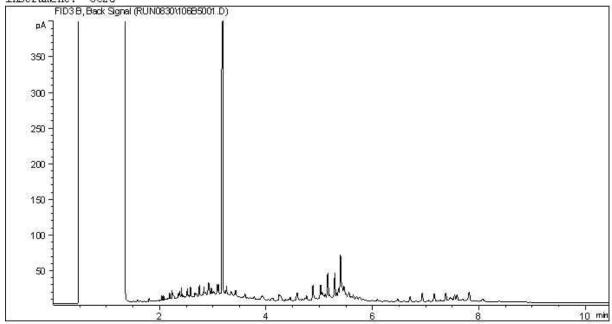
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

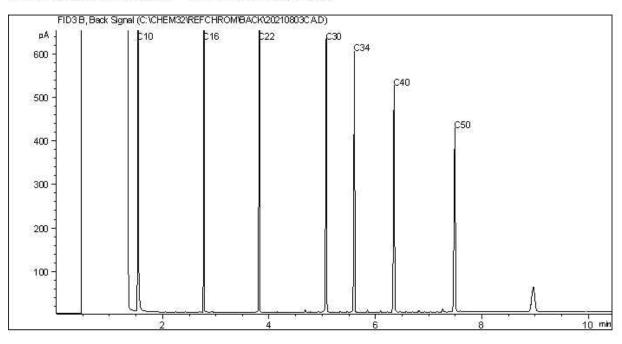
Client ID: TP21-TP19-24-01

### CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC20



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

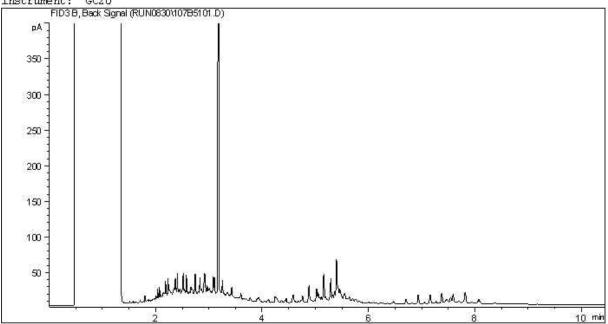
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

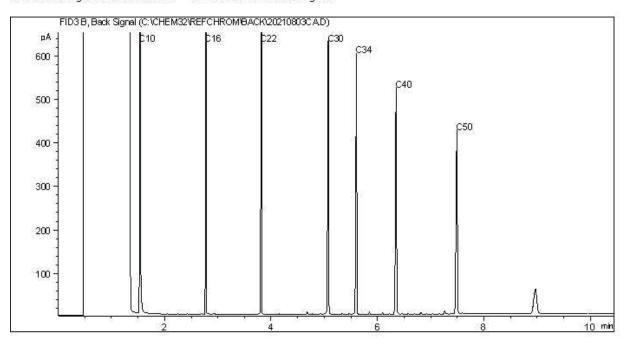
Client ID: TP21-TP19-24-03

### CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC20



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

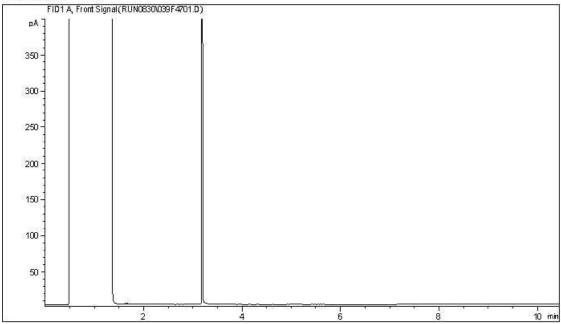
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

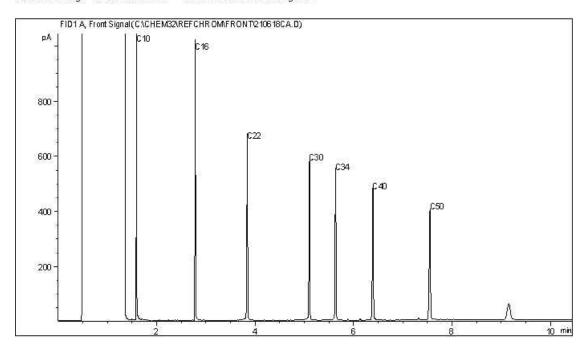
Client ID: TP21-TP19-24-05

### CCME Hydrocarbons (F2-F4)+F3A/B in soil Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

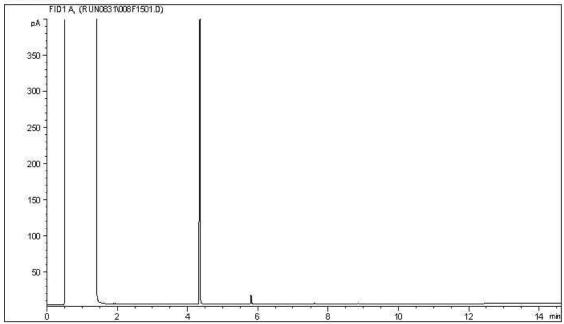
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

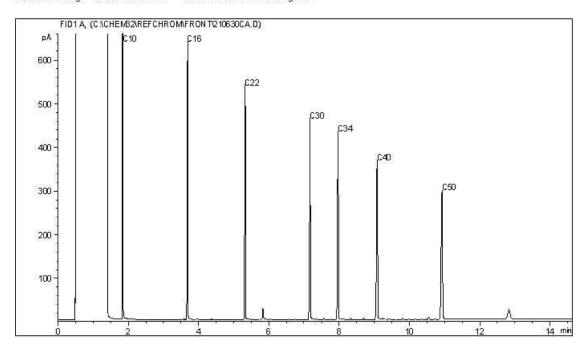
Client ID: TP21-TP19-24-05

### CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC12



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

Bureau Veritas Job #: C162508

Report Date: 2021/12/24

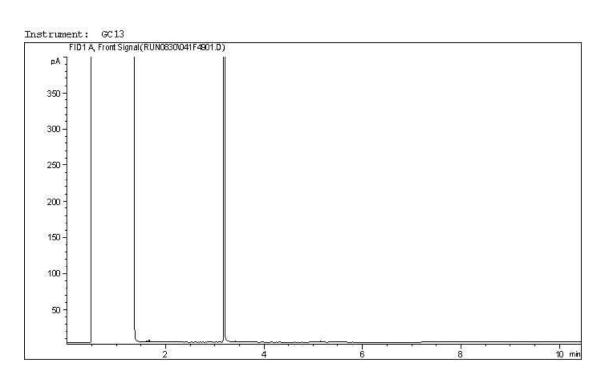
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Dup

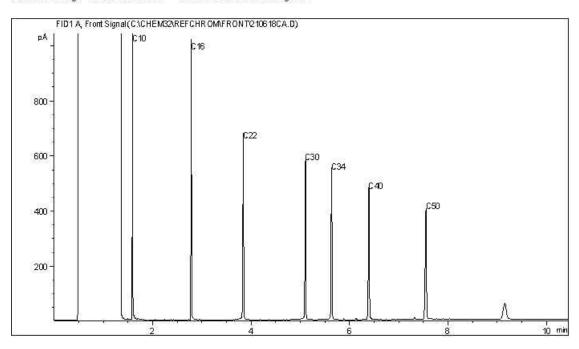
GOLDER ASSOCIATES LTD. Client Project #: 20368099-6000-1001

Client ID: TP21-TP19-24-05

### CCME Hydrocarbons (F2-F4)+F3A/B in soil Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	c4	1	C12	Diesel:	c8	-	C22
Varsol:	c8	: 4	C12	Lubricating Oils:	C20	-	C40
Kerosene:	c7	-12	C16	Crude Oils:	C3	-	C60+

Bureau Veritas Job #: C162508

Report Date: 2021/12/24

Bureau Veritas Sample: AEO134 Lab-

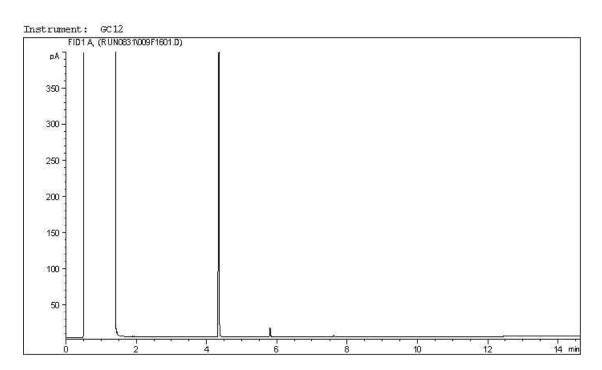
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GOLDER ASSOCIATES LTD.

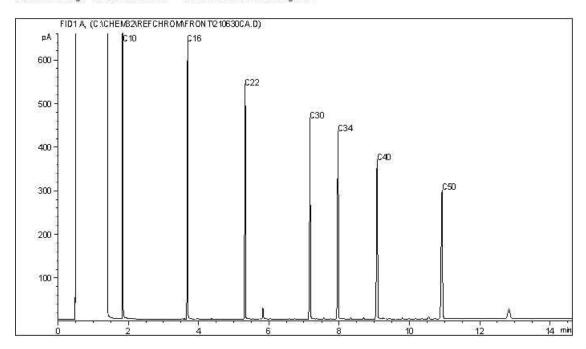
Client Project #: 20368099-6000-1001

Client ID: TP21-TP19-24-05

### CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	c4	1	C12	Diesel:	c8	-	C22
Varsol:	c8	: 4	C12	Lubricating Oils:	C20	-	C40
Kerosene:	c7	-12	C16	Crude Oils:	C3	-	C60+

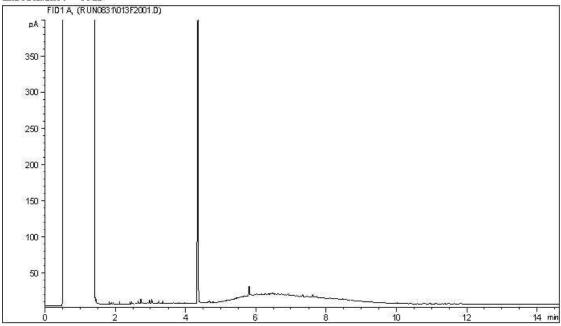
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

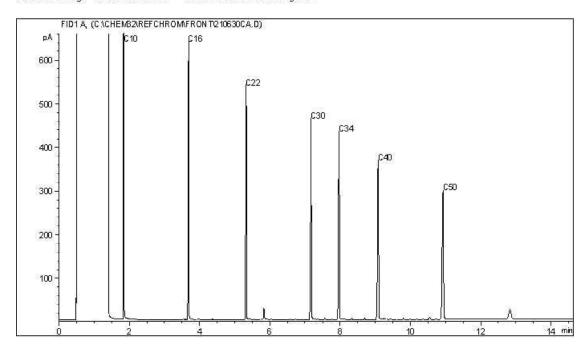
Client ID: TP21-TP19-21-02

### CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC12



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

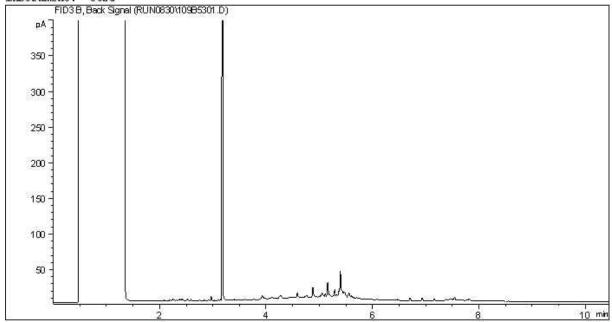
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

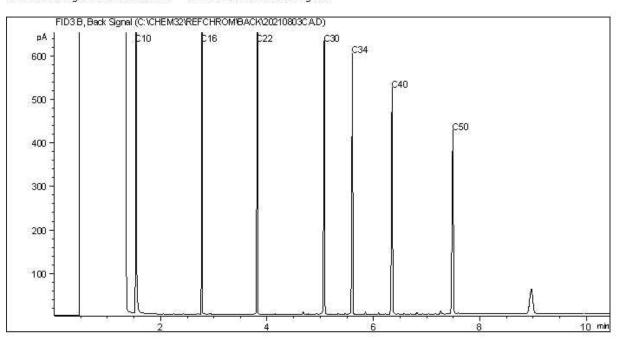
Client ID: TP21-TP19-21-04

### CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC20



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

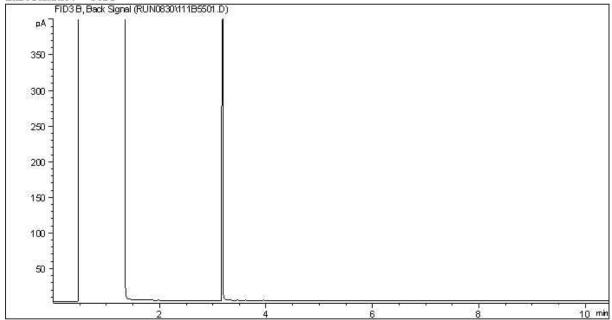
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

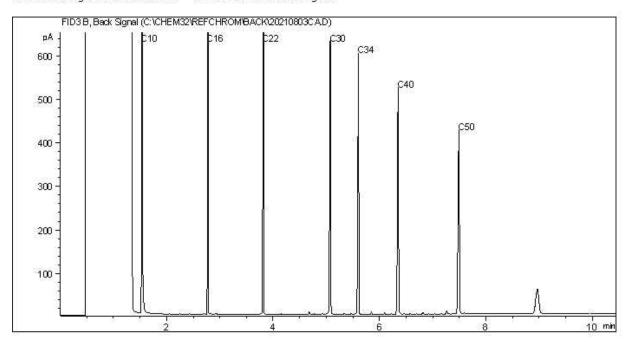
Client ID: TP21-TP19-21-06

### CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC20



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

10 min

Client ID: DUPI

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

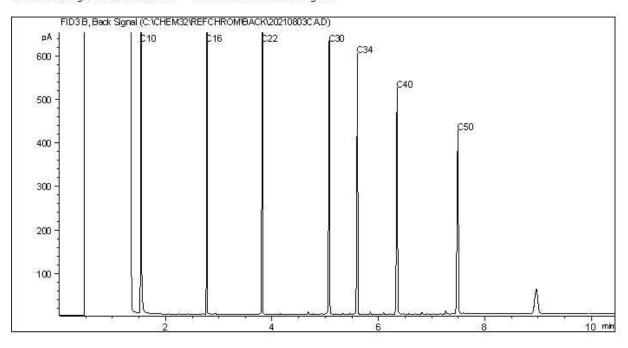
Instrument: GC20

FID3 B, Back Signal (RUN0830\t1295601.D)

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Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

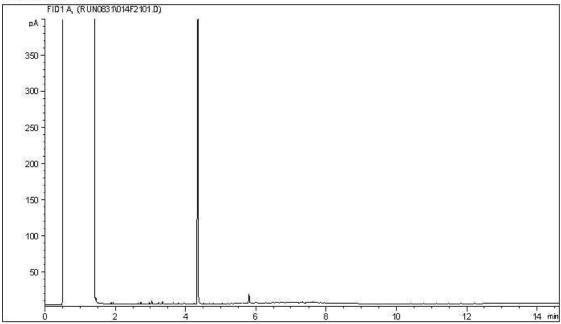
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

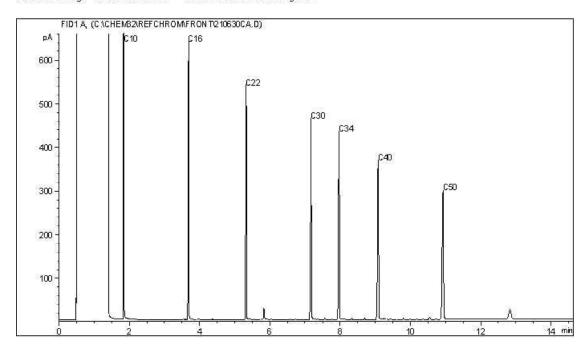
Client ID: TP21-136-01

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC12



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

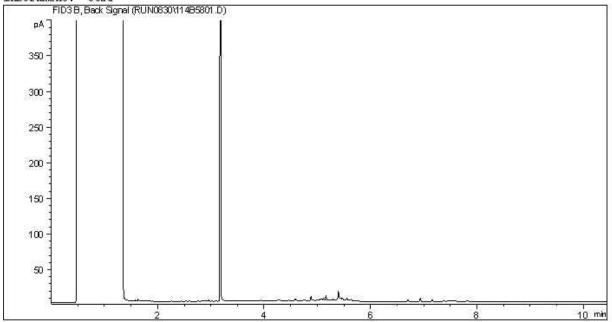
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

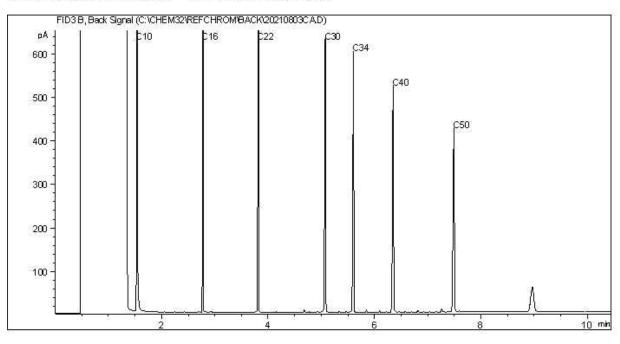
Client ID: TP21-136-03

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC20



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

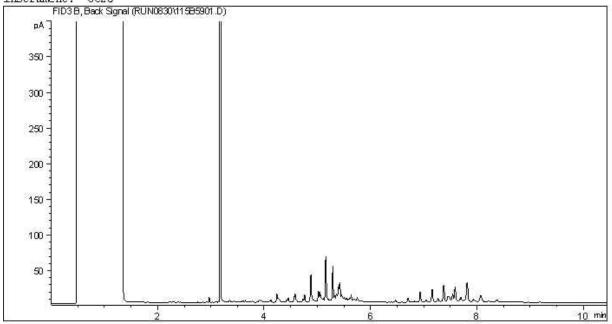
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

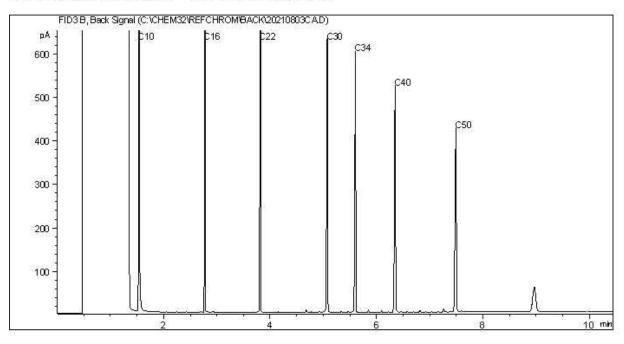
Client ID: TP21-136-06

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC20



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

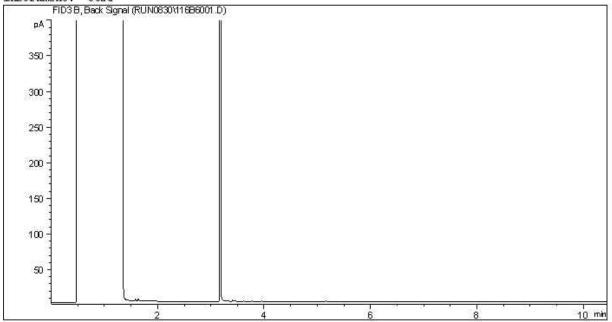
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

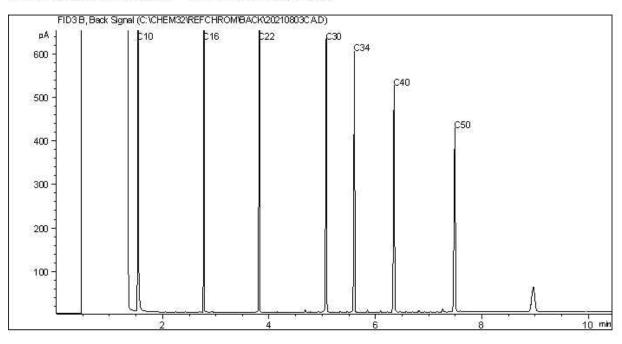
Client ID: TP21-137-02

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC20



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

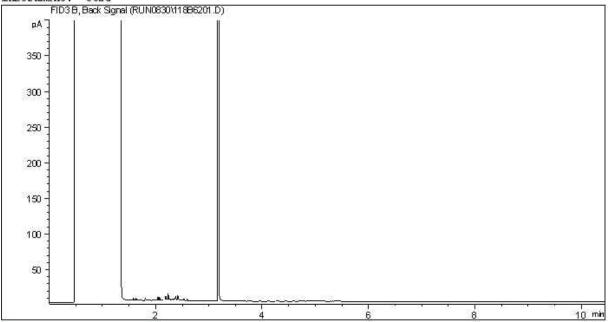
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Client Project #: 20368099-6000-1001

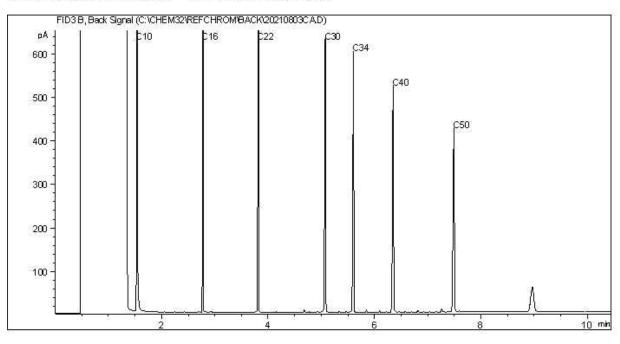
Client ID: TP21-137-03

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC20



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

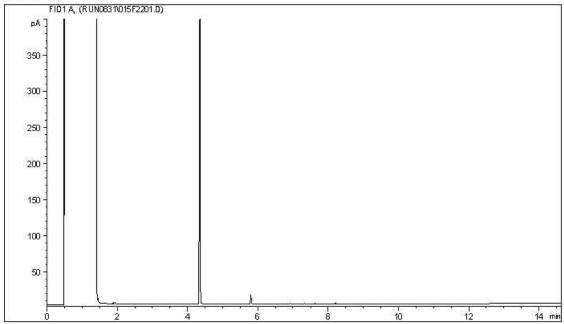
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Client Project #: 20368099-6000-1001

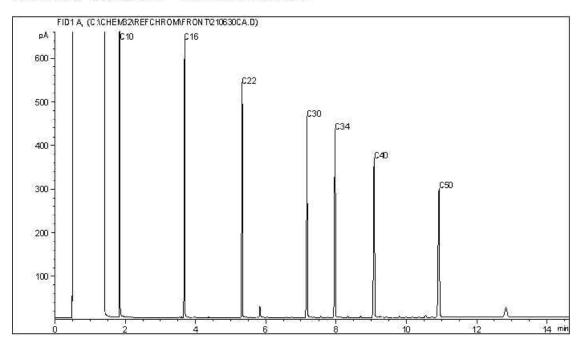
Client ID: TP21-137-05

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC12



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

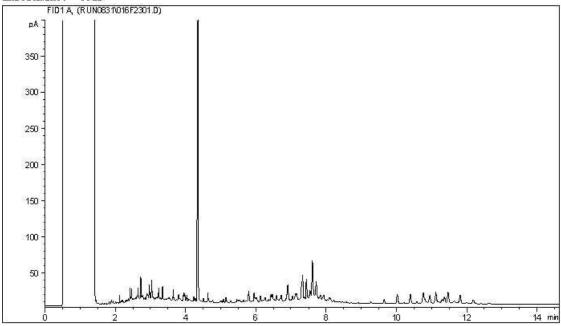
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

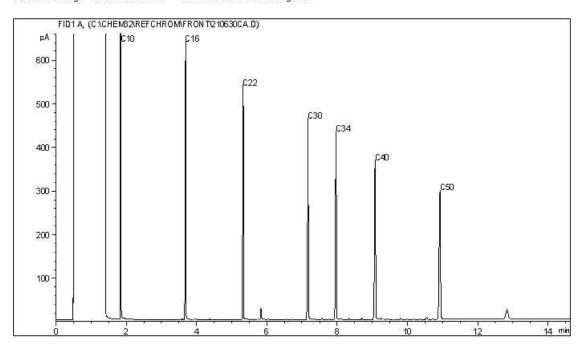
Client ID: TP21-138-01

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC12



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

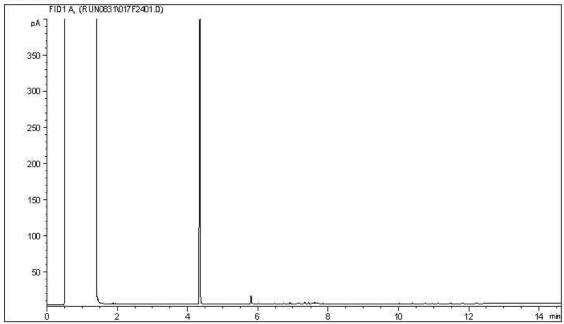
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Client Project #: 20368099-6000-1001

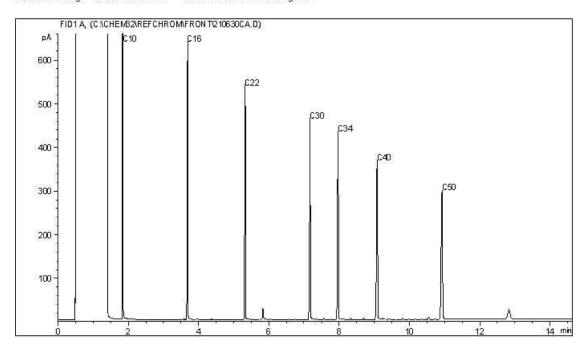
Client ID: TP21-138-03

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC12



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

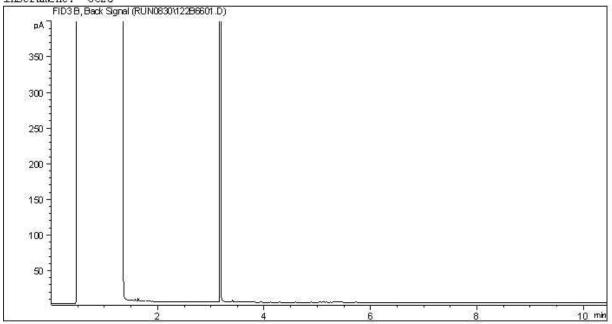
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Client Project #: 20368099-6000-1001

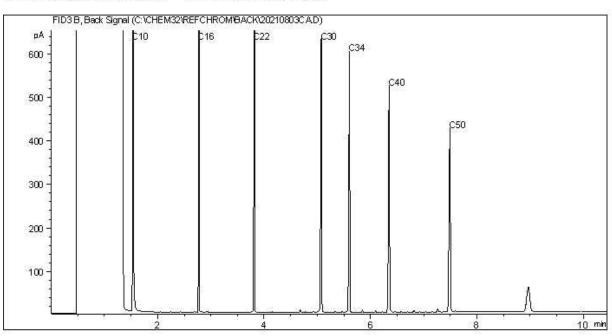
Client ID: TP21-138-06

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC20



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

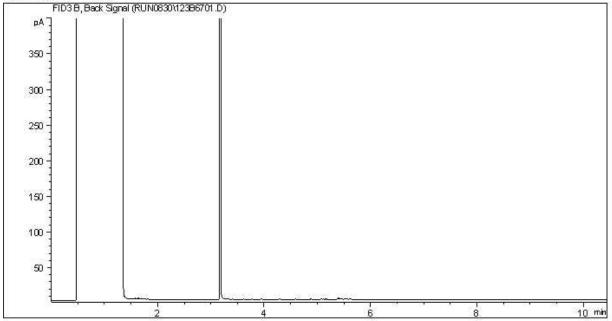
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

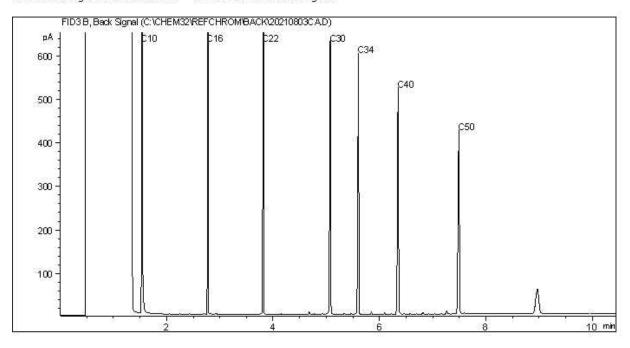
Client ID: DUPJ

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC20



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: - C12 Diesel: C8 - C22 Varsol: c8 C12 Lubricating Oils: c20 - c40Kerosene: c7 - C16 Crude Oils: c3 - c60+

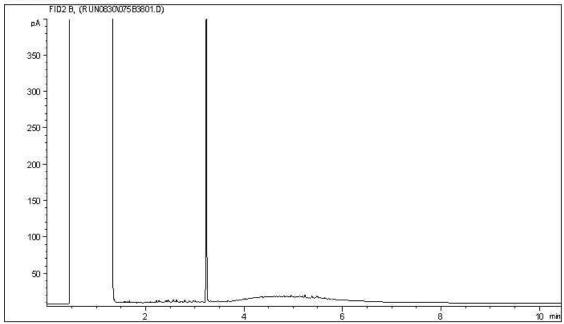
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

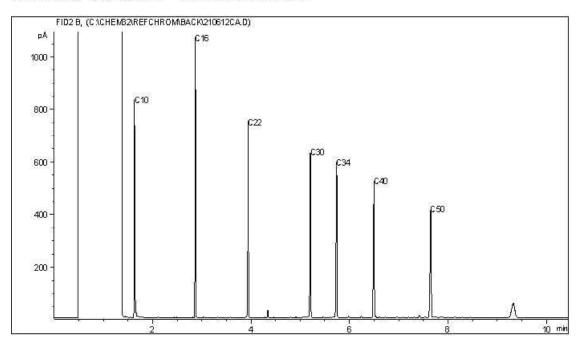
Client ID: TP21-146-02

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

Client ID: TP21-146-03

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

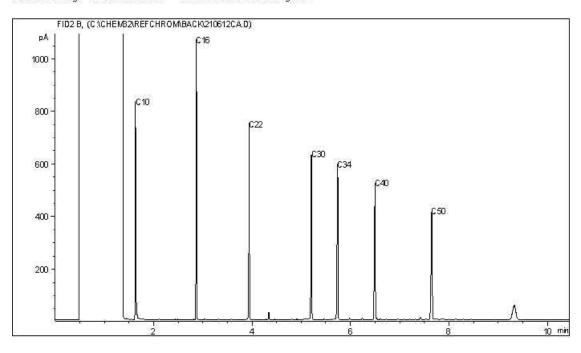
FID2 B, (RUN0830077 B4001.D)

pA
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Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

50

GOLDER ASSOCIATES LTD.

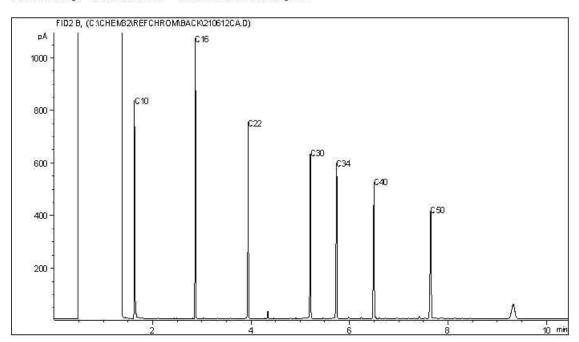
Client Project #: 20368099-6000-1001

10 min

Client ID: TP21-146-05

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

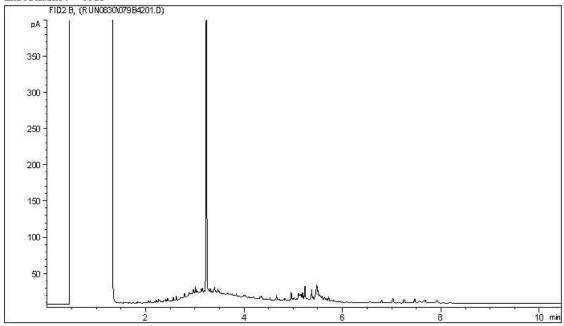
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

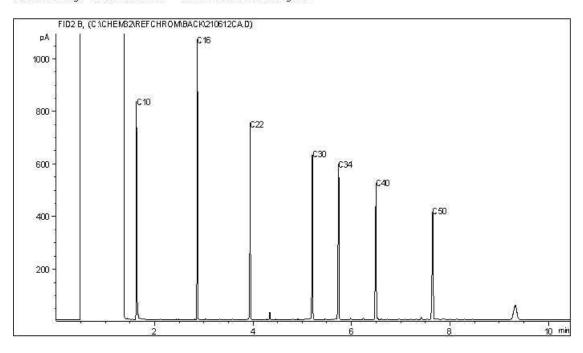
Client ID: TP21-114-01

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

10 min

Client ID: TP21-114-04

# CCME Hydrocarbons (F2-F4)+F3A/B in soil Chromatogram

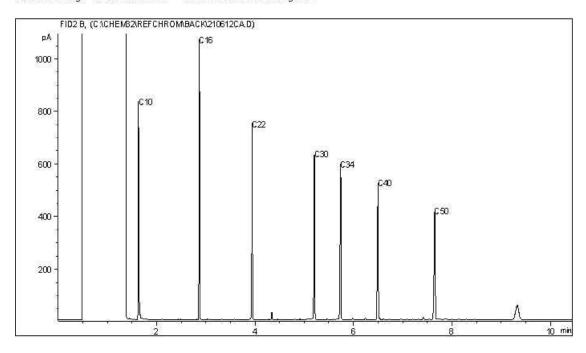
Instrument: GC10

FID2 B, (RUN0830080B4301.D)

pA

300 
250 
100 
100 
50 -

Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

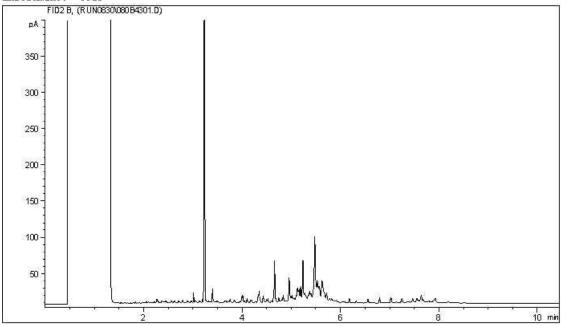
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

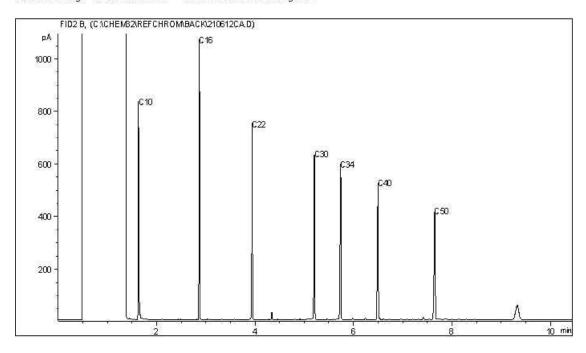
Client ID: TP21-114-04

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

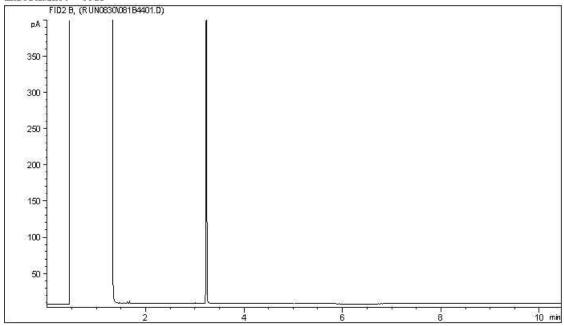
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

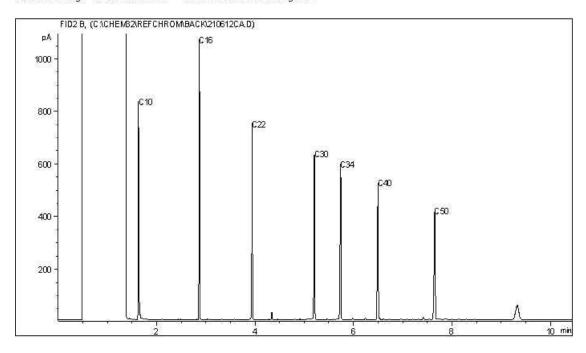
Client ID: TP21-114-06

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

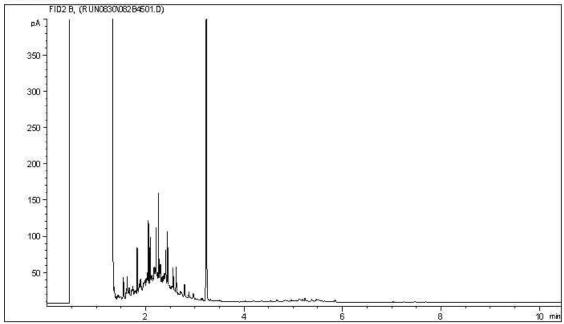
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

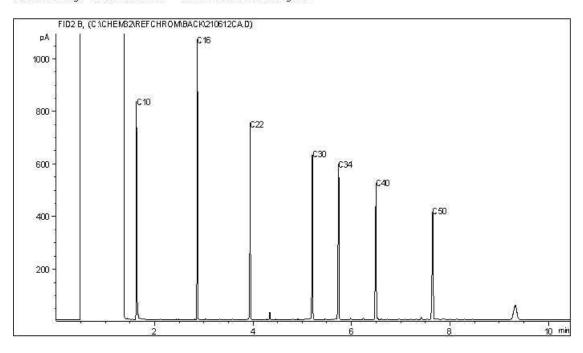
Client ID: TP21-13-02

# CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	115	C12	Diesel:	c8	-	C22
Varsol:	c8	: <del></del> :	C12	Lubricating Oils:	C20	-	C40
Kerosene:	c7	123	C16	Crude Oils:	C3	_	C60+

GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

Client ID: TP21-13-03

# CCME Hydrocarbons (F2-F4)+F3A/B in soil Chromatogram

Tinstrument: GC10

FID2 B, (RUN083008484701.0)

pA

700

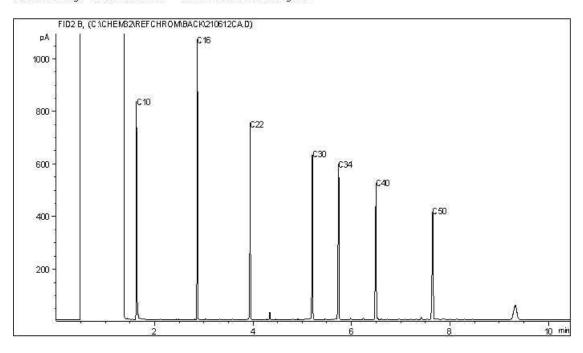
600

300

200

100

Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	115	C12	Diesel:	c8	-	C22
Varsol:	c8	: <del></del> :	C12	Lubricating Oils:	C20	-	C40
Kerosene:	c7	123	C16	Crude Oils:	C3	_	C60+

GOLDER ASSOCIATES LTD.

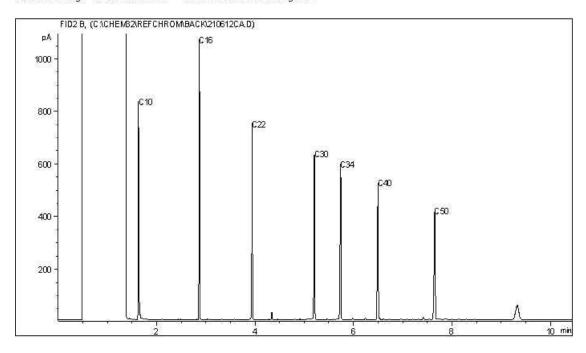
Client Project #: 20368099-6000-1001

Client ID: TP21-13-03

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10 FID2 B, (RUN0830/084B4701.D) 700 600 500 400 300 200 100 -0-

Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12 Diesel: C22 Varsol: - C12 Lubricating Oils: - c40 c7 - c16 Crude Oils: - c60+ Kerosene:

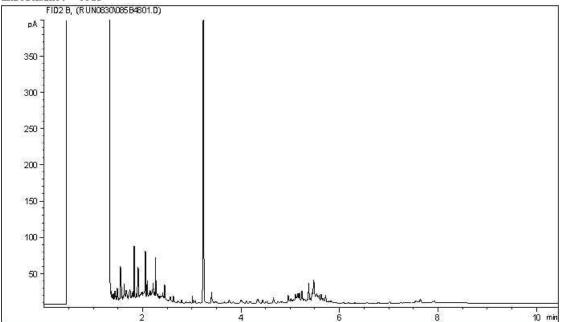
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

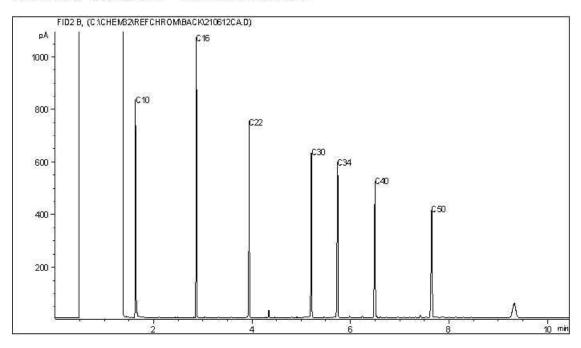
Client ID: TP21-13-05

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: c4 - c12 Diesel: - C22 Varsol: c8 - c12 Lubricating Oils: c20 - c40 c7 - c16 Crude Oils: - c60+ Kerosene:

GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

10 min

Client ID: DUP K

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

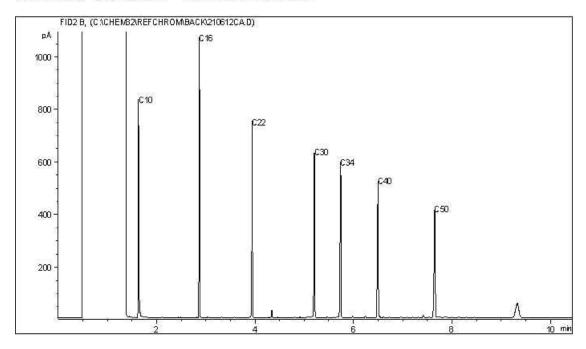
Instrument: GC10

FID2 B, (RUN083008864901.D)

pA

33025015010050-

Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

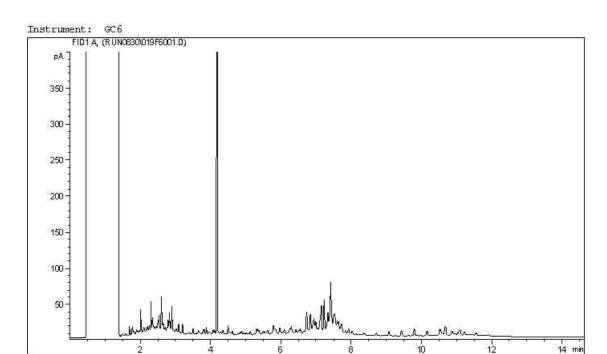
Bureau Veritas Job #: C162508

C162508 GOLDER ASSOCIATES LTD.

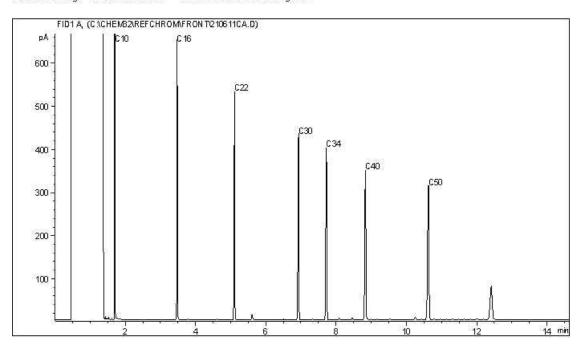
Report Date: 2021/12/24 Bureau Veritas Sample: AEO218 Client Project #: 20368099-6000-1001

Client ID: TP21-18-01

# CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	115	C12	Diesel:	c8	-	C22
Varsol:	c8	: <del></del> :	C12	Lubricating Oils:	C20	-	C40
Kerosene:	c7	123	C16	Crude Oils:	C3	_	C60+

Bureau Veritas Job #: C162508

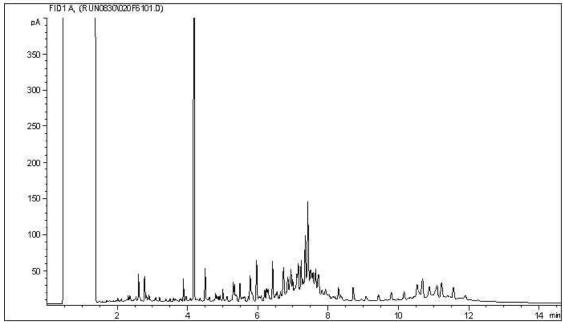
GOLDER ASSOCIATES LTD.

Report Date: 2021/12/24 Client Project #: 20368099-6000-1001 Bureau Veritas Sample: AEO219

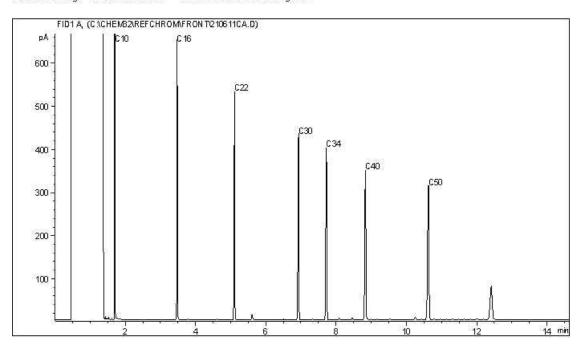
Client ID: TP21-18-03

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC6



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

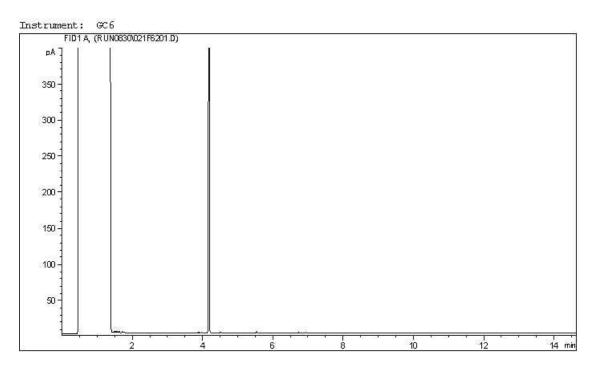
Gasoline: C4 - C12 Diesel: C22 Varsol: - C12 Lubricating Oils: - c40 c7 - c16 Crude Oils: - c60+ Kerosene:

Bureau Veritas Job #: C162508 Report Date: 2021/12/24

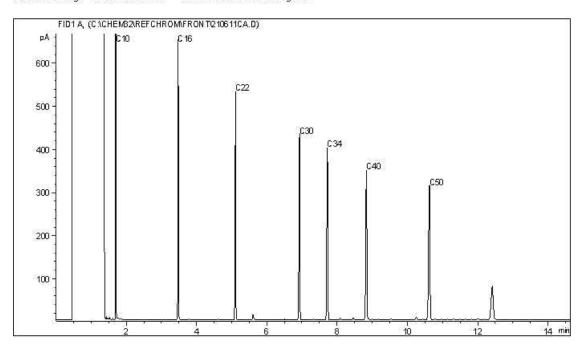
GOLDER ASSOCIATES LTD. Client Project #: 20368099-6000-1001

Bureau Veritas Sample: AEO220 Client ID: TP21-18-06

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4		C12	Diesel:	c8 -	C22
Varsol:	c8	: <del></del> :	C12	Lubricating Oils:	C20 -	C40
Kerosene:	c7	4	C16	Crude Oils:	c3 -	C60+

50 -

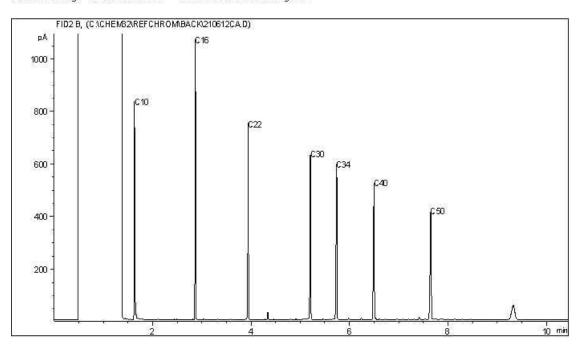
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

Client ID: TP21-43-01

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

GOLDER ASSOCIATES LTD.

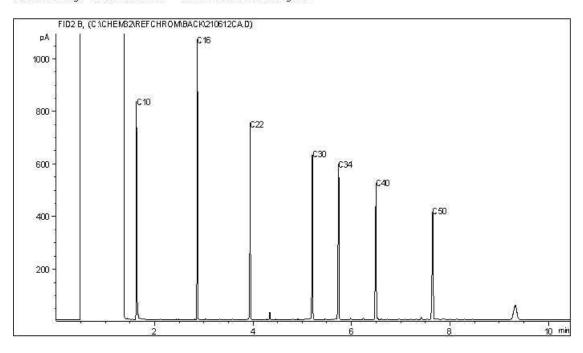
Client Project #: 20368099-6000-1001

10 min

Client ID: TP21-43-03

# CCME Hydrocarbons (F2-F4)+F3A/B in soil Chromatogram

Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

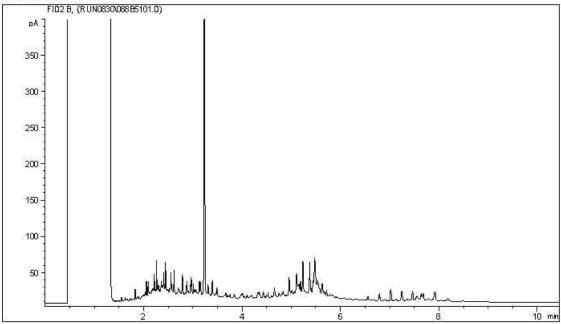
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

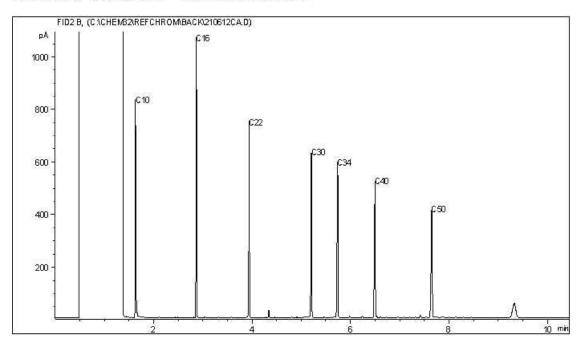
Client ID: TP21-43-03

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

50 -

GOLDER ASSOCIATES LTD.

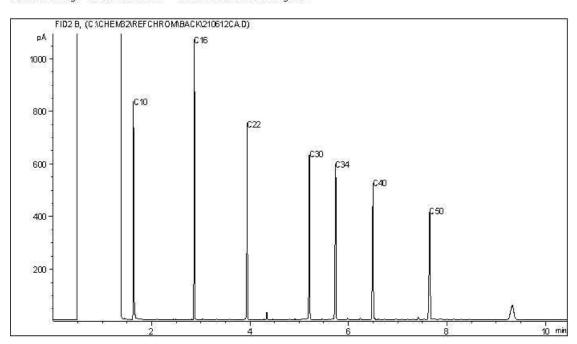
Client Project #: 20368099-6000-1001

10 min

Client ID: TP21-43-05

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

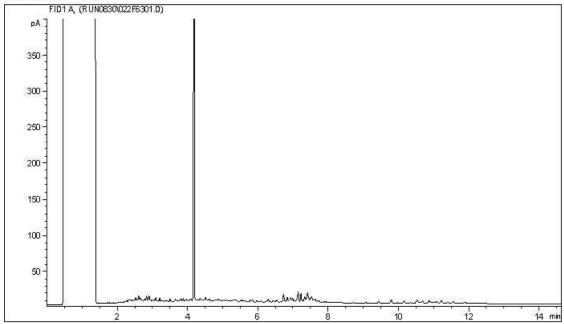
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

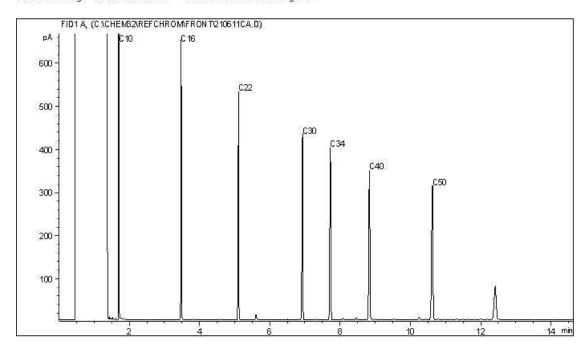
Client ID: TP21-49-02

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC6



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

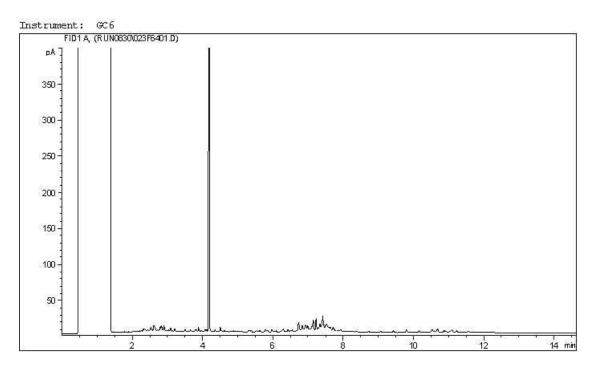
 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

Bureau Veritas Job #: C162508

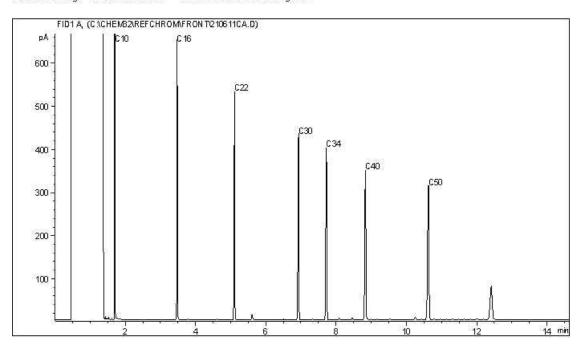
GOLDER ASSOCIATES LTD.

Report Date: 2021/12/24 Client Project #: 20368099-6000-1001 Bureau Veritas Sample: AEO225 Client ID: TP21-49-03

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	c4 -	C12	Diesel:	c8 -	C22
Varsol:	c8 -	C12	Lubricating Oils:	C20 -	C40
Kerosene:	c7 -	C16	Crude Oils:	c3 -	C60+

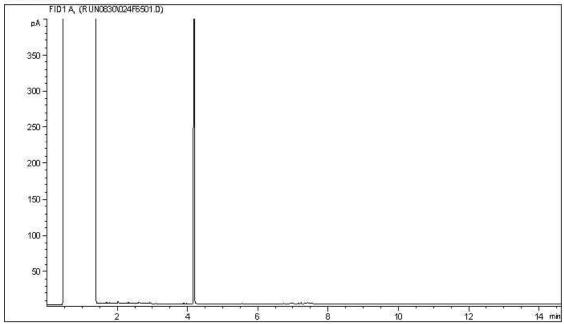
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

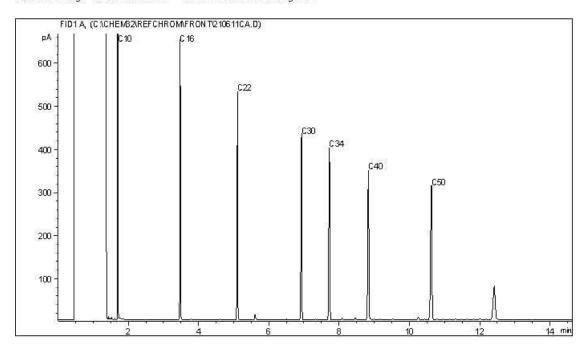
Client ID: TP21-49-06

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC6



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

50

GOLDER ASSOCIATES LTD.

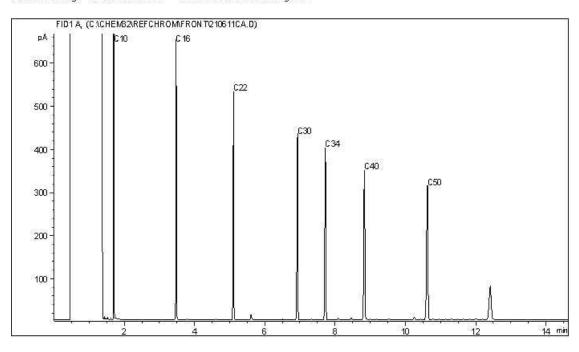
Client Project #: 20368099-6000-1001

14 min

Client ID: TP21-49-05

# CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

14 min

Client ID: TP21-49-05

# CCME Hydrocarbons (F2-F4)+F3A/B in soil Chromatogram

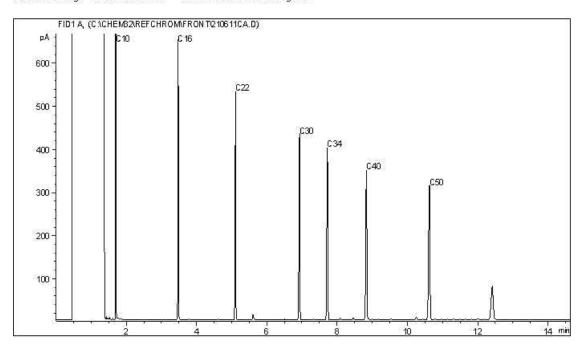
Instrument: GC6

FID1A (RUN0830026F6701.D)

pA

30025015010050-

Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

50 -

GOLDER ASSOCIATES LTD.

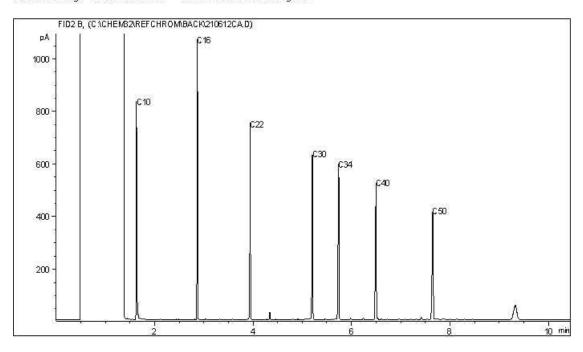
Client Project #: 20368099-6000-1001

10 min

Client ID: DUP L

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

Bureau Veritas Job #: C162508 Report Date: 2021/12/24

Dup

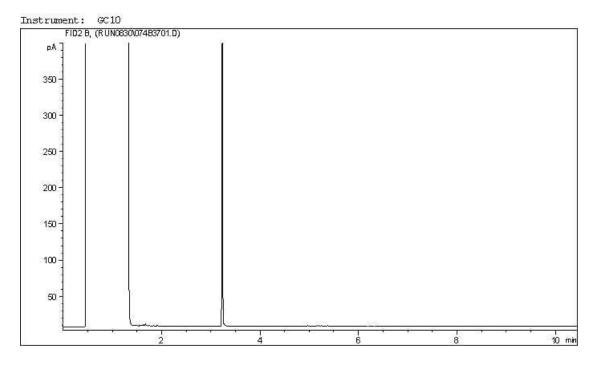
Bureau Veritas Sample: AEO229 Lab-

GOLDER ASSOCIATES LTD.

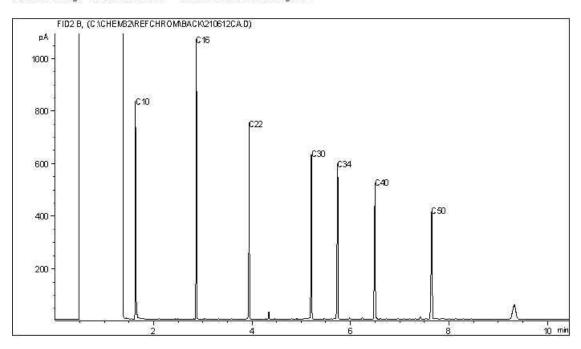
Client Project #: 20368099-6000-1001

Client ID: DUP L

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	T	C12	Diesel:	c8	-	C22
Varsol:	c8	-	C12	Lubricating Oils:	C20	-	C40
Kerosene:	c7	_	C16	Crude Oils:	C3	_	C60+

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

# GOLDER DATA QUALITY REVIEW CHECKLIST

Site Location: Camp Farew	ell			Sampling Date:	August 19, 2021
Golder Project Number:	20368099	-6000-100	1	Laboratory:	Bureau Veritas Edmonton
Lab Submission Number:	C162508				
Was the Cooler Received at the lat Was proper chain of custody of the Were sample temperatures accepta Were all samples analyzed and ext Has lab warranted all tests were in Was sufficient sample provided fo Has lab warranted all samples wer	e samples able when racted with statistical r the reque	documente they reache thin hold tin control in ested analy	ed and keped lab?: mes?: CoA?: rsis?	ot?	Yes
Are All Laboratory QC Within Ac	ceptance (	Criteria (Y	es, No, N	ot Applicable)?	
Surrogate Recovery Method Blank Concentration Laboratory Duplicate RPD Matrix Spike Recovery Blank Spike Recovery Are All Field QC Samples Within Field Blank Concentration Trip Blank Concentration Field Duplicate RPD	Yes X X X X X X Alert Lim	No No No X	NA  [o, Not Ap  NA  X  X	acceptance criterion policable)?  Samples TP21-13 for F1 (C6-C10)-	Comments C results are within ia.  Comments 3-05 and DUP J exceed the alert limits BTEX (87%) and F2 (C10-C16) (105%) Id QC samples are within alert limits.
Is data considered reliable (Yes/Notes) If answer is "No" or "Suspect", de Please see QA/QC appendix for do	scribe and		ntionale:	Suspect	-
Data Reviewed by (Print):		bert er 3, 2021		Data Reviewed by	(Signature): Onido Collect



Your P.O. #: 20368099-7000-1011 Your Project #: 20368099-6000-1011

#### **Attention: Aurelie Belavance**

GOLDER ASSOCIATES LTD. 2800, 700 -2nd Street SW CALGARY, AB CANADA T2P 2W2

Your C.O.C. #: 644511-01, 644511-15-01, 644511-16-01, 644511-17-01, 644511-18-01, 644511-19-01

Report Date: 2021/09/09 Report #: R3069088 Version: 2 - Final

#### **CERTIFICATE OF ANALYSIS**

BV LABS JOB #: C162523 Received: 2021/08/23, 20:30

Sample Matrix: Soil # Samples Received: 41

# Samples Received. 41		Date	Date		
Analyses	Quantity	Extracted	Analyzed	Laboratory Method	Analytical Method
Barium on ICP using Fusion Extraction (1)	3	2021/09/02	2021/09/05	AB SOP-00044 / AB SOP- 00042	EPA 6010d R5 m
Boron (Hot Water Soluble) (1)	3	2021/08/30	2021/08/30	AB SOP-00034 / AB SOP- 00042	EPA 6010d R5 m
BTEX/F1 by HS GC/MS/FID (MeOH extract) (1, 2)	1	N/A	2021/08/29	AB SOP-00039	CCME CWS/EPA 8260d m
BTEX/F1 by HS GC/MS/FID (MeOH extract) (1, 2)	20	N/A	2021/08/30	AB SOP-00039	CCME CWS/EPA 8260d m
BTEX/F1 by HS GC/MS/FID (MeOH extract) (1, 2)	20	N/A	2021/08/31	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX (1)	21	N/A	2021/08/31		Auto Calc
F1-BTEX (1)	20	N/A	2021/09/01		Auto Calc
Hexavalent Chromium (1, 3)	2	2021/08/27	2021/08/27	AB SOP-00063	SM 23 3500-Cr B m
Hexavalent Chromium (1, 3)	1	2021/08/30	2021/08/31	AB SOP-00063	SM 23 3500-Cr B m
CCME Hydrocarbons (F2-F4)+F3A/B in soil (1, 4)	1	2021/08/29	2021/08/30	AB SOP-00036	CCME PHC-CWS m
CCME Hydrocarbons (F2-F4)+F3A/B in soil (1, 4)	5	2021/08/30	2021/08/30	AB SOP-00036	CCME PHC-CWS m
CCME Hydrocarbons (F2-F4)+F3A/B in soil (1, 4)	1	2021/08/30	2021/08/31	AB SOP-00036	CCME PHC-CWS m
CCME Hydrocarbons (F2-F4 in soil) (1, 5)	3	2021/08/28	2021/08/30	AB SOP-00036	CCME PHC-CWS m
CCME Hydrocarbons (F2-F4 in soil) (1, 5)	5	2021/08/29	2021/08/30	AB SOP-00036	CCME PHC-CWS m
CCME Hydrocarbons (F2-F4 in soil) (1, 5)	2	2021/08/29	2021/08/31	AB SOP-00036	CCME PHC-CWS m
CCME Hydrocarbons (F2-F4 in soil) (1, 5)	10	2021/08/29	2021/09/01	AB SOP-00036	CCME PHC-CWS m
CCME Hydrocarbons (F2-F4 in soil) (1, 5)	1	2021/08/30	2021/08/31	AB SOP-00036	CCME PHC-CWS m
CCME Hydrocarbons (F2-F4 in soil) (1, 5)	13	2021/08/30	2021/09/01	AB SOP-00036	CCME PHC-CWS m
CCME Hydrocarbons (F2/F2+F3B) in soil (1, 6)	1	N/A	2021/08/28		Auto Calc
CCME Hydrocarbons (F2/F2+F3B) in soil (1, 6)	1	N/A	2021/08/30		Auto Calc
CCME Hydrocarbons (F2/F2+F3B) in soil (1, 6)	5	N/A	2021/08/31		Auto Calc
CCME Hydrocarbons (F4G in soil) (1, 5)	1	2021/08/30	2021/08/31	AB SOP-00036 AB SOP-00040	CCME PHC-CWS m
Elements by ICPMS - Soils (1)	3	2021/08/29	2021/08/30	AB SOP-00001 / AB SOP-00043	EPA 6020b R2 m
Moisture (1)	3	N/A	2021/08/28	AB SOP-00002	CCME PHC-CWS m
Moisture (1)	3	N/A	2021/08/29	AB SOP-00002	CCME PHC-CWS m



Your P.O. #: 20368099-7000-1011 Your Project #: 20368099-6000-1011

#### **Attention: Aurelie Belavance**

GOLDER ASSOCIATES LTD. 2800, 700 -2nd Street SW CALGARY, AB CANADA T2P 2W2

Your C.O.C. #: 644511-01, 644511-15-01, 644511-16-01, 644511-17-01, 644511-18-01, 644511-19-01

Report Date: 2021/09/09 Report #: R3069088

Version: 2 - Final

#### **CERTIFICATE OF ANALYSIS**

BV LABS JOB #: C162523 Received: 2021/08/23, 20:30

Sample Matrix: Soil # Samples Received: 41

		Date	Date		
Analyses	Quantity	Extracted	Analyzed	<b>Laboratory Method</b>	<b>Analytical Method</b>
Moisture (1)	18	N/A	2021/08/30	AB SOP-00002	CCME PHC-CWS m
Moisture (1)	17	N/A	2021/08/31	AB SOP-00002	CCME PHC-CWS m
Nitrite-N and Nitrate-N (soluble) (1)	3	2021/08/31	2021/08/31	AB SOP-00033 / AB SOP- 00023	SM 23 4110 B m
Soluble lons (1)	3	2021/08/31	2021/08/31	AB SOP-00033 / AB SOP- 00042	EPA 6010d R5 m
Soluble Paste (1)	3	2021/08/31	2021/08/31	AB SOP-00033	Carter 2nd ed 15.2 m
Soluble Ions Calculation (1)	3	N/A	2021/08/28		Auto Calc

#### Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

<sup>\*</sup> RPDs calculated using raw data. The rounding of final results may result in the apparent difference.



Your P.O. #: 20368099-7000-1011 Your Project #: 20368099-6000-1011

**Attention: Aurelie Belavance** 

GOLDER ASSOCIATES LTD. 2800, 700 -2nd Street SW CALGARY, AB CANADA T2P 2W2

Your C.O.C. #: 644511-01, 644511-15-01, 644511-16-01, 644511-17-01, 644511-18-01, 644511-19-01

> Report Date: 2021/09/09 Report #: R3069088

> > Version: 2 - Final

#### **CERTIFICATE OF ANALYSIS**

#### BV LABS JOB #: C162523

#### Received: 2021/08/23, 20:30

- (1) This test was performed by Bureau Veritas Calgary Environmental
- (2) No lab extraction date is given for F1BTEX & VOC samples that are field preserved with methanol. Extraction date is date sampled unless otherwise stated.
- (3) Some soil samples may react with the Cr(VI) spike reducing it to Cr(III). These samples are highly unlikely to contain native hexavalent chromium. Thus a failed spike recovery does not invalidate a negative result on the native sample.
- (4) All CCME results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories
- conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil. Validation of Performance-Based Alternative Methods September 2003. Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.
- (5) All CCME results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil, Validation of Performance-Based Alternative Methods September 2003. Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.
- (6) All CCME results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil, Validation of Performance-Based Alternative Methods September 2003. Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

#### **Encryption Key**



09 Sep 2021 12:33:09

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Cynny Hagen, Key Account Specialist Email: Cynny.HAGEN@bureauveritas.com

Phone# (403)735-2273

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



Client Project #: 20368099-6000-1011 Your P.O. #: 20368099-7000-1011

Sampler Initials: PT

#### AT1 BTEX AND F1-F4 IN SOIL (VIALS)

BV Labs ID		AEO249	AEO249		AEO250		AEO251	AEO252		
Sampling Date		2021/08/17 09:18	2021/08/17 09:18		2021/08/17 09:19		2021/08/17 09:20	2021/08/17 09:36		
COC Number		644511-15-01	644511-15-01		644511-15-01		644511-15-01	644511-15-01		
	UNITS	вн19-37-01	BH19-37-01 Lab-Dup	RDL	BH19-37-03	RDL	BH19-37-06	TP19-16-01	RDL	QC Batch
Ext. Pet. Hydrocarbon										
F2 (C10-C16 Hydrocarbons)	mg/kg	73	N/A	10	68 (1)	26	<10	79	10	A334975
F3 (C16-C34 Hydrocarbons)	mg/kg	340	N/A	50	1400 (1)	130	63	250	50	A334975
F4 (C34-C50 Hydrocarbons)	mg/kg	83	N/A	50	410 (1)	130	<50	<50	50	A334975
Reached Baseline at C50	mg/kg	Yes	N/A	N/A	Yes	N/A	Yes	Yes	N/A	A334975
Physical Properties	•			•						
Moisture	%	15	N/A	0.30	62	0.30	18	13	0.30	A335452
Volatiles										
Xylenes (Total)	mg/kg	0.15	N/A	0.045	<0.15	0.15	<0.045	<0.045	0.045	A333210
F1 (C6-C10) - BTEX	mg/kg	<10	N/A	10	<24	24	<10	<10	10	A333210
Field Preserved Volatiles										
Benzene	mg/kg	0.0097	0.013	0.0050	0.031 (2)	0.017	<0.0050	<0.0050	0.0050	A334586
Toluene	mg/kg	0.23	0.23	0.050	<0.080 (3)	0.080	<0.050	<0.050	0.050	A334586
Ethylbenzene	mg/kg	0.023	0.023	0.010	<0.034 (2)	0.034	<0.010	<0.010	0.010	A334586
m & p-Xylene	mg/kg	0.11	0.12	0.040	<0.13 (2)	0.13	<0.040	<0.040	0.040	A334586
o-Xylene	mg/kg	0.036	0.034	0.020	<0.067 (2)	0.067	<0.020	<0.020	0.020	A334586
F1 (C6-C10)	mg/kg	<10	<10	10	<24 (3)	24	<10	<10	10	A334586
Surrogate Recovery (%)										
1,4-Difluorobenzene (sur.)	%	96	94	N/A	97	N/A	93	95	N/A	A334586
4-Bromofluorobenzene (sur.)	%	96	95	N/A	97	N/A	97	96	N/A	A334586
D10-o-Xylene (sur.)	%	93	95	N/A	97	N/A	99	90	N/A	A334586
D4-1,2-Dichloroethane (sur.)	%	101	100	N/A	101	N/A	100	102	N/A	A334586
O-TERPHENYL (sur.)	%	97	N/A	N/A	95	N/A	94	93	N/A	A334975

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate

- (1) Detection limits raised due to high moisture content, sample contains => 50% moisture.
- (2) Detection limits raised based on sample weight used for analysis.
- (3) Detection limits raised based on MDL and sample weight used for analysis.



Client Project #: 20368099-6000-1011 Your P.O. #: 20368099-7000-1011

Sampler Initials: PT

# AT1 BTEX AND F1-F4 IN SOIL (VIALS)

		i e	i	i	i			t	
BV Labs ID		AEO253	AEO253	AEO254	AEO254		AEO255		
Sampling Date		2021/08/17	2021/08/17	2021/08/17	2021/08/17		2021/08/17		
Jumpining Date		09:37	09:37	09:48	09:48		10:03		
COC Number		644511-15-01	644511-15-01	644511-15-01	644511-15-01		644511-15-01		
	UNITS	TP19-16-03	TP19-16-03 Lab-Dup	TP19-16-05	TP19-16-05 Lab-Dup	QC Batch	BH19-39-01	RDL	QC Batch
Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	120	130	<10	N/A	A335451	50	10	A334975
F3 (C16-C34 Hydrocarbons)	mg/kg	370	330	<50	N/A	A335451	640	50	A334975
F4 (C34-C50 Hydrocarbons)	mg/kg	90	82	<50	N/A	A335451	190	50	A334975
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	N/A	A335451	Yes	N/A	A334975
Physical Properties									
Moisture	%	16	N/A	17	17	A335452	31	0.30	A335452
Volatiles									
Xylenes (Total)	mg/kg	<0.045	N/A	<0.045	N/A	A333210	<0.045	0.045	A333210
F1 (C6-C10) - BTEX	mg/kg	<10	N/A	<10	N/A	A333210	<10	10	A333210
Field Preserved Volatiles	•	•	•	•	•	•	•	=	•
Benzene	mg/kg	<0.0050	N/A	<0.0050	N/A	A334586	0.013	0.0050	A334586
Toluene	mg/kg	<0.050	N/A	<0.050	N/A	A334586	<0.050	0.050	A334586
Ethylbenzene	mg/kg	<0.010	N/A	<0.010	N/A	A334586	<0.010	0.010	A334586
m & p-Xylene	mg/kg	<0.040	N/A	<0.040	N/A	A334586	<0.040	0.040	A334586
o-Xylene	mg/kg	<0.020	N/A	<0.020	N/A	A334586	<0.020	0.020	A334586
F1 (C6-C10)	mg/kg	<10	N/A	<10	N/A	A334586	<10	10	A334586
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	96	N/A	96	N/A	A334586	95	N/A	A334586
4-Bromofluorobenzene (sur.)	%	96	N/A	98	N/A	A334586	96	N/A	A334586
D10-o-Xylene (sur.)	%	90	N/A	109	N/A	A334586	97	N/A	A334586
D4-1,2-Dichloroethane (sur.)	%	102	N/A	100	N/A	A334586	100	N/A	A334586
O-TERPHENYL (sur.)	%	100	101	121	N/A	A335451	93	N/A	A334975
RDI - Reportable Detection Lie	mit						· -		

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate



Client Project #: 20368099-6000-1011 Your P.O. #: 20368099-7000-1011

Sampler Initials: PT

# AT1 BTEX AND F1-F4 IN SOIL (VIALS)

-									
BV Labs ID		AEO256		AEO257	AEO258		AEO270		
Sampling Date		2021/08/17		2021/08/17	2021/08/17		2021/08/17		
Janipinig Date		10:04		10:09	10:09		13:49		
COC Number		644511-15-01		644511-15-01	644511-15-01		644511-16-01		
	UNITS	BH19-39-03	QC Batch	BH19-39-06	DUP D	QC Batch	BH19-94-01	RDL	QC Batch
Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	N/A	A334975	<10	<10	A335451	61	10	A335451
F3 (C16-C34 Hydrocarbons)	mg/kg	N/A	A334975	<50	<50	A335451	320	50	A335451
F4 (C34-C50 Hydrocarbons)	mg/kg	N/A	A334975	<50	<50	A335451	87	50	A335451
Reached Baseline at C50	mg/kg	N/A	A334975	Yes	Yes	A335451	Yes	N/A	A335451
Physical Properties									
Moisture	%	10	A335452	18	17	A335452	19	0.30	A335452
Volatiles									
Xylenes (Total)	mg/kg	<0.045	A333210	<0.045	<0.045	A333210	<0.045	0.045	A333349
F1 (C6-C10) - BTEX	mg/kg	<10	A333210	<10	<10	A333210	<10	10	A333349
Field Preserved Volatiles	•		-			-			-
Benzene	mg/kg	<0.0050	A334586	<0.0050	<0.0050	A334586	<0.0050	0.0050	A334586
Toluene	mg/kg	<0.050	A334586	<0.050	<0.050	A334586	<0.050	0.050	A334586
Ethylbenzene	mg/kg	<0.010	A334586	<0.010	<0.010	A334586	<0.010	0.010	A334586
m & p-Xylene	mg/kg	<0.040	A334586	<0.040	<0.040	A334586	<0.040	0.040	A334586
o-Xylene	mg/kg	<0.020	A334586	<0.020	<0.020	A334586	<0.020	0.020	A334586
F1 (C6-C10)	mg/kg	<10	A334586	<10	<10	A334586	<10	10	A334586
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	94	A334586	95	96	A334586	98	N/A	A334586
4-Bromofluorobenzene (sur.)	%	98	A334586	98	95	A334586	97	N/A	A334586
D10-o-Xylene (sur.)	%	97	A334586	97	100	A334586	96	N/A	A334586
D4-1,2-Dichloroethane (sur.)	%	100	A334586	101	100	A334586	102	N/A	A334586
O-TERPHENYL (sur.)	%	N/A	A334975	110	110	A335451	110	N/A	A335451
RDL = Reportable Detection Lir	mit		· -	·	·	· -		- <del></del>	



/ Labs Job #: C162523 GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1011 Your P.O. #: 20368099-7000-1011

Sampler Initials: PT

# AT1 BTEX AND F1-F4 IN SOIL (VIALS)

BV Labs ID		AEO271	AEO272	AEO273	AEO274	AEO275		
Compline Date		2021/08/17	2021/08/17	2021/08/17	2021/08/17	2021/08/17		
Sampling Date		13:50	13:51	10:19	10:21	10:39		
COC Number		644511-16-01	644511-16-01	644511-16-01	644511-16-01	644511-16-01		
	UNITS	BH19-94-03	BH19-94-05	TP19-17-01	TP19-17-03	TP19-17-06	RDL	QC Batch
Ext. Pet. Hydrocarbon								
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	<10	110	220	<10	10	A335451
F3 (C16-C34 Hydrocarbons)	mg/kg	<50	<50	320	580	<50	50	A335451
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	<50	63	150	<50	50	A335451
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes	Yes	N/A	A335451
Physical Properties								
Moisture	%	7.4	17	12	17	17	0.30	A335452
Volatiles								
Xylenes (Total)	mg/kg	<0.045	<0.045	<0.045	<0.045	<0.045	0.045	A333349
F1 (C6-C10) - BTEX	mg/kg	<10	<10	<10	<10	<10	10	A333349
Field Preserved Volatiles	•	•	•	•	-	•	•	
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	A334586
Toluene	mg/kg	<0.050	<0.050	<0.050	0.38	<0.050	0.050	A334586
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	A334586
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	A334586
o-Xylene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	A334586
F1 (C6-C10)	mg/kg	<10	<10	<10	<10	<10	10	A334586
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	94	93	95	95	94	N/A	A334586
4-Bromofluorobenzene (sur.)	%	101	99	96	98	96	N/A	A334586
D10-o-Xylene (sur.)	%	98	90	97	98	98	N/A	A334586
D4-1,2-Dichloroethane (sur.)	%	103	102	101	102	101	N/A	A334586
O-TERPHENYL (sur.)	%	102	103	102	117	127	N/A	A335451
RDL = Reportable Detection Lir	nit							



Report Date: 2021/09/09

GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1011 Your P.O. #: 20368099-7000-1011

Sampler Initials: PT

# AT1 BTEX AND F1-F4 IN SOIL (VIALS)

	_								
BV Labs ID		AEO276	AEO276		AEO277	AEO278	AEO279		
Sampling Date		2021/08/17	2021/08/17		2021/08/17	2021/08/17	2021/08/17		
Janipinig Date		10:21	10:21		10:50	10:51	10:52		
COC Number		644511-16-01	644511-16-01		644511-16-01	644511-16-01	644511-16-01		
	UNITS	DUP E	DUP E Lab-Dup	QC Batch	TP19-18-02	TP19-18-03	TP19-18-05	RDL	QC Batch
Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	190	N/A	A335451	99	77	<10	10	A335167
F3 (C16-C34 Hydrocarbons)	mg/kg	540	N/A	A335451	270	200	<50	50	A335167
F4 (C34-C50 Hydrocarbons)	mg/kg	130	N/A	A335451	<50	<50	<50	50	A335167
Reached Baseline at C50	mg/kg	Yes	N/A	A335451	Yes	Yes	Yes	N/A	A335167
Physical Properties									
Moisture	%	14	15	A335403	12	13	5.9	0.30	A335214
Volatiles									
Xylenes (Total)	mg/kg	<0.045	N/A	A333349	<0.045	<0.045	<0.045	0.045	A333349
F1 (C6-C10) - BTEX	mg/kg	<10	N/A	A333349	<10	<10	<10	10	A333349
Field Preserved Volatiles	•	•	•	•	•	•	•	•	•
Benzene	mg/kg	<0.0050	N/A	A334586	<0.0050	<0.0050	0.0078	0.0050	A334586
Toluene	mg/kg	0.28	N/A	A334586	<0.050	<0.050	<0.050	0.050	A334586
Ethylbenzene	mg/kg	<0.010	N/A	A334586	<0.010	<0.010	<0.010	0.010	A334586
m & p-Xylene	mg/kg	<0.040	N/A	A334586	<0.040	<0.040	<0.040	0.040	A334586
o-Xylene	mg/kg	<0.020	N/A	A334586	<0.020	<0.020	<0.020	0.020	A334586
F1 (C6-C10)	mg/kg	<10	N/A	A334586	<10	<10	<10	10	A334586
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	93	N/A	A334586	95	96	94	N/A	A334586
4-Bromofluorobenzene (sur.)	%	95	N/A	A334586	97	96	97	N/A	A334586
D10-o-Xylene (sur.)	%	98	N/A	A334586	98	96	96	N/A	A334586
D4-1,2-Dichloroethane (sur.)	%	102	N/A	A334586	101	101	100	N/A	A334586
O-TERPHENYL (sur.)	%	109	N/A	A335451	105	112	99	N/A	A335167
BDI - Banartable Detection Lie	i+							-	

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate



Client Project #: 20368099-6000-1011 Your P.O. #: 20368099-7000-1011

Sampler Initials: PT

#### AT1 BTEX AND F1-F4 IN SOIL (VIALS)

BV Labs ID		AEO295	AEO295	AEO296	AEO296		AEO297		
Campling Date		2021/08/17	2021/08/17	2021/08/17	2021/08/17		2021/08/17		
Sampling Date		11:09	11:09	11:12	11:12		11:13		
COC Number		644511-17-01	644511-17-01	644511-17-01	644511-17-01		644511-17-01		
	UNITS	TP19-19-01	TP19-19-01 Lab-Dup	TP19-19-03	TP19-19-03 Lab-Dup	RDL	TP19-19-05	RDL	QC Batch
Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	130	N/A	150	N/A	10	N/A	10	A336003
F3 (C16-C34 Hydrocarbons)	mg/kg	280	N/A	340	N/A	50	N/A	50	A336003
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	N/A	75	N/A	50	N/A	50	A336003
Reached Baseline at C50	mg/kg	Yes	N/A	Yes	N/A	N/A	N/A	N/A	A336003
Physical Properties									
Moisture	%	9.8	N/A	17	18	0.30	57	0.30	A336200
Volatiles									
Xylenes (Total)	mg/kg	<0.045	N/A	<0.045	N/A	0.045	<0.17	0.17	A333349
F1 (C6-C10) - BTEX	mg/kg	<10	N/A	11	N/A	10	<26	26	A333349
Field Preserved Volatiles									
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	N/A	0.0050	0.084 (1)	0.020	A334646
Toluene	mg/kg	<0.050	<0.050	<0.050	N/A	0.050	0.17 (2)	0.050	A334646
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	N/A	0.010	0.034 (2)	0.014	A334646
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	N/A	0.040	<0.16 (1)	0.16	A334646
o-Xylene	mg/kg	<0.020	<0.020	<0.020	N/A	0.020	<0.078 (1)	0.078	A334646
F1 (C6-C10)	mg/kg	<10	<10	11	N/A	10	<26 (2)	26	A334646
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	104	102	106	N/A	N/A	103	N/A	A334646
4-Bromofluorobenzene (sur.)	%	100	99	99	N/A	N/A	99	N/A	A334646
D10-o-Xylene (sur.)	%	107	107	131	N/A	N/A	121	N/A	A334646
D4-1,2-Dichloroethane (sur.)	%	106	103	105	N/A	N/A	104	N/A	A334646
O-TERPHENYL (sur.)	%	95	N/A	102	N/A	N/A	N/A	N/A	A336003

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate

- (1) Detection limits raised based on sample weight used for analysis.
- (2) Detection limit reported based on MDL and sample weight used for analysis.



Client Project #: 20368099-6000-1011 Your P.O. #: 20368099-7000-1011

Sampler Initials: PT

#### AT1 BTEX AND F1-F4 IN SOIL (VIALS)

BV Labs ID		AEO298	AEO299	AEO300	AEO300	AEO301	AEO302		
Sampling Date		2021/08/17	2021/08/17	2021/08/17	2021/08/17	2021/08/17	2021/08/17		
Sampling Date		11:17	15:03	15:04	15:04	15:10	14:22		
COC Number		644511-17-01	644511-17-01	644511-17-01	644511-17-01	644511-17-01	644511-17-01		
	UNITS	TP19-19-06	TP21-81-01	TP21-81-03	TP21-81-03 Lab-Dup	TP21-81-06	TP19-09-02	RDL	QC Batch
Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	130	290	350	<10	130	10	A336003
F3 (C16-C34 Hydrocarbons)	mg/kg	<50	430	530	700	<50	320	50	A336003
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	100	98	180	<50	62	50	A336003
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes	Yes	Yes	N/A	A336003
Physical Properties									
Moisture	%	15	13	15	N/A	17	12	0.30	A336200
Volatiles									
Xylenes (Total)	mg/kg	<0.045	0.064	0.25	N/A	<0.045	0.053	0.045	A333349
F1 (C6-C10) - BTEX	mg/kg	<10	<10	23	N/A	<10	<10	10	A333349
Field Preserved Volatiles	•		-	•	•	•	•	=	•
Benzene	mg/kg	<0.0050	0.0083	0.011	N/A	<0.0050	<0.0050	0.0050	A334646
Toluene	mg/kg	<0.050	0.072	0.24	N/A	<0.050	0.15	0.050	A334646
Ethylbenzene	mg/kg	<0.010	0.015	0.039	N/A	<0.010	<0.010	0.010	A334646
m & p-Xylene	mg/kg	<0.040	0.064	0.18	N/A	<0.040	0.053	0.040	A334646
o-Xylene	mg/kg	<0.020	<0.020	0.076	N/A	<0.020	<0.020	0.020	A334646
F1 (C6-C10)	mg/kg	<10	<10	24	N/A	<10	<10	10	A334646
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	102	103	103	N/A	105	104	N/A	A334646
4-Bromofluorobenzene (sur.)	%	99	100	98	N/A	98	99	N/A	A334646
D10-o-Xylene (sur.)	%	107	117	120	N/A	118	121	N/A	A334646
D4-1,2-Dichloroethane (sur.)	%	103	103	103	N/A	99	101	N/A	A334646
O-TERPHENYL (sur.)	%	101	100	96	109	100	98	N/A	A336003
PDI - Papartable Detection Lie	mi+		- <del> </del>						

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate



Report Date: 2021/09/09

GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1011 Your P.O. #: 20368099-7000-1011

Sampler Initials: PT

#### AT1 BTEX AND F1-F4 IN SOIL (VIALS)

BV Labs ID		AEO303		AEO304		AEO315	AEO316		
Sampling Date		2021/08/17		2021/08/17		2021/08/17	2021/08/17		
Jumping Bute		14:23		14:24		15:22	15:23		
COC Number		644511-17-01		644511-17-01		644511-18-01	644511-18-01		
	UNITS	TP19-09-03	RDL	TP19-09-06	RDL	TP21-74-02	TP21-74-03	RDL	QC Batch
Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	230	10	<10	10	110	220	10	A336003
F3 (C16-C34 Hydrocarbons)	mg/kg	510	50	<50	50	330	460	50	A336003
F4 (C34-C50 Hydrocarbons)	mg/kg	120	50	<50	50	91	120	50	A336003
Reached Baseline at C50	mg/kg	Yes	N/A	Yes	N/A	Yes	Yes	N/A	A336003
Physical Properties					•				
Moisture	%	15	0.30	5.9	0.30	N/A	N/A	0.30	A336200
Volatiles									
Xylenes (Total)	mg/kg	<0.045	0.045	<0.045	0.045	<0.045	0.55	0.045	A333349
F1 (C6-C10) - BTEX	mg/kg	17	10	<15	15	<10	16	10	A333349
Field Preserved Volatiles									
Benzene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0082	0.0050	A334646
Toluene	mg/kg	0.25	0.050	<0.050	0.050	<0.050	0.35	0.050	A334646
Ethylbenzene	mg/kg	0.014	0.010	<0.010	0.010	<0.010	0.064	0.010	A334646
m & p-Xylene	mg/kg	<0.040	0.040	<0.040	0.040	<0.040	0.33	0.040	A334646
o-Xylene	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.22	0.020	A334646
F1 (C6-C10)	mg/kg	17	10	<15 (1)	15	<10	17	10	A334646
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	104	N/A	104	N/A	104	103	N/A	A334646
4-Bromofluorobenzene (sur.)	%	99	N/A	100	N/A	101	100	N/A	A334646
D10-o-Xylene (sur.)	%	114	N/A	112	N/A	122	119	N/A	A334646
D4-1,2-Dichloroethane (sur.)	%	100	N/A	102	N/A	104	105	N/A	A334646
O-TERPHENYL (sur.)	%	117	N/A	110	N/A	100	95	N/A	A336003

RDL = Reportable Detection Limit

N/A = Not Applicable

(1) Detection limit raised due to interferent.



Client Project #: 20368099-6000-1011 Your P.O. #: 20368099-7000-1011

Sampler Initials: PT

### AT1 BTEX AND F1-F4 IN SOIL (VIALS)

BV Labs ID		AEO317		AEO318	AEO319	AEO320		AEO321		
Sampling Date		2021/08/17		2021/08/17	2021/08/17	2021/08/17		2021/08/17		
Sampling Date		15:24		15:24	14:02	14:03		14:10		
COC Number		644511-18-01		644511-18-01	644511-18-01	644511-18-01		644511-18-01		
	UNITS	TP21-74-05	RDL	DUP F	TP19-08-02	TP19-08-03	RDL	TP19-08-06	RDL	QC Batch
Ext. Pet. Hydrocarbon										
F2 (C10-C16 Hydrocarbons)	mg/kg	N/A	10	N/A	95	N/A	10	<10	10	A336003
F3 (C16-C34 Hydrocarbons)	mg/kg	N/A	50	N/A	370	N/A	50	<50	50	A336003
F4 (C34-C50 Hydrocarbons)	mg/kg	N/A	50	N/A	100	N/A	50	<50	50	A336003
Reached Baseline at C50	mg/kg	N/A	N/A	N/A	Yes	N/A	N/A	Yes	N/A	A336003
Physical Properties		•	•		•	-	•	•	-	•
Moisture	%	N/A	0.30	12	10	12	0.30	14	0.30	A336200
Volatiles										
Xylenes (Total)	mg/kg	<0.045	0.045	0.27	0.074	0.17	0.045	0.080	0.045	A333349
F1 (C6-C10) - BTEX	mg/kg	<11	11	17	<10	77	10	<24	24	A333349
Field Preserved Volatiles										
Benzene	mg/kg	<0.0050	0.0050	0.010	0.014	0.010	0.0050	<0.0050	0.0050	A334646
Toluene	mg/kg	<0.050	0.050	0.19	0.078	0.30	0.050	<0.050	0.050	A334646
Ethylbenzene	mg/kg	<0.010	0.010	0.036	0.015	0.022	0.010	0.020	0.010	A334646
m & p-Xylene	mg/kg	<0.040	0.040	0.17	0.074	0.12	0.040	0.080	0.040	A334646
o-Xylene	mg/kg	<0.020	0.020	0.099	<0.020	0.059	0.020	<0.020	0.020	A334646
F1 (C6-C10)	mg/kg	<11 (1)	11	18	<10	77	10	<24 (1)	24	A334646
Surrogate Recovery (%)										
1,4-Difluorobenzene (sur.)	%	102	N/A	103	105	103	N/A	102	N/A	A334646
4-Bromofluorobenzene (sur.)	%	101	N/A	100	101	99	N/A	100	N/A	A334646
D10-o-Xylene (sur.)	%	114	N/A	125	109	115	N/A	126	N/A	A334646
D4-1,2-Dichloroethane (sur.)	%	102	N/A	103	103	103	N/A	102	N/A	A334646
O-TERPHENYL (sur.)	%	N/A	N/A	N/A	104	N/A	N/A	97	N/A	A336003

RDL = Reportable Detection Limit

N/A = Not Applicable

(1) Detection limit raised due to interferent.



/ Labs Job #: C162523 GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1011 Your P.O. #: 20368099-7000-1011

Sampler Initials: PT

### AT1 BTEX AND F1-F4 IN SOIL (VIALS)

mg/kg mg/kg mg/kg mg/kg	2021/08/17 14:04 644511-18-01 <b>TP19-08-04</b> N/A N/A N/A N/A	2021/08/17 14:40 644511-19-01 <b>TP19-11-01</b> 92 360 90	QC Batch A336003 A336003	2021/08/17 14:41 644511-19-01 <b>TP19-11-03</b>	RDL 10	QC Batch	2021/08/17 14:46 644511-19-01 <b>TP19-11-05</b>	RDL	QC Batch
mg/kg mg/kg mg/kg mg/kg	644511-18-01 <b>TP19-08-04</b> N/A  N/A  N/A	644511-19-01 <b>TP19-11-01</b> 92  360	A336003	644511-19-01 <b>TP19-11-03</b>		`	644511-19-01	RDL	QC Batch
mg/kg mg/kg mg/kg mg/kg	N/A N/A N/A	92 360	A336003	TP19-11-03		`		RDL	QC Batch
mg/kg mg/kg mg/kg mg/kg	N/A N/A N/A	92 360	A336003			`	TP19-11-05	RDL	QC Batch
mg/kg mg/kg mg/kg	N/A N/A	360		280	10				
mg/kg mg/kg mg/kg	N/A N/A	360		280	10				
mg/kg mg/kg	N/A		A336003		10	A335451	N/A	10	A335451
mg/kg		90		550	50	A335451	N/A	50	A335451
	N/A		A336003	120	50	A335451	N/A	50	A335451
		Yes	A336003	Yes	N/A	A335451	N/A	N/A	A335451
				•		•	•		
%	22	11	A336200	11	0.30	A335403	27	0.30	A336200
mg/kg	0.71	0.25	A333349	0.20	0.045	A333349	<0.045	0.045	A333349
mg/kg	45	<10	A333349	13	10	A333349	<23	23	A333349
mg/kg	<0.0050	0.017	A334646	0.019	0.0050	A334646	<0.0050	0.0050	A335198
mg/kg	<0.050	0.62	A334646	0.24	0.050	A334646	<0.050	0.050	A335198
mg/kg	0.11	0.052	A334646	0.027	0.010	A334646	<0.010	0.010	A335198
mg/kg	0.50	0.18	A334646	0.15	0.040	A334646	<0.040	0.040	A335198
mg/kg	0.20	0.068	A334646	0.049	0.020	A334646	<0.020	0.020	A335198
mg/kg	46	<10	A334646	13	10	A334646	<23 (1)	23	A335198
%	102	103	A334646	102	N/A	A334646	95	N/A	A335198
%	99	99	A334646	101	N/A	A334646	99	N/A	A335198
%	128	125	A334646	122	N/A	A334646	95	N/A	A335198
%	102	103	A334646	104	N/A	A334646	102	N/A	A335198
%	N/A	104	A336003	111	N/A	A335451	N/A	N/A	N/A
n	ng/kg ng/kg ng/kg ng/kg ng/kg ng/kg % %	ng/kg 0.71 ng/kg 45  ng/kg <0.0050 ng/kg <0.050 ng/kg 0.11 ng/kg 0.50 ng/kg 0.20 ng/kg 46  % 102 % 99 % 128 % 102	ng/kg 0.71 0.25 ng/kg 45 <10  ng/kg <0.0050 0.017 ng/kg <0.050 0.62 ng/kg 0.11 0.052 ng/kg 0.50 0.18 ng/kg 0.20 0.068 ng/kg 46 <10  % 102 103 % 99 99 % 128 125 % 102 103	ng/kg 0.71 0.25 A333349 ng/kg 45 <10 A333349 ng/kg <0.0050 0.017 A334646 ng/kg <0.050 0.62 A334646 ng/kg 0.11 0.052 A334646 ng/kg 0.50 0.18 A334646 ng/kg 0.20 0.068 A334646 ng/kg 46 <10 A334646 % 102 103 A334646 % 99 99 A334646 % 128 125 A334646 % 102 103 A334646	ng/kg 0.71 0.25 A333349 0.20 ng/kg 45 <10 A333349 13  ng/kg <0.0050 0.017 A334646 0.019 ng/kg <0.050 0.62 A334646 0.24 ng/kg 0.11 0.052 A334646 0.027 ng/kg 0.50 0.18 A334646 0.15 ng/kg 0.20 0.068 A334646 0.049 ng/kg 46 <10 A334646 13  % 102 103 A334646 102 % 99 99 A334646 101 % 128 125 A334646 122 % 102 103 A334646 104	ng/kg 0.71 0.25 A333349 0.20 0.045 ng/kg 45 <10 A333349 13 10  ng/kg <0.0050 0.017 A334646 0.019 0.0050 ng/kg <0.050 0.62 A334646 0.24 0.050 ng/kg 0.11 0.052 A334646 0.027 0.010 ng/kg 0.50 0.18 A334646 0.15 0.040 ng/kg 0.20 0.068 A334646 0.049 0.020 ng/kg 46 <10 A334646 13 10  % 102 103 A334646 102 N/A % 99 99 A334646 101 N/A % 128 125 A334646 122 N/A % 102 103 A334646 104 N/A	ng/kg	ng/kg         0.71         0.25         A333349         0.20         0.045         A333349         <0.045           ng/kg         45         <10         A333349         13         10         A333349         <23           ng/kg         <0.0050         0.017         A334646         0.019         0.0050         A334646         <0.0050           ng/kg         <0.050         0.62         A334646         0.24         0.050         A334646         <0.050           ng/kg         0.11         0.052         A334646         0.027         0.010         A334646         <0.010           ng/kg         0.50         0.18         A334646         0.15         0.040         A334646         <0.040           ng/kg         0.20         0.068         A334646         0.049         0.020         A334646         <0.020           ng/kg         46         <10         A334646         13         10         A334646         <0.020           ng/kg         46         <10         A334646         102         N/A         A334646         95           %         99         99         A334646         101         N/A         A334646         95           % <td>ng/kg         0.71         0.25         A333349         0.20         0.045         A333349         &lt;0.045         0.045           ng/kg         45         &lt;10         A333349         13         10         A333349         &lt;23         23           ng/kg         &lt;0.0050         0.017         A334646         0.019         0.0050         A334646         &lt;0.0050         0.0050</td>	ng/kg         0.71         0.25         A333349         0.20         0.045         A333349         <0.045         0.045           ng/kg         45         <10         A333349         13         10         A333349         <23         23           ng/kg         <0.0050         0.017         A334646         0.019         0.0050         A334646         <0.0050         0.0050

RDL = Reportable Detection Limit

N/A = Not Applicable

(1) Detection limit raised due to interferent.



Client Project #: 20368099-6000-1011 Your P.O. #: 20368099-7000-1011

Sampler Initials: PT

# **CCME REGULATED METALS - SOILS (SOIL)**

BV Labs ID		AEO315		AEO316	AEO317		
Sampling Date		2021/08/17 15:22		2021/08/17 15:23	2021/08/17 15:24		
COC Number		644511-18-01		644511-18-01	644511-18-01		
	UNITS	TP21-74-02	QC Batch	TP21-74-03	TP21-74-05	RDL	QC Batch
Elements	•				•	•	
Soluble (Hot water) Boron (B)	mg/kg	0.39	A336116	0.49	0.29	0.10	A336116
Hex. Chromium (Cr 6+)	mg/kg	<0.080	A336364	<0.080	<0.080	0.080	A334489
Total Antimony (Sb)	mg/kg	0.58	A335392	0.51	<0.50	0.50	A335392
Total Arsenic (As)	mg/kg	9.1	A335392	6.8	9.0	1.0	A335392
Total Barium (Ba)	mg/kg	2700	A335392	2400	220	1.0	A335392
Total Beryllium (Be)	mg/kg	<0.40	A335392	<0.40	<0.40	0.40	A335392
Total Cadmium (Cd)	mg/kg	0.18	A335392	0.16	0.15	0.050	A335392
Total Chromium (Cr)	mg/kg	72	A335392	130	27	1.0	A335392
Total Cobalt (Co)	mg/kg	5.9	A335392	5.4	7.0	0.50	A335392
Total Copper (Cu)	mg/kg	12	A335392	15	9.6	1.0	A335392
Total Lead (Pb)	mg/kg	25	A335392	25	6.5	0.50	A335392
Total Mercury (Hg)	mg/kg	0.080	A335392	0.083	<0.050	0.050	A335392
Total Molybdenum (Mo)	mg/kg	2.2	A335392	3.0	1.2	0.40	A335392
Total Nickel (Ni)	mg/kg	40	A335392	67	25	1.0	A335392
Total Selenium (Se)	mg/kg	<0.50	A335392	<0.50	<0.50	0.50	A335392
Total Silver (Ag)	mg/kg	<0.20	A335392	<0.20	<0.20	0.20	A335392
Total Thallium (TI)	mg/kg	<0.10	A335392	<0.10	<0.10	0.10	A335392
Total Tin (Sn)	mg/kg	<1.0	A335392	<1.0	<1.0	1.0	A335392
Total Uranium (U)	mg/kg	0.71	A335392	0.57	0.47	0.20	A335392
Total Vanadium (V)	mg/kg	28	A335392	24	25	1.0	A335392
Total Zinc (Zn)	mg/kg	44	A335392	36	41	10	A335392
RDL = Reportable Detection Lin	nit					•	



Report Date: 2021/09/09

GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1011 Your P.O. #: 20368099-7000-1011

Sampler Initials: PT

#### **RESULTS OF CHEMICAL ANALYSES OF SOIL**

BV Labs ID		AEO315		AEO316		AEO317	AEO317		
Campling Data		2021/08/17		2021/08/17		2021/08/17	2021/08/17		
Sampling Date		15:22		15:23		15:24	15:24		
COC Number		644511-18-01		644511-18-01		644511-18-01	644511-18-01		
	UNITS	TP21-74-02	RDL	TP21-74-03	RDL	TP21-74-05	TP21-74-05	RDL	QC Batch
	UNITS	1721-74-02	KDL	1721-74-03	KDL	1721-74-05	Lab-Dup	KDL	QC Battii
Calculated Parameters									
Calculated Sulphate (SO4)	mg/kg	150	2.1	110	2.1	11	N/A	1.3	A333147
Calculated Nitrate (N)	mg/kg	<0.085	0.085	<0.083	0.083	<0.051	N/A	0.051	A333147
Soluble Parameters									
Soluble Nitrite (N)	mg/L	<0.20	0.20	<0.20	0.20	<0.20	<0.20	0.20	A337473
Soluble Nitrate (N)	mg/L	1.2	0.20	<0.20	0.20	0.29	<0.20	0.20	A337473
Saturation %	%	43	N/A	42	N/A	26	24	N/A	A335174
Soluble Sulphate (SO4)	mg/L	350	5.0	270	5.0	43	N/A	5.0	A338090

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate



Client Project #: 20368099-6000-1011 Your P.O. #: 20368099-7000-1011

Sampler Initials: PT

#### PETROLEUM HYDROCARBONS (CCME)

BV Labs ID		AEO256		AEO297		AEO317	AEO318	AEO320		
Sampling Date		2021/08/17		2021/08/17		2021/08/17	2021/08/17	2021/08/17		
Sampling Date		10:04		11:13		15:24	15:24	14:03		
COC Number		644511-15-01		644511-17-01		644511-18-01	644511-18-01	644511-18-01		
	UNITS	BH19-39-03	RDL	TP19-19-05	RDL	TP21-74-05	DUP F	TP19-08-03	RDL	QC Batch
Ext. Pet. Hydrocarbon										
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	10	<23 (1)	23	<10	170	170	10	A335211
F3 (C16-C34 Hydrocarbons)	mg/kg	<71	71	290	170	<71	370	400	71	A333320
F3A (C16-C22)	mg/kg	<50	50	<120 (1)	120	<50	170	180	50	A335211
F3B (C22-C34)	mg/kg	<50	50	290 (1)	120	<50	200	220	50	A335211
F2% (BIC)	mg/kg	NC	N/A	NC	N/A	NC	NC	NC	N/A	A333320
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	50	<120 (1)	120	<50	77	91	50	A335211
Reached Baseline at C50	mg/kg	Yes	N/A	Yes	N/A	Yes	Yes	Yes	N/A	A335211
Surrogate Recovery (%)										
O-TERPHENYL (sur.)	%	89	N/A	89	N/A	89	93	96	N/A	A335211

RDL = Reportable Detection Limit

N/A = Not Applicable

(1) Detection limits raised due to high moisture content, sample contains => 50% moisture.

BV Labs ID		AEO322	AEO327		
Samulina Data		2021/08/17	2021/08/17		
Sampling Date		14:04	14:46		
COC Number		644511-18-01	644511-19-01		
	UNITS	TP19-08-04	TP19-11-05	RDL	QC Batch
Ext. Pet. Hydrocarbon					
F2 (C10-C16 Hydrocarbons)	mg/kg	37	95	10	A335211
F3 (C16-C34 Hydrocarbons)	mg/kg	1800	1500	71	A333320
F3A (C16-C22)	mg/kg	180	170	50	A335211
F3B (C22-C34)	mg/kg	1600	1300	50	A335211
F2% (BIC)	mg/kg	NC	NC	N/A	A333320
F4 (C34-C50 Hydrocarbons)	mg/kg	980	690	50	A335211
Reached Baseline at C50	mg/kg	Yes	No	N/A	A335211
F4G-SG (Heavy Hydrocarbons-Grav.)	mg/kg	N/A	4300	500	A337167
Surrogate Recovery (%)	•				
O-TERPHENYL (sur.)	%	100	97	N/A	A335211
RDL = Reportable Detection Limit	•				
N/A = Not Applicable					



Client Project #: 20368099-6000-1011 Your P.O. #: 20368099-7000-1011

Sampler Initials: PT

# **PHYSICAL TESTING (SOIL)**

BV Labs ID		AEO315	AEO316	AEO317		
Sampling Date		2021/08/17 15:22	2021/08/17 15:23	2021/08/17 15:24		
COC Number		644511-18-01	644511-18-01	644511-18-01		
	UNITS	TP21-74-02	TP21-74-03	TP21-74-05	RDL	QC Batch
Physical Properties	UNITS	TP21-74-02	TP21-74-03	TP21-74-05	RDL	QC Batch
Physical Properties Moisture	WNITS %	<b>TP21-74-02</b>	<b>TP21-74-03</b>	<b>TP21-74-05</b> 11	<b>RDL</b> 0.30	QC Batch A334625



Client Project #: 20368099-6000-1011 Your P.O. #: 20368099-7000-1011

Sampler Initials: PT

# **ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)**

BV Labs ID		AEO315	AEO315	AEO316	AEO317		
Sampling Date		2021/08/17 15:22	2021/08/17 15:22	2021/08/17 15:23	2021/08/17 15:24		
COC Number		644511-18-01	644511-18-01	644511-18-01	644511-18-01		
			TP21-74-02	TD24 74 02	TD24 74 05		00 0-4-1-
	UNITS	TP21-74-02	Lab-Dup	TP21-74-03	TP21-74-05	KDL	QC Batch
Elements	UNITS	TP21-74-02	Lab-Dup	TP21-74-03	TP21-74-05	KDL	QC Batch
Elements Total Fusion Barium (Ba)	mg/kg	3700	<b>Lab-Dup</b> 3900	4000	980	50	A340316

Lab-Dup = Laboratory Initiated Duplicate



Report Date: 2021/09/09

GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1011 Your P.O. #: 20368099-7000-1011

Sampler Initials: PT

#### **GENERAL COMMENTS**

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	5.7°C
Package 2	4.0°C
Package 3	7.3°C
Package 4	5.0°C
Package 5	7.0°C

Results relate only to the items tested.



Report Date: 2021/09/09

GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1011 Your P.O. #: 20368099-7000-1011

Sampler Initials: PT

#### **QUALITY ASSURANCE REPORT**

QA/QC								
Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
A334489	KWE	Matrix Spike	Hex. Chromium (Cr 6+)	2021/08/27		97	%	75 - 125
A334489	KWE	Spiked Blank	Hex. Chromium (Cr 6+)	2021/08/27		110	%	80 - 120
A334489	KWE	Method Blank	Hex. Chromium (Cr 6+)	2021/08/27	<0.080		mg/kg	
A334489	KWE	RPD	Hex. Chromium (Cr 6+)	2021/08/27	NC		%	35
A334586	RSU	Matrix Spike [AEO249-02]	1,4-Difluorobenzene (sur.)	2021/08/30		97	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/08/30		99	%	50 - 140
			D10-o-Xylene (sur.)	2021/08/30		91	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/30		101	%	50 - 140
			Benzene	2021/08/30		97	%	50 - 140
			Toluene	2021/08/30		100	%	50 - 140
			Ethylbenzene	2021/08/30		102	%	50 - 140
			m & p-Xylene	2021/08/30		104	%	50 - 140
			o-Xylene	2021/08/30		106	%	50 - 140
			F1 (C6-C10)	2021/08/30		78	%	60 - 140
A334586	RSU	Spiked Blank	1,4-Difluorobenzene (sur.)	2021/08/30		95	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/08/30		96	%	50 - 140
			D10-o-Xylene (sur.)	2021/08/30		88	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/30		102	%	50 - 140
			Benzene	2021/08/30		89	%	60 - 130
			Toluene	2021/08/30		94	%	60 - 130
			Ethylbenzene	2021/08/30		93	%	60 - 130
			m & p-Xylene	2021/08/30		95	%	60 - 130
			o-Xylene	2021/08/30		88	%	60 - 130
			F1 (C6-C10)	2021/08/30		88	%	60 - 140
A334586	RSU	Method Blank	1,4-Difluorobenzene (sur.)	2021/08/30		96	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/08/30		95	%	50 - 140
			D10-o-Xylene (sur.)	2021/08/30		86	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/30		99	%	50 - 140
			Benzene	2021/08/30	<0.0050		mg/kg	
			Toluene	2021/08/30	<0.050		mg/kg	
			Ethylbenzene	2021/08/30	<0.010		mg/kg	
			m & p-Xylene	2021/08/30	<0.040		mg/kg	
			o-Xylene	2021/08/30	<0.020		mg/kg	
			F1 (C6-C10)	2021/08/30	<10		mg/kg	
A334586	RSU	RPD [AEO249-02]	Benzene	2021/08/30	29		%	50
		(	Toluene	2021/08/30	0.55		%	50
			Ethylbenzene	2021/08/30	1.1		%	50
			m & p-Xylene	2021/08/30	0.66		%	50
			o-Xylene	2021/08/30	3.6		%	50
			F1 (C6-C10)	2021/08/30	NC		%	30
A334625	RIL	Method Blank	Moisture	2021/08/28	<0.30		%	30
A334625	RIL	RPD	Moisture	2021/08/28	8.4		%	20
A334646	DO1	Matrix Spike [AEO295-02]	1,4-Difluorobenzene (sur.)	2021/08/31	0.1	95	%	50 - 140
1334040	DO1	Wattix Spike [ALO255 02]	4-Bromofluorobenzene (sur.)	2021/08/31		98	%	50 - 140
			D10-o-Xylene (sur.)	2021/08/31		107	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/31		107	%	50 - 140
			Benzene	2021/08/31		99	%	50 - 140
			Toluene	2021/08/31		94	% %	50 - 140
			Ethylbenzene	2021/08/31		94 101	% %	50 - 140
			m & p-Xylene	2021/08/31		94	% %	50 - 140
			·			94 98		
			o-Xylene F1 (C6-C10)	2021/08/31 2021/08/31		98 93	% %	50 - 140 60 - 140
			1 T (CO-CTO)	2021/08/31		44	70	DU - 140



Client Project #: 20368099-6000-1011 Your P.O. #: 20368099-7000-1011

Sampler Initials: PT

QA/QC								
Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			4-Bromofluorobenzene (sur.)	2021/08/31		88	%	50 - 140
			D10-o-Xylene (sur.)	2021/08/31		95	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/31		97	%	50 - 140
			Benzene	2021/08/31		86	%	60 - 130
			Toluene	2021/08/31		89	%	60 - 130
			Ethylbenzene	2021/08/31		90	%	60 - 130
			m & p-Xylene	2021/08/31		87	%	60 - 130
			o-Xylene	2021/08/31		79	%	60 - 130
			F1 (C6-C10)	2021/08/31		88	%	60 - 140
A334646	DO1	Method Blank	1,4-Difluorobenzene (sur.)	2021/09/01		106	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/09/01		86	%	50 - 140
			D10-o-Xylene (sur.)	2021/09/01		74	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/09/01		74	%	50 - 140
			Benzene	2021/09/01	<0.0050		mg/kg	
			Toluene	2021/09/01	<0.050		mg/kg	
			Ethylbenzene	2021/09/01	<0.010		mg/kg	
			m & p-Xylene	2021/09/01	<0.040		mg/kg	
			o-Xylene	2021/09/01	<0.020		mg/kg	
			F1 (C6-C10)	2021/09/01	<10		mg/kg	
A334646	DO1	RPD [AEO295-02]	Benzene	2021/08/31	NC		%	50
			Toluene	2021/08/31	NC		%	50
			Ethylbenzene	2021/08/31	NC		%	50
			m & p-Xylene	2021/08/31	NC		%	50
			o-Xylene	2021/08/31	NC		%	50
			F1 (C6-C10)	2021/08/31	NC		%	30
A334975	MHF	Matrix Spike	O-TERPHENYL (sur.)	2021/08/28		125	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/28		121	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/08/28		126	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/08/28		125	%	60 - 140
334975	MHF	Spiked Blank	O-TERPHENYL (sur.)	2021/08/28		109	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/28		108	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/08/28		113	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/08/28		112	%	60 - 140
4334975	MHF	Method Blank	O-TERPHENYL (sur.)	2021/08/28		136	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/28	<10		mg/kg	
			F3 (C16-C34 Hydrocarbons)	2021/08/28	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2021/08/28	<50		mg/kg	
A334975	MHF	RPD	F2 (C10-C16 Hydrocarbons)	2021/08/28	NC		%	40
			F3 (C16-C34 Hydrocarbons)	2021/08/28	NC		%	40
			F4 (C34-C50 Hydrocarbons)	2021/08/28	NC		%	40
A335167	GG3	Matrix Spike	O-TERPHENYL (sur.)	2021/08/30		124	%	60 - 140
		·	F2 (C10-C16 Hydrocarbons)	2021/08/30		NC	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/08/30		111	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/08/30		100	%	60 - 140
A335167	GG3	Spiked Blank	O-TERPHENYL (sur.)	2021/08/30		96	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/30		88	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/08/30		92	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/08/30		83	%	60 - 140
A335167	GG3	Method Blank	O-TERPHENYL (sur.)	2021/08/30		103	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/30	<10		mg/kg	
			F3 (C16-C34 Hydrocarbons)	2021/08/30	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2021/08/30	<50		mg/kg	
A335167	GG3	RPD	F2 (C10-C16 Hydrocarbons)	2021/08/30	4.3		%	40



Report Date: 2021/09/09

GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1011 Your P.O. #: 20368099-7000-1011

Sampler Initials: PT

QA/QC								
Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
		Ασ 1/μο	F3 (C16-C34 Hydrocarbons)	2021/08/30	3.2		%	40
			F4 (C34-C50 Hydrocarbons)	2021/08/30	NC		%	40
A335174	KKC	QC Standard	Saturation %	2021/08/31		96	%	75 - 125
A335174	KKC	RPD [AEO317-03]	Saturation %	2021/08/31	4.8		%	12
A335174	KKC	RPD	Saturation %	2021/08/31	1.9		%	12
A335198	JNG	Matrix Spike	1,4-Difluorobenzene (sur.)	2021/08/29		97	%	50 - 140
		•	4-Bromofluorobenzene (sur.)	2021/08/29		128	%	50 - 140
			D10-o-Xylene (sur.)	2021/08/29		109	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/29		103	%	50 - 140
			Benzene	2021/08/29		83	%	50 - 140
			Toluene	2021/08/29		89	%	50 - 140
			Ethylbenzene	2021/08/29		90	%	50 - 140
			m & p-Xylene	2021/08/29		86	%	50 - 140
			o-Xylene	2021/08/29		82	%	50 - 140
			F1 (C6-C10)	2021/08/29		87	%	60 - 140
A335198	JNG	Spiked Blank	1,4-Difluorobenzene (sur.)	2021/08/29		87	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/08/29		89	%	50 - 140
			D10-o-Xylene (sur.)	2021/08/29		86	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/29		98	%	50 - 140
			Benzene	2021/08/29		69	%	60 - 130
			Toluene	2021/08/29		77	%	60 - 130
			Ethylbenzene	2021/08/29		76	%	60 - 130
			m & p-Xylene	2021/08/29		75	%	60 - 130
			o-Xylene	2021/08/29		64	%	60 - 130
			F1 (C6-C10)	2021/08/29		100	%	60 - 140
A335198	JNG	Method Blank	1,4-Difluorobenzene (sur.)	2021/08/30		93	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/08/30		99	%	50 - 140
			D10-o-Xylene (sur.)	2021/08/30		97	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/30		107	%	50 - 140
			Benzene	2021/08/30	<0.0050		mg/kg	
			Toluene	2021/08/30	<0.050		mg/kg	
			Ethylbenzene	2021/08/30	<0.010		mg/kg	
			m & p-Xylene	2021/08/30	<0.040		mg/kg	
			o-Xylene	2021/08/30	<0.020		mg/kg	
			F1 (C6-C10)	2021/08/30	<10		mg/kg	
A335198	JNG	RPD	Benzene	2021/08/29	18		%	50
			Toluene	2021/08/29	NC		%	50
			Ethylbenzene	2021/08/29	1.8		%	50
			m & p-Xylene	2021/08/29	11		%	50
			o-Xylene	2021/08/29	2.4		%	50
			F1 (C6-C10)	2021/08/29	9.2		%	30
A335211	GG3	Matrix Spike	O-TERPHENYL (sur.)	2021/08/30		93	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/30		86	%	60 - 140
			F3A (C16-C22)	2021/08/30		89	%	60 - 140
			F3B (C22-C34)	2021/08/30		88	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/08/30		89	%	60 - 140
A335211	GG3	Spiked Blank	O-TERPHENYL (sur.)	2021/08/30		97	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/30		92	%	60 - 140
			F3A (C16-C22)	2021/08/30		95	%	60 - 140
			F3B (C22-C34)	2021/08/30		93	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/08/30		94	%	60 - 140
A335211	GG3	Method Blank	O-TERPHENYL (sur.)	2021/08/30		102	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/30	<10		mg/kg	



Client Project #: 20368099-6000-1011 Your P.O. #: 20368099-7000-1011

Sampler Initials: PT

QA/QC								
Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
241011		ζο . γρο	F3A (C16-C22)	2021/08/30	<50		mg/kg	QU ZIIIIII
			F3B (C22-C34)	2021/08/30	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2021/08/30	<50		mg/kg	
A335211	GG3	RPD	F3A (C16-C22)	2021/08/30	NC		%	40
			F3B (C22-C34)	2021/08/30	NC		%	40
A335214	RIL	Method Blank	Moisture	2021/08/29	<0.30		%	
A335214	RIL	RPD	Moisture	2021/08/29	6.8		%	20
A335392	LQ1	Matrix Spike	Total Antimony (Sb)	2021/08/30		103	%	75 - 125
			Total Arsenic (As)	2021/08/30		NC	%	75 - 125
			Total Barium (Ba)	2021/08/30		NC	%	75 - 125
			Total Beryllium (Be)	2021/08/30		113	%	75 - 125
			Total Cadmium (Cd)	2021/08/30		107	%	75 - 125
			Total Chromium (Cr)	2021/08/30		NC	%	75 - 125
			Total Cobalt (Co)	2021/08/30		105	%	75 - 125
			Total Copper (Cu)	2021/08/30		NC	%	75 - 125
			Total Lead (Pb)	2021/08/30		107	%	75 - 125
			Total Mercury (Hg)	2021/08/30		110	%	75 - 125
			Total Molybdenum (Mo)	2021/08/30		115	%	75 - 125
			Total Nickel (Ni)	2021/08/30		NC	%	75 - 125
			Total Selenium (Se)	2021/08/30		106	%	75 - 125
			Total Silver (Ag)	2021/08/30		110	%	75 - 125
			Total Thallium (TI)	2021/08/30		106	%	75 - 125
			Total Tin (Sn)	2021/08/30		109	%	75 - 125
			Total Uranium (U)	2021/08/30		116	%	75 - 125
			Total Vanadium (V)	2021/08/30		122	%	75 - 125
			Total Zinc (Zn)	2021/08/30		NC	%	75 - 125
A335392	LQ1	QC Standard	Total Antimony (Sb)	2021/08/30		101	%	15 - 182
7.000052	-4-	Qo o tanaan a	Total Arsenic (As)	2021/08/30		112	%	53 - 147
			Total Barium (Ba)	2021/08/30		108	%	80 - 119
			Total Cadmium (Cd)	2021/08/30		108	%	72 - 128
			Total Chromium (Cr)	2021/08/30		102	%	59 - 141
			Total Cobalt (Co)	2021/08/30		110	%	58 - 142
			Total Copper (Cu)	2021/08/30		113	%	83 - 117
			Total Lead (Pb)	2021/08/30		118	%	79 - 121
			Total Molybdenum (Mo)	2021/08/30		111	%	67 - 133
			Total Nickel (Ni)	2021/08/30		120	%	79 - 121
			Total Silver (Ag)	2021/08/30		113	%	47 - 153
			Total Tin (Sn)	2021/08/30		107	%	67 - 133
			Total Uranium (U)	2021/08/30		114	%	77 - 123
			Total Vanadium (V)	2021/08/30		112	%	79 - 121
			Total Zinc (Zn)	2021/08/30		110	%	79 - 121
A335392	LQ1	Spiked Blank	Total Antimony (Sb)	2021/08/30		110	%	80 - 120
			Total Arsenic (As)	2021/08/30		104	%	80 - 120
			Total Barium (Ba)	2021/08/30		104	%	80 - 120
			Total Beryllium (Be)	2021/08/30		104	%	80 - 120
			Total Cadmium (Cd)	2021/08/30		103	%	80 - 120
			Total Chromium (Cr)	2021/08/30		107	%	80 - 120
			Total Cobalt (Co)	2021/08/30		108	%	80 - 120
			Total Copper (Cu)	2021/08/30		111	%	80 - 120
			Total Lead (Pb)	2021/08/30		106	%	80 - 120
			Total Mercury (Hg)	2021/08/30		111	%	80 - 120
			Total Molybdenum (Mo)	2021/08/30		110	%	80 - 120
			Total Nickel (Ni)	2021/08/30		110	%	80 - 120



Client Project #: 20368099-6000-1011 Your P.O. #: 20368099-7000-1011

Sampler Initials: PT

QA/QC								
Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Selenium (Se)	2021/08/30		107	%	80 - 120
			Total Silver (Ag)	2021/08/30		108	%	80 - 120
			Total Thallium (TI)	2021/08/30		106	%	80 - 120
			Total Tin (Sn)	2021/08/30		103	%	80 - 120
			Total Uranium (U)	2021/08/30		111	%	80 - 120
			Total Vanadium (V)	2021/08/30		109	%	80 - 120
			Total Zinc (Zn)	2021/08/30		104	%	80 - 120
335392	LQ1	Method Blank	Total Antimony (Sb)	2021/08/30	<0.50		mg/kg	
			Total Arsenic (As)	2021/08/30	<1.0		mg/kg	
			Total Barium (Ba)	2021/08/30	<1.0		mg/kg	
			Total Beryllium (Be)	2021/08/30	<0.40		mg/kg	
			Total Cadmium (Cd)	2021/08/30	< 0.050		mg/kg	
			Total Chromium (Cr)	2021/08/30	<1.0		mg/kg	
			Total Cobalt (Co)	2021/08/30	<0.50		mg/kg	
			Total Copper (Cu)	2021/08/30	<1.0		mg/kg	
			Total Lead (Pb)	2021/08/30	<0.50		mg/kg	
			Total Mercury (Hg)	2021/08/30	<0.050		mg/kg	
			Total Molybdenum (Mo)	2021/08/30	<0.40		mg/kg	
			Total Nickel (Ni)	2021/08/30	<1.0		mg/kg	
			Total Selenium (Se)	2021/08/30	<0.50		mg/kg	
			Total Silver (Ag)	2021/08/30	<0.20		mg/kg	
			Total Thallium (TI)	2021/08/30	<0.10		mg/kg	
			Total Tin (Sn)	2021/08/30	<1.0		mg/kg	
			Total Uranium (U)	2021/08/30	<0.20		mg/kg	
			Total Vanadium (V)	2021/08/30	<1.0		mg/kg	
			Total Zinc (Zn)	2021/08/30	<10		mg/kg	
335392	LQ1	RPD	Total Antimony (Sb)	2021/08/30	13		%	30
			Total Arsenic (As)	2021/08/30	23		%	30
			Total Barium (Ba)	2021/08/30	0.45		%	35
			Total Beryllium (Be)	2021/08/30	0.65		%	30
			Total Cadmium (Cd)	2021/08/30	1.4		%	30
			Total Chromium (Cr)	2021/08/30	1.5		%	30
			Total Cobalt (Co)	2021/08/30	0.56		%	30
			Total Copper (Cu)	2021/08/30	2.8		%	30
			Total Lead (Pb)	2021/08/30	9.6		%	35
			Total Mercury (Hg)	2021/08/30	19		%	35
			Total Molybdenum (Mo)	2021/08/30	23		%	35
			Total Nickel (Ni)	2021/08/30	0.89		%	30
			Total Selenium (Se)	2021/08/30	NC		%	30
			Total Silver (Ag)	2021/08/30	NC		%	35
			Total Thallium (TI)	2021/08/30	7.0		%	30
			Total Tin (Sn)	2021/08/30	NC		%	35
			Total Uranium (U)	2021/08/30	2.9		%	30
			Total Vanadium (V)	2021/08/30	0.18		%	30
			Total Zinc (Zn)	2021/08/30	3.5		%	30
335403	SVI	Method Blank	Moisture	2021/08/30	<0.30		%	30
335403	SVI	RPD [AEO276-01]	Moisture	2021/08/30	9.1		%	20
335451	EC0	Matrix Spike [AEO253-01]	O-TERPHENYL (sur.)	2021/08/30	J.±	101	%	60 - 140
222 <del>4</del> 21	LCU	WIGHT SPINE [ALOZJS-01]	F2 (C10-C16 Hydrocarbons)	2021/08/31		97	% %	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/08/31		105	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/08/31		105	% %	60 - 140
225/51	ECO	Snikad Blank						
335451	EC0	Spiked Blank	O-TERPHENYL (sur.)	2021/08/31		96	%	60 - 140



Client Project #: 20368099-6000-1011 Your P.O. #: 20368099-7000-1011

Sampler Initials: PT

QA/QC								
Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			F3 (C16-C34 Hydrocarbons)	2021/08/31		99	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/08/31		99	%	60 - 140
A335451	EC0	Method Blank	O-TERPHENYL (sur.)	2021/08/31		103	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/31	<10		mg/kg	
			F3 (C16-C34 Hydrocarbons)	2021/08/31	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2021/08/31	<50		mg/kg	
A335451	EC0	RPD [AEO253-01]	F2 (C10-C16 Hydrocarbons)	2021/08/31	10		%	40
			F3 (C16-C34 Hydrocarbons)	2021/08/31	10		%	40
			F4 (C34-C50 Hydrocarbons)	2021/08/31	8.9		%	40
A335452	SVI	Method Blank	Moisture	2021/08/30	< 0.30		%	
A335452	SVI	RPD [AEO254-01]	Moisture	2021/08/30	3.0		%	20
A336003	EC0	Matrix Spike [AEO300-01]	O-TERPHENYL (sur.)	2021/09/01		102	%	60 - 140
		, , ,	F2 (C10-C16 Hydrocarbons)	2021/09/01		104	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/09/01		98	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/09/01		113	%	60 - 140
A336003	EC0	Spiked Blank	O-TERPHENYL (sur.)	2021/08/31		95	%	60 - 140
		·	F2 (C10-C16 Hydrocarbons)	2021/08/31		92	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/08/31		89	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/08/31		97	%	60 - 140
A336003	EC0	Method Blank	O-TERPHENYL (sur.)	2021/08/31		112	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/31	<10		mg/kg	
			F3 (C16-C34 Hydrocarbons)	2021/08/31	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2021/08/31	<50		mg/kg	
A336003	EC0	RPD [AEO300-01]	F2 (C10-C16 Hydrocarbons)	2021/09/01	18		%	40
		[	F3 (C16-C34 Hydrocarbons)	2021/09/01	26		%	40
			F4 (C34-C50 Hydrocarbons)	2021/09/01	NC		%	40
A336116	MPU	Matrix Spike	Soluble (Hot water) Boron (B)	2021/08/30		102	%	75 - 125
A336116	MPU	Spiked Blank	Soluble (Hot water) Boron (B)	2021/08/30		96	%	80 - 120
A336116	MPU	Method Blank	Soluble (Hot water) Boron (B)	2021/08/30	<0.10	30	mg/kg	00 110
A336116	MPU	RPD	Soluble (Hot water) Boron (B)	2021/08/30	10		g/g	35
A336200	SVI	Method Blank	Moisture	2021/08/31	<0.30		%	
A336200	SVI	RPD [AEO296-01]	Moisture	2021/08/31	6.9		%	20
A336364	KWE	Matrix Spike	Hex. Chromium (Cr 6+)	2021/08/31	0.5	96	%	75 - 125
A336364	KWE	Spiked Blank	Hex. Chromium (Cr 6+)	2021/08/31		109	%	80 - 120
A336364	KWE	•	Hex. Chromium (Cr 6+)	2021/08/31	<0.080	100	mg/kg	00 110
A336364	KWE	RPD	Hex. Chromium (Cr 6+)	2021/08/31	NC		%	35
A337167	JB9	Spiked Blank	F4G-SG (Heavy Hydrocarbons-Grav.)	2021/08/31	110	109	%	60 - 140
A337167	JB9	Method Blank	F4G-SG (Heavy Hydrocarbons-Grav.)	2021/08/31	<500	103	mg/kg	00 110
A337473	KD9	Matrix Spike [AEO317-03]	Soluble Nitrite (N)	2021/08/31	1300	99	%	75 - 125
A337473	RDS	Matrix Spike [ALOSI7 05]	Soluble Nitrate (N)	2021/08/31		100	%	75 - 125
A337473	KD9	QC Standard	Soluble Nitrate (N)	2021/08/31		92	%	75 - 125
A337473	KD9	Spiked Blank	Soluble Nitrite (N)	2021/08/31		100	%	80 - 120
A337473	RDS	Spiked Blank	Soluble Nitrate (N)	2021/08/31		102	%	80 - 120
A337473	KD9	Method Blank	Soluble Nitrite (N)	2021/08/31	<0.20	102	mg/L	00 - 120
A337473	KDJ	Wiethod Blank	Soluble Nitrate (N)	2021/08/31	<0.20		mg/L	
A337473	KD9	RPD [AEO317-03]	Soluble Nitrite (N)	2021/08/31	NC		/// // // // // // // // // // // // //	30
,,,,,,,,,,	לטא	D [NEO317-03]	Soluble Nitrate (N)	2021/08/31	NC		% %	30
A338090	MPU	QC Standard	Soluble Nitrate (N) Soluble Sulphate (SO4)	2021/08/31	IVC	100	% %	75 - 125
A338090	MPU	Method Blank	Soluble Sulphate (SO4)	2021/08/31	<5.0	100	‰ mg/L	13-123
A338090	MPU	RPD	Soluble Sulphate (SO4)	2021/08/31	9.5		mg/L %	30
A340316		QC Standard	Total Fusion Barium (Ba)	2021/08/31	9.3	124		75 - 125
	JAB		• •				%	
A340316	JAB	Spiked Blank Method Blank	Total Fusion Barium (Ba)	2021/09/05	<b>~</b> E0	117	% ma/ka	75 - 125
A340316	JAB	IVIEUTOU DIGITK	Total Fusion Barium (Ba)	2021/09/05	<50		mg/kg	



Report Date: 2021/09/09

GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1011 Your P.O. #: 20368099-7000-1011

Sampler Initials: PT

#### QUALITY ASSURANCE REPORT(CONT'D)

QA/QC								
Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
A340316	JAB	RPD [AEO315-03]	Total Fusion Barium (Ba)	2021/09/05	6.5		%	35

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).



Client Project #: 20368099-6000-1011 Your P.O. #: 20368099-7000-1011

Sampler Initials: PT

#### **VALIDATION SIGNATURE PAGE**

The analytical data and all QC contained in this report were reviewed and validated by:

Ghayasuddin Khan, M.Sc., P.Chem., QP, Scientific Specialist, Inorganics

Gita Pokhrel, Laboratory Supervisor

Junchi Gao

Janet Gao, B.Sc., QP, Supervisor, Organics

Luba Shymushovska, B.Sc., QP, Senior Analyst, Organics

Samuel Gao, M.Sc., QP, Senior Analyst, Organics

Sandy Yuan, M.Sc., QP, Scientific Specialist

1/pronicatalk

Veronica Falk, B.Sc., P.Chem., QP, Scientific Specialist, Organics

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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	Salara Salara

# MCAT

# ADDITIONAL COOLER TEMPERATURE RECORD

CHAIN-OF-CUSTODY RECORD

CONTOUR SEAL   CONT	CHAIN OF CUSTODY#				(Magnetype)	MAXXAINI JOB#:			e *	
Control Services   15   15   15   15   15   15   15   1			20	li li						
Control   Cont		COSTODY SEAL	-	1	3	CUSTODY SEAL	-			and the same of
Comparison		TATAL	5		1	PRESENT		E CO	Maga	er <sub>iji</sub>
Control   Cont	of	ICE PRESENT		- IEMP	v v	INTACT	TOTAL STREET	TEMP	Physics,	Mupos
CENTRESON   Trans   COLUMN		CUSTODY SEAL	_	7	E 7	IICE PRESENT	-	-	1	m m
Control   Cont	of	DBESENT		-	Constitution of the last of th	CUSTODY SEAL	$\vdash$	-		
Control Services   Control Ser			1			PRESENT	-			
Control Section   1	Of	DAINI		TEMP	5	INTACT	The Lates	TEMP		prine.
Common		ICE PRESENT	_	-	resta	ICE PRESENT			No.	nega-
The column   The	4	CUSTODY SEAL		See P		CUSTODY SEAL	-	T	The same of the sa	- Constitution
Control Section   Control Se		PRESENT	5	2	0	PRESENT	╀	T	STREET, STREET	
CETION SEAL		INTACT	)	TEMP	X	TATAL		T		unan
Cuttors State   Cuttors State   Vision   Coolers to   Cuttors State   Vision   V	io.	ICE PRESENT		7	(C)	HICE DDESCENT	-	TIME	Lotte	cuerne
Control   Cont		CUSTODY SEAL	L	Time.	THE REAL PROPERTY AND ADDRESS OF THE PERSON NAMED IN COLUMN TWO IS NOT		-		2	
Column   C	of	PRESENT	╀			COSTONI SEAL	_	-		
CATONY SOLATION SOL		The state of the s	-	-	1	PRESENT		Mars.	-	275
CLISTODY SEAL   VIS NO COOLER D   1   2   3	C C	INIACI	>	TEMP	この	INTACT		TEMP	Reta	Zapiski.
CLISTODY SEAL   WIS ACT	ICE PRESENT	7	)	/	ICE PRESENT		ī	rate	DECK OF THE PERSON	
PRESENT   CONCERN   TRAP   COLER   FRESENT   TRAP   COLER   TRAPES   TRAP	CORNA	CUSTODY SEAL	_			CHSTODY SEAL	╀	2	Herniston.	-
Control		PRESENT	-	n n		COSTORI SEAL	-	COULER		
Custopy seal		TATA	3		1	PRESENT	~	Neg.		Man
CUSTODY SEAL   VES NO   COOLER D   CUSTODY SEAL	of			TEMP	all A	INTACT		TEMP		Tev
CUSTODY SEAL   VES NO   COOLER D   1 2 3   CUSTODY SEAL   VES NO   COOLER D   TEMP	Continue de la constitución de l	ICE PRESENT	-		tire.	ICE PRESENT		T	Cattle of	(r)
TEADMY   THOSAN   TEADM   TEADM   TEADM   TEADM   TEADMY   TEADM   TEADMY   TEADMY	4	CUSTODY SEAL	_	-		CUSTODY SEAL	┞	h	- Promote Prom	
COURTION SEAL   TEMP   1 2 3   CEPRESENT   TEMP   T		PRESENT				PRESENT	╀			
CC PRESENT   CC PRESENT   CLSTODY SEAL   VES   NO   COOLER   D   COOLER   D   COOLER   D   COOLER   D   COOLER   D   CC PRESENT   CC		INTACT		TEMP	tessesco transcrip	INTACT	1	T	kuna	ner.
CLISTODY SEAL   YES NO   COOLER ID   CLISTODY SEAL   YES NO   COOLER ID	TO.	ICE PRESENT		altere	Filtra	ILLE ODGCGNIT	SPECIAL PROPERTY SERVICES	LEIMIP	THE	
NITACT   TEMP   1 2 3   CIC PRESENT   TEMP   TEMP		CUSTODY SEAL	Ļ	COOLEGUD	-	ICE PRESENT	-	-	-	3
INTACT   TEMP   1 2 3   TEMP   1 3 3   TEMP   T	of	DBESENT	-	-		CUSTODY SEAL	_	-		
CEPRESENT   TEMP   1 2 3   CEPRESENT   TEMP   TE	THE RESIDENCE AND ADDRESS OF THE PERSON OF T		ntage.		eren.	PRESENT		PRINCE		
CEPRESENT   CEPRESENT   CEPRESENT   CEPRESENT   CEPRESENT   CEPRESENT   CEPRESENT   CUSTODY SEAL   VES   NO   COOLER ID   PRESENT   TEMP   1 2 3   CEPRESENT   TEMP   TEMP	Of a	INIACI		TEMP		INTACT		TEMP	etic Con	
CUSTODY SEAL   YES NO GOOLER ID   PRESENT   YES NO GOOLER ID	CANADA STATE OF THE PARTY OF TH	ICE PRESENT		1	~	ICE PRESENT	STATE OF THE PERSON NAMED IN		WEIGH	-
NTACT   TEMP   1 2 3   TEPRESENT   TEMP   1 2 2   TEMP   1 2 2   TEMP   T		CUSTODY SEAL	L	Total Section		CHSTODY SEAL	-	de	-	0
INTACT   TEMP   1 2 3   INTACT   TEMP   1 3 3 3   INTACT   TEMP   1 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	01	PRESENT			STATE OF THE PERSON NAMED AND ADDRESS OF THE PERSON NAMED AND	7070	+	-	THE RESERVE THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN THE PERSON	Tangara.
ICE PRESENT   TEMP   1 2 3   ICE PRESENT   TEMP   1 2 2		INTACT				PRESENT		estin	NO.6	
CUSTODY SEAL   TES   NO GOOLER   1   2   3   ICE PRESENT   TEMP   1   3   3   ICE PRESENT   TEMP   1   3   3   ICE PRESENT   TEMP   1   3   3   ICE PRESENT   TEMP	of	120000000000000000000000000000000000000	-		mien	INTACT		TEMP	E Mari	
CLUSTODY SEAL   YES   NO GOOLER ID   PRESENT   YES   NO GOOLER ID	ENWINESTER SETTINGGE OF THE SET O	I C L RESENT	_		NIS.	ICE PRESENT			Thylis	m
NESSENT   PRESENT   TEMP   1 2 3   INTACT   TEMP   1 2   2   2   2   2   2   2   2   2		CUSTODY SEAL		COOLER ID		CUSTODY SEAL	-	7-	The state of the s	and the same
INTACT   TEMP   1 2 3   INTACT   TEMP   1 2 3   INTACT   TEMP   1 2 2 3   INTACT   TEMP   1 2 2   INTACT   TEMP   1 2 3   INTACT   TEMP   1 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	ID.	PRESENT				PRESENT	-	+	Santana Mariana	STEP STEP
CEPRESENT   CEPRESENT   TEMP   1 2 3   ICEPRESENT   TEMP   1 2		INTACT		TENAD	er alan				arrage	
CUSTODY SEAL   YES NO GOOLER   1 2 3   INCEPRESENT   YES NO COOLER   1 2   2   2   2   2   2   2   2   2	of	(ICE DBESCHIT	The second second	CHARL	.The	INIACI		TEMP	e Tales	
COLSTODY SEAL   YES   NO   COOLER   DRESENT   YES   NO   COOLER   DRESENT   TEMP   1   2   3   ICEPRESENT   TEMP   1   2	TO THE RESIDENCE AND ADDRESS OF THE PERSON NAMED OF THE PERSON NAM	ILL TRESENT	-	8	are.	ICE PRESENT		tuna	tega	677
RECEIVED BY (SIGN & PRINT)  RECEIVED BY (SIGN & PRINT)  NATASHAP  OATE (YYYY/MM/DD) TIME (HH:MM)	· ·	CUSTODY SEAL		COOLER ID		CUSTODY SEAL	-	100	ascenturing	
RECEIVED BY (SIGN & PRINT)  TEMP  1 2 3 ICEPRESENT  TEMP  1 2  NATASH R  ON INCOMINE (HH:MIM)	10	PRESENT				PRESENT	+	-	122	and the same
RECEIVED BY (SIGN & PRINT)  ONT ASH A  ON O		INTACT		-TEMP		WITACH	1	7	igration (arrests)	
DATE (YYYY/MIM/DD) TIME (HH:MM)	of	ICF PRESENT			-	INIACI	100 A	TEMP #	RC16	
DATE (YYYY/MIM/DD) TIW				1	-	ICE PRESENT			2	113
My class and 100 100 101.						+ .	* STATE STAT	and the same of th	And the second designation of the second	THE PERSON
NA chose 2001 100 101.		RECEIVED BY (SI	SN & PRINT	()	3	DATE (YY	YY/MM/		ME (HH:MM	i demonstration
10 00 100 00 00 00 00 00 00 00 00 00 00		ノトライン					STATE OF THE PERSON.	and the last	AND THE PERSON NAMED IN COLUMN	-
		ニンケーグンレイ			2		100			

# ADDITIONAL COOLER TEMPERATURE RECORD CHAIN-OF-CUSTODY RECORD

CONTROL NOT SEAL   150		COOLER ID		TEMP		COOLER ID		TEMP	1 2	COOLERID		TEMP		COOLERID	Tesses T		COOLERID	1	TEMP		COOLER ID		TEMP	-	COOLER ID	TEAN		COOLERID	-	TEMP	1 2 3	COOLER ID		TEMP	1 7	COOLER ID			7 1 1
CUSTODY SEAL   YES   NO COOLER   D   SEASTY   TEMP   T   T   T   T   T   T   T   T   T		YES NO				YES NO				YES NO			-	-	+		YES NO	-			YES NO			-1	+			res NO				res NO				H		1	
CUSTODY SEAL   YES   NO COOLER   O	MAXXAM JOB#:	CUSTODY SEAL	74555VT	-Dr_N	ICE PRESENT	CUSTODY SEAL	TVESEVE	TOTAL	ICE PRESENT	CUSTODY SEAL	PPE3E7T	LD4.IN.	ICE PRESENT	COSTODY SEAL	DY.N.	ICE PRESENT	CUSTODY SEAL	1.000 vc	177.N	ICE PRESENT	CUSTODY SEAL	74.352.45	したい	LE PRESENT	CUSTODY SEAL	17.2	ICE PRESENT	CUSTODY SEAL	1,355+6	IN_ACT	ICE PRESENT	LUSTOBY SEAL	745000	L-T-N	ILE PRESENT	CUSTODY SEAL	Pagady	IVE PRESENT	
COSTENDOYSEAL   YES   NO   COOLER   D			1	7)	m		,	4	м		1	\		I	6	m	T	1	<u></u>	m			,		T		m				m				2			m	
TEMP   TEMP   TEMP   TEMP			1/	1	e t		-	-	-		1	_			Yo	* 1		Ĺ	7	ý			,				761				e (				rı		-		
CUSTODY SEAL   YES   NO		COOLERID		eum		COLER ID	_	_		OOLER ID	-	<u> </u>	- 1	OUEEN ID	-	-		<u> </u>	_		DOLER ID			1	JOLER ID	TEMP		OLER D			-	CLER D	_		-	OLER ID	CAAD		
	ń	O <sub>N</sub>				ON				ON		I	-	+	T		1				-	T	T	+	-+-	T	Γ	7	٦			-	T	1	+		T	T	
		YES	1	1	1	YES	/	1	\	YES	1	1	> 24	1	1	>	(B)	\	1	\	YE.			200		L		Æ				YES				Æ			
CUSTODY #		CUSTODY SEAL	7,000,7	T N:	ILE PRESENT	CUSTODY SEAL	- Vacable	レンインペー	ICE PRESENT	CDSTODY SEAL	PASSEZ	IL SOBSENT	CUSTODY SEAL	- K-95-3-K-	107407	CE PRESENT	CUSTODY SEAL	74,375.47	177-N	CE PRESENT	CUSTODY SEAL	VESSTA	CE PRESENT	C. STODY SEAL	_F3554	N-A-T	ICE PRESENT	CUSTODY SEAL	PAESEN.	1.77.N	ILE PRESENT	LUSTODY SEAL		(N-15)	CTOR SEN	CUSTODY SEAL	N-15E-IN	ICE PRESENT	
	CHAIN OF CUSTODY #											3											12																
		355	925	e e	1	0	323	ï	255	7	355		355	1	353	1	11	1	1) 10 11	1	0	01 27 87 87 87 87 87 87 87 87 87 87 87 87 87	ı	#5# #6#	1	35.1		151	656		100				1		393		

S:30 Am

2021/06/23

J. Merson

Attention Address

Tel:

Page of

10+5 Bottle Order #: Carmen McKay Project Manager Laboratory Use Only: C#644511-15-01 CHAIN OF CUSTODY RECORD BV Labs Job #: (62523 COC #: C00480 20368099-7000-1001 20368099-6000-1001 PROJECT INFORMATION: Project: Project Name P.O.# Site # Buraau Veritas Laboratories 4000 1931 N.E., Galgary, Alberta Canada T2E 6P8 Telt/4033, 291+3077 Toll-free 800-563-6266 Fax (403) 2:r1-9468 www.bvlabs.com #6340 GOLDER ASSOCIATES LTD.
Auralie Belavance
2800, 700 - 2nd Street SW
CALGARY AB T2P 2W2
(403) 299-5600
abellavance@golder.com REPORT TO: Company Name. Attention Address. Tell (403) 299-5506 e #254 GOLDER ASSOCIATES LTD.
ACCOUNTS PAYABLE
2800, 700 -2nd Street SW
CALGARY AB TZP 2WZ
(905) 567-6100 Ext. 1167 Fex. (403) INVOICE TO:

100	canadaaccountspayableinvoices@golder.com	Email:	abellavance@golder.com	@golder.con			Sampled By	ad By					C#644511-15-01
		Speci	Special Instructions	-		ANA	ANALYSIS REQUESTED (PLEASE BE SPECIFIC)	STED (PLEA.	SE BE SPEC	IFIC)			Turnaround Time (TAT) Required:
Regulatory Criteria ATI CCME	riterna: AE			Field Filtered ? ( Y / N )	slio2 - Soils	Ino S nr 47-17 bns X37 siavlanA 31A: nios ni (867+	te / nitrate	on (True Barium)  BTEX and F1-F2 in	) Water	ted Metals (CCME/AT1)	Water by GC/MS	Regul (will be Stand) elegated (stand) e	Please provide advance retice for uch projects Regular (Standard 1 AT: Regular (Standard 1 AT: September 1 AT:
	CAMPICE MISTRE REPT COOL (* 10°C.) FROM TIME OF SAMPLING UNTIL DELIVERY TO BY LABS Sample Company and Company	MPLING UNTIL DELIVERY Date Sampled	TO BV LABS Time Sampled	Matrix		(Vials)		CCWE	VVater	Regula Pessid -	ni HA9		(call lab for #) # of Bottles Comments
NA	SHIV	17 Aug (2)	81.60	7105		>						n	
1	BH19-37-03		69:19	1		>						ev	
1	BH19-31-06		06:90		16+	5	ď					•	S Received in Yellowknife
R	10-91-6101		04:36		27	>						(1)	
1	20- 91- 6124		15:40			>						3	(C. 30 mm
1	70-91-101		84:60			>						** 1	S 600 5.3 505.
1	BH19-39-01		(0:03			>						cr	Temp:
. 1	BH19-39 -03		ho:0)			>						c	0
· Na	10-39-06		10:00			>						מי	
N	Dup-D		10:09	>		>						r	
		Date: (YY/MM/DD) Time		RECEIVED BY: (Signature/Print)	Y: (Signatur	-	Date:	5	Time		# jars used and	Time Sensitive	Laboratory Use Only
1	FETER THAT 24	21/08/17 18:00	B WATH	THE	S	アントエル	£	100/2	15:	C			Temperature (°C) on Receipt Custody sea Infact on Looser
1												]	

- UMLESS OTHERWISE AGREED TO IN WRITTING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BY LARS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT THIS CHAIN OF CUSTODY OF CUSTODY MAY RESULT IN AMALYTICAL TAT DELAYS.

" ALL SAMPLES ARE HELD FOR 80 DAYS AFTER SAMPLE RECEIPT, FOR SPECIAL REQUESTS CONTACT YOUR PROJECT MANAGER.

Yellow. Client

White: BV Labs

Bureau Veritas Laboratories. 4000 19st N.E., Calgary, Alberta Canada T2E 6P8 Tel:(403) 291-3077 Toll-free:8000-883-6296 Fax:(403) 291-9459 www.bvlabs.com.

CHAIN OF CUSTODY RECORD

20f5

Use Only:	Bottle Order #:		644511	Project Manager:	Carmen McKay	The second secon	AT) Required:	ice for rush projects  S. 5. 6 days - contact your Project Manager for businession)	(real fah for #)	Comments			Yellowknife	ymo	8:30 Am	3 6061						Custody Seal intact on Cooler? Yes No
Laboratory Use Only:	BV Labs Job #:	249491)	(0,0)	COC #:	200	C#644511-16-01	Turnaround Time (TAT) Required:	Pleasa provide advance notice for tuch projects.  Regular (Standard) TAT:  (will be appeal fituah TAT is not specified):  Standard TAT = 5-7 Working days for most leats.  Standard TAT for certain tests are > 5 days - contact your Project Manager for the sea note: Standard TAT for certain tests are > 5 days - contact your Project Manager for Jobs Specific Rush TAT (if applies to entire submission)	Date Required: Rush Confirmation Number:				Paraire V ai haviana	By: J.Menmo	3	AL	245				Laboratory Use Only	Temperature (°C) on Receipt
									Date Resh Co	etimiJ * of Bottles	n	h	3	h	ሊ	3	n	٣	3	2	3	ime densitive
:NO		1001	1001					r by GC/MS	ətsW n	і Н∀А											# jars used and	namuran
<b>IFORMATI</b>		-0002-6	-0009-6				(c)	etals (CCME/AT1)		IugəA esiQ -												
PROJECT INFORMATION:	C00480	20368099-7000-1001	20368099-6000-1001	5			E SPECIFI	3L	etsVV er	nituoA									*		Time	SS
4			,	8			(PLEASE B	ni SA-14 bns		CCME											(dd/Mi	九
	Oustation #	P O. #.	Project:	Project Name	Site #:	Sampled By:	ANALYSIS REQUESTED (PLEASE BE SPECIFIC)	P using Fusion (muinsB eur													te: (YY/N	80
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							AN	sisylsn <i>f</i> lios ni	CALE A													
-	T.							lio2 ni 44-14 br		B MA	>	>	>	>	>	>	1	>	>	>	ure/Print)	いってんとせる
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REPORT TO:	DER ASSOC	vance	2800, 700 -2nd Street SW	<b>IB T2P 2W2</b>	000	abellavance@golder.com		(V/V)	ia bieia	Matrix	2012									>	RECEIVED BY: (Signature/Print)	ASHA
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WARWALKABS.OOKORTIONS.

• IT IS THE RESPONSIBILITY OF THE RELINQUINEER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTOOY RAY RESULT IN ANALYTICAL TAT DELAYS.

• ALL SAMPLES ARE HELD FOR 60 DAYS AFTER SAMPLE RECEIPT, FOR SPECIAL REQUESTS CONTACT YOUR PROJECT MANAGER.

Standard TAT = 5-7 Working days for most lests...
Please note: Standard TAT for certain tests are > 5 days - contact your Project Manager for details 3045 Page of Bottle Order #: Carmen McKay Project Manage Please provide advance notice for rush projects Turnaround Time (TAT) Required: Laboratory Use Only: Job Specific Rush TAT (if applies to entire submission) omments C#644511-17-01 (will be applied if Rush TAT is not specified). CHAIN OF CUSTODY RECORD BV Labs Job #: 3523 Regular (Standard) TAT: Date Required: ed Sample C00480 20368099-7000-1001 20368099-6000-1001 n Water by GC/MS PROJECT INFORMATION: paylo (tTA/BMOO) sletal Metals ANALYSIS REQUESTED (PLEASE BE SPECIFIC) ne Water Project Name ction (True Barium) m on ICP using Fusion Site # ate / nitrate lios ni (857+5 CALE Analysis Bureau Veritas Laboratories 4000 19st N E, Galgary, Alberta Canada T2E 6P8 Tel (403) 291-3077 Toll-free 800-563-6296 Faz;(403) 291-9468 www.bulabs , #6340 GOLDER ASSOCIATES LTD.
Aurelie Belavance
2800, 700 -2nd Street SW
CALGARY AB T2P 2W2 lioS ni 44-14 bas X3T8 slio2 - slateM betaluge9 Fax abellavance@golder.com Field Filtered ? ( Y / N ) (403) 299-5600 Attention: Address Tel: Email: (403) 299-5606 CALGARY AB T2P 2W2 (905) 567-6100 Ext. 1167 Pax (403) 299-5i canadaaccountspayableinvoices@golder.com #254 GOLDER ASSOCIATES LTD. 2800, 700 -2nd Street SW INVOICE TO: ACCOUNTS PAYABLE Regulatory Criteria CCME Other 2 A.T. Attention. Tel<sup>-</sup> Email:

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White: BV Labs

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WWW STALASS CONTERNIS AND CONDITIONS.

- IT IS THE RESERVONSBILLY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

- ALL SAMPLES ARE HELD FOR 80 DAYS AFTER SAMPLE RECEIPT, FOR SPECIAL REQUESTS CONTACT YOUR PROJECT MANAGER.

Page of	4045	only:	Bottle Order #:		644511	Project Manager:	Carmen McKav		equired:		*	- contact your Project Manager for	sion)		(call lab for #)	ıts					Oracle Oracle	@ 8:30 M	17.07	thing .				Custody Seal Intact on Cooler?
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IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

"ALL SAMPLES ARE HELD FOR SO DAYS AFTER BAMPLE RECEIPT, FOR SPECIAL REQUESTS CONTACT YOUR PROJECT MANAGER.

CHAIN OF CUSTODY RECORD

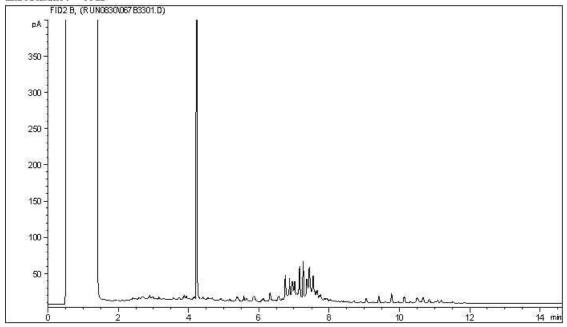
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VERITAS														July 1
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Email:	canadaaccountspayableinvoices@golder.com	Email:	abellavance	@golder.cc	ш			Sampled By:					C#644511-19-01	(a)
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WWW.BVLABS.CC	- UMLESS OTHERWING, WORTNING, WORN SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BY LABS' STANDARD TERNIS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERNIS WHICH ARE AMALABLE FOR VIEWING AT WICHOMETERS AND CONDITIONS.	USTODY IS SUBJECT TO BY	LABS' STANDARD TERMS 3D. AN INCOMPLETE CHAI	AND CONDITION OF CUSTODY	NS. SIGNING MAY RESUL	OF THIS CHAIN IN ANALYTICA	OF CUSTODY D L TAT DELAYS.	OCUMENT IS ACKING	WLEDGMENT AND	ACCEPTANC	E OF OUR TERN	S WHICH ARE		White: BV Labs Yellow: Client
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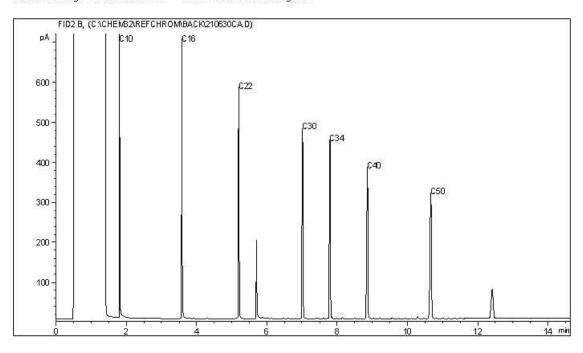
Report Date: 2021/09/09 Client Project #: 20368099-6000-1011 BV Labs Sample: AEO249 Client ID: BH19-37-01

### CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC12



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

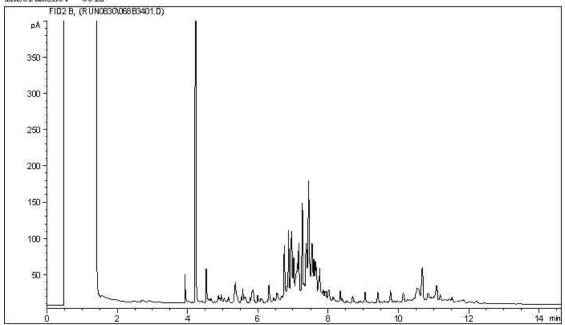
BV Labs Job #: C162523 GOLDER ASSOCIATES LTD. Client Project #: 20368099-6000-1011

Report Date: 2021/09/09

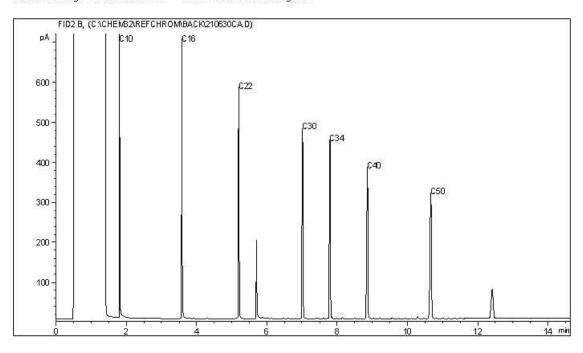
BV Labs Sample: AEO250 Client ID: BH19-37-03

# CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC12



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12 Diesel: C22 Varsol: c8 - c12 Lubricating Oils: - c40 c7 - c16 Crude Oils: - C60+ Kerosene:

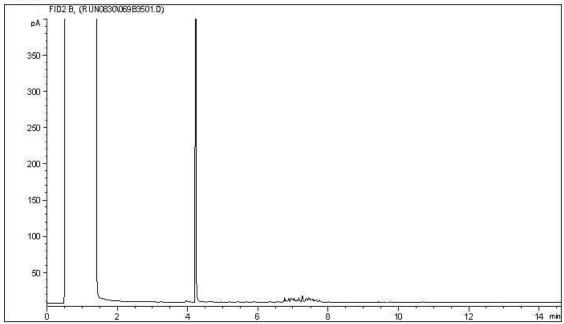
Report Date: 2021/09/09 BV Labs Sample: AEO251

Client Project #: 20368099-6000-1011

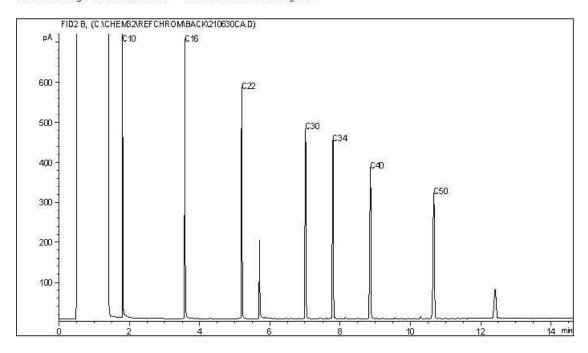
Client ID: BH19-37-06

### CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC12



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: c4 - c12 Diesel: c8 - c22 Varsol: c8 - c12 Lubricating Oils: c20 - c40 c7 - c16 Crude Oils: c3 - c60+ Kerosene:

BV Labs Job #: C162523 Report Date: 2021/09/09  ${\tt GOLDER} \ {\tt ASSOCIATES} \ {\tt LTD}.$ 

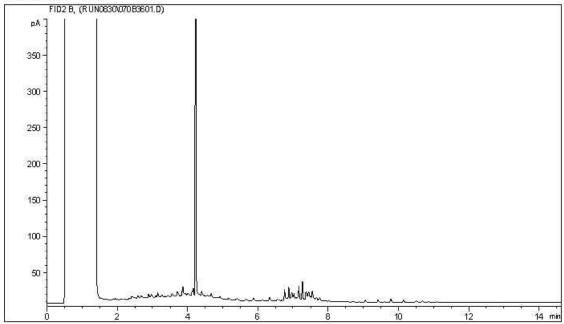
Client Project #: 20368099-6000-1011

Client ID: TP19-16-01

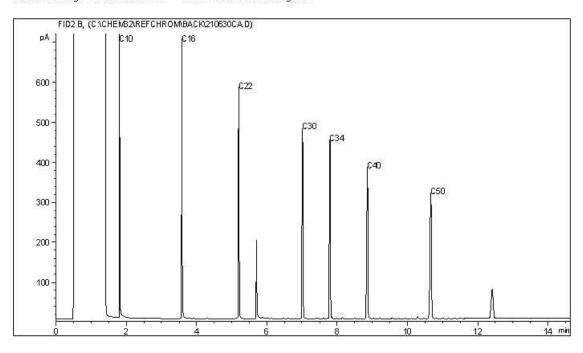
### CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC12

BV Labs Sample: AEO252



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

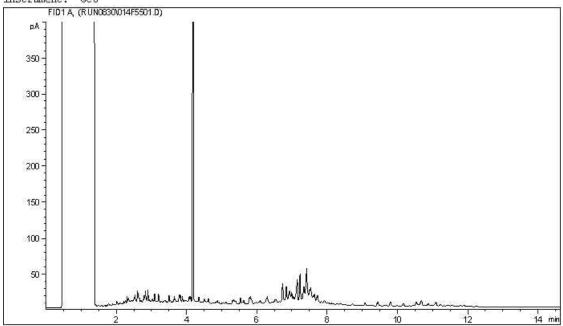
 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

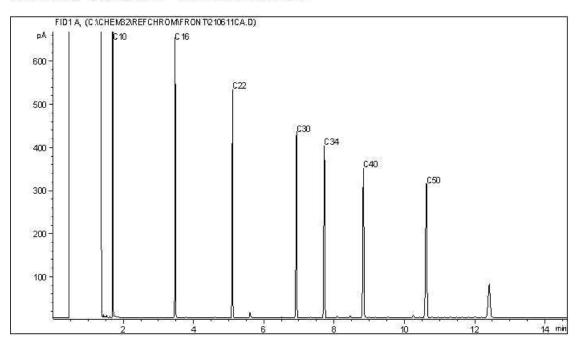
 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

# CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC6



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

GOLDER ASSOCIATES LTD.

BV Labs Job #: C162523 Report Date: 2021/09/09

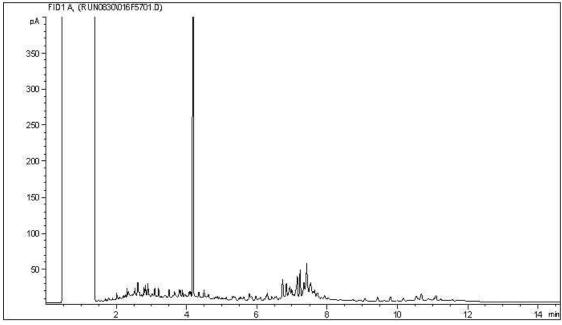
BV Labs Sample: AEO253 Lab-Dup

Client Project #: 20368099-6000-1011

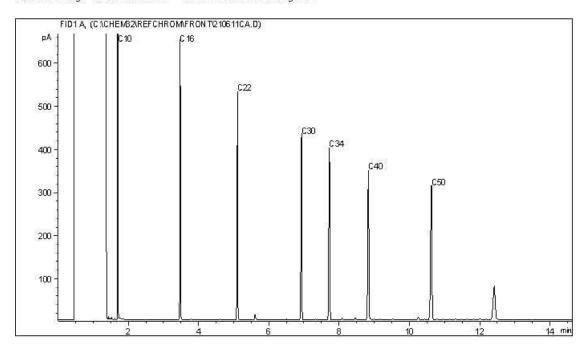
Client ID: TP19-16-03

# CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC6



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	115	C12	Diesel:	c8	T	C22
Varsol:	c8	: <del></del> :	C12	Lubricating Oils:	C20	-	C40
Kerosene:	c7	123	C16	Crude Oils:	C3	_	C60+

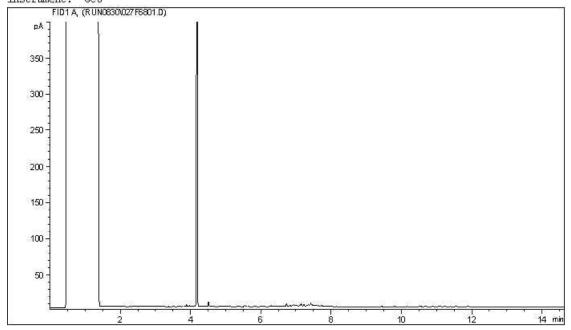
BV Labs Job #: C162523

GOLDER ASSOCIATES LTD. Report Date: 2021/09/09 Client Project #: 20368099-6000-1011 BV Labs Sample: AEO254

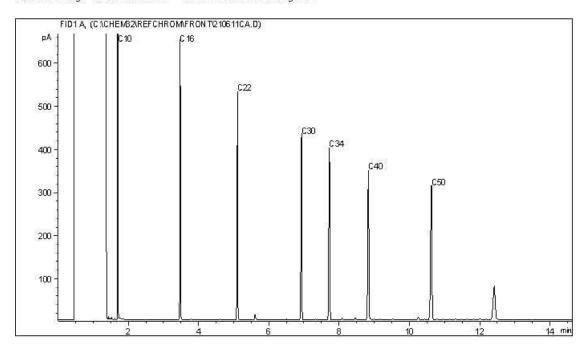
Client ID: TP19-16-05

# CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC6



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

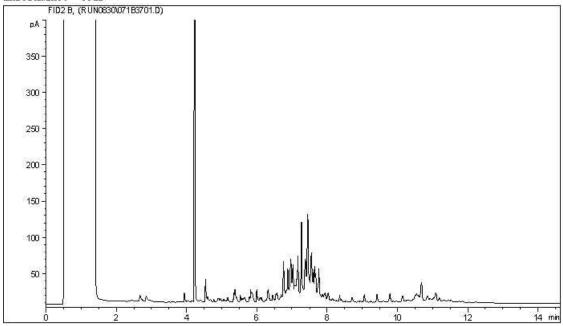
Gasoline:	c4 -	C12	Diesel:	c8 -	C22
Varsol:	c8 -	C12	Lubricating Oils:	c20 -	C40
Kerosene:	c7 -	C16	Crude Oils:	c3 -	C60+

Report Date: 2021/09/09 Client Project #: 20368099-6000-1011 BV Labs Sample: AEO255

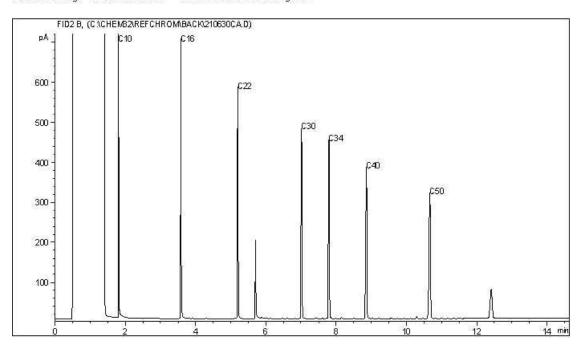
Client ID: BH19-39-01

### CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC12



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12 Diesel: - C22 Varsol: c8 - c12 Lubricating Oils: c20 - c40 c7 - c16 Crude Oils: - c60+ Kerosene:

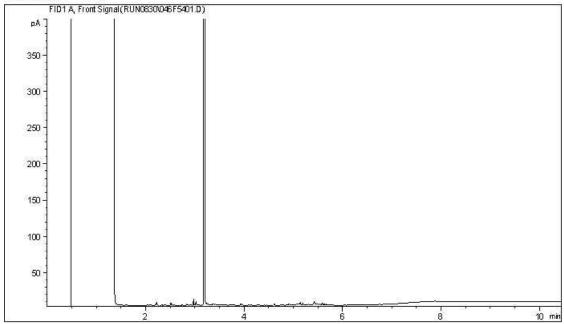
BV Labs Job #: C162523 GOLDER ASSOCIATES LTD. Client Project #: 20368099-6000-1011

Report Date: 2021/09/09 BV Labs Sample: AEO256

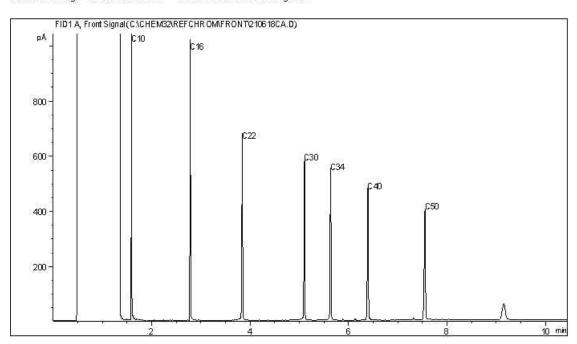
Client ID: BH19-39-03

# CCME Hydrocarbons (F2-F4)+F3A/B in soil Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



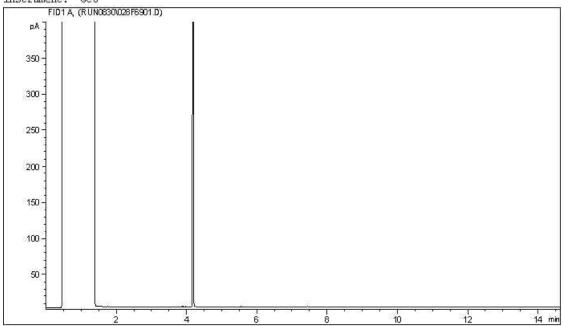
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: c4 - c12 Diesel: c8 - c22 Varsol: c8 - c12 Lubricating Oils: c20 - c40 c7 - c16 Crude Oils: c3 - c60+ Kerosene:

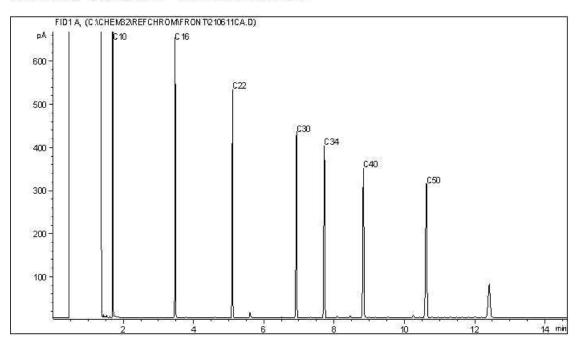
Report Date: 2021/09/09 Client Project #: 20368099-6000-1011 BV Labs Sample: AEO257 Client ID: BH19-39-06

### CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC6



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

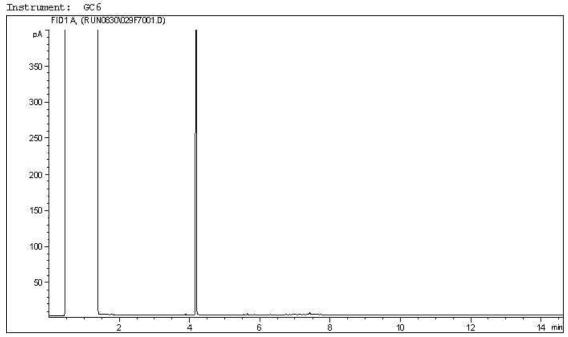
BV Labs Job #: C162523 GOLDE Report Date: 2021/09/09 Client |

GOLDER ASSOCIATES LTD. Client Project #: 20368099-6000-1011

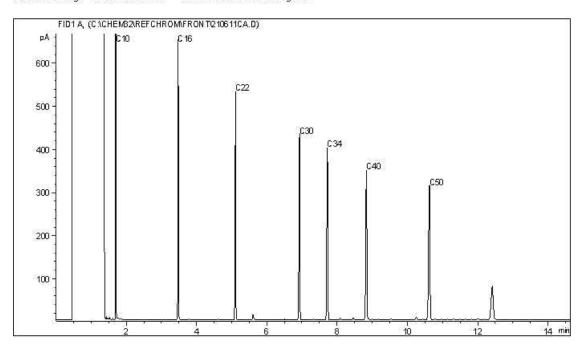
Client ID: DUP D

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

BV Labs Sample: AEO258



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

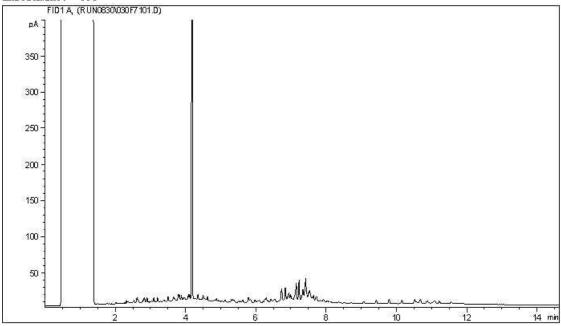
 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

Report Date: 2021/09/09 Client Project #: 20368099-6000-1011 BV Labs Sample: AEO270

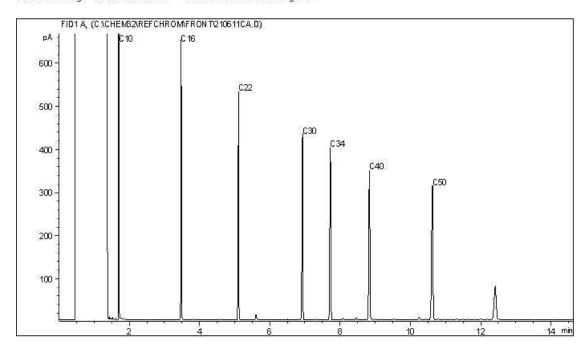
Client ID: BH19-94-01

### CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC6



Carbon Range Distribution - Reference Chromatogram



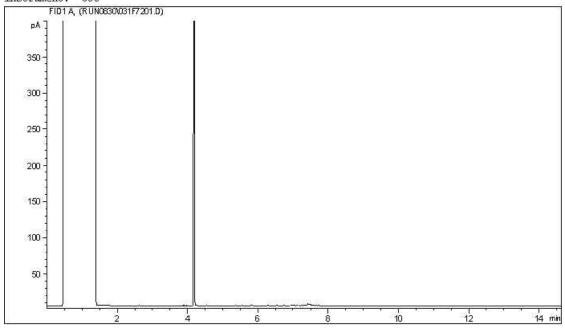
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12 Diesel: - C22 Varsol: c8 - c12 Lubricating Oils: c20 - c40 c7 - c16 Crude Oils: - c60+ Kerosene:

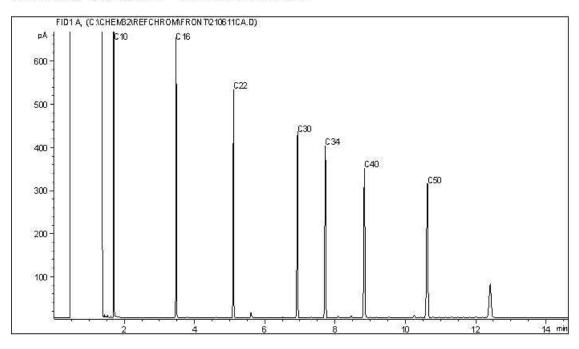
Report Date: 2021/09/09 Client Project #: 20368099-6000-1011 BV Labs Sample: AEO271 Client ID: BH19-94-03

# CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC6



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

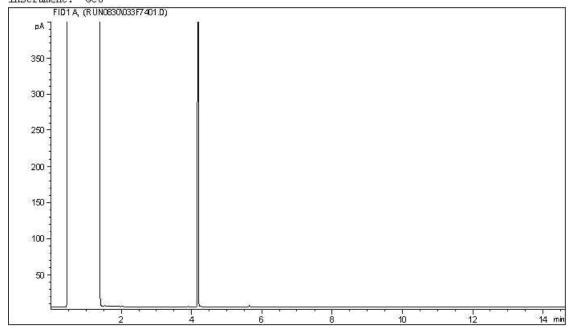
 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

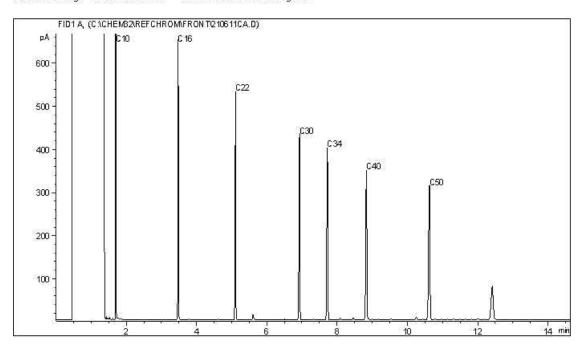
Report Date: 2021/09/09 Client Project #: 20368099-6000-1011 BV Labs Sample: AEO272 Client ID: BH19-94-05

### CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC6



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

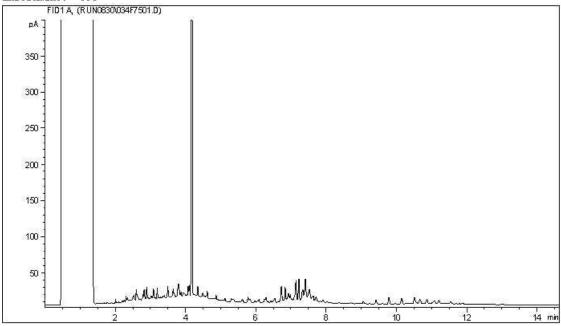
 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

Report Date: 2021/09/09 Client Project #: 20368099-6000-1011 BV Labs Sample: AEO273

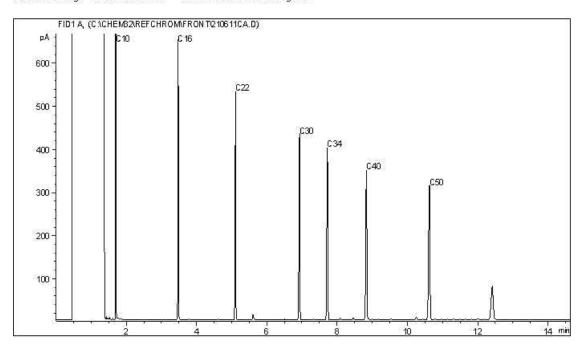
Client ID: TP19-17-01

# CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC6



Carbon Range Distribution - Reference Chromatogram

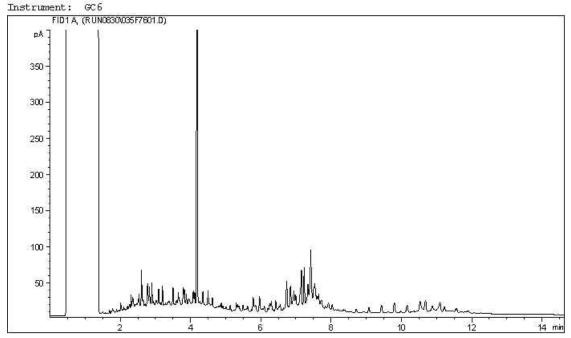


TYPICAL PRODUCT CARBON NUMBER RANGES

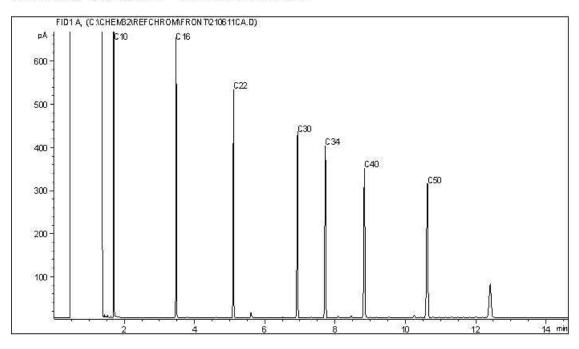
Gasoline: C4 - C12 Diesel: - C22 Varsol: c8 - c12 Lubricating Oils: c20 - c40 c7 - c16 Crude Oils: - c60+ Kerosene:

Report Date: 2021/09/09 Client Project #: 20368099-6000-1011 BV Labs Sample: AEO274 Client ID: TP19-17-03

### CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

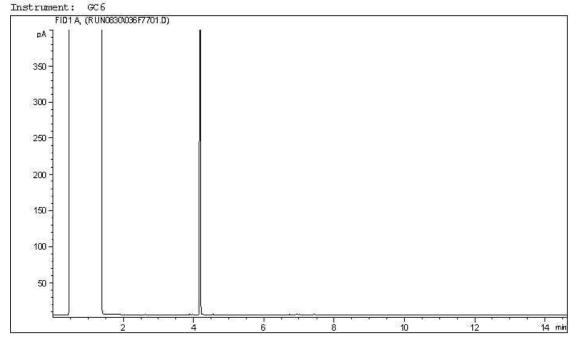
BV Labs Job #: C162523 GOLDER ASSOCIATES LTD. Report Date: 2021/09/09

Client Project #: 20368099-6000-1011

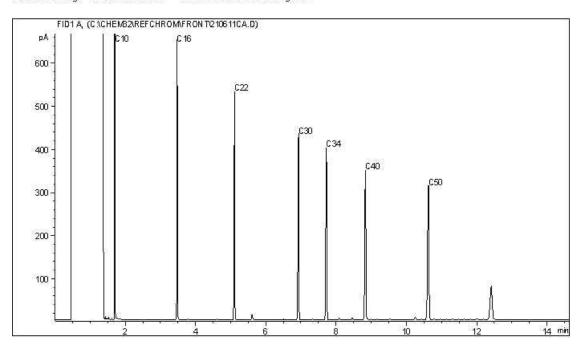
Client ID: TP19-17-06

### CCME Hydrocarbons (F2-F4 in soil) Chromatogram

BV Labs Sample: AEO275



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

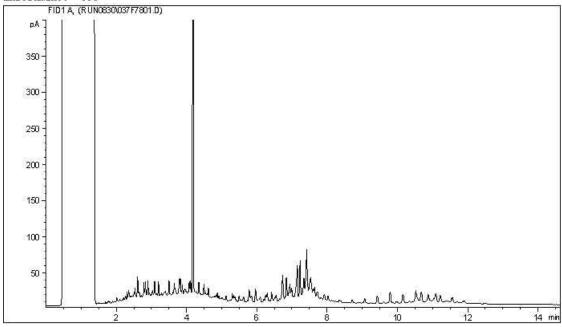
Gasoline: c4 - c12 Diesel: c8 - c22 Varsol: c8 - c12 Lubricating Oils: c20 - c40 c7 - c16 Crude Oils: c3 - c60+ Kerosene:

Report Date: 2021/09/09 Client Project #: 20368099-6000-1011 BV Labs Sample: AEO276

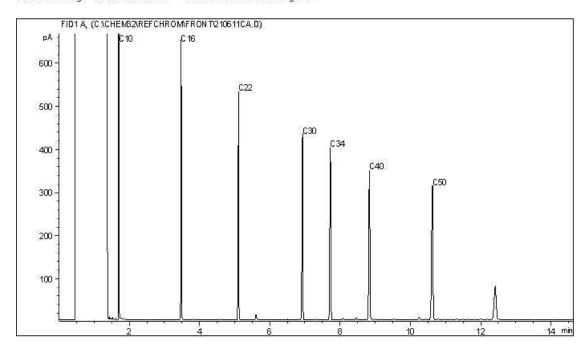
Client ID: DUP E

# CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC6



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12 Diesel: - C22 Varsol: c8 - c12 Lubricating Oils: - c40 c7 - c16 Crude Oils: - c60+ Kerosene:

BV Labs Job #: C162523 Report Date: 2021/09/09 GOLDER ASSOCIATES LTD.

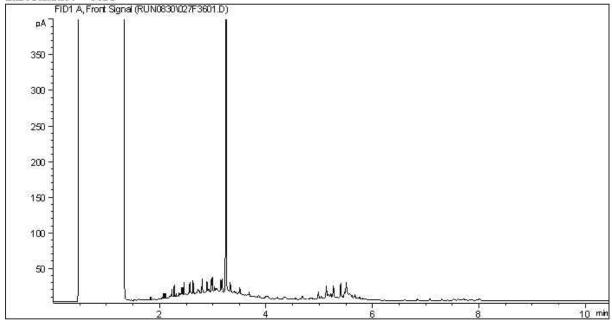
Client Project #: 20368099-6000-1011

Client ID: TP19-18-02

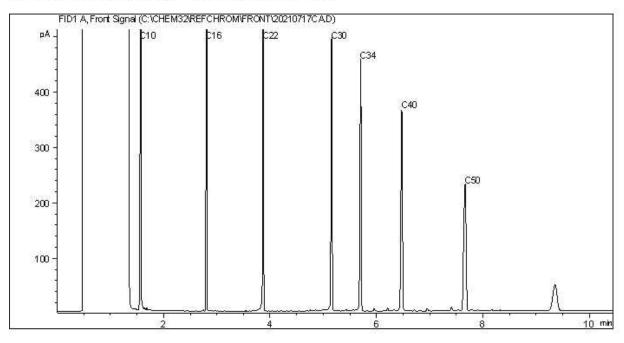
### CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC20

BV Labs Sample: AEO277



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: - C12 Diesel: C8 - C22 Varsol: c8 C12 Lubricating Oils: c20 - c40Kerosene: c7 - C16 Crude Oils: - c60+

BV Labs Job #: C162523 Report Date: 2021/09/09

BV Labs Sample: AEO278

GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1011

10 min

Client ID: TP19-18-03

### CCME Hydrocarbons (F2-F4 in soil) Chromatogram

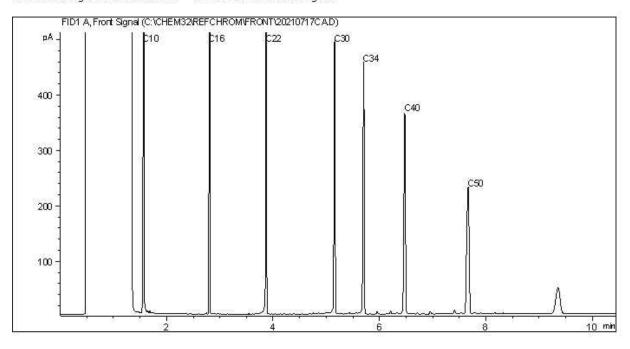
Instrument: GC20

FID1 A, Front Signal (RUN0830V028F3701.D)

pA

300 
250 
150 
100 
50 -

Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

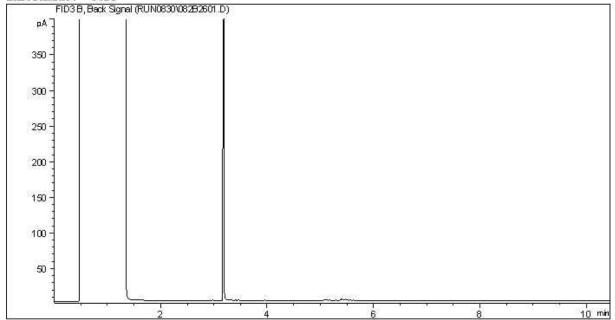
 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

Report Date: 2021/09/09 Client Project #: 20368099-6000-1011 BV Labs Sample: AEO279

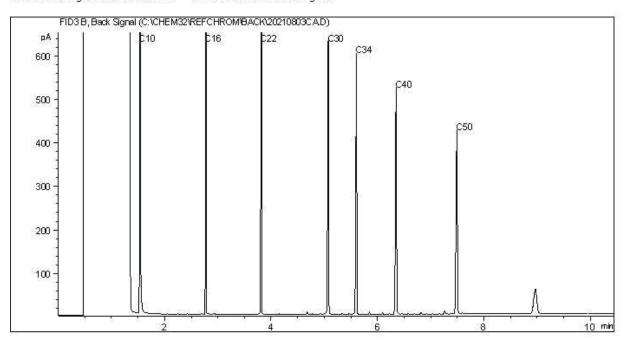
Client ID: TP19-18-05

### CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC20



Carbon Range Distribution - Reference Chromatogram



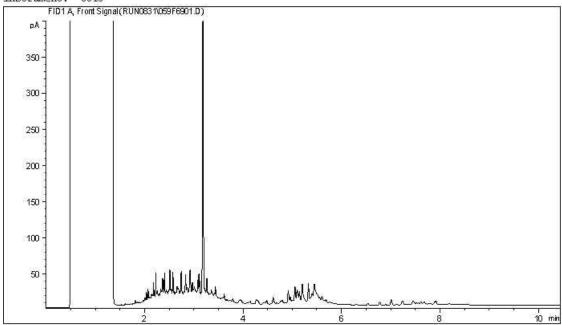
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: - C12 Diesel: C8 - C22 Varsol: c8 C12 Lubricating Oils: c20 - c40Kerosene: c7 - C16 Crude Oils: c3 - c60+

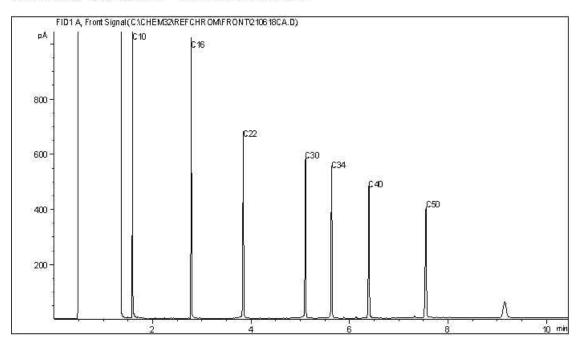
Report Date: 2021/09/09 Client Project #: 20368099-6000-1011 BV Labs Sample: AEO295 Client ID: TP19-19-01

# CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

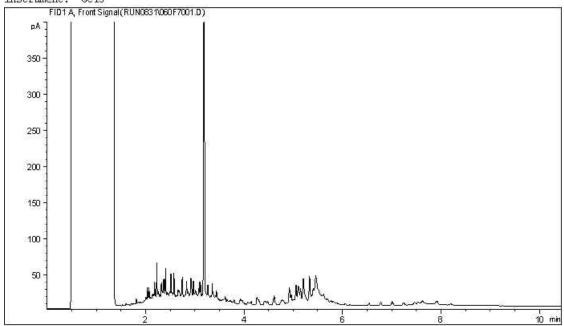
 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

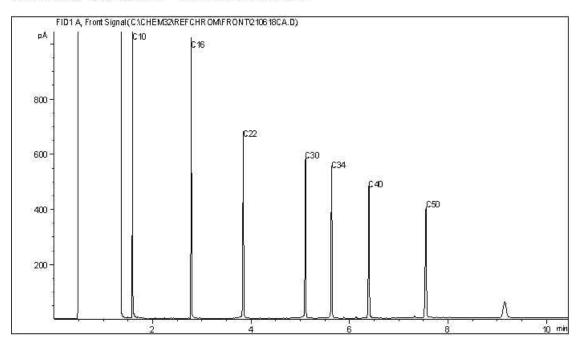
Report Date: 2021/09/09 Client Project #: 20368099-6000-1011 BV Labs Sample: AEO296 Client ID: TP19-19-03

# CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



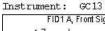
TYPICAL PRODUCT CARBON NUMBER RANGES

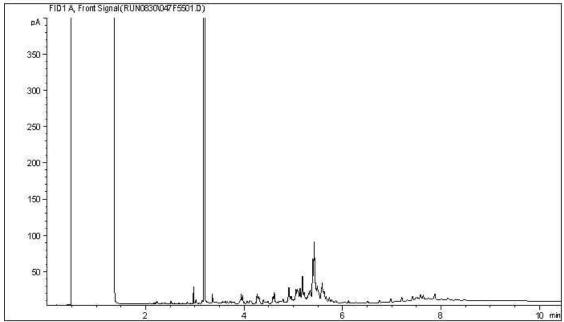
Gasoline:	C4 -	C12	Diesel:	c8 -	C22
Varsol:	c8 -	C12	Lubricating Oils:	c20 -	C40
Kerosene:	c7 -	C16	Crude Oils:	c3 -	C60+

Report Date: 2021/09/09 BV Labs Sample: AEO297

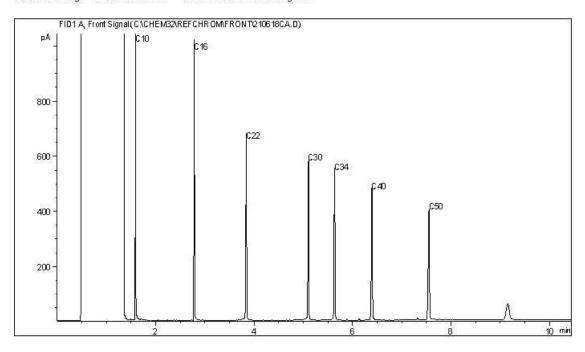
Client Project #: 20368099-6000-1011 Client ID: TP19-19-05

# CCME Hydrocarbons (F2-F4)+F3A/B in soil Chromatogram





Carbon Range Distribution - Reference Chromatogram



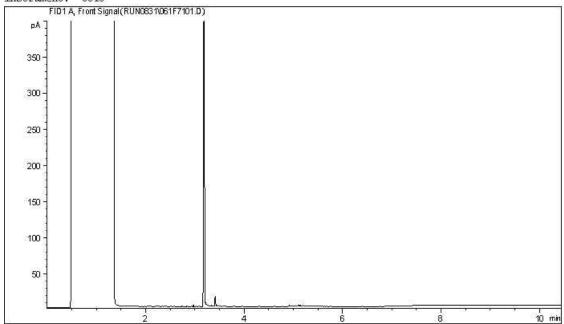
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	c4 -	C12	Diesel:	c8 -	C22
Varsol:	c8 -	C12	Lubricating Oils:	c20 -	C40
Kerosene:	c7 -	C16	Crude Oils:	c3 -	C60+

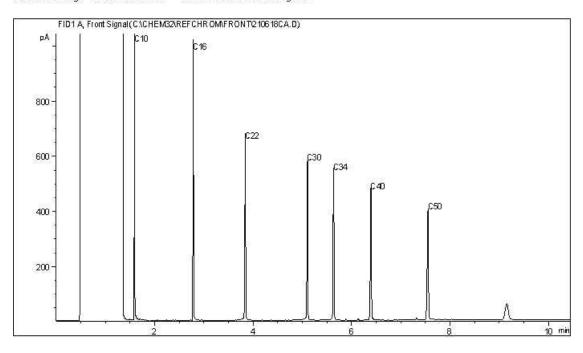
Report Date: 2021/09/09 Client Project #: 20368099-6000-1011 BV Labs Sample: AEO298 Client ID: TP19-19-06

# CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

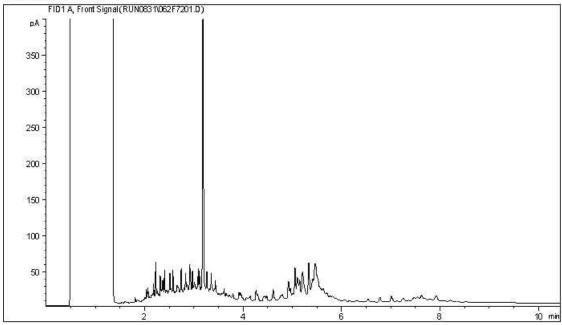
 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

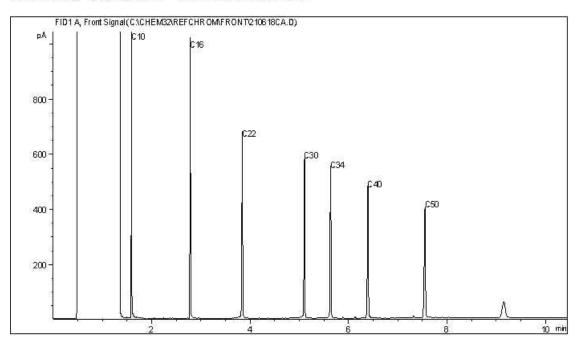
Report Date: 2021/09/09 Client Project #: 20368099-6000-1011 BV Labs Sample: AEO299 Client ID: TP21-81-01

# CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

BV Labs Job #: C162523 Report Date: 2021/09/09 GOLDER ASSOCIATES LTD.

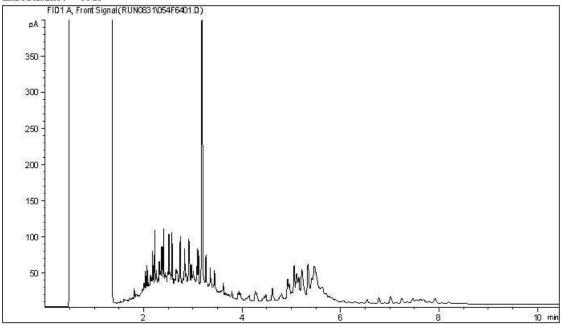
Client Project #: 20368099-6000-1011

Client ID: TP21-81-03

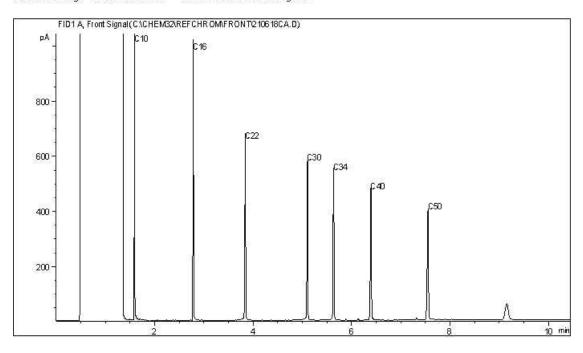
# CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC13

BV Labs Sample: AEO300



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

Report Date: 2021/09/09

BV Labs Sample: AEO300 Lab-Dup

Client Project #: 20368099-6000-1011

Client ID: TP21-81-03

# CCME Hydrocarbons (F2-F4 in soil) Chromatogram

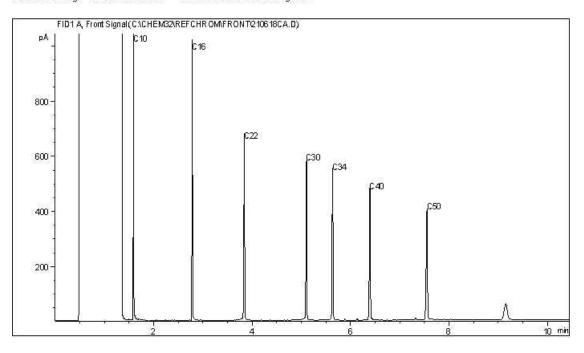
Instrument: GC13

FID1 A Front Signal (RUN0831066F6801.D)

pA

390 
250 
190 
100 
50 -

Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	c4 -	C12	Diesel:	c8 -	C22
Varsol:	c8 -	C12	Lubricating Oils:	C20 -	C40
Kerosene:	c7 -	C16	Crude Oils:	c3 -	C60+

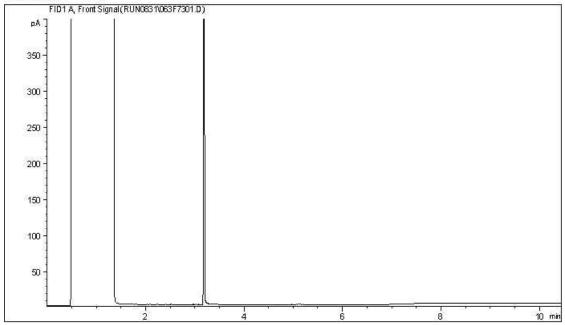
Report Date: 2021/09/09 BV Labs Sample: AEO301

Client Project #: 20368099-6000-1011

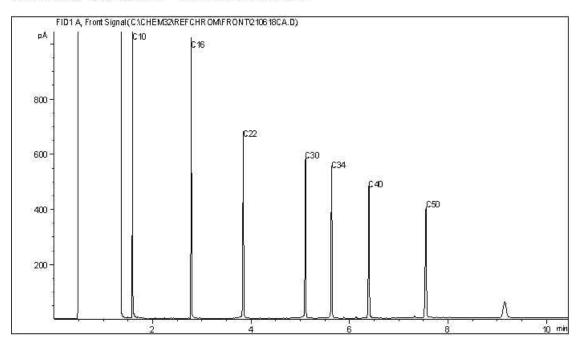
Client ID: TP21-81-06

# CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

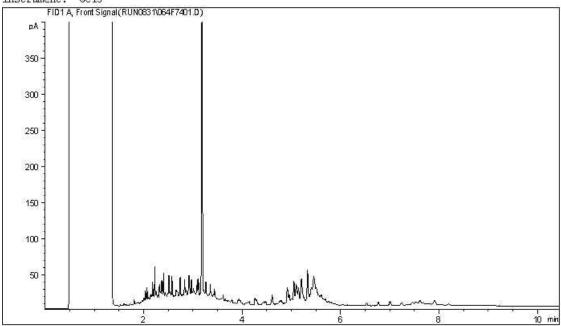
 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

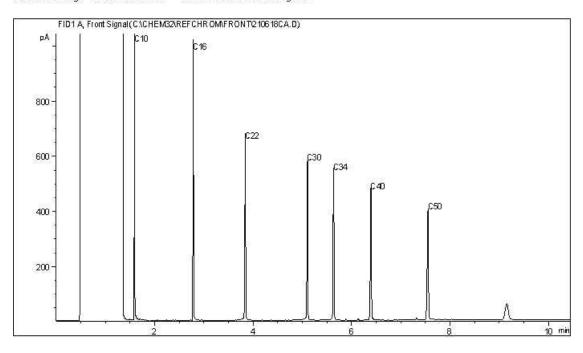
Report Date: 2021/09/09 Client Project #: 20368099-6000-1011 BV Labs Sample: AEO302 Client ID: TP19-09-02

# CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

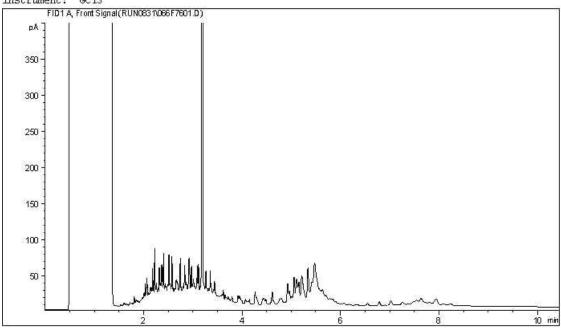
BV Labs Job #: C162523 Report Date: 2021/09/09 GOLDER ASSOCIATES LTD. Client Project #: 20368099-6000-1011

Client ID: TP19-09-03

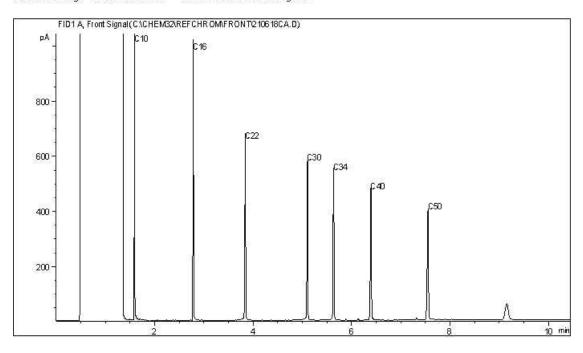
# CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC13

BV Labs Sample: AEO303



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	115	C12	Diesel:	c8	T	C22
Varsol:	c8	: <del></del> :	C12	Lubricating Oils:	C20	-	C40
Kerosene:	c7	123	C16	Crude Oils:	C3	_	C60+

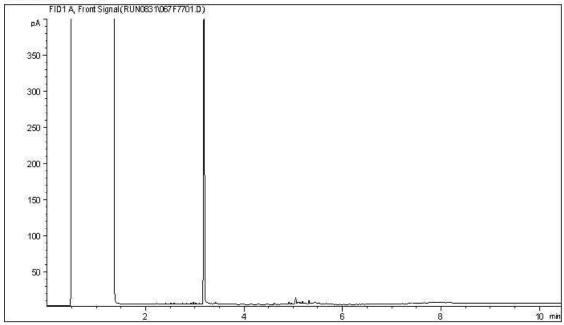
Report Date: 2021/09/09 BV Labs Sample: AEO304

Client Project #: 20368099-6000-1011

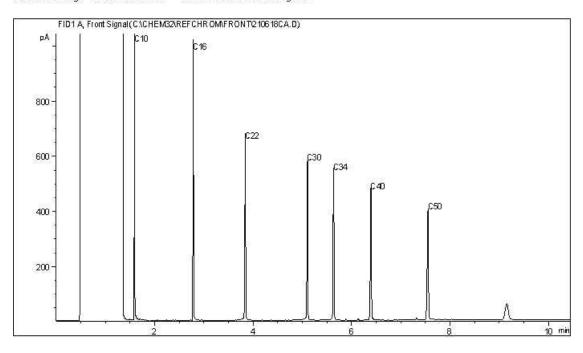
Client ID: TP19-09-06

# CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

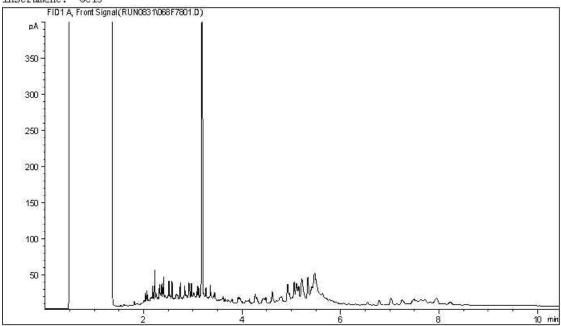
Gasoline:	C4	115	C12	Diesel:	c8	T	C22
Varsol:	c8	: <del></del> :	C12	Lubricating Oils:	C20	-	C40
Kerosene:	c7	123	C16	Crude Oils:	C3	_	C60+

Report Date: 2021/09/09 BV Labs Sample: AEO315

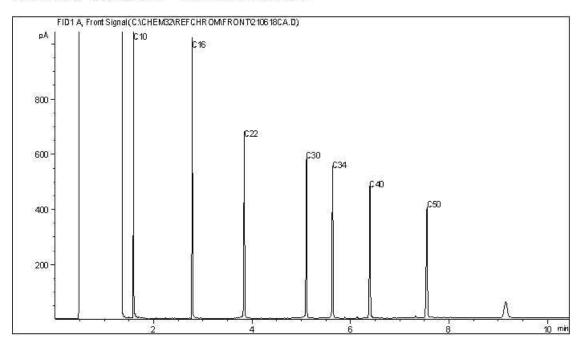
Client Project #: 20368099-6000-1011 Client ID: TP21-74-02

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

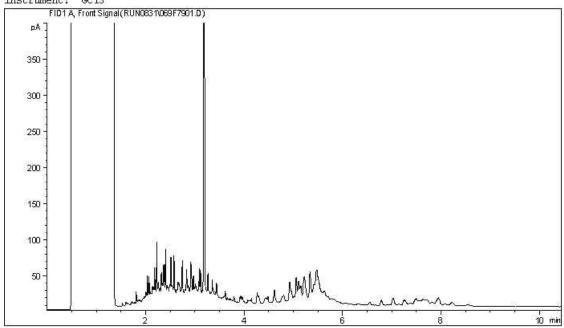
 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

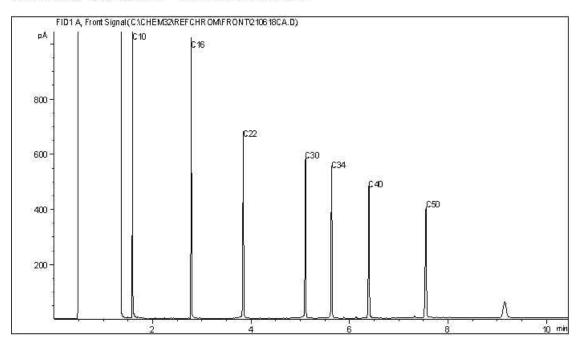
Report Date: 2021/09/09 Client Project #: 20368099-6000-1011 BV Labs Sample: AEO316 Client ID: TP21-74-03

### CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

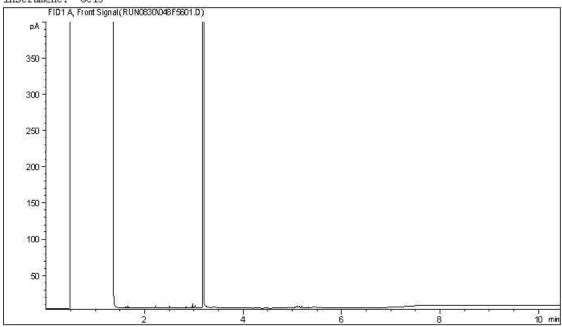
BV Labs Job #: C162523 GOLDER ASSOCIATES LTD.
Report Date: 2021/09/09 Client Project #: 20368099-6000-1011

Report Date: 2021/09/09 BV Labs Sample: AEO317

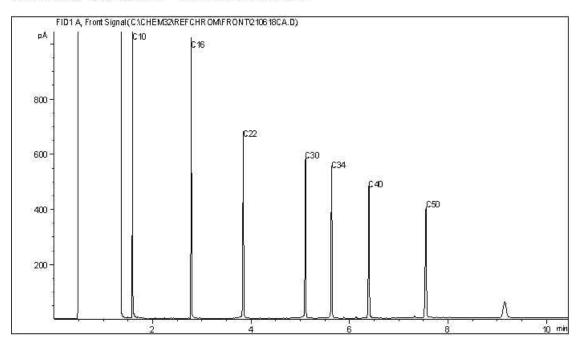
Client ID: TP21-74-05

CCME Hydrocarbons (F2-F4)+F3A/B in soil Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

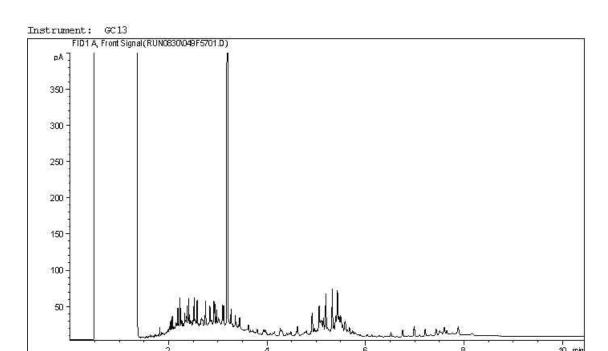
 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

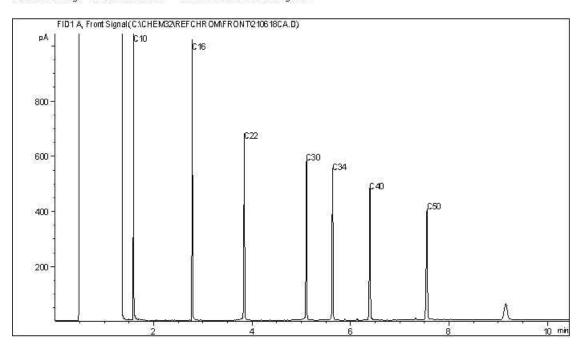
Report Date: 2021/09/09 BV Labs Sample: AEO318 Client Project #: 20368099-6000-1011

Client ID: DUP F

# CCME Hydrocarbons (F2-F4)+F3A/B in soil Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	115	C12	Diesel:	c8	T	C22
Varsol:	c8	: <del></del> :	C12	Lubricating Oils:	C20	-	C40
Kerosene:	c7	123	C16	Crude Oils:	C3	_	C60+

BV Labs Job #: C162523 Report Date: 2021/09/09  ${\tt GOLDER\ ASSOCIATES\ LTD}.$ 

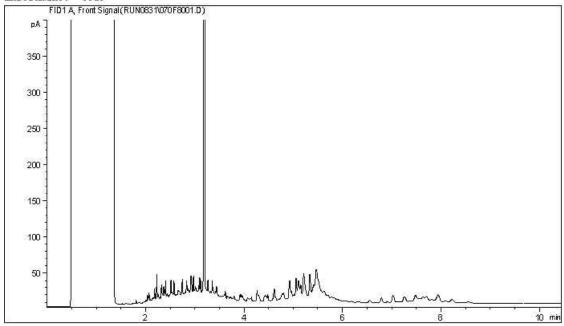
Client Project #: 20368099-6000-1011

Client ID: TP19-08-02

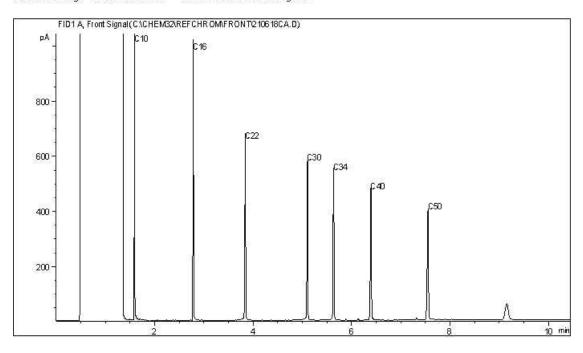
# CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC13

BV Labs Sample: AEO319



Carbon Range Distribution - Reference Chromatogram



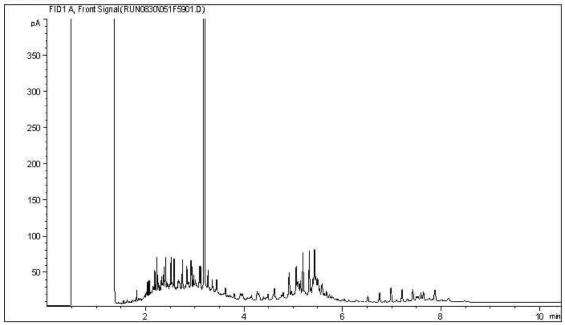
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 -	C12	Diesel:	c8 -	C22
Varsol:	c8 -	C12	Lubricating Oils:	c20 -	C40
Kerosene:	c7 -	C16	Crude Oils:	c3 -	C60+

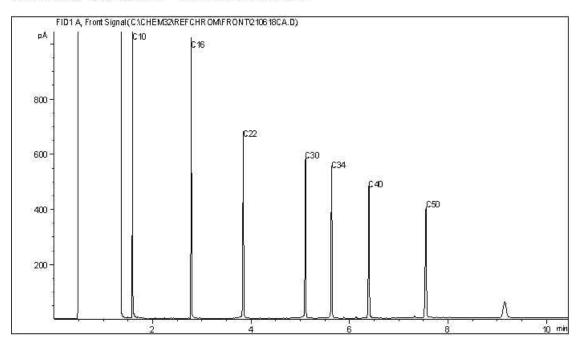
Report Date: 2021/09/09 Client Project #: 20368099-6000-1011 BV Labs Sample: AEO320 Client ID: TP19-08-03

# CCME Hydrocarbons (F2-F4)+F3A/B in soil Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram

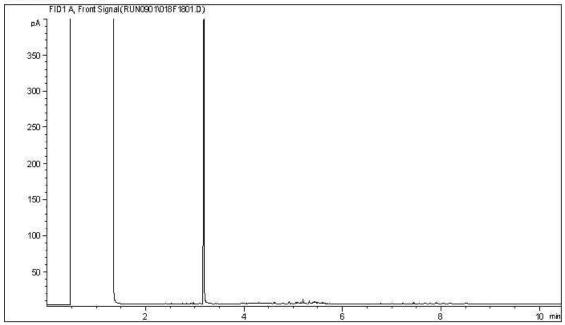


TYPICAL PRODUCT CARBON NUMBER RANGES

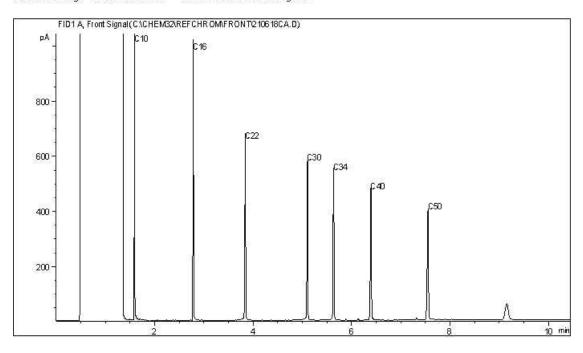
Gasoline:	C4	115	C12	Diesel:	c8	-	C22
Varsol:	c8	: <del></del> :	C12	Lubricating Oils:	C20	-	C40
Kerosene:	c7	123	C16	Crude Oils:	C3	_	C60+

# CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

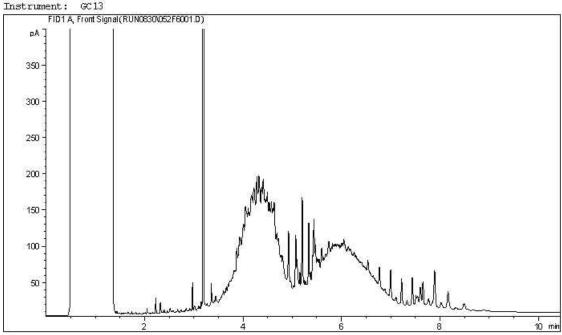
 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

BV Labs Job #: C162523 GOLDER ASSOCIATES LTD. Client Project #: 20368099-6000-1011

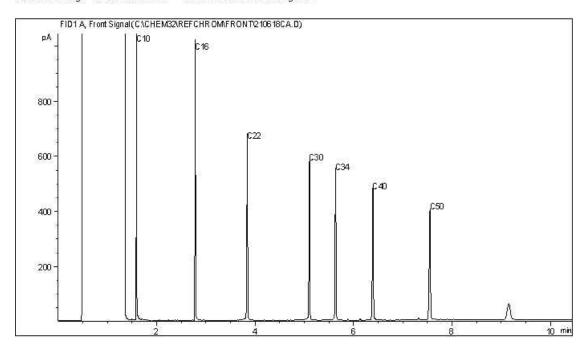
Report Date: 2021/09/09 BV Labs Sample: AEO322

Client ID: TP19-08-04

CCME Hydrocarbons (F2-F4)+F3A/B in soil Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

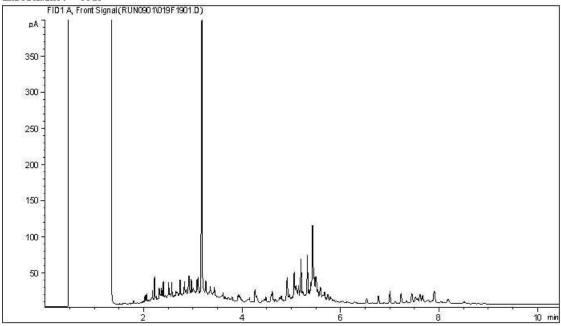
Gasoline: C4 - C12 Diesel: C22 Varsol: - C12 Lubricating Oils: - c40 c7 - c16 Crude Oils: - c60+ Kerosene:

Report Date: 2021/09/09 Client Project #: 20368099-6000-1011 BV Labs Sample: AEO325

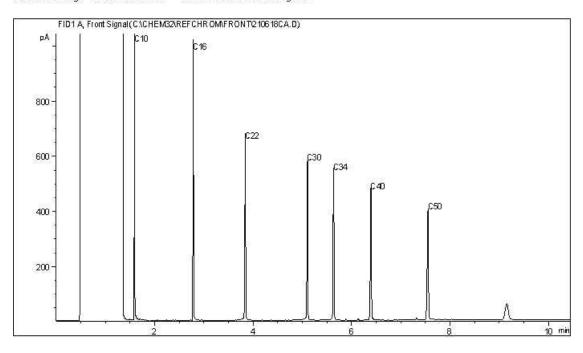
Client ID: TP19-11-01

# CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12 Diesel: - C22 Varsol: c8 - c12 Lubricating Oils: c20 - c40 c7 - c16 Crude Oils: - c60+ Kerosene:

Report Date: 2021/09/09 BV Labs Sample: AEO326 Client Project #: 20368099-6000-1011

14 min

Client ID: TP19-11-03

# CCME Hydrocarbons (F2-F4 in soil) Chromatogram

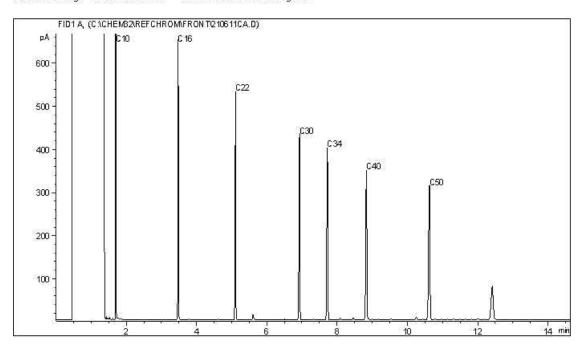
Instrument: GC6

FID1A (RUN0830038F7501D)

pA

30025010010050-

Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

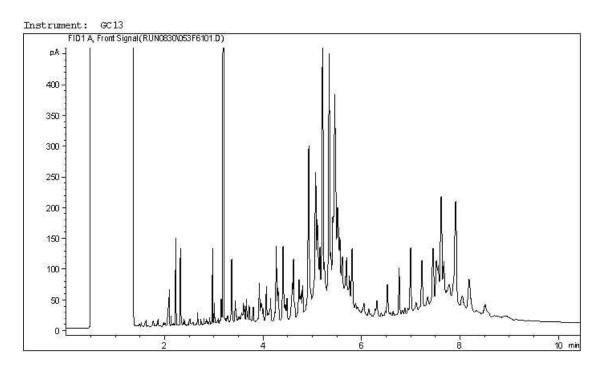
 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

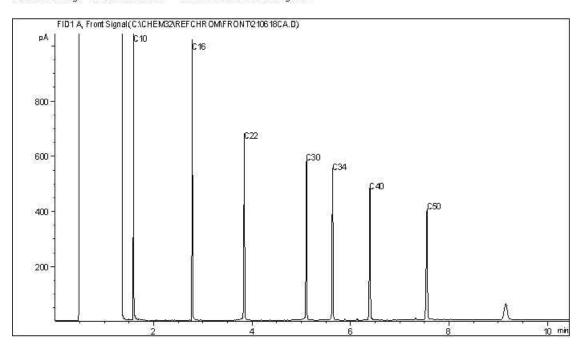
Report Date: 2021/09/09 BV Labs Sample: AEO327 Client Project #: 20368099-6000-1011

Client ID: TP19-11-05

# CCME Hydrocarbons (F2-F4)+F3A/B in soil Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	c4 -	C12	Diesel:	c8 -	C22
Varsol:	c8 -	C12	Lubricating Oils:	c20 -	C40
Kerosene:	c7 -	C16	Crude Oils:	c3 -	C60+

# GOLDER DATA QUALITY REVIEW CHECKLIST

Site Location: Camp Farewo	ell			Sampling Date:	August 17, 2021				
Golder Project Number: 2	20368099	9-6000-100	1	Laboratory: Bureau Veritas Edmonton					
Lab Submission Number: <u>(</u>	C162523								
Was the Cooler Received at the lat Was proper chain of custody of the Were sample temperatures accepta Were all samples analyzed and ext Has lab warranted all tests were in Was sufficient sample provided for Has lab warranted all samples were	samples ble when racted wi statistica the requ	documente they reache thin hold tin I control in tested analy	ed and keped lab?: mes?: CoA?: rsis?	ot?	Yes				
Are All Laboratory QC Within Ac	ceptance	Criteria (Yo	es, No, N	ot Applicable)?					
Surrogate Recovery Method Blank Concentration Laboratory Duplicate RPD Matrix Spike Recovery Blank Spike Recovery	Yes X X X X X X	No	NA	All laboratory Q acceptance criter	Comments C results are within ria.				
Are All Field QC Samples Within	Alert Lin	nits (Yes, N	o, Not Ap	oplicable)?					
Field Blank Concentration Trip Blank Concentration Field Duplicate RPD	Yes	No	NA X X	All field QC sam alert limits.	Comments uples are within				
Is data considered reliable (Yes/No If answer is "No" or "Suspect", des			ntionale:	Yes	-				
Data Reviewed by (Print):		bert er 20, 2021		Data Reviewed by	y (Signature): Ondo	(albert			



Your P.O. #: 20368099-7000-1001 Your Project #: 20368099-6000-1001

#### **Attention: Aurelie Belavance**

GOLDER ASSOCIATES LTD. 2800, 700 -2nd Street SW CALGARY, AB CANADA T2P 2W2

Your C.O.C. #: 644511-20-01, 644511-21-01, 644511-22-01

Report Date: 2021/09/01

Report #: R3066326 Version: 1 - Final

# **CERTIFICATE OF ANALYSIS**

BV LABS JOB #: C162535 Received: 2021/08/23, 08:30

Sample Matrix: Soil # Samples Received: 23

		Date	Date		
Analyses	Quantity	Extracted	Analyzed	<b>Laboratory Method</b>	<b>Analytical Method</b>
BTEX/F1 by HS GC/MS/FID (MeOH extract) (1)	3	2021/08/30	2021/08/30	AB SOP-00039	CCME CWS/EPA 8260d m
BTEX/F1 by HS GC/MS/FID (MeOH extract) (1, 2)	19	N/A	2021/08/31	AB SOP-00039	CCME CWS/EPA 8260d m
BTEX/F1 by HS GC/MS/FID (MeOH extract) (1, 2)	1	N/A	2021/09/01	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX (1)	3	N/A	2021/08/31		Auto Calc
F1-BTEX (1)	20	N/A	2021/09/01		Auto Calc
CCME Hydrocarbons (F2-F4)+F3A/B in soil (1, 3)	2	2021/08/30	2021/08/31	AB SOP-00036	CCME PHC-CWS m
CCME Hydrocarbons (F2-F4 in soil) (1, 4)	17	2021/08/30	2021/08/30	AB SOP-00036	CCME PHC-CWS m
CCME Hydrocarbons (F2-F4 in soil) (1, 4)	4	2021/08/30	2021/08/31	AB SOP-00036	CCME PHC-CWS m
CCME Hydrocarbons (F2-F4 in soil) (1, 4)	2	2021/08/30	2021/09/01	AB SOP-00036	CCME PHC-CWS m
CCME Hydrocarbons (F2/F2+F3B) in soil (1, 5)	2	N/A	2021/08/31		Auto Calc
Moisture (1)	23	N/A	2021/08/31	AB SOP-00002	CCME PHC-CWS m

#### Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.



Your P.O. #: 20368099-7000-1001 Your Project #: 20368099-6000-1001

**Attention: Aurelie Belavance** 

GOLDER ASSOCIATES LTD. 2800, 700 -2nd Street SW CALGARY, AB CANADA T2P 2W2

Your C.O.C. #: 644511-20-01, 644511-21-01, 644511-22-01

Report Date: 2021/09/01

Report #: R3066326 Version: 1 - Final

# **CERTIFICATE OF ANALYSIS**

# BV LABS JOB #: C162535

Received: 2021/08/23, 08:30

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

- \* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
- (1) This test was performed by Bureau Veritas Calgary Environmental
- (2) No lab extraction date is given for F1BTEX & VOC samples that are field preserved with methanol. Extraction date is date sampled unless otherwise stated.
- (3) All CCME results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories

conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil, Validation of Performance-Based Alternative Methods September 2003. Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

(4) All CCME results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil, Validation of Performance-Based Alternative Methods September 2003. Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

(5) All CCME results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil, Validation of Performance-Based Alternative Methods September 2003. Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

# **Encryption Key**



Bureau Veritas

01 Sep 2021 16:45:59

 $\label{lem:please} \textit{Please direct all questions regarding this Certificate of Analysis to your Project Manager.}$ 

Cynny Hagen, Key Account Specialist Email: Cynny.HAGEN@bureauveritas.com

Phone# (403)735-2273

\_\_\_\_\_\_

This report has been generated and distributed using a secure automated process.

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



Report Date: 2021/09/01

GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001 Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

# AT1 BTEX AND F1-F4 IN SOIL (VIALS)

BV Labs ID		AEO359	AEO359	AEO360		AEO361		AEO362		
Sampling Date		2021/08/18 09:40	2021/08/18 09:40	2021/08/18 09:41		2021/08/18 09:42		2021/08/18 10:05		
COC Number		644511-20-01	644511-20-01	644511-20-01		644511-20-01		644511-20-01		
	UNITS	TP21-12-02	TP21-12-02 Lab-Dup	TP21-12-04	RDL	TP21-12-05	RDL	TP21-19-01	RDL	QC Batch
Ext. Pet. Hydrocarbon										
F2 (C10-C16 Hydrocarbons)	mg/kg	190	N/A	<10	10	<10	10	57	10	A336176
F3 (C16-C34 Hydrocarbons)	mg/kg	220	N/A	<50	50	<50	50	310	50	A336176
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	N/A	<50	50	<50	50	70	50	A336176
Reached Baseline at C50	mg/kg	Yes	N/A	Yes	N/A	Yes	N/A	Yes	N/A	A336176
Physical Properties										
Moisture	%	8.5	N/A	16	0.30	15	0.30	15	0.30	A336201
Volatiles	•	•	•	•	•	-	=	•	=	•
Xylenes (Total)	mg/kg	<0.045	N/A	<0.045	0.045	<0.045	0.045	0.14	0.045	A333210
F1 (C6-C10) - BTEX	mg/kg	17	N/A	31	10	<11	11	<10	10	A333210
Field Preserved Volatiles	•	•	•	•	•	-	=	•	=	•
Benzene	mg/kg	<0.0050	<0.0050	0.039	0.0050	0.025	0.0050	<0.0050	0.0050	A335200
Toluene	mg/kg	<0.050	<0.050	<0.050	0.050	<0.050	0.050	0.11	0.050	A335200
Ethylbenzene	mg/kg	<0.010	<0.010	0.041	0.010	0.020	0.010	0.034	0.010	A335200
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	0.040	<0.040	0.040	0.14	0.040	A335200
o-Xylene	mg/kg	<0.020	<0.020	<0.020	0.020	<0.020	0.020	<0.020	0.020	A335200
F1 (C6-C10)	mg/kg	17	22	32	10	<11 (1)	11	<10	10	A335200
Surrogate Recovery (%)		•								
1,4-Difluorobenzene (sur.)	%	87	89	90	N/A	87	N/A	88	N/A	A335200
4-Bromofluorobenzene (sur.)	%	98	101	100	N/A	100	N/A	102	N/A	A335200
D10-o-Xylene (sur.)	%	111	115	123	N/A	133	N/A	127	N/A	A335200
D4-1,2-Dichloroethane (sur.)	%	110	115	113	N/A	112	N/A	112	N/A	A335200
O-TERPHENYL (sur.)	%	97	N/A	91	N/A	92	N/A	102	N/A	A336176

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate

N/A = Not Applicable

(1) Detection limit raised due to interferent.



Client Project #: 20368099-6000-1001 Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

# AT1 BTEX AND F1-F4 IN SOIL (VIALS)

			_		_	_	_	_	_
BV Labs ID		AEO363	AEO364	AEO365	AEO366	AEO367	AEO368		
Sampling Date		2021/08/18	2021/08/18	2021/08/18	2021/08/18	2021/08/18	2021/08/18		
Jamping Date		10:06	10:06	11:04	11:05	11:05	11:22		
COC Number		644511-20-01	644511-20-01	644511-20-01	644511-20-01	644511-20-01	644511-20-01		
	UNITS	TP21-19-04	TP21-19-06	TP21-73-02	TP21-73-04	TP21-73-05	DUP H	RDL	QC Batch
Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	200	25	16	66	<10	<10	10	A336176
F3 (C16-C34 Hydrocarbons)	mg/kg	500	69	110	220	100	<50	50	A336176
F4 (C34-C50 Hydrocarbons)	mg/kg	120	<50	<50	51	<50	<50	50	A336176
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes	Yes	Yes	N/A	A336176
Physical Properties	•	•		•				•	
Moisture	%	24	20	9.7	29	12	16	0.30	A336201
Volatiles									
Xylenes (Total)	mg/kg	0.12	<0.045	<0.045	0.16	<0.045	<0.045	0.045	A333210
F1 (C6-C10) - BTEX	mg/kg	62	<10	<10	15	<10	<10	10	A333210
Field Preserved Volatiles									
Benzene	mg/kg	0.033	0.0086	<0.0050	0.015	<0.0050	N/A	0.0050	A335200
Toluene	mg/kg	0.28	<0.050	<0.050	0.46	<0.050	N/A	0.050	A335200
Ethylbenzene	mg/kg	0.027	<0.010	<0.010	0.041	<0.010	N/A	0.010	A335200
m & p-Xylene	mg/kg	0.063	<0.040	<0.040	0.12	<0.040	N/A	0.040	A335200
o-Xylene	mg/kg	0.054 (1)	<0.020	<0.020	0.048	<0.020	N/A	0.020	A335200
F1 (C6-C10)	mg/kg	63	<10	<10	15	<10	N/A	10	A335200
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	89	87	89	88	87	N/A	N/A	A335200
4-Bromofluorobenzene (sur.)	%	99	100	103	104	102	N/A	N/A	A335200
D10-o-Xylene (sur.)	%	125	121	124	114	111	N/A	N/A	A335200
D4-1,2-Dichloroethane (sur.)	%	113	111	116	113	114	N/A	N/A	A335200
O-TERPHENYL (sur.)	%	103	102	92	94	99	94	N/A	A336176
	_				-		-		

RDL = Reportable Detection Limit

N/A = Not Applicable

(1) Qualifying ion outside of acceptance criteria. Results are tentatively identified and potentially biased high.



Client Project #: 20368099-6000-1001 Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

# AT1 BTEX AND F1-F4 IN SOIL (VIALS)

BV Labs ID		AEO368	AEO380		AEO381		AEO382		
Sampling Date		2021/08/18	2021/08/18		2021/08/18		2021/08/18		
Janipinig Date		11:22	14:12		14:13		14:14		
COC Number		644511-20-01	644511-21-01		644511-21-01		644511-21-01		
	UNITS	DUP H Lab-Dup	TP21-105-03	QC Batch	TP21-105-04	QC Batch	TP21-105-06	RDL	QC Batch
Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	N/A	32	A336176	140	A336003	<10	10	A336176
F3 (C16-C34 Hydrocarbons)	mg/kg	N/A	140	A336176	180	A336003	<50	50	A336176
F4 (C34-C50 Hydrocarbons)	mg/kg	N/A	<50	A336176	<50	A336003	<50	50	A336176
Reached Baseline at C50	mg/kg	N/A	Yes	A336176	Yes	A336003	Yes	N/A	A336176
Physical Properties									
Moisture	%	16	12	A336201	12	A336201	15	0.30	A336201
Volatiles									
Xylenes (Total)	mg/kg	N/A	<0.045	A333210	<0.045	A333210	<0.045	0.045	A333210
F1 (C6-C10) - BTEX	mg/kg	N/A	<10	A333210	11	A333210	<10	10	A333210
Field Preserved Volatiles	•	-		•				•	,
Benzene	mg/kg	N/A	<0.0050	A335200	<0.0050	A335200	<0.0050	0.0050	A335200
Toluene	mg/kg	N/A	<0.050	A335200	<0.050	A335200	<0.050	0.050	A335200
Ethylbenzene	mg/kg	N/A	<0.010	A335200	<0.010	A335200	<0.010	0.010	A335200
m & p-Xylene	mg/kg	N/A	<0.040	A335200	<0.040	A335200	<0.040	0.040	A335200
o-Xylene	mg/kg	N/A	<0.020	A335200	<0.020	A335200	<0.020	0.020	A335200
F1 (C6-C10)	mg/kg	N/A	<10	A335200	11	A335200	<10	10	A335200
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	N/A	88	A335200	106	A335200	89	N/A	A335200
4-Bromofluorobenzene (sur.)	%	N/A	102	A335200	86	A335200	103	N/A	A335200
D10-o-Xylene (sur.)	%	N/A	116	A335200	117	A335200	113	N/A	A335200
D4-1,2-Dichloroethane (sur.)	%	N/A	115	A335200	75	A335200	115	N/A	A335200
O-TERPHENYL (sur.)	%	N/A	100	A336176	96	A336003	95	N/A	A336176
PDI - Papartable Detection Lin	mit	- <del> </del>	· -	. —					

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate

N/A = Not Applicable



Client Project #: 20368099-6000-1001 Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

# AT1 BTEX AND F1-F4 IN SOIL (VIALS)

	-							_	
BV Labs ID		AEO383		AEO384	AEO385	AEO386	AEO387		
Sampling Date		2021/08/18		2021/08/18	2021/08/18	2021/08/18	2021/08/18		
. 0		11:15		11:15	11:22	10:27	10:28		
COC Number		644511-21-01		644511-21-01	644511-21-01	644511-21-01	644511-21-01		
	UNITS	TP21-82-03	QC Batch	TP21-82-04	TP21-82-06	TP21-50-02	TP21-50-04	RDL	QC Batch
Ext. Pet. Hydrocarbon	•	•	•				•	•	•
F2 (C10-C16 Hydrocarbons)	mg/kg	150	A336003	47	<10	190	150	10	A336176
F3 (C16-C34 Hydrocarbons)	mg/kg	420	A336003	550	<50	370	310	50	A336176
F4 (C34-C50 Hydrocarbons)	mg/kg	130	A336003	200	<50	81	67	50	A336176
Reached Baseline at C50	mg/kg	Yes	A336003	Yes	Yes	Yes	Yes	N/A	A336176
Physical Properties									
Moisture	%	17	A336201	37	19	11	13	0.30	A336201
Volatiles									
Xylenes (Total)	mg/kg	0.053	A333210	<0.045	<0.045	<0.045	<0.045	0.045	A333210
F1 (C6-C10) - BTEX	mg/kg	12	A333210	<10	<10	<10	<10	10	A333210
Field Preserved Volatiles	•	•	-				•	•	•
Benzene	mg/kg	<0.0050	A335200	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	A335200
Toluene	mg/kg	0.10	A335200	<0.050	<0.050	0.34	0.20	0.050	A335200
Ethylbenzene	mg/kg	0.015	A335200	<0.010	<0.010	<0.010	<0.010	0.010	A335200
m & p-Xylene	mg/kg	0.053	A335200	<0.040	<0.040	<0.040	<0.040	0.040	A335200
o-Xylene	mg/kg	<0.020	A335200	<0.020	<0.020	<0.020	<0.020	0.020	A335200
F1 (C6-C10)	mg/kg	12	A335200	<10	<10	<10	<10	10	A335200
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	88	A335200	89	89	89	86	N/A	A335200
4-Bromofluorobenzene (sur.)	%	100	A335200	103	106	100	102	N/A	A335200
D10-o-Xylene (sur.)	%	107	A335200	111	116	123	115	N/A	A335200
D4-1,2-Dichloroethane (sur.)	%	114	A335200	118	116	111	114	N/A	A335200
O-TERPHENYL (sur.)	%	107	A336003	98	101	103	101	N/A	A336176
RDL = Reportable Detection Lin	mit								

N/A = Not Applicable



Client Project #: 20368099-6000-1001 Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

# AT1 BTEX AND F1-F4 IN SOIL (VIALS)

_					_	_		_		
BV Labs ID		AEO388	AEO389	AEO389		AEO397	AEO397			
Sampling Date		2021/08/18	2021/08/18	2021/08/18		2021/08/18	2021/08/18			
Janipinig Date		10:29	10:28	10:28		10:11	10:11			
COC Number		644511-21-01	644511-21-01	644511-21-01		644511-22-01	644511-22-01			
	UNITS	TP21-50-06	DUP G	DUP G Lab-Dup	QC Batch	TP21-42-03	TP21-42-03 Lab-Dup	RDL	QC Batch	
Ext. Pet. Hydrocarbon										
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	190	210	A336176	250	N/A	10	A336179	
F3 (C16-C34 Hydrocarbons)	mg/kg	<50	380	370	A336176	450	N/A	50	A336179	
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	71	82	A336176	93	N/A	50	A336179	
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	A336176	Yes	N/A	N/A	A336179	
Physical Properties	,									
Moisture	%	16	15	N/A	A336201	13	13	0.30	A336205	
Volatiles										
Xylenes (Total)	mg/kg	<0.045	<0.045	N/A	A333210	0.055	N/A	0.045	A333210	
F1 (C6-C10) - BTEX	mg/kg	<10	12	N/A	A333210	16	N/A	10	A333210	
Field Preserved Volatiles	•	•	•	•	•		•	•	<u>,                                      </u>	
Benzene	mg/kg	N/A	<0.0050	N/A	A335200	<0.0050	N/A	0.0050	A335200	
Toluene	mg/kg	N/A	0.35	N/A	A335200	0.11	N/A	0.050	A335200	
Ethylbenzene	mg/kg	N/A	<0.010	N/A	A335200	0.016	N/A	0.010	A335200	
m & p-Xylene	mg/kg	N/A	<0.040	N/A	A335200	0.055	N/A	0.040	A335200	
o-Xylene	mg/kg	N/A	<0.020	N/A	A335200	<0.020	N/A	0.020	A335200	
F1 (C6-C10)	mg/kg	N/A	12	N/A	A335200	16	N/A	10	A335200	
Surrogate Recovery (%)										
1,4-Difluorobenzene (sur.)	%	N/A	89	N/A	A335200	87	N/A	N/A	A335200	
4-Bromofluorobenzene (sur.)	%	N/A	104	N/A	A335200	100	N/A	N/A	A335200	
D10-o-Xylene (sur.)	%	N/A	115	N/A	A335200	115	N/A	N/A	A335200	
D4-1,2-Dichloroethane (sur.)	%	N/A	117	N/A	A335200	115	N/A	N/A	A335200	
O-TERPHENYL (sur.)	%	97	106	105	A336176	107	N/A	N/A	A336179	
BDI - Banartable Detection Lie	no i t			· -		· -		-		

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate

N/A = Not Applicable



Client Project #: 20368099-6000-1001 Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

# AT1 BTEX AND F1-F4 IN SOIL (VIALS)

Sampling Date		AEO398 2021/08/18	AEO399 2021/08/18		
. 0			2021/08/18		
. 0					
100 N		10:12	10:14		
COC Number		644511-22-01	644511-22-01		
	UNITS	TP21-42-04	TP21-42-05	RDL	QC Batch
Ext. Pet. Hydrocarbon	•				
-2 (C10-C16 Hydrocarbons)	mg/kg	140	11	10	A336176
3 (C16-C34 Hydrocarbons)	mg/kg	280	270	50	A336176
4 (C34-C50 Hydrocarbons)	mg/kg	56	71	50	A336176
Reached Baseline at C50	mg/kg	Yes	Yes	N/A	A336176
Physical Properties					
Moisture	%	16	33	0.30	A336205
/olatiles					
(ylenes (Total)	mg/kg	0.087	<0.045	0.045	A333210
-1 (C6-C10) - BTEX	mg/kg	22	<10	10	A333210
Field Preserved Volatiles	•	•	•	•	
Benzene	mg/kg	<0.0050	N/A	0.0050	A335200
Toluene	mg/kg	0.23	N/A	0.050	A335200
Ethylbenzene	mg/kg	0.015	N/A	0.010	A335200
n & p-Xylene	mg/kg	0.056	N/A	0.040	A335200
o-Xylene	mg/kg	0.030	N/A	0.020	A335200
-1 (C6-C10)	mg/kg	22	N/A	10	A335200
Surrogate Recovery (%)					
L,4-Difluorobenzene (sur.)	%	88	N/A	N/A	A335200
1-Bromofluorobenzene (sur.)	%	103	N/A	N/A	A335200
D10-o-Xylene (sur.)	%	121	N/A	N/A	A335200
04-1,2-Dichloroethane (sur.)	%	114	N/A	N/A	A335200
D-TERPHENYL (sur.)	%	98	98	N/A	A336176



Client Project #: 20368099-6000-1001 Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

# PETROLEUM HYDROCARBONS (CCME)

BV Labs ID		AEO364	AEO367					
Campling Data		2021/08/18	2021/08/18					
Sampling Date		10:06	11:05					
COC Number		644511-20-01	644511-20-01					
	UNITS	TP21-19-06	TP21-73-05	RDL	QC Batch			
Ext. Pet. Hydrocarbon								
F3A (C16-C22)	mg/kg	<50	<50	50	A335211			
F3B (C22-C34)	mg/kg	<50	79	50	A335211			
F2% (BIC)	mg/kg	NC	NC	N/A	A333320			
Reached Baseline at C50	mg/kg	Yes	Yes	N/A	A335211			
RDL = Reportable Detection	Limit							
N/A = Not Applicable								



Client Project #: 20368099-6000-1001 Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

# **VOLATILE ORGANICS BY GC-MS (SOIL)**

	AEO368	AEO388	AEO399		
	2021/08/18	2021/08/18	2021/08/18		
	11:22	10:29	10:14		
	644511-20-01	644511-21-01	644511-22-01		
UNITS	DUP H	TP21-50-06	TP21-42-05	RDL	QC Batch
mg/kg	<0.0050	<0.0050	<0.0050	0.0050	A335767
mg/kg	<0.050	<0.050	<0.050	0.050	A335767
mg/kg	<0.010	<0.010	<0.010	0.010	A335767
mg/kg	<0.040	<0.040	<0.040	0.040	A335767
mg/kg	<0.020	<0.020	<0.020	0.020	A335767
mg/kg	<10	<10	<10	10	A335767
				<del>-</del>	
%	100	100	99	N/A	A335767
%	98	97	97	N/A	A335767
%	103	107	109	N/A	A335767
%	119	117	118	N/A	A335767
nit					
	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	2021/08/18   11:22   644511-20-01   UNITS   DUP H	2021/08/18	2021/08/18         2021/08/18         2021/08/18         2021/08/18           11:22         10:29         10:14           644511-20-01         644511-21-01         644511-22-01           UNITS         DUP H         TP21-50-06         TP21-42-05           mg/kg         <0.0050	2021/08/18



Client Project #: 20368099-6000-1001 Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

### **GENERAL COMMENTS**

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	5.7°C
Package 2	4.0°C
Package 3	7.3°C
Package 4	5.0°C
Package 5	7.0°C

Sample AEO368 [DUP H]: Sample received was not in compliance with CCME sampling requirements for VOC/BTEX/F1 in soil.

Sample AEO388 [TP21-50-06]: Sample received was not in compliance with CCME sampling requirements for VOC/BTEX/F1 in soil.

Sample AEO399 [TP21-42-05]: Sample received was not in compliance with CCME sampling requirements for VOC/BTEX/F1 in soil.

Results relate only to the items tested.



Client Project #: 20368099-6000-1001 Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

# **QUALITY ASSURANCE REPORT**

QA/QC								
Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
A335200	DO1	Matrix Spike [AEO359-02]	1,4-Difluorobenzene (sur.)	2021/08/31		87	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/08/31		103	%	50 - 140
			D10-o-Xylene (sur.)	2021/08/31		124	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/31		114	%	50 - 140
			Benzene	2021/08/31		93	%	50 - 140
			Toluene	2021/08/31		100	%	50 - 140
			Ethylbenzene	2021/08/31		103	%	50 - 140
			m & p-Xylene	2021/08/31		99	%	50 - 140
			o-Xylene	2021/08/31		94	%	50 - 140
			F1 (C6-C10)	2021/08/31		89	%	60 - 140
A335200	DO1	Spiked Blank	1,4-Difluorobenzene (sur.)	2021/08/31		79	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/08/31		94	%	50 - 140
			D10-o-Xylene (sur.)	2021/08/31		99	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/31		107	%	50 - 140
			Benzene	2021/08/31		80	%	60 - 130
			Toluene	2021/08/31		91	%	60 - 130
			Ethylbenzene	2021/08/31		90	%	60 - 130
			m & p-Xylene	2021/08/31		87	%	60 - 130
			o-Xylene	2021/08/31		75	%	60 - 130
			F1 (C6-C10)	2021/08/31		121	%	60 - 140
A335200	DO1	Method Blank	1,4-Difluorobenzene (sur.)	2021/08/31		92	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/08/31		103	%	50 - 140
			D10-o-Xylene (sur.)	2021/08/31		103	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/31		109	%	50 - 140
			Benzene	2021/08/31	<0.0050		mg/kg	
			Toluene	2021/08/31	<0.050		mg/kg	
			Ethylbenzene	2021/08/31	< 0.010		mg/kg	
			m & p-Xylene	2021/08/31	<0.040		mg/kg	
			o-Xylene	2021/08/31	<0.020		mg/kg	
			F1 (C6-C10)	2021/08/31	<10		mg/kg	
A335200	DO1	RPD [AEO359-02]	Benzene	2021/08/31	NC		%	50
			Toluene	2021/08/31	NC		%	50
			Ethylbenzene	2021/08/31	NC		%	50
			m & p-Xylene	2021/08/31	NC		%	50
			o-Xylene	2021/08/31	NC		%	50
			F1 (C6-C10)	2021/08/31	22		%	30
A335211	GG3	Matrix Spike	F3A (C16-C22)	2021/08/30		89	%	60 - 140
			F3B (C22-C34)	2021/08/30		88	%	60 - 140
A335211	GG3	Spiked Blank	F3A (C16-C22)	2021/08/30		95	%	60 - 140
			F3B (C22-C34)	2021/08/30		93	%	60 - 140
A335211	GG3	Method Blank	F3A (C16-C22)	2021/08/30	<50		mg/kg	
			F3B (C22-C34)	2021/08/30	<50		mg/kg	
A335211	GG3	RPD	F3A (C16-C22)	2021/08/30	NC		%	40
			F3B (C22-C34)	2021/08/30	NC		%	40
A335767	DO1	Matrix Spike	1,4-Difluorobenzene (sur.)	2021/08/30		96	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/08/30		99	%	50 - 140
			D10-o-Xylene (sur.)	2021/08/30		104	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/30		115	%	50 - 140
			Benzene	2021/08/30		109	%	50 - 140
			Toluene	2021/08/30		106	%	50 - 140
			Ethylbenzene	2021/08/30		109	%	50 - 140
			m & p-Xylene	2021/08/30		108	%	50 - 140
			o-Xylene	2021/08/30		107	%	50 - 140



Client Project #: 20368099-6000-1001 Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

# QUALITY ASSURANCE REPORT(CONT'D)

QA/QC								
Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			F1 (C6-C10)	2021/08/30		82	%	60 - 140
A335767	DO1	Spiked Blank	1,4-Difluorobenzene (sur.)	2021/08/30		96	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/08/30		97	%	50 - 140
			D10-o-Xylene (sur.)	2021/08/30		97	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/30		119	%	50 - 140
			Benzene	2021/08/30		98	%	60 - 130
			Toluene	2021/08/30		98	%	60 - 130
			Ethylbenzene	2021/08/30		99	%	60 - 130
			m & p-Xylene	2021/08/30		97	%	60 - 130
			o-Xylene	2021/08/30		89	%	60 - 130
			F1 (C6-C10)	2021/08/30		109	%	60 - 140
A335767	DO1	Method Blank	1,4-Difluorobenzene (sur.)	2021/08/30		100	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/08/30		99	%	50 - 140
			D10-o-Xylene (sur.)	2021/08/30		99	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/30		116	%	50 - 140
			Benzene	2021/08/30	<0.0050		mg/kg	
			Toluene	2021/08/30	< 0.050		mg/kg	
			Ethylbenzene	2021/08/30	< 0.010		mg/kg	
			m & p-Xylene	2021/08/30	< 0.040		mg/kg	
			o-Xylene	2021/08/30	<0.020		mg/kg	
			F1 (C6-C10)	2021/08/30	<10		mg/kg	
A335767	DO1	RPD	Benzene	2021/08/30	NC		%	50
			Toluene	2021/08/30	NC		%	50
			Ethylbenzene	2021/08/30	NC		%	50
			m & p-Xylene	2021/08/30	NC		%	50
			o-Xylene	2021/08/30	NC		%	50
			F1 (C6-C10)	2021/08/30	NC		%	40
A336003	EC0	Matrix Spike	O-TERPHENYL (sur.)	2021/09/01		102	%	60 - 140
		·	F2 (C10-C16 Hydrocarbons)	2021/09/01		104	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/09/01		98	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/09/01		113	%	60 - 140
A336003	EC0	Spiked Blank	O-TERPHENYL (sur.)	2021/08/31		95	%	60 - 140
		·	F2 (C10-C16 Hydrocarbons)	2021/08/31		92	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/08/31		89	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/08/31		97	%	60 - 140
A336003	EC0	Method Blank	O-TERPHENYL (sur.)	2021/08/31		112	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/31	<10		mg/kg	
			F3 (C16-C34 Hydrocarbons)	2021/08/31	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2021/08/31	<50		mg/kg	
A336003	EC0	RPD	F2 (C10-C16 Hydrocarbons)	2021/09/01	18		%	40
			F3 (C16-C34 Hydrocarbons)	2021/09/01	26		%	40
			F4 (C34-C50 Hydrocarbons)	2021/09/01	NC		%	40
A336176	GG3	Matrix Spike [AEO389-01]	O-TERPHENYL (sur.)	2021/08/30		96	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/30		73	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/08/30		80	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/08/30		79	%	60 - 140
A336176	GG3	Spiked Blank	O-TERPHENYL (sur.)	2021/08/30		109	%	60 - 140
="			F2 (C10-C16 Hydrocarbons)	2021/08/30		101	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/08/30		104	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/08/30		94	%	60 - 140
A336176	GG3	Method Blank	O-TERPHENYL (sur.)	2021/08/30		103	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/30	<10	100	mg/kg	2.0
			F3 (C16-C34 Hydrocarbons)	2021/08/30	<50		mg/kg	



Client Project #: 20368099-6000-1001 Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

# QUALITY ASSURANCE REPORT(CONT'D)

QA/QC								
Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			F4 (C34-C50 Hydrocarbons)	2021/08/30	<50		mg/kg	
A336176	GG3	RPD [AEO389-01]	F2 (C10-C16 Hydrocarbons)	2021/08/30	7.0		%	40
			F3 (C16-C34 Hydrocarbons)	2021/08/30	1.9		%	40
			F4 (C34-C50 Hydrocarbons)	2021/08/30	14		%	40
A336179	GG3	Matrix Spike	O-TERPHENYL (sur.)	2021/08/31		110	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/31		98	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/08/31		102	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/08/31		96	%	60 - 140
A336179	GG3	Spiked Blank	O-TERPHENYL (sur.)	2021/08/31		106	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/31		96	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/08/31		99	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/08/31		91	%	60 - 140
A336179	GG3	Method Blank	O-TERPHENYL (sur.)	2021/08/31		104	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/31	<10		mg/kg	
			F3 (C16-C34 Hydrocarbons)	2021/08/31	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2021/08/31	<50		mg/kg	
A336179	GG3	RPD	F2 (C10-C16 Hydrocarbons)	2021/08/31	33		%	40
			F3 (C16-C34 Hydrocarbons)	2021/08/31	8.3		%	40
			F4 (C34-C50 Hydrocarbons)	2021/08/31	NC		%	40
A336201	KLG	Method Blank	Moisture	2021/08/31	<0.30		%	
A336201	KLG	RPD [AEO368-01]	Moisture	2021/08/31	2.5		%	20
A336205	KLG	Method Blank	Moisture	2021/08/31	<0.30		%	
A336205	KLG	RPD [AEO397-01]	Moisture	2021/08/31	1.5		%	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).



Client Project #: 20368099-6000-1001 Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

### **VALIDATION SIGNATURE PAGE**

The analytical data and all QC contained in this report were reviewed and validated by:

Gita Pokhrel, Laboratory Supervisor

Junchi Gao

Janet Gao, B.Sc., QP, Supervisor, Organics

Veronica Falk, B.Sc., P.Chem., QP, Scientific Specialist, Organics

Vermica Felk

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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# ADDITIONAL COOLER TEMPERATURE RECORD

CHAIN-OF-CUSTODY RECORD

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Page 16 of 46

# ADDITIONAL COOLER TEMPERATURE RECORD CHAIN-OF-CUSTODY RECORD

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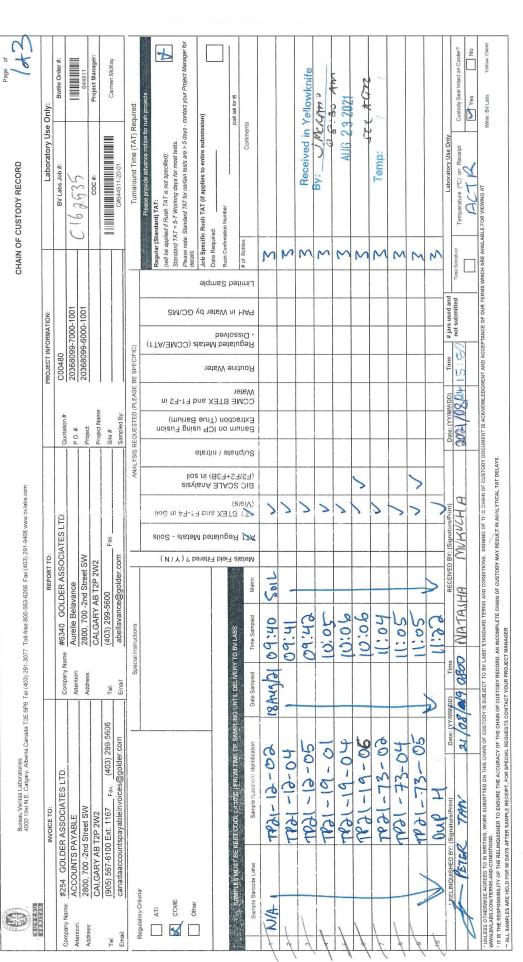
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Bureau Veritas Canada (2019) Inc.

3) 291-9468 www.hvlabs.com
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103) 291-3077 Toll-free:800-563-6266 Fax.(4
s oerta Canada T2E 6P8 Tel:(403) 291-3077
Bureau Veritas Laboratories 4000 19st N.E. Calgary, Alb

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- UNIESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BY LABS STANDARD TERMS AND CONDITIONS.

\*\*WINDERS CONTERNS AND CONDITIONS.

\*\*THIS RESPONSIBILITY OF THE RELINQUISHER THE ACCURACY OF THE CHAIN OF CUSTODY RECORD, AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

\*\*ALL SAMPLES ARE HELD FOR 80 DAYS AFTER SAMPLE RECEIT, FOR SPECIAL REQUESTS CONTACT YOUR PROJECT MANAGER.

Yellow: Client

White: BV Labs

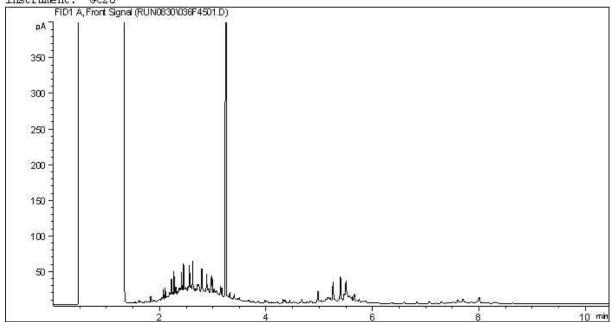
Bureau Veritas Canada (2019) Inc.

Report Date: 2021/09/01 Client Project #: 20368099-6000-1001

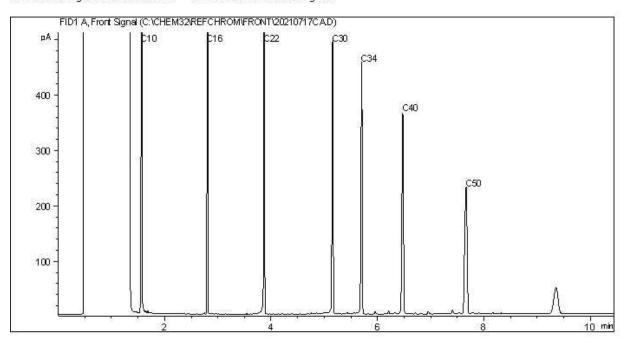
BV Labs Sample: AEO359 Client ID: TP21-12-02

### CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC20



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

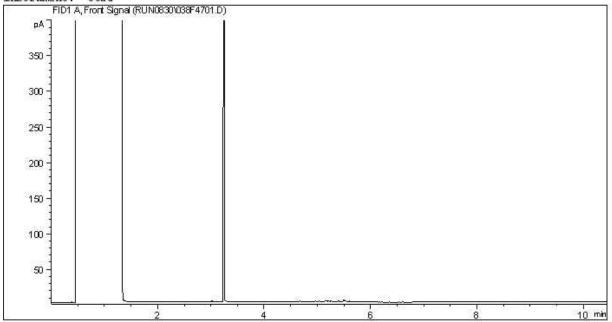
 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

Report Date: 2021/09/01 Client Project #: 20368099-6000-1001

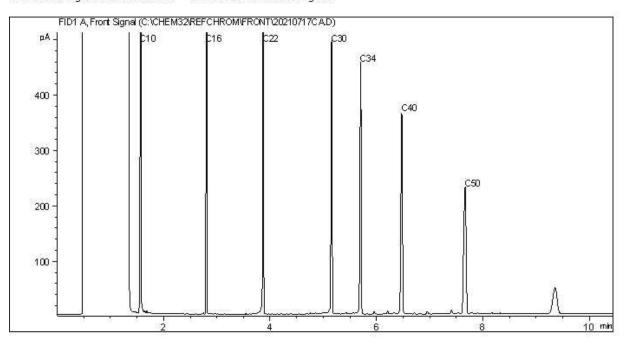
BV Labs Sample: AEO360 Client ID: TP21-12-04

### CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC20



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

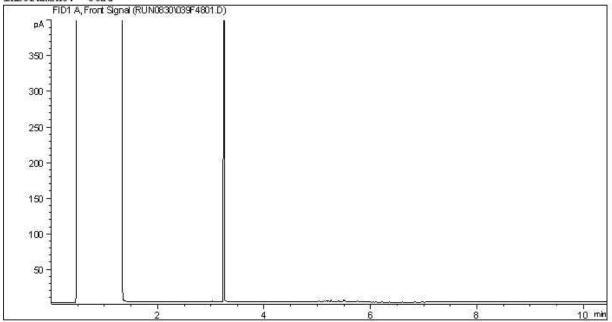
 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

Report Date: 2021/09/01 Client Project #: 20368099-6000-1001

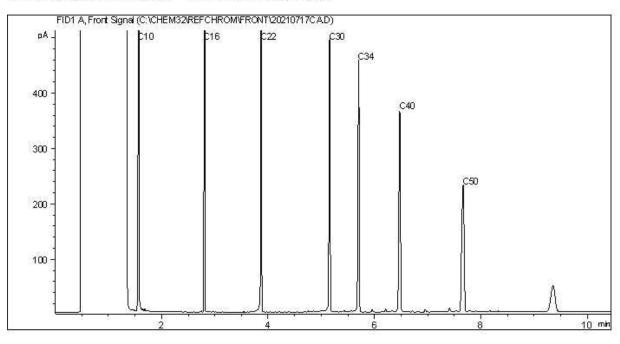
BV Labs Sample: AEO361 Client ID: TP21-12-05

### CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC20



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

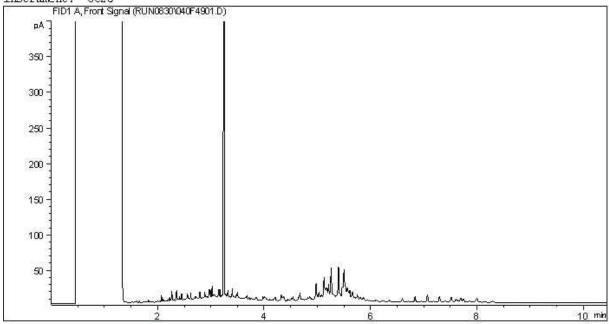
 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

Report Date: 2021/09/01 Client Project #: 20368099-6000-1001

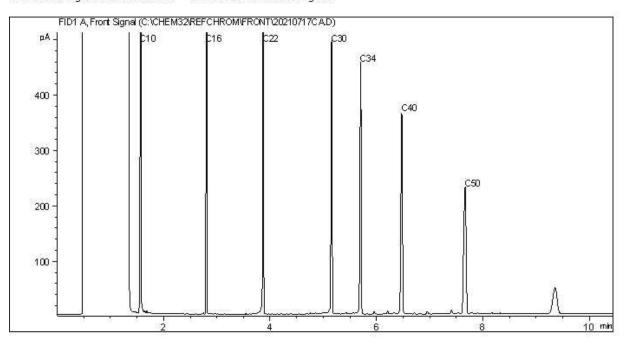
BV Labs Sample: AEO362 Client ID: TP21-19-01

### CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC20



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

Report Date: 2021/09/01 Client Project #: 20368099-6000-1001

BV Labs Sample: AEO363 Client ID: TP21-19-04

### CCME Hydrocarbons (F2-F4 in soil) Chromatogram

10 min

Instrument: GC20

FID1 A, Front Signal (RUN0830V041F5001.D)

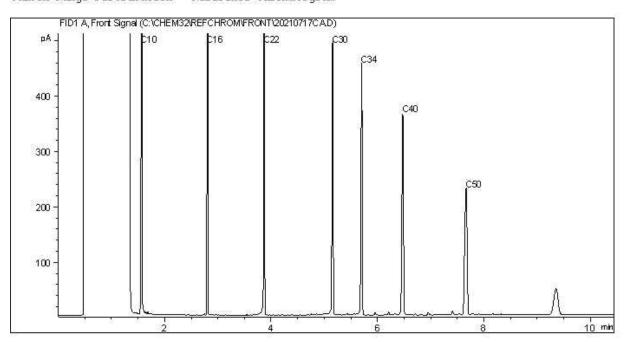
pA

350 
250 
150 -

Carbon Range Distribution - Reference Chromatogram

100

50



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

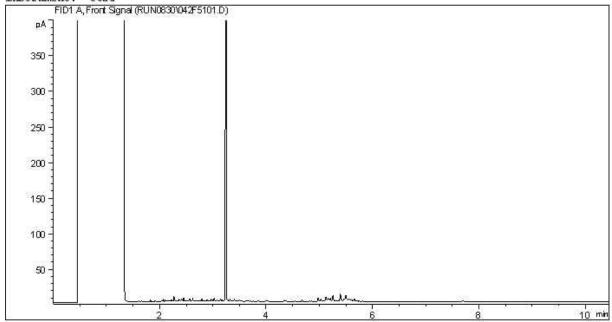
 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

Report Date: 2021/09/01 Client Project #: 20368099-6000-1001

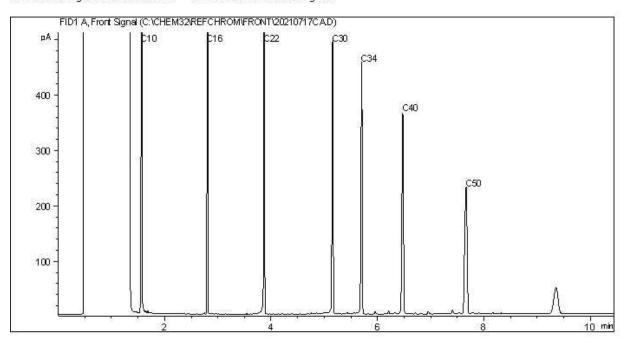
BV Labs Sample: AEO364 Client ID: TP21-19-06

### CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC20



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

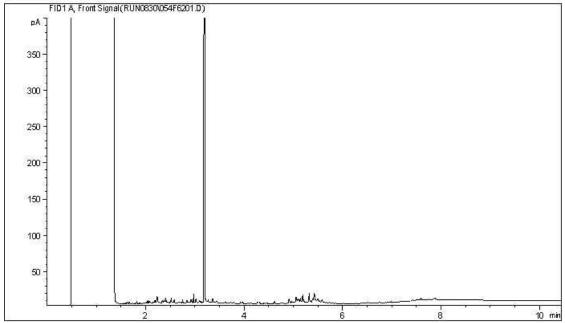
 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

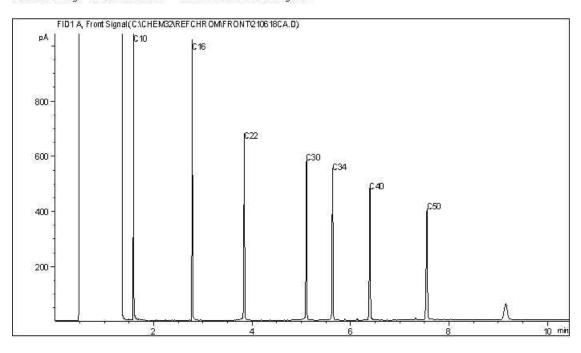
Report Date: 2021/09/01 Client Project #: 20368099-6000-1001 BV Labs Sample: AEO364 Client ID: TP21-19-06

# CCME Hydrocarbons (F2-F4)+F3A/B in soil Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

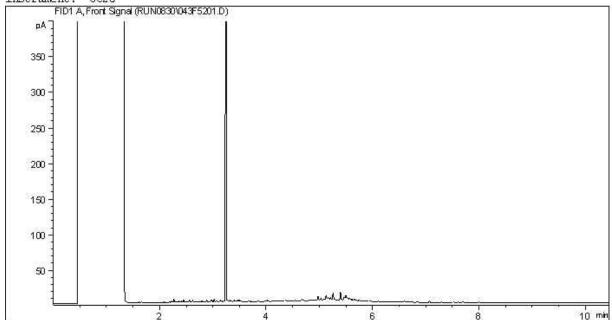
 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

Report Date: 2021/09/01 Client Project #: 20368099-6000-1001

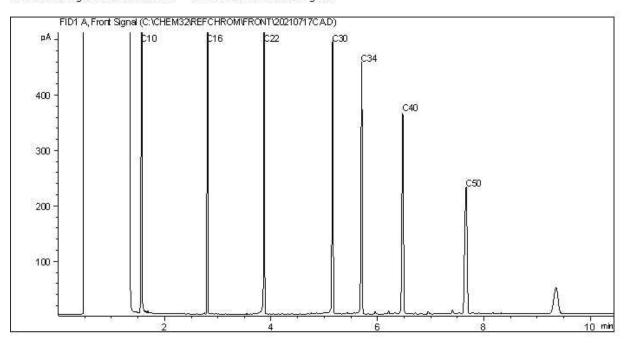
BV Labs Sample: AEO365 Client ID: TP21-73-02

### CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC20



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

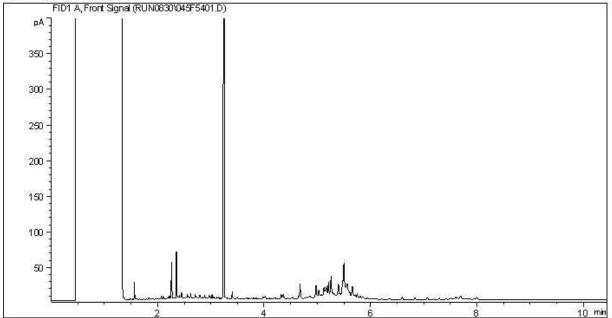
 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

Report Date: 2021/09/01 Client Project #: 20368099-6000-1001

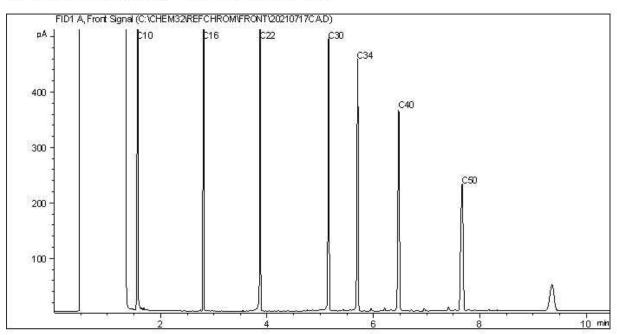
BV Labs Sample: AEO366 Client ID: TP21-73-04

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC20



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: - C12 Varsol: c8 C12 Kerosene: c7 - C16 Diesel: C8 - C22 Lubricating Oils: c20 - c40Crude Oils: - c60+

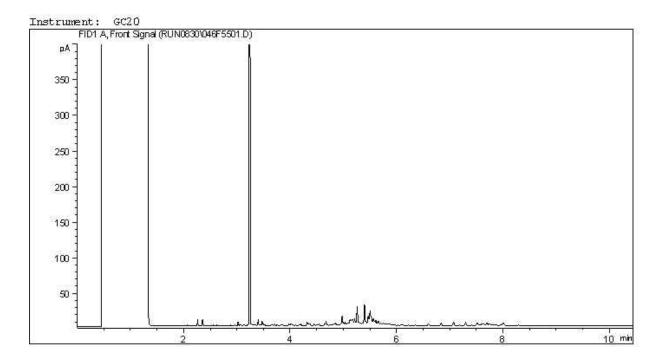
BV Labs Job #: C162535 Report Date: 2021/09/01

BV Labs Sample: AEO367

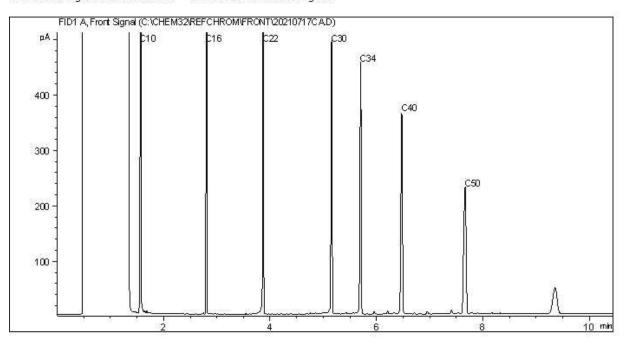
GOLDER ASSOCIATES LTD. Client Project #: 20368099-6000-1001

Client ID: TP21-73-05

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



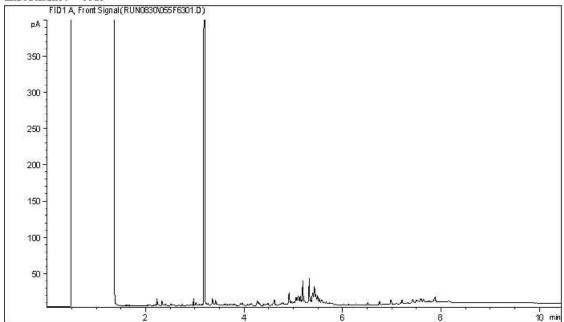
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	-	C12	Diesel:	c8	-	C22
Varsol:	c8	_	C12	Lubricating Oils:	C20	1	C40
Kerosene:	c7	_	C16	Crude Oils:	c3	1	C60+

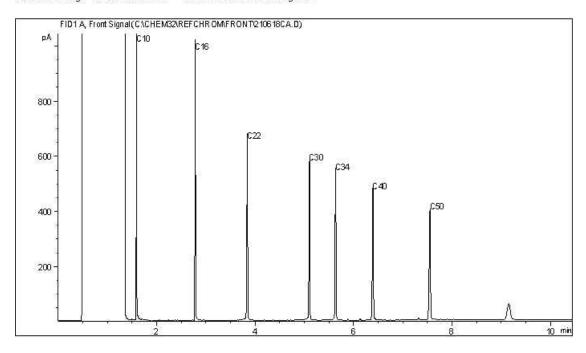
Report Date: 2021/09/01 Client Project #: 20368099-6000-1001 BV Labs Sample: AEO367 Client ID: TP21-73-05

## CCME Hydrocarbons (F2-F4)+F3A/B in soil Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

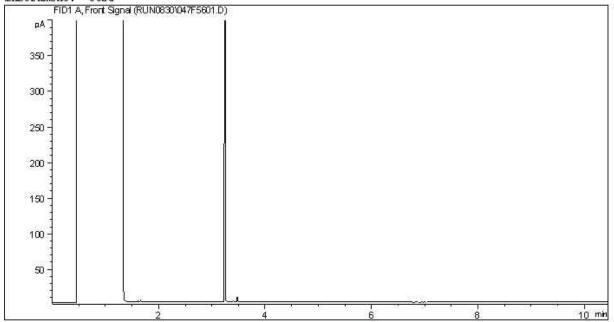
 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

Report Date: 2021/09/01 Client Project #: 20368099-6000-1001

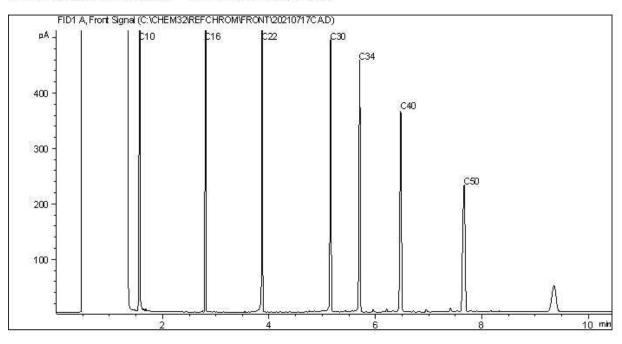
BV Labs Sample: AEO368 Client ID: DUP H

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC20



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

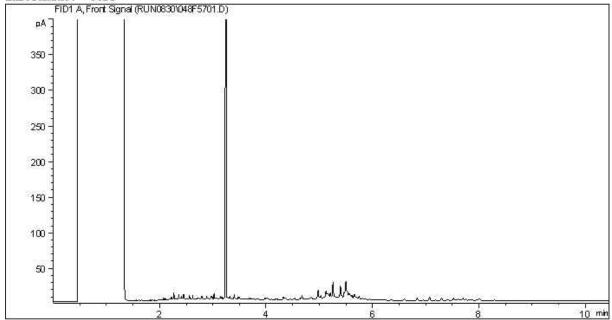
 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

Report Date: 2021/09/01 Client Project #: 20368099-6000-1001

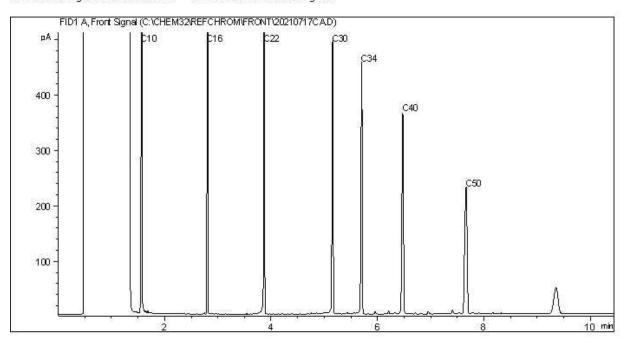
BV Labs Sample: AEO380 Client ID: TP21-105-03

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC20



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

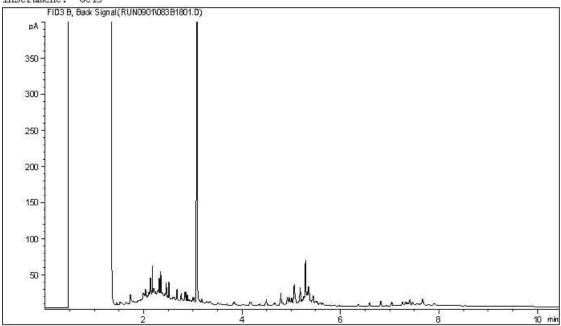
 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

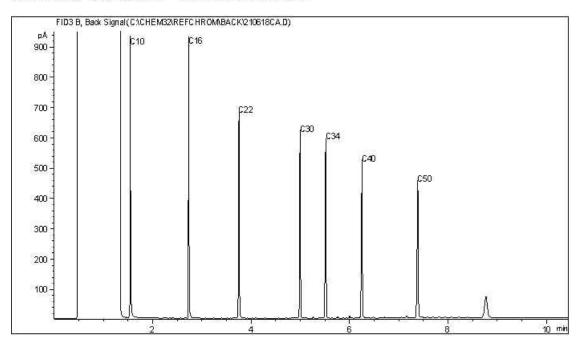
 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

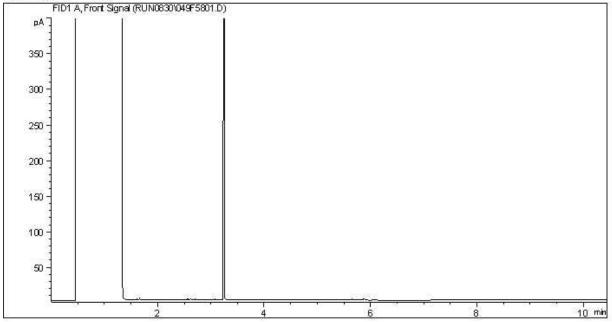
 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

Report Date: 2021/09/01 Client Project #: 20368099-6000-1001

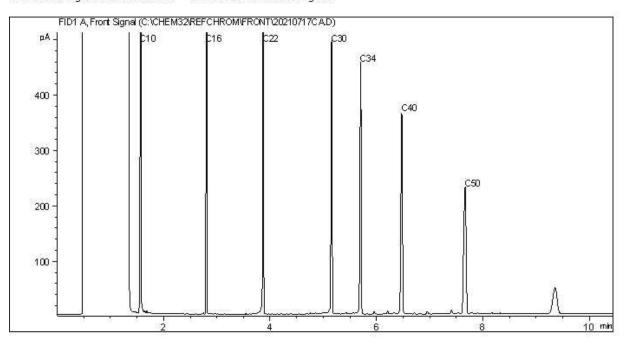
BV Labs Sample: AEO382 Client ID: TP21-105-06

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC20



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

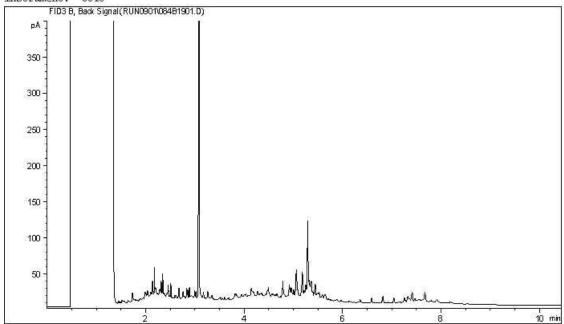
 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

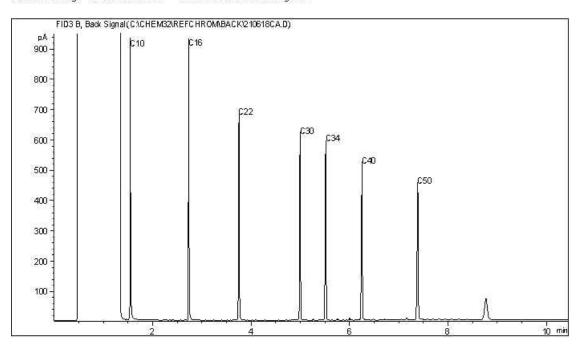
Report Date: 2021/09/01 Client Project #: 20368099-6000-1001 BV Labs Sample: AEO383 Client ID: TP21-82-03

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

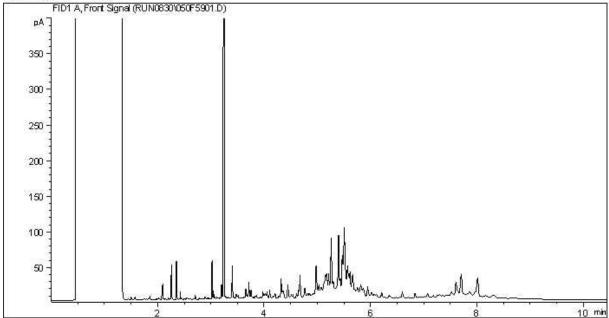
 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

Report Date: 2021/09/01 Client Project #: 20368099-6000-1001

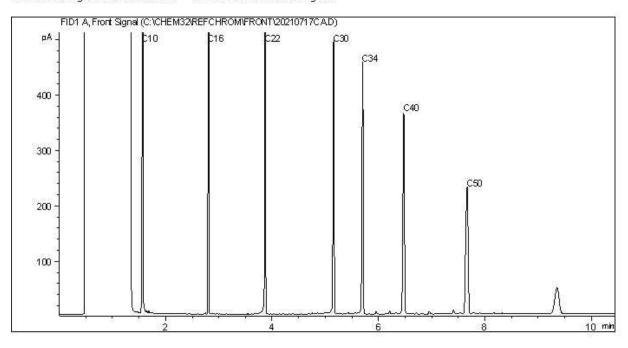
BV Labs Sample: AEO384 Client ID: TP21-82-04

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC20



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

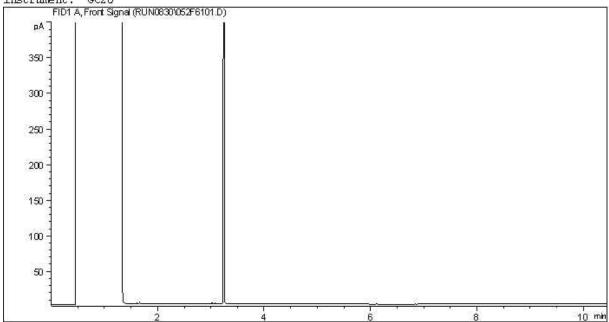
 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

Report Date: 2021/09/01 Client Project #: 20368099-6000-1001

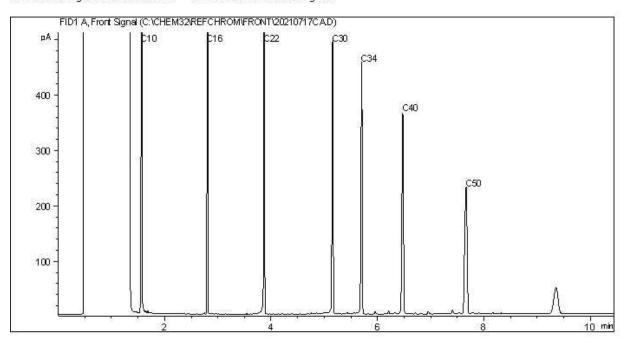
BV Labs Sample: AEO385 Client ID: TP21-82-06

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC20



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

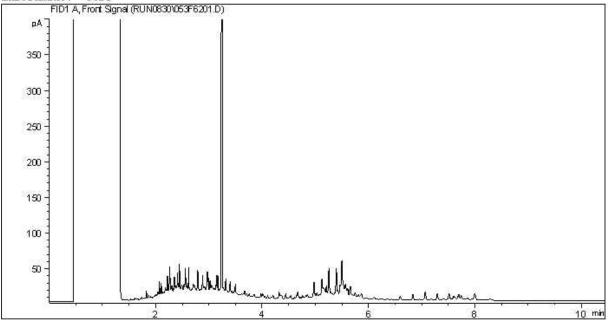
 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

Report Date: 2021/09/01 Client Project #: 20368099-6000-1001

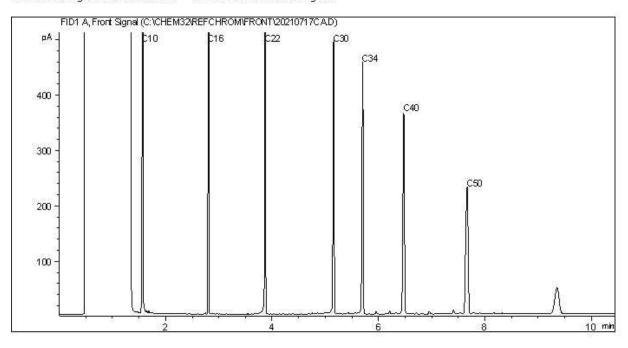
BV Labs Sample: AEO386 Client ID: TP21-50-02

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC20



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

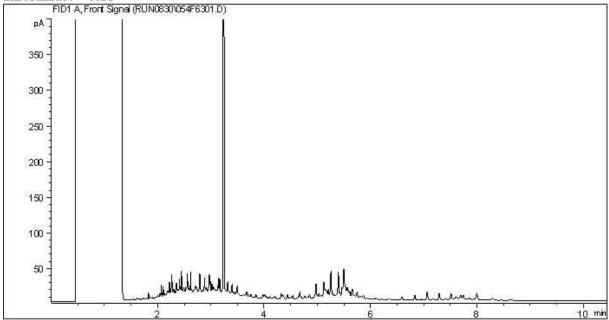
Gasoline: C12 Varsol: c8 C12 Kerosene: c7 - C16 Diesel: C22 Lubricating Oils: c20 - c40Crude Oils: - c60+

Report Date: 2021/09/01 Client Project #: 20368099-6000-1001

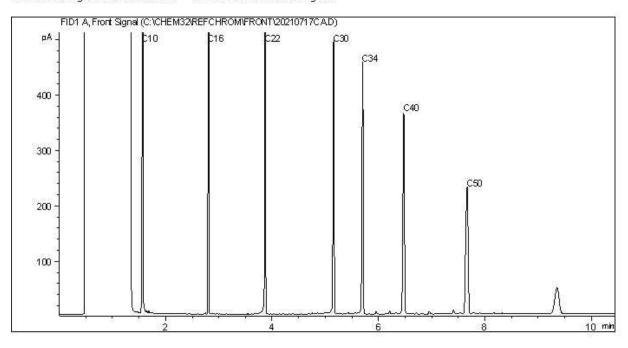
BV Labs Sample: AEO387 Client ID: TP21-50-04

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC20



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

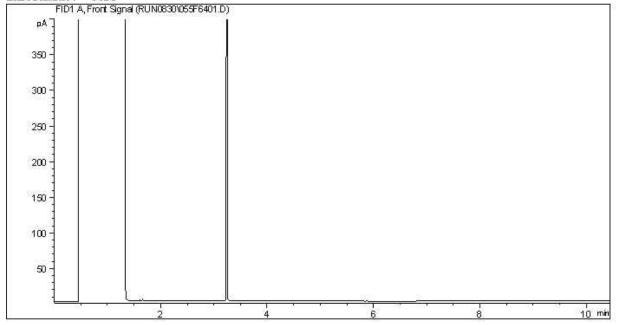
Gasoline: C12 Diesel: C22 Varsol: c8 C12 Lubricating Oils: c20 - c40Kerosene: c7 - C16 Crude Oils: - c60+

Report Date: 2021/09/01 Client Project #: 20368099-6000-1001

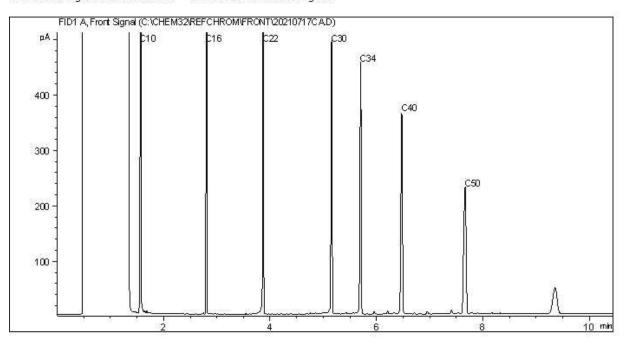
BV Labs Sample: AEO388 Client ID: TP21-50-06

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC20



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

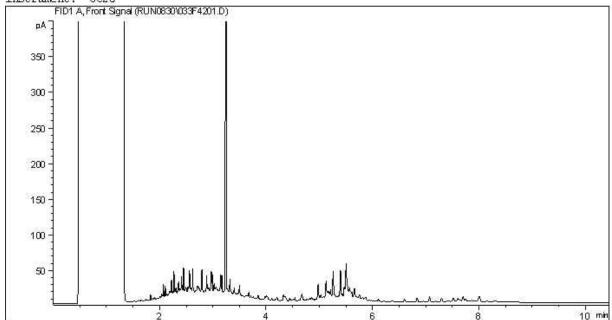
 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

Report Date: 2021/09/01 Client Project #: 20368099-6000-1001

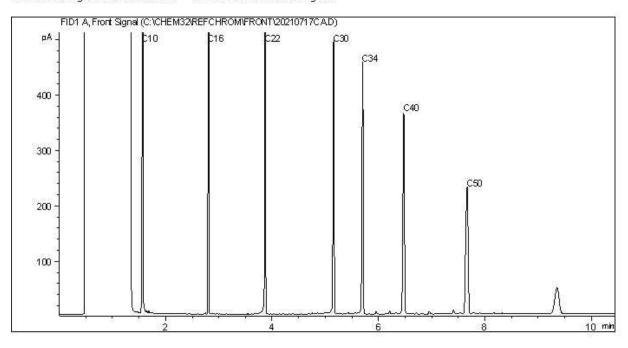
BV Labs Sample: AEO389 Client ID: DUP G

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC20



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

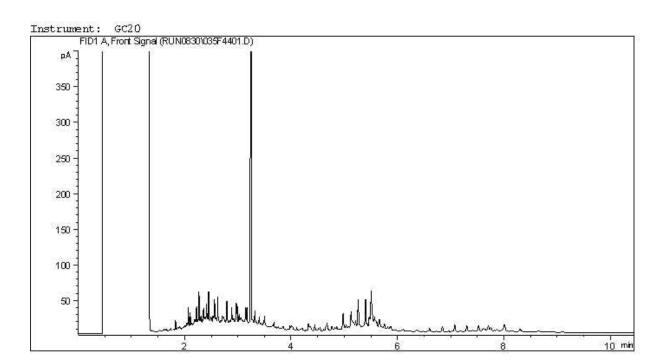
Report Date: 2021/09/01

BV Labs Sample: AEO389 Lab-Dup

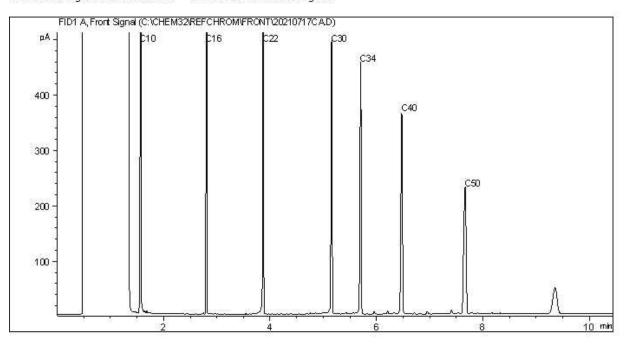
Client Project #: 20368099-6000-1001

Client ID: DUP G

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	-	C12	Diesel:	c8	-	C22
Varsol:	c8	_	C12	Lubricating Oils:	C20	1	C40
Kerosene:	c7	_	C16	Crude Oils:	c3	1	C60+

BV Labs Job #: C162535 Report Date: 2021/09/01 BV Labs Sample: AEO397

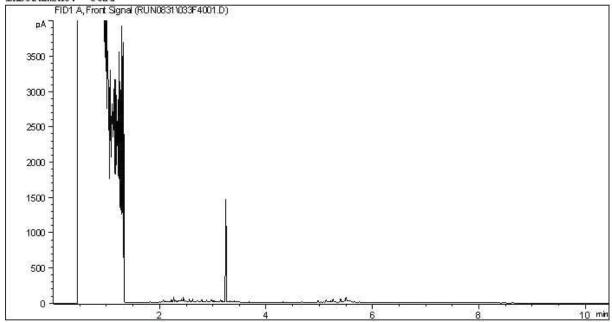
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

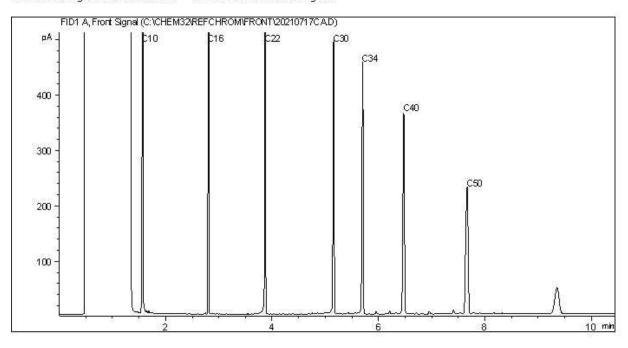
Client ID: TP21-42-03

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC20



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

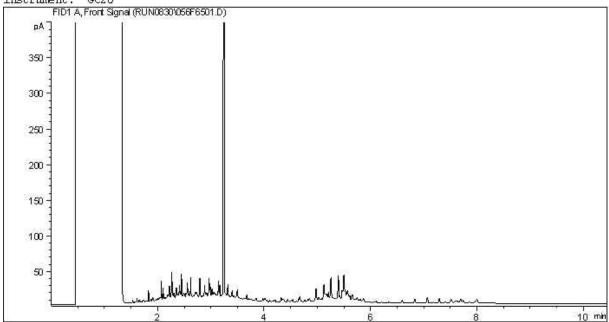
Gasoline: C4 - C12 Diesel: C8 - C22 Varsol: c8 C12 Lubricating Oils: c20 - c40Kerosene: c7 - C16 Crude Oils: - c60+

Report Date: 2021/09/01 Client Project #: 20368099-6000-1001

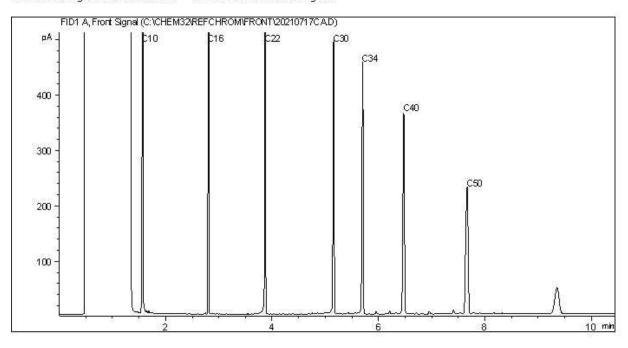
BV Labs Sample: AEO398 Client ID: TP21-42-04

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC20



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

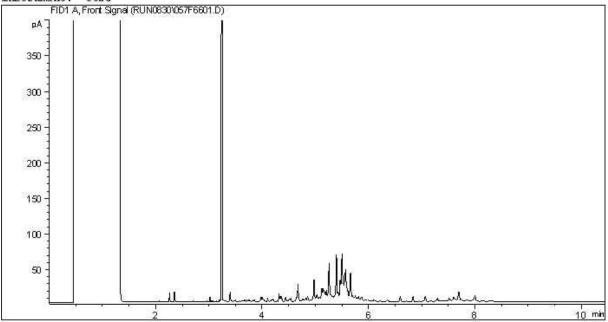
Gasoline: C12 Diesel: C22 Varsol: c8 C12 Lubricating Oils: c20 - c40Kerosene: c7 - C16 Crude Oils: - c60+

Report Date: 2021/09/01 Client Project #: 20368099-6000-1001

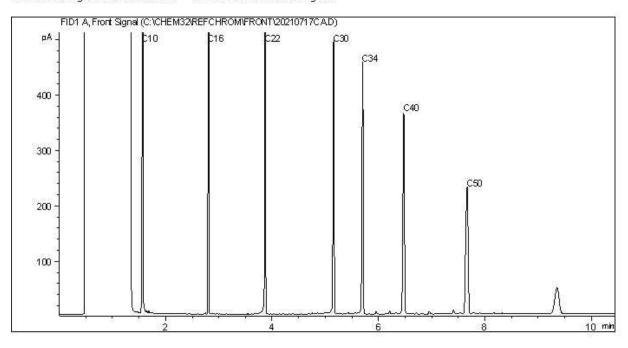
BV Labs Sample: AEO399 Client ID: TP21-42-05

## CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC20



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C12 Varsol: c8 C12 Kerosene: c7 - C16 Diesel: C8 - C22 Lubricating Oils: c20 - c40Crude Oils: - c60+

# GOLDER DATA QUALITY REVIEW CHECKLIST

Site Location: Camp Farewo	ell		Sampling Date: August 18, 2021							
Golder Project Number: 2	20368099	9-6000-100	1	Laboratory: Bureau Veritas Edmonton						
Lab Submission Number: <u>(</u>	C162535									
Was the Cooler Received at the lab Was proper chain of custody of the Were sample temperatures accepta Were all samples analyzed and ext Has lab warranted all tests were in Was sufficient sample provided for Has lab warranted all samples were	samples ble when racted wi statistica the requ	documente they reache thin hold tin I control in tested analy	ed and keped lab?: mes?: CoA?: rsis?	Yes Yes Yes Yes Yes Yes No						
Are All Laboratory QC Within Acc	ceptance	Criteria (Y	es, No, N	Not Applicable)?						
Yes No NA Comments  Surrogate Recovery X All laboratory QC results are within  Method Blank Concentration X acceptance criteria.  Laboratory Duplicate RPD X Matrix Spike Recovery X Blank Spike Recovery X										
Are All Field QC Samples Within	Alert Lin	nits (Yes, N	o, Not Aj	Applicable)?						
Field Blank Concentration Trip Blank Concentration Field Duplicate RPD	Yes	No	NA X X	Comments  All field QC samples are within alert limits.						
Is data considered reliable (Yes/No If answer is "No" or "Suspect", des			ntionale:	Yes						
Data Reviewed by (Print):		lbert er 2, 2021		Data Reviewed by (Signature):	x					



Your P.O. #: 20368099-7000-1001 Your Project #: 20368099-6000-1001

Site Location: Camp Farewell and Unipkat I-22, Northwest

Territories

## **Attention: Aurelie Belavance**

GOLDER ASSOCIATES LTD. 2800, 700 -2nd Street SW CALGARY, AB CANADA T2P 2W2

Your C.O.C. #: 644511-38-01, 644511-39-01, 644511-40-01, 644511-41-01

Report Date: 2021/12/24

Report #: R3113901 Version: 4 - Revision

# **CERTIFICATE OF ANALYSIS – REVISED REPORT**

BV LABS JOB #: C162661 Received: 2021/08/24, 09:45

Sample Matrix: Soil # Samples Received: 35

·		Date	Date		
Analyses	Quantity	Extracted	Analyzed	Laboratory Method	<b>Analytical Method</b>
BTEX/F1 by HS GC/MS/FID (MeOH extract) (1)	1	2021/08/27	2021/08/30	AB SOP-00039	CCME CWS/EPA 8260d m
BTEX/F1 by HS GC/MS/FID (MeOH extract) (1)	1	2021/08/28	2021/08/30	AB SOP-00039	CCME CWS/EPA 8260d m
BTEX/F1 by HS GC/MS/FID (MeOH extract) (1, 2)	20	N/A	2021/08/29	AB SOP-00039	CCME CWS/EPA 8260d m
BTEX/F1 by HS GC/MS/FID (MeOH extract) (1, 2)	13	N/A	2021/08/30	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX (1)	33	N/A	2021/08/30		Auto Calc
F1-BTEX (1)	2	N/A	2021/08/31		Auto Calc
CCME Hydrocarbons (F2-F4)+F3A/B in soil (1, 3)	4	2021/08/27	2021/08/30	AB SOP-00036	CCME PHC-CWS m
CCME Hydrocarbons (F2-F4 in soil) (1, 4)	20	2021/08/27	2021/08/30	AB SOP-00036	CCME PHC-CWS m
CCME Hydrocarbons (F2-F4 in soil) (1, 4)	3	2021/08/28	2021/08/29	AB SOP-00036	CCME PHC-CWS m
CCME Hydrocarbons (F2-F4 in soil) (1, 4)	12	2021/08/28	2021/08/30	AB SOP-00036	CCME PHC-CWS m
CCME Hydrocarbons (F2/F2+F3B) in soil (1, 5)	2	N/A	2021/08/28		Auto Calc
CCME Hydrocarbons (F2/F2+F3B) in soil (1, 5)	1	N/A	2021/12/23		Auto Calc
CCME Hydrocarbons (F2/F2+F3B) in soil (1, 5)	1	N/A	2021/12/24		Auto Calc
CCME Hydrocarbons (F4G in soil) (1, 4)	1	2021/08/27	2021/08/31	AB SOP-00036	CCME PHC-CWS m
				AB SOP-00040	
Moisture (1)	20	N/A	2021/08/28	AB SOP-00002	CCME PHC-CWS m
Moisture (1)	15	N/A	2021/08/29	AB SOP-00002	CCME PHC-CWS m

#### Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report.



Your P.O. #: 20368099-7000-1001 Your Project #: 20368099-6000-1001

Site Location: Camp Farewell and Unipkat I-22, Northwest

**Territories** 

**Attention: Aurelie Belavance** 

GOLDER ASSOCIATES LTD. 2800, 700 -2nd Street SW CALGARY, AB CANADA T2P 2W2

Your C.O.C. #: 644511-38-01, 644511-39-01, 644511-40-01, 644511-41-01

Report Date: 2021/12/24

Report #: R3113901 Version: 4 - Revision

## **CERTIFICATE OF ANALYSIS – REVISED REPORT**

## **BV LABS JOB #: C162661**

## Received: 2021/08/24, 09:45

Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

- \* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
- (1) This test was performed by Bureau Veritas Calgary, 4000 19 St., Calgary, AB, T2E 6P8
- (2) No lab extraction date is given for F1BTEX & VOC samples that are field preserved with methanol. Extraction date is date sampled unless otherwise stated.
- (3) All CCME results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil, Validation of Performance-Based Alternative Methods September 2003. Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.
- (4) All CCME results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil, Validation of Performance-Based Alternative Methods September 2003. Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.
- (5) All CCME results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil, Validation of Performance-Based Alternative Methods September 2003. Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

# **Encryption Key**



24 Dec 2021 14:00:56

Bureau Veritas

Please direct all questions regarding this Certificate of Analysis to your Project Manager. Cynny Hagen, Key Account Specialist

Email: Cynny.HAGEN@bureauveritas.com

Phone# (403)735-2273

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



Client Project #: 20368099-6000-1001

Site Location: Camp Farewell and Unipkat I-22, Northwest

Territories

Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

# AT1 BTEX AND F1-F4 IN SOIL (SOIL)

Bureau Veritas ID		AEP016		AEP036	AEP036		
Sampling Date		2021/08/22		2021/08/22	2021/08/22		
Sampling Date		11:02		11:03	11:03		
COC Number		644511-39-01		644511-41-01	644511-41-01		
	UNITS	TP21-60-04	QC Batch	DUP S	DUP S Lab-Dup	RDL	QC Batch
Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	A334849	<10	N/A	10	A335162
F3 (C16-C34 Hydrocarbons)	mg/kg	350	A334849	76	N/A	50	A335162
F4 (C34-C50 Hydrocarbons)	mg/kg	68	A334849	<50	N/A	50	A335162
Reached Baseline at C50	mg/kg	Yes	A334849	Yes	N/A	N/A	A335162
Physical Properties							
Moisture	%	33	A334847	21	N/A	0.30	A335215
Volatiles	•	•	•	•		ē	-
Benzene	mg/kg	<0.0050	A335767	<0.0050	<0.0050	0.0050	A335767
Toluene	mg/kg	<0.050	A335767	<0.050	<0.050	0.050	A335767
Ethylbenzene	mg/kg	<0.010	A335767	<0.010	<0.010	0.010	A335767
m & p-Xylene	mg/kg	<0.040	A335767	<0.040	<0.040	0.040	A335767
o-Xylene	mg/kg	<0.020	A335767	<0.020	<0.020	0.020	A335767
Xylenes (Total)	mg/kg	<0.045	A334549	<0.045	N/A	0.045	A334549
F1 (C6-C10) - BTEX	mg/kg	<10	A334549	<10	N/A	10	A334549
F1 (C6-C10)	mg/kg	<10	A335767	<10	<10	10	A335767
Surrogate Recovery (%)							
1,4-Difluorobenzene (sur.)	%	98	A335767	99	99	N/A	A335767
4-Bromofluorobenzene (sur.)	%	98	A335767	97	98	N/A	A335767
D10-o-Xylene (sur.)	%	115	A335767	105	106	N/A	A335767
D4-1,2-Dichloroethane (sur.)	%	116	A335767	117	116	N/A	A335767
O-TERPHENYL (sur.)	%	97	A334849	109	N/A	N/A	A335162
PDI - Papartable Detection Lie	mi+					_	

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate



Client Project #: 20368099-6000-1001

Site Location: Camp Farewell and Unipkat I-22, Northwest

Territories

Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

# AT1 BTEX AND F1-F4 IN SOIL (VIALS)

	-			_					
Bureau Veritas ID		AEP003	AEP003		AEP004	AEP005	AEP006		
Sampling Date		2021/08/22	2021/08/22		2021/08/22	2021/08/22	2021/08/22		
Sampling Date		09:59	09:59		10:01	10:24	10:28		
COC Number		644511-38-01	644511-38-01		644511-38-01	644511-38-01	644511-38-01		
	UNITS	TP21-62-02	TP21-62-02 Lab-Dup	RDL	TP21-62-04	TP21-63-01	TP21-63-03	RDL	QC Batch
Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	28	N/A	10	<10	120	230	10	A334849
F3 (C16-C34 Hydrocarbons)	mg/kg	410	N/A	50	<50	220	290	50	A334849
F4 (C34-C50 Hydrocarbons)	mg/kg	160	N/A	50	<50	<50	<50	50	A334849
Reached Baseline at C50	mg/kg	Yes	N/A	N/A	Yes	Yes	Yes	N/A	A334849
Physical Properties	•			•		•			
Moisture	%	29	N/A	0.30	12	15	3.6	0.30	A334839
Volatiles								•	•
Xylenes (Total)	mg/kg	<0.18	N/A	0.18	<0.045	<0.045	<0.045	0.045	A334549
F1 (C6-C10) - BTEX	mg/kg	<25	N/A	25	<10	<10	<10	10	A334549
Field Preserved Volatiles									
Benzene	mg/kg	<0.018 (1)	<0.018	0.018	<0.0050	<0.0050	<0.0050	0.0050	A335196
Toluene	mg/kg	<0.050 (1)	<0.050	0.050	<0.050	<0.050	<0.050	0.050	A335196
Ethylbenzene	mg/kg	<0.033 (1)	<0.033	0.033	<0.010	<0.010	<0.010	0.010	A335196
m & p-Xylene	mg/kg	<0.16 (2)	<0.16	0.16	<0.040	<0.040	<0.040	0.040	A335196
o-Xylene	mg/kg	<0.081 (2)	<0.081	0.081	<0.020	<0.020	<0.020	0.020	A335196
F1 (C6-C10)	mg/kg	<25 (1)	<25	25	<10	<10	<10	10	A335196
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	85	87	N/A	86	86	84	N/A	A335196
4-Bromofluorobenzene (sur.)	%	104	104	N/A	101	102	104	N/A	A335196
D10-o-Xylene (sur.)	%	118	118	N/A	138	122	119	N/A	A335196
D4-1,2-Dichloroethane (sur.)	%	115	114	N/A	112	112	115	N/A	A335196
O-TERPHENYL (sur.)	%	105	N/A	N/A	100	106	109	N/A	A334849

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate

- (1) Detection limit reported based on MDL and sample weight used for analysis.
- (2) Detection limits raised based on sample weight used for analysis.



Client Project #: 20368099-6000-1001

Site Location: Camp Farewell and Unipkat I-22, Northwest

Territories

Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

# AT1 BTEX AND F1-F4 IN SOIL (VIALS)

	AEP007	AEP008	AEP008		AEP009	AEP010		
	10:30	10:29	10:29		10:32	10:35		
	644511-38-01	644511-38-01	644511-38-01		644511-38-01	644511-38-01		
UNITS	TP21-63-05	TP21-64-01	TP21-64-01 Lab-Dup	QC Batch	TP21-64-03	TP21-64-06	RDL	QC Batch
mg/kg	<10	30	20	A334849	25	<10	10	A334849
mg/kg	<50	120	87	A334849	66	<50	50	A334849
mg/kg	<50	<50	<50	A334849	<50	<50	50	A334849
mg/kg	Yes	Yes	Yes	A334849	Yes	Yes	N/A	A334849
•								
%	15	14	N/A	A334839	5.6	19	0.30	A334847
•				•			•	•
mg/kg	<0.045	<0.045	N/A	A334549	<0.045	<0.045	0.045	A334549
mg/kg	<10	<10	N/A	A334549	<10	<10	10	A334549
•	•	•	•	•	•	•	•	•
mg/kg	<0.0050	<0.0050	N/A	A335196	<0.0050	<0.0050	0.0050	A335196
mg/kg	<0.050	<0.050	N/A	A335196	<0.050	<0.050	0.050	A335196
mg/kg	<0.010	<0.010	N/A	A335196	<0.010	<0.010	0.010	A335196
mg/kg	<0.040	<0.040	N/A	A335196	<0.040	<0.040	0.040	A335196
mg/kg	<0.020	<0.020	N/A	A335196	<0.020	<0.020	0.020	A335196
mg/kg	<10	<10	N/A	A335196	<10	<10	10	A335196
%	86	86	N/A	A335196	87	88	N/A	A335196
%	108	101	N/A	A335196	104	103	N/A	A335196
%	140	121	N/A	A335196	115	127	N/A	A335196
%	113	113	N/A	A335196	115	115	N/A	A335196
%	102	104	91	A334849	96	98	N/A	A334849
	mg/kg	mg/kg     <10       mg/kg     <50	2021/08/22   10:30   10:29     644511-38-01   644511-38-01     UNITS   TP21-63-05   TP21-64-01	2021/08/22   10:30   10:29	2021/08/22   10:30   10:29   10:29   10:29   10:30   644511-38-01   644511-38-01   644511-38-01   TP21-64-01   Lab-Dup   QC Batch	2021/08/22   10:30   10:29   10:29   10:32	2021/08/22   2021/08/22   10:30   10:29   10:29   10:32   10:35	2021/08/22   10:30   10:29   10:29   10:32   10:35   10:35   10:39   10:35

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate



Client Project #: 20368099-6000-1001

Site Location: Camp Farewell and Unipkat I-22, Northwest

Territories

Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

# AT1 BTEX AND F1-F4 IN SOIL (VIALS)

Bureau Veritas ID		AEP011	AEP012		AEP013	AEP014	AEP014		
Sampling Date		2021/08/22	2021/08/22		2021/08/22	2021/08/22	2021/08/22		
		10:39	10:40		10:41	10:42	10:42		
COC Number		644511-38-01	644511-38-01		644511-39-01	644511-39-01	644511-39-01		
	UNITS	TP21-59-01	TP21-59-03	QC Batch	TP21-59-04	TP21-59-06	TP21-59-06 Lab-Dup	RDL	QC Batch
Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	340	63	A334849	45	<10	N/A	10	A334849
F3 (C16-C34 Hydrocarbons)	mg/kg	610	120	A334849	110	<50	N/A	50	A334849
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	<50	A334849	<50	<50	N/A	50	A334849
Reached Baseline at C50	mg/kg	Yes	Yes	A334849	Yes	Yes	N/A	N/A	A334849
Physical Properties									
Moisture	%	14	11	A334839	8.0	19	20	0.30	A334839
Volatiles	•	•	•	•	•	•	•	•	•
Xylenes (Total)	mg/kg	<0.045	<0.045	A334549	<0.045	<0.045	N/A	0.045	A334698
F1 (C6-C10) - BTEX	mg/kg	<10	<10	A334549	<10	<10	N/A	10	A334698
Field Preserved Volatiles	•	•	•	•	•	•	•	•	•
Benzene	mg/kg	<0.0050	<0.0050	A335196	<0.0050	<0.0050	N/A	0.0050	A335196
Toluene	mg/kg	<0.050	0.50	A335196	1.3	<0.050	N/A	0.050	A335196
Ethylbenzene	mg/kg	<0.010	<0.010	A335196	<0.010	<0.010	N/A	0.010	A335196
m & p-Xylene	mg/kg	<0.040	<0.040	A335196	<0.040	<0.040	N/A	0.040	A335196
o-Xylene	mg/kg	<0.020	<0.020	A335196	<0.020	<0.020	N/A	0.020	A335196
F1 (C6-C10)	mg/kg	<10	<10	A335196	<10	<10	N/A	10	A335196
Surrogate Recovery (%)	•	•	•	•	•	•	•	•	•
1,4-Difluorobenzene (sur.)	%	86	86	A335196	88	85	N/A	N/A	A335196
4-Bromofluorobenzene (sur.)	%	100	105	A335196	110	104	N/A	N/A	A335196
D10-o-Xylene (sur.)	%	122	117	A335196	112	120	N/A	N/A	A335196
D4-1,2-Dichloroethane (sur.)	%	109	113	A335196	117	111	N/A	N/A	A335196
O-TERPHENYL (sur.)	%	101	100	A334849	101	99	N/A	N/A	A334849
RDL = Reportable Detection Li	mi+		<u> </u>		<u> </u>	<u> </u>	<del></del>		

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate



Client Project #: 20368099-6000-1001

Site Location: Camp Farewell and Unipkat I-22, Northwest

Territories

Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

# AT1 BTEX AND F1-F4 IN SOIL (VIALS)

-									
Bureau Veritas ID		AEP015	AEP017		AEP018		AEP019		
Sampling Date		2021/08/22	2021/08/22		2021/08/22		2021/08/22		
Jamping Date		11:01	11:03		11:38		13:48		
COC Number		644511-39-01	644511-39-01		644511-39-01		644511-39-01		
	UNITS	TP21-60-02	TP21-60-06	RDL	TP21-61-02	RDL	TP21-31-02	RDL	QC Batch
Ext. Pet. Hydrocarbon	•	•	•	•	•	•		•	
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	<10	10	46	10	<10	10	A334849
F3 (C16-C34 Hydrocarbons)	mg/kg	74	67	50	1300	50	92	50	A334849
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	<50	50	480	50	<50	50	A334849
Reached Baseline at C50	mg/kg	Yes	Yes	N/A	No	N/A	Yes	N/A	A334849
Physical Properties	•	•	•	=	•	3	•	=	
Moisture	%	7.4	22	0.30	42	0.30	36	0.30	A334847
Volatiles									
Xylenes (Total)	mg/kg	<0.045	<0.045	0.045	<0.10	0.10	<0.045	0.045	A334698
F1 (C6-C10) - BTEX	mg/kg	<10	<10	10	<23	23	<10	10	A334698
Field Preserved Volatiles									
Benzene	mg/kg	<0.0050	<0.0050	0.0050	<0.010 (1)	0.010	<0.0050	0.0050	A335196
Toluene	mg/kg	<0.050	<0.050	0.050	<0.050 (1)	0.050	<0.050	0.050	A335196
Ethylbenzene	mg/kg	<0.010	<0.010	0.010	<0.018 (1)	0.018	<0.010	0.010	A335196
m & p-Xylene	mg/kg	<0.040	<0.040	0.040	<0.090 (2)	0.090	<0.040	0.040	A335196
o-Xylene	mg/kg	<0.020	<0.020	0.020	<0.045 (2)	0.045	<0.020	0.020	A335196
F1 (C6-C10)	mg/kg	<10	<10	10	<23 (2)	23	<10	10	A335196
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	88	86	N/A	87	N/A	85	N/A	A335196
4-Bromofluorobenzene (sur.)	%	107	105	N/A	105	N/A	105	N/A	A335196
D10-o-Xylene (sur.)	%	120	132	N/A	115	N/A	101	N/A	A335196
D4-1,2-Dichloroethane (sur.)	%	116	114	N/A	117	N/A	113	N/A	A335196
O-TERPHENYL (sur.)	%	99	96	N/A	97	N/A	96	N/A	A334849

RDL = Reportable Detection Limit

N/A = Not Applicable

(2) Detection limits raised based on sample weight used for analysis.

<sup>(1)</sup> Detection limit reported based on MDL and sample weight used for analysis.



Client Project #: 20368099-6000-1001

Site Location: Camp Farewell and Unipkat I-22, Northwest

Territories

Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

# AT1 BTEX AND F1-F4 IN SOIL (VIALS)

Bureau Veritas ID		AEP020			AEP021	AEP022	AEP023		
Sampling Date		2021/08/22			2021/08/22	2021/08/22	2021/08/22		
Jamping Date		13:51			14:00	14:01	14:02		
COC Number		644511-39-01			644511-39-01	644511-39-01	644511-40-01		
	UNITS	TP21-30-02	RDL	QC Batch	TP21-33-02	TP21-33-04	TP21-33-06	RDL	QC Batch
Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	<22 (1)	22	A334849	230	38	<10	10	A335167
F3 (C16-C34 Hydrocarbons)	mg/kg	250 (1)	110	A334849	330	110	<50	50	A335167
F4 (C34-C50 Hydrocarbons)	mg/kg	<110 (1)	110	A334849	52	<50	<50	50	A335167
Reached Baseline at C50	mg/kg	Yes	N/A	A334849	Yes	Yes	Yes	N/A	A335167
Physical Properties									
Moisture	%	55	0.30	A334847	9.0	8.0	15	0.30	A335215
Volatiles	•	•		•	•	•	•	=	
Xylenes (Total)	mg/kg	<0.13	0.13	A334698	<0.045	<0.045	<0.045	0.045	A334698
F1 (C6-C10) - BTEX	mg/kg	<19	19	A334698	<10	<10	<10	10	A334698
Field Preserved Volatiles	•	•		•	•	•	•	-	
Benzene	mg/kg	<0.013 (2)	0.013	A335196	<0.0050	<0.0050	<0.0050	0.0050	A335196
Toluene	mg/kg	<0.050 (2)	0.050	A335196	<0.050	<0.050	<0.050	0.050	A335196
Ethylbenzene	mg/kg	<0.024 (2)	0.024	A335196	<0.010	<0.010	<0.010	0.010	A335196
m & p-Xylene	mg/kg	<0.12 (3)	0.12	A335196	<0.040	<0.040	<0.040	0.040	A335196
o-Xylene	mg/kg	<0.060 (3)	0.060	A335196	<0.020	<0.020	<0.020	0.020	A335196
F1 (C6-C10)	mg/kg	<19 (2)	19	A335196	<10	<10	<10	10	A335196
Surrogate Recovery (%)	•	•		•	•	•	•	=	
1,4-Difluorobenzene (sur.)	%	89	N/A	A335196	86	88	87	N/A	A335196
4-Bromofluorobenzene (sur.)	%	104	N/A	A335196	102	106	109	N/A	A335196
D10-o-Xylene (sur.)	%	127	N/A	A335196	127	123	118	N/A	A335196
D4-1,2-Dichloroethane (sur.)	%	117	N/A	A335196	114	117	115	N/A	A335196
O-TERPHENYL (sur.)	%	100	N/A	A334849	111	104	101	N/A	A335167

RDL = Reportable Detection Limit

- (1) Detection limits raised due to high moisture content, sample contains => 50% moisture.
- (2) Detection limit reported based on MDL and sample weight used for analysis.
- (3) Detection limits raised based on sample weight used for analysis.



Client Project #: 20368099-6000-1001

Site Location: Camp Farewell and Unipkat I-22, Northwest

Territories

Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

# AT1 BTEX AND F1-F4 IN SOIL (VIALS)

Bureau Veritas ID		AEP024	AEP024		AEP025		AEP025		
Sampling Date		2021/08/22	2021/08/22		2021/08/22		2021/08/22		
Sampling Date		14:24	14:24		14:25		14:25		
COC Number		644511-40-01	644511-40-01		644511-40-01		644511-40-01		
	UNITS	TP21-32-03	TP21-32-03 Lab-Dup	QC Batch	TP21-32-04	QC Batch	TP21-32-04 REPEAT	RDL	QC Batch
Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	830	860	A335167	6900	A334849	N/A	10	A334849
F3 (C16-C34 Hydrocarbons)	mg/kg	110	110	A335167	650	A334849	N/A	50	A334849
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	<50	A335167	130	A334849	N/A	50	A334849
Reached Baseline at C50	mg/kg	Yes	Yes	A335167	Yes	A334849	N/A	N/A	A334849
Physical Properties	•							•	•
Moisture	%	4.1	N/A	A335215	40	A334847	N/A	0.30	A334847
Volatiles	•								
Xylenes (Total)	mg/kg	<0.045	N/A	A334698	18	A334698	32	0.045	A368317
F1 (C6-C10) - BTEX	mg/kg	<10	N/A	A334698	740	A334698	800	10	A368317
Field Preserved Volatiles	•		•			-		·	•
Benzene	mg/kg	<0.0050	N/A	A335198	<0.0050	A335198	0.016	0.0050	A363224
Toluene	mg/kg	<0.050	N/A	A335198	0.16	A335198	0.28	0.050	A363224
Ethylbenzene	mg/kg	<0.010	N/A	A335198	3.6	A335198	6.1	0.010	A363224
m & p-Xylene	mg/kg	<0.040	N/A	A335198	11	A335198	20	0.040	A363224
o-Xylene	mg/kg	<0.020	N/A	A335198	6.4	A335198	12	0.020	A363224
F1 (C6-C10)	mg/kg	<10	N/A	A335198	770	A335198	840	10	A363224
Surrogate Recovery (%)	•	•	•		•	•	•	=	•
1,4-Difluorobenzene (sur.)	%	96	N/A	A335198	97	A335198	102	N/A	A363224
4-Bromofluorobenzene (sur.)	%	101	N/A	A335198	107	A335198	106	N/A	A363224
D10-o-Xylene (sur.)	%	95	N/A	A335198	111	A335198	122	N/A	A363224
D4-1,2-Dichloroethane (sur.)	%	103	N/A	A335198	103	A335198	106	N/A	A363224
O-TERPHENYL (sur.)	%	102	96	A335167	100	A334849	N/A	N/A	N/A

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate



Client Project #: 20368099-6000-1001

Site Location: Camp Farewell and Unipkat I-22, Northwest

Territories

Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

# AT1 BTEX AND F1-F4 IN SOIL (VIALS)

Bureau Veritas ID		AEP025			AEP026			AEP027		
Sampling Date		2021/08/22			2021/08/22			2021/08/22		
		14:25			14:26			14:45		
COC Number		644511-40-01			644511-40-01			644511-40-01		
	UNITS	TP21-32-04 Lab-Dup	RDL	QC Batch	TP21-32-05	RDL	QC Batch	TP21-28-02	RDL	QC Batch
Ext. Pet. Hydrocarbon	·			<u></u>	·	•	<u> </u>	<u> </u>	<u> </u>	·
F2 (C10-C16 Hydrocarbons)	mg/kg	N/A	10	A334849	30 (1)	24	A334849	480	10	A335167
F3 (C16-C34 Hydrocarbons)	mg/kg	N/A	50	A334849	510 (1)	120	A334849	690	50	A335167
F4 (C34-C50 Hydrocarbons)	mg/kg	N/A	50	A334849	170 (1)	120	A334849	72	50	A335167
Reached Baseline at C50	mg/kg	N/A	N/A	A334849	Yes	N/A	A334849	Yes	N/A	A335167
Physical Properties										
Moisture	%	40	0.30	A334847	58	0.30	A334847	14	0.30	A335215
Volatiles									•	•
Xylenes (Total)	mg/kg	N/A	0.045	A368317	<0.16	0.16	A334698	<0.045	0.045	A334698
F1 (C6-C10) - BTEX	mg/kg	N/A	10	A368317	<22	22	A334698	11	10	A334698
Field Preserved Volatiles										
Benzene	mg/kg	N/A	0.0050	A363224	<0.016 (2)	0.016	A335198	<0.0050	0.0050	A335198
Toluene	mg/kg	N/A	0.050	A363224	0.20 (3)	0.18	A335198	<0.050	0.050	A335198
Ethylbenzene	mg/kg	N/A	0.010	A363224	<0.028 (2)	0.028	A335198	0.017	0.010	A335198
m & p-Xylene	mg/kg	N/A	0.040	A363224	<0.14 (3)	0.14	A335198	<0.040	0.040	A335198
o-Xylene	mg/kg	N/A	0.020	A363224	<0.071 (3)	0.071	A335198	<0.020	0.020	A335198
F1 (C6-C10)	mg/kg	N/A	10	A363224	<22 (2)	22	A335198	11	10	A335198
Surrogate Recovery (%)										
1,4-Difluorobenzene (sur.)	%	N/A	N/A	A363224	93	N/A	A335198	96	N/A	A335198
4-Bromofluorobenzene (sur.)	%	N/A	N/A	A363224	102	N/A	A335198	101	N/A	A335198
D10-o-Xylene (sur.)	%	N/A	N/A	A363224	124	N/A	A335198	99	N/A	A335198
D4-1,2-Dichloroethane (sur.)	%	N/A	N/A	A363224	112	N/A	A335198	106	N/A	A335198
O-TERPHENYL (sur.)	%	N/A	N/A	N/A	102	N/A	A334849	106	N/A	A335167

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate

- (1) Detection limits raised due to high moisture content, sample contains => 50% moisture.
- (2) Detection limit reported based on MDL and sample weight used for analysis.
- (3) Detection limits raised based on sample weight used for analysis.



Client Project #: 20368099-6000-1001

Site Location: Camp Farewell and Unipkat I-22, Northwest

Territories

Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

# AT1 BTEX AND F1-F4 IN SOIL (VIALS)

Bureau Veritas ID Sampling Date		AEP028	AEP029	AEP029	AEP030	AEP031		
Sampling Date								
Sampling Date		2021/08/22	2021/08/22	2021/08/22	2021/08/22	2021/08/22		
		14:57	14:57	14:57	14:58	15:10		
COC Number		644511-40-01	644511-40-01	644511-40-01	644511-40-01	644511-40-01		
	UNITS	TP21-28-04	TP21-28-06	TP21-28-06 Lab-Dup	TP21-28-08	TP21-29-02	RDL	QC Batch
Ext. Pet. Hydrocarbon			•	•				
F2 (C10-C16 Hydrocarbons)	mg/kg	220	<10	N/A	<10	<10	10	A335167
F3 (C16-C34 Hydrocarbons)	mg/kg	370	<50	N/A	<50	<50	50	A335167
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	<50	N/A	<50	<50	50	A335167
Reached Baseline at C50	mg/kg	Yes	Yes	N/A	Yes	Yes	N/A	A335167
Physical Properties								
Moisture	%	11	16	15	16	4.5	0.30	A335215
Volatiles								
Xylenes (Total)	mg/kg	0.13	0.17	N/A	<0.045	<0.045	0.045	A334698
F1 (C6-C10) - BTEX	mg/kg	31	<10	N/A	<10	<10	10	A334698
Field Preserved Volatiles								
Benzene	mg/kg	<0.0050	<0.0050	N/A	<0.0050	<0.0050	0.0050	A335198
Toluene	mg/kg	<0.050	<0.050	N/A	<0.050	<0.050	0.050	A335198
Ethylbenzene	mg/kg	0.022	0.035	N/A	<0.010	<0.010	0.010	A335198
m & p-Xylene	mg/kg	0.091	0.13	N/A	<0.040	<0.040	0.040	A335198
o-Xylene	mg/kg	0.040 (1)	0.041	N/A	0.037 (1)	<0.020	0.020	A335198
F1 (C6-C10)	mg/kg	31	<10	N/A	<10	<10	10	A335198
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	95	97	N/A	97	97	N/A	A335198
4-Bromofluorobenzene (sur.)	%	99	102	N/A	100	100	N/A	A335198
D10-o-Xylene (sur.)	%	102	110	N/A	92	91	N/A	A335198
D4-1,2-Dichloroethane (sur.)	%	107	107	N/A	107	105	N/A	A335198
O-TERPHENYL (sur.)	%	95	89	N/A	95	94	N/A	A335167

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate

N/A = Not Applicable

(1) Qualifying ion outside of acceptance criteria. Results are tentatively identified and potentially biased high.



Client Project #: 20368099-6000-1001

Site Location: Camp Farewell and Unipkat I-22, Northwest

Territories

Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

# AT1 BTEX AND F1-F4 IN SOIL (VIALS)

Bureau Veritas ID		AEP032			AEP033			AEP034		
Sampling Date		2021/08/22			2021/08/22			2021/08/22		
Jamping Date		15:11			15:12			14:22		
COC Number		644511-40-01			644511-41-01			644511-41-01		
	UNITS	TP21-29-04	RDL	QC Batch	TP21-29-05	RDL	QC Batch	TP21-32-01	RDL	QC Batch
Ext. Pet. Hydrocarbon										
F2 (C10-C16 Hydrocarbons)	mg/kg	15	10	A335167	<28 (1)	28	A335162	20	10	A335167
F3 (C16-C34 Hydrocarbons)	mg/kg	200	50	A335167	180 (1)	140	A335162	<50	50	A335167
F4 (C34-C50 Hydrocarbons)	mg/kg	52	50	A335167	<140 (1)	140	A335162	<50	50	A335167
Reached Baseline at C50	mg/kg	Yes	N/A	A335167	Yes	N/A	A335162	Yes	N/A	A335167
Physical Properties										
Moisture	%	46	0.30	A335215	64	0.30	A335215	4.9	0.30	A335215
Volatiles		-	•	•	•	•		•	•	•
Xylenes (Total)	mg/kg	<0.092	0.092	A334698	<0.17	0.17	A334698	<0.045	0.045	A334698
F1 (C6-C10) - BTEX	mg/kg	<21	21	A334698	<24	24	A334698	<10	10	A334698
Field Preserved Volatiles		-	•		•	•		•	•	•
Benzene	mg/kg	<0.0090 (2)	0.0090	A335198	<0.017 (2)	0.017	A335198	<0.0050	0.0050	A335198
Toluene	mg/kg	0.22 (3)	0.10	A335198	0.25 (3)	0.19	A335198	<0.050	0.050	A335198
Ethylbenzene	mg/kg	<0.016 (2)	0.016	A335198	<0.030 (2)	0.030	A335198	<0.010	0.010	A335198
m & p-Xylene	mg/kg	<0.082 (3)	0.082	A335198	<0.15 (3)	0.15	A335198	<0.040	0.040	A335198
o-Xylene	mg/kg	<0.041 (3)	0.041	A335198	0.10 (3)	0.076	A335198	<0.020	0.020	A335198
F1 (C6-C10)	mg/kg	<21 (3)	21	A335198	<24 (2)	24	A335198	<10	10	A335198
Surrogate Recovery (%)		-	•	•	•	•		•	•	•
1,4-Difluorobenzene (sur.)	%	96	N/A	A335198	94	N/A	A335198	94	N/A	A335198
4-Bromofluorobenzene (sur.)	%	99	N/A	A335198	102	N/A	A335198	101	N/A	A335198
D10-o-Xylene (sur.)	%	93	N/A	A335198	101	N/A	A335198	102	N/A	A335198
D4-1,2-Dichloroethane (sur.)	%	103	N/A	A335198	101	N/A	A335198	102	N/A	A335198
O-TERPHENYL (sur.)	%	104	N/A	A335167	106	N/A	A335162	99	N/A	A335167

RDL = Reportable Detection Limit

- (1) Detection limits raised due to high moisture content, sample contains => 50% moisture.
- (2) Detection limit reported based on MDL and sample weight used for analysis.
- (3) Detection limits raised based on sample weight used for analysis.



Client Project #: 20368099-6000-1001

Site Location: Camp Farewell and Unipkat I-22, Northwest

Territories

Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

# AT1 BTEX AND F1-F4 IN SOIL (VIALS)

Bureau Veritas ID		AEP035		AEP037			AEP037		
Sampling Date		2021/08/22 10:28		2021/08/22 14:25			2021/08/22 14:25		
COC Number		644511-41-01		644511-41-01			644511-41-01		
	UNITS	DUP U	QC Batch	DUP T	RDL	QC Batch	DUP T REPEAT	RDL	QC Batch
Ext. Pet. Hydrocarbon	-	•	-				•		
F2 (C10-C16 Hydrocarbons)	mg/kg	80	A335162	4300	10	A335167	N/A	10	A335167
F3 (C16-C34 Hydrocarbons)	mg/kg	130	A335162	800	50	A335167	N/A	50	A335167
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	A335162	240	50	A335167	N/A	50	A335167
Reached Baseline at C50	mg/kg	Yes	A335162	Yes	N/A	A335167	N/A	N/A	A335167
Physical Properties			•						
Moisture	%	13	A335215	44	0.30	A335215	N/A	0.30	A335215
Volatiles					-				
Xylenes (Total)	mg/kg	<0.045	A334698	32	0.045	A334698	35	0.092	A368317
F1 (C6-C10) - BTEX	mg/kg	<10	A334698	1400	10	A334698	640	21	A368317
Field Preserved Volatiles	•		-		-				
Benzene	mg/kg	<0.0050	A335198	<0.0050	0.0050	A335198	0.022 (1)	0.010	A363224
Toluene	mg/kg	<0.050	A335198	0.27	0.050	A335198	0.33 (1)	0.10	A363224
Ethylbenzene	mg/kg	<0.010	A335198	6.5	0.010	A335198	6.7 (1)	0.021	A363224
m & p-Xylene	mg/kg	<0.040	A335198	20	0.040	A335198	22 (1)	0.082	A363224
o-Xylene	mg/kg	<0.020	A335198	11	0.020	A335198	13 (1)	0.041	A363224
F1 (C6-C10)	mg/kg	<10	A335198	1400	10	A335198	680 (1)	21	A363224
Surrogate Recovery (%)	•		-		-				
1,4-Difluorobenzene (sur.)	%	95	A335198	96	N/A	A335198	100	N/A	A363224
4-Bromofluorobenzene (sur.)	%	100	A335198	111	N/A	A335198	101	N/A	A363224
D10-o-Xylene (sur.)	%	105	A335198	111	N/A	A335198	125	N/A	A363224
D4-1,2-Dichloroethane (sur.)	%	104	A335198	104	N/A	A335198	107	N/A	A363224

RDL = Reportable Detection Limit

N/A = Not Applicable

(1) Detection limits raised based on sample weight used for analysis.



Client Project #: 20368099-6000-1001

Site Location: Camp Farewell and Unipkat I-22, Northwest

Territories

Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

# PETROLEUM HYDROCARBONS (CCME)

	_		_		_	_		_
Bureau Veritas ID		AEP003		AEP012	AEP013	AEP018		
Sampling Date		2021/08/22 09:59		2021/08/22 10:40	2021/08/22 10:41	2021/08/22 11:38		
COC Number		644511-38-01		644511-38-01	644511-39-01	644511-39-01		
	UNITS	TP21-62-02	QC Batch	TP21-59-03	TP21-59-04	TP21-61-02	RDL	QC Batch
Ext. Pet. Hydrocarbon								
F2 (C10-C16 Hydrocarbons)	mg/kg	28	A457151	N/A	N/A	N/A	10	A457151
F3 (C16-C34 Hydrocarbons)	mg/kg	410	A453392	N/A	N/A	N/A	71	A453392
F3A (C16-C22)	mg/kg	62	A457151	78	60	N/A	50	A330260
F3B (C22-C34)	mg/kg	350	A457151	<50	51	N/A	50	A330260
F2% (BIC)	mg/kg	7.6	A453392	NC	NC	N/A	N/A	A334554
Reached Baseline at C50	mg/kg	N/A	N/A	Yes	Yes	N/A	N/A	A330260
F4G-SG (Heavy Hydrocarbons-Grav.)	mg/kg	N/A	N/A	N/A	N/A	6800	500	A337167
Surrogate Recovery (%)	-	•	•	•	-	-		•
O-TERPHENYL (sur.)	%	105	A457151	N/A	N/A	N/A	N/A	N/A
RDL = Reportable Detection Limit								
N/A = Not Applicable								

Bureau Veritas ID		AEP026				
Sampling Date		2021/08/22				
Sampling Date		14:26				
COC Number		644511-40-01				
	UNITS	TP21-32-05	RDL	QC Batch		
Ext. Pet. Hydrocarbon	ext. Pet. Hydrocarbon					
F2 (C10-C16 Hydrocarbons)	mg/kg	30 (1)	24	A457151		
F3 (C16-C34 Hydrocarbons)	mg/kg	430	170	A453392		
F3A (C16-C22)	mg/kg	<120 (1)	120	A457151		
F3B (C22-C34)	mg/kg	430 (1)	120	A457151		
F2% (BIC)	mg/kg	6.5	N/A	A453392		
Surrogate Recovery (%)	•					
O-TERPHENYL (sur.)	%	102	N/A	A457151		

RDL = Reportable Detection Limit

N/A = Not Applicable

(1) Detection limits raised due to high moisture content, sample contains => 50% moisture.



Client Project #: 20368099-6000-1001

Site Location: Camp Farewell and Unipkat I-22, Northwest

**Territories** 

Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

## **GENERAL COMMENTS**

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	4.7°C
Package 2	3.3°C
Package 3	2.0°C
Package 4	1.3°C
Package 5	3.0°C

Revision #3: Report reissued with both set of data for F1 (C6-C10) - BTEX, BTEX on samples TP21-32-04 & DUP T.

Revised report: Generate EDD 2021/09/20

Version #4: Report reissued to include results for F3A/F3B/Chromatogram on samples listed below as per client request received 2021/12/16.

TP21-32-05/AEP026 TP21-62-02/AEP003

#### HYDROCARBON RESEMBLANCE

The reported hydrocarbon resemblance was obtained by visual comparison of the sample chromatogram with a library of reference product chromatograms. Since variables such as the degree and type of weathering and the presence of non-petrogenic hydrocarbons cannot be duplicated in reference spectra, the resemblance information must be regarded as approximate and qualitative and as such, Bureau Veritas Laboratories can assume no liability for any conclusions drawn from these data.

Sample AEP006 [TP21-63-03]: Sample was analyzed past method specified hold time for CCME Hydrocarbons (F2-F4 in soil).

Sample AEP016 [TP21-60-04]: Sample received was not in compliance with CCME sampling requirements for VOC/BTEX/F1 in soil.

Sample AEPO26 [TP21-32-05]: The CCME F2-F4 chromatographic peak profile is consistent with biogenic organic material (e.g. peat). Chromatograms of biogenic organic material may contain peak patterns spanning the C18 to C50 range, but they are most commonly characterized by a profile of unevenly distributed sharp peaks between C28 and C34. The impacts are not consistent with a petroleum product or crude oil.

Sample AEP035 [DUP U]: Sample was analyzed past method specified hold time for CCME Hydrocarbons (F2-F4 in soil).

Sample AEP036 [DUP S]: Sample received was not in compliance with CCME sampling requirements for VOC/BTEX/F1 in soil.

Results relate only to the items tested.



Client Project #: 20368099-6000-1001

Site Location: Camp Farewell and Unipkat I-22, Northwest

Territories

Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

# **QUALITY ASSURANCE REPORT**

QA/QC								
Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
A330260	GG3	Matrix Spike	O-TERPHENYL (sur.)	2021/08/25		103		60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/25		90	WITS  % % % % % % % % % % mg/kg mg/kg mg/kg % % % % % % % % % % % % % % % % % % %	60 - 140
	F3A (C16-C22)	2021/08/25		87		60 - 140		
			F3B (C22-C34)	2021/08/25		58 (1)		60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/08/25		88		60 - 140
A330260	GG3	Spiked Blank	O-TERPHENYL (sur.)	2021/08/25		112	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/25		97	% % % % % % % % % % % % % % % % % % %	60 - 140
			F3A (C16-C22)	2021/08/25		96		60 - 140
			F3B (C22-C34)	2021/08/25		100	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/08/25		99		60 - 140
A330260	GG3	Method Blank	O-TERPHENYL (sur.)	2021/08/25		105	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/25	<10		mg/kg	
			F3A (C16-C22)	2021/08/25	<50		mg/kg	
			F3B (C22-C34)	2021/08/25	<50		% % % % mg/kg mg/kg mg/kg mg/kg % % % % % % % % % % % % % % % % % % %	
			F4 (C34-C50 Hydrocarbons)	2021/08/25	<50		mg/kg	
A330260	GG3	RPD	F3A (C16-C22)	2021/08/25	NC		%	40
			F3B (C22-C34)	2021/08/25	18		%	40
A334839	ARV	Method Blank	Moisture	2021/08/28	<0.30		%	
A334839	ARV	RPD [AEP014-01]	Moisture	2021/08/28	4.1		%	20
A334847	ARV	Method Blank	Moisture	2021/08/28	<0.30		%	
A334847	ARV	RPD [AEP025-01]	Moisture	2021/08/28	2.3		%	20
A334849	GG3	Matrix Spike [AEP008-01]	O-TERPHENYL (sur.)	2021/08/30		118	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/30		114	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/08/30		116	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/08/30		120	%	60 - 140
A334849	GG3	Spiked Blank	O-TERPHENYL (sur.)	2021/08/30		101	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/30		101 % 97 %	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/08/30		99	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/08/30		98	%	60 - 140
A334849	GG3	Method Blank	O-TERPHENYL (sur.)	2021/08/30		97	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/30	<10		% % % % % % mg/kg mg/kg mg/kg % % % % % % % % % % % % % % % % % % %	
			F3 (C16-C34 Hydrocarbons)	2021/08/30	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2021/08/30	<50		mg/kg	
A334849	GG3	RPD [AEP008-01]	F2 (C10-C16 Hydrocarbons)	2021/08/30	39		%	40
			F3 (C16-C34 Hydrocarbons)	2021/08/30	34		%	40
			F4 (C34-C50 Hydrocarbons)	2021/08/30	NC		%	40
A335162	MHF	Matrix Spike	O-TERPHENYL (sur.)	2021/08/29		125	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/29		122	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/08/29		124	mg/kg mg/kg % % % % % % % % % % % % % % % % % % %	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/08/29		125	%	60 - 140
A335162	MHF	Spiked Blank	O-TERPHENYL (sur.)	2021/08/29		99	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/29		98	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/08/29		99	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/08/29		99	%	60 - 140
A335162	MHF	Method Blank	O-TERPHENYL (sur.)	2021/08/29		108	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/29	<10		mg/kg	
			F3 (C16-C34 Hydrocarbons)	2021/08/29	<50			
			F4 (C34-C50 Hydrocarbons)	2021/08/29	<50		mg/kg	
A335162	MHF	RPD	F2 (C10-C16 Hydrocarbons)	2021/08/29	NC		%	40
			F3 (C16-C34 Hydrocarbons)	2021/08/29	NC		%	40
			F4 (C34-C50 Hydrocarbons)	2021/08/29	NC		%	40



Client Project #: 20368099-6000-1001

Site Location: Camp Farewell and Unipkat I-22, Northwest

Territories

Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

# QUALITY ASSURANCE REPORT(CONT'D)

QA/QC								
Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
A335167	GG3	Matrix Spike [AEP024-01]	O-TERPHENYL (sur.)	2021/08/30		124		60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/30		NC		60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/08/30		111		60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/08/30		100		60 - 140
A335167	GG3	Spiked Blank	O-TERPHENYL (sur.)	2021/08/30		96		60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/30		88	% % % % % % % % % % % % % % % % % % %	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/08/30		92		60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/08/30		83		60 - 140
A335167	GG3	Method Blank	O-TERPHENYL (sur.)	2021/08/30		103		60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/30	<10		% % % % % % % % % % % % % % % % % % %	
			F3 (C16-C34 Hydrocarbons)	2021/08/30	<50			
			F4 (C34-C50 Hydrocarbons)	2021/08/30	<50		mg/kg	
A335167	GG3	RPD [AEP024-01]	F2 (C10-C16 Hydrocarbons)	2021/08/30	4.3		%	40
			F3 (C16-C34 Hydrocarbons)	2021/08/30	3.2		%	40
			F4 (C34-C50 Hydrocarbons)	2021/08/30	NC		%	40
A335196	JNG	Matrix Spike [AEP003-02]	1,4-Difluorobenzene (sur.)	2021/08/29		86	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/08/29		105	% % % % % % mg/kg mg/kg % % % % % % % % % % % % % % % % % % %	50 - 140
			D10-o-Xylene (sur.)	2021/08/29		120	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/29		109	%	50 - 140
			Benzene	2021/08/29		99	%	50 - 140
			Toluene	2021/08/29		108	%	50 - 140
			Ethylbenzene	2021/08/29		111	%	50 - 140
			m & p-Xylene	2021/08/29		106	%	50 - 140
			o-Xylene	2021/08/29		102	%	50 - 140
			F1 (C6-C10)	2021/08/29		107	%	60 - 140
A335196	JNG	Spiked Blank	1,4-Difluorobenzene (sur.)	2021/08/29		75	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/08/29		95	%	50 - 140
			D10-o-Xylene (sur.)	2021/08/29		98	% % % % % % % % %	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/29		107		50 - 140
			Benzene	2021/08/29		81	%	60 - 130
			Toluene	2021/08/29		90	% % % % % mg/kg mg/kg % % % % % % % % % % % % % % % % % % %	60 - 130
			Ethylbenzene	2021/08/29		90		60 - 130
			m & p-Xylene	2021/08/29		87		60 - 130
			o-Xylene	2021/08/29		78		60 - 130
			F1 (C6-C10)	2021/08/29		99	%	60 - 140
A335196	JNG	Method Blank	1,4-Difluorobenzene (sur.)	2021/08/29		86	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/08/29		109	%	50 - 140
			D10-o-Xylene (sur.)	2021/08/29		107	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/29		113	%	50 - 140
			Benzene	2021/08/29	<0.0050		mg/kg	
			Toluene	2021/08/29	< 0.050			
			Ethylbenzene	2021/08/29	<0.010			
			m & p-Xylene	2021/08/29	< 0.040			
			o-Xylene	2021/08/29	<0.020			
			F1 (C6-C10)	2021/08/29	<10		% mg/kg mg/kg mg/kg % % % % % % % % % % % % % % % % % % %	
A335196	JNG	RPD [AEP003-02]	Benzene	2021/08/29	NC			50
		1	Toluene	2021/08/29	NC			50
			Ethylbenzene	2021/08/29	NC		% mg/kg mg/kg mg/kg % % % % % % % % % % % % % % % % % % %	50
			m & p-Xylene	2021/08/29	NC			50
			o-Xylene	2021/08/29	NC		%	50



Client Project #: 20368099-6000-1001

Site Location: Camp Farewell and Unipkat I-22, Northwest

Territories

Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

# QUALITY ASSURANCE REPORT(CONT'D)

QA/QC								
Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			F1 (C6-C10)	2021/08/29	NC	•	%	30
A335198	JNG	Matrix Spike	1,4-Difluorobenzene (sur.)	2021/08/29		97	%	50 - 140
		·	4-Bromofluorobenzene (sur.)	2021/08/29		128	%	50 - 140
			D10-o-Xylene (sur.)	2021/08/29		109	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/29		103	%	50 - 140
			Benzene	2021/08/29		83	%	50 - 140
			Toluene	2021/08/29		89	%	50 - 140
			Ethylbenzene	2021/08/29		90	%	50 - 140
			m & p-Xylene	2021/08/29		86	%	50 - 140
			o-Xylene	2021/08/29		82	%	50 - 140
			F1 (C6-C10)	2021/08/29		87	%	60 - 140
A335198	JNG	Spiked Blank	1,4-Difluorobenzene (sur.)	2021/08/29		87	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/08/29		89	%	50 - 140
			D10-o-Xylene (sur.)	2021/08/29		86	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/29		98	%	50 - 140
			Benzene	2021/08/29		69	%	60 - 130
			Toluene	2021/08/29		77	%	60 - 130
			Ethylbenzene	2021/08/29		76	%	60 - 130
			m & p-Xylene	2021/08/29		75	%	60 - 130
			o-Xylene	2021/08/29		64	%	60 - 130
			F1 (C6-C10)	2021/08/29		100	%	60 - 140
A335198	JNG	Method Blank	1,4-Difluorobenzene (sur.)	2021/08/30		93	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/08/30		99	%	50 - 140
			D10-o-Xylene (sur.)	2021/08/30		97	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/30		107	%	50 - 140
			Benzene	2021/08/30	<0.0050		mg/kg	
			Toluene	2021/08/30	< 0.050		mg/kg	
			Ethylbenzene	2021/08/30	< 0.010		mg/kg	
			m & p-Xylene	2021/08/30	< 0.040		mg/kg	
			o-Xylene	2021/08/30	<0.020		mg/kg	
			F1 (C6-C10)	2021/08/30	<10		mg/kg	
A335198	JNG	RPD	Benzene	2021/08/29	18		%	50
			Toluene	2021/08/29	NC		%	50
			Ethylbenzene	2021/08/29	1.8		%	50
			m & p-Xylene	2021/08/29	11		%	50
			o-Xylene	2021/08/29	2.4		%	50
			F1 (C6-C10)	2021/08/29	9.2		%	30
A335215	RIL	Method Blank	Moisture	2021/08/29	<0.30		%	
A335215	RIL	RPD [AEP029-01]	Moisture	2021/08/29	5.3		%	20
A335767	DO1	Matrix Spike [AEP036-01]	1,4-Difluorobenzene (sur.)	2021/08/30		96	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/08/30		99	%	50 - 140
			D10-o-Xylene (sur.)	2021/08/30		104	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/30		115	%	50 - 140
			Benzene	2021/08/30		109	%	50 - 140
			Toluene	2021/08/30		106	%	50 - 140
			Ethylbenzene	2021/08/30		109	%	50 - 140
			m & p-Xylene	2021/08/30		108	%	50 - 140
			o-Xylene	2021/08/30		107	%	50 - 140
			F1 (C6-C10)	2021/08/30		82	%	60 - 140
A335767	DO1	Spiked Blank	1,4-Difluorobenzene (sur.)	2021/08/30		96	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/08/30		97	%	50 - 140



Client Project #: 20368099-6000-1001

Site Location: Camp Farewell and Unipkat I-22, Northwest

Territories

Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

# QUALITY ASSURANCE REPORT(CONT'D)

QA/QC								
Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
		. ,,	D10-o-Xylene (sur.)	2021/08/30		97	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/30		119	%	50 - 140
			Benzene	2021/08/30		98	%	60 - 130
			Toluene	2021/08/30		98	%	60 - 130
			Ethylbenzene	2021/08/30		99	%	60 - 130
			m & p-Xylene	2021/08/30		97	%	60 - 130
			o-Xylene	2021/08/30		89	%	60 - 130
			F1 (C6-C10)	2021/08/30		109	%	60 - 140
A335767	DO1	Method Blank	1,4-Difluorobenzene (sur.)	2021/08/30		100	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/08/30		99	%	50 - 140
			D10-o-Xylene (sur.)	2021/08/30		99	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/30		116	%	50 - 140
			Benzene	2021/08/30	<0.0050		mg/kg	
			Toluene	2021/08/30	<0.050		mg/kg	
			Ethylbenzene	2021/08/30	< 0.010		mg/kg	
			m & p-Xylene	2021/08/30	< 0.040		mg/kg	
			o-Xylene	2021/08/30	<0.020		mg/kg	
			F1 (C6-C10)	2021/08/30	<10		mg/kg	
A335767	DO1	RPD [AEP036-01]	Benzene	2021/08/30	NC		%	50
			Toluene	2021/08/30	NC		%	50
			Ethylbenzene	2021/08/30	NC		%	50
			m & p-Xylene	2021/08/30	NC		%	50
			o-Xylene	2021/08/30	NC		%	50
			LH (C5-C10)	2021/08/30	NC		%	40
			F1 (C6-C10)	2021/08/30	NC		%	40
A337167	JB9	Spiked Blank	F4G-SG (Heavy Hydrocarbons-Grav.)	2021/08/31		109	%	60 - 140
A337167	JB9	Method Blank	F4G-SG (Heavy Hydrocarbons-Grav.)	2021/08/31	<500		mg/kg	
A363224	DO1	Matrix Spike	1,4-Difluorobenzene (sur.)	2021/09/23		115	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/09/23		94	%	50 - 140
			D10-o-Xylene (sur.)	2021/09/23		114	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/09/23		121	%	50 - 140
			Benzene	2021/09/23		102	%	50 - 140
			Toluene	2021/09/23		99	%	50 - 140
			Ethylbenzene	2021/09/23		103	%	50 - 140
			m & p-Xylene	2021/09/23		104	%	50 - 140
			o-Xylene	2021/09/23		104	%	50 - 140
			F1 (C6-C10)	2021/09/23		100	%	60 - 140
A363224	DO1	Spiked Blank	1,4-Difluorobenzene (sur.)	2021/09/23		121	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/09/23		93	%	50 - 140
			D10-o-Xylene (sur.)	2021/09/23		108	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/09/23		119	%	50 - 140
			Benzene	2021/09/23		105	%	60 - 130
			Toluene	2021/09/23		106	%	60 - 130
			Ethylbenzene	2021/09/23		103	%	60 - 130
			m & p-Xylene	2021/09/23		106	%	60 - 130
			o-Xylene	2021/09/23		106	%	60 - 130
			F1 (C6-C10)	2021/09/23		86	%	60 - 140
A363224	DO1	Method Blank	1,4-Difluorobenzene (sur.)	2021/09/23		123	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/09/23		93	%	50 - 140
			D10-o-Xylene (sur.)	2021/09/23		107	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/09/23		121	%	50 - 140



Client Project #: 20368099-6000-1001

Site Location: Camp Farewell and Unipkat I-22, Northwest

Territories

Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

### QUALITY ASSURANCE REPORT(CONT'D)

QA/QC		007						001: "
Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Benzene	2021/09/23	<0.0050		mg/kg	
			Toluene	2021/09/23	<0.050		mg/kg	
			Ethylbenzene	2021/09/23	<0.010		mg/kg	
			m & p-Xylene	2021/09/23	<0.040		mg/kg	
			o-Xylene	2021/09/23	<0.020		mg/kg	
			F1 (C6-C10)	2021/09/23	<10		mg/kg	
A364348	LL0	Matrix Spike	O-TERPHENYL (sur.)	2021/09/24		83	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/09/24		80	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/09/24		84	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/09/24		83	%	60 - 140
A364348	LL0	Spiked Blank	O-TERPHENYL (sur.)	2021/09/24		97	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/09/24		100	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/09/24		101	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/09/24		97	%	60 - 140
A364348	LL0	Method Blank	O-TERPHENYL (sur.)	2021/09/24		89	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/09/24	<10		mg/kg	
			F3 (C16-C34 Hydrocarbons)	2021/09/24	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2021/09/24	<50		mg/kg	
A457151	MHF	Spiked Blank	O-TERPHENYL (sur.)	2021/08/24		106	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/24		108	%	60 - 140
			F3A (C16-C22)	2021/08/24		109	%	60 - 140
			F3B (C22-C34)	2021/08/24		112	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/08/24		107	%	60 - 140
A457151	MHF	Method Blank	O-TERPHENYL (sur.)	2021/08/24		103	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/24	<10		mg/kg	
			F3A (C16-C22)	2021/08/24	<50		mg/kg	
			F3B (C22-C34)	2021/08/24	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2021/08/24	<50		mg/kg	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



Client Project #: 20368099-6000-1001

Site Location: Camp Farewell and Unipkat I-22, Northwest

Territories

Your P.O. #: 20368099-7000-1001

Sampler Initials: PT

#### **VALIDATION SIGNATURE PAGE**

The analytical data and all QC contained in this report were reviewed and validated by:

Gita Pokhrel, Laboratory Supervisor

Junchi Gas

Janet Gao, B.Sc., QP, Supervisor, Organics

Luba Shymushovska, B.Sc., QP, Senior Analyst, Organics

Veronica Falk, B.Sc., P.Chem., QP, Scientific Specialist, Organics

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



# ADDITIONAL COOLER TEMPERATURE RECORD

CHAIN-OF-CUSTODY RECORD

C	HAIN OF CUSTODY #	COOLER OBSER	VATIONS	5:					MAXXAM JOB#:						
									C	16	26	61			
1 ot 2	644511 - 38 -01	CUSTODY SEAL	YES	NO	COOLER	ID			CUSTODY SEAL	YES	NO	COOLER	D		
		PRESENT	V			10	21	0	PRESENT	1		Î			
1 of U	644511 - 39 -01	INTACT	V.		TEMP	2	4	8	INTACT			TEMP			
		CUSTODY SEAL	11/		-	1 1	2	3	ICE PRESENT				1	2	3
3 of 4	644511-40-01	PRESENT	YE5	NO	COOLER	ID	- Company		CUSTODY SEAL	YES	NO	COOLER	)		
723		INTACT	11/	-	-	1	1.7	10	PRESENT						
4 of 4	644511-41-01	ICE PRESENT	1/	-	TEMP	1 '	3	6	INTACT	-		TEMP			
ge -		CUSTODY SEAL	YE5	NO	COOLER	10	1	3	ICE PRESENT		1/2		1	2	3
1c		PRESENT	17	14.0	COULER	7	_		CUSTODY SEAL PRESENT	YES	NO	COOLER	)		
7.4 5.7		INTACT	17	-	TEMP	3	11	2	INTACT	+-					
tc		ICE PRESENT	11	-	1.5.11	1		3	ICE PRESENT	-	-	TEMP		,	
3=		CUSTODY SEAL	YES	NO	COOLER	ID.	1		CUSTODY SEAL	VES	n NO	COOLER II	1	2	3
ic		PASJENT	17	-	1	T	T		PRESENT	11.5	140	COOLERII	_	-	
3-1		INTACT	17		TEMP	1	0	3	INTACT	+-	- ^	TEMP			
of		ICE PRESENT	17	and the latest the lat	1	1	1	3	ICE PRESENT	-		TEIVIP		, ,	3
1=		CUSTODY SEAL	YES	NO	COOLER	D	1		CUSTODY SEAL	YES	NO	COOLER IS	)		2
21		PRESENT	11/	-	1	Line	1		PRESENT	-	10000		-		
		1NTACT	11/		TEMP	3	3	3	INTACT	1		TEMP			
07		ICE PRESENT	IV		1	1	2	3	ICE PRESENT	_		13.11	1		3
įŧ		CUSTODY SEAL	YES	NO	COOLERI	D			CUSTODY SEAL	YES	NO	COOLERIE			-
1C		PRESENT							PRESENT	-					
3	4	NT4CT			TEMP	1			INTACT	1		TEMP			- 1
of		ICE PRESENT				1	2	3	ICE PRESENT				1	2	3
E	1	CUSTODY SEAL	YES	NO	COOLER	D			CUSTODY SEAL	YES	NO	COOLERIE			
or		PRESENT			1				PRESENT					-	
of	1	INTACT			TEMP				INTACT			TEMP			- 1
= 0,		ICE PRESENT				1	2	3	ICE PRESENT				1	2	3
- 1c		CUSTODY SEAL	YE5	NO	COOLER	U	-		CUSTODY SEAL	YES	NO	COOLER ID			
2		PRESENT							PREJENT						
of of		INTACT ICE PRESENT			TEMP				INTACT			TEMP			- 1
2		CUSTODY SEAL	V65	1.2	100.50	1	2	3	ICE PRESENT				1	2	3
of		PHESCHT	YES	ON	COOLER I				CUSTODY SEAL	YES	NO	COOLER ID			
2		107-427	1	-	TEMP			į.	PRESENT					1	1
of		ICE PRESENT		-	IEMP	,	2	3	INTACT	-		TEMP			
2		CUSTUDY SEAL	YES	NO	COOLERIE				ICE PRESENT CUSTODY SEAL	VEC	ALC)	COOLER	1	2	3
of		PRESENT	1		3311111				PRESENT	YES	NO	COOLER ID			
÷		INTACT		-	TEMP			96	INTACT	-		TEMP			1
of		ICE PRESENT	1	_		1	. 2	3	ICE PRESENT	-		TEIVIP	, 1	2	3
		RECEIVED BY (S	IGN & F	PRINT	)				DATE (	YYYY/N	1M/D	D)		HH:MM	
		Jose Mei	,					22	1/08	1.2	4	9:	45	An	





# ADDITIONAL COOLER TEMPERATURE RECORD

CHAIN-OF-CUSTODY RECORD

		COOLER OBSER	VATIONS	5:					MA	АХХАМ ЈОВ#:					5	
	HAIN OF CUSTODY#									C	16	16	61			
age   of 4	(1111511 20 0)	CUSTODY SEAL	YES	NO	COOLER	ID		to the State of State		CUSTODY SEAL	YES	NO	COOLER	D	THE REAL PROPERTY.	***************************************
of T	644511-38-01	PRESENT	V						- Target	PRESENT	WORKELLOO	NAME AND ADDRESS OF	-	I	The same of the sa	I
2 of 4	644511-39-01	INTACT	10,		TEMP	15	7	7		INTACT			TEMP		l	
01	0-11311 37 01	ICE PRESENT	1			1	2	3		ICE PRESENT		- Control of the last of the l		1	2	3
age of 4	644511-40-01	CUSTODY SEAL	YES	NO	COOLER	ID				CUSTODY SEAL	YES	NO	COOLER	D	Campion and a	
		PRESENT	IV,		To the same of the	1	1	1/_		PRESENT						1
4 of 4	644511-41-01	INTACT	1/		TEMP	0	6	6		INTACT			TEMP			Contraction
ige	0.101	ICE PRESENT	1/	-		1	2	3		ICE PRESENT	-	THE PERSON		1	2	3
of		CUSTODY SEAL PRESENT	YES	NO	COOLER	ID	U			CUSTODY SEAL	YES	NO	COOLER I	D	010000000000000000000000000000000000000	
ige		INTACT	1	-	-	3	0	5	Š.	PRESENT						
of		ICE PRESENT	14	-	TEMP	0	2	0		INTACT			TEMP	and the same of th		6
ge		CUSTODY SEAL	YES	NO	COOLER	1	2	3		ICE PRESENT		THE PERSON		1	2	3
of		PRESENT	11:3	INO	COOLER	7	1	-		CUSTODY SEAL	YES	NO	COOLER	D	-	Date and you
ge		INTACT	17	-	TEMP	8	2	2		PRÉSENT						
of	THE PARTY OF THE P	ICE PRESENT	-	-	- TEIVIP	0	2	3		ICE PRESENT	-	THE REAL PROPERTY.	TEMP	١	2	
ge	1	CUSTODY SEAL	YES	NO	COOLER I		2	3		CUSTODY SEAL	YES	NO	COOLED	1	2	3
of		PRESENT	1	110	COULT					PRESENT	163	NO	COOLER II	)	Station of the last	THE REAL PROPERTY.
ge		INTACT	1	-	TEMP	5	<			INTACT		-	TEMP			
of	d d	ICE PRESENT	19		1	1	5	Ş		ICE PRESENT	CHARLES TON	n-me-	TEIVIP	,	2	3
ge	STEED CONTRACTOR OF THE PARTY O	CUSTODY SEAL	YES	NO	COOLER	D	-		1	CUSTODY SEAL	YES	NO	COOLER II		- Committee of the Comm	3
of		PRESENT		CHE / CHE /	-					PRESENT	- ILJ	NO	COOLER II		and several services in	-
ge		INTACT	19		TEMP	1	S	7	- 1	INTACT			TEMP			
of		ICE PRESENT	-	e V <sub>ale</sub> ndeles		7	2	3	100	ICE PRESENT	CARCIDAD SUR	-	TEIVIP	1	2	3
ge		CUSTODY SEAL	YES	NO	COOLER II				- 8	CUSTODY SEAL	YES	NO	COOLER ID	)	TAXABLE (T)	
of	}	PRESENT						CHONWESTER		PRESENT	CHIPS SPORT	COCCUS BUTTON		MEGITATION OF	-	OCCUPANTOS
ge		INTACT			TEMP				- H	INTACT			TEMP			
of	3	ICE PRESENT				1	2	3	i	ICE PRESENT	CHEST CO.	a chimedeal		1	2	3
ge		CUSTODY SEAL	YES	NO	COOLER II	)	Commence of the Commence of th	O) THE COLUMN	i i	CUSTODY SEAL	YES	NO	COOLER IE	)	-	Telanonia.
of	J.	PRESENT	i i						800	PRESENT	-	THE RESERVE		CONTRACTOR OF THE	No.	MUSIC SURE
ge		INTACT	g		TEMP				person	INTACT			TEMP	1	8	
of		ICE PRESENT				1	2	3		ICE PRESENT				1	2	3
ge		CUSTODY SEAL	YES	NO	COOLER II	)			į	CUSTODY SEAL	YES	NO	COOLER ID	)	and the state of the	WATER COLUMN
of		PRESENT							- Date of the last	PRESENT					1	CICLE HOUSE
ge		INTACT			TEMP				Depart of the last	INTACT			TEMP	1	4	
of_		ICE PRESENT	1			1	2	3	Matte	ICE PRESENT		HILL DILL SHEET		1	2 1	3
ge		CUSTODY SEAL	YES	NO	COOLER ID	)			1	CUSTODY SEAL	YES	NO	COOLER ID		SECTION ASSESSMENT OF THE PARTY	CATHERINA
of		PRESENT	6							PRESENT	9			-	-	
ge		INTACT			TEMP				1	INTACT	-		TEMP		A STATE OF THE STA	
of		ICE PRESENT			<u> </u>	1	2 .	. 3		ICE PRESENT				1	2 8	3
		RECEIVED BY (S	IGN & I	PRINT	)			-		DATE (Y	/YY/IV	IM/D	D) I	TIME (	H:MIV	Sauterouse 1
				The second	1	-	2	tricks him your a	1 -		COLUMNIA	I .		and the same of th	THE PERSON NAMED IN	erites neura
		NATAJHA		S 74 F	1 110		nh	-	15	9 2091	100	12	_	11 .	20	

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p-000																			
		Bureau Veritas Laboratories 4000 19st N.E. Calgary. Alberta Canada	T2E 6P8 Tel:(403) 29	11-3077 Toll-free:800-	563-6266 Fax	c(403) 2	291-9468	www.bvlabs	i.com								CHAIN C	DF CUSTODY RECORD	Page of
BUREAU VERITAS																			1 04 4
		INVOICE TO:			REPO	RT TO:							PROJEC	INFORMA	TION:			Laboratory Use C	Only:
Company Name		ER ASSOCIATES LTD.	Company			SOCI	IATES I	_TD.			Quotation #:		C0048	0				BV Labs Job #:	Bottle Order #:
Attention:	ACCOUNTS		Attention:	Aurelie Be							P.O. #:			099-7000				C162661	
Address:	2800, 700 -2n		Address:	2800, 700	DV2VASE CONTRACT						Project:		20368	099-6000	0-1001			C16 2061	644511
100 77	(905) 567-610			CALGARY		W2					Project Nam	e:						COC #:	Project Manager:
Tel: Email:		00 Ext: 1167 Fax: (403) 299-5606 htspayableinvoices@golder.com	1.0%	(403) 299-	ce@golder		Fax: _				Site #:								Carmen McKay
Email:	Carradaaccour	ntspayablemvoices@golder.com	Email:		ce@goldel	.COM					Sampled By							C#644511-38-01	
Regulatory Cr	iteria:	-	Spe	ecial Instructions		-			AN	ALYSIS R	EQUESTED	(PLEASE	BE SPEC	IFIC)		,		Turnaround Time (TAT) Req	uired:
ATI CCM Other	E *					iltered ? ( Y / N )	ed Metals - Soils	and F1-F4 in Soii	SCALE Analysis //F2+F3B) in soil	trate	Barium on ICP using Fusion Extraction (True Barium)	( and F1-F2 in	Je.	Regulated Metals (CCME/AT1) - Dissolved	r by GC/MS	ejd	(will be a Standard Please no details	Please provide advance notice for rus (Standard) TAT:  ppplied if Rush TAT is not specified):  ITAT = 5-7 Working days for most tests  ote: Standard TAT for certain tests are > 5 days - co  cific Rush TAT (if applies to entire submission	ontact your Project Manager
3	AMPLES MUST BE I	KEPT COOL ( < 10°C ) FROM TIME OF SAMPI	LING UNTIL DELIVER	Y TO BV LABS		Is Field F	Regulated	AKI BTEX a (Vials)	SCALE -2+F3B	Sulphate / nitrate	m on IC	E BTEX	Routine Water	lated M solved	in Water	ed Sample	Date Rec	firmation Number:	il lab for #)
Sample	Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals	Z	Sial	BIC (F2/F	Sulp	Bariu Extra	CCME	Routi	Regu - Diss	PAH	Limited	# of Bottle		u lab loi +)
WA	I	TP21-62-02	22AUG/21	09:59	SUL			V									3		
2		10-62-04	1	10:01	1	$\Box$		V									3		
8		TP21-63-01		10:24				V									3		
4		TP21-63-03		10:58		П		V									3	Received in Yello	wknife
5	***	1021-63-05		10:30				1									3	By: J.Mercan	
18	,	TP21-64-01		10:29				V									3	AUG 2 4 202	
M		TP21-64-03		10:32				V									3	PIS. SET ACT	
8		1P21-64-06		10:35				V									3	Temp: /	/
8	1/	TP21-59-01	N.	10:39				V									3		

Bureau Veritas Canada (2019) Inc.

Custody Seal Intact on Cooler?

No

Yellow: Client

Yes

White: BV Labs

MUHUCITA

\*\*UNLESS OTHERWISE AGREED TO IN WITTING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BY LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BYLABS.COM/TERMS-AND-CONDITIONS.

16:30 NATRUHA

IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

\*\* ALL SAMPLES ARE HELD FOR 50 DAYS AFTER SAMPLE RECEIPT, FOR SPECIAL REQUESTS CONTACT YOUR PROJECT MANAGER

BUREAU		Bureau Veritas Laboratories 4000 19st N.E, Calgary, Alberta Cana	da T2E 6P8	Tel:(403) 291-	-3077 Toll-free:800-5	63-6266 Fax	(403)	291-9468	www.bvlabs.	com							,	CHAIN C	OF CUSTODY RECORD	Page of
MAN-MARKANAN		INVOICE TO:		T		REPOR	RT TO:				T			PROJECT	INFORMA	TION:			Laboratory Use	Only:
Company Name:	#254 GOLDE	ER ASSOCIATES LTD.		Company Na	ame: #6340 GC	LDER AS	SOC	IATES I	TD.			Quotation#		C0048	0				BV Labs Job #:	Bottle Order #:
Attention:	<b>ACCOUNTS</b> F	PAYABLE		Attention:	Aurelie Bel	avance						P.O. #:		20368	099-7000	-1001			0.162661	
Address:	2800, 700 -2n			Address:	2800, 700 -							Project:		20368	099-6000	-1001			C10 2001	644511
	CALGARY AE				CALGARY		W2					Project Nam	10;						COC #:	Project Manager:
Tel:	(905) 567-610		506	Tel:	(403) 299-5			_ Fax:				Site #:								Carmen McKay
Email.	canadaaccou	ntspayableinvoices@golder.com		Email:	abellavano	e@golder	.com					Sampled By	:						C#644511-39-01	
Regulatory Cr	iteria:			Spec	cial Instructions					ANA	ALYSIS F	REQUESTED	(PLEASE	BE SPEC	IFIC)				Turnaround Time (TAT) Re	equired:
CCMI Other	Ę						iltered ? ( Y / N )	Regulated Metals - Soils	and F1-F4 in Soil	BIC SCALE Analysis (F2/F2+F3B) in soil	trate	Barium on ICP using Fusion Extraction (True Barium)	BTEX and F1-F2 in	-e	Regulated Metals (CCME/AT1) - Dissolved	r by GC/MS	ple	(will be a Standard Please no details Job Spe	Please provide advance notice for ( (Standard) TAT: pplied if Rush TAT is not specified): ITAT = 5-7 Working days for most tests. ote: Standard TAT for certain tests are > 5 days - cific Rush TAT (if applies to entire submiss	contact your Project Manager fo
						110	eld F	ulat	×	NLE, F3B)	ı / ni	Ol no	Ě	Wate	pa M	Water	Sample	Date Rec		
S	AMPLES MUST BE	KEPT COOL ( < 10°C ) FROM TIME OF SAM	MPLING UN	TIL DELIVERY	TO BV LABS		IS FI	Rec	BTE s)	SC/	hate	um o	出出	ine	ulate	.⊑	ed	Rush Con	firmation Number:	'call lab for #)
Sample	e Barcode Label	Sample (Location) Identification	Di	ate Sampled	Time Sampled	Matrix	Metals	AT AT	AFH BTEX (Vials)	BIC (F2/I	Sulphate / nitrate	Bariu	CCME Water	Routine Water	Regu-	PAH	Limited	# of Bottle	es Comment	s
NIA	1	TP21-59-04	72	AUGAI	10:41	SOIL			V	1		1000						3		
NIT		1021-59-06	9	1100		1010			V			1						3		
			_	1	10:43	1	-		V ,			-	-	ļ			-			
3		TP21-60-09	_		11:61		$\perp$		V			-						3		
4		TP21-60-04			11:03				V									3	Received in	Yellowknite
5		TP21-60-06			11:03				V									3	By: J. mot	:45
B		tP21-61-02			11:38		П		V									3	AUG 2	
7		TP21-31-02			13:48				V									3	see ACT	
8		TO21-30-02			13:51				V									2	Temp:	1
8		TP21-33-02			14:00				-1			-						2		
	1			/		-			V/									5		
	A	1921-33 04			14:01	W			V									3		
	RELINQUISHED BY	(Signature/Print) Date:	08/2		ZO NATAS	RECEIVE		(Signatu	re/Print)	_		Date: (YY/N		Time		s used and submitted		e Sensitive	Laboratory Use Only Temperature (°C) on Receipt	Custody Seal Intact on Cooler?
0	1911	~ INV A	00/20	- (6.	ברון רוען ער		. (1	PP	47		1013	108	12)	10,00	~				ACTA	Yes No

Bureau Veritas Canada (2019) Inc.

White: BV Labs

Yellow: Client

\* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BY LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEGGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

\* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

" ALL SAMPLES ARE HELD FOR 60 DAYS AFTER SAMPLE RECEIPT, FOR SPECIAL REQUESTS CONTACT YOUR PROJECT MANAGER

BUREAU

Bureau Veritas Laboratories 4000 19st N.E. Calgary, Alberta Canada T2E 6P8 Tel.(403) 291-3077 Toll-free 800-563-6266 Fax:(403) 291-9468 www.bvlabs.com

#### CHAIN OF CUSTODY RECORD

Page of 344

BUREAU																				2 of 1
		INVOICE TO:				REPO	RT TO:							PROJECT	INFORMA	ATION:			Laboratory Use	Only:
Company Name:	CONTRACTOR OF THE PARTY OF THE	ER ASSOCIATES LTD.		Company N			SSOC	IATES I	TD.			Quotation #:		C00480					BV Labs Job #:	Bottle Order #:
Attention:	ACCOUNTS F			Attention:	Aurelie Be							P.O. #:		203680	Company Company	71 (1.000)			C162661	
Address:	2800, 700 -2nd			Address:	2800, 700 CALGARY							Project:		203680	99-600	0-1001			The state of the s	644511
	(905) 567-610		200 5606	_	(403) 299-		2002					Project Name	э:						COC #:	Project Manager:
Tel: Email.		ntspayableinvoices@golder		Tel: Email:	abellavan		r.com	_ Fax:				Site #: Sampled By:							C#644511-40-01	Carmen McKay
Regulatory Cri	teria:			Spe	cial Instructions					ANA	ALYSIS R	EQUESTED	(PLEASE	BE SPECIF	FIC)				Turnaround Time (TAT) Re	equired:
☐ ATI								10							=				Please provide advance notice for r	ush projects
							î	Soils	Soll			ion	.⊑	1	TA.				Standard) TAT: uplied if Rush TAT is not specified):	1
CCME	≣						1		.⊑			Fusion um)	F1-F2		ME	MS		200000000000000000000000000000000000000	TAT = 5-7 Working days for most tests	
Other							) ¿ pa	Metals	F1-F4	BIC SCALE Analysis (F2/F2+F3B) in soil	a.	sing	d F1		Regulated Metals (CCME/AT1) - Dissolved	in Water by GC/MS		Please no details	te: Standard TAT for certain tests are > 5 days -	contact your Project Manager for
							iltered	pe	and F	Ana	nitrate	ICP us (True	au	<u></u>	etal	r by	ble	Job Spec	ific Rush TAT (if applies to entire submissi	ion)
							ield F	ulat	×	LE F3B	/ ni	D L	Ê	Nati	N N	Vate	Sample	Date Requ		
S	AMPLES MUST BE	KEPT COOL ( < 10°C ) FROM TIME	E OF SAMPLING U	NTIL DELIVERY	TO BV LABS		MARKET LL	Regulated	BTE s)	SCA 2+F	nate	m o	E F	le l	solv	ii V	be	Rush Confi	rmation Number:	call lab for #)
Comple	Barcode Label	Sample (Location) Identific	cation	Date Sampled	Time Sampled	Matrix	Metals	1	AFI BTEX (Vials)	SIC : F2/F	Sulphate /	Barium on Extraction (	CCME BTEX and Water	Routine Water	Regu	PAH	Limited	# of Bottle:		
1 NIA	- Daridouc Eaber		,		- Contract C	-	+	4	./		- 07	шш	0 >	LL.	ш,	_ u		3		
NA		MA1-33-0		JAMA S		SOL	1		V			-		-		-				
12		1021-32-0			14:94	1			V									3		
8		TPH-32-0	4		14:25				V									3		
1		TP21-32-0	25		14:26				/									3	Received in Yo	
5		1P21-28-0	20		1446				V									3	By: J.Mere	CIX
6			24		1457				V									3	AUG 24	
7		TP21-28-0	6		1457				V									3	See Ac	
8		and the state of t	X		1458				V									3	Temp:	F F
9	1	TP31-29-0	-	1.	1510				V									3		
10	<i>y</i>	0-19-6-16-9T			1511	V	10		1									2		
1-1-	RELINQUISHED BY:		Date: YYY/MM/I	DD) Time		RECEI	/ED BY:	(Signatu	re/Print)			Date: (YY/M	M/DD)	Time	# jar	s used and			Laboratory Use Only	
1		ETER TAN	2/08/2	2 16:3	20 NATH	NHA		MUH	NUCH	P	2	021/08/	25	16:20	not	submitted		Sensitive	Temperature (°C) on Receipt	Custody Seal Intact on Cooler?
			1		792														HOTR	Yes No
* UNLESS OTHERWI WWW.BVLABS.COM	ISE AGREED TO IN WR TERMS-AND-CONDITI	ITING, WORK SUBMITTED ON THIS CH. ONS.	IAIN OF CUSTODY IS	SUBJECT TO BV	LABS' STANDARD TERM	AS AND CONE	ITIONS.	SIGNING O	F THIS CHAIN	OF CUSTO	DY DOCU	MENT IS ACKN	OWLEDGE	MENT AND A	CCEPTANCE	OF OUR TE	RMS WHICH	H ARE AVAIL	ABLE FOR VIEWING AT W	hite: BV Labs Yellow: Client
DOMESTIC CARROLL SERVICE CONTRACTOR		NQUISHER TO ENSURE THE ACCURAC AFTER SAMPLE RECEIPT, FOR SPECIA				IAIN OF CUST	ODY MAY	RESULTI	N ANALYTICA	AL TAT DELA	AYS.								ice : yell	

Bureau Veritas Canada (2019) Inc.

BURE	NIE NIE	Bureau Veritas Laboratories 4000 19st N.E. Calgary, Alberta Canad	da T2E 6P8	3 Tel:(403) 29	1-3077 Toll-free:800-5	63-6266 Fax:	(403) 2	91-9468 v	www.bvlabs	com							9	CHAIN C	F CUSTODY RECORD	Page of	of LA
WERDO		INVOICE TO:		T		REPOR	T TO							BBO IECT	INFORMA	TION			Laboratory Use	Only	
	#254 COLDI	ER ASSOCIATES LTD.		-	lame: #6340 GC	3000 800	20 0.000	ATECI	TD					C0048	Parame Period Service	TION:			BV Labs Job #:	Bottle Order	H-
Company Na	ACCOUNTS I			_ Company I	Aurelie Bel		300	AIESL	.10.			Quotation #:			099-700	1001				ALL DESCRIPTION OF THE PARTY OF	
Attention:	2800, 700 -2n			Attention:	2800, 700 -		N/S					P.O. #:			099-600				C162661		1
Address:	CALGARY A			_ Address:	CALGARY							Project:		203000	J99-000i	0-1001			COC #:	644511 Project Manag	er.
T00	(905) 567-610		06	T-1	(403) 299-5		002	-				Project Nam	e:				-			Trojost manag	
Tel: Email:		ntspayableinvoices@golder.com	-	Tel: Email:	abellavano		com	_ Fax:				Site #:							C#644511-41-01	Carmen McKa	Y
Cinaii.		mopa) asioni voices@genaciisciii		-		0690.001	1	r.				Sampled By						r.			
Regulator	/ Criteria:			Spe	cial Instructions		-		т	ANA	ALYSIS F	REQUESTED	(PLEASE	BE SPECI	FIC)			ISSUED AND AND ADDRESS.	Turnaround Time (TAT) Re	No. of the contract of the con	e same
The same	TI CME						iltered ? ( Y / N )	Regulated Metals - Soils	and F1-F4 in Soil	BIC SCALE Analysis (F2/F2+F3B) in soil	Sulphate / nitrate	ICP using Fusion (True Barium)	CCME BTEX and F1-F2 in Water		Regulated Metals (CCME/AT1) - Dissolved	in Water by GC/MS	eld	(will be ap Standard Please no details Job Spec	Please provide advance notice for it Standard) TAT:  plied if Rush TAT is not specified):  TAT = 5-7 Working days for most tests.  te: Standard TAT for certain tests are > 5 days - it life Rush TAT (if applies to entire submissi	contact your Project Mar	ager for
							eld F	ulate	×	1E /	/ nil	9 E	I X	Water	D Da	Vate	Sample	Date Req			
	SAMPLES MUST BE	KEPT COOL ( < 10°C ) FROM TIME OF SAN	IPLING UN	ITIL DELIVER	TO BV LABS		LL.	Reg	8TE (6	SCA 2+F	ate	c tio	ш	ne /	late	. <u>.</u>	00	Rush Conf	rmation Number:	call lab for #)	_
	74 - 74 F-2 - 1						Metals	E	ATA BTEX (Vials)	IC S	ulpł	Barium on I Extraction (	CM /ate	Routine	egu	PAH	Limited	# of Bottle			
Sa	mpie Barcode Label	Sample (Location) Identification	.0	ate Sampled	Time Sampled	Matrix	2	Ø	1000	m =	S	ωш	US	ď	α,	0.	5		23,11,11		
NIA	1	TP21-29-05	2	-AUG/21	15:12	SOIL			1			İ						3			
2		TP21-32-61		1	14:22	1			V									2			
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6		DOCT		11 000 101		80 10													AUG 2	A 7071	
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	* RELINQUISHED BY		(YY/MM/D			RECEIVE	D BY:	(Signatu	re/Print)			Date: (YY/N	IM/DD)	Time		rs used an			Laboratory Use Only		
	A t	ETER TAN 21/3	08/2	2 16:	30 NATA	140	r	11/1/1/1	ICHE	2	2	121/08/	125 1	Li Qu	2 not	submitted	Tim	ne Sensitive	Temperature (°C) on Receipt	Custody Seal Intact on C	poler?

Bureau Veritas Canada (2019) Inc.

No

Yellow: Client

Yes

White: BV Labs

\*UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBNITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BY LABS "STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.WSVLABS.COMUTERWS-AND-CONDITIONS.

\*\*IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

\*\*ALL SAMPLES ARE HELD FOR 60 DAYS AFTER SAMPLE RECEIPT, FOR SPECIAL REQUESTS CONTACT YOUR PROJECT MANAGER

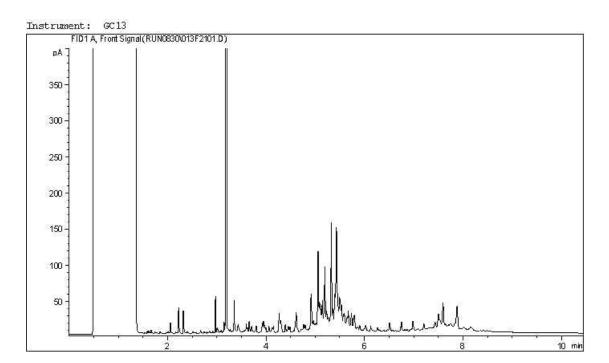
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

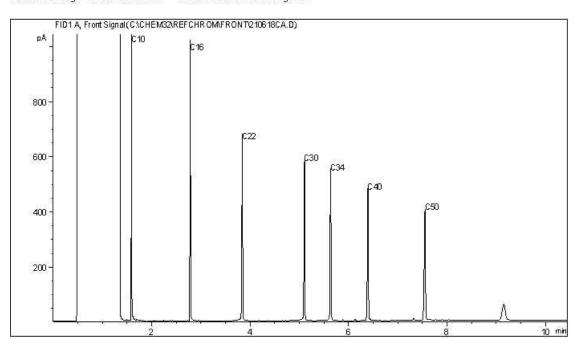
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-62-02

#### CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 -	- C12	Diesel:	cs -	C22
Varsol:	c8 -	- C12	Lubricating Oils:	c20 -	C40
Kerosene:	c7 -	- c16	Crude Oils:	c3 -	C60+

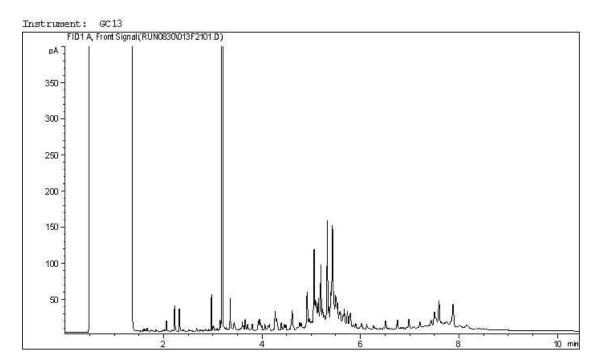
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

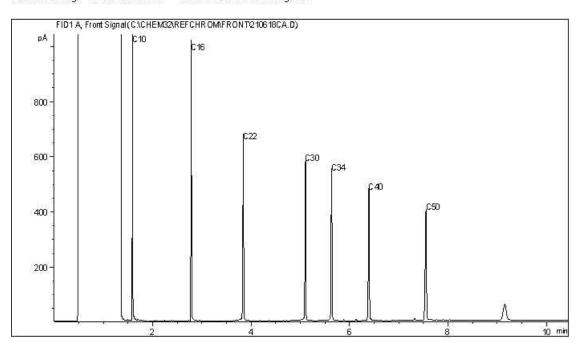
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-62-02

#### CCME Hydrocarbons (F2-F4)+F3A/B in soil Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	c4	170	C12	Diesel:	c8	100	C22
Varsol:	c8	Η.	C12	Lubricating Oils:	C20	-	C40
Kerosene:	c7	_	C16	Crude Oils:	C3		C60+

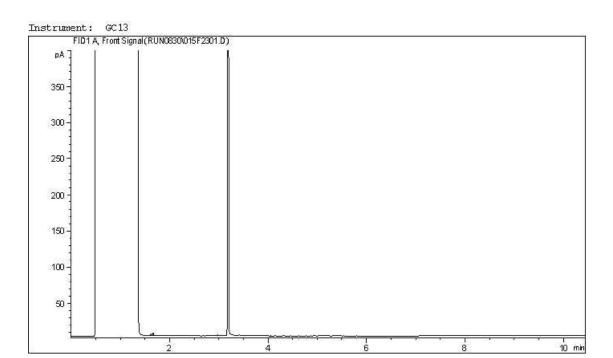
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

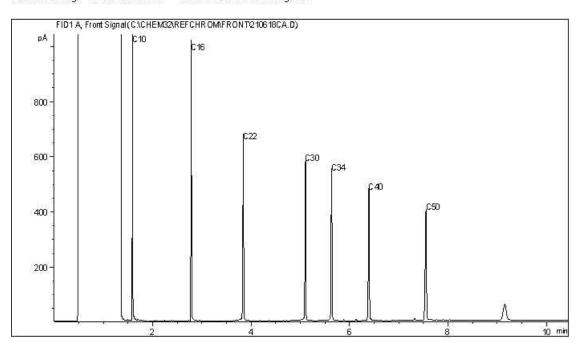
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-62-04

#### CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	1	C12	Diesel:	c8 -	S	C22
Varsol:	c8	: <del>- )</del> :	C12	Lubricating Oils:	C20 -		C40
Kerosene:	c7	_	C16	Crude Oils:	C3 -	3	C60+

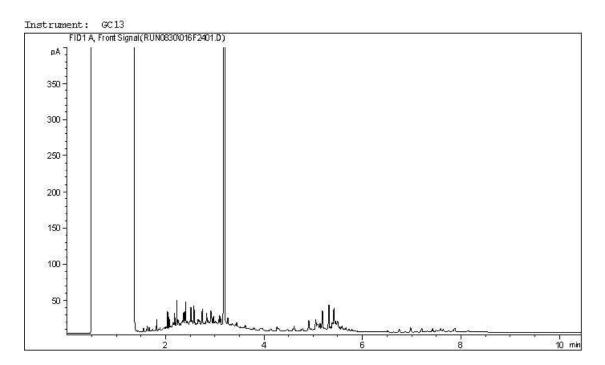
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

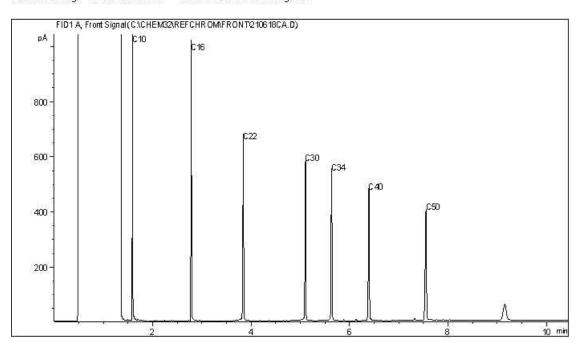
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-63-01

#### CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	1	C12	Diesel:	c8 -	S	C22
Varsol:	c8	: <del>- )</del> :	C12	Lubricating Oils:	C20 -		C40
Kerosene:	c7	_	C16	Crude Oils:	C3 -	3	C60+

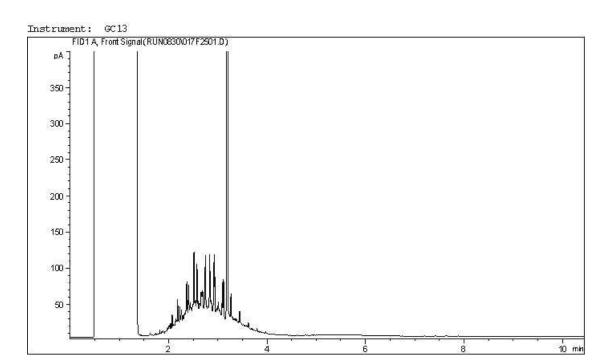
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

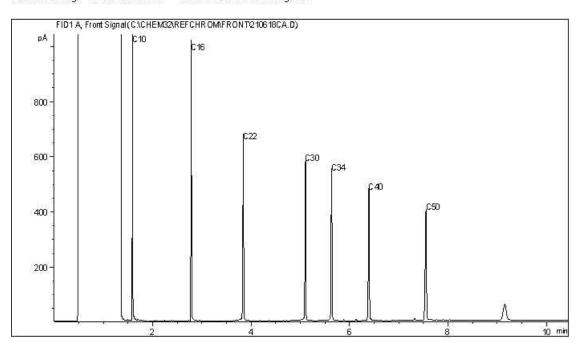
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-63-03

#### CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	1	C12	Diesel:	c8 -	S	C22
Varsol:	c8	: <del>- )</del> :	C12	Lubricating Oils:	c20 -		C40
Kerosene:	c7	_	C16	Crude Oils:	C3 -	3	C60+

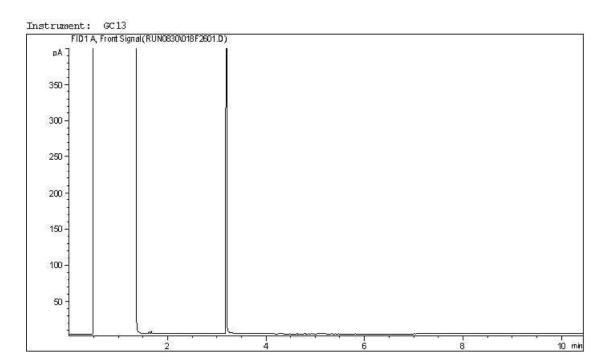
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

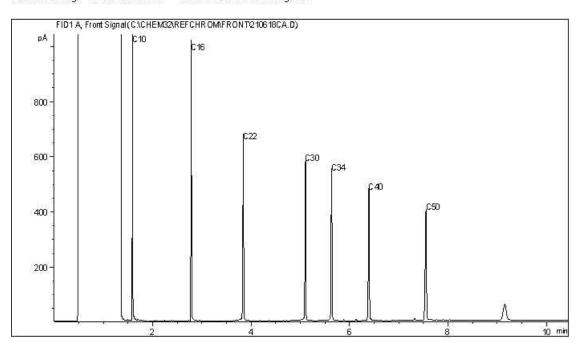
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-63-05

#### CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

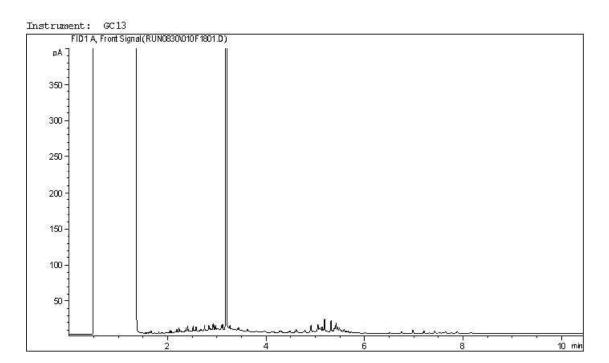
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Client Project #: 20368099-6000-1001

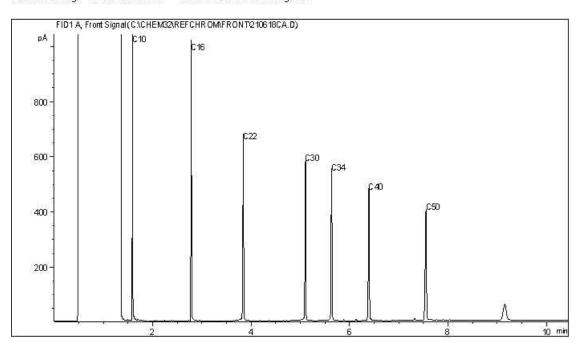
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-64-01

#### CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

Bureau Veritas Job #: C162661

Report Date: 2021/12/24

Bureau Veritas Sample: AEP008 Lab-Dup

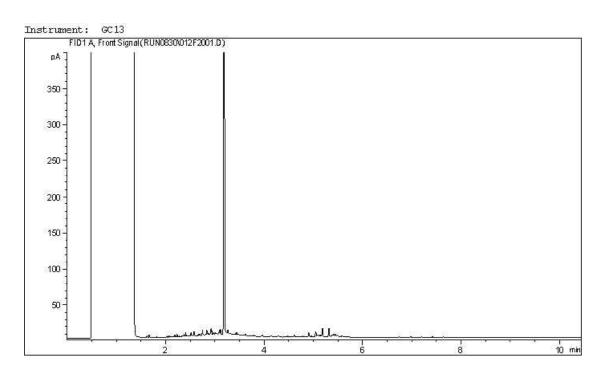
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Client Project #: 20368099-6000-1001

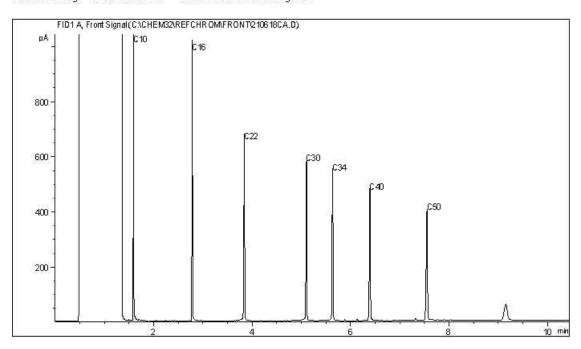
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-64-01

#### CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4		C12	Diesel:	c8	10	C22
Varsol:	c8	$(\frac{1}{2})^{\frac{1}{2}}$	C12	Lubricating Oils:	C20	-	C40
Kerosene:	c7	4	C16	Crude Oils:	C3	-1	C60+

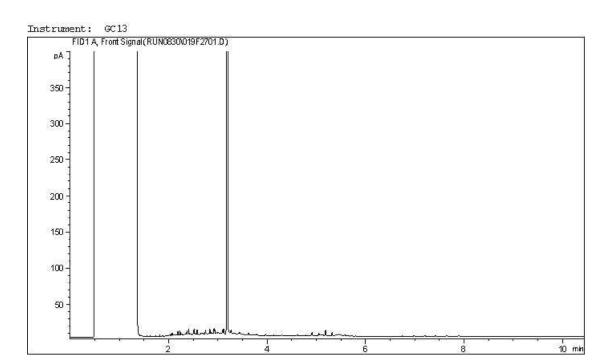
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

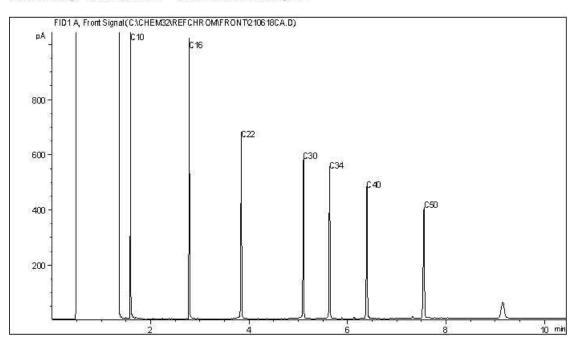
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-64-03

#### CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	1	C12	Diesel:	c8 -	S	C22
Varsol:	c8	: <del>- )</del> :	C12	Lubricating Oils:	c20 -		C40
Kerosene:	c7	_	C16	Crude Oils:	C3 -	3	C60+

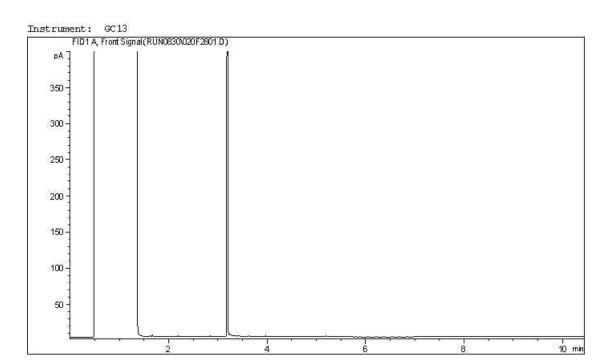
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

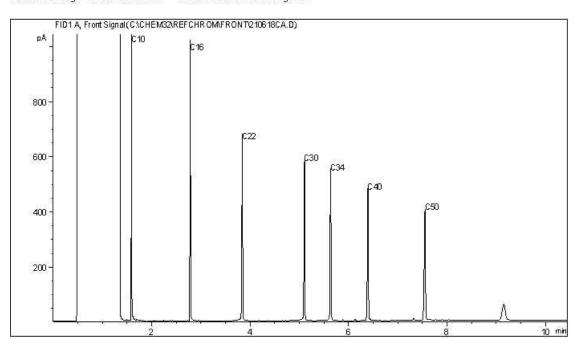
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-64-06

#### CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	1	C12	Diesel:	c8 -	S	C22
Varsol:	c8	: <del>- )</del> :	C12	Lubricating Oils:	c20 -		C40
Kerosene:	c7	_	C16	Crude Oils:	C3 -	3	C60+

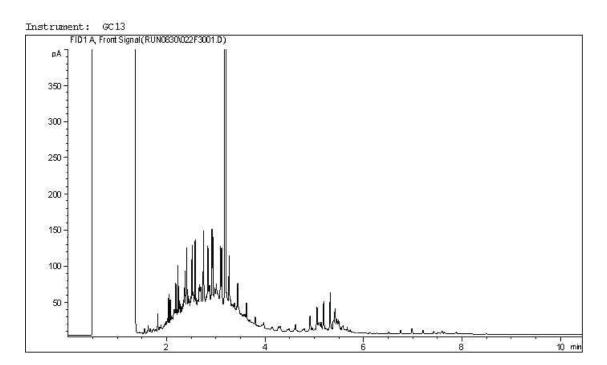
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

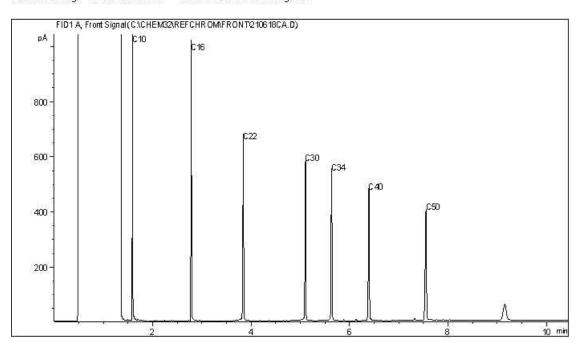
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-59-01

#### CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	c4	170	C12	Diesel:	c8	100	C22
Varsol:	c8	Η.	C12	Lubricating Oils:	C20	-	C40
Kerosene:	c7	_	C16	Crude Oils:	C3		C60+

GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-59-03

#### **CCME Hydrocarbons (F2-F4 in soil) Chromatogram**

FID1 A Front Signal (RUN0830023F3101.D)

pA

330

250

150

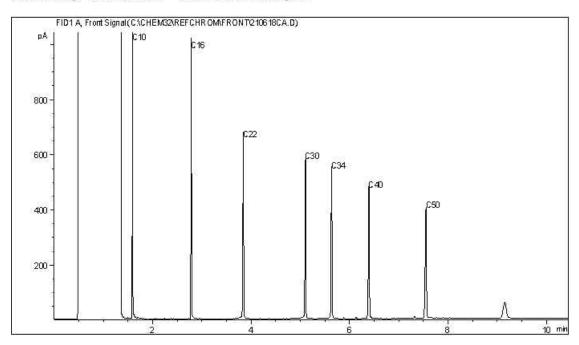
100

50

100

2 4 6 8 10 min

Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

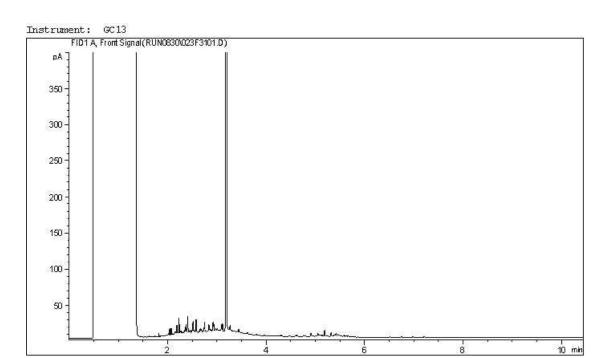
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

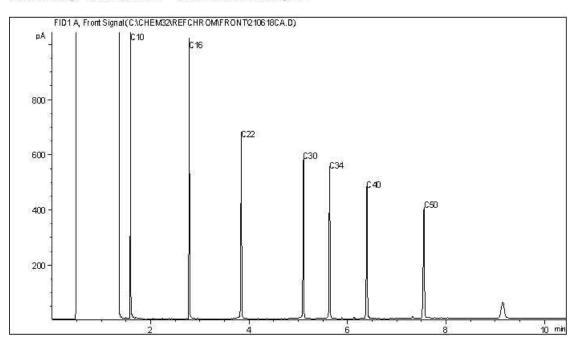
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-59-03

#### CCME Hydrocarbons (F2-F4)+F3A/B in soil Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 -	- C12	Diesel:	cs -	C22
Varsol:	c8 -	- C12	Lubricating Oils:	c20 -	C40
Kerosene:	c7 -	- c16	Crude Oils:	c3 -	C60+

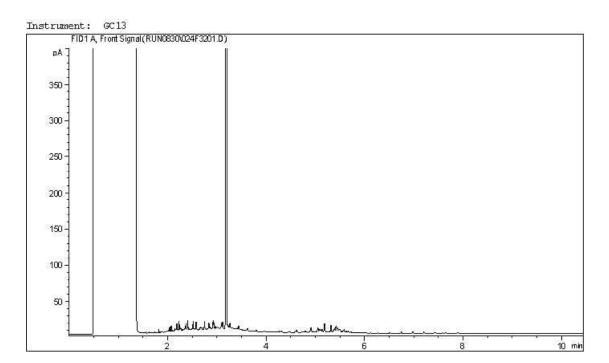
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

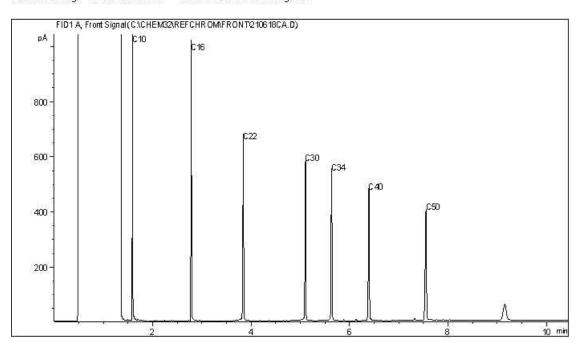
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-59-04

#### CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 -	- C12	Diesel:	cs -	C22
Varsol:	c8 -	- C12	Lubricating Oils:	c20 -	C40
Kerosene:	c7 -	- c16	Crude Oils:	c3 -	C60+

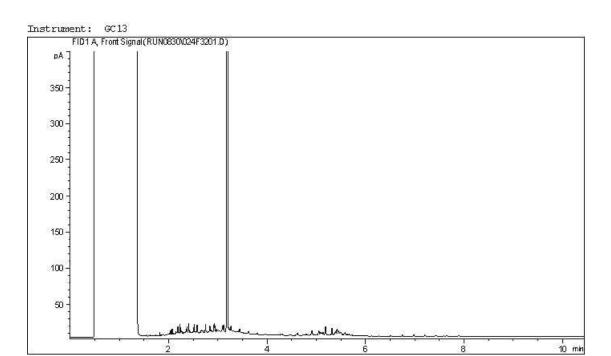
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

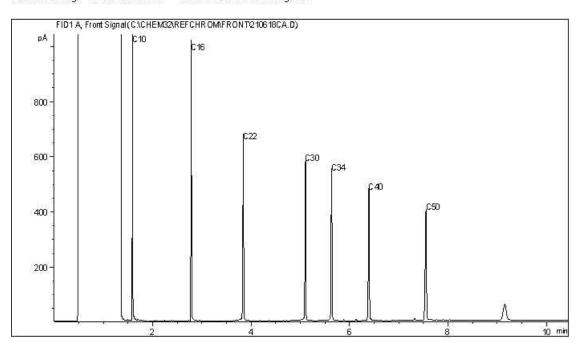
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-59-04

#### CCME Hydrocarbons (F2-F4)+F3A/B in soil Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	1	C12	Diesel:	c8 -	S	C22
Varsol:	c8	: <del>- )</del> :	C12	Lubricating Oils:	c20 -		C40
Kerosene:	c7	_	C16	Crude Oils:	C3 -	3	C60+

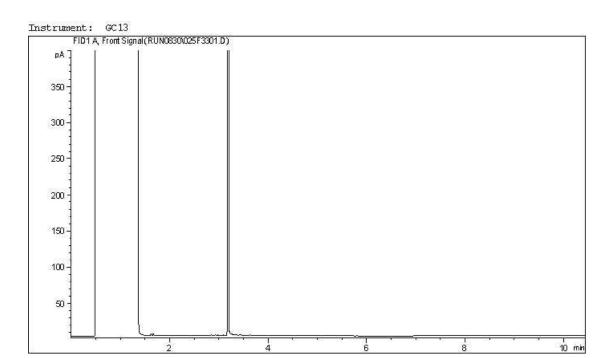
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

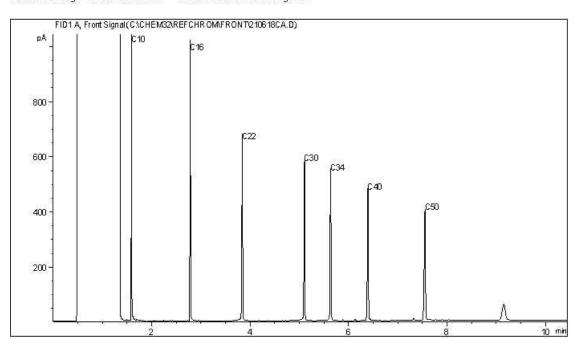
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-59-06

#### **CCME Hydrocarbons (F2-F4 in soil) Chromatogram**



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	1	C12	Diesel:	c8 -	S	C22
Varsol:	c8	: <del>- )</del> :	C12	Lubricating Oils:	c20 -		C40
Kerosene:	c7	_	C16	Crude Oils:	C3 -	3	C60+

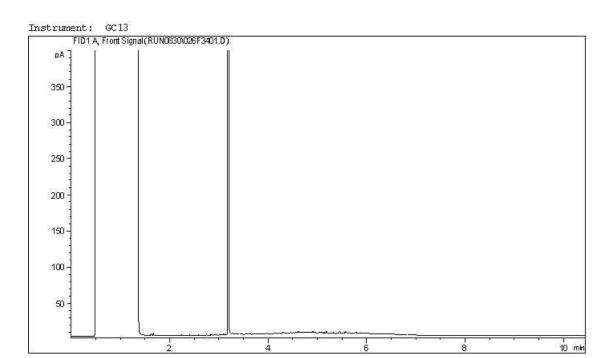
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

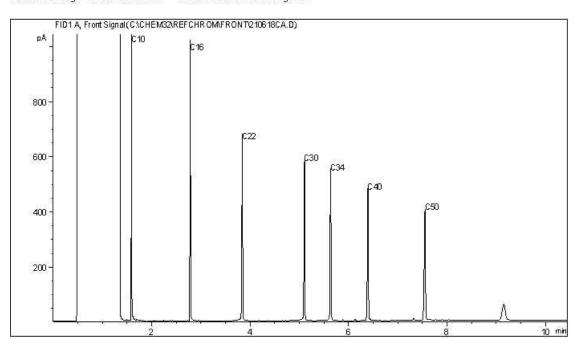
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-60-02

#### **CCME Hydrocarbons (F2-F4 in soil) Chromatogram**



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	1	C12	Diesel:	c8 -	S	C22
Varsol:	c8	: <del>- )</del> :	C12	Lubricating Oils:	c20 -		C40
Kerosene:	c7	_	C16	Crude Oils:	C3 -	3	C60+

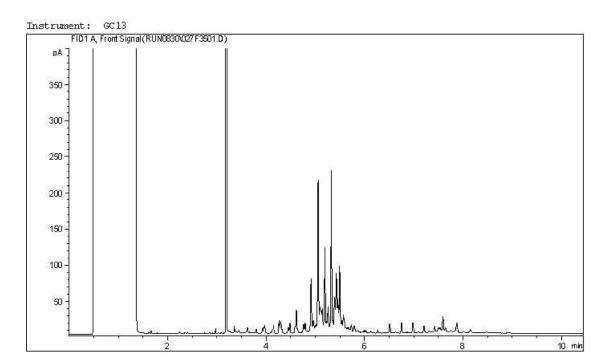
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

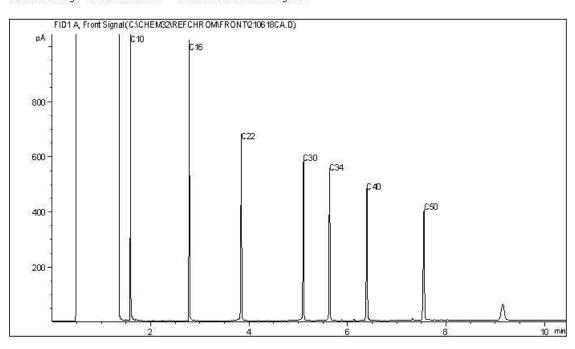
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-60-04

#### **CCME Hydrocarbons (F2-F4 in soil) Chromatogram**



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 -	- C12	Diesel:	cs -	C22
Varsol:	c8 -	- C12	Lubricating Oils:	c20 -	C40
Kerosene:	c7 -	- c16	Crude Oils:	c3 -	C60+

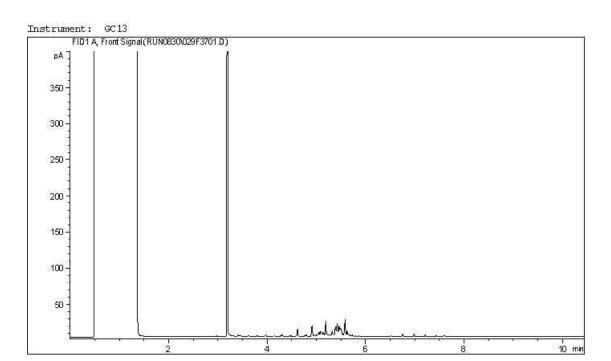
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

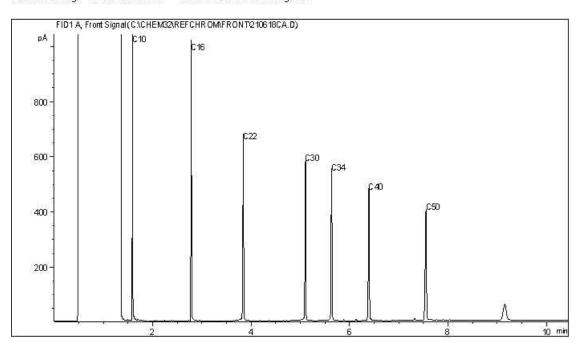
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-60-06

#### **CCME Hydrocarbons (F2-F4 in soil) Chromatogram**



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	1	C12	Diesel:	c8 -		C22
Varsol:	c8	: <del>- )</del> :	C12	Lubricating Oils:	c20 -	÷	C40
Kerosene:	c7	_	C16	Crude Oils:	c3 -	-	C60+

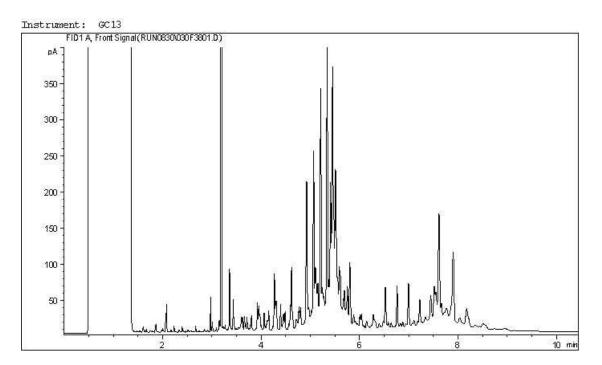
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

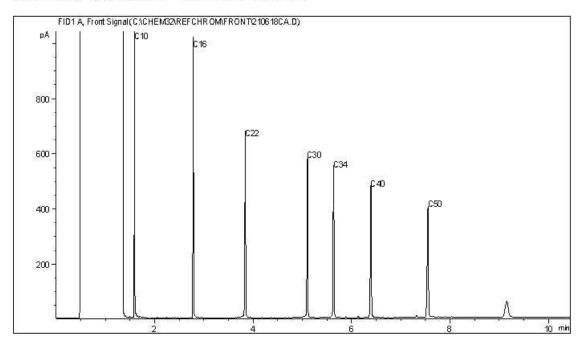
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-61-02

#### CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	c4	170	C12	Diesel:	c8	100	C22
Varsol:	c8	Η.	C12	Lubricating Oils:	C20	-	C40
Kerosene:	c7	_	C16	Crude Oils:	C3		C60+

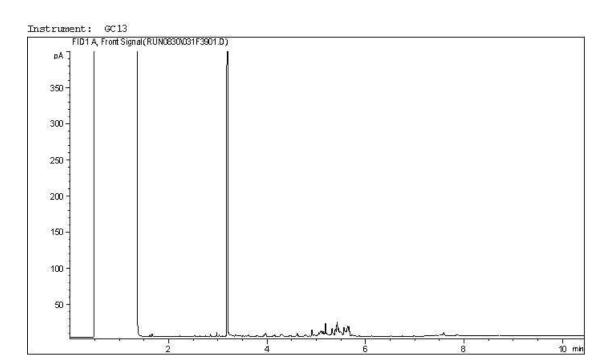
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

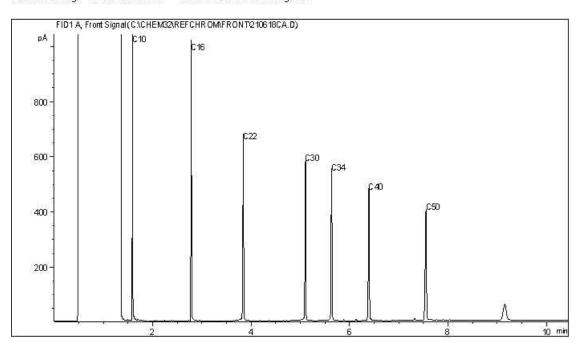
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-31-02

#### **CCME Hydrocarbons (F2-F4 in soil) Chromatogram**



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	c4	170	C12	Diesel:	c8	100	C22
Varsol:	c8	Η.	C12	Lubricating Oils:	C20	-	C40
Kerosene:	c7	_	C16	Crude Oils:	C3		C60+

GOLDER ASSOCIATES LTD.

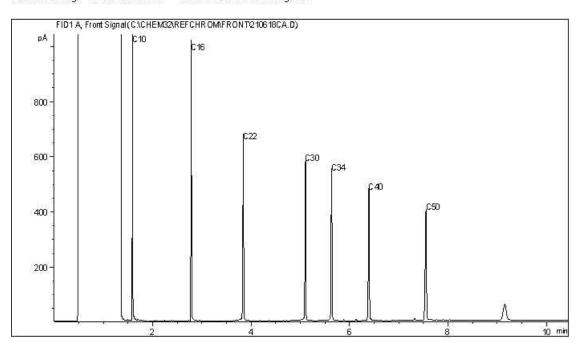
Client Project #: 20368099-6000-1001

Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-30-02

#### **CCME Hydrocarbons (F2-F4 in soil) Chromatogram**

Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

 Gasoline:
 C4 - C12
 Diesel:
 C8 - C22

 Varsol:
 C8 - C12
 Lubricating Oils:
 C20 - C40

 Kerosene:
 C7 - C16
 Crude Oils:
 C3 - C60+

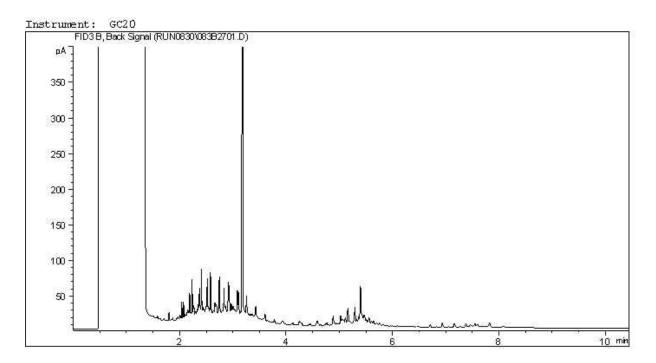
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

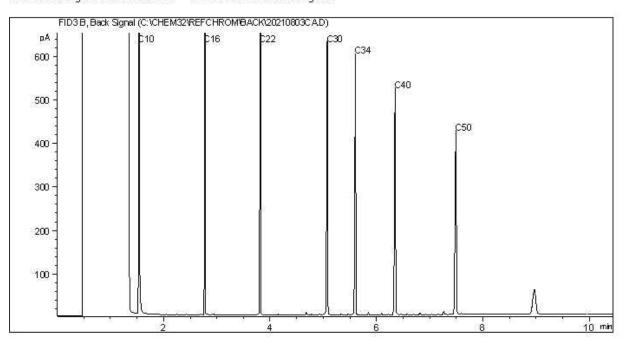
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-33-02

#### **CCME Hydrocarbons (F2-F4 in soil) Chromatogram**



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	-	C12	Diesel:	cs -	C22
Varsol:	c8	-	C12	Lubricating Oils:	c20 -	C40
Kerosene:	c7	_	C16	Crude Oils:	c3 -	C60+

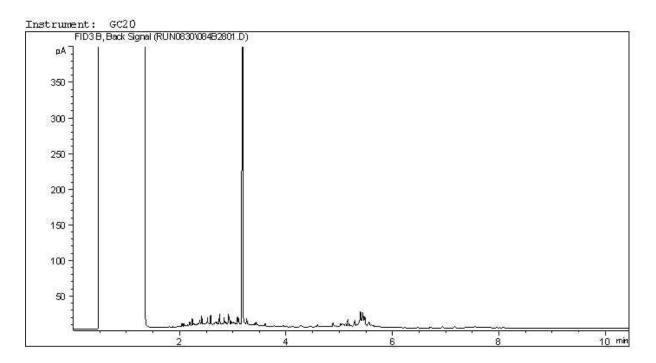
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

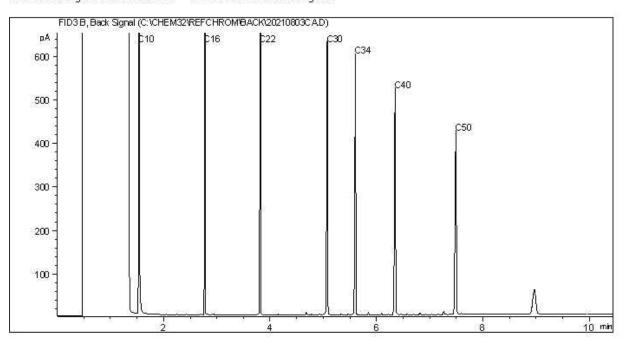
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-33-04

#### **CCME Hydrocarbons (F2-F4 in soil) Chromatogram**



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	-	C12	Diesel:	cs -	C22
Varsol:	c8	_	C12	Lubricating Oils:	c20 -	C40
Kerosene:	c7	_	C16	Crude Oils:	c3 -	C60+

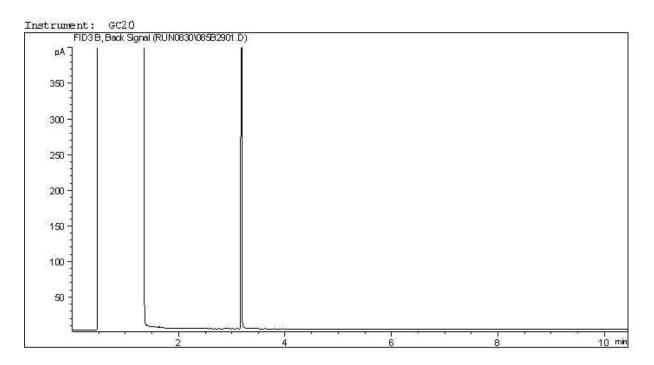
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Client Project #: 20368099-6000-1001

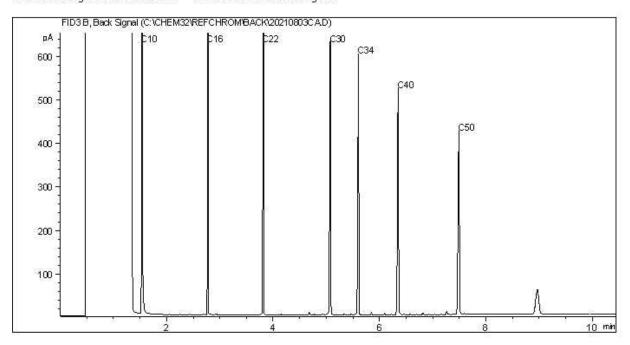
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-33-06

#### **CCME Hydrocarbons (F2-F4 in soil) Chromatogram**



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	-	C12	Diesel:	c8	-	C22
Varsol:	c8	_	C12	Lubricating Oils:	C20	1	C40
Kerosene:	c7	_	C16	Crude Oils:	C3		C60+

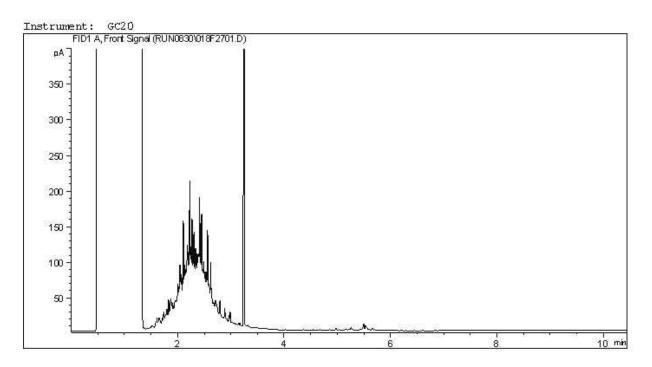
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

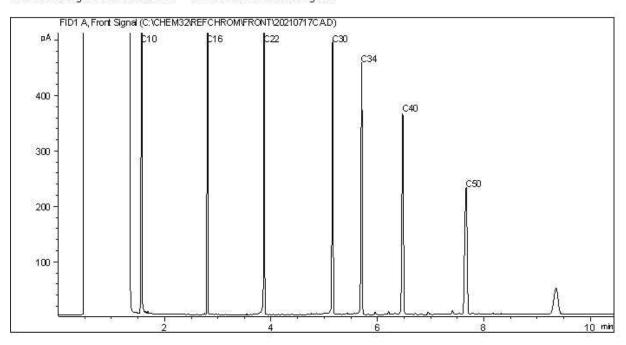
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-32-03

#### **CCME Hydrocarbons (F2-F4 in soil) Chromatogram**



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	c4	-	C12	Diesel:	c8 -	C22
Varsol:	c8	_	C12	Lubricating Oils:	c20 -	C40
Kerosene:	c7	_	C16	Crude Oils:	c3 -	C60+

Bureau Veritas Job #: C162661 Report Date: 2021/12/24

Bureau Veritas Sample: AEP024 Lab-Dup

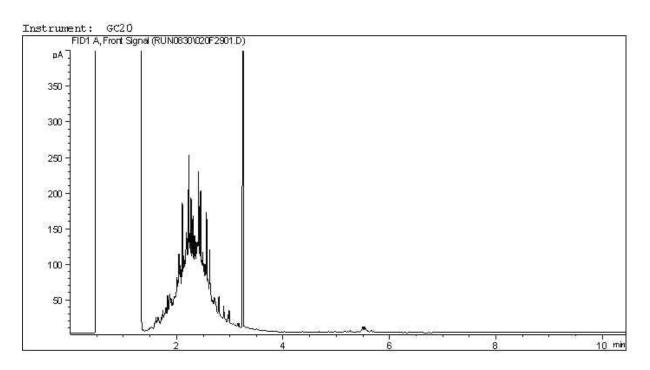
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Client Project #: 20368099-6000-1001

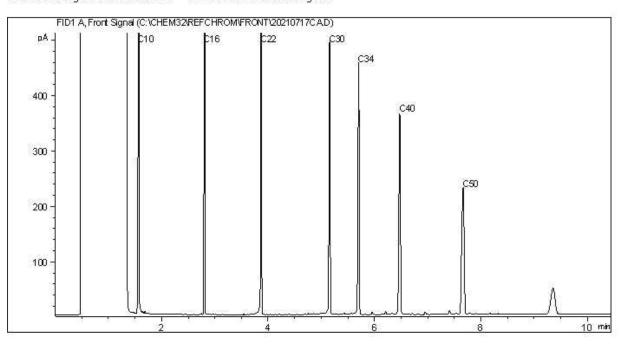
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-32-03

#### **CCME Hydrocarbons (F2-F4 in soil) Chromatogram**



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	-	C12	Diesel:	cs -	C22
Varsol:	c8	_	C12	Lubricating Oils:	c20 -	C40
Kerosene:	c7	_	C16	Crude Oils:	c3 -	C60+

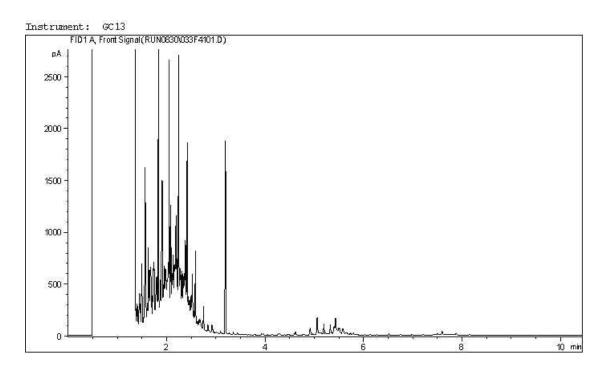
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

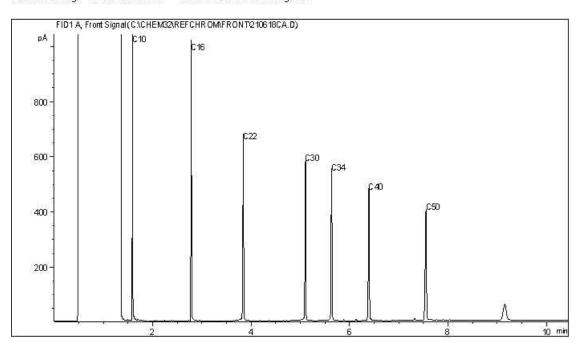
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-32-04

#### CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	1	C12	Diesel:	c8 -	S	C22
Varsol:	c8	: <del>- )</del> :	C12	Lubricating Oils:	c20 -		C40
Kerosene:	c7	_	C16	Crude Oils:	C3 -	3	C60+

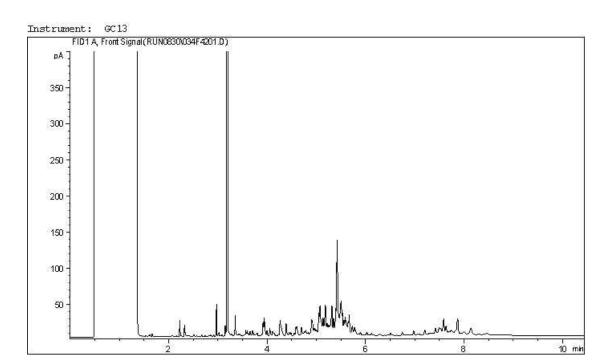
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

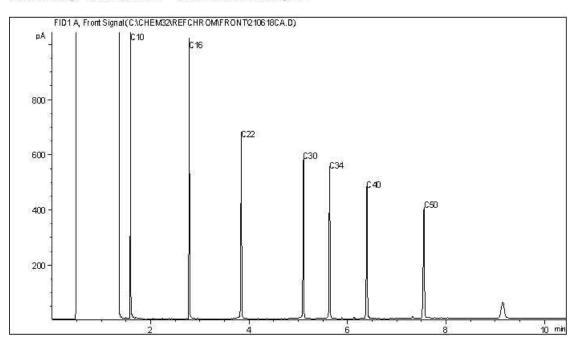
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-32-05

#### **CCME Hydrocarbons (F2-F4 in soil) Chromatogram**



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	c4	170	C12	Diesel:	c8	100	C22
Varsol:	c8	Η.	C12	Lubricating Oils:	C20	-	C40
Kerosene:	c7	_	C16	Crude Oils:	C3		C60+

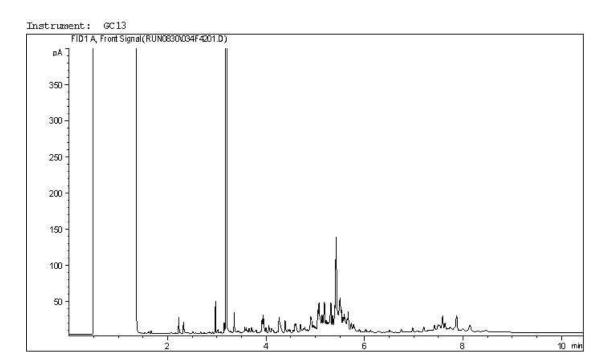
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

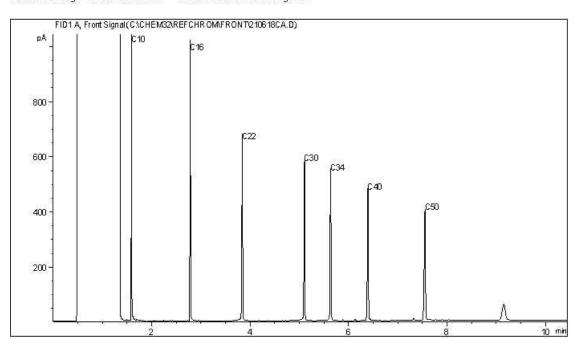
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-32-05

#### CCME Hydrocarbons (F2-F4)+F3A/B in soil Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	1	C12	Diesel:	c8 -	S	C22
Varsol:	c8	: <del>- )</del> :	C12	Lubricating Oils:	c20 -		C40
Kerosene:	c7	_	C16	Crude Oils:	C3 -	3	C60+

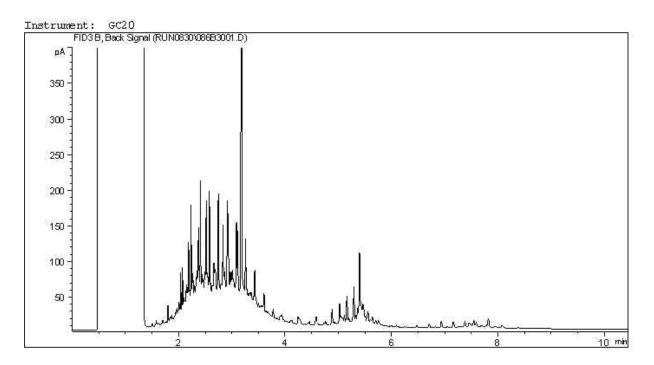
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Client Project #: 20368099-6000-1001

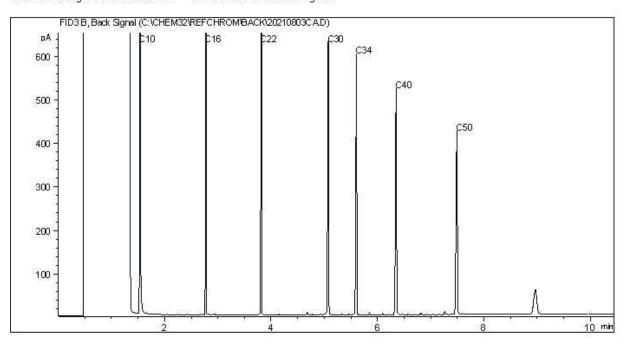
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-28-02

#### **CCME Hydrocarbons (F2-F4 in soil) Chromatogram**



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	-	C12	Diesel:	cs -	C22
Varsol:	c8	_	C12	Lubricating Oils:	c20 -	C40
Kerosene:	c7	_	C16	Crude Oils:	c3 -	C60+

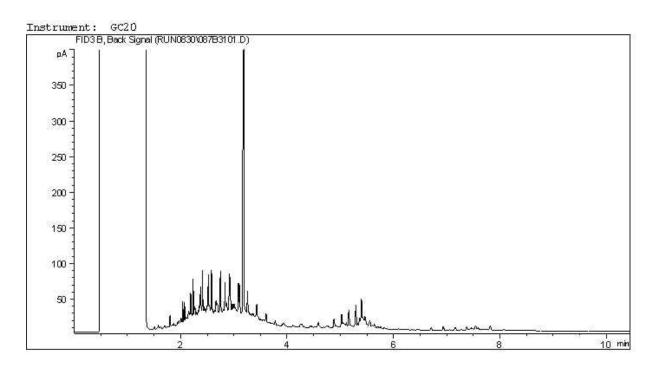
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Client Project #: 20368099-6000-1001

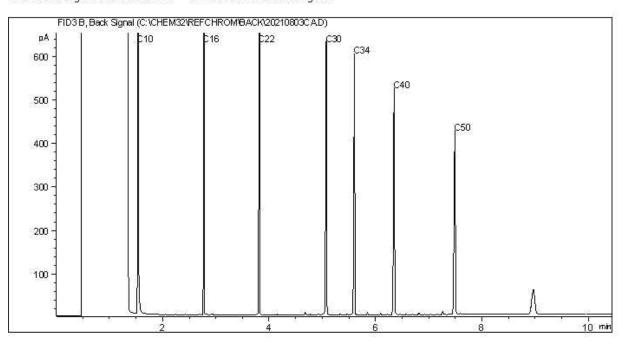
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-28-04

#### **CCME Hydrocarbons (F2-F4 in soil) Chromatogram**



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	c4	-	C12	Diesel:	c8 -	C22
Varsol:	c8	_	C12	Lubricating Oils:	c20 -	C40
Kerosene:	c7	_	C16	Crude Oils:	c3 -	C60+

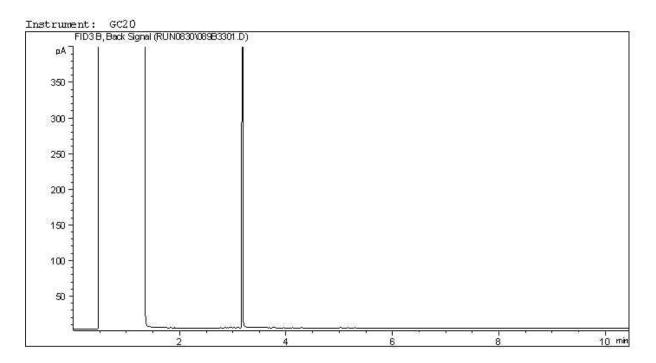
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Client Project #: 20368099-6000-1001

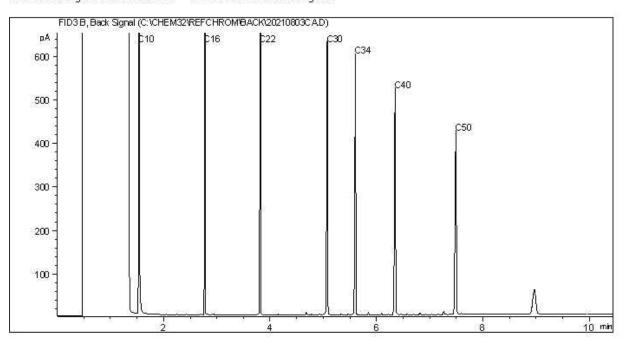
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-28-06

#### **CCME Hydrocarbons (F2-F4 in soil) Chromatogram**



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	c4	-	C12	Diesel:	c8 -	C22
Varsol:	c8	_	C12	Lubricating Oils:	c20 -	C40
Kerosene:	c7	_	C16	Crude Oils:	c3 -	C60+

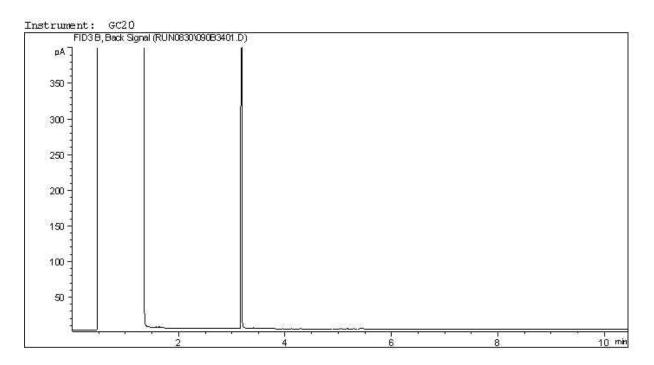
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

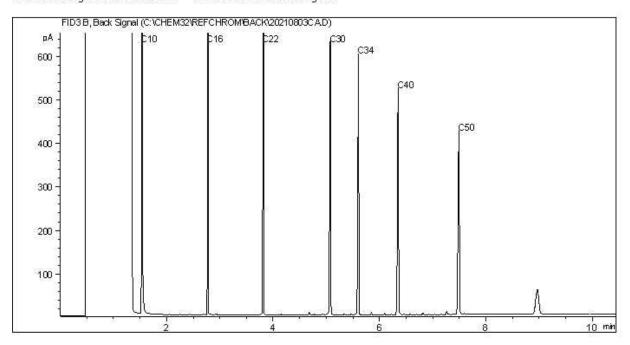
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-28-08

#### CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	-	C12	Diesel:	cs -	C22
Varsol:	c8	_	C12	Lubricating Oils:	c20 -	C40
Kerosene:	c7	_	C16	Crude Oils:	c3 -	C60+

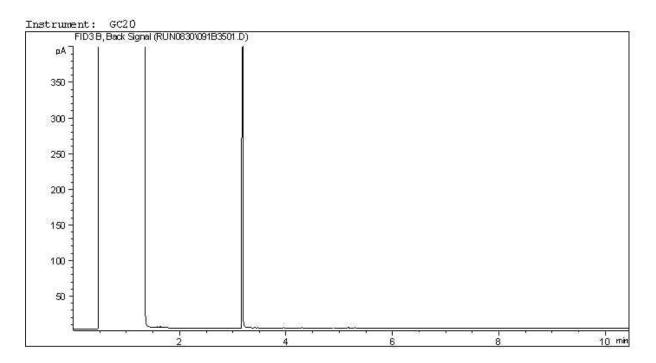
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

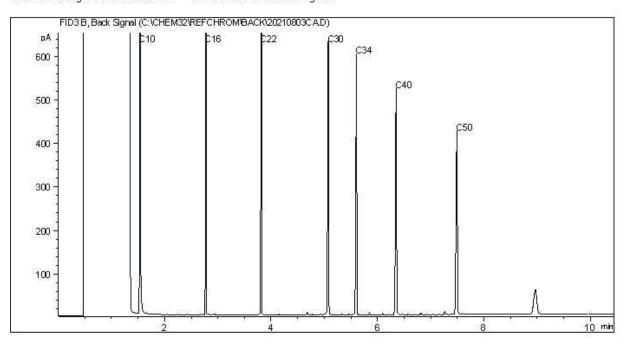
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-29-02

#### CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	-	C12	Diesel:	cs -	C22
Varsol:	c8	_	C12	Lubricating Oils:	c20 -	C40
Kerosene:	c7	_	C16	Crude Oils:	c3 -	C60+

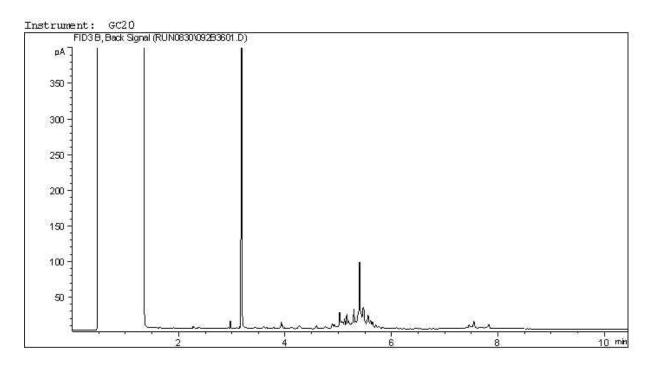
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

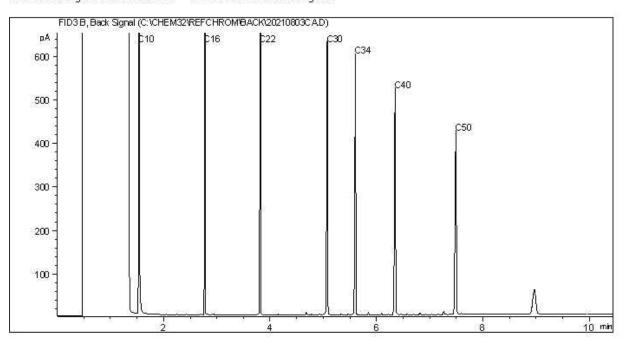
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-29-04

#### **CCME Hydrocarbons (F2-F4 in soil) Chromatogram**



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	-	C12	Diesel:	cs -	C22
Varsol:	c8	_	C12	Lubricating Oils:	c20 -	C40
Kerosene:	c7	_	C16	Crude Oils:	c3 -	C60+

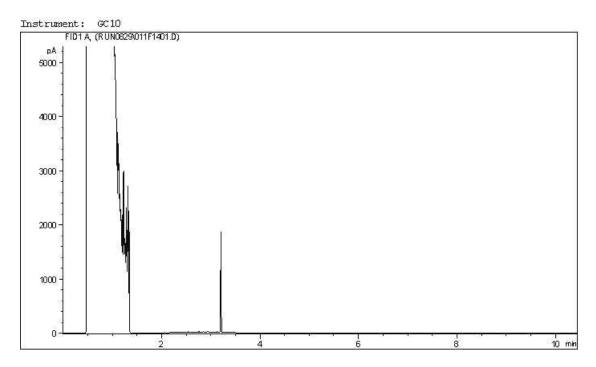
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Client Project #: 20368099-6000-1001

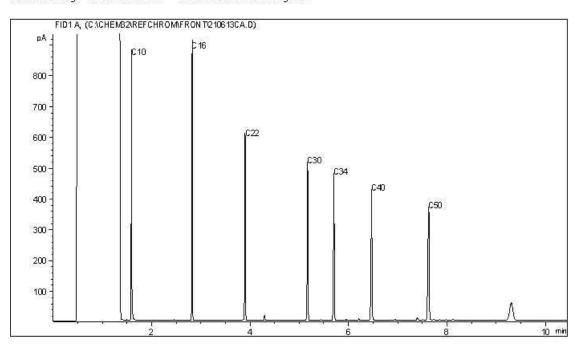
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: DUP U

#### CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4		C12	Diesel:	c8	10	C22
Varsol:	c8	$(\frac{1}{2})^{\frac{1}{2}}$	C12	Lubricating Oils:	C20	-	C40
Kerosene:	c7	4	C16	Crude Oils:	C3	-1	C60+

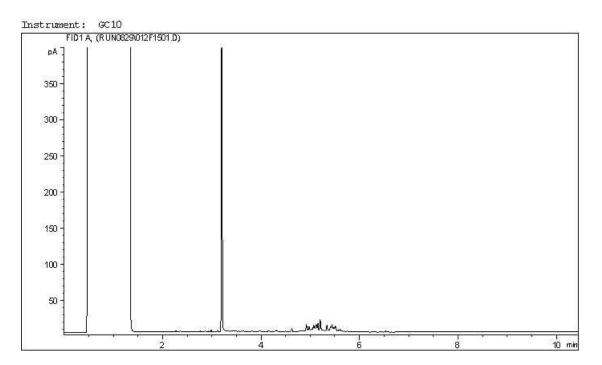
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

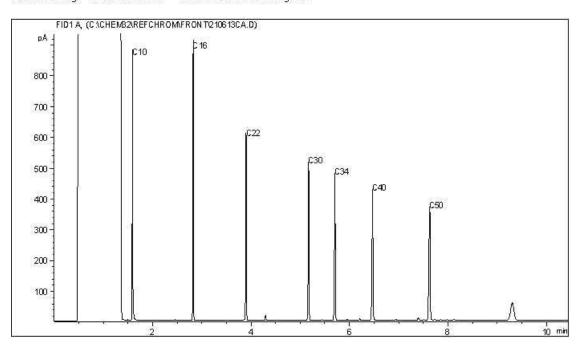
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Client ID: DUP S

#### **CCME Hydrocarbons (F2-F4 in soil) Chromatogram**



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4		C12	Diesel:	c8	10	C22
Varsol:	c8	$(\frac{1}{2})^{\frac{1}{2}}$	C12	Lubricating Oils:	C20	-	C40
Kerosene:	c7	4	C16	Crude Oils:	C3	-1	C60+

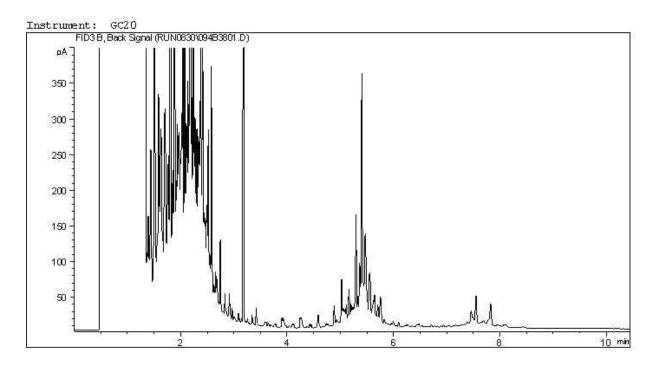
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

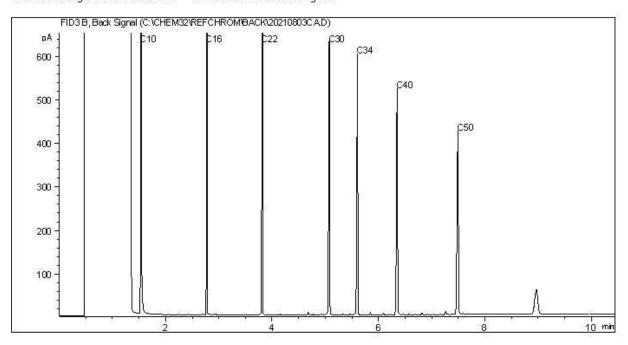
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: DUP T

#### CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	-	C12	Diesel:	cs -	C22
Varsol:	c8	_	C12	Lubricating Oils:	c20 -	C40
Kerosene:	c7	_	C16	Crude Oils:	c3 -	C60+

# GOLDER DATA QUALITY REVIEW CHECKLIST

Site Location: Camp Farewell			Sampling Date:	August 22, 2021
Golder Project Number: 2036809	9-6000-1001	_	Laboratory:	Bureau Veritas Edmonton
Lab Submission Number: <u>C162661</u>				
Was the Cooler Received at the lab under a Was proper chain of custody of the sample: Were sample temperatures acceptable when Were all samples analyzed and extracted w Has lab warranted all tests were in statistica Was sufficient sample provided for the required Has lab warranted all samples were analyzed.	s documented they reached ithin hold ting al control in the duested analys	d and keped lab?: nes?: CoA?: sis?	ot?	Yes
Are All Laboratory QC Within Acceptance  Yes  Surrogate Recovery X  Method Blank Concentration X  Laboratory Duplicate RPD X  Matrix Spike Recovery X  Blank Spike Recovery X	No	es, No, No		Comments C results are within a.
Are All Field QC Samples Within Alert Lin  Yes  Field Blank Concentration  Trip Blank Concentration  Field Duplicate RPD	No X	o, Not A <sub>I</sub> NA  X  X		Comments 3-03 and DUP U exceed the alert limit
Is data considered reliable (Yes/No/Suspec If answer is "No" or "Suspect", describe an Please see QA/QC appendix for details		tionale:	Suspect	
Data Reviewed by (Print): Anita Co			Data Reviewed by	(Signature): Ondo Collect



Your P.O. #: 20368099-7000-1001 Your Project #: 20368099-6000-1001

Site Location: Camp Farewell and Unipkat I-22, Northwest

**Territories** 

#### **Attention: Aurelie Belavance**

GOLDER ASSOCIATES LTD. 2800, 700 -2nd Street SW CALGARY, AB CANADA T2P 2W2

Your C.O.C. #: 644511-29-01, 644511-30-01, 644511-31-01, 644511-32-01

Report Date: 2021/12/24

Report #: R3113756 Version: 2 - Revision

#### **CERTIFICATE OF ANALYSIS – REVISED REPORT**

BV LABS JOB #: C162662 Received: 2021/08/24, 09:45

Sample Matrix: Soil # Samples Received: 31

·		Date	Date		
Analyses	Quantity	Extracted	Analyzed	<b>Laboratory Method</b>	<b>Analytical Method</b>
BTEX/F1 by HS GC/MS/FID (MeOH extract) (1, 2)	20	N/A	2021/08/31	AB SOP-00039	CCME CWS/EPA 8260d m
BTEX/F1 by HS GC/MS/FID (MeOH extract) (1, 2)	11	N/A	2021/09/01	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX (1)	20	N/A	2021/08/31		Auto Calc
F1-BTEX (1)	11	N/A	2021/09/01		Auto Calc
CCME Hydrocarbons (F2-F4)+F3A/B in soil (1, 3)	3	2021/08/30	2021/08/31	AB SOP-00036	CCME PHC-CWS m
CCME Hydrocarbons (F2-F4 in soil) (1, 4)	29	2021/08/30	2021/08/31	AB SOP-00036	CCME PHC-CWS m
CCME Hydrocarbons (F2/F2+F3B) in soil (1, 5)	2	N/A	2021/08/31		Auto Calc
CCME Hydrocarbons (F2/F2+F3B) in soil (1, 5)	1	N/A	2021/12/23		Auto Calc
CCME Hydrocarbons (F4G in soil) (1, 4)	4	2021/08/30	2021/09/01	AB SOP-00036	CCME PHC-CWS m
				AB SOP-00040	
Moisture (1)	10	N/A	2021/08/30	AB SOP-00002	CCME PHC-CWS m
Moisture (1)	21	N/A	2021/08/31	AB SOP-00002	CCME PHC-CWS m

#### Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.



Your P.O. #: 20368099-7000-1001 Your Project #: 20368099-6000-1001

Site Location: Camp Farewell and Unipkat I-22, Northwest

**Territories** 

**Attention: Aurelie Belavance** 

GOLDER ASSOCIATES LTD. 2800, 700 -2nd Street SW CALGARY, AB CANADA T2P 2W2

Your C.O.C. #: 644511-29-01, 644511-30-01, 644511-31-01, 644511-32-01

Report Date: 2021/12/24

Report #: R3113756 Version: 2 - Revision

#### **CERTIFICATE OF ANALYSIS – REVISED REPORT**

# **BV LABS JOB #: C162662**

#### Received: 2021/08/24, 09:45

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

- \* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
- (1) This test was performed by Bureau Veritas Calgary, 4000 19 St., Calgary, AB, T2E 6P8
- (2) No lab extraction date is given for F1BTEX & VOC samples that are field preserved with methanol. Extraction date is date sampled unless otherwise stated.
- (3) All CCME results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories

conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil, Validation of Performance-Based Alternative Methods September 2003. Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

(4) All CCME results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil, Validation of Performance-Based Alternative Methods September 2003. Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

(5) All CCME results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil, Validation of Performance-Based Alternative Methods September 2003. Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

#### **Encryption Key**



Bureau Veritas

24 Dec 2021 12:51:40

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Cynny Hagen, Key Account Specialist Email: Cynny.HAGEN@bureauveritas.com

Phone# (403)735-2273

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BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



Client Project #: 20368099-6000-1001

Site Location: Camp Farewell and Unipkat I-22, Northwest

Territories

Your P.O. #: 20368099-7000-1001

Sampler Initials: .

#### AT1 BTEX AND F1-F4 IN SOIL (VIALS)

_			_	_	_	_		_		
Bureau Veritas ID		AEP038	AEP038		AEP039	AEP039		AEP040		
Sampling Date		2021/08/20	2021/08/20		2021/08/20	2021/08/20		2021/08/20		
Sampling Date		14:24	14:24		14:26	14:26		14:25		
COC Number		644511-29-01	644511-29-01		644511-29-01	644511-29-01		644511-29-01		
	UNITS	TP21-165-02	TP21-165-02 Lab-Dup	RDL	TP21-165-04	TP21-165-04 Lab-Dup	RDL	TP21-165-03	RDL	QC Batch
Ext. Pet. Hydrocarbon										
F2 (C10-C16 Hydrocarbons)	mg/kg	39	N/A	10	140 (1)	N/A	26	N/A	26	A336179
F3 (C16-C34 Hydrocarbons)	mg/kg	790	N/A	50	2900 (1)	N/A	130	N/A	130	A336179
F4 (C34-C50 Hydrocarbons)	mg/kg	280	N/A	50	1100 (1)	N/A	130	N/A	130	A336179
Reached Baseline at C50	mg/kg	Yes	N/A	N/A	No	N/A	N/A	N/A	N/A	A336179
Physical Properties										
Moisture	%	30	N/A	0.30	62	64	0.30	45	0.30	A336620
Volatiles										
Xylenes (Total)	mg/kg	<0.098	N/A	0.098	<0.14	N/A	0.14	<0.10	0.10	A334339
F1 (C6-C10) - BTEX	mg/kg	<22	N/A	22	<31	N/A	31	<23	23	A334339
Field Preserved Volatiles										
Benzene	mg/kg	<0.0068 (2)	<0.0068	0.0068	<0.0068 (2)	N/A	0.0068	<0.0068 (2)	0.0068	A335208
Toluene	mg/kg	<0.050 (2)	<0.050	0.050	0.32 (3)	N/A	0.16	<0.050 (2)	0.050	A335208
Ethylbenzene	mg/kg	<0.018 (2)	0.022	0.018	<0.018 (2)	N/A	0.018	<0.018 (2)	0.018	A335208
m & p-Xylene	mg/kg	<0.087 (3)	<0.087	0.087	<0.12 (3)	N/A	0.12	<0.090 (3)	0.090	A335208
o-Xylene	mg/kg	<0.044 (3)	<0.044	0.044	<0.062 (3)	N/A	0.062	<0.045 (3)	0.045	A335208
F1 (C6-C10)	mg/kg	<22 (3)	<22	22	<31 (3)	N/A	31	<23 (3)	23	A335208
Surrogate Recovery (%)										
1,4-Difluorobenzene (sur.)	%	93	96	N/A	97	N/A	N/A	95	N/A	A335208
4-Bromofluorobenzene (sur.)	%	101	102	N/A	102	N/A	N/A	102	N/A	A335208
D10-o-Xylene (sur.)	%	104	105	N/A	128	N/A	N/A	123	N/A	A335208
D4-1,2-Dichloroethane (sur.)	%	102	106	N/A	105	N/A	N/A	105	N/A	A335208
O-TERPHENYL (sur.)	%	104	N/A	N/A	117	N/A	N/A	N/A	N/A	A336179
		•		•		-			•	

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate

- (1) Detection limits raised due to high moisture content, sample contains => 50% moisture.
- (2) Detection limits raised based on MDL and sample weight used for analysis.
- (3) Detection limits raised based on sample weight used for analysis.



Report Date: 2021/12/24

GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

Site Location: Camp Farewell and Unipkat I-22, Northwest

Territories

Your P.O. #: 20368099-7000-1001

Sampler Initials: .

#### AT1 BTEX AND F1-F4 IN SOIL (VIALS)

	-	_									
Bureau Veritas ID		AEP041			AEP042		AEP043		AEP044		
Sampling Date		2021/08/20			2021/08/20		2021/08/20		2021/08/20		
Jamping Date		10:41			10:42		11:02		11:04		
COC Number		644511-29-01			644511-29-01		644511-29-01		644511-29-01		
	UNITS	TP21-164-02	RDL	QC Batch	TP21-164-03	RDL	TP21-139-01	RDL	TP21-139-03	RDL	QC Batch
Ext. Pet. Hydrocarbon											
F2 (C10-C16 Hydrocarbons)	mg/kg	57	10	A336179	270 (1)	22	N/A	22	16	10	A336179
F3 (C16-C34 Hydrocarbons)	mg/kg	870	50	A336179	5100 (1)	110	N/A	110	150	50	A336179
F4 (C34-C50 Hydrocarbons)	mg/kg	380	50	A336179	2200 (1)	110	N/A	110	66	50	A336179
Reached Baseline at C50	mg/kg	No	N/A	A336179	No	N/A	N/A	N/A	Yes	N/A	A336179
Physical Properties	•	-	·	-							
Moisture	%	18	0.30	A336620	54	0.30	8.5	0.30	11	0.30	A336205
Volatiles											
Xylenes (Total)	mg/kg	<0.045	0.045	A334339	0.11	0.10	<0.045	0.045	<0.045	0.045	A334339
F1 (C6-C10) - BTEX	mg/kg	<10	10	A334339	<23	23	<10	10	<10	10	A334339
Field Preserved Volatiles											
Benzene	mg/kg	<0.0050	0.0050	A335208	0.076 (2)	0.012	<0.0050	0.0050	<0.0050	0.0050	A335208
Toluene	mg/kg	<0.050	0.050	A335208	<0.12 (2)	0.12	<0.050	0.050	<0.050	0.050	A335208
Ethylbenzene	mg/kg	<0.010	0.010	A335208	0.053 (2)	0.023	<0.010	0.010	<0.010	0.010	A335208
m & p-Xylene	mg/kg	<0.040	0.040	A335208	0.11 (2)	0.093	<0.040	0.040	<0.040	0.040	A335208
o-Xylene	mg/kg	<0.020	0.020	A335208	<0.047 (2)	0.047	<0.020	0.020	<0.020	0.020	A335208
F1 (C6-C10)	mg/kg	<10	10	A335208	<23 (2)	23	<10	10	<10	10	A335208
Surrogate Recovery (%)											
1,4-Difluorobenzene (sur.)	%	95	N/A	A335208	97	N/A	95	N/A	95	N/A	A335208
4-Bromofluorobenzene (sur.)	%	101	N/A	A335208	104	N/A	100	N/A	102	N/A	A335208
D10-o-Xylene (sur.)	%	129	N/A	A335208	124	N/A	100	N/A	123	N/A	A335208
D4-1,2-Dichloroethane (sur.)	%	102	N/A	A335208	105	N/A	105	N/A	104	N/A	A335208
O-TERPHENYL (sur.)	%	113	N/A	A336179	115	N/A	N/A	N/A	106	N/A	A336179
DDI Dementable Detection Liv											

RDL = Reportable Detection Limit

<sup>(1)</sup> Detection limits raised due to high moisture content, sample contains => 50% moisture.

<sup>(2)</sup> Detection limits raised based on sample weight used for analysis.



Client Project #: 20368099-6000-1001

Site Location: Camp Farewell and Unipkat I-22, Northwest

Territories

Your P.O. #: 20368099-7000-1001

Sampler Initials: .

## AT1 BTEX AND F1-F4 IN SOIL (VIALS)

1		1		i	i	1	1	i –	
Bureau Veritas ID		AEP045	AEP046	AEP047	AEP048	AEP049	AEP050		
Sampling Date		2021/08/20	2021/08/20	2021/08/20	2021/08/20	2021/08/20	2021/08/20		
Jamping Jac		11:09	11:09	11:16	11:26	11:29	14:05		
COC Number		644511-29-01	644511-29-01	644511-29-01	644511-30-01	644511-30-01	644511-30-01		
	UNITS	TP21-139-05	DUP M	TP21-140-02	TP21-140-04	TP21-140-06	TP21-141-02	RDL	QC Batch
Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	16	11	20	<10	19	26	10	A336179
F3 (C16-C34 Hydrocarbons)	mg/kg	72	66	110	<50	120	140	50	A336179
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	<50	<50	<50	<50	<50	50	A336179
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes	Yes	Yes	N/A	A336179
Physical Properties									
Moisture	%	16	9.6	13	3.4	12	12	0.30	A336205
Volatiles	•	•	-	•	•	•	•	=	,
Xylenes (Total)	mg/kg	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	0.045	A334339
F1 (C6-C10) - BTEX	mg/kg	<10	<10	<10	<10	<10	<10	10	A334339
Field Preserved Volatiles	•	•	-	•	•	•	•	=	,
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	A335208
Toluene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	A335208
Ethylbenzene	mg/kg	<0.010	0.024	<0.010	<0.010	<0.010	<0.010	0.010	A335208
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	A335208
o-Xylene	mg/kg	<0.020	0.027	<0.020	<0.020	<0.020	<0.020	0.020	A335208
F1 (C6-C10)	mg/kg	<10	<10	<10	<10	<10	<10	10	A335208
Surrogate Recovery (%)			-	•	•	•	•	-	
1,4-Difluorobenzene (sur.)	%	96	95	94	97	95	73	N/A	A335208
4-Bromofluorobenzene (sur.)	%	100	104	105	106	102	80	N/A	A335208
D10-o-Xylene (sur.)	%	116	131	119	126	133	100	N/A	A335208
D4-1,2-Dichloroethane (sur.)	%	107	105	103	108	109	83	N/A	A335208
O-TERPHENYL (sur.)	%	107	105	95	112	119	102	N/A	A336179
PDI - Papartable Detection Lie	mi+	<del></del>	<u> </u>		·				<u> </u>

RDL = Reportable Detection Limit



Report Date: 2021/12/24

GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

Site Location: Camp Farewell and Unipkat I-22, Northwest

Territories

Your P.O. #: 20368099-7000-1001

Sampler Initials: .

#### AT1 BTEX AND F1-F4 IN SOIL (VIALS)

Bureau Veritas ID		AEP051	AEP052	AEP052	AEP053	AEP054	AEP055		
Sampling Date		2021/08/20	2021/08/20	2021/08/20	2021/08/20	2021/08/20	2021/08/20		
Janipinig Date		13:23	13:38	13:38	13:38	14:02	13:58		
COC Number		644511-30-01	644511-30-01	644511-30-01	644511-30-01	644511-30-01	644511-30-01		
	UNITS	TP21-141-04	TP21-141-06	TP21-141-06 Lab-Dup	DUP N	TP21-143-02	TP21-143-01	RDL	QC Batch
Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	11	18	13	19	<10	<10	10	A336179
F3 (C16-C34 Hydrocarbons)	mg/kg	89	130	120	99	92	77	50	A336179
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	<50	<50	<50	<50	<50	50	A336179
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes	Yes	Yes	N/A	A336179
Physical Properties									
Moisture	%	9.5	12	N/A	9.4	2.9	3.2	0.30	A336205
Volatiles	-	•	-	•	•	•	•	-	
Xylenes (Total)	mg/kg	<0.045	<0.045	N/A	<0.045	<0.045	<0.045	0.045	A334339
F1 (C6-C10) - BTEX	mg/kg	<10	<10	N/A	<10	<10	<10	10	A334339
Field Preserved Volatiles	•	•		•		•			
Benzene	mg/kg	<0.0050	<0.0050	N/A	<0.0050	<0.0050	<0.0050	0.0050	A335208
Toluene	mg/kg	<0.050	<0.050	N/A	<0.050	<0.050	<0.050	0.050	A335208
Ethylbenzene	mg/kg	<0.010	<0.010	N/A	<0.010	<0.010	<0.010	0.010	A335208
m & p-Xylene	mg/kg	<0.040	<0.040	N/A	<0.040	<0.040	<0.040	0.040	A335208
o-Xylene	mg/kg	<0.020	<0.020	N/A	<0.020	<0.020	<0.020	0.020	A335208
F1 (C6-C10)	mg/kg	<10	<10	N/A	<10	<10	<10	10	A335208
Surrogate Recovery (%)	•	•	-	•	•	•	•	•	
1,4-Difluorobenzene (sur.)	%	94	95	N/A	100	100	99	N/A	A335208
4-Bromofluorobenzene (sur.)	%	103	103	N/A	102	101	100	N/A	A335208
D10-o-Xylene (sur.)	%	133	137	N/A	111	106	133	N/A	A335208
D4-1,2-Dichloroethane (sur.)	%	109	108	N/A	102	103	101	N/A	A335208
O-TERPHENYL (sur.)	%	104	104	108	103	95	99	N/A	A336179
DDI - Donortable Detection Liv				·	·	·			

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate



Client Project #: 20368099-6000-1001

Site Location: Camp Farewell and Unipkat I-22, Northwest

Territories

Your P.O. #: 20368099-7000-1001

Sampler Initials: .

## AT1 BTEX AND F1-F4 IN SOIL (VIALS)

Bureau Veritas ID		AEP056	AEP057		AEP058		AEP059		
Sampling Date		2021/08/20	2021/08/20		2021/08/20		2021/08/20		
Sampling Date		14:03	14:08		14:09		14:10		
COC Number		644511-30-01	644511-30-01		644511-31-01		644511-31-01		
	UNITS	TP21-143-04	TP21-144-02	QC Batch	TP21-144-04	QC Batch	TP21-144-05	RDL	QC Batch
Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	11	<10	A336179	92	A336179	27	10	A336324
F3 (C16-C34 Hydrocarbons)	mg/kg	200	<50	A336179	<50	A336179	110	50	A336324
F4 (C34-C50 Hydrocarbons)	mg/kg	57	<50	A336179	<50	A336179	<50	50	A336324
Reached Baseline at C50	mg/kg	Yes	Yes	A336179	Yes	A336179	Yes	N/A	A336324
Physical Properties								•	
Moisture	%	26	5.5	A336205	3.5	A336205	31	0.30	A336241
Volatiles	•								
Xylenes (Total)	mg/kg	<0.045	<0.045	A334549	<0.045	A334549	<0.045	0.045	A334549
F1 (C6-C10) - BTEX	mg/kg	<10	<10	A334549	<10	A334549	<10	10	A334549
Field Preserved Volatiles	•			•		-		·	
Benzene	mg/kg	<0.0050	<0.0050	A335208	<0.0050	A338476	<0.0050	0.0050	A338476
Toluene	mg/kg	<0.050	<0.050	A335208	<0.050	A338476	<0.050	0.050	A338476
Ethylbenzene	mg/kg	<0.010	<0.010	A335208	<0.010	A338476	<0.010	0.010	A338476
m & p-Xylene	mg/kg	<0.040	<0.040	A335208	<0.040	A338476	<0.040	0.040	A338476
o-Xylene	mg/kg	<0.020	<0.020	A335208	<0.020	A338476	<0.020	0.020	A338476
F1 (C6-C10)	mg/kg	<10	<10	A335208	<10	A338476	<10	10	A338476
Surrogate Recovery (%)	•			•		-		ē	
1,4-Difluorobenzene (sur.)	%	99	99	A335208	102	A338476	104	N/A	A338476
4-Bromofluorobenzene (sur.)	%	100	101	A335208	99	A338476	100	N/A	A338476
D10-o-Xylene (sur.)	%	103	104	A335208	138	A338476	121	N/A	A338476
D4-1,2-Dichloroethane (sur.)	%	101	101	A335208	103	A338476	104	N/A	A338476
O-TERPHENYL (sur.)	%	109	102	A336179	100	A336179	96	N/A	A336324
RDL = Reportable Detection Lir	nit								

RDL = Reportable Detection Limit



Client Project #: 20368099-6000-1001

Site Location: Camp Farewell and Unipkat I-22, Northwest

Territories

Your P.O. #: 20368099-7000-1001

Sampler Initials: .

#### AT1 BTEX AND F1-F4 IN SOIL (VIALS)

_		_	_	_	_	_	_			
Bureau Veritas ID		AEP060	AEP061	AEP062		AEP063		AEP064		
Sampling Date		2021/08/20	2021/08/20	2021/08/20		2021/08/20		2021/08/20		
Jamping Date		14:25	14:26	14:27		14:50		14:51		
COC Number		644511-31-01	644511-31-01	644511-31-01		644511-31-01		644511-31-01		
	UNITS	TP21-145-02	TP21-145-03	TP21-145-06	RDL	TP21-128-02	RDL	TP21-128-04	RDL	QC Batch
Ext. Pet. Hydrocarbon										
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	<10	<10	10	25	10	<10	10	A336324
F3 (C16-C34 Hydrocarbons)	mg/kg	<50	<50	<50	50	450	50	<50	50	A336324
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	<50	<50	50	110	50	<50	50	A336324
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	N/A	Yes	N/A	Yes	N/A	A336324
Physical Properties										
Moisture	%	3.7	13	12	0.30	45	0.30	6.3	0.30	A336241
Volatiles										
Xylenes (Total)	mg/kg	<0.045	<0.045	<0.045	0.045	<0.090	0.090	<0.045	0.045	A334549
F1 (C6-C10) - BTEX	mg/kg	<10	<10	<10	10	<20	20	<10	10	A334549
Field Preserved Volatiles										
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	<0.0067 (1)	0.0067	<0.0050	0.0050	A338476
Toluene	mg/kg	<0.050	<0.050	<0.050	0.050	0.41 (2)	0.10	<0.050	0.050	A338476
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	0.010	<0.010 (1)	0.010	<0.010	0.010	A338476
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	0.040	<0.081 (2)	0.081	<0.040	0.040	A338476
o-Xylene	mg/kg	<0.020	<0.020	<0.020	0.020	<0.040 (2)	0.040	<0.020	0.020	A338476
F1 (C6-C10)	mg/kg	<10	<10	<10	10	<20 (2)	20	<10	10	A338476
Surrogate Recovery (%)										
1,4-Difluorobenzene (sur.)	%	104	103	102	N/A	102	N/A	101	N/A	A338476
4-Bromofluorobenzene (sur.)	%	100	99	101	N/A	101	N/A	100	N/A	A338476
D10-o-Xylene (sur.)	%	107	122	129	N/A	127	N/A	125	N/A	A338476
D4-1,2-Dichloroethane (sur.)	%	102	102	104	N/A	104	N/A	104	N/A	A338476
O-TERPHENYL (sur.)	%	101	106	106	N/A	101	N/A	103	N/A	A336324
DDI - Damantahla Dataatian Li	:-									_

RDL = Reportable Detection Limit

<sup>(1)</sup> Detection limit reported based on MDL and sample weight used for analysis.

<sup>(2)</sup> Detection limits raised based on sample weight used for analysis.



Client Project #: 20368099-6000-1001

Site Location: Camp Farewell and Unipkat I-22, Northwest

Territories

Your P.O. #: 20368099-7000-1001

Sampler Initials: .

#### AT1 BTEX AND F1-F4 IN SOIL (VIALS)

_	_					_	
Bureau Veritas ID		AEP065	AEP066	AEP067	AEP068		
Sampling Date		2021/08/20	2021/08/20	2021/08/20	2021/08/20		
Sampling Date		14:52	15:08	15:09	15:10		
COC Number		644511-31-01	644511-31-01	644511-31-01	644511-32-01		
	UNITS	TP21-128-06	TP21-127-02	TP21-127-04	TP21-127-05	RDL	QC Batch
Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	36	<10	<10	10	A336324
F3 (C16-C34 Hydrocarbons)	mg/kg	<50	570	59	<50	50	A336324
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	200	<50	<50	50	A336324
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes	N/A	A336324
Physical Properties							
Moisture	%	16	27	4.5	5.9	0.30	A336241
Volatiles	•		-	-			
Xylenes (Total)	mg/kg	<0.045	<0.045	<0.045	<0.045	0.045	A334549
F1 (C6-C10) - BTEX	mg/kg	<10	<10	<10	<10	10	A334549
Field Preserved Volatiles	•		•	•	•	•	,
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	A338476
Toluene	mg/kg	<0.050	0.083	<0.050	<0.050	0.050	A338476
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	A338476
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	0.040	A338476
o-Xylene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020	A338476
F1 (C6-C10)	mg/kg	<10	<10	<10	<10	10	A338476
Surrogate Recovery (%)	•	•	•	•	•	•	,
1,4-Difluorobenzene (sur.)	%	102	101	101	101	N/A	A338476
4-Bromofluorobenzene (sur.)	%	99	100	100	100	N/A	A338476
D10-o-Xylene (sur.)	%	125	134	118	129	N/A	A338476
D4-1,2-Dichloroethane (sur.)	%	103	103	103	103	N/A	A338476
O-TERPHENYL (sur.)	%	104	101	108	107	N/A	A336324
RDL = Reportable Detection Li	mit						
NI/A Net Amelicable							



Client Project #: 20368099-6000-1001

Site Location: Camp Farewell and Unipkat I-22, Northwest

Territories

Your P.O. #: 20368099-7000-1001

Sampler Initials: .

## PETROLEUM HYDROCARBONS (CCME)

Bureau Veritas ID		AEP039		AEP040	AEP041		AEP042		
Sampling Date		2021/08/20 14:26		2021/08/20 14:25	2021/08/20 10:41		2021/08/20 10:42		
COC Number		644511-29-01		644511-29-01	644511-29-01		644511-29-01		
	UNITS	TP21-165-04	RDL	TP21-165-03	TP21-164-02	RDL	TP21-164-03	RDL	QC Batch
Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	N/A	10	92	N/A	10	N/A	10	A335211
F3 (C16-C34 Hydrocarbons)	mg/kg	N/A	71	1400	N/A	71	N/A	71	A334552
F3A (C16-C22)	mg/kg	N/A	50	160	N/A	50	N/A	50	A335211
F3B (C22-C34)	mg/kg	N/A	50	1200	N/A	50	N/A	50	A335211
F2% (BIC)	mg/kg	N/A	N/A	7.0	N/A	N/A	N/A	N/A	A334552
F4 (C34-C50 Hydrocarbons)	mg/kg	N/A	50	580	N/A	50	N/A	50	A335211
Reached Baseline at C50	mg/kg	N/A	N/A	No	N/A	N/A	N/A	N/A	A335211
F4G-SG (Heavy Hydrocarbons-Grav.)	mg/kg	2500 (1)	1300	2100	1200	500	3200 (1)	1100	A339367
Surrogate Recovery (%)	•	•	•			•	•		
O-TERPHENYL (sur.)	%	N/A	N/A	90	N/A	N/A	N/A	N/A	A335211

RDL = Reportable Detection Limit

N/A = Not Applicable

(1) Detection limits raised due to high moisture content, samples contain => 50% moisture.

Bureau Veritas ID		AEP043		AEP063		
Sampling Date		2021/08/20 11:02		2021/08/20 14:50		
COC Number		644511-29-01		644511-31-01		
	UNITS	TP21-139-01	QC Batch	TP21-128-02	RDL	QC Batch
Ext. Pet. Hydrocarbon						
F2 (C10-C16 Hydrocarbons)	mg/kg	30	A335211	N/A	10	A335211
F3 (C16-C34 Hydrocarbons)	mg/kg	130	A334554	450	71	A454259
F3A (C16-C22)	mg/kg	<50	A335211	56	50	A457151
F3B (C22-C34)	mg/kg	130	A335211	390	50	A457151
F2% (BIC)	mg/kg	NC	A334554	6.0	N/A	A454259
F4 (C34-C50 Hydrocarbons)	mg/kg	65	A335211	N/A	50	N/A
Reached Baseline at C50	mg/kg	Yes	A335211	N/A	N/A	N/A
Surrogate Recovery (%)						
O-TERPHENYL (sur.)	%	90	A335211	101	N/A	A457151
RDL = Reportable Detection Limit	•				-	-
N/A = Not Applicable						



Client Project #: 20368099-6000-1001

Site Location: Camp Farewell and Unipkat I-22, Northwest

Territories

Your P.O. #: 20368099-7000-1001

Sampler Initials: .

#### **GENERAL COMMENTS**

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	4.7°C
Package 2	3.3°C
Package 3	2.0°C
Package 4	1.3°C
Package 5	3.0°C

Version #2: Report reissued to include results for F3A/F3B/Chromatogram on sample TP21-128-02/AEP063 as per client request received 2021/12/16.

#### HYDROCARBON RESEMBLANCE

The reported hydrocarbon resemblance was obtained by visual comparison of the sample chromatogram with a library of reference product chromatograms. Since variables such as the degree and type of weathering and the presence of non-petrogenic hydrocarbons cannot be duplicated in reference spectra, the resemblance information must be regarded as approximate and qualitative and as such, Bureau Veritas Laboratories can assume no liability for any conclusions drawn from these data.

Sample AEP063 [TP21-128-02]: The CCME F2-F4 chromatographic peak profile is consistent with biogenic organic material (e.g. peat). Chromatograms of biogenic organic material may contain peak patterns spanning the C18 to C50 range, but they are most commonly characterized by a profile of unevenly distributed sharp peaks between C28 and C34. The impacts are not consistent with a petroleum product or crude oil.

Results relate only to the items tested.



Bureau Veritas Job #: C162662 Report Date: 2021/12/24 GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

Site Location: Camp Farewell and Unipkat I-22, Northwest

Territories

Your P.O. #: 20368099-7000-1001

Sampler Initials: .

## **QUALITY ASSURANCE REPORT**

QA/QC								
Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
A335208	RSU	Matrix Spike [AEP038-02]	1,4-Difluorobenzene (sur.)	2021/08/31		93	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/08/31		100	%	50 - 140
			D10-o-Xylene (sur.)	2021/08/31		104	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/31		106	%	50 - 140
			Benzene	2021/08/31		102	%	50 - 140
			Toluene	2021/08/31		103	%	50 - 140
			Ethylbenzene	2021/08/31		111	%	50 - 140
			m & p-Xylene	2021/08/31		107	%	50 - 140
			o-Xylene	2021/08/31		112	%	50 - 140
			F1 (C6-C10)	2021/08/31		108	%	60 - 140
A335208	RSU	Spiked Blank	1,4-Difluorobenzene (sur.)	2021/08/31		95	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/08/31		103	%	50 - 140
			D10-o-Xylene (sur.)	2021/08/31		117	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/31		112	%	50 - 140
			Benzene	2021/08/31		96	%	60 - 130
			Toluene	2021/08/31		101	%	60 - 130
			Ethylbenzene	2021/08/31		104	%	60 - 130
			m & p-Xylene	2021/08/31		103	%	60 - 130
			o-Xylene	2021/08/31		99	%	60 - 130
			F1 (C6-C10)	2021/08/31		72	%	60 - 140
A335208	RSU	Method Blank	1,4-Difluorobenzene (sur.)	2021/08/31		97	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/08/31		104	%	50 - 140
			D10-o-Xylene (sur.)	2021/08/31		114	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/08/31		105	%	50 - 140
			Benzene	2021/08/31	<0.0050	200	mg/kg	50 1.0
			Toluene	2021/08/31	<0.050		mg/kg	
			Ethylbenzene	2021/08/31	<0.010		mg/kg	
			m & p-Xylene	2021/08/31	<0.040		mg/kg	
			o-Xylene	2021/08/31	<0.020		mg/kg	
			F1 (C6-C10)	2021/08/31	<10		mg/kg	
A335208	RSU	RPD [AEP038-02]	Benzene	2021/08/31	NC		// // // // // // // // // // // // //	50
A333200	1130	NFD [ALF030-02]	Toluene	2021/08/31	NC		%	50
				2021/08/31			%	50
			Ethylbenzene		20 NG			
			m & p-Xylene	2021/08/31	NC		%	50
			o-Xylene	2021/08/31	NC NC		%	50
A 225244	663	Markety Cutter	F1 (C6-C10)	2021/08/31	NC	0.2	%	30
A335211	GG3	Matrix Spike	O-TERPHENYL (sur.)	2021/08/30		93	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/30		86	%	60 - 140
			F3A (C16-C22)	2021/08/30		89	%	60 - 140
			F3B (C22-C34)	2021/08/30		88	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/08/30		89	%	60 - 140
A335211	GG3	Spiked Blank	O-TERPHENYL (sur.)	2021/08/30		97	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/30		92	%	60 - 140
			F3A (C16-C22)	2021/08/30		95	%	60 - 140
			F3B (C22-C34)	2021/08/30		93	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/08/30		94	%	60 - 140
A335211	GG3	Method Blank	O-TERPHENYL (sur.)	2021/08/30		102	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/30	<10		mg/kg	
			F3A (C16-C22)	2021/08/30	<50		mg/kg	
			F3B (C22-C34)	2021/08/30	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2021/08/30	<50		mg/kg	



Report Date: 2021/12/24

GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

Site Location: Camp Farewell and Unipkat I-22, Northwest

Territories

Your P.O. #: 20368099-7000-1001

Sampler Initials: .

# QUALITY ASSURANCE REPORT(CONT'D)

QA/QC								
Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
A335211	GG3	RPD	F3A (C16-C22)	2021/08/30	NC		%	40
			F3B (C22-C34)	2021/08/30	NC		%	40
A336179	GG3	Matrix Spike [AEP052-01]	O-TERPHENYL (sur.)	2021/08/31		110	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/31		98	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/08/31		102	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/08/31		96	%	60 - 140
A336179	GG3	Spiked Blank	O-TERPHENYL (sur.)	2021/08/31		106	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/31		96	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/08/31		99	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/08/31		91	%	60 - 140
A336179	GG3	Method Blank	O-TERPHENYL (sur.)	2021/08/31		104	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/31	<10		mg/kg	
			F3 (C16-C34 Hydrocarbons)	2021/08/31	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2021/08/31	<50		mg/kg	
A336179	GG3	RPD [AEP052-01]	F2 (C10-C16 Hydrocarbons)	2021/08/31	33		%	40
			F3 (C16-C34 Hydrocarbons)	2021/08/31	8.3		%	40
			F4 (C34-C50 Hydrocarbons)	2021/08/31	NC		%	40
A336205	KLG	Method Blank	Moisture	2021/08/31	< 0.30		%	
A336205	KLG	RPD	Moisture	2021/08/31	1.5		%	20
A336241	WLE	Method Blank	Moisture	2021/08/30	< 0.30		%	
A336241	WLE	RPD	Moisture	2021/08/30	7.8		%	20
A336324	EC0	Matrix Spike	O-TERPHENYL (sur.)	2021/08/31		93	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/31		90	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/08/31		89	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/08/31		94	%	60 - 140
A336324	EC0	Spiked Blank	O-TERPHENYL (sur.)	2021/08/31		106	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/31		102	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/08/31		103	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/08/31		109	%	60 - 140
A336324	EC0	Method Blank	O-TERPHENYL (sur.)	2021/08/31		102	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/08/31	<10		mg/kg	
			F3 (C16-C34 Hydrocarbons)	2021/08/31	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2021/08/31	<50		mg/kg	
A336324	EC0	RPD	F2 (C10-C16 Hydrocarbons)	2021/08/31	NC		%	40
			F3 (C16-C34 Hydrocarbons)	2021/08/31	NC		%	40
			F4 (C34-C50 Hydrocarbons)	2021/08/31	NC		%	40
A336620	KLG	Method Blank	Moisture	2021/08/31	<0.30		%	
A336620		RPD [AEP039-01]	Moisture	2021/08/31	3.0		%	20
A338476		Matrix Spike	1,4-Difluorobenzene (sur.)	2021/09/01	0.0	94	%	50 - 140
71330170	501	Width Spine	4-Bromofluorobenzene (sur.)	2021/09/01		99	%	50 - 140
			D10-o-Xylene (sur.)	2021/09/01		125	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/09/01		100	%	50 - 140
			Benzene	2021/09/01		98	%	50 - 140
			Toluene	2021/09/01		93	%	50 - 140
			Ethylbenzene	2021/09/01		100	%	50 - 140
			m & p-Xylene	2021/09/01		93	%	50 - 140
			o-Xylene	2021/09/01		93 97	%	50 - 140
			F1 (C6-C10)	2021/09/01		91	%	60 - 140
A338476	DO1	Spiked Blank	1,4-Difluorobenzene (sur.)	2021/09/01		89	%	50 - 140
H330470	501	Spined Dialik	4-Bromofluorobenzene (sur.)	2021/09/01		89	% %	50 - 140
			. ,	2021/09/01				50 - 140
			D10-o-Xylene (sur.)	2021/09/01		100	%	JU - 14



Client Project #: 20368099-6000-1001

Site Location: Camp Farewell and Unipkat I-22, Northwest

Territories

Your P.O. #: 20368099-7000-1001

Sampler Initials: .

## QUALITY ASSURANCE REPORT(CONT'D)

QA/QC								
Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			D4-1,2-Dichloroethane (sur.)	2021/09/01		99	%	50 - 140
			Benzene	2021/09/01		91	%	60 - 130
			Toluene	2021/09/01		94	%	60 - 130
			Ethylbenzene	2021/09/01		95	%	60 - 130
			m & p-Xylene	2021/09/01		93	%	60 - 130
			o-Xylene	2021/09/01		84	%	60 - 130
			F1 (C6-C10)	2021/09/01		94	%	60 - 140
A338476	DO1	Method Blank	1,4-Difluorobenzene (sur.)	2021/09/01		100	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/09/01		101	%	50 - 140
			D10-o-Xylene (sur.)	2021/09/01		112	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/09/01		104	%	50 - 140
			Benzene	2021/09/01	<0.0050		mg/kg	
			Toluene	2021/09/01	<0.050		mg/kg	
			Ethylbenzene	2021/09/01	< 0.010		mg/kg	
			m & p-Xylene	2021/09/01	<0.040		mg/kg	
			o-Xylene	2021/09/01	<0.020		mg/kg	
			F1 (C6-C10)	2021/09/01	<10		mg/kg	
A338476	DO1	RPD	Benzene	2021/09/01	12		%	50
			Toluene	2021/09/01	NC		%	50
			Ethylbenzene	2021/09/01	1.8		%	50
			m & p-Xylene	2021/09/01	NC		%	50
			o-Xylene	2021/09/01	NC		%	50
			F1 (C6-C10)	2021/09/01	NC		%	30
A339367	JLJ	Spiked Blank	F4G-SG (Heavy Hydrocarbons-Grav.)	2021/09/01		105	%	60 - 140
A339367	JLJ	Method Blank	F4G-SG (Heavy Hydrocarbons-Grav.)	2021/09/01	<500		mg/kg	
A457151	MHF	Spiked Blank	O-TERPHENYL (sur.)	2021/08/24		106	%	60 - 140
			F3A (C16-C22)	2021/08/24		109	%	60 - 140
			F3B (C22-C34)	2021/08/24		112	%	60 - 140
A457151	MHF	Method Blank	O-TERPHENYL (sur.)	2021/08/24		103	%	60 - 140
			F3A (C16-C22)	2021/08/24	<50		mg/kg	
			F3B (C22-C34)	2021/08/24	<50		mg/kg	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).



Client Project #: 20368099-6000-1001

Site Location: Camp Farewell and Unipkat I-22, Northwest

Territories

Your P.O. #: 20368099-7000-1001

Sampler Initials: .

#### **VALIDATION SIGNATURE PAGE**

The analytical data and all QC contained in this report were reviewed and validated by:

Gita Pokhrel, Laboratory Supervisor

Janet Gao, B.Sc., QP, Supervisor, Organics

Vermica felk

Veronica Falk, B.Sc., P.Chem., QP, Scientific Specialist, Organics

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



# ADDITIONAL COOLER TEMPERATURE RECORD

CHAIN-OF-CUSTODY RECORD

CHAIN OF CUSTODY #	COOLER OBSERVATIONS	i		MAXXAM JOB#: C162662								
1 644511-29-01	CUSTODY SEAL YES	NO COOLER	ID		CUSTODY SEAL	YES	NO	COOLER I	)		_	
	PRESENT		0 11	0	PRESENT		-			1	T	
2 of 4 644511-36-01	INTACT	TEMP	2 4	8	INTACT			TEMP		1	I	
	ICE PRESENT		1 2	3	ICE PRESENT				1	2	3	
3 of 4 644511-31-01	CUSTODY SEAL YES	NO COOLER	D.		CUSTODY SEAL	YES	NO	COOLER ID				
23	PRESENT /		1110		PRESENT					1	1	
4 or 4 644511-32-01	INTACT /	TEMP	13	6	INTACT			TEMP		1		
4-	V		1 2	`3	ICE PRESENT				1	2	3	
or	CUSTODY SEAL YES	NO COOLER	ID.		CUSTODY SEAL	YES	NO	COOLER ID	No.		A CONTRACT	
74 74	PRESENT		31	2	PRESENT							
af	ICE PRESENT	TEMP	1 1 "	1	INTACT			TEMP			1	
			1 2	3	ICE PRESENT			1 1	1	2	3	
of		NO COOLER	D	-	CUSTODY SEAL	YES	NO	COOLER ID				
1.2	PRESENT /		1115	7	PRESENT			- 1				
of	V	TEMP	0	3	INTACT			TEMP			į.	
			1 2	3	ICE PRESENT				- 1	2	3	
of	PRESENT VES	NO COULER	D		CUSTODY SEAL	YES	NO	COOLER ID				
3	INTACT I		33	1-	PRESENT							
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	Jose Merenn		Commission		221	108	12	4	9:	45	An	



# ADDITIONAL COOLER TEMPERATURE RECORD

CHAIN-OF-CUSTODY RECORD

	HAIN OF CUSTODY #	COOLER OBSER	VATION	S:					MAXXAM JOB#:		67	266	2	-	
Page of 4	644511-29-01	CUSTODY SEAL	YES	NO	COOLER	ID		The State of Street,	CUSTODY SEAL	YES	NO	COOLERI	D	Part Manager Product	-
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Page 7 of 4	644511-30-01	INTACT	10,		TEMP	5	17	17	INTACT	_	-	TEMP	STATE OF THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS N		
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Page 3 of 4	644511-31-01	CUSTODY SEAL	YES	NO	COOLER	D			CUSTODY SEAL	YES	NO	COOLER II	D	1	1
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Page of 4	644511-32-01	INTACT	11		TEMP	6	16	161	INTACT	-	1	TEMP	4		
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of		PRESENT	Vr			0		10	PRESENT		-	-	-	Times	I
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of		PRESENT	10	CHINGS HOL				10	PRESENT		1		-	-	-
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Page		CUSTODY SEAL	YES	NO	COOLER II	)	-		CUSTODY SEAL	YES	NO	COOLER IE	-	No. of Persons in Contract of the Persons in Con	-
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MCAL

BUREAU		Bureau Veritas Laboratories 4000 19st N.E. Calgary, Alb	erta Canada T2E	6P8 Tel:(403) 2	91-3077 Toll-free:800	-563-6266 Fax	(403)	291-9468	www.bvlabs	com							(	CHAIN O	F CUSTODY RECORD	Page of
<b>斯洛里尔斯斯</b> 尔里		INVOICE TO:				REPOR	RT TO:							PROJECT	INFORMA	TION:		T	Laboratory Use	e Only:
Company Name:	#254 GOLDI	ER ASSOCIATES LTD.		Company	Name: #6340 G	OLDER AS	SOC	IATES	TD.			Quotation#		C0048	0				BV Labs Job #:	Bottle Order #:
Attention:	<b>ACCOUNTS</b>	PAYABLE		Attention	Aurelie Be	elavance						P.O. #:		203680	099-7000	0-1001			C162662	
Address:	2800, 700 -2n			Address:		-2nd Stree						Project:		203680	099-6000	0-1001			6102002	644511
	CALGARY A					/ AB T2P 2	N2			-		Project Nam	e:	-					COC #:	Project Manager:
Tel:		00 Ext: 1167 Fax: (403)		Tel:	(403) 299			_ Fax:				Site #:								Carmen McKay
Email:	canadaaccou	ntspayableinvoices@golde	er.com	Email:	abellavar	ce@golder	.com					Sampled By							C#644511-29-01	
Regulatory Cr	iteria:			S	pecial Instructions		-			ANA	ALYSIS R	EQUESTED	(PLEASE	BE SPECI	FIC)	,			Turnaround Time (TAT) R	lequired:
☐ ATI								u u							5				Please provide advance notice for	rush projects
							(N/	Soils	Soil			Fusion um)	.⊑		IAT				Standard) TAT: plied if Rush TAT is not specified):	$\times$
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Other							) ¿ p	Metals	F1-F4	Analysis 3) in soil		ing	and F1-F2		00	GC/MS		Please noi details	te: Standard TAT for certain tests are > 5 days	- contact your Project Manager for
							tere	2 ≥	and F	in s	rate	D us	and	_	tals	by	<u>w</u>	20000000	ific Rush TAT (if applies to entire submiss	sion)
					(mail		E P	late	a ×	E /	nit /	≥ E	EX	/ate	ĕ ₽	ater	Sample	Date Requ	uired:	
	AMDÉES MI IST BE	KEPT COOL ( < 10°C ) FROM TIM	E OE SAMDLING	2 LINTE DELIVE	DV TO BV LARS		Fie	Regulated	BTEX s)	CAI 2+F	ate	n or	E	le V	atec	>	Š	Rush Confir	mation Number:	
	AWIFECOMOST BE	KEN COOLS C TO C T KOW TIN	IL OF SAMI LING	JOHNE DELIVE	INT TO BY CABS		Metals	AT1 F	(Vials)	BIC SCALE AI (F2/F2+F3B) ii	Sulphate / nitrate	Barium on ICP us Extraction (True E	CCME BTEX a	Routine Water	Regulated Metals (CCME/AT1) - Dissolved	PAH in Water by	Limited	# of Bottles	T	(call lab for #)
Sampl	c Ramode Lacel	Sample (Location) Identi	fication	Date Sampled	Time Sampled	Matrix	ž	4	K 2	8 F	હ	8 0	5 ≥	N N	8 -	8	تَ		Comment	ts
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/	RELINQUISHED BY		Data: (VV/M	M/DD) T	me	PECEIVI	D BV	(Signatur	a/Oring)			Date: (YY/M	M/DD)	Time	1 # 1==	s used and		2	Laboratori Han Oak	
	PETE		Date: (YY/M	20 16	:00 NAT		.5 61.	MILL	KUCH	10		may los		16:20		s used and submitted		Sensitive	Laboratory Use Only Temperature (°C) on Receipt	Custody Seal Intact on Cooler?
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* UNLESS OTHERW	VISE AGREED TO IN WI	RITING, WORK SUBMITTED ON THIS C	HAIN OF CUSTOD	Y IS SUBJECT TO	BV LABS' STANDARD TE	MS AND CONDI	IONS.	SIGNING O	THIS CHAIR	N OF CUSTO	DY DOCUM	MENT IS ACK	OWLEDGM	ENT AND A	CCEPTANCE	OF OUR TE	RMS WHICH	ARE AVAILA	ABLE FOR VIEWING AT	/hite: BV Labs Yellow: Client
		INQUISHER TO ENSURE THE ACCURA	ACY OF THE CHAIN	OF CUSTODY RE	CORD. AN INCOMPLETE	HAIN OF CUSTO	DY MAY	RESULT II	N ANALYTICA	AL TAT DELA	AYS.									renow: Client

Bureau Veritas Canada (2019) Inc.

BUREA VERITA		Bureau Veritas Laboratories 4000 19st N.E. Calgary, Alberta Canad	da T2E 6P8 Tel:(403	) 291-3077 Toll-fre	ee:800-563-620	66 Fax:(40	3) 291-9	468 www.bvlab	s.com					k-		CI	HAIN O	F CUSTODY RECORD	Page of 2 of 4
		INVOICE TO:				REPORT T	0:						PROJECT	INFORMA	ATION:			Laboratory Use	Only:
Company Nam	#254 GOLD	ER ASSOCIATES LTD.	Compa	ny Name #634	0 GOLDE	RASSC	CIATE	S LTD.			Quotation #:		C0048	)			_	BV Labs Job #:	Bottle Order #:
Attention	ACCOUNTS		Attentio	n: Aure	lie Belavan	се					P.O. #:		203680	99-700	0-1001			1167667	
Address:	2800, 700 -2r		Addres		, 700 -2nd						Project:		203680	99-600	0-1001			C162662	644511
	CALGARY A			-	GARY AB T	2P 2W2					Project Name		-					COC #:	Project Manager:
Tel:	(905) 567-610	TOA.	101.		299-5600		Fa	x:			Site #:								Carmen McKay
Email:	Canadaaccou	ntspayableinvoices@golder.com	Email:	abel	lavance@g	older.co	m				Sampled By:							C#644511-30-01	Carmen McKay
Regulatory (	Criteria:			Special Instruction	is				ANA	ALYSIS R	EQUESTED (	PLEASE	BE SPECI	FIC)				Turnaround Time (TAT) Re	quired:
☐ ATI														5		8		Please provide advance notice for ru	ush projects
							2	Soil			, E	<u></u>		/AT				Standard) TAT:	
CCI	ΛE						-	.⊑			Fusion um)	F2		ME	MS			pplied if Rush TAT is not specified): TAT = 5-7 Working days for most tests.	
Oth	er							Metals F1-F4	isis =		a i.i	F1-F2		0)	)C/I	1	Please no	te: Standard TAT for certain tests are > 5 days - o	contact your Project Manager for
									nal) n sc	ate	us ne E	and		als	by (		details	ific Rush TAT (if applies to entire submission	on)
								a	E A	nitr	ICP u	X	ater	Me	ter	Id II	Date Requ		
F 19 75	SAMPLES MUST BE	KEPT COOL ( < 10°C ) FROM TIME OF SAM	DUNG ENTH DEUN	FDV TO DVI ADO				BTEX and	FE	ate /	no r	BT	≥   ≥	ted	in Water by GC/MS	Sa	Rush Confi	rmation Number:	
		REF I COOL ( > 10 C ) FROM THE OF SAM	PLING UNTIL DELIV	ERY TO BY LABS		latrix			BIC SCALE Analysis (F2/F2+F3B) in soil	Sulphate / nitrate	Barium on I Extraction (	CCME BTEX and Water	Routine Water	Regulated Metals (CCME/AT1) - Dissolved	.⊆ π	Limited Sample	of Bottle		call lab for #)
Samp	le Barcode Label	Sample (Location) Identification	Date Sample	Time Sam	pled M	latrix 2	N K	Z A Z	B E	Su	Ва	S ≥	8	Re - D	PAH	트	FOI BOttle	Comments	
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	RELINQUISHED BY:	(Signature/Print) Date: (	YY/MM/QD) 1	ime 190		CEIVED	V: /Sign	ature/Print)		т.	Date: (YY/MM	UDDI T	Time	Ти:	s used and		5		1
4		0-			TASHA	9 h	1114	JUHA		08	180/ 1/6C	2001	16:20		s used and submitted	Time Se	ensitive	Laboratory Use Only Temperature (°C) on Receipt (	Custody Seal Intact on Cooler?
			1-0	111	LINITE	. /'	WIT	01/00			01 10 01	N	VIN				7	00	Yes No
* UNLESS OTHERW WWW.BVLABS.COM	ISE AGREED TO IN WRI	TING, WORK SUBMITTED ON THIS CHAIN OF CUS	STODY IS SUBJECT TO	BV LABS' STANDAR	D TERMS AND	CONDITIONS	SIGNIN	G OF THIS CHAIR	OF CUSTOD	DY DOCUM	ENT IS ACKNO	OWLEDGM	IENT AND AC	CEPTANCE	OF OUR TER	RMS WHICH A	RE AVAIL	ABLE FOR VIEWING AT	
		QUISHER TO ENSURE THE ACCURACY OF THE C	CHAIN OF CUSTODY RE	CORD. AN INCOMPL	ETE CHAIN OF	CUSTODY M	AY RESU	LT IN ANALYTIC	AL TAT DELA	YS.								Whi	ite: BV Labs   Yellow: Client

Bureau Veritas Canada (2019) Inc.

BUREAU

INVOICE TO:

Bureau Veritas Laboratories 4000 19st N.E., Calgary, Alberta Canada T2E 6P8 Tel (403) 291-3077 Toll-free 800-563-6266 Fax (403) 291-9468 www.bvlabs.com

REPORT TO:

#### CHAIN OF CUSTODY RECORD

PROJECT INFORMATION:

Page of

	7017
Laboratory Use	Only:
s Job #:	Bottle Order #:
1667	

Company Hame.	GOLDER ASSOCIATES LTD.	Comp	pany Name: #6340 G	OLDER ASS	OCI	AIESL	ID.			Quotation #:		C0048					BV Labs Job #:	Bottle Order #:
Attention: ACCO	JNTS PAYABLE	Atten	Aurelie Be	elavance						P.O. #:		203680	99-7000	-1001			C162662	
Address: 2800,	700 -2nd Street SW	Addre	2800, 700	-2nd Street S	SW					Project:		203680	99-6000	-1001			0102002	644511
	ARY AB T2P 2W2		CALGAR	AB T2P 2W	2		-			Project Name	91						COC #:	Project Manager:
Tel: (905) 5	67-6100 Ext: 1167 Fax: (403) 299-5	606 Tel:	(403) 299	-5600		Fax				Site #:								
	accountspayableinvoices@golder.com	Emai	abellavar	ce@golder.co	om					Sampled By:							C#644511-31-01	Carmen McKay
Linux					-										1			
Regulatory Criteria:			Special Instructions					ANA	ALYSIS F	EQUESTED	(PLEASE	BE SPECII	FIC)	1		AND AND STREET	Turnaround Time (TAT) Re	
I ATI						S							Ē		-	D. H	Please provide advance notice for r	ush projects
					î	Soils	Soil			ioi	.⊆		A				Standard) TAT: oplied if Rush TAT is not specified):	X
CCME					7		.⊑			Fusion um)	F1-F2		(CCME/AT1)	GC/MS		A COLOR DE LA COLOR	TAT = 5-7 Working days for most tests	
					5	Metals	1-F4	· <u>s</u> =		ariu	<u>'</u>		8	5		Please no	nte: Standard TAT for certain tests are > 5 days -	contact your Project Manager for
Other					red	ĕ ⊠	缸	Analysis 3) in soil	ā	using Fusi e Barium)	and		sls (	5		details		
	LANCON AND AND AND AND AND AND AND AND AND AN				-iite	Regulated	and	A (i	nitrate	Barium on ICP us Extraction (True I	w ×	ē	Regulated Metals - Dissolved	PAH in Water by	Sample		cific Rush TAT (if applies to entire submissi	ion)
					ple	E a	×	338	7 ח	50	BTEX	Water	p p p	Vate	am	Date Rec		8
SAMPLES K	UST BE KEPT COOL ( < 10°C ) FROM TIME OF SA	MPLING UNTIL DEL	IVERY TO BY LABS		Fig	Seg	AT BTEX (Vials)	BIC SCALE A (F2/F2+F3B) i	Sulphate /	o tio	ш,	Routine 1	late	\ \	8	Rush Cont	irmation Number:	call lab for #)
					Metals		T 20	C S	di	ariu	CCME	inc	egu Siss	Ŧ	Limited	# of Bottle	ie l	1
Sample Barcode L	abel Sample (Location) Identification	Date Samp	led Time Sampled	Matrix	ž	AT1	23	图币	S	வ வ	ర≥	N. N.	R. J.	7	ے		Comments	5
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	1001-128-0	4	1451				V									3	Cet 1	Tim
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10	1691-19J-0		1509	•			V									2		
* RELINQUI	SHED BY: (Signature/Print) Date	(YY/MM/DD)	Time	RECEIVED						Date: (YY/M		Time		s used and submitted		Sensitive	Laboratory Use Only	141 (01 U 2 UU01 U 2 U 141
4	PETER TAN 21/	08/20 1	6:00 NATI	UHH	1	MUK	VCH	7	2	024 108,	125	16:20	-		Г	7	Temperature (°C) on Receipt	Custody Seal Intact on Cooler?
-															<u> </u>		MLIV	Yes No
* UNLESS OTHERWISE AGREED WWW.BVLABS.COM/TERMS-AN	TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF D-CONDITIONS.	CUSTODY IS SUBJECT	TO BV LABS' STANDARD TER	MS AND CONDITIO	NS. S	IGNING OF	THIS CHAI	N OF CUSTO	DY DOCU	MENT IS ACK	NOWLEDGN	MENT AND A	CCEPTANCE	OF OUR TE	RMS WHICH	ARE AVAII	ABLE FOR VIEWING AT	hite: BV Labs Yellow: Client
	THE RELINQUISHER TO ENSURE THE ACCURACY OF THE			HAIN OF CUSTODY	MAY	RESULT IN	ANALYTIC	AL TAT DELA	AYS.								ice; yes	
" ALL SAMPLES ARE HELD FO	R 60 DAYS AFTER SAMPLE RECEIPT, FOR SPECIAL REQU	ESTS CONTACT YOUR	PROJECT MANAGER														140, 900	

Bureau Veritas Canada (2019) Inc.

(23 YES)
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Bureau Veritas Laboratories 4000 19st N.E., Calgary, Alberta Canada T2E 6P8 Tel (403) 291-3077 Toll-free:800-563-6266 Fax (403) 291-9468 www.bulabs.com

## CHAIN OF CUSTODY RECORD

Page of 4

BUREAU VERITAS																						1
		INVOICE TO:						REPORT	TO:							PROJECT	INFORMA	TION:			Laboratory Use	Only:
Company Name:	#254 GOLDE	R ASSOCIA	TES LTD.		Cor	npany Name	e: #6340 GC	GOLDER ASSOCIATES LTD.				Quotation #:		C00480	)		-		BV Labs Job #:	Bottle Order #:		
Attention:	<b>ACCOUNTS F</b>	AYABLE			Atte	ention:	Aurelie Bel							P.O. #:		203680	99-7000	-1001			C162662	
Address:	2800, 700 -2nd	d Street SW			Add	iress:	TOTAL SECTION OF THE PARTY OF T	-2nd Street S	3100					Project:		203680	99-6000	-1001			002002	644511
	CALGARY AB						CALGARY	AB T2P 2W	12					Project Name	9:						COC #:	Project Manager:
Tel.	(905) 567-610		Fax: (403)		Tel		(403) 299-			Fax:				Site #:								Carmen McKay
Email:	canadaaccour	tspayableinv	oices@golde	er.com	Em	ail:	abellavano	ce@golder.c	om					Sampled By:							C#644511-32-01	
Regulatory Cr	iteria:			_		Special	Instructions					ANA	LYSIS R	EQUESTED	(PLEASE	BE SPECIF	IC)				Turnaround Time (TAT) Re-	
CCM Other			COC VERON TIME	OF CAMP	INC UNTIL O		D BIVI ABS		Field Filtered ? ( Y / N )	Regulated Metals - Soils	BTEX and F1-F4 in Soil	BIC SCALE Analysis (F2/F2+F3B) in soil	Sulphate / nitrate	m on ICP using Fusion ction (True Barium)	CCME BTEX and F1-F2 in Water	Routine Water	Regulated Metals (CCME/AT1) - Dissolved	in Water by GC/MS	Sa	(will be app Standard of Please not details Job Speci Date Requi	mation Number:	contact your Project Manager for
	e Barcode Label		(Location) Identif		Date Sar		Time Sampled	Matrix	Metals	AT1 R	Vials	BIC S	Sulph	Barium on Extraction (	CCME	Soutir	Regul	PAH ii	Limited	# of Bottles		call lab for #)
		0			200000000000000000000000000000000000000	. 800000	Annual Market	-	-			220 00					-			7		
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	RELINQUISHED BY:	/Cionatura/Drin	61	Date: /V	Y/MM/QD)	Time		RECEIVED	) BV:	/Signatur	n/Drini)			Date: (YY/M	M/DD)	Time	# iar	s used and			Laboratory Use Only	
	4		TAN		18/20		ONATAS			SUCH		-	21	124 108/6	25	16:20	-	submitted	Time	Sensitive		Custody Seal Intact on Cooler?
		FICK	· - V	~ 10	120	10.0	101111111111111111111111111111111111111	18-1	W	NUTTION IN	4		- 12	N-1 100/0		10,00						Yes No
* IT IS THE RESPON	VISE AGREED TO IN WR M/TERMS-AND-CONDITION VISIBILITY OF THE RELII RE HELD FOR 60 DAYS	ONS. NQUISHER TO ENS	URE THE ACCURA	CY OF THE CH	IAIN OF CUSTOR	Y RECORD.	AN INCOMPLETE CH							MENT IS ACK	NOWLEDGA	MENT AND A	CCEPTANCE	OF OUR TE	MS WHICH	ARE AVAILA	BLE FOR VIEWING AT WH	nite: BV Labs Yellow: Client

Bureau Veritas Canada (2019) Inc.

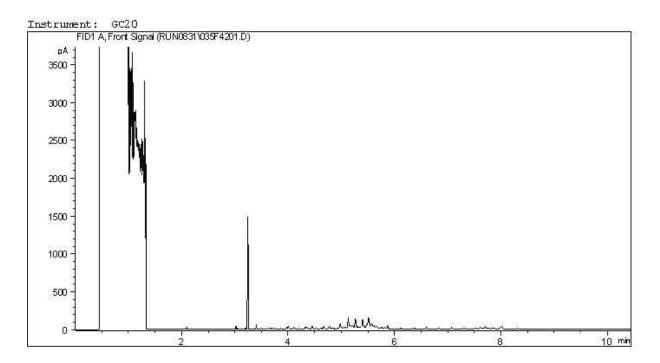
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

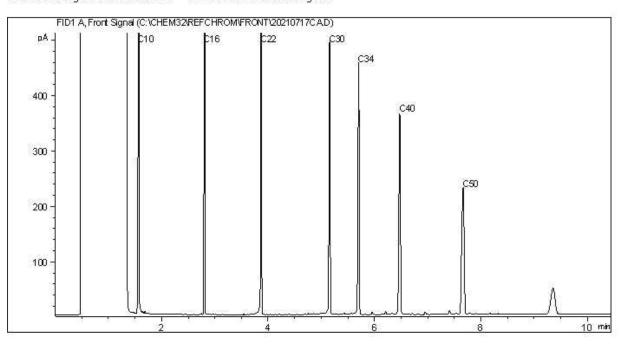
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-165-02

# CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	-	C12	Diesel:	cs -	C22
Varsol:	c8	_	C12	Lubricating Oils:	c20 -	C40
Kerosene:	c7	_	C16	Crude Oils:	c3 -	C60+

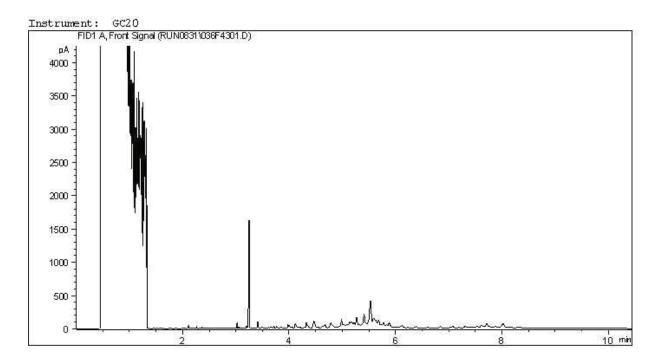
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

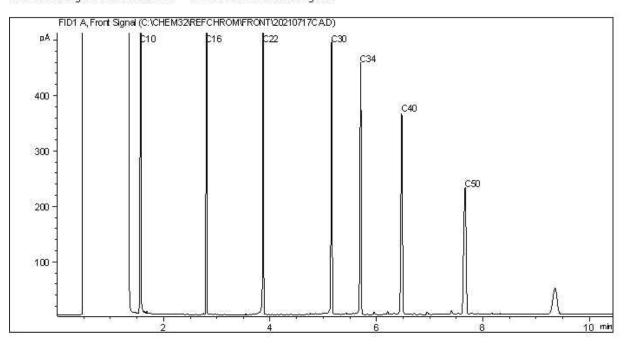
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-165-04

# CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	-	C12	Diesel:	cs -	C22
Varsol:	c8	_	C12	Lubricating Oils:	c20 -	C40
Kerosene:	c7	_	C16	Crude Oils:	c3 -	C60+

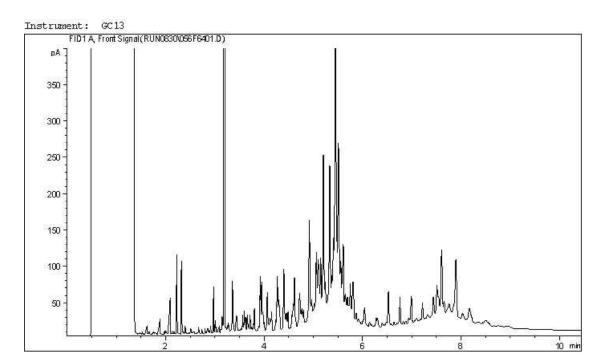
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

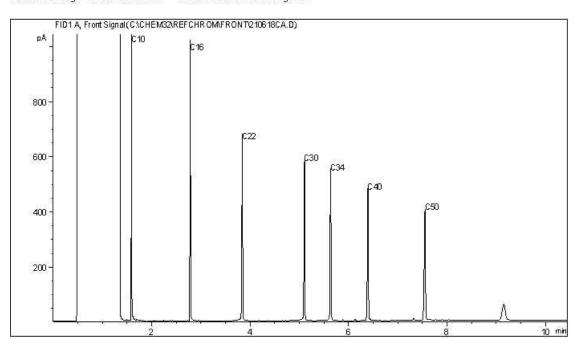
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-165-03

# CCME Hydrocarbons (F2-F4)+F3A/B in soil Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	1	C12	Diesel:	c8 -	S	C22
Varsol:	c8	: <del>- )</del> :	C12	Lubricating Oils:	c20 -		C40
Kerosene:	c7	_	C16	Crude Oils:	C3 -	3	C60+

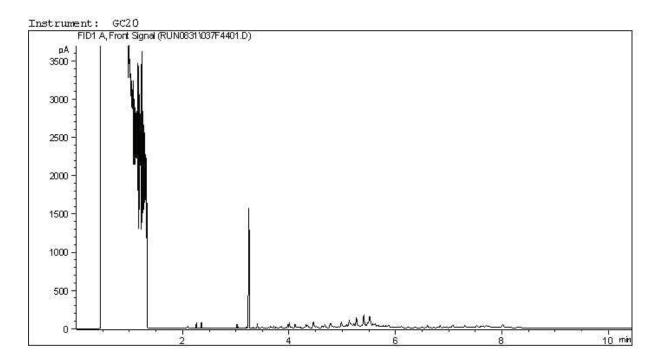
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

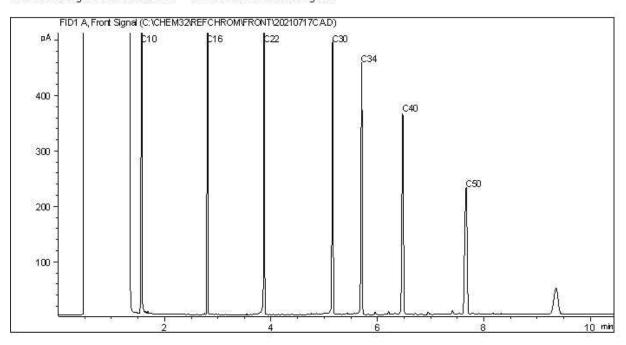
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-164-02

# CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	-	C12	Diesel:	cs -	C22
Varsol:	c8	_	C12	Lubricating Oils:	c20 -	C40
Kerosene:	c7	_	C16	Crude Oils:	c3 -	C60+

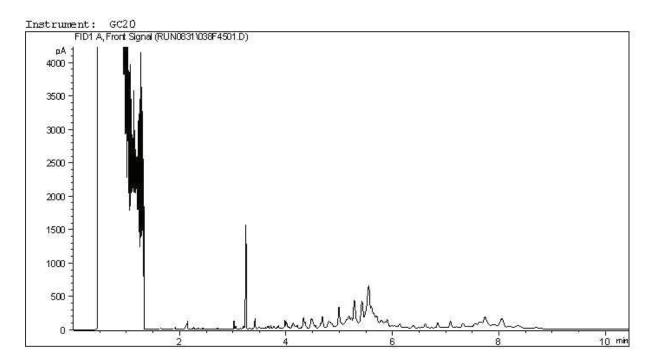
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Client Project #: 20368099-6000-1001

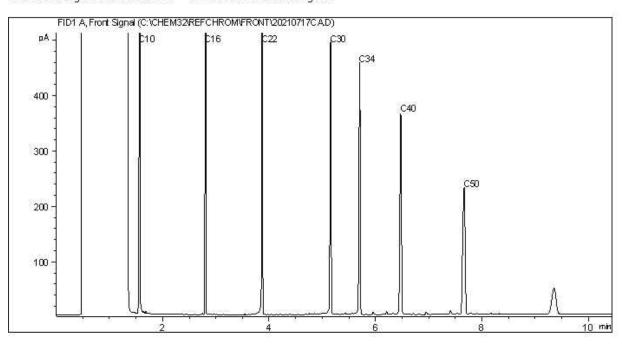
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-164-03

# CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	c4	-	C12	Diesel:	c8 -	C22
Varsol:	c8	_	C12	Lubricating Oils:	c20 -	C40
Kerosene:	c7	_	C16	Crude Oils:	c3 -	C60+

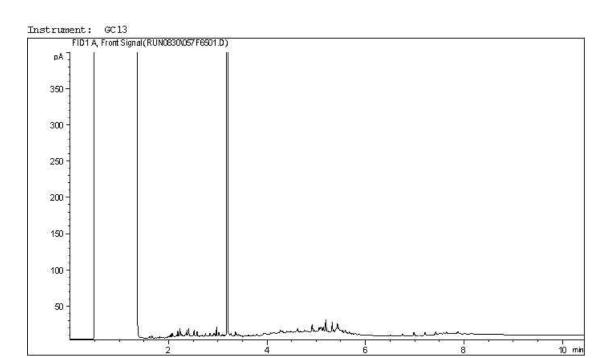
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

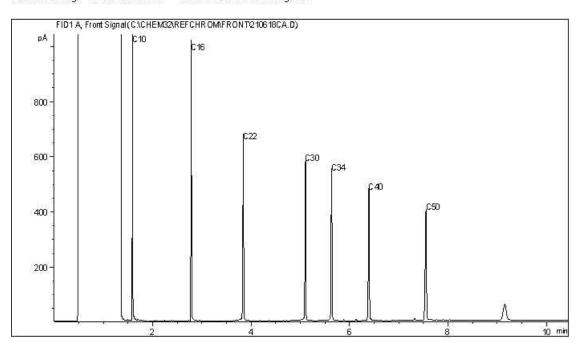
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-139-01

# CCME Hydrocarbons (F2-F4)+F3A/B in soil Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	c4	1	C12	Diesel:	c8	1	C22
Varsol:	c8	Η.	C12	Lubricating Oils:	C20	-	C40
Kerosene:	c7	_	C16	Crude Oils:	C3		C60+

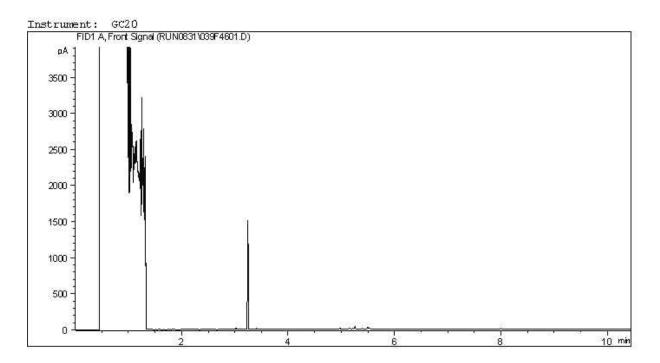
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

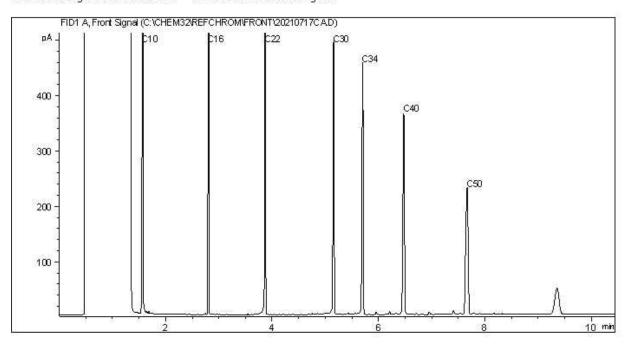
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-139-03

# CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	-	C12	Diesel:	cs -	C22
Varsol:	c8	_	C12	Lubricating Oils:	c20 -	C40
Kerosene:	c7	_	C16	Crude Oils:	c3 -	C60+

GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-139-05

# CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC20

FID1 A, Front Signal (RUN0831'040F4701.D)

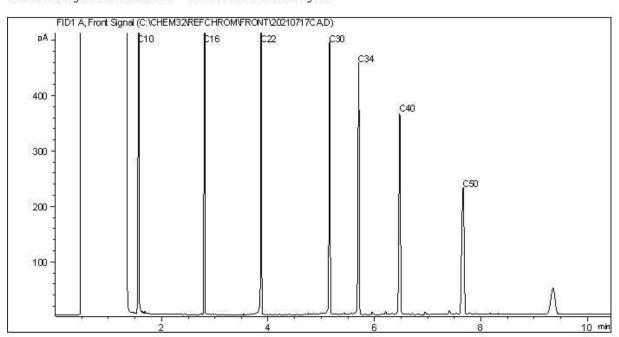
pA

2000

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2 4 6 8 10 min

Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	c4	-	C12	Diesel:	c8	$\leftarrow$	C22
Varsol:	c8	_	C12	Lubricating Oils:	C20	1	C40
Kerosene:	c7	_	C16	Crude Oils:	C3		C60+

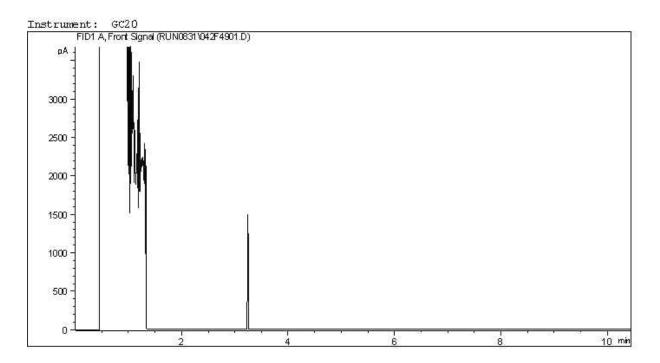
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

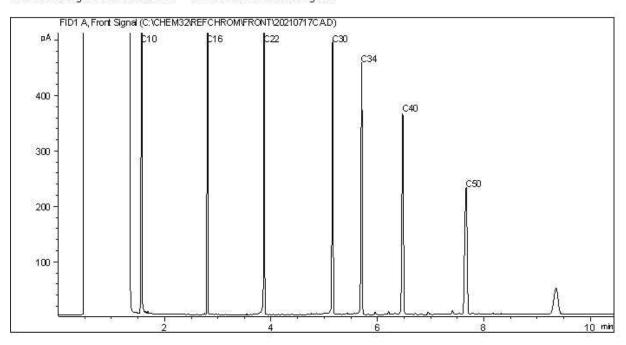
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: DUP M

# CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	c4	-	C12	Diesel:	c8	$\leftarrow$	C22
Varsol:	c8	_	C12	Lubricating Oils:	C20	1	C40
Kerosene:	c7	_	C16	Crude Oils:	C3		C60+

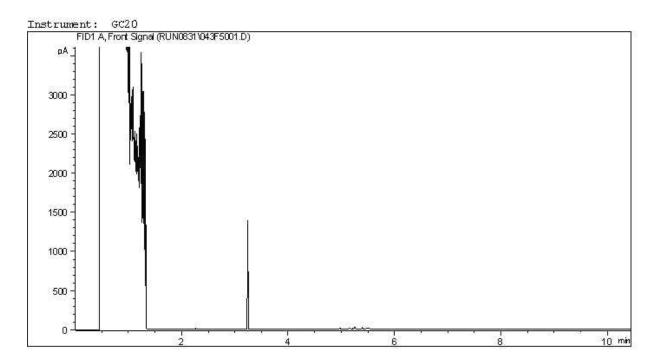
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

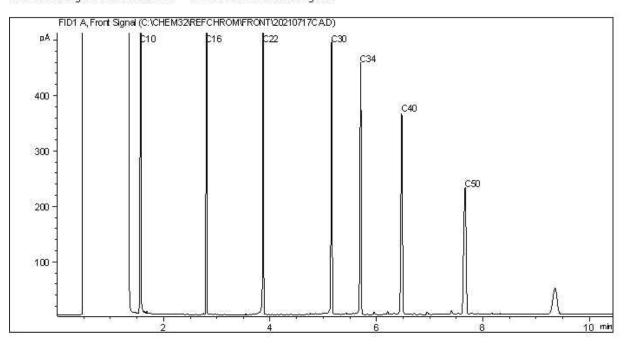
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-140-02

# CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	-	C12	Diesel:	c8	-	C22
Varsol:	c8	_	C12	Lubricating Oils:	C20	ш	C40
Kerosene:	c7	_	C16	Crude Oils:	C3	_	C60+

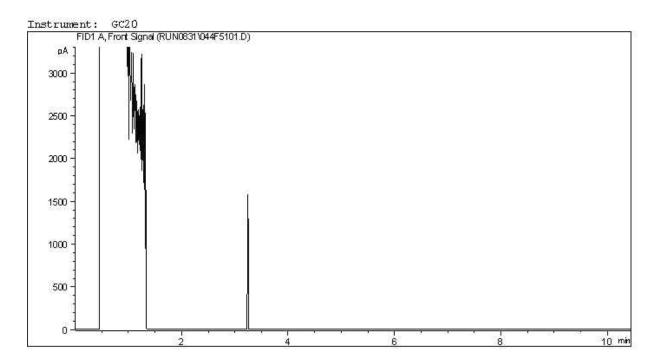
GOLDER ASSOCIATES LTD.

Client Project #: 20368099-6000-1001

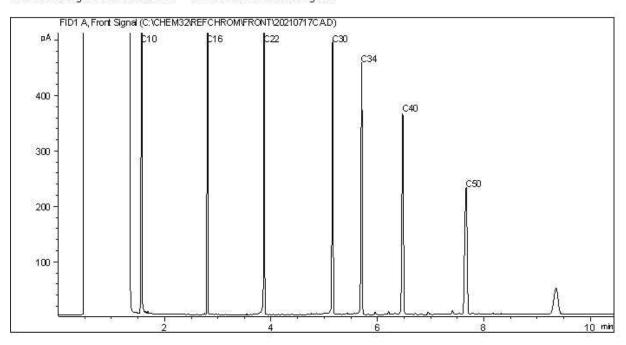
Site Reference: Camp Farewell and Unipkat I-22, Northwest Territories

Client ID: TP21-140-04

# CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	-	C12	Diesel:	cs -	C22
Varsol:	c8	_	C12	Lubricating Oils:	c20 -	C40
Kerosene:	c7	_	C16	Crude Oils:	c3 -	C60+