



BUREAU  
VERITAS

BV Labs Job #: C167913  
Report Date: 2021/09/22

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: 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

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

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

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

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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.

604



**ADDITIONAL COOLER TEMPERATURE RECORD**  
CHAIN-OF-CUSTODY RECORD

CHAIN OF CUSTODY #		COOLER OBSERVATIONS:												MAXXAM JOB#:											
Page	of	YES	NO	COOLER ID	TEMP	1	2	3	YES	NO	COOLER ID	TEMP	1	2	3	YES	NO	COOLER ID	TEMP	1	2	3			
1	5	✓				0	1	0	✓							PRESENT									
2	5	✓							✓							INTACT									
3	5	✓				2	2	4	✓							ICE PRESENT									
4	5	✓				1	1	4	✓							CUSTODY SEAL									
5	5	✓				5	4	4	✓							ICE PRESENT									
		✓				3	2	1	✓							CUSTODY SEAL									
		✓				0	0	-1	✓							ICE PRESENT									
		✓				5	1	4	✓							CUSTODY SEAL									
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**ADDITIONAL COOLER TEMPERATURE RECORD**  
CHAIN-OF-CUSTODY RECORD

CHAIN OF CUSTODY #		COOLER OBSERVATIONS:										MAXXAM JOB#:	
DATE	TIME	YES	NO	COOLER ID	TEMP	YES	NO	COOLER ID	TEMP	YES	NO	COOLER ID	TEMP
10/1/21	9:00	✓			346	✓				✓			
10/1/21		✓			346	✓				✓			
10/1/21		✓			673	✓				✓			
10/1/21		✓			673	✓				✓			
10/1/21		✓			962	✓				✓			
10/1/21		✓			962	✓				✓			
10/1/21		✓			225	✓				✓			
10/1/21		✓			225	✓				✓			
10/1/21		✓			253	✓				✓			
10/1/21		✓			253	✓				✓			
10/1/21		✓			811	✓				✓			
10/1/21		✓			811	✓				✓			
10/1/21		✓			221	✓				✓			
10/1/21		✓			221	✓				✓			
10/1/21		✓			151	✓				✓			
10/1/21		✓			151	✓				✓			
10/1/21		✓			123	✓				✓			
10/1/21		✓			123	✓				✓			
10/1/21		✓			123	✓				✓			

RECEIVED BY (SIGN & PRINT) Jose Mecan DATE (YYYY/MM/DD) 27/2021/09/10 TIME (HH:MM) 9:00



Bureau Veritas Laboratories  
4000 19th N.E. Calgary, Alberta Canada T2E 6P6 Tel: (403) 291-3077 Toll-free 800-563-6266 Fax: (403) 291-9468 www.bvlab.com

CHAIN OF CUSTODY RECORD

<b>INVOICE TO:</b> #254 GOLDER ASSOCIATES LTD. ACCOUNTS PAYABLE 2800, 700-2nd Street SW CALGARY AB T2P 2W2 (905) 567-6100 Ext: 1157 Fax: (403) 299-5606 canadaaccounts@payableinvoices@golder.com		<b>REPORT TO:</b> #6340 GOLDER ASSOCIATES LTD. Aurelie Belavance 2800, 700-2nd Street SW CALGARY AB T2P 2W2 (403) 299-5600 abelavance@golder.com	
<b>Company Name:</b> #6340 GOLDER ASSOCIATES LTD. <b>Attention:</b> Aurelie Belavance <b>Address:</b> 2800, 700-2nd Street SW CALGARY AB T2P 2W2 <b>Tel:</b> (403) 299-5600 <b>Email:</b> abelavance@golder.com		<b>PROJECT INFORMATION:</b> Quotation #: C00480 P.O. #: 20368099-7000-1001 Project: 20368099-6000-1001 Project Name: Site #: Sampled By:	
<b>Company Name:</b> #6340 GOLDER ASSOCIATES LTD. <b>Attention:</b> Aurelie Belavance <b>Address:</b> 2800, 700-2nd Street SW CALGARY AB T2P 2W2 <b>Tel:</b> (403) 299-5600 <b>Email:</b> abelavance@golder.com		<b>PROJECT INFORMATION:</b> Quotation #: C00480 P.O. #: 20368099-7000-1001 Project: 20368099-6000-1001 Project Name: Site #: Sampled By:	

Regulatory Criteria:  ATI  CCME  Other

Special Instructions: email: savellov@golder.com facility code 41359544

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required:  Regular (Standard) TAT: (will be applied if Rush TAT is not specified): Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests are > 5 days - contact your Project Manager for details.  Job Specific Rush TAT (if applies to entire submission)

Date Required: \_\_\_\_\_ Rush Confirmation Number: \_\_\_\_\_

Sample Barcode Label	Sample's (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered? (Y/N)	AT1 Regulated Metals - Soils	AT1 BTEX and F1-F4 in Soil	BIC SCALE Analysis (F2/F2+FB) in Soil	Suphate / nitrate	Barium on ICF using Fusion Extraction (True Barium)	CMC BTEX and F1-F2 in Water	Routine Water	Regulated Metals (CCME/AT1) Dissolved	PAH in Water by GC/MS	Limited Sample	# of Bottles	Comments
NA	TP21-104-01	31 Aug 2021	09:41	Soil		X	X								3		
	TP21-104-03		09:42	Soil		X	X								3		
	TP21-104-06		09:45	Soil		X	X								3		
	DUP NN		09:42	Soil		X	X								3		
	TP21-117-01		10:00	Soil		X	X		X						3 + 619	Received in Yellowknife By: J. McCann SEP 10 2021 Sec Acc 72 Temp:	
	TP21-117-03		10:03	Soil		X	X		X						3 + 613		
	TP21-117-05		10:11	Soil		X	X		X						3 + 619		
	DUP 00		10:03	Soil		X	X								3		
	TP21-118-02		09:32	Soil		X	X								3		
	TP21-118-04		10:23	Soil		X	X								3		

RECEIVED BY: (Signature/Print) *Alicia Lin* Time 17:00 Date: (Y/M/DD) 21/08/21

RECEIVED BY: (Signature/Print) *Alicia Lin* Time 14:40 Date: (Y/M/DD) 2021/09/11

# Jars used and not submitted:  Time Sensitive:  Laboratory Use Only:  Temperature (°C) on Receipt: SEE ACTR

Custom Seal Inaction Cooler? Yes  No  Yellow Client

\* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV 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.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



CHAIN OF CUSTODY RECORD

Bureau Veritas Laboratories  
4001 19th N.E. Calgary, Alberta Canada T2E 6P8 Tel: (403) 291-3077 Toll-free 800-563-6266 Fax: (403) 291-9468 www.bvlabs.com

<b>INVOICE TO:</b> #254 GOLDER ASSOCIATES LTD. ACCOUNTS PAYABLE 2800, 700-2nd Street SW CALGARY AB T2P 2W2 (905) 567-6100 Ext: 1167 Fax: (403) 299-5606 canadaccountspayableinvoices@golder.com		<b>REPORT TO:</b> #6340 GOLDER ASSOCIATES LTD. Aurelie Belavance 2800, 700-2nd Street SW CALGARY AB T2P 2W2 (403) 299-5600 abelavance@golder.com		<b>PROJECT INFORMATION:</b> Quotation #: C00480 P.O.#: 20368099-7000-1001 Project: 20368099-6000-1001 Project Name: Site #: Sampled By:		<b>Laboratory Use Only:</b> BV Labs Job #: Bottle Order #: COC #: 167913 Project Manager: Carmen McKay C06451172-01	
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Regulatory Criteria:  
 ATI  
 CCME  
 Other

Special Instructions:  
 email: smellov@golder.com  
 facility code: 41594544

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)  
 Routine Water  
 Regulated Metals (CCME/AT1)  
 PAH in Water by GC/MS  
 Limited Sample

Sample Barcode Label	Sample Location/Identifier	Date Sampled	Time Sampled	Matrix	ATI Regulated Metals - Soils	ATI pTEX and F1-F4 in Soil	(Vials)	(B2/F2+F3B) in soil	Sulphate / nitrate	Barium on ICP using Fusion	Extraction (on True Barium)	CCME BTEX and F1-F2 in Water	Routine Water	Regulated Metals (CCME/AT1)	PAH in Water by GC/MS	Limited Sample	# of Bottles	Comments
NA	TP21-118-06	31 Aug 2021	10:31	SOIL	X	X											3	
	DUP PP		10:31		X	X											3	
	TP21-119-01		10:38		X	X											3	
	TP21-119-03		10:39		X	X											3	
	DUP BQ		10:51		X	X											3	
	TP21-119-05		10:55		X	X											3	
	TP21-120-02		10:57		X	X											3	Received in Yellowknife By: J. A. ... @ 9:00 AM SEP 10 2021 Temp: see ACTR
	TP21-120-04		10:57		X	X											3	
	DUP RR		11:03		X	X											3	
	TP21-120-06		11:03		X	X											3	

RECEIVED BY: (Signature/Print) *Alicia Lin*  
 Date: (YYMM/DD) 2021/09/11 14:40  
 Time: 14:40

RELINQUISHED BY: (Signature/Print) *PETER TAN*  
 Date: (YYMM/DD) 2021/09/31 17:00  
 Time: 17:00

Temperature (°C) on Receipt: SEE ACTR  
 Custody Seal Intact on Cooler? Yes  No

While BV Labs Yellow Client

\* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV 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.BVLABS.COM/TERMS-AND-CONDITIONS.  
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CHAIN OF CUSTODY RECORD

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<b>PROJECT INFORMATION:</b> Quotation #: C00480 P.O. #: 20368099-7000-1001 Project: 20368099-6000-1001 Project Name: Site #: Sampled By: Carmen McKay		<b>Laboratory Use Only:</b> BV Labs Job #: C167913 Bottle Order #: 644511 Project Manager: COC #: CR644511-7E-01	
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Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	ANALYSIS REQUESTED (PLEASE BE SPECIFIC)							Turnaround Time (TAT) Required: Please provide advance notice for rush projects		
					ATI Regulated Metals - Soils	ATI BTEX and F1-F4 in Soil	BIC SCALE Analysis (F2/F2+3B) in soil	Sulphate / nitrate	Barium on ICP using Fusion Extraction (True Barium)	CCME BTEX and F1-F2 in Water	Routine Water		Regulated Metals (CCME/AT1) - Dissolved	PAH in Water by GC/MS
NA	TP21-104-05	31 Aug 2021	09:42	SOIL	X	X	X	X	X	X	X	X	3	
	TP21-121-01		11:18		X	X	X	X	X	X	X	X	3	
	TP21-121-03		11:20		X	X	X	X	X	X	X	X	3	
	TP21-121-05		11:24		X	X	X	X	X	X	X	X	3	
	DUP SS		11:24		X	X	X	X	X	X	X	X	3	
	TP21-122-02		13:35		X	X	X	X	X	X	X	X	3	
	TP21-122-04		13:40		X	X	X	X	X	X	X	X	3	
	TP21-122-06		13:45		X	X	X	X	X	X	X	X	3	
	DUP TT		13:45		X	X	X	X	X	X	X	X	3	
	TP21-129-01		14:07		X	X	X	X	X	X	X	X	3	

Date: (Y/M/DD) 21/08/21 Time: 17:00 RECEIVED BY: (Signature/Print) Alicia Lin		Date: (Y/M/DD) 2021/09/11 Time: 14:40 RECEIVED BY: (Signature/Print) Alicia Lin	
RELINQUISHED BY: (Signature/Print) [Signature] Date: (Y/M/DD) 21/08/21 Time: 17:00		LABORATORY USE ONLY Temperature (°C) on Receipt: SEE ACTK Custody Seal Intact on Cooler? Yes <input type="checkbox"/> No <input type="checkbox"/>	

REGULATORY CRITERIA:  
 ATI  
 CCME  
 Other

SPECIAL INSTRUCTIONS:  
 SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGEMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.  
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White BV Labs Yellow Client

CHAIN OF CUSTODY RECORD

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<b>COMPANY NAME:</b> #254 GOLDER ASSOCIATES LTD. Attention: Aurelie Belavance Address: 2800, 700-2nd Street SW CALGARY AB T2P 2W2 (905) 557-6100 Ext: 1167 Fax: (403) 299-5606 canadaccounts@payableinvoices@golder.com		<b>QUOTATION #:</b> C00480 P.O. #: 20368099-7000-1001 Project: 20368099-6000-1001 Project Name: Site #: Sampled By:	
<b>REGULATORY CRITERIA:</b> <input type="checkbox"/> ATI <input checked="" type="checkbox"/> CCME <input type="checkbox"/> Other		<b>LABORATORY USE ONLY:</b> BV Labs Job #: C167913 Bottle Order #: 544511 Project Manager: Carmen McKay Site #: 04644511-77-01	

Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered ? (Y/N)	AT1 Regulated Metals - Soils	AT1 BTEX and F1-F4 in Soil	BIC SCALE Analysis (F2/F2+F3B) in soil	Suphate / nitrate	Barium on ICP using Fusion Extraction (True Barium)	CCME BTEX and F1-F2 in Water	Routine Water	Regulated Metals (CCME/AT1) - Dissolved	PAH in Water by GC/MS	Limited Sample	# of Bottles	Comments
NA	TP21-129-03 Dup VV	31 Aug 2024	14:08	Soil	X	X	X	X	X						3	3	
	TP21-129-05		14:13		X	X	X	X	X						3	3	
	TP21-130-02		14:25		X	X	X	X	X						3	3	Received in Yellowknife By: J. MacCann @ 9:00 A
	TP21-130-04 Dup VV		14:28		X	X	X	X	X						3	3	SEP 10 2021
	TP21-130-06		14:35		X	X	X	X	X						3	3	Temp: See ACTR
	TP21-131-01		14:40		X	X	X	X	X						3	3	
	TP21-131-03		14:41		X	X	X	X	X						3	3	
	TP21-131-05		14:52		X	X	X	X	X						3	3	

Special Instructions: **SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS**

REGULATORY CRITERIA:  ATI  CCME  Other

RECEIVED BY: (Signature/Print) *Alicia Lin* Date: (Y/M/DD) 2024/09/11 Time: 14:40

LABORATORY USE ONLY: Temperature (°C) on Receipt: SEE ACTR Custody Seal Intact on Cooler?  Yes  No

White: BV Labs Yellow: Client

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4000 19st N.E. Calgary, Alberta Canada T2E 6P8 Tel: (403) 291-3077 Toll-free 800-553-6266 Fax: (403) 291-9468 www.bvlabs.com

CHAIN OF CUSTODY RECORD

<b>INVOICE TO:</b> #254 GOLDER ASSOCIATES LTD. ACCOUNTS PAYABLE 2800, 700 -2nd Street SW CALGARY AB T2P 2W2 (905) 567-6100 Ext: 1167 Fax: (403) 299-5606 canadaaccounts@payableinvoics@golder.com		<b>REPORT TO:</b> #6340 GOLDER ASSOCIATES LTD. Aurelie Belavance 2800, 700 -2nd Street SW CALGARY AB T2P 2W2 (403) 299-5600 abellavance@golder.com		<b>PROJECT INFORMATION:</b> Quotation #: C00480 P.O. #: 20368099-7000-1001 Project: 20368099-6000-1001 Project Name: Site #: Sampled By:		<b>Laboratory Use Only:</b> BV Labs Job #: C167913 Project Manager: Carmen McKay C#644511-75-01	
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Regulatory Criteria:  ATI  CCME  Other

Special Instructions: **SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS**

ANALYSIS REQUESTED (PLEASE BE SPECIFIC):

Turnaround Time (TAT) Required:  Regular (Standard) TAT: (will be applied if Rush TAT is not specified): Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests are > 5 days - contact your Project Manager for details

Job Specific Rush TAT (if applies to entire submission):

Date Required: \_\_\_\_\_ Rush Confirmation Number: \_\_\_\_\_

#	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered ? (Y/N)		AT1 Regulated Metals - Soils		AT1 BTEX and F1-F4 in Soil (Vals)		BIC SCALE Analysis (F2/F2+F3B) in soil		Suphate / nitrate		Barium on ICP using Fusion Extraction (True Barium)		CCME BTEX and F1-F2 in Water		Routine Water		Regulated Metals (CCME/AT1) - Dissolved		PAH in Water by GC/MS		Limited Sample		# of Bottles	Comments
					Y	N	AT1	F1-F4	F2	F2+F3B	Suphate	Nitrate	Barium	CCME	BTEX	F1	F2	Regulated	Dissolved	PAH	Limited							
1	NA	31 Aug 2021	14:59	Soil			X		X																	3		
2			15:04				X		X																	3		
3			15:07				X		X																	3		
4			15:15				X		X																	3		
5			15:16				X		X																	3		
6			15:21				X		X																	3		
7			14:42				X		X																	3		
8			15:21				X		X																	3		
9			15:00				X		X																	3		

RECEIVED BY: (Signature/Print) *Alice Lin* Date: (YY/MM/DD) 2021/09/11 Time: 14:40

RECEIVED BY: (Signature/Print) *PETER TAN* Date: (YY/MM/DD) 21/08/31 Time: 17:00

Temperature (°C) on Receipt: *See ACTR* Custody Seal Intact on Cooler?  Yes  No

Time Sensitive:  Laboratory Use Only:

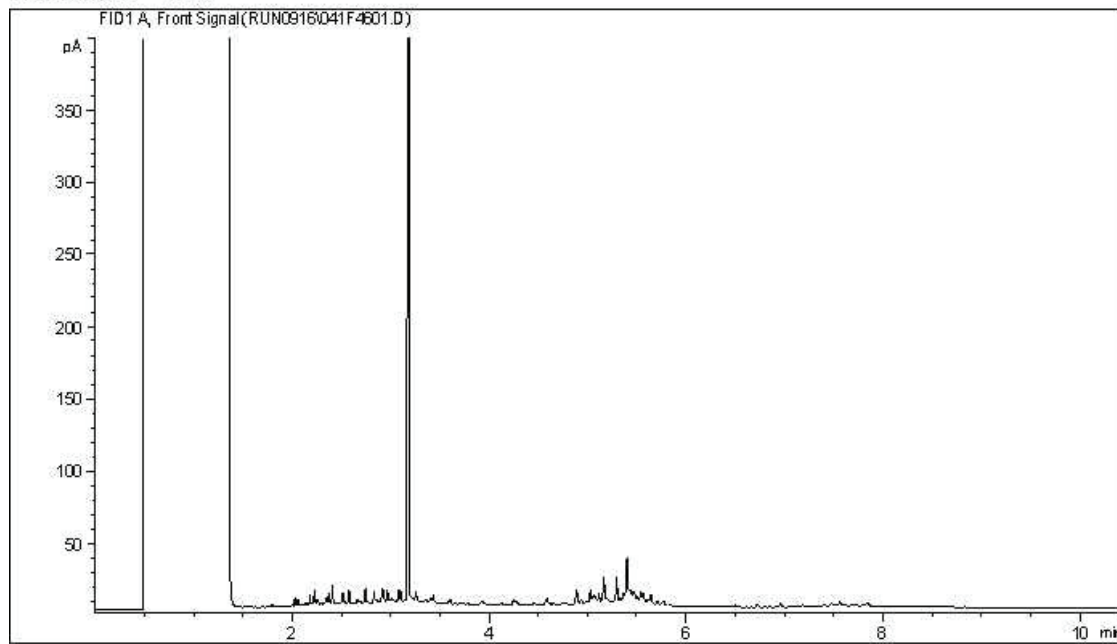
White BV Labs Yellow Client

\* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV 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.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.

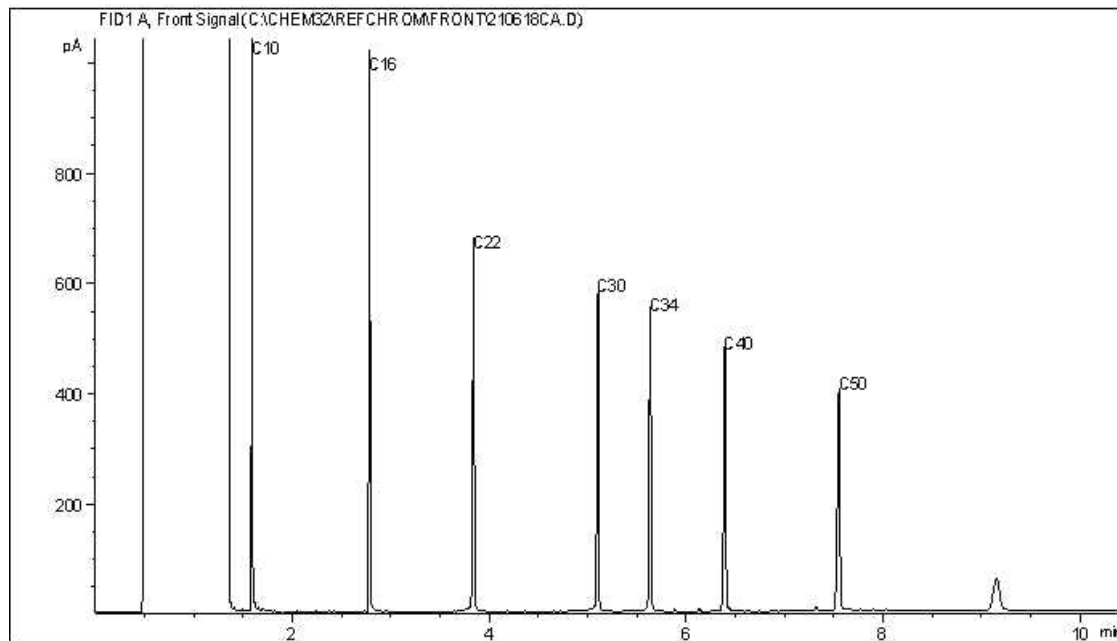


CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



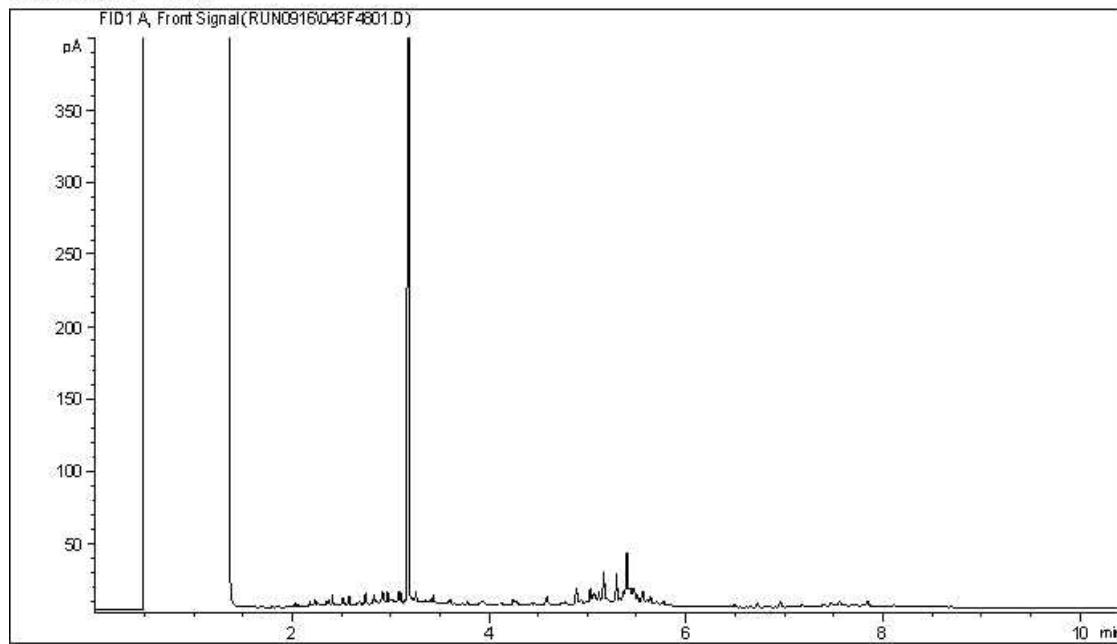
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Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

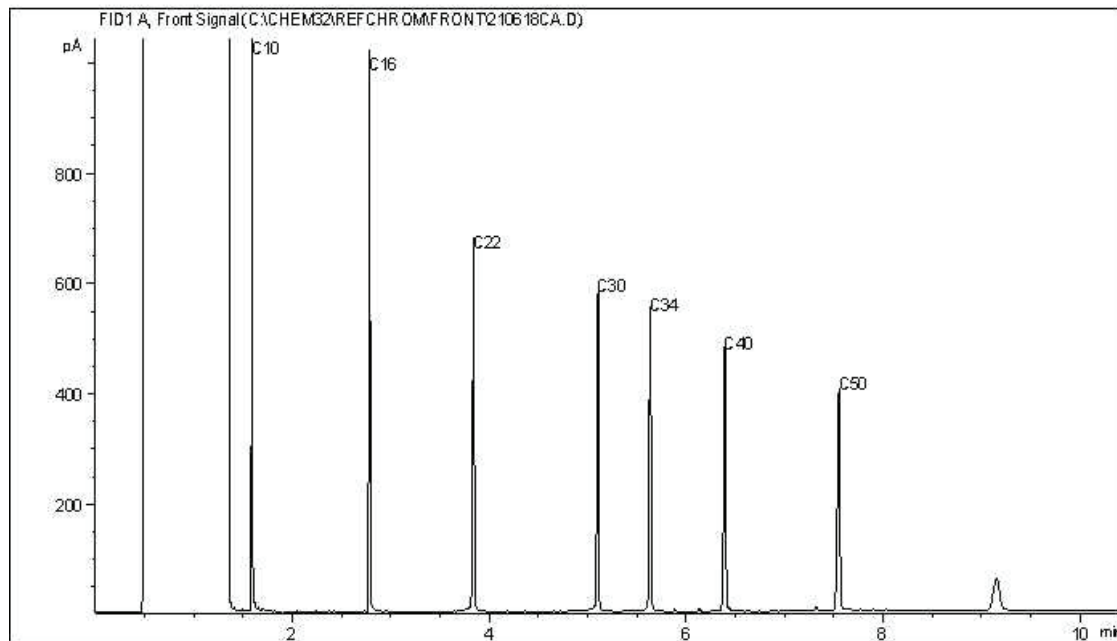
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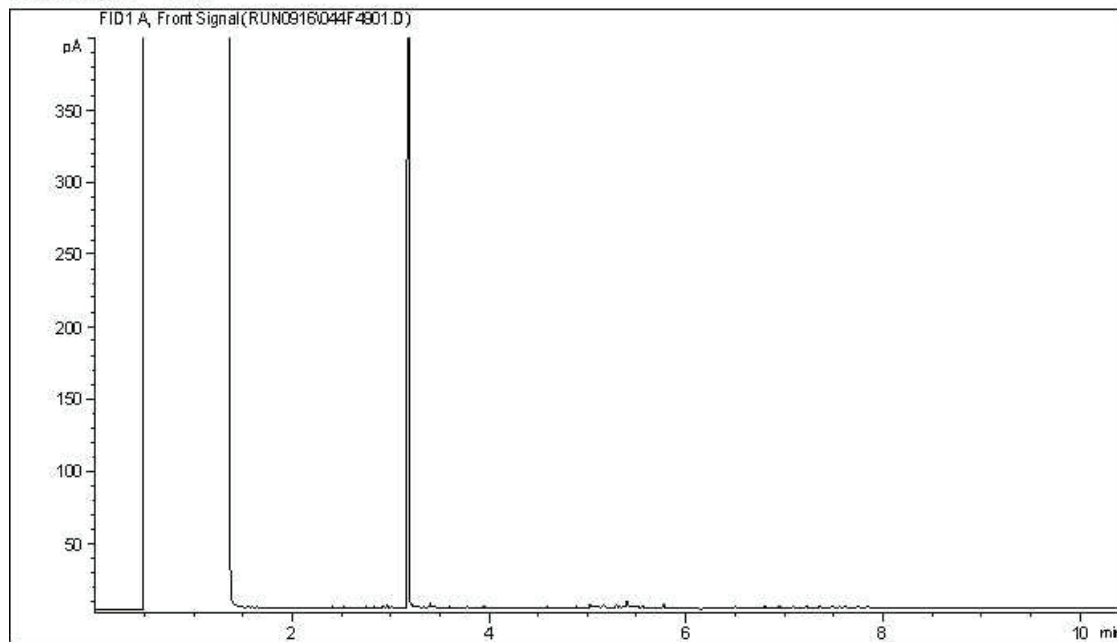
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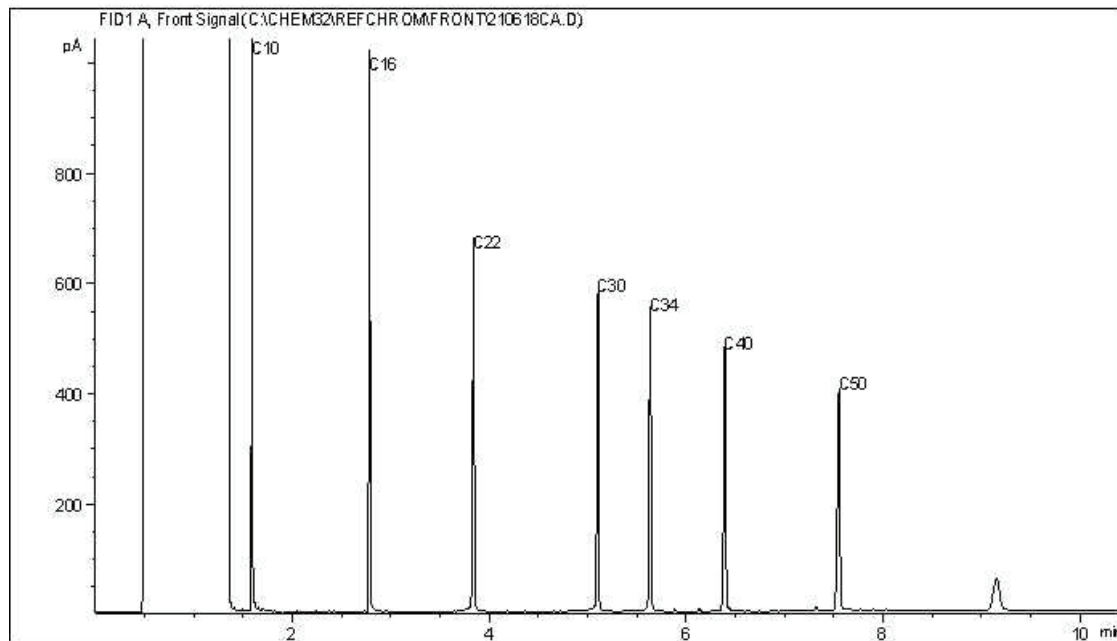
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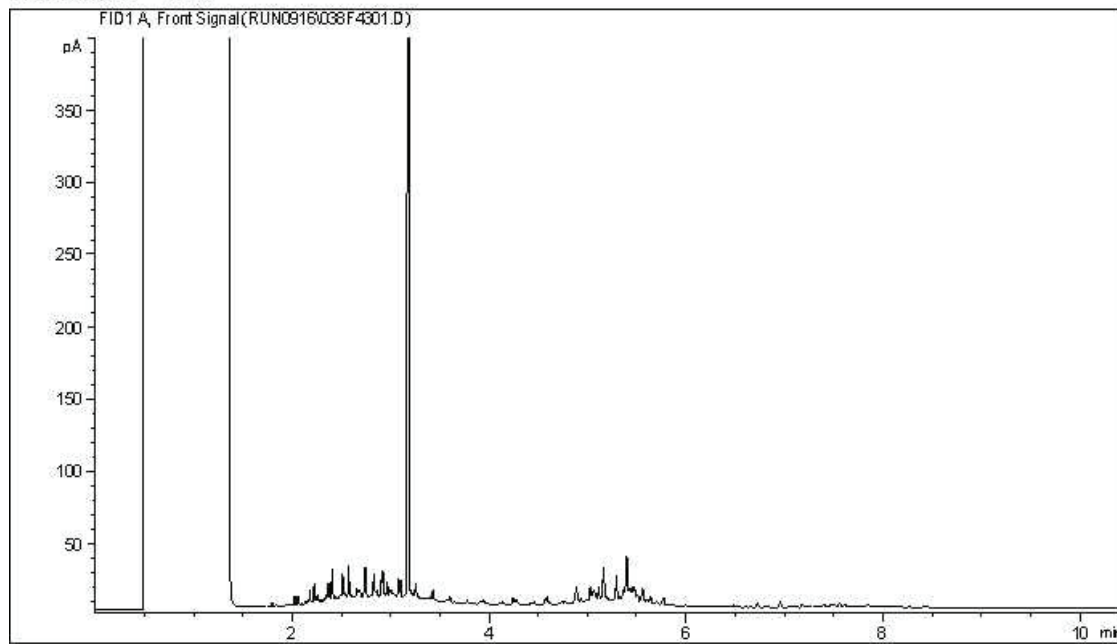
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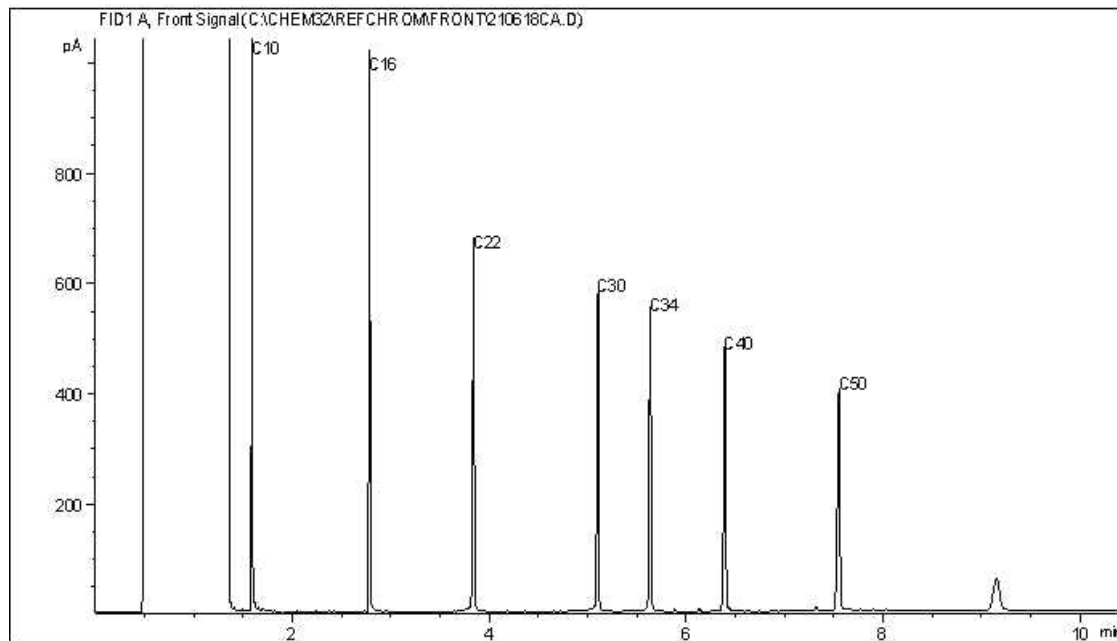


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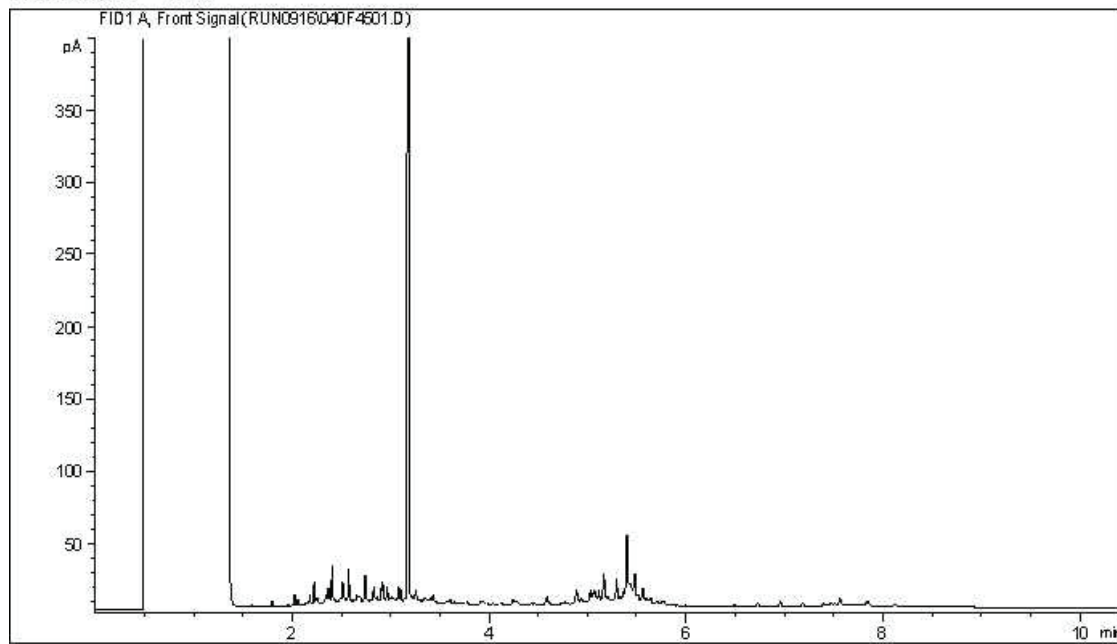
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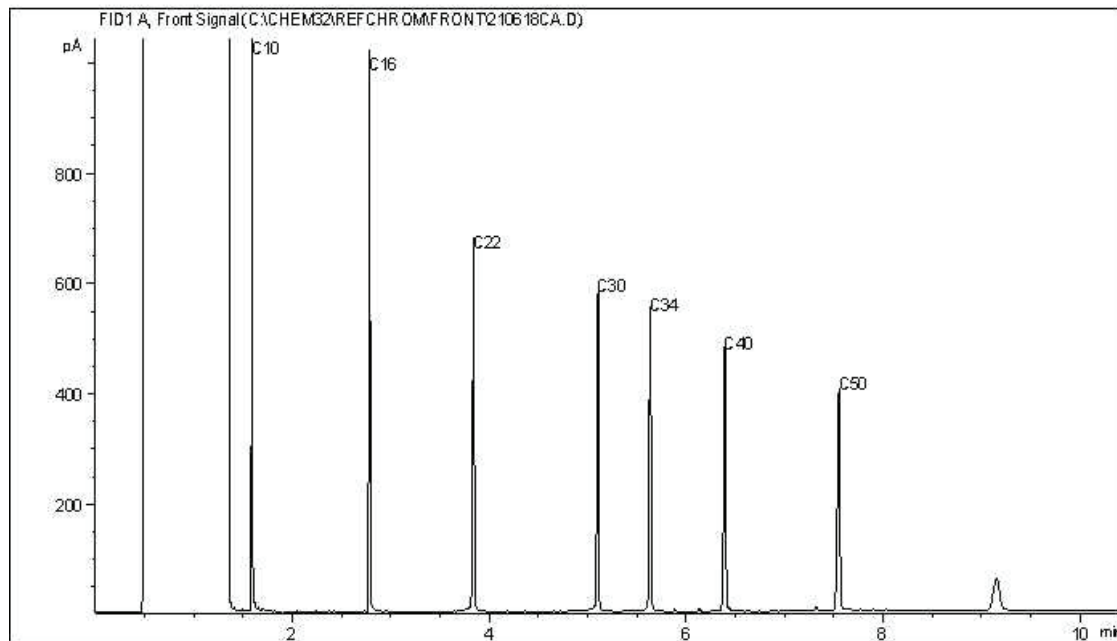
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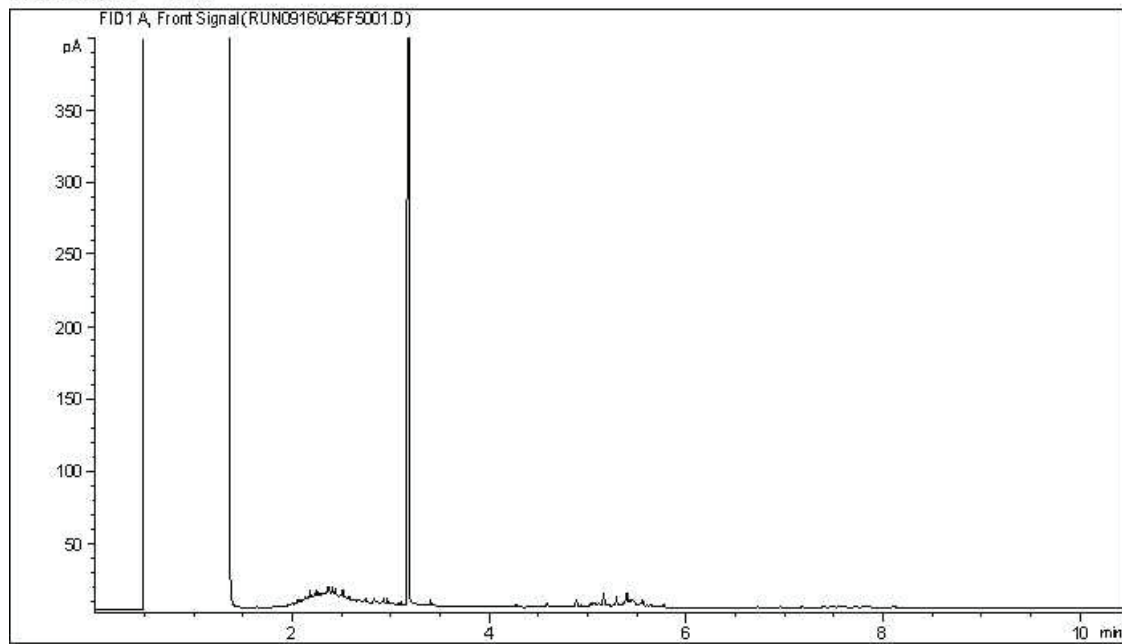
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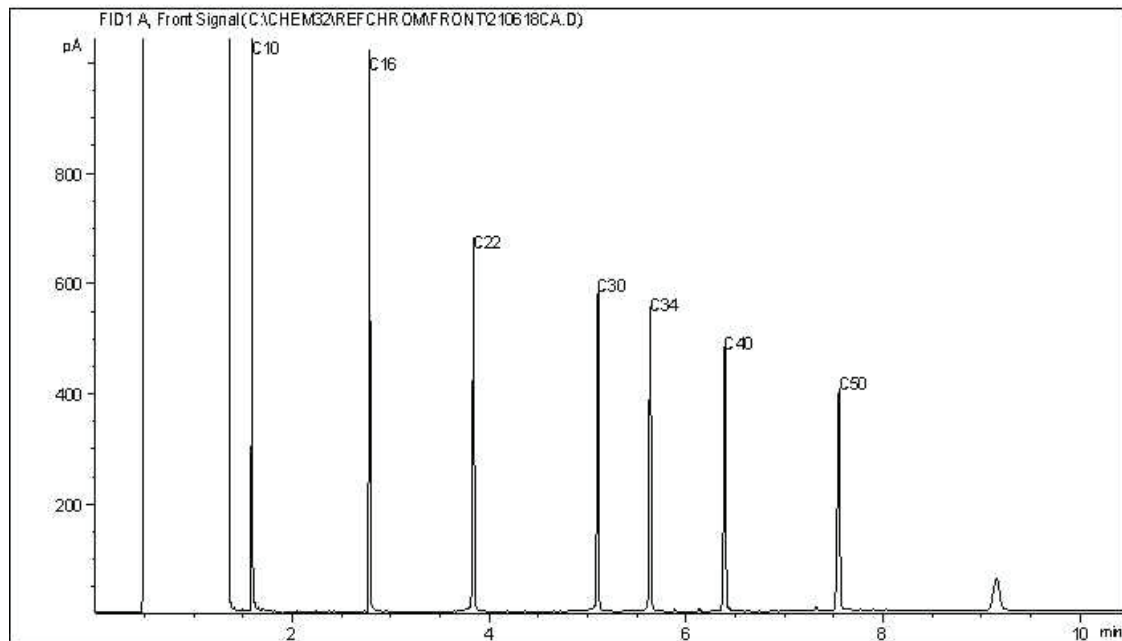
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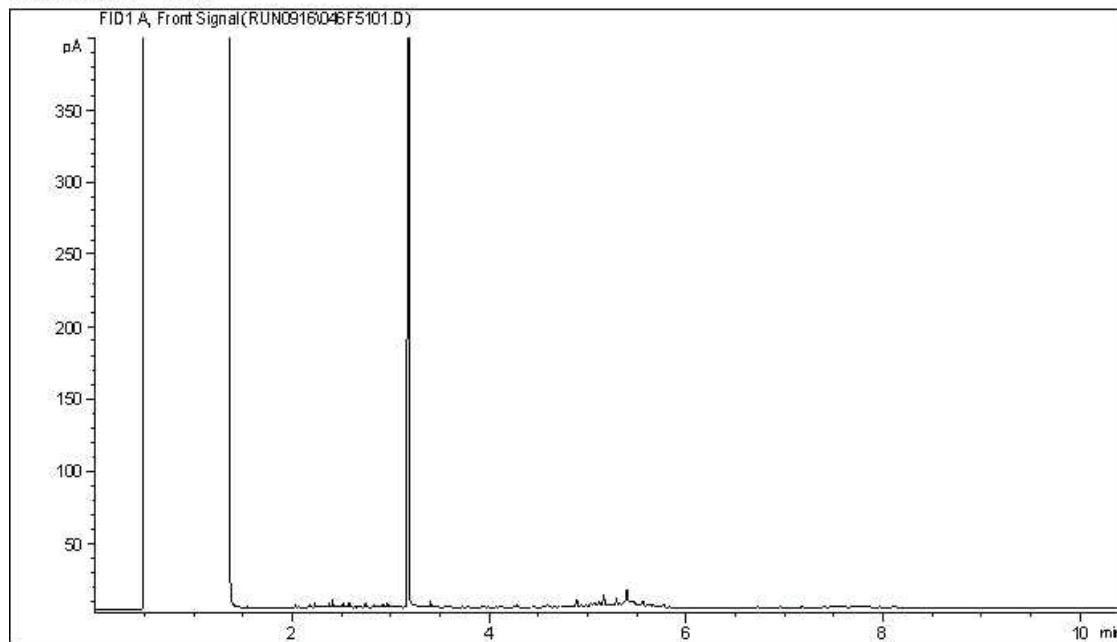
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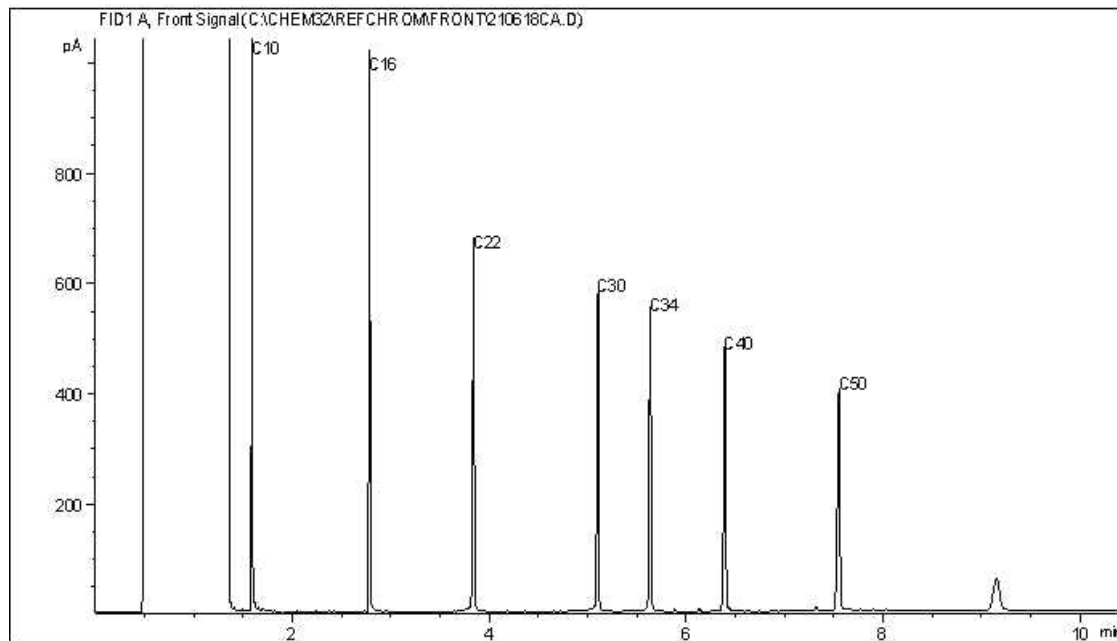


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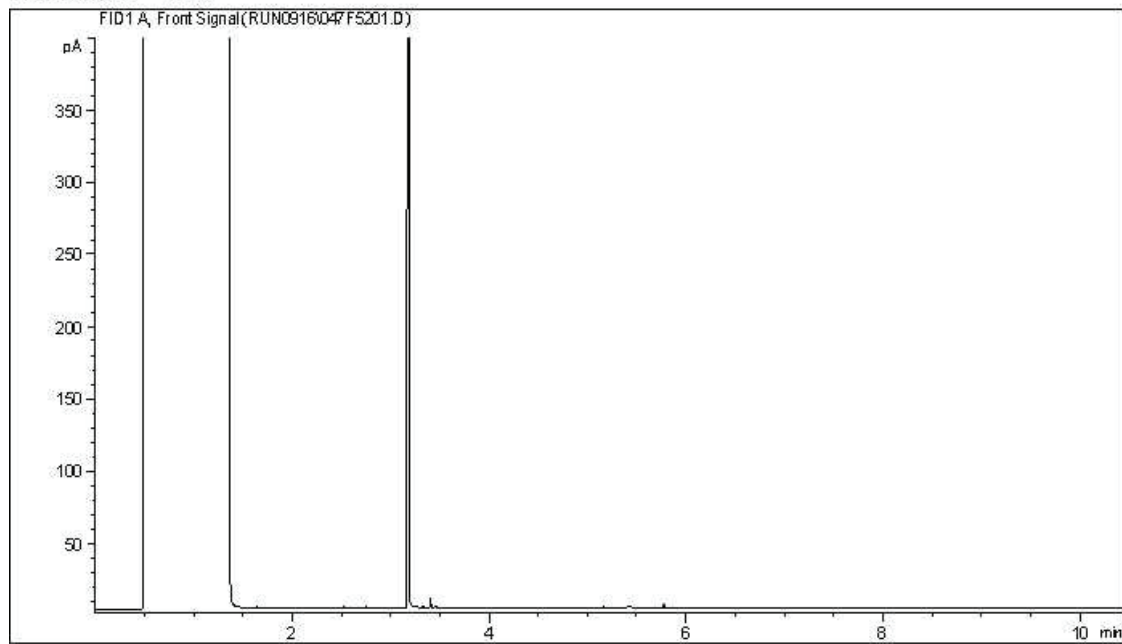
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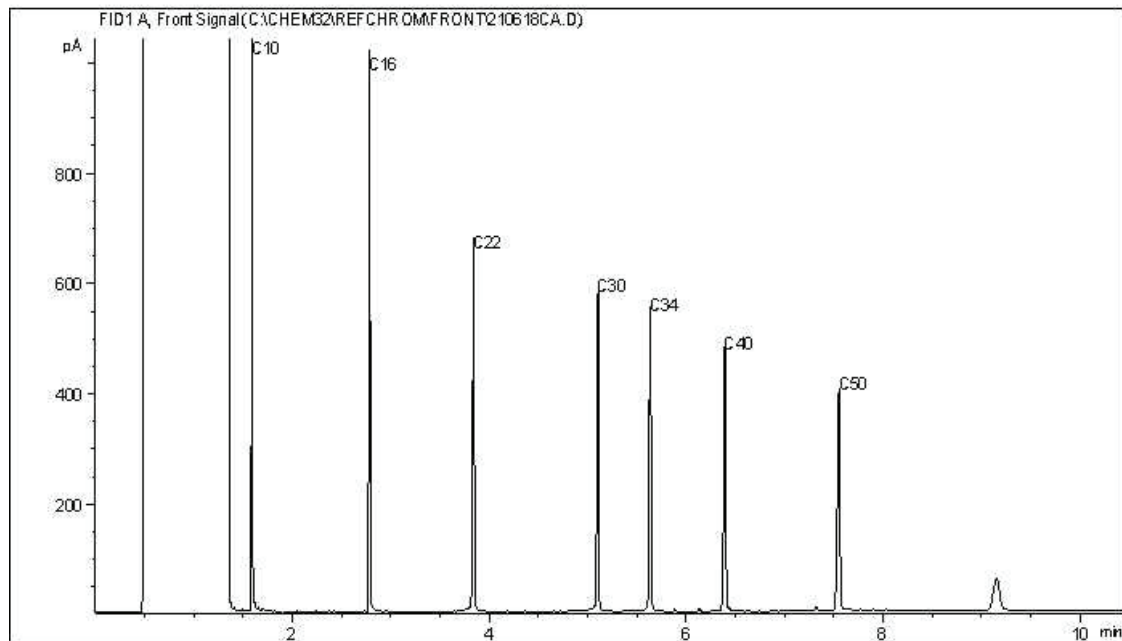
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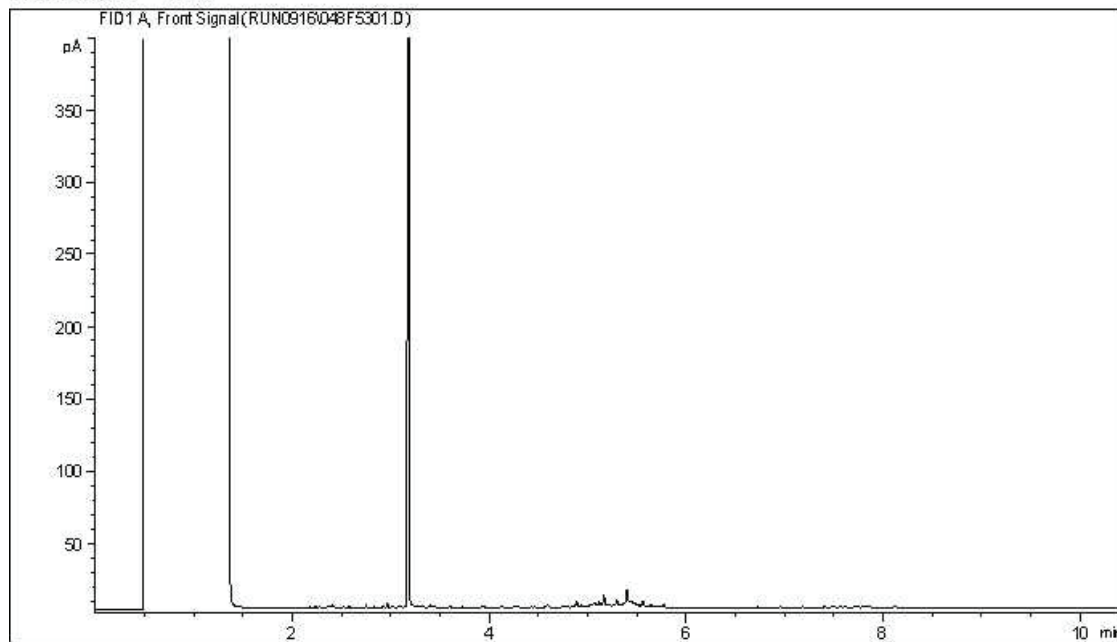
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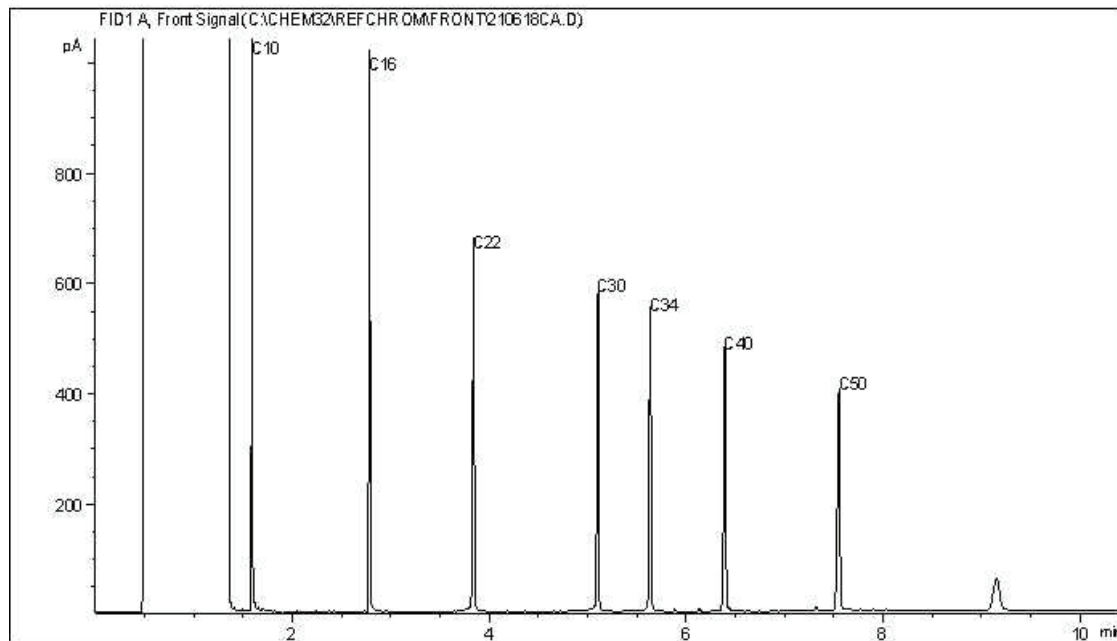
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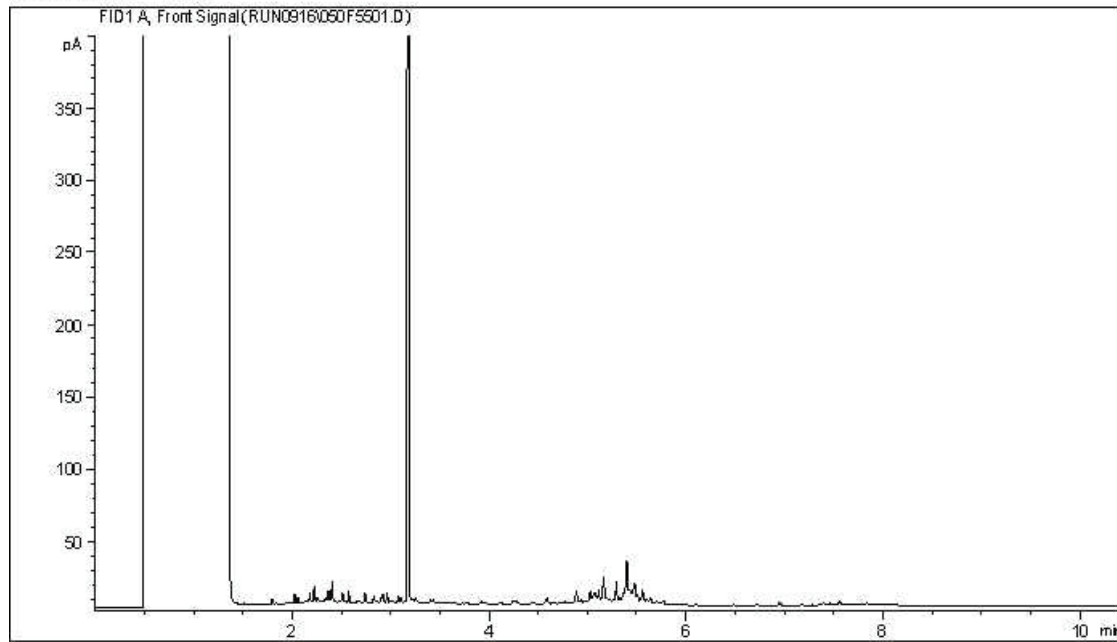
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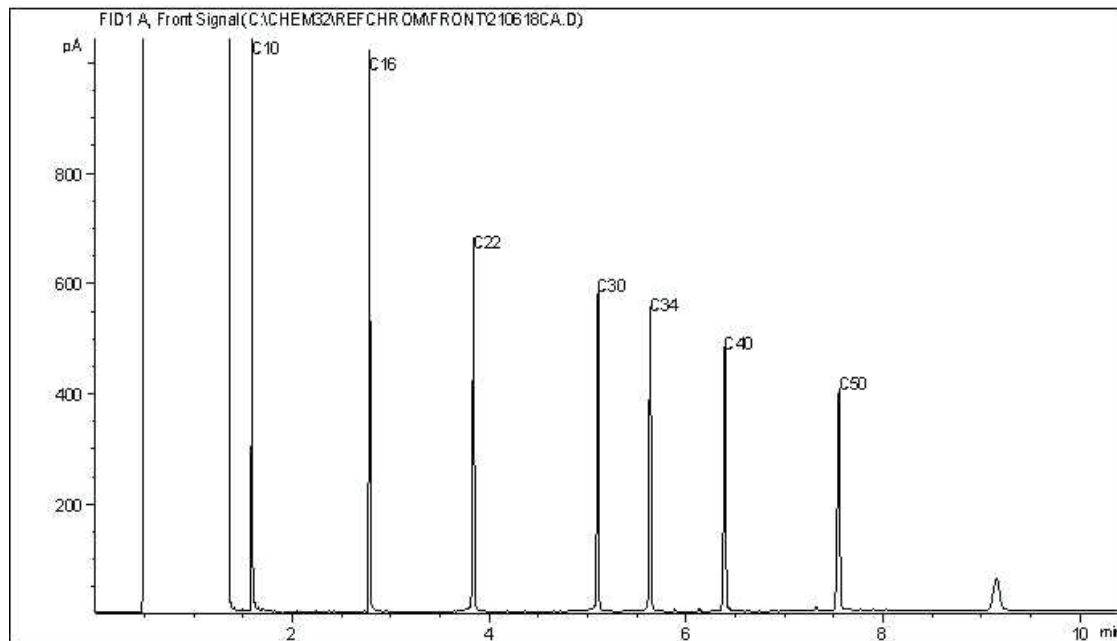
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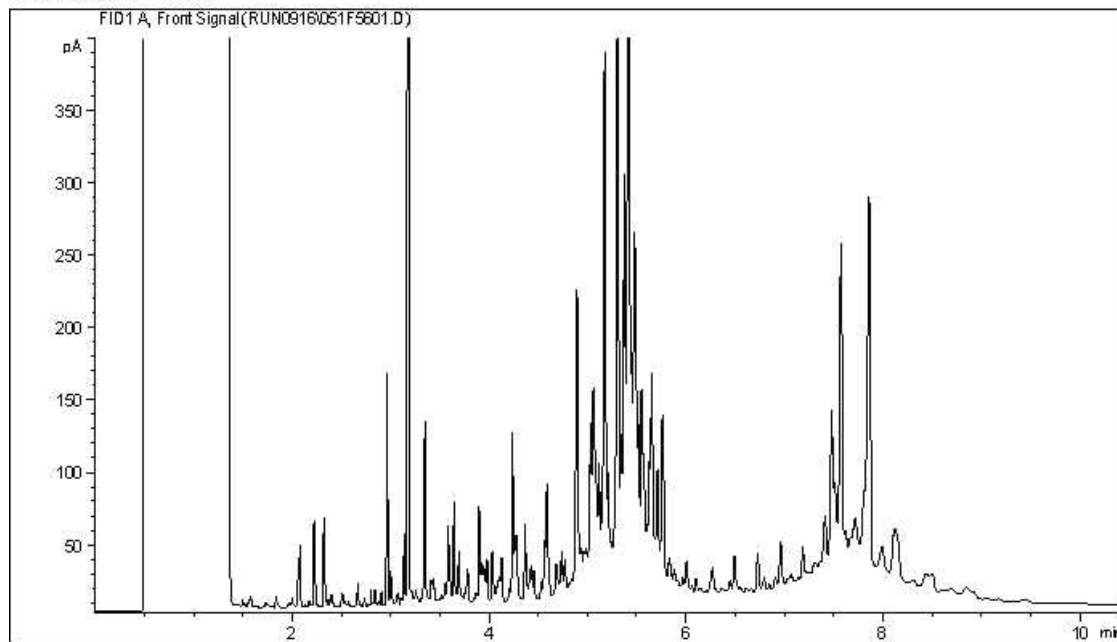
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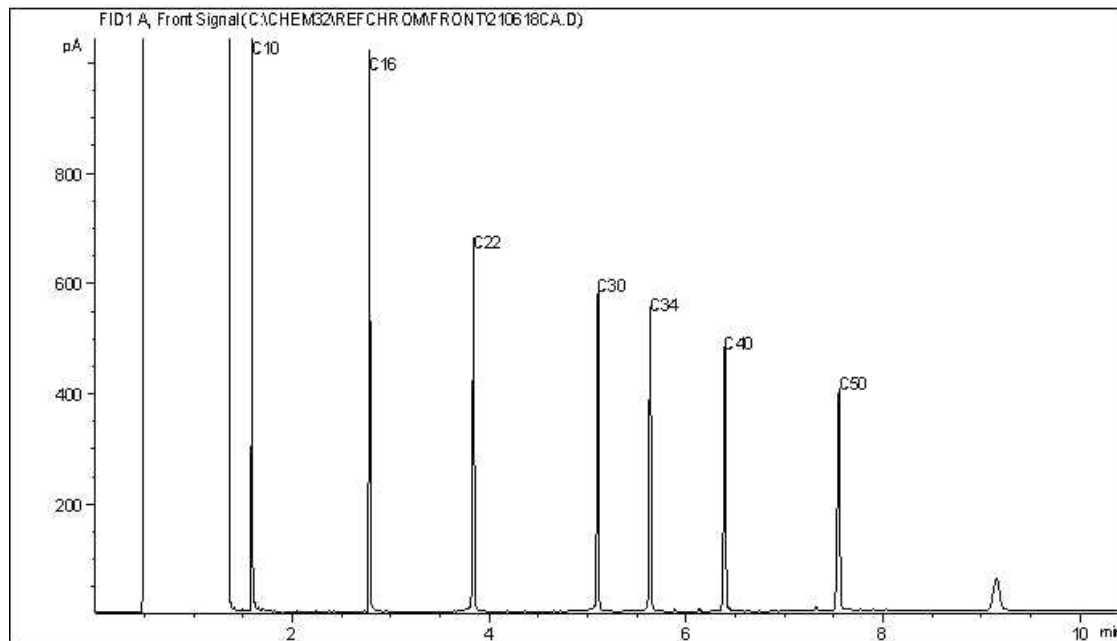
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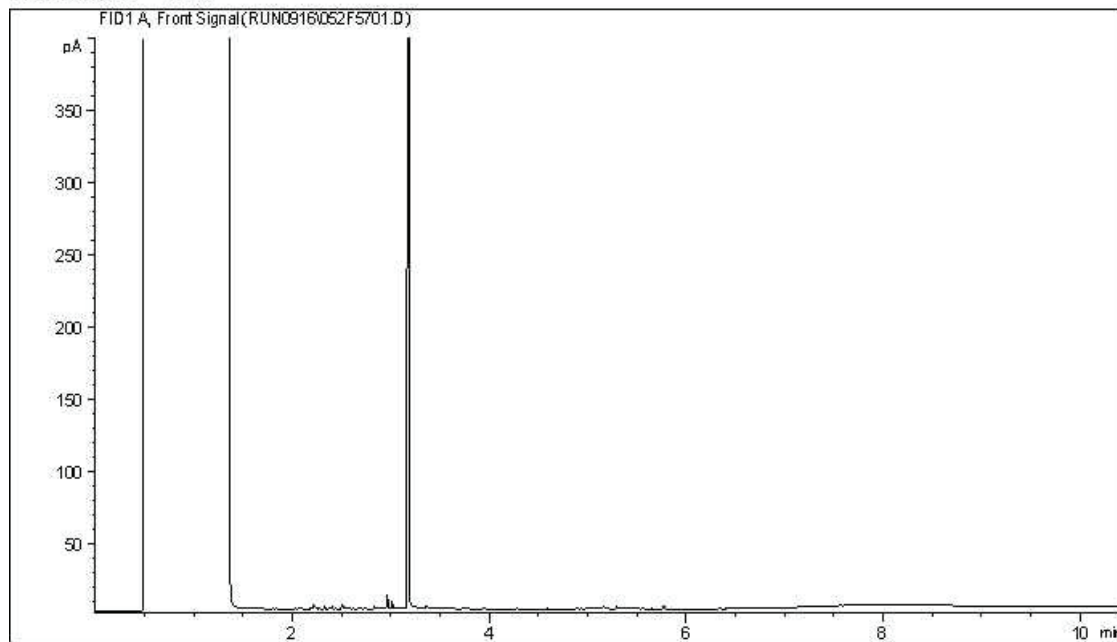
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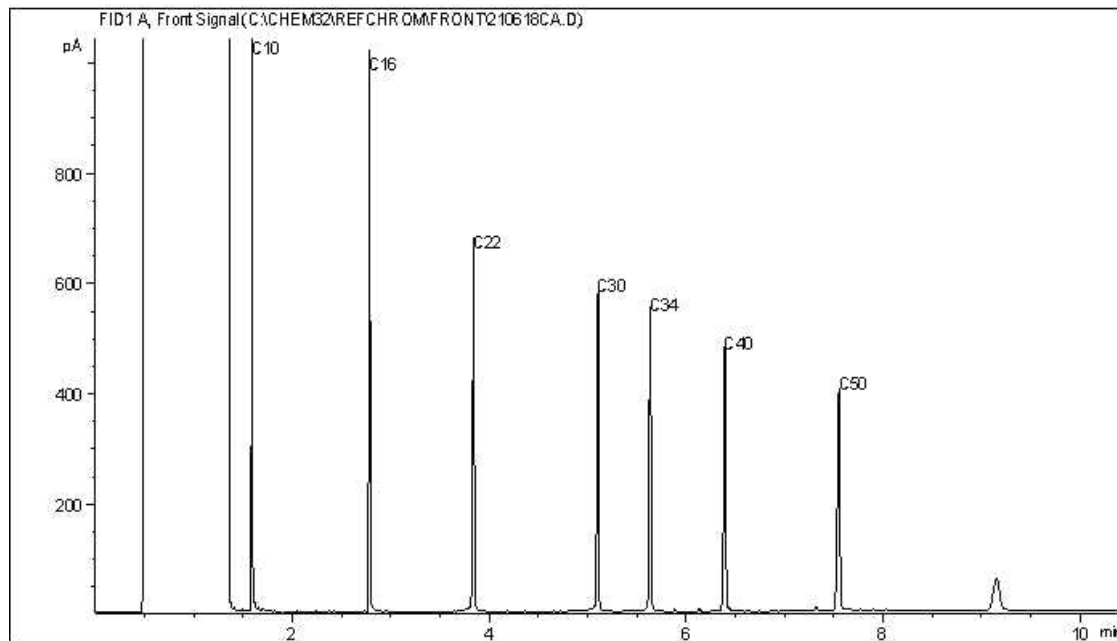


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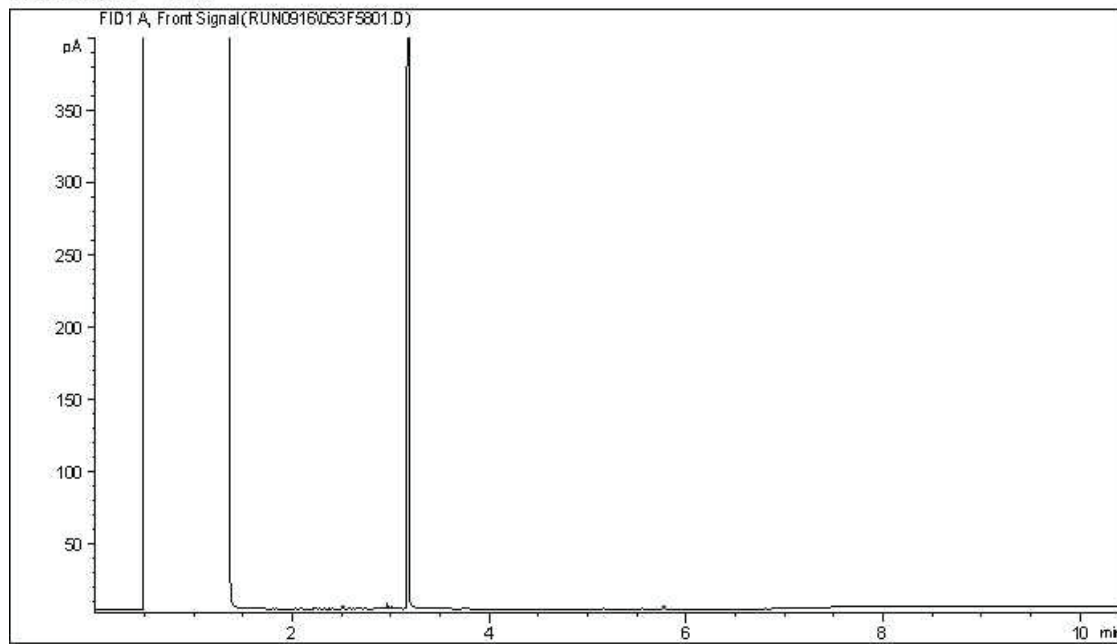
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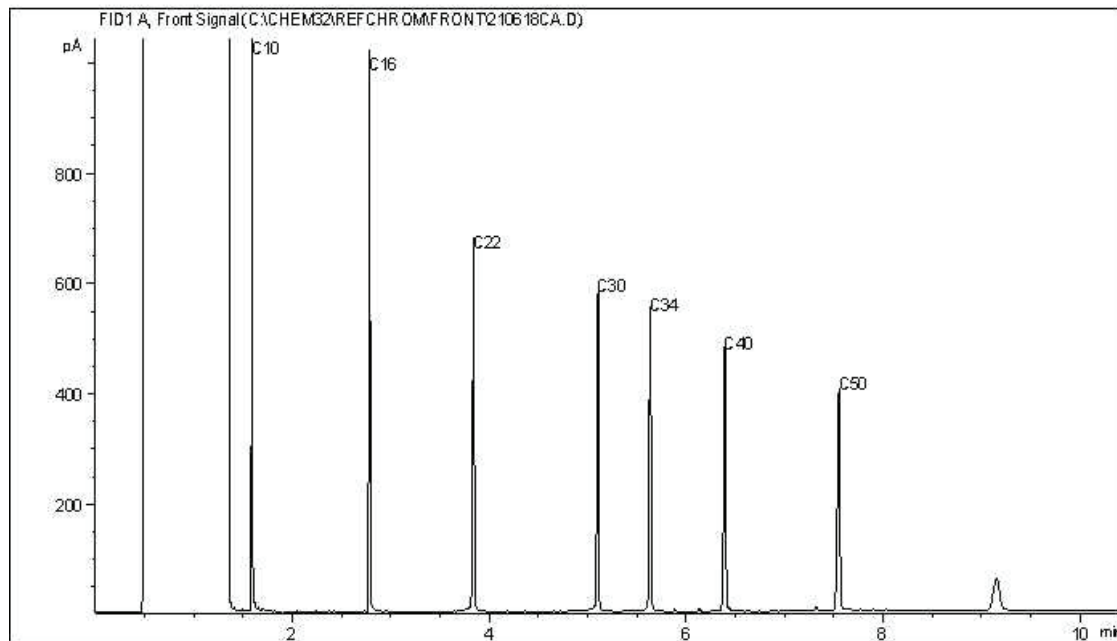
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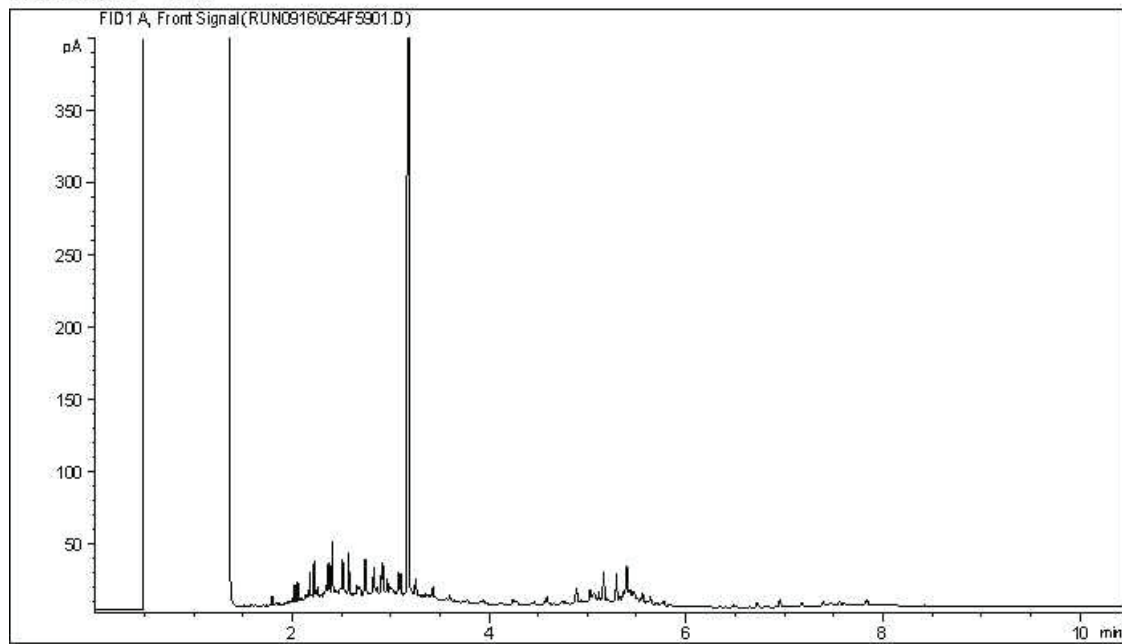
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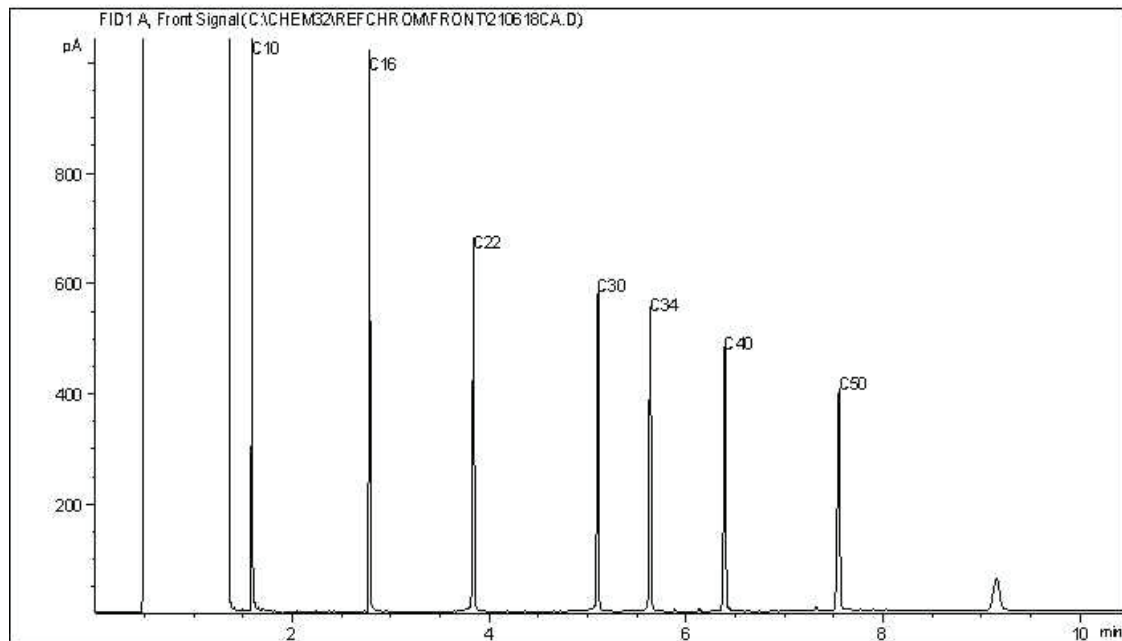
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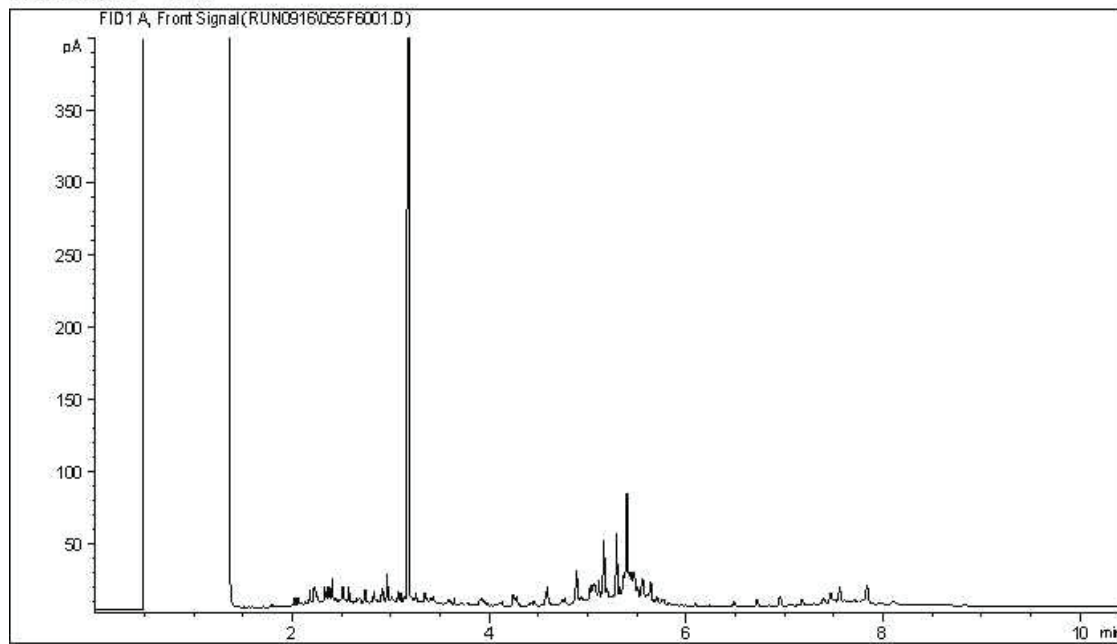
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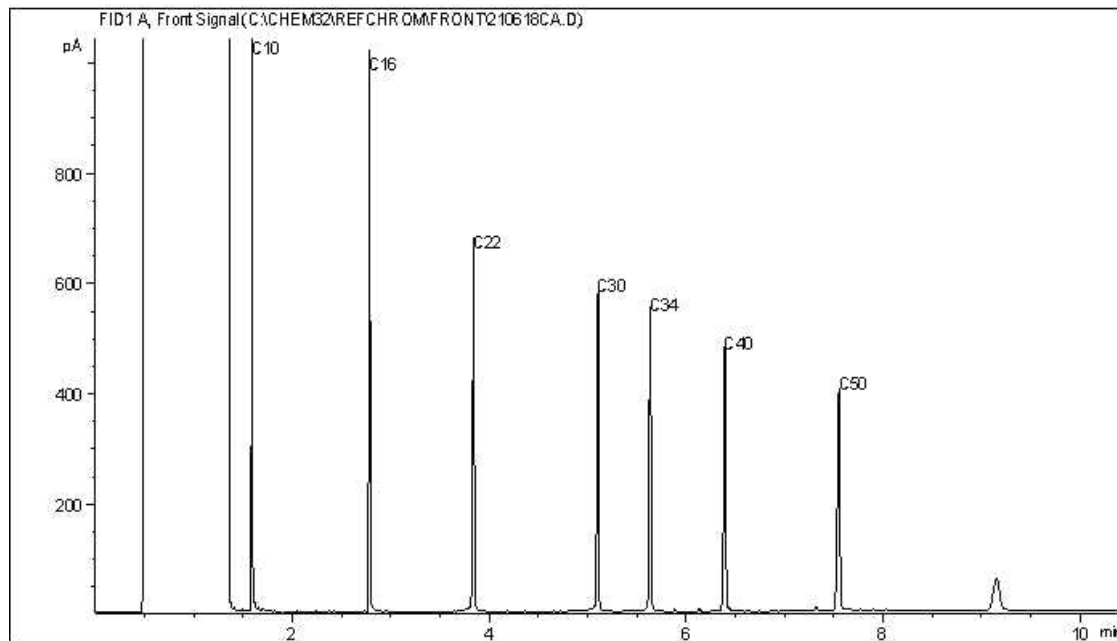


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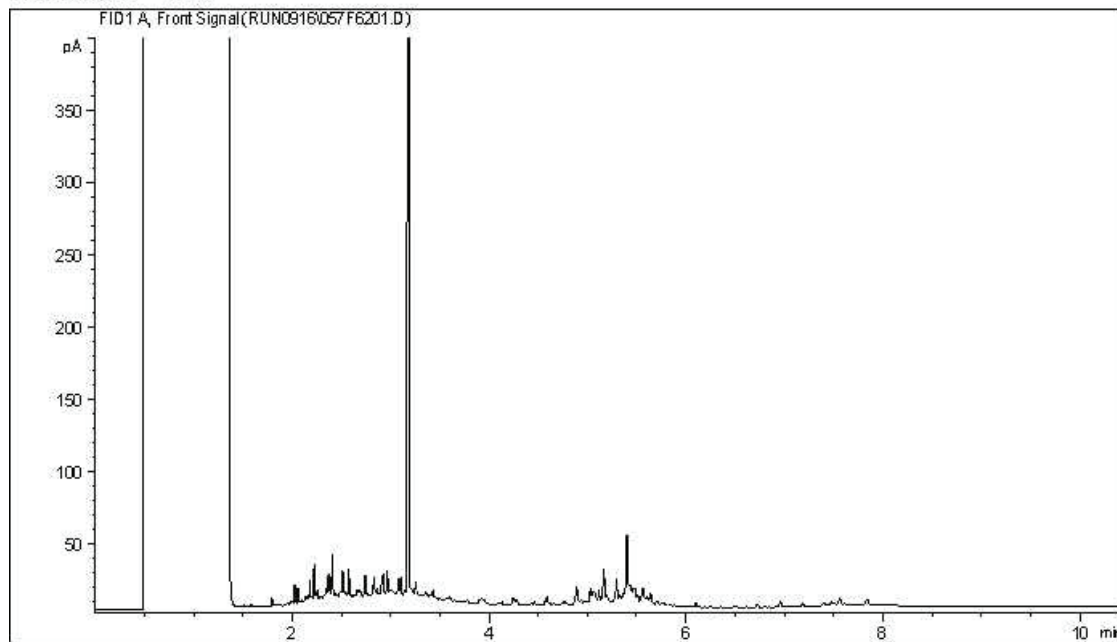
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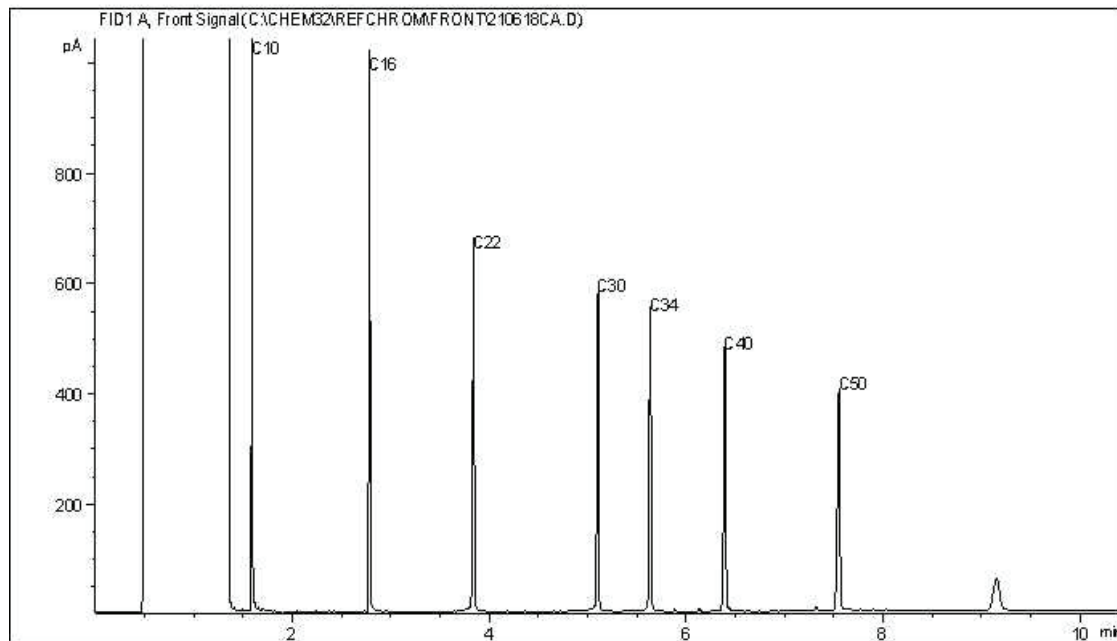
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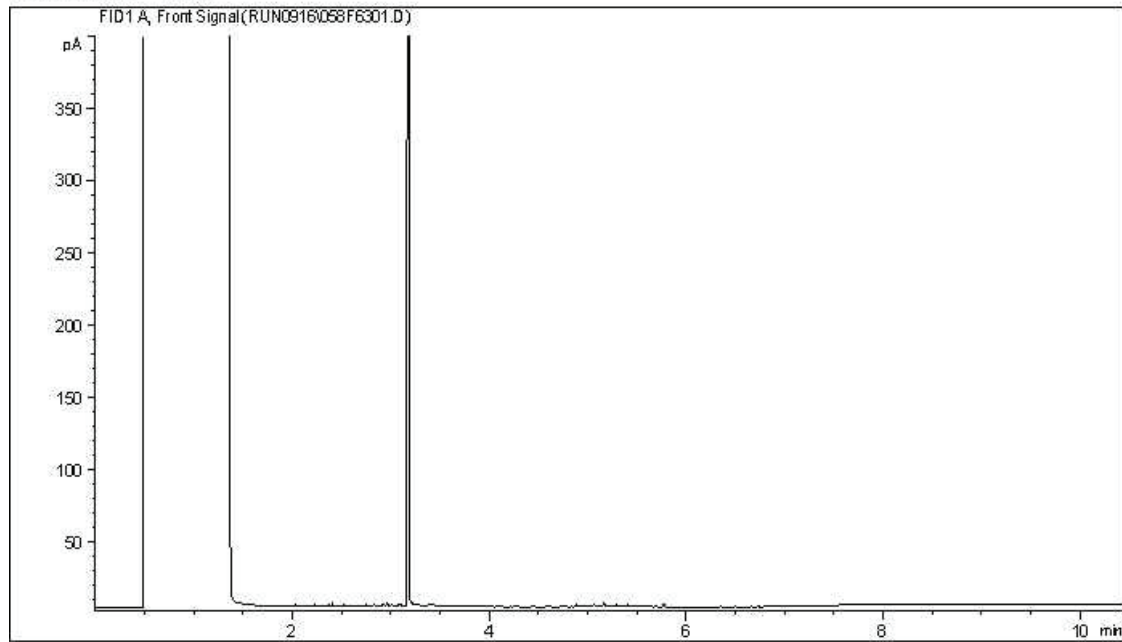
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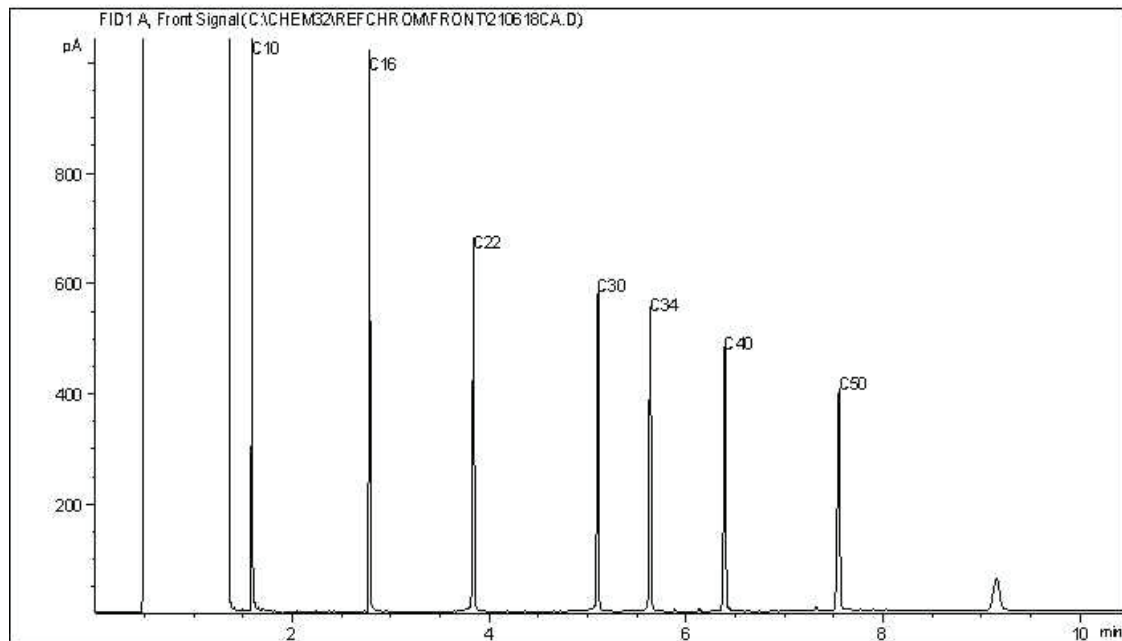
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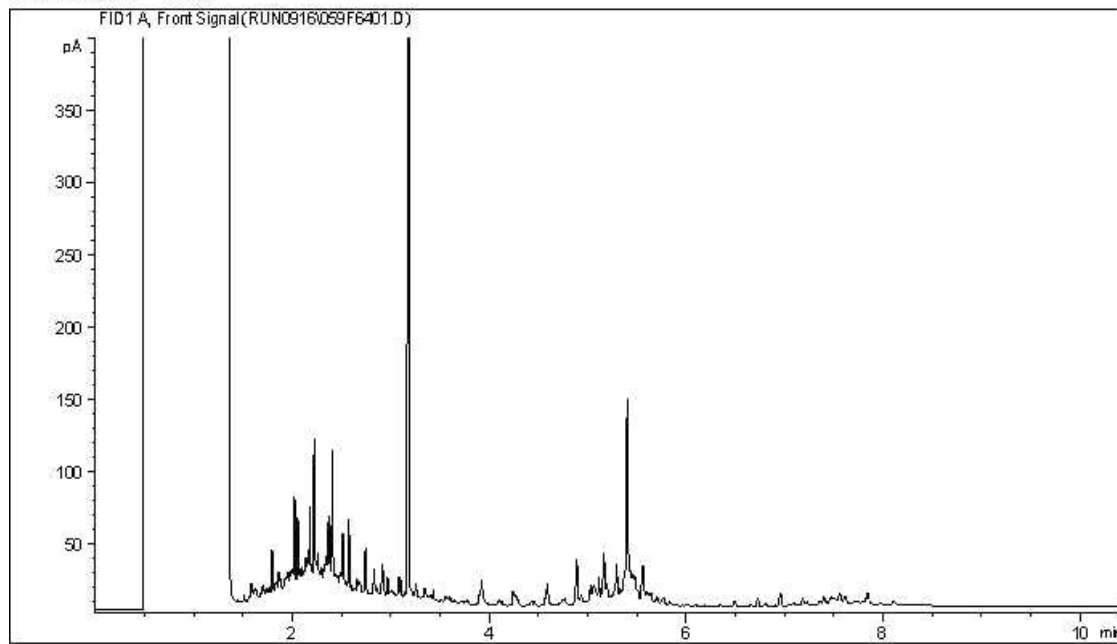
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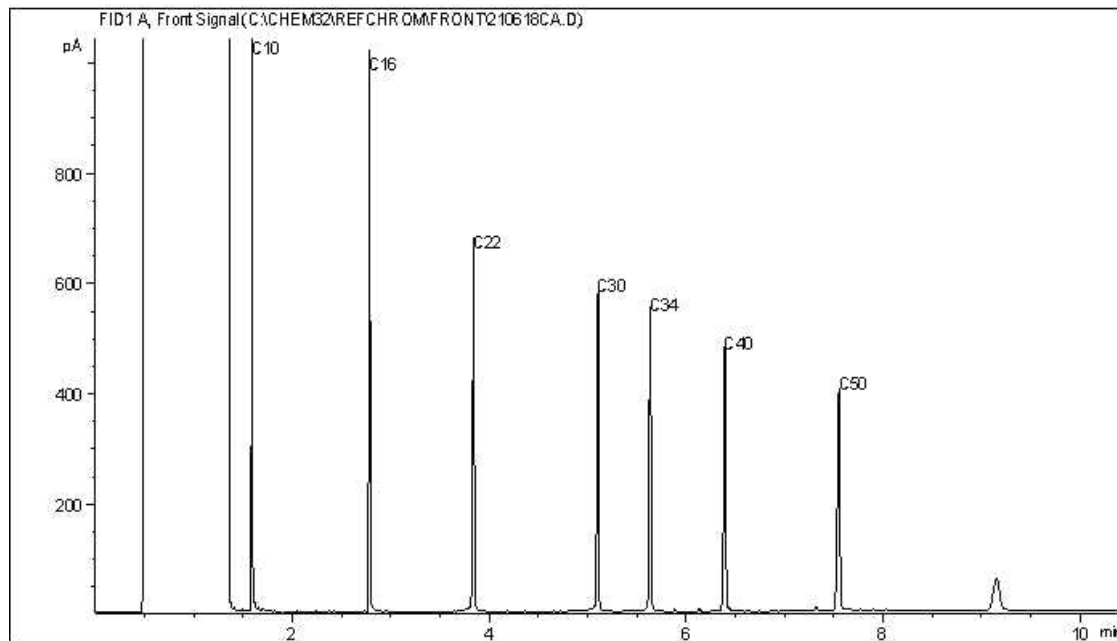


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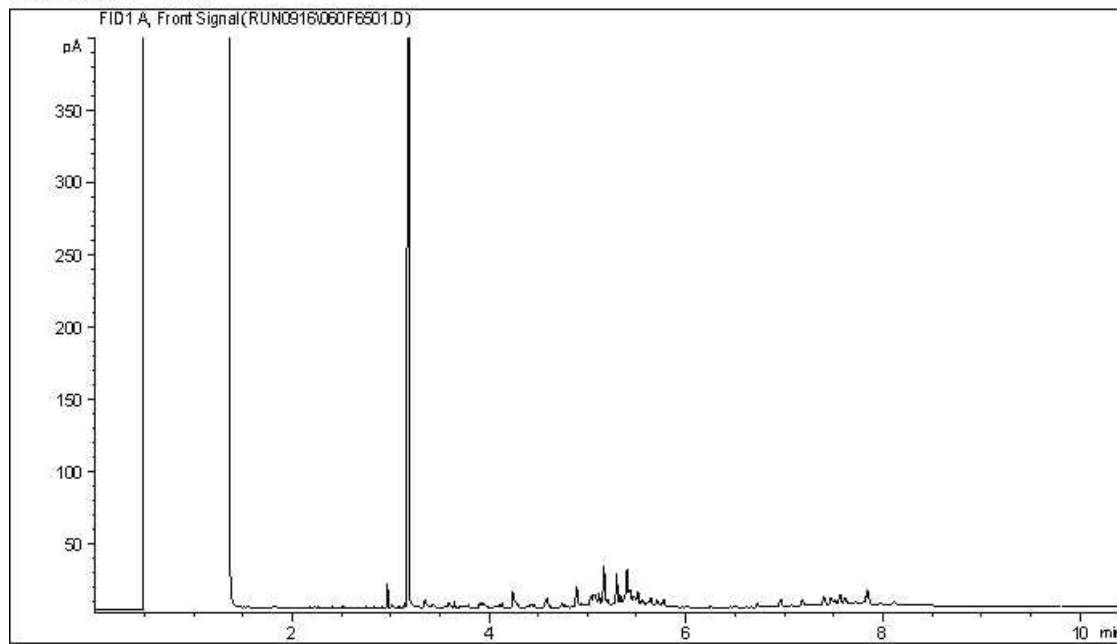
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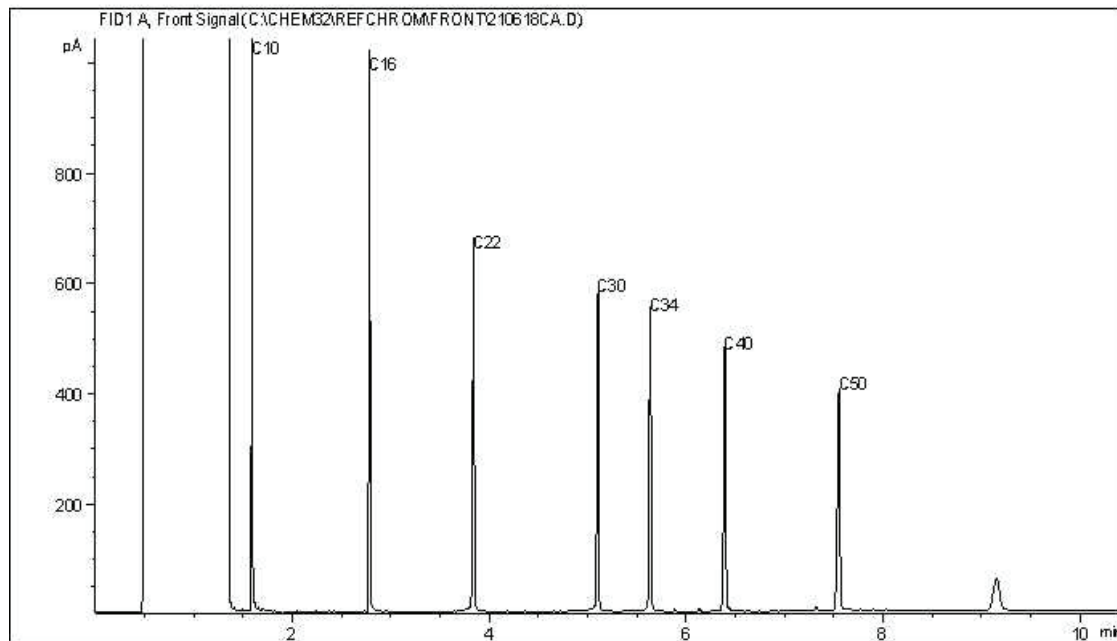
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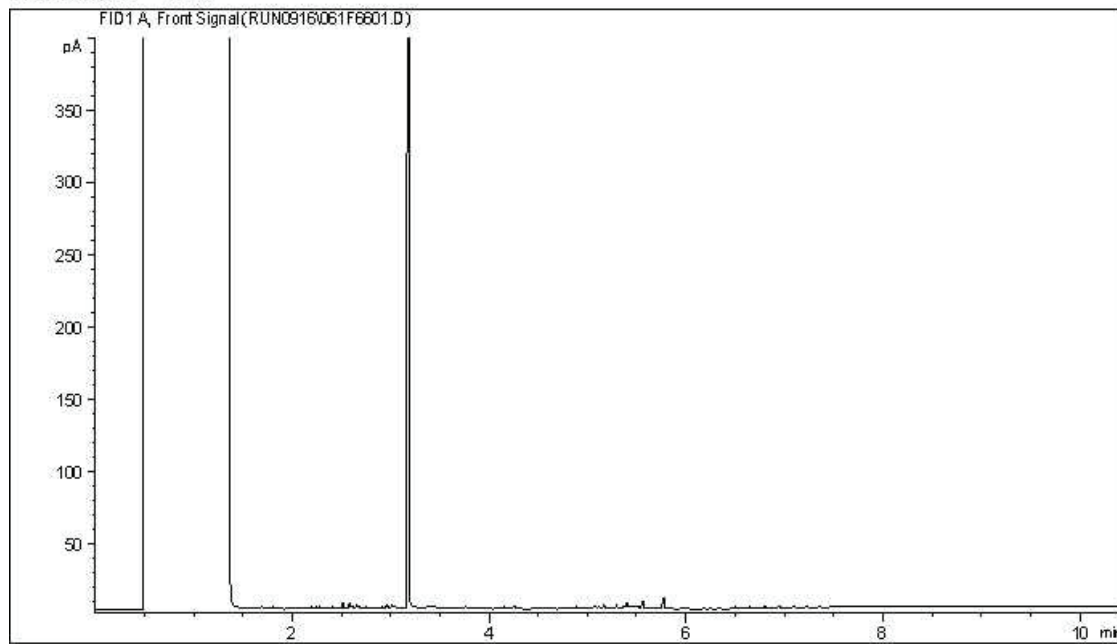
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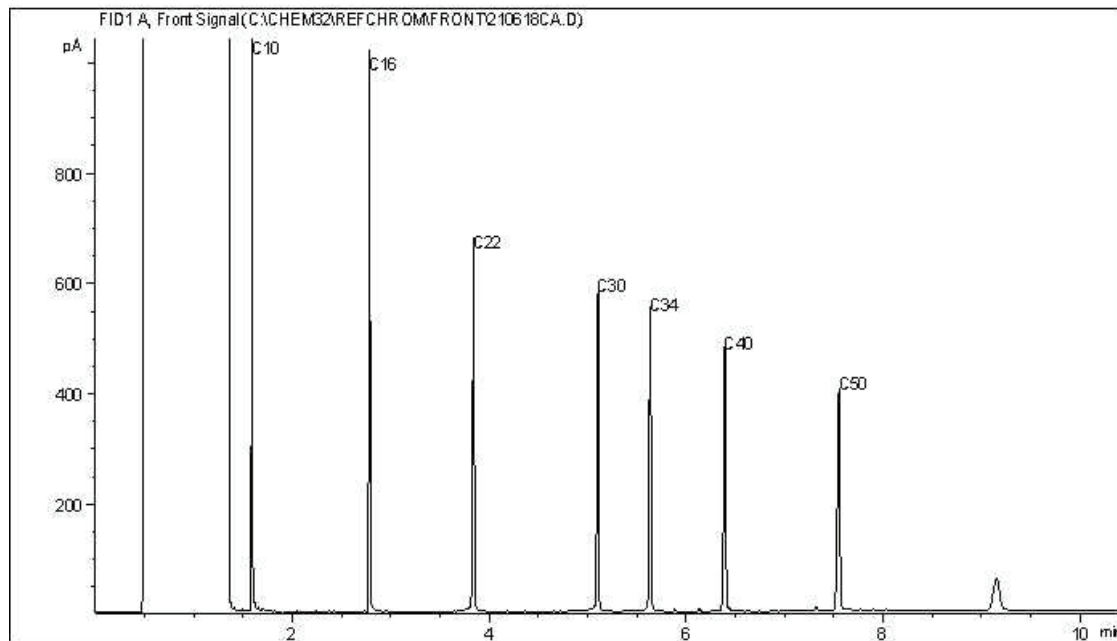
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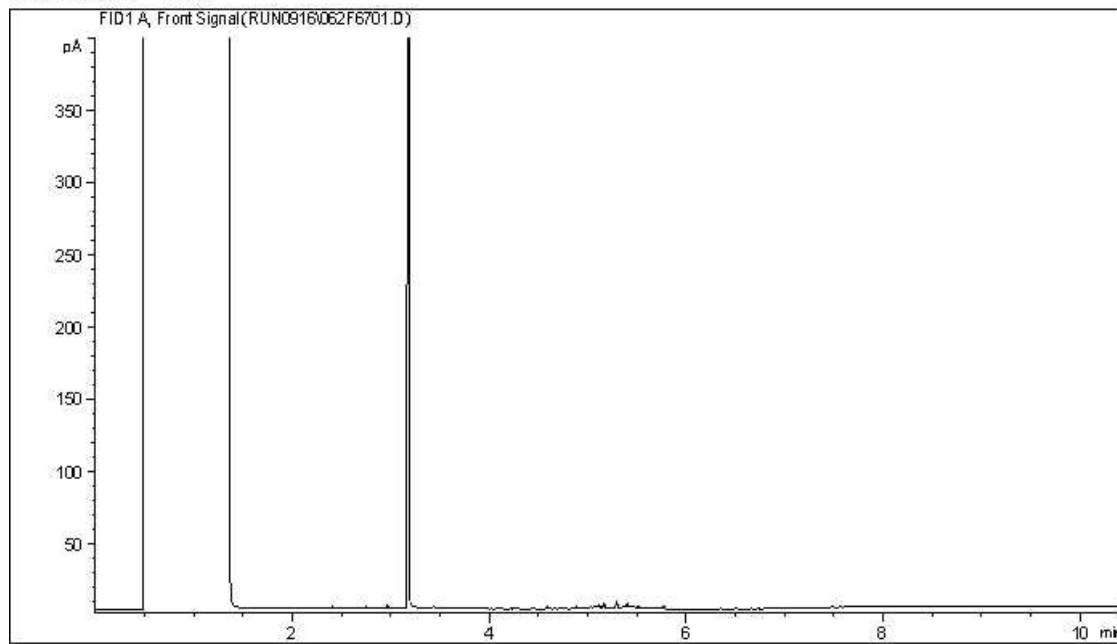
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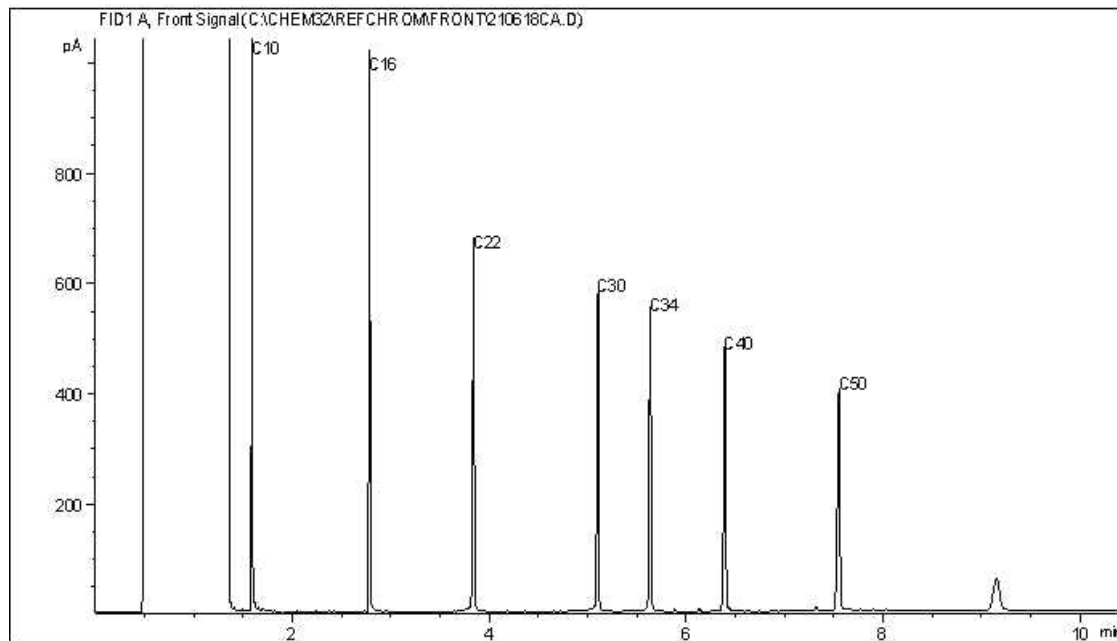


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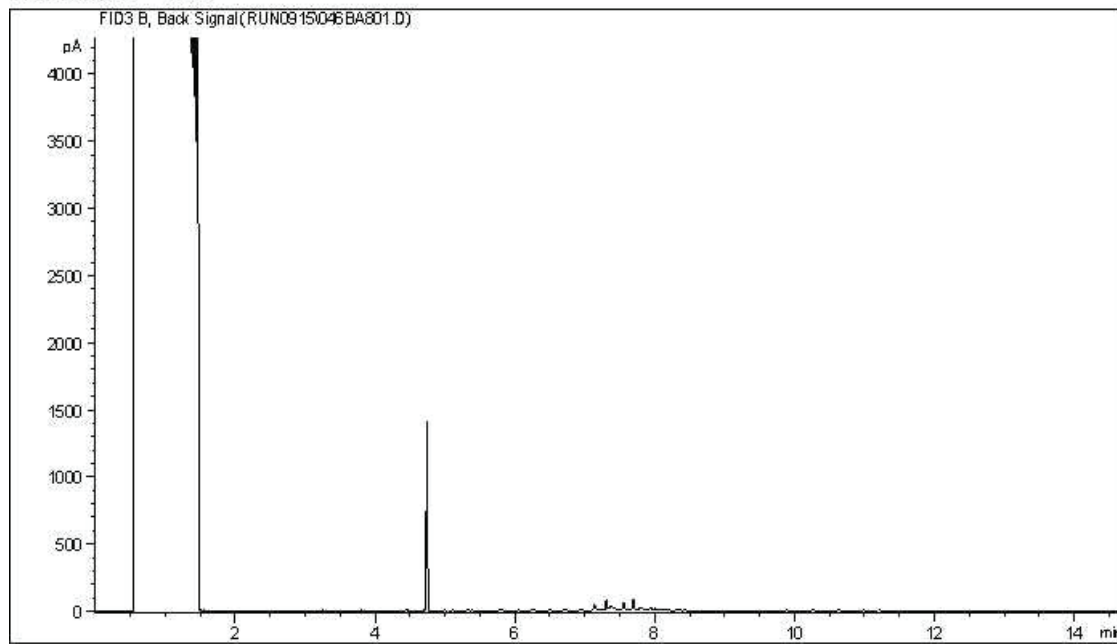
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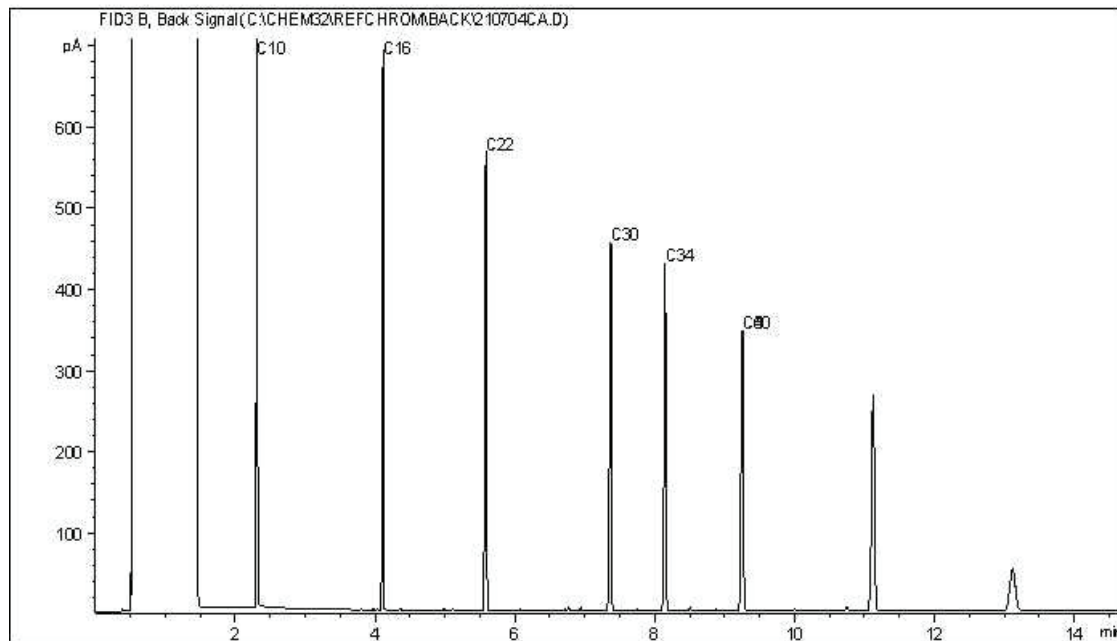
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC19



Carbon Range Distribution - Reference Chromatogram



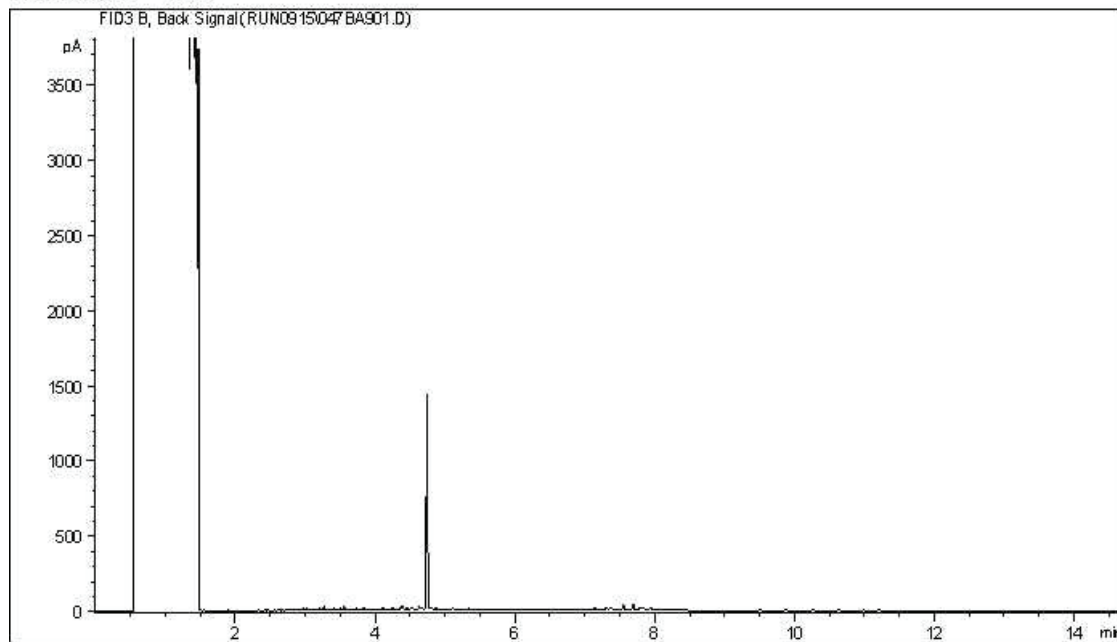
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

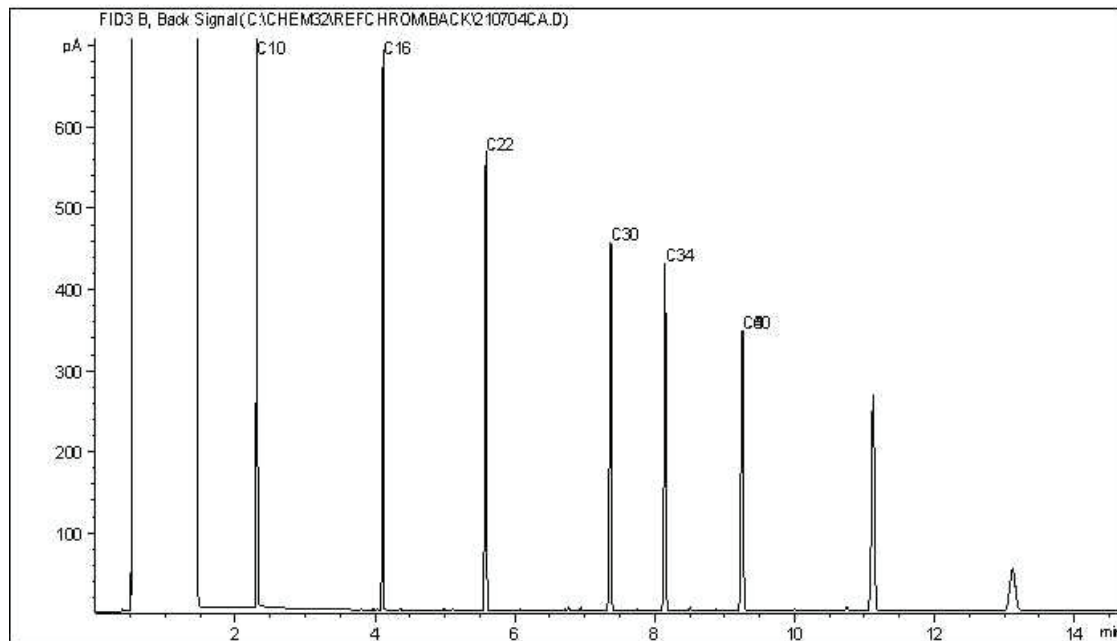
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC19



Carbon Range Distribution - Reference Chromatogram



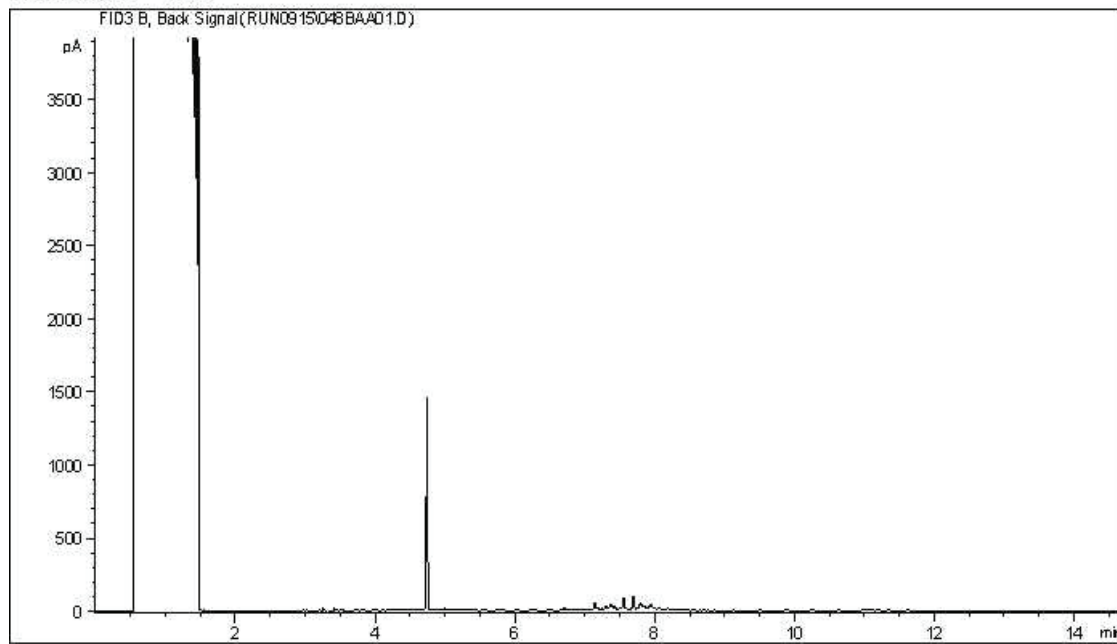
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

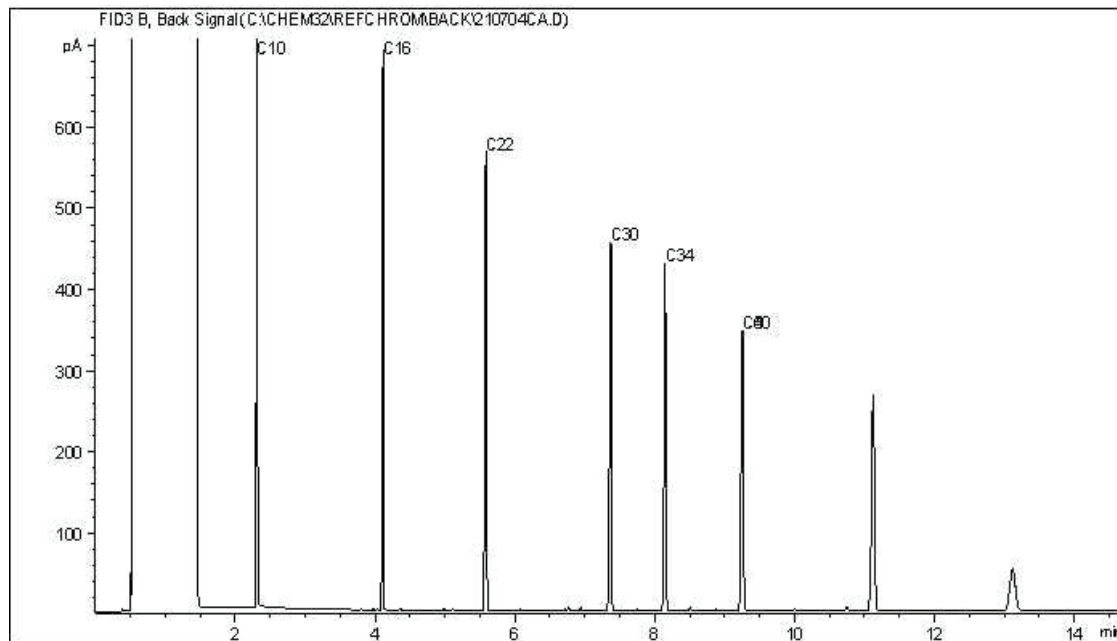
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC19



Carbon Range Distribution - Reference Chromatogram



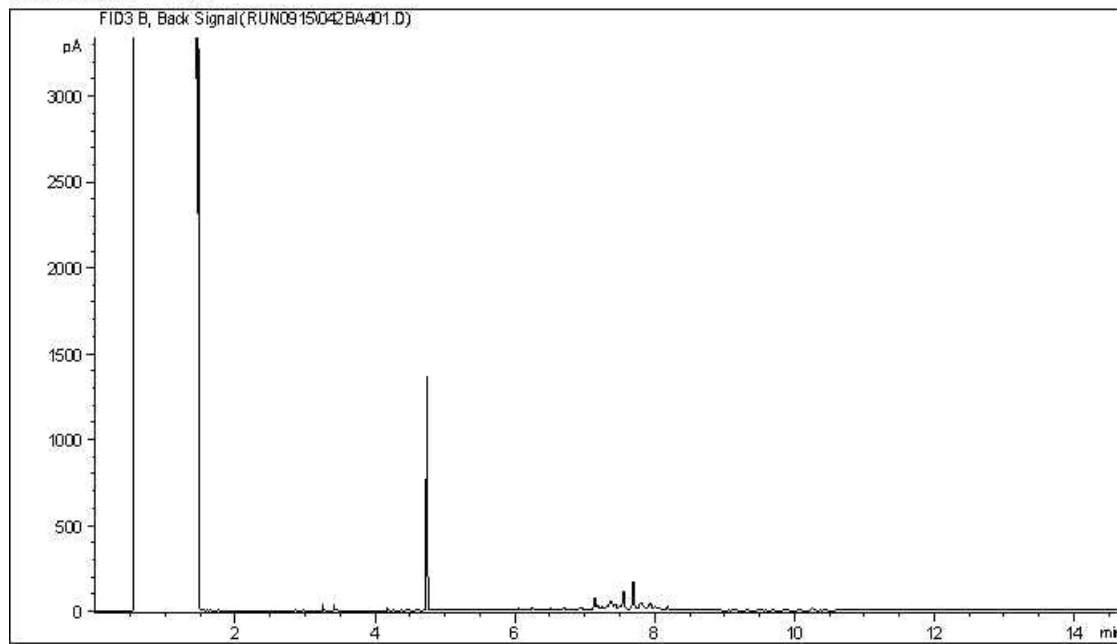
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

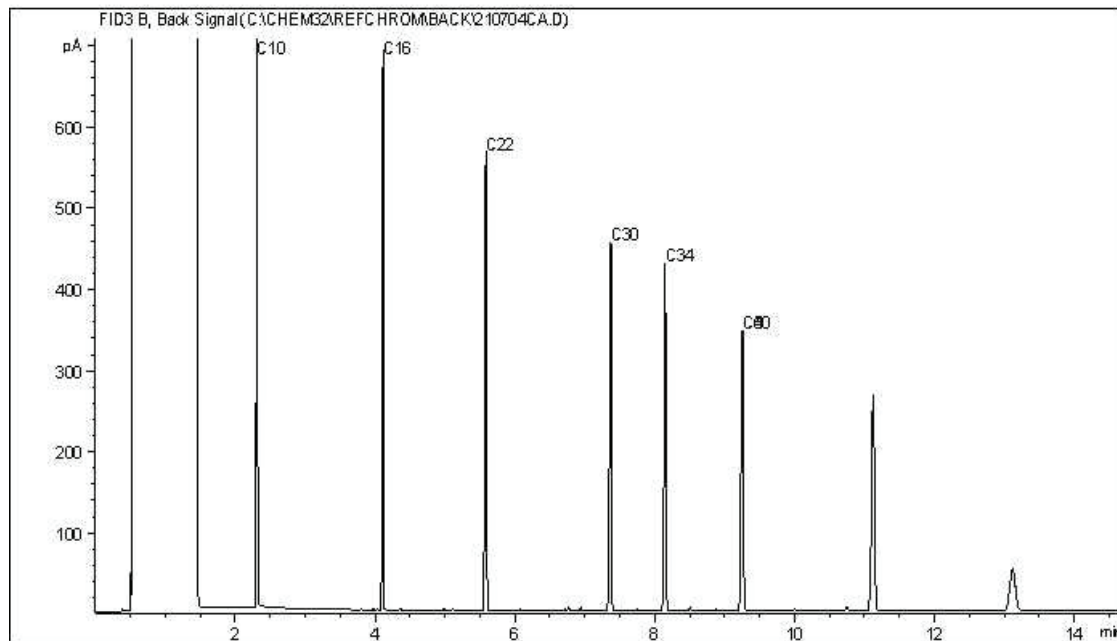
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC19



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

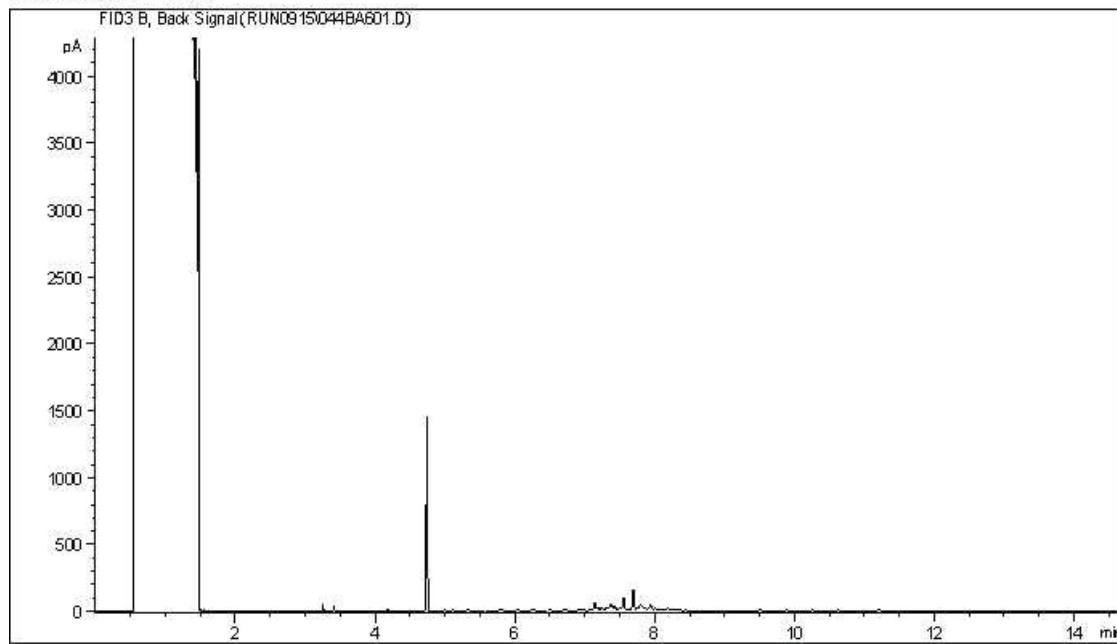
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

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

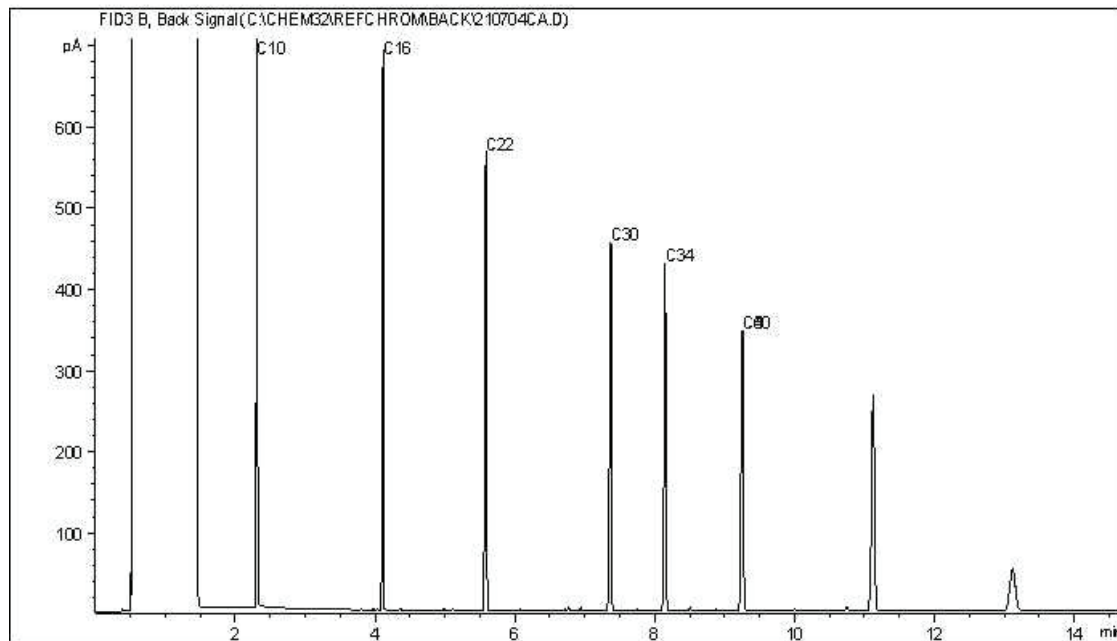


**CCME Hydrocarbons (F2-F4 in soil) Chromatogram**

Instrument: GC19



Carbon Range Distribution - Reference Chromatogram



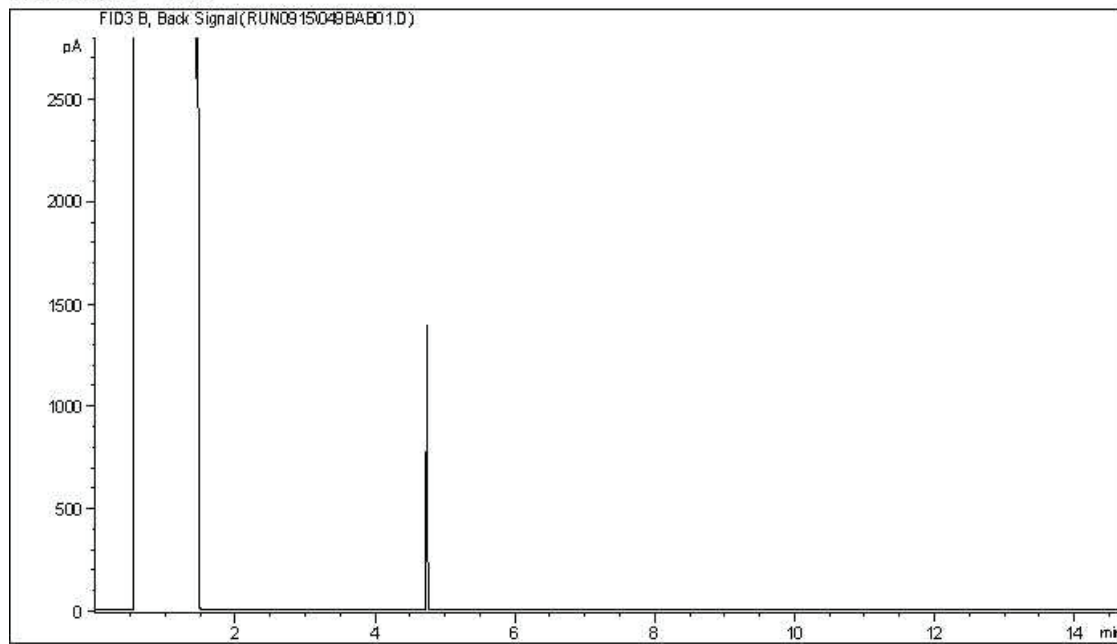
**TYPICAL PRODUCT CARBON NUMBER RANGES**

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

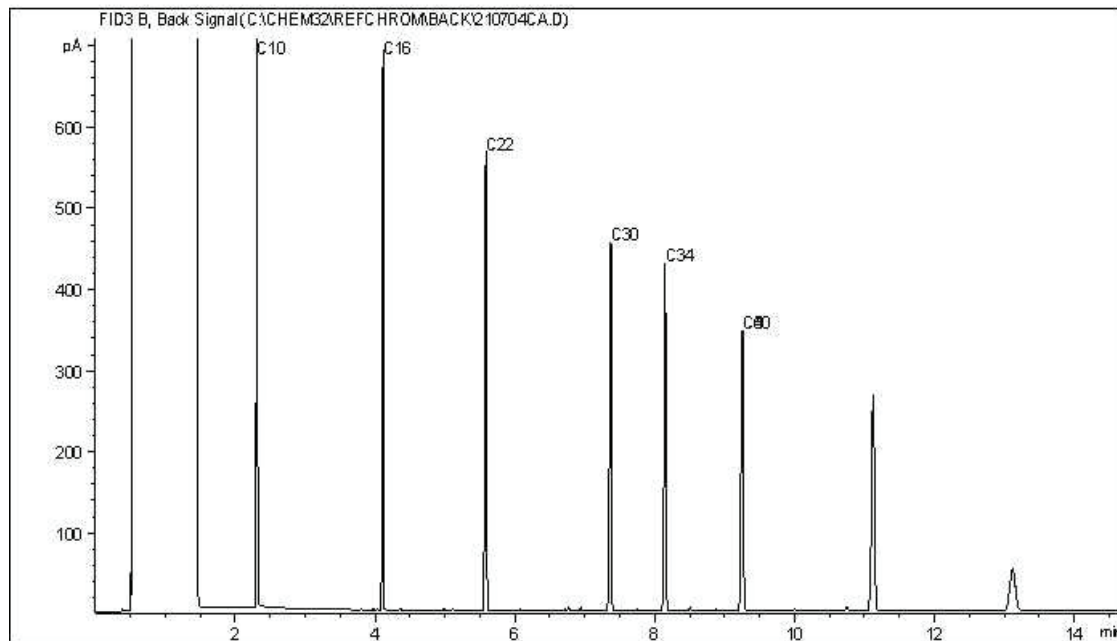
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC19



Carbon Range Distribution - Reference Chromatogram



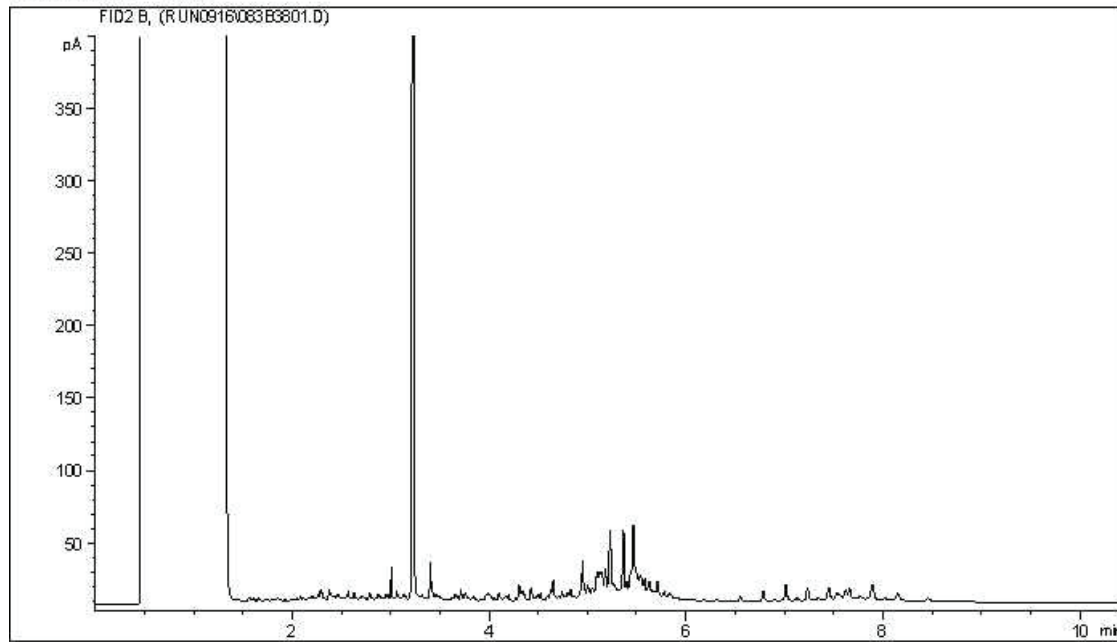
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

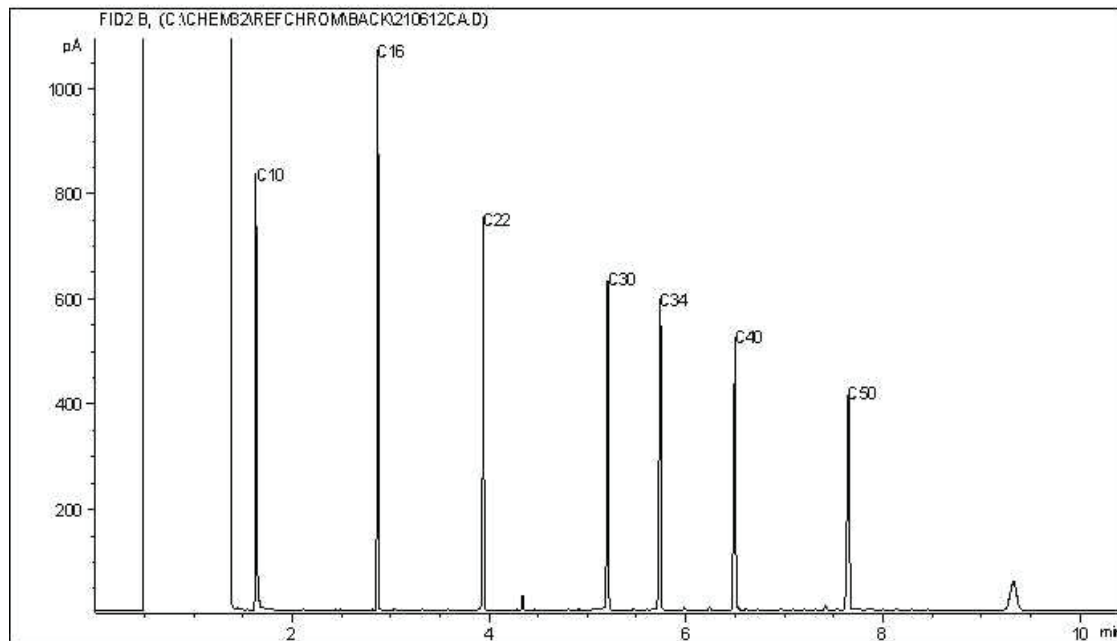
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



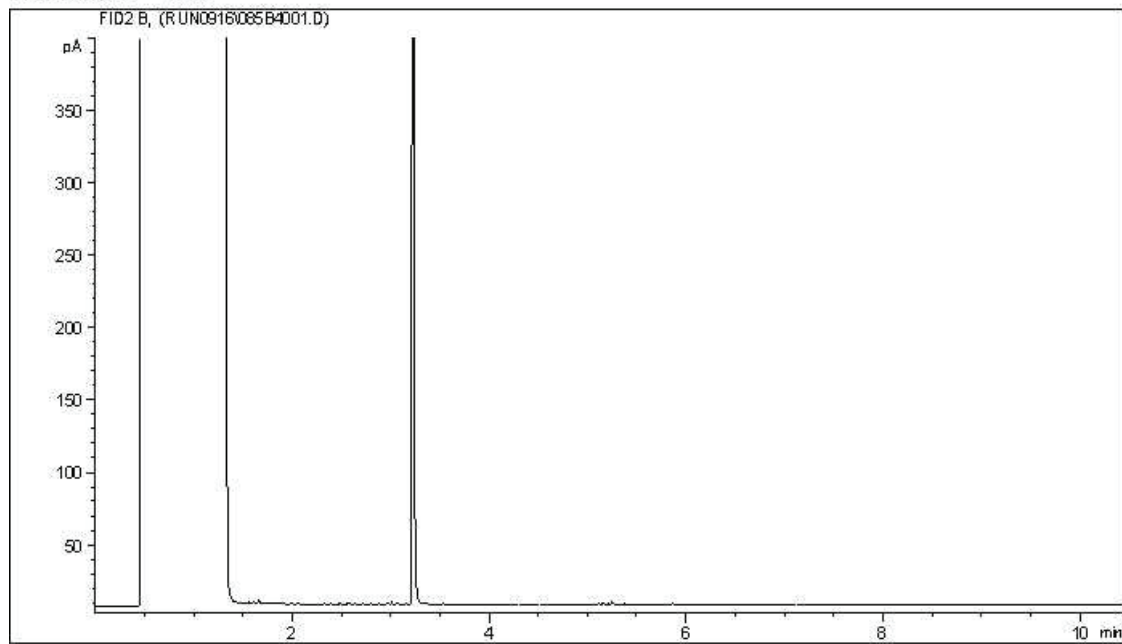
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

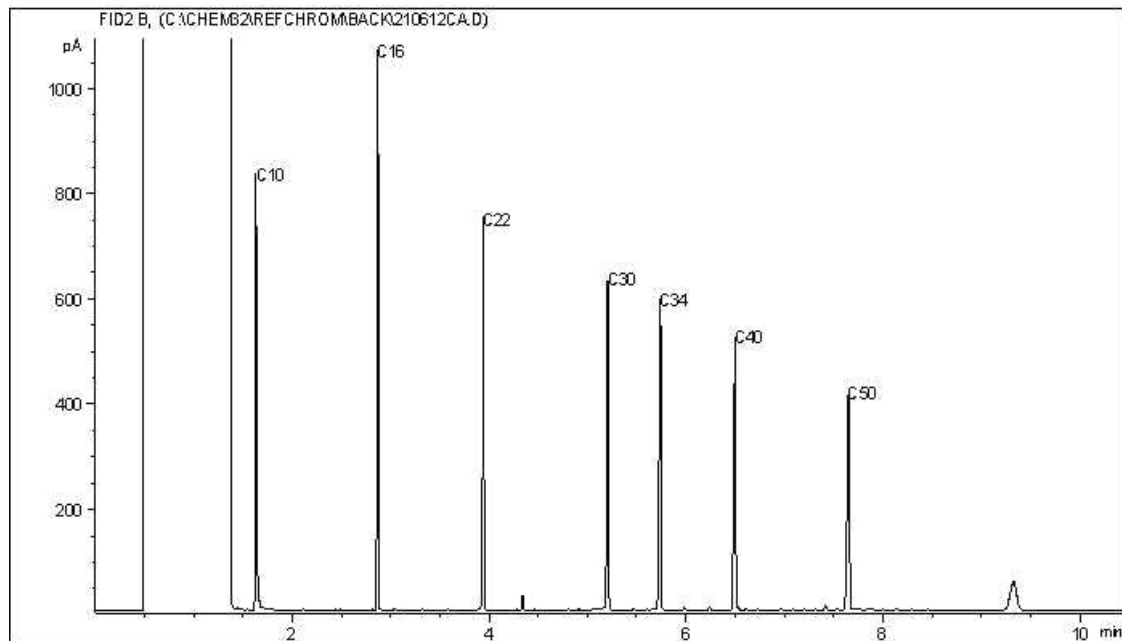
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



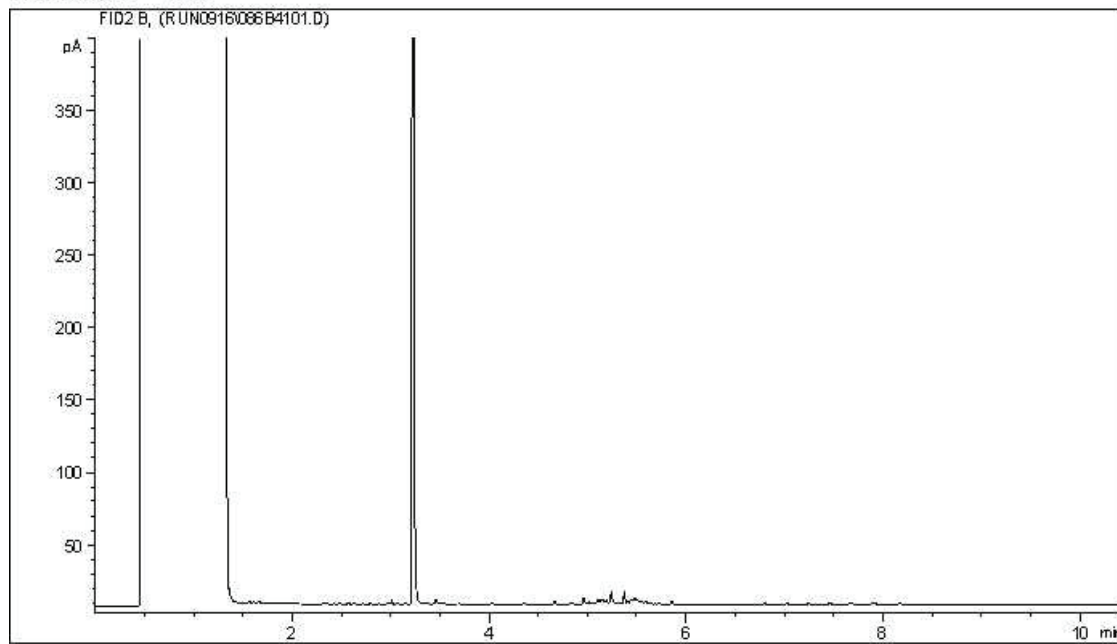
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Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

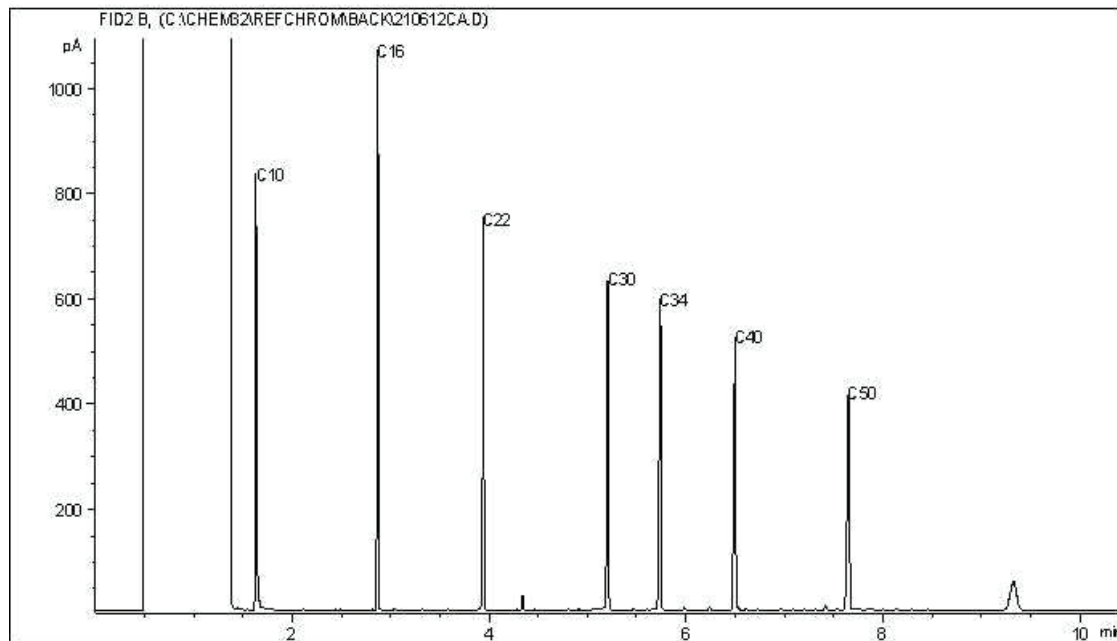
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

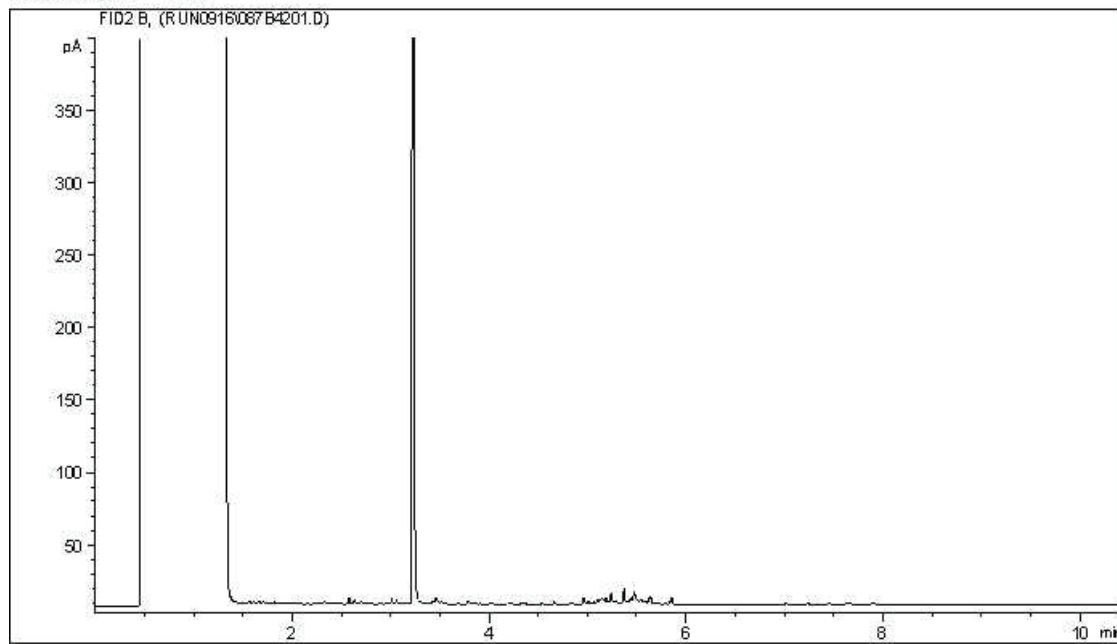
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
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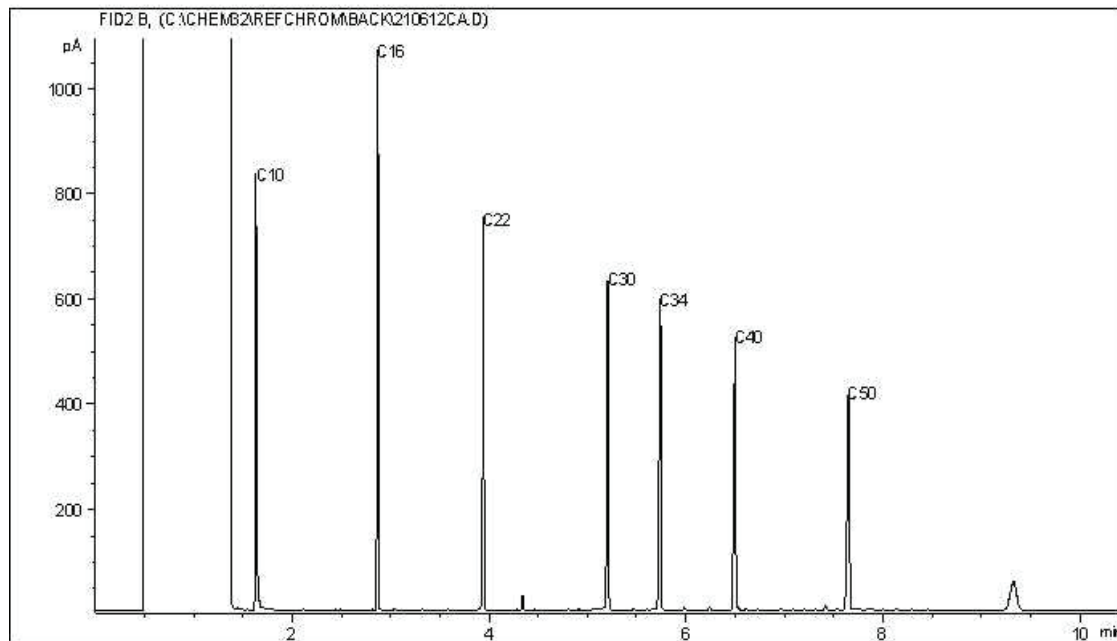


CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



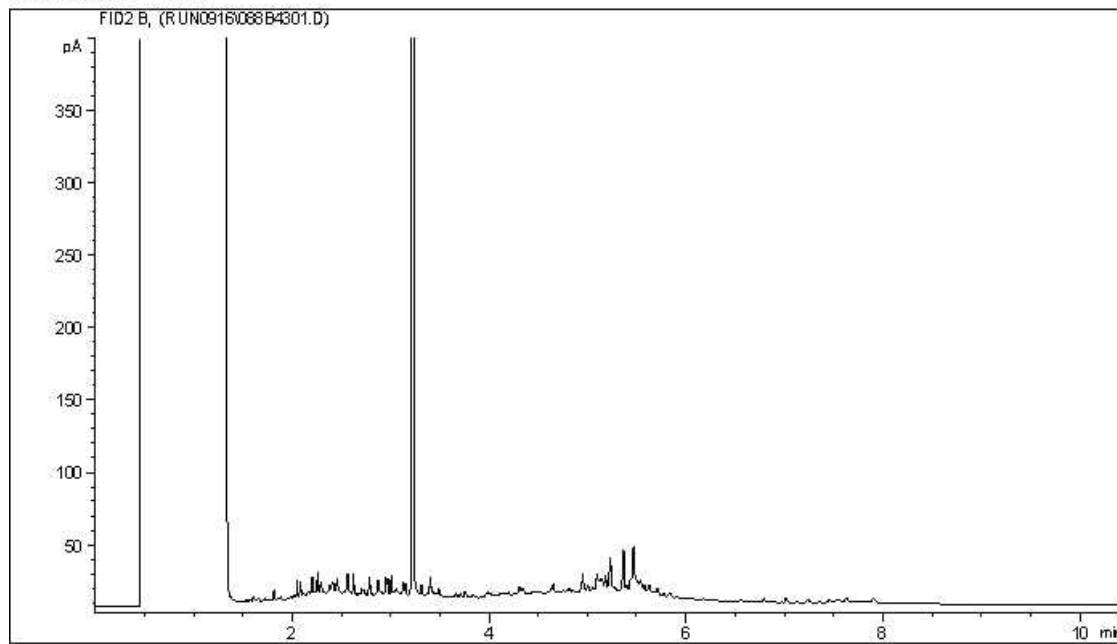
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Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
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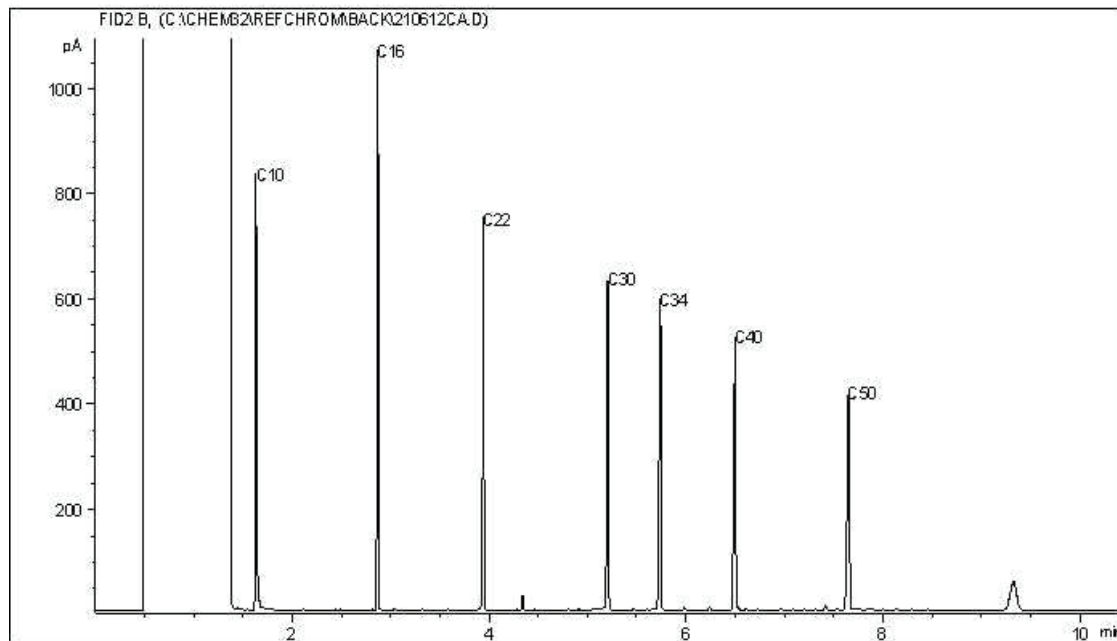
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



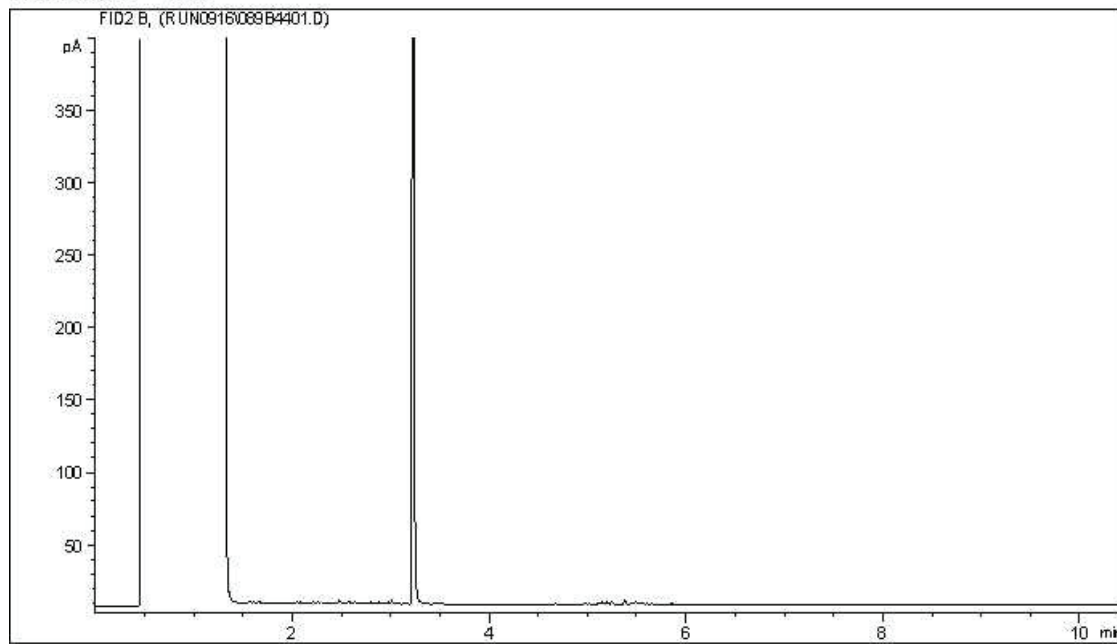
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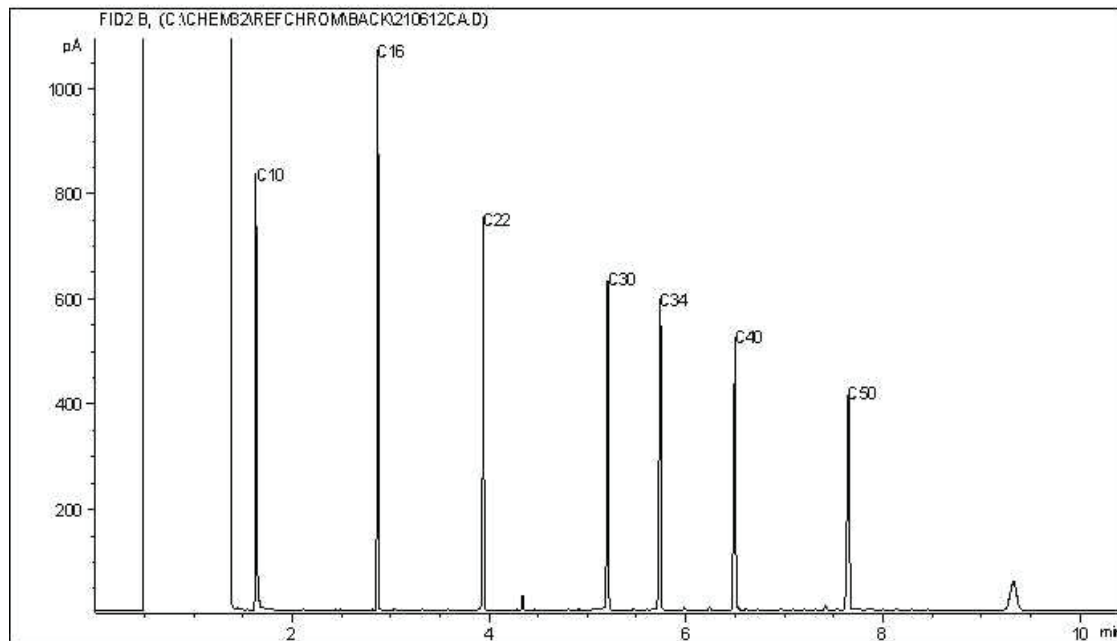
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



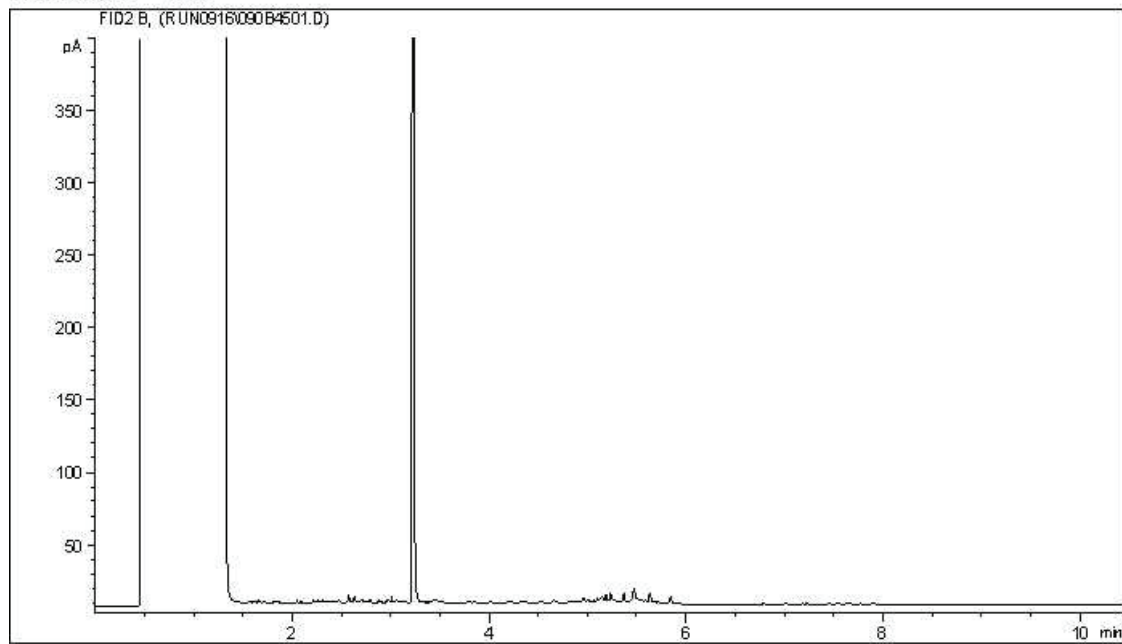
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Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
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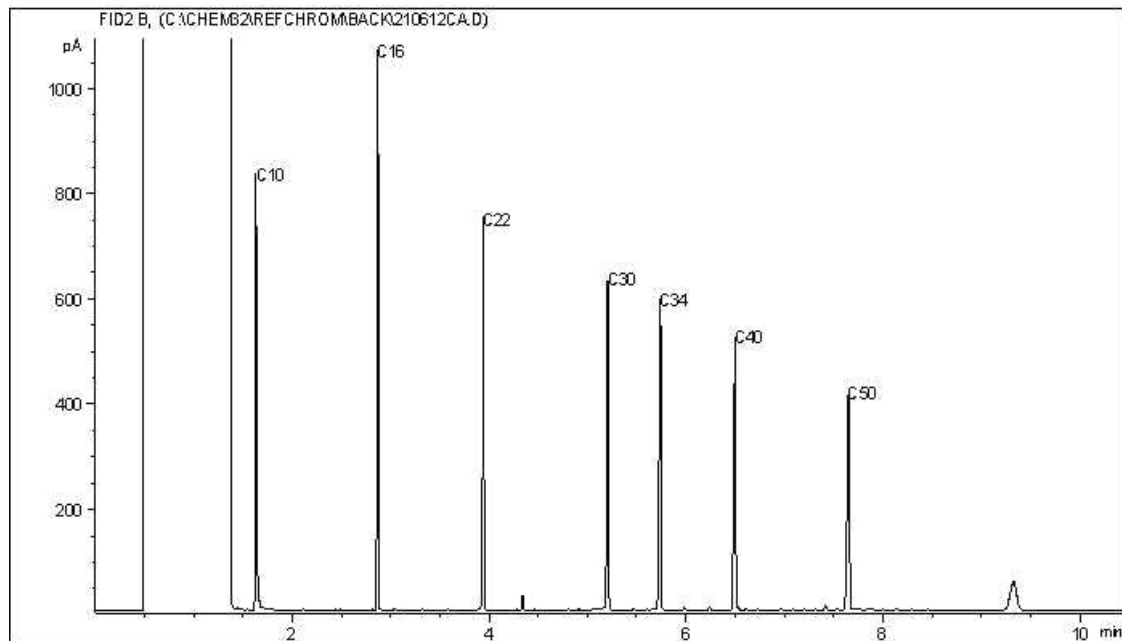
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



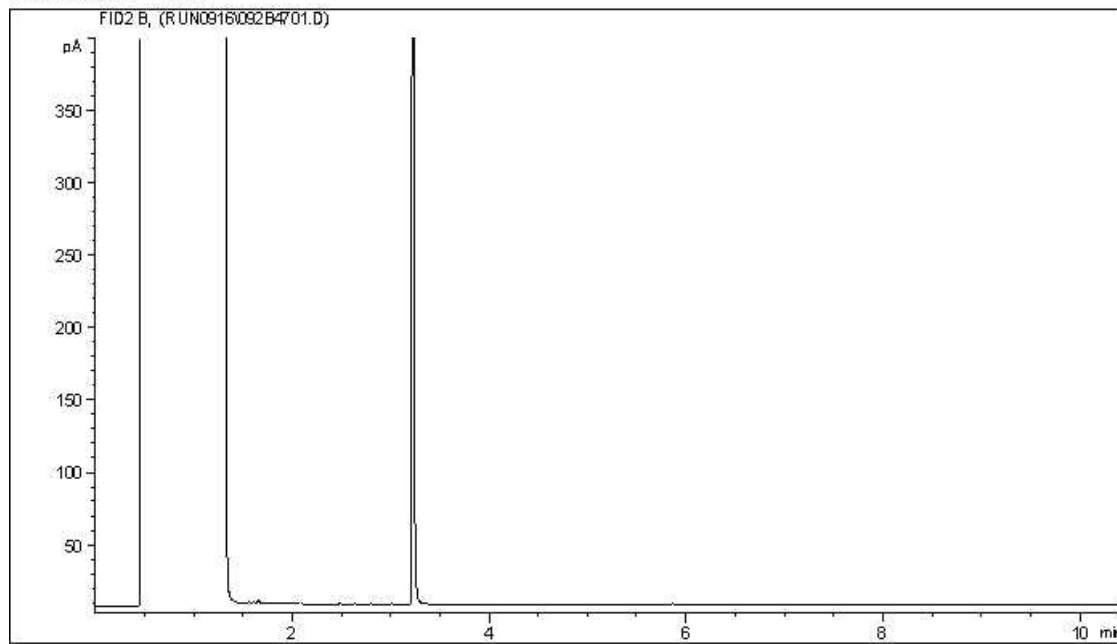
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Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

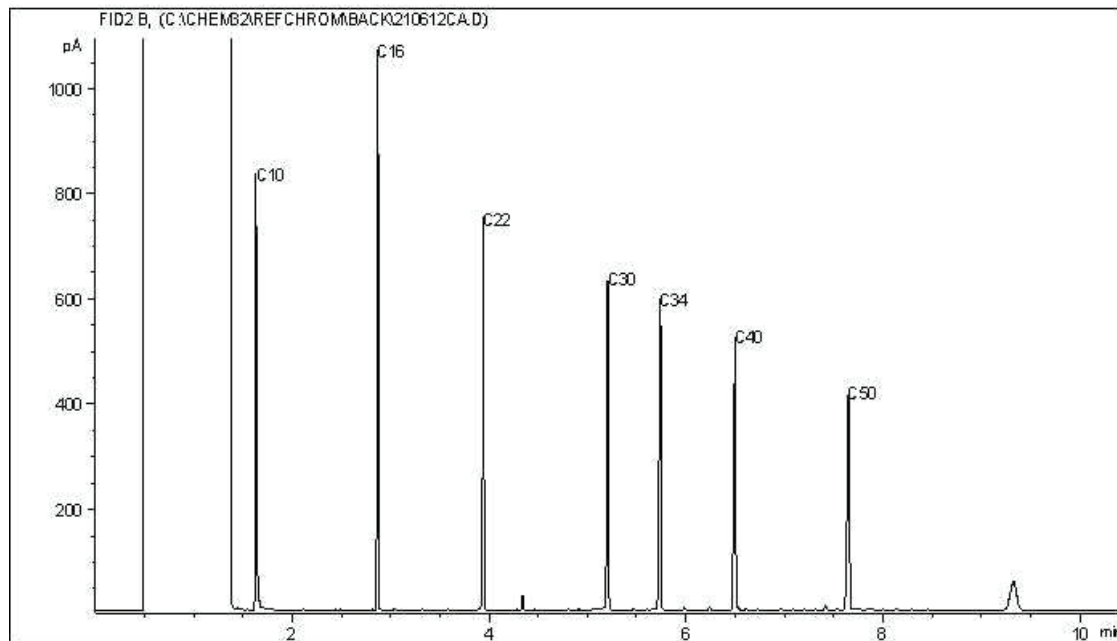
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

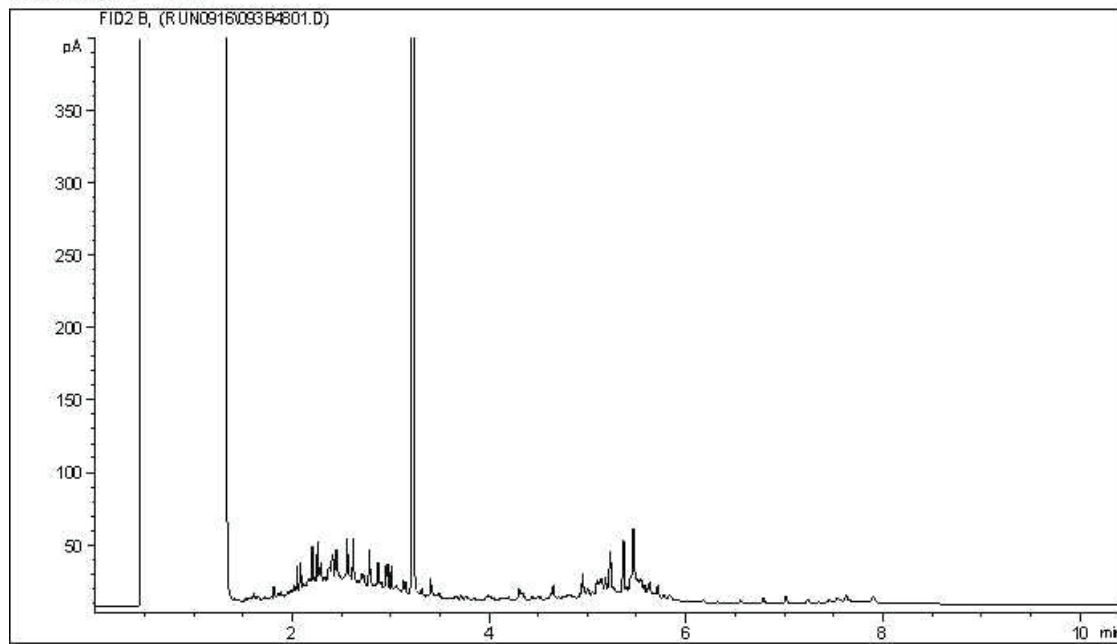
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

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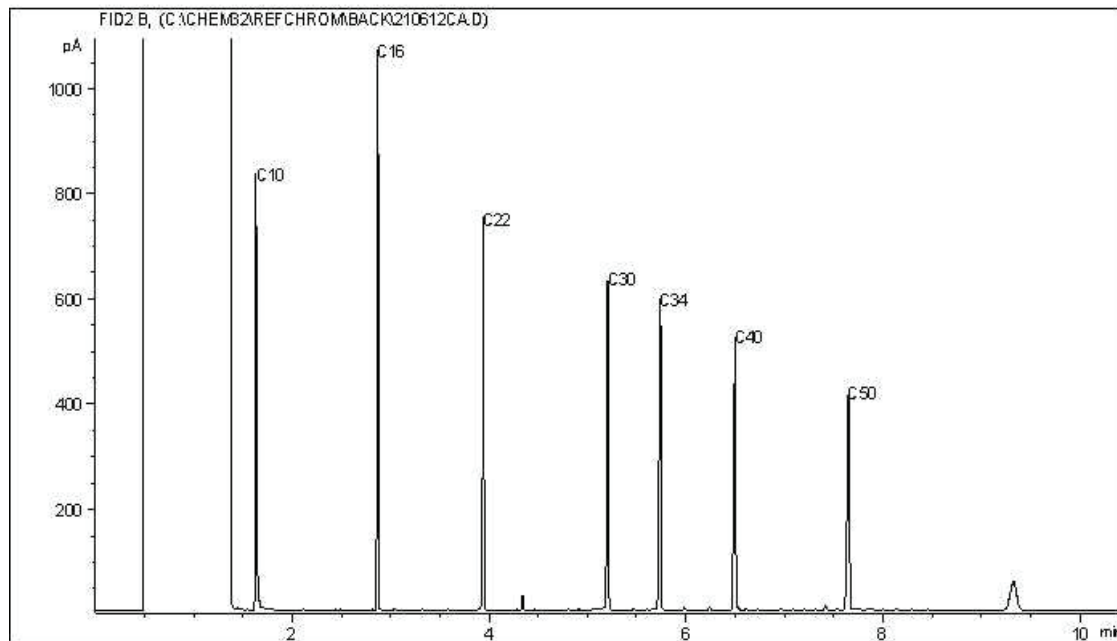


CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



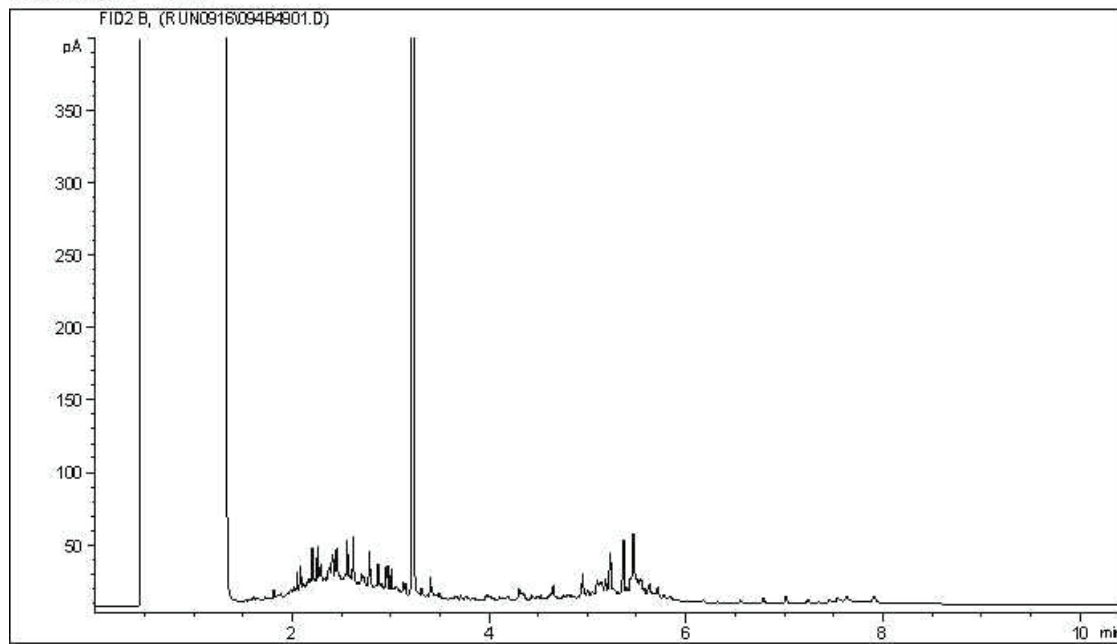
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

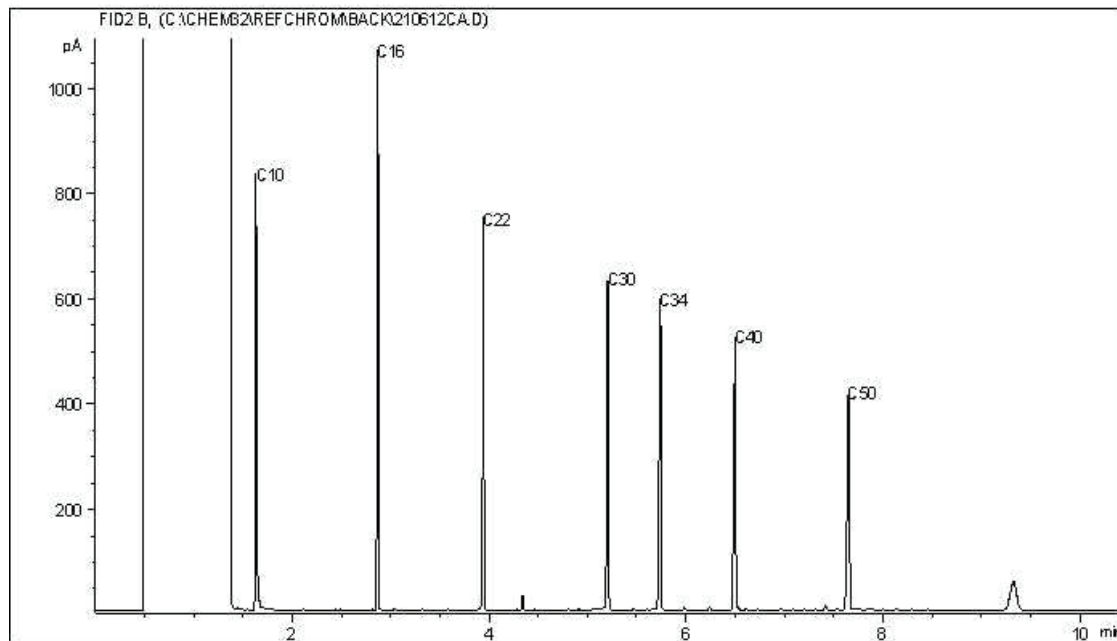
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



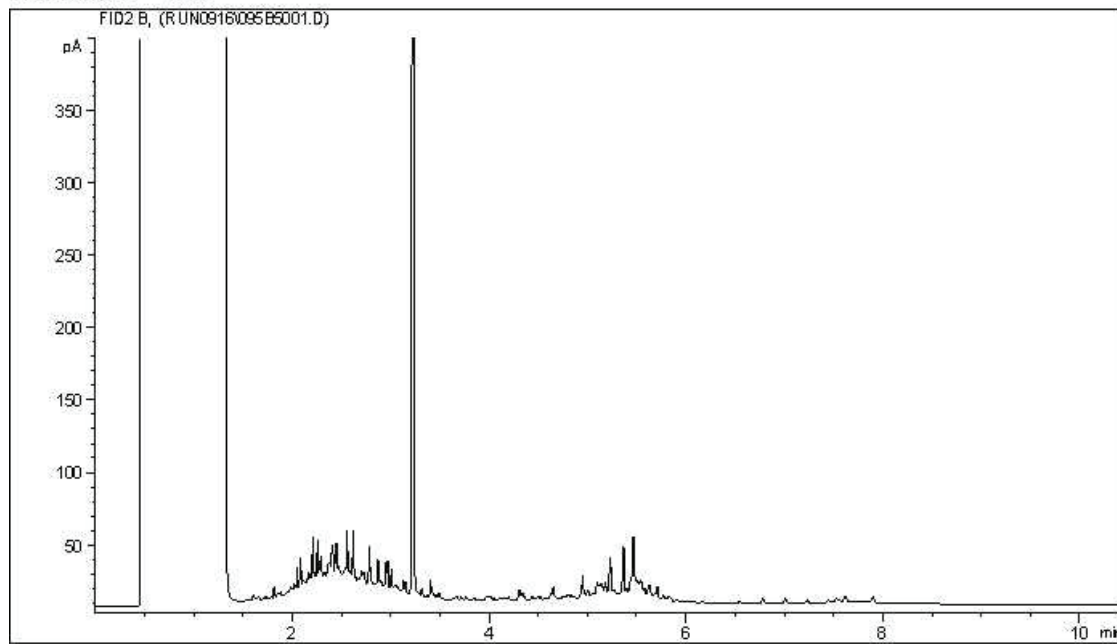
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Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
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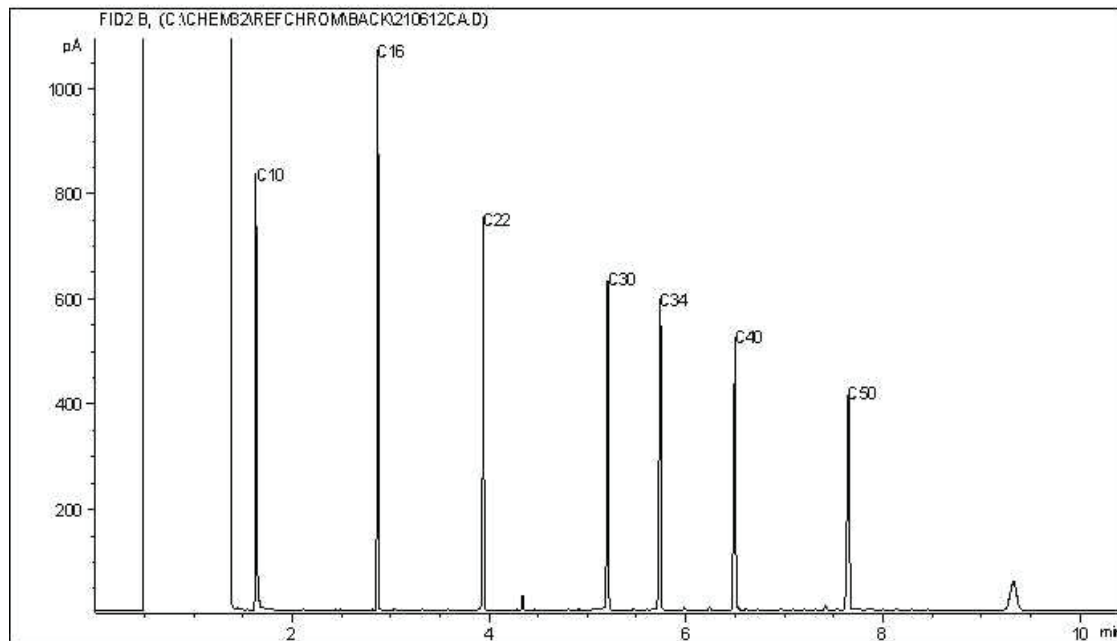
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



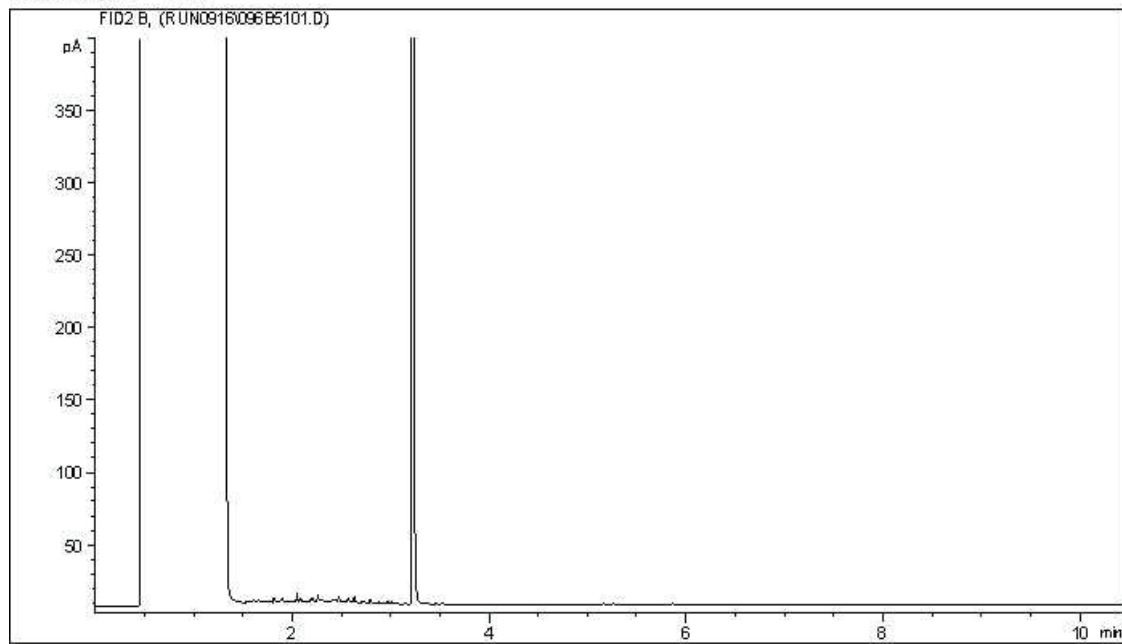
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Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
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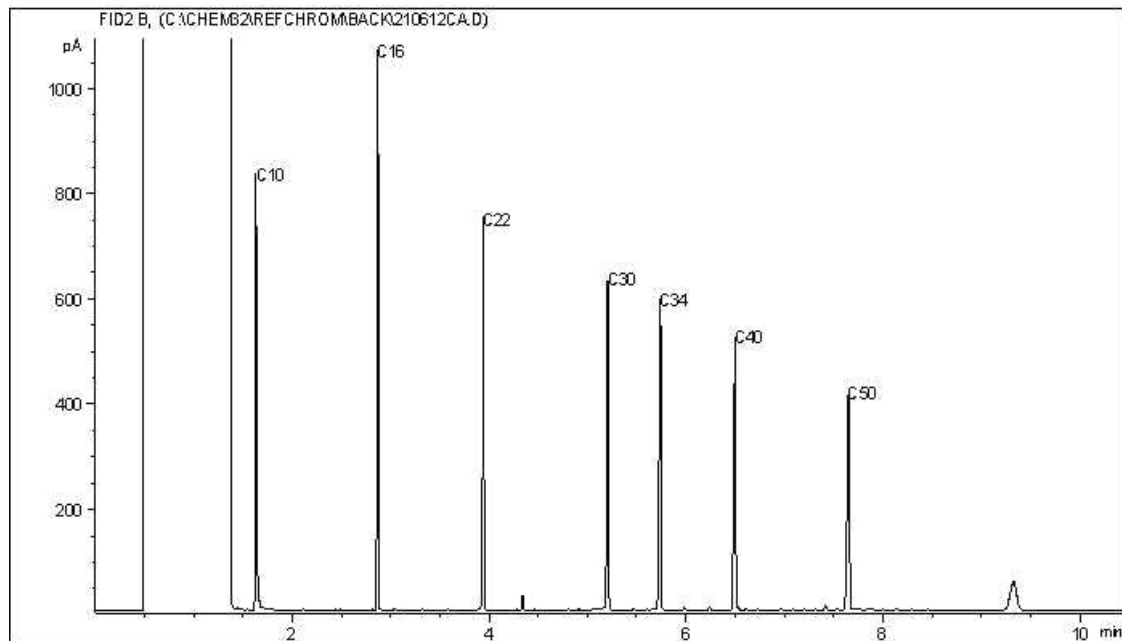
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



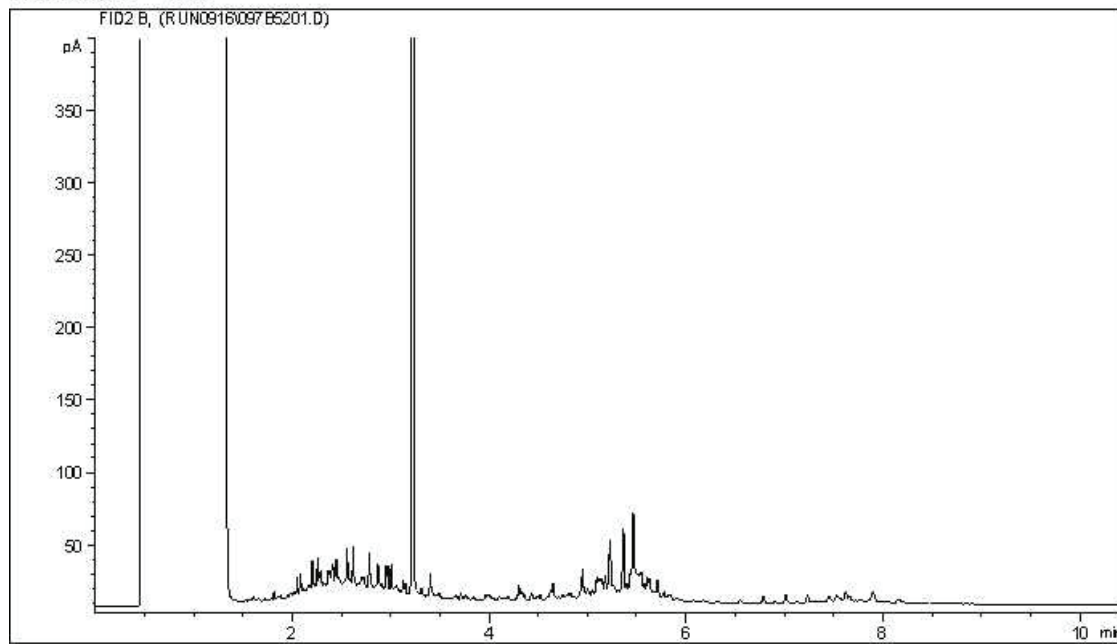
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
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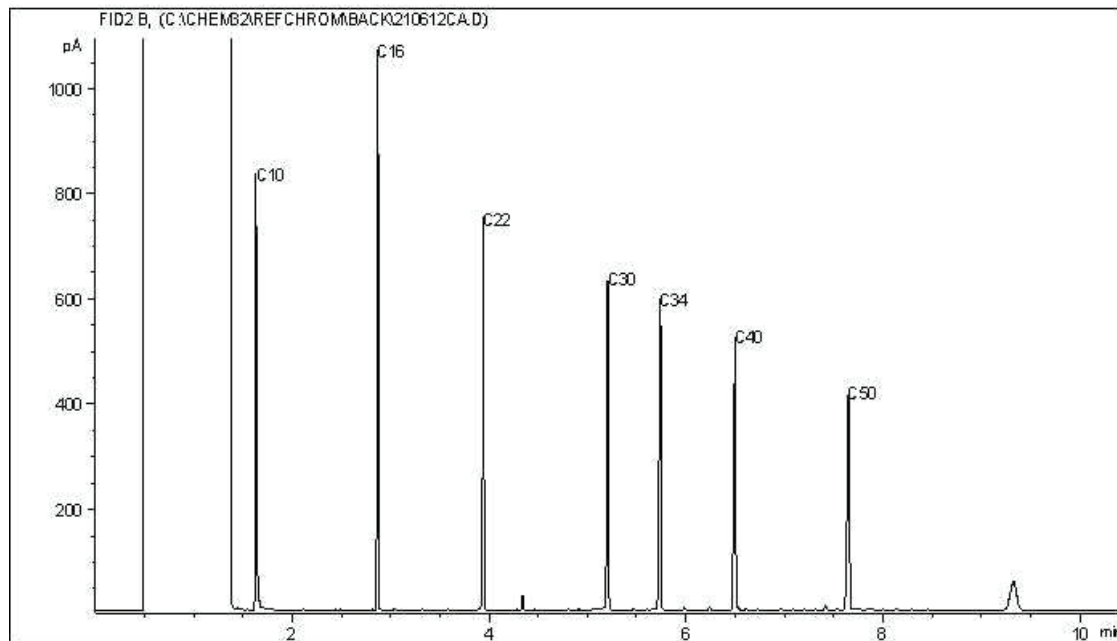
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

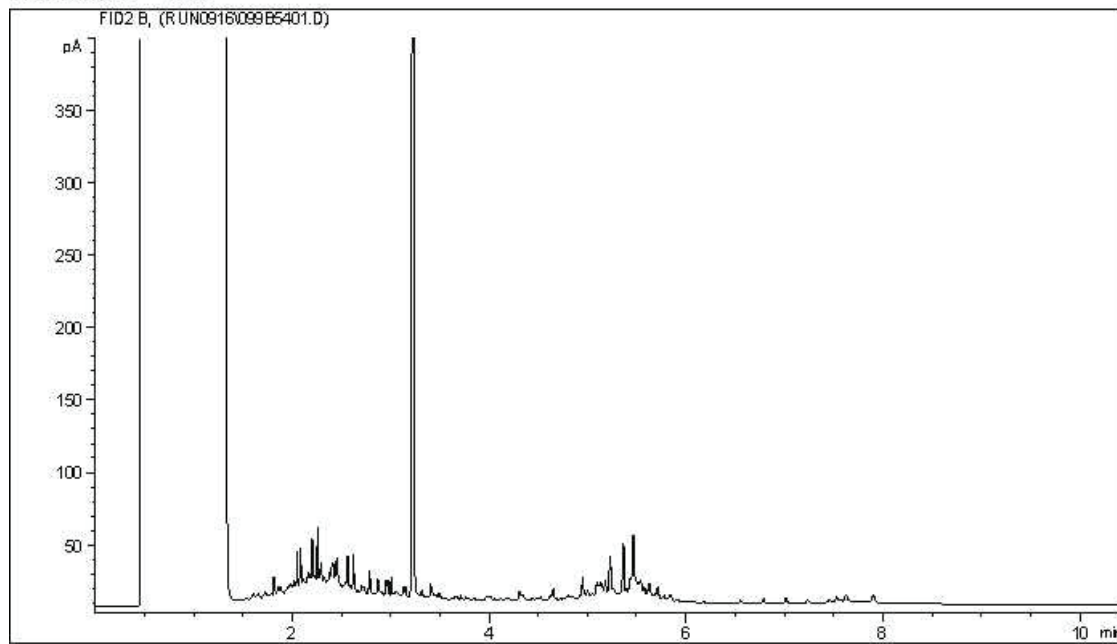
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
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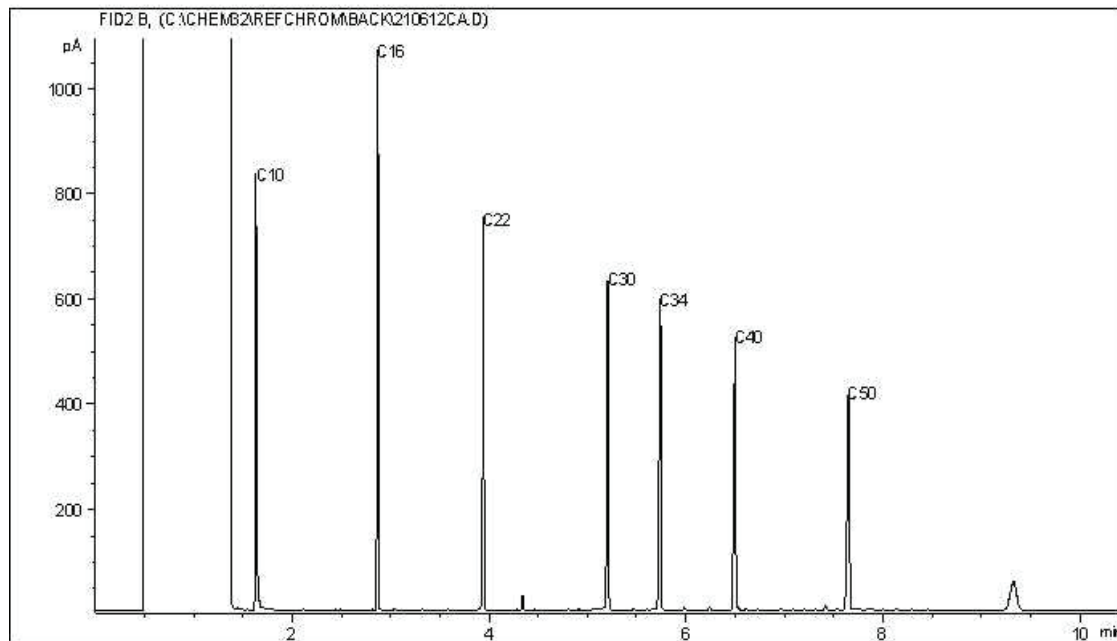


CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



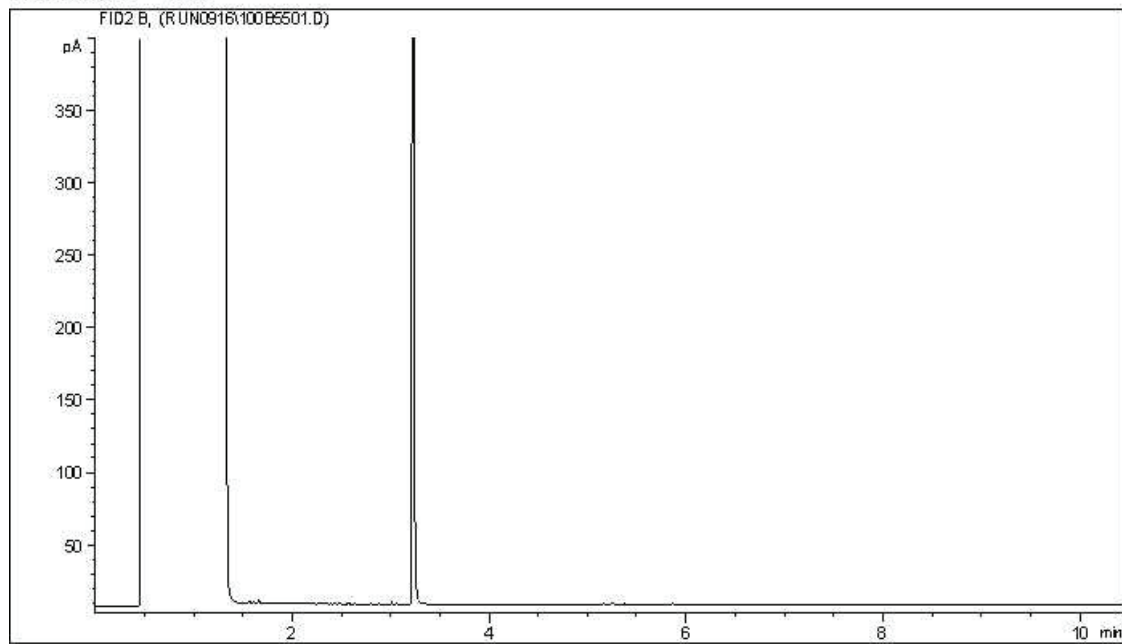
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
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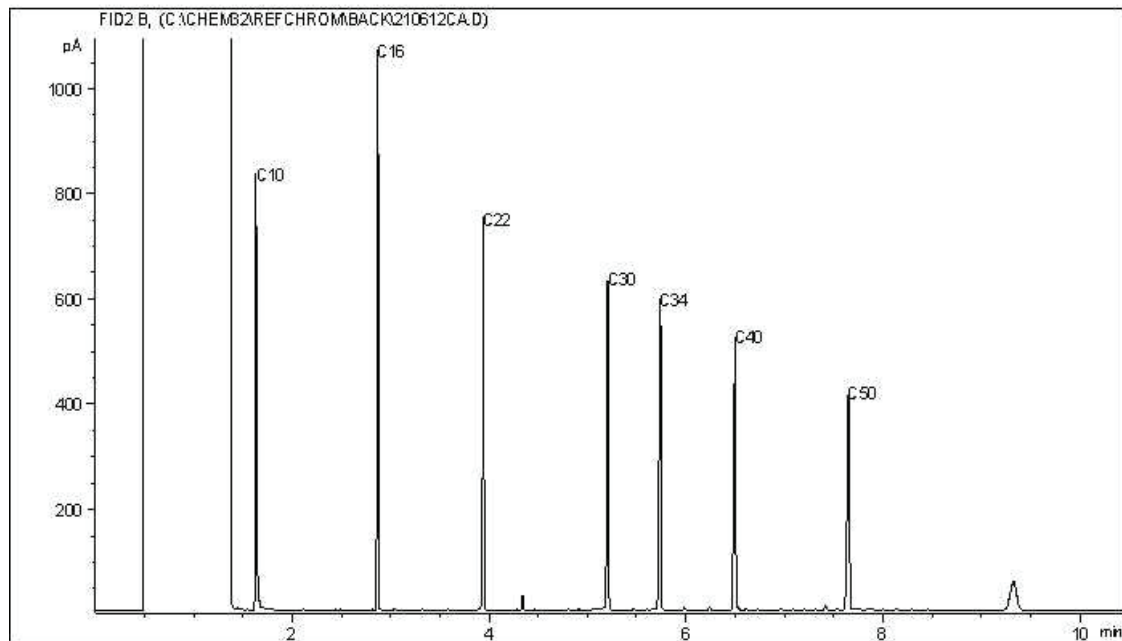
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



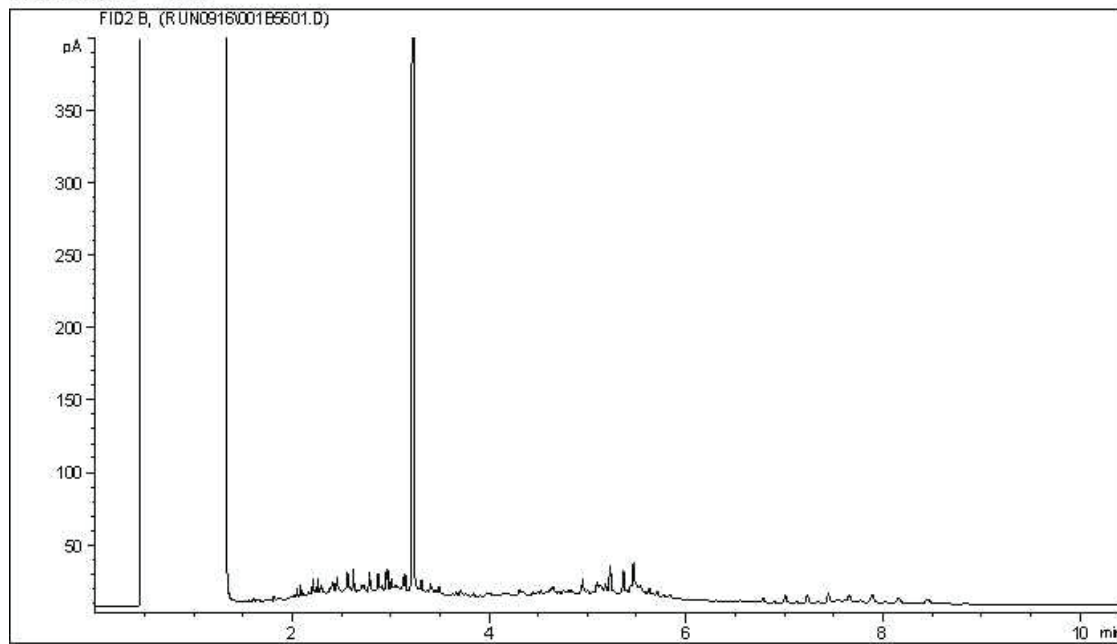
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Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
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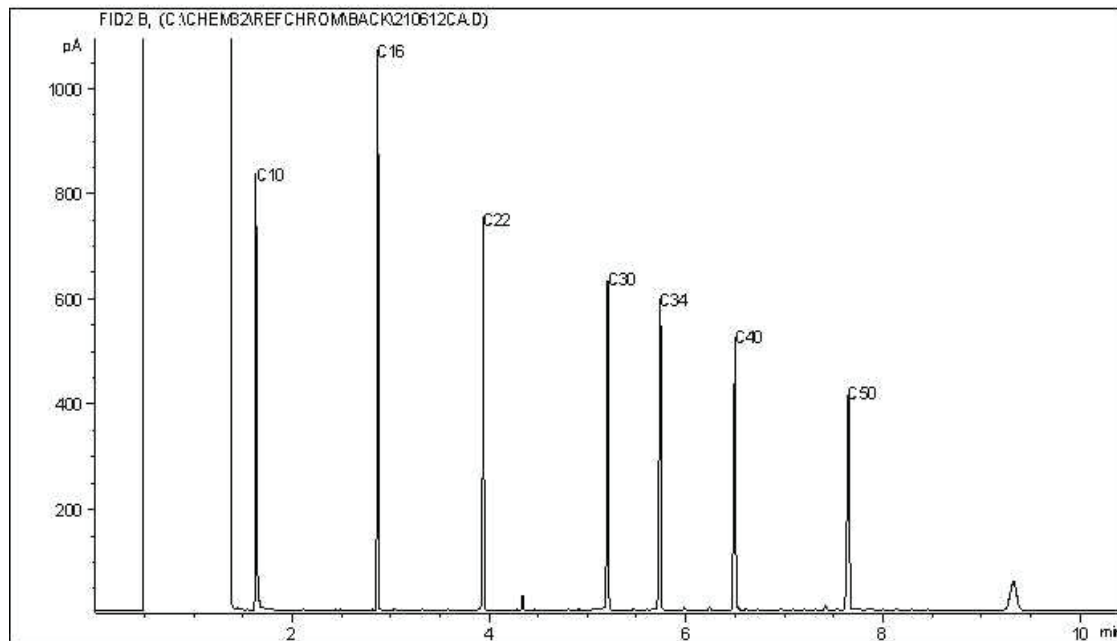
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



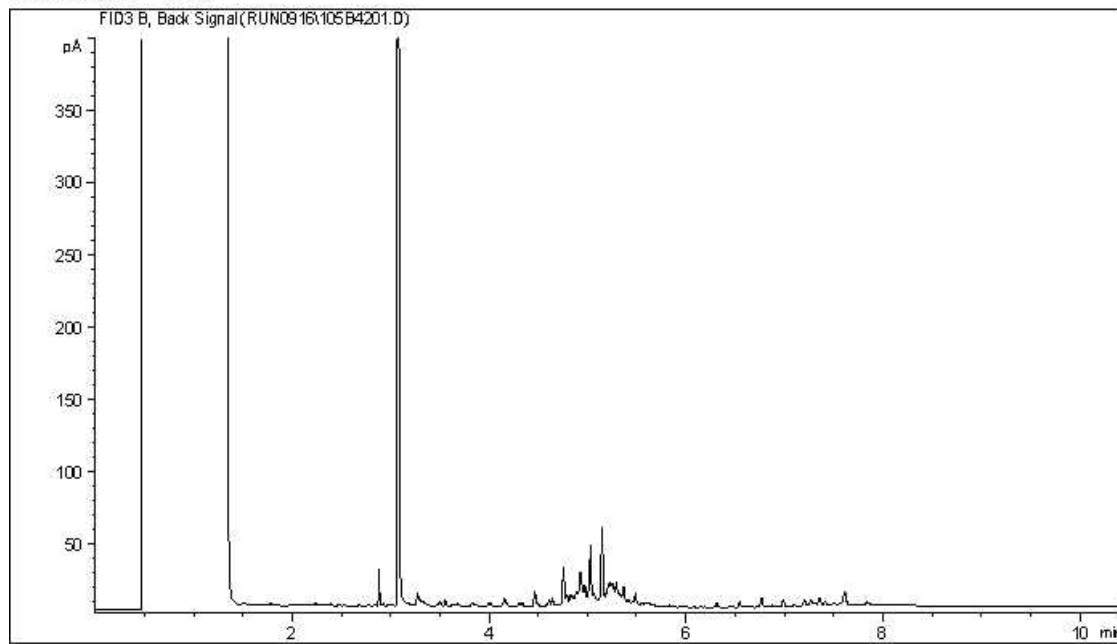
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Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

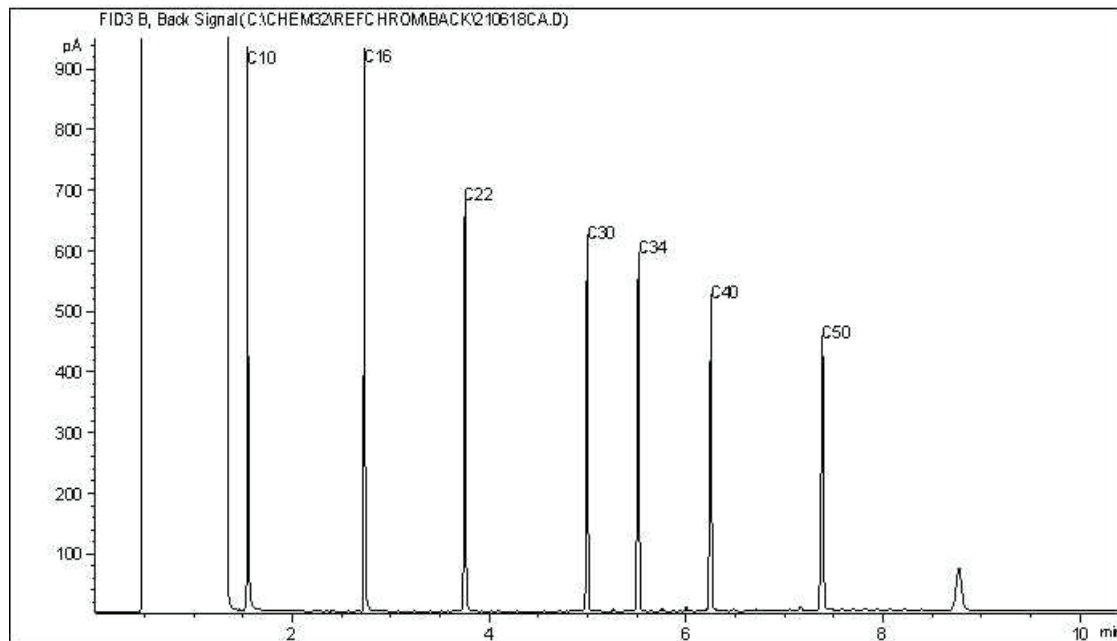
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CCME Hydrocarbons (F2-F4)+F3A/B in soil Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



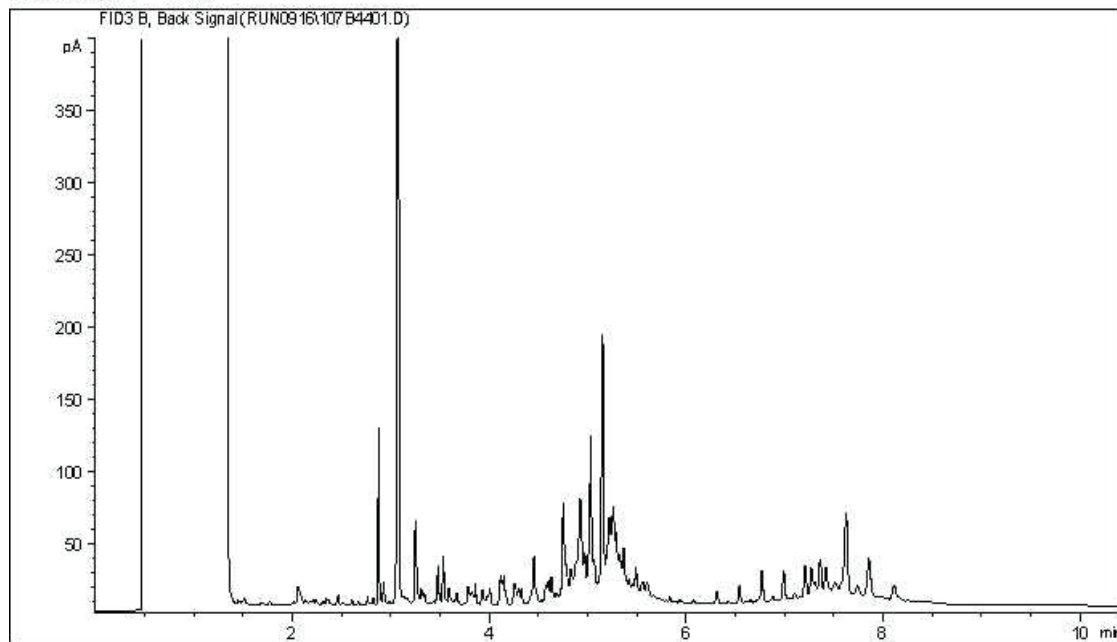
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

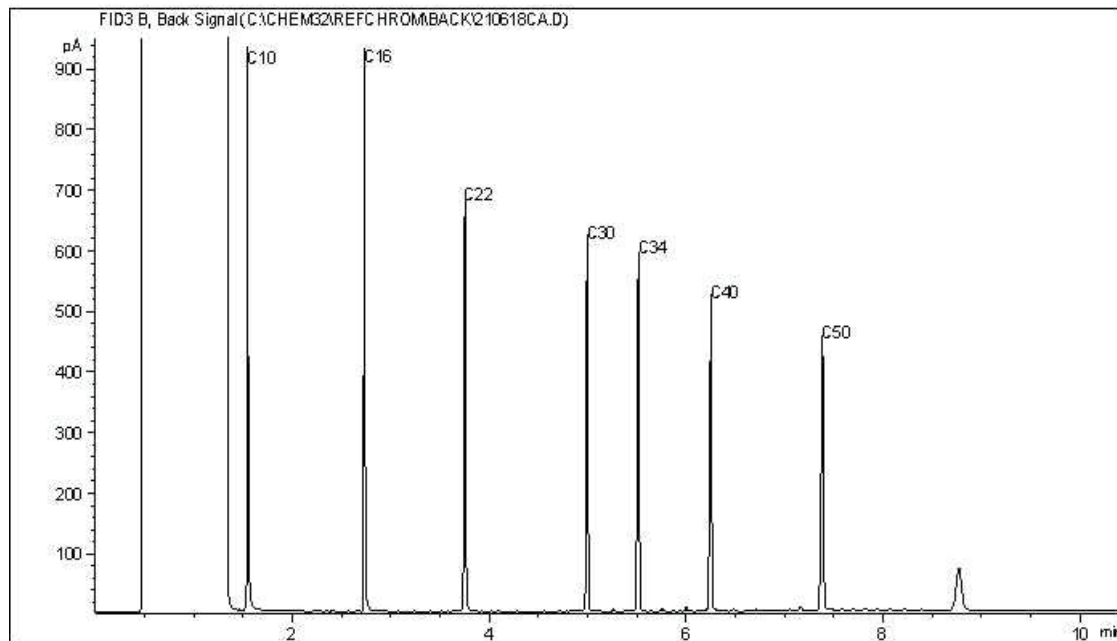
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

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

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



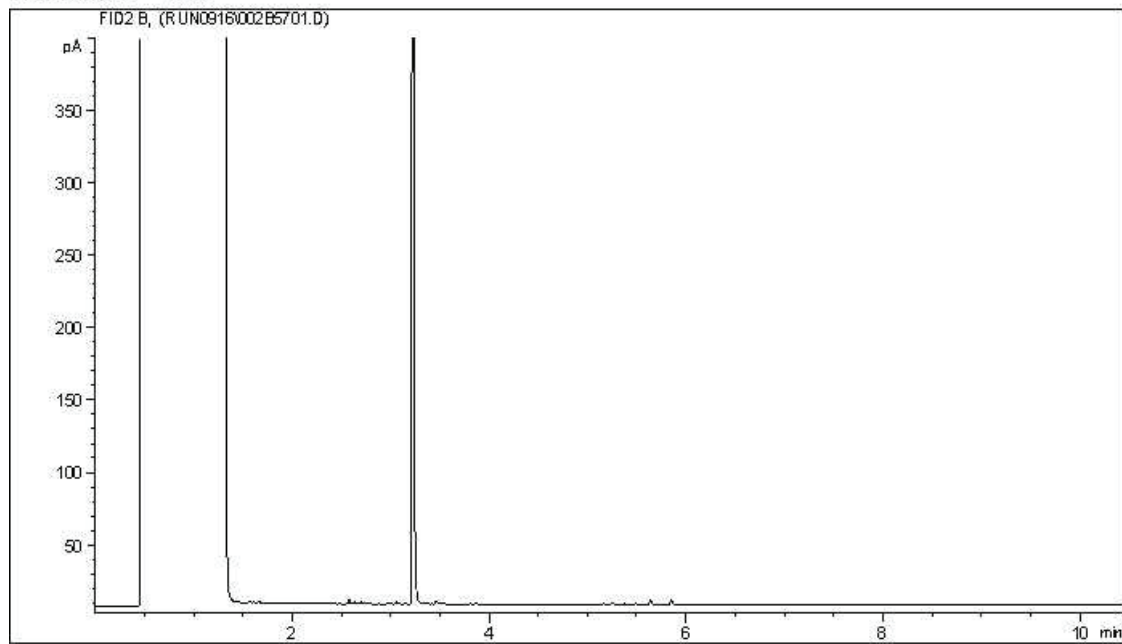
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Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

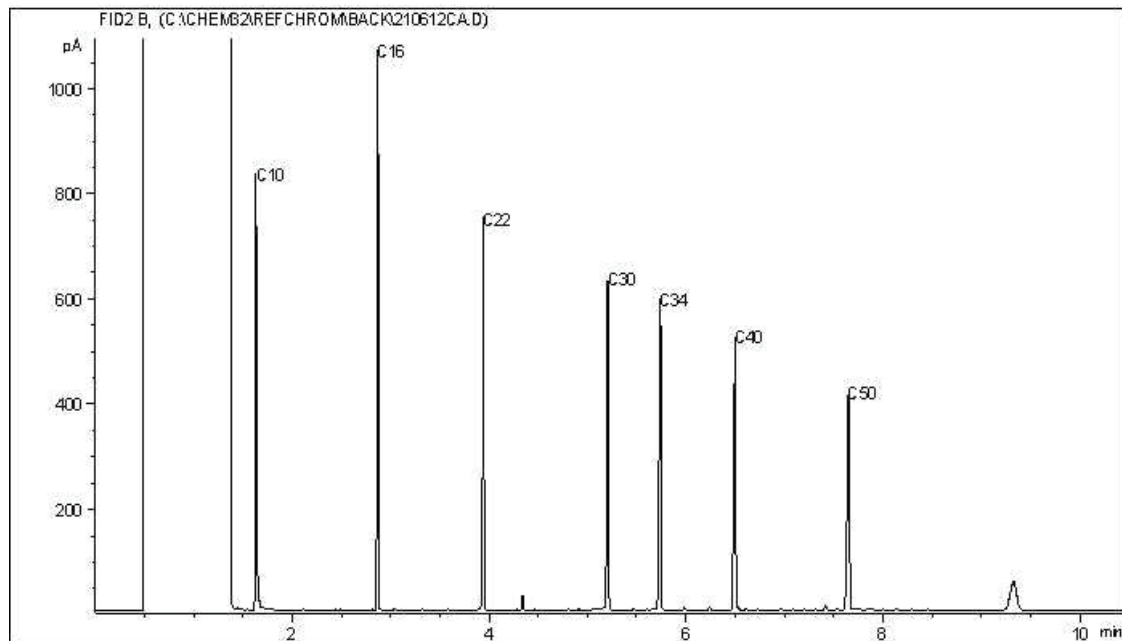
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

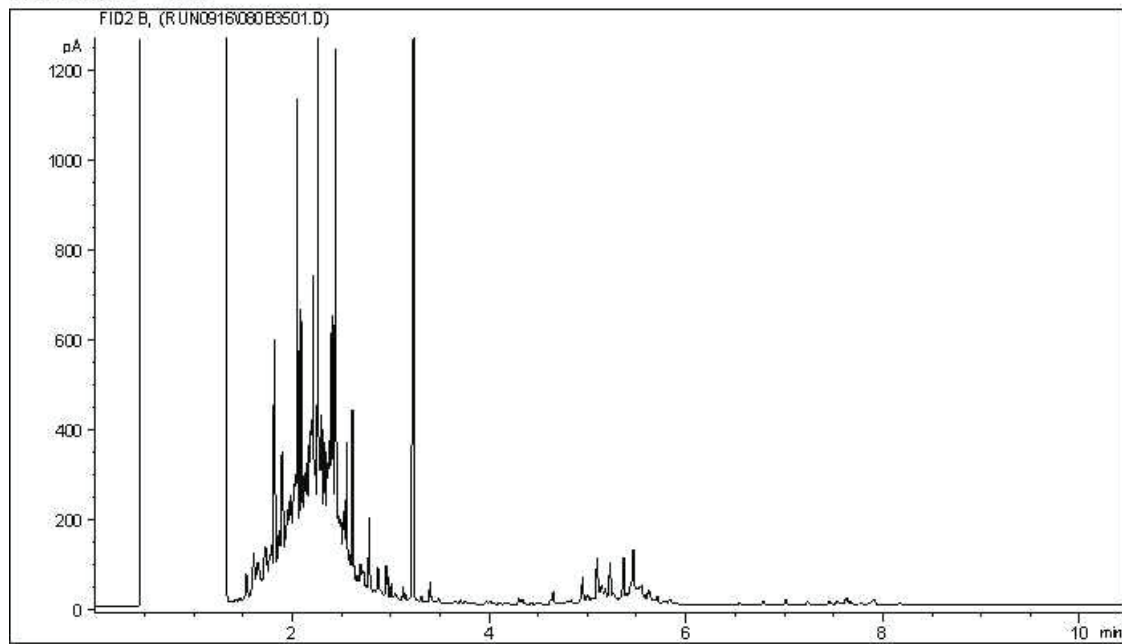
Gasoline:	C4 - C12	Diesel:	C8 - C22
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Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

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

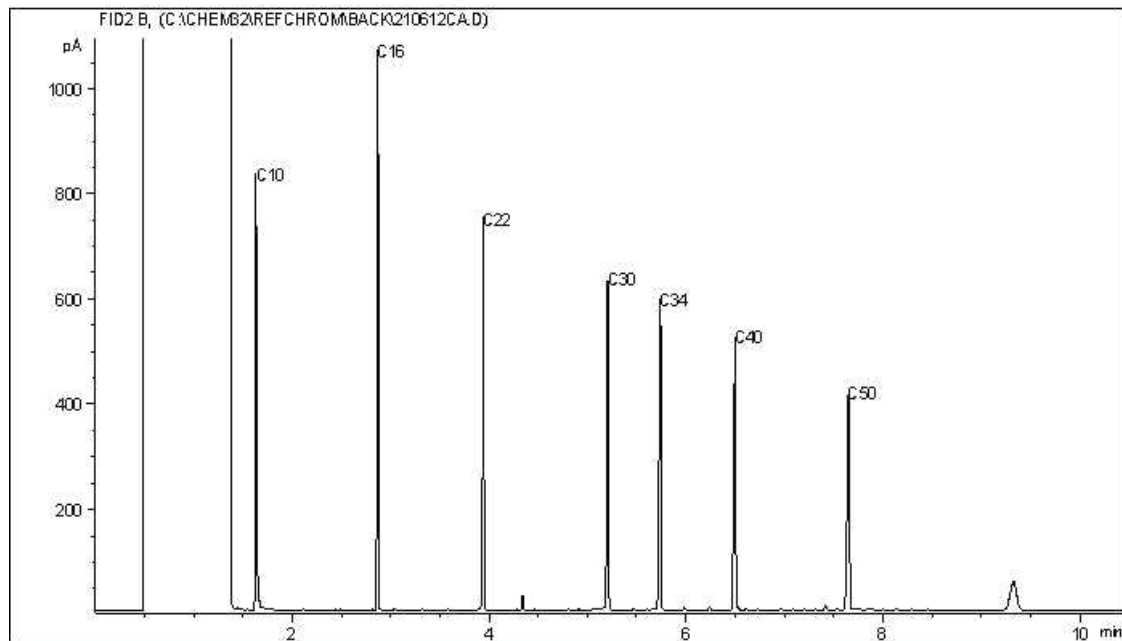


CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



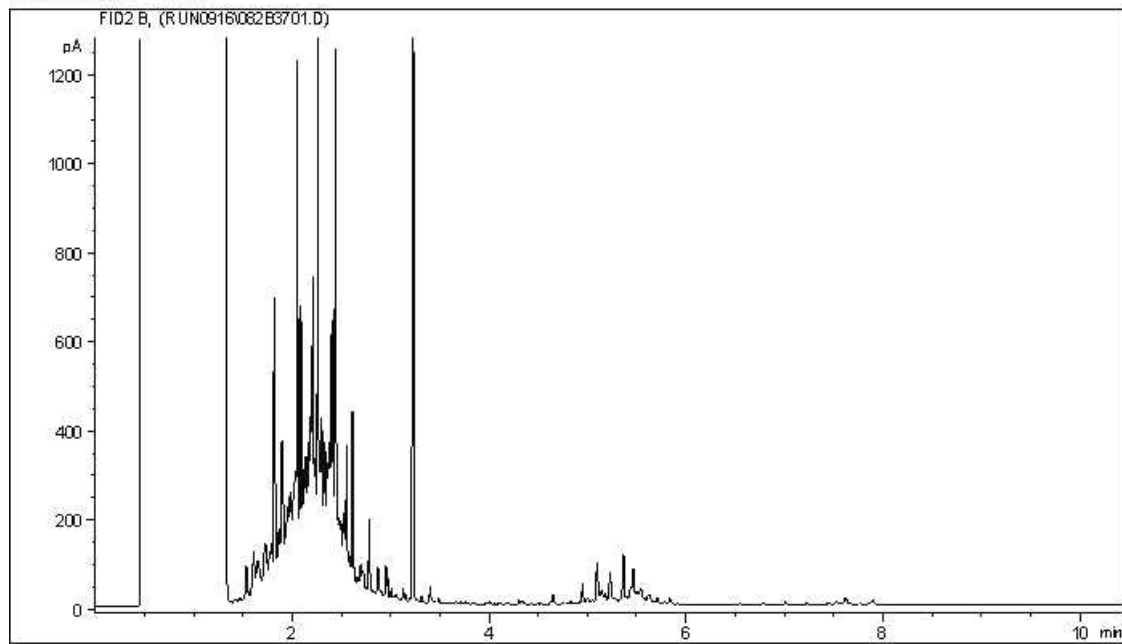
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

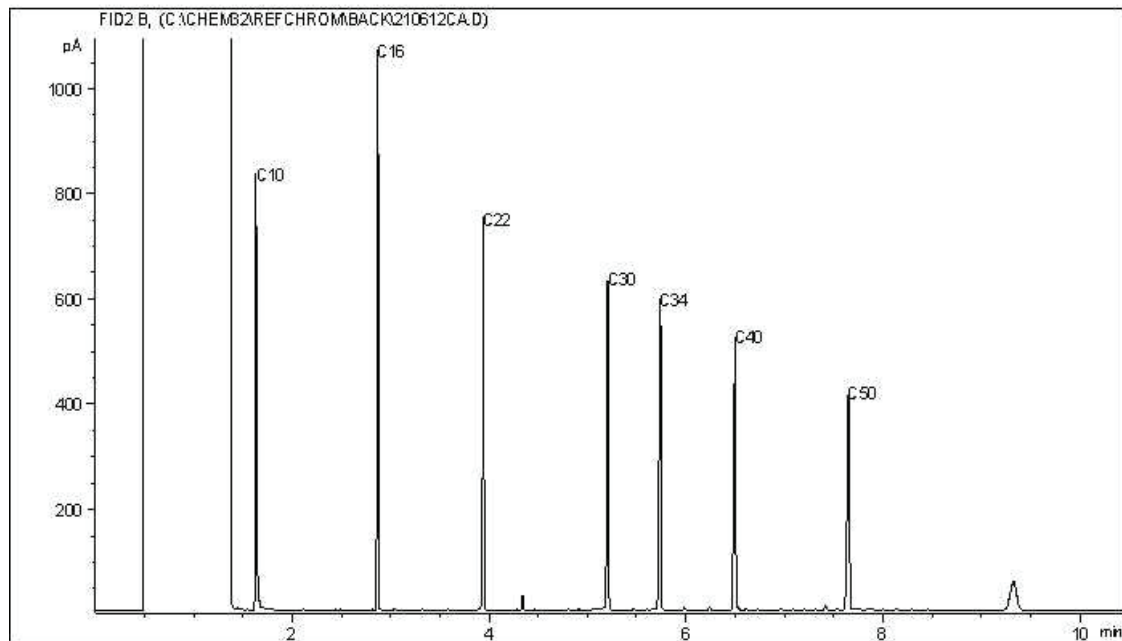
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



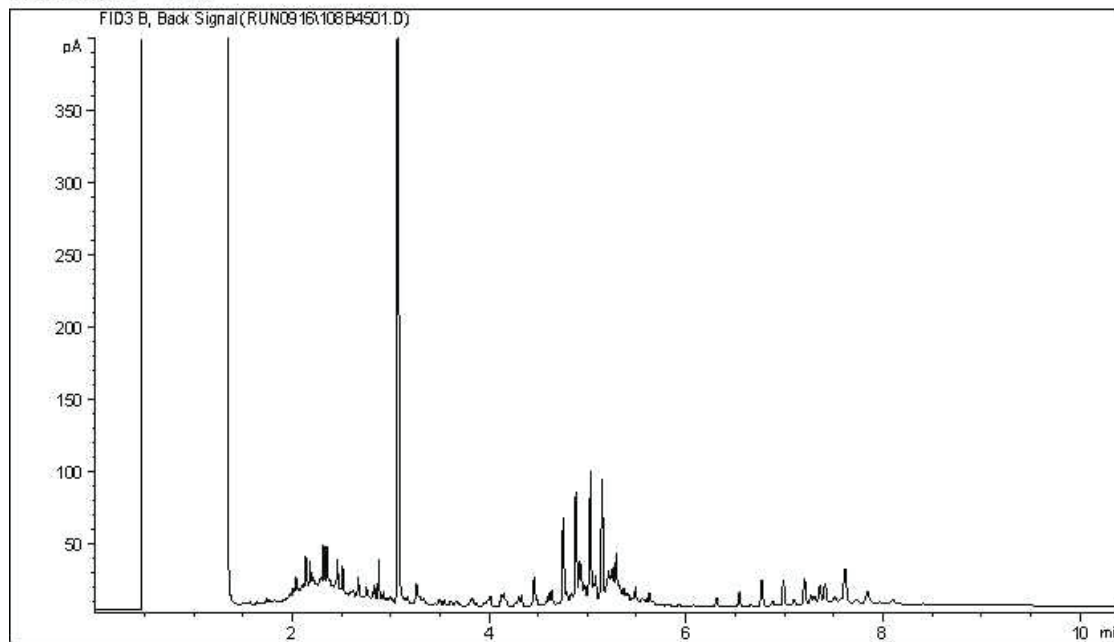
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

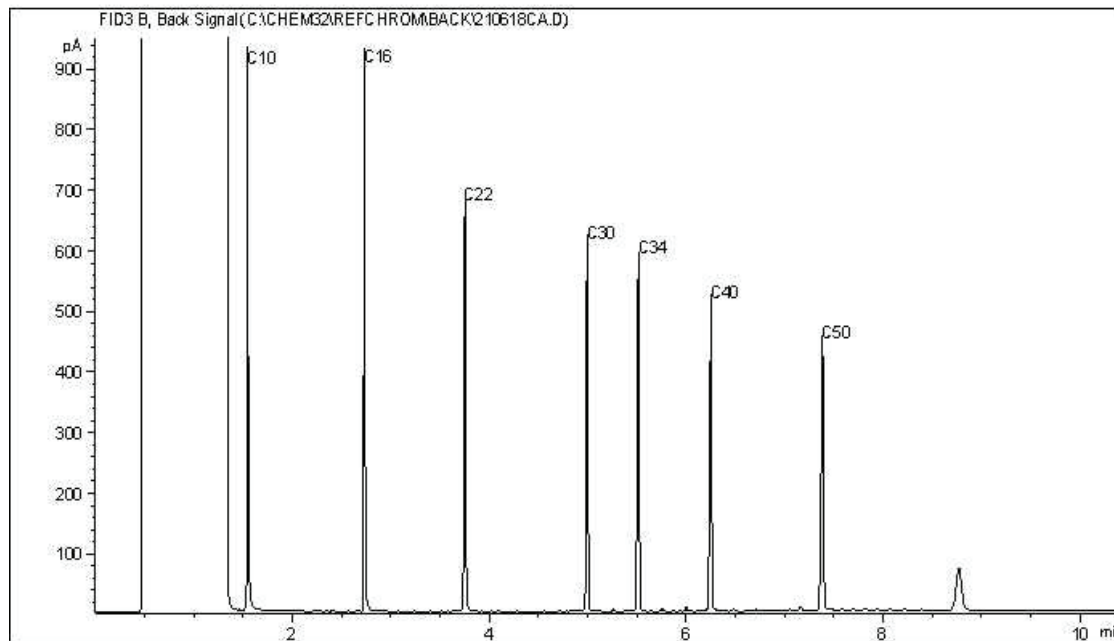
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

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

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



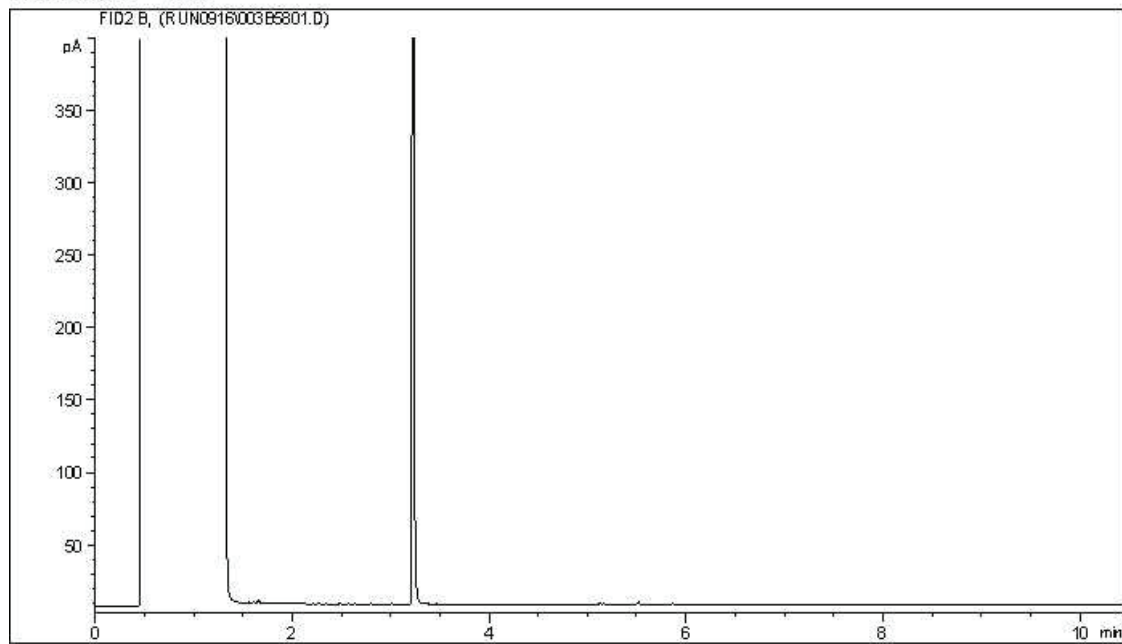
**TYPICAL PRODUCT CARBON NUMBER RANGES**

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

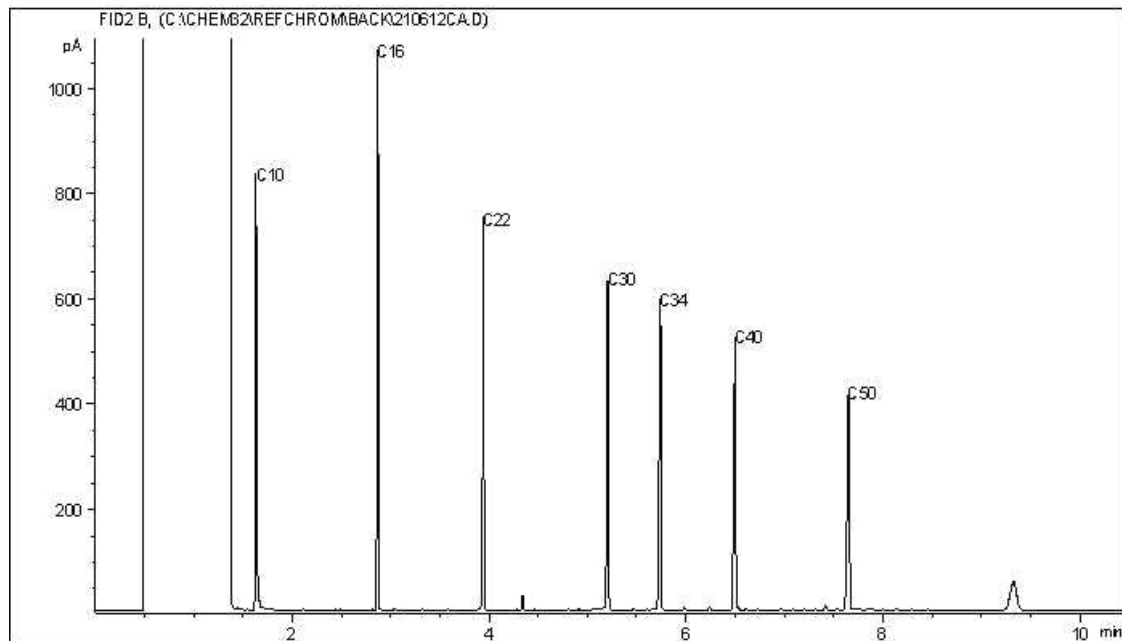
**Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.**

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



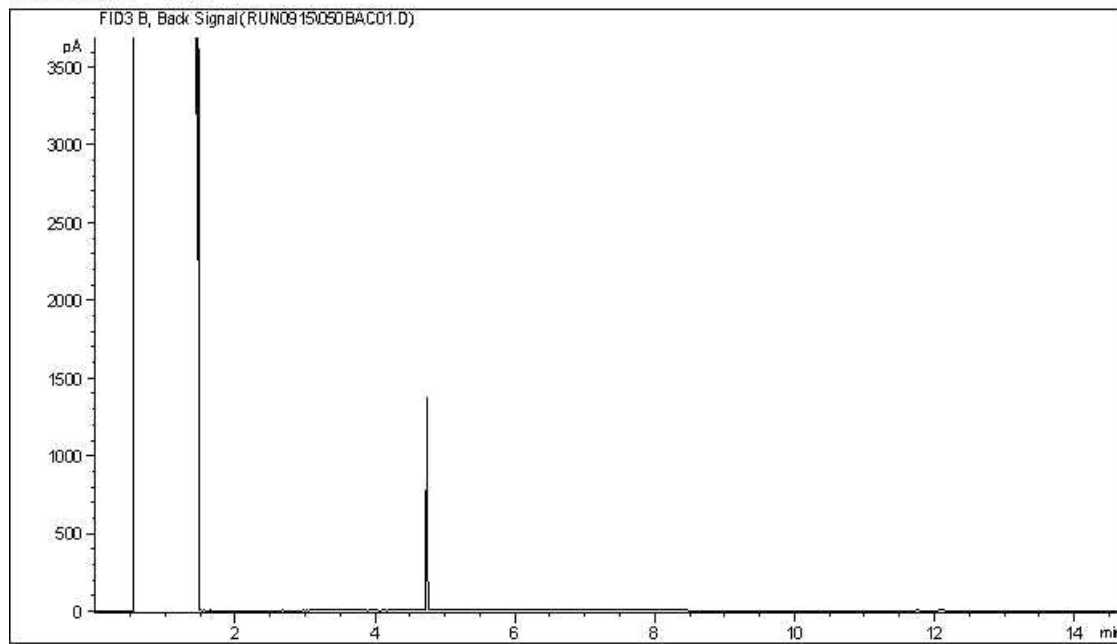
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

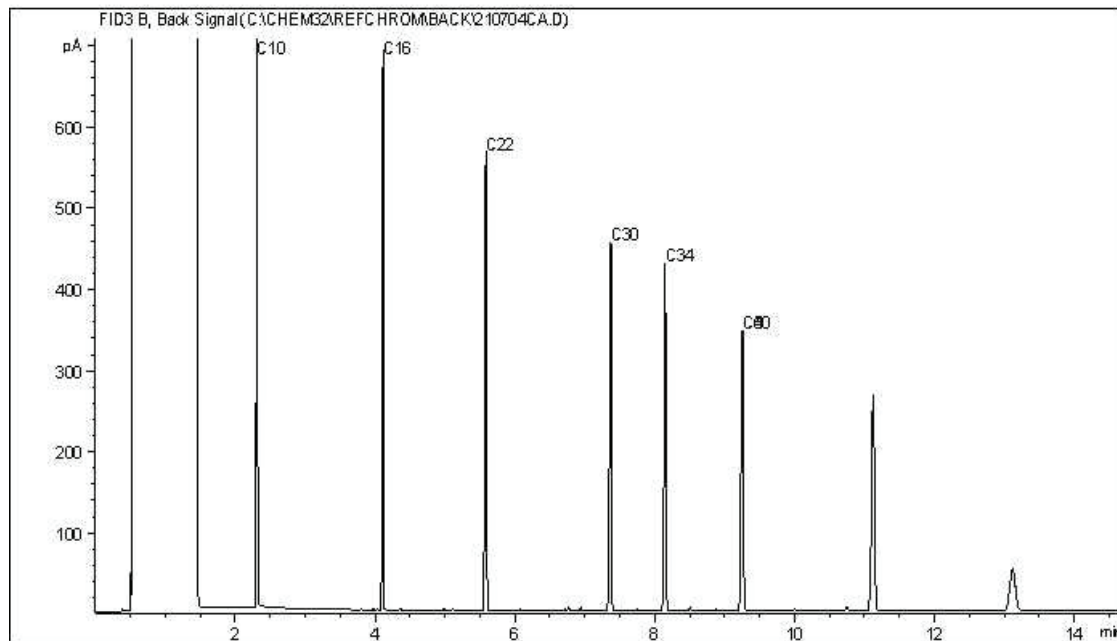
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC19



Carbon Range Distribution - Reference Chromatogram



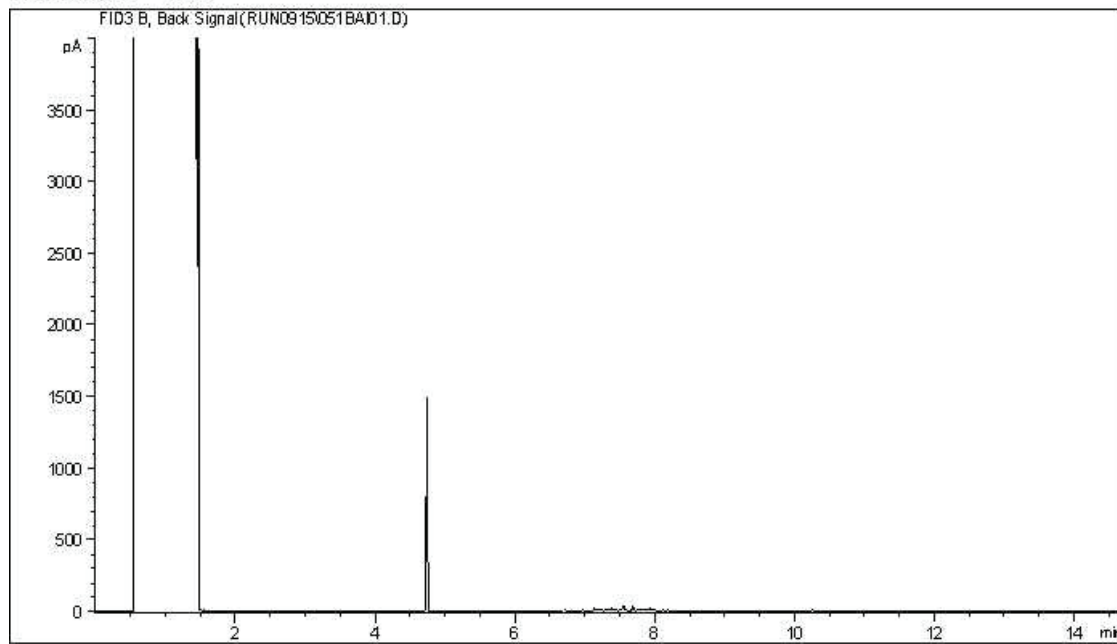
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

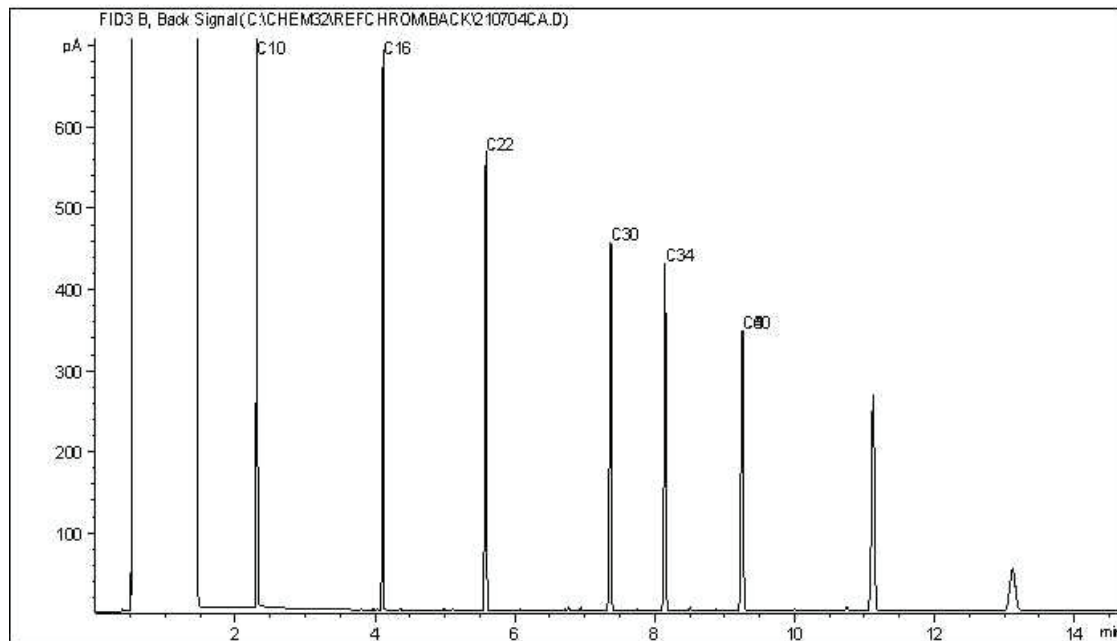
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC19



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

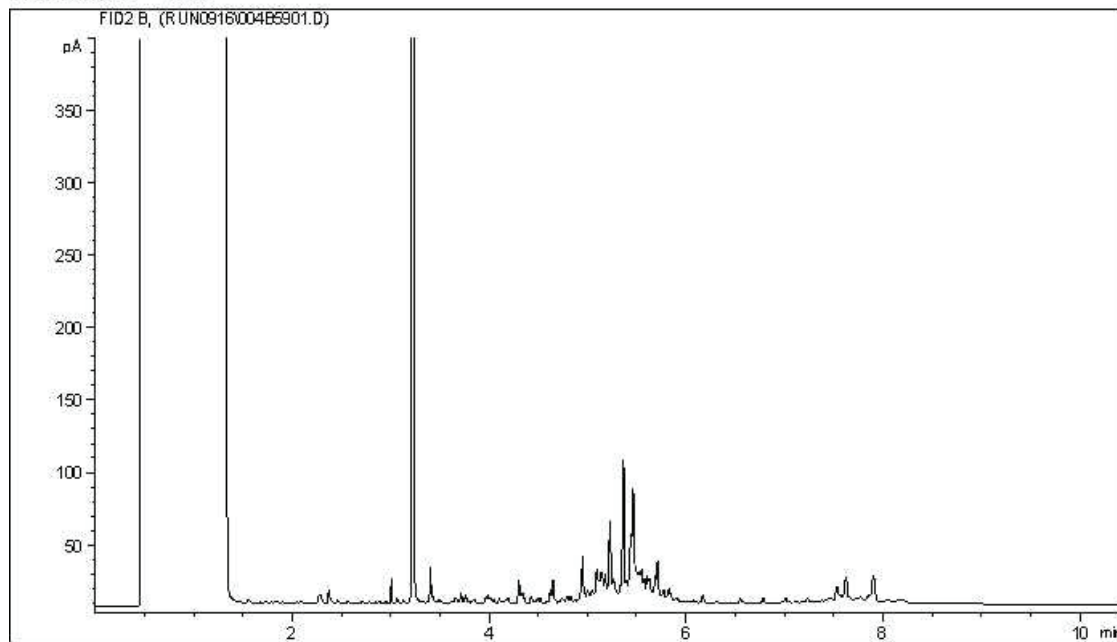
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

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

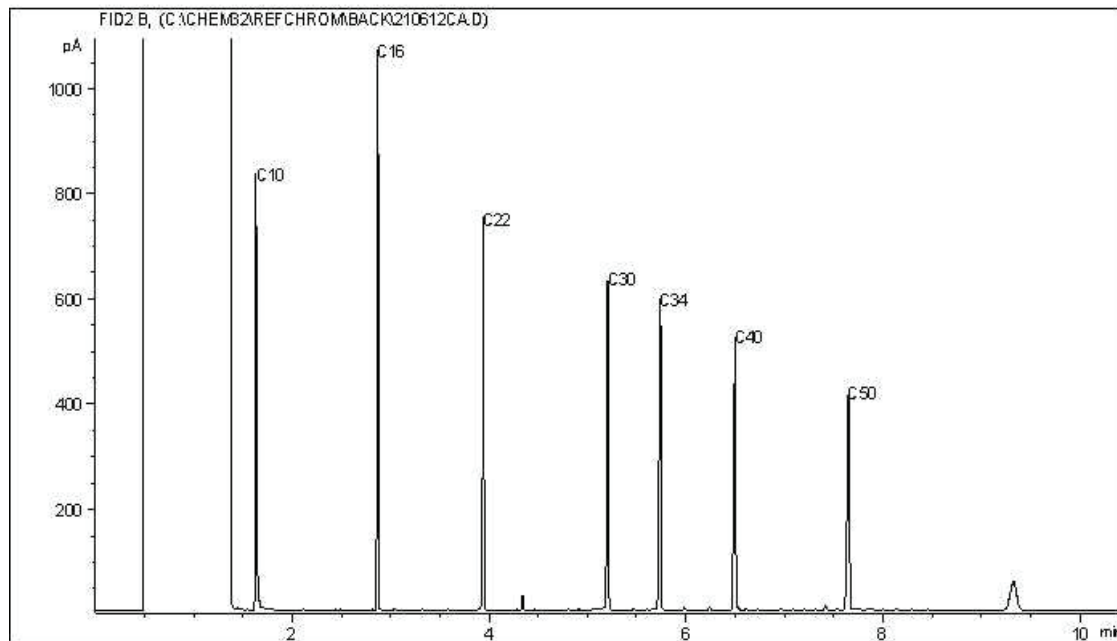


CCME Hydrocarbons (F2-F4 in soil) Chromatogram

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+

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 Farewell

Sampling Date: August 31, 2021

Golder Project Number: 20368099-6000-1001

Laboratory: Bureau Veritas Edmonton

Lab Submission Number: C167913

Was the Cooler Received at the lab under a sealed and intact custody seal? Yes  
 Was proper chain of custody of the samples documented and kept? Yes  
 Were sample temperatures acceptable when they reached lab?: Yes  
 Were all samples analyzed and extracted within hold times?: Yes  
 Has lab warranted all tests were in statistical control in CoA?: Yes  
 Was sufficient sample provided for the requested analysis? Yes  
 Has lab warranted all samples were analyzed with limited headspace present?: Yes

Are All Laboratory QC Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery	X			Laboratory duplicate RPD recovery for F3B (C22-C34)
Method Blank Concentration	X			(102%) exceeded the acceptance criteria of (40%).
Laboratory Duplicate RPD		X		All remaining laboratory QC results are within
Matrix Spike Recovery	X			acceptance criteria.
Blank Spike Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	All field QC samples are within
Trip Blank Concentration			X	alert limits.
Field Duplicate RPD	X			

Is data considered reliable (Yes/No/Suspect)? Yes  
 If answer is "No" or "Suspect", describe and provide rationale:

Data Reviewed by (Print): Anita Colbert

Data Reviewed by (Signature): Anita Colbert

Date: September 21, 2021



Your P.O. #: 20368099-7000-1001  
 Your Project #: 20368099-6000-1001  
 Site Location: Camp Farewell and Unipkat I-22, Northwest Territories  
 Your C.O.C. #: 644511-87-01, 644511-89-01

**Attention: Aurelie Belavance**

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

**Report Date: 2021/09/28**  
 Report #: R3077660  
 Version: 4 - Revision

**CERTIFICATE OF ANALYSIS – REVISED REPORT**

**BV LABS JOB #: C167916**

**Received: 2021/09/10, 09:00**

Sample Matrix: Soil  
 # Samples Received: 16

<b>Analyses</b>	<b>Quantity</b>	<b>Date Extracted</b>	<b>Date Analyzed</b>	<b>Laboratory Method</b>	<b>Analytical Method</b>
Barium on ICP using Fusion Extraction (1)	8	2021/09/20	2021/09/21	AB SOP-00044 / AB SOP-00042	EPA 6010d R5 m
BTEX/F1 by HS GC/MS/FID (MeOH extract) (1, 2)	16	N/A	2021/09/16	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX (1)	16	N/A	2021/09/17		Auto Calc
Hexavalent Chromium (1, 3)	10	2021/09/17	2021/09/17	AB SOP-00063	SM 23 3500-Cr B m
CCME Hydrocarbons (F2-F4 in soil) (1, 4)	9	2021/09/16	2021/09/17	AB SOP-00036	CCME PHC-CWS m
CCME Hydrocarbons (F2-F4 in soil) (1, 4)	7	2021/09/16	2021/09/18	AB SOP-00036	CCME PHC-CWS m
Elements by ICPMS - Soils (1)	2	2021/09/16	2021/09/16	AB SOP-00001 / AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Soils (1)	8	2021/09/17	2021/09/17	AB SOP-00001 / AB SOP-00043	EPA 6020b R2 m
Moisture (1)	16	N/A	2021/09/17	AB SOP-00002	CCME PHC-CWS m
Nitrate-N (soluble) (1)	8	2021/09/13	2021/09/18		Auto Calc
Benzo[a]pyrene Equivalency (1)	8	N/A	2021/09/18		Auto Calc
PAH in Soil by GC/MS (1)	8	2021/09/16	2021/09/18	AB SOP-00036 / AB SOP-00003	EPA 3540C/8270E m
Soluble Ions (1)	2	2021/09/16	2021/09/17	AB SOP-00033 / AB SOP-00042	EPA 6010d R5 m
Soluble Ions (1)	8	2021/09/17	2021/09/19	AB SOP-00033 / AB SOP-00042	EPA 6010d R5 m
Soluble Paste (1)	2	2021/09/16	2021/09/16	AB SOP-00033	Carter 2nd ed 15.2 m
Soluble Paste (1)	8	2021/09/17	2021/09/17	AB SOP-00033	Carter 2nd ed 15.2 m
Soluble Boron Calculation (1)	2	N/A	2021/09/18		Auto Calc
Soluble Boron Calculation (1)	8	N/A	2021/09/19		Auto Calc
Soluble Ions Calculation (1)	10	N/A	2021/09/28		Auto Calc
VOCs in Soil by HS GC/MS (Std List) (1, 2)	2	N/A	2021/09/15	AB SOP-00056	EPA 5021a/8260d 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



Your P.O. #: 20368099-7000-1001  
Your Project #: 20368099-6000-1001  
Site Location: Camp Farewell and Unipkat I-22, Northwest Territories  
Your C.O.C. #: 644511-87-01, 644511-89-01

**Attention: Aurelie Belavance**

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

**Report Date: 2021/09/28**  
Report #: R3077660  
Version: 4 - Revision

**CERTIFICATE OF ANALYSIS – REVISED REPORT**

**BV LABS JOB #: C167916**

**Received: 2021/09/10, 09:00**

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.

\* 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) 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.

Encryption Key

Lateshia Lee  
Supervisor, Project Submissions  
and Support  
28 Sep 2021 17:10:23

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.



BUREAU  
VERITAS

BV Labs Job #: C167916  
Report Date: 2021/09/28

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: PT

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

BV Labs ID		AFU815	AFU816	AFU817	AFU818	AFU819	AFU820		
Sampling Date		2021/09/04 10:01	2021/09/04 10:02	2021/09/04 10:05	2021/09/04 09:57	2021/09/04 09:59	2021/09/04 10:00		
COC Number		644511-87-01	644511-87-01	644511-87-01	644511-87-01	644511-87-01	644511-87-01		
	UNITS	TP21-190-02	TP21-190-04	TP21-190-06	TP21-191-02	TP21-191-04	TP21-191-06	RDL	QC Batch

Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	15	41	<10	<10	<10	<10	10	A355623
F3 (C16-C34 Hydrocarbons)	mg/kg	<50	140	<50	<50	<50	<50	50	A355623
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	<50	<50	<50	<50	<50	50	A355623
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes	Yes	Yes	N/A	A355623

Physical Properties									
Moisture	%	5.3	14	8.3	3.8	4.9	15	0.30	A355624

Volatiles									
Xylenes (Total)	mg/kg	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	0.045	A350570
F1 (C6-C10) - BTEX	mg/kg	<10	<10	<10	<10	<10	<10	10	A350570

Field Preserved Volatiles									
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	A351760
Toluene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	A351760
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	A351760
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	A351760
o-Xylene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	A351760
F1 (C6-C10)	mg/kg	<10	<10	<10	<10	<10	<10	10	A351760

Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	100	98	100	101	99	99	N/A	A351760
4-Bromofluorobenzene (sur.)	%	98	97	96	95	98	96	N/A	A351760
D10-o-Xylene (sur.)	%	98	109	102	98	94	97	N/A	A351760
D4-1,2-Dichloroethane (sur.)	%	102	102	101	103	104	101	N/A	A351760
O-TERPHENYL (sur.)	%	79	83	82	81	76	84	N/A	A355623

RDL = Reportable Detection Limit  
N/A = Not Applicable



BUREAU  
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BV Labs Job #: C167916  
Report Date: 2021/09/28

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: PT

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

BV Labs ID		AFU821	AFU822		AFU823	AFU823		
Sampling Date		2021/09/04 11:25	2021/09/04 11:30		2021/09/04 11:42	2021/09/04 11:42		
COC Number		644511-87-01	644511-87-01		644511-87-01	644511-87-01		
	UNITS	HA21-192-01	HA21-192-02	QC Batch	HA21-193-01	HA21-193-01 Lab-Dup	RDL	QC Batch
<b>Ext. Pet. Hydrocarbon</b>								
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	<10	A355623	<10	N/A	10	A355625
F3 (C16-C34 Hydrocarbons)	mg/kg	<50	<50	A355623	<50	N/A	50	A355625
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	<50	A355623	<50	N/A	50	A355625
Reached Baseline at C50	mg/kg	Yes	Yes	A355623	Yes	N/A	N/A	A355625
<b>Physical Properties</b>								
Moisture	%	7.2	11	A355624	9.0	8.2	0.30	A355624
<b>Volatiles</b>								
Xylenes (Total)	mg/kg	<0.045	<0.045	A350570	<0.045	N/A	0.045	A350570
F1 (C6-C10) - BTEX	mg/kg	<10	<10	A350570	<10	N/A	10	A350570
<b>Field Preserved Volatiles</b>								
Benzene	mg/kg	<0.0050	<0.0050	A351760	<0.0050	N/A	0.0050	A351760
Toluene	mg/kg	<0.050	<0.050	A351760	<0.050	N/A	0.050	A351760
Ethylbenzene	mg/kg	<0.010	<0.010	A351760	<0.010	N/A	0.010	A351760
m & p-Xylene	mg/kg	<0.040	<0.040	A351760	<0.040	N/A	0.040	A351760
o-Xylene	mg/kg	<0.020	<0.020	A351760	<0.020	N/A	0.020	A351760
F1 (C6-C10)	mg/kg	<10	<10	A351760	<10	N/A	10	A351760
<b>Surrogate Recovery (%)</b>								
1,4-Difluorobenzene (sur.)	%	100	99	A351760	98	N/A	N/A	A351760
4-Bromofluorobenzene (sur.)	%	95	96	A351760	96	N/A	N/A	A351760
D10-o-Xylene (sur.)	%	99	100	A351760	103	N/A	N/A	A351760
D4-1,2-Dichloroethane (sur.)	%	104	102	A351760	102	N/A	N/A	A351760
O-TERPHENYL (sur.)	%	81	81	A355623	99	N/A	N/A	A355625
RDL = Reportable Detection Limit Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable								





BUREAU  
VERITAS

BV Labs Job #: C167916  
Report Date: 2021/09/28

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: PT

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

BV Labs ID		AFU824	AFU824		AFU825	AFU826		
Sampling Date		2021/09/04 11:45	2021/09/04 11:45		2021/09/04 13:30	2021/09/04 13:50		
COC Number		644511-87-01	644511-87-01		644511-89-01	644511-89-01		
	UNITS	HA21-193-02	HA21-193-02 Lab-Dup	QC Batch	HA21-194-01	HA21-194-02	RDL	QC Batch
<b>Ext. Pet. Hydrocarbon</b>								
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	<10	A355625	25	66	10	A355623
F3 (C16-C34 Hydrocarbons)	mg/kg	<50	<50	A355625	210	950	50	A355623
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	<50	A355625	85	690	50	A355623
Reached Baseline at C50	mg/kg	Yes	Yes	A355625	Yes	Yes	N/A	A355623
<b>Physical Properties</b>								
Moisture	%	5.8	N/A	A355626	6.3	4.3	0.30	A355624
<b>Volatiles</b>								
Xylenes (Total)	mg/kg	<0.045	N/A	A350570	<0.045	<0.045	0.045	A350570
F1 (C6-C10) - BTEX	mg/kg	<10	N/A	A350570	<10	<10	10	A350570
<b>Field Preserved Volatiles</b>								
Benzene	mg/kg	<0.0050	N/A	A351760	<0.0050	<0.0050	0.0050	A351760
Toluene	mg/kg	<0.050	N/A	A351760	<0.050	<0.050	0.050	A351760
Ethylbenzene	mg/kg	<0.010	N/A	A351760	<0.010	<0.010	0.010	A351760
m & p-Xylene	mg/kg	<0.040	N/A	A351760	<0.040	<0.040	0.040	A351760
o-Xylene	mg/kg	<0.020	N/A	A351760	<0.020	<0.020	0.020	A351760
F1 (C6-C10)	mg/kg	<10	N/A	A351760	<10	<10	10	A351760
<b>Surrogate Recovery (%)</b>								
1,4-Difluorobenzene (sur.)	%	99	N/A	A351760	101	100	N/A	A351760
4-Bromofluorobenzene (sur.)	%	96	N/A	A351760	95	95	N/A	A351760
D10-o-Xylene (sur.)	%	105	N/A	A351760	102	100	N/A	A351760
D4-1,2-Dichloroethane (sur.)	%	101	N/A	A351760	101	103	N/A	A351760
O-TERPHENYL (sur.)	%	92	89	A355625	76	80	N/A	A355623
RDL = Reportable Detection Limit Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable								



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BV Labs Job #: C167916  
Report Date: 2021/09/28

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: PT

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

BV Labs ID		AFU827		AFU828		AFU829		AFU830		
Sampling Date		2021/09/04 13:55		2021/09/04 11:40		2021/09/04 11:15		2021/09/04 11:20		
COC Number		644511-89-01		644511-89-01		644511-89-01		644511-89-01		
	UNITS	FM21-01	QC Batch	FM21-02	RDL	TP21-152-02	RDL	TP21-177-01	RDL	QC Batch
<b>Ext. Pet. Hydrocarbon</b>										
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	A355625	<10	10	1700	10	35	10	A355625
F3 (C16-C34 Hydrocarbons)	mg/kg	<50	A355625	<50	50	1100	50	330	50	A355625
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	A355625	<50	50	220	50	110	50	A355625
Reached Baseline at C50	mg/kg	Yes	A355625	Yes	N/A	Yes	N/A	Yes	N/A	A355625
<b>Physical Properties</b>										
Moisture	%	2.2	A355628	2.8	0.30	40	0.30	45	0.30	A355626
<b>Volatiles</b>										
Xylenes (Total)	mg/kg	<0.045	A350570	<0.045	0.045	<0.095	0.095	<0.045	0.045	A350570
F1 (C6-C10) - BTEX	mg/kg	<10	A350570	<10	10	<21	21	<10	10	A350570
<b>Field Preserved Volatiles</b>										
Benzene	mg/kg	<0.0050	A351760	<0.0050	0.0050	<0.011 (1)	0.011	<0.0050	0.0050	A351760
Toluene	mg/kg	<0.050	A351760	<0.050	0.050	<0.11 (1)	0.11	<0.050	0.050	A351760
Ethylbenzene	mg/kg	<0.010	A351760	<0.010	0.010	<0.021 (1)	0.021	<0.010	0.010	A351760
m & p-Xylene	mg/kg	<0.040	A351760	<0.040	0.040	<0.085 (1)	0.085	<0.040	0.040	A351760
o-Xylene	mg/kg	<0.020	A351760	<0.020	0.020	<0.043 (1)	0.043	<0.020	0.020	A351760
F1 (C6-C10)	mg/kg	<10	A351760	<10	10	<21 (1)	21	<10	10	A351760
<b>Surrogate Recovery (%)</b>										
1,4-Difluorobenzene (sur.)	%	100	A351760	98	N/A	99	N/A	100	N/A	A351760
4-Bromofluorobenzene (sur.)	%	98	A351760	97	N/A	97	N/A	98	N/A	A351760
D10-o-Xylene (sur.)	%	93	A351760	91	N/A	103	N/A	94	N/A	A351760
D4-1,2-Dichloroethane (sur.)	%	102	A351760	103	N/A	103	N/A	103	N/A	A351760
O-TERPHENYL (sur.)	%	99	A355625	95	N/A	108	N/A	116	N/A	A355625
RDL = Reportable Detection Limit N/A = Not Applicable (1) Detection limits raised based on sample weight used for analysis.										



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BV Labs Job #: C167916  
Report Date: 2021/09/28

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: PT

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

<b>BV Labs ID</b>		AFU830		
<b>Sampling Date</b>		2021/09/04 11:20		
<b>COC Number</b>		644511-89-01		
	<b>UNITS</b>	<b>TP21-177-01 Lab-Dup</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Physical Properties</b>				
Moisture	%	41	0.30	A355626
RDL = Reportable Detection Limit				
Lab-Dup = Laboratory Initiated Duplicate				



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BV Labs Job #: C167916  
Report Date: 2021/09/28

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: PT

**AT1 REGULATED METALS - SOILS (SOIL)**

BV Labs ID		AFU815		AFU816		AFU817		AFU818		
Sampling Date		2021/09/04 10:01		2021/09/04 10:02		2021/09/04 10:05		2021/09/04 09:57		
COC Number		644511-87-01		644511-87-01		644511-87-01		644511-87-01		
	UNITS	TP21-190-02	RDL	TP21-190-04	RDL	TP21-190-06	RDL	TP21-191-02	RDL	QC Batch
<b>Calculated Parameters</b>										
Calculated Boron (B)	mg/kg	0.033	0.025	0.085	0.034	<0.030	0.030	0.046	0.023	A350633
<b>Elements</b>										
Hex. Chromium (Cr 6+)	mg/kg	<0.080	0.080	<0.080	0.080	<0.080	0.080	<0.080	0.080	A356383
<b>Soluble Parameters</b>										
Soluble Boron (B)	mg/L	0.13	0.10	0.25	0.10	<0.10	0.10	0.20	0.10	A357683
Saturation %	%	25	N/A	34	N/A	30	N/A	23	N/A	A354884
Soluble Sulphate (SO4)	mg/L	31	5.0	71	5.0	37	5.0	28	5.0	A357683
<b>Elements</b>										
Total Antimony (Sb)	mg/kg	<0.50	0.50	<0.50	0.50	<0.50	0.50	<0.50	0.50	A355882
Total Arsenic (As)	mg/kg	4.5	1.0	5.9	1.0	5.6	1.0	5.8	1.0	A355882
Total Barium (Ba)	mg/kg	220	1.0	340	1.0	110	1.0	260	1.0	A355882
Total Beryllium (Be)	mg/kg	<0.40	0.40	<0.40	0.40	<0.40	0.40	<0.40	0.40	A355882
Total Cadmium (Cd)	mg/kg	<0.050	0.050	0.079	0.050	0.071	0.050	0.079	0.050	A355882
Total Chromium (Cr)	mg/kg	4.9	1.0	5.7	1.0	5.5	1.0	5.5	1.0	A355882
Total Cobalt (Co)	mg/kg	1.6	0.50	2.7	0.50	3.5	0.50	2.2	0.50	A355882
Total Copper (Cu)	mg/kg	4.4	1.0	4.2	1.0	3.7	1.0	4.5	1.0	A355882
Total Lead (Pb)	mg/kg	6.9	0.50	5.4	0.50	3.2	0.50	7.8	0.50	A355882
Total Mercury (Hg)	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	<0.050	0.050	A355882
Total Molybdenum (Mo)	mg/kg	<0.40	0.40	0.52	0.40	<0.40	0.40	0.52	0.40	A355882
Total Nickel (Ni)	mg/kg	3.6	1.0	5.2	1.0	9.0	1.0	5.1	1.0	A355882
Total Selenium (Se)	mg/kg	<0.50	0.50	<0.50	0.50	<0.50	0.50	<0.50	0.50	A355882
Total Silver (Ag)	mg/kg	<0.20	0.20	<0.20	0.20	<0.20	0.20	<0.20	0.20	A355882
Total Thallium (Tl)	mg/kg	<0.10	0.10	<0.10	0.10	<0.10	0.10	<0.10	0.10	A355882
Total Tin (Sn)	mg/kg	<1.0	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	A355882
Total Uranium (U)	mg/kg	0.28	0.20	0.23	0.20	0.22	0.20	0.30	0.20	A355882
Total Vanadium (V)	mg/kg	11	1.0	16	1.0	11	1.0	13	1.0	A355882
Total Zinc (Zn)	mg/kg	12	10	21	10	25	10	15	10	A355882
RDL = Reportable Detection Limit N/A = Not Applicable										



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BV Labs Job #: C167916  
Report Date: 2021/09/28

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: PT

### AT1 REGULATED METALS - SOILS (SOIL)

<b>BV Labs ID</b>		AFU819			AFU820	AFU820		AFU825		
<b>Sampling Date</b>		2021/09/04 09:59			2021/09/04 10:00	2021/09/04 10:00		2021/09/04 13:30		
<b>COC Number</b>		644511-87-01			644511-87-01	644511-87-01		644511-89-01		
	<b>UNITS</b>	<b>TP21-191-04</b>	<b>RDL</b>	<b>QC Batch</b>	<b>TP21-191-06</b>	<b>TP21-191-06 Lab-Dup</b>	<b>RDL</b>	<b>HA21-194-01</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Calculated Parameters</b>										
Calculated Boron (B)	mg/kg	0.043	0.025	A350633	0.053	N/A	0.030	0.051	0.032	A350633
<b>Elements</b>										
Hex. Chromium (Cr 6+)	mg/kg	<0.080	0.080	A356383	<0.080	N/A	0.080	<0.080	0.080	A356105
<b>Soluble Parameters</b>										
Soluble Boron (B)	mg/L	0.17	0.10	A357683	0.18	0.14	0.10	0.16	0.10	A357683
Saturation %	%	25	N/A	A354884	30	30	N/A	32	N/A	A354884
Soluble Sulphate (SO4)	mg/L	32	5.0	A357683	61	55	5.0	47	5.0	A357683
<b>Elements</b>										
Total Antimony (Sb)	mg/kg	<0.50	0.50	A355882	<0.50	0.68	0.50	0.76	0.50	A355882
Total Arsenic (As)	mg/kg	4.7	1.0	A355882	5.1	5.1	1.0	4.7	1.0	A355882
Total Barium (Ba)	mg/kg	290	1.0	A355882	65	64	1.0	2300	1.0	A355882
Total Beryllium (Be)	mg/kg	<0.40	0.40	A355882	<0.40	<0.40	0.40	<0.40	0.40	A355882
Total Cadmium (Cd)	mg/kg	0.061	0.050	A355882	0.066	0.062	0.050	0.54	0.050	A355882
Total Chromium (Cr)	mg/kg	5.2	1.0	A355882	5.1	5.3	1.0	7.8	1.0	A355882
Total Cobalt (Co)	mg/kg	1.6	0.50	A355882	3.2	3.2	0.50	2.4	0.50	A355882
Total Copper (Cu)	mg/kg	3.9	1.0	A355882	3.6	3.7	1.0	2900	1.0	A355882
Total Lead (Pb)	mg/kg	7.5	0.50	A355882	2.8	2.7	0.50	47	0.50	A355882
Total Mercury (Hg)	mg/kg	<0.050	0.050	A355882	<0.050	<0.050	0.050	0.11	0.050	A355882
Total Molybdenum (Mo)	mg/kg	<0.40	0.40	A355882	<0.40	<0.40	0.40	0.59	0.40	A355882
Total Nickel (Ni)	mg/kg	4.4	1.0	A355882	8.7	8.2	1.0	5.3	1.0	A355882
Total Selenium (Se)	mg/kg	<0.50	0.50	A355882	<0.50	<0.50	0.50	<0.50	0.50	A355882
Total Silver (Ag)	mg/kg	<0.20	0.20	A355882	<0.20	<0.20	0.20	0.28	0.20	A355882
Total Thallium (Tl)	mg/kg	<0.10	0.10	A355882	<0.10	<0.10	0.10	<0.10	0.10	A355882
Total Tin (Sn)	mg/kg	<1.0	1.0	A355882	<1.0	<1.0	1.0	<1.0	1.0	A355882
Total Uranium (U)	mg/kg	0.34	0.20	A355882	0.30	0.30	0.20	0.26	0.20	A355882
Total Vanadium (V)	mg/kg	11	1.0	A355882	10	11	1.0	12	1.0	A355882
Total Zinc (Zn)	mg/kg	12	10	A355882	24	24	10	120	10	A355882

RDL = Reportable Detection Limit  
Lab-Dup = Laboratory Initiated Duplicate  
N/A = Not Applicable



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BV Labs Job #: C167916  
Report Date: 2021/09/28

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: PT

### AT1 REGULATED METALS - SOILS (SOIL)

BV Labs ID		AFU826			AFU827		AFU828		
Sampling Date		2021/09/04 13:50			2021/09/04 13:55		2021/09/04 11:40		
COC Number		644511-89-01			644511-89-01		644511-89-01		
	UNITS	HA21-194-02	RDL	QC Batch	FM21-01	RDL	FM21-02	RDL	QC Batch
<b>Calculated Parameters</b>									
Calculated Boron (B)	mg/kg	0.078	0.036	A350633	0.034	0.023	0.066	0.052	A350633
<b>Elements</b>									
Hex. Chromium (Cr 6+)	mg/kg	<0.080	0.080	A356105	<0.080	0.080	<0.080	0.080	A356105
<b>Soluble Parameters</b>									
Soluble Boron (B)	mg/L	0.22	0.10	A357683	0.15	0.10	0.13	0.10	A356253
Saturation %	%	36	N/A	A354884	23	N/A	52	N/A	A353202
Soluble Sulphate (SO4)	mg/L	74	5.0	A357683	N/A	N/A	N/A	N/A	N/A
<b>Elements</b>									
Total Antimony (Sb)	mg/kg	1.1	0.50	A355882	<0.50	0.50	<0.50	0.50	A354079
Total Arsenic (As)	mg/kg	8.2	1.0	A355882	6.5	1.0	5.1	1.0	A354079
Total Barium (Ba)	mg/kg	2400	1.0	A355882	250	1.0	89	1.0	A354079
Total Beryllium (Be)	mg/kg	<0.40	0.40	A355882	<0.40	0.40	<0.40	0.40	A354079
Total Cadmium (Cd)	mg/kg	0.54	0.050	A355882	0.076	0.050	0.081	0.050	A354079
Total Chromium (Cr)	mg/kg	9.8	1.0	A355882	6.6	1.0	6.0	1.0	A354079
Total Cobalt (Co)	mg/kg	3.3	0.50	A355882	3.1	0.50	3.8	0.50	A354079
Total Copper (Cu)	mg/kg	53	1.0	A355882	6.8	1.0	4.9	1.0	A354079
Total Lead (Pb)	mg/kg	46	0.50	A355882	7.7	0.50	3.3	0.50	A354079
Total Mercury (Hg)	mg/kg	0.071	0.050	A355882	<0.050	0.050	<0.050	0.050	A354079
Total Molybdenum (Mo)	mg/kg	1.1	0.40	A355882	0.52	0.40	0.44	0.40	A354079
Total Nickel (Ni)	mg/kg	9.6	1.0	A355882	7.9	1.0	10	1.0	A354079
Total Selenium (Se)	mg/kg	<0.50	0.50	A355882	<0.50	0.50	<0.50	0.50	A354079
Total Silver (Ag)	mg/kg	<0.20	0.20	A355882	<0.20	0.20	<0.20	0.20	A354079
Total Thallium (Tl)	mg/kg	<0.10	0.10	A355882	<0.10	0.10	<0.10	0.10	A354079
Total Tin (Sn)	mg/kg	1.4	1.0	A355882	<1.0	1.0	<1.0	1.0	A354079
Total Uranium (U)	mg/kg	0.42	0.20	A355882	0.36	0.20	0.36	0.20	A354079
Total Vanadium (V)	mg/kg	16	1.0	A355882	15	1.0	12	1.0	A354079
Total Zinc (Zn)	mg/kg	170	10	A355882	21	10	31	10	A354079
RDL = Reportable Detection Limit N/A = Not Applicable									





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BV Labs Job #: C167916  
Report Date: 2021/09/28

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: PT

### RESULTS OF CHEMICAL ANALYSES OF SOIL

BV Labs ID		AFU815		AFU816		AFU817		AFU818			
Sampling Date		2021/09/04 10:01		2021/09/04 10:02		2021/09/04 10:05		2021/09/04 09:57			
COC Number		644511-87-01		644511-87-01		644511-87-01		644511-87-01			
	UNITS	TP21-190-02	RDL	TP21-190-04	RDL	TP21-190-06	RDL	TP21-191-02	RDL	QC Batch	

Calculated Parameters										
Soluble Nitrate (N)	mg/L	1.1	0.20	0.32	0.20	1.1	0.20	2.6	0.20	A350563
Calculated Calcium (Ca)	mg/kg	3.0	0.37	8.9	0.51	12	0.45	2.2	0.34	A368052
Calculated Magnesium (Mg)	mg/kg	0.51	0.25	3.4	0.34	2.3	0.30	0.41	0.23	A368052
Calculated Sodium (Na)	mg/kg	3.0	0.61	4.6	0.86	3.5	0.76	3.5	0.57	A368052
Calculated Potassium (K)	mg/kg	0.84	0.32	1.5	0.45	1.1	0.39	3.9	0.30	A368052
Calculated Boron (B)	mg/kg	0.033	0.025	0.085	0.034	<0.030	0.030	0.046	0.023	A368052
Calculated Sulphate (SO4)	mg/kg	7.7	1.2	24	1.7	11	1.5	6.5	1.1	A368052
Calculated Nitrate (N)	mg/kg	0.28	0.049	0.11	0.069	0.34	0.061	0.60	0.046	A368052
Calculated Nitrite (N)	mg/kg	<0.049	0.049	<0.069	0.069	<0.061	0.061	<0.046	0.046	A368052
Calculated Total Nitrogen (N)	mg/kg	CALCERROR	N/A	CALCERROR	N/A	CALCERROR	N/A	CALCERROR	N/A	A368052

RDL = Reportable Detection Limit  
N/A = Not Applicable

BV Labs ID		AFU819		AFU820		AFU825		AFU826			
Sampling Date		2021/09/04 09:59		2021/09/04 10:00		2021/09/04 13:30		2021/09/04 13:50			
COC Number		644511-87-01		644511-87-01		644511-89-01		644511-89-01			
	UNITS	TP21-191-04	RDL	TP21-191-06	RDL	HA21-194-01	RDL	HA21-194-02	RDL	QC Batch	

Calculated Parameters										
Soluble Nitrate (N)	mg/L	1.9	0.20	3.9	0.20	<0.20	0.20	<0.20	0.20	A350563
Calculated Calcium (Ca)	mg/kg	2.1	0.37	15	0.45	27	0.48	41	0.54	A368052
Calculated Magnesium (Mg)	mg/kg	0.42	0.25	3.9	0.30	3.5	0.32	5.2	0.36	A368052
Calculated Sodium (Na)	mg/kg	3.0	0.62	8.0	0.75	5.4	0.79	8.0	0.91	A368052
Calculated Potassium (K)	mg/kg	6.6	0.32	1.4	0.39	4.1	0.41	1.2	0.47	A368052
Calculated Boron (B)	mg/kg	0.043	0.025	0.053	0.030	0.051	0.032	0.078	0.036	A368052
Calculated Sulphate (SO4)	mg/kg	8.0	1.2	18	1.5	15	1.6	27	1.8	A368052
Calculated Nitrate (N)	mg/kg	0.48	0.050	1.2	0.060	<0.064	0.064	<0.073	0.073	A368052
Calculated Nitrite (N)	mg/kg	<0.050	0.050	<0.060	0.060	<0.064	0.064	<0.073	0.073	A368052
Calculated Total Nitrogen (N)	mg/kg	CALCERROR	N/A	CALCERROR	N/A	CALCERROR	N/A	CALCERROR	N/A	A368052

RDL = Reportable Detection Limit  
N/A = Not Applicable



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BV Labs Job #: C167916  
Report Date: 2021/09/28

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: PT

### RESULTS OF CHEMICAL ANALYSES OF SOIL

<b>BV Labs ID</b>		AFU827		AFU828		
<b>Sampling Date</b>		2021/09/04 13:55		2021/09/04 11:40		
<b>COC Number</b>		644511-89-01		644511-89-01		
	<b>UNITS</b>	<b>FM21-01</b>	<b>RDL</b>	<b>FM21-02</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Calculated Parameters</b>						
Calculated Calcium (Ca)	mg/kg	6.8	0.34	44	0.77	A368052
Calculated Magnesium (Mg)	mg/kg	1.1	0.23	6.5	0.52	A368052
Calculated Sodium (Na)	mg/kg	2.9	0.57	8.6	1.3	A368052
Calculated Potassium (K)	mg/kg	0.56	0.30	1.6	0.67	A368052
Calculated Boron (B)	mg/kg	0.034	0.023	0.066	0.052	A368052
Calculated Sulphate (SO4)	mg/kg	2.6	1.1	39	2.6	A368052
RDL = Reportable Detection Limit						



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BV Labs Job #: C167916  
Report Date: 2021/09/28

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: PT

### SEMIVOLATILE ORGANICS BY GC-MS (SOIL)

BV Labs ID		AFU815	AFU816	AFU817	AFU818	AFU819		
Sampling Date		2021/09/04 10:01	2021/09/04 10:02	2021/09/04 10:05	2021/09/04 09:57	2021/09/04 09:59		
COC Number		644511-87-01	644511-87-01	644511-87-01	644511-87-01	644511-87-01		
	UNITS	TP21-190-02	TP21-190-04	TP21-190-06	TP21-191-02	TP21-191-04	RDL	QC Batch
<b>Polycyclic Aromatics</b>								
Acenaphthene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	A355621
B[a]P TPE Total Potency Equivalents	mg/kg	<0.0071	<0.0071	<0.0071	<0.0071	<0.0071	0.0071	A350628
Acenaphthylene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	A355621
Acridine	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	A355621
Anthracene	mg/kg	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.0040	A355621
Benzo(a)anthracene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	A355621
Benzo(b&j)fluoranthene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	A355621
Benzo(k)fluoranthene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	A355621
Benzo(g,h,i)perylene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	A355621
Benzo(c)phenanthrene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	A355621
Benzo(a)pyrene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	A355621
Benzo(e)pyrene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	A355621
Chrysene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	A355621
Dibenz(a,h)anthracene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	A355621
Fluoranthene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	A355621
Fluorene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	A355621
Indeno(1,2,3-cd)pyrene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	A355621
1-Methylnaphthalene	mg/kg	<0.0050	0.047	<0.0050	<0.0050	<0.0050	0.0050	A355621
2-Methylnaphthalene	mg/kg	<0.0050	0.047	<0.0050	<0.0050	<0.0050	0.0050	A355621
Naphthalene	mg/kg	<0.0050	0.018	<0.0050	<0.0050	<0.0050	0.0050	A355621
Phenanthrene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	A355621
Perylene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	A355621
Pyrene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	A355621
Quinoline	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	A355621
<b>Surrogate Recovery (%)</b>								
D10-ANTHRACENE (sur.)	%	90	103	92	87	89	N/A	A355621
D8-ACENAPHTHYLENE (sur.)	%	82	95	84	81	83	N/A	A355621
D8-NAPHTHALENE (sur.)	%	77	88	78	74	78	N/A	A355621
TERPHENYL-D14 (sur.)	%	97	114	98	93	95	N/A	A355621
RDL = Reportable Detection Limit N/A = Not Applicable								



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BV Labs Job #: C167916  
Report Date: 2021/09/28

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: PT

### SEMIVOLATILE ORGANICS BY GC-MS (SOIL)

BV Labs ID		AFU820		AFU825		AFU826		
Sampling Date		2021/09/04 10:00		2021/09/04 13:30		2021/09/04 13:50		
COC Number		644511-87-01		644511-89-01		644511-89-01		
	UNITS	TP21-191-06	QC Batch	HA21-194-01	QC Batch	HA21-194-02	RDL	QC Batch
<b>Polycyclic Aromatics</b>								
Acenaphthene	mg/kg	<0.0050	A355621	<0.0050	A355621	<0.0050	0.0050	A355621
B[a]P TPE Total Potency Equivalents	mg/kg	<0.0071	A350628	<0.0071	A350057	0.083	0.0071	A350628
Acenaphthylene	mg/kg	<0.0050	A355621	<0.0050	A355621	0.011	0.0050	A355621
Acridine	mg/kg	<0.010	A355621	<0.010	A355621	<0.010	0.010	A355621
Anthracene	mg/kg	<0.0040	A355621	<0.0040	A355621	0.0075	0.0040	A355621
Benzo(a)anthracene	mg/kg	<0.0050	A355621	<0.0050	A355621	0.012	0.0050	A355621
Benzo(b&j)fluoranthene	mg/kg	<0.0050	A355621	<0.0050	A355621	0.047	0.0050	A355621
Benzo(k)fluoranthene	mg/kg	<0.0050	A355621	<0.0050	A355621	0.011	0.0050	A355621
Benzo(g,h,i)perylene	mg/kg	<0.0050	A355621	<0.0050	A355621	0.080	0.0050	A355621
Benzo(c)phenanthrene	mg/kg	<0.0050	A355621	<0.0050	A355621	<0.0050	0.0050	A355621
Benzo(a)pyrene	mg/kg	<0.0050	A355621	<0.0050	A355621	0.065	0.0050	A355621
Benzo(e)pyrene	mg/kg	<0.0050	A355621	<0.0050	A355621	0.047	0.0050	A355621
Chrysene	mg/kg	<0.0050	A355621	<0.0050	A355621	0.012	0.0050	A355621
Dibenz(a,h)anthracene	mg/kg	<0.0050	A355621	<0.0050	A355621	<0.0050	0.0050	A355621
Fluoranthene	mg/kg	<0.0050	A355621	<0.0050	A355621	0.013	0.0050	A355621
Fluorene	mg/kg	<0.0050	A355621	<0.0050	A355621	0.0070	0.0050	A355621
Indeno(1,2,3-cd)pyrene	mg/kg	<0.0050	A355621	<0.0050	A355621	0.072	0.0050	A355621
1-Methylnaphthalene	mg/kg	<0.0050	A355621	0.0054	A355621	0.029	0.0050	A355621
2-Methylnaphthalene	mg/kg	<0.0050	A355621	0.012	A355621	0.11	0.0050	A355621
Naphthalene	mg/kg	<0.0050	A355621	<0.0050	A355621	0.070	0.0050	A355621
Phenanthrene	mg/kg	<0.0050	A355621	<0.0050	A355621	0.018	0.0050	A355621
Perylene	mg/kg	<0.0050	A355621	<0.0050	A355621	0.022	0.0050	A355621
Pyrene	mg/kg	<0.0050	A355621	<0.0050	A355621	0.060	0.0050	A355621
Quinoline	mg/kg	<0.010	A355621	<0.010	A355621	<0.010	0.010	A355621
<b>Surrogate Recovery (%)</b>								
D10-ANTHRACENE (sur.)	%	97	A355621	87	A355621	84	N/A	A355621
D8-ACENAPHTHYLENE (sur.)	%	89	A355621	81	A355621	78	N/A	A355621
D8-NAPHTHALENE (sur.)	%	83	A355621	77	A355621	76	N/A	A355621
TERPHENYL-D14 (sur.)	%	105	A355621	98	A355621	91	N/A	A355621
RDL = Reportable Detection Limit N/A = Not Applicable								



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BV Labs Job #: C167916  
Report Date: 2021/09/28

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: PT

### ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

<b>BV Labs ID</b>		AFU815	AFU816	AFU817	AFU818	AFU819	AFU820		
<b>Sampling Date</b>		2021/09/04 10:01	2021/09/04 10:02	2021/09/04 10:05	2021/09/04 09:57	2021/09/04 09:59	2021/09/04 10:00		
<b>COC Number</b>		644511-87-01	644511-87-01	644511-87-01	644511-87-01	644511-87-01	644511-87-01		
	<b>UNITS</b>	<b>TP21-190-02</b>	<b>TP21-190-04</b>	<b>TP21-190-06</b>	<b>TP21-191-02</b>	<b>TP21-191-04</b>	<b>TP21-191-06</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Elements</b>									
Total Fusion Barium (Ba)	mg/kg	970	950	530	960	950	600	50	A358665
RDL = Reportable Detection Limit									

<b>BV Labs ID</b>		AFU825	AFU826		
<b>Sampling Date</b>		2021/09/04 13:30	2021/09/04 13:50		
<b>COC Number</b>		644511-89-01	644511-89-01		
	<b>UNITS</b>	<b>HA21-194-01</b>	<b>HA21-194-02</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Elements</b>					
Total Fusion Barium (Ba)	mg/kg	10000	74000	50	A358665
RDL = Reportable Detection Limit					



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BV Labs Job #: C167916  
Report Date: 2021/09/28

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: PT

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

BV Labs ID		AFU827	AFU828		
Sampling Date		2021/09/04 13:55	2021/09/04 11:40		
COC Number		644511-89-01	644511-89-01		
	UNITS	FM21-01	FM21-02	RDL	QC Batch
<b>Field Preserved Volatiles</b>					
Bromodichloromethane	mg/kg	<0.030	<0.030	0.030	A351389
Bromoform	mg/kg	<0.050	<0.050	0.050	A351389
Bromomethane	mg/kg	<0.020	<0.020	0.020	A351389
Carbon tetrachloride	mg/kg	<0.00050	<0.00050	0.00050	A351389
Chlorobenzene	mg/kg	<0.0050	<0.0050	0.0050	A351389
Dibromochloromethane	mg/kg	<0.020	<0.020	0.020	A351389
Chloroethane	mg/kg	<0.020	<0.020	0.020	A351389
Chloroform	mg/kg	<0.010	<0.010	0.010	A351389
Chloromethane	mg/kg	<0.030	<0.030	0.030	A351389
1,2-dibromoethane	mg/kg	<0.0020	<0.0020	0.0020	A351389
1,2-dichlorobenzene	mg/kg	0.025	0.023	0.020	A351389
1,3-dichlorobenzene	mg/kg	<0.020	<0.020	0.020	A351389
1,4-dichlorobenzene	mg/kg	<0.020	<0.020	0.020	A351389
1,1-dichloroethane	mg/kg	<0.020	<0.020	0.020	A351389
1,2-dichloroethane	mg/kg	<0.0020	<0.0020	0.0020	A351389
1,1-dichloroethene	mg/kg	<0.020	<0.020	0.020	A351389
cis-1,2-dichloroethene	mg/kg	<0.020	<0.020	0.020	A351389
trans-1,2-dichloroethene	mg/kg	<0.020	<0.020	0.020	A351389
Dichloromethane	mg/kg	<0.030	<0.030	0.030	A351389
1,2-dichloropropane	mg/kg	<0.020	<0.020	0.020	A351389
cis-1,3-dichloropropene	mg/kg	<0.020	<0.020	0.020	A351389
trans-1,3-dichloropropene	mg/kg	<0.020	<0.020	0.020	A351389
Methyl methacrylate	mg/kg	<0.040	<0.040	0.040	A351389
Methyl-tert-butylether (MTBE)	mg/kg	<0.030	<0.030	0.030	A351389
Styrene	mg/kg	<0.020	<0.020	0.020	A351389
1,1,1,2-tetrachloroethane	mg/kg	<0.050	<0.050	0.050	A351389
1,1,2,2-tetrachloroethane	mg/kg	<0.050	<0.050	0.050	A351389
Tetrachloroethene	mg/kg	<0.010	<0.010	0.010	A351389
1,2,3-trichlorobenzene	mg/kg	<0.040	<0.040	0.040	A351389
1,2,4-trichlorobenzene	mg/kg	<0.040	<0.040	0.040	A351389
RDL = Reportable Detection Limit					



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BV Labs Job #: C167916  
Report Date: 2021/09/28

GOLDER ASSOCIATES LTD.  
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Site Location: Camp Farewell and Unipkat I-22, Northwest  
Territories  
Your P.O. #: 20368099-7000-1001  
Sampler Initials: PT

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

BV Labs ID		AFU827	AFU828		
Sampling Date		2021/09/04 13:55	2021/09/04 11:40		
COC Number		644511-89-01	644511-89-01		
	<b>UNITS</b>	<b>FM21-01</b>	<b>FM21-02</b>	<b>RDL</b>	<b>QC Batch</b>
1,3,5-trichlorobenzene	mg/kg	<0.040	<0.040	0.040	A351389
1,1,1-trichloroethane	mg/kg	<0.020	<0.020	0.020	A351389
1,1,2-trichloroethane	mg/kg	<0.020	<0.020	0.020	A351389
Trichloroethene	mg/kg	<0.010	<0.010	0.010	A351389
Trichlorofluoromethane	mg/kg	<0.020	<0.020	0.020	A351389
1,2,4-trimethylbenzene	mg/kg	<0.50	<0.50	0.50	A351389
1,3,5-trimethylbenzene	mg/kg	<0.50	<0.50	0.50	A351389
Vinyl chloride	mg/kg	<0.00030	<0.00030	0.00030	A351389
<b>Surrogate Recovery (%)</b>					
1,4-Difluorobenzene (sur.)	%	99	99	N/A	A351389
4-Bromofluorobenzene (sur.)	%	97	97	N/A	A351389
D10-o-Xylene (sur.)	%	107	102	N/A	A351389
D4-1,2-Dichloroethane (sur.)	%	99	101	N/A	A351389
RDL = Reportable Detection Limit N/A = Not Applicable					





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BV Labs Job #: C167916  
Report Date: 2021/09/28

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: PT

### GENERAL COMMENTS

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

Package 1	4.3°C
Package 2	5.3°C
Package 3	5.7°C
Package 4	3.0°C
Package 5	3.3°C
Package 6	3.3°C
Package 7	1.7°C
Package 8	2.3°C

Version #4: Report reissued to amend sample IDs for AFU821, AFU822, AFU823 and AFU824 on 2021/09/28

**Results relate only to the items tested.**



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BV Labs Job #: C167916  
Report Date: 2021/09/28

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: PT

### QUALITY ASSURANCE REPORT

QA/QC	Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
A351389	QW1	Matrix Spike	1,4-Difluorobenzene (sur.)	2021/09/14	99	%	50 - 140		
			4-Bromofluorobenzene (sur.)	2021/09/14	105	%	50 - 140		
			D10-o-Xylene (sur.)	2021/09/14	107	%	50 - 140		
			D4-1,2-Dichloroethane (sur.)	2021/09/14	102	%	50 - 140		
			Bromodichloromethane	2021/09/14	96	%	50 - 140		
			Bromoform	2021/09/14	116	%	50 - 140		
			Bromomethane	2021/09/14	87	%	50 - 140		
			Carbon tetrachloride	2021/09/14	86	%	50 - 140		
			Chlorobenzene	2021/09/14	91	%	50 - 140		
			Dibromochloromethane	2021/09/14	109	%	50 - 140		
			Chloroethane	2021/09/14	72	%	50 - 140		
			Chloroform	2021/09/14	90	%	50 - 140		
			Chloromethane	2021/09/14	69	%	50 - 140		
			1,2-dibromoethane	2021/09/14	107	%	50 - 140		
			1,2-dichlorobenzene	2021/09/14	96	%	50 - 140		
			1,3-dichlorobenzene	2021/09/14	95	%	50 - 140		
			1,4-dichlorobenzene	2021/09/14	98	%	50 - 140		
			1,1-dichloroethane	2021/09/14	95	%	50 - 140		
			1,2-dichloroethane	2021/09/14	101	%	50 - 140		
			1,1-dichloroethene	2021/09/14	86	%	50 - 140		
			cis-1,2-dichloroethene	2021/09/14	93	%	50 - 140		
			trans-1,2-dichloroethene	2021/09/14	91	%	50 - 140		
			Dichloromethane	2021/09/14	95	%	50 - 140		
			1,2-dichloropropane	2021/09/14	99	%	50 - 140		
			cis-1,3-dichloropropene	2021/09/14	114	%	50 - 140		
			trans-1,3-dichloropropene	2021/09/14	102	%	50 - 140		
			Methyl methacrylate	2021/09/14	120	%	50 - 140		
			Methyl-tert-butylether (MTBE)	2021/09/14	95	%	50 - 140		
			Styrene	2021/09/14	96	%	50 - 140		
			1,1,1,2-tetrachloroethane	2021/09/14	94	%	50 - 140		
			1,1,1,2-tetrachloroethane	2021/09/14	111	%	50 - 140		
			Tetrachloroethene	2021/09/14	81	%	50 - 140		
			1,2,3-trichlorobenzene	2021/09/14	91	%	50 - 140		
1,2,4-trichlorobenzene	2021/09/14	89	%	50 - 140					
1,3,5-trichlorobenzene	2021/09/14	85	%	50 - 140					
1,1,1-trichloroethane	2021/09/14	89	%	50 - 140					
1,1,2-trichloroethane	2021/09/14	101	%	50 - 140					
Trichloroethene	2021/09/14	86	%	50 - 140					
Trichlorofluoromethane	2021/09/14	84	%	50 - 140					
1,2,4-trimethylbenzene	2021/09/14	92	%	50 - 140					
1,3,5-trimethylbenzene	2021/09/14	92	%	50 - 140					
Vinyl chloride	2021/09/14	85	%	50 - 140					
A351389	QW1	Spiked Blank	1,4-Difluorobenzene (sur.)	2021/09/14	99	%	50 - 140		
			4-Bromofluorobenzene (sur.)	2021/09/14	103	%	50 - 140		
			D10-o-Xylene (sur.)	2021/09/14	102	%	50 - 140		
			D4-1,2-Dichloroethane (sur.)	2021/09/14	94	%	50 - 140		
			Bromodichloromethane	2021/09/14	92	%	60 - 130		
			Bromoform	2021/09/14	112	%	60 - 130		
			Bromomethane	2021/09/14	81	%	60 - 130		
Carbon tetrachloride	2021/09/14	90	%	60 - 130					
Chlorobenzene	2021/09/14	95	%	60 - 130					



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BV Labs Job #: C167916  
Report Date: 2021/09/28

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: PT

### QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dibromochloromethane	2021/09/14		106	%	60 - 130
			Chloroethane	2021/09/14		71	%	60 - 130
			Chloroform	2021/09/14		89	%	60 - 130
			Chloromethane	2021/09/14		62	%	60 - 130
			1,2-dibromoethane	2021/09/14		103	%	60 - 130
			1,2-dichlorobenzene	2021/09/14		97	%	60 - 130
			1,3-dichlorobenzene	2021/09/14		97	%	60 - 130
			1,4-dichlorobenzene	2021/09/14		100	%	60 - 130
			1,1-dichloroethane	2021/09/14		94	%	60 - 130
			1,2-dichloroethane	2021/09/14		92	%	60 - 130
			1,1-dichloroethene	2021/09/14		87	%	60 - 130
			cis-1,2-dichloroethene	2021/09/14		93	%	60 - 130
			trans-1,2-dichloroethene	2021/09/14		95	%	60 - 130
			Dichloromethane	2021/09/14		93	%	60 - 130
			1,2-dichloropropane	2021/09/14		96	%	60 - 130
			cis-1,3-dichloropropene	2021/09/14		104	%	60 - 130
			trans-1,3-dichloropropene	2021/09/14		91	%	60 - 130
			Methyl methacrylate	2021/09/14		107	%	60 - 130
			Methyl-tert-butylether (MTBE)	2021/09/14		91	%	60 - 130
			Styrene	2021/09/14		100	%	60 - 130
			1,1,1,2-tetrachloroethane	2021/09/14		96	%	60 - 130
			1,1,2,2-tetrachloroethane	2021/09/14		108	%	60 - 130
			Tetrachloroethene	2021/09/14		90	%	60 - 130
			1,2,3-trichlorobenzene	2021/09/14		94	%	60 - 130
			1,2,4-trichlorobenzene	2021/09/14		97	%	60 - 130
			1,3,5-trichlorobenzene	2021/09/14		91	%	60 - 130
			1,1,1-trichloroethane	2021/09/14		91	%	60 - 130
			1,1,2-trichloroethane	2021/09/14		94	%	60 - 130
			Trichloroethene	2021/09/14		90	%	60 - 130
			Trichlorofluoromethane	2021/09/14		74	%	60 - 130
			1,2,4-trimethylbenzene	2021/09/14		97	%	60 - 130
			1,3,5-trimethylbenzene	2021/09/14		98	%	60 - 130
			Vinyl chloride	2021/09/14		82	%	60 - 130
A351389	QW1	Method Blank	1,4-Difluorobenzene (sur.)	2021/09/14		97	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/09/14		98	%	50 - 140
			D10-o-Xylene (sur.)	2021/09/14		99	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/09/14		98	%	50 - 140
			Bromodichloromethane	2021/09/14	<0.030		mg/kg	
			Bromoform	2021/09/14	<0.050		mg/kg	
			Bromomethane	2021/09/14	<0.020		mg/kg	
			Carbon tetrachloride	2021/09/14	<0.00050		mg/kg	
			Chlorobenzene	2021/09/14	<0.0050		mg/kg	
			Dibromochloromethane	2021/09/14	<0.020		mg/kg	
			Chloroethane	2021/09/14	<0.020		mg/kg	
			Chloroform	2021/09/14	<0.010		mg/kg	
			Chloromethane	2021/09/14	<0.030		mg/kg	
			1,2-dibromoethane	2021/09/14	<0.0020		mg/kg	
			1,2-dichlorobenzene	2021/09/14	<0.020		mg/kg	
			1,3-dichlorobenzene	2021/09/14	<0.020		mg/kg	
			1,4-dichlorobenzene	2021/09/14	<0.020		mg/kg	
			1,1-dichloroethane	2021/09/14	<0.020		mg/kg	



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BV Labs Job #: C167916  
Report Date: 2021/09/28

GOLDER ASSOCIATES LTD.  
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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
				1,2-dichloroethane	2021/09/14	<0.0020		mg/kg	
				1,1-dichloroethene	2021/09/14	<0.020		mg/kg	
				cis-1,2-dichloroethene	2021/09/14	<0.020		mg/kg	
				trans-1,2-dichloroethene	2021/09/14	<0.020		mg/kg	
				Dichloromethane	2021/09/14	<0.030		mg/kg	
				1,2-dichloropropane	2021/09/14	<0.020		mg/kg	
				cis-1,3-dichloropropene	2021/09/14	<0.020		mg/kg	
				trans-1,3-dichloropropene	2021/09/14	<0.020		mg/kg	
				Methyl methacrylate	2021/09/14	<0.040		mg/kg	
				Methyl-tert-butylether (MTBE)	2021/09/14	<0.030		mg/kg	
				Styrene	2021/09/14	<0.020		mg/kg	
				1,1,1,2-tetrachloroethane	2021/09/14	<0.050		mg/kg	
				1,1,1,2-tetrachloroethane	2021/09/14	<0.050		mg/kg	
				Tetrachloroethene	2021/09/14	<0.010		mg/kg	
				1,2,3-trichlorobenzene	2021/09/14	<0.040		mg/kg	
				1,2,4-trichlorobenzene	2021/09/14	<0.040		mg/kg	
				1,3,5-trichlorobenzene	2021/09/14	<0.040		mg/kg	
				1,1,1-trichloroethane	2021/09/14	<0.020		mg/kg	
				1,1,2-trichloroethane	2021/09/14	<0.020		mg/kg	
				Trichloroethene	2021/09/14	<0.010		mg/kg	
				Trichlorofluoromethane	2021/09/14	<0.020		mg/kg	
				1,2,4-trimethylbenzene	2021/09/14	<0.50		mg/kg	
				1,3,5-trimethylbenzene	2021/09/14	<0.50		mg/kg	
				Vinyl chloride	2021/09/14	<0.00030		mg/kg	
A351389		QW1	RPD	Bromodichloromethane	2021/09/14	NC		%	50
				Bromoform	2021/09/14	NC		%	50
				Bromomethane	2021/09/14	NC		%	50
				Carbon tetrachloride	2021/09/14	NC		%	50
				Chlorobenzene	2021/09/14	NC		%	50
				Dibromochloromethane	2021/09/14	NC		%	50
				Chloroethane	2021/09/14	NC		%	50
				Chloroform	2021/09/14	NC		%	50
				Chloromethane	2021/09/14	NC		%	50
				1,2-dibromoethane	2021/09/14	NC		%	50
				1,2-dichlorobenzene	2021/09/14	NC		%	50
				1,3-dichlorobenzene	2021/09/14	NC		%	50
				1,4-dichlorobenzene	2021/09/14	NC		%	50
				1,1-dichloroethane	2021/09/14	NC		%	50
				1,2-dichloroethane	2021/09/14	NC		%	50
				1,1-dichloroethene	2021/09/14	NC		%	50
				cis-1,2-dichloroethene	2021/09/14	NC		%	50
				trans-1,2-dichloroethene	2021/09/14	NC		%	50
				Dichloromethane	2021/09/14	NC		%	50
				1,2-dichloropropane	2021/09/14	NC		%	50
				cis-1,3-dichloropropene	2021/09/14	NC		%	50
				trans-1,3-dichloropropene	2021/09/14	NC		%	50
				Methyl methacrylate	2021/09/14	NC		%	50
				Methyl-tert-butylether (MTBE)	2021/09/14	NC		%	50
				Styrene	2021/09/14	NC		%	50
				1,1,1,2-tetrachloroethane	2021/09/14	NC		%	50
				1,1,2,2-tetrachloroethane	2021/09/14	NC		%	50



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BV Labs Job #: C167916  
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GOLDER ASSOCIATES LTD.  
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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
			Tetrachloroethene	2021/09/14	NC		%	50
			1,2,3-trichlorobenzene	2021/09/14	NC		%	50
			1,2,4-trichlorobenzene	2021/09/14	NC		%	50
			1,3,5-trichlorobenzene	2021/09/14	NC		%	50
			1,1,1-trichloroethane	2021/09/14	NC		%	50
			1,1,2-trichloroethane	2021/09/14	NC		%	50
			Trichloroethene	2021/09/14	NC		%	50
			Trichlorofluoromethane	2021/09/14	NC		%	50
			1,2,4-trimethylbenzene	2021/09/14	NC		%	50
			1,3,5-trimethylbenzene	2021/09/14	NC		%	50
			Vinyl chloride	2021/09/14	NC		%	50
A351760	DO1	Matrix Spike	1,4-Difluorobenzene (sur.)	2021/09/16		104	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/09/16		101	%	50 - 140
			D10-o-Xylene (sur.)	2021/09/16		98	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/09/16		102	%	50 - 140
			Benzene	2021/09/16		102	%	50 - 140
			Toluene	2021/09/16		106	%	50 - 140
			Ethylbenzene	2021/09/16		106	%	50 - 140
			m & p-Xylene	2021/09/16		108	%	50 - 140
			o-Xylene	2021/09/16		108	%	50 - 140
			F1 (C6-C10)	2021/09/16		96	%	60 - 140
A351760	DO1	Spiked Blank	1,4-Difluorobenzene (sur.)	2021/09/16		99	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/09/16		97	%	50 - 140
			D10-o-Xylene (sur.)	2021/09/16		94	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/09/16		101	%	50 - 140
			Benzene	2021/09/16		85	%	60 - 130
			Toluene	2021/09/16		87	%	60 - 130
			Ethylbenzene	2021/09/16		89	%	60 - 130
			m & p-Xylene	2021/09/16		89	%	60 - 130
			o-Xylene	2021/09/16		93	%	60 - 130
			F1 (C6-C10)	2021/09/16		94	%	60 - 140
A351760	DO1	Method Blank	1,4-Difluorobenzene (sur.)	2021/09/16		101	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/09/16		96	%	50 - 140
			D10-o-Xylene (sur.)	2021/09/16		92	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/09/16		103	%	50 - 140
			Benzene	2021/09/16	<0.0050		mg/kg	
			Toluene	2021/09/16	<0.050		mg/kg	
			Ethylbenzene	2021/09/16	<0.010		mg/kg	
			m & p-Xylene	2021/09/16	<0.040		mg/kg	
			o-Xylene	2021/09/16	<0.020		mg/kg	
			F1 (C6-C10)	2021/09/16	<10		mg/kg	
A351760	DO1	RPD	Benzene	2021/09/16	NC		%	50
			Toluene	2021/09/16	NC		%	50
			Ethylbenzene	2021/09/16	NC		%	50
			m & p-Xylene	2021/09/16	NC		%	50
			o-Xylene	2021/09/16	NC		%	50
			F1 (C6-C10)	2021/09/16	NC		%	30
A353202	JHC	QC Standard	Saturation %	2021/09/16		102	%	75 - 125
A353202	JHC	RPD	Saturation %	2021/09/16	1.3		%	12
A354079	PC5	Matrix Spike	Total Antimony (Sb)	2021/09/16		104	%	75 - 125
			Total Arsenic (As)	2021/09/16		97	%	75 - 125



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GOLDER ASSOCIATES LTD.  
Client Project #: 20368099-6000-1001  
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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
			Total Barium (Ba)	2021/09/16		NC	%	75 - 125
			Total Beryllium (Be)	2021/09/16		98	%	75 - 125
			Total Cadmium (Cd)	2021/09/16		101	%	75 - 125
			Total Chromium (Cr)	2021/09/16		112	%	75 - 125
			Total Cobalt (Co)	2021/09/16		100	%	75 - 125
			Total Copper (Cu)	2021/09/16		99	%	75 - 125
			Total Lead (Pb)	2021/09/16		96	%	75 - 125
			Total Mercury (Hg)	2021/09/16		98	%	75 - 125
			Total Molybdenum (Mo)	2021/09/16		104	%	75 - 125
			Total Nickel (Ni)	2021/09/16		102	%	75 - 125
			Total Selenium (Se)	2021/09/16		99	%	75 - 125
			Total Silver (Ag)	2021/09/16		102	%	75 - 125
			Total Thallium (Tl)	2021/09/16		100	%	75 - 125
			Total Tin (Sn)	2021/09/16		103	%	75 - 125
			Total Uranium (U)	2021/09/16		103	%	75 - 125
			Total Vanadium (V)	2021/09/16		139 (1)	%	75 - 125
			Total Zinc (Zn)	2021/09/16		NC	%	75 - 125
A354079	PC5	QC Standard	Total Antimony (Sb)	2021/09/16		116	%	15 - 182
			Total Arsenic (As)	2021/09/16		104	%	53 - 147
			Total Barium (Ba)	2021/09/16		99	%	80 - 119
			Total Cadmium (Cd)	2021/09/16		100	%	72 - 128
			Total Chromium (Cr)	2021/09/16		99	%	59 - 141
			Total Cobalt (Co)	2021/09/16		99	%	58 - 142
			Total Copper (Cu)	2021/09/16		109	%	83 - 117
			Total Lead (Pb)	2021/09/16		108	%	79 - 121
			Total Molybdenum (Mo)	2021/09/16		111	%	67 - 133
			Total Nickel (Ni)	2021/09/16		112	%	79 - 121
			Total Silver (Ag)	2021/09/16		115	%	47 - 153
			Total Tin (Sn)	2021/09/16		104	%	67 - 133
			Total Uranium (U)	2021/09/16		94	%	77 - 123
			Total Vanadium (V)	2021/09/16		105	%	79 - 121
			Total Zinc (Zn)	2021/09/16		105	%	79 - 121
A354079	PC5	Spiked Blank	Total Antimony (Sb)	2021/09/16		105	%	80 - 120
			Total Arsenic (As)	2021/09/16		99	%	80 - 120
			Total Barium (Ba)	2021/09/16		98	%	80 - 120
			Total Beryllium (Be)	2021/09/16		96	%	80 - 120
			Total Cadmium (Cd)	2021/09/16		98	%	80 - 120
			Total Chromium (Cr)	2021/09/16		100	%	80 - 120
			Total Cobalt (Co)	2021/09/16		102	%	80 - 120
			Total Copper (Cu)	2021/09/16		105	%	80 - 120
			Total Lead (Pb)	2021/09/16		98	%	80 - 120
			Total Mercury (Hg)	2021/09/16		102	%	80 - 120
			Total Molybdenum (Mo)	2021/09/16		100	%	80 - 120
			Total Nickel (Ni)	2021/09/16		102	%	80 - 120
			Total Selenium (Se)	2021/09/16		103	%	80 - 120
			Total Silver (Ag)	2021/09/16		99	%	80 - 120
			Total Thallium (Tl)	2021/09/16		102	%	80 - 120
			Total Tin (Sn)	2021/09/16		97	%	80 - 120
			Total Uranium (U)	2021/09/16		102	%	80 - 120
			Total Vanadium (V)	2021/09/16		102	%	80 - 120
			Total Zinc (Zn)	2021/09/16		103	%	80 - 120



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BV Labs Job #: C167916  
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GOLDER ASSOCIATES LTD.  
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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
A354079	PC5	Method Blank	Total Antimony (Sb)	2021/09/16	<0.50			mg/kg	
			Total Arsenic (As)	2021/09/16	<1.0			mg/kg	
			Total Barium (Ba)	2021/09/16	<1.0			mg/kg	
			Total Beryllium (Be)	2021/09/16	<0.40			mg/kg	
			Total Cadmium (Cd)	2021/09/16	<0.050			mg/kg	
			Total Chromium (Cr)	2021/09/16	<1.0			mg/kg	
			Total Cobalt (Co)	2021/09/16	<0.50			mg/kg	
			Total Copper (Cu)	2021/09/16	<1.0			mg/kg	
			Total Lead (Pb)	2021/09/16	<0.50			mg/kg	
			Total Mercury (Hg)	2021/09/16	<0.050			mg/kg	
			Total Molybdenum (Mo)	2021/09/16	<0.40			mg/kg	
			Total Nickel (Ni)	2021/09/16	<1.0			mg/kg	
			Total Selenium (Se)	2021/09/16	<0.50			mg/kg	
			Total Silver (Ag)	2021/09/16	<0.20			mg/kg	
			Total Thallium (Tl)	2021/09/16	<0.10			mg/kg	
			Total Tin (Sn)	2021/09/16	<1.0			mg/kg	
			Total Uranium (U)	2021/09/16	<0.20			mg/kg	
			Total Vanadium (V)	2021/09/16	<1.0			mg/kg	
Total Zinc (Zn)	2021/09/16	<10			mg/kg				
A354079	PC5	RPD	Total Antimony (Sb)	2021/09/16	6.7			%	30
			Total Arsenic (As)	2021/09/16	1.4			%	30
			Total Barium (Ba)	2021/09/16	1.5			%	35
			Total Beryllium (Be)	2021/09/16	2.1			%	30
			Total Cadmium (Cd)	2021/09/16	1.4			%	30
			Total Chromium (Cr)	2021/09/16	4.5			%	30
			Total Cobalt (Co)	2021/09/16	1.0			%	30
			Total Copper (Cu)	2021/09/16	0.25			%	30
			Total Lead (Pb)	2021/09/16	2.1			%	35
			Total Mercury (Hg)	2021/09/16	NC			%	35
			Total Molybdenum (Mo)	2021/09/16	2.1			%	35
			Total Nickel (Ni)	2021/09/16	5.8			%	30
			Total Selenium (Se)	2021/09/16	NC			%	30
			Total Silver (Ag)	2021/09/16	NC			%	35
			Total Thallium (Tl)	2021/09/16	6.0			%	30
			Total Tin (Sn)	2021/09/16	NC			%	35
			Total Uranium (U)	2021/09/16	4.9			%	30
			Total Vanadium (V)	2021/09/16	3.2			%	30
Total Zinc (Zn)	2021/09/16	2.9			%	30			
A354884	LZ0	QC Standard	Saturation %	2021/09/17			101	%	75 - 125
A354884	LZ0	RPD [AFU820-01]	Saturation %	2021/09/17	0.94			%	12
A355621	SJ1	Matrix Spike	D10-ANTHRACENE (sur.)	2021/09/17			97	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2021/09/17			89	%	50 - 130
			D8-NAPHTHALENE (sur.)	2021/09/17			85	%	50 - 130
			TERPHENYL-D14 (sur.)	2021/09/17			110	%	50 - 130
			Acenaphthene	2021/09/17			87	%	50 - 130
			Acenaphthylene	2021/09/17			86	%	50 - 130
			Acridine	2021/09/17			52	%	50 - 130
			Anthracene	2021/09/17			81	%	50 - 130
			Benzo(a)anthracene	2021/09/17			87	%	50 - 130
			Benzo(b&j)fluoranthene	2021/09/17			79	%	50 - 130
Benzo(k)fluoranthene	2021/09/17			80	%	50 - 130			





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Your P.O. #: 20368099-7000-1001  
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### QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Benzo(g,h,i)perylene	2021/09/17		69	%	50 - 130
			Benzo(c)phenanthrene	2021/09/17		85	%	50 - 130
			Benzo(a)pyrene	2021/09/17		78	%	50 - 130
			Benzo(e)pyrene	2021/09/17		73	%	50 - 130
			Chrysene	2021/09/17		86	%	50 - 130
			Dibenz(a,h)anthracene	2021/09/17		71	%	50 - 130
			Fluoranthene	2021/09/17		91	%	50 - 130
			Fluorene	2021/09/17		87	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2021/09/17		78	%	50 - 130
			1-Methylnaphthalene	2021/09/17		67	%	50 - 130
			2-Methylnaphthalene	2021/09/17		83	%	50 - 130
			Naphthalene	2021/09/17		79	%	50 - 130
			Phenanthrene	2021/09/17		88	%	50 - 130
			Perylene	2021/09/17		82	%	50 - 130
			Pyrene	2021/09/17		86	%	50 - 130
			Quinoline	2021/09/17		97	%	50 - 130
A355621	SJ1	Spiked Blank	D10-ANTHRACENE (sur.)	2021/09/18		99	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2021/09/18		94	%	50 - 130
			D8-NAPHTHALENE (sur.)	2021/09/18		91	%	50 - 130
			TERPHENYL-D14 (sur.)	2021/09/18		111	%	50 - 130
			Acenaphthene	2021/09/18		92	%	50 - 130
			Acenaphthylene	2021/09/18		91	%	50 - 130
			Acridine	2021/09/18		65	%	50 - 130
			Anthracene	2021/09/18		86	%	50 - 130
			Benzo(a)anthracene	2021/09/18		94	%	50 - 130
			Benzo(b&j)fluoranthene	2021/09/18		86	%	50 - 130
			Benzo(k)fluoranthene	2021/09/18		91	%	50 - 130
			Benzo(g,h,i)perylene	2021/09/18		92	%	50 - 130
			Benzo(c)phenanthrene	2021/09/18		88	%	50 - 130
			Benzo(a)pyrene	2021/09/18		91	%	50 - 130
			Benzo(e)pyrene	2021/09/18		83	%	50 - 130
			Chrysene	2021/09/18		91	%	50 - 130
			Dibenz(a,h)anthracene	2021/09/18		90	%	50 - 130
			Fluoranthene	2021/09/18		96	%	50 - 130
			Fluorene	2021/09/18		94	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2021/09/18		88	%	50 - 130
			1-Methylnaphthalene	2021/09/18		71	%	50 - 130
			2-Methylnaphthalene	2021/09/18		89	%	50 - 130
			Naphthalene	2021/09/18		84	%	50 - 130
			Phenanthrene	2021/09/18		90	%	50 - 130
			Perylene	2021/09/18		88	%	50 - 130
			Pyrene	2021/09/18		92	%	50 - 130
			Quinoline	2021/09/18		94	%	50 - 130
A355621	SJ1	Method Blank	D10-ANTHRACENE (sur.)	2021/09/18		80	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2021/09/18		88	%	50 - 130
			D8-NAPHTHALENE (sur.)	2021/09/18		83	%	50 - 130
			TERPHENYL-D14 (sur.)	2021/09/18		105	%	50 - 130
			Acenaphthene	2021/09/18	<0.0050		mg/kg	
			Acenaphthylene	2021/09/18	<0.0050		mg/kg	
			Acridine	2021/09/18	<0.010		mg/kg	
			Anthracene	2021/09/18	<0.0040		mg/kg	



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BV Labs Job #: C167916  
Report Date: 2021/09/28

GOLDER ASSOCIATES LTD.  
Client Project #: 20368099-6000-1001  
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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
			Benzo(a)anthracene	2021/09/18	<0.0050		mg/kg	
			Benzo(b&j)fluoranthene	2021/09/18	<0.0050		mg/kg	
			Benzo(k)fluoranthene	2021/09/18	<0.0050		mg/kg	
			Benzo(g,h,i)perylene	2021/09/18	<0.0050		mg/kg	
			Benzo(c)phenanthrene	2021/09/18	<0.0050		mg/kg	
			Benzo(a)pyrene	2021/09/18	<0.0050		mg/kg	
			Benzo(e)pyrene	2021/09/18	<0.0050		mg/kg	
			Chrysene	2021/09/18	<0.0050		mg/kg	
			Dibenz(a,h)anthracene	2021/09/18	<0.0050		mg/kg	
			Fluoranthene	2021/09/18	<0.0050		mg/kg	
			Fluorene	2021/09/18	<0.0050		mg/kg	
			Indeno(1,2,3-cd)pyrene	2021/09/18	<0.0050		mg/kg	
			1-Methylnaphthalene	2021/09/18	<0.0050		mg/kg	
			2-Methylnaphthalene	2021/09/18	<0.0050		mg/kg	
			Naphthalene	2021/09/18	<0.0050		mg/kg	
			Phenanthrene	2021/09/18	<0.0050		mg/kg	
			Perylene	2021/09/18	<0.0050		mg/kg	
			Pyrene	2021/09/18	<0.0050		mg/kg	
			Quinoline	2021/09/18	<0.010		mg/kg	
A355621	SJ1	RPD	Acenaphthene	2021/09/17	NC		%	50
			Acenaphthylene	2021/09/17	NC		%	50
			Acridine	2021/09/17	NC		%	50
			Anthracene	2021/09/17	NC		%	50
			Benzo(a)anthracene	2021/09/17	NC		%	50
			Benzo(b&j)fluoranthene	2021/09/17	9.4		%	50
			Benzo(k)fluoranthene	2021/09/17	11		%	50
			Benzo(g,h,i)perylene	2021/09/17	18		%	50
			Benzo(c)phenanthrene	2021/09/17	NC		%	50
			Benzo(a)pyrene	2021/09/17	36		%	50
			Benzo(e)pyrene	2021/09/17	3.7		%	50
			Chrysene	2021/09/17	NC		%	50
			Dibenz(a,h)anthracene	2021/09/17	NC		%	50
			Fluoranthene	2021/09/17	2.4		%	50
			Fluorene	2021/09/17	NC		%	50
			Indeno(1,2,3-cd)pyrene	2021/09/17	22		%	50
			1-Methylnaphthalene	2021/09/17	NC		%	50
			2-Methylnaphthalene	2021/09/17	NC		%	50
			Naphthalene	2021/09/17	NC		%	50
			Phenanthrene	2021/09/17	NC		%	50
			Perylene	2021/09/17	39		%	50
			Pyrene	2021/09/17	7.3		%	50
			Quinoline	2021/09/17	NC		%	50
A355623	CAU	Matrix Spike	O-TERPHENYL (sur.)	2021/09/17		91	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/09/17		79	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/09/17		76	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/09/17		73	%	60 - 140
A355623	CAU	Spiked Blank	O-TERPHENYL (sur.)	2021/09/17		99	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/09/17		85	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/09/17		83	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/09/17		80	%	60 - 140
A355623	CAU	Method Blank	O-TERPHENYL (sur.)	2021/09/17		85	%	60 - 140



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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
A355623	CAU	RPD	F2 (C10-C16 Hydrocarbons)	2021/09/17	<10		mg/kg	
			F3 (C16-C34 Hydrocarbons)	2021/09/17	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2021/09/17	<50		mg/kg	
			F2 (C10-C16 Hydrocarbons)	2021/09/17	3.9	%	40	
			F3 (C16-C34 Hydrocarbons)	2021/09/17	22	%	40	
			F4 (C34-C50 Hydrocarbons)	2021/09/17	NC	%	40	
A355624	MAE	Method Blank	Moisture	2021/09/17	<0.30		%	
A355624	MAE	RPD [AFU823-01]	Moisture	2021/09/17	9.3		%	20
A355625	GG3	Matrix Spike [AFU824-01]	O-TERPHENYL (sur.)	2021/09/17		86	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/09/17		82	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/09/17		87	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/09/17		85	%	60 - 140
A355625	GG3	Spiked Blank	O-TERPHENYL (sur.)	2021/09/17		91	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/09/17		89	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/09/17		93	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/09/17		91	%	60 - 140
A355625	GG3	Method Blank	O-TERPHENYL (sur.)	2021/09/17		98	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/09/17	<10	mg/kg		
A355625	GG3	RPD [AFU824-01]	F3 (C16-C34 Hydrocarbons)	2021/09/17	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2021/09/17	<50		mg/kg	
			F2 (C10-C16 Hydrocarbons)	2021/09/17	NC	%	40	
			F3 (C16-C34 Hydrocarbons)	2021/09/17	NC	%	40	
A355625	GG3	RPD [AFU824-01]	F4 (C34-C50 Hydrocarbons)	2021/09/17	NC	%	40	
			Moisture	2021/09/17	<0.30	%		
			Moisture	2021/09/17	9.7	%	20	
A355628	SNA	Method Blank	Moisture	2021/09/17	<0.30		%	
A355628	SNA	RPD	Moisture	2021/09/17	1.9		%	20
A355882	PC5	Matrix Spike [AFU820-01]	Total Antimony (Sb)	2021/09/17		113	%	75 - 125
			Total Arsenic (As)	2021/09/17		103	%	75 - 125
			Total Barium (Ba)	2021/09/17		NC	%	75 - 125
			Total Beryllium (Be)	2021/09/17		114	%	75 - 125
			Total Cadmium (Cd)	2021/09/17		101	%	75 - 125
			Total Chromium (Cr)	2021/09/17		108	%	75 - 125
			Total Cobalt (Co)	2021/09/17		104	%	75 - 125
			Total Copper (Cu)	2021/09/17		104	%	75 - 125
			Total Lead (Pb)	2021/09/17		97	%	75 - 125
			Total Mercury (Hg)	2021/09/17		94	%	75 - 125
			Total Molybdenum (Mo)	2021/09/17		105	%	75 - 125
			Total Nickel (Ni)	2021/09/17		107	%	75 - 125
			Total Selenium (Se)	2021/09/17		109	%	75 - 125
			Total Silver (Ag)	2021/09/17		102	%	75 - 125
			Total Thallium (Tl)	2021/09/17		94	%	75 - 125
			Total Tin (Sn)	2021/09/17		104	%	75 - 125
			Total Uranium (U)	2021/09/17		93	%	75 - 125
			Total Vanadium (V)	2021/09/17		121	%	75 - 125
			Total Zinc (Zn)	2021/09/17		112	%	75 - 125
			A355882	PC5	QC Standard	Total Antimony (Sb)	2021/09/17	
Total Arsenic (As)	2021/09/17					97	%	53 - 147
Total Barium (Ba)	2021/09/17					88	%	80 - 119
Total Cadmium (Cd)	2021/09/17					91	%	72 - 128
Total Chromium (Cr)	2021/09/17					91	%	59 - 141



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GOLDER ASSOCIATES LTD.  
Client Project #: 20368099-6000-1001  
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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			
A355882	PC5	Spiked Blank	Total Cobalt (Co)	2021/09/17		94	%	58 - 142			
			Total Copper (Cu)	2021/09/17		100	%	83 - 117			
			Total Lead (Pb)	2021/09/17		103	%	79 - 121			
			Total Molybdenum (Mo)	2021/09/17		107	%	67 - 133			
			Total Nickel (Ni)	2021/09/17		100	%	79 - 121			
			Total Silver (Ag)	2021/09/17		84	%	47 - 153			
			Total Tin (Sn)	2021/09/17		98	%	67 - 133			
			Total Uranium (U)	2021/09/17		100	%	77 - 123			
			Total Vanadium (V)	2021/09/17		96	%	79 - 121			
			Total Zinc (Zn)	2021/09/17		101	%	79 - 121			
			Total Antimony (Sb)	2021/09/17		108	%	80 - 120			
			Total Arsenic (As)	2021/09/17		97	%	80 - 120			
			Total Barium (Ba)	2021/09/17		90	%	80 - 120			
			Total Beryllium (Be)	2021/09/17		105	%	80 - 120			
			Total Cadmium (Cd)	2021/09/17		94	%	80 - 120			
			Total Chromium (Cr)	2021/09/17		98	%	80 - 120			
			Total Cobalt (Co)	2021/09/17		98	%	80 - 120			
			Total Copper (Cu)	2021/09/17		100	%	80 - 120			
			Total Lead (Pb)	2021/09/17		91	%	80 - 120			
			A355882	PC5	Method Blank	Total Mercury (Hg)	2021/09/17		92	%	80 - 120
						Total Molybdenum (Mo)	2021/09/17		97	%	80 - 120
Total Nickel (Ni)	2021/09/17					96	%	80 - 120			
Total Selenium (Se)	2021/09/17					103	%	80 - 120			
Total Silver (Ag)	2021/09/17					95	%	80 - 120			
Total Thallium (Tl)	2021/09/17					90	%	80 - 120			
Total Tin (Sn)	2021/09/17					94	%	80 - 120			
Total Uranium (U)	2021/09/17					88	%	80 - 120			
Total Vanadium (V)	2021/09/17					98	%	80 - 120			
Total Zinc (Zn)	2021/09/17					100	%	80 - 120			
Total Antimony (Sb)	2021/09/17					<0.50		mg/kg			
Total Arsenic (As)	2021/09/17					<1.0		mg/kg			
Total Barium (Ba)	2021/09/17					<1.0		mg/kg			
Total Beryllium (Be)	2021/09/17					<0.40		mg/kg			
Total Cadmium (Cd)	2021/09/17					<0.050		mg/kg			
Total Chromium (Cr)	2021/09/17		<1.0		mg/kg						
Total Cobalt (Co)	2021/09/17		<0.50		mg/kg						
Total Copper (Cu)	2021/09/17		<1.0		mg/kg						
Total Lead (Pb)	2021/09/17		<0.50		mg/kg						
Total Mercury (Hg)	2021/09/17		<0.050		mg/kg						
Total Molybdenum (Mo)	2021/09/17		<0.40		mg/kg						
Total Nickel (Ni)	2021/09/17		<1.0		mg/kg						
Total Selenium (Se)	2021/09/17		<0.50		mg/kg						
Total Silver (Ag)	2021/09/17		<0.20		mg/kg						
Total Thallium (Tl)	2021/09/17		<0.10		mg/kg						
Total Tin (Sn)	2021/09/17		<1.0		mg/kg						
Total Uranium (U)	2021/09/17		<0.20		mg/kg						
Total Vanadium (V)	2021/09/17		<1.0		mg/kg						
Total Zinc (Zn)	2021/09/17		<1.0		mg/kg						
A355882	PC5	RPD [AFU820-01]	Total Antimony (Sb)	2021/09/17	NC		%	30			
			Total Arsenic (As)	2021/09/17	0.75		%	30			
			Total Barium (Ba)	2021/09/17	1.4		%	35			



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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
			Total Beryllium (Be)	2021/09/17	NC		%	30
			Total Cadmium (Cd)	2021/09/17	5.9		%	30
			Total Chromium (Cr)	2021/09/17	2.7		%	30
			Total Cobalt (Co)	2021/09/17	1.4		%	30
			Total Copper (Cu)	2021/09/17	2.4		%	30
			Total Lead (Pb)	2021/09/17	1.2		%	35
			Total Mercury (Hg)	2021/09/17	NC		%	35
			Total Molybdenum (Mo)	2021/09/17	NC		%	35
			Total Nickel (Ni)	2021/09/17	5.7		%	30
			Total Selenium (Se)	2021/09/17	NC		%	30
			Total Silver (Ag)	2021/09/17	NC		%	35
			Total Thallium (Tl)	2021/09/17	NC		%	30
			Total Tin (Sn)	2021/09/17	NC		%	35
			Total Uranium (U)	2021/09/17	0.28		%	30
			Total Vanadium (V)	2021/09/17	1.4		%	30
			Total Zinc (Zn)	2021/09/17	0.38		%	30
A356105	BFE	Matrix Spike	Hex. Chromium (Cr 6+)	2021/09/17		91	%	75 - 125
A356105	BFE	Spiked Blank	Hex. Chromium (Cr 6+)	2021/09/17		98	%	80 - 120
A356105	BFE	Method Blank	Hex. Chromium (Cr 6+)	2021/09/17	<0.080		mg/kg	
A356105	BFE	RPD	Hex. Chromium (Cr 6+)	2021/09/17	NC		%	35
A356253	JAB	Matrix Spike	Soluble Boron (B)	2021/09/17		94	%	75 - 125
A356253	JAB	Spiked Blank	Soluble Boron (B)	2021/09/17		94	%	80 - 120
A356253	JAB	Method Blank	Soluble Boron (B)	2021/09/17	<0.10		mg/L	
A356253	JAB	RPD	Soluble Boron (B)	2021/09/17	14		%	30
A356383	BFE	Matrix Spike	Hex. Chromium (Cr 6+)	2021/09/17		105	%	75 - 125
A356383	BFE	Spiked Blank	Hex. Chromium (Cr 6+)	2021/09/17		100	%	80 - 120
A356383	BFE	Method Blank	Hex. Chromium (Cr 6+)	2021/09/17	<0.080		mg/kg	
A356383	BFE	RPD	Hex. Chromium (Cr 6+)	2021/09/17	NC		%	35
A357683	JAB	Matrix Spike [AFU820-01]	Soluble Boron (B)	2021/09/19		96	%	75 - 125
A357683	JAB	QC Standard	Soluble Sulphate (SO4)	2021/09/19		110	%	75 - 125
A357683	JAB	Spiked Blank	Soluble Boron (B)	2021/09/19		96	%	80 - 120
A357683	JAB	Method Blank	Soluble Boron (B)	2021/09/19	<0.10		mg/L	
			Soluble Sulphate (SO4)	2021/09/19	<5.0		mg/L	
A357683	JAB	RPD [AFU820-01]	Soluble Boron (B)	2021/09/19	21		%	30
			Soluble Sulphate (SO4)	2021/09/19	9.9		%	30
A358665	MPU	QC Standard	Total Fusion Barium (Ba)	2021/09/21		92	%	75 - 125
A358665	MPU	Spiked Blank	Total Fusion Barium (Ba)	2021/09/21		95	%	75 - 125
A358665	MPU	Method Blank	Total Fusion Barium (Ba)	2021/09/21	<50		mg/kg	



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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	
A358665	MPU	RPD	Total Fusion Barium (Ba)	2021/09/21	3.7		%	35	
<p>Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.</p> <p>Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.</p> <p>QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.</p> <p>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.</p> <p>Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.</p> <p>Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.</p> <p>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)</p> <p>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 &lt;= 2x RDL).</p> <p>(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.</p>									



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Your P.O. #: 20368099-7000-1001  
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### VALIDATION SIGNATURE PAGE

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

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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.





### ADDITIONAL COOLER TEMPERATURE RECORD CHAIN-OF-CUSTODY RECORD

CHAIN OF CUSTODY #			MAXXAM JOB#: <span style="font-size: 1.2em; color: blue;">C167916</span>														
DATE	TIME	CUSTODY #	COOLER OBSERVATIONS:														
			CUSTODY SEAL	PRESENT	INTACT	ICE PRESENT	YES	NO	COOLER ID	TEMP	1	2	3				
01/01/21	9:00	1	PRESENT	✓	✓	✓	✓	✓	3	4	6						
01/01/21			PRESENT	✓	✓	✓	✓	✓									
01/01/21			PRESENT	✓	✓	✓	✓	✓	6	7	3						
01/01/21			PRESENT	✓	✓	✓	✓	✓	9	4	2						
01/01/21			PRESENT	✓	✓	✓	✓	✓	2	2	5						
01/01/21			PRESENT	✓	✓	✓	✓	✓	2	5	3						
01/01/21			PRESENT	✓	✓	✓	✓	✓	8	1	1						
01/01/21			PRESENT	✓	✓	✓	✓	✓	2	2	1						
01/01/21			PRESENT	✓	✓	✓	✓	✓	1	5	1						
01/01/21			PRESENT	✓	✓	✓	✓	✓									
01/01/21			PRESENT	✓	✓	✓	✓	✓									
01/01/21			PRESENT	✓	✓	✓	✓	✓									
01/01/21			PRESENT	✓	✓	✓	✓	✓									
01/01/21			PRESENT	✓	✓	✓	✓	✓									

RECEIVED BY (SIGN & PRINT) <i>Jose Moran</i>	DATE (YYYY/MM/DD) 27/2021/09/10
TIME (HH:MM) 9:00	

604



# ADDITIONAL COOLER TEMPERATURE RECORD

## CHAIN-OF-CUSTODY RECORD

Page	of

COOLER OBSERVATIONS:				MAXAM JOB#:			
CUSTODY SEAL	YES	NO	COOLER ID	CUSTODY SEAL	YES	NO	COOLER ID
PRESENT	✓			PRESENT			
INTACT				INTACT			
ICE PRESENT	✓		010	ICE PRESENT			1 2 3
CUSTODY SEAL	✓			CUSTODY SEAL	YES	NO	COOLER ID
PRESENT	✓			PRESENT			
INTACT	✓			INTACT			
ICE PRESENT	✓		224	ICE PRESENT			1 2 3
CUSTODY SEAL	✓			CUSTODY SEAL	YES	NO	COOLER ID
PRESENT	✓			PRESENT			
INTACT	✓			INTACT			
ICE PRESENT	✓		114	ICE PRESENT			1 2 3
CUSTODY SEAL	✓			CUSTODY SEAL	YES	NO	COOLER ID
PRESENT	✓			PRESENT			
INTACT	✓			INTACT			
ICE PRESENT	✓		544	ICE PRESENT			1 2 3
CUSTODY SEAL	✓			CUSTODY SEAL	YES	NO	COOLER ID
PRESENT	✓			PRESENT			
INTACT	✓			INTACT			
ICE PRESENT	✓		321	ICE PRESENT			1 2 3
CUSTODY SEAL	✓			CUSTODY SEAL	YES	NO	COOLER ID
PRESENT	✓			PRESENT			
INTACT	✓			INTACT			
ICE PRESENT	✓		00-1	ICE PRESENT			1 2 3
CUSTODY SEAL	✓			CUSTODY SEAL	YES	NO	COOLER ID
PRESENT	✓			PRESENT			
INTACT	✓			INTACT			
ICE PRESENT	✓		514	ICE PRESENT			1 2 3
CUSTODY SEAL	✓			CUSTODY SEAL	YES	NO	COOLER ID
PRESENT	✓			PRESENT			
INTACT	✓			INTACT			
ICE PRESENT	✓		-100	ICE PRESENT			1 2 3
CUSTODY SEAL	✓			CUSTODY SEAL	YES	NO	COOLER ID
PRESENT	✓			PRESENT			
INTACT	✓			INTACT			
ICE PRESENT	✓		122	ICE PRESENT			1 2 3
CUSTODY SEAL	✓			CUSTODY SEAL	YES	NO	COOLER ID
PRESENT	✓			PRESENT			
INTACT	✓			INTACT			
ICE PRESENT	✓			ICE PRESENT			
CUSTODY SEAL	✓			CUSTODY SEAL	YES	NO	COOLER ID
PRESENT	✓			PRESENT			
INTACT	✓			INTACT			
ICE PRESENT	✓			ICE PRESENT			
CUSTODY SEAL	✓			CUSTODY SEAL	YES	NO	COOLER ID
PRESENT	✓			PRESENT			
INTACT	✓			INTACT			
ICE PRESENT	✓			ICE PRESENT			
CUSTODY SEAL	✓			CUSTODY SEAL	YES	NO	COOLER ID

RECEIVED BY (SIGN & PRINT)	DATE (YYYY/MM/DD)	TIME (HH:MM)
<i>Alicia Lin</i>	2021/09/11	14:40



CHAIN OF CUSTODY RECORD

Bureau Veritas Laboratories  
 4000 16th N.E. Calgary, Alberta Canada T2E 6P8 Tel: (403) 291-3077 Toll-free 800-563-6266 Fax: (403) 291-5468 www.bvlabs.com

**INVOICE TO:**  
 Company Name: #254 GOLDER ASSOCIATES LTD.  
 Attention: ACCOUNTS PAYABLE  
 Address: 2800, 700-2nd Street SW  
 Calgary AB T2P 2W2  
 Tel: (905) 567-6100 Ext: 1167 Fax: (403) 299-5606  
 Email: canadaccounts@bvlabs.com

**REPORT TO:**  
 Company Name: #6340 GOLDER ASSOCIATES LTD.  
 Attention: Aurelie Belavance  
 Address: 2800, 700-2nd Street SW  
 Calgary AB T2P 2W2  
 Tel: (403) 299-5600 Fax: (403) 299-5600  
 Email: abelavance@golder.com

**PROJECT INFORMATION:**  
 Quotation #: C00480  
 P.O. #: 20368099-7000-1001  
 Project: 20368099-6000-1001  
 Project Name:  
 Site #:  
 Sampled By:

**Laboratory Use Only:**  
 BV Labs Job #: C167916  
 Bottle Order #: 644511  
 Project Manager: Carmen McKay  
 COC #: C0644511-87-01

**Regulatory Criteria:**  
 ATI  
 COME  
 Other

**Special Instructions:**  
 email: shell@bvlabs.com  
 Upload to FC:  
 41259544

**Turnaround Time (TAT) Required:**  
 Please provide advance notice for rush projects.

**Regular (Standard) TAT:**  
 (will be applied if Rush TAT is not specified):  
 Standard TAT = 5-7 Working days for most tests.  
 Please note: Standard TAT for certain tests are > 5 days - contact your Project Manager for details

**Job Specific Rush TAT (if applies to entire submission)**  
 Date Required: \_\_\_\_\_  
 Rush Confirmation Number: \_\_\_\_\_ (call lab for #)

Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered? (Y/N)	AT1 Regulated Metals - Soils	AT1 BTEX and F1-F4 in Soil (Vials)	BIC SCALE Analysis (F2/F2+3B) in soil	Sulphate / nitrate	Barium on ICP using Fusion Extraction (True Barium)	COMETEX and F1-F2 in Water	Routine Water	Regulated Metals (COMETAT1) - Dissolved	PAH in Water/SOILS	Limited Sample	# of Bottles	Comments
1	NA	04 Sep 2021	10:01	SOIL		X	X	X	X	X					4 + bag		
2	T21-190-02		10:02			X	X	X	X	X					4 + bag		
3	T21-190-04		10:05			X	X	X	X	X					4 + bag		
4	T21-191-02		09:57			X	X	X	X	X					4 + bag		
5	T21-191-04		09:59			X	X	X	X	X					4 + bag		
6	T21-191-06		10:00			X	X	X	X	X					4 + bag		
7	T21-192-01		11:25			X	X	X	X	X					3		Received in Yellowknife By: J. McArno e.g. J. J. K. M.
8	T21-192-02		11:30			X	X	X	X	X					3		SEP 10 2021 see ACTR Temp:
9	T21-193-01		11:42			X	X	X	X	X					3		
10	T21-193-02		11:45			X	X	X	X	X					3		

**RELINQUISHED BY:** (Signature/Print) PETER TAN Date: 21/09/04 Time: 16:00  
**RECEIVED BY:** (Signature/Print) Alicia Lin Date: 2021/09/11 Time: 14:40

**Laboratory Use Only:**  
 Temperature (°C) on Receipt: SEE ACTR  
 Custody Seal Intact on Cooler?  Yes  No  
 While BV Labs Yellow Client

\* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV 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.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 90 DAYS AFTER SAMPLE RECEIPT. FOR SPECIAL REQUESTS CONTACT YOUR PROJECT MANAGER

# CHAIN OF CUSTODY RECORD

Bureau Veritas Laboratories  
4000 198th N.E. Calgary, Alberta Canada T2E 6P8 Tel: (403) 291-3077 Toll-free 800-563-6286 Fax: (403) 291-9468 www.bvlabs.com

<b>INVOICE TO:</b> #254 GOLDER ASSOCIATES LTD. ACCOUNTS PAYABLE Attention: Aurelie Belavance 2800, 700 -2nd Street SW CALGARY AB T2P 2W2 Tel: (905) 867-6100 Ext: 1167 Fax: (403) 299-5606 Email: canadaaccounts@payableinvoices@golder.com	<b>REPORT TO:</b> #6340 GOLDER ASSOCIATES LTD. Aurelie Belavance 2800, 700 -2nd Street SW CALGARY AB T2P 2W2 Tel: (403) 299-5600 Fax: _____ Email: abellavance@golder.com
<b>PROJECT INFORMATION:</b> Quotation #: C00480 P.O. #: 20368099-7000-1001 Project: 20368099-6000-1001 Project Name: _____ Site #: _____ Sampled By: _____	
<b>LABORATORY USE ONLY:</b> BV Labs Job #: C167P16 COC #: _____ Project Manager: Carmen McKay Bottle Order #: _____ C0644511-89-01	

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered? (Y/N)							Time	Date: (YY/MM/DD)	Time	# Jars used and not submitted	Temperature (°C) on Receipt	Custody Seal Intact on Cooler?	
					AT1 Regulated Metals - Soils	AT1 BTEX and F1-F4 in Soil	(Vials)	BIC SCALE Analysis (F2/F2+F3B) in soil	Suphate / nitrate	Barium on ICP using Fusion	Extraction (True Barium)							Water
1	N/A	HA21-194-01	04 Sep 2011	13:30	Soil	X	X	X	X	X	X	X	X	X	X	X	X	X
2	N/A	HA21-194-02	04 Sep 2011	13:50	Soil	X	X	X	X	X	X	X	X	X	X	X	X	X
3	N/A	HA21-194-01	04 Sep 2011	13:55	Soil	X	X	X	X	X	X	X	X	X	X	X	X	X
4	N/A	FM21-02	04 Sep 2011	14:00	Soil	X	X	X	X	X	X	X	X	X	X	X	X	X
5	N/A	TP21-152-02	04 Sep 2011	11:15	Soil	X	X	X	X	X	X	X	X	X	X	X	X	X
6	N/A	TP21-177-01	04 Sep 2011	11:20	Soil	X	X	X	X	X	X	X	X	X	X	X	X	X

**Regulatory Criteria:**  
 AT1  
 CCME  
 Other

**Special Instructions:**  
 SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

**Turnaround Time (TAT) Required:**  
 Please provide advance notice for rush projects   
**Regular (Standard) TAT:** (will be applied if Rush TAT is not specified):  
 Standard TAT = 5-7 Working days for most tests  
 Please note: Standard TAT for certain tests are > 5 days - contact your Project Manager for details  
**Job Specific Rush TAT (if applies to entire submission)**  
 Date Required: \_\_\_\_\_  
 Rush Confirmation Number: \_\_\_\_\_  
 # of Bottles: \_\_\_\_\_ (call lab for #)  
 Comments: \_\_\_\_\_

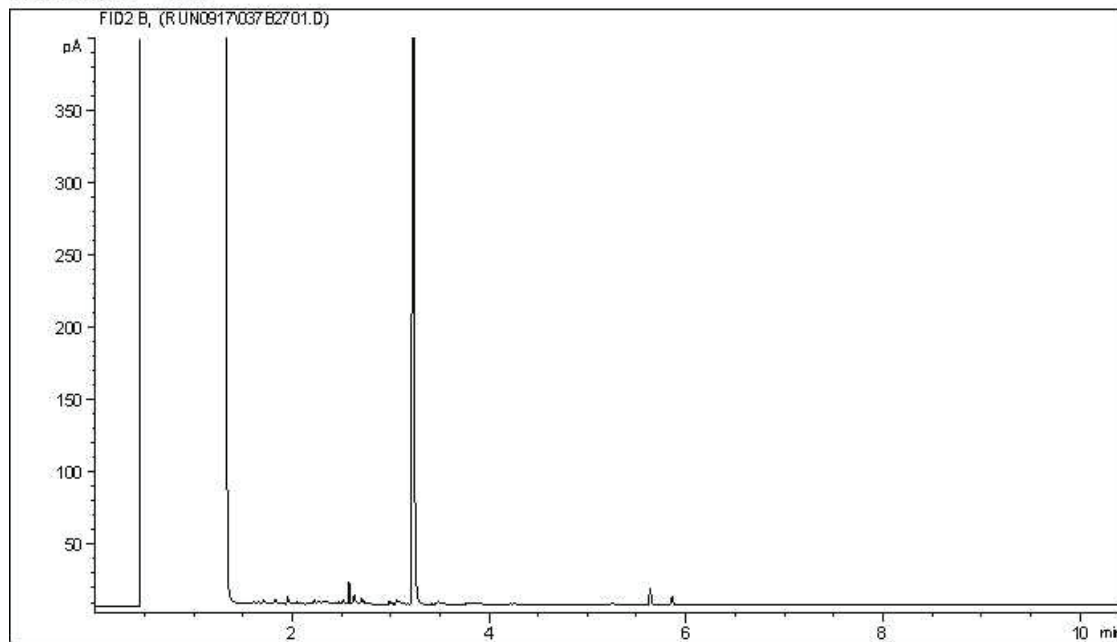
**RECEIVED BY: (Signature/Print)** PETER TAN  
 Date: (YY/MM/DD) 21/09/11 Time 16:00  
**RECEIVED BY: (Signature/Print)** Alicia Jin  
 Date: (YY/MM/DD) 20/09/11 Time 14:40

**LABORATORY USE ONLY:**  
 Laboratory Use Only  
 Temperature (°C) on Receipt: SEE ACTR  
 Custody Seal Intact on Cooler?  Yes  No  
 While: BV Labs Yellow Client

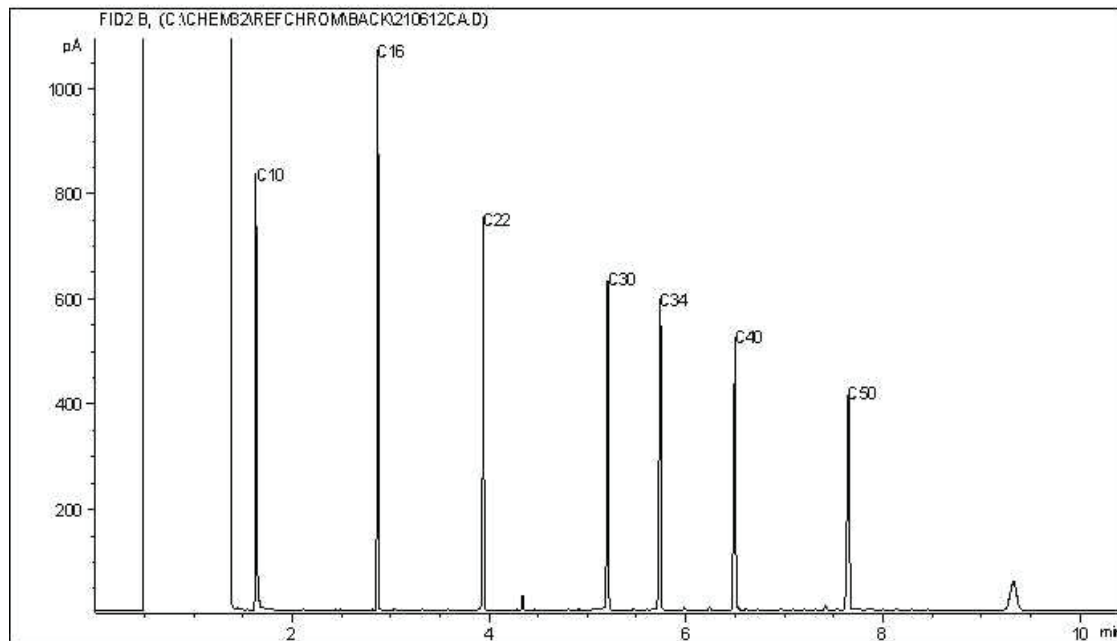
\* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.  
 \*\*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

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



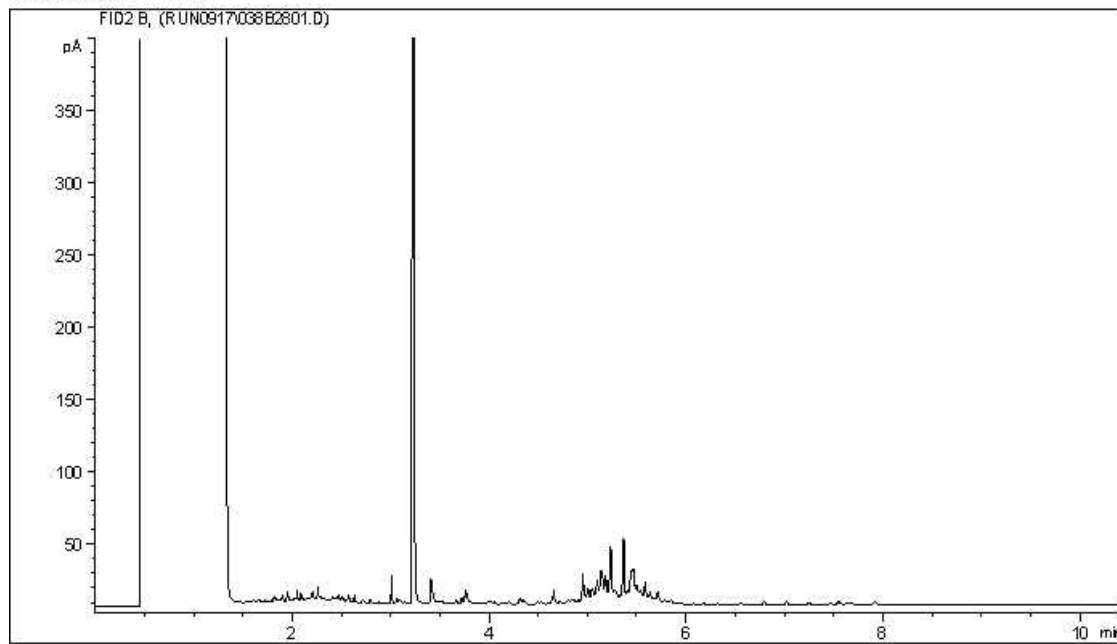
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

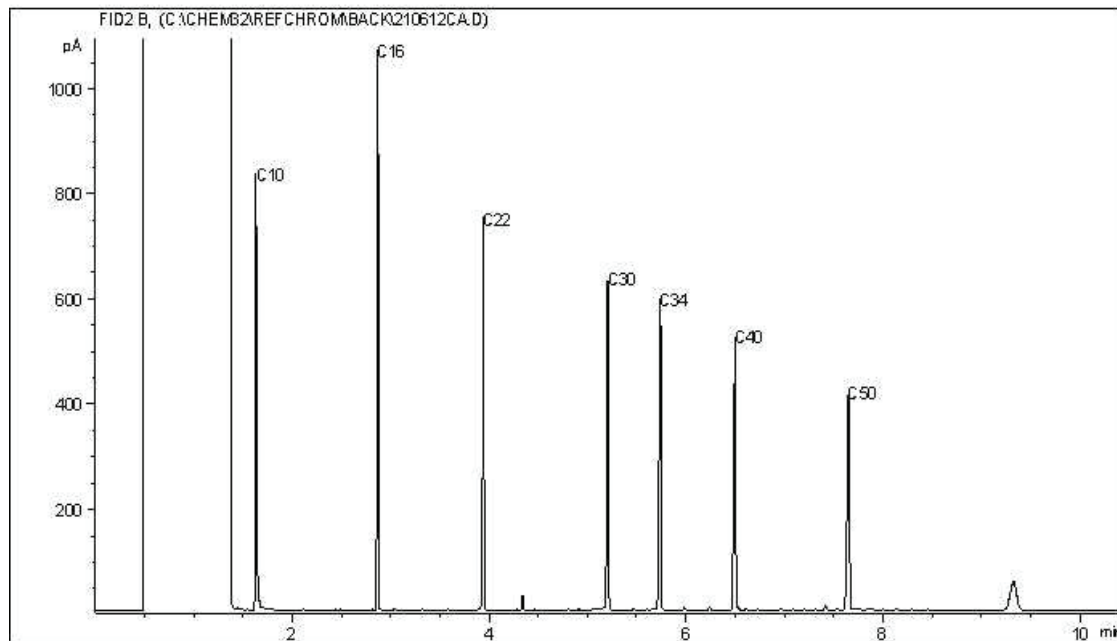
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

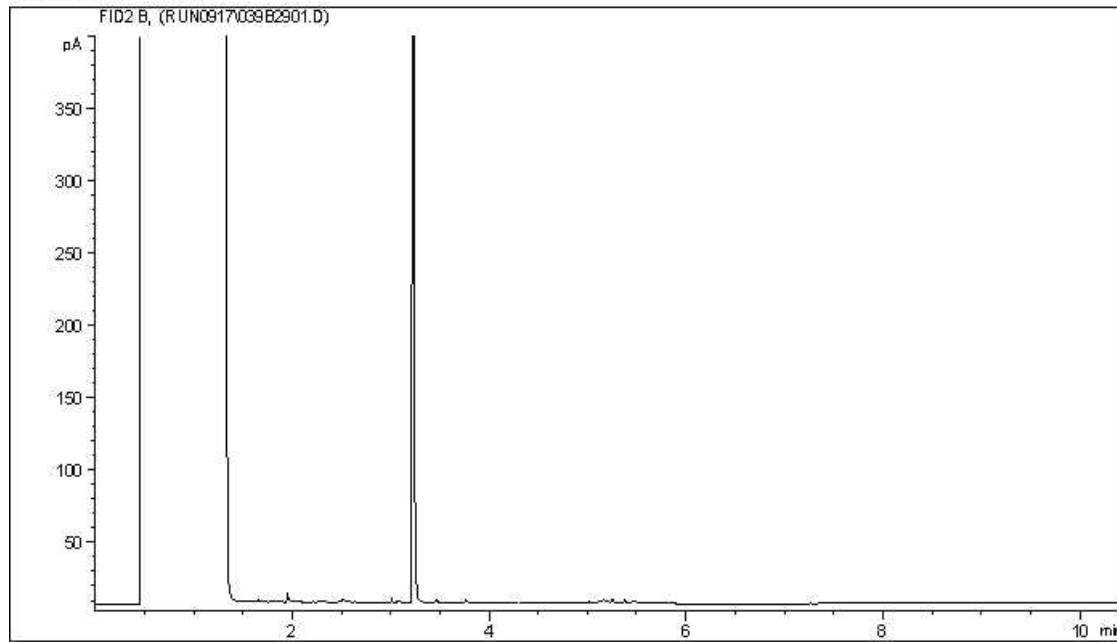
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

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

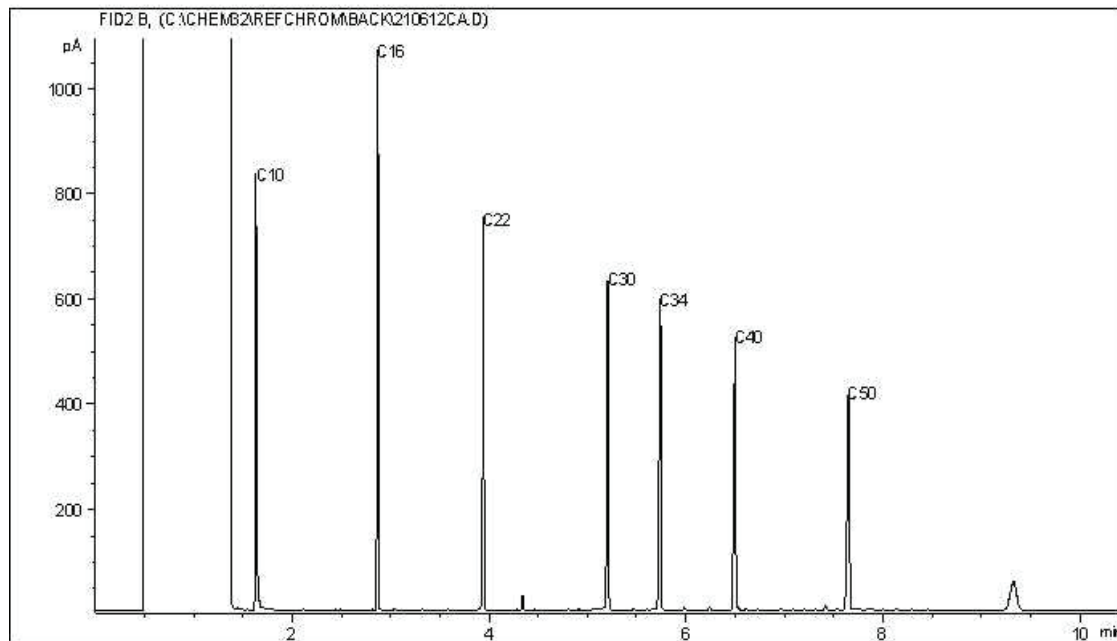


CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

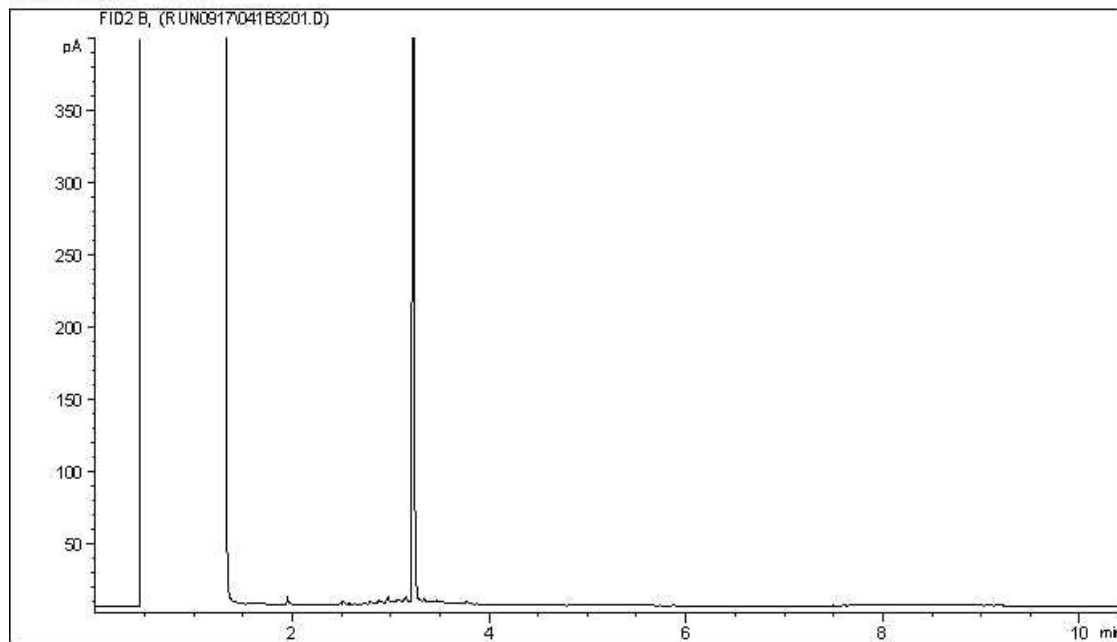
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

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

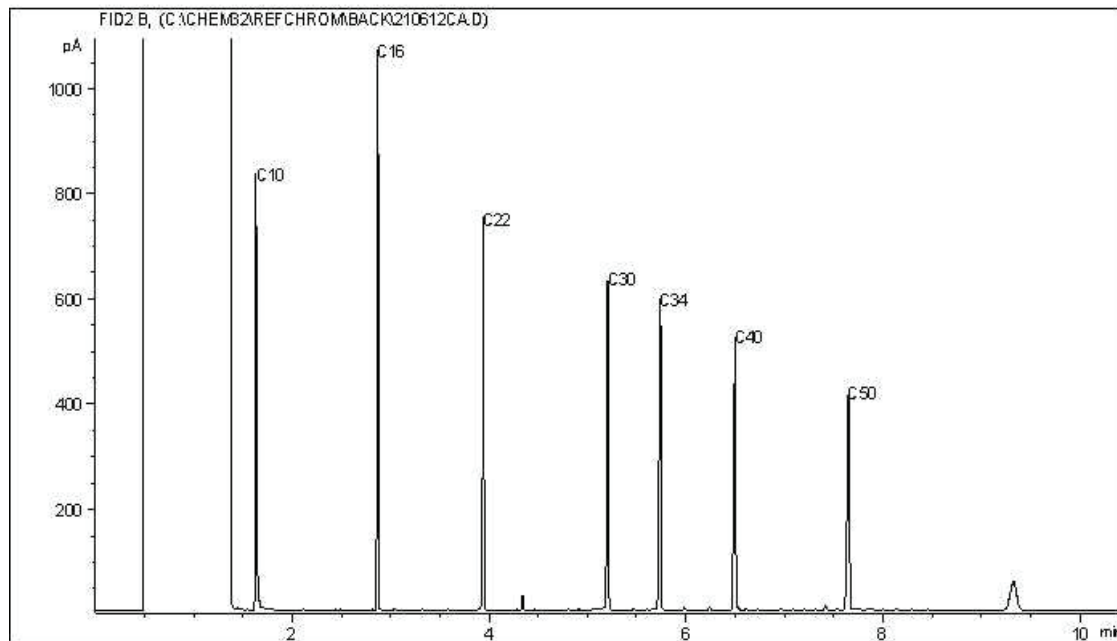


CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



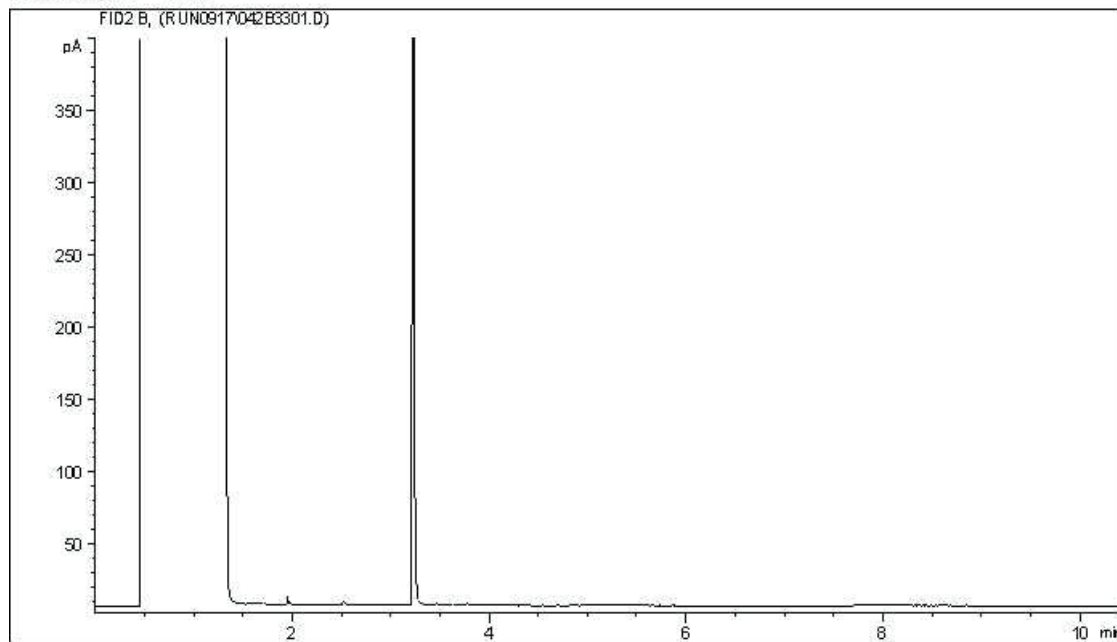
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

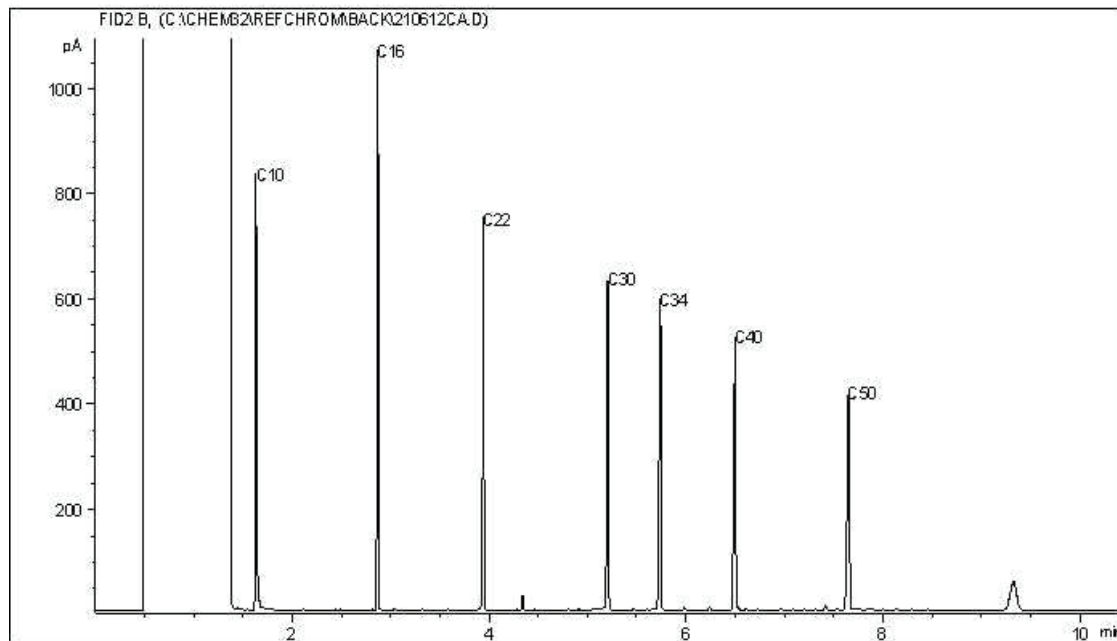
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



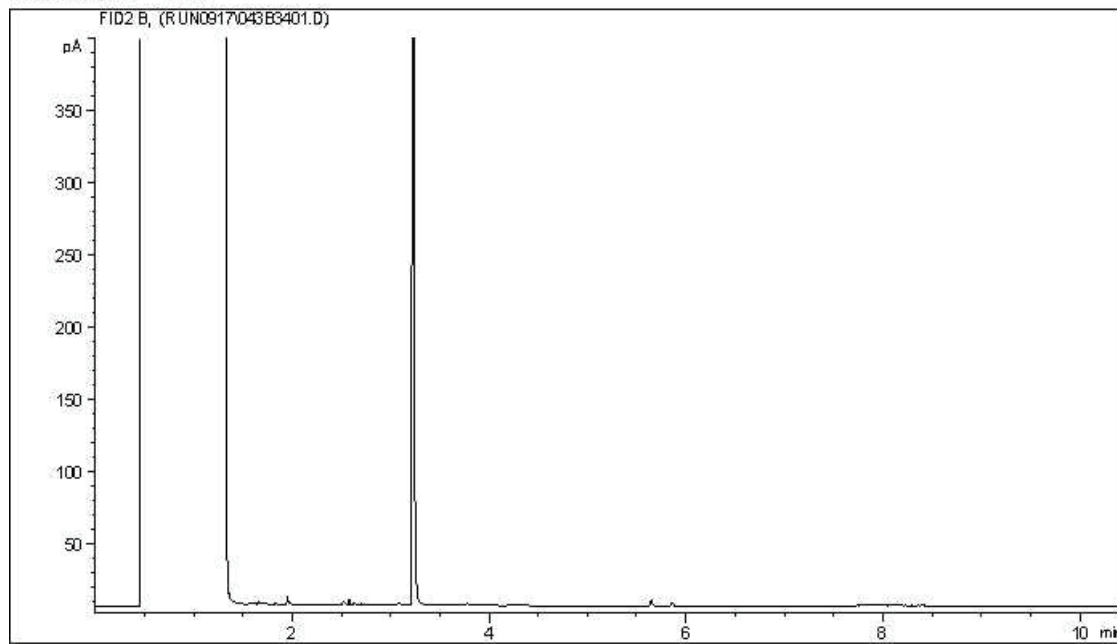
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

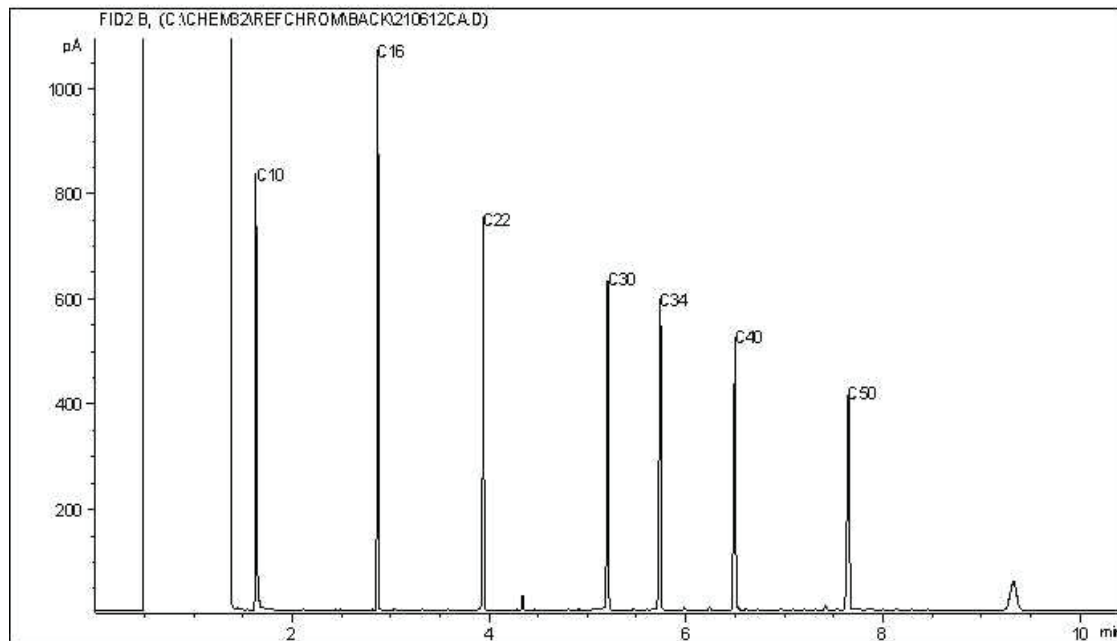
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



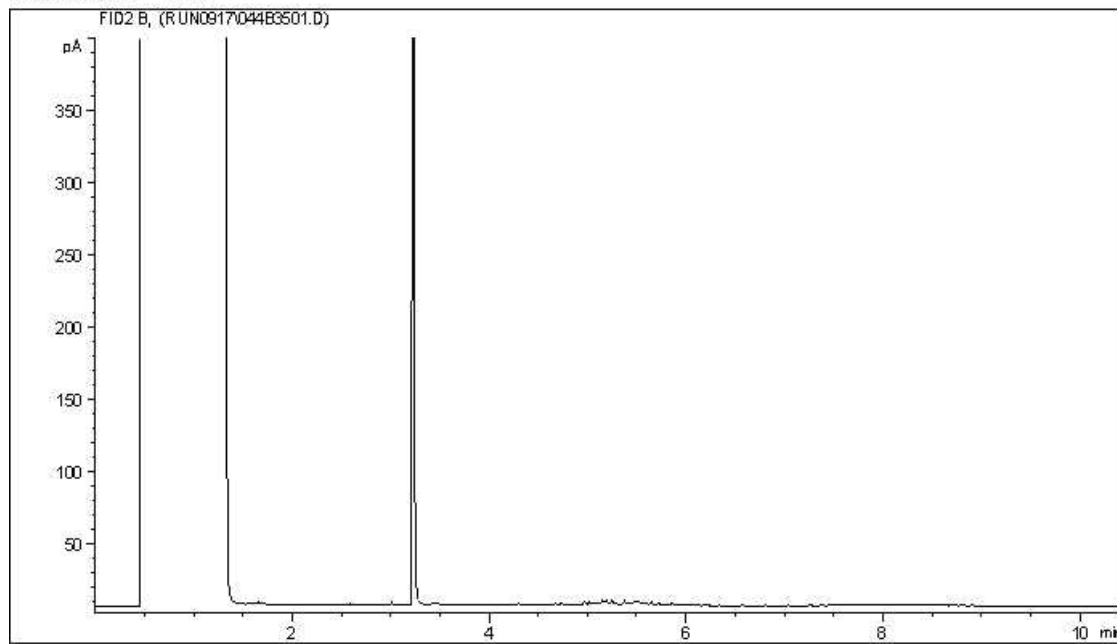
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

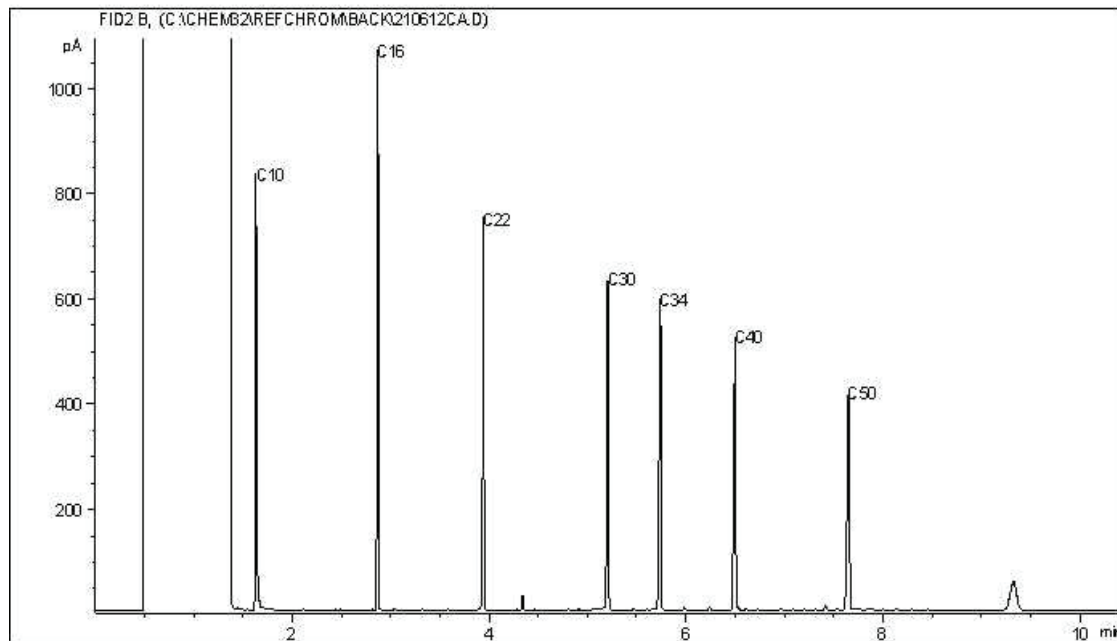
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



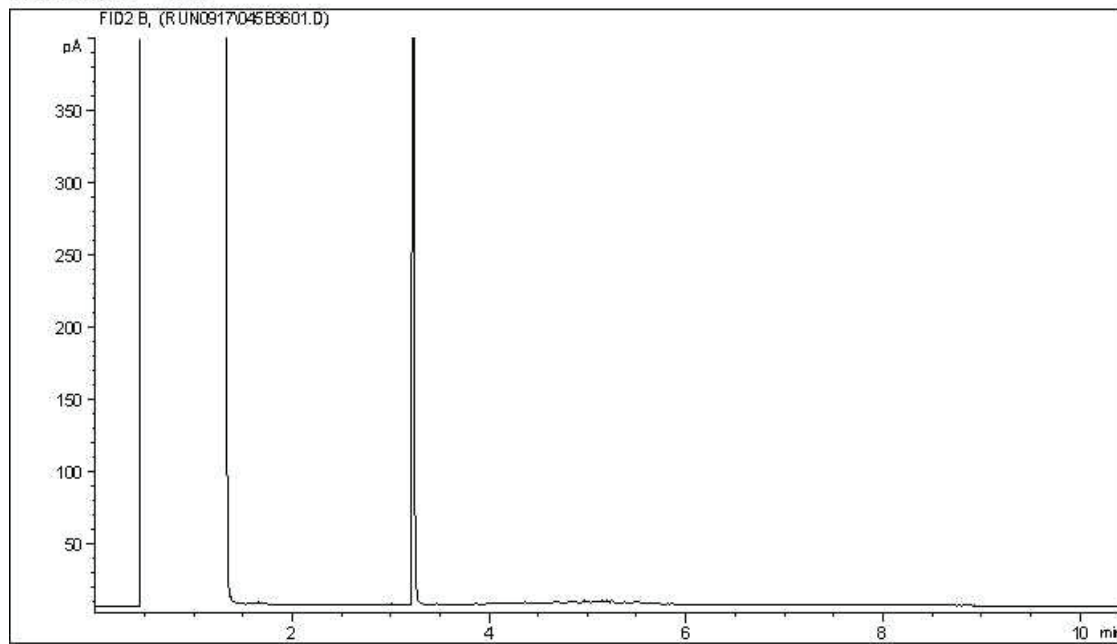
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

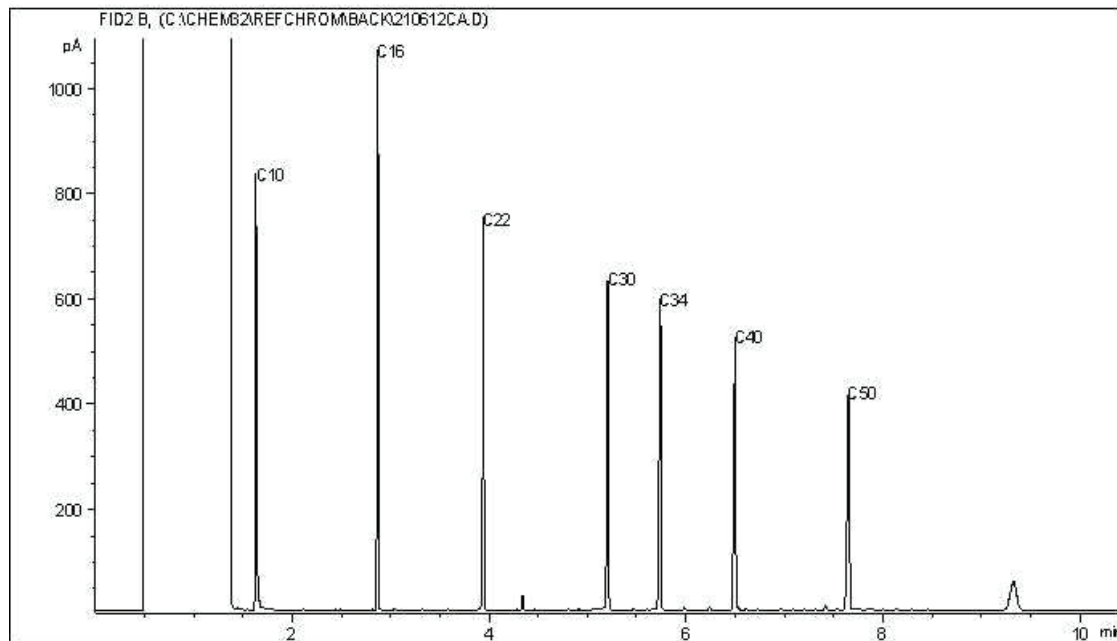
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



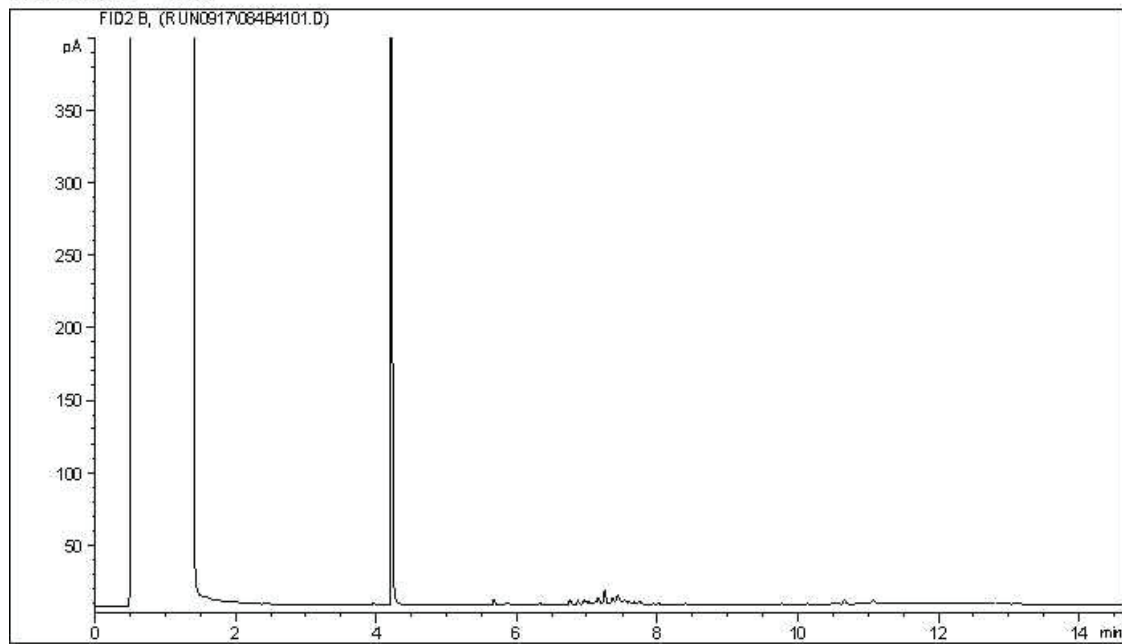
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

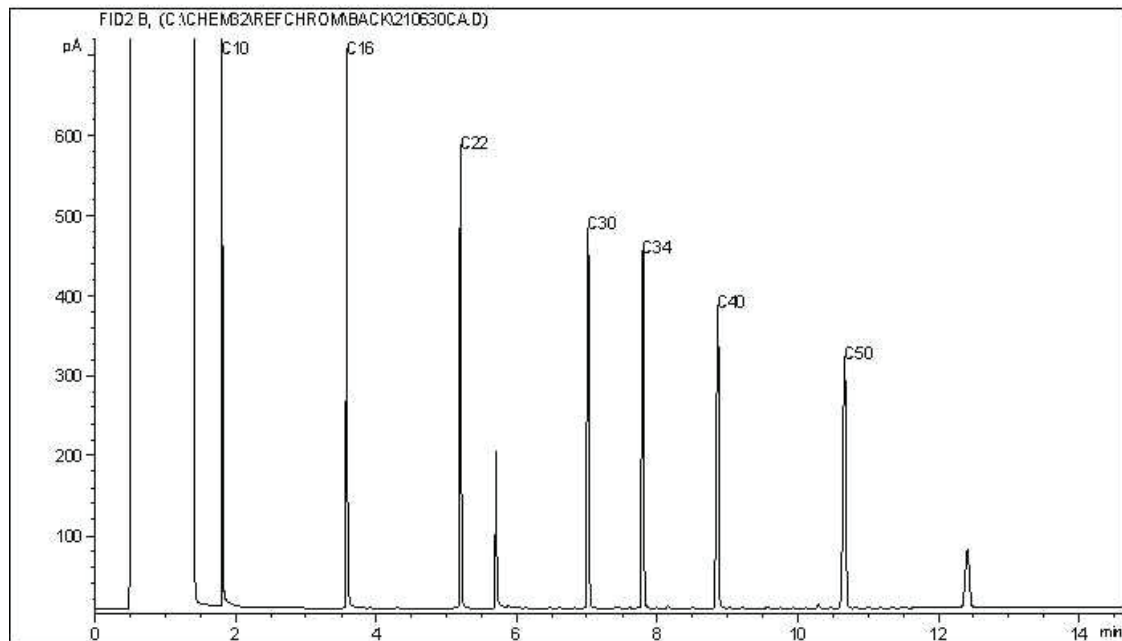
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC12



Carbon Range Distribution - Reference Chromatogram



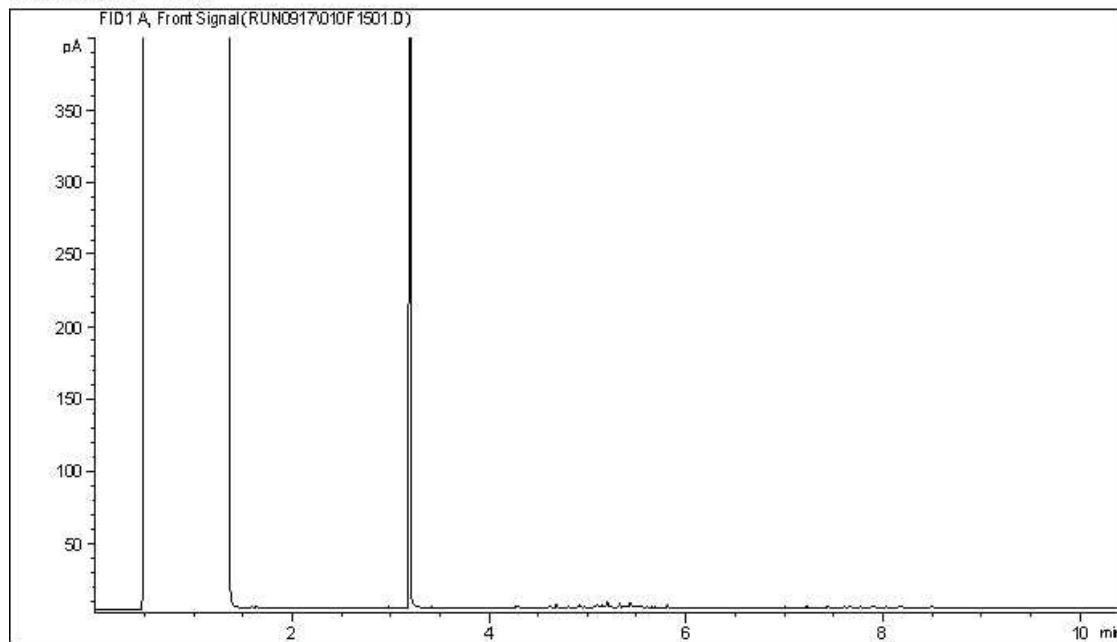
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

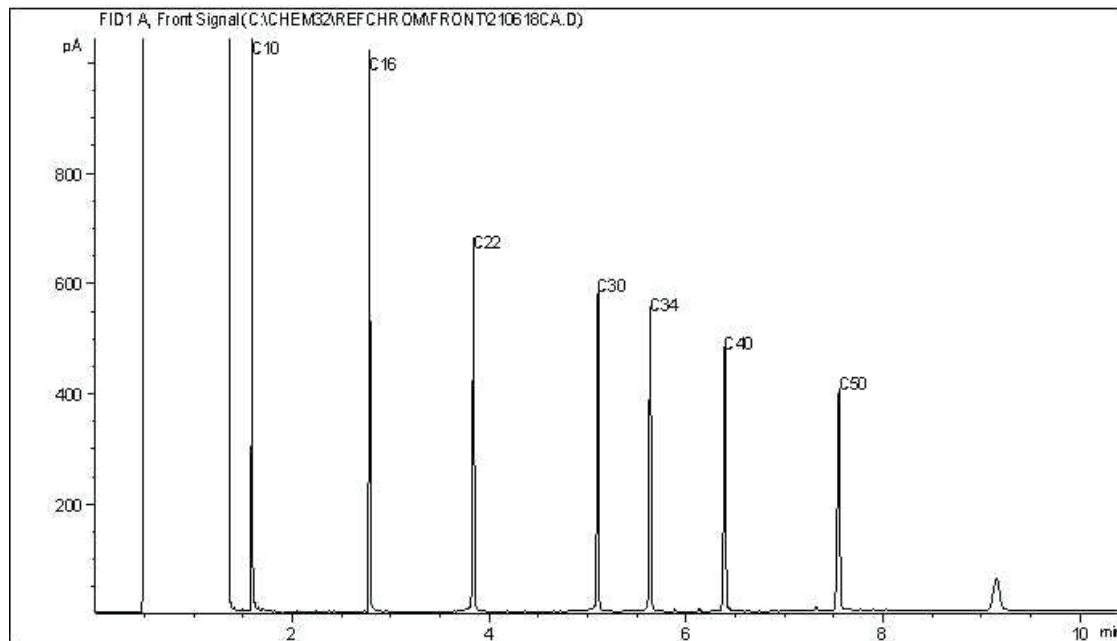
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

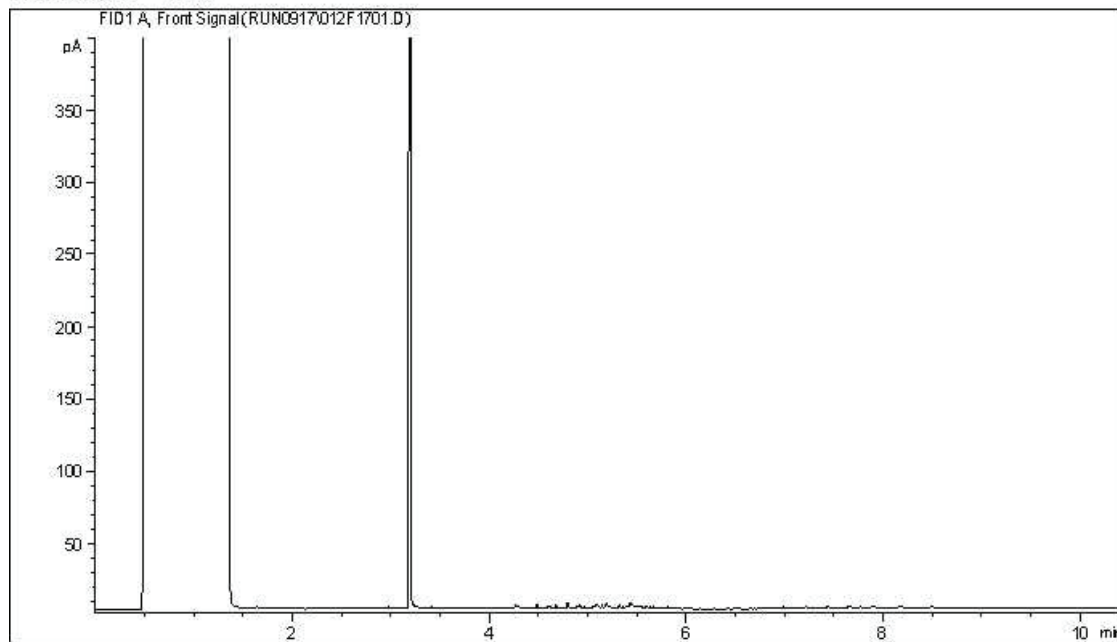
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

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

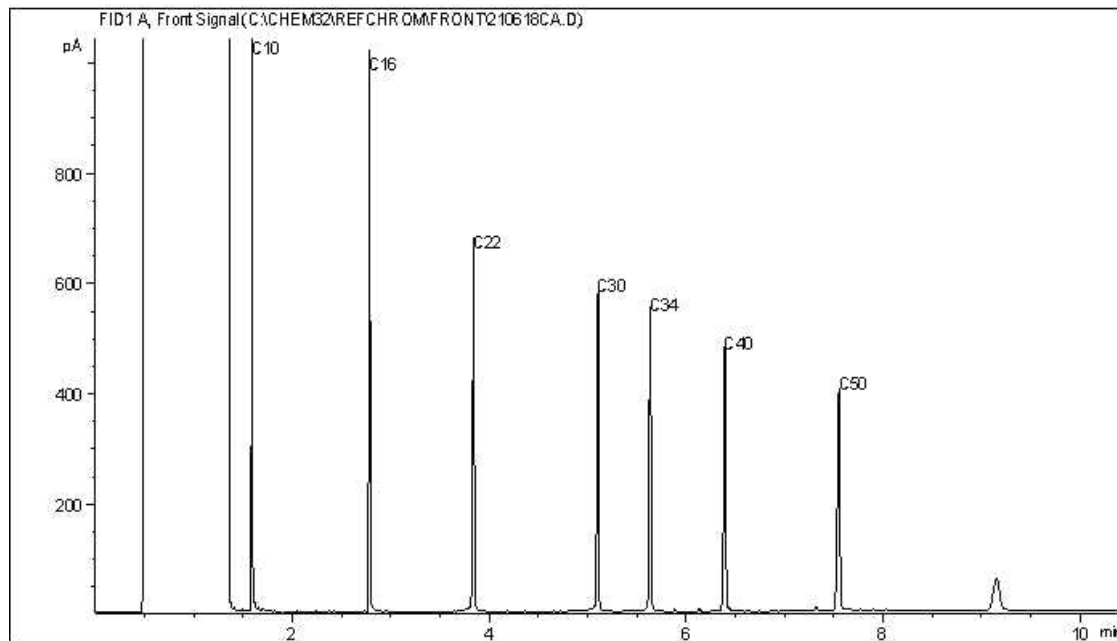


CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



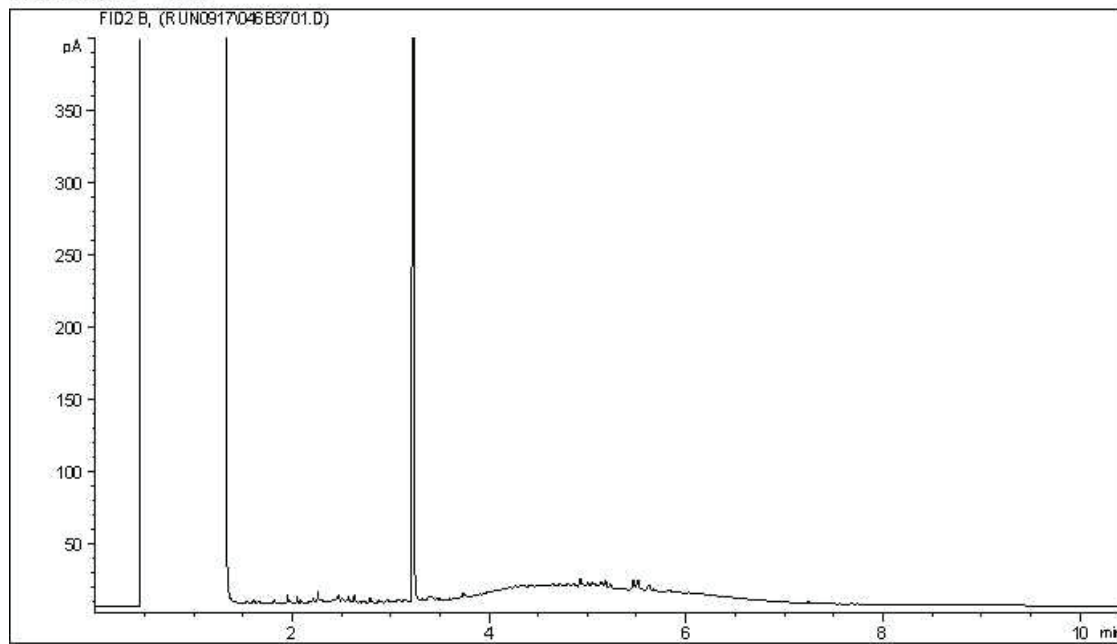
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

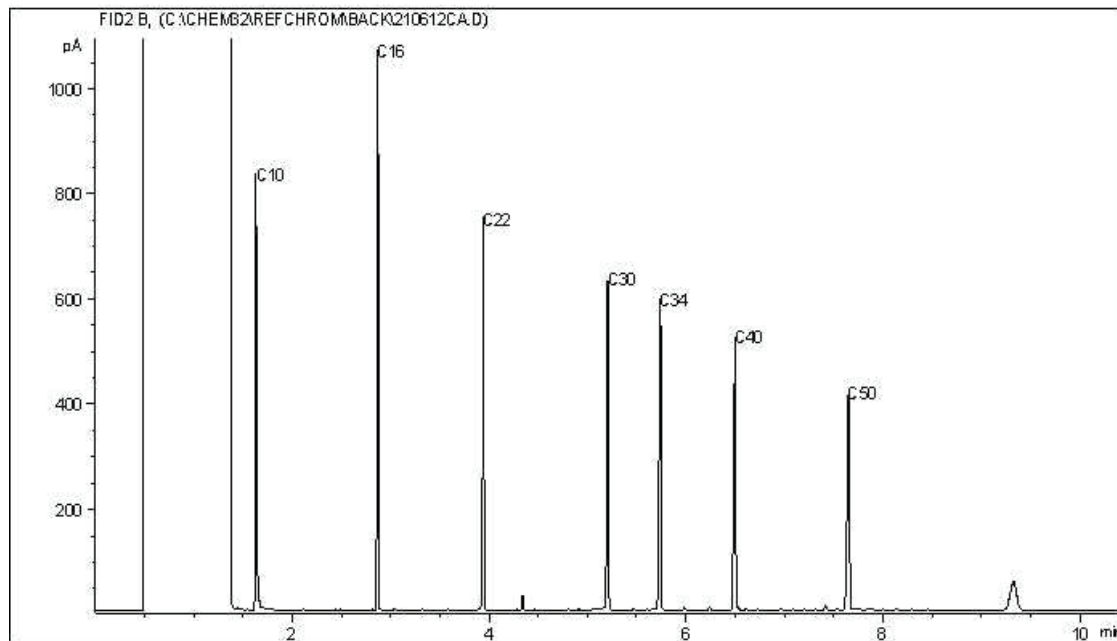
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



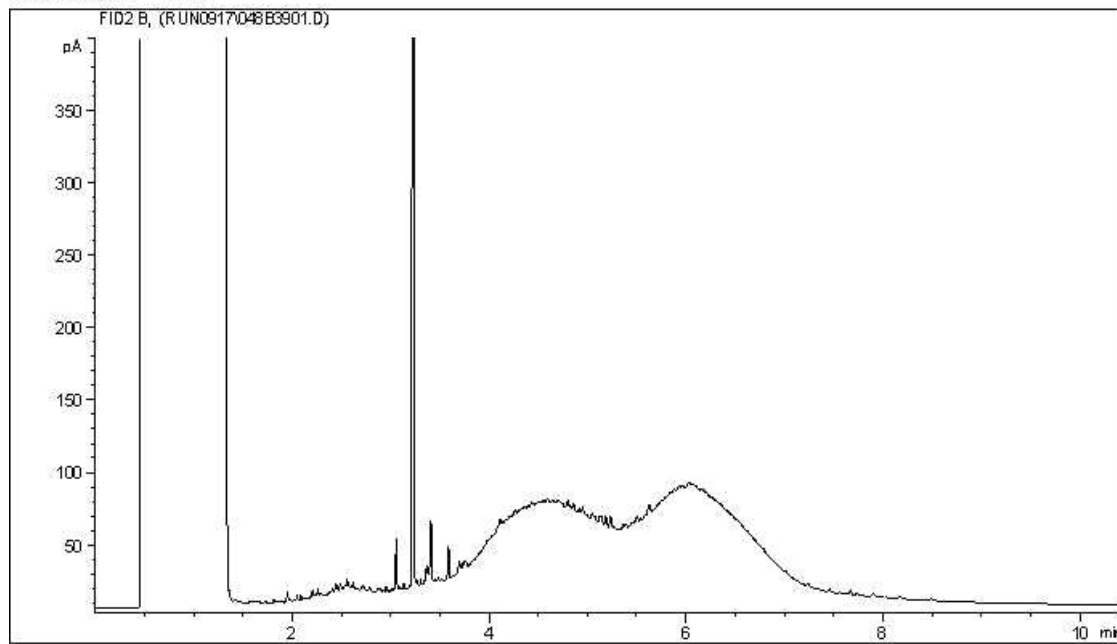
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

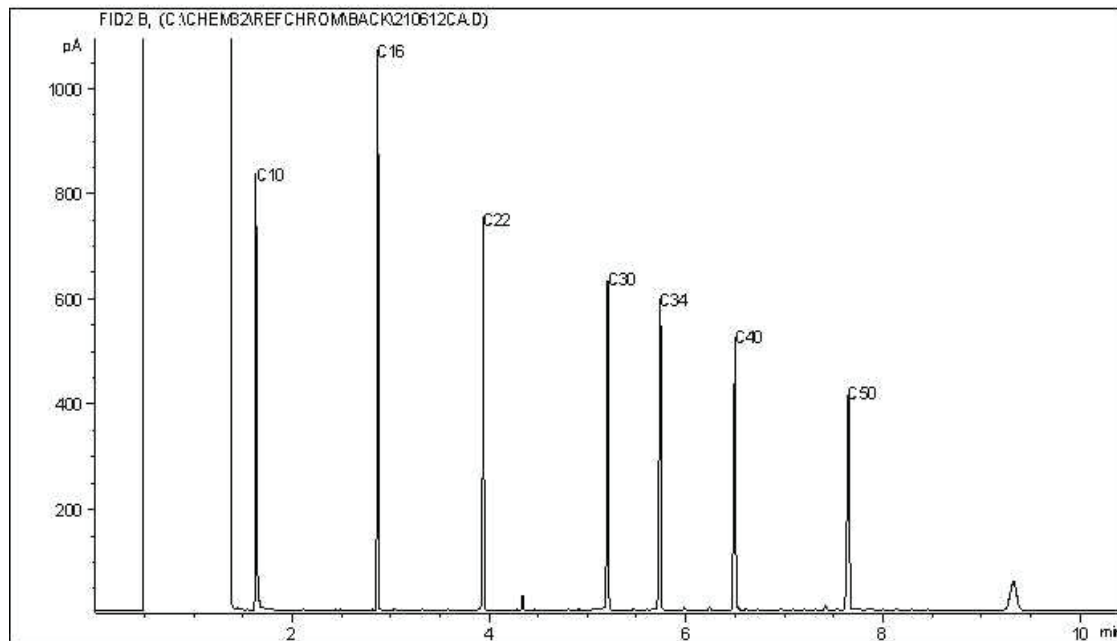
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



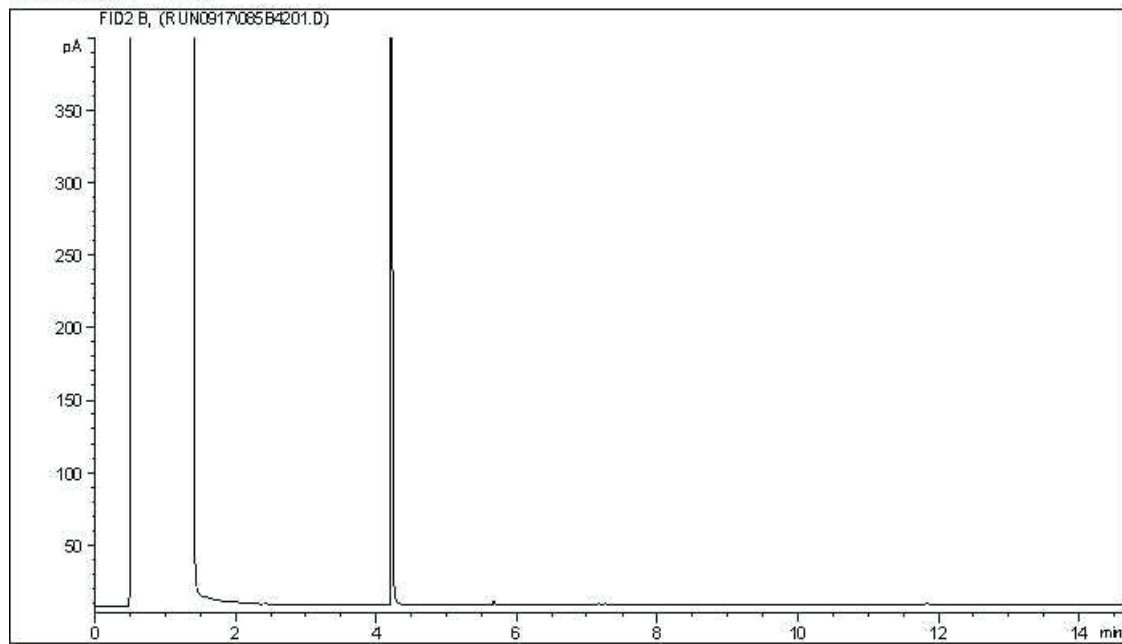
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

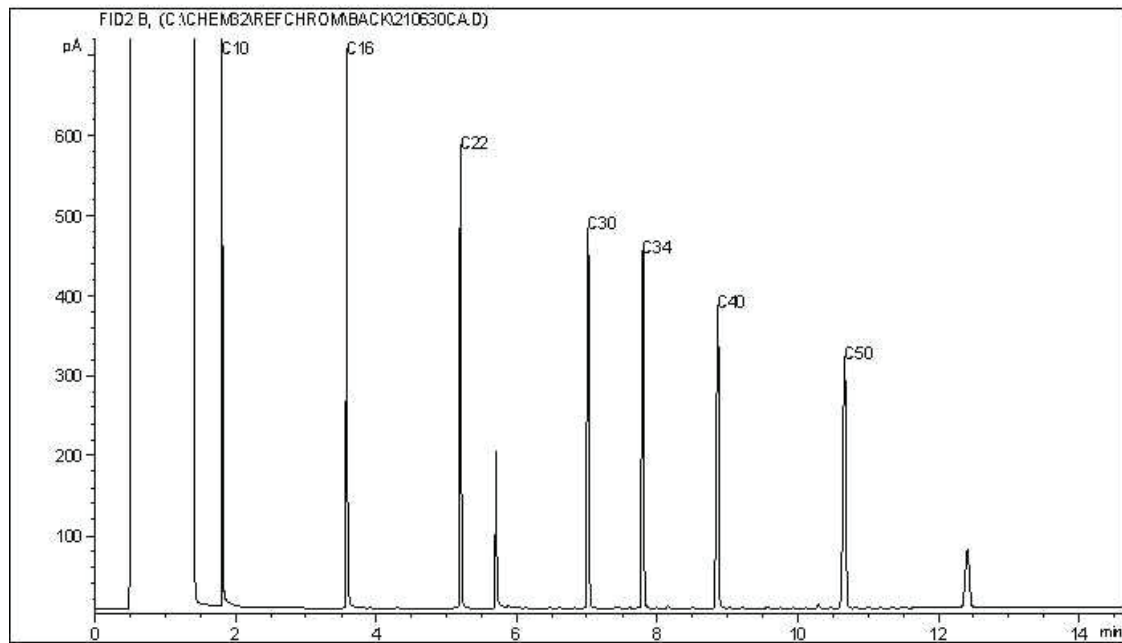
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC12



Carbon Range Distribution - Reference Chromatogram



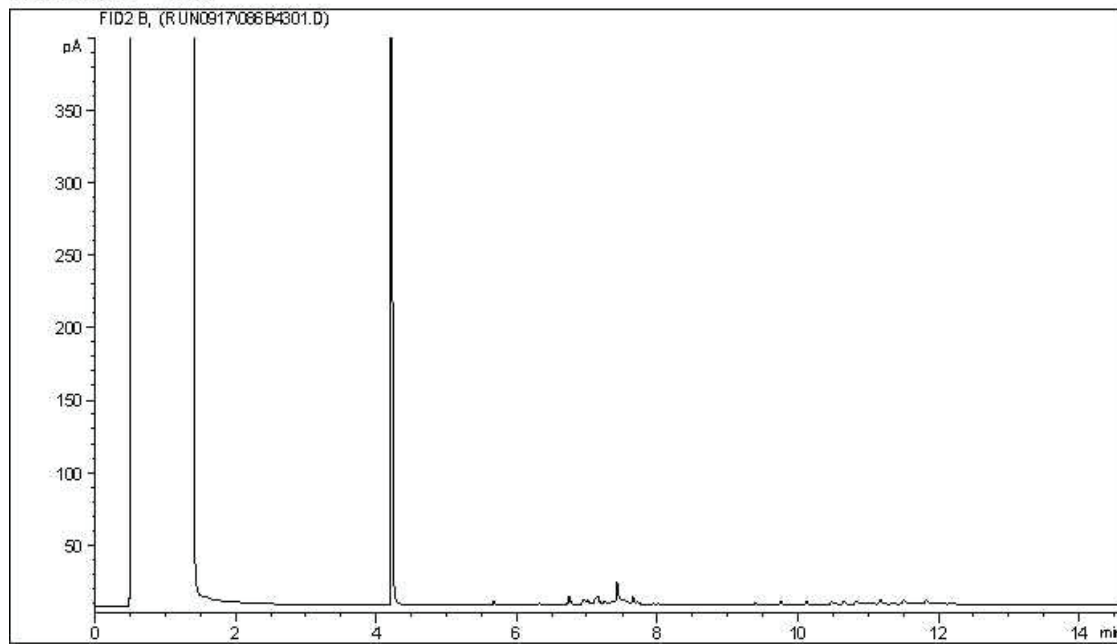
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

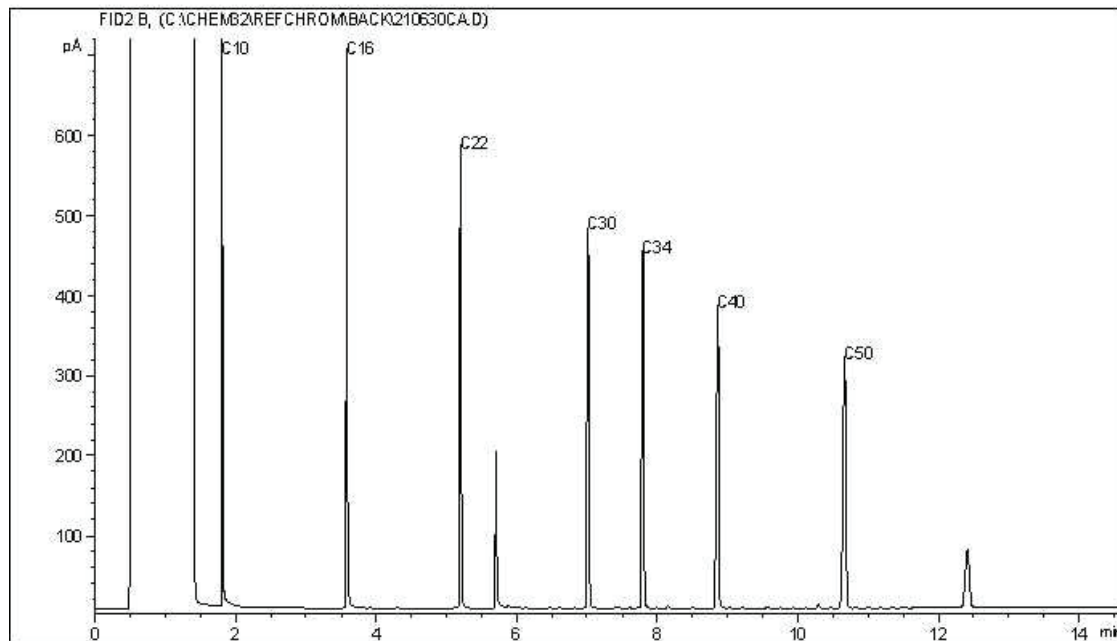
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC12



Carbon Range Distribution - Reference Chromatogram



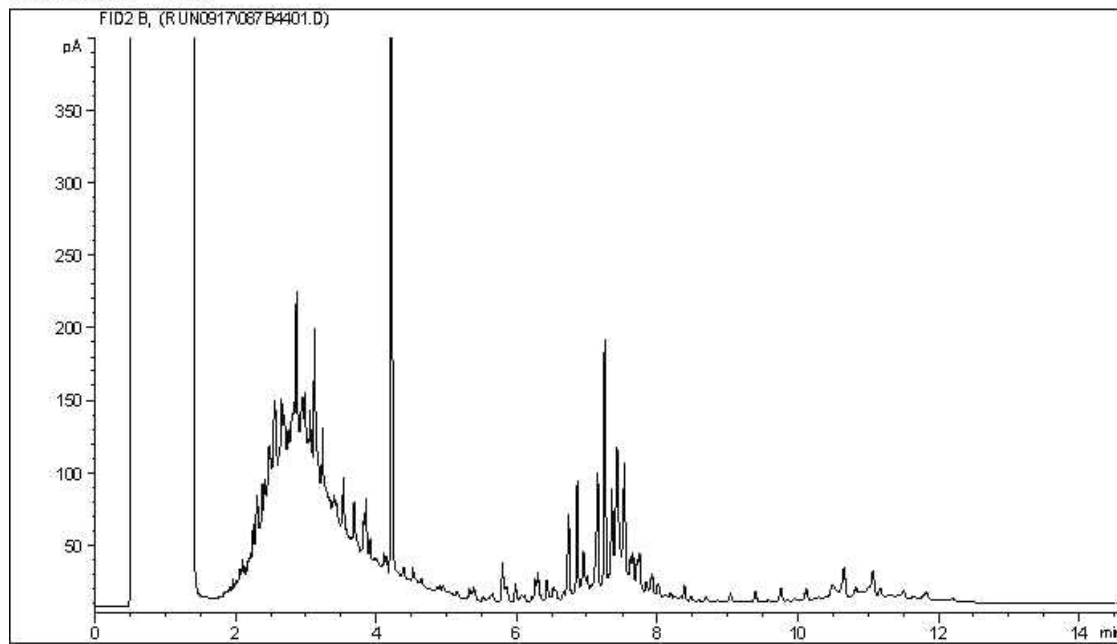
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

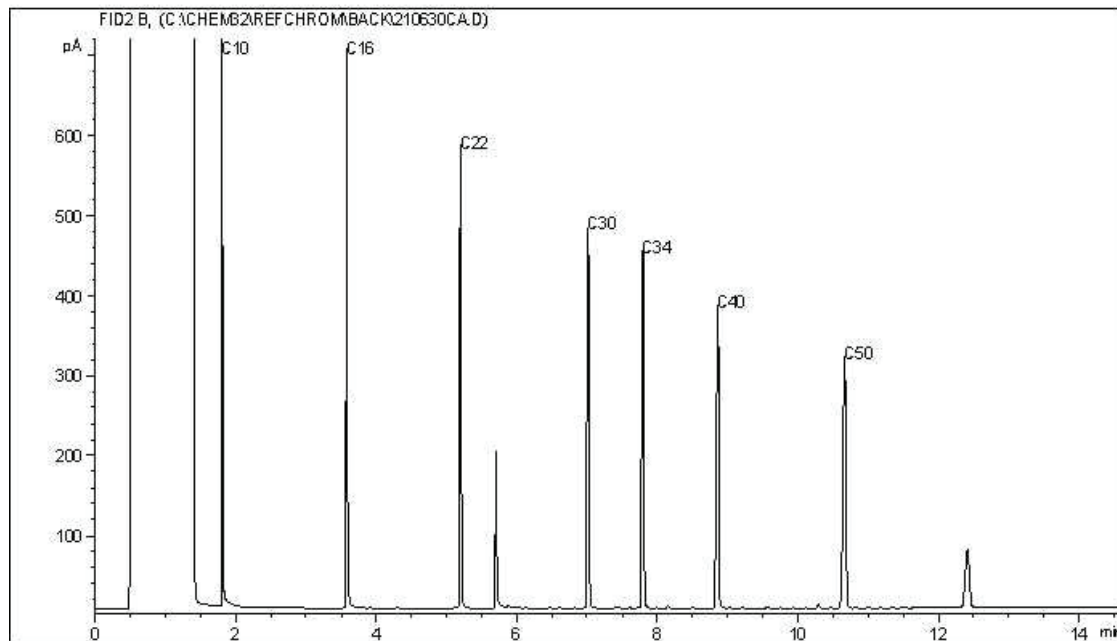
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC12



Carbon Range Distribution - Reference Chromatogram



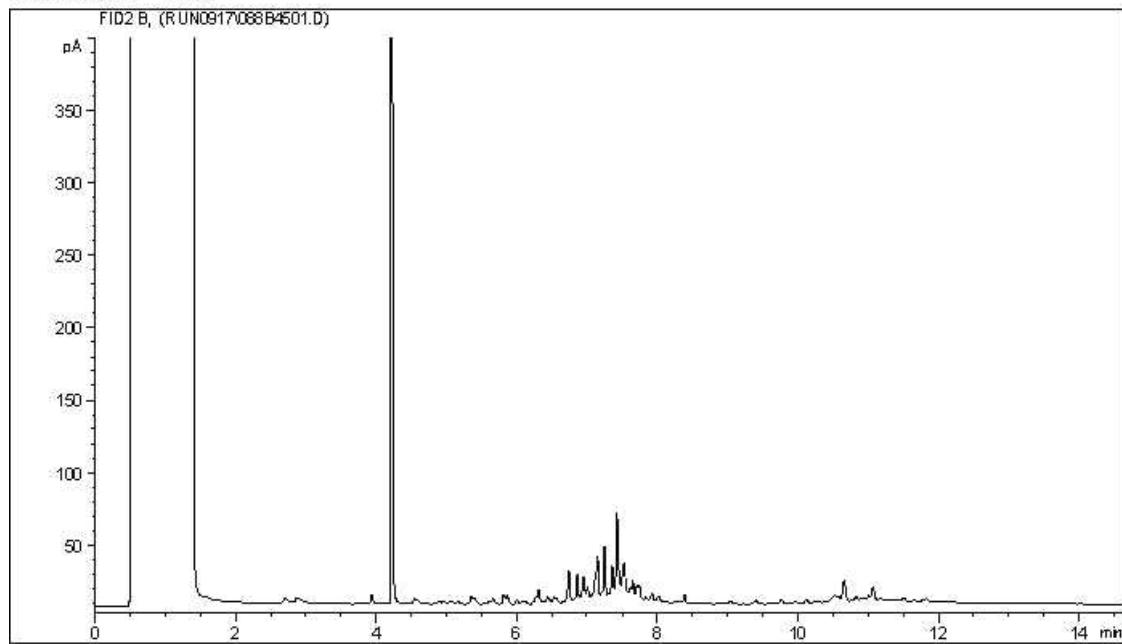
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

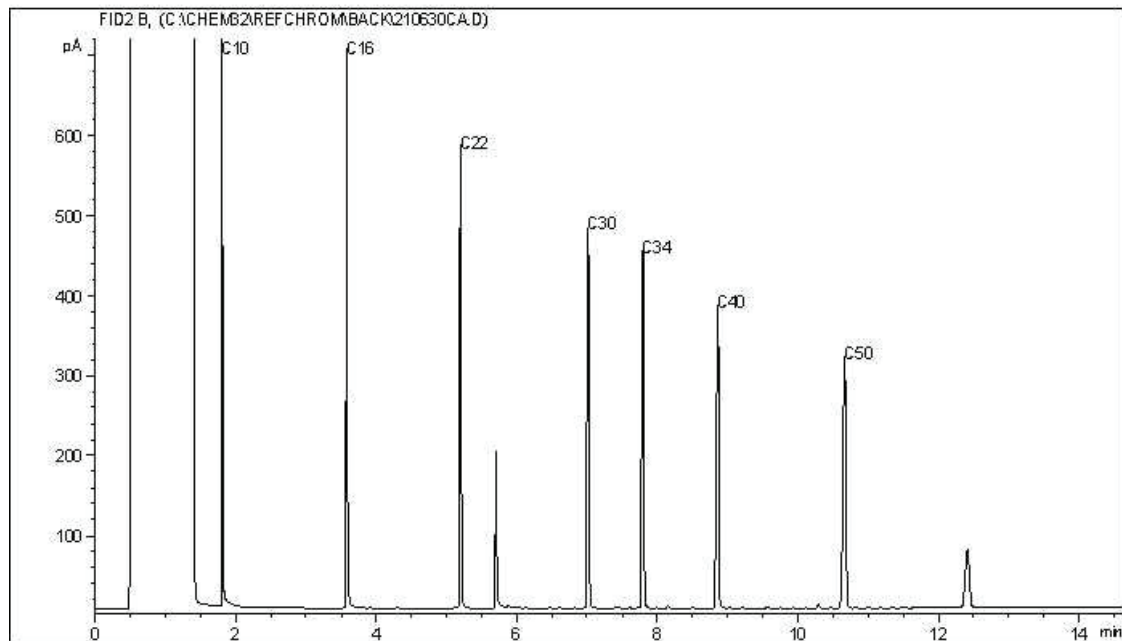
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

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+

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 Farewell

Sampling Date: September 4, 2021

Golder Project Number: 20368099-6000-1001

Laboratory: Bureau Veritas Edmonton

Lab Submission Number: C167916

Was the Cooler Received at the lab under a sealed and intact custody seal? Yes  
 Was proper chain of custody of the samples documented and kept? Yes  
 Were sample temperatures acceptable when they reached lab?: Yes  
 Were all samples analyzed and extracted within hold times?: Yes  
 Has lab warranted all tests were in statistical control in CoA?: Yes  
 Was sufficient sample provided for the requested analysis? Yes  
 Has lab warranted all samples were analyzed with limited headspace present?: Yes

Are All Laboratory QC Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery	X			Matrix spike recovery for vanadium(139%) exceeded the acceptance criteria of (75-125%).
Method Blank Concentration	X			
Laboratory Duplicate RPD	X			All remaining laboratory QC results are within acceptance criteria.
Matrix Spike Recovery		X		
Blank Spike Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	No field QC samples were collected.
Trip Blank Concentration			X	
Field Duplicate RPD			X	

Is data considered reliable (Yes/No/Suspect)? Yes  
 If answer is "No" or "Suspect", describe and provide rationale:

Data Reviewed by (Print): Anita Colbert

Data Reviewed by (Signature): Anita Colbert

Date: September 27, 2021



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. #: 644511-79-01, 644511-80-01, 644511-81-01, 644511-83-01

**Report Date: 2021/09/28**  
 Report #: R3077291  
 Version: 3 - Revision

**CERTIFICATE OF ANALYSIS – REVISED REPORT**

**BV LABS JOB #: C167920**

**Received: 2021/09/10, 09:00**

Sample Matrix: Soil  
 # Samples Received: 38

Analyses	Date		Laboratory Method	Analytical Method
	Quantity Extracted	Date Analyzed		
BTEX/F1 by HS GC/MS/FID (MeOH extract) (1, 2)	38	N/A	2021/09/17 AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX (1)	38	N/A	2021/09/18	Auto Calc
CCME Hydrocarbons (F2-F4 in soil) (1, 3)	1	2021/09/14	2021/09/15 AB SOP-00036	CCME PHC-CWS m
CCME Hydrocarbons (F2-F4 in soil) (1, 3)	18	2021/09/14	2021/09/17 AB SOP-00036	CCME PHC-CWS m
CCME Hydrocarbons (F2-F4 in soil) (1, 3)	19	2021/09/14	2021/09/18 AB SOP-00036	CCME PHC-CWS m
CCME Hydrocarbons (F4G in soil) (1, 3)	1	2021/09/14	2021/09/20 AB SOP-00036 AB SOP-00040	CCME PHC-CWS m
Moisture (1)	38	N/A	2021/09/15 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.

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.



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. #: 644511-79-01, 644511-80-01, 644511-81-01, 644511-83-01

**Report Date: 2021/09/28**  
Report #: R3077291  
Version: 3 - Revision

**CERTIFICATE OF ANALYSIS – REVISED REPORT**

**BV LABS JOB #: C167920**

**Received: 2021/09/10, 09:00**

- (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.

Encryption Key



**AUTHORIZED REPORT  
RAPPORT AUTORISÉ**

Bureau Veritas  
28 Sep 2021 08:28:49

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.



BUREAU  
VERITAS

BV Labs Job #: C167920  
Report Date: 2021/09/28

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: PT

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

BV Labs ID		AFU856	AFU856	AFU857	AFU858	AFU859		
Sampling Date		2021/09/01 09:55	2021/09/01 09:55	2021/09/01 09:57	2021/09/01 10:00	2021/09/01 10:00		
COC Number		644511-79-01	644511-79-01	644511-79-01	644511-79-01	644511-79-01		
	UNITS	TP21-134-02	TP21-134-02 Lab-Dup	TP21-134-04	TP21-134-06	DUP XX	RDL	QC Batch
<b>Ext. Pet. Hydrocarbon</b>								
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	N/A	<10	<10	<10	10	A351377
F3 (C16-C34 Hydrocarbons)	mg/kg	<50	N/A	<50	<50	<50	50	A351377
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	N/A	<50	<50	<50	50	A351377
Reached Baseline at C50	mg/kg	Yes	N/A	Yes	Yes	Yes	N/A	A351377
<b>Physical Properties</b>								
Moisture	%	7.1	N/A	4.4	12	12	0.30	A351631
<b>Volatiles</b>								
Xylenes (Total)	mg/kg	<0.045	N/A	<0.045	<0.045	<0.045	0.045	A350570
F1 (C6-C10) - BTEX	mg/kg	<10	N/A	<10	<10	<10	10	A350570
<b>Field Preserved Volatiles</b>								
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	A351801
Toluene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	A351801
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	A351801
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	A351801
o-Xylene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	A351801
F1 (C6-C10)	mg/kg	<10	<10	<10	<10	<10	10	A351801
<b>Surrogate Recovery (%)</b>								
1,4-Difluorobenzene (sur.)	%	108	102	102	102	107	N/A	A351801
4-Bromofluorobenzene (sur.)	%	100	95	100	100	93	N/A	A351801
D10-o-Xylene (sur.)	%	96	87	98	108	89	N/A	A351801
D4-1,2-Dichloroethane (sur.)	%	104	100	99	100	103	N/A	A351801
O-TERPHENYL (sur.)	%	96	N/A	92	97	99	N/A	A351377
RDL = Reportable Detection Limit Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable								



BUREAU  
VERITAS

BV Labs Job #: C167920  
Report Date: 2021/09/28

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: PT

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

BV Labs ID		AFU860	AFU860		AFU861		AFU862		
Sampling Date		2021/09/01 10:15	2021/09/01 10:15		2021/09/01 10:17		2021/09/01 10:29		
COC Number		644511-79-01	644511-79-01		644511-79-01		644511-79-01		
	UNITS	TP21-135-02	TP21-135-02 Lab-Dup	QC Batch	TP21-135-03	QC Batch	TP21-135-05	RDL	QC Batch
<b>Ext. Pet. Hydrocarbon</b>									
F2 (C10-C16 Hydrocarbons)	mg/kg	84	86	A351402	35	A351377	<10	10	A351377
F3 (C16-C34 Hydrocarbons)	mg/kg	95	85	A351402	<50	A351377	<50	50	A351377
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	<50	A351402	<50	A351377	<50	50	A351377
Reached Baseline at C50	mg/kg	Yes	Yes	A351402	Yes	A351377	Yes	N/A	A351377
<b>Physical Properties</b>									
Moisture	%	7.2	6.0	A352143	5.4	A351889	6.3	0.30	A351631
<b>Volatiles</b>									
Xylenes (Total)	mg/kg	<0.045	N/A	A350570	<0.045	A350570	<0.045	0.045	A350570
F1 (C6-C10) - BTEX	mg/kg	<10	N/A	A350570	<10	A350570	<10	10	A350570
<b>Field Preserved Volatiles</b>									
Benzene	mg/kg	<0.0050	N/A	A351801	<0.0050	A351801	<0.0050	0.0050	A351801
Toluene	mg/kg	<0.050	N/A	A351801	<0.050	A351801	<0.050	0.050	A351801
Ethylbenzene	mg/kg	<0.010	N/A	A351801	<0.010	A351801	<0.010	0.010	A351801
m & p-Xylene	mg/kg	<0.040	N/A	A351801	<0.040	A351801	<0.040	0.040	A351801
o-Xylene	mg/kg	<0.020	N/A	A351801	<0.020	A351801	<0.020	0.020	A351801
F1 (C6-C10)	mg/kg	<10	N/A	A351801	<10	A351801	<10	10	A351801
<b>Surrogate Recovery (%)</b>									
1,4-Difluorobenzene (sur.)	%	103	N/A	A351801	102	A351801	93	N/A	A351801
4-Bromofluorobenzene (sur.)	%	109	N/A	A351801	102	A351801	103	N/A	A351801
D10-o-Xylene (sur.)	%	106	N/A	A351801	106	A351801	97	N/A	A351801
D4-1,2-Dichloroethane (sur.)	%	100	N/A	A351801	97	A351801	93	N/A	A351801
O-TERPHENYL (sur.)	%	102	93	A351402	99	A351377	100	N/A	A351377
RDL = Reportable Detection Limit Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable									



BUREAU  
VERITAS

BV Labs Job #: C167920  
Report Date: 2021/09/28

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: PT

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

BV Labs ID		AFU862	AFU863	AFU864	AFU865		AFU868		
Sampling Date		2021/09/01 10:29	2021/09/01 10:17	2021/09/01 09:57	2021/09/01 10:29		2021/09/01 10:54		
COC Number		644511-79-01	644511-79-01	644511-79-01	644511-79-01		644511-80-01		
	UNITS	TP21-135-05 Lab-Dup	DUP YY	DUP WW	DUP ZZ	QC Batch	TP21-177-02	RDL	QC Batch

Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	79	<10	<10	A351377	52	10	A351377
F3 (C16-C34 Hydrocarbons)	mg/kg	<50	<50	<50	<50	A351377	850	50	A351377
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	<50	<50	<50	A351377	290	50	A351377
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes	A351377	Yes	N/A	A351377
Physical Properties									
Moisture	%	N/A	11	3.5	6.8	A351631	29	0.30	A351889
Volatiles									
Xylenes (Total)	mg/kg	N/A	<0.045	<0.045	<0.045	A350570	<0.045	0.045	A350570
F1 (C6-C10) - BTEX	mg/kg	N/A	<10	<10	<10	A350570	<10	10	A350570
Field Preserved Volatiles									
Benzene	mg/kg	N/A	<0.0050	<0.0050	<0.0050	A351801	<0.0050	0.0050	A351801
Toluene	mg/kg	N/A	<0.050	<0.050	<0.050	A351801	<0.050	0.050	A351801
Ethylbenzene	mg/kg	N/A	<0.010	<0.010	<0.010	A351801	<0.010	0.010	A351801
m & p-Xylene	mg/kg	N/A	<0.040	<0.040	<0.040	A351801	<0.040	0.040	A351801
o-Xylene	mg/kg	N/A	<0.020	<0.020	<0.020	A351801	<0.020	0.020	A351801
F1 (C6-C10)	mg/kg	N/A	<10	<10	<10	A351801	<10	10	A351801
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	N/A	101	100	101	A351801	97	N/A	A351801
4-Bromofluorobenzene (sur.)	%	N/A	98	102	100	A351801	98	N/A	A351801
D10-o-Xylene (sur.)	%	N/A	108	103	97	A351801	102	N/A	A351801
D4-1,2-Dichloroethane (sur.)	%	N/A	99	97	99	A351801	96	N/A	A351801
O-TERPHENYL (sur.)	%	100	91	93	94	A351377	110	N/A	A351377
RDL = Reportable Detection Limit Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable									



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

BV Labs ID		AFU869		AFU870	AFU871	AFU872	AFU873		
Sampling Date		2021/09/01 10:54		2021/09/01 10:55	2021/09/01 10:55	2021/09/01 11:16	2021/09/01 11:16		
COC Number		644511-80-01		644511-80-01	644511-80-01	644511-80-01	644511-80-01		
	UNITS	DUP AAA	RDL	TP21-177-04	DUP BBB	TP21-178-02	DUP CCC	RDL	QC Batch
<b>Ext. Pet. Hydrocarbon</b>									
F2 (C10-C16 Hydrocarbons)	mg/kg	36	10	<10	<10	<10	10	10	A351377
F3 (C16-C34 Hydrocarbons)	mg/kg	720	50	<50	<50	<50	<50	50	A351377
F4 (C34-C50 Hydrocarbons)	mg/kg	240	50	<50	<50	<50	<50	50	A351377
Reached Baseline at C50	mg/kg	Yes	N/A	Yes	Yes	Yes	Yes	N/A	A351377
<b>Physical Properties</b>									
Moisture	%	37	0.30	11	12	3.8	5.0	0.30	A351631
<b>Volatiles</b>									
Xylenes (Total)	mg/kg	<0.093	0.093	<0.045	<0.045	<0.045	<0.045	0.045	A350570
F1 (C6-C10) - BTEX	mg/kg	<21	21	<10	<10	<10	<10	10	A350570
<b>Field Preserved Volatiles</b>									
Benzene	mg/kg	<0.010 (1)	0.010	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	A351801
Toluene	mg/kg	<0.10 (1)	0.10	<0.050	<0.050	<0.050	<0.050	0.050	A351801
Ethylbenzene	mg/kg	<0.021 (1)	0.021	<0.010	<0.010	<0.010	<0.010	0.010	A351801
m & p-Xylene	mg/kg	<0.083 (1)	0.083	<0.040	<0.040	<0.040	<0.040	0.040	A351801
o-Xylene	mg/kg	<0.042 (1)	0.042	<0.020	<0.020	<0.020	<0.020	0.020	A351801
F1 (C6-C10)	mg/kg	<21 (1)	21	<10	<10	<10	<10	10	A351801
<b>Surrogate Recovery (%)</b>									
1,4-Difluorobenzene (sur.)	%	99	N/A	106	104	99	104	N/A	A351801
4-Bromofluorobenzene (sur.)	%	99	N/A	97	97	98	101	N/A	A351801
D10-o-Xylene (sur.)	%	94	N/A	97	92	95	103	N/A	A351801
D4-1,2-Dichloroethane (sur.)	%	98	N/A	100	96	94	98	N/A	A351801
O-TERPHENYL (sur.)	%	108	N/A	104	104	101	103	N/A	A351377
RDL = Reportable Detection Limit N/A = Not Applicable (1) Detection limits raised based on sample weight used for analysis.									





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BV Labs Job #: C167920  
Report Date: 2021/09/28

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: PT

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

BV Labs ID		AFU874	AFU875		AFU876	AFU877		
Sampling Date		2021/09/01 11:17	2021/09/01 11:17		2021/09/01 11:25	2021/09/01 11:25		
COC Number		644511-80-01	644511-80-01		644511-80-01	644511-80-01		
	UNITS	TP21-178-04	DUP DDD	QC Batch	TP21-178-06	DUP EEE	RDL	QC Batch
<b>Ext. Pet. Hydrocarbon</b>								
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	<10	A351377	<10	<10	10	A351864
F3 (C16-C34 Hydrocarbons)	mg/kg	<50	<50	A351377	<50	<50	50	A351864
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	<50	A351377	<50	<50	50	A351864
Reached Baseline at C50	mg/kg	Yes	Yes	A351377	Yes	Yes	N/A	A351864
<b>Physical Properties</b>								
Moisture	%	3.6	3.9	A351631	15	14	0.30	A351588
<b>Volatiles</b>								
Xylenes (Total)	mg/kg	<0.045	<0.045	A350812	<0.045	<0.045	0.045	A350812
F1 (C6-C10) - BTEX	mg/kg	<10	<10	A350812	<10	<10	10	A350812
<b>Field Preserved Volatiles</b>								
Benzene	mg/kg	<0.0050	<0.0050	A351801	<0.0050	<0.0050	0.0050	A351801
Toluene	mg/kg	<0.050	<0.050	A351801	<0.050	<0.050	0.050	A351801
Ethylbenzene	mg/kg	<0.010	<0.010	A351801	<0.010	<0.010	0.010	A351801
m & p-Xylene	mg/kg	<0.040	<0.040	A351801	<0.040	<0.040	0.040	A351801
o-Xylene	mg/kg	<0.020	<0.020	A351801	<0.020	<0.020	0.020	A351801
F1 (C6-C10)	mg/kg	<10	<10	A351801	<10	<10	10	A351801
<b>Surrogate Recovery (%)</b>								
1,4-Difluorobenzene (sur.)	%	104	106	A351801	102	107	N/A	A351801
4-Bromofluorobenzene (sur.)	%	101	100	A351801	104	95	N/A	A351801
D10-o-Xylene (sur.)	%	100	98	A351801	102	86	N/A	A351801
D4-1,2-Dichloroethane (sur.)	%	97	99	A351801	98	100	N/A	A351801
O-TERPHENYL (sur.)	%	112	108	A351377	99	102	N/A	A351864
RDL = Reportable Detection Limit N/A = Not Applicable								



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BV Labs Job #: C167920  
Report Date: 2021/09/28

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: PT

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

BV Labs ID		AFU881	AFU882		AFU883	AFU884		
Sampling Date		2021/09/01 11:40	2021/09/01 11:40		2021/09/01 11:41	2021/09/01 11:41		
COC Number		644511-81-01	644511-81-01		644511-81-01	644511-81-01		
	UNITS	TP21-179-02	DUP FFF	QC Batch	TP21-179-04	DUP GGG	RDL	QC Batch
<b>Ext. Pet. Hydrocarbon</b>								
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	<10	A351864	<10	<10	10	A351377
F3 (C16-C34 Hydrocarbons)	mg/kg	<50	<50	A351864	<50	<50	50	A351377
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	<50	A351864	<50	<50	50	A351377
Reached Baseline at C50	mg/kg	Yes	Yes	A351864	Yes	Yes	N/A	A351377
<b>Physical Properties</b>								
Moisture	%	4.6	4.3	A351588	4.0	4.2	0.30	A351631
<b>Volatiles</b>								
Xylenes (Total)	mg/kg	<0.045	<0.045	A350812	<0.045	<0.045	0.045	A350812
F1 (C6-C10) - BTEX	mg/kg	<10	<10	A350812	<10	<10	10	A350812
<b>Field Preserved Volatiles</b>								
Benzene	mg/kg	<0.0050	<0.0050	A351806	<0.0050	<0.0050	0.0050	A351806
Toluene	mg/kg	<0.050	<0.050	A351806	<0.050	<0.050	0.050	A351806
Ethylbenzene	mg/kg	<0.010	<0.010	A351806	<0.010	<0.010	0.010	A351806
m & p-Xylene	mg/kg	<0.040	<0.040	A351806	<0.040	<0.040	0.040	A351806
o-Xylene	mg/kg	<0.020	<0.020	A351806	<0.020	<0.020	0.020	A351806
F1 (C6-C10)	mg/kg	<10	<10	A351806	<10	<10	10	A351806
<b>Surrogate Recovery (%)</b>								
1,4-Difluorobenzene (sur.)	%	101	101	A351806	101	101	N/A	A351806
4-Bromofluorobenzene (sur.)	%	95	92	A351806	97	97	N/A	A351806
D10-o-Xylene (sur.)	%	97	95	A351806	92	97	N/A	A351806
D4-1,2-Dichloroethane (sur.)	%	95	94	A351806	93	95	N/A	A351806
O-TERPHENYL (sur.)	%	92	98	A351864	98	101	N/A	A351377
RDL = Reportable Detection Limit N/A = Not Applicable								



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BV Labs Job #: C167920  
Report Date: 2021/09/28

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: PT

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

BV Labs ID		AFU885	AFU886	AFU886	AFU887	AFU888	AFU889		
Sampling Date		2021/09/01 11:49	2021/09/01 11:49	2021/09/01 11:49	2021/09/01 14:05	2021/09/01 14:07	2021/09/01 14:07		
COC Number		644511-81-01	644511-81-01	644511-81-01	644511-81-01	644511-81-01	644511-81-01		
	UNITS	TP21-179-06	DUP HHH	DUP HHH Lab-Dup	TP21-180-01	TP21-180-03	DUP III	RDL	QC Batch

Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	<10	<10	96	190	380	10	A351864
F3 (C16-C34 Hydrocarbons)	mg/kg	<50	<50	<50	230	320	770	50	A351864
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	<50	<50	54	240	370	50	A351864
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes	Yes	Yes	N/A	A351864

Physical Properties									
Moisture	%	13	16	17	11	4.4	8.1	0.30	A351588

Volatiles									
Xylenes (Total)	mg/kg	<0.045	<0.045	N/A	<0.045	0.15	<0.045	0.045	A350812
F1 (C6-C10) - BTEX	mg/kg	<10	<10	N/A	<10	<10	<10	10	A350812

Field Preserved Volatiles									
Benzene	mg/kg	<0.0050	<0.0050	N/A	<0.0050	0.071	<0.0050	0.0050	A351806
Toluene	mg/kg	<0.050	<0.050	N/A	<0.050	0.24	<0.050	0.050	A351806
Ethylbenzene	mg/kg	<0.010	<0.010	N/A	<0.010	0.026	<0.010	0.010	A351806
m & p-Xylene	mg/kg	<0.040	<0.040	N/A	<0.040	0.12	<0.040	0.040	A351806
o-Xylene	mg/kg	<0.020	<0.020	N/A	<0.020	0.025	<0.020	0.020	A351806
F1 (C6-C10)	mg/kg	<10	<10	N/A	<10	<10	<10	10	A351806

Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	101	99	N/A	100	102	102	N/A	A351806
4-Bromofluorobenzene (sur.)	%	98	97	N/A	97	94	96	N/A	A351806
D10-o-Xylene (sur.)	%	99	96	N/A	100	91	100	N/A	A351806
D4-1,2-Dichloroethane (sur.)	%	96	93	N/A	95	96	96	N/A	A351806
O-TERPHENYL (sur.)	%	94	102	94	99	89	108	N/A	A351864

RDL = Reportable Detection Limit  
 Lab-Dup = Laboratory Initiated Duplicate  
 N/A = Not Applicable



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BV Labs Job #: C167920  
Report Date: 2021/09/28

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: PT

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

BV Labs ID		AFU890	AFU891	AFU892	AFU893	AFU894	AFU895		
Sampling Date		2021/09/01 14:09	2021/09/01 14:09	2021/09/01 14:30	2021/09/01 14:33	2021/09/01 14:45	2021/09/01 15:07		
COC Number		644511-81-01	644511-83-01	644511-83-01	644511-83-01	644511-83-01	644511-83-01		
	UNITS	TP21-180-05	TP21-180-06	TP21-181-02	TP21-181-04	TP21-181-06	TP21-182-02	RDL	QC Batch
<b>Ext. Pet. Hydrocarbon</b>									
F2 (C10-C16 Hydrocarbons)	mg/kg	180	260	<10	<10	<10	11	10	A351864
F3 (C16-C34 Hydrocarbons)	mg/kg	860	230	<50	<50	<50	180	50	A351864
F4 (C34-C50 Hydrocarbons)	mg/kg	290	100	<50	<50	<50	<50	50	A351864
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes	Yes	Yes	N/A	A351864
<b>Physical Properties</b>									
Moisture	%	7.0	15	3.0	11	14	17	0.30	A351588
<b>Volatiles</b>									
Xylenes (Total)	mg/kg	0.13	0.083	<0.045	<0.045	<0.045	<0.045	0.045	A350812
F1 (C6-C10) - BTEX	mg/kg	<10	58	<10	<10	<10	<10	10	A350812
<b>Field Preserved Volatiles</b>									
Benzene	mg/kg	0.020	0.011 (1)	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	A351806
Toluene	mg/kg	0.094	0.066	<0.050	<0.050	<0.050	<0.050	0.050	A351806
Ethylbenzene	mg/kg	0.023	0.12	<0.010	<0.010	<0.010	<0.010	0.010	A351806
m & p-Xylene	mg/kg	0.097	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	A351806
o-Xylene	mg/kg	0.032	0.083	<0.020	<0.020	<0.020	<0.020	0.020	A351806
F1 (C6-C10)	mg/kg	<10	59	<10	<10	<10	<10	10	A351806
<b>Surrogate Recovery (%)</b>									
1,4-Difluorobenzene (sur.)	%	101	100	100	99	99	100	N/A	A351806
4-Bromofluorobenzene (sur.)	%	98	95	99	97	98	97	N/A	A351806
D10-o-Xylene (sur.)	%	103	103	88	104	100	103	N/A	A351806
D4-1,2-Dichloroethane (sur.)	%	97	95	95	97	96	96	N/A	A351806
O-TERPHENYL (sur.)	%	109	104	100	103	102	103	N/A	A351864
RDL = Reportable Detection Limit N/A = Not Applicable (1) Qualifying ion outside of acceptance criteria. Results are tentatively identified and potentially biased high.									



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GOLDER ASSOCIATES LTD.  
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Territories  
Your P.O. #: 20368099-7000-1001  
Sampler Initials: PT

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

BV Labs ID		AFU896		AFU897		AFU898		
Sampling Date		2021/09/01 15:07		2021/09/01 15:08		2021/09/01 14:33		
COC Number		644511-83-01		644511-83-01		644511-83-01		
	UNITS	DUP KKK	RDL	TP21-182-04	RDL	DUP JJJ	RDL	QC Batch
<b>Ext. Pet. Hydrocarbon</b>								
F2 (C10-C16 Hydrocarbons)	mg/kg	18	10	83	10	<10	10	A351864
F3 (C16-C34 Hydrocarbons)	mg/kg	300	50	1200	50	<50	50	A351864
F4 (C34-C50 Hydrocarbons)	mg/kg	100	50	390	50	<50	50	A351864
Reached Baseline at C50	mg/kg	Yes	N/A	No	N/A	Yes	N/A	A351864
<b>Physical Properties</b>								
Moisture	%	24	0.30	45	0.30	16	0.30	A351588
<b>Volatiles</b>								
Xylenes (Total)	mg/kg	<0.045	0.045	<0.092	0.092	<0.045	0.045	A350812
F1 (C6-C10) - BTEX	mg/kg	<10	10	<21	21	<10	10	A350812
<b>Field Preserved Volatiles</b>								
Benzene	mg/kg	<0.0050	0.0050	<0.010 (1)	0.010	<0.0050	0.0050	A351806
Toluene	mg/kg	<0.050	0.050	<0.10 (1)	0.10	<0.050	0.050	A351806
Ethylbenzene	mg/kg	<0.010	0.010	<0.021 (1)	0.021	<0.010	0.010	A351806
m & p-Xylene	mg/kg	<0.040	0.040	<0.082 (1)	0.082	<0.040	0.040	A351806
o-Xylene	mg/kg	<0.020	0.020	<0.041 (1)	0.041	<0.020	0.020	A351806
F1 (C6-C10)	mg/kg	<10	10	<21 (1)	21	<10	10	A351806
<b>Surrogate Recovery (%)</b>								
1,4-Difluorobenzene (sur.)	%	99	N/A	100	N/A	100	N/A	A351806
4-Bromofluorobenzene (sur.)	%	96	N/A	95	N/A	94	N/A	A351806
D10-o-Xylene (sur.)	%	106	N/A	112	N/A	101	N/A	A351806
D4-1,2-Dichloroethane (sur.)	%	95	N/A	96	N/A	96	N/A	A351806
O-TERPHENYL (sur.)	%	108	N/A	111	N/A	99	N/A	A351864
RDL = Reportable Detection Limit N/A = Not Applicable (1) Detection limits raised based on sample weight used for analysis.								



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BV Labs Job #: C167920  
Report Date: 2021/09/28

GOLDER ASSOCIATES LTD.  
Client Project #: 20368099-6000-1001  
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Territories  
Your P.O. #: 20368099-7000-1001  
Sampler Initials: PT

**PETROLEUM HYDROCARBONS (CCME)**

<b>BV Labs ID</b>		AFU897		
<b>Sampling Date</b>		2021/09/01 15:08		
<b>COC Number</b>		644511-83-01		
	<b>UNITS</b>	<b>TP21-182-04</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Ext. Pet. Hydrocarbon</b>				
F4G-SG (Heavy Hydrocarbons-Grav.)	mg/kg	1700	500	A358666
RDL = Reportable Detection Limit				



### GENERAL COMMENTS

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

Package 1	4.3°C
Package 2	5.3°C
Package 3	5.7°C
Package 4	3.0°C
Package 5	3.3°C
Package 6	3.3°C
Package 7	1.7°C
Package 8	2.3°C

Version #3: Report reissued to amend client sample ID on AFU877 from DUP-EE to DUP-EEE as per the original Chain of Custody.

Sample AFU888 [TP21-180-03] : Sample was analyzed past method specified hold time for CCME Hydrocarbons (F2-F4 in soil).

Sample AFU889 [DUP III] : Sample was analyzed past method specified hold time for CCME Hydrocarbons (F2-F4 in soil).

**Results relate only to the items tested.**





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BV Labs Job #: C167920  
Report Date: 2021/09/28

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: PT

### QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
A351377	CAU	Matrix Spike [AFU862-01]	O-TERPHENYL (sur.)	2021/09/18		103	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/09/18		88	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/09/18		86	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/09/18		84	%	60 - 140
A351377	CAU	Spiked Blank	O-TERPHENYL (sur.)	2021/09/18		104	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/09/18		90	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/09/18		86	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/09/18		82	%	60 - 140
A351377	CAU	Method Blank	O-TERPHENYL (sur.)	2021/09/18		100	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/09/18	<10		mg/kg	
			F3 (C16-C34 Hydrocarbons)	2021/09/18	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2021/09/18	<50		mg/kg	
A351377	CAU	RPD [AFU862-01]	F2 (C10-C16 Hydrocarbons)	2021/09/18	NC		%	40
			F3 (C16-C34 Hydrocarbons)	2021/09/18	NC		%	40
			F4 (C34-C50 Hydrocarbons)	2021/09/18	NC		%	40
A351402	MHF	Matrix Spike [AFU860-01]	O-TERPHENYL (sur.)	2021/09/15		98	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/09/15		101	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/09/15		99	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/09/15		100	%	60 - 140
A351402	MHF	Spiked Blank	O-TERPHENYL (sur.)	2021/09/15		105	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/09/15		102	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/09/15		105	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/09/15		105	%	60 - 140
A351402	MHF	Method Blank	O-TERPHENYL (sur.)	2021/09/15		111	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/09/15	<10		mg/kg	
			F3 (C16-C34 Hydrocarbons)	2021/09/15	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2021/09/15	<50		mg/kg	
A351402	MHF	RPD [AFU860-01]	F2 (C10-C16 Hydrocarbons)	2021/09/15	1.4		%	40
			F3 (C16-C34 Hydrocarbons)	2021/09/15	11		%	40
			F4 (C34-C50 Hydrocarbons)	2021/09/15	NC		%	40
A351588	WLE	Method Blank	Moisture	2021/09/15	<0.30		%	
A351588	WLE	RPD [AFU886-01]	Moisture	2021/09/15	2.4		%	20
A351631	SVI	Method Blank	Moisture	2021/09/15	<0.30		%	
A351631	SVI	RPD	Moisture	2021/09/15	0.37		%	20
A351801	RSU	Matrix Spike [AFU856-02]	1,4-Difluorobenzene (sur.)	2021/09/17		101	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/09/17		101	%	50 - 140
			D10-o-Xylene (sur.)	2021/09/17		94	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/09/17		100	%	50 - 140
			Benzene	2021/09/17		88	%	50 - 140
			Toluene	2021/09/17		88	%	50 - 140
			Ethylbenzene	2021/09/17		88	%	50 - 140
			m & p-Xylene	2021/09/17		86	%	50 - 140
			o-Xylene	2021/09/17		84	%	50 - 140
			F1 (C6-C10)	2021/09/17		104	%	60 - 140
			1,4-Difluorobenzene (sur.)	2021/09/17		103	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/09/17		96	%	50 - 140
A351801	RSU	Spiked Blank	D10-o-Xylene (sur.)	2021/09/17		95	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/09/17		100	%	50 - 140
			Benzene	2021/09/17		87	%	60 - 130
			Toluene	2021/09/17		87	%	60 - 130
			Ethylbenzene	2021/09/17		88	%	60 - 130



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BV Labs Job #: C167920  
Report Date: 2021/09/28

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: PT

### QUALITY ASSURANCE REPORT(CONT'D)

QA/QC	Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
A351801	RSU	Method Blank	m & p-Xylene	2021/09/17		87	%	60 - 130	
			o-Xylene	2021/09/17		82	%	60 - 130	
			F1 (C6-C10)	2021/09/17		86	%	60 - 140	
			1,4-Difluorobenzene (sur.)	2021/09/17		104	%	50 - 140	
			4-Bromofluorobenzene (sur.)	2021/09/17		102	%	50 - 140	
			D10-o-Xylene (sur.)	2021/09/17		89	%	50 - 140	
			D4-1,2-Dichloroethane (sur.)	2021/09/17		103	%	50 - 140	
			Benzene	2021/09/17	<0.0050		mg/kg		
			Toluene	2021/09/17	<0.050		mg/kg		
			Ethylbenzene	2021/09/17	<0.010		mg/kg		
A351801	RSU	RPD [AFU856-02]	m & p-Xylene	2021/09/17	<0.040		mg/kg		
			o-Xylene	2021/09/17	<0.020		mg/kg		
			F1 (C6-C10)	2021/09/17	<10		mg/kg		
			Benzene	2021/09/17	NC		%	50	
			Toluene	2021/09/17	NC		%	50	
			Ethylbenzene	2021/09/17	NC		%	50	
			m & p-Xylene	2021/09/17	NC		%	50	
			o-Xylene	2021/09/17	NC		%	50	
			F1 (C6-C10)	2021/09/17	NC		%	30	
			A351806	RSU	Matrix Spike	1,4-Difluorobenzene (sur.)	2021/09/17		100
4-Bromofluorobenzene (sur.)	2021/09/17					98	%	50 - 140	
D10-o-Xylene (sur.)	2021/09/17					107	%	50 - 140	
D4-1,2-Dichloroethane (sur.)	2021/09/17					91	%	50 - 140	
Benzene	2021/09/17					78	%	50 - 140	
Toluene	2021/09/17					82	%	50 - 140	
Ethylbenzene	2021/09/17					87	%	50 - 140	
m & p-Xylene	2021/09/17					89	%	50 - 140	
o-Xylene	2021/09/17					86	%	50 - 140	
F1 (C6-C10)	2021/09/17					85	%	60 - 140	
A351806	RSU	Spiked Blank	1,4-Difluorobenzene (sur.)	2021/09/17		104	%	50 - 140	
			4-Bromofluorobenzene (sur.)	2021/09/17		101	%	50 - 140	
			D10-o-Xylene (sur.)	2021/09/17		98	%	50 - 140	
			D4-1,2-Dichloroethane (sur.)	2021/09/17		97	%	50 - 140	
			Benzene	2021/09/17		80	%	60 - 130	
			Toluene	2021/09/17		82	%	60 - 130	
			Ethylbenzene	2021/09/17		84	%	60 - 130	
			m & p-Xylene	2021/09/17		87	%	60 - 130	
			o-Xylene	2021/09/17		88	%	60 - 130	
			F1 (C6-C10)	2021/09/17		94	%	60 - 140	
A351806	RSU	Method Blank	1,4-Difluorobenzene (sur.)	2021/09/17		104	%	50 - 140	
			4-Bromofluorobenzene (sur.)	2021/09/17		97	%	50 - 140	
			D10-o-Xylene (sur.)	2021/09/17		84	%	50 - 140	
			D4-1,2-Dichloroethane (sur.)	2021/09/17		96	%	50 - 140	
			Benzene	2021/09/17	<0.0050		mg/kg		
			Toluene	2021/09/17	<0.050		mg/kg		
			Ethylbenzene	2021/09/17	<0.010		mg/kg		
			m & p-Xylene	2021/09/17	<0.040		mg/kg		
			o-Xylene	2021/09/17	<0.020		mg/kg		
			F1 (C6-C10)	2021/09/17	<10		mg/kg		
A351806	RSU	RPD	Benzene	2021/09/17	NC		%	50	
			Toluene	2021/09/17	NC		%	50	



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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
A351864	CAU	Matrix Spike [AFU886-01]	Ethylbenzene	2021/09/17	NC		%	50
			m & p-Xylene	2021/09/17	NC		%	50
			o-Xylene	2021/09/17	NC		%	50
			F1 (C6-C10)	2021/09/17	NC		%	30
			O-TERPHENYL (sur.)	2021/09/17		123	%	60 - 140
A351864	CAU	Spiked Blank	F2 (C10-C16 Hydrocarbons)	2021/09/17		105	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/09/17		104	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/09/17		100	%	60 - 140
			O-TERPHENYL (sur.)	2021/09/17		105	%	60 - 140
A351864	CAU	Method Blank	F2 (C10-C16 Hydrocarbons)	2021/09/17		94	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/09/17		91	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/09/17		86	%	60 - 140
			O-TERPHENYL (sur.)	2021/09/17		103	%	60 - 140
A351864	CAU	RPD [AFU886-01]	F2 (C10-C16 Hydrocarbons)	2021/09/17	<10		mg/kg	
			F3 (C16-C34 Hydrocarbons)	2021/09/17	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2021/09/17	<50		mg/kg	
			F2 (C10-C16 Hydrocarbons)	2021/09/17	NC		%	40
A351889	SVI	Method Blank	F3 (C16-C34 Hydrocarbons)	2021/09/17	NC		%	40
			F4 (C34-C50 Hydrocarbons)	2021/09/17	NC		%	40
			Moisture	2021/09/15	<0.30		%	
A351889	SVI	RPD	Moisture	2021/09/15	7.2		%	20
A352143	ODM	Method Blank	Moisture	2021/09/15	<0.30		%	
A352143	ODM	RPD [AFU860-01]	Moisture	2021/09/15	18		%	20
A358666	JLJ	Spiked Blank	F4G-SG (Heavy Hydrocarbons-Grav.)	2021/09/20		95	%	60 - 140
A358666	JLJ	Method Blank	F4G-SG (Heavy Hydrocarbons-Grav.)	2021/09/20	<500		mg/kg	
A358666	JLJ	RPD	F4G-SG (Heavy Hydrocarbons-Grav.)	2021/09/20	10		%	40

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).



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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

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

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

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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.



**ADDITIONAL COOLER TEMPERATURE RECORD**  
CHAIN-OF-CUSTODY RECORD

CHAIN OF CUSTODY #		COOLER OBSERVATIONS:										MAXXAM JOB#:					
YES	NO	YES	NO	COOLER ID	YES	NO	COOLER ID	YES	NO	COOLER ID	YES	NO	COOLER ID	TEMP	1	2	3
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	6				
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3				
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	6	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3				
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3				
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	9	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2				
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5				
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3				
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3				
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<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3				
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	8	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1				
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1				
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	7	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1				
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1				
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3				
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3				
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3				
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3				
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3				

RECEIVED BY (SIGN & PRINT): Jose Meenan DATE (YYYY/MM/DD): 27 2021/09/10 TIME (HH:MM): 9:00





CHAIN OF CUSTODY RECORD

Bureau Veritas Laboratories  
4000 196th Ave NE, Calgary, Alberta Canada T2E 6P8 Tel: (403) 391-3077 Toll-free: 800-563-6286 Fax: (403) 291-9468 www.bvlabits.com

<b>INVOICE TO:</b> #254 GOLDER ASSOCIATES LTD. ACCOUNTS PAYABLE 2800, 700 -2nd Street SW CALGARY AB T2P 2W2 (905) 567-6100 Ext: 1167 Fax: (403) 299-5606 canadaaccounts@payableinvoicess@golder.com		<b>REPORT TO:</b> #6340 GOLDER ASSOCIATES LTD. Aurelia Belavance 2800, 700 -2nd Street SW CALGARY AB T2P 2W2 (403) 299-5600 abelavance@golder.com		<b>PROJECT INFORMATION:</b> C00480 20368099-7000-1001 20368099-6000-1001 Project Name Site # Sampled By:		<b>Laboratory Use Only:</b> BV Labs Job #: 167920 COC #: Project Manager: Carmen McKay Bottle Order #: 644511	
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Regulatory Criteria:  ATI  CCME  Other

Special Instructions: (email) shells@golder.com, (phone) 412-595-444, Facility Code

ANALYSIS REQUESTED (PLEASE BE SPECIFIC):

AT1 Regulated Metals - Soils	AT1 BTEX and F-1, F-4 in Soil	(Vials)	BIC SCALE Analysis (F2/F2+F3B) in soil	Sulphate / nitrate	Barium on ICP using Fusion	Extraction (True Barium)	CME BTEX and F1-F2 in Water	Routine Water	Regulated Metals (CCME/AT1) - Dissolved	PAH in Water by GC/MS	Limited Sample
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Turnaround Time (TAT) Required:  Regular (Standard) TAT: (will be applied if Rush TAT is not specified); Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests are > 5 days - contact your Project Manager for details.  Job Specific Rush TAT (if applies to entire submission)

Date Required: \_\_\_\_\_ Rush Confirmation Number: \_\_\_\_\_ (call job for #)

Comments: Received in Yellowknife By: J. M... @ 09:00 AM SEP 10 2021 Temp: 1 / 1

Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered ? (Y / N)	AT1 Regulated Metals - Soils	(Vials)	BIC SCALE Analysis (F2/F2+F3B) in soil	Sulphate / nitrate	Barium on ICP using Fusion	Extraction (True Barium)	CME BTEX and F1-F2 in Water	Routine Water	Regulated Metals (CCME/AT1) - Dissolved	PAH in Water by GC/MS	Limited Sample	# of Bottles	Comments
NA	TP21-134-02	01 Sep 2021	09:55	Soil		X	X	X	X							3		
	TP21-134-04		09:57			X	X	X	X							3		
	TP21-134-06		10:00			X	X	X	X							3		
	Dup XX		10:00			X	X	X	X							3		
	TP21-135-02		10:15			X	X	X	X							3		
	TP21-135-03		10:17			X	X	X	X							3		
	TP21-135-05		10:29			X	X	X	X							3		
	Dup YY		10:17			X	X	X	X							3		
	Dup WW		10:57			X	X	X	X							3		
	Dup ZZ		10:29			X	X	X	X							3		

RECEIVED BY: (Signature/Print) *[Signature]* Alicia Lih

RECEIVED BY: (Signature/Print) *[Signature]* Alicia Lih

Date: (YY/MM/DD) 21/09/01 17:00

Date: (YY/MM/DD) 2021/09/11 14:40

Temperature (°C) on Receipt: SEE ACTR

Custom Seal Intact on Cooler?  Yes  No

White: BV Labs Yellow: Client

\* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV 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.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



CHAIN OF CUSTODY RECORD

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

<b>INVOICE TO:</b> #254 GOLDER ASSOCIATES LTD. ACCOUNTS PAYABLE 2800, 700 - 2nd Street SW CALGARY AB T2P 2W2 Tel: (905) 567-6100 Ext: 1167 Fax: (403) 299-5606 Email: canadabccountspayableinvoices@golder.com		<b>REPORT TO:</b> #6340 GOLDER ASSOCIATES LTD. Aurelie Belavance 2800, 700 - 2nd Street SW CALGARY AB T2P 2W2 Tel: (403) 299-5600 Fax: Email: abelavance@golder.com	
<b>PROJECT INFORMATION:</b> Quotation #: C00480 P.O. #: 20368099-7000-1001 Project: 20368099-6000-1001 Project Name: Site #: Sampled By:		<b>Laboratory Use Only:</b> BV Labs Job #: 0167920 Bottle Order #: 64511 Project Manager: Carmen McKay COC #: C#644511-80-01	

Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	ANALYSIS REQUESTED (PLEASE BE SPECIFIC)							Metals Field Filtered ? (Y / N)	AT1 Regulated Metals - Soils	AT1 BTEX and F1-F4 in Soil	BIC SCALE Analysis (F2/F2+F3B) in soil	Sulphate / nitrate	Barium on ICP using Fusion	CME BTEX and F1-F2 in Water	Routine Water	Regulated Metals (CME/AT1) - Dissolved	PAH in Water by GC/MS	Limited Sample	# of Bottles	Comments	Turnaround Time (TAT) Required:
					AT1 BTEX and F1-F4 in Soil	AT1 BTEX and F1-F4 in Soil	BIC SCALE Analysis (F2/F2+F3B) in soil	Sulphate / nitrate	Barium on ICP using Fusion	CME BTEX and F1-F2 in Water	Routine Water														
NA	TP21-177-02	01 Sep 2021	10:54	Soil	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	3				
	Dup AAA		10:54		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	3				
	TP21-177-04		10:55		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	3				
	Dup BBB		10:55		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	3				
	TP21-178-02		11:16		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	3				
	Dup CCC		11:16		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	3				
	TP21-178-04		11:17		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	3				
	Dup DDD		11:17		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	3				
	TP21-178-06		11:25		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	3				
	Dup EEE		11:25		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	3				
RECEIVED BY: (Signature/Print) PETER TAN		Date: (YY/MM/DD) 24/09/01		Time: 17:00		RECEIVED BY: (Signature/Print) Alice Lin		Date: (YY/MM/DD) 2021/09/11		Time: 14:40		# jars used and not submitted 2021/09/11		Temperature (°C) on Receipt SEE ACTR		Custody Seal Intact on Cooler? Yes <input type="checkbox"/> No <input type="checkbox"/>									

**REGULATORY CRITERIA:**  
 ATI  
 CME  
 Other

**SPECIAL INSTRUCTIONS:**  
 SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

**LABORATORY USE ONLY:**  
 Regular (Standard) TAT:  (will be applied if Rush TAT is not specified). Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests are > 5 days - contact your Project Manager for details.  
 Job Specific Rush TAT (if applies to entire submission):  
 Date Required:  
 Rush Confirmation Number:  
 (cell/lab for #)  
 Comments: Received in Yellowknife BY: JMG/CTP @ 9:00 AM SEP 10 2021 See ACTR Temp: / /

**UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV 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.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 90 DAYS AFTER SAMPLE RECEIPT. FOR SPECIAL REQUESTS CONTACT YOUR PROJECT MANAGER.

While: BV Labs Yellow: Client

CHAIN OF CUSTODY RECORD

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.bv-labs.com

<b>INVOICE TO:</b> #254 GOLDER ASSOCIATES LTD. ACCOUNTS PAYABLE 2800, 700-2nd Street SW CALGARY AB T2P 2W2 Tel: (905) 567-6100 Ext: 1167 Fax: (403) 299-5606 Email: canadaccounts@payableinvoices@golder.com		<b>REPORT TO:</b> #6340 GOLDER ASSOCIATES LTD. Aurelie Belavance 2800, 700-2nd Street SW CALGARY AB T2P 2W2 Tel: (403) 299-5600 Fax: abelavance@golder.com	
<b>PROJECT INFORMATION:</b> Quotation #: C00480 P.O. #: 20366099-7000-1001 Project: 20366099-6000-1001 Project Name: Site #: Sampled By:		<b>Laboratory Use Only:</b> BV Labs Job #: C167920 Barcode: 646511 Project Manager: Carmen McKay COC #: CF64511-81-01	

Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered? (Y/N)	AT1 Regulated Metals - Soils	AT1 BTEX and F1-F4 in Soil	BIC SCALE Analysis (F2/F3/F3B) in Soil	Suphate / nitrate	Barium on ICP using Fusion Extraction (True Barium)	CMC BTEX and F1-F2 in Water	Routine Water	Regulated Metals (CME/AT1) - Dissolved	PAH in Water by GC/MS	Limited Sample	Comments
NA	TP21-179-02	01 Sep 2021	11:40	Soil		X	X								3	
	Dup FFF		11:40			X	X								3	
	TP21-179-04		11:41			X	X								3	
	Dup GG-G		11:41			X	X								3	
	TP21-179-06		11:49			X	X								3	
	Dup HHH		11:49			X	X								3	
	TP21-180-01		14:05			X	X								3	
	TP21-180-03		14:07			X	X								3	
	Dup III		14:07			X	X								3	
	TP21-180-05		14:09			X	X								3	
RECEIVED BY: (Signature/Print) PETER TAN Date: (YY/MM/DD) 21/09/01 Time: 17:00		RECEIVED BY: (Signature/Print) ALICIA LIN Date: (YY/MM/DD) 20/10/11 Time: 14:40		Laboratory Use Only Temperature (°C) on Receipt: SEE ACTR Custody Seal Intact on Cooler? Yes <input type="checkbox"/> No <input type="checkbox"/>		Turnaround Time (TAT) Required: <input checked="" type="checkbox"/> Regular (Standard) TAT: (will be applied if Rush TAT is not specified). Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests are > 5 days - contact your Project Manager for details. Job Specific Rush TAT (if applies to entire submission) <input type="checkbox"/> Date Required: _____ Rush Confirmation Number: _____ (cell/lab for #)										

REGULATORY CRITERIA:  ATI  CCMC  Other

SPECIAL INSTRUCTIONS:

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV 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.BV.LABS.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 90 DAYS AFTER SAMPLE RECEIPT, FOR SPECIAL REQUESTS CONTACT YOUR PROJECT MANAGER.

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Bureau Veritas Laboratories  
4000 15th N.E. Calgary, Alberta Canada T2E 6P8 Tel: (403) 291-3077 Toll-free: 800-563-6266 Fax: (403) 291-9468 www.bv-labs.com

CHAIN OF CUSTODY RECORD

Page 4 of 4

<b>INVOICE TO:</b> Company Name: #254 GOLDER ASSOCIATES LTD. ACCOUNTS PAYABLE Attention: Aurelie Belavance Address: 2800, 700 -2nd Street SW CALGARY AB T2P 2W2 Tel: (905) 567-6100 Ext: 1167 Fax: (403) 299-5606 Email: canadaaccounts@payableinvoic.com		<b>REPORT TO:</b> Company Name: #6340 GOLDER ASSOCIATES LTD. Aurelie Belavance Attention: 2800, 700 -2nd Street SW Address: CALGARY AB T2P 2W2 Tel: (403) 299-5600 Fax: Email: abellavance@golder.com	
<b>PROJECT INFORMATION:</b> Quotation #: C00480 P.O. #: 20368099-7000-1001 Project: 20368099-6000-1001 Project Name: Site #: Sampled By:		<b>Laboratory Use Only:</b> BV Labs Job #: C16792 Bottle Order #: 845311 Project Manager: Carmen McKay COC #: C#64511-83-01	

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Regular (Standard) TAT:  (will be applied if Rush TAT is not specified). Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests are > 5 days - contact your Project Manager for details

Job Specific Rush TAT (if applies to entire submission)

Date Required: \_\_\_\_\_ Rush Confirmation Number: \_\_\_\_\_ (call lab for #)

Turnaround Time (TAT) Required: \_\_\_\_\_

Please provide advance notice for rush projects

Sample Barcode - Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered ? (Y/N)	AT1 Regulated Metals - Soils	AT1 BTEX and F1-F4 in Soil (Vials)	BIC SCALE Analysis (F2/F2+F3B) in soil	Sulphate / nitrate	Barium on ICP using Fusion Extraction (True Barium)	CMCE BTEX and F1-F2 in Water	Routine Water	Regulated Metals (CME/AT1) - Dissolved	PAH in Water by GC/MS	Limited Sample	# of Bottles	Comments
NA	TP21-180-06	01 Sept. 2021	14:09	6ZL	X	X									3		
	TP21-181-02		14:30		X	X									3		
	TP21-181-04		14:33		X	X									3		
	TP21-181-06		14:45		X	X									3		Received in Yellowknife
	TP21-182-02		15:07		X	X									3		By: J. Mercurio
	AP KKK		15:07		X	X									3		SEP 10 2021
	TP21-182-04		15:08		X	X									3		Temp: /
	AP JJJ		14:33		X	X									3		

\* RELINQUISHED BY: (Signature/Print) PETER TAN Date: 21/09/01 Time: 17:00

RECEIVED BY: (Signature/Print) ALICIA LIN Date: 2021/09/11 Time: 14:40

Temperature (°C) on Receipt: SEE ACTR

Custody Seal Intact on Cooler?  Yes  No

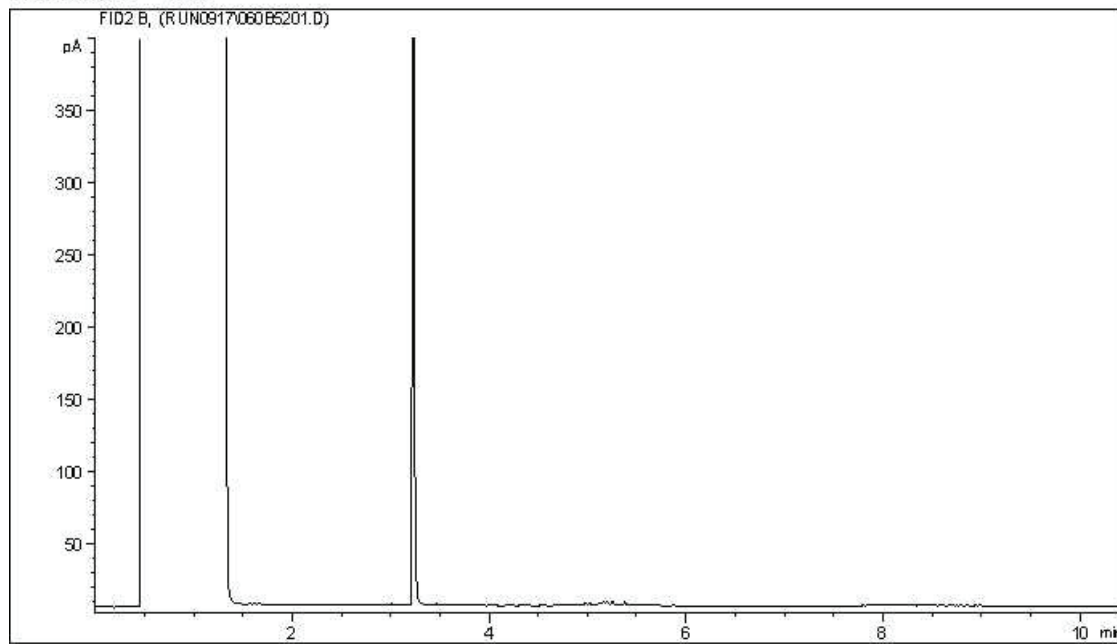
Time Sensitive  # Jars used and not submitted

White BV Labs. Yellow Client

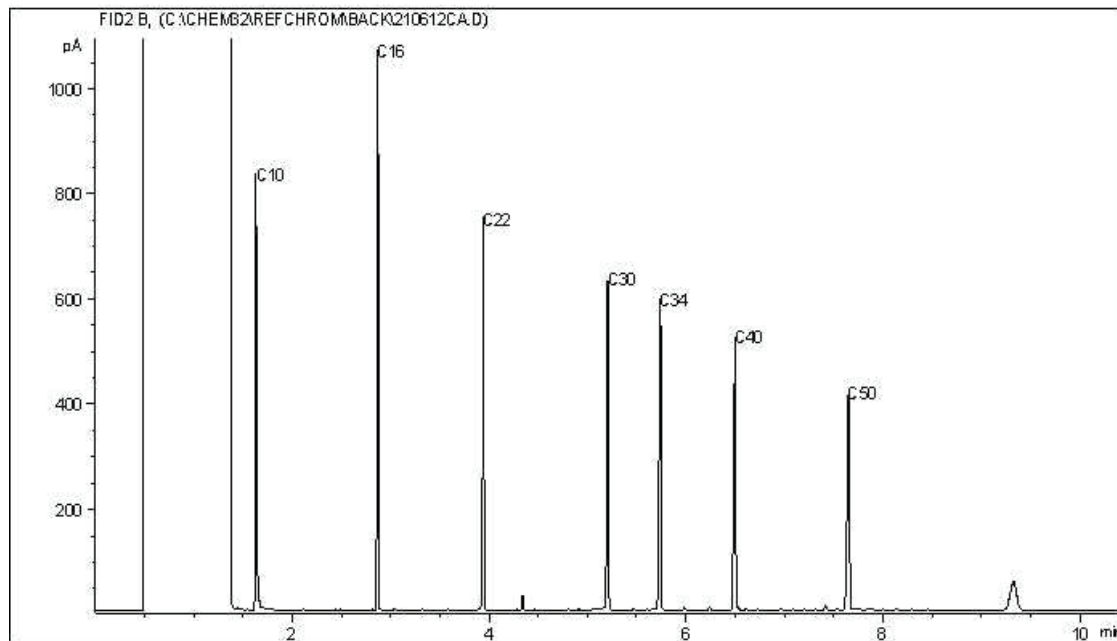
UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS. IT IS THE 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 90 DAYS AFTER SAMPLE RECEIPT, FOR SPECIAL REQUESTS CONTACT YOUR PROJECT MANAGER

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



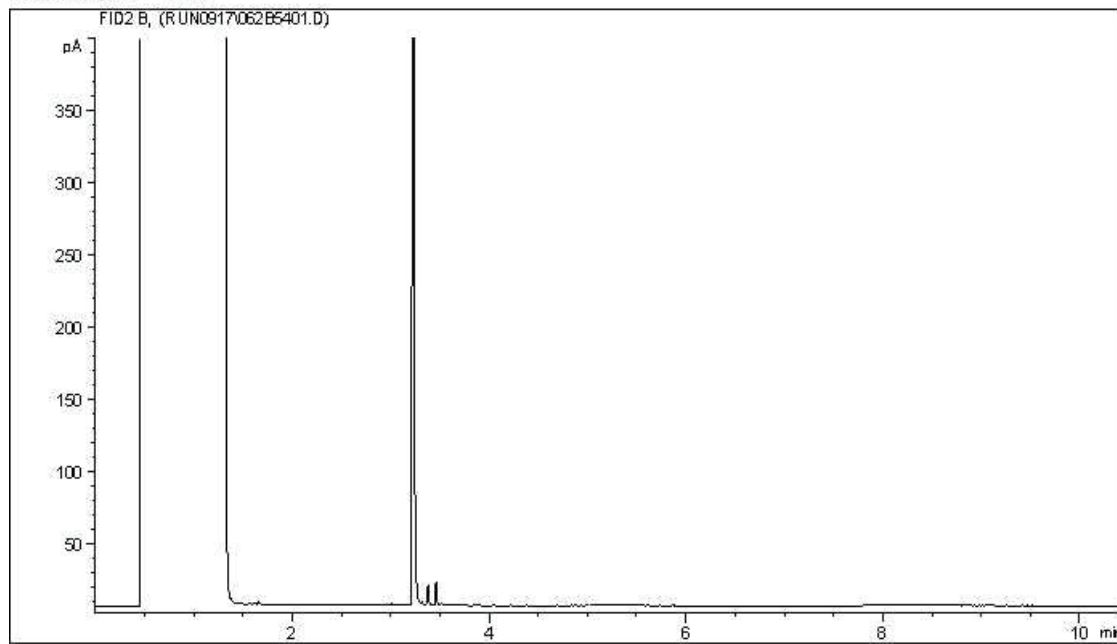
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

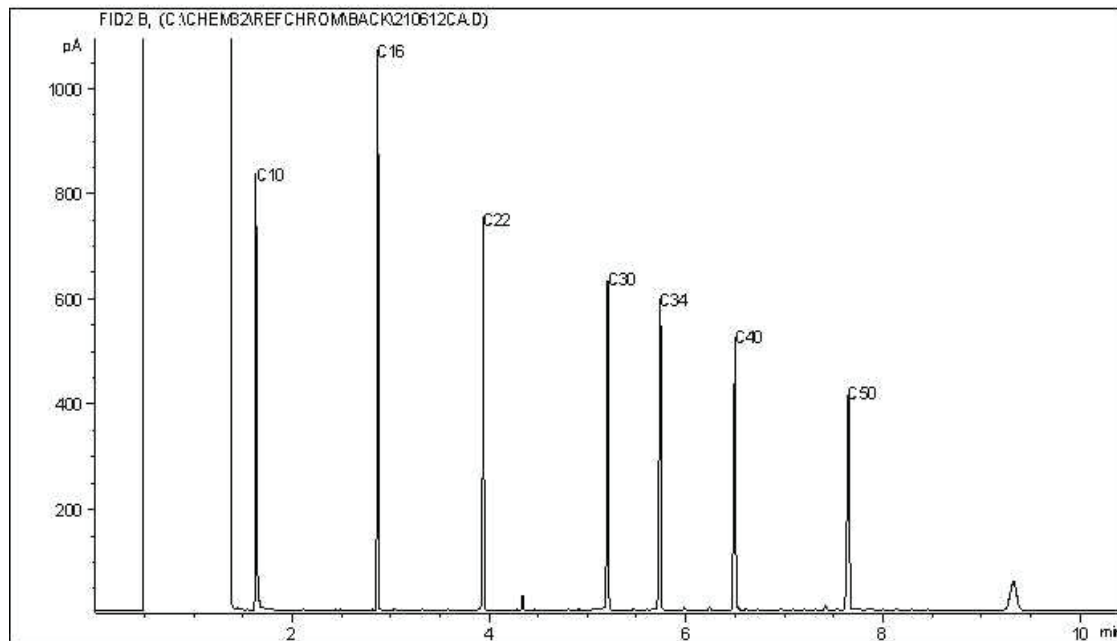
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



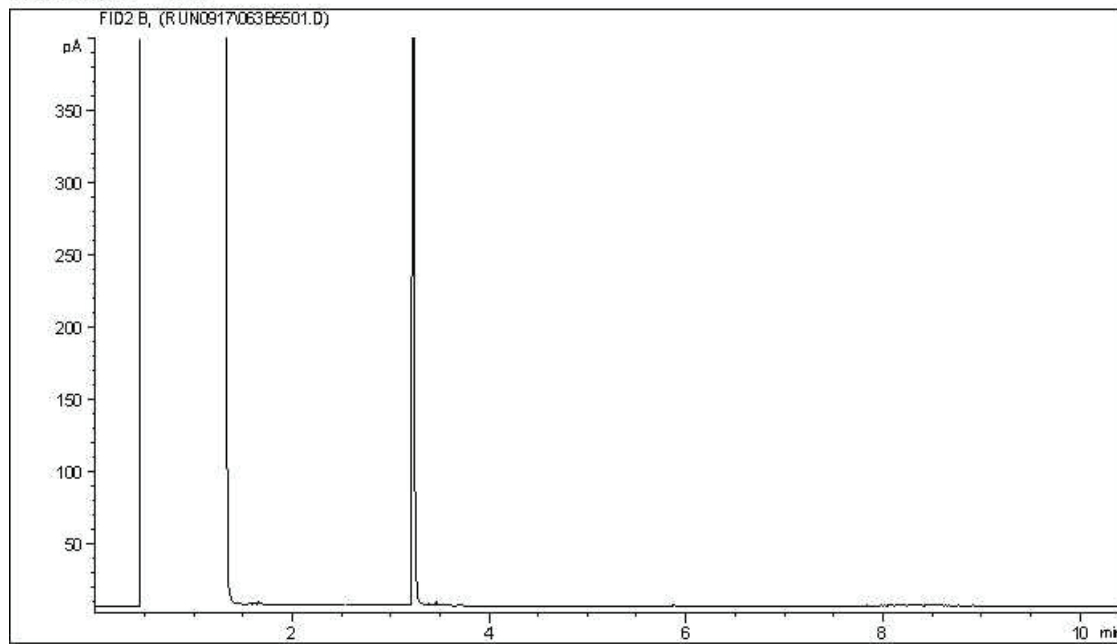
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

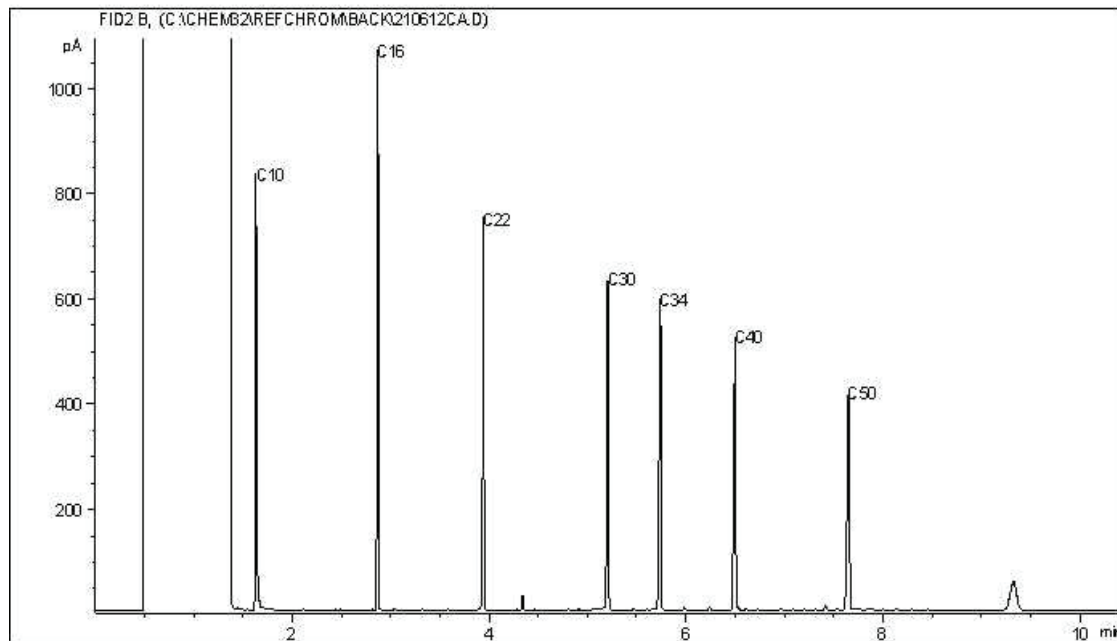
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



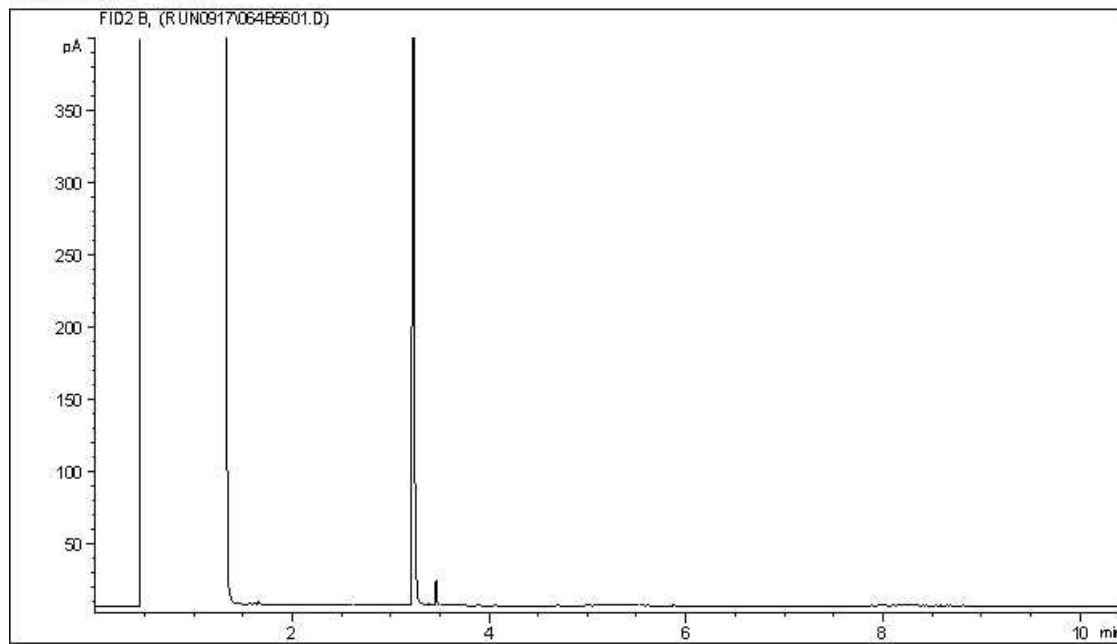
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

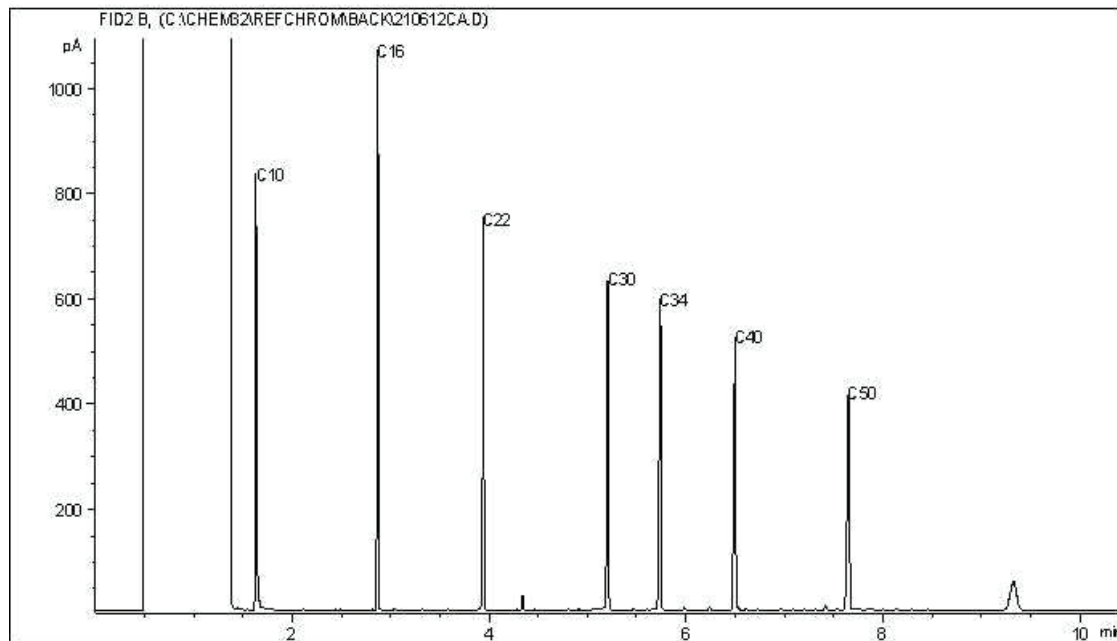
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

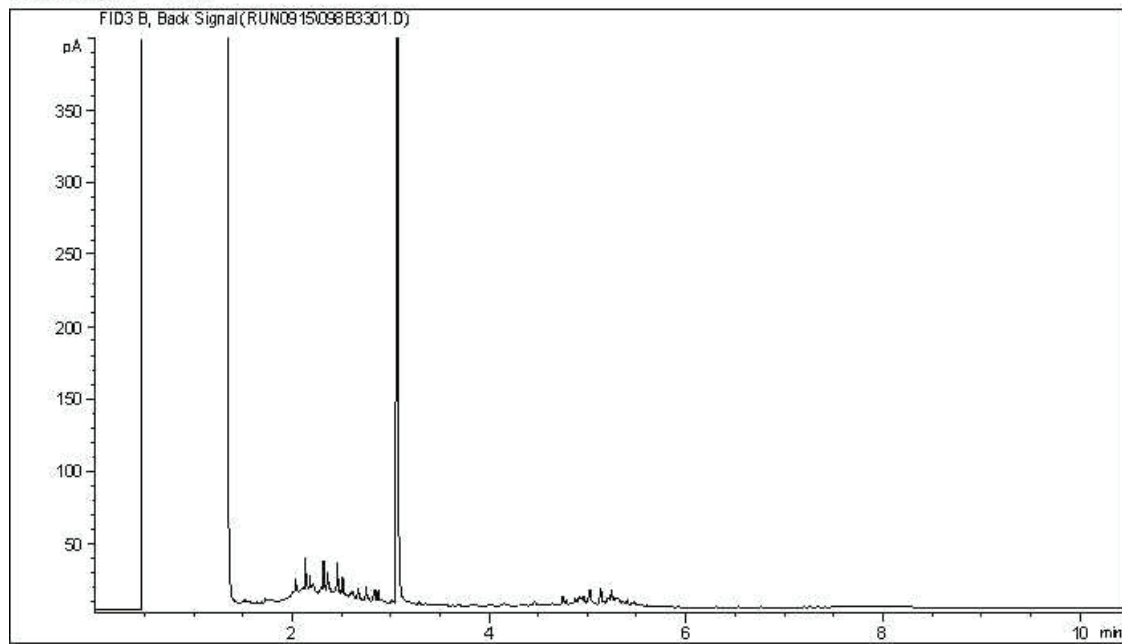
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

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

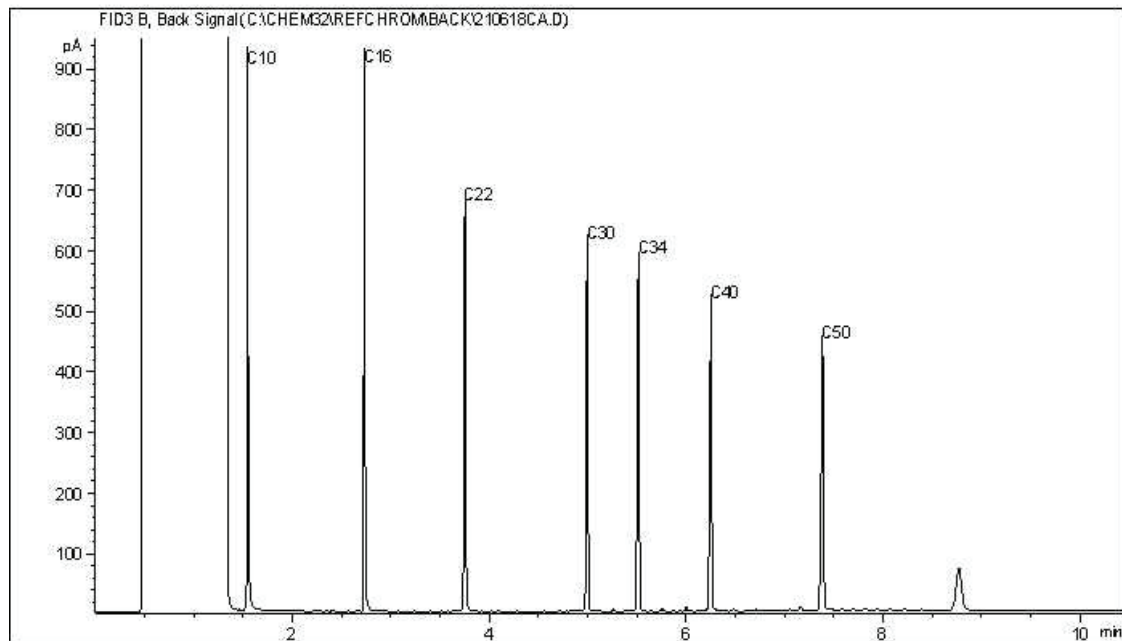


CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



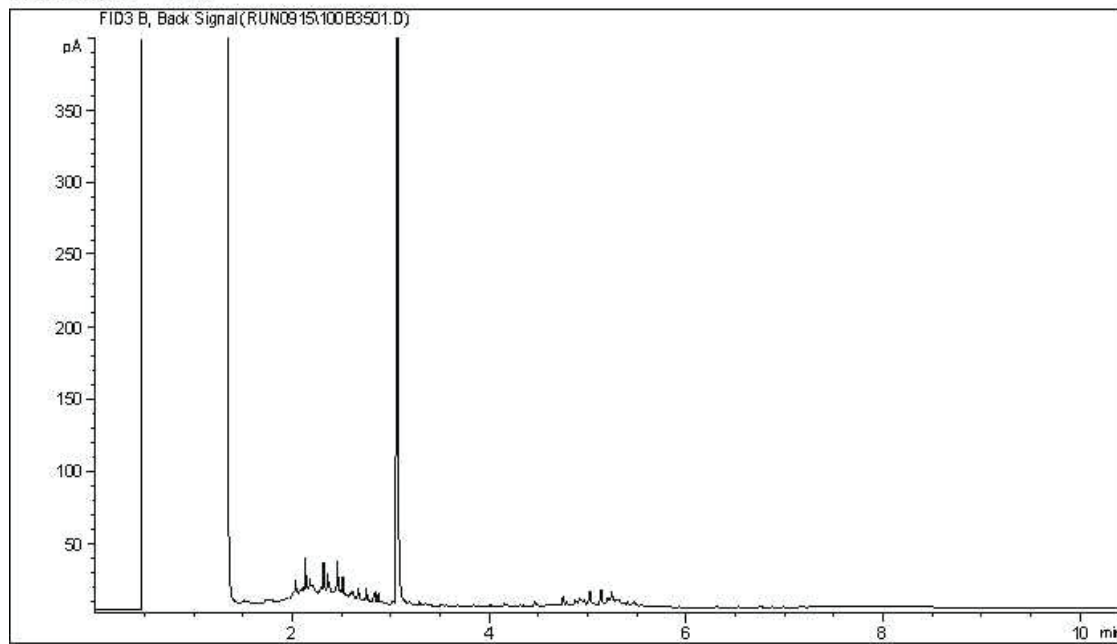
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

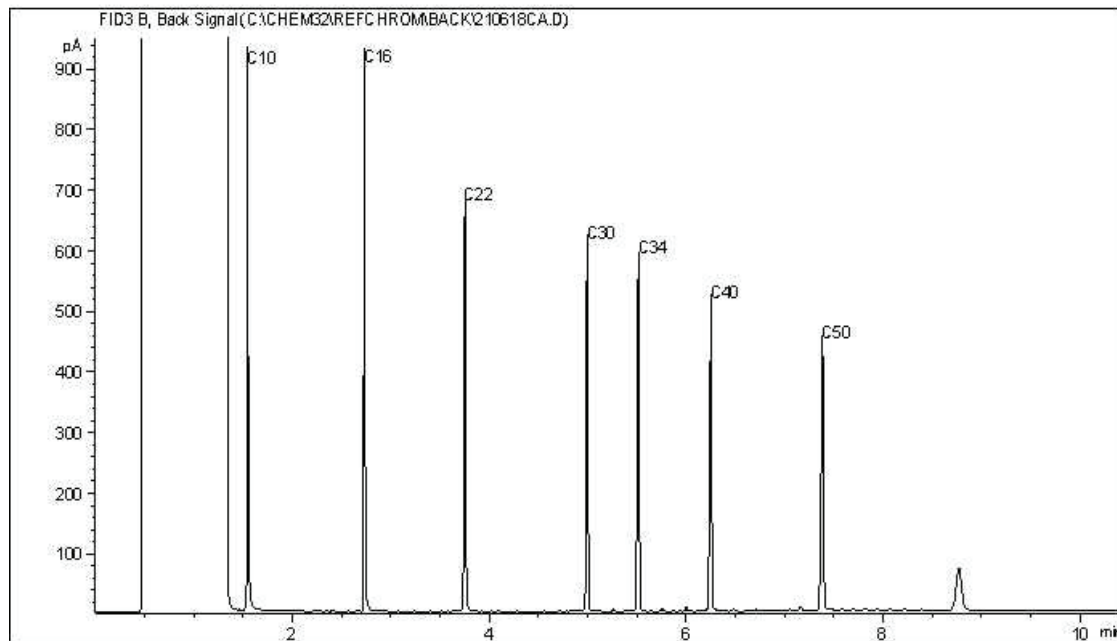
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



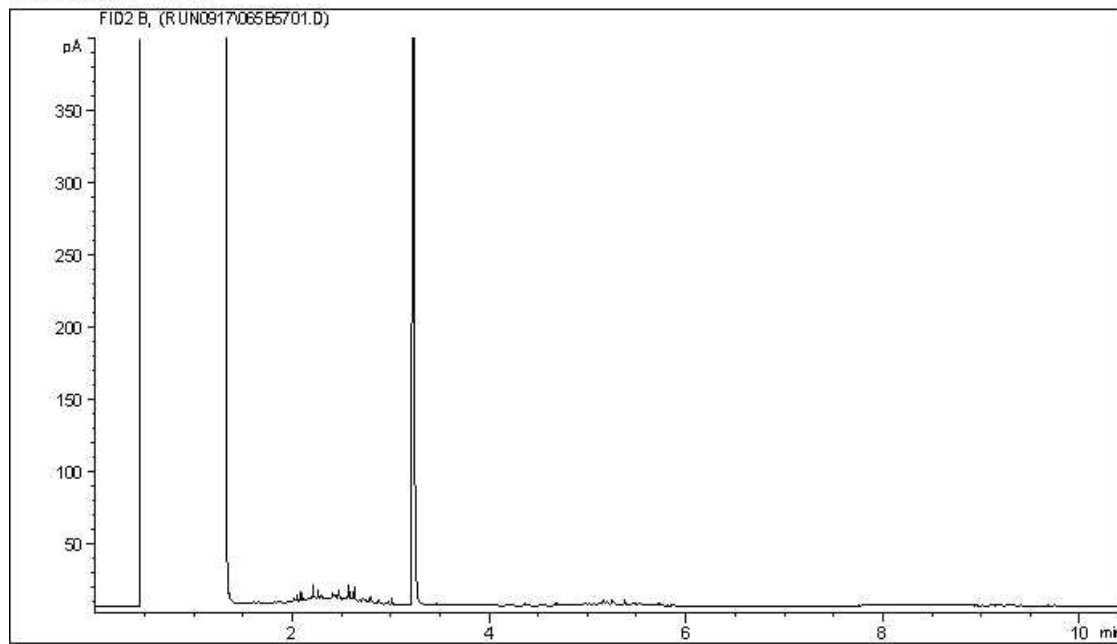
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

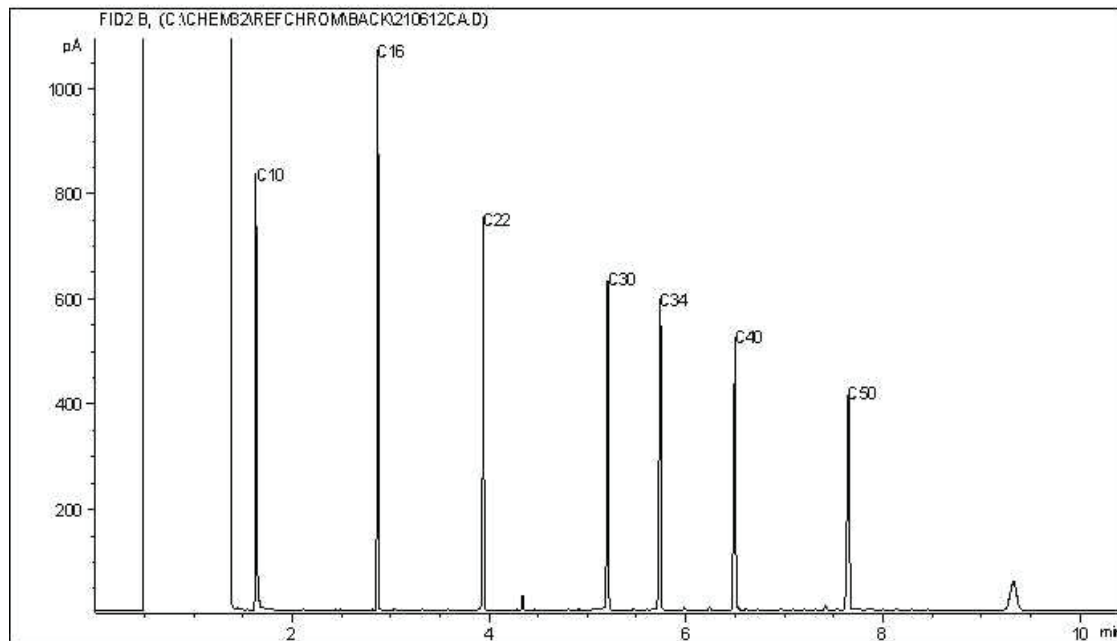
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



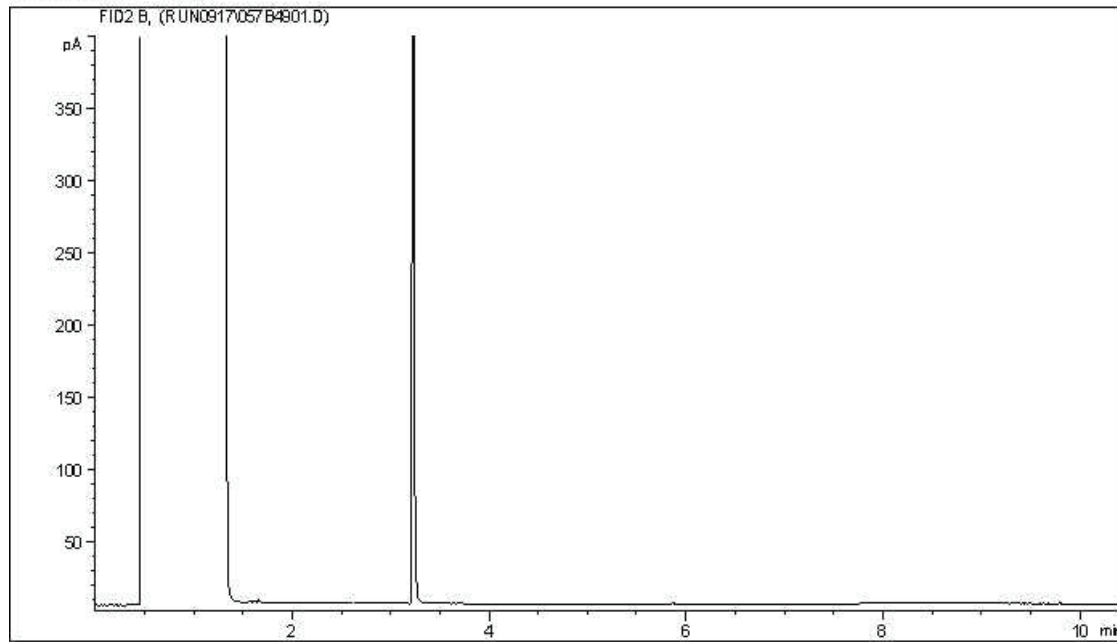
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Gasoline:	C4 - C12	Diesel:	C8 - C22
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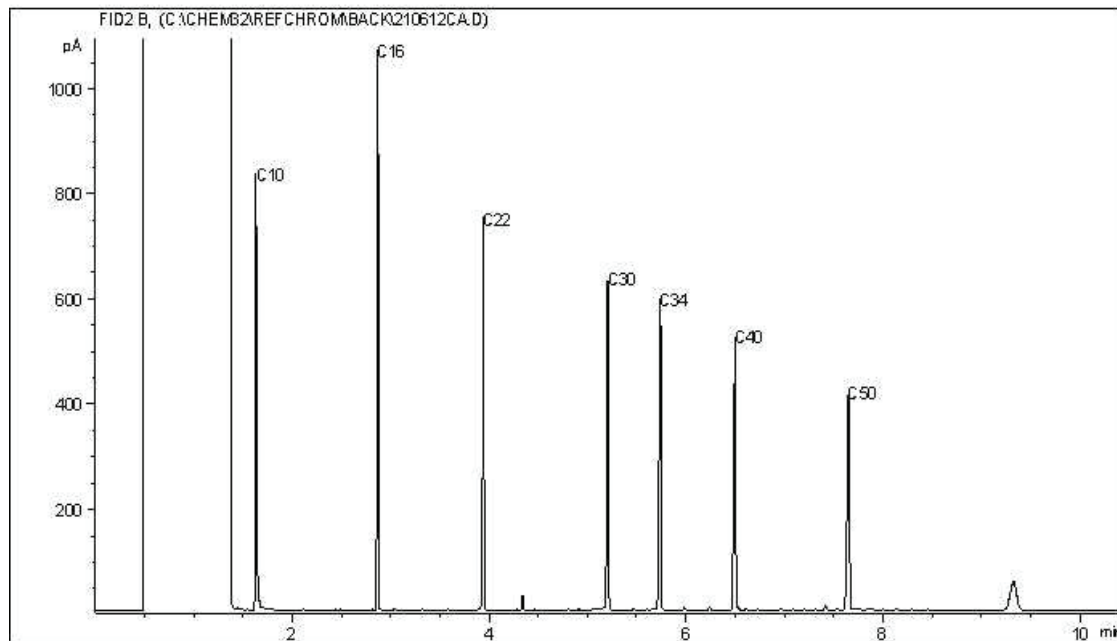
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



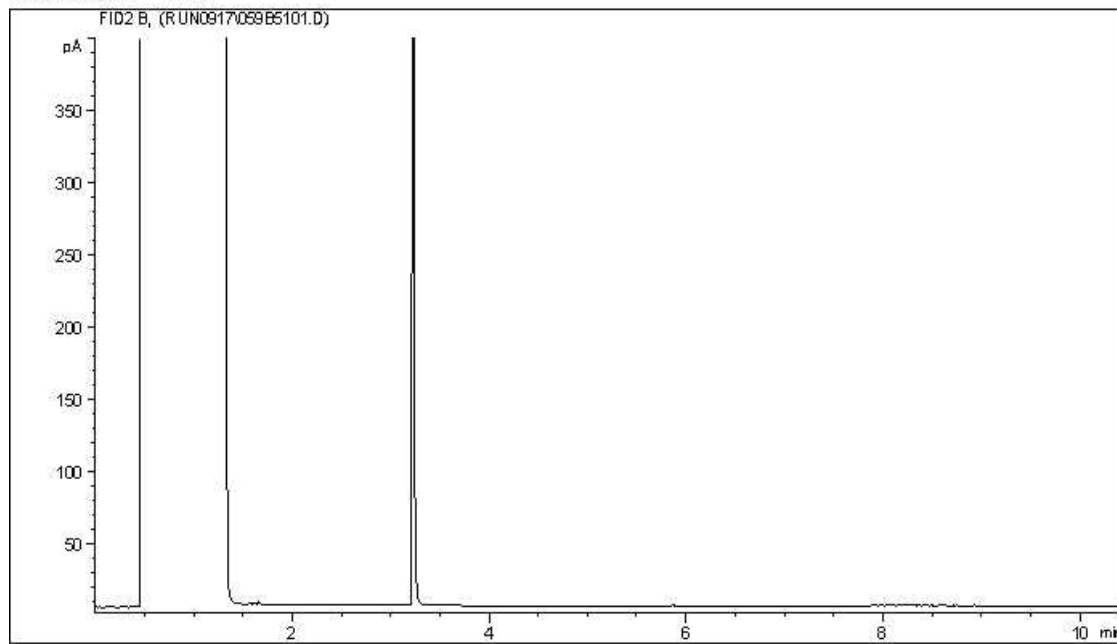
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

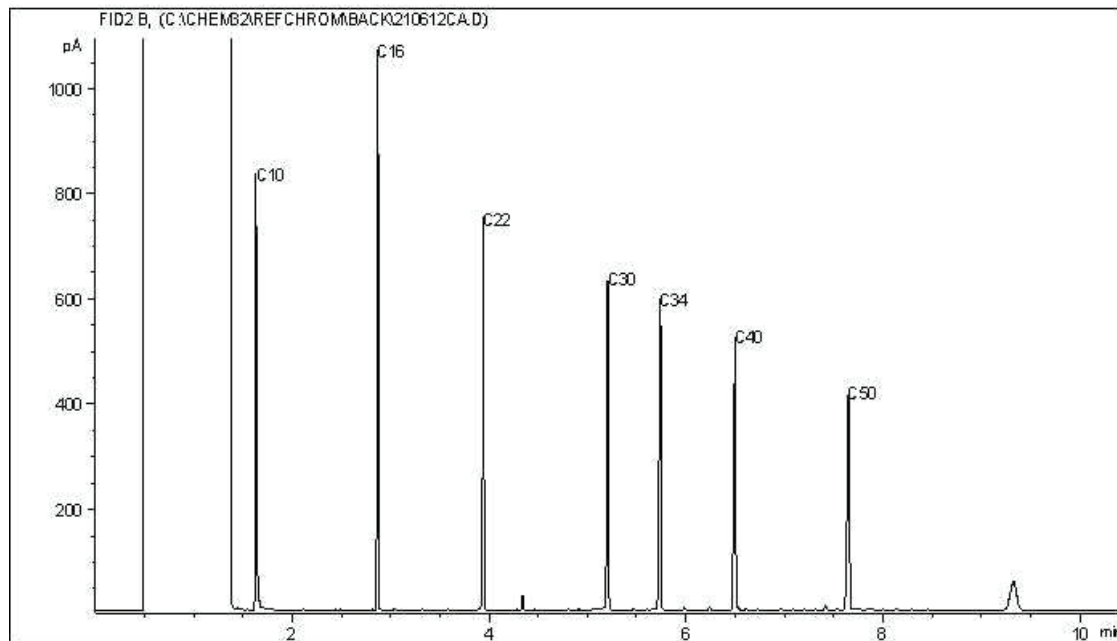
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



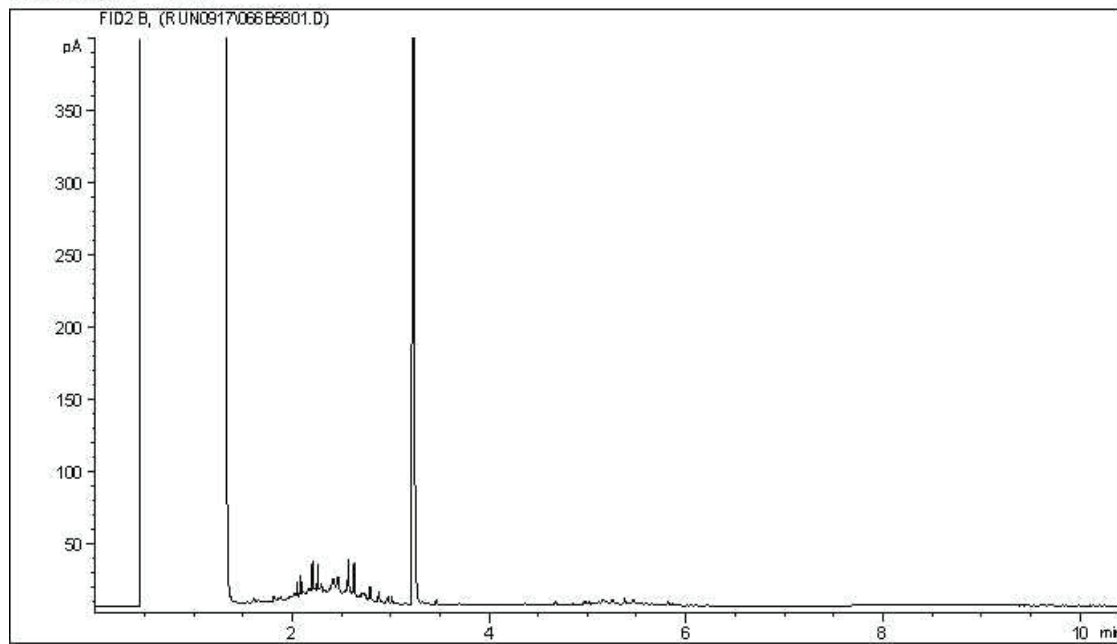
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
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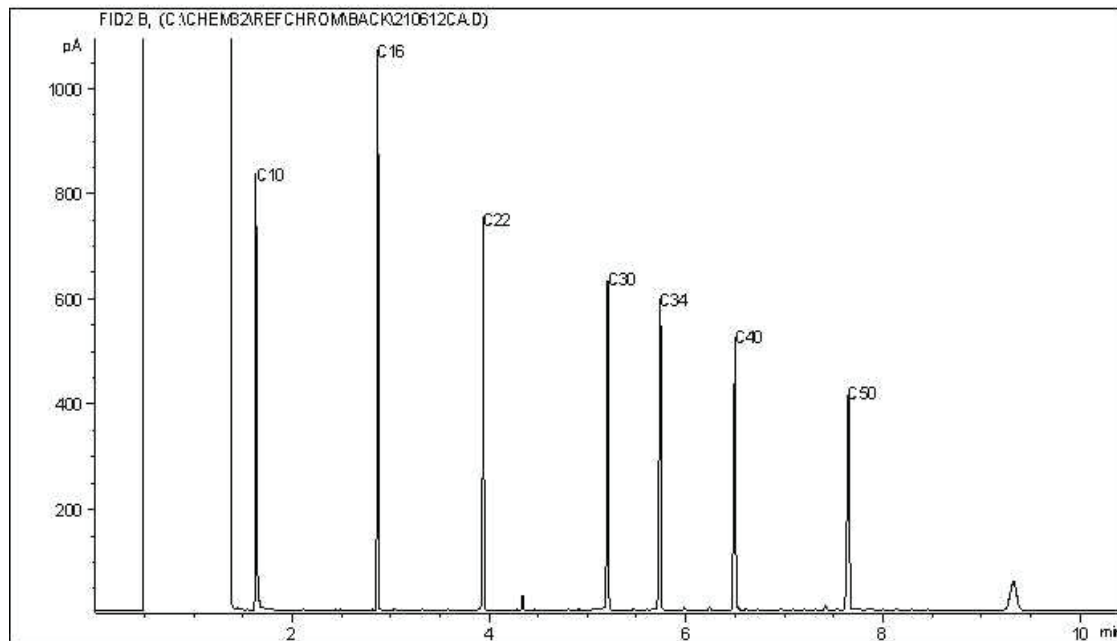
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



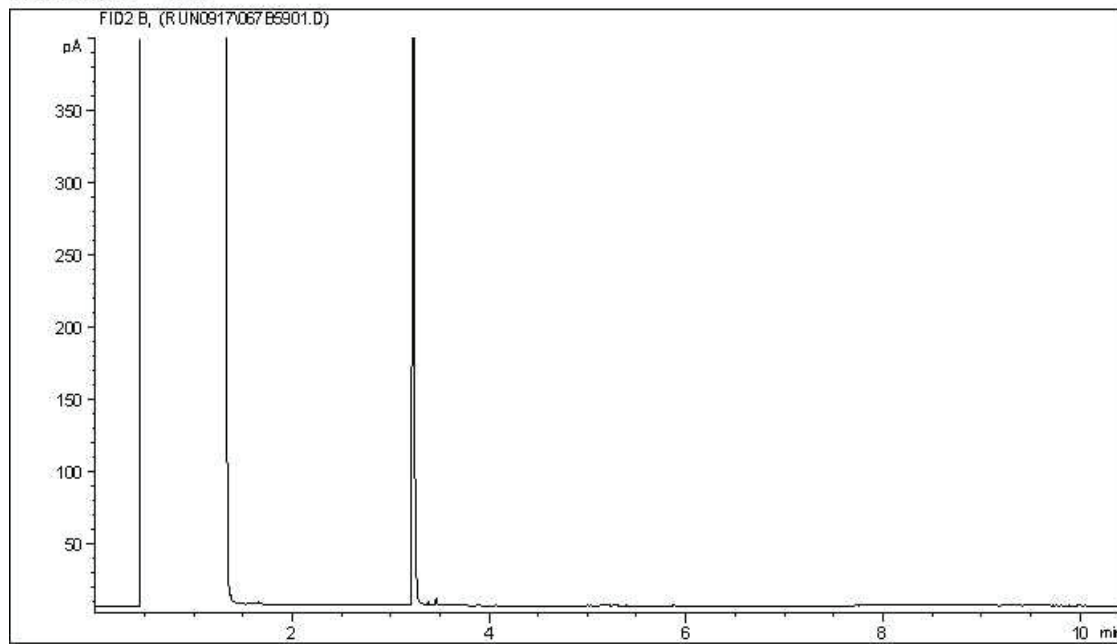
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
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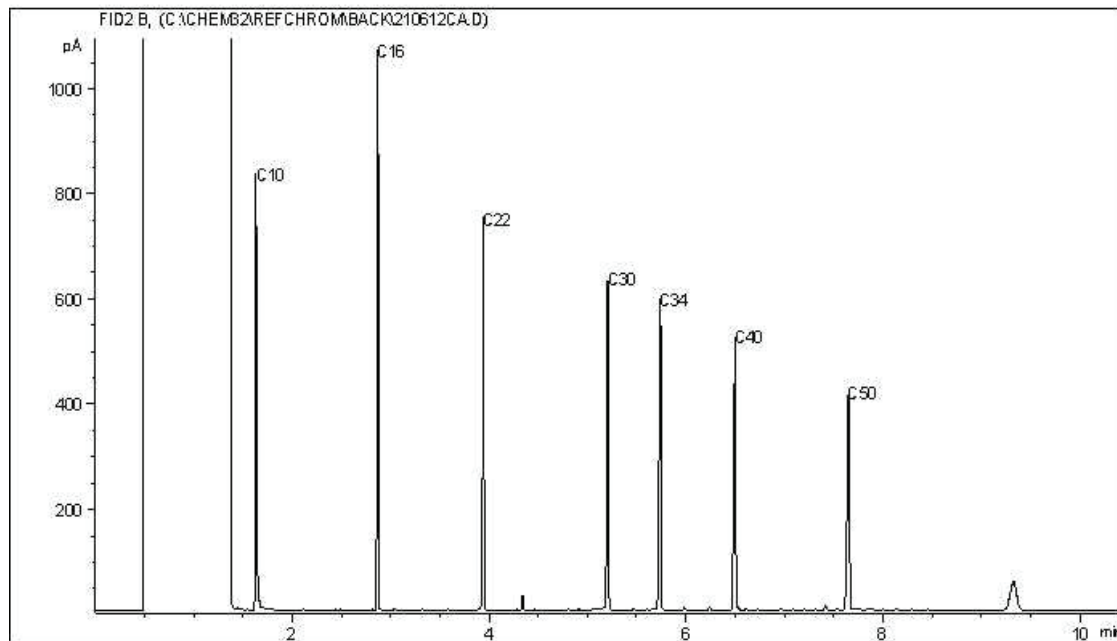
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

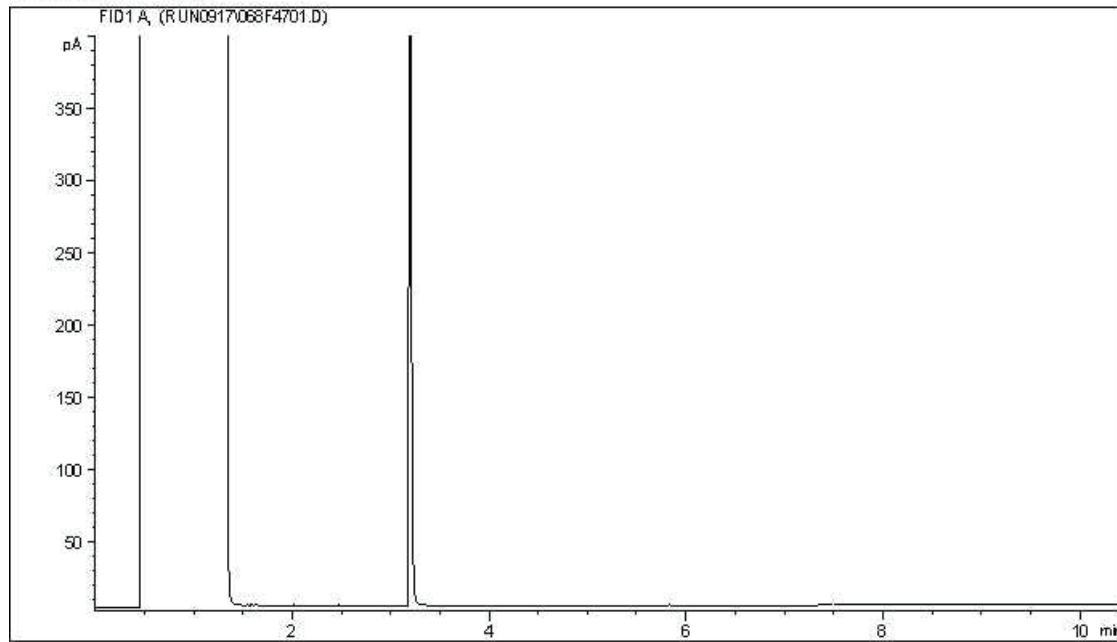
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

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

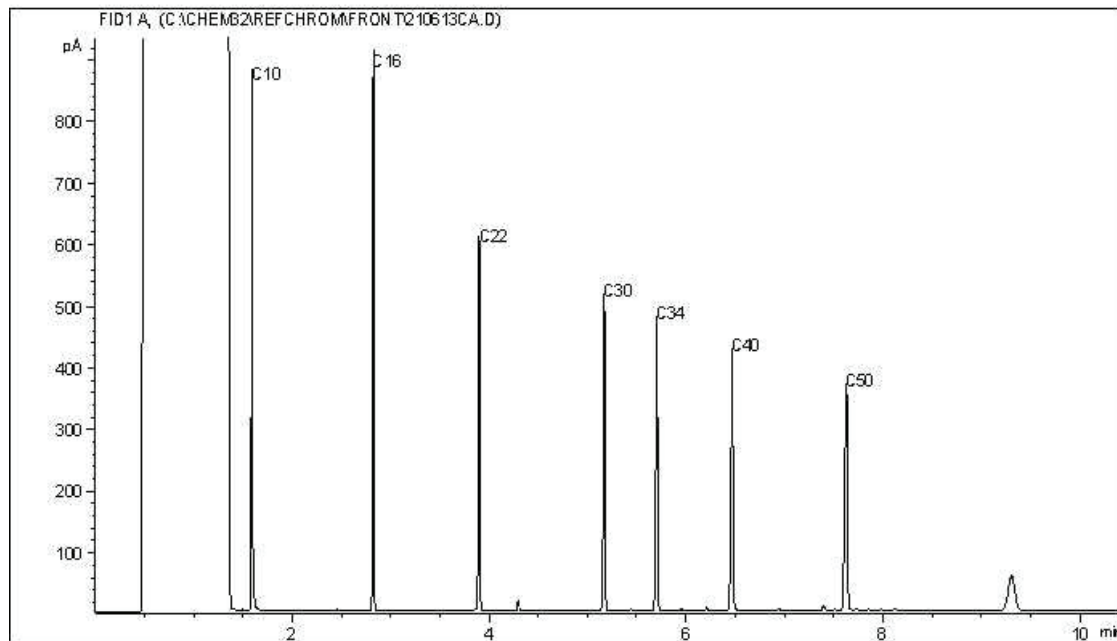


CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



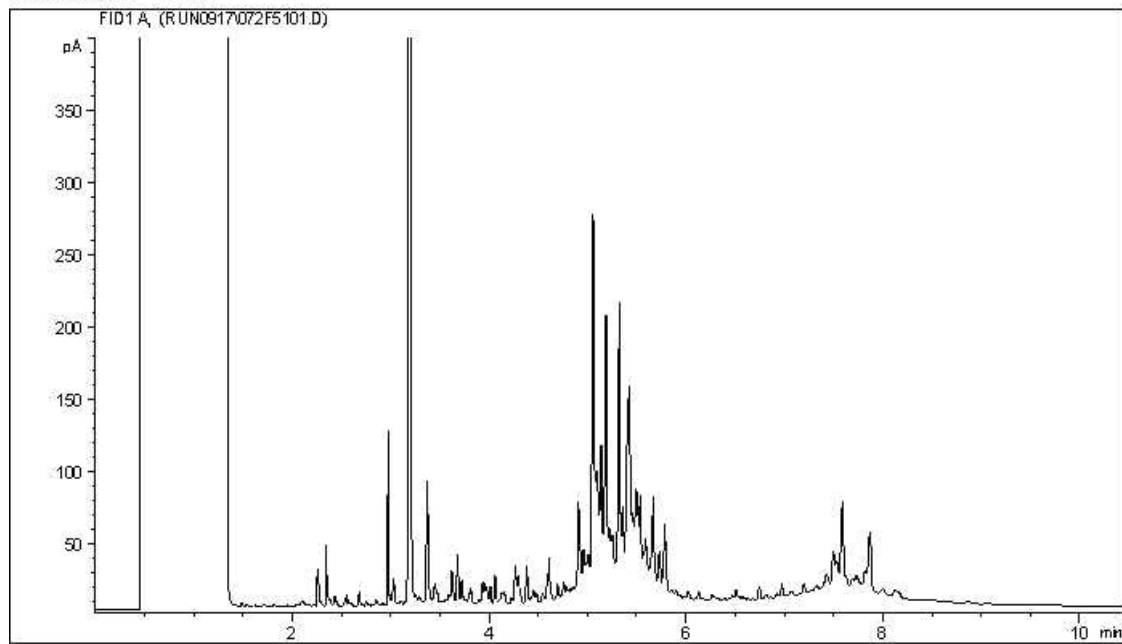
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
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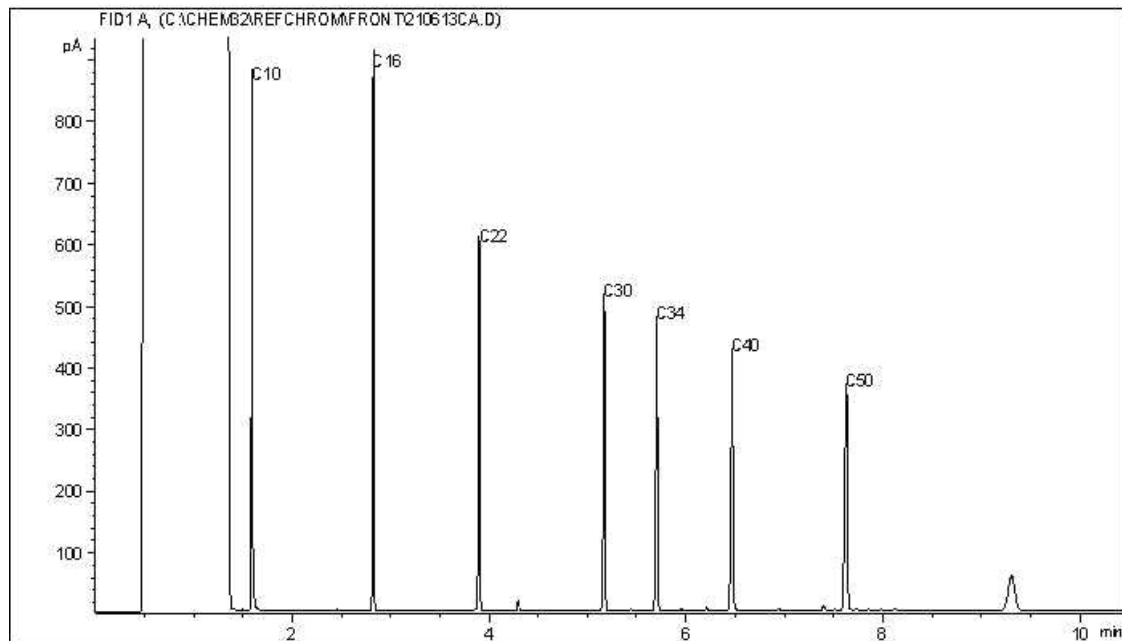
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



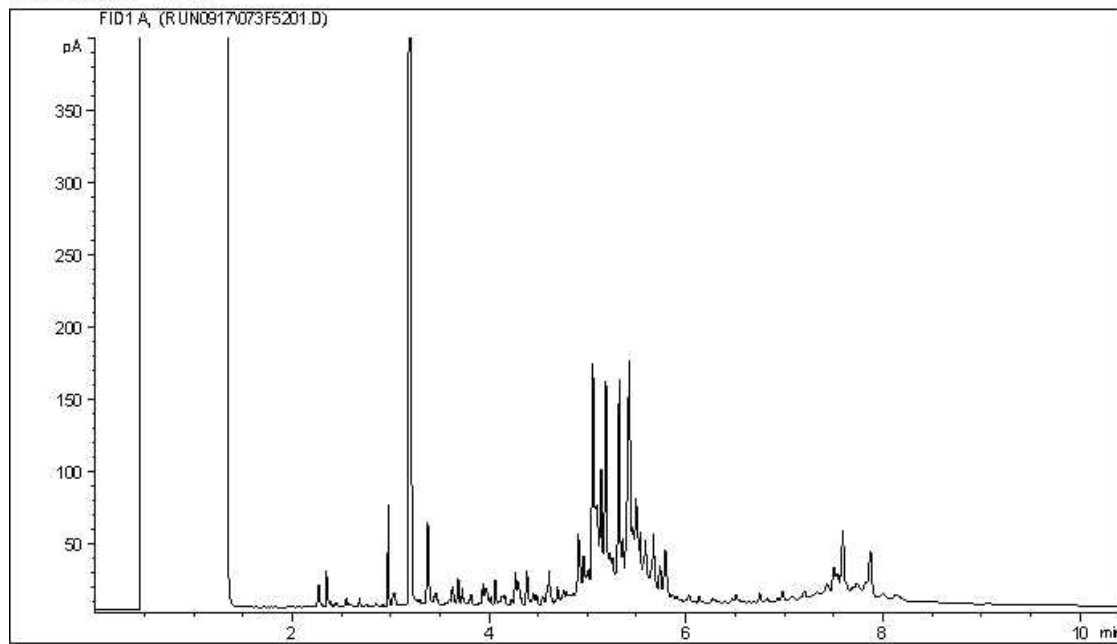
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
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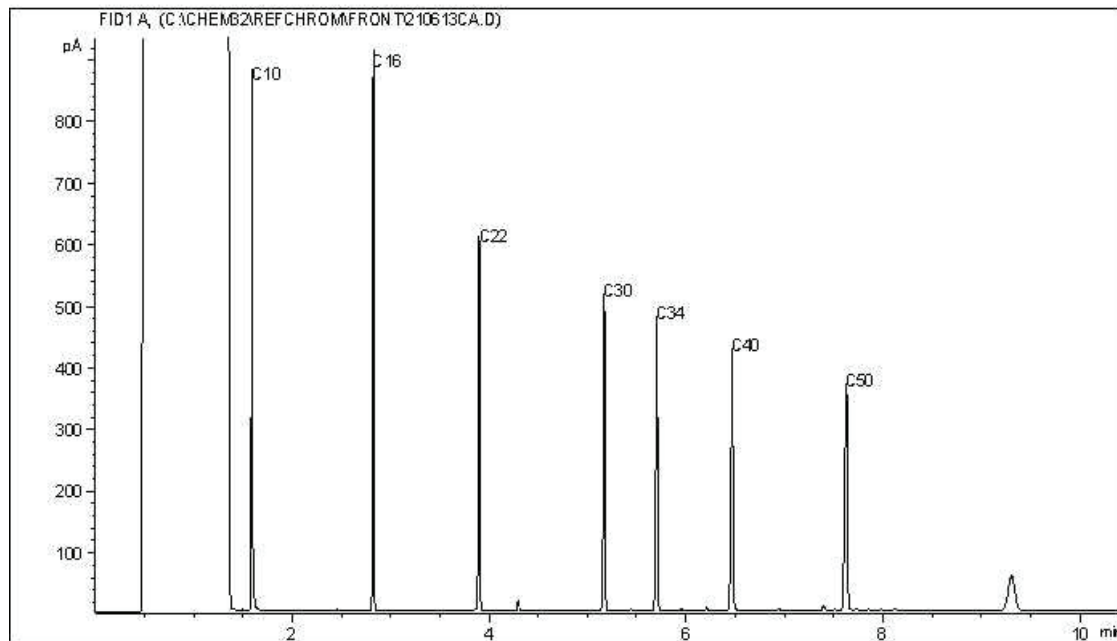
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



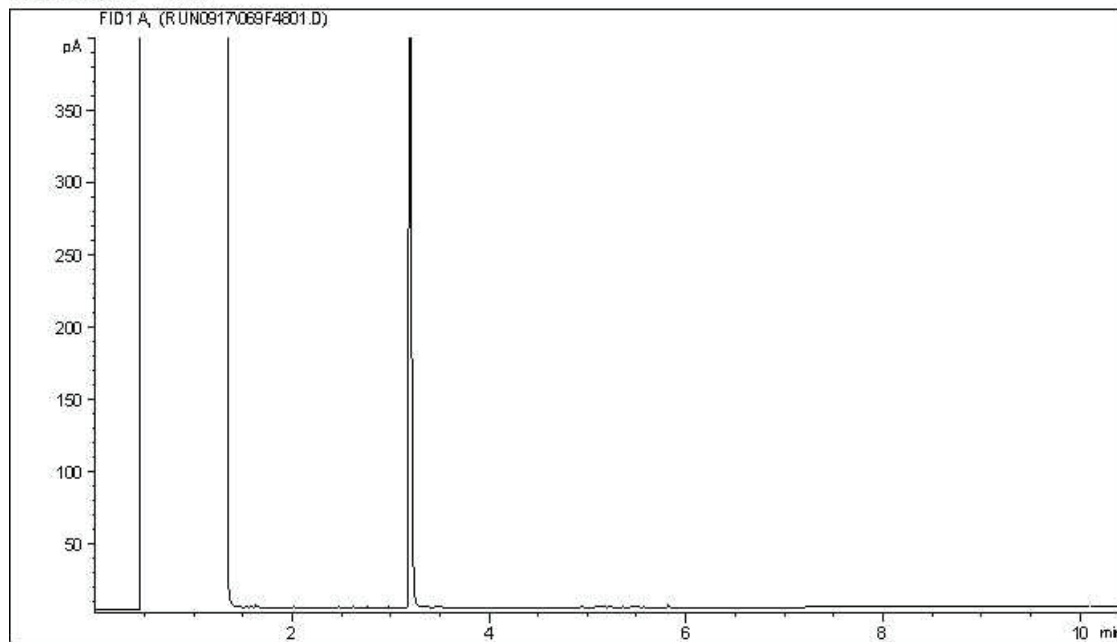
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

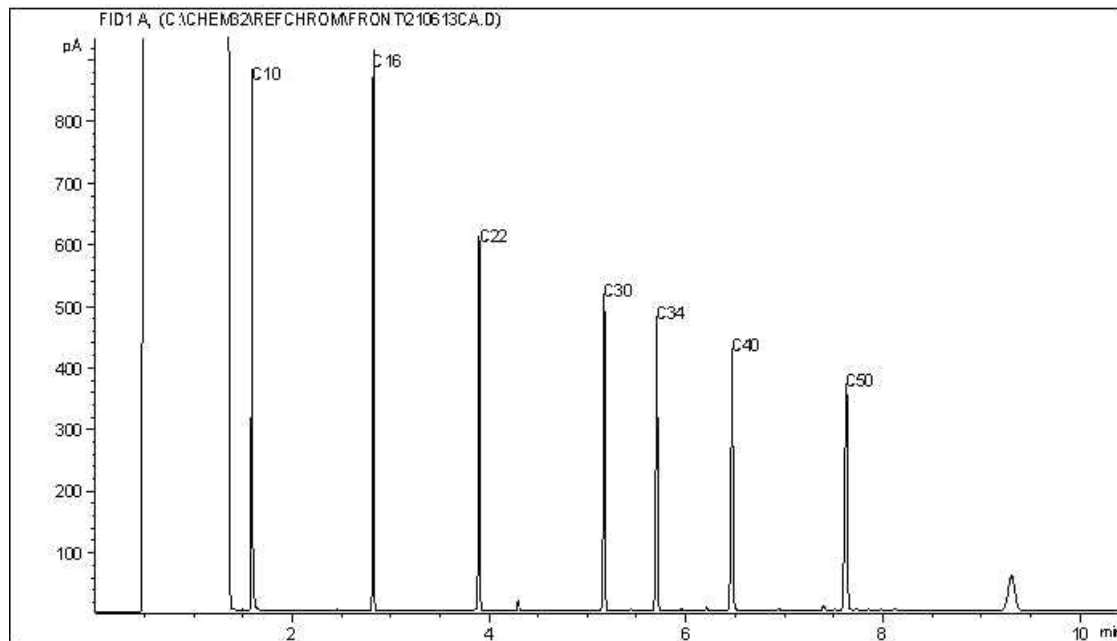
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



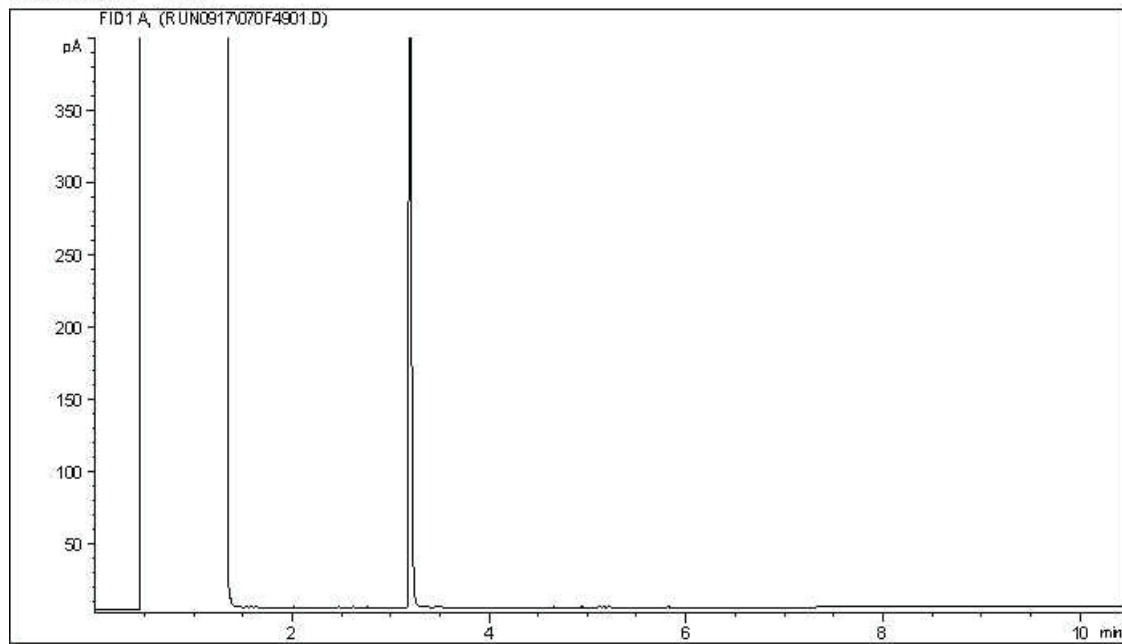
TYPICAL PRODUCT CARBON NUMBER RANGES

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Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

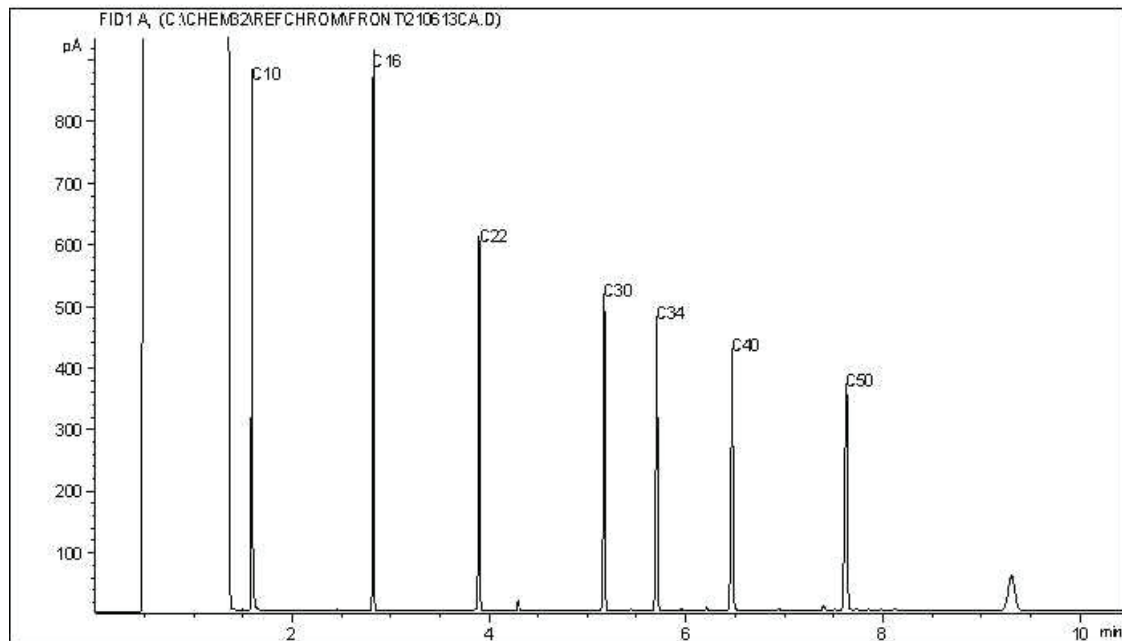
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



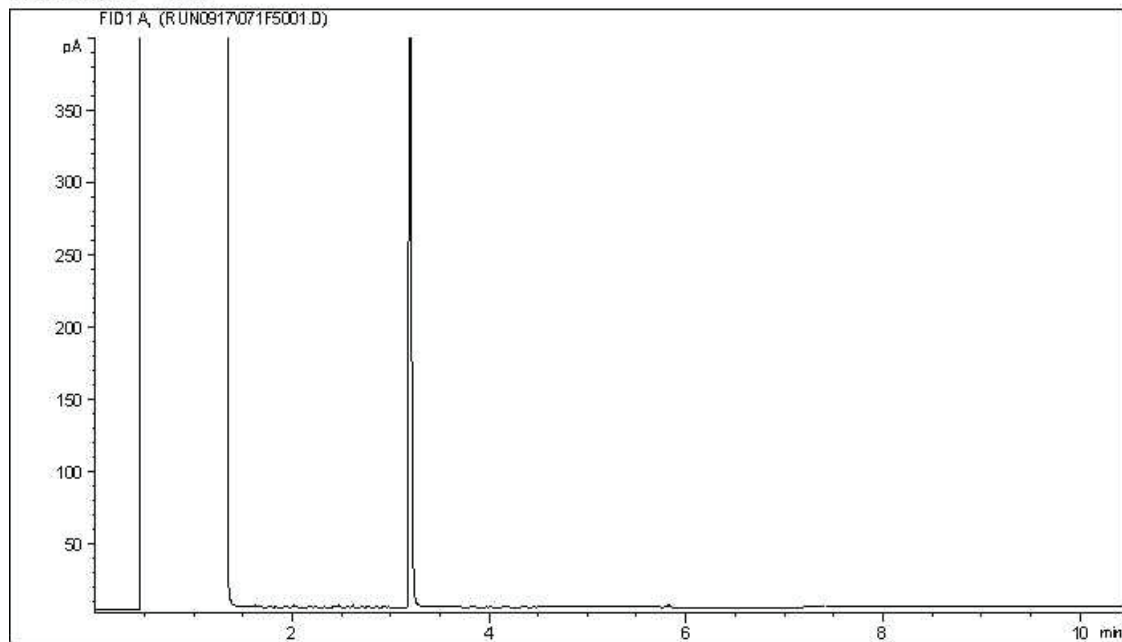
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

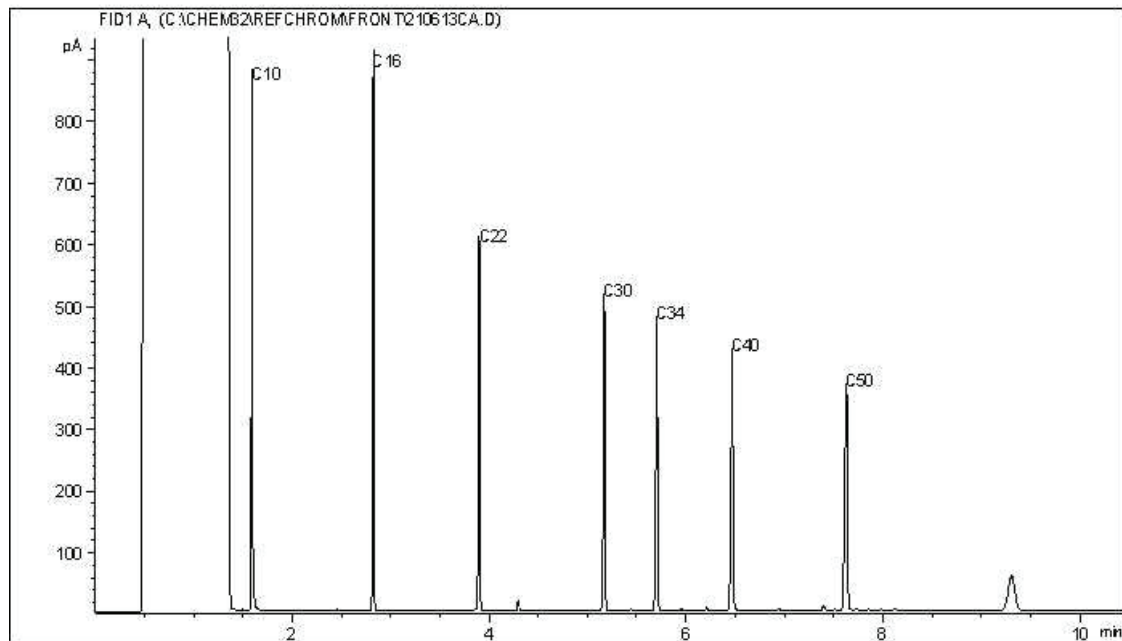
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



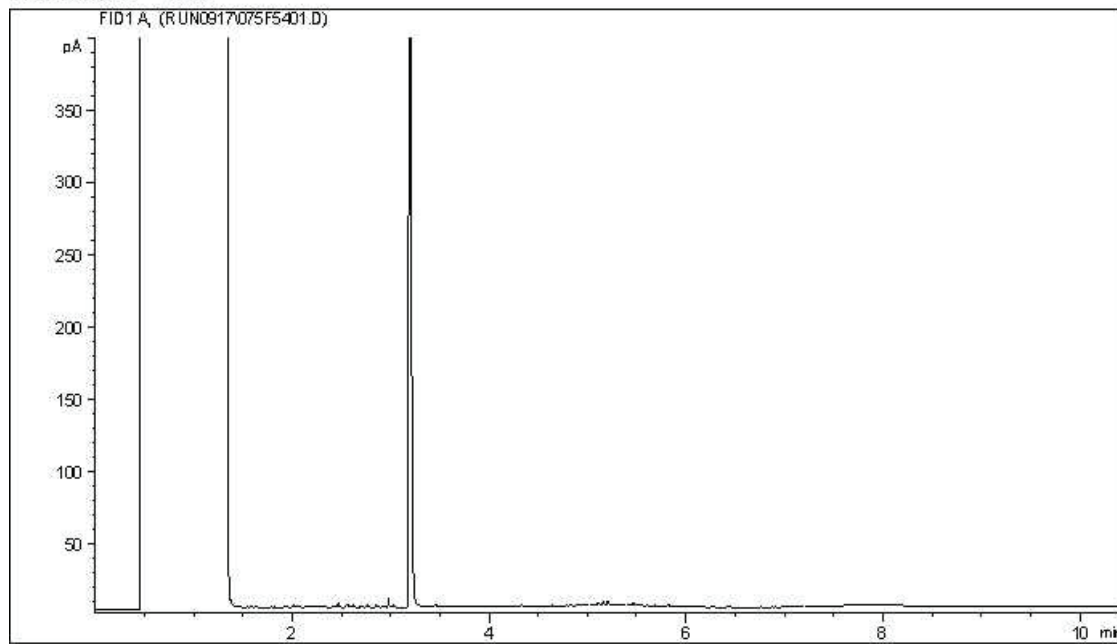
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Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
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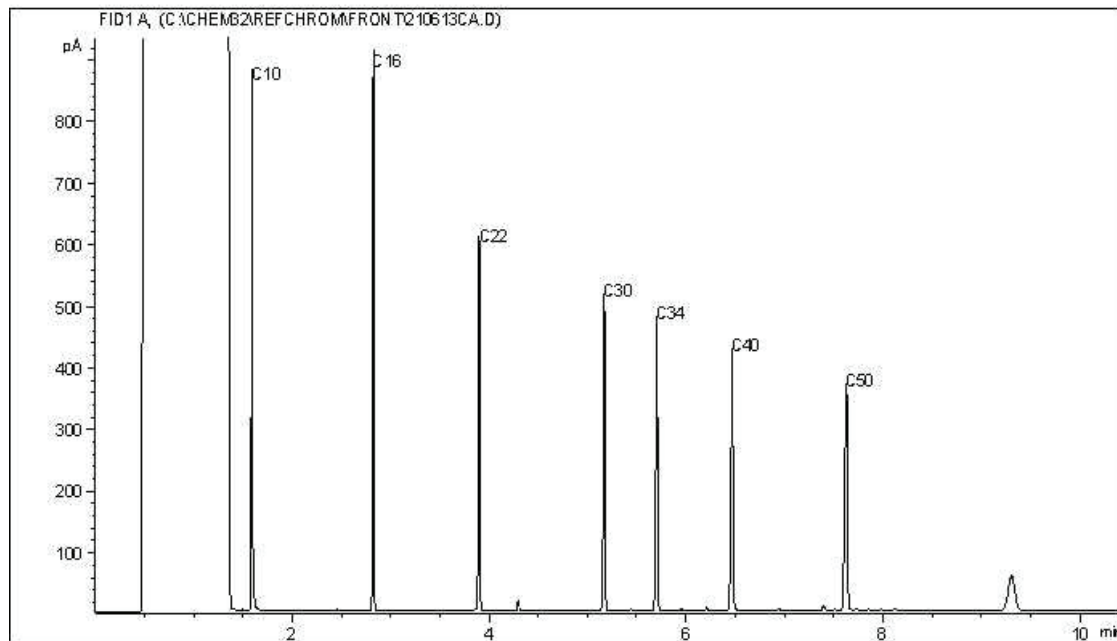
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

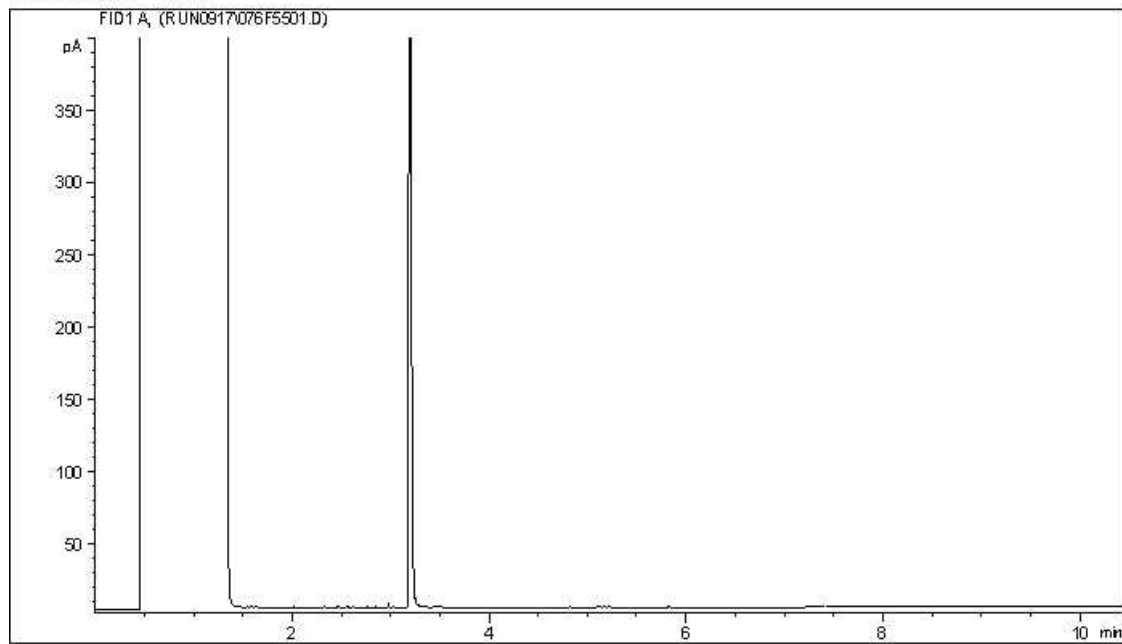
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

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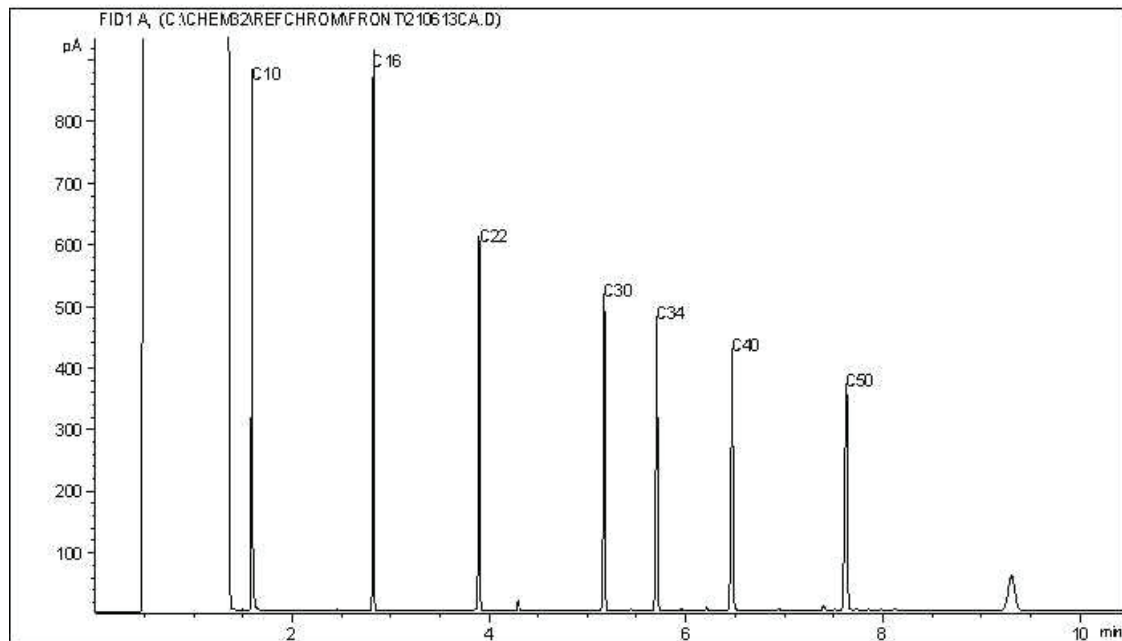


CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



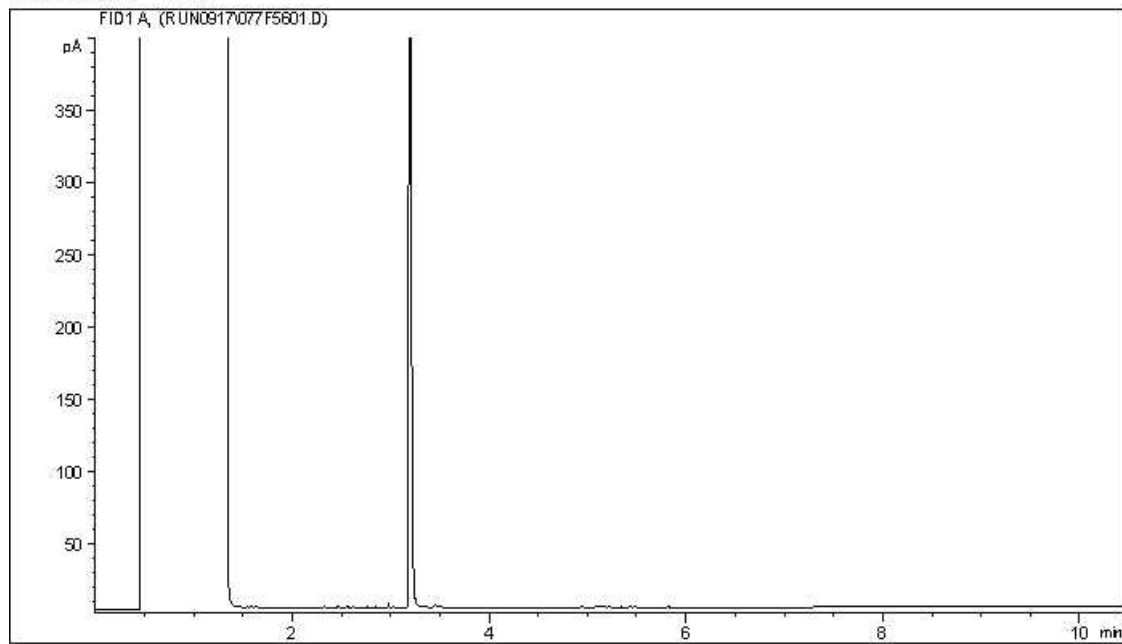
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Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

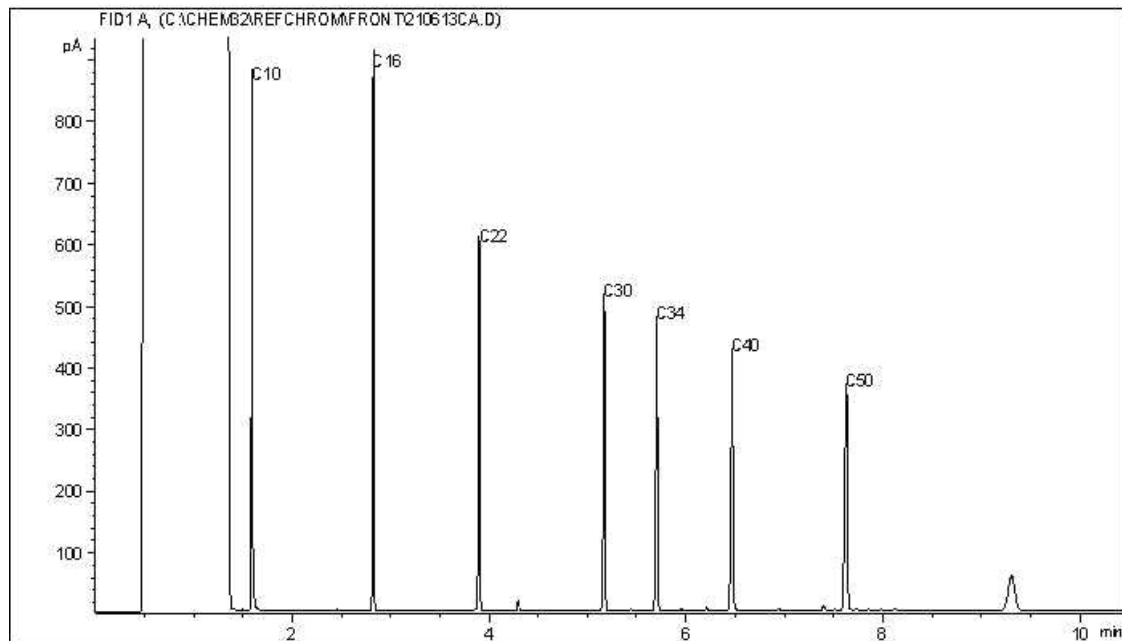
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



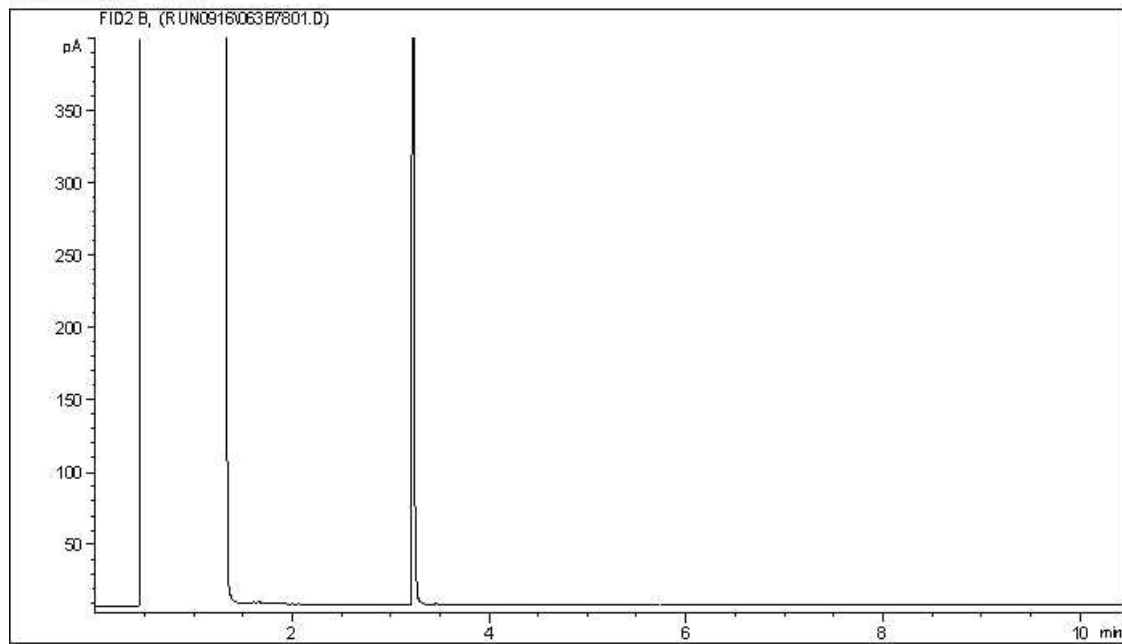
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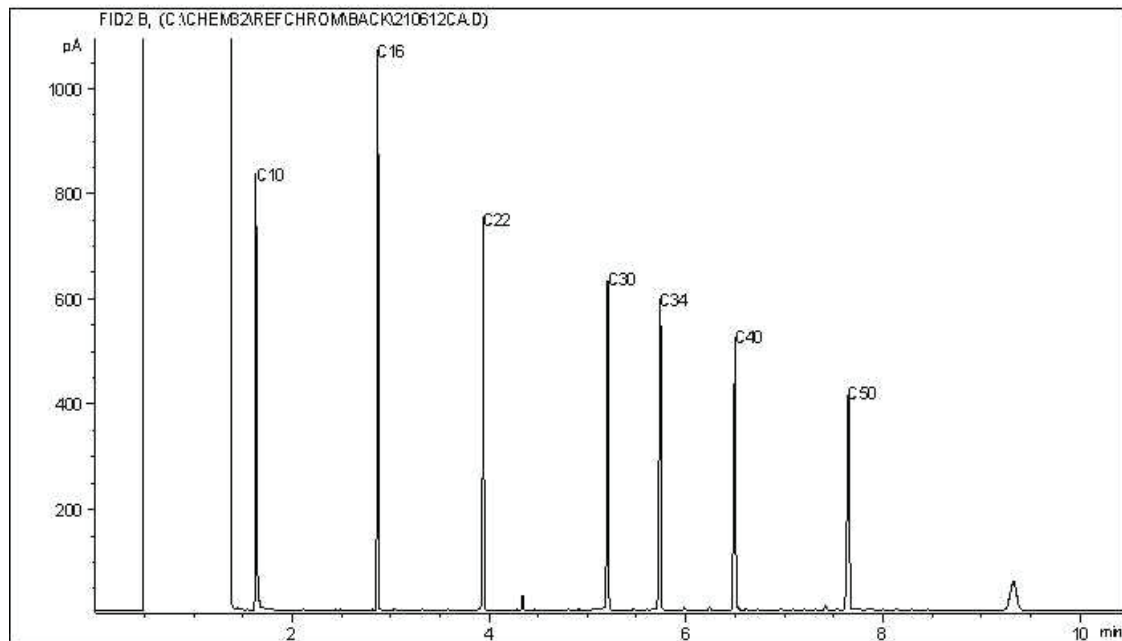
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



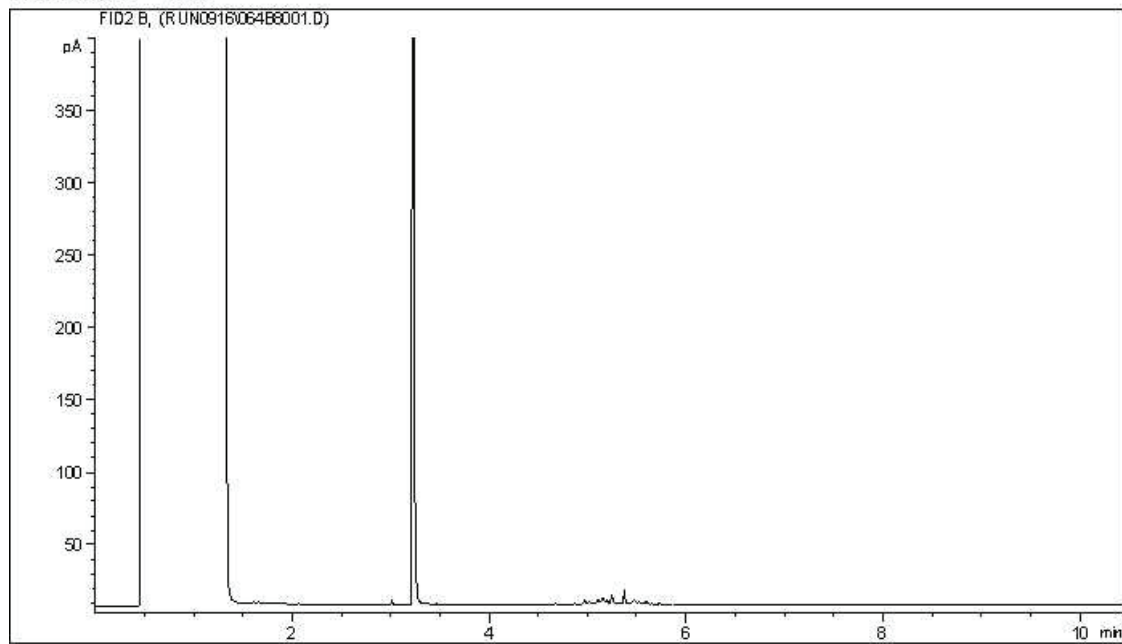
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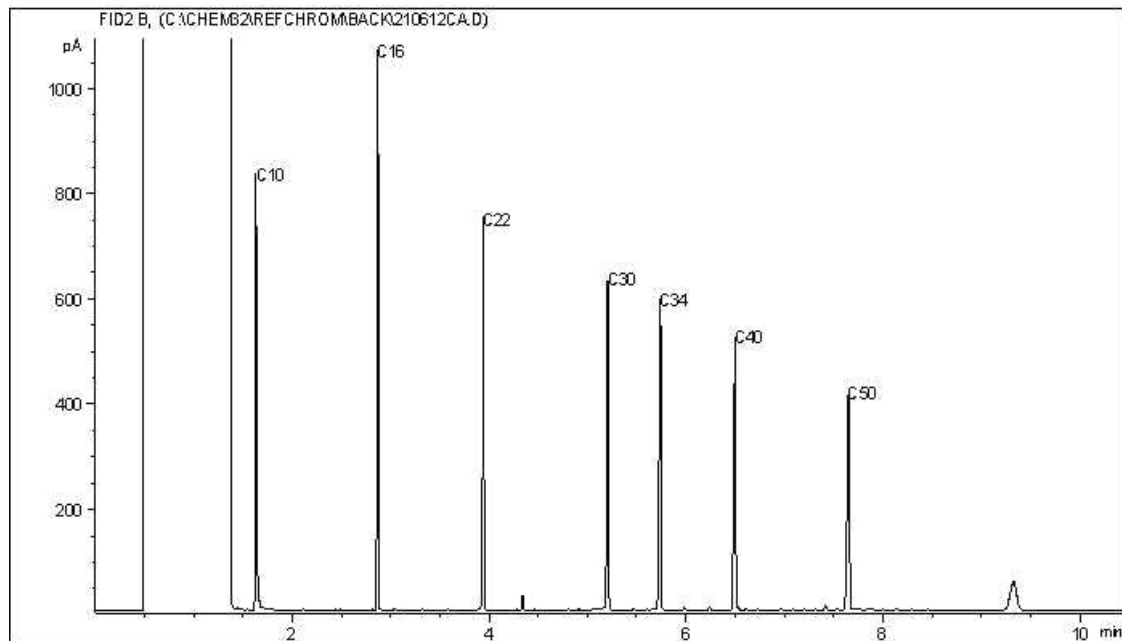
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

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Carbon Range Distribution - Reference Chromatogram



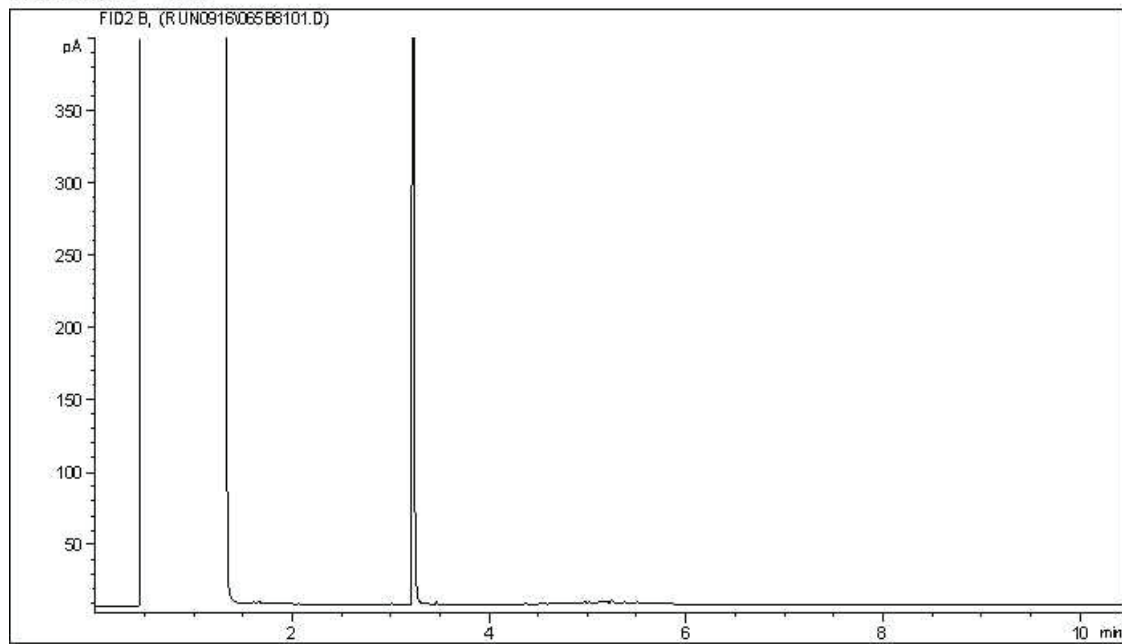
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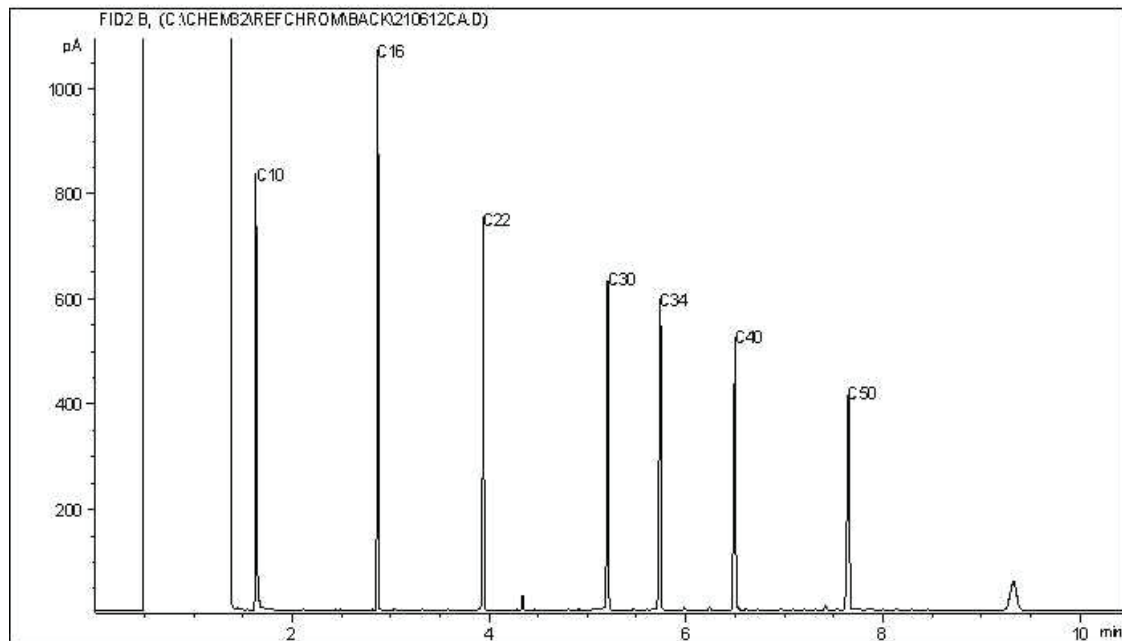
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

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Carbon Range Distribution - Reference Chromatogram



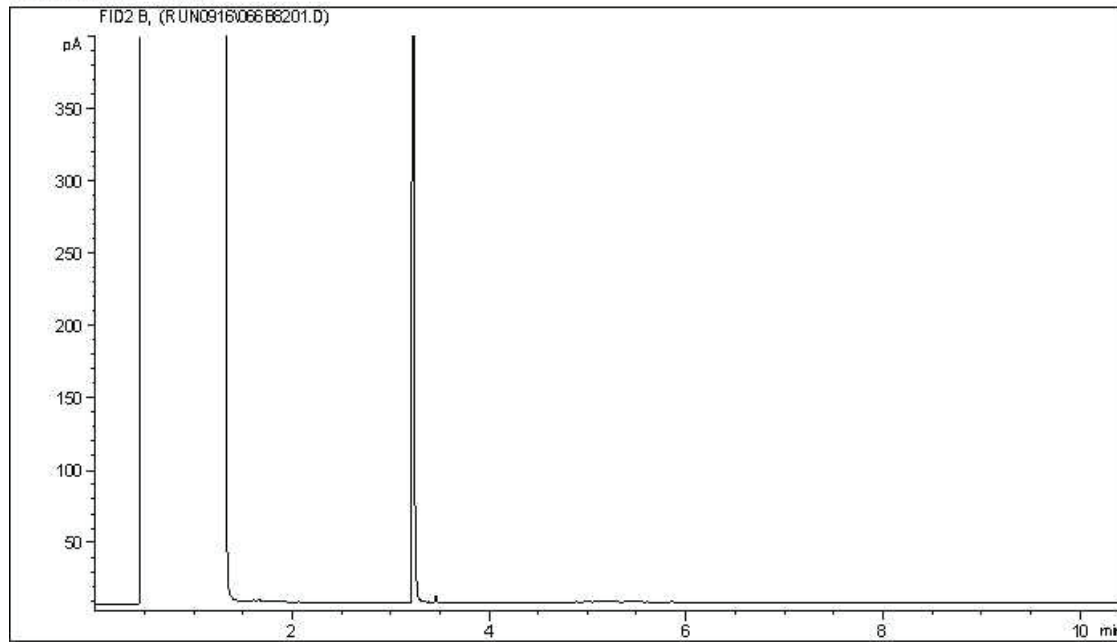
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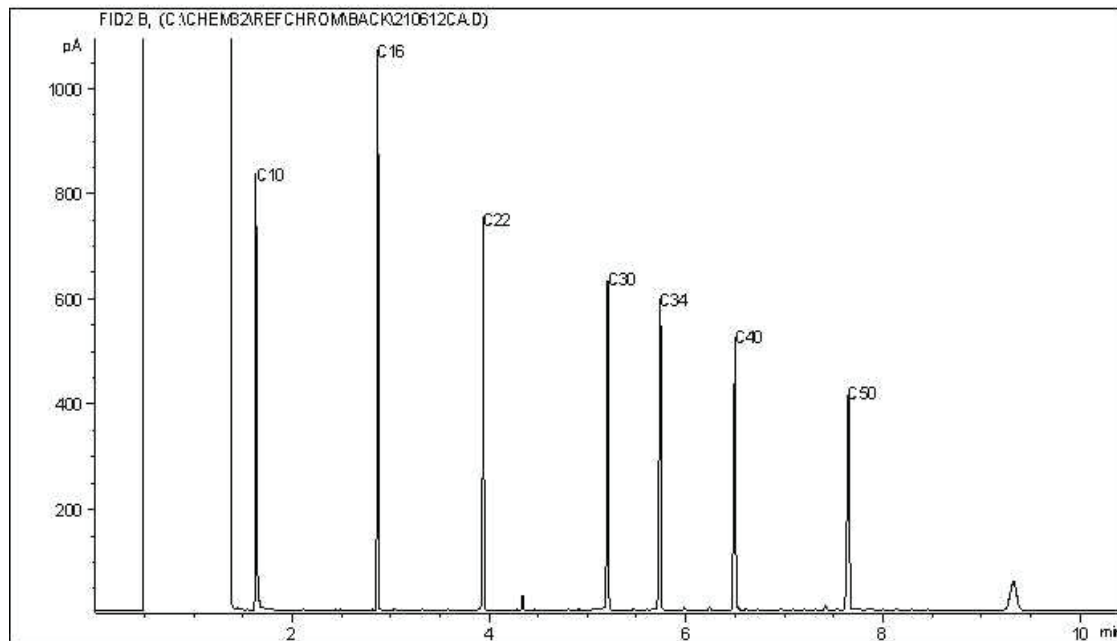
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



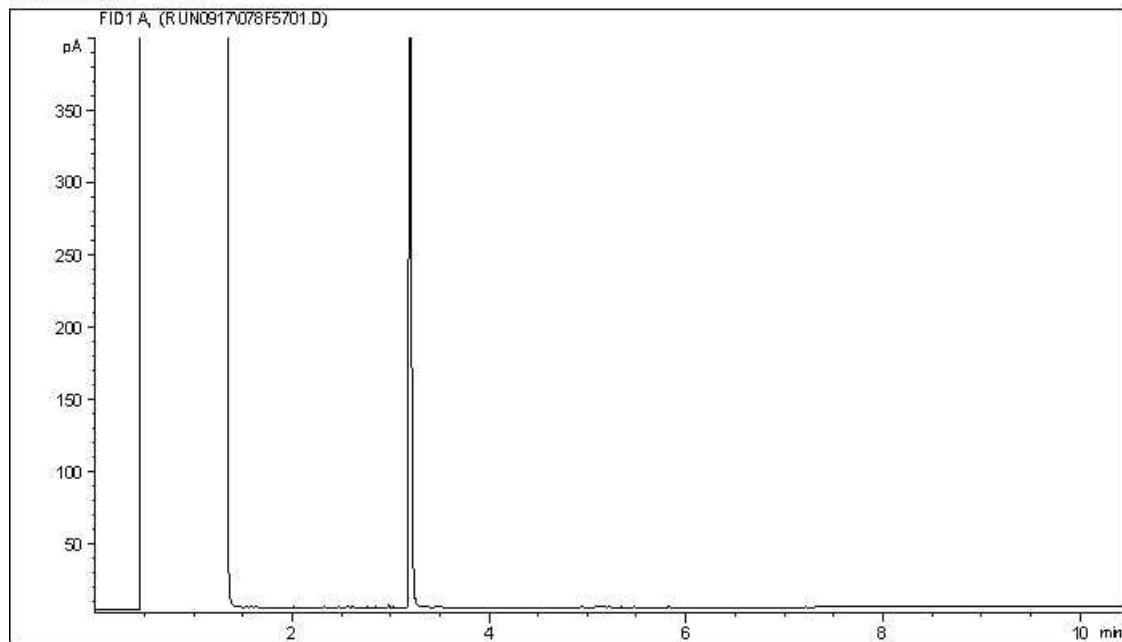
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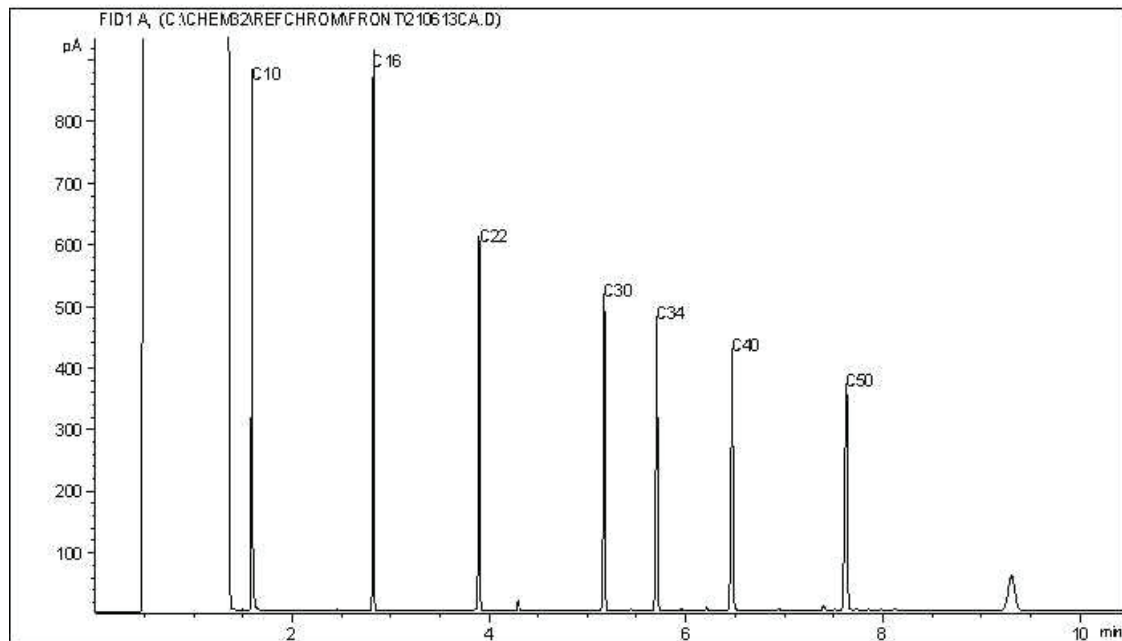
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

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Carbon Range Distribution - Reference Chromatogram



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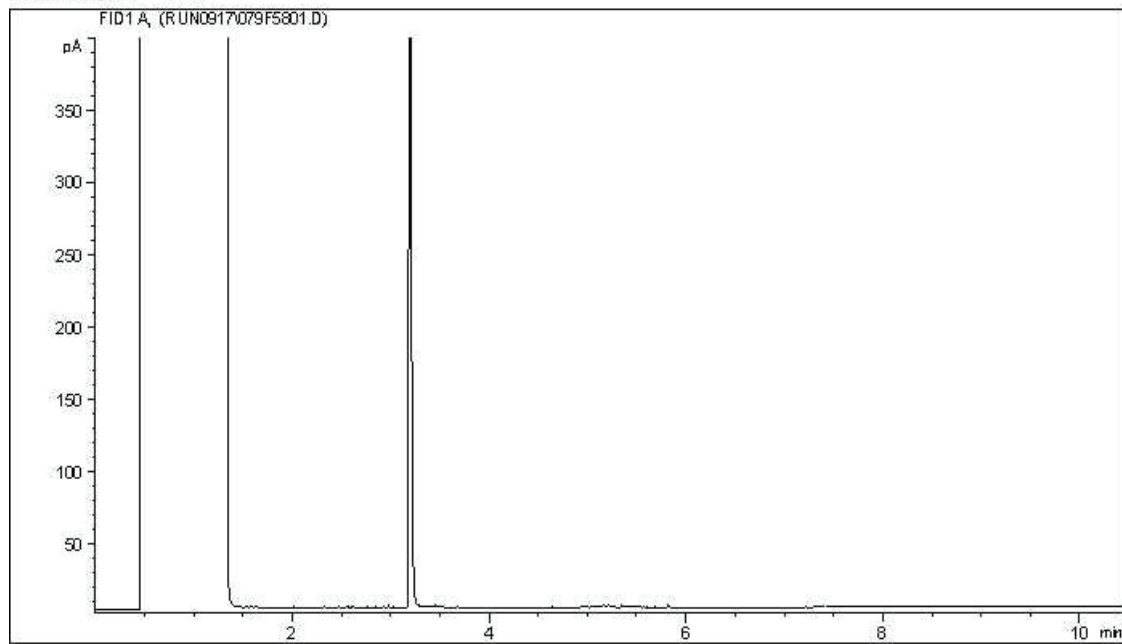
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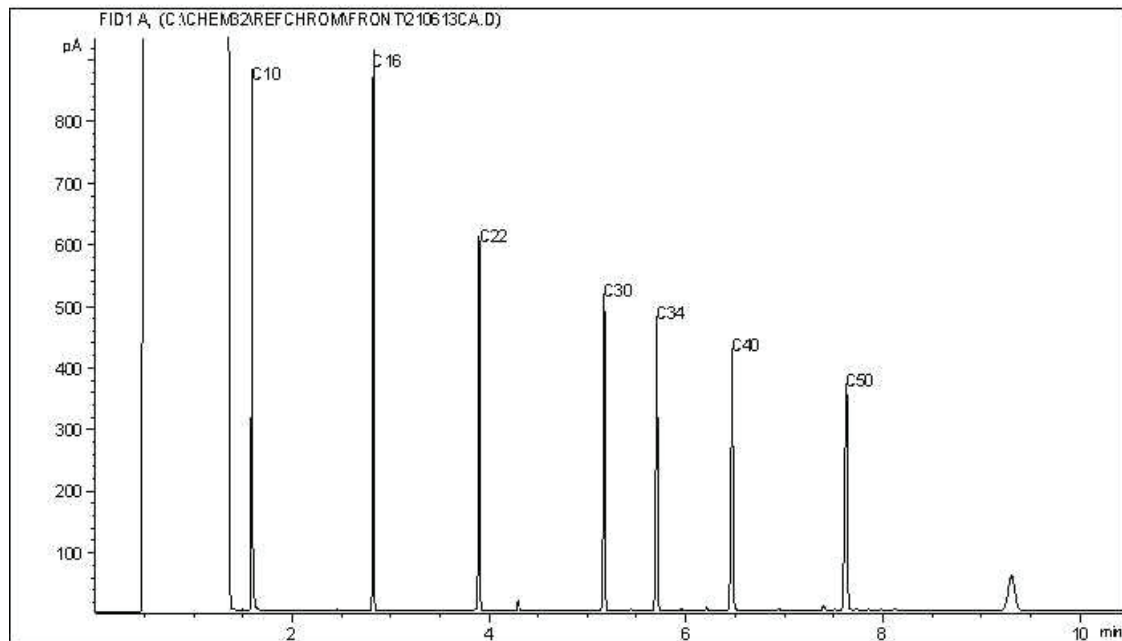


CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



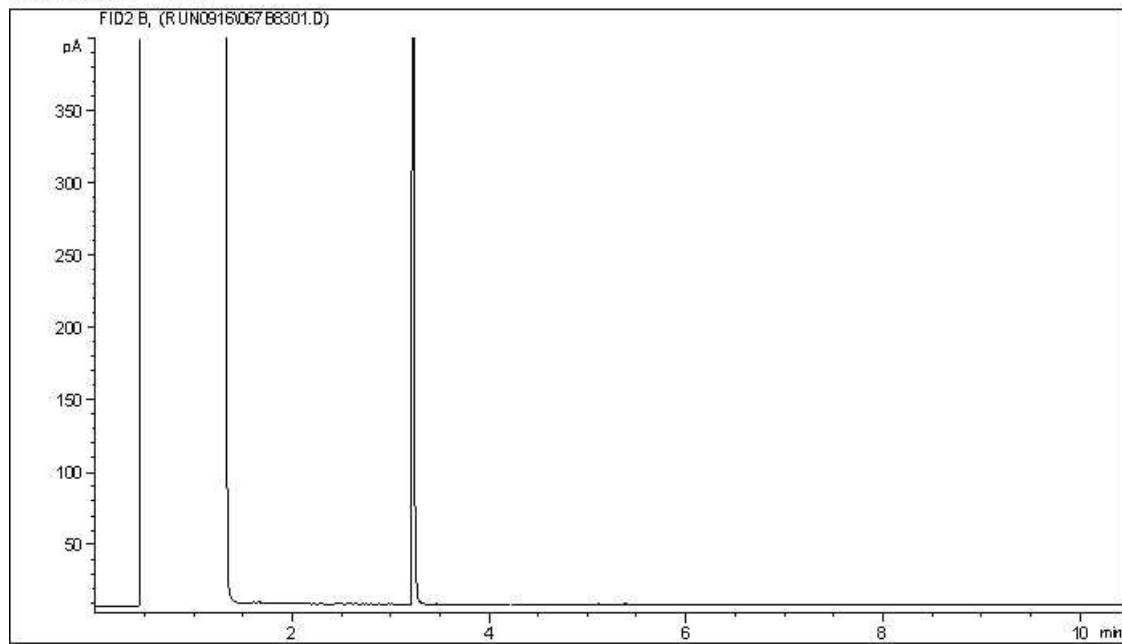
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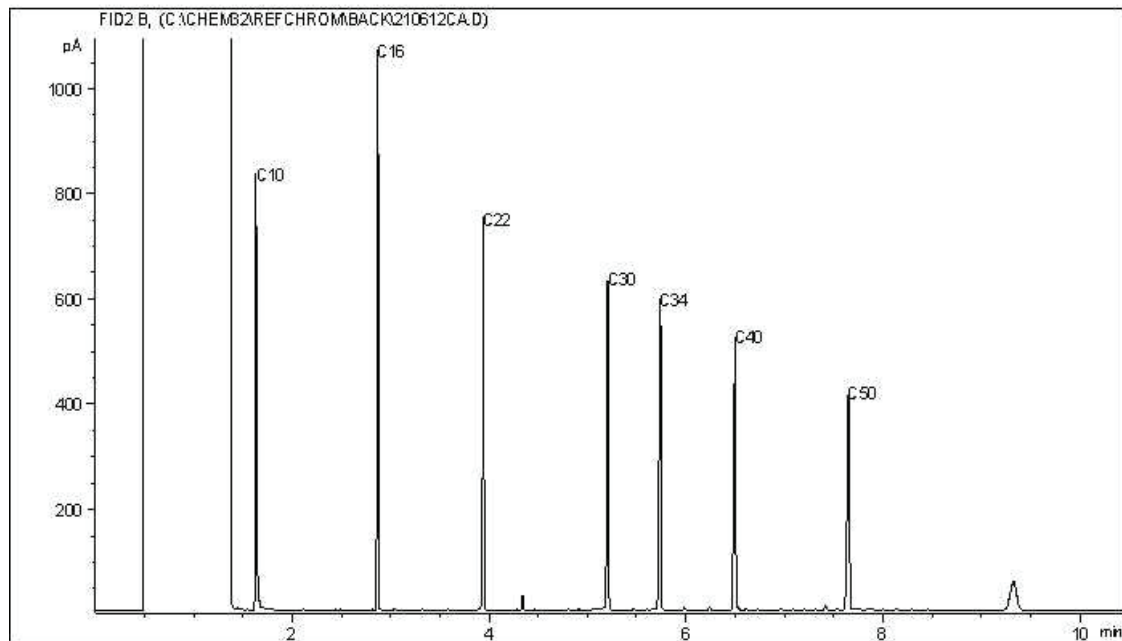
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



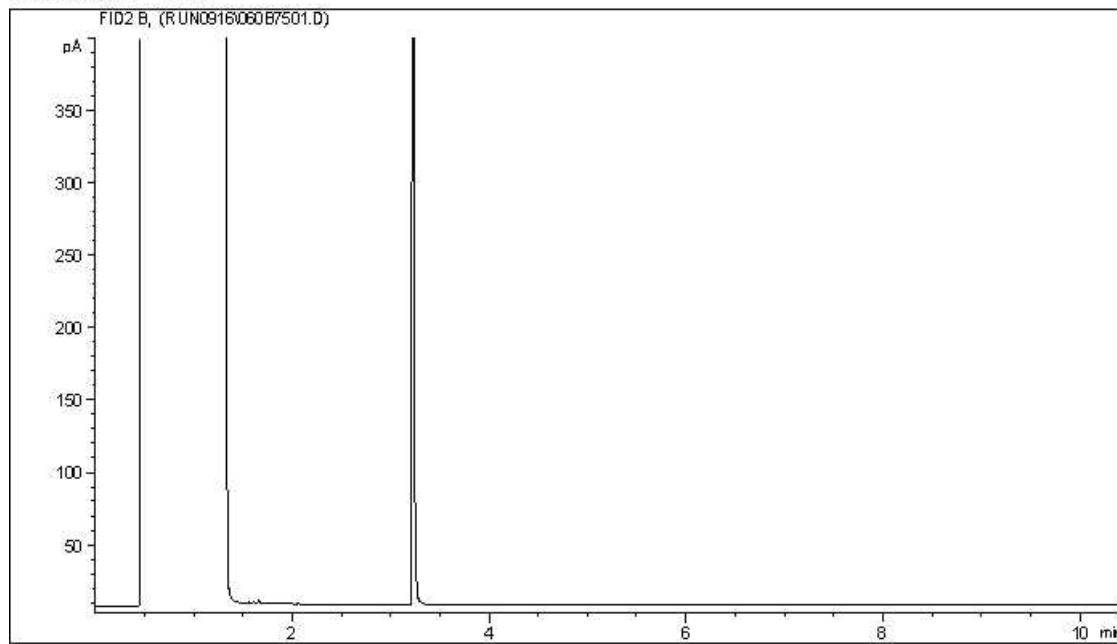
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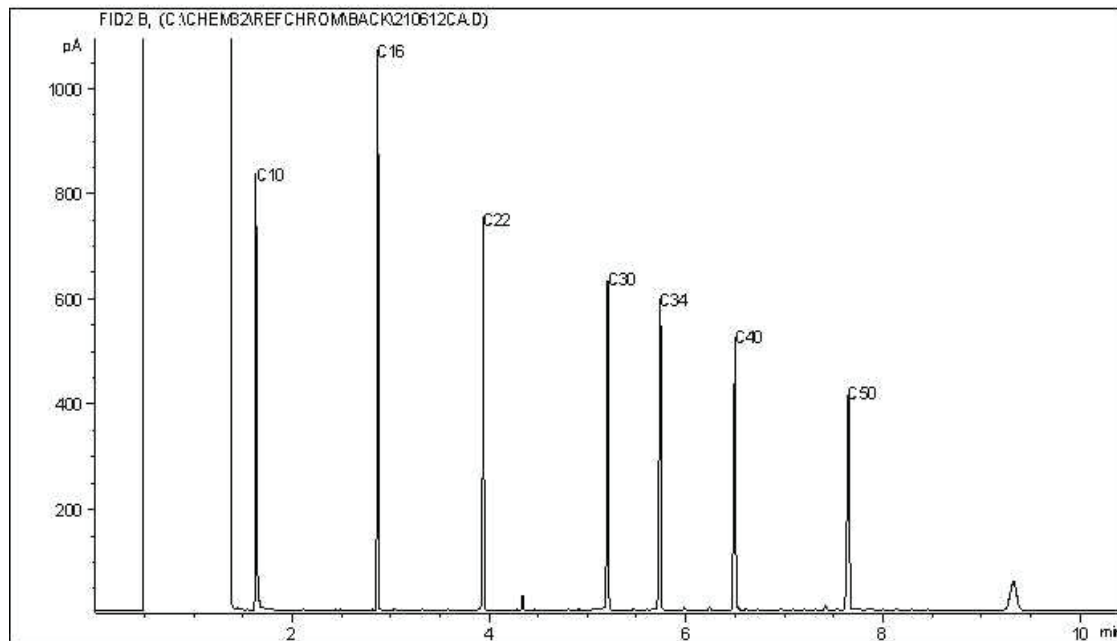
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

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Carbon Range Distribution - Reference Chromatogram



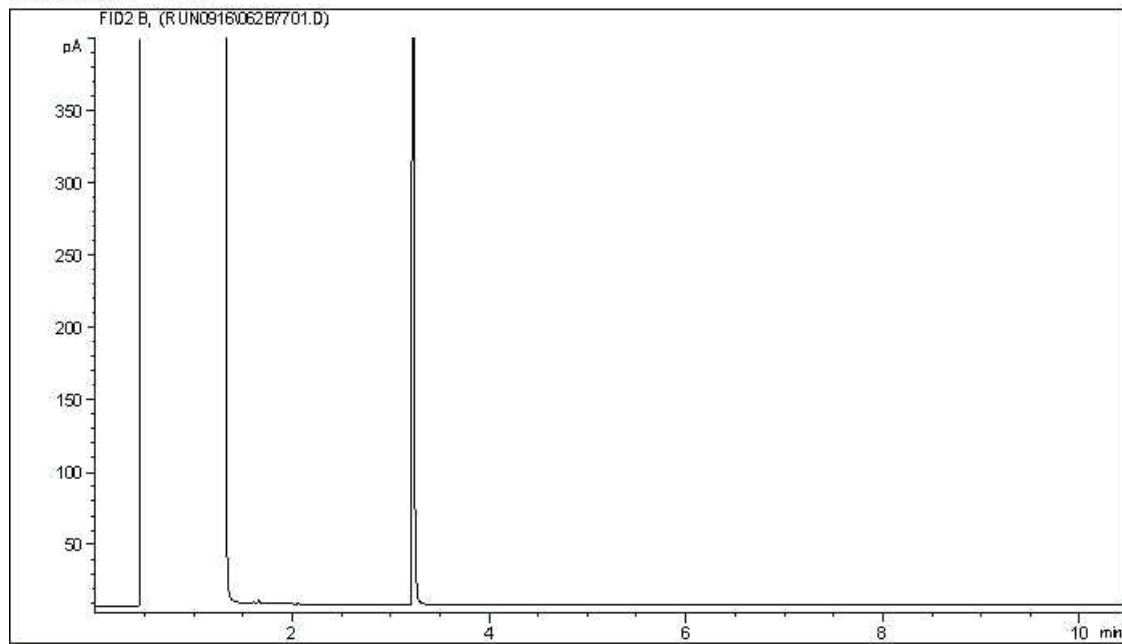
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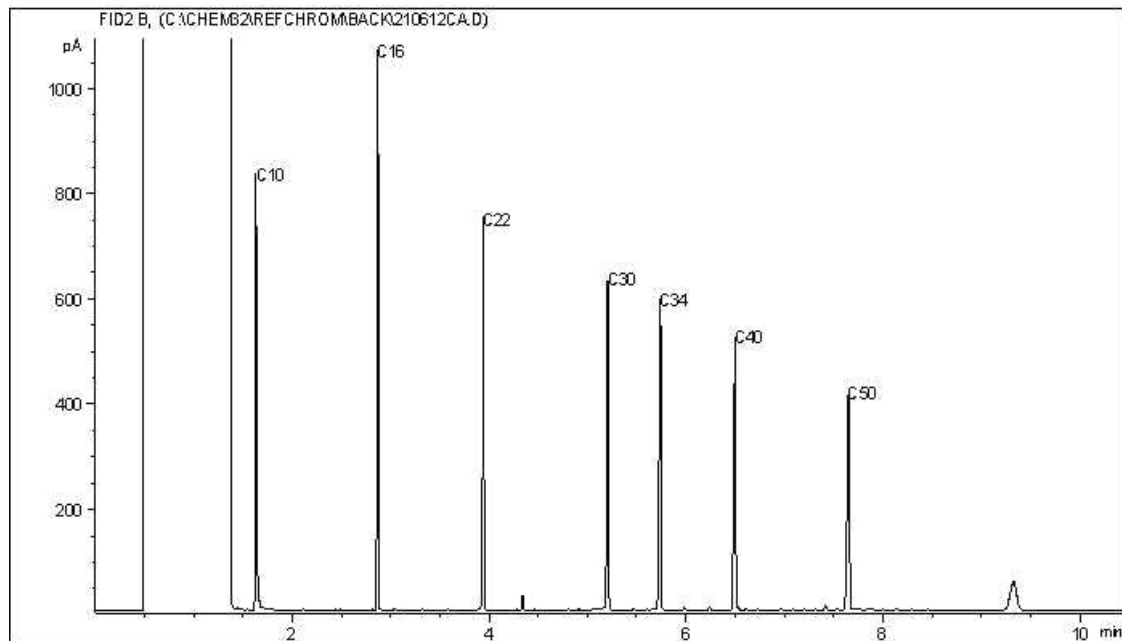
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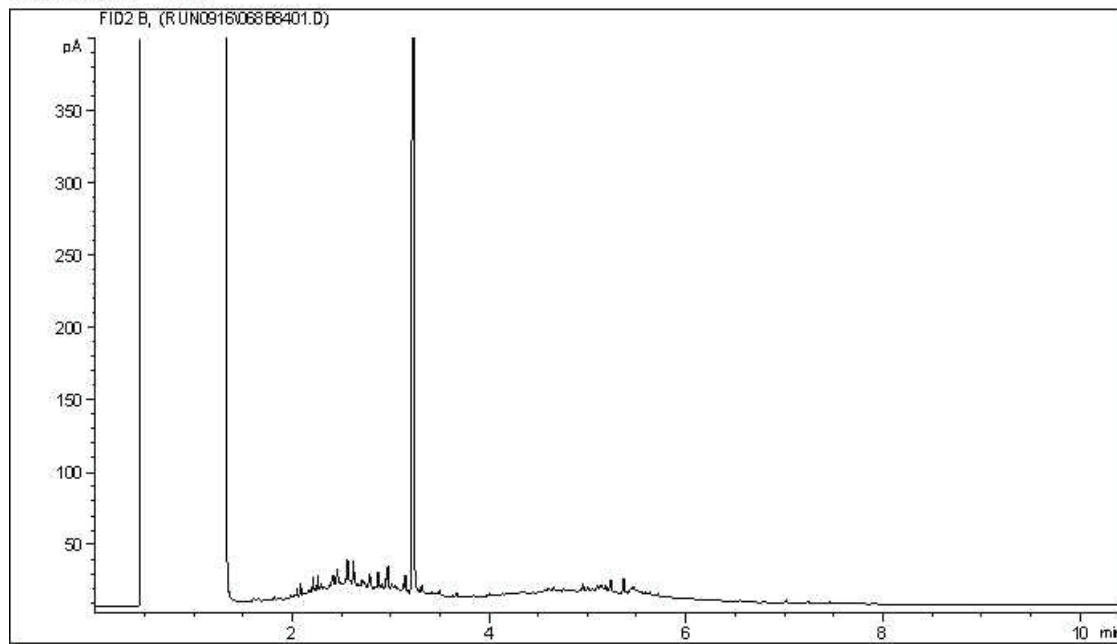
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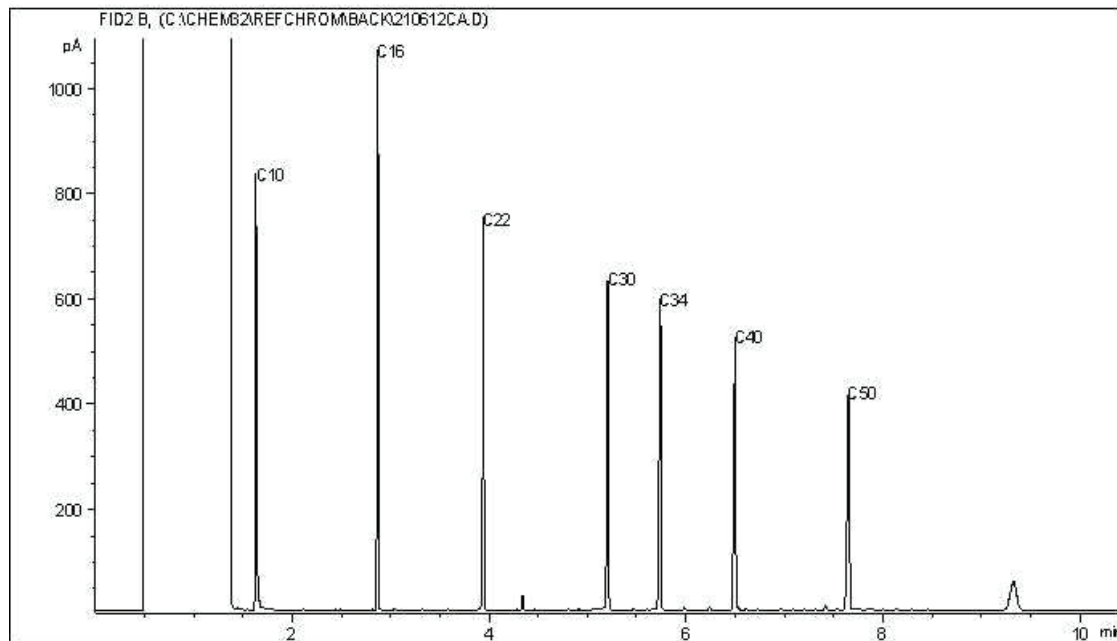
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

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Carbon Range Distribution - Reference Chromatogram



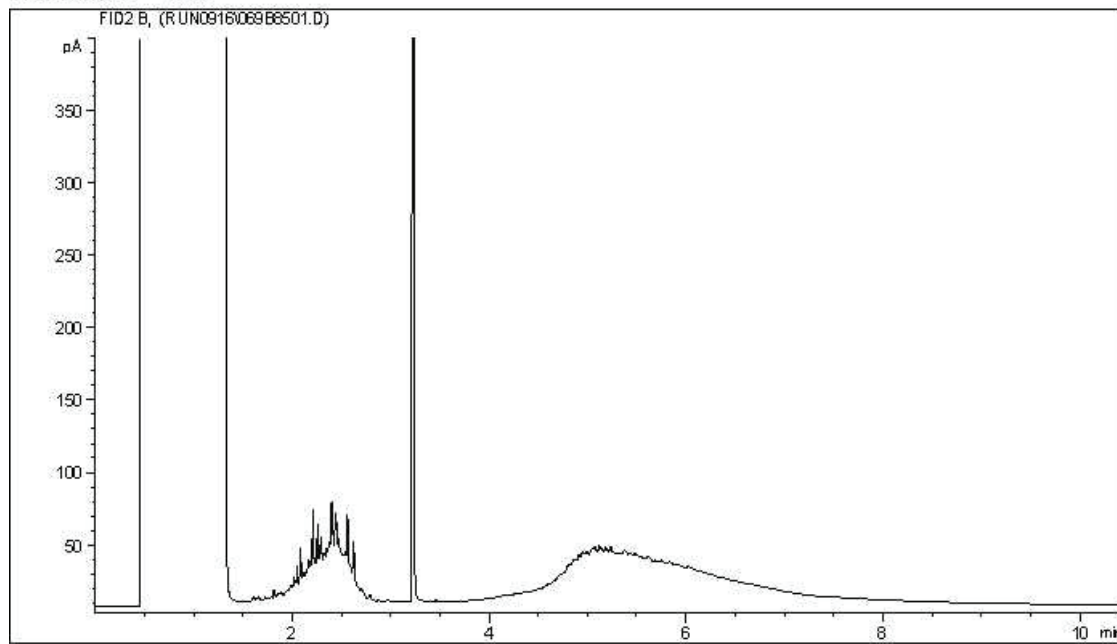
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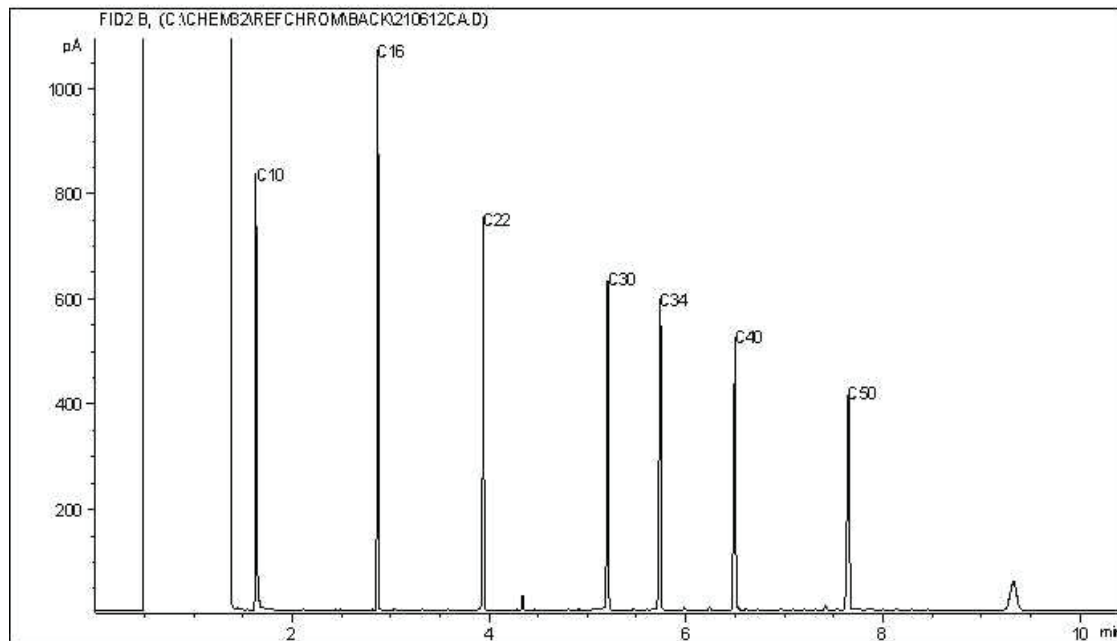
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

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Carbon Range Distribution - Reference Chromatogram

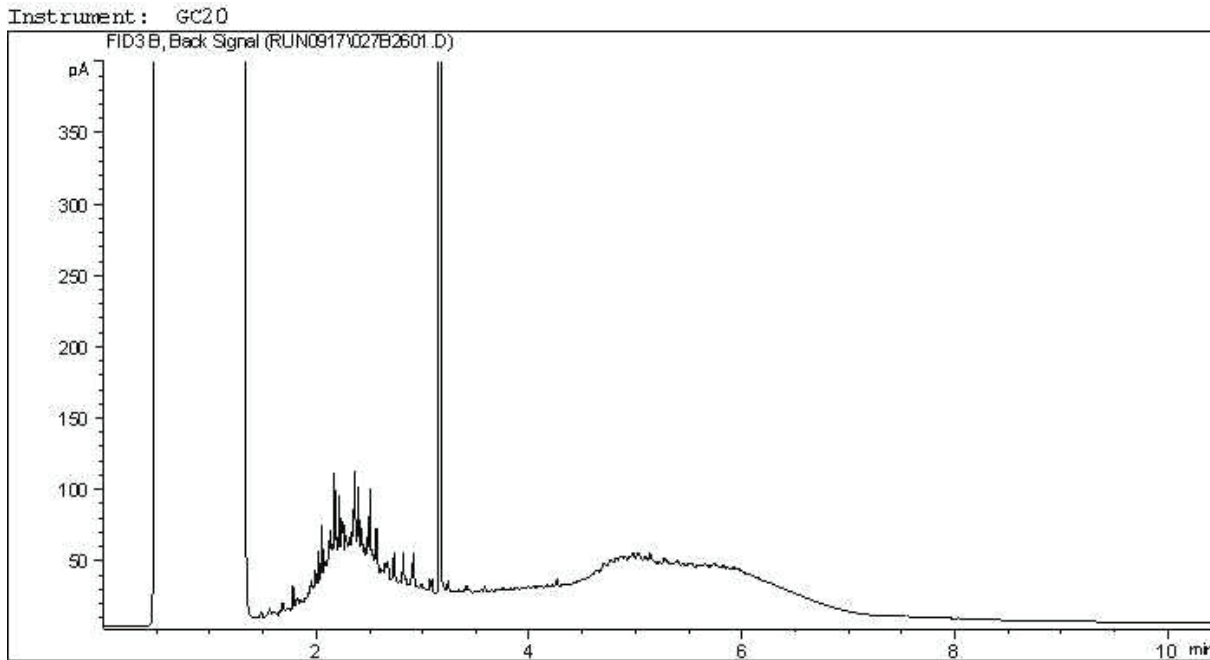


TYPICAL PRODUCT CARBON NUMBER RANGES

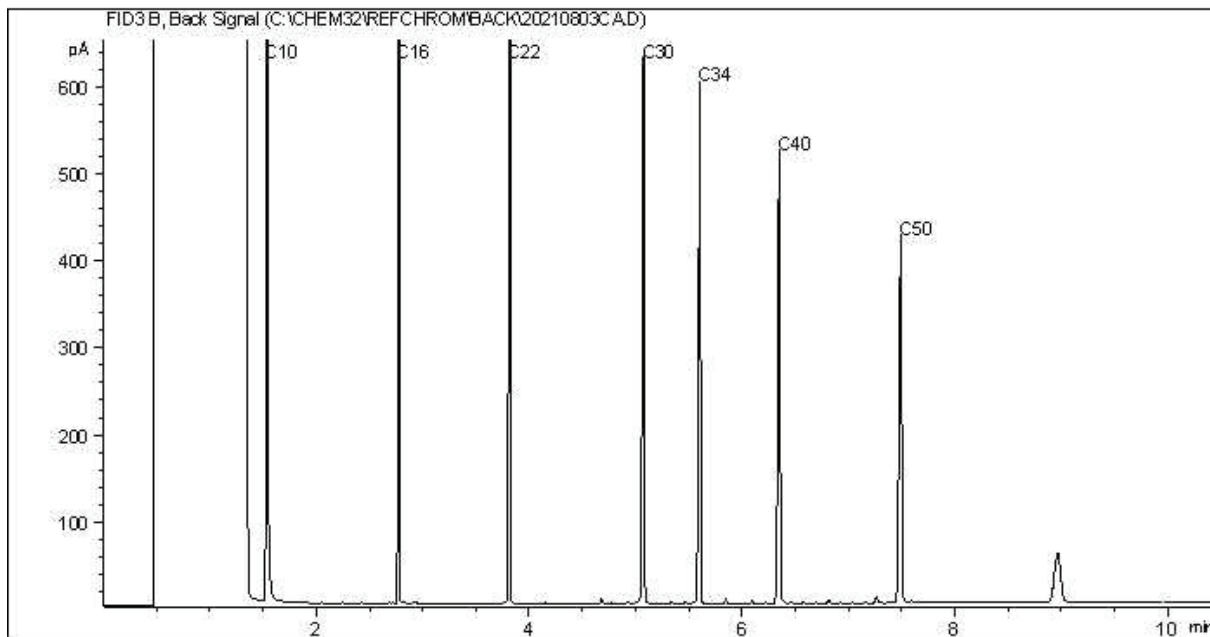
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Carbon Range Distribution - Reference Chromatogram



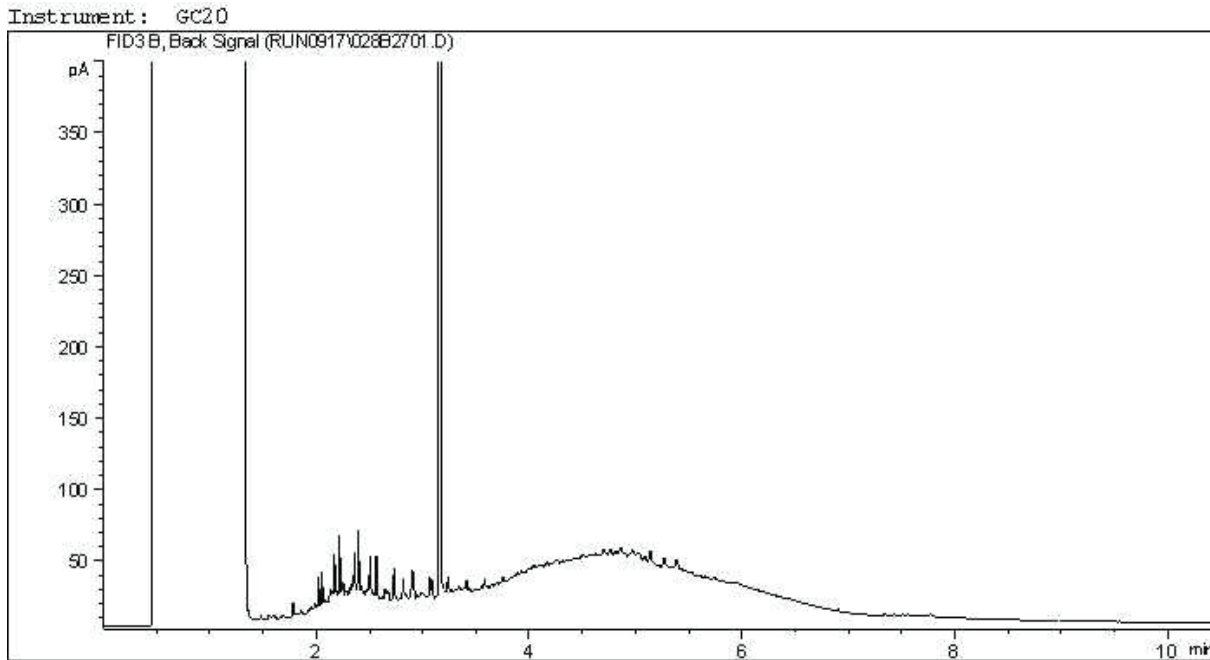
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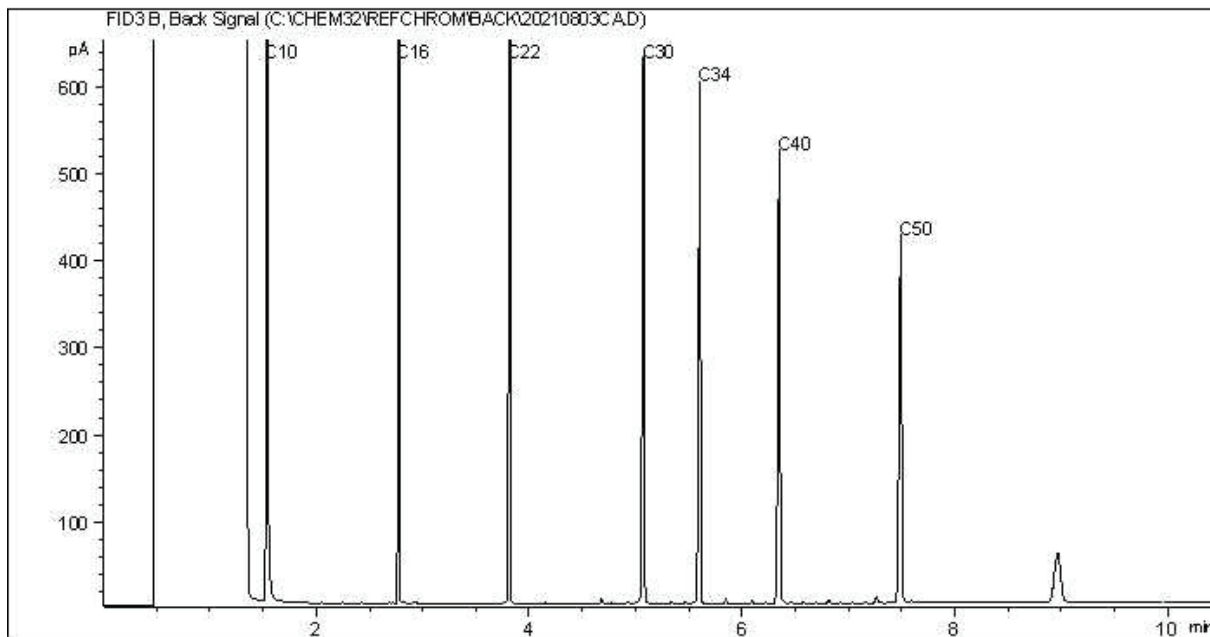
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram



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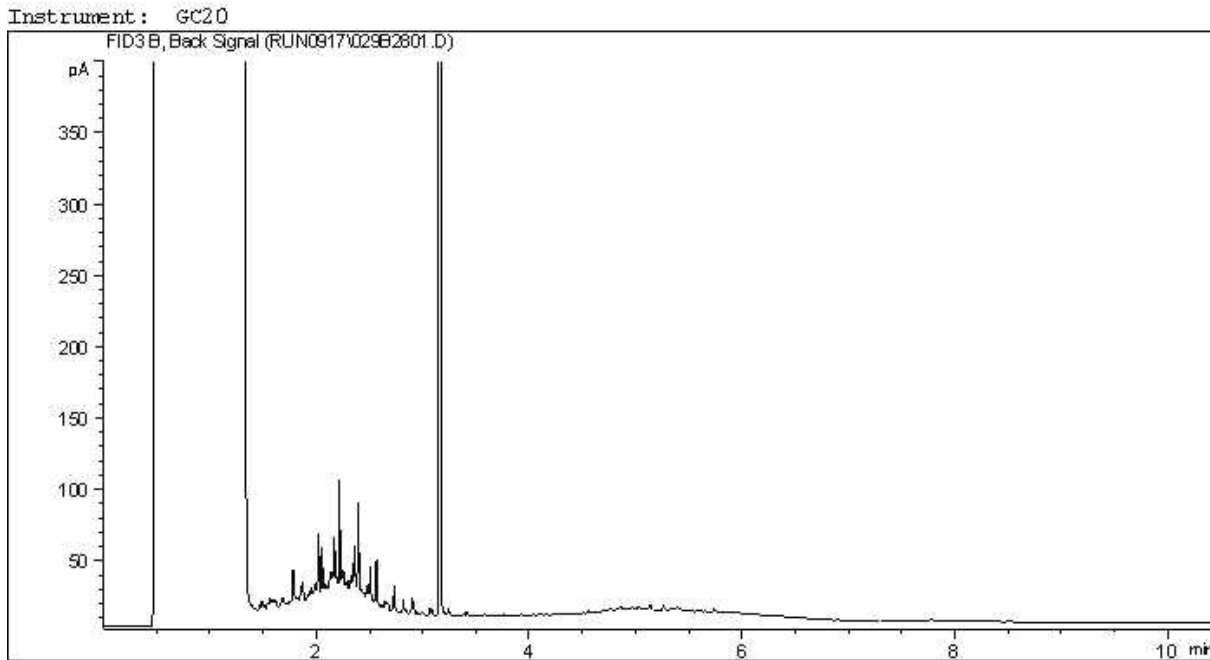


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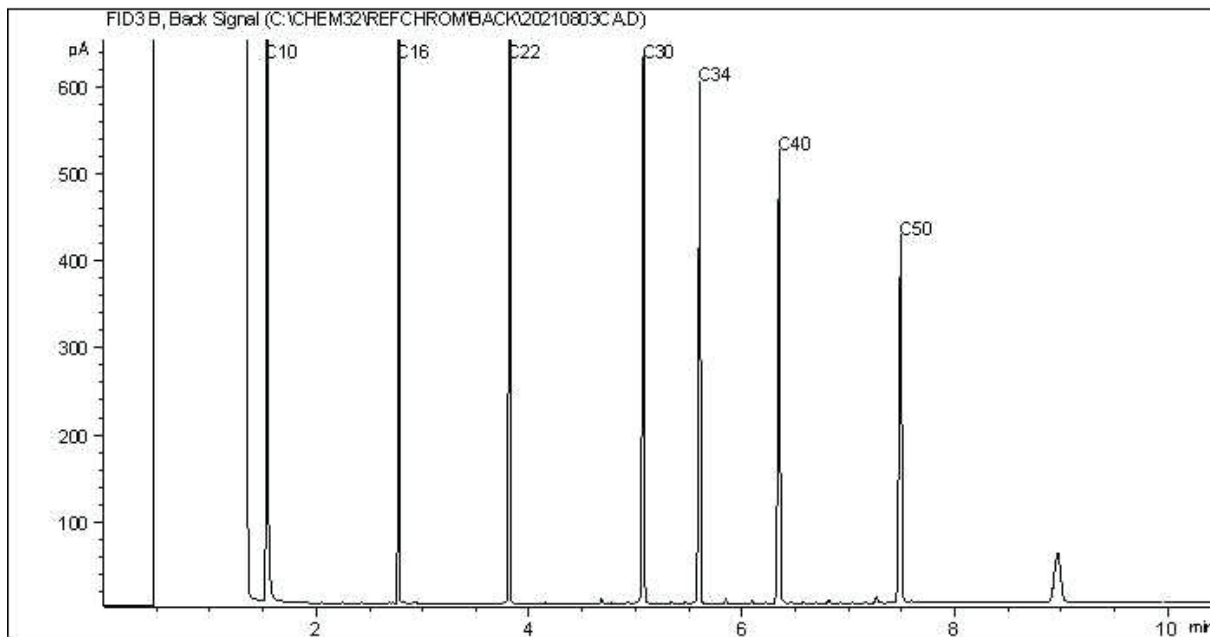
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram



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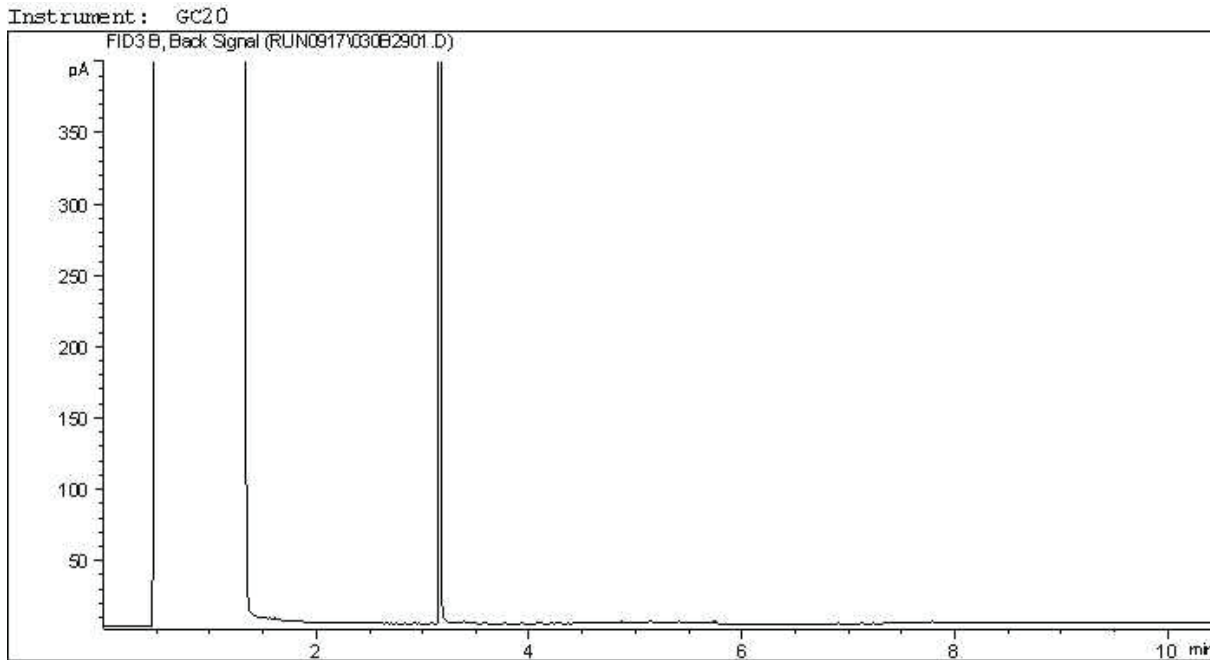


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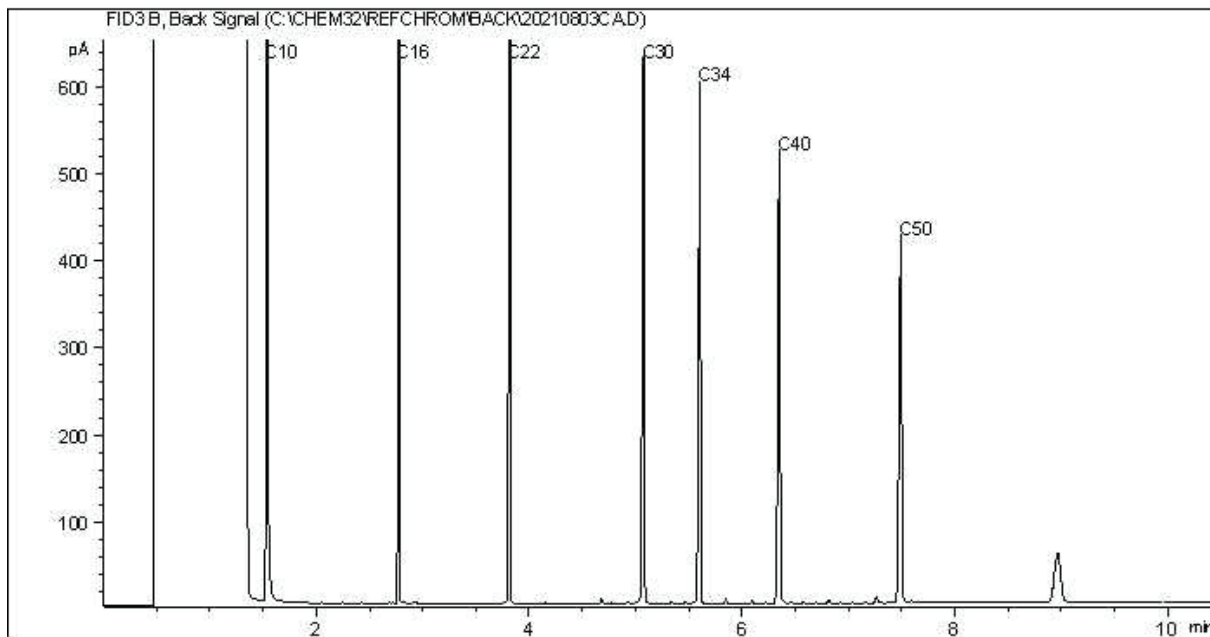
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram

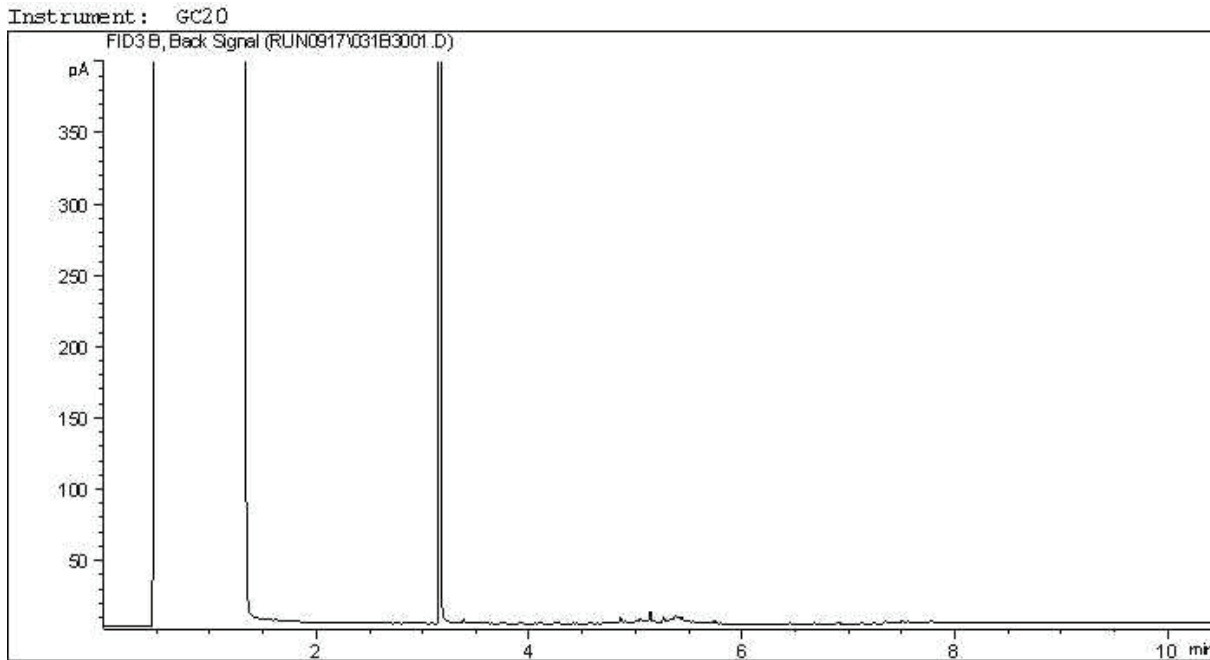


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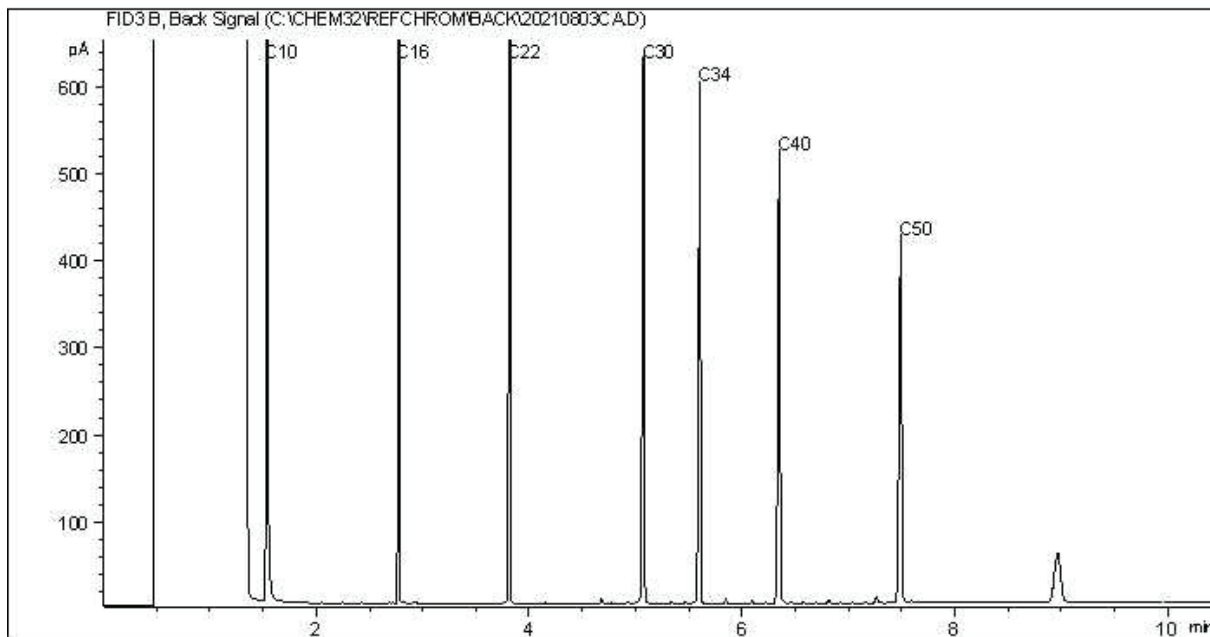
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram

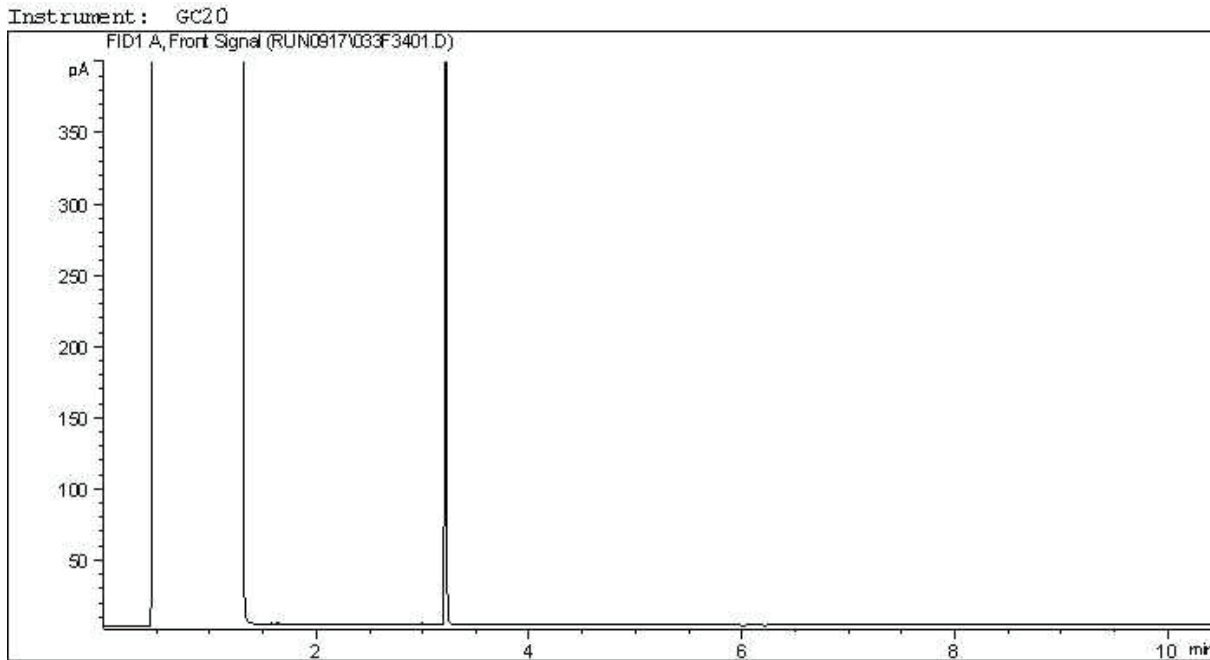


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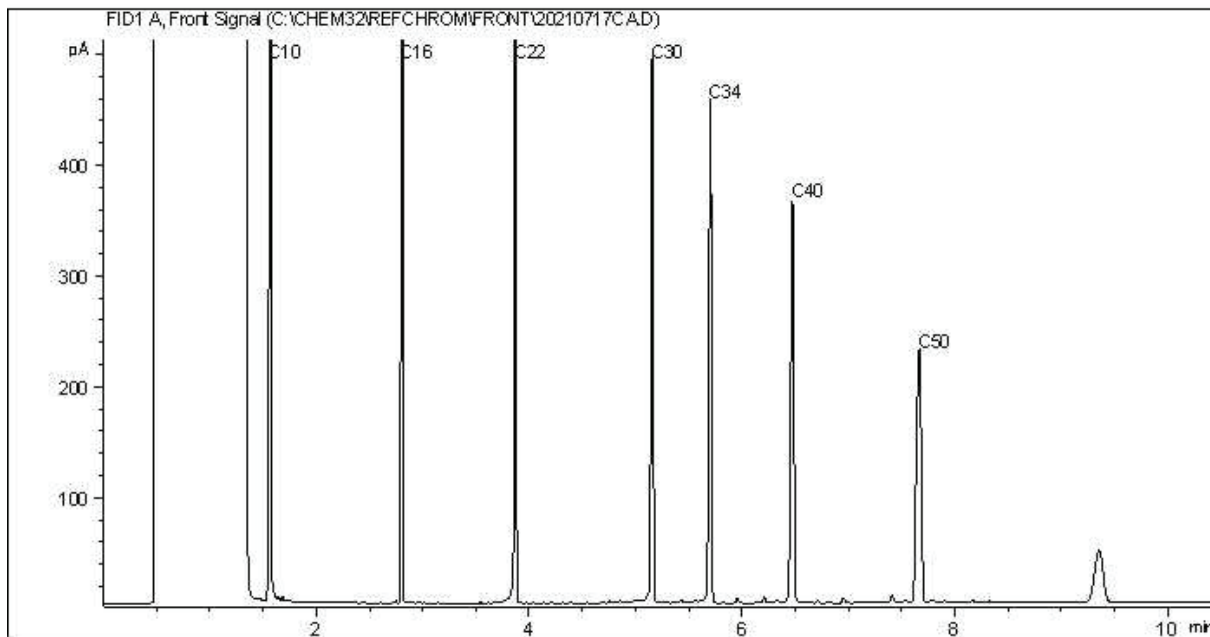
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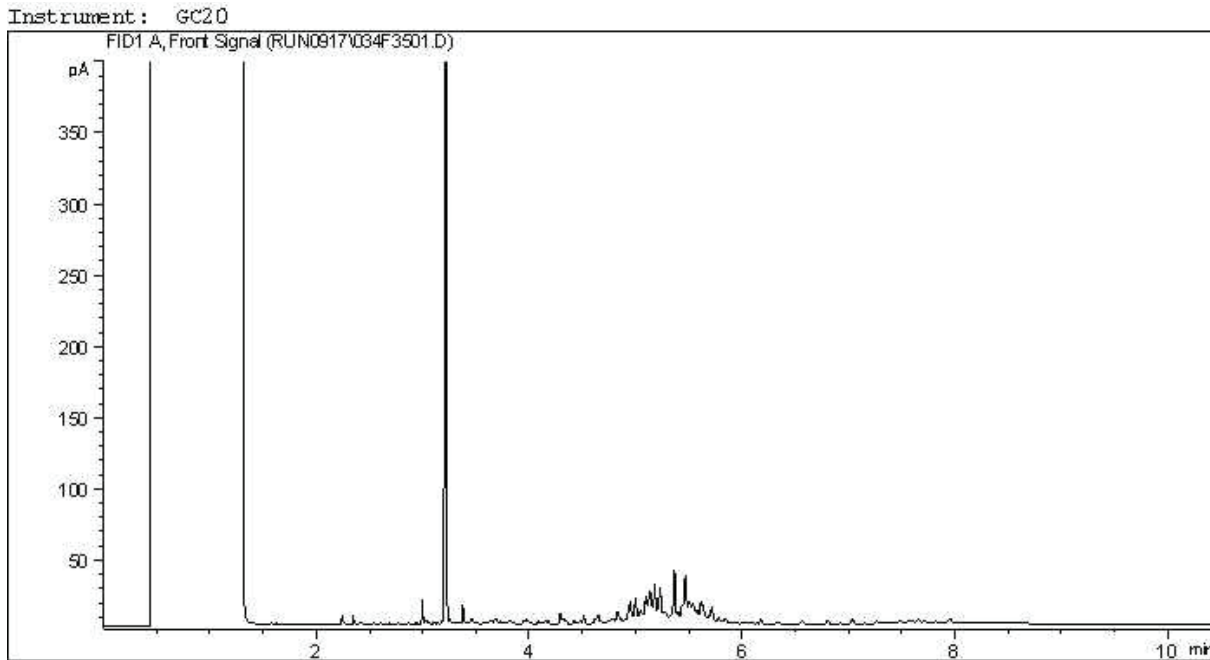


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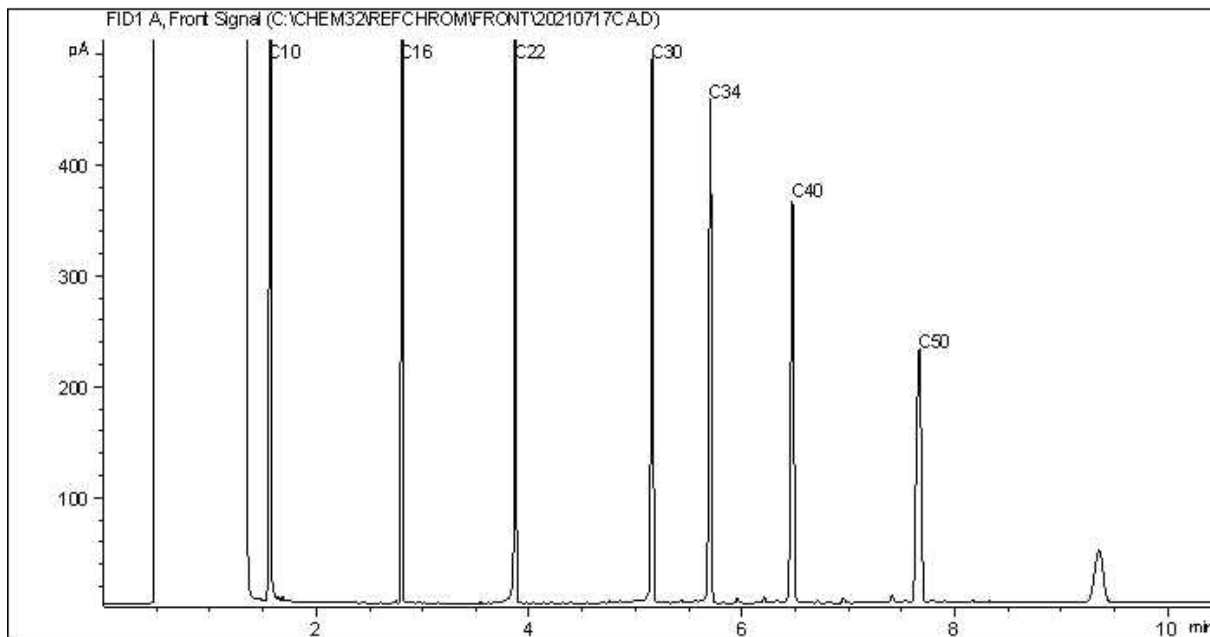
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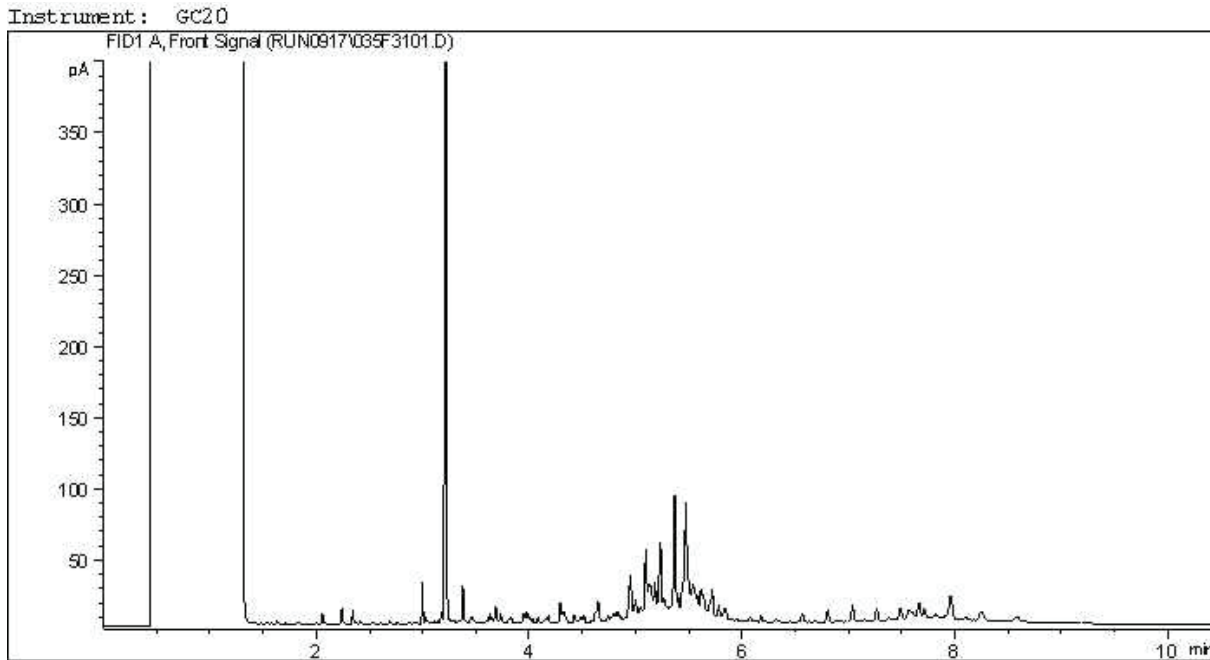


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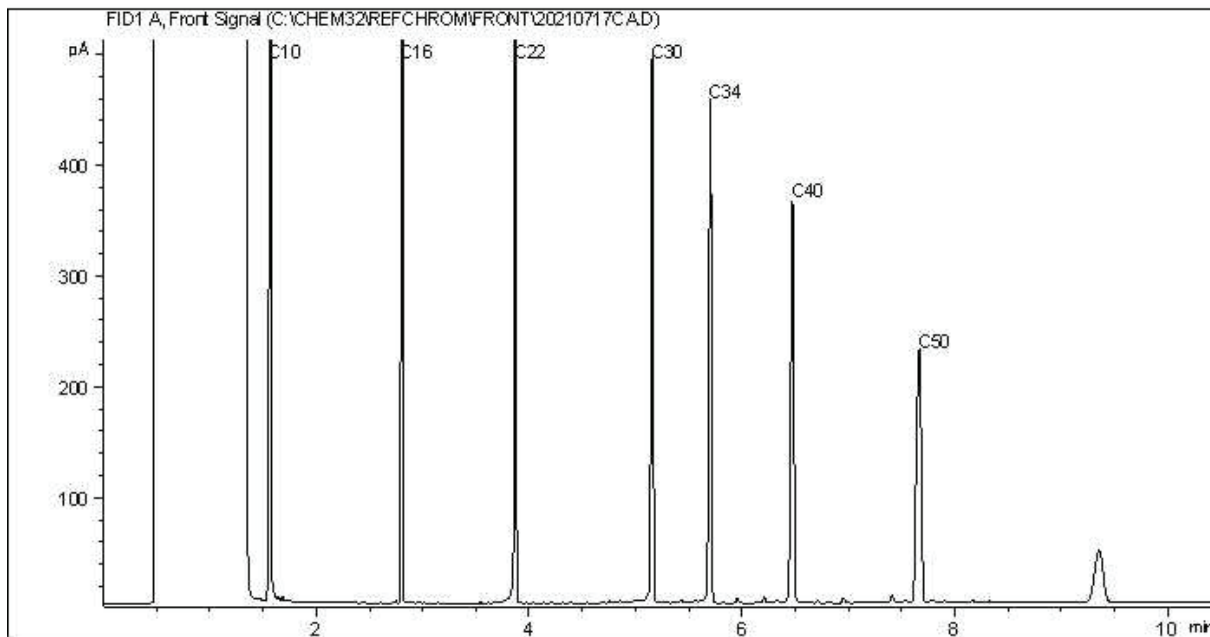
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



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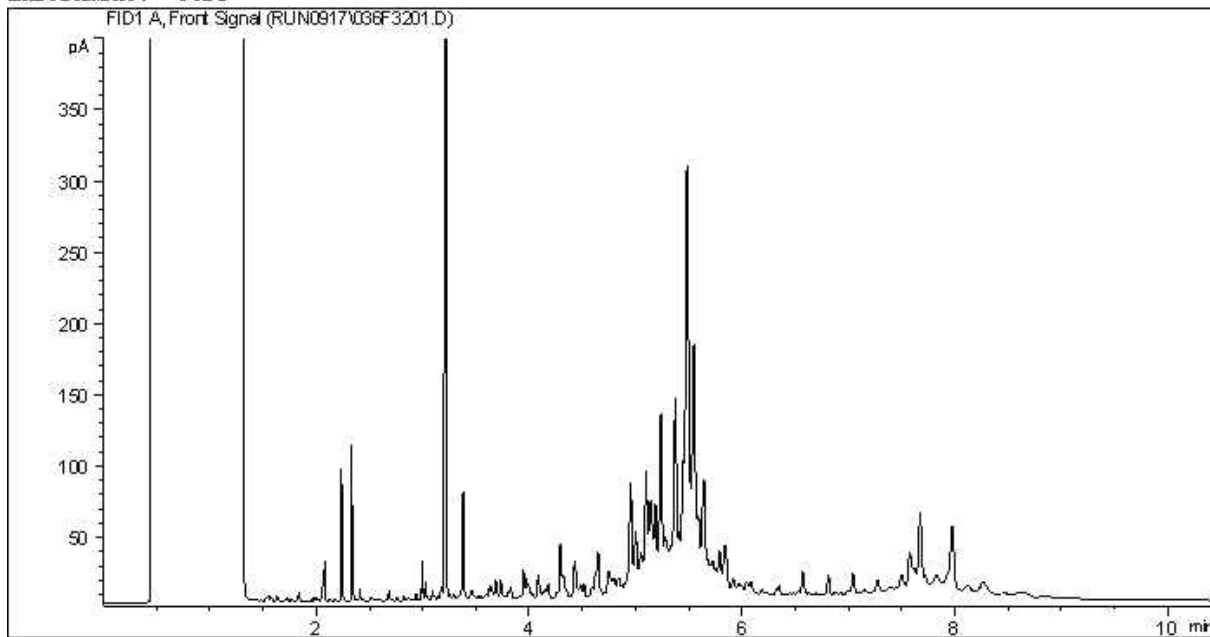
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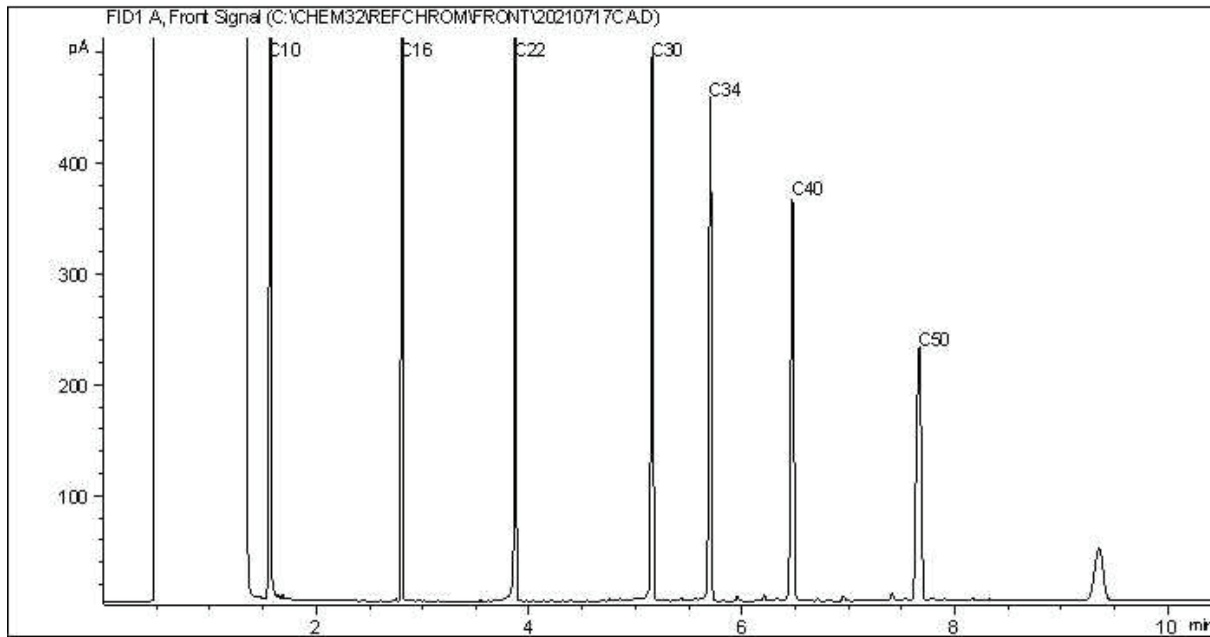


CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC20



Carbon Range Distribution - Reference Chromatogram



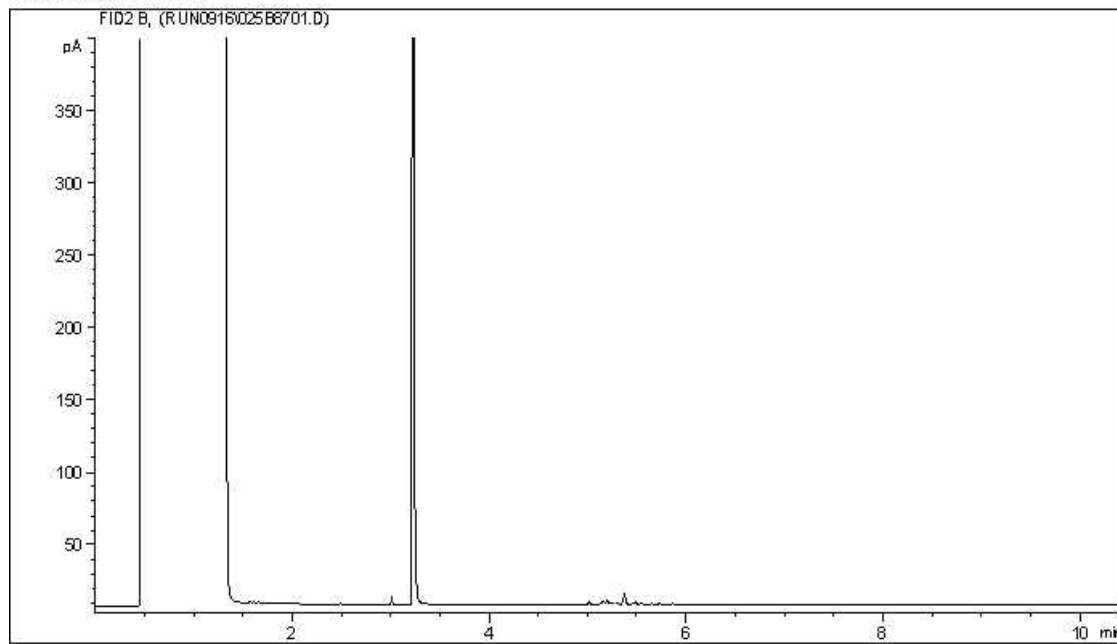
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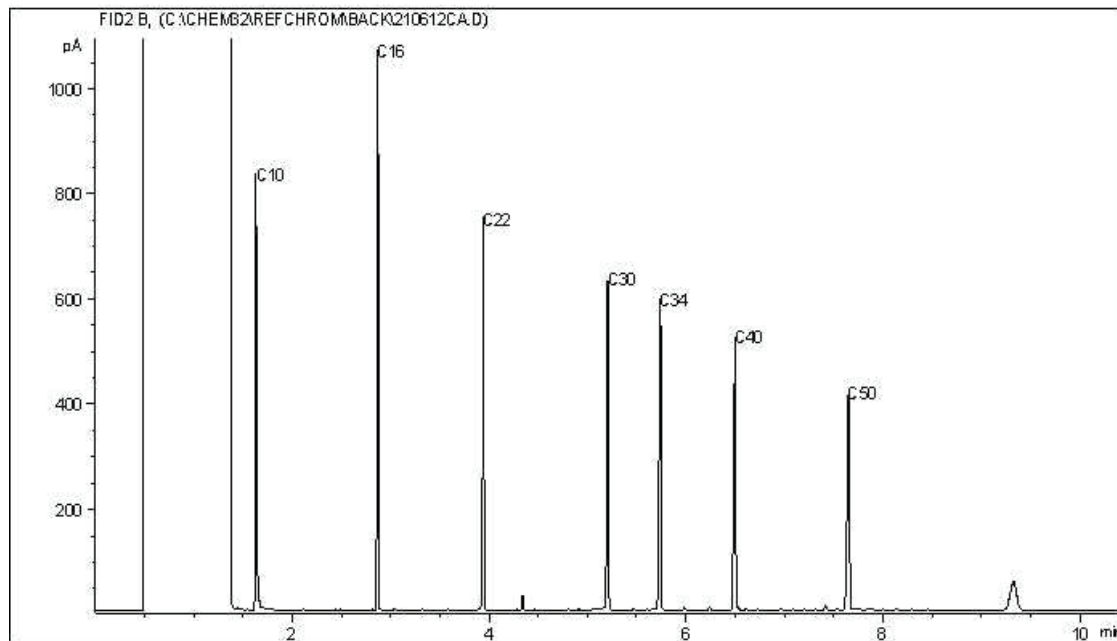
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



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Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
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**GOLDER DATA QUALITY REVIEW CHECKLIST**

Site Location: Camp Farewell

Sampling Date: September 1, 2021

Golder Project Number: 20368099-6000-1001

Laboratory: Bureau Veritas Edmonton

Lab Submission Number: C167920

Was the Cooler Received at the lab under a sealed and intact custody seal? Yes

Was proper chain of custody of the samples documented and kept? Yes

Were sample temperatures acceptable when they reached lab?: Yes

Were all samples analyzed and extracted within hold times?: Yes

Has lab warranted all tests were in statistical control in CoA?: Yes

Was sufficient sample provided for the requested analysis? Yes

Has lab warranted all samples were analyzed with limited headspace present?: Yes

Are All Laboratory QC Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery	X			All laboratory QC results are within acceptance criteria.
Method Blank Concentration	X			
Laboratory Duplicate RPD	X			
Matrix Spike Recovery	X			
Blank Spike Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	Samples TP21-180-03 and DUP III exceed the alert limits for F2 (C10-C16) (67%) and F3 (C16-C34) (83%).
Trip Blank Concentration			X	
Field Duplicate RPD		X		All remaining field QC samples are within alert limits.

Is data considered reliable (Yes/No/Suspect)?: Suspect

If answer is "No" or "Suspect", describe and provide rationale:

Please see QA/QC appendix for details

Data Reviewed by (Print): Anita Colbert

Data Reviewed by (Signature): Anita Colbert

Date: September 27, 2021



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. #: 644511-85-01, 644511-86-01, 644511-84-01, 644511-82-01

**Report Date: 2022/01/14**  
 Report #: R3122013  
 Version: 6 - Revision

**CERTIFICATE OF ANALYSIS – REVISED REPORT**

**BV LABS JOB #: C168138**

**Received: 2021/09/10, 09:00**

Sample Matrix: Soil  
 # Samples Received: 31

Analyses	Quantity	Date		Laboratory Method	Analytical Method
		Extracted	Analyzed		
Barium on ICP using Fusion Extraction (1)	5	2021/09/20	2021/09/21	AB SOP-00044 / AB SOP-00042	EPA 6010d R5 m
BTEX/F1 by HS GC/MS/FID (MeOH extract) (1, 2)	31	N/A	2021/09/17	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX (1)	11	N/A	2021/09/17		Auto Calc
F1-BTEX (1)	20	N/A	2021/09/18		Auto Calc
Hexavalent Chromium (1, 3)	5	2021/09/15	2021/09/15	AB SOP-00063	SM 23 3500-Cr B m
CCME Hydrocarbons (F2-F4)+F3A/B in soil (1, 4)	12	2021/09/16	2021/09/17	AB SOP-00036	CCME PHC-CWS m
CCME Hydrocarbons (F2-F4 in soil) (1, 5)	2	2021/09/16	2021/09/17	AB SOP-00036	CCME PHC-CWS m
CCME Hydrocarbons (F2-F4 in soil) (1, 5)	17	2021/09/16	2021/09/18	AB SOP-00036	CCME PHC-CWS m
CCME Hydrocarbons (F2/F2+F3B) in soil (1, 6)	12	N/A	2021/09/17		Auto Calc
CCME Hydrocarbons (F4G in soil) (1, 5)	3	2021/09/16	2021/09/20	AB SOP-00036 AB SOP-00040	CCME PHC-CWS m
Elements by ICPMS - Soils (1)	5	2021/09/17	2021/09/17	AB SOP-00001 / AB SOP-00043	EPA 6020b R2 m
Moisture (1)	31	N/A	2021/09/17	AB SOP-00002	CCME PHC-CWS m
Nitrate-N (soluble) (1)	5	2021/09/14	2021/09/18		Auto Calc
Benzo[a]pyrene Equivalency (1)	5	N/A	2021/09/18		Auto Calc
PAH in Soil by GC/MS (1)	5	2021/09/16	2021/09/18	AB SOP-00036 / AB SOP-00003	EPA 3540C/8270E m
Soluble Ions (1)	5	2021/09/17	2021/09/19	AB SOP-00033 / AB SOP-00042	EPA 6010d R5 m
Soluble Paste (1)	5	2021/09/17	2021/09/17	AB SOP-00033	Carter 2nd ed 15.2 m
Soluble Boron Calculation (1)	5	N/A	2021/09/19		Auto Calc
Soluble Ions Calculation (1)	5	N/A	2021/09/28		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.



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. #: 644511-85-01, 644511-86-01, 644511-84-01, 644511-82-01

**Report Date: 2022/01/14**  
Report #: R3122013  
Version: 6 - Revision

**CERTIFICATE OF ANALYSIS – REVISED REPORT**

**BV LABS JOB #: C168138**

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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.

\* 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) 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.



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. #: 644511-85-01, 644511-86-01, 644511-84-01, 644511-82-01

**Report Date: 2022/01/14**  
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**CERTIFICATE OF ANALYSIS – REVISED REPORT**

**BV LABS JOB #: C168138**

**Received: 2021/09/10, 09:00**

Encryption Key



**AUTHORIZED REPORT  
RAPPORT AUTORISÉ**

Bureau Veritas

14 Jan 2022 16:29:38

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.



BUREAU  
VERITAS

Bureau Veritas Job #: C168138  
Report Date: 2022/01/14

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: PT

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

<b>Bureau Veritas ID</b>		AFW111	AFW111		AFW112			AFW113		
<b>Sampling Date</b>		2021/09/03 08:43	2021/09/03 08:43		2021/09/03 10:02			2021/09/03 10:30		
<b>COC Number</b>		644511-85-01	644511-85-01		644511-85-01			644511-85-01		
	<b>UNITS</b>	<b>TP21-183-02</b>	<b>TP21-183-02 Lab-Dup</b>	<b>RDL</b>	<b>TP21-183-04</b>	<b>RDL</b>	<b>QC Batch</b>	<b>TP21-184-02</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Ext. Pet. Hydrocarbon</b>										
F2 (C10-C16 Hydrocarbons)	mg/kg	N/A	N/A	N/A	N/A	10	A355312	<10	10	A355312
F3 (C16-C34 Hydrocarbons)	mg/kg	N/A	N/A	N/A	N/A	50	A355312	<50	50	A355312
F4 (C34-C50 Hydrocarbons)	mg/kg	N/A	N/A	N/A	N/A	50	A355312	<50	50	A355312
Reached Baseline at C50	mg/kg	N/A	N/A	N/A	N/A	N/A	A355312	Yes	N/A	A355312

<b>Physical Properties</b>										
Moisture	%	54	N/A	0.30	53	0.30	A355564	5.0	0.30	A355376

<b>Volatiles</b>										
Xylenes (Total)	mg/kg	<0.12	N/A	0.12	<0.094	0.094	A351423	<0.045	0.045	A351423
F1 (C6-C10) - BTEX	mg/kg	<24	N/A	24	<21	21	A351423	<10	10	A351423

<b>Field Preserved Volatiles</b>										
Benzene	mg/kg	<0.014 (1)	<0.014	0.014	<0.011 (1)	0.011	A353452	<0.0050	0.0050	A353452
Toluene	mg/kg	<0.080 (2)	<0.080	0.080	<0.11 (1)	0.11	A353452	<0.050	0.050	A353452
Ethylbenzene	mg/kg	<0.027 (1)	<0.027	0.027	<0.021 (1)	0.021	A353452	<0.010	0.010	A353452
m & p-Xylene	mg/kg	<0.11 (1)	<0.11	0.11	<0.084 (1)	0.084	A353452	<0.040	0.040	A353452
o-Xylene	mg/kg	<0.054 (1)	<0.054	0.054	<0.042 (1)	0.042	A353452	<0.020	0.020	A353452
F1 (C6-C10)	mg/kg	<24 (2)	<24	24	<21 (1)	21	A353452	<10	10	A353452

<b>Surrogate Recovery (%)</b>										
1,4-Difluorobenzene (sur.)	%	101	100	N/A	102	N/A	A353452	102	N/A	A353452
4-Bromofluorobenzene (sur.)	%	95	97	N/A	96	N/A	A353452	97	N/A	A353452
D10-o-Xylene (sur.)	%	100	102	N/A	111	N/A	A353452	102	N/A	A353452
D4-1,2-Dichloroethane (sur.)	%	101	101	N/A	102	N/A	A353452	103	N/A	A353452
O-TERPHENYL (sur.)	%	N/A	N/A	N/A	N/A	N/A	N/A	114	N/A	A355312

RDL = Reportable Detection Limit  
 Lab-Dup = Laboratory Initiated Duplicate  
 N/A = Not Applicable  
 (1) Detection limits raised based on sample weight used for analysis.  
 (2) Detection limits raised based on MDL and sample weight used for analysis.





BUREAU  
VERITAS

Bureau Veritas Job #: C168138  
Report Date: 2022/01/14

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: PT

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

Bureau Veritas ID		AFW114		AFW115	AFW116			AFW117		
Sampling Date		2021/09/03 10:35		2021/09/03 10:38	2021/09/03 08:49			2021/09/03 08:50		
COC Number		644511-85-01		644511-85-01	644511-85-01			644511-85-01		
	UNITS	TP21-184-04	RDL	TP21-184-05	TP21-185-02	RDL	QC Batch	TP21-185-03	RDL	QC Batch
<b>Ext. Pet. Hydrocarbon</b>										
F2 (C10-C16 Hydrocarbons)	mg/kg	N/A	10	N/A	<10	10	A355312	N/A	10	A355312
F3 (C16-C34 Hydrocarbons)	mg/kg	N/A	50	N/A	<50	50	A355312	N/A	50	A355312
F4 (C34-C50 Hydrocarbons)	mg/kg	N/A	50	N/A	<50	50	A355312	N/A	50	A355312
Reached Baseline at C50	mg/kg	N/A	N/A	N/A	Yes	N/A	A355312	N/A	N/A	A355312
<b>Physical Properties</b>										
Moisture	%	66	0.30	42	5.8	0.30	A355375	48	0.30	A355564
<b>Volatiles</b>										
Xylenes (Total)	mg/kg	<0.21	0.21	<0.045	<0.045	0.045	A351423	<0.12	0.12	A351423
F1 (C6-C10) - BTEX	mg/kg	<47	47	<10	<10	10	A351423	<24	24	A351423
<b>Field Preserved Volatiles</b>										
Benzene	mg/kg	0.044 (1)	0.024	0.018	<0.0050	0.0050	A353452	<0.013 (1)	0.013	A353452
Toluene	mg/kg	69 (1)	0.24	0.78	<0.050	0.050	A353452	<0.080 (2)	0.080	A353452
Ethylbenzene	mg/kg	<0.047 (1)	0.047	<0.010	<0.010	0.010	A353452	<0.026 (1)	0.026	A353452
m & p-Xylene	mg/kg	<0.19 (1)	0.19	<0.040	<0.040	0.040	A353452	<0.10 (1)	0.10	A353452
o-Xylene	mg/kg	<0.094 (1)	0.094	<0.020	<0.020	0.020	A353452	<0.052 (1)	0.052	A353452
F1 (C6-C10)	mg/kg	93 (1)	47	<10	<10	10	A353452	<24 (2)	24	A353452
<b>Surrogate Recovery (%)</b>										
1,4-Difluorobenzene (sur.)	%	99	N/A	101	100	N/A	A353452	102	N/A	A353452
4-Bromofluorobenzene (sur.)	%	96	N/A	98	97	N/A	A353452	96	N/A	A353452
D10-o-Xylene (sur.)	%	96	N/A	119	99	N/A	A353452	108	N/A	A353452
D4-1,2-Dichloroethane (sur.)	%	98	N/A	102	101	N/A	A353452	102	N/A	A353452
O-TERPHENYL (sur.)	%	N/A	N/A	N/A	116	N/A	A355312	N/A	N/A	N/A
RDL = Reportable Detection Limit N/A = Not Applicable (1) Detection limits raised based on sample weight used for analysis. (2) Detection limits raised based on MDL and sample weight used for analysis.										



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

<b>Bureau Veritas ID</b>		AFW117		AFW118		AFW119			AFW219		
<b>Sampling Date</b>		2021/09/03 08:50		2021/09/03 09:00		2021/09/03 08:52			2021/09/03 10:46		
<b>COC Number</b>		644511-85-01		644511-85-01		644511-85-01			644511-86-01		
	<b>UNITS</b>	<b>TP21-185-03 Lab-Dup</b>	<b>RDL</b>	<b>TP21-185-05</b>	<b>RDL</b>	<b>TP21-185-04</b>	<b>RDL</b>	<b>QC Batch</b>	<b>TP21-186-02</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Ext. Pet. Hydrocarbon</b>											
F2 (C10-C16 Hydrocarbons)	mg/kg	N/A	10	N/A	10	N/A	10	A355312	22	10	A355534
F3 (C16-C34 Hydrocarbons)	mg/kg	N/A	50	N/A	50	N/A	50	A355312	53	50	A355534
F4 (C34-C50 Hydrocarbons)	mg/kg	N/A	50	N/A	50	N/A	50	A355312	<50	50	A355534
Reached Baseline at C50	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	A355312	Yes	N/A	A355534

<b>Physical Properties</b>											
Moisture	%	51	0.30	57	0.30	67	0.30	A355564	8.1	0.30	A355564

<b>Volatiles</b>											
Xylenes (Total)	mg/kg	N/A	0.12	<0.10	0.10	<0.20	0.20	A351423	0.12	0.045	A351423
F1 (C6-C10) - BTEX	mg/kg	N/A	24	<23	23	<24	24	A351423	<10	10	A351423

<b>Field Preserved Volatiles</b>											
Benzene	mg/kg	N/A	0.013	<0.012 (1)	0.012	<0.022 (1)	0.022	A353452	<0.0050	0.0050	A353452
Toluene	mg/kg	N/A	0.080	2.2 (1)	0.12	<0.080 (2)	0.080	A353452	<0.050	0.050	A353452
Ethylbenzene	mg/kg	N/A	0.026	<0.023 (1)	0.023	<0.044 (1)	0.044	A353452	0.013	0.010	A353452
m & p-Xylene	mg/kg	N/A	0.10	<0.093 (1)	0.093	<0.18 (1)	0.18	A353452	0.082	0.040	A353452
o-Xylene	mg/kg	N/A	0.052	<0.046 (1)	0.046	<0.088 (1)	0.088	A353452	0.034	0.020	A353452
F1 (C6-C10)	mg/kg	N/A	24	<23 (1)	23	<24 (2)	24	A353452	<10	10	A353452

<b>Surrogate Recovery (%)</b>											
1,4-Difluorobenzene (sur.)	%	N/A	N/A	101	N/A	101	N/A	A353452	100	N/A	A353452
4-Bromofluorobenzene (sur.)	%	N/A	N/A	96	N/A	97	N/A	A353452	96	N/A	A353452
D10-o-Xylene (sur.)	%	N/A	N/A	118	N/A	106	N/A	A353452	91	N/A	A353452
D4-1,2-Dichloroethane (sur.)	%	N/A	N/A	101	N/A	102	N/A	A353452	102	N/A	A353452
O-TERPHENYL (sur.)	%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	98	N/A	A355534

RDL = Reportable Detection Limit  
 Lab-Dup = Laboratory Initiated Duplicate  
 N/A = Not Applicable  
 (1) Detection limits raised based on sample weight used for analysis.  
 (2) Detection limits raised based on MDL and sample weight used for analysis.



BUREAU  
VERITAS

Bureau Veritas Job #: C168138  
Report Date: 2022/01/14

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: PT

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

<b>Bureau Veritas ID</b>		AFW220	AFW221	AFW222	AFW223	AFW224	AFW226		
<b>Sampling Date</b>		2021/09/03 10:48	2021/09/03 10:50	2021/09/03 10:45	2021/09/03 13:48	2021/09/03 13:56	2021/09/03 13:57		
<b>COC Number</b>		644511-86-01	644511-86-01	644511-86-01	644511-86-01	644511-86-01	644511-86-01		
	<b>UNITS</b>	<b>TP21-186-04</b>	<b>TP21-186-06</b>	<b>TP21-186-01</b>	<b>TP21-159-06</b>	<b>TP21-160-05</b>	<b>TP21-160-06</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Ext. Pet. Hydrocarbon</b>									
F2 (C10-C16 Hydrocarbons)	mg/kg	N/A	<10	N/A	<10	N/A	96	10	A355534
F3 (C16-C34 Hydrocarbons)	mg/kg	N/A	<50	N/A	<50	N/A	110	50	A355534
F4 (C34-C50 Hydrocarbons)	mg/kg	N/A	<50	N/A	<50	N/A	<50	50	A355534
Reached Baseline at C50	mg/kg	N/A	Yes	N/A	Yes	N/A	Yes	N/A	A355534

<b>Physical Properties</b>									
Moisture	%	8.1	18	9.3	22	15	17	0.30	A355564

<b>Volatiles</b>									
Xylenes (Total)	mg/kg	<0.045	<0.045	<0.045	<0.045	1.8	0.13	0.045	A351423
F1 (C6-C10) - BTEX	mg/kg	<10	<10	<10	<10	150	34	10	A351423

<b>Field Preserved Volatiles</b>									
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0065	<0.0050	0.0050	A353452
Toluene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	A353452
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	<0.010	0.12	0.038	0.010	A353452
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	1.7	0.13	0.040	A353452
o-Xylene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.061	<0.020	0.020	A353452
F1 (C6-C10)	mg/kg	<10	<10	<10	<10	150	34	10	A353452

<b>Surrogate Recovery (%)</b>									
1,4-Difluorobenzene (sur.)	%	100	100	100	100	99	99	N/A	A353452
4-Bromofluorobenzene (sur.)	%	97	97	96	97	103	99	N/A	A353452
D10-o-Xylene (sur.)	%	100	111	100	114	118	108	N/A	A353452
D4-1,2-Dichloroethane (sur.)	%	101	102	101	100	101	102	N/A	A353452
O-TERPHENYL (sur.)	%	N/A	97	N/A	100	N/A	101	N/A	A355534

RDL = Reportable Detection Limit  
N/A = Not Applicable



BUREAU  
VERITAS

Bureau Veritas Job #: C168138  
Report Date: 2022/01/14

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: PT

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

Bureau Veritas ID		AFW227		AFW279		AFW280	AFW281		
Sampling Date		2021/09/03 13:58		2021/09/03 14:28		2021/09/03 14:29	2021/09/03 14:35		
COC Number		644511-86-01		644511-84-01		644511-84-01	644511-84-01		
	UNITS	TP21-160-07	RDL	TP21-187-02	RDL	TP21-187-04	TP21-187-06	RDL	QC Batch
<b>Ext. Pet. Hydrocarbon</b>									
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	10	110 (1)	26	<10	<10	10	A355534
F3 (C16-C34 Hydrocarbons)	mg/kg	<50	50	2900 (1)	130	<50	<50	50	A355534
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	50	920 (1)	130	<50	<50	50	A355534
Reached Baseline at C50	mg/kg	Yes	N/A	No	N/A	Yes	Yes	N/A	A355534
<b>Physical Properties</b>									
Moisture	%	16	0.30	62	0.30	9.9	18	0.30	A355564
<b>Volatiles</b>									
Xylenes (Total)	mg/kg	<0.045	0.045	<0.15	0.15	<0.045	<0.045	0.045	A351423
F1 (C6-C10) - BTEX	mg/kg	<10	10	<24	24	<10	<10	10	A351423
<b>Field Preserved Volatiles</b>									
Benzene	mg/kg	0.012	0.0050	<0.017 (2)	0.017	<0.0050	<0.0050	0.0050	A353452
Toluene	mg/kg	<0.050	0.050	<0.080 (3)	0.080	<0.050	<0.050	0.050	A353452
Ethylbenzene	mg/kg	0.032	0.010	<0.034 (2)	0.034	<0.010	<0.010	0.010	A353452
m & p-Xylene	mg/kg	<0.040	0.040	<0.13 (2)	0.13	<0.040	<0.040	0.040	A353452
o-Xylene	mg/kg	<0.020	0.020	<0.067 (2)	0.067	<0.020	<0.020	0.020	A353452
F1 (C6-C10)	mg/kg	<10	10	<24 (3)	24	<10	<10	10	A353452
<b>Surrogate Recovery (%)</b>									
1,4-Difluorobenzene (sur.)	%	100	N/A	100	N/A	102	100	N/A	A353452
4-Bromofluorobenzene (sur.)	%	97	N/A	98	N/A	97	97	N/A	A353452
D10-o-Xylene (sur.)	%	101	N/A	99	N/A	105	108	N/A	A353452
D4-1,2-Dichloroethane (sur.)	%	102	N/A	102	N/A	103	101	N/A	A353452
O-TERPHENYL (sur.)	%	96	N/A	94	N/A	98	97	N/A	A355534
RDL = Reportable Detection Limit N/A = Not Applicable (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.									



BUREAU  
VERITAS

Bureau Veritas Job #: C168138  
Report Date: 2022/01/14

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: PT

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

Bureau Veritas ID		AFW282	AFW283	AFW284		AFW285		
Sampling Date		2021/09/03 14:50	2021/09/03 14:52	2021/09/03 15:07		2021/09/03 15:08		
COC Number		644511-84-01	644511-84-01	644511-84-01		644511-84-01		
	UNITS	TP21-80-05	TP21-80-06	TP21-188-02	RDL	TP21-188-04	RDL	QC Batch
<b>Ext. Pet. Hydrocarbon</b>								
F2 (C10-C16 Hydrocarbons)	mg/kg	27	<10	N/A	10	N/A	10	A355534
F3 (C16-C34 Hydrocarbons)	mg/kg	72	<50	N/A	50	N/A	50	A355534
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	<50	N/A	50	N/A	50	A355534
Reached Baseline at C50	mg/kg	Yes	Yes	N/A	N/A	N/A	N/A	A355534
<b>Physical Properties</b>								
Moisture	%	11	20	49	0.30	49	0.30	A355564
<b>Volatiles</b>								
Xylenes (Total)	mg/kg	<0.045	<0.045	<0.045	0.045	<0.12	0.12	A351423
F1 (C6-C10) - BTEX	mg/kg	<10	<10	<10	10	<24	24	A351423
<b>Field Preserved Volatiles</b>								
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	<0.013 (1)	0.013	A353455
Toluene	mg/kg	<0.050	<0.050	<0.050	0.050	<0.080 (2)	0.080	A353455
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	0.010	<0.026 (1)	0.026	A353455
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	0.040	<0.10 (1)	0.10	A353455
o-Xylene	mg/kg	<0.020	<0.020	<0.020	0.020	<0.051 (1)	0.051	A353455
F1 (C6-C10)	mg/kg	<10	<10	<10	10	<24 (2)	24	A353455
<b>Surrogate Recovery (%)</b>								
1,4-Difluorobenzene (sur.)	%	101	99	101	N/A	101	N/A	A353455
4-Bromofluorobenzene (sur.)	%	98	97	96	N/A	95	N/A	A353455
D10-o-Xylene (sur.)	%	103	101	126	N/A	107	N/A	A353455
D4-1,2-Dichloroethane (sur.)	%	103	102	102	N/A	103	N/A	A353455
O-TERPHENYL (sur.)	%	95	94	N/A	N/A	N/A	N/A	A355534
RDL = Reportable Detection Limit N/A = Not Applicable (1) Detection limits raised based on sample weight used for analysis. (2) Detection limits raised based on MDL and sample weight used for analysis.								



BUREAU  
VERITAS

Bureau Veritas Job #: C168138  
Report Date: 2022/01/14

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: PT

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

Bureau Veritas ID		AFW286		AFW287		AFW342	AFW343		
Sampling Date		2021/09/03 15:13		2021/09/03 14:28		2021/09/03 16:04	2021/09/03 16:05		
COC Number		644511-84-01		644511-84-01		644511-82-01	644511-82-01		
	UNITS	TP21-188-06	QC Batch	TP21-187-03	QC Batch	TP21-189-01	TP21-189-03	RDL	QC Batch
<b>Ext. Pet. Hydrocarbon</b>									
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	A355625	34	A355625	170	6900	10	A355623
F3 (C16-C34 Hydrocarbons)	mg/kg	<50	A355625	790	A355625	160	4500	50	A355623
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	A355625	320	A355625	54	1900	50	A355623
Reached Baseline at C50	mg/kg	Yes	A355625	No	A355625	Yes	Yes	N/A	A355623
<b>Physical Properties</b>									
Moisture	%	14	A355626	25	A355626	12	13	0.30	A355624
<b>Volatiles</b>									
Xylenes (Total)	mg/kg	<0.045	A351423	<0.045	A351571	<0.045	1.7	0.045	A351571
F1 (C6-C10) - BTEX	mg/kg	<10	A351423	<10	A351571	28	290	10	A351571
<b>Field Preserved Volatiles</b>									
Benzene	mg/kg	<0.0050	A353455	<0.0050	A353455	<0.0050	0.23	0.0050	A353455
Toluene	mg/kg	<0.050	A353455	<0.050	A353455	<0.050	1.5	0.050	A353455
Ethylbenzene	mg/kg	<0.010	A353455	<0.010	A353455	<0.010	0.39	0.010	A353455
m & p-Xylene	mg/kg	<0.040	A353455	<0.040	A353455	<0.040	1.3	0.040	A353455
o-Xylene	mg/kg	<0.020	A353455	<0.020	A353455	<0.020	0.33	0.020	A353455
F1 (C6-C10)	mg/kg	<10	A353455	<10	A353455	28	290	10	A353455
<b>Surrogate Recovery (%)</b>									
1,4-Difluorobenzene (sur.)	%	100	A353455	102	A353455	102	100	N/A	A353455
4-Bromofluorobenzene (sur.)	%	99	A353455	98	A353455	96	109	N/A	A353455
D10-o-Xylene (sur.)	%	98	A353455	109	A353455	99	120	N/A	A353455
D4-1,2-Dichloroethane (sur.)	%	102	A353455	101	A353455	102	104	N/A	A353455
O-TERPHENYL (sur.)	%	97	A355625	96	A355625	78	96	N/A	A355623
RDL = Reportable Detection Limit N/A = Not Applicable									



BUREAU  
VERITAS

Bureau Veritas Job #: C168138  
Report Date: 2022/01/14

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: PT

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

Bureau Veritas ID		AFW344	AFW345		AFW346		
Sampling Date		2021/09/03 16:06	2021/09/03 16:07		2021/09/03 16:08		
COC Number		644511-82-01	644511-82-01		644511-82-01		
	UNITS	TP21-189-05	TP21-189-06	QC Batch	TP21-189-08	RDL	QC Batch
<b>Ext. Pet. Hydrocarbon</b>							
F2 (C10-C16 Hydrocarbons)	mg/kg	3100	3800	A355623	4100	10	A355623
F3 (C16-C34 Hydrocarbons)	mg/kg	340	770	A355623	740	50	A355623
F4 (C34-C50 Hydrocarbons)	mg/kg	79	240	A355623	230	50	A355623
Reached Baseline at C50	mg/kg	Yes	Yes	A355623	Yes	N/A	A355623
<b>Physical Properties</b>							
Moisture	%	3.1	3.8	A355624	8.3	0.30	A355626
<b>Volatiles</b>							
Xylenes (Total)	mg/kg	17	13	A351571	1.3	0.045	A351571
F1 (C6-C10) - BTEX	mg/kg	1600	1900	A351571	1200	10	A351571
<b>Field Preserved Volatiles</b>							
Benzene	mg/kg	0.088 (1)	0.039 (1)	A353455	0.026 (1)	0.0050	A353455
Toluene	mg/kg	0.39	0.17	A353455	0.063	0.050	A353455
Ethylbenzene	mg/kg	1.4	1.7	A353455	0.26	0.010	A353455
m & p-Xylene	mg/kg	8.7	4.8	A353455	0.43	0.040	A353455
o-Xylene	mg/kg	7.9	8.3	A353455	0.86	0.020	A353455
F1 (C6-C10)	mg/kg	1700	1900	A353455	1200	10	A353455
<b>Surrogate Recovery (%)</b>							
1,4-Difluorobenzene (sur.)	%	95	98	A353455	97	N/A	A353455
4-Bromofluorobenzene (sur.)	%	108	95	A353455	NC (2)	N/A	A353455
D10-o-Xylene (sur.)	%	131	172 (3)	A353455	NC (2)	N/A	A353455
D4-1,2-Dichloroethane (sur.)	%	114	119	A353455	115	N/A	A353455
O-TERPHENYL (sur.)	%	85	80	A355623	90	N/A	A355623
RDL = Reportable Detection Limit N/A = Not Applicable (1) Qualifying ion outside of acceptance criteria. Results are tentatively identified and potentially biased high. (2) Surrogate recovery non calculable due to matrix interference. (3) O-Xylene-d10 recovery biased due to high level of native hydrocarbon present in sample.							





BUREAU VERITAS

Bureau Veritas Job #: C168138  
Report Date: 2022/01/14

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: PT

**AT1 REGULATED METALS - SOILS (SOIL)**

Bureau Veritas ID		AFW342		AFW343		AFW344		AFW345			
Sampling Date		2021/09/03 16:04		2021/09/03 16:05		2021/09/03 16:06		2021/09/03 16:07			
COC Number		644511-82-01		644511-82-01		644511-82-01		644511-82-01			
		UNITS	TP21-189-01	RDL	TP21-189-03	RDL	TP21-189-05	RDL	TP21-189-06	RDL	QC Batch
<b>Calculated Parameters</b>											
Calculated Boron (B)	mg/kg	0.14	0.050	0.21	0.037	0.054	0.029	<0.030	0.030	A350655	
<b>Elements</b>											
Hex. Chromium (Cr 6+)	mg/kg	<0.080	0.080	<0.080	0.080	<0.080	0.080	<0.080	0.080	A353165	
<b>Soluble Parameters</b>											
Soluble Boron (B)	mg/L	0.29	0.10	0.56	0.10	0.18	0.10	<0.10	0.10	A357683	
Saturation %	%	50	N/A	37	N/A	29	N/A	30	N/A	A354884	
Soluble Sulphate (SO4)	mg/L	200	5.0	480	5.0	330	5.0	25	5.0	A357683	
<b>Elements</b>											
Total Antimony (Sb)	mg/kg	<0.50	0.50	11	0.50	<0.50	0.50	<0.50	0.50	A355882	
Total Arsenic (As)	mg/kg	5.3	1.0	9.1	1.0	6.1	1.0	6.8	1.0	A355882	
Total Barium (Ba)	mg/kg	2300	1.0	1700	1.0	460	1.0	90	1.0	A355882	
Total Beryllium (Be)	mg/kg	<0.40	0.40	<0.40	0.40	<0.40	0.40	<0.40	0.40	A355882	
Total Cadmium (Cd)	mg/kg	0.24	0.050	14	0.050	0.37	0.050	0.086	0.050	A355882	
Total Chromium (Cr)	mg/kg	110	1.0	82	1.0	6.4	1.0	5.3	1.0	A355882	
Total Cobalt (Co)	mg/kg	5.3	0.50	5.3	0.50	3.7	0.50	3.8	0.50	A355882	
Total Copper (Cu)	mg/kg	12	1.0	540	1.0	22	1.0	5.0	1.0	A355882	
Total Lead (Pb)	mg/kg	14	0.50	1100	13	12	0.50	5.0	0.50	A355882	
Total Mercury (Hg)	mg/kg	0.054	0.050	0.43	0.050	<0.050	0.050	<0.050	0.050	A355882	
Total Molybdenum (Mo)	mg/kg	2.9	0.40	3.4	0.40	0.55	0.40	0.55	0.40	A355882	
Total Nickel (Ni)	mg/kg	54	1.0	41	1.0	8.8	1.0	9.3	1.0	A355882	
Total Selenium (Se)	mg/kg	<0.50	0.50	<0.50	0.50	<0.50	0.50	<0.50	0.50	A355882	
Total Silver (Ag)	mg/kg	<0.20	0.20	<0.20	0.20	<0.20	0.20	<0.20	0.20	A355882	
Total Thallium (Tl)	mg/kg	<0.10	0.10	<0.10	0.10	<0.10	0.10	<0.10	0.10	A355882	
Total Tin (Sn)	mg/kg	<1.0	1.0	9.1	1.0	<1.0	1.0	<1.0	1.0	A355882	
Total Uranium (U)	mg/kg	0.45	0.20	0.41	0.20	0.28	0.20	0.24	0.20	A355882	
Total Vanadium (V)	mg/kg	12	1.0	16	1.0	12	1.0	12	1.0	A355882	
Total Zinc (Zn)	mg/kg	61	10	690	10	54	10	26	10	A355882	
RDL = Reportable Detection Limit N/A = Not Applicable											



**AT1 REGULATED METALS - SOILS (SOIL)**

<b>Bureau Veritas ID</b>		AFW346		
<b>Sampling Date</b>		2021/09/03 16:08		
<b>COC Number</b>		644511-82-01		
	<b>UNITS</b>	<b>TP21-189-08</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Calculated Parameters</b>				
Calculated Boron (B)	mg/kg	<0.031	0.031	A350655
<b>Elements</b>				
Hex. Chromium (Cr 6+)	mg/kg	<0.080	0.080	A353165
<b>Soluble Parameters</b>				
Soluble Boron (B)	mg/L	<0.10	0.10	A357683
Saturation %	%	31	N/A	A354884
Soluble Sulphate (SO4)	mg/L	31	5.0	A357683
<b>Elements</b>				
Total Antimony (Sb)	mg/kg	<0.50	0.50	A355882
Total Arsenic (As)	mg/kg	5.3	1.0	A355882
Total Barium (Ba)	mg/kg	85	1.0	A355882
Total Beryllium (Be)	mg/kg	<0.40	0.40	A355882
Total Cadmium (Cd)	mg/kg	0.090	0.050	A355882
Total Chromium (Cr)	mg/kg	5.6	1.0	A355882
Total Cobalt (Co)	mg/kg	3.4	0.50	A355882
Total Copper (Cu)	mg/kg	4.8	1.0	A355882
Total Lead (Pb)	mg/kg	4.4	0.50	A355882
Total Mercury (Hg)	mg/kg	<0.050	0.050	A355882
Total Molybdenum (Mo)	mg/kg	<0.40	0.40	A355882
Total Nickel (Ni)	mg/kg	9.1	1.0	A355882
Total Selenium (Se)	mg/kg	<0.50	0.50	A355882
Total Silver (Ag)	mg/kg	<0.20	0.20	A355882
Total Thallium (Tl)	mg/kg	<0.10	0.10	A355882
Total Tin (Sn)	mg/kg	<1.0	1.0	A355882
Total Uranium (U)	mg/kg	0.36	0.20	A355882
Total Vanadium (V)	mg/kg	12	1.0	A355882
Total Zinc (Zn)	mg/kg	27	10	A355882
RDL = Reportable Detection Limit N/A = Not Applicable				



BUREAU  
VERITAS

Bureau Veritas Job #: C168138  
Report Date: 2022/01/14

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: PT

### RESULTS OF CHEMICAL ANALYSES OF SOIL

<b>Bureau Veritas ID</b>		AFW342		AFW343			AFW344		
<b>Sampling Date</b>		2021/09/03 16:04		2021/09/03 16:05			2021/09/03 16:06		
<b>COC Number</b>		644511-82-01		644511-82-01			644511-82-01		
	<b>UNITS</b>	<b>TP21-189-01</b>	<b>RDL</b>	<b>TP21-189-03</b>	<b>RDL</b>	<b>QC Batch</b>	<b>TP21-189-05</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Calculated Parameters</b>									
Soluble Nitrate (N)	mg/L	<0.20	0.20	<0.20	0.20	A351579	<0.20	0.20	A351579
Calculated Calcium (Ca)	mg/kg	45	0.75	130	0.56	A368052	47	0.44	A368767
Calculated Magnesium (Mg)	mg/kg	12	0.50	7.0	0.37	A368052	5.1	0.29	A368767
Calculated Sodium (Na)	mg/kg	10	1.2	12	0.93	A368052	3.8	0.73	A368767
Calculated Potassium (K)	mg/kg	6.4	0.65	9.8	0.48	A368052	5.0	0.38	A368767
Calculated Boron (B)	mg/kg	0.14	0.050	0.21	0.037	A368052	0.054	0.029	A368767
Calculated Sulphate (SO4)	mg/kg	100	2.5	180	1.9	A368052	96	1.5	A368767
Calculated Nitrate (N)	mg/kg	<0.099	0.099	<0.074	0.074	A368052	<0.059	0.059	A368767
Calculated Nitrite (N)	mg/kg	<0.099	0.099	<0.074	0.074	A368052	<0.059	0.059	A368767
Calculated Total Nitrogen (N)	mg/kg	CALCERROR	N/A	CALCERROR	N/A	A368052	CALCERROR	N/A	A368767

RDL = Reportable Detection Limit  
N/A = Not Applicable

<b>Bureau Veritas ID</b>		AFW345		AFW346		
<b>Sampling Date</b>		2021/09/03 16:07		2021/09/03 16:08		
<b>COC Number</b>		644511-82-01		644511-82-01		
	<b>UNITS</b>	<b>TP21-189-06</b>	<b>RDL</b>	<b>TP21-189-08</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Calculated Parameters</b>						
Soluble Nitrate (N)	mg/L	<0.20	0.20	<0.20	0.20	A351579
Calculated Calcium (Ca)	mg/kg	9.0	0.45	13	0.46	A368767
Calculated Magnesium (Mg)	mg/kg	2.7	0.30	1.4	0.31	A368767
Calculated Sodium (Na)	mg/kg	3.4	0.76	4.6	0.76	A368767
Calculated Potassium (K)	mg/kg	1.2	0.39	0.81	0.40	A368767
Calculated Boron (B)	mg/kg	<0.030	0.030	<0.031	0.031	A368767
Calculated Sulphate (SO4)	mg/kg	7.7	1.5	9.5	1.5	A368767
Calculated Nitrate (N)	mg/kg	<0.061	0.061	<0.061	0.061	A368767
Calculated Nitrite (N)	mg/kg	<0.061	0.061	<0.061	0.061	A368767
Calculated Total Nitrogen (N)	mg/kg	CALCERROR	N/A	CALCERROR	N/A	A368767

RDL = Reportable Detection Limit  
N/A = Not Applicable



**PETROLEUM HYDROCARBONS (CCME)**

Bureau Veritas ID		AFW111			AFW112			AFW114		
Sampling Date		2021/09/03 08:43			2021/09/03 10:02			2021/09/03 10:35		
COC Number		644511-85-01			644511-85-01			644511-85-01		
	UNITS	TP21-183-02	RDL	QC Batch	TP21-183-04	RDL	QC Batch	TP21-184-04	RDL	QC Batch
<b>Ext. Pet. Hydrocarbon</b>										
F2 (C10-C16 Hydrocarbons)	mg/kg	110 (1)	22	A355591	21 (1)	21	A355591	570 (1)	29	A350635
F3 (C16-C34 Hydrocarbons)	mg/kg	1300	150	A351574	340	150	A351575	9800	210	A351574
F3A (C16-C22)	mg/kg	140 (1)	110	A355591	<110 (1)	110	A355591	1100 (1)	150	A350635
F3B (C22-C34)	mg/kg	1200 (1)	110	A355591	340 (1)	110	A355591	8600 (1)	150	A350635
F2% (BIC)	mg/kg	8.8	N/A	A351574	5.9	N/A	A351575	6.2	N/A	A351574
F4 (C34-C50 Hydrocarbons)	mg/kg	480 (1)	110	A355591	140 (1)	110	A355591	3800 (1)	150	A350635
Reached Baseline at C50	mg/kg	Yes	N/A	A355591	Yes	N/A	A355591	No	N/A	A350635
F4G-SG (Heavy Hydrocarbons-Grav.)	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	24000 (2)	1400	A358672
<b>Surrogate Recovery (%)</b>										
O-TERPHENYL (sur.)	%	94	N/A	A355591	101	N/A	A355591	133	N/A	A350635
RDL = Reportable Detection Limit N/A = Not Applicable (1) Detection limits raised due to high moisture content, sample contains => 50% moisture. (2) Detection limits raised due to high moisture content, samples contain => 50% moisture.										

Bureau Veritas ID		AFW115			AFW117			AFW118			AFW119	
Sampling Date		2021/09/03 10:38			2021/09/03 08:50			2021/09/03 09:00			2021/09/03 08:52	
COC Number		644511-85-01			644511-85-01			644511-85-01			644511-85-01	
	UNITS	TP21-184-05	QC Batch	TP21-185-03	RDL	TP21-185-05	RDL	TP21-185-04	RDL	QC Batch		
<b>Ext. Pet. Hydrocarbon</b>												
F2 (C10-C16 Hydrocarbons)	mg/kg	23	A350635	25	10	<23 (1)	23	<30 (1)	30	A355591		
F3 (C16-C34 Hydrocarbons)	mg/kg	410	A351575	250	71	<160	160	210	210	A351575		
F3A (C16-C22)	mg/kg	62	A350635	<50	50	<120 (1)	120	<150 (1)	150	A355591		
F3B (C22-C34)	mg/kg	340	A350635	250	50	<120 (1)	120	210 (1)	150	A355591		
F2% (BIC)	mg/kg	6.3	A351575	NC	N/A	NC	N/A	NC	N/A	A351575		
F4 (C34-C50 Hydrocarbons)	mg/kg	120	A350635	67	50	<120 (1)	120	<150 (1)	150	A355591		
Reached Baseline at C50	mg/kg	Yes	A350635	Yes	N/A	Yes	N/A	Yes	N/A	A355591		
<b>Surrogate Recovery (%)</b>												
O-TERPHENYL (sur.)	%	135	A350635	99	N/A	102	N/A	96	N/A	A355591		
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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Bureau Veritas Job #: C168138  
Report Date: 2022/01/14

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: PT

**PETROLEUM HYDROCARBONS (CCME)**

Bureau Veritas ID		AFW220	AFW222	AFW224	AFW279	AFW284		
Sampling Date		2021/09/03 10:48	2021/09/03 10:45	2021/09/03 13:56	2021/09/03 14:28	2021/09/03 15:07		
COC Number		644511-86-01	644511-86-01	644511-86-01	644511-84-01	644511-84-01		
	<b>UNITS</b>	<b>TP21-186-04</b>	<b>TP21-186-01</b>	<b>TP21-160-05</b>	<b>TP21-187-02</b>	<b>TP21-188-02</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Ext. Pet. Hydrocarbon</b>								
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	30	12	N/A	2200 (1)	10	A355591
F3 (C16-C34 Hydrocarbons)	mg/kg	<71	<71	<71	N/A	950	71	A351575
F3A (C16-C22)	mg/kg	<50	<50	<50	N/A	250	50	A355591
F3B (C22-C34)	mg/kg	<50	<50	<50	N/A	700	50	A355591
F2% (BIC)	mg/kg	NC	NC	NC	N/A	NC	N/A	A351575
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	<50	<50	N/A	190	50	A355591
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	N/A	Yes	N/A	A355591
F4G-SG (Heavy Hydrocarbons-Grav.)	mg/kg	N/A	N/A	N/A	10000 (2)	N/A	1200	A358672
<b>Surrogate Recovery (%)</b>								
O-TERPHENYL (sur.)	%	93	93	96	N/A	96	N/A	A355591
RDL = Reportable Detection Limit N/A = Not Applicable (1) Duplicate exceeds acceptance criteria due to sample non homogeneity. Reanalysis yields similar results. (2) Detection limits raised due to high moisture content, samples contain => 50% moisture.								



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Territories  
Your P.O. #: 20368099-7000-1001  
Sampler Initials: PT

### PETROLEUM HYDROCARBONS (CCME)

Bureau Veritas ID		AFW284	AFW285		AFW287		
Sampling Date		2021/09/03 15:07	2021/09/03 15:08		2021/09/03 14:28		
COC Number		644511-84-01	644511-84-01		644511-84-01		
	UNITS	TP21-188-02 Lab-Dup	TP21-188-04	RDL	TP21-187-03	RDL	QC Batch
<b>Ext. Pet. Hydrocarbon</b>							
F2 (C10-C16 Hydrocarbons)	mg/kg	1200 (1)	260	10	N/A	10	A355591
F3 (C16-C34 Hydrocarbons)	mg/kg	N/A	410	71	N/A	71	A351575
F3A (C16-C22)	mg/kg	230	160	50	N/A	50	A355591
F3B (C22-C34)	mg/kg	840	240	50	N/A	50	A355591
F2% (BIC)	mg/kg	N/A	52	N/A	N/A	N/A	A351575
F4 (C34-C50 Hydrocarbons)	mg/kg	230	96	50	N/A	50	A355591
Reached Baseline at C50	mg/kg	Yes	Yes	N/A	N/A	N/A	A355591
F4G-SG (Heavy Hydrocarbons-Grav.)	mg/kg	N/A	N/A	1200	2200	500	A358672
<b>Surrogate Recovery (%)</b>							
O-TERPHENYL (sur.)	%	105	94	N/A	N/A	N/A	A355591
RDL = Reportable Detection Limit Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable (1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.							



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Territories  
Your P.O. #: 20368099-7000-1001  
Sampler Initials: PT

### SEMIVOLATILE ORGANICS BY GC-MS (SOIL)

Bureau Veritas ID		AFW342		AFW343		AFW344		AFW345		
Sampling Date		2021/09/03 16:04		2021/09/03 16:05		2021/09/03 16:06		2021/09/03 16:07		
COC Number		644511-82-01		644511-82-01		644511-82-01		644511-82-01		
	UNITS	TP21-189-01	RDL	TP21-189-03	RDL	TP21-189-05	RDL	TP21-189-06	RDL	QC Batch

Polycyclic Aromatics										
Acenaphthene	mg/kg	<0.0050	0.0050	<0.050 (1)	0.050	0.15 (2)	0.0050	0.25 (2)	0.0050	A355621
B[a]P TPE Total Potency Equivalents	mg/kg	<0.0071	0.0071	<0.071	0.071	<0.0071	0.0071	<0.0071	0.0071	A351203
Acenaphthylene	mg/kg	<0.0050	0.0050	0.12 (1)	0.050	0.048 (2)	0.0050	0.071 (2)	0.0050	A355621
Acridine	mg/kg	<0.010	0.010	0.54 (1)	0.10	0.052	0.010	0.13	0.010	A355621
Anthracene	mg/kg	<0.0040	0.0040	0.088 (1)	0.040	0.012	0.0040	0.026	0.0040	A355621
Benzo(a)anthracene	mg/kg	<0.0050	0.0050	<0.050 (1)	0.050	<0.0050	0.0050	<0.0050	0.0050	A355621
Benzo(b&j)fluoranthene	mg/kg	<0.0050	0.0050	<0.050 (1)	0.050	<0.0050	0.0050	<0.0050	0.0050	A355621
Benzo(k)fluoranthene	mg/kg	<0.0050	0.0050	<0.050 (1)	0.050	<0.0050	0.0050	<0.0050	0.0050	A355621
Benzo(g,h,i)perylene	mg/kg	<0.0050	0.0050	<0.050 (1)	0.050	<0.0050	0.0050	<0.0050	0.0050	A355621
Benzo(c)phenanthrene	mg/kg	<0.0050	0.0050	<0.050 (1)	0.050	<0.0050	0.0050	<0.0050	0.0050	A355621
Benzo(a)pyrene	mg/kg	<0.0050	0.0050	<0.050 (1)	0.050	<0.0050	0.0050	<0.0050	0.0050	A355621
Benzo(e)pyrene	mg/kg	<0.0050	0.0050	<0.050 (1)	0.050	<0.0050	0.0050	<0.0050	0.0050	A355621
Chrysene	mg/kg	<0.0050	0.0050	<0.050 (1)	0.050	<0.0050	0.0050	<0.0050	0.0050	A355621
Dibenz(a,h)anthracene	mg/kg	<0.0050	0.0050	<0.050 (1)	0.050	<0.0050	0.0050	<0.0050	0.0050	A355621
Fluoranthene	mg/kg	<0.0050	0.0050	0.086 (1)	0.050	0.0072	0.0050	0.0097	0.0050	A355621
Fluorene	mg/kg	0.0071	0.0050	0.32 (1)	0.050	0.27	0.0050	0.42	0.0050	A355621
Indeno(1,2,3-cd)pyrene	mg/kg	<0.0050	0.0050	<0.050 (1)	0.050	<0.0050	0.0050	<0.0050	0.0050	A355621
1-Methylnaphthalene	mg/kg	0.016	0.0050	1.1 (1)	0.050	4.3	0.0050	6.7	0.050	A355621
2-Methylnaphthalene	mg/kg	0.012	0.0050	0.88 (1)	0.050	9.1	0.050	10	0.050	A355621
Naphthalene	mg/kg	0.0090	0.0050	0.79 (1)	0.050	3.7	0.0050	2.4	0.0050	A355621
Phenanthrene	mg/kg	<0.0050	0.0050	0.30 (1)	0.050	0.15	0.0050	0.39	0.0050	A355621
Perylene	mg/kg	<0.0050	0.0050	<0.050 (1)	0.050	<0.0050	0.0050	<0.0050	0.0050	A355621
Pyrene	mg/kg	<0.0050	0.0050	0.52 (1)	0.050	0.018	0.0050	0.024	0.0050	A355621
Quinoline	mg/kg	<0.010	0.010	NC (3)	0.10	<0.010	0.010	<0.010	0.010	A355621

RDL = Reportable Detection Limit

- (1) Detection limits raised due to dilution as a result of sample matrix interference.
- (2) Qualifying ion outside of acceptance criteria. Results are tentatively identified and potentially biased high.
- (3) Quinoline not calculated due to required dilution caused by sample matrix. Detection limits raised due to dilution as a result of sample matrix interference.





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Your P.O. #: 20368099-7000-1001  
Sampler Initials: PT

### SEMIVOLATILE ORGANICS BY GC-MS (SOIL)

Bureau Veritas ID		AFW342		AFW343		AFW344		AFW345		
Sampling Date		2021/09/03 16:04		2021/09/03 16:05		2021/09/03 16:06		2021/09/03 16:07		
COC Number		644511-82-01		644511-82-01		644511-82-01		644511-82-01		
	UNITS	TP21-189-01	RDL	TP21-189-03	RDL	TP21-189-05	RDL	TP21-189-06	RDL	QC Batch
<b>Surrogate Recovery (%)</b>										
D10-ANTHRACENE (sur.)	%	86	N/A	113	N/A	86	N/A	87	N/A	A355621
D8-ACENAPHTHYLENE (sur.)	%	76	N/A	105	N/A	76	N/A	78	N/A	A355621
D8-NAPHTHALENE (sur.)	%	69	N/A	98	N/A	58	N/A	60	N/A	A355621
TERPHENYL-D14 (sur.)	%	90	N/A	116	N/A	88	N/A	92	N/A	A355621
RDL = Reportable Detection Limit N/A = Not Applicable										



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Territories  
Your P.O. #: 20368099-7000-1001  
Sampler Initials: PT

### SEMIVOLATILE ORGANICS BY GC-MS (SOIL)

Bureau Veritas ID		AFW346		
Sampling Date		2021/09/03 16:08		
COC Number		644511-82-01		
	UNITS	TP21-189-08	RDL	QC Batch
<b>Polycyclic Aromatics</b>				
Acenaphthene	mg/kg	0.17 (1)	0.0050	A355621
B[a]P TPE Total Potency Equivalents	mg/kg	<0.0071	0.0071	A351203
Acenaphthylene	mg/kg	0.063 (1)	0.0050	A355621
Acridine	mg/kg	0.13	0.010	A355621
Anthracene	mg/kg	0.024	0.0040	A355621
Benzo(a)anthracene	mg/kg	<0.0050	0.0050	A355621
Benzo(b&j)fluoranthene	mg/kg	<0.0050	0.0050	A355621
Benzo(k)fluoranthene	mg/kg	<0.0050	0.0050	A355621
Benzo(g,h,i)perylene	mg/kg	<0.0050	0.0050	A355621
Benzo(c)phenanthrene	mg/kg	<0.0050	0.0050	A355621
Benzo(a)pyrene	mg/kg	<0.0050	0.0050	A355621
Benzo(e)pyrene	mg/kg	<0.0050	0.0050	A355621
Chrysene	mg/kg	<0.0050	0.0050	A355621
Dibenz(a,h)anthracene	mg/kg	<0.0050	0.0050	A355621
Fluoranthene	mg/kg	0.0068	0.0050	A355621
Fluorene	mg/kg	0.29	0.0050	A355621
Indeno(1,2,3-cd)pyrene	mg/kg	<0.0050	0.0050	A355621
1-Methylnaphthalene	mg/kg	0.39 (1)	0.0050	A355621
2-Methylnaphthalene	mg/kg	0.38	0.0050	A355621
Naphthalene	mg/kg	0.29	0.0050	A355621
Phenanthrene	mg/kg	0.28	0.0050	A355621
Perylene	mg/kg	<0.0050	0.0050	A355621
Pyrene	mg/kg	0.018	0.0050	A355621
Quinoline	mg/kg	<0.010	0.010	A355621
<b>Surrogate Recovery (%)</b>				
D10-ANTHRACENE (sur.)	%	91	N/A	A355621
D8-ACENAPHTHYLENE (sur.)	%	80	N/A	A355621
RDL = Reportable Detection Limit N/A = Not Applicable (1) Qualifying ion outside of acceptance criteria. Results are tentatively identified and potentially biased high.				



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GOLDER ASSOCIATES LTD.  
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Territories  
Your P.O. #: 20368099-7000-1001  
Sampler Initials: PT

**SEMIVOLATILE ORGANICS BY GC-MS (SOIL)**

<b>Bureau Veritas ID</b>		AFW346		
<b>Sampling Date</b>		2021/09/03 16:08		
<b>COC Number</b>		644511-82-01		
	<b>UNITS</b>	<b>TP21-189-08</b>	<b>RDL</b>	<b>QC Batch</b>
D8-NAPHTHALENE (sur.)	%	62	N/A	A355621
TERPHENYL-D14 (sur.)	%	97	N/A	A355621
RDL = Reportable Detection Limit N/A = Not Applicable				



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Sampler Initials: PT

### ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

<b>Bureau Veritas ID</b>		AFW342	AFW343	AFW344	AFW345	AFW346		
<b>Sampling Date</b>		2021/09/03 16:04	2021/09/03 16:05	2021/09/03 16:06	2021/09/03 16:07	2021/09/03 16:08		
<b>COC Number</b>		644511-82-01	644511-82-01	644511-82-01	644511-82-01	644511-82-01		
	<b>UNITS</b>	<b>TP21-189-01</b>	<b>TP21-189-03</b>	<b>TP21-189-05</b>	<b>TP21-189-06</b>	<b>TP21-189-08</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Elements</b>								
Total Fusion Barium (Ba)	mg/kg	6600	5300	910	760	550	50	A358665
RDL = Reportable Detection Limit								



### GENERAL COMMENTS

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

Package 1	4.3°C
Package 2	5.3°C
Package 3	5.7°C
Package 4	3.0°C
Package 5	3.3°C
Package 6	3.3°C
Package 7	1.7°C
Package 8	2.3°C

Version #3: Report reissued to amend reporting unit for SO4 & NO3 in mg/kg as per client request.

Version #4: Report reissued to include Chromatogram on sample TP21-184-05/AFW115 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.

Version #5: Report reissued with updated BIC calculation data for sample AFW114 & AFW115 due to calculation error.

Version #6: Report reissued to include Chromatogram interpretation letter on sample TP21-184-05/AFW115 as per client request received 2022/1/12.

Sample AFW115 [TP21-184-05] : 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.

**Results relate only to the items tested.**



BUREAU VERITAS

Bureau Veritas Job #: C168138  
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Sampler Initials: PT

### QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
A350635	ECO	Matrix Spike	O-TERPHENYL (sur.)	2021/09/16		96	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/09/16		97	%	60 - 140
			F3A (C16-C22)	2021/09/16		110	%	60 - 140
			F3B (C22-C34)	2021/09/16		112	%	60 - 140
A350635	ECO	Spiked Blank	F4 (C34-C50 Hydrocarbons)	2021/09/16		102	%	60 - 140
			O-TERPHENYL (sur.)	2021/09/16		105	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/09/16		104	%	60 - 140
			F3A (C16-C22)	2021/09/16		109	%	60 - 140
A350635	ECO	Method Blank	F3B (C22-C34)	2021/09/16		105	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/09/16		106	%	60 - 140
			O-TERPHENYL (sur.)	2021/09/16		111	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/09/16	<10		mg/kg	
A350635	ECO	RPD	F3A (C16-C22)	2021/09/16	<50		mg/kg	
			F3B (C22-C34)	2021/09/16	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2021/09/16	<50		mg/kg	
			F2 (C10-C16 Hydrocarbons)	2021/09/16	NC		%	40
A353165	STI	Matrix Spike	F3A (C16-C22)	2021/09/16	36		%	40
			F3B (C22-C34)	2021/09/16	102 (1)		%	40
			F4 (C34-C50 Hydrocarbons)	2021/09/16	NC		%	40
			Hex. Chromium (Cr 6+)	2021/09/15		97	%	75 - 125
A353165	STI	Spiked Blank	Hex. Chromium (Cr 6+)	2021/09/15		96	%	80 - 120
A353165	STI	Method Blank	Hex. Chromium (Cr 6+)	2021/09/15	<0.080		mg/kg	
A353165	STI	RPD	Hex. Chromium (Cr 6+)	2021/09/15	NC		%	35
A353452	RSU	Matrix Spike [AFW111-02]	1,4-Difluorobenzene (sur.)	2021/09/17		105	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/09/17		101	%	50 - 140
			D10-o-Xylene (sur.)	2021/09/17		106	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/09/17		102	%	50 - 140
			Benzene	2021/09/17		101	%	50 - 140
			Toluene	2021/09/17		104	%	50 - 140
			Ethylbenzene	2021/09/17		104	%	50 - 140
			m & p-Xylene	2021/09/17		106	%	50 - 140
			o-Xylene	2021/09/17		105	%	50 - 140
			F1 (C6-C10)	2021/09/17		100	%	60 - 140
			1,4-Difluorobenzene (sur.)	2021/09/17		101	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/09/17		98	%	50 - 140
			D10-o-Xylene (sur.)	2021/09/17		97	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/09/17		101	%	50 - 140
A353452	RSU	Method Blank	Benzene	2021/09/17		89	%	60 - 130
			Toluene	2021/09/17		92	%	60 - 130
			Ethylbenzene	2021/09/17		94	%	60 - 130
			m & p-Xylene	2021/09/17		96	%	60 - 130
			o-Xylene	2021/09/17		96	%	60 - 130
			F1 (C6-C10)	2021/09/17		106	%	60 - 140
			1,4-Difluorobenzene (sur.)	2021/09/17		100	%	50 - 140
			4-Bromofluorobenzene (sur.)	2021/09/17		97	%	50 - 140
			D10-o-Xylene (sur.)	2021/09/17		94	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2021/09/17		100	%	50 - 140
			Benzene	2021/09/17	<0.0050		mg/kg	
			Toluene	2021/09/17	<0.050		mg/kg	
			Ethylbenzene	2021/09/17	<0.010		mg/kg	



BUREAU  
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Bureau Veritas Job #: C168138  
Report Date: 2022/01/14

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: PT

### QUALITY ASSURANCE REPORT(CONT'D)

QA/QC	Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
				m & p-Xylene	2021/09/17	<0.040		mg/kg	
				o-Xylene	2021/09/17	<0.020		mg/kg	
				F1 (C6-C10)	2021/09/17	<10		mg/kg	
A353452	RSU	RPD	[AFW111-02]	Benzene	2021/09/17	NC		%	50
				Toluene	2021/09/17	NC		%	50
				Ethylbenzene	2021/09/17	NC		%	50
				m & p-Xylene	2021/09/17	NC		%	50
				o-Xylene	2021/09/17	NC		%	50
				F1 (C6-C10)	2021/09/17	NC		%	30
A353455	RSU	Matrix Spike		1,4-Difluorobenzene (sur.)	2021/09/17		103	%	50 - 140
				4-Bromofluorobenzene (sur.)	2021/09/17		101	%	50 - 140
				D10-o-Xylene (sur.)	2021/09/17		134	%	50 - 140
				D4-1,2-Dichloroethane (sur.)	2021/09/17		103	%	50 - 140
				Benzene	2021/09/17		100	%	50 - 140
				Toluene	2021/09/17		103	%	50 - 140
				Ethylbenzene	2021/09/17		102	%	50 - 140
				m & p-Xylene	2021/09/17		105	%	50 - 140
				o-Xylene	2021/09/17		103	%	50 - 140
				F1 (C6-C10)	2021/09/17		83	%	60 - 140
A353455	RSU	Spiked Blank		1,4-Difluorobenzene (sur.)	2021/09/17		100	%	50 - 140
				4-Bromofluorobenzene (sur.)	2021/09/17		98	%	50 - 140
				D10-o-Xylene (sur.)	2021/09/17		97	%	50 - 140
				D4-1,2-Dichloroethane (sur.)	2021/09/17		102	%	50 - 140
				Benzene	2021/09/17		89	%	60 - 130
				Toluene	2021/09/17		91	%	60 - 130
				Ethylbenzene	2021/09/17		93	%	60 - 130
				m & p-Xylene	2021/09/17		95	%	60 - 130
				o-Xylene	2021/09/17		95	%	60 - 130
				F1 (C6-C10)	2021/09/17		92	%	60 - 140
A353455	RSU	Method Blank		1,4-Difluorobenzene (sur.)	2021/09/17		99	%	50 - 140
				4-Bromofluorobenzene (sur.)	2021/09/17		97	%	50 - 140
				D10-o-Xylene (sur.)	2021/09/17		101	%	50 - 140
				D4-1,2-Dichloroethane (sur.)	2021/09/17		102	%	50 - 140
				Benzene	2021/09/17	<0.0050		mg/kg	
				Toluene	2021/09/17	<0.050		mg/kg	
				Ethylbenzene	2021/09/17	<0.010		mg/kg	
				m & p-Xylene	2021/09/17	<0.040		mg/kg	
				o-Xylene	2021/09/17	<0.020		mg/kg	
				F1 (C6-C10)	2021/09/17	<10		mg/kg	
A353455	RSU	RPD		Benzene	2021/09/17	NC		%	50
				Toluene	2021/09/17	NC		%	50
				Ethylbenzene	2021/09/17	NC		%	50
				m & p-Xylene	2021/09/17	NC		%	50
				o-Xylene	2021/09/17	NC		%	50
				F1 (C6-C10)	2021/09/17	NC		%	30
A354884	LZO	QC Standard		Saturation %	2021/09/17		101	%	75 - 125
A354884	LZO	RPD		Saturation %	2021/09/17	0.94		%	12
A355312	SEH	Matrix Spike		O-TERPHENYL (sur.)	2021/09/17		137	%	60 - 140
				F2 (C10-C16 Hydrocarbons)	2021/09/17		129	%	60 - 140
				F3 (C16-C34 Hydrocarbons)	2021/09/17		137	%	60 - 140
				F4 (C34-C50 Hydrocarbons)	2021/09/17		129	%	60 - 140





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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
A355312	SEH	Spiked Blank	O-TERPHENYL (sur.)	2021/09/17		127	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/09/17		105	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/09/17		114	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/09/17		112	%	60 - 140
A355312	SEH	Method Blank	O-TERPHENYL (sur.)	2021/09/17		133	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/09/17	<10		mg/kg	
			F3 (C16-C34 Hydrocarbons)	2021/09/17	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2021/09/17	<50		mg/kg	
A355312	SEH	RPD	F2 (C10-C16 Hydrocarbons)	2021/09/17	NC		%	40
			F3 (C16-C34 Hydrocarbons)	2021/09/17	NC		%	40
			F4 (C34-C50 Hydrocarbons)	2021/09/17	NC		%	40
A355375	RIL	Method Blank	Moisture	2021/09/17	<0.30		%	
A355375	RIL	RPD	Moisture	2021/09/17	1.2		%	20
A355376	RIL	Method Blank	Moisture	2021/09/17	<0.30		%	
A355376	RIL	RPD	Moisture	2021/09/17	3.4		%	20
A355534	CAU	Matrix Spike	O-TERPHENYL (sur.)	2021/09/17		99	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/09/17		97	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/09/17		102	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/09/17		101	%	60 - 140
A355534	CAU	Spiked Blank	O-TERPHENYL (sur.)	2021/09/17		90	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/09/17		89	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/09/17		94	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/09/17		92	%	60 - 140
A355534	CAU	Method Blank	O-TERPHENYL (sur.)	2021/09/17		99	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/09/17	<10		mg/kg	
			F3 (C16-C34 Hydrocarbons)	2021/09/17	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2021/09/17	<50		mg/kg	
A355534	CAU	RPD	F2 (C10-C16 Hydrocarbons)	2021/09/17	NC		%	40
			F3 (C16-C34 Hydrocarbons)	2021/09/17	NC		%	40
			F4 (C34-C50 Hydrocarbons)	2021/09/17	NC		%	40
A355564	YML	Method Blank	Moisture	2021/09/17	<0.30		%	
A355564	YML	RPD [AFW117-01]	Moisture	2021/09/17	6.9		%	20
A355591	CAU	Matrix Spike [AFW284-01]	O-TERPHENYL (sur.)	2021/09/17		101	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/09/17		NC	%	60 - 140
			F3A (C16-C22)	2021/09/17		79	%	60 - 140
			F3B (C22-C34)	2021/09/17		95	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/09/17		110	%	60 - 140
A355591	CAU	Spiked Blank	O-TERPHENYL (sur.)	2021/09/17		95	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/09/17		92	%	60 - 140
			F3A (C16-C22)	2021/09/17		95	%	60 - 140
			F3B (C22-C34)	2021/09/17		97	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/09/17		94	%	60 - 140
A355591	CAU	Method Blank	O-TERPHENYL (sur.)	2021/09/17		103	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/09/17	<10		mg/kg	
			F3A (C16-C22)	2021/09/17	<50		mg/kg	
			F3B (C22-C34)	2021/09/17	<50		mg/kg	
A355591	CAU	RPD [AFW284-01]	F2 (C10-C16 Hydrocarbons)	2021/09/19	56 (1)		%	40
			F3A (C16-C22)	2021/09/19	8.6		%	40
			F3B (C22-C34)	2021/09/19	18		%	40



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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
A355621	SJ1	Matrix Spike	F4 (C34-C50 Hydrocarbons)	2021/09/19	20		%	40
			D10-ANTHRACENE (sur.)	2021/09/17		97	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2021/09/17		89	%	50 - 130
			D8-NAPHTHALENE (sur.)	2021/09/17		85	%	50 - 130
			TERPHENYL-D14 (sur.)	2021/09/17		110	%	50 - 130
			Acenaphthene	2021/09/17		87	%	50 - 130
			Acenaphthylene	2021/09/17		86	%	50 - 130
			Acridine	2021/09/17		52	%	50 - 130
			Anthracene	2021/09/17		81	%	50 - 130
			Benzo(a)anthracene	2021/09/17		87	%	50 - 130
			Benzo(b&j)fluoranthene	2021/09/17		79	%	50 - 130
			Benzo(k)fluoranthene	2021/09/17		80	%	50 - 130
			Benzo(g,h,i)perylene	2021/09/17		69	%	50 - 130
			Benzo(c)phenanthrene	2021/09/17		85	%	50 - 130
			Benzo(a)pyrene	2021/09/17		78	%	50 - 130
			Benzo(e)pyrene	2021/09/17		73	%	50 - 130
			Chrysene	2021/09/17		86	%	50 - 130
			Dibenz(a,h)anthracene	2021/09/17		71	%	50 - 130
			Fluoranthene	2021/09/17		91	%	50 - 130
			Fluorene	2021/09/17		87	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2021/09/17		78	%	50 - 130
1-Methylnaphthalene	2021/09/17		67	%	50 - 130			
2-Methylnaphthalene	2021/09/17		83	%	50 - 130			
Naphthalene	2021/09/17		79	%	50 - 130			
Phenanthrene	2021/09/17		88	%	50 - 130			
Perylene	2021/09/17		82	%	50 - 130			
Pyrene	2021/09/17		86	%	50 - 130			
Quinoline	2021/09/17		97	%	50 - 130			
A355621	SJ1	Spiked Blank	D10-ANTHRACENE (sur.)	2021/09/18		99	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2021/09/18		94	%	50 - 130
			D8-NAPHTHALENE (sur.)	2021/09/18		91	%	50 - 130
			TERPHENYL-D14 (sur.)	2021/09/18		111	%	50 - 130
			Acenaphthene	2021/09/18		92	%	50 - 130
			Acenaphthylene	2021/09/18		91	%	50 - 130
			Acridine	2021/09/18		65	%	50 - 130
			Anthracene	2021/09/18		86	%	50 - 130
			Benzo(a)anthracene	2021/09/18		94	%	50 - 130
			Benzo(b&j)fluoranthene	2021/09/18		86	%	50 - 130
			Benzo(k)fluoranthene	2021/09/18		91	%	50 - 130
			Benzo(g,h,i)perylene	2021/09/18		92	%	50 - 130
			Benzo(c)phenanthrene	2021/09/18		88	%	50 - 130
			Benzo(a)pyrene	2021/09/18		91	%	50 - 130
Benzo(e)pyrene	2021/09/18		83	%	50 - 130			
Chrysene	2021/09/18		91	%	50 - 130			
Dibenz(a,h)anthracene	2021/09/18		90	%	50 - 130			
Fluoranthene	2021/09/18		96	%	50 - 130			
Fluorene	2021/09/18		94	%	50 - 130			
Indeno(1,2,3-cd)pyrene	2021/09/18		88	%	50 - 130			
1-Methylnaphthalene	2021/09/18		71	%	50 - 130			
2-Methylnaphthalene	2021/09/18		89	%	50 - 130			
Naphthalene	2021/09/18		84	%	50 - 130			



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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
A355621	SJ1	Method Blank	Phenanthrene	2021/09/18		90	%	50 - 130
			Perylene	2021/09/18		88	%	50 - 130
			Pyrene	2021/09/18		92	%	50 - 130
			Quinoline	2021/09/18		94	%	50 - 130
			D10-ANTHRACENE (sur.)	2021/09/18		80	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2021/09/18		88	%	50 - 130
			D8-NAPHTHALENE (sur.)	2021/09/18		83	%	50 - 130
			TERPHENYL-D14 (sur.)	2021/09/18		105	%	50 - 130
			Acenaphthene	2021/09/18	<0.0050		mg/kg	
			Acenaphthylene	2021/09/18	<0.0050		mg/kg	
			Acridine	2021/09/18	<0.010		mg/kg	
			Anthracene	2021/09/18	<0.0040		mg/kg	
			Benzo(a)anthracene	2021/09/18	<0.0050		mg/kg	
			Benzo(b&j)fluoranthene	2021/09/18	<0.0050		mg/kg	
			Benzo(k)fluoranthene	2021/09/18	<0.0050		mg/kg	
			Benzo(g,h,i)perylene	2021/09/18	<0.0050		mg/kg	
			Benzo(c)phenanthrene	2021/09/18	<0.0050		mg/kg	
			Benzo(a)pyrene	2021/09/18	<0.0050		mg/kg	
			Benzo(e)pyrene	2021/09/18	<0.0050		mg/kg	
			Chrysene	2021/09/18	<0.0050		mg/kg	
			Dibenz(a,h)anthracene	2021/09/18	<0.0050		mg/kg	
			Fluoranthene	2021/09/18	<0.0050		mg/kg	
			Fluorene	2021/09/18	<0.0050		mg/kg	
			Indeno(1,2,3-cd)pyrene	2021/09/18	<0.0050		mg/kg	
1-Methylnaphthalene	2021/09/18	<0.0050		mg/kg				
2-Methylnaphthalene	2021/09/18	<0.0050		mg/kg				
Naphthalene	2021/09/18	<0.0050		mg/kg				
Phenanthrene	2021/09/18	<0.0050		mg/kg				
Perylene	2021/09/18	<0.0050		mg/kg				
Pyrene	2021/09/18	<0.0050		mg/kg				
Quinoline	2021/09/18	<0.010		mg/kg				
A355621	SJ1	RPD	Acenaphthene	2021/09/17	NC		%	50
			Acenaphthylene	2021/09/17	NC		%	50
			Acridine	2021/09/17	NC		%	50
			Anthracene	2021/09/17	NC		%	50
			Benzo(a)anthracene	2021/09/17	NC		%	50
			Benzo(b&j)fluoranthene	2021/09/17	9.4		%	50
			Benzo(k)fluoranthene	2021/09/17	11		%	50
			Benzo(g,h,i)perylene	2021/09/17	18		%	50
			Benzo(c)phenanthrene	2021/09/17	NC		%	50
			Benzo(a)pyrene	2021/09/17	36		%	50
			Benzo(e)pyrene	2021/09/17	3.7		%	50
			Chrysene	2021/09/17	NC		%	50
			Dibenz(a,h)anthracene	2021/09/17	NC		%	50
			Fluoranthene	2021/09/17	2.4		%	50
			Fluorene	2021/09/17	NC		%	50
			Indeno(1,2,3-cd)pyrene	2021/09/17	22		%	50
			1-Methylnaphthalene	2021/09/17	NC		%	50
			2-Methylnaphthalene	2021/09/17	NC		%	50
Naphthalene	2021/09/17	NC		%	50			
Phenanthrene	2021/09/17	NC		%	50			



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### QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
A355623	CAU	Matrix Spike	Perylene	2021/09/17	39		%	50
			Pyrene	2021/09/17	7.3		%	50
			Quinoline	2021/09/17	NC		%	50
			O-TERPHENYL (sur.)	2021/09/17		91	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/09/17		79	%	60 - 140
A355623	CAU	Spiked Blank	F3 (C16-C34 Hydrocarbons)	2021/09/17		76	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/09/17		73	%	60 - 140
			O-TERPHENYL (sur.)	2021/09/17		99	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/09/17		85	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/09/17		83	%	60 - 140
A355623	CAU	Method Blank	F4 (C34-C50 Hydrocarbons)	2021/09/17		80	%	60 - 140
			O-TERPHENYL (sur.)	2021/09/17		85	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/09/17	<10		mg/kg	
			F3 (C16-C34 Hydrocarbons)	2021/09/17	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2021/09/17	<50		mg/kg	
A355623	CAU	RPD	F2 (C10-C16 Hydrocarbons)	2021/09/17	3.9		%	40
			F3 (C16-C34 Hydrocarbons)	2021/09/17	22		%	40
			F4 (C34-C50 Hydrocarbons)	2021/09/17	NC		%	40
A355624	MAE	Method Blank	Moisture	2021/09/17	<0.30		%	
A355624	MAE	RPD	Moisture	2021/09/17	9.3		%	20
A355625	GG3	Matrix Spike	O-TERPHENYL (sur.)	2021/09/17		86	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/09/17		82	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/09/17		87	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/09/17		85	%	60 - 140
			O-TERPHENYL (sur.)	2021/09/17		91	%	60 - 140
A355625	GG3	Spiked Blank	F2 (C10-C16 Hydrocarbons)	2021/09/17		89	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2021/09/17		93	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2021/09/17		91	%	60 - 140
			O-TERPHENYL (sur.)	2021/09/17		98	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2021/09/17	<10		mg/kg	
A355625	GG3	RPD	F3 (C16-C34 Hydrocarbons)	2021/09/17	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2021/09/17	<50		mg/kg	
			F2 (C10-C16 Hydrocarbons)	2021/09/17	NC		%	40
			F3 (C16-C34 Hydrocarbons)	2021/09/17	NC		%	40
			F4 (C34-C50 Hydrocarbons)	2021/09/17	NC		%	40
A355626	MAE	Method Blank	Moisture	2021/09/17	<0.30		%	
A355626	MAE	RPD	Moisture	2021/09/17	9.7		%	20
A355882	PC5	Matrix Spike	Total Antimony (Sb)	2021/09/17		113	%	75 - 125
			Total Arsenic (As)	2021/09/17		103	%	75 - 125
			Total Barium (Ba)	2021/09/17		NC	%	75 - 125
			Total Beryllium (Be)	2021/09/17		114	%	75 - 125
			Total Cadmium (Cd)	2021/09/17		101	%	75 - 125
			Total Chromium (Cr)	2021/09/17		108	%	75 - 125
			Total Cobalt (Co)	2021/09/17		104	%	75 - 125
			Total Copper (Cu)	2021/09/17		104	%	75 - 125
			Total Lead (Pb)	2021/09/17		97	%	75 - 125
			Total Mercury (Hg)	2021/09/17		94	%	75 - 125
			Total Molybdenum (Mo)	2021/09/17		105	%	75 - 125
			Total Nickel (Ni)	2021/09/17		107	%	75 - 125
			Total Selenium (Se)	2021/09/17		109	%	75 - 125
			Total Silver (Ag)	2021/09/17		102	%	75 - 125



BUREAU VERITAS

Bureau Veritas Job #: C168138  
Report Date: 2022/01/14

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: PT

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
A355882	PC5	QC Standard	Total Thallium (Tl)	2021/09/17		94	%	75 - 125
			Total Tin (Sn)	2021/09/17		104	%	75 - 125
			Total Uranium (U)	2021/09/17		93	%	75 - 125
			Total Vanadium (V)	2021/09/17		121	%	75 - 125
			Total Zinc (Zn)	2021/09/17		112	%	75 - 125
			Total Antimony (Sb)	2021/09/17		119	%	15 - 182
			Total Arsenic (As)	2021/09/17		97	%	53 - 147
			Total Barium (Ba)	2021/09/17		88	%	80 - 119
			Total Cadmium (Cd)	2021/09/17		91	%	72 - 128
			Total Chromium (Cr)	2021/09/17		91	%	59 - 141
			Total Cobalt (Co)	2021/09/17		94	%	58 - 142
			Total Copper (Cu)	2021/09/17		100	%	83 - 117
			Total Lead (Pb)	2021/09/17		103	%	79 - 121
			Total Molybdenum (Mo)	2021/09/17		107	%	67 - 133
			Total Nickel (Ni)	2021/09/17		100	%	79 - 121
			Total Silver (Ag)	2021/09/17		84	%	47 - 153
			A355882	PC5	Spiked Blank	Total Tin (Sn)	2021/09/17	
Total Uranium (U)	2021/09/17					100	%	77 - 123
Total Vanadium (V)	2021/09/17					96	%	79 - 121
Total Zinc (Zn)	2021/09/17					101	%	79 - 121
Total Antimony (Sb)	2021/09/17					108	%	80 - 120
Total Arsenic (As)	2021/09/17					97	%	80 - 120
Total Barium (Ba)	2021/09/17					90	%	80 - 120
Total Beryllium (Be)	2021/09/17					105	%	80 - 120
Total Cadmium (Cd)	2021/09/17					94	%	80 - 120
Total Chromium (Cr)	2021/09/17					98	%	80 - 120
Total Cobalt (Co)	2021/09/17					98	%	80 - 120
Total Copper (Cu)	2021/09/17					100	%	80 - 120
Total Lead (Pb)	2021/09/17					91	%	80 - 120
Total Mercury (Hg)	2021/09/17					92	%	80 - 120
Total Molybdenum (Mo)	2021/09/17					97	%	80 - 120
Total Nickel (Ni)	2021/09/17					96	%	80 - 120
Total Selenium (Se)	2021/09/17					103	%	80 - 120
A355882	PC5	Method Blank	Total Silver (Ag)	2021/09/17		95	%	80 - 120
			Total Thallium (Tl)	2021/09/17		90	%	80 - 120
			Total Tin (Sn)	2021/09/17		94	%	80 - 120
			Total Uranium (U)	2021/09/17		88	%	80 - 120
			Total Vanadium (V)	2021/09/17		98	%	80 - 120
			Total Zinc (Zn)	2021/09/17		100	%	80 - 120
			Total Antimony (Sb)	2021/09/17	<0.50		mg/kg	
			Total Arsenic (As)	2021/09/17	<1.0		mg/kg	
			Total Barium (Ba)	2021/09/17	<1.0		mg/kg	
			Total Beryllium (Be)	2021/09/17	<0.40		mg/kg	
			Total Cadmium (Cd)	2021/09/17	<0.050		mg/kg	
			Total Chromium (Cr)	2021/09/17	<1.0		mg/kg	
			Total Cobalt (Co)	2021/09/17	<0.50		mg/kg	
			Total Copper (Cu)	2021/09/17	<1.0		mg/kg	
			Total Lead (Pb)	2021/09/17	<0.50		mg/kg	
			Total Mercury (Hg)	2021/09/17	<0.050		mg/kg	
			Total Molybdenum (Mo)	2021/09/17	<0.40		mg/kg	
Total Nickel (Ni)	2021/09/17	<1.0		mg/kg				



BUREAU  
VERITAS

Bureau Veritas Job #: C168138  
Report Date: 2022/01/14

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: PT

### QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits			
A355882	PC5	RPD	Total Selenium (Se)	2021/09/17	<0.50		mg/kg				
			Total Silver (Ag)	2021/09/17	<0.20		mg/kg				
			Total Thallium (Tl)	2021/09/17	<0.10		mg/kg				
			Total Tin (Sn)	2021/09/17	<1.0		mg/kg				
			Total Uranium (U)	2021/09/17	<0.20		mg/kg				
			Total Vanadium (V)	2021/09/17	<1.0		mg/kg				
			Total Zinc (Zn)	2021/09/17	<10		mg/kg				
			Total Antimony (Sb)	2021/09/17	NC		%	30			
			Total Arsenic (As)	2021/09/17	0.75		%	30			
			Total Barium (Ba)	2021/09/17	1.4		%	35			
			Total Beryllium (Be)	2021/09/17	NC		%	30			
			Total Cadmium (Cd)	2021/09/17	5.9		%	30			
			Total Chromium (Cr)	2021/09/17	2.7		%	30			
			Total Cobalt (Co)	2021/09/17	1.4		%	30			
			Total Copper (Cu)	2021/09/17	2.4		%	30			
			Total Lead (Pb)	2021/09/17	1.2		%	35			
			Total Mercury (Hg)	2021/09/17	NC		%	35			
			Total Molybdenum (Mo)	2021/09/17	NC		%	35			
			Total Nickel (Ni)	2021/09/17	5.7		%	30			
			Total Selenium (Se)	2021/09/17	NC		%	30			
			Total Silver (Ag)	2021/09/17	NC		%	35			
			Total Thallium (Tl)	2021/09/17	NC		%	30			
			Total Tin (Sn)	2021/09/17	NC		%	35			
			Total Uranium (U)	2021/09/17	0.28		%	30			
			Total Vanadium (V)	2021/09/17	1.4		%	30			
			Total Zinc (Zn)	2021/09/17	0.38		%	30			
			A357683	JAB	Matrix Spike	Soluble Boron (B)	2021/09/19		96	%	75 - 125
			A357683	JAB	QC Standard	Soluble Sulphate (SO4)	2021/09/19		110	%	75 - 125
A357683	JAB	Spiked Blank	Soluble Boron (B)	2021/09/19		96	%	80 - 120			
A357683	JAB	Method Blank	Soluble Boron (B)	2021/09/19	<0.10		mg/L				
			Soluble Sulphate (SO4)	2021/09/19	<5.0		mg/L				
A357683	JAB	RPD	Soluble Boron (B)	2021/09/19	21		%	30			
			Soluble Sulphate (SO4)	2021/09/19	9.9		%	30			
A358665	MPU	QC Standard	Total Fusion Barium (Ba)	2021/09/21		92	%	75 - 125			
A358665	MPU	Spiked Blank	Total Fusion Barium (Ba)	2021/09/21		95	%	75 - 125			
A358665	MPU	Method Blank	Total Fusion Barium (Ba)	2021/09/21	<50		mg/kg				
A358665	MPU	RPD	Total Fusion Barium (Ba)	2021/09/21	3.7		%	35			
A358672	JLJ	Spiked Blank	F4G-SG (Heavy Hydrocarbons-Grav.)	2021/09/20		100	%	60 - 140			
A358672	JLJ	Method Blank	F4G-SG (Heavy Hydrocarbons-Grav.)	2021/09/20	<500		mg/kg				



BUREAU  
VERITAS

Bureau Veritas Job #: C168138  
Report Date: 2022/01/14

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: PT

### QUALITY ASSURANCE REPORT(CONT'D)

QA/QC									
Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits	
A358672	JLJ	RPD	F4G-SG (Heavy Hydrocarbons-Grav.)	2021/09/20	22		%	40	
<p>Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.</p> <p>Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.</p> <p>QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.</p> <p>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.</p> <p>Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.</p> <p>Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.</p> <p>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)</p> <p>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 &lt;= 2x RDL).</p> <p>(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.</p>									





### 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

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

Maria Magdalena Florescu, Ph.D., P.Chem., QP, Inorganics Manager

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

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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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

604

CHAIN OF CUSTODY RECORD

<b>INVOICE TO:</b>		<b>REPORT TO:</b>		<b>PROJECT INFORMATION:</b>		<b>Laboratory Use Only:</b>	
Company Name: #254 GOLDER ASSOCIATES LTD.	Company Name: #6340 GOLDER ASSOCIATES LTD.	Quotation #: C00480	BV Labs Job #: C168138		644511	Bottle Order #:	
Attention: ACCOUNTS PAYABLE	Attention: Aurelie Belavance	P.O. #: 20368099-7000-1001	COC #:		Project Manager: Carmen McKay		
Address: 2800, 700 -2nd Street SW CALGARY AB T2P 2W2	Address: 2800, 700 -2nd Street SW CALGARY AB T2P 2W2	Project: 20368099-6000-1001	Site #:		C#644511-85-01		
Tel: (905) 567-6100 Ext: 1167 Fax: (403) 299-5606	Tel: (403) 299-5600 Fax:	Project Name:	Sampled By:				
Email: canadaaccounts payableinvoices@golder.com	Email: abellavance@golder.com						

Regulatory Criteria: <input type="checkbox"/> ATI <input checked="" type="checkbox"/> CCME <input type="checkbox"/> Other	Special Instructions: email: sheildgr@golder.com upload to: Facility code 41259544	ANALYSIS REQUESTED (PLEASE BE SPECIFIC)										Turnaround Time (TAT) Required: Please provide advance notice for rush projects.		
SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS		Metals Field Filtered? (Y/N)	AT1 Regulated Metals - Soils	AT1 BTEX and F1-F4 in Soil (Vials)	BIC SCALE Analysis (F2/F2+F3B) in soil	Sulphate / nitrate	Barium on ICP using Fusion Extraction (True Barium)	CCME BTEX and F1-F2 in Water	Routine Water	Regulated Metals (CCME/AT1) - Dissolved	PAH in Water by GC/MS	Limited Sample	<input checked="" type="checkbox"/> Regular (Standard) TAT: (will be applied if Rush TAT is not specified): Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests are > 5 days - contact your Project Manager for details.	

Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered? (Y/N)	AT1 Regulated Metals - Soils	AT1 BTEX and F1-F4 in Soil (Vials)	BIC SCALE Analysis (F2/F2+F3B) in soil	Sulphate / nitrate	Barium on ICP using Fusion Extraction (True Barium)	CCME BTEX and F1-F2 in Water	Routine Water	Regulated Metals (CCME/AT1) - Dissolved	PAH in Water by GC/MS	Limited Sample	# of Bottles	Comments
1 NA	TP21-183-02	03 Sep 2021	08:43	Soil			X	X								3	Received in Yellowknife By: Jmercurio @ 9:05 AM SEP 10 2021 See ACTR Temp: 1 1 Headspace may be present due to frozen soil.
2	TP21-183-04		10:02				X	X								3	
3	TP21-184-02		10:30				X									3	
4	TP21-184-04		10:35				X	X								3	
5	TP21-184-05		10:38				X	X								3	
6	TP21-185-02		08:49				X									3	
7	TP21-185-03		08:50				X	X								3	
8	TP21-185-05		09:00				X	X						X		3	
9	TP21-185-04		08:52				X	X								3	
10																	

RELINQUISHED BY: (Signature/Print) <i>Peter Tan</i>	Date: YY/MM/DD 21/09/23	Time 17:00	RECEIVED BY: (Signature/Print) <i>Alicia Lin</i>	Date: YY/MM/DD 2021/09/11	Time 14:40	# Jars used and not submitted	Time Sensitive <input type="checkbox"/>	Temperature (°C) on Receipt SEE ACTR	Custody Seal Intact on Cooler? <input type="checkbox"/> Yes <input type="checkbox"/> No
--	----------------------------	---------------	---	------------------------------	---------------	-------------------------------	--	---	--

\* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV 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.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 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 2 of 4

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name: #254 GOLDER ASSOCIATES LTD.	Company Name: #6340 GOLDER ASSOCIATES LTD.	Quotation #: C00480	BV Labs Job #:		Bottle Order #:		
Attention: ACCOUNTS PAYABLE	Attention: Aurelie Belavance	P.O. #: 20368099-7000-1001	C168138		644511		
Address: 2800, 700 -2nd Street SW	Address: 2800, 700 -2nd Street SW	Project: 20368099-6000-1001	COC #:		Project Manager:		
Address: CALGARY AB T2P 2W2	Address: CALGARY AB T2P 2W2	Project Name:	C#644511-86-01		Carmen McKay		
Tel: (905) 567-6100 Ext: 1167 Fax: (403) 299-5606	Tel: (403) 299-5600 Fax:	Site #:					
Email: canadaaccounts payableinvoices@golder.com	Email: abellavance@golder.com	Sampled By:					

Regulatory Criteria: <input type="checkbox"/> ATI <input checked="" type="checkbox"/> CCME <input type="checkbox"/> Other	Special Instructions	ANALYSIS REQUESTED (PLEASE BE SPECIFIC)										Turnaround Time (TAT) Required: Please provide advance notice for rush projects		
		Metals Field Filtered? (Y/N)	AT1 Regulated Metals - Soils	AT1 BTEX and F1-F4 in Soil (Vials)	BIC SCALE Analysis (F2/F2+F3B) in soil	Sulphate / nitrate	Barium on ICP using Fusion Extraction (True Barium)	CCME BTEX and F1-F2 in Water	Routine Water	Regulated Metals (CCME/AT1) - Dissolved	PAH in Water by GC/MS	Limited Sample	<input checked="" type="checkbox"/> Regular (Standard) TAT: (will be applied if Rush TAT is not specified). Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests are > 5 days - contact your Project Manager for details.  <input type="checkbox"/> Job Specific Rush TAT (if applies to entire submission) Date Required: _____ Rush Confirmation Number: _____ (call lab for #)	

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS						Metals Field Filtered? (Y/N)	AT1 Regulated Metals - Soils	AT1 BTEX and F1-F4 in Soil (Vials)	BIC SCALE Analysis (F2/F2+F3B) in soil	Sulphate / nitrate	Barium on ICP using Fusion Extraction (True Barium)	CCME BTEX and F1-F2 in Water	Routine Water	Regulated Metals (CCME/AT1) - Dissolved	PAH in Water by GC/MS	Limited Sample	# of Bottles	Comments
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix														
1 NA	TP21-186-02	03 Sep 2021	10:46	Soil		X											3	
2	TP21-186-04		10:48			X	X										3	
3	TP21-186-06		10:50			X											3	
4	TP21-186-01		10:45			X	X										3	Received in Yellowknife By: J. MCCARD 09:00 AM
5	TP21-159-06		13:48			X											3	
6	TP21-160-05		13:56			X	X										3	SEP 10 2021
7	TP21-160-06		13:57			X											3	see ACTR
8	TP21-160-07		13:58			X											3	Temp:
9																		
10																		

RELINQUISHED BY: (Signature/Print) <i>PETER TAN</i>	Date: (YY/MM/DD) 21/09/23	Time 17:00	RECEIVED BY: (Signature/Print) <i>Alicia Lin</i>	Date: (YY/MM/DD) 2021/09/11	Time 14:40	# jars used and not submitted	Laboratory Use Only		
							Time Sensitive <input type="checkbox"/>	Temperature (°C) on Receipt SEE ACTR	Custody Seal intact on Cooler? <input type="checkbox"/> Yes <input type="checkbox"/> No


\* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV 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.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





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CHAIN OF CUSTODY RECORD

<b>INVOICE TO:</b>		<b>REPORT TO:</b>		<b>PROJECT INFORMATION:</b>		<b>Laboratory Use Only:</b>	
Company Name: #254 GOLDER ASSOCIATES LTD.	Company Name: #6340 GOLDER ASSOCIATES LTD.	Quotation #: C00480	BV Labs Job #: <b>C168138</b>		Bottle Order #: 		
Attention: ACCOUNTS PAYABLE	Attention: Aurelie Belavance	P.O. #: 20368099-7000-1001	COC #: <b>C#644511-84-01</b>		Project Manager: Carmen McKay		
Address: 2800, 700 -2nd Street SW	Address: 2800, 700 -2nd Street SW	Project: 20368099-6000-1001	Site #: _____		Project Manager: Carmen McKay		
Address: CALGARY AB T2P 2W2	Address: CALGARY AB T2P 2W2	Project Name: _____	Site #: _____		Project Manager: Carmen McKay		
Tel: (905) 567-6100 Ext: 1167 Fax: (403) 299-5606	Tel: (403) 299-5600 Fax: _____	Sampled By: _____	Site #: _____		Project Manager: Carmen McKay		
Email: canadaaccounts payableinvoices@golder.com	Email: abellavance@golder.com		Site #: _____		Project Manager: Carmen McKay		

Regulatory Criteria: <input type="checkbox"/> ATI <input checked="" type="checkbox"/> CCME <input type="checkbox"/> Other		Special Instructions <b>Do NOT analyse TP21-80-05</b>		ANALYSIS REQUESTED (PLEASE BE SPECIFIC)										Turnaround Time (TAT) Required: Please provide advance notice for rush projects			
SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS				Metals Field Filtered? (Y/N)										Regular (Standard) TAT: (will be applied if Rush TAT is not specified): Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests are > 5 days - contact your Project Manager for details			
				<input type="checkbox"/> AT1 Regulated Metals - Soils <input checked="" type="checkbox"/> AT1 BTEX and F1-F4 in Soil <input type="checkbox"/> BIC SCALE Analysis (F2/F2+F3B) in soil <input type="checkbox"/> Sulphate / nitrate <input type="checkbox"/> Barium on ICP using Fusion Extraction (True Barium) <input type="checkbox"/> CCME BTEX and F1-F2 in Water <input checked="" type="checkbox"/> Regulated Metals (CCME/AT1) - Dissolved <input type="checkbox"/> PAH in Water by GC/MS <input type="checkbox"/> Limited Sample										<input checked="" type="checkbox"/> Regular (Standard) TAT <input type="checkbox"/> Job Specific Rush TAT (if applies to entire submission)			
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix													
NA	TP21-187-02	03 Sep 2021	14:28	SOIL													
	TP21-187-04		14:29														
	TP21-187-06		14:35														
	TP21-80-05		14:50														
	TP21-80-06		14:52														
	TP21-188-02		15:07														
	TP21-188-04		15:08														
	TP21-188-06		15:13														
	TP21-187-03		14:28														

* RELINQUISHED BY: (Signature/Print) <b>PETER TAN</b>		Date: (YY/MM/DD) <b>21/09/23</b>	Time <b>17:00</b>	RECEIVED BY: (Signature/Print) <b>Alicia Lin</b>		Date: (YY/MM/DD) <b>2021/09/11</b>	Time <b>14:40</b>	# jars used and not submitted	Laboratory Use Only		
									<input type="checkbox"/> Time Sensitive	Temperature (°C) on Receipt <b>SEE ACTR</b>	Custody Seal Intact on Cooler? <input type="checkbox"/> Yes <input type="checkbox"/> No



\* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV 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.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 90 DAYS AFTER SAMPLE RECEIPT. FOR SPECIAL REQUESTS CONTACT YOUR PROJECT MANAGER.



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  
44

<b>INVOICE TO:</b>		<b>REPORT TO:</b>		<b>PROJECT INFORMATION:</b>		<b>Laboratory Use Only:</b>	
Company Name: #254 GOLDER ASSOCIATES LTD.	Company Name: #6340 GOLDER ASSOCIATES LTD.	Quotation #: C00480	BV Labs Job #: <b>C168138</b>		Bottle Order #: 		
Attention: ACCOUNTS PAYABLE	Attention: Aurelie Belavance	P O #: 20368099-7000-1001	COC #: <b>644511</b>		Project Manager: <b>Carmen McKay</b>		
Address: 2800, 700 -2nd Street SW CALGARY AB T2P 2W2	Address: 2800, 700 -2nd Street SW CALGARY AB T2P 2W2	Project: 20368099-6000-1001					
Tel: (905) 567-6100 Ext: 1167 Fax: (403) 299-5606	Tel: (403) 299-5600 Fax:	Project Name:	Site #:		C#644511-82-01		
Email: canadaaccounts payableinvoices@golder.com	Email: abellavance@golder.com	Sampled By:					

Regulatory Criteria: <input type="checkbox"/> ATI <input checked="" type="checkbox"/> CCME <input type="checkbox"/> Other		Special Instructions		ANALYSIS REQUESTED (PLEASE BE SPECIFIC)										Turnaround Time (TAT) Required: Please provide advance notice for rush projects		
SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS				Metals Field Filtered? (Y/N)	AT1 Regulated Metals - Soils	AT1 BTEX and F1-F4 in Soil (Vials)	BIC SCALE Analysis (F2/F2+F3B) in soil	Sulphate / nitrate	Barium on ICP using Fusion Extraction (True Barium)	CCME BTEX and F1-F2 in Water	Routine Water	Regulated Metals (CCME/AT1) - Dissolved	PAH - Soils	Limited Sample	Regular (Standard) TAT: (will be applied if Rush TAT is not specified): Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests are > 5 days - contact your Project Manager for details	
<input checked="" type="checkbox"/> Job Specific Rush TAT (if applies to entire submission) Date Required: <input type="checkbox"/> Rush Confirmation Number: _____ (call lab for #)																
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix											# of Bottles	Comments
✓ NA	TP21-189-01	03 Sep 2021	16:04	SOIL	X	X	X	X	X				X		4+Bags	
✓	TP21-189-03		16:05		X	X	X	X	X				X		4+Bags	
✓	TP21-189-05		16:06		X	X	X	X	X				X		4+Bags	
✓	TP21-189-06		16:07		X	X	X	X	X				X		4+Bags	
✓	TP21-189-08		16:08		X	X	X	X	X				X		4+Bags	Received in Yellowknife By: J. McLean @ 9:30 am SEP 10 2021 SEE ACTA Temp:
6																
7																
8																
9																
10																

RELINQUISHED BY: (Signature/Print) <i>[Signature]</i> JETERA TAN	Date: (YY/MM/DD) 21/09/23	Time 17:00	RECEIVED BY: (Signature/Print) <i>[Signature]</i> Alicia Lin	Date: (YY/MM/DD) 2021/09/11	Time 14:40	# jars used and not submitted	Laboratory Use Only		
							Time Sensitive <input type="checkbox"/>	Temperature (°C) on Receipt <b>SEE ACTA</b>	Custody Seal intact on Cooler? <input type="checkbox"/> Yes <input type="checkbox"/> No

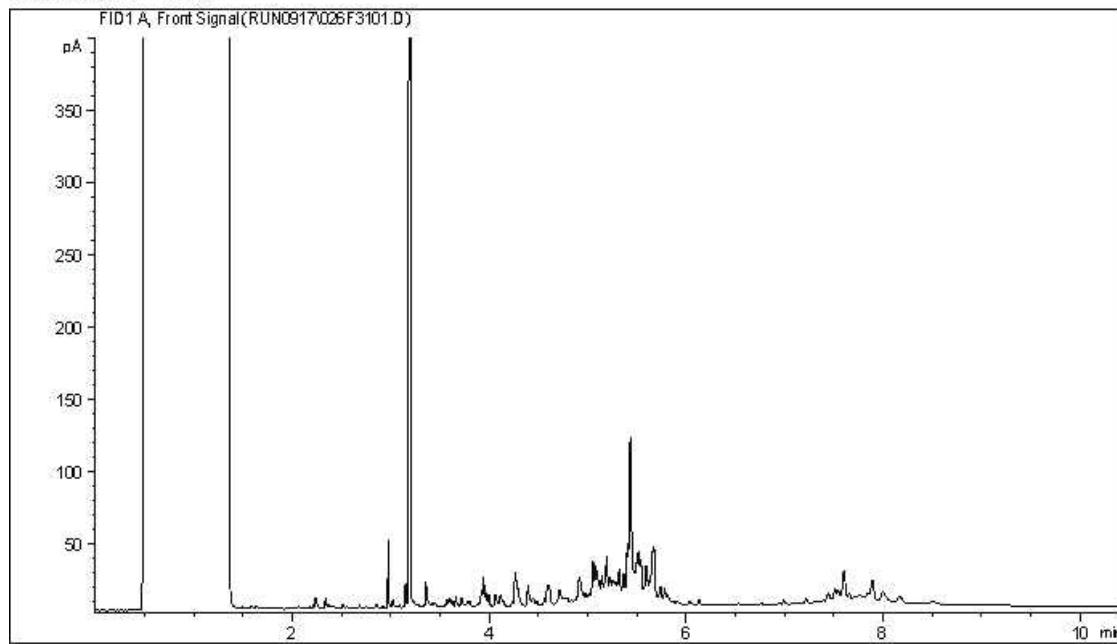
\* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.  
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 \*\*\* ALL SAMPLES ARE HELD FOR 90 DAYS AFTER SAMPLE RECEIPT, FOR SPECIAL REQUESTS CONTACT YOUR PROJECT MANAGER.



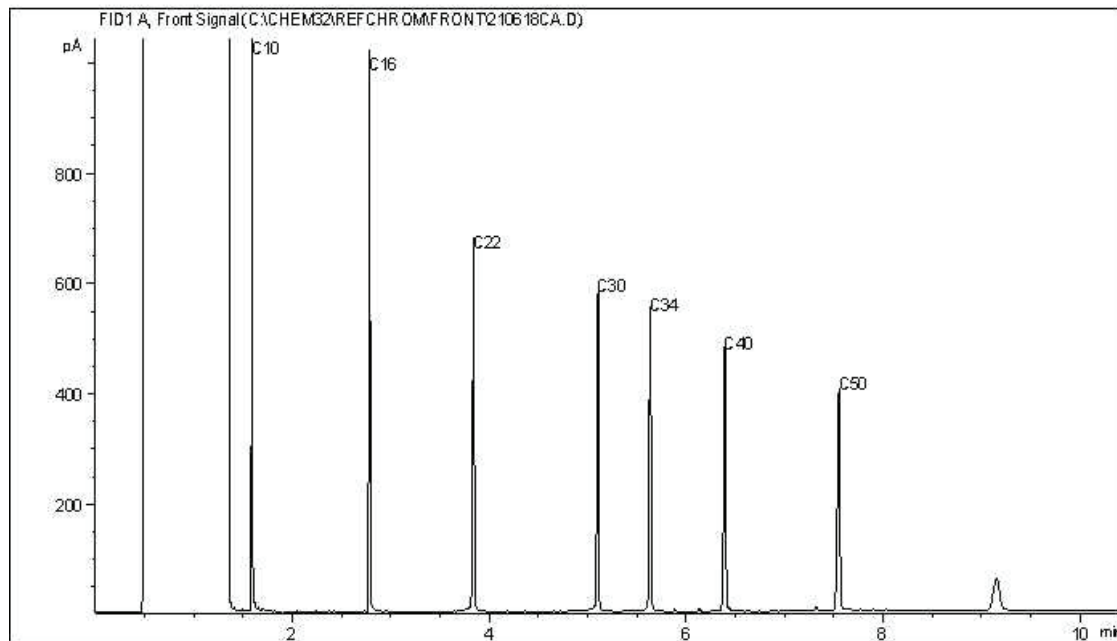


CCME Hydrocarbons (F2-F4)+F3A/B in soil Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram

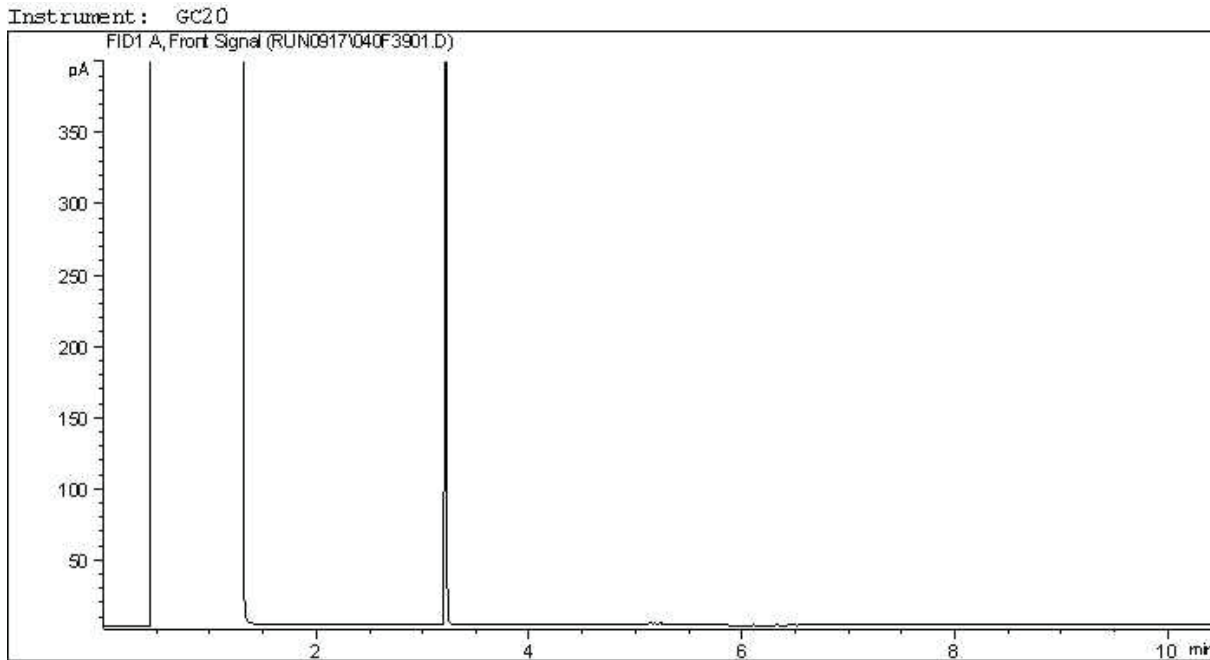


TYPICAL PRODUCT CARBON NUMBER RANGES

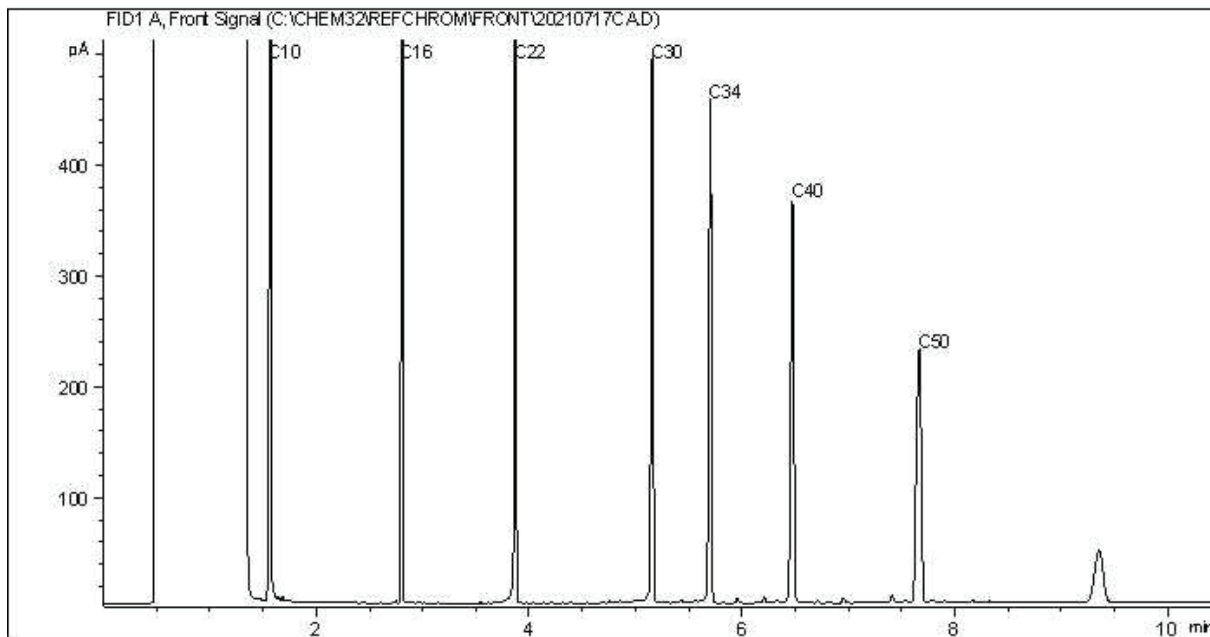
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

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

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram

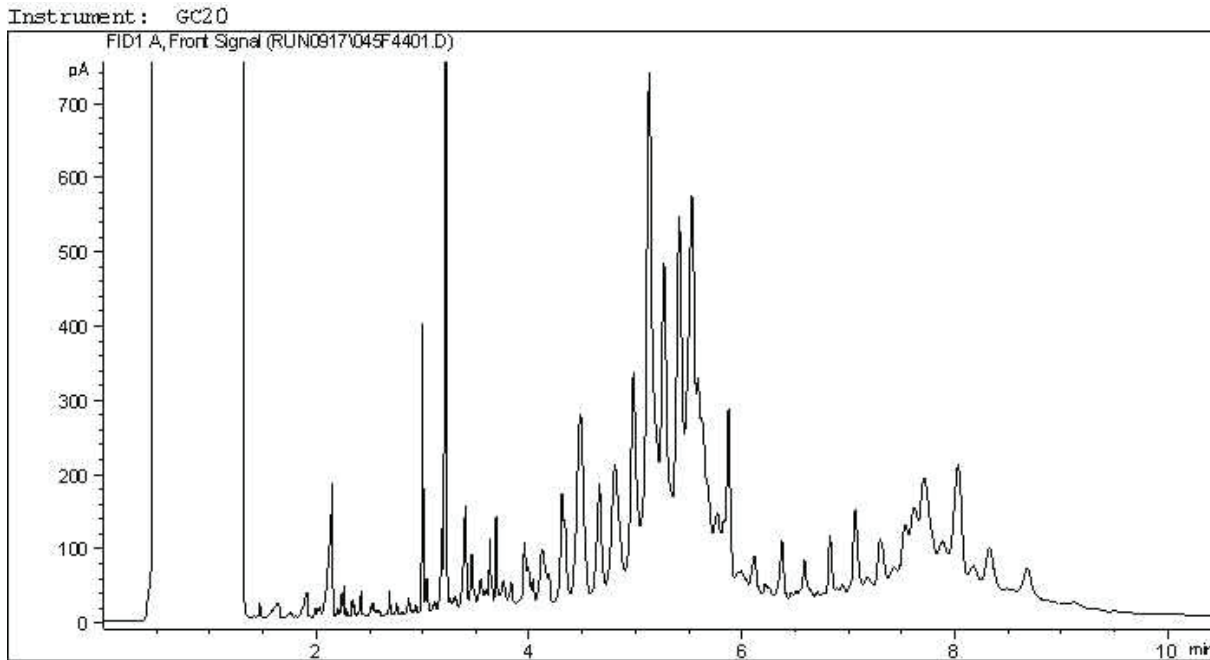


TYPICAL PRODUCT CARBON NUMBER RANGES

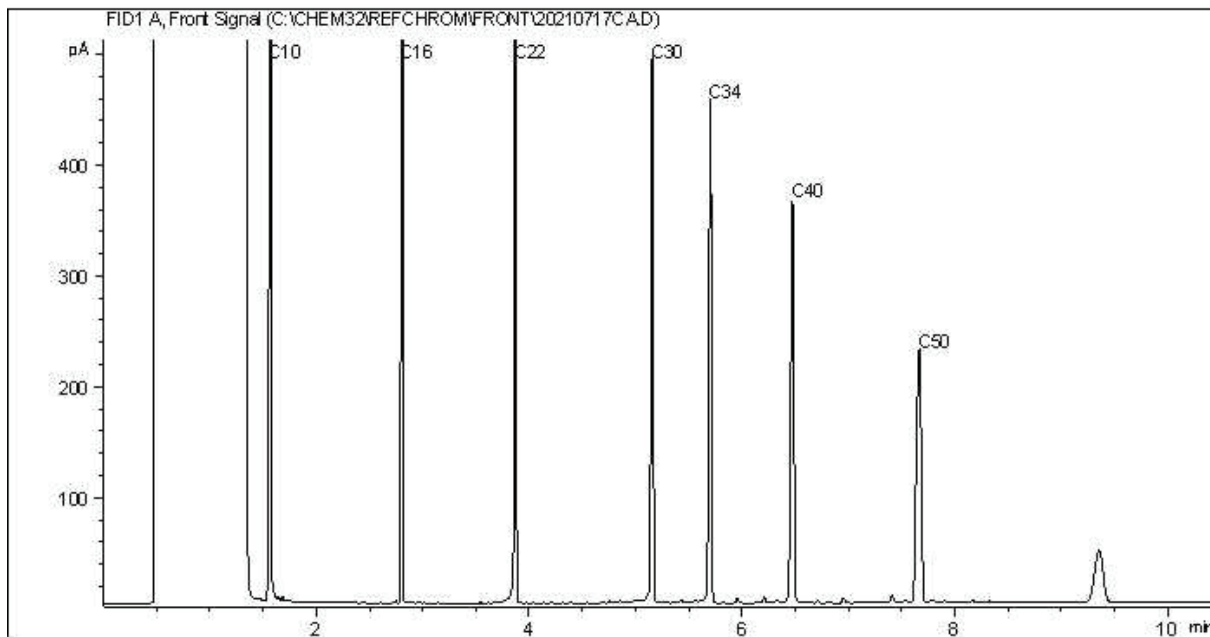
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

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



Carbon Range Distribution - Reference Chromatogram



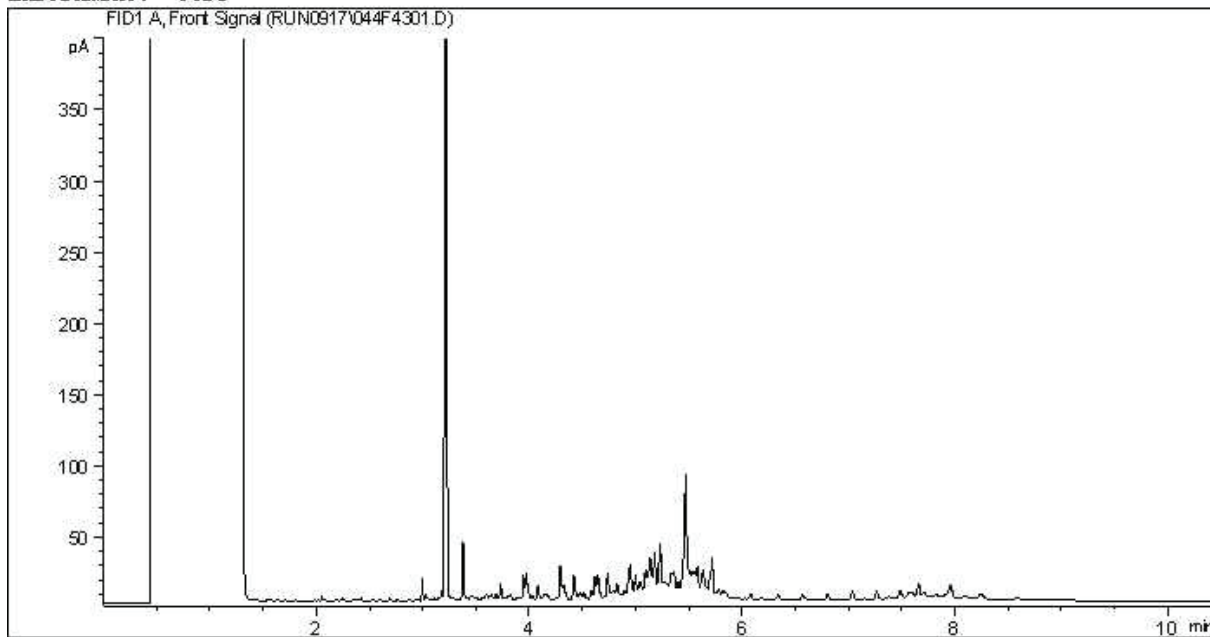
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

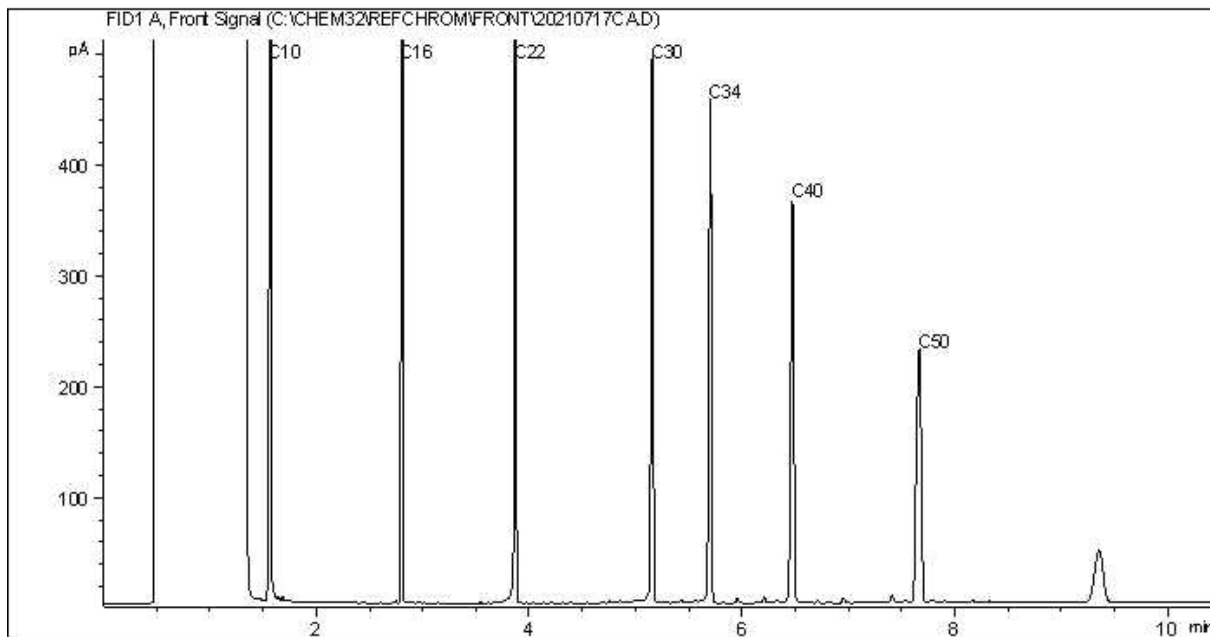
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CCME Hydrocarbons (F2-F4)+F3A/B in soil Chromatogram

Instrument: GC20



Carbon Range Distribution - Reference Chromatogram

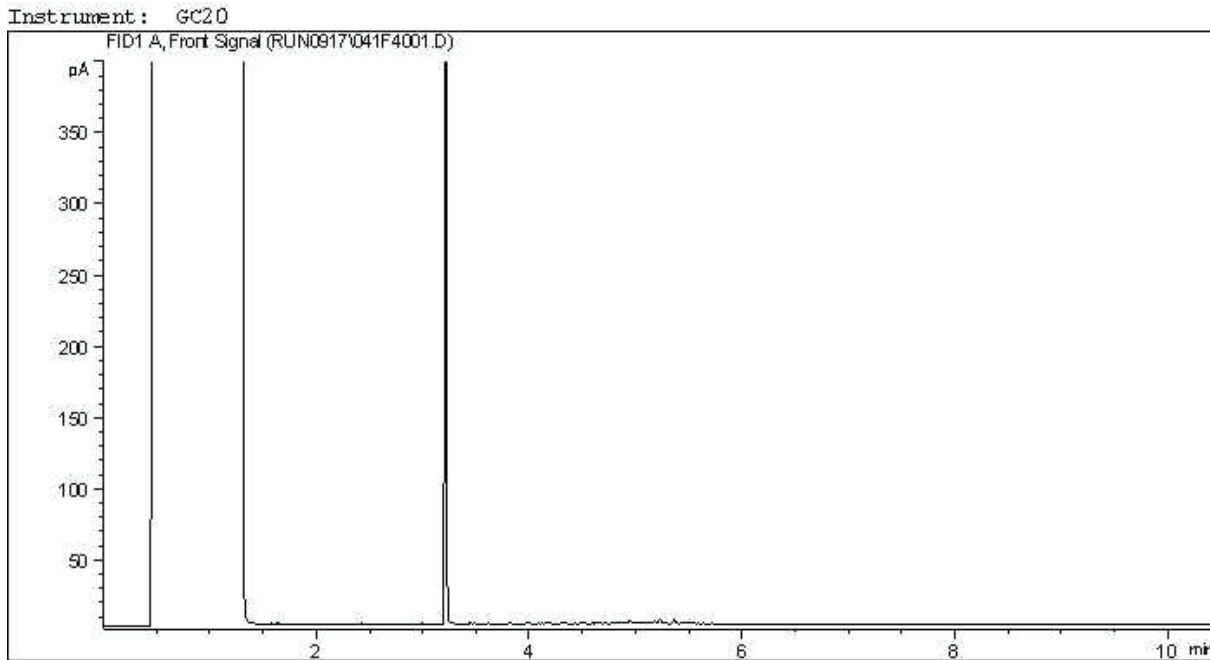


TYPICAL PRODUCT CARBON NUMBER RANGES

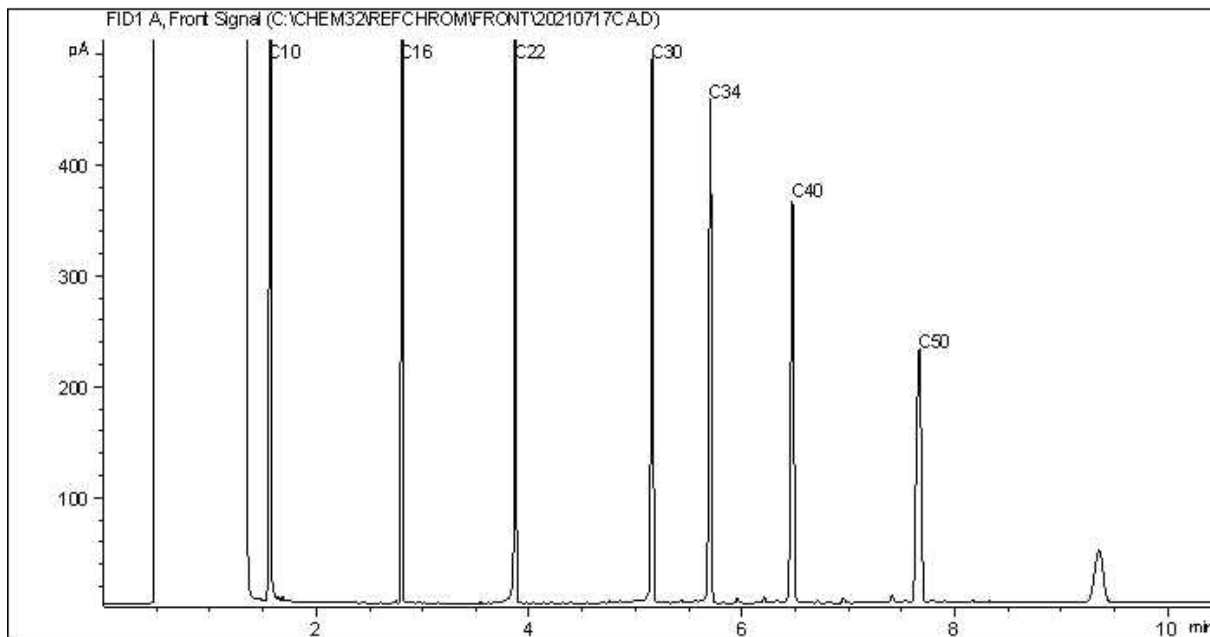
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

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CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



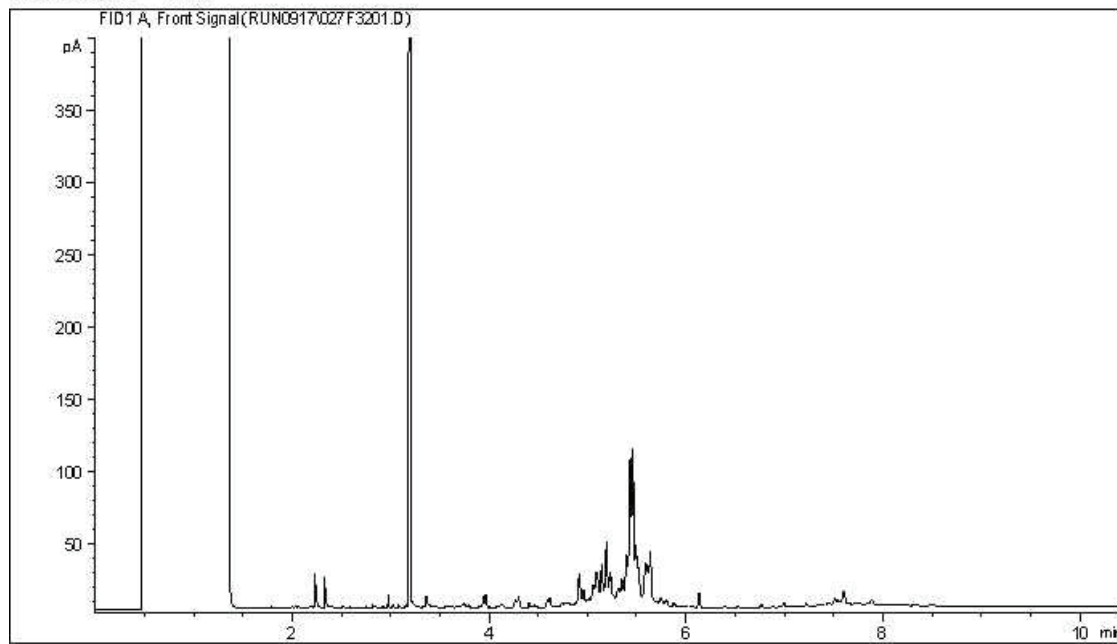
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

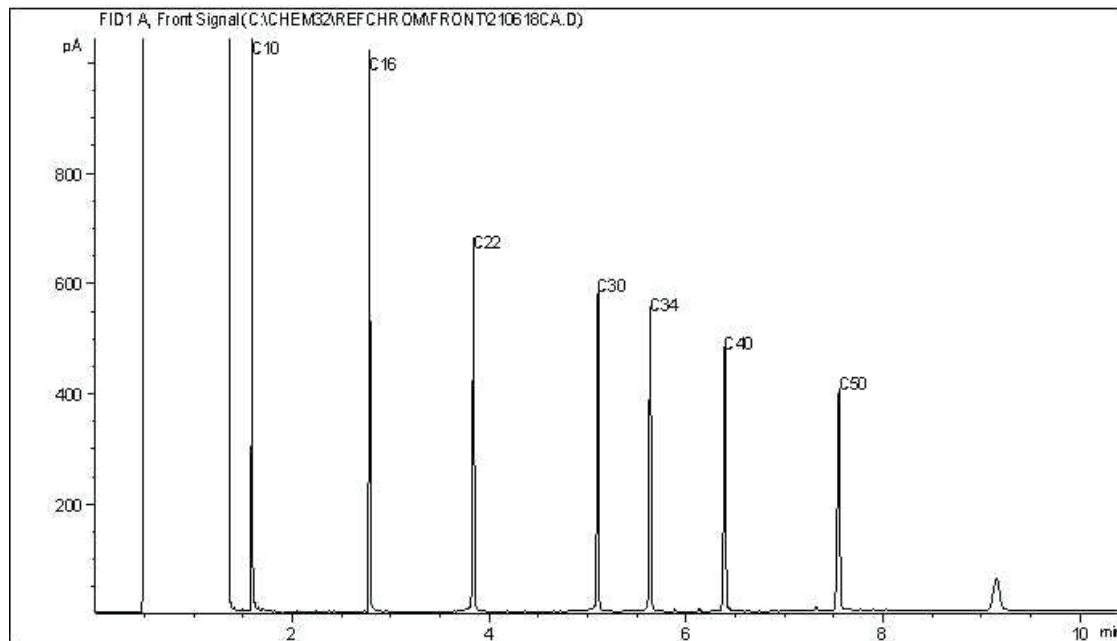
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

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

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



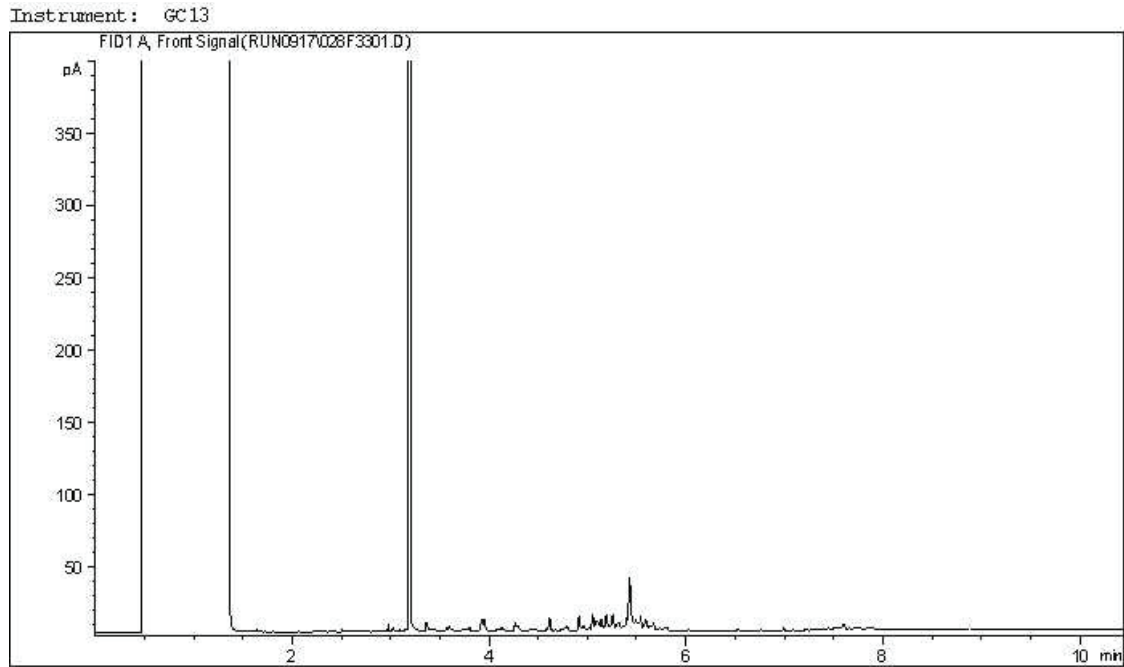
**TYPICAL PRODUCT CARBON NUMBER RANGES**

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

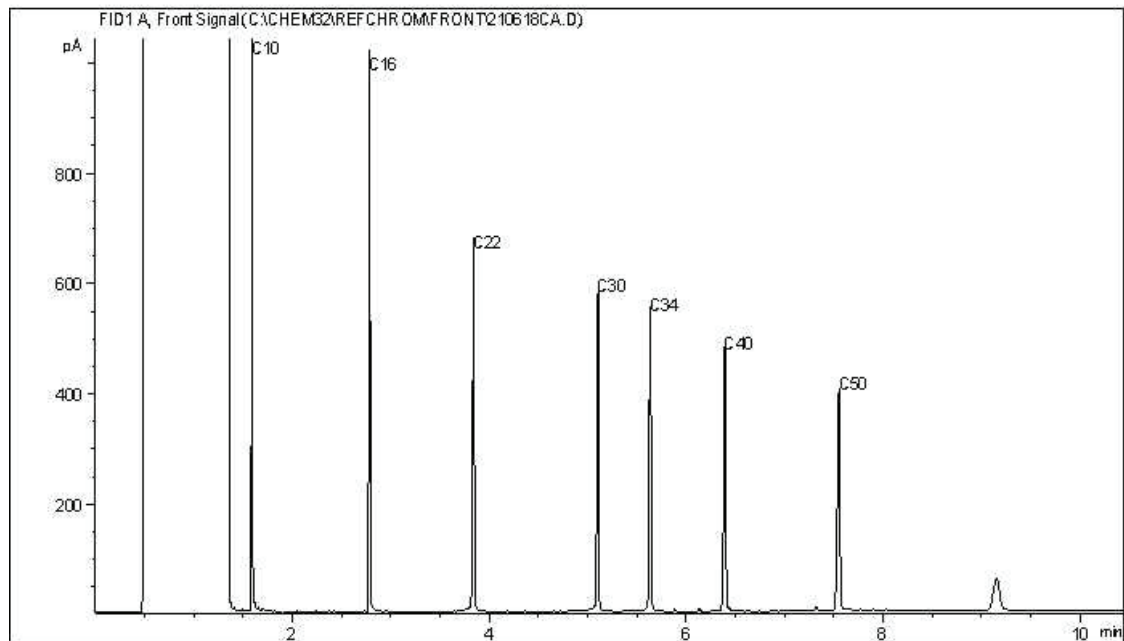
**Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.**



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



Carbon Range Distribution - Reference Chromatogram



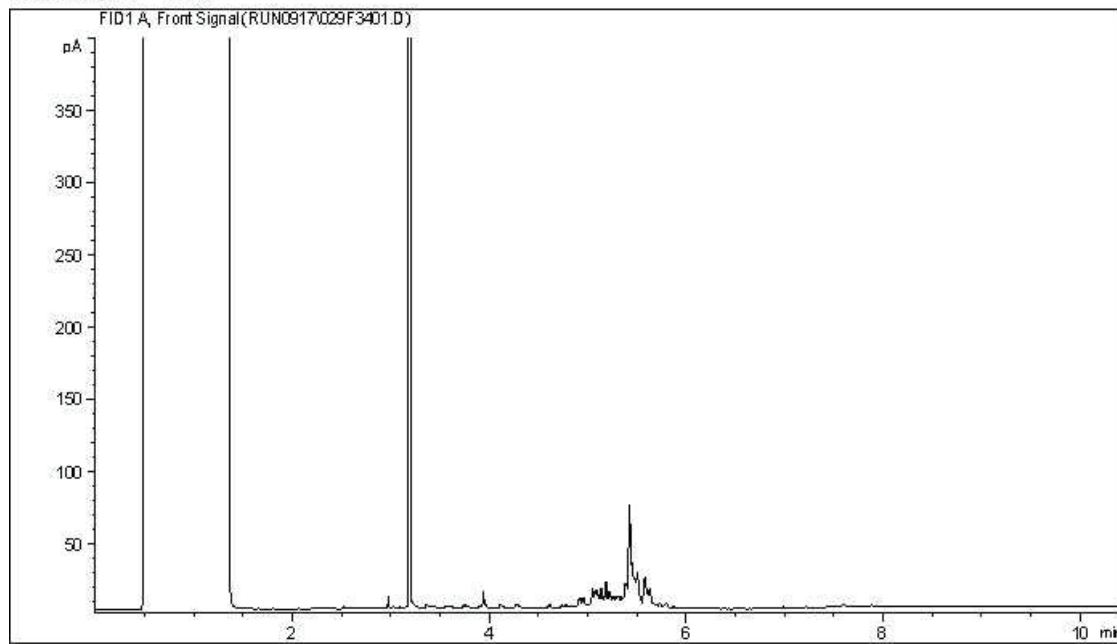
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

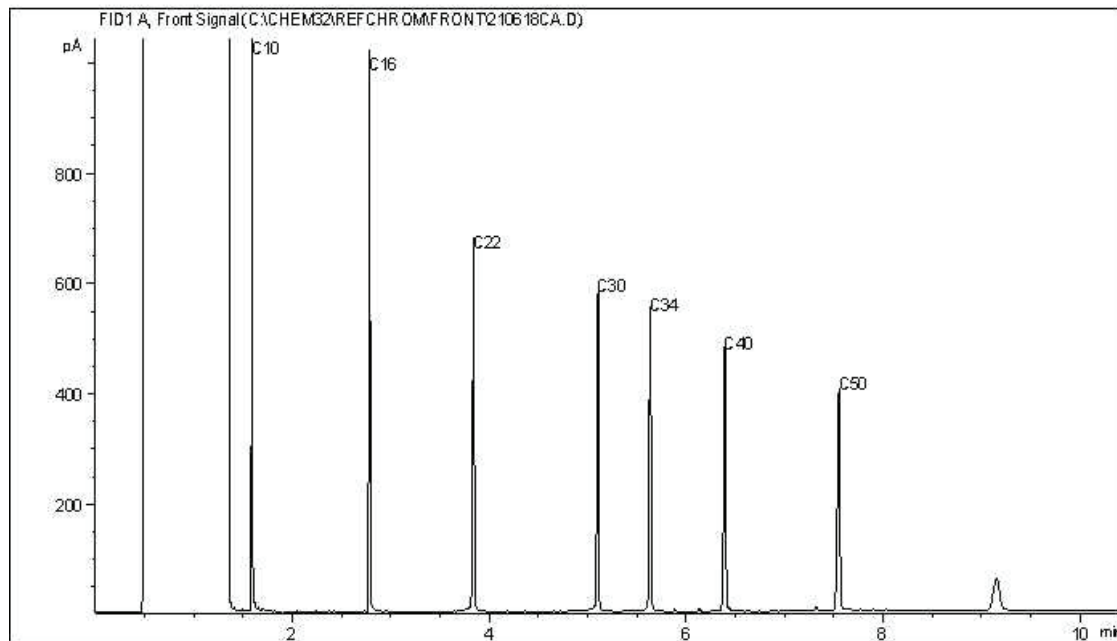
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CCME Hydrocarbons (F2-F4)+F3A/B in soil Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



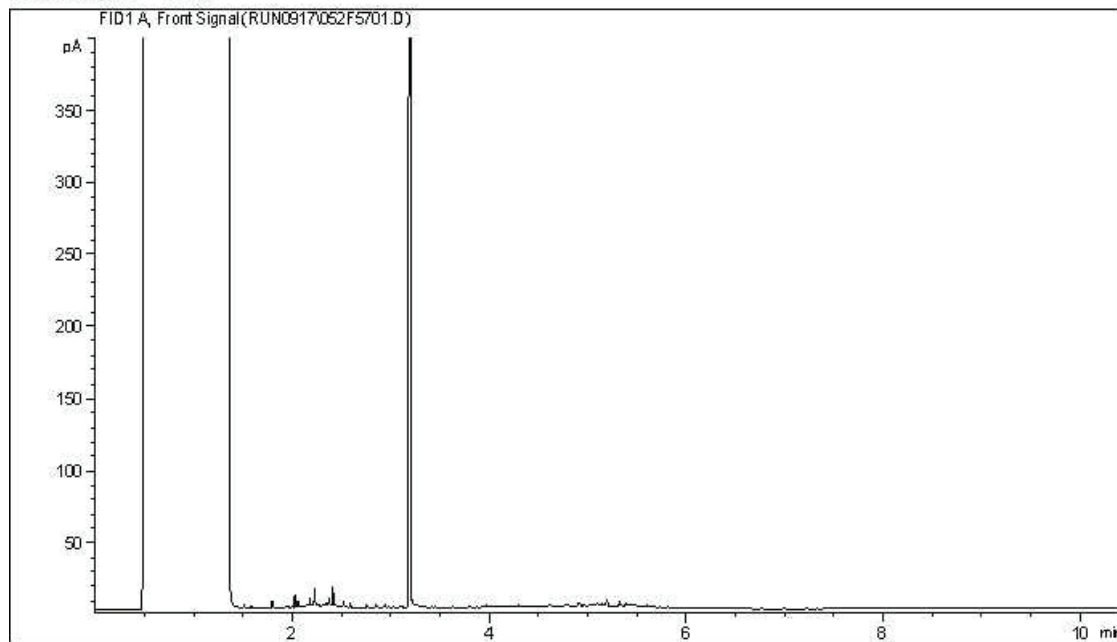
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

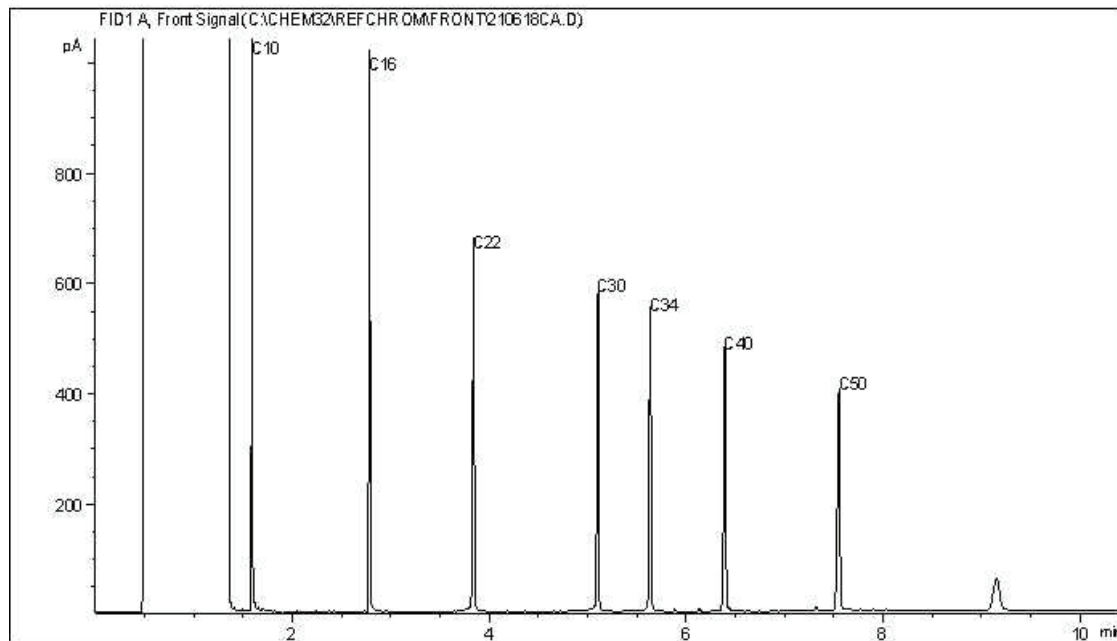
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram

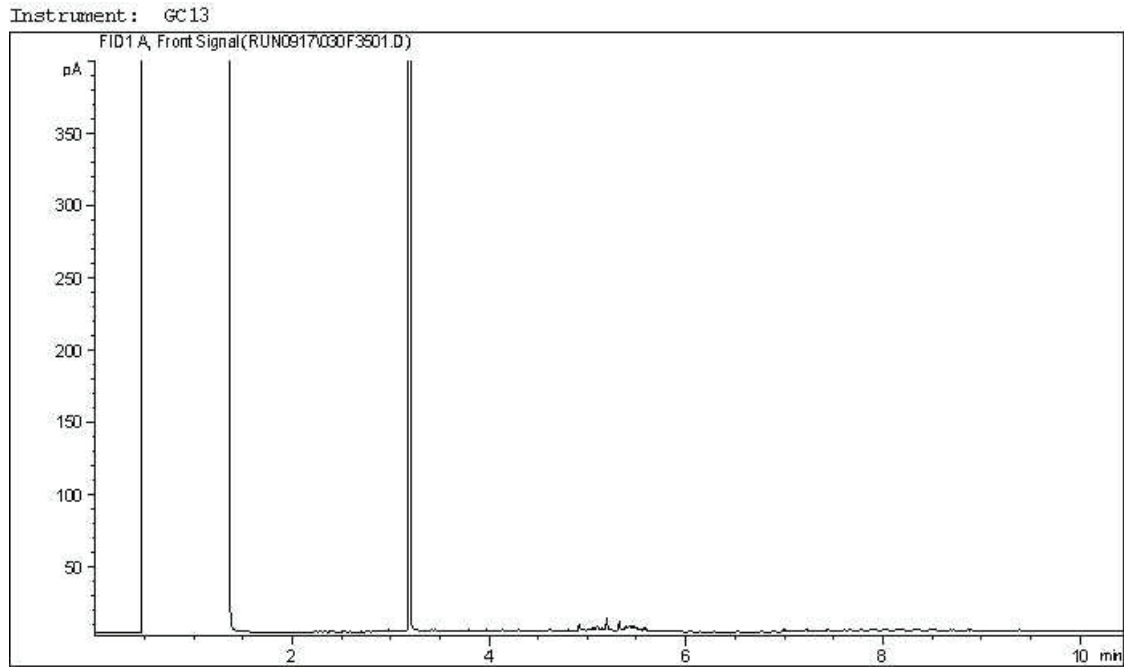


TYPICAL PRODUCT CARBON NUMBER RANGES

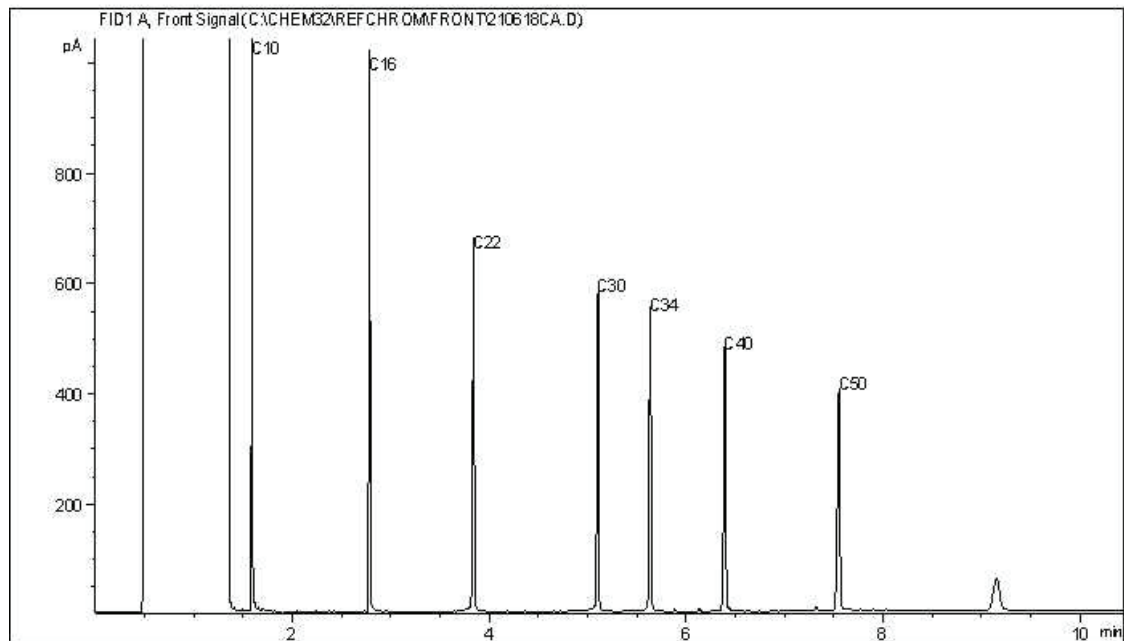
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

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

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



Carbon Range Distribution - Reference Chromatogram



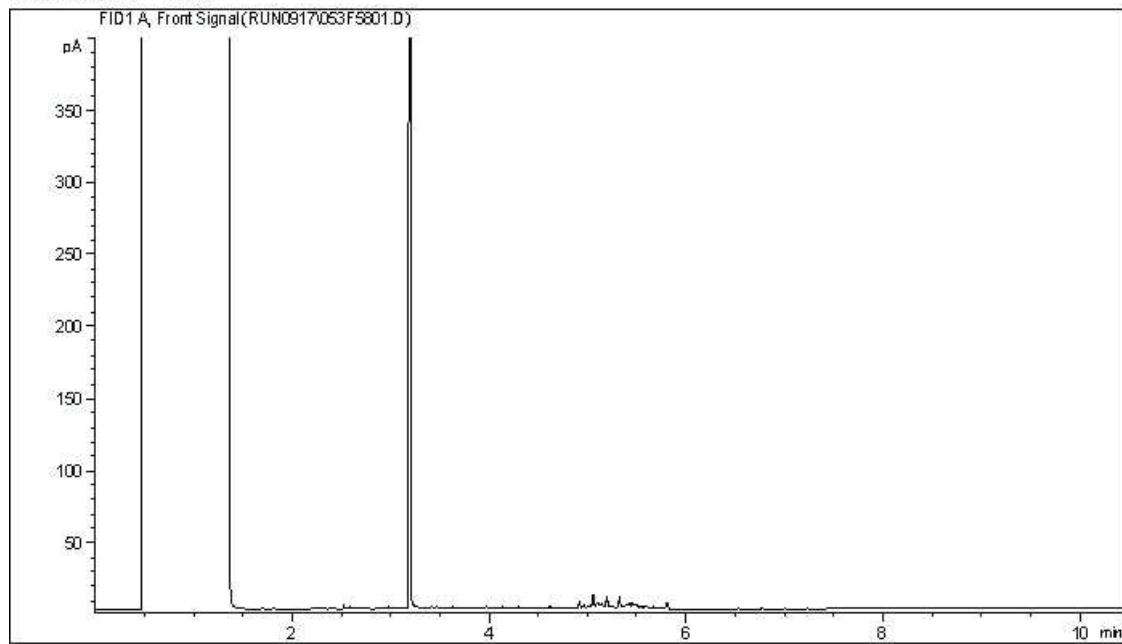
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
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Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

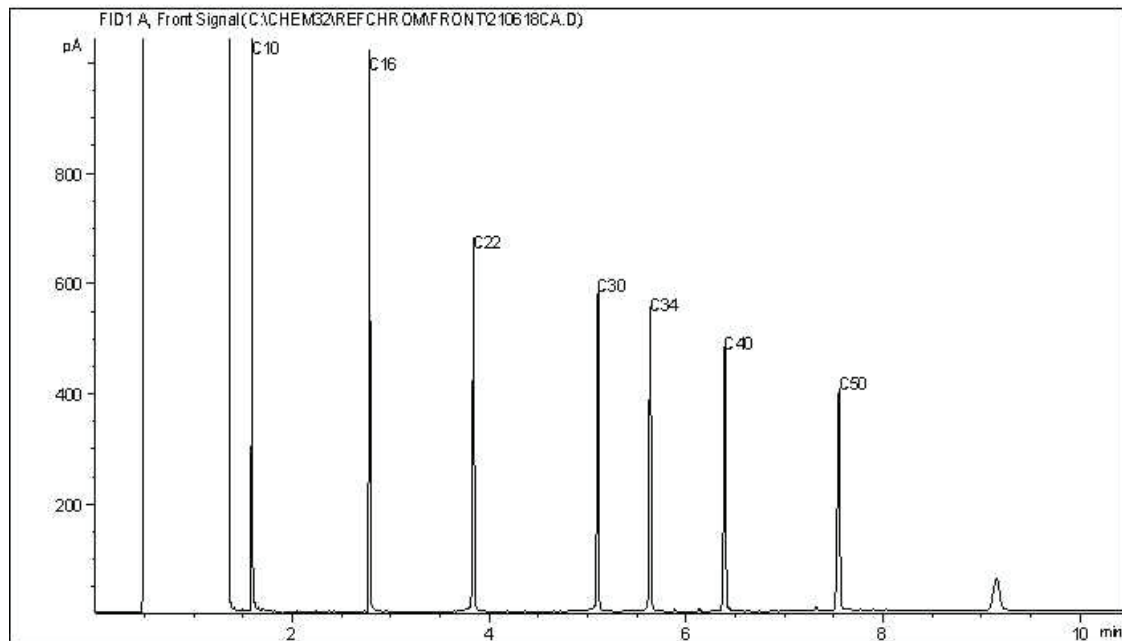
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



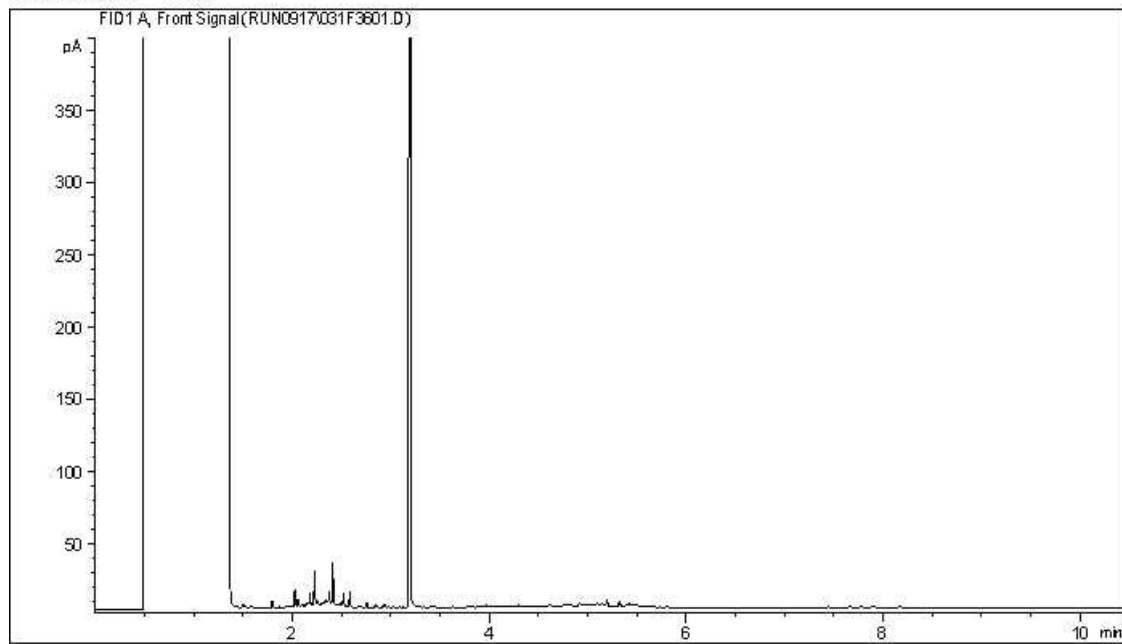
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

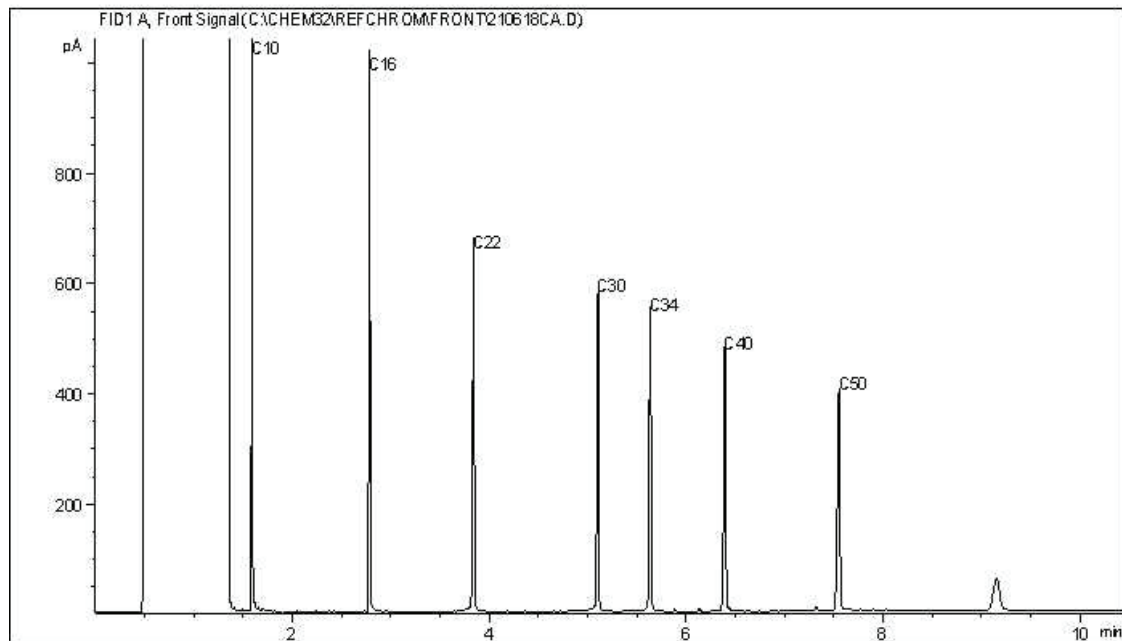
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CCME Hydrocarbons (F2-F4)+F3A/B in soil Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



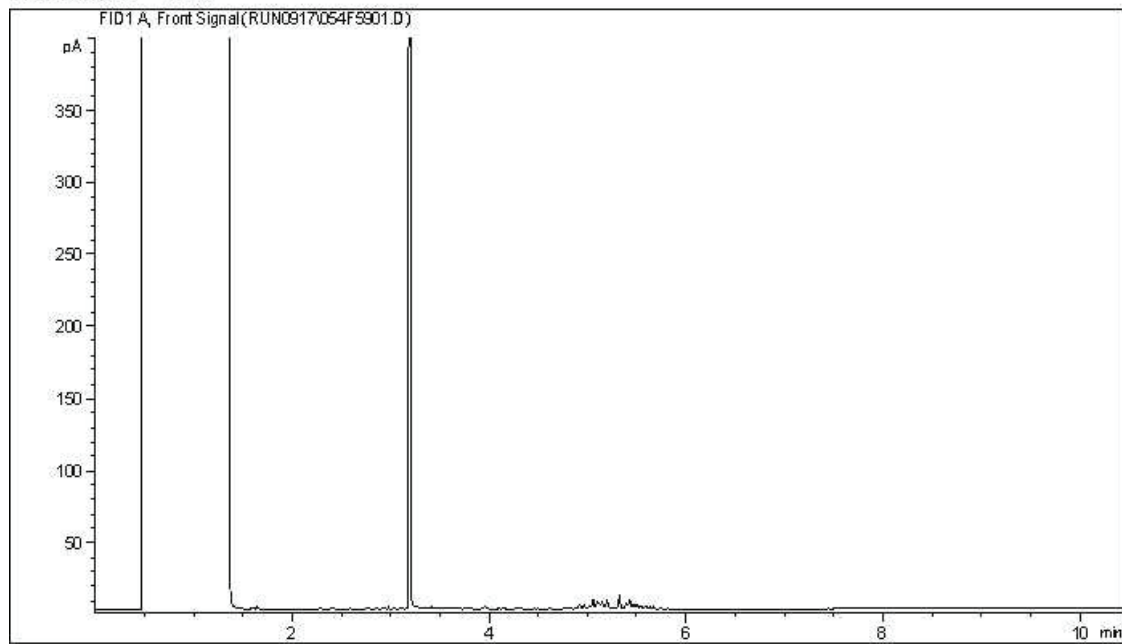
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

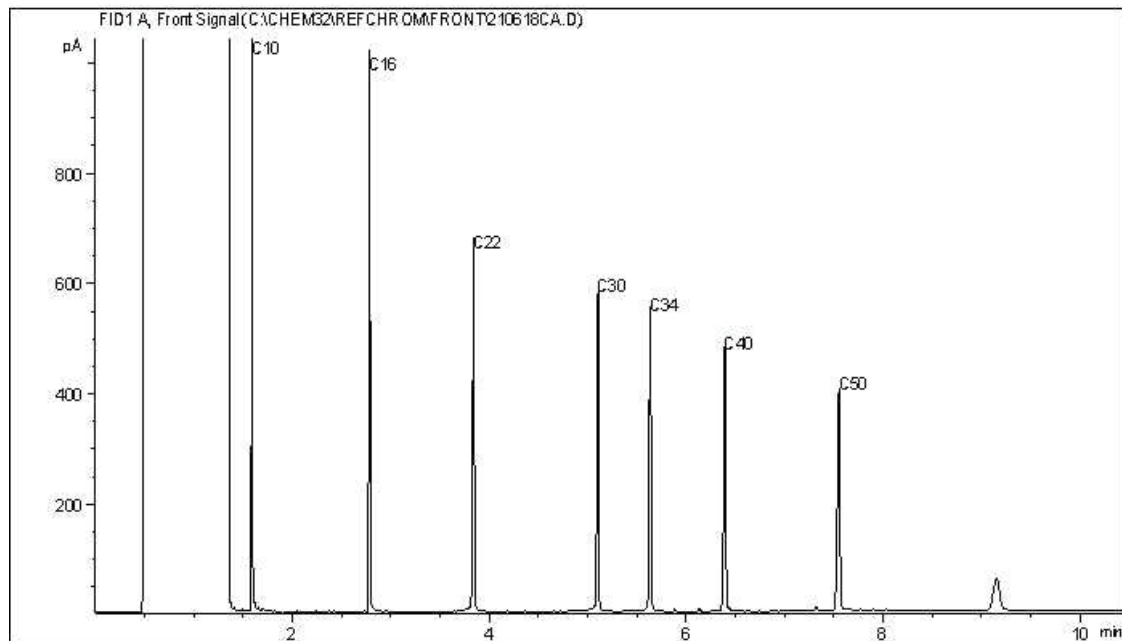
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



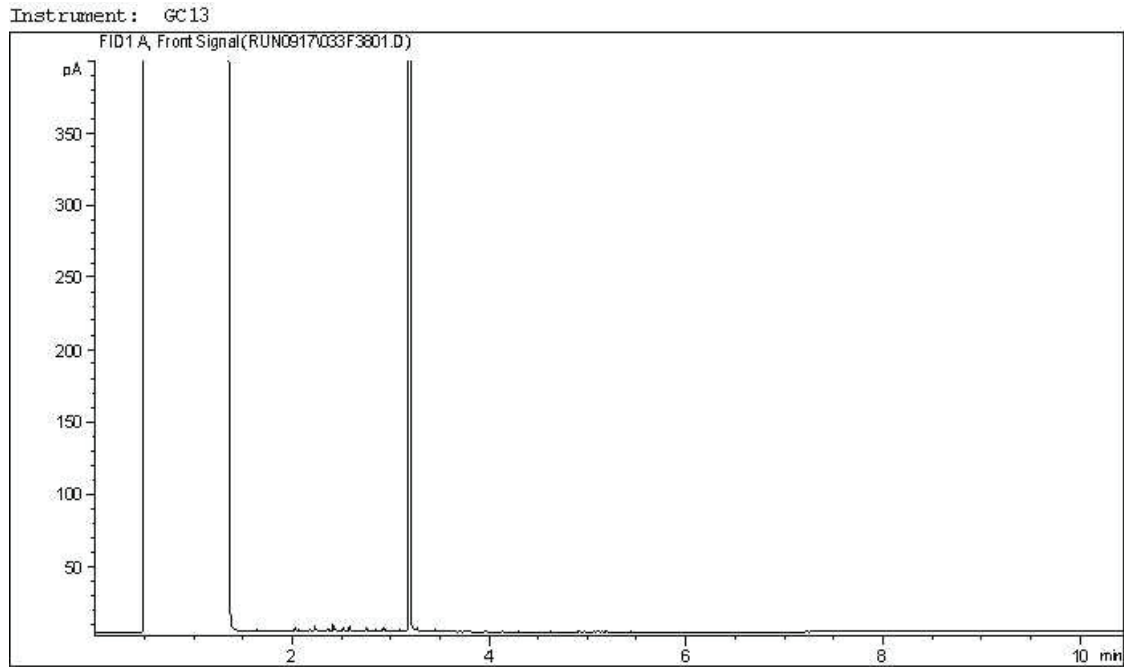
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

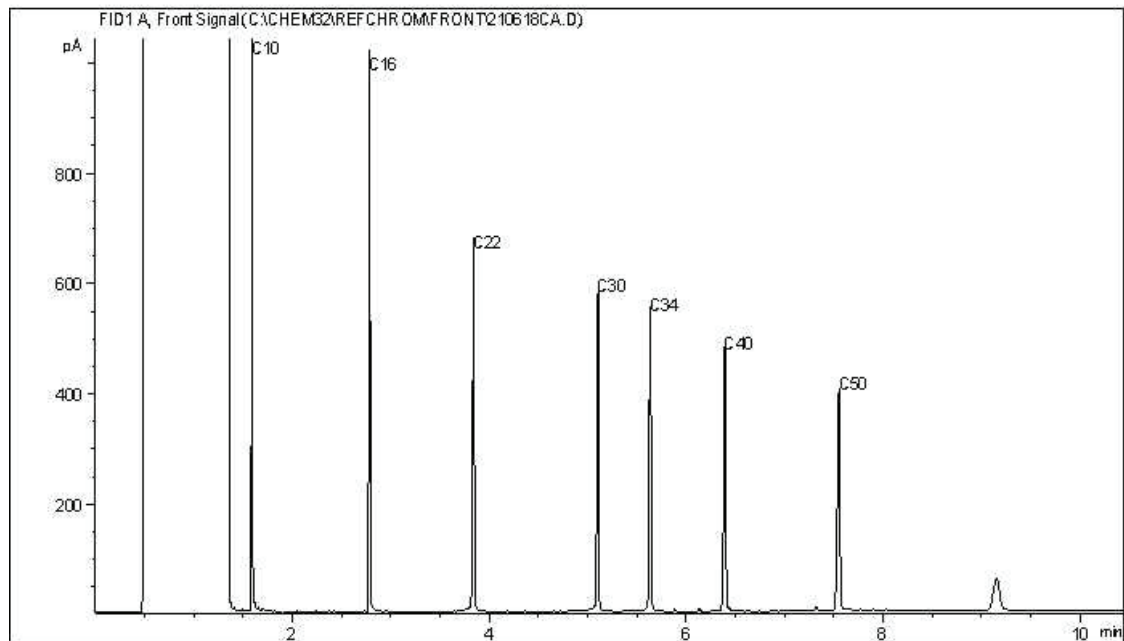
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CCME Hydrocarbons (F2-F4)+F3A/B in soil Chromatogram



Carbon Range Distribution - Reference Chromatogram



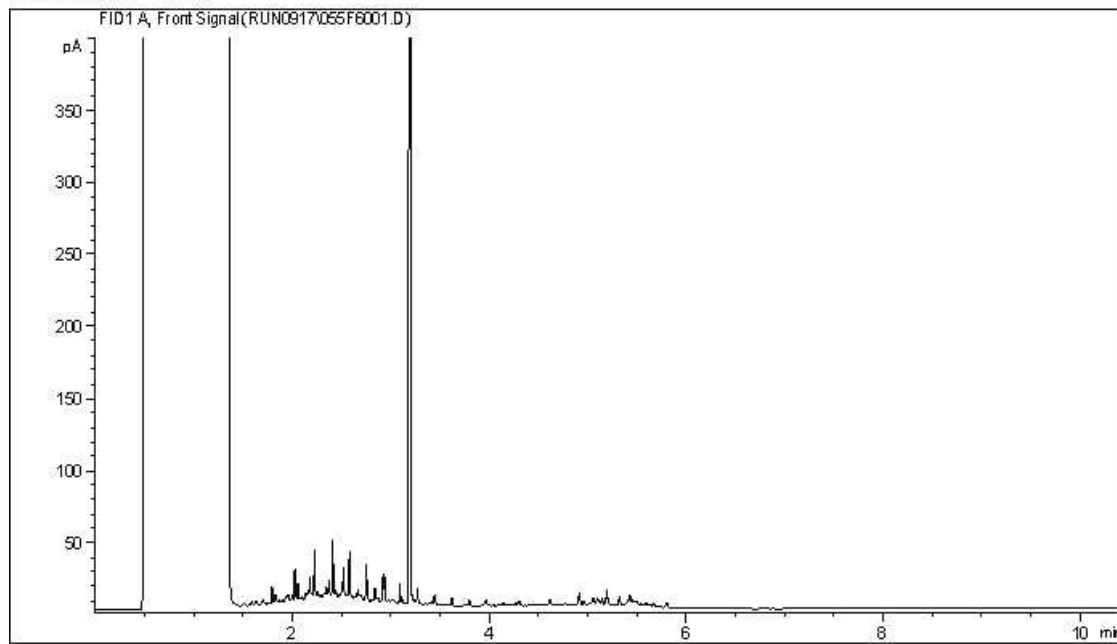
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

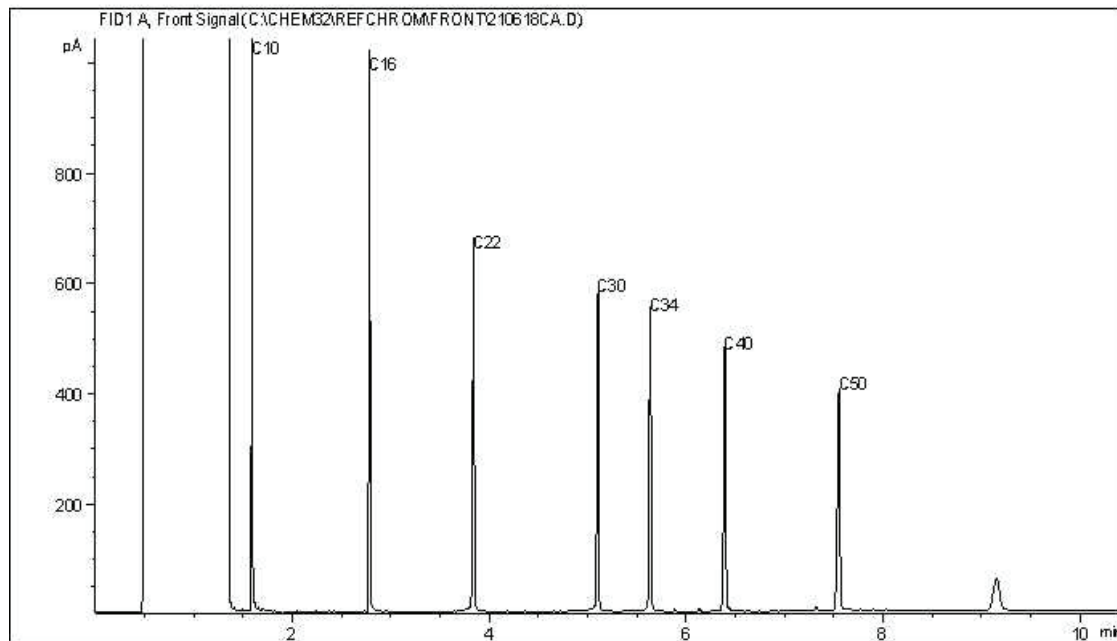
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



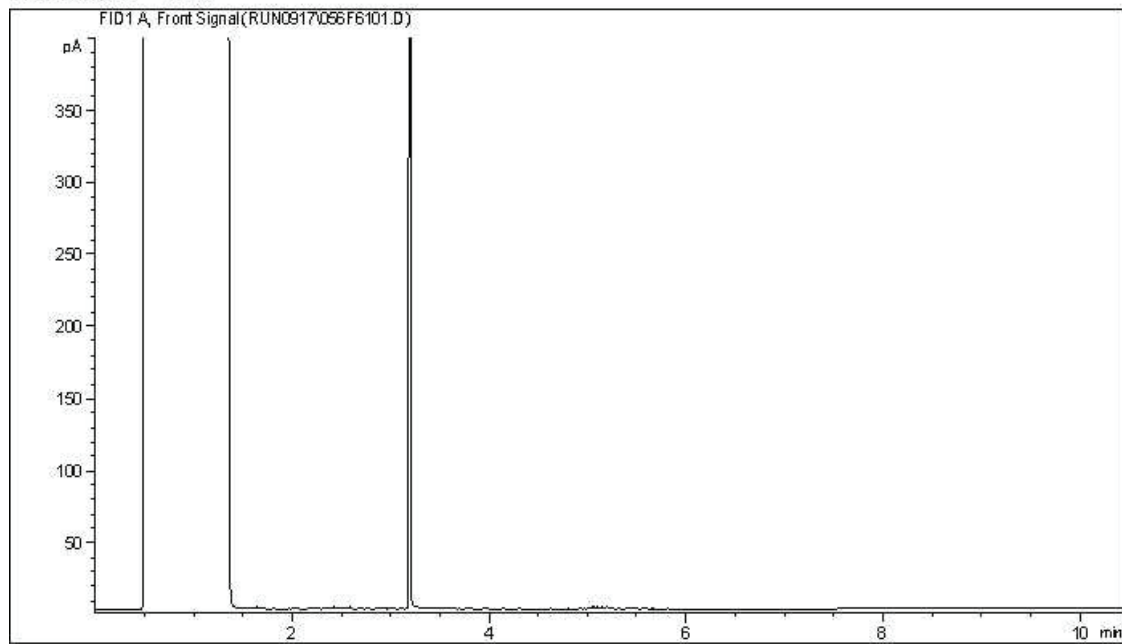
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

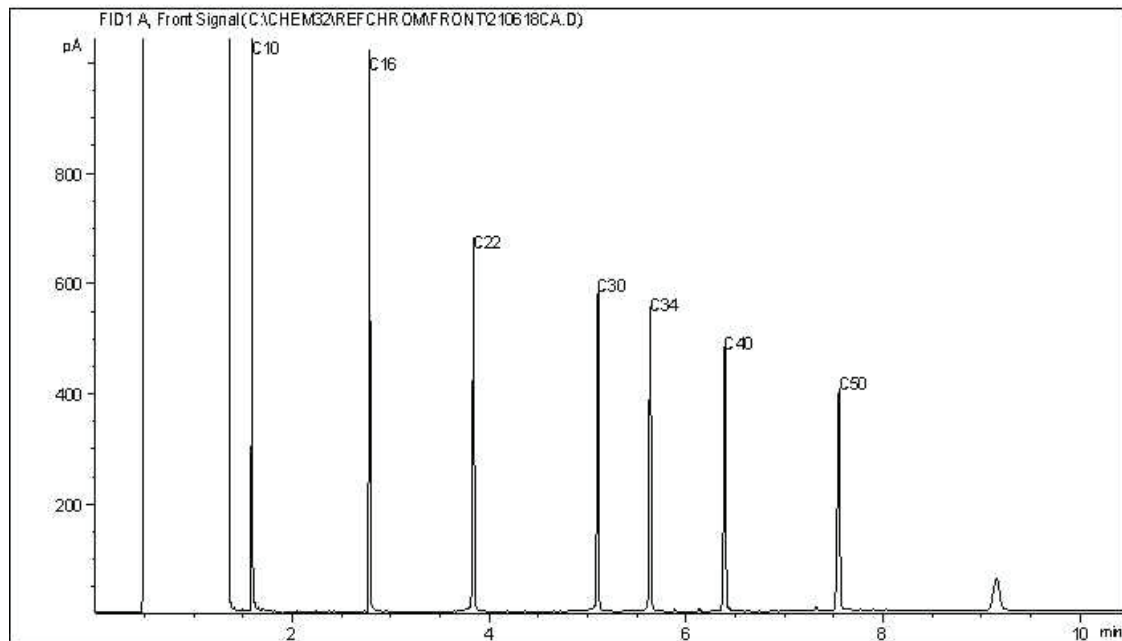
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



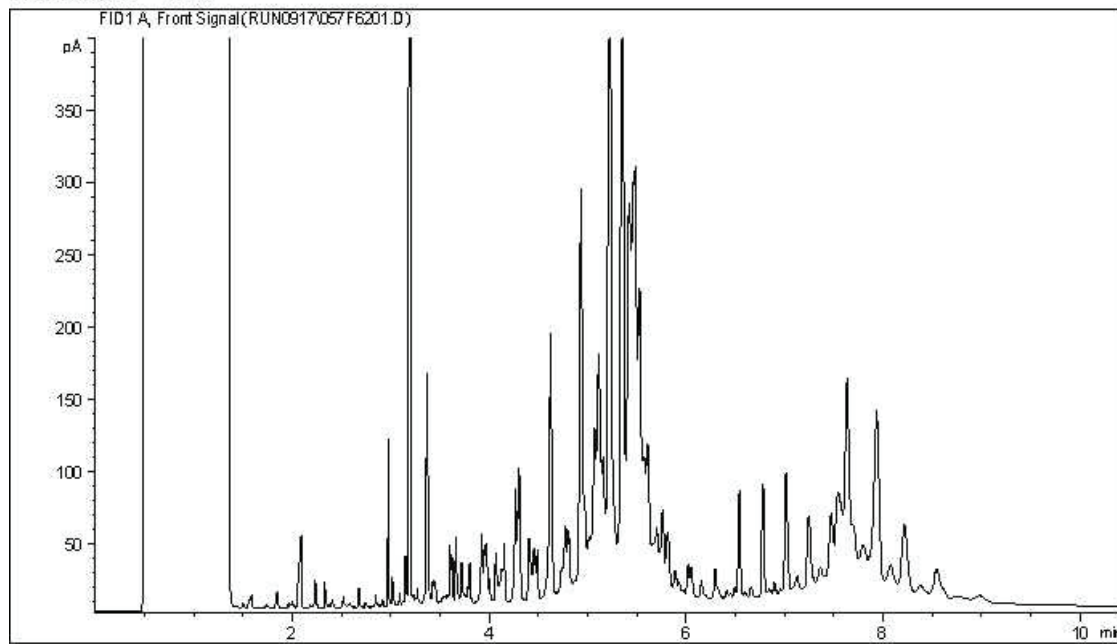
TYPICAL PRODUCT CARBON NUMBER RANGES

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Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
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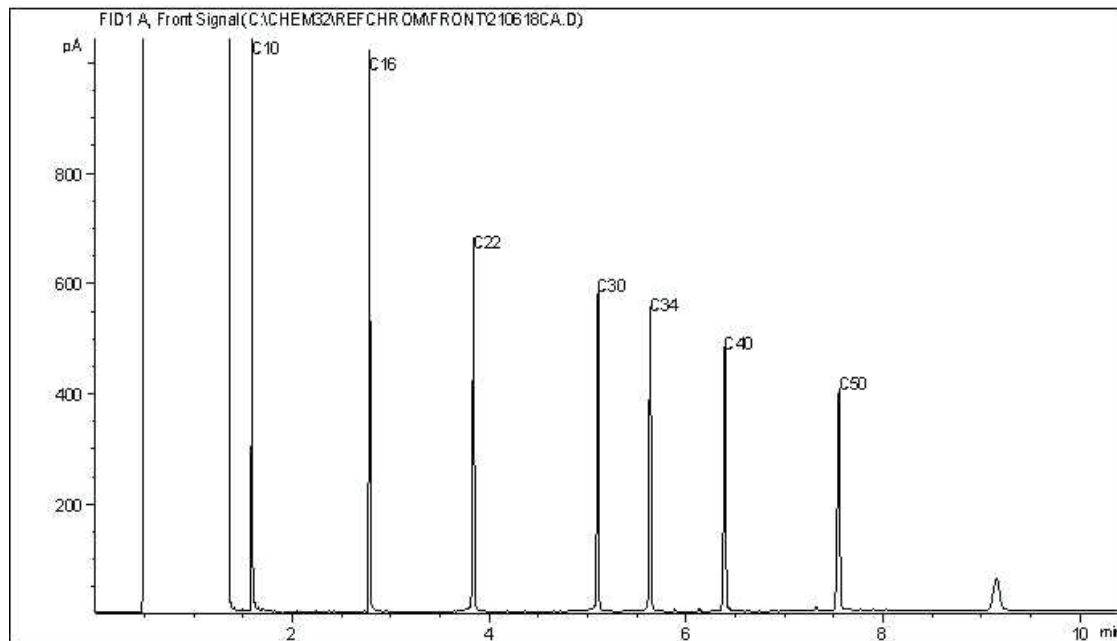
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



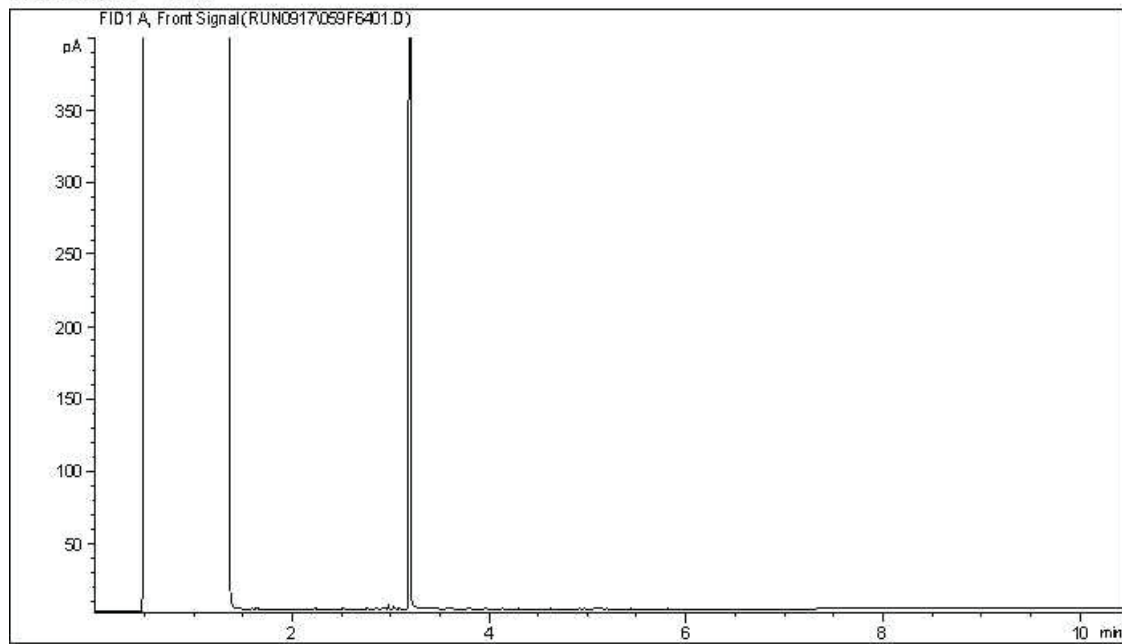
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

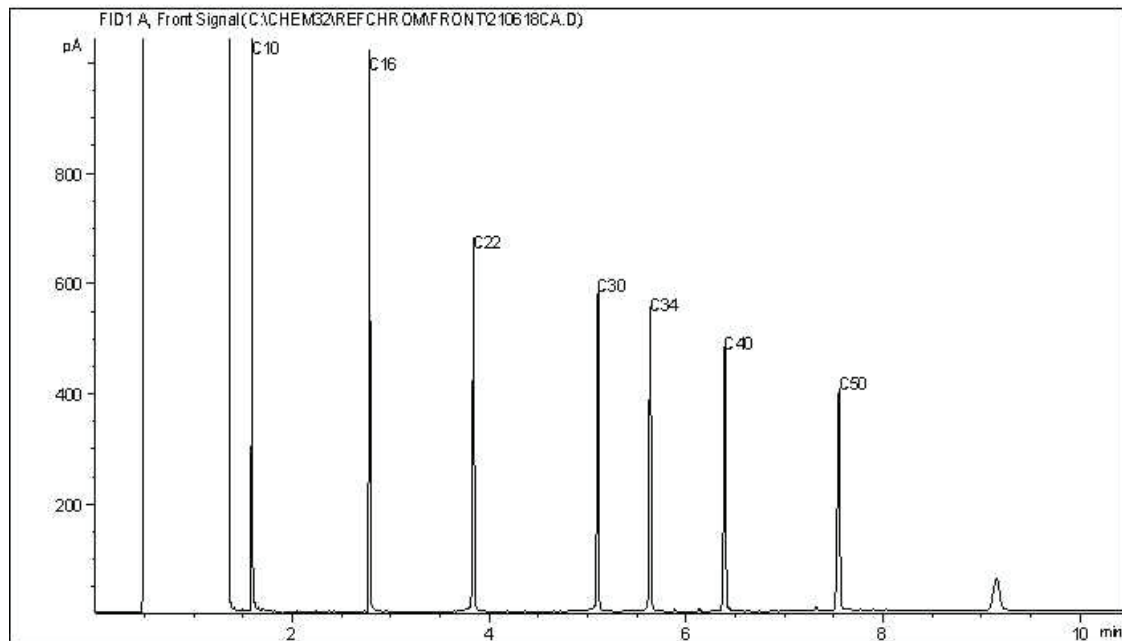
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



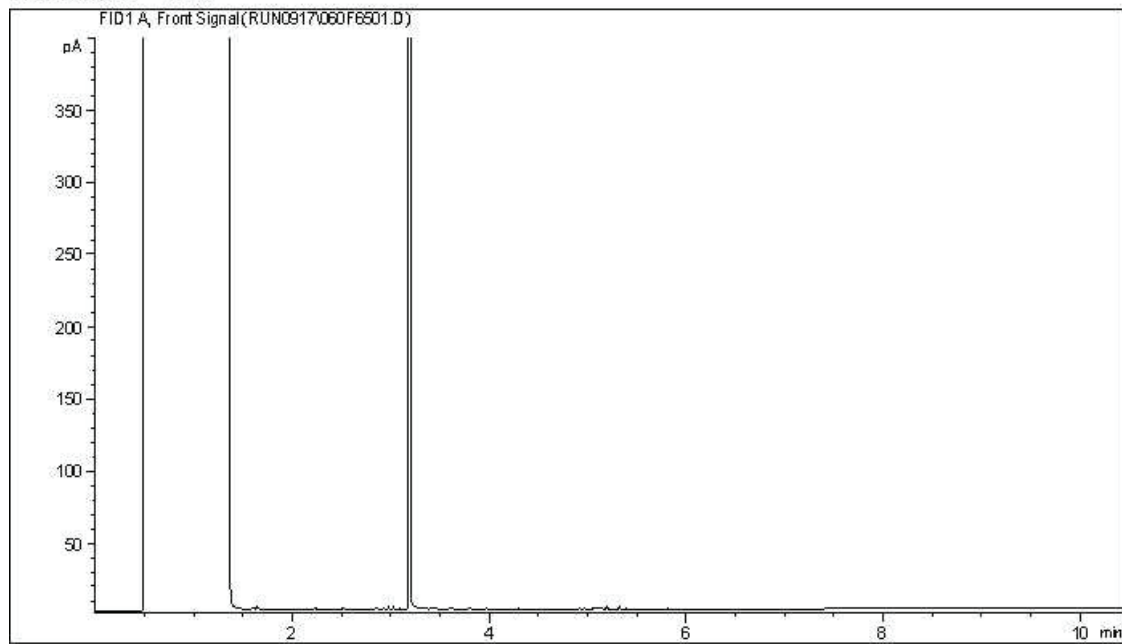
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

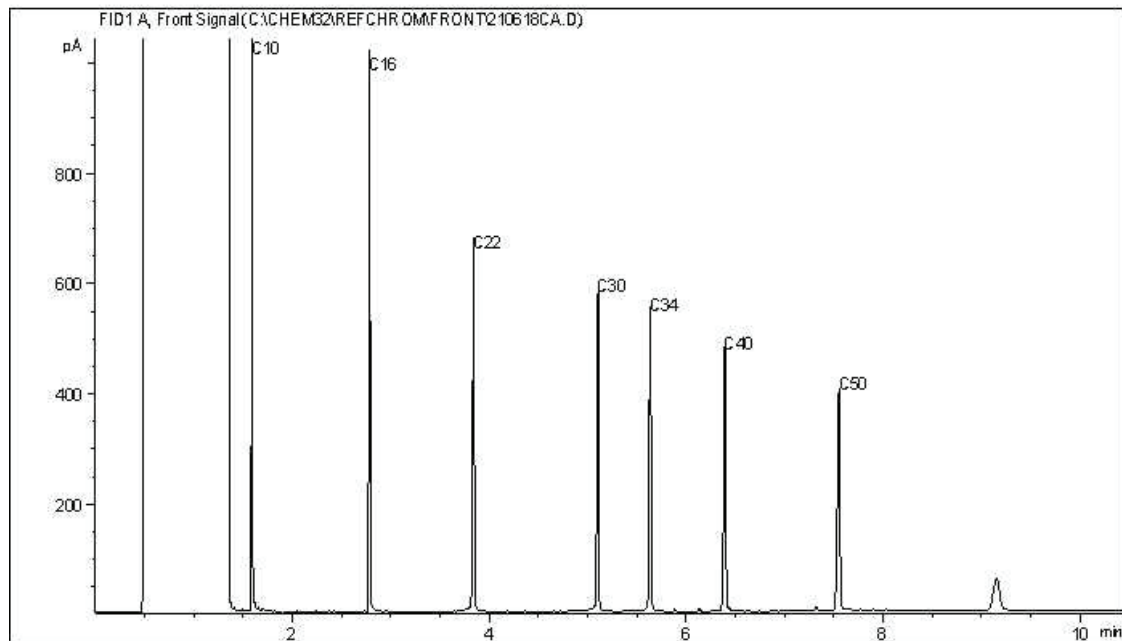
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



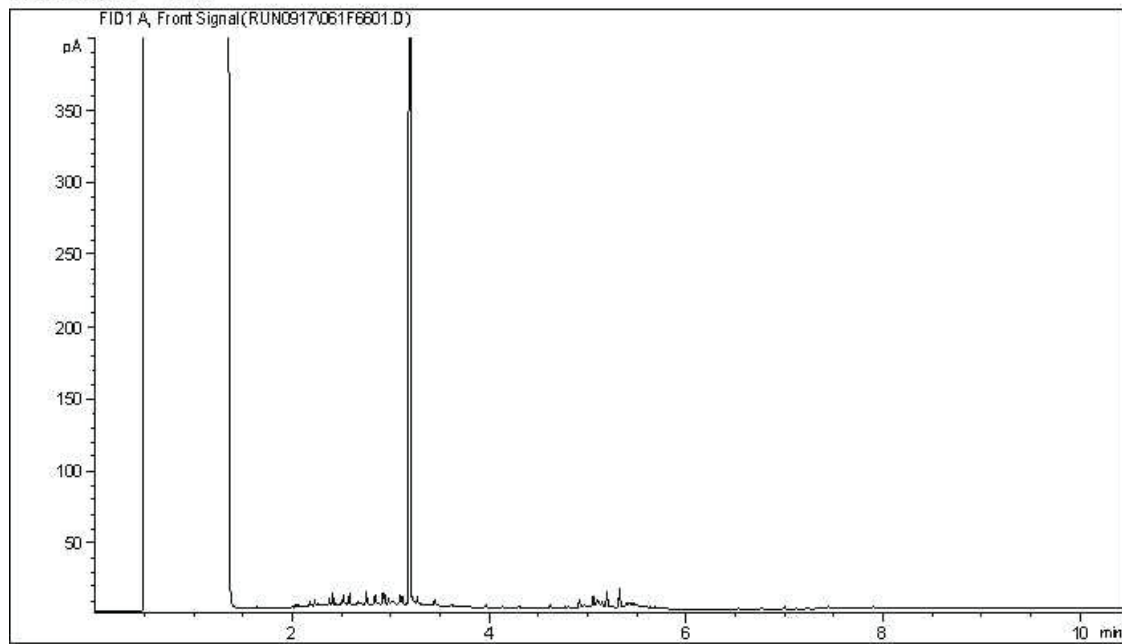
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

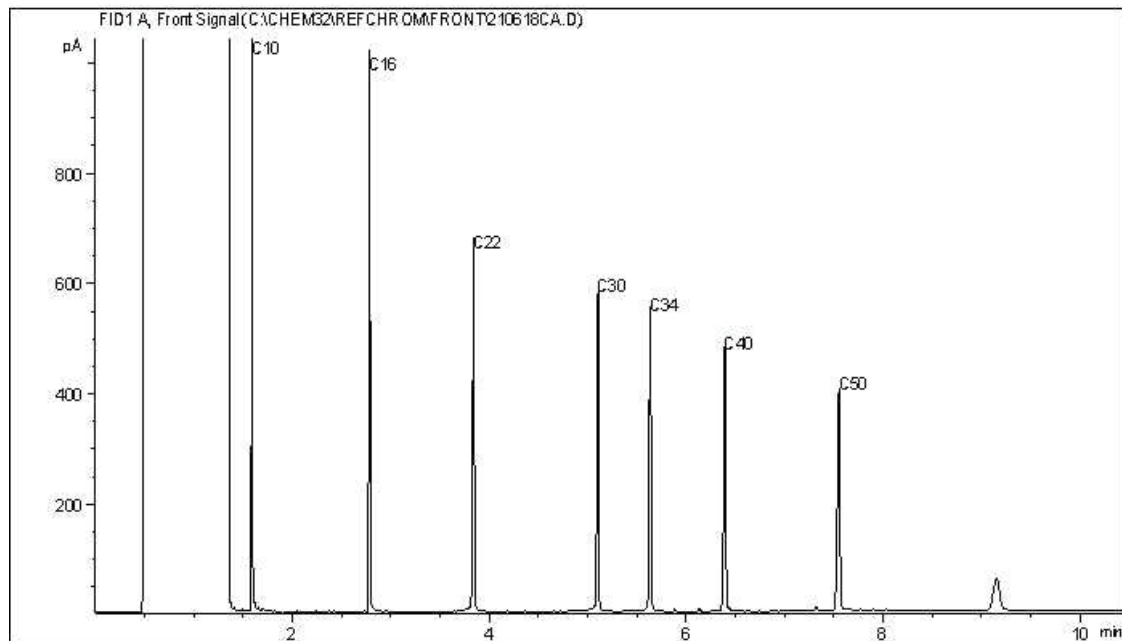
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

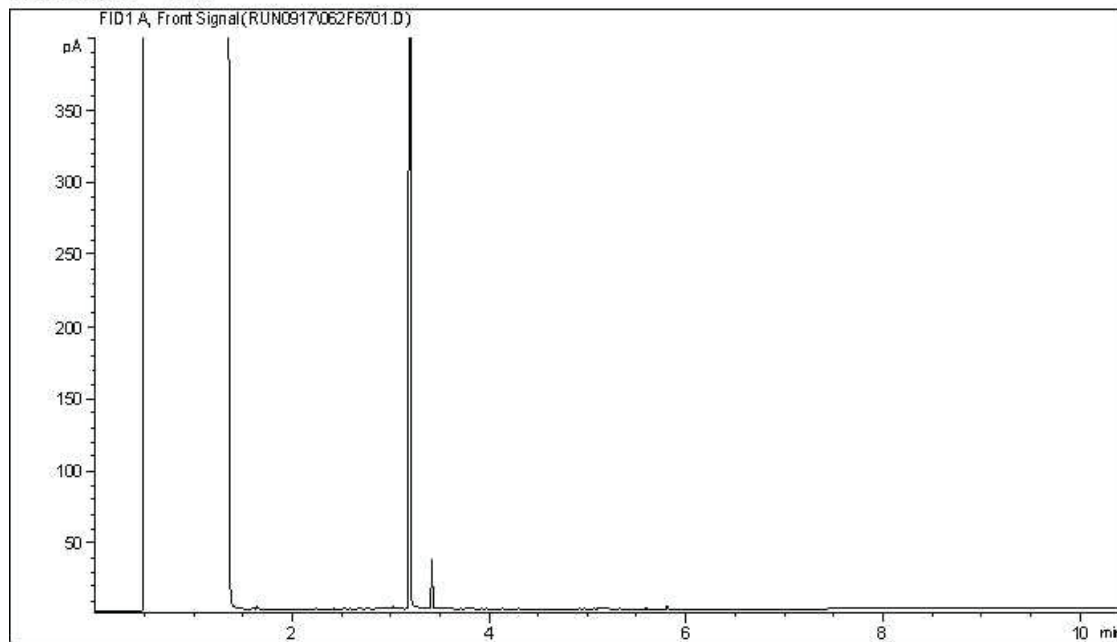
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

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

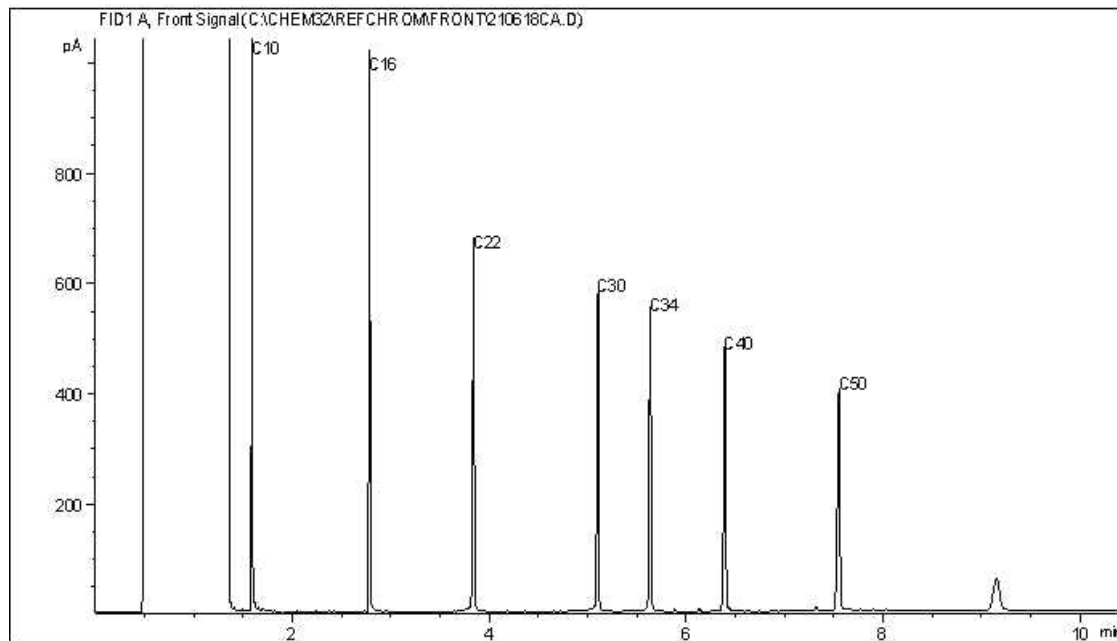


CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



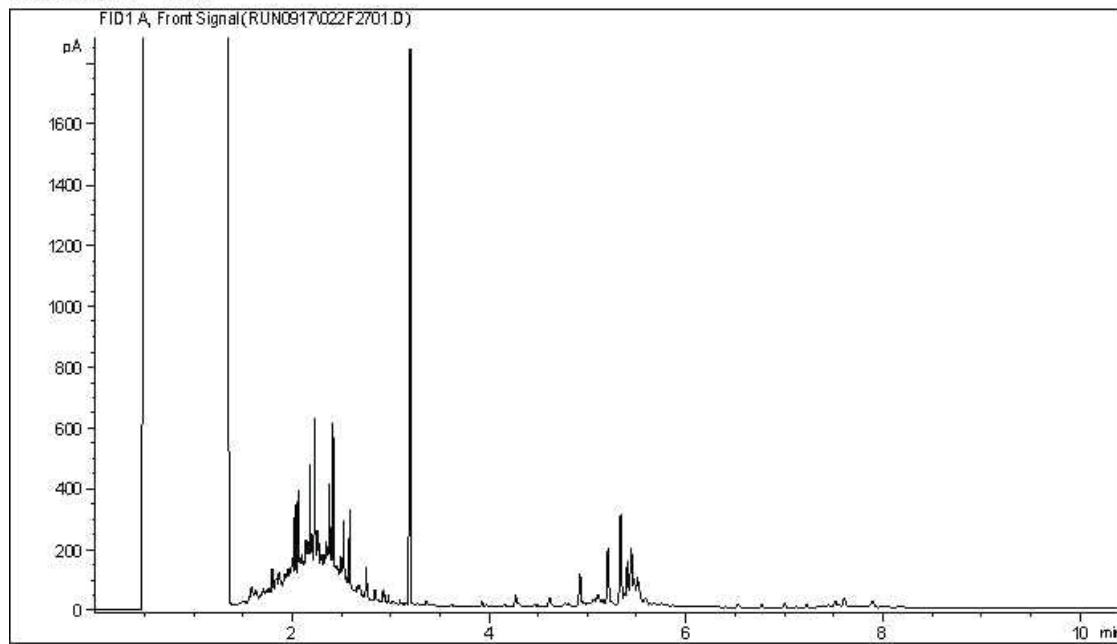
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

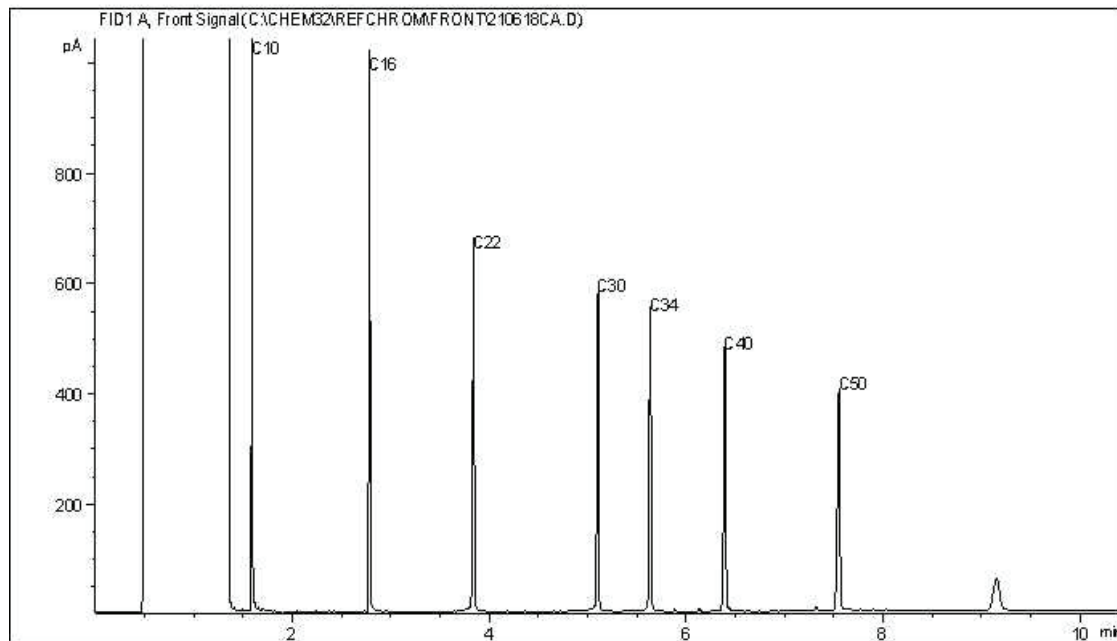
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

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

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



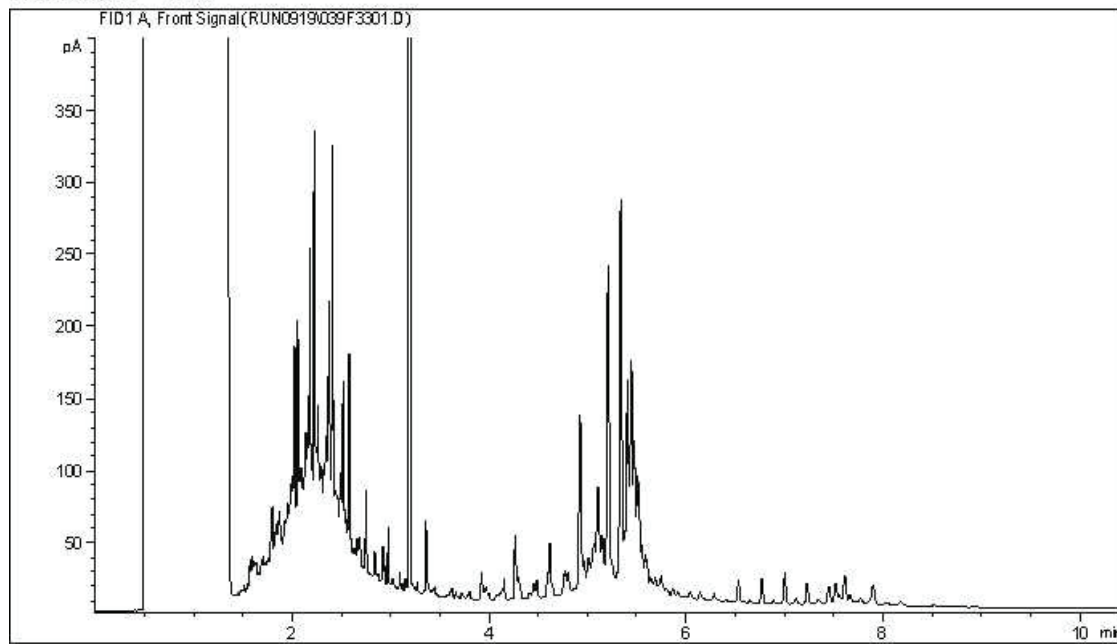
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

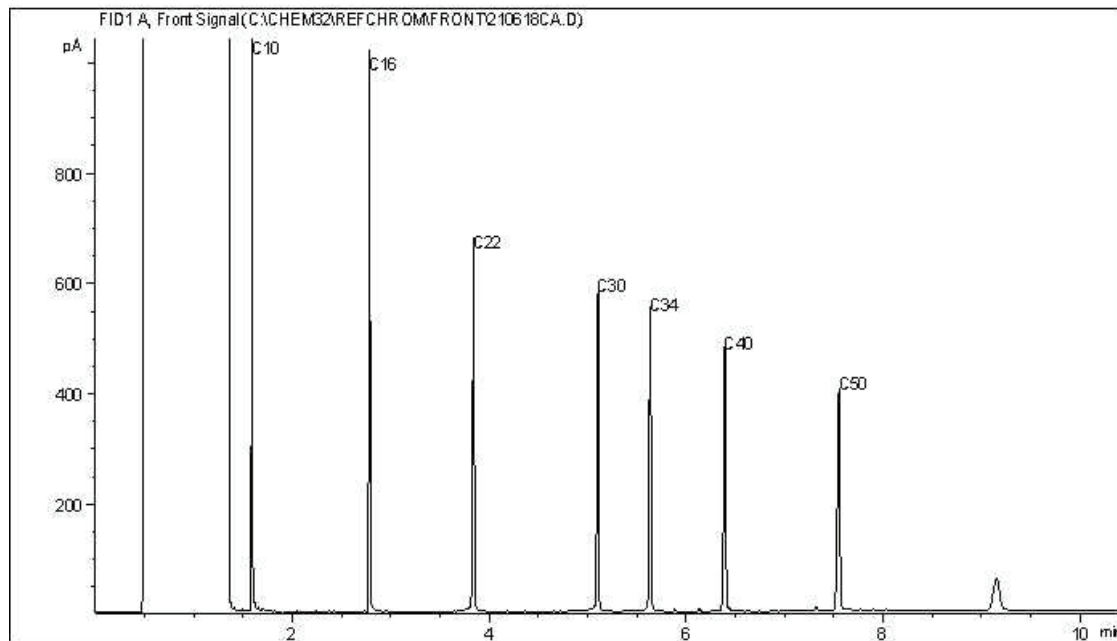
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

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

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



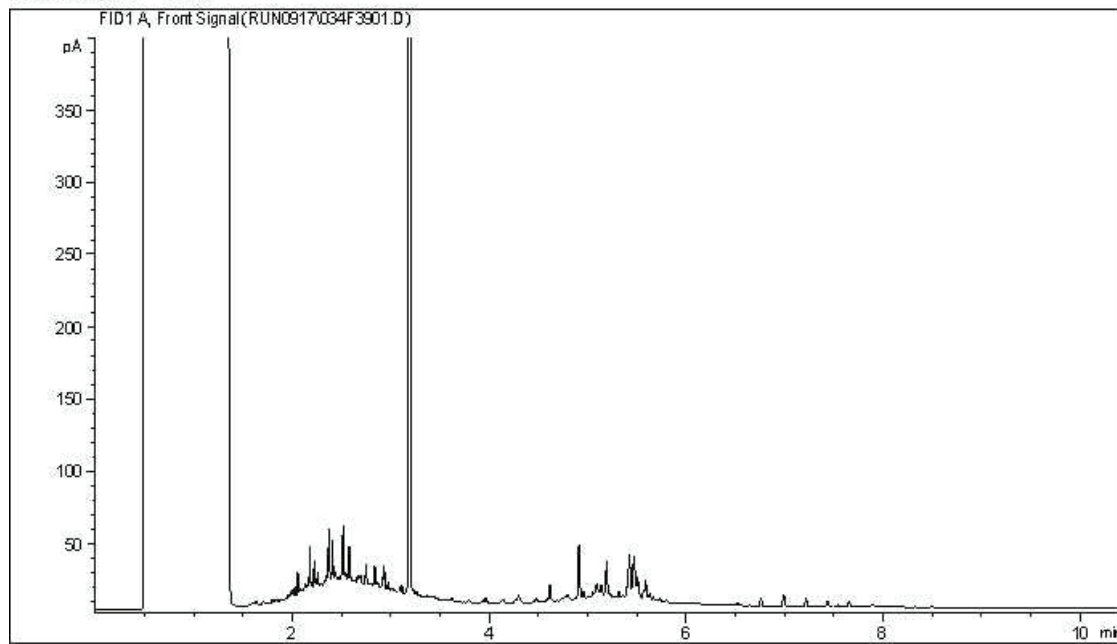
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

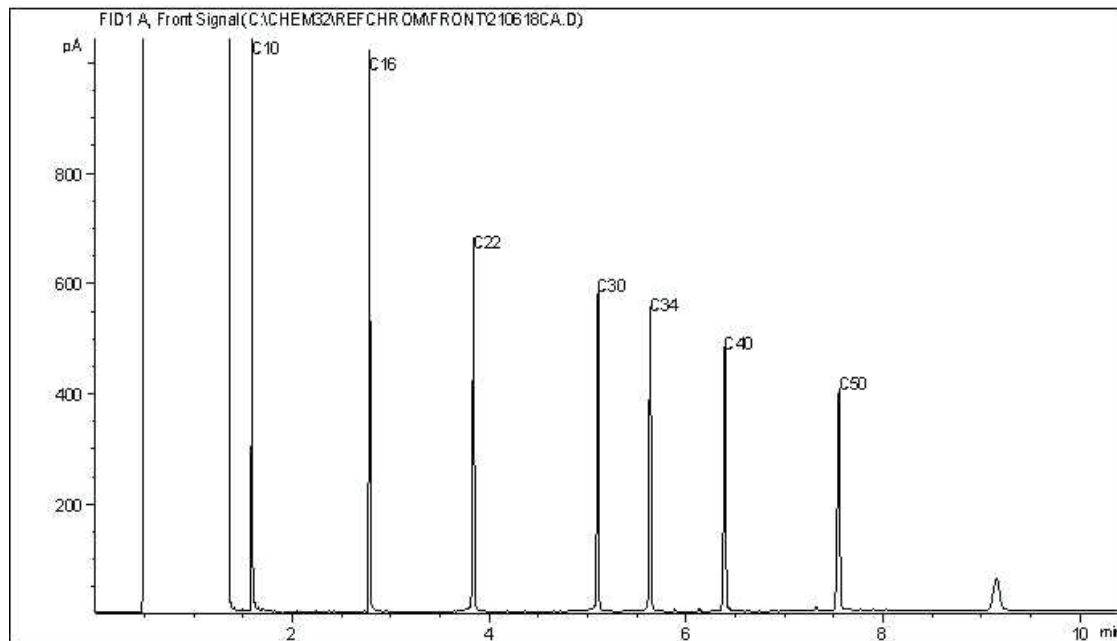
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

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

Instrument: GC13



Carbon Range Distribution - Reference Chromatogram



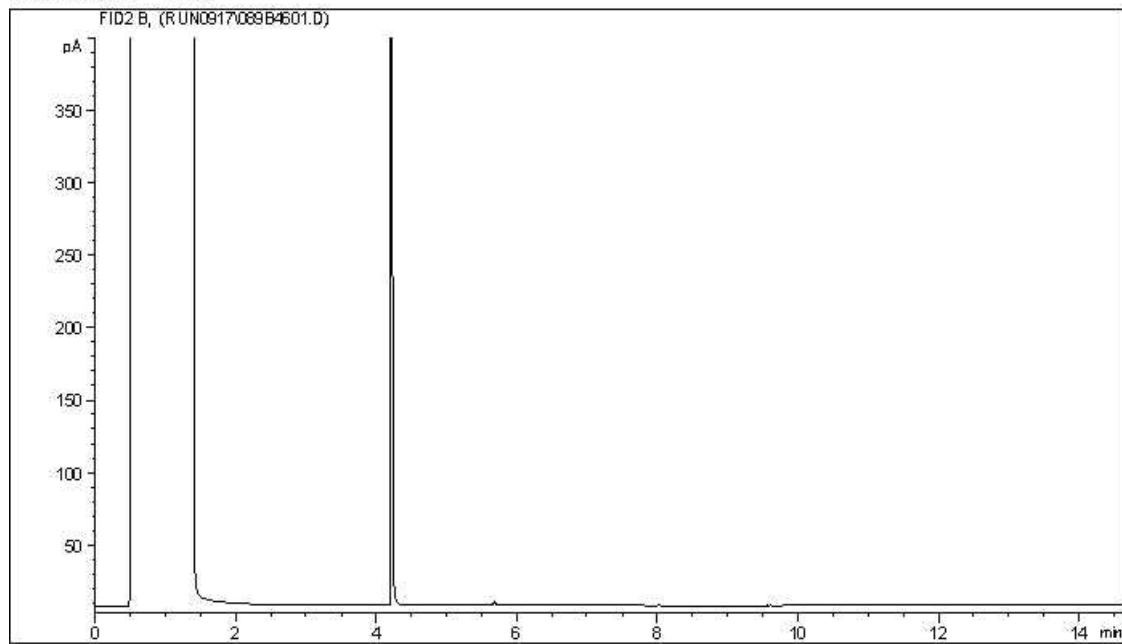
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

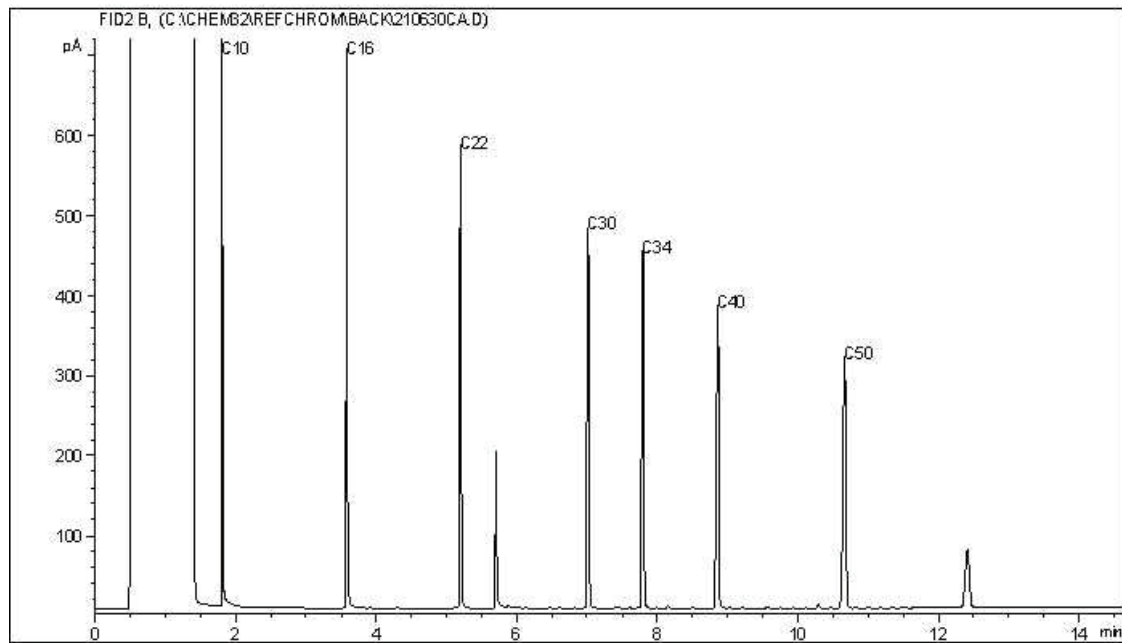
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC12



Carbon Range Distribution - Reference Chromatogram



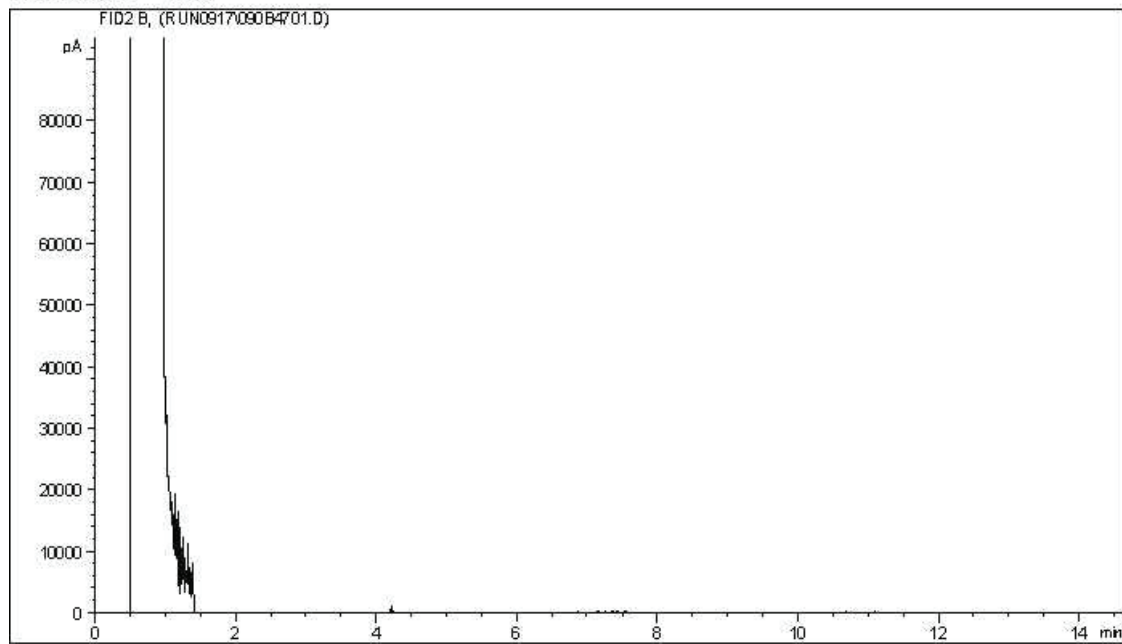
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

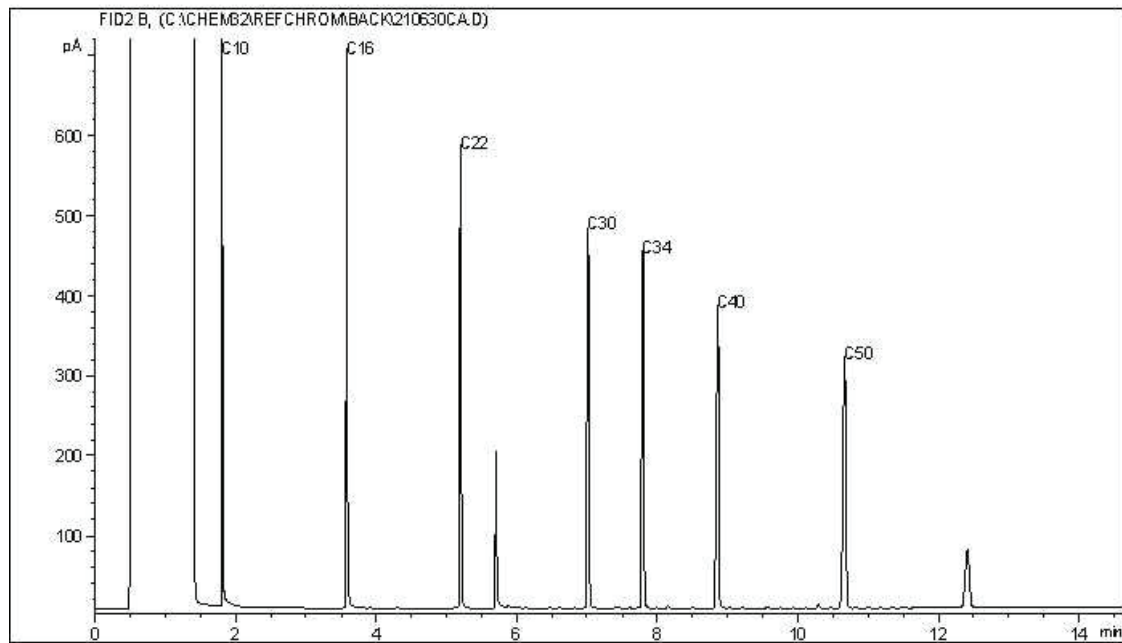
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC12



Carbon Range Distribution - Reference Chromatogram



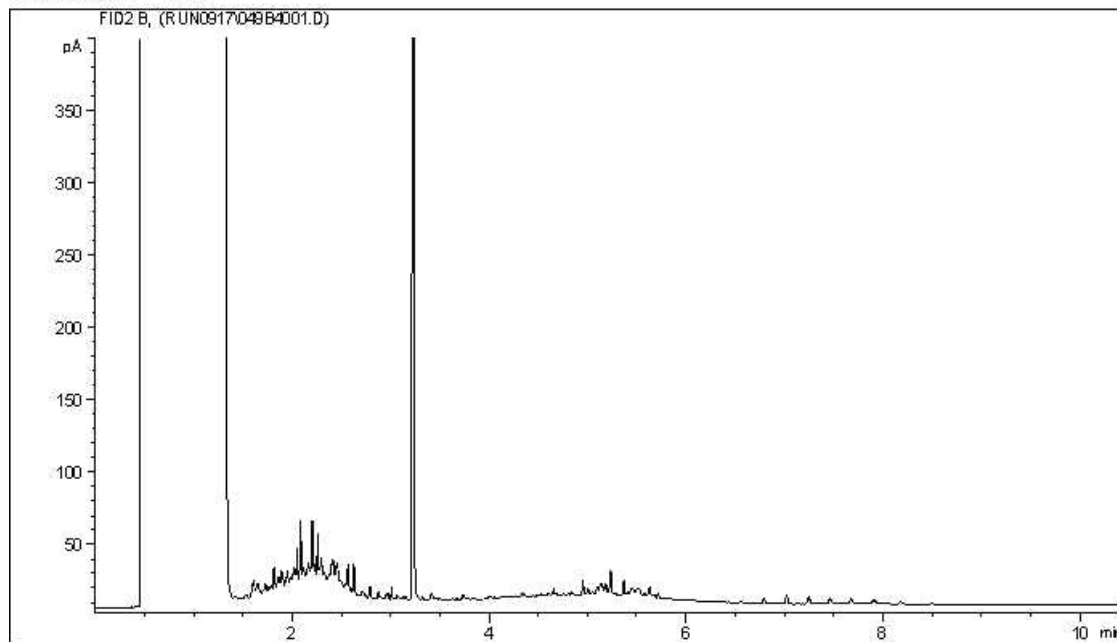
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

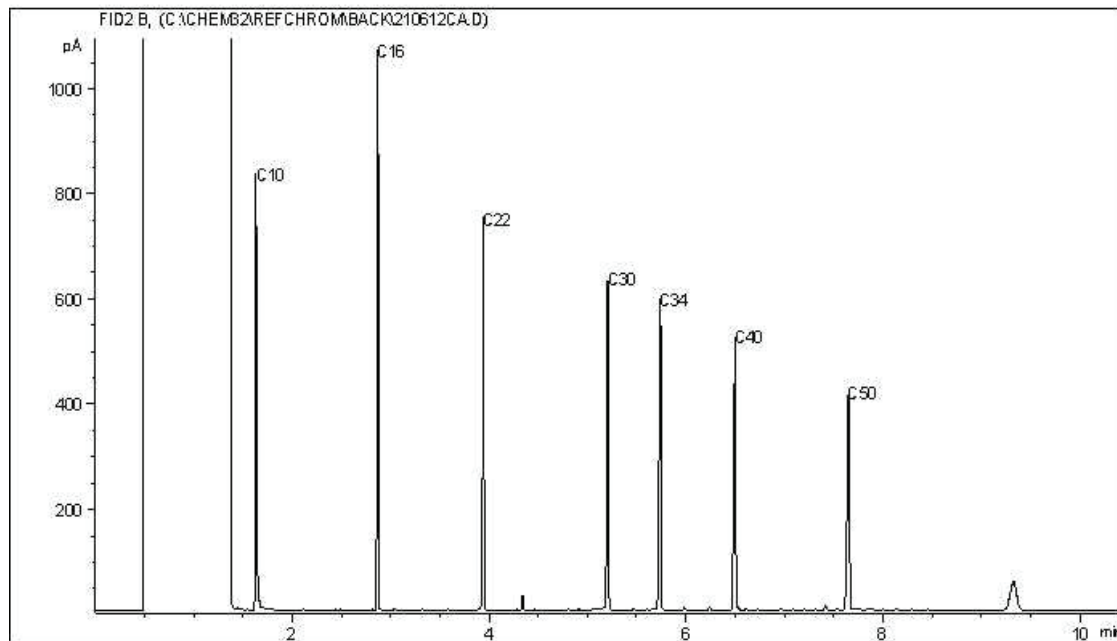
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC10



Carbon Range Distribution - Reference Chromatogram



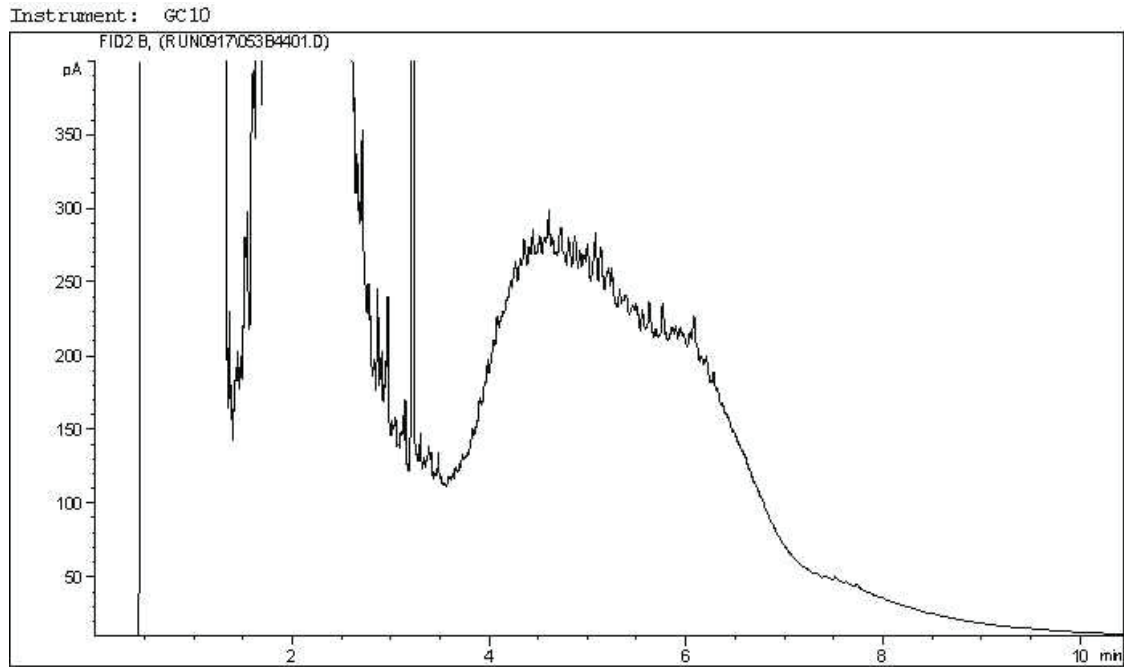
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

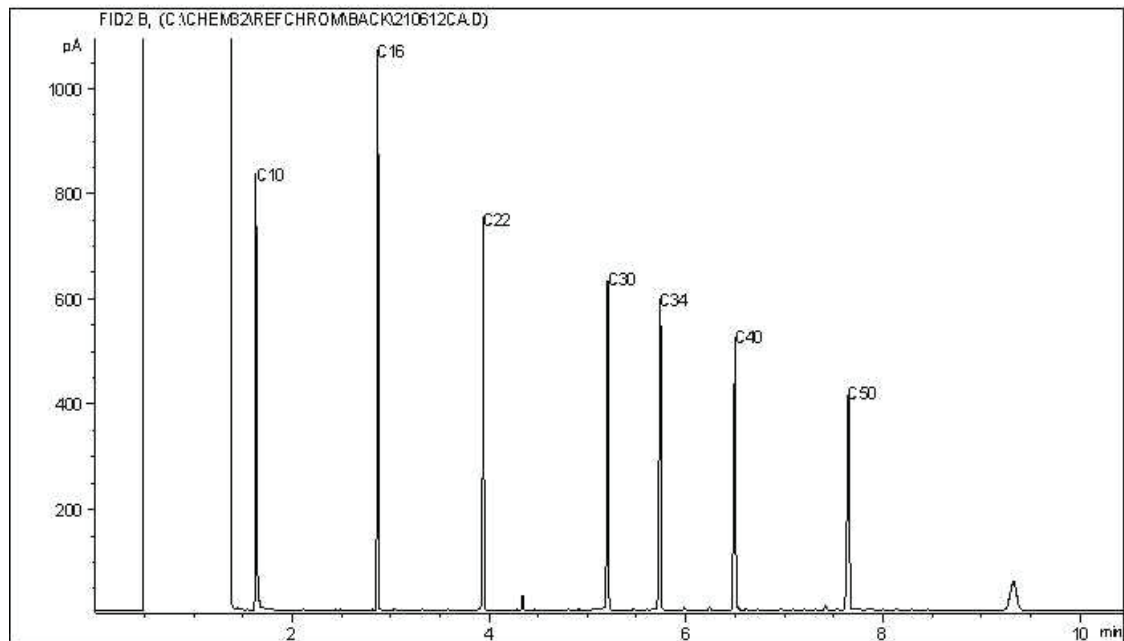
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.



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+

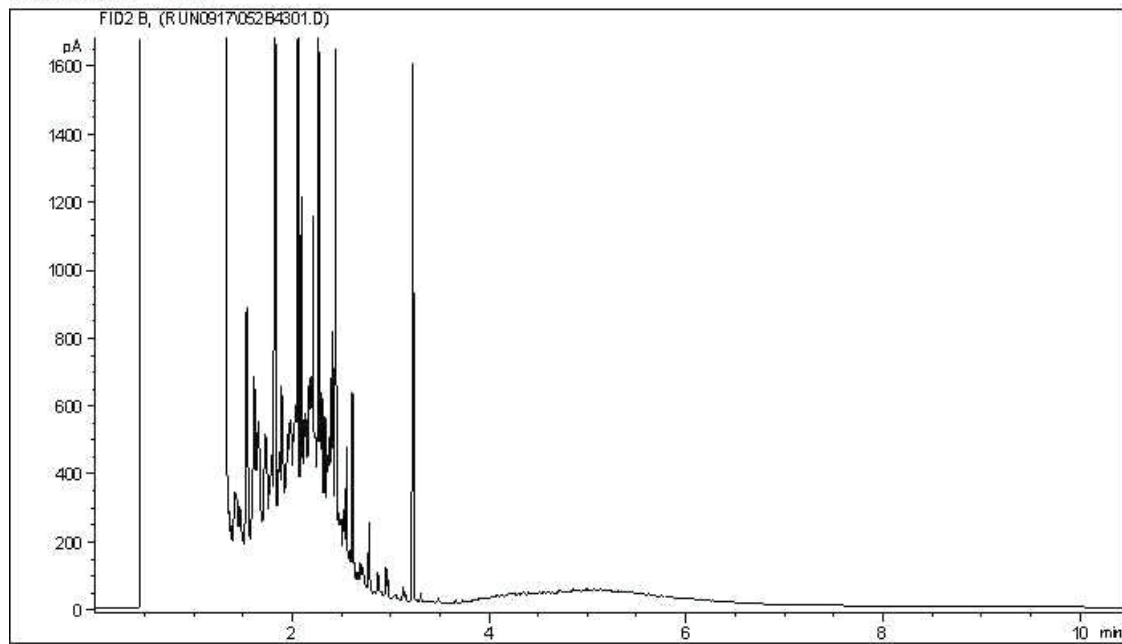
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.



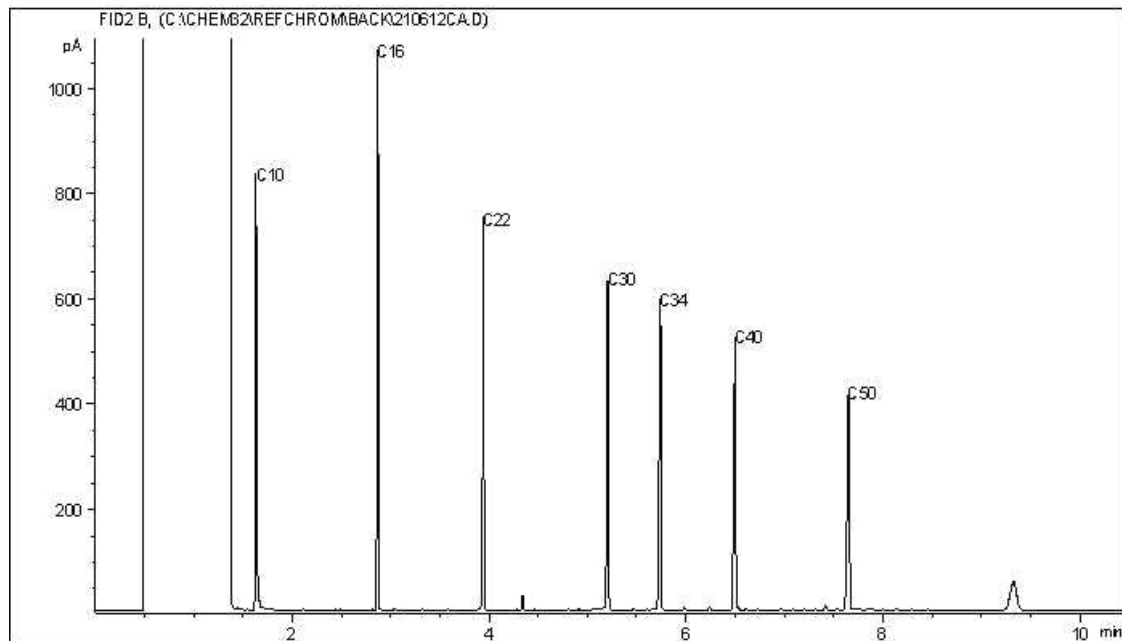


CCME Hydrocarbons (F2-F4 in soil) Chromatogram

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+

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 Farewell

Sampling Date: September 3, 2021

Golder Project Number: 20368099-6000-1001

Laboratory: Bureau Veritas Edmonton

Lab Submission Number: C168138

Was the Cooler Received at the lab under a sealed and intact custody seal? Yes  
 Was proper chain of custody of the samples documented and kept? Yes  
 Were sample temperatures acceptable when they reached lab?: Yes  
 Were all samples analyzed and extracted within hold times?: Yes  
 Has lab warranted all tests were in statistical control in CoA?: Yes  
 Was sufficient sample provided for the requested analysis? Yes  
 Has lab warranted all samples were analyzed with limited headspace present?: Yes

Are All Laboratory QC Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery		X		All remaining laboratory QC results are within acceptance criteria, please see QA/QC appendix.
Method Blank Concentration	X			
Laboratory Duplicate RPD		X		
Matrix Spike Recovery	X			
Blank Spike Recovery	X			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Field Blank Concentration			X	No field QC samples were collected.
Trip Blank Concentration			X	
Field Duplicate RPD			X	

Is data considered reliable (Yes/No/Suspect)? Yes  
 If answer is "No" or "Suspect", describe and provide rationale:

Data Reviewed by (Print): Anita Colbert

Data Reviewed by (Signature): Anita Colbert

Date: September 27, 2021

**APPENDIX F**

# Biogenic Interference Calculation and Chromatogram Interpretation

# Evaluation for Biogenic Organic Compound Contributions

Chromatograms and petroleum hydrocarbon (PHC) data from the 2021 soil sampling event at the Site were reviewed for the presence of natural biogenic organic compounds (BOCs). In accordance with the Alberta Land Policy 2018-1 (Biogenic Interference Calculation [BIC] Scale for Delineating Petroleum Hydrocarbons [PHC] in Organic Soils and Compost) (GoA 2018), BIC calculations and chromatogram interpretations were completed and reviewed to determine the likely origin of PHC Fraction F3 exceedances in soil.

## 1.0 BIC CALCULATIONS

The 2018-1 policy provides guidance for identifying false exceedances of the PHC Fraction F3 guideline. In order to apply the BIC under the Alberta regulatory framework (GoA 2018), some conditions must be met:

- Concentration of PHC Fraction F2 must be below 30 milligrams per kilogram (mg/kg) and do not exceed the guideline.
- Concentration of PHC Fraction F4 is detectable but not above the guideline.
- PHC Fraction F3 is detectable and exceeds the Alberta Tier 1 guideline (300 mg/kg).
- Greater than 85% of PHC Fraction F3 occurs in the F3b range (C22 – C34).

The BIC focuses on PHC Fraction F2 and F3b concentrations and percentages, as shown in the following formula:

$$\text{BIC} = \frac{|\text{PHC F2}|}{(\text{PHC F2}) + (\text{PHCF3b})} \times 100$$

When F2 concentrations are reported as less than the reportable detection limit (RDL), the PHC Fraction F2 concentrations are calculated as half the RDL concentration.

Samples with BIC values of <10% indicate potentially false exceedances of the PHC Fraction F3 guideline, while samples with BIC values of ≥10% indicate potentially true PHC Fraction F3 exceedances. The BIC results should be used in conjunction with chromatogram analysis to provide correct conclusions.

Laboratory analysis for BIC was completed on approximately 10% of the sample locations in 2021.

## 2.0 CHROMATOGRAMS

The chromatogram interpretations were requested on select samples which fit the BIC criteria under the Alberta framework. The interpretations were completed by Bureau Veritas Laboratories on January 12, 2022, in accordance with analytical specifications required by the prescriptive and performance-based elements of the Canadian Council of the Ministers of the Environment (CCME) Tier 1 protocols (CCME 2001) for hydrocarbon determination in soil samples. The interpretation methods and chromatogram results are attached.

## 3.0 SUMMARY OF RESULTS

Numerous samples collected did not meet the criteria for the BIC. A summary of the results for these samples is found in Table F1, attached.



Table 1, below, summarizes the results of the BIC and chromatogram analyses completed on samples which met the BIC criteria.

**Table 1: BIC and Chromatogram Analysis**

Sample Location	Depth (mbgs)	F2 (C10-C16) (mg/kg)	F3 (C16-C34) (mg/kg)	F3b (C22 - C34) (mg/kg)	BIC (%)	Chromatogram Interpretation
TP21-10	0.5	<38	550	550	3.8	Biogenic origin
TP21-32	1.0	30	510	510	6.5	Biogenic origin
TP21-49	1.0	23	760	760	3.2	Biogenic origin
TP21-62	0.3	28	410	410	7.6	Biogenic origin
TP21-79	0.7	23	540	540	4.4	Biogenic origin
TP21-83	1.0	28	590	590	5.1	Biogenic origin
TP21-128	0.3	25	450	450	6.0	Biogenic origin
TP21-147	0.15	<10	420	420	1.3	Lubricating oil
TP21-157	0.7	28	510	510	5.2	Biogenic origin
TP21-184	1.0	23	410	410	6.3	Biogenic origin

**Notes:** <sup>(a)</sup> Chromatogram interpretation not requested because F3 concentration was below the applied guideline  
mbgs – metres below ground surface

It is concluded from the chromatogram review and BIC data that the elevated PHC Fraction F3 concentrations in nine soil samples were due to BOCs. It is concluded from the chromatogram review that petrogenic PHC was present in TP21-147.

## 4.0 REFERENCES

CCME (Canadian Council of the Ministers of the Environment). 2001. Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil – Tier I Method. 2001.

GoA (Government of Alberta). 2018. Land Policy 2018-1: BIC Scale for Delineating Petroleum Hydrocarbons in Organic Soils and Compost. April 3, 2018.

## Attachments

Table F1 – Summary of BIC Inapplicable Soil Samples

Chromatogram Interpretations

**Table F1  
Summary of Biogenic Interference Calculation Inapplicable Soil Samples  
Camp Farewell, Inuvialuit Settlement Region, Northwest Territories  
Shell Canada Limited**

Location	Depth (mbgs)	F2 (C10-C16) (mg/kg)	F3 (C16-C34) (mg/kg)	F3b (C22 - C34) (mg/kg)	BIC calculated (yes/no)	Comment
TP21-BH19-39	0.5	<10	<71	<50	no	F3 not detected
TP21-TP19-08	0.5	170	400	220	no	F2 >30 mg/kg
	0.7	37	1,800	1,600	no	F2 >30 mg/kg
TP21-TP19-11	1	95	1,500	1,300	no	F2 >30 mg/kg
TP21-TP19-19	1	<23	290	290	no	F3 below 300 mg/kg
TP21-TP19-24	1	<10	<50	<50	no	F3 not detected
TP21-13	0.5	180	3,100	74	no	F2 >30 mg/kg
TP21-16	0.5	51	710	710	no	F2 >30 mg/kg
TP21-19	1.5	25	69	<50	no	F3b is less than 85% of F3
						F3 below 300 mg/kg
TP21-36	0.3	320	430	160	no	F2 >30 mg/kg
	0.5	300	370	180	no	F2 >30 mg/kg
TP21-39	1	41	600	540	no	F2 >30 mg/kg
TP21-41	1	150	490	340	no	F2 >30 mg/kg
TP21-46	0.7	120	2,300	2,000	no	F2 >30 mg/kg
TP21-59	0.5	63	120	<50	no	F2 >30 mg/kg
						F3 below 300 mg/kg
	0.7	45	110	51	no	F3b is less than 85% of F3 F2 >30 mg/kg
TP21-73	1	<10	100	79	no	F3b is less than 85% of F3
TP21-74	0.5	170	370	200	no	F2 <30 mg/kg
					no	F3b is less than 85% of F3
	1	<10	<71	<50	no	F3 not detected
TP21-77	0.7	110	2,500	2,200	no	F2 >30 mg/kg
TP21-80	1	42	760	730	no	F2 >30 mg/kg
TP21-93	1.5	<10	<50	<50	no	F3 not detected
TP21-106	0.7	110	390	230	no	F2 >30 mg/kg
						F3b is less than 85% of F3
TP21-114	0.7	29	270	230	no	F3 below 300 mg/kg
TP21-132	0.7	14	100	100	no	F3 below 300 mg/kg
TP21-133	0.5	120	240	180	no	F2 >30 mg/kg
						F3 below 300 mg/kg
						F3b is less than 85% of F3
TP21-139	0.15	30	130	130	no	F3 below 300 mg/kg
TP21-149	0.3	10,000	1,200	790	no	F2 >30 mg/kg
	0.7	4,700	280	150	no	F2 >30 mg/kg
						F3 below 300 mg/kg
						F3b is less than 85% of F3
<b>Units</b>	<b>mbgs</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>-</b>	<b>-</b>
<b>Criteria<sup>(a)</sup></b>	<b>-</b>	<b>150</b>	<b>400</b>	<b>-</b>	<b>-</b>	<b>-</b>

**Notes:**

<sup>(a)</sup> Government of Northwest Territories (GNWT). 2003. Environmental Guideline for Contaminated Site Remediation. November 2003.

BIC - biogenic interference calculation

F2, F3, F3b - petroleum hydrocarbon fractions 2, 3 and 3b

mbgs - metres below ground surface

mg/kg - milligrams per kilogram

> - greater than

< - less than

- not available

**Table F1  
Summary of Biogenic Interference Calculation Inapplicable Soil Samples  
Camp Farewell, Inuvialuit Settlement Region, Northwest Territories  
Shell Canada Limited**

Location	Depth (mbgs)	F2 (C10-C16) (mg/kg)	F3 (C16-C34) (mg/kg)	F3b (C22 - C34) (mg/kg)	BIC calculated (yes/no)	Comment
TP21-152	0.5	4,800	230	<50	no	F2 >30 mg/kg F3 below 300 mg/kg
	1	13	<71	<50	no	F3 not detected
TP21-160	1	12	<71	<50	no	F3 not detected
TP21-165	0.5	92	1,400	1,200	no	F2 >30 mg/kg
TP21-183	0.3	110	1,300	1,200	no	F2 >30 mg/kg
TP21-184	0.7	570	9,800	8,600	no	F2 >30 mg/kg
TP21-185	0.5	25	250	250	no	F3 below 300 mg/kg
	0.7	<30	210	210	no	F3 below 300 mg/kg
	1	<23	<160	<120	no	F3 not detected
TP21-186	0.15	30	<71	<50	no	F3 not detected
	0.7	30	<71	<50	no	F3 not detected
TP21-188	0.3	2,200	950	700	no	F2 >30 mg/kg
	0.7	260	410	240	no	F2 >30 mg/kg
<b>Units</b>	<b>mbgs</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>-</b>	<b>-</b>
<b>Criteria<sup>(a)</sup></b>	<b>-</b>	<b>150</b>	<b>400</b>	<b>-</b>	<b>-</b>	<b>-</b>

**Notes:**

<sup>(a)</sup> Government of Northwest Territories (GNWT). 2003. Environmental Guideline for Contaminated Site Remediation. November 2003.

BIC - biogenic interference calculation

F2, F3, F3b - petroleum hydrocarbon fractions 2, 3 and 3b

mbgs - metres below ground surface

mg/kg - milligrams per kilogram

> - greater than

< - less than

- not available



January 14, 2022

**GOLDER ASSOCIATES LTD.**

2800, 700 -2nd Street SW  
CALGARY, AB, T2P 2W2

Attention: Aurelie Belavance

**Re: Chromatogram Interpretation of Project: 20368099-6000-1001**

**Bureau Veritas Job Nos.: C161006, C161010, C162508, C162661, C162662, C164643,  
C164648 and C168138**

Bureau Veritas was retained by Golder Associates to provide hydrocarbon interpretations concerning the likely origin of hydrocarbons quantified within CCME fraction(s) F2, F3 and/or F4.

### **Analytical Method**

Petroleum hydrocarbon analyses at Bureau Veritas are conducted in accordance with the analytical specifications required by the prescriptive and performance-based (where appropriate) elements of the CCME Tier I protocols for hydrocarbon determination<sup>1</sup> in soil samples.

### **Chromatogram Interpretation**

A comprehensive qualitative assessment of the resultant gas chromatograms in the F2-F4 ranges was performed. The chromatograms were inspected for specific peak profiles that would indicate the possible origin of the hydrocarbons present in the sample. The presence and nature of specific aliphatic compounds (n-alkanes), the presence of characteristic unresolved complex mixtures (UCMs) or "humps" and the relative abundance (ratios) of specific compounds are reviewed as part of the evaluation.

---

<sup>1</sup> Canadian Council of Ministers of the Environment: "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil – Tier I Method" 2001



## Data Interpretation

**Table 1. Qualitative Data Summary – Chromatogram Interpretation**

Lab ID	Sample ID	Chromatogram Interpretation
AEF035	TP21-157-04	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.
AEF094	TP21-79-04	
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.
AEO227	TP21-49-05	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
AEP003	TP21-62-02	
AEP026	TP21-32-05	
AEP063	TP21-128-02	
AFA026	TP21-83-05	
AFA081	TP21-10-03	
AFW115	TP21-184-05	

If you have any questions or require additional information, please do not hesitate to contact the undersigned.

Sincerely,

**Bureau Veritas Laboratories**

Michael Sheppard, B.Sc., QP  
Consulting Scientist  
Environmental Services

Scott Cantwell, CET, B.Sc., P.Chem.  
Director and General Manager – Western Canada  
Environmental Services

### Disclaimer

#### Hydrocarbon Resemblance

Characterization by way of visual evaluation of the sample chromatogram may not be conclusive and is only indicative of substances that may be present. The resemblance information must be regarded as approximate and qualitative.

**APPENDIX G**

**Quality Assurance/Quality Control**

## Quality Assurance/Quality Control

In conjunction with the field investigations completed to date, a quality assurance/quality control (QA/QC) program was implemented to ensure the integrity of the soil, groundwater and/or soil vapour sampling and analytical testing results.

### 1.0 FIELD PROGRAM

All sampling activities were completed in accordance with Golder's Technical Field Procedures by trained Golder personnel. All field activities were documented in field notes and results were recorded on standard field forms. All reusable field equipment involved in the sampling and monitoring of soil, groundwater and surface water was decontaminated between sampling locations in accordance with Golder's Technical Procedures. Soil samples were collected using appropriate handling protocols and were placed in sample containers provided by Bureau Veritas Laboratories (BVL).

Soil samples are not directly contacted by hand. To help prevent cross-contamination, stainless steel sampling instruments and a new pair of clean nitrile gloves are used for the collection of each sample. Soil samples that were collected for field methanol preservation were collected using a dedicated, disposable Terra Core™ soil sampling device.

All soil, groundwater and surface water samples are placed in laboratory-supplied containers suitable for the analytes, and where applicable, the appropriate laboratory-supplied preservative is added to the samples, as outlined in the following table.

Analyte	Laboratory Containers	Preservative	Field Filtered
<b>Soil samples</b>			
BTEX and PHC Fractions F1 to F4	1 x 120-mL jars 2 x 40-mL clear glass vials	No preservative Methanol	n/a
PAHs	2 x 125-mL jars	No preservative	n/a
Metals	2 x 250-mL jars or plastic bag	No preservative	n/a
VOCs	1 x 120-mL jars 2 x 40-mL clear glass vials	No preservative Methanol	n/a
<b>Groundwater samples</b>			
BTEX and PHC Fraction F1	2 x 40-mL clear glass vials	Sodium bisulphate	No
PHC Fraction F2	2 x 100-mL amber glass	Sodium bisulphate	No
Routine potability parameters	500-mL HDPE	No preservative	No
	250-mL HDPE	No preservative	No
	125-mL HDPE	Nitric acid	Yes
Dissolved metals	125-mL HDPE	Nitric acid	Yes



Analyte	Laboratory Containers	Preservative	Field Filtered
PAHs	2 x 100-mL amber glass	Sodium bisulphate	No
<b>Surface water samples</b>			
BTEX and PHC Fraction F1	2 x 40-mL clear glass vials	Sodium bisulphate	No
PHC Fraction F2	2 x 100-mL amber glass	Sodium bisulphate	No
Routine potability parameters	500-mL HDPE	No preservative	No
	250-mL HDPE	No preservative	No
	125-mL HDPE	Nitric acid	Yes
Total metals	125-mL HDPE	No preservative	Yes
PAHs	2 x 100-mL amber glass	Sodium bisulphate	No

**Notes:**

BTEX – benzene, toluene, ethylbenzene, xylenes; HDPE – high density polyethylene; mL – millilitre; L – litre; n/a – not applicable; PAH – polycyclic aromatic hydrocarbon; PHC – petroleum hydrocarbon; VOC – volatile organic compound

Soil, groundwater and surface water samples were given unique identification numbers and the soil and groundwater sampling containers were preserved in ice-filled coolers to maintain temperatures below 10°C. Samples were logged onto formal chain-of-custody documents and transported to BVL for chemical analysis. BVL is accredited by the Standards Council of Canada.

Blind field duplicate soil, groundwater and surface water samples are submitted for analysis. Trip and field blanks are submitted for analysis, as necessary, to evaluate the potential for cross contamination during the sampling and transportation of the samples. Submission of blind field duplicate QC samples was at a minimum rate of 10% of total samples.

## 2.0 LABORATORY PROGRAM

The laboratory QA/QC program included adherence to laboratory sampling and analysis protocols (e.g., hold times, sample containers, preservatives, detection limits and approved methodology) and the analysis of laboratory method blanks, laboratory control sample (blank spike), laboratory sample duplicates, surrogate recovery and matrix spikes.

Laboratory method blank samples are free of the target analytes and are analyzed through the same analytical method than the test samples. Method blank results are used to detect interferences or impurities introduced by the laboratory equipment, reagents, or solvents.

Laboratory control samples are fortified with a known concentration of the select target analytes and then analyzed through the same analytical method than the test samples. Laboratory control samples are used to monitor the analyte recovery and validate the calibration of the instrumentation.

For laboratory duplicate samples, a second aliquot from a randomly selected sample within an analytical batch is processed through the same analytical method. Laboratory duplicate sample results are used to evaluate the reproducibility of the analytical method.

Surrogate recovery is analyzed for organics parameters by spiking samples with known quantities of surrogate chemicals which have similar chemical properties to the parameters being analyzed. The reported recovery provides an indication of the analytical method accuracy for that sample.

Matrix spikes were conducted by adding known concentrations of the analyte of interest to a sample to evaluate the effects of the sample matrix on the analytical method.

### 3.0 DATA RECEPTION

Once laboratory analytical results were received, Golder completed a review of field and laboratory quality. This included review of laboratory QC performance to confirm results are within acceptance criteria, as well as evaluation of field duplicate and blank results to confirm they were within alert limits. Upon receipt of the analytical results, relative percent difference (RPD) values between the original samples and their blind field duplicates were calculated as follows:

$$\text{RPD}\% = \frac{|S - D|}{\frac{1}{2}(S + D)} \times 100$$

Where: RPD = relative percent difference

S = sample value

D = blind field duplicate or replicate value.

Since analytical error increases near the reportable detection limit (RDL), an RPD was only calculated where the concentrations of both the original and blind field duplicate samples were greater than five times the RDL. The calculated RPDs were then compared to parameter specific alert limits.

Exceedances of the QC acceptance or alert criteria were investigated with the laboratory and, if warranted, a corrective action report was requested from the laboratory.

### 4.0 DATA QUALITY REVIEW RESULTS

Results of the data quality review are summarized in Table G1. The RPD calculations and QC results are presented in Tables G2 to G7.

Sixty-three field duplicate soil samples were collected and submitted to the laboratory as part of the soil investigation. One field duplicate, two field blanks and one trip blank were also submitted to the laboratory as part of the surface water QC program.

Based on the data quality review, 75 data quality issues have been identified. Sample heterogeneity was the cause of numerous data quality issues. Where heterogeneity led to differences in concentrations of a parameter in a sample and its corresponding duplicate that straddled the guideline value (one sample above and one below the guideline value), the highest, most conservative value was selected for the interpretation of the results. Those test pit locations were considered to exceed the guideline as a conservative measure. Hold times were exceeded for numerous samples due to the challenges of sample submission from the remote Site. None of the data quality issues had a material effect on the interpretation of the data collected during this investigation

The issues are discussed in detail in Table G1.

### 5.0 SUMMARY OF RESULTS

Based on the review of the laboratory and field QA/QC results, the data presented in this report are considered to be reliable.

**Table G1  
Summary of Quality Control Sample Results  
Camp Farewell, Inuvialuit Settlement Region, Northwest Territories  
Shell Canada Limited**

BVL Job Number	Matrix	BVL Sample ID Affected	Test Affected	Data Quality Issue	Comments
C160616	Soil	n/a	n/a	No data quality issues were identified.	The data are considered reliable.
C160993	Soil	AEE832	F3B (C22-C34)	Matrix spike recovery for F3B (C22-C34) (58%) below the acceptance criteria of (60-140%) due to matrix interference.	This data quality issue may represent a potential low bias for this sample. There is no applicable guideline for F3B (C22-C34) therefore indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the F3B (C22-C34) data reported can be considered reliable.
		AEE874, AEE875 and AEE876	Chromium and Vanadium	Matrix spike recovery for chromium (134%) and vanadium (161%) exceeded the acceptance criteria of (75-125%) for batch A333424.	This data quality issue may represent a potential high bias for this sample. Chromium and vanadium in the samples were below the regulatory guideline, indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the chromium and vanadium data reported can be considered reliable.
C161006	Soil	AEF028, AEF035, AEF043 and AEF047	F3B (C22-C34)	Matrix spike recovery for F3B (C22-C34) (58%) below the acceptance criteria of (60-140%) for batch A330260.	This data quality issue may represent a potential low bias for this sample. There is no applicable guideline for F3B (C22-C34) therefore indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the F3B (C22-C34) data reported can be considered reliable.
		AEF024 and AEF025	Chromium and Vanadium	Matrix spike recovery for chromium (134%) and vanadium(161%) exceeded the acceptance criteria of (75-125%) for batch A333424.	This data quality issue may represent a potential high bias for this sample. Chromium and vanadium in the samples were below the regulatory guideline, indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the chromium and vanadium data reported can be considered reliable.
		AEF044 and AEF046	F2 (C10-C16)	Field duplicate samples TP21-149-05 and DUP A exceed the alert limit for F2 (C10-C16) (114%).	A quality check of the data yielded similar results. Sample non-homogeneity is believed to be the root cause. F2 (C10-C16) concentrations in both the sample and the field duplicate were above the regulatory guideline, indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the F2 (C10-C16) data reported can be considered reliable.
C161010	Soil	AEF097, AEF099, AEF101, AEF102 and AEF103	F3B (C22-C34)	Matrix spike recovery for F3B (C22-C34) (58%) below the acceptance criteria of (60-140%) for batch A330260.	This data quality issue may represent a potential low bias for this sample. There is no applicable guideline for F3B (C22-C34) therefore indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the F3B (C22-C34) data reported can be considered reliable.
		AEF071, AEF072 and AEF073	Chromium, Nickel and Vanadium	Matrix spike recovery for chromium (142%), nickel (132%) and vanadium(177%) exceeded the acceptance criteria of (75-125%) for batch A331374.	This data quality issue may represent a potential high bias for this sample. Chromium, nickel and vanadium in the samples were below the regulatory guideline, indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the chromium, nickel and vanadium data reported can be considered reliable.
		AEF071, AEF072 and AEF073	Zinc	Spiked blank recovery for zinc (121%) exceeded the acceptance criteria of (80-120%) for batch A331374.	This data quality issue may represent a potential high bias for this sample. Zinc in the samples were below the regulatory guideline, indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the zinc data reported can be considered reliable.
		AEF073	Benzene	Qualifying ion (Benzene) is outside of the acceptance criteria.	This data quality issue may represent a potential high bias for this sample. Benzene concentration in the sample was below the regulatory guideline, indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the Benzene data reported can be considered reliable.
		AEF097	m & p-Xylene	Qualifying ion (m & p-Xylene) is outside of the acceptance criteria.	This data quality issue may represent a potential high bias for this sample. There is no applicable guideline for m & p-Xylene however total xylenes is the sum of m & p-Xylene and o-Xylene. The total xylenes result is above the regulatory guidelines, therefore indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the data reported can be considered reliable.

**Notes:**

- BTEX - benzene, toluene, ethylbenzene, xylenes
- BVL - Bureau Veritas Laboratories
- CCME - Canadian Council of the Ministers of the Environment
- F1, F2, F3, F3A, F3B, F4 - petroleum hydrocarbon fractions 1, 2, 3, 3A, 3B and 4
- n/a - not applicable
- PHC - petroleum hydrocarbon
- RPD - relative percent difference
- TCLP - toxicity characteristic leaching procedure
- VOC - volatile organic compound

**Table G1**  
**Summary of Quality Control Sample Results**  
**Camp Farewell, Inuvialuit Settlement Region, Northwest Territories**  
**Shell Canada Limited**

BVL Job Number	Matrix	BVL Sample ID Affected	Test Affected	Data Quality Issue	Comments
C162508	Soil	AEO138	Benzene	Qualifying ion (Benzene) is outside of the acceptance criteria.	This deviation may represent a potential high bias for this sample. Benzene concentration in the sample was below the regulatory guideline, indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the Benzene data reported can be considered reliable.
		AEO189	Ethylbenzene	Qualifying ion (Ethylbenzene) is outside of the acceptance criteria.	This deviation may represent a potential high bias for this sample. Ethylbenzene concentration in the sample was below the regulatory guideline, indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the Ethylbenzene data reported can be considered reliable.
		AEO191	Benzene	Qualifying ion (Benzene) is outside of the acceptance criteria.	This deviation may represent a potential high bias for this sample. Benzene concentration in the sample was above the regulatory guideline, indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the Benzene data reported can be considered reliable.
		AEO131 and AEO144	VOC/BTEX/F1	Sample received was not in compliance with CCME sampling requirements for VOC/BTEX/F1 in soil.	VOC/BTEX/F1 was submitted in methanol vials that contained less methanol than required, therefore glass jars were used for VOC/BTEX/F1 analysis. This does not have any direct affect on the integrity of the sample, thus the data are considered reliable.
		AEO191 and AEO138	F1 (C6-C10) - BTEX	Field duplicate samples TP21-13-05 and DUP J exceed the alert limit for F1 (C6-C10) - BTEX (87%).	A quality check of the data yielded similar results. F1 (C6-C10) - BTEX concentrations in both the sample and the field duplicate were above the regulatory guideline, indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the F1 (C6-C10) - BTEX data reported can be considered reliable.
			F2 (C10-C16)	Field duplicate samples TP21-13-05 and DUP J exceed the alert limit for F2 (C10-C16) (105%).	A quality check of the data yielded similar results. The F2 (C10-C16) concentration observed in the sample met the regulatory guideline, while the field duplicate result exceeded the guideline. Thus, this F2 (C10-C16) data for this sample pair should be considered suspect. This test pit location is considered exceeding the guideline for F2 as a conservative measure.
C162523	Soil	n/a	n/a	No data quality issues were identified.	The data are considered reliable.
C162535	Soil	AEO363	o-Xylene	Qualifying ion (o-Xylene) is outside of the acceptance criteria.	This data quality issue may represent a potential high bias for this sample. There is no applicable guideline for o-Xylene however total xylenes is the sum of m & p-Xylene and o-Xylene. The total xylenes result is below the regulatory guidelines, therefore indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the data reported can be considered reliable.
		AEO368, AEO388 and AEO399	VOC/BTEX/F1	Sample received was not in compliance with CCME sampling requirements for VOC/BTEX/F1 in soil.	VOC/BTEX/F1 was submitted in methanol vials that contained less methanol than required, therefore glass jars were used for VOC/BTEX/F1 analysis. This does not have any direct affect on the integrity of the sample, thus the data are considered reliable.

**Notes:**

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- BVL - Bureau Veritas Laboratories
- CCME - Canadian Council of the Ministers of the Environment
- F1, F2, F3, F3A, F3B, F4 - petroleum hydrocarbon fractions 1, 2, 3, 3A, 3B and 4
- n/a - not applicable
- PHC - petroleum hydrocarbon
- RPD - relative percent difference
- TCLP - toxicity characteristic leaching procedure
- VOC - volatile organic compound

**Table G1**  
**Summary of Quality Control Sample Results**  
**Camp Farewell, Inuvialuit Settlement Region, Northwest Territories**  
**Shell Canada Limited**

BVL Job Number	Matrix	BVL Sample ID Affected	Test Affected	Data Quality Issue	Comments
C162661	Soil	AEP028 and AEP030	o-Xylene	Qualifying ion (o-Xylene) is outside of the acceptance criteria.	This data quality issue may represent a potential high bias for this sample. There is no applicable guideline for o-Xylene however total xylenes is the sum of m & p-Xylene and o-Xylene. The total xylenes result is below the regulatory guidelines, therefore indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the data reported can be considered reliable.
		AEP012, AEP013 and AEP018	F3B (C22-C34)	Matrix spike recovery for F3B (C22-C34) (58%) below the acceptance criteria of (60-140%) for batch A330260.	This data quality issue may represent a potential low bias for this sample. There is no applicable guideline for F3B (C22-C34) therefore indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the F3B (C22-C34) data reported can be considered reliable.
		AEP016 and AEP036	VOC/BTEX/F1	Sample received was not in compliance with CCME sampling requirements for VOC/BTEX/F1 in soil.	VOC/BTEX/F1 was submitted in methanol vials that contained less methanol than required, therefore glass jars were used for VOC/BTEX/F1 analysis. This does not have any direct affect on the integrity of the sample, thus the data are considered reliable.
		AEP006 and AEP035	F2	Field duplicate samples TP21-63-03 and DUP U exceed the alert limit for F2 (97%).	A quality check of the data yielded similar results. Sample non-homogeneity is believed to be the root cause. The F2 concentration observed in the field duplicate met the regulatory guideline, while the sample result exceeded the guideline. Thus, these F2 data for this sample pair should be considered suspect. This test pit location is considered exceeding the guideline for F2 as a conservative measure.
			F2-F4	Sample was analyzed past method specified hold time for CCME Hydrocarbons (F2-F4 in soil).	This may increase the uncertainty associated with the data. Thus, these data should be considered suspect. Exceeding the hold time would be expected to decrease the concentration of hydrocarbons in the sample due to potential off-gassing. The sample TP21-63-03 exceeded the guideline for F2 indicating that this issue did not have a material effect on the interpretation of the data.
C162662	Soil	n/a	n/a	No data quality issues were identified.	The data are considered reliable.
C162768	Soil	AEP501	PHC	Surrogate recovery for D10-o-Xylene (157%) exceeded the acceptance criteria (50-140%) for batch A336426.	This data quality issue may represent a potential high bias for this parameter. However, since the results were below the reportable detection limit, there is no impact on data quality. Under these circumstances, the data reported can be considered reliable.
		AEP489, AEP509 and AEP532	VOC/BTEX/F1	Sample received was not in compliance with CCME sampling requirements for VOC/BTEX/F1 in soil.	VOC/BTEX/F1 was submitted in methanol vials, however they leaked in transit. Therefore glass jars were used for VOC/BTEX/F1 analysis. This does not have any direct affect on the integrity of the sample, thus the data are considered reliable.
		AEP523, AEP524 and AEP525	Soluble Nitrate plus Nitrite	Matrix spike recovery for soluble nitrate plus nitrite (51%) below the acceptance criteria of (75-125%) for batch A337225.	This data quality issue may represent a potential low bias for this sample. There is no applicable guideline for soluble nitrate plus nitrite therefore indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the soluble nitrate plus nitrite data reported can be considered reliable.

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- n/a - not applicable
- PHC - petroleum hydrocarbon
- RPD - relative percent difference
- TLCP - toxicity characteristic leaching procedure
- VOC - volatile organic compound

**Table G1**  
**Summary of Quality Control Sample Results**  
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**Shell Canada Limited**

BVL Job Number	Matrix	BVL Sample ID Affected	Test Affected	Data Quality Issue	Comments
C164600	Groundwater	AEZ785, AEZ786, AEZ788, AEZ789 and AEZ791	F4	Matrix spike recovery for F4 (144%) exceeded the acceptance criteria of (60-140%) for batch A339935.	This data quality issue may represent a potential high bias for this sample. F4 in the samples were below the regulatory guideline, indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the F4 data reported can be considered reliable.
		AEZ787 and AEZ790	Dissolved Nitrate plus Nitrite	Matrix spike recovery for Dissolved Nitrate plus Nitrite (133%) exceeded the acceptance criteria of (80-120%) for batch A340069.	This data quality issue may represent a potential high bias for this sample. There is no applicable guideline for Dissolved Nitrate plus Nitrite therefore indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the Dissolved Nitrate plus Nitrite data reported can be considered reliable.
		AEZ785 and AEZ790	Aluminum	Spiked blank recovery for Aluminum (121%) exceeded the acceptance criteria of (80-120%) for batch A340771.	This data quality issue may represent a potential high bias for this sample. Aluminum in the samples were below the regulatory guideline, indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the Aluminum data reported can be considered reliable.
		AEZ785	Barium	Matrix spike recovery for Barium (9.5%) below the acceptance criteria of (80-120%) for batch A343870.	This data quality issue may represent a potential low bias for this sample. Barium in the sample was below the regulatory guideline, indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the Barium data reported can be considered reliable.
			Silicon	Matrix spike recovery for Silicon (78%) below the acceptance criteria of (80-120%) for batch A343870.	This data quality issue may represent a potential low bias for this sample. There is no applicable guideline for silicon therefore indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the silicon data reported can be considered reliable.
		AEZ790	Barium	Matrix spike recovery for Barium (9%) below the acceptance criteria of (80-120%) for batch A341798.	This data quality issue may represent a potential low bias for this sample. Groundwater from this well, sampled in 2019 (IEG 2020), had a comparable barium concentration (also below guideline), therefore there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the data reported can be considered reliable.
C164643	Soil	n/a	n/a	No data quality issues were identified.	The data are considered reliable.
C164647	Soil	AFA046	o-Xylene	Qualifying ion (o-Xylene) is outside of the acceptance criteria.	This data quality issue may represent a potential high bias for this sample. There is no applicable guideline for o-Xylene however total xylenes is the sum of m & p-Xylene and o-Xylene. The total xylenes result is below the regulatory guidelines, therefore indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the data reported can be considered reliable.
		AFA065 and AFA066	F2 and F3	Field duplicate samples TP21-175-02 and DUP-BB exceed the alerts limit for F2 (67%) and F3 (100%).	A quality check of the data yielded similar results. F2 and F3 concentrations in both the sample and the field duplicate were above the regulatory guideline, indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the F2 and F3 data reported can be considered reliable.
		AFA068 and AFA070	F2	Field duplicate samples TP21-176-02 and DUP-CC exceed the alert limit for F2 (74%).	A quality check of the data yielded similar results. F2 concentrations in both the sample and the field duplicate were above the regulatory guideline, indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the F2 data reported can be considered reliable.

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- n/a - not applicable
- PHC - petroleum hydrocarbon
- RPD - relative percent difference
- TCLP - toxicity characteristic leaching procedure
- VOC - volatile organic compound

**Table G1**  
**Summary of Quality Control Sample Results**  
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BVL Job Number	Matrix	BVL Sample ID Affected	Test Affected	Data Quality Issue	Comments
C164648	Soil	AFA064	F4	Matrix spike recovery for F4 (56%) below the acceptance criteria of (60-140%) due to matrix interference.	This data quality issue may represent a potential low bias for this sample. F4 in the sample and laboratory duplicate were below the regulatory guideline, indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the F4 data reported can be considered reliable.
		AFA096 and AFA097	F2	Field duplicate samples TP21-06-03 and DUP FF exceed the alert limit for F2 (94%).	A quality check of the data yielded similar results. Sample non-homogeneity is believed to be the root cause. The F2 concentration observed in the sample met the regulatory guideline, while the field duplicate result exceeded the guideline. Thus, these F2 data for this sample pair should be considered suspect. This test pit location is considered exceeding the guideline for F2 as a conservative measure.
C164651	Soil	n/a	n/a	No data quality issues were identified.	The data are considered reliable.
C164652	Wood	All	VOC/BTEX/F1	Sample received was not in compliance with CCME sampling requirements for VOC/BTEX/F1 in soil.	VOC/BTEX/F1 was not submitted in methanol vials, therefore glass jars were used for VOC/BTEX/F1 analysis. This does not have any direct effect on the integrity of the sample, thus the data are considered reliable.
C164653	Soil	AFA127	F2	Matrix duplicate RPD for F2 (117%) exceed the acceptance criteria (40%) due to sample non homogeneity.	This may increase the uncertainty associated with these results. F2 concentrations were below the regulatory guideline in both the sample and the lab duplicate, indicating that the data quality issue will not have a material effect on the interpretation of the results for this parameter. Under these circumstances, the F2 data reported can be considered reliable.
		AFA138	m & p-Xylene	Qualifying ion (m & p-Xylene) is outside of the acceptance criteria.	This data quality issue may represent a potential high bias for this sample. There is no applicable guideline for m & p-Xylene however total xylenes is the sum of m & p-Xylene and o-Xylene. The total xylenes result is below the regulatory guidelines, therefore indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the data reported can be considered reliable.
		AFA139 and AFA144	o-Xylene	Qualifying ion (o-Xylene) is outside of the acceptance criteria.	This data quality issue may represent a potential high bias for this sample. There is no applicable guideline for o-Xylene however total xylenes is the sum of m & p-Xylene and o-Xylene. The total xylenes result is below the regulatory guidelines, therefore indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the data reported can be considered reliable.
		AFA135 and AFA136	Ethylbenzene	Field duplicate samples TP21-22-05 and DUP-GG exceed the alert limit for Ethylbenzene (127%).	A quality check of the data yielded similar results. Sample non-homogeneity is believed to be the root cause. Ethylbenzene concentrations in both the sample and the field duplicate were below the regulatory guideline, indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the Ethylbenzene data reported can be considered reliable.
			Xylenes (Total) and F2	Field duplicate samples TP21-22-05 and DUP-GG exceed the alert limits for Xylenes (Total) (131%) and F2 (192%).	A quality check of the data yielded similar results. Sample non-homogeneity is believed to be the root cause. The Xylenes (Total) and F2 concentrations observed in the sample met the regulatory guideline, while the field duplicate result exceeded the guideline. Thus, these Xylenes (Total) and F2 data for this sample pair should be considered suspect. This test pit location is considered exceeding the guideline for xylenes and F2 as a conservative measure.
		AFA140 and AFA141	F2	Field duplicate samples TP21-23-06 and DUP-HH exceed the alert limit for F2 (105%).	A quality check of the data yielded similar results. Sample non-homogeneity is believed to be the root cause. F2 concentrations in both the sample and the field duplicate were above the regulatory guideline, indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the F2 data reported can be considered reliable.
C164860	Soil	n/a	n/a	No data quality issues were identified.	The data are considered reliable.

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 F1, F2, F3, F3A, F3B, F4 - petroleum hydrocarbon fractions 1, 2, 3, 3A, 3B and 4  
 n/a - not applicable  
 PHC - petroleum hydrocarbon  
 RPD - relative percent difference  
 TCLP - toxicity characteristic leaching procedure  
 VOC - volatile organic compound



**Table G1**  
**Summary of Quality Control Sample Results**  
**Camp Farewell, Inuvialuit Settlement Region, Northwest Territories**  
**Shell Canada Limited**

BVL Job Number	Matrix	BVL Sample ID Affected	Test Affected	Data Quality Issue	Comments
C164989	Soil	AFC350	F2	Matrix spike recovery for F2 (56%) below the acceptance criteria of (60-140%) due to matrix interference.	This data quality issue may represent a potential low bias for this sample. The F2 concentration observed in the sample met the regulatory guideline, while the laboratory duplicate result exceeded the guideline. Thus, these F2 data for this sample pair should be considered suspect. Another sample from this location (TP21-41) exceeds the applied guideline for PHC F2. Therefore this issue will not have a material effect on the interpretation of the results.
			F3A (C16-C22)	Matrix spike recovery for F3A (C16-C22) (52%) below the acceptance criteria of (60-140%) due to matrix interference.	This data quality issue may represent a potential low bias for this sample. There is no applicable guideline for F3A (C16-C22) therefore indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the F3A (C16-C22) data reported can be considered reliable.
			F2-F4, F3A and F3B	Sample was analyzed past method specified hold time for CCME Hydrocarbons (F2-F4) and F3A/B in soil (TP21-41).	This may increase the uncertainty associated with the data. Thus, these data should be considered suspect. Another sample from this location (TP21-41) exceeds the applied guideline for PHC F2. Therefore, this issue will not have a material effect on the interpretation of the results.
		AFC301, AFC382 and AFC385	VOC/BTEX/F1	Sample received was not in compliance with CCME sampling requirements for VOC/BTEX/F1 in soil.	VOC/BTEX/F1 was submitted in methanol vials, however the vials leaked during transit. Therefore glass jars were used for VOC/BTEX/F1 analysis. This does not have any direct affect on the integrity of the sample, thus the data are considered reliable.
		AFC301	F2-F4	Sample was analyzed past method specified hold time for CCME Hydrocarbons (F2-F4 in soil).	This may increase the uncertainty associated with the data. Thus, these data should be considered suspect. Exceeding the hold time would be expected to decrease the concentration of hydrocarbons in the sample due to potential off-gassing. The sample exceeds the guideline for F3 indicating that this issue did not have an effect on the interpretation of the data.
		AFC322 and AFC387	Toluene	Field duplicate samples TP21-36-05 and DUP W exceed the alert limit for toluene (108%).	A quality check of the data yielded similar results. Sample non-homogeneity is believed to be the root cause. Toluene concentrations in both the sample and the field duplicate were above the regulatory guideline, indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the Toluene data reported can be considered reliable.
		AFC329 and AFC388	Ethylbenzene	Field duplicate samples TP21-38-05 and DUP X exceed the alert limits for ethylbenzene (116%).	A quality check of the data yielded similar results. Sample non-homogeneity is believed to be the root cause. Ethylbenzene concentrations in both the sample and the field duplicate were below the regulatory guideline, indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the Ethylbenzene data reported can be considered reliable.
			Total Xylenes	Field duplicate samples TP21-38-05 and DUP X exceed the alert limits for total xylenes (102%).	A quality check of the data yielded similar results. Sample non-homogeneity is believed to be the root cause. Total Xylenes concentrations in both the sample and the field duplicate were above the regulatory guideline, indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the Total Xylenes data reported can be considered reliable.
		F1 (C6-C10) - BTEX	Field duplicate samples TP21-38-05 and DUP X exceed the alert limits for F1 (C6-C10) - BTEX (84%).	A quality check of the data yielded similar results. Sample non-homogeneity is believed to be the root cause. The F1 (C6-C10) - BTEX concentration observed in the sample met the regulatory guideline, while the field duplicate result exceeded the guideline. Thus, these F1 (C6-C10) - BTEX data for this sample pair should be considered suspect. This test pit location is considered exceeding the guideline for F1 as a conservative measure.	
C165063	Soil	n/a	n/a	No data quality issues were identified.	The data are considered reliable.

**Notes:**

- BTEX - benzene, toluene, ethylbenzene, xylenes
- BVL - Bureau Veritas Laboratories
- CCME - Canadian Council of the Ministers of the Environment
- F1, F2, F3, F3A, F3B, F4 - petroleum hydrocarbon fractions 1, 2, 3, 3A, 3B and 4
- n/a - not applicable
- PHC - petroleum hydrocarbon
- RPD - relative percent difference
- TCLP - toxicity characteristic leaching procedure
- VOC - volatile organic compound

**Table G1  
Summary of Quality Control Sample Results  
Camp Farewell, Inuvialuit Settlement Region, Northwest Territories  
Shell Canada Limited**

BVL Job Number	Matrix	BVL Sample ID Affected	Test Affected	Data Quality Issue	Comments
C167904	Surface Water	AFU653 and AFU655	PAH	Surrogate recovery for terphenyl-d14 (147% and 140%) exceeded the acceptance criteria (50-130%) for batch A352619.	This data quality issue may represent a potential high bias for the parameters in this test in this sample. All results were below guidelines, indicating that there will not be a material effect on the interpretation of the results of these parameter. Under these circumstances, the data reported can be considered reliable.
		AFU654	Total Aluminum	Laboratory duplicate RPD for total aluminum (37%) exceed the acceptance criteria (20%) due to sample non homogeneity.	This may increase the uncertainty associated with these results. Total Aluminum concentration was above the regulatory guideline in the sample, indicating that the data quality issue will not have a material effect on the interpretation of the results for this parameter. Under these circumstances, the Total Aluminum data reported can be considered reliable.
			Total Titanium	Laboratory duplicate RPD for total titanium (43%) exceed the acceptance criteria (20%) due to sample non homogeneity.	This may increase the uncertainty associated with these results. There is no applicable guideline for total titanium therefore indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the total titanium data reported can be considered reliable.
		AFU656 and AFU657	Nitrate and Nitrite	Sample analyzed past method specified hold time for Nitrate and Nitrite.	This may increase the uncertainty of test results but does not necessarily imply that results are compromised. The data are considered reliable.
		AFU653, AFU654 and AFU655	PAH	Matrix spike recovery for terphenyl-d14 (173%) exceeded the acceptance criteria (50-130%) for batch A352619.	This data quality issue may represent a potential high bias for the parameters in this test in this sample. All results were below guidelines, indicating that there will not be a material effect on the interpretation of the results of these parameter. Under these circumstances, the data reported can be considered reliable.
				Spiked blank recovery for terphenyl-d14 (151%) exceeded the acceptance criteria (50-130%) for batch A352619.	This data quality issue may represent a potential high bias for the parameters in this test in this sample. All results were below guidelines, indicating that there will not be a material effect on the interpretation of the results of these parameter. Under these circumstances, the data reported can be considered reliable.
				Method blank concentration for terphenyl-d14 (152%) exceeded the acceptance criteria (50-130%) for batch A352619.	This data quality issue may represent a potential high bias for the parameters in this test in this sample. All results were below guidelines, indicating that there will not be a material effect on the interpretation of the results of these parameter. Under these circumstances, the data reported can be considered reliable.
		AFU653	Total Silicon	Matrix spike recovery for total silicon (128%) exceeded the acceptance criteria of (80-120%) due to matrix interference.	This data quality issue may represent a potential high bias for this sample. There is no applicable guideline for total silicon therefore indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the total silicon data reported can be considered reliable.
		AFU653 and AFU654	Total Aluminum	Field duplicate samples SW21-01 and DUP A exceed the alert limit for Total Aluminum (67%).	A quality check of the data yielded similar results. Sample non-homogeneity is believed to be the root cause. Total Aluminum concentrations in both the sample and the field duplicate were above the regulatory guideline, indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the Total Aluminum data reported can be considered reliable.
		Groundwater	AFU651	BTEX/F1-F2	Sample was analyzed past method specified hold time (monitoring well P06-07)
C167913	Soil	AFU762	F3B (C22-C34)	Laboratory duplicate RPD recovery for F3B (C22-C34) (102%) exceeded the acceptance criteria of (40%) due to sample non homogeneity.	This data quality issue may represent a potential high bias for this sample. There is no applicable guideline for F3B (C22-C34) therefore indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the F3B (C22-C34) data reported can be considered reliable.

**Notes:**

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- n/a - not applicable
- PHC - petroleum hydrocarbon
- RPD - relative percent difference
- TCLP - toxicity characteristic leaching procedure
- VOC - volatile organic compound

**Table G1**  
**Summary of Quality Control Sample Results**  
**Camp Farewell, Inuvialuit Settlement Region, Northwest Territories**  
**Shell Canada Limited**

BVL Job Number	Matrix	BVL Sample ID Affected	Test Affected	Data Quality Issue	Comments
C167916	Soil	AFU827 and AFU828	Vanadium	Matrix spike recovery for vanadium(139%) exceeded the acceptance criteria of (75-125%) for batch A354079.	This data quality issue may represent a potential high bias for this sample. Vanadium in the samples were below the regulatory guideline, indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the vanadium data reported can be considered reliable.
C167920	Soil	AFU891	Benzene	Qualifying ion (Benzene) is outside of the acceptance criteria.	This deviation may represent a potential high bias for this sample. Benzene concentration in the sample was below the regulatory guideline, indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the Benzene data reported can be considered reliable.
		AFU888 and AFU889	F2 (C10-C16)	Field duplicate samples TP21-180-03 and DUP III exceed the alert limit for F2 (C10-C16) (67%).	A quality check of the data yielded similar results. Sample non-homogeneity is believed to be the root cause. F2 (C10-C16) concentrations in both the sample and the field duplicate were above the regulatory guideline, indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the F2 (C10-C16) data reported can be considered reliable.
			F3 (C16-C34)	Field duplicate samples TP21-180-03 and DUP III exceed the alert limit for F3 (C16-C34) (83%).	A quality check of the data yielded similar results. Sample non-homogeneity is believed to be the root cause. The F3 (C16-C34) concentration observed in the sample met the regulatory guideline, while the field duplicate result exceeded the guideline. Thus, these F3 (C16-C34) data for this sample pair should be considered suspect. This test pit location is considered exceeding the guideline for F3 as a conservative measure.
C168138	Soil	AFW344, AFW345, AFW346	Benzene	Qualifying ion (Benzene) is outside of the acceptance criteria.	This data quality issue may represent a potential high bias for this sample. Benzene concentrations in the samples were below the regulatory guideline, indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the Benzene data reported can be considered reliable.
		AFW345	PHC	Surrogate recovery for D10-o-Xylene (172%) exceeded the acceptance criteria (50-140%) due to matrix interference.	This data quality issue may represent a potential high bias for the parameters in this test in this sample. All results were either below or well above guidelines, indicating that there will not be a material effect on the interpretation of the results of these parameter. Under these circumstances, the data reported can be considered reliable.
		AFW114 and AFW115	F3B (C22-C34)	Laboratory duplicate RPD for F3B (C22-C34) (102%) exceeded the acceptance criteria of (40%) for batch A350635.	This may increase the uncertainty associated with these results. There is no applicable guideline for F3B (C22-C34) therefore indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the F3B (C22-C34) data reported can be considered reliable.
		AFW284	F2 (C10-C16 Hydrocarbons)	Laboratory duplicate RPD for F2 (C10-C16 Hydrocarbons) (56%) exceeded the acceptance criteria of (40%) for batch A355591.	This may increase the uncertainty associated with these results. F2 concentrations were above the regulatory guideline in both the sample and the lab duplicate, indicating that the data quality issue will not have a material effect on the interpretation of the results for this parameter. Under these circumstances, the F2 data reported can be considered reliable.
		AFW344 and AFW345	Acenaphthene and Acenaphthylene	Qualifying ion (Acenaphthene and Acenaphthylene) is outside of the acceptance criteria.	This data quality issue may represent a potential high bias for this sample. There is no applicable guideline for Acenaphthene and Acenaphthylene therefore indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the Acenaphthene and Acenaphthylene data reported can be considered reliable.
		AFW346	Acenaphthene, Acenaphthylene and 1-Methylnaphthalene	Qualifying ion (Acenaphthene, Acenaphthylene and 1-Methylnaphthalene) is outside of the acceptance criteria.	This data quality issue may represent a potential high bias for this sample. There is no applicable guideline for Acenaphthene, Acenaphthylene and 1-Methylnaphthalene therefore indicating that there will not be a material effect on the interpretation of the results of this parameter. Under these circumstances, the Acenaphthene, Acenaphthylene and 1-Methylnaphthalene data reported can be considered reliable.

**Notes:**

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- F1, F2, F3, F3A, F3B, F4 - petroleum hydrocarbon fractions 1, 2, 3, 3A, 3B and 4
- n/a - not applicable
- PHC - petroleum hydrocarbon
- RPD - relative percent difference
- TCLP - toxicity characteristic leaching procedure
- VOC - volatile organic compound

**Table G2**  
**Summary of Field Duplicate Sample Results - Soil Petroleum Hydrocarbons**  
**Camp Farewell, Inuvialuit Settlement Region, Northwest Territories**  
**Shell Canada Limited**

Sample Location	Units	Alert Limit	RDL	TP21-149-06	DUP A	RPD %	TP21-111-05	DUP B	RPD %	TP21-112-06	DUP C	RPD %
Sample Depth (mbgs)				1.2	1.2		1.0	1.0		1.5	1.5	
Sample Collection Date				14-Aug-2021	14-Aug-2021		15-Aug-2021	15-Aug-2021		16-Aug-2021	16-Aug-2021	
BVL Sample ID				AEF044	AEF046		AEF088	AEF089		AEE879	AEE880	
Benzene	mg/kg	>100%	0.005	<0.0050	<0.0050	n/c	<0.0050	<0.0050	n/c	<0.0050	<0.0050	n/c
Toluene	mg/kg	>100%	0.05	<0.050	<0.050	n/c	<0.050	<0.050	n/c	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>100%	0.01	<0.010	<0.010	n/c	<0.010	<0.010	n/c	0.026	<0.010	n/c
Xylenes (Total)	mg/kg	>100%	0.045	<0.045	<0.045	n/c	<0.045	<0.045	n/c	0.13	<0.045	n/c
F1 (C <sub>6</sub> -C <sub>10</sub> ) - BTEX	mg/kg	>60%	10	150	<10	n/c	<10	<10	n/c	10	<10	n/c
F2 (C <sub>10</sub> -C <sub>16</sub> )	mg/kg	>60%	10	4,000	1,100	<b>114</b>	11	<10	n/c	<10	<10	n/c
F3 (C <sub>16</sub> -C <sub>34</sub> )	mg/kg	>60%	50	540	120	n/c	<50	<50	n/c	<50	<50	n/c
F4 (C <sub>34</sub> -C <sub>50</sub> )	mg/kg	>60%	50	240	<50	n/c	<50	<50	n/c	<50	<50	n/c

Sample Location	Units	Alert Limit	RDL	TP21-BH19-39-06	DUP D	RPD	TP21-TP19-17-03	DUP E	RPD	TP21-74-03	DUP F	RPD
Sample Depth (mbgs)				1.5	1.5		0.5	0.5		0.5	0.5	
Sample Collection Date				17-Aug-2021	17-Aug-2021		17-Aug-2021	17-Aug-2021		17-Aug-2021	17-Aug-2021	
BVL Sample ID				AEO257	AEO258		AEO274	AEO276		AEO316	AEO318	
Benzene	mg/kg	>100%	0.005	<0.0050	<0.0050	n/c	<0.0050	<0.0050	n/c	0.0082	0.01	n/c
Toluene	mg/kg	>100%	0.05	<0.050	<0.050	n/c	0.38	0.28	30	0.35	0.19	n/c
Ethylbenzene	mg/kg	>100%	0.01	<0.010	<0.010	n/c	<0.010	<0.010	n/c	0.064	0.036	n/c
Xylenes (Total)	mg/kg	>100%	0.045	<0.045	<0.045	n/c	<0.045	<0.045	n/c	0.55	0.27	68
F1 (C <sub>6</sub> -C <sub>10</sub> ) - BTEX	mg/kg	>60%	10	<10	<10	n/c	<10	<10	n/c	16	17	n/c
F2 (C <sub>10</sub> -C <sub>16</sub> )	mg/kg	>60%	10	<10	<10	n/c	220	190	15	220	170	26
F3 (C <sub>16</sub> -C <sub>34</sub> )	mg/kg	>60%	50	<50	<50	n/c	580	540	7	460	370	22
F4 (C <sub>34</sub> -C <sub>50</sub> )	mg/kg	>60%	50	<50	<50	n/c	150	130	n/c	120	77	n/c

Sample Location	Units	Alert Limit	RDL	TP21-50-04	DUP G	RPD	TP21-82-06	DUP H	RPD	TP21-13-05	DUP I	RPD %
Sample Depth (mbgs)				0.7	0.7		1.5	1.5		1.0	1.0	
Sample Collection Date				18-Aug-2021	18-Aug-2021		18-Aug-2021	18-Aug-2021		19-Aug-2021	19-Aug-2021	
BVL Sample ID				AEO387	AEO389		AEO385	AEO368		AEO191	AEO138	
Benzene	mg/kg	>100%	0.005	<0.0050	<0.0050	n/c	<0.0050	<0.0050	n/c	0.55	0.48	14
Toluene	mg/kg	>100%	0.05	0.2	0.35	n/c	<0.050	<0.050	n/c	6.3	5.3	17
Ethylbenzene	mg/kg	>100%	0.01	<0.010	<0.010	n/c	<0.010	<0.010	n/c	27	22	20
Xylenes (Total)	mg/kg	>100%	0.045	<0.045	<0.045	n/c	<0.045	<0.045	n/c	130	120	8
F1 (C <sub>6</sub> -C <sub>10</sub> ) - BTEX	mg/kg	>60%	10	<10	12	n/c	<10	<10	n/c	5,600	2,200	<b>87</b>
F2 (C <sub>10</sub> -C <sub>16</sub> )	mg/kg	>60%	10	150	190	24	<10	<10	n/c	140	450	<b>105</b>
F3 (C <sub>16</sub> -C <sub>34</sub> )	mg/kg	>60%	50	310	380	20	<50	<50	n/c	110	280	n/c
F4 (C <sub>34</sub> -C <sub>50</sub> )	mg/kg	>60%	50	67	71	n/c	<50	<50	n/c	<50	100	n/c

**Notes:**

- Bold/Underline** - RPD exceeds alert limit
- BTEX - benzene, toluene, ethylbenzene, xylenes
- BVL - Bureau Veritas Laboratories
- F1, F2, F3, F4 - petroleum hydrocarbon fractions 1, 2, 3 and 4
- mbgs - metres below ground surface
- mg/kg - milligrams per kilogram
- n/c - not calculated
- RDL - reportable detection limit
- RPD - relative percent difference
- > - greater than
- < - less than
- RPD is not calculated if either the original or field duplicate sample has a result less than 5X the RDL

**Table G2**  
**Summary of Field Duplicate Sample Results - Soil Petroleum Hydrocarbons**  
**Camp Farewell, Inuvialuit Settlement Region, Northwest Territories**  
**Shell Canada Limited**

Sample Location	Units	Alert Limit	RDL	TP21-TP19-24-05	DUP J	RPD %	TP21-138-06	DUP K	RPD	TP21-146-05	DUP L	RPD
Sample Depth (mbgs)				1.0	1.0		1.5	1.5		1.0	1.0	
Sample Collection Date				19-Aug-2021	19-Aug-2021		19-Aug-2021	19-Aug-2021		19-Aug-2021	19-Aug-2021	
BVL Sample ID				AEO134	AEO153		AEO152	AEO192		AEO185	AEO229	
Benzene	mg/kg	>100%	0.005	<0.0050	<0.0050	n/c	<0.0050	<0.0050	n/c	0.01	0.012	n/c
Toluene	mg/kg	>100%	0.05	0.22	0.36	n/c	<0.050	<0.050	n/c	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>100%	0.01	<0.010	<0.010	n/c	<0.010	<0.010	n/c	0.02	0.034	n/c
Xylenes (Total)	mg/kg	>100%	0.045	<0.045	<0.045	n/c	<0.045	<0.045	n/c	<0.045	0.049	n/c
F1 (C <sub>6</sub> -C <sub>10</sub> ) - BTEX	mg/kg	>60%	10	<10	<10	n/c	<10	<10	n/c	<10	<10	n/c
F2 (C <sub>10</sub> -C <sub>16</sub> )	mg/kg	>60%	10	<10	<10	n/c	<10	13	n/c	<10	<10	n/c
F3 (C <sub>16</sub> -C <sub>34</sub> )	mg/kg	>60%	50	<50	<50	n/c	<50	<50	n/c	<50	<50	n/c
F4 (C <sub>34</sub> -C <sub>50</sub> )	mg/kg	>60%	50	<50	<50	n/c	<50	<50	n/c	<50	<50	n/c

Sample Location	Units	Alert Limit	RDL	TP21-139-05	DUP M	RPD	TP21-141-06	DUP N	RPD	TP21-BH19-110-05	DUP O	RPD
Sample Depth (mbgs)				1.0	1.0		1.5	1.5		1	1	
Sample Collection Date				20-Aug-2021	20-Aug-2021		20-Aug-2021	20-Aug-2021		21-Aug-2021	21-Aug-2021	
BVL Sample ID				AEP045	AEP046		AEP052	AEP053		AEP502	AEP503	
Benzene	mg/kg	>100%	0.005	<0.0050	<0.0050	n/c	<0.0050	<0.0050	n/c	<0.0050	<0.0050	n/c
Toluene	mg/kg	>100%	0.05	<0.050	<0.050	n/c	<0.050	<0.050	n/c	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>100%	0.01	<0.010	0.024	n/c	<0.010	<0.010	n/c	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>100%	0.045	<0.045	<0.045	n/c	<0.045	<0.045	n/c	<0.045	<0.045	n/c
F1 (C <sub>6</sub> -C <sub>10</sub> ) - BTEX	mg/kg	>60%	10	<10	<10	n/c	<10	<10	n/c	<10	<10	n/c
F2 (C <sub>10</sub> -C <sub>16</sub> )	mg/kg	>60%	10	16	11	n/c	18	19	n/c	<10	<10	n/c
F3 (C <sub>16</sub> -C <sub>34</sub> )	mg/kg	>60%	50	72	66	n/c	130	99	n/c	<50	<50	n/c
F4 (C <sub>34</sub> -C <sub>50</sub> )	mg/kg	>60%	50	<50	<50	n/c	<50	<50	n/c	<50	<50	n/c

Sample Location	Units	Alert Limit	RDL	TP21-125-04	DUP P	RPD	TP21-95-03	DUP Q	RPD	TP21-92-06	DUP R	RPD
Sample Depth (mbgs)				0.7	0.7		0.5	0.5		1.5	1.5	
Sample Collection Date				21-Aug-2021	21-Aug-2021		21-Aug-2021	21-Aug-2021		21-Aug-2021	21-Aug-2021	
BVL Sample ID				AEP508	AEP509		AEP516	AEP519		AEP528	AEP529	
Benzene	mg/kg	>100%	0.005	<0.0050	<0.0050	n/c	<0.0050	<0.0050	n/c	<0.0050	<0.0050	n/c
Toluene	mg/kg	>100%	0.05	<0.050	<0.050	n/c	<0.050	<0.050	n/c	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>100%	0.01	<0.010	<0.010	n/c	<0.010	<0.010	n/c	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>100%	0.045	<0.045	<0.045	n/c	<0.045	<0.045	n/c	<0.045	<0.045	n/c
F1 (C <sub>6</sub> -C <sub>10</sub> ) - BTEX	mg/kg	>60%	10	<10	<10	n/c	<10	<10	n/c	<10	<10	n/c
F2 (C <sub>10</sub> -C <sub>16</sub> )	mg/kg	>60%	10	<10	<10	n/c	<10	24	n/c	<10	<10	n/c
F3 (C <sub>16</sub> -C <sub>34</sub> )	mg/kg	>60%	50	<50	<50	n/c	<50	86	n/c	<50	<50	n/c
F4 (C <sub>34</sub> -C <sub>50</sub> )	mg/kg	>60%	50	<50	<50	n/c	<50	<50	n/c	<50	<50	n/c

**Notes:**  
**Bold/Underline** - RPD exceeds alert limit  
 BTEX - benzene, toluene, ethylbenzene, xylenes  
 BVL - Bureau Veritas Laboratories  
 F1, F2, F3, F4 - petroleum hydrocarbon fractions 1, 2, 3 and 4  
 mbgs - metres below ground surface  
 mg/kg - milligrams per kilogram  
 n/c - not calculated  
 RDL - reportable detection limit  
 RPD - relative percent difference  
 > - greater than  
 < - less than  
 RPD is not calculated if either the original or field duplicate sample has a result less than 5X the RDL

**Table G2**  
**Summary of Field Duplicate Sample Results - Soil Petroleum Hydrocarbons**  
**Camp Farewell, Inuvialuit Settlement Region, Northwest Territories**  
**Shell Canada Limited**

Sample Location	Units	Alert Limit	RDL	TP21-60-06	DUP S	RPD	TP21-32-04	DUP T	RPD	TP21-63-03	DUP U	RPD
Sample Depth (mbgs)				1.3	1.3		0.7	0.7		0.5	0.5	
Sample Collection Date				22-Aug-2021	22-Aug-2021		22-Aug-2021	22-Aug-2021		22-Aug-2021	22-Aug-2021	
BVL Sample ID				AEP017	AEP036		AEP025	AEP037		AEP006	AEP035	
Benzene	mg/kg	>100%	0.005	<0.0050	<0.0050	n/c	0.016	0.022	n/c	<0.0050	<0.0050	n/c
Toluene	mg/kg	>100%	0.05	<0.050	<0.050	n/c	0.28	0.33	16	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>100%	0.01	<0.010	<0.010	n/c	6.1	6.7	9	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>100%	0.045	<0.045	<0.045	n/c	32	35	9	<0.045	<0.045	n/c
F1 (C <sub>6</sub> -C <sub>10</sub> ) - BTEX	mg/kg	>60%	10	<10	<10	n/c	800	640	22	<10	<10	n/c
F2 (C <sub>10</sub> -C <sub>16</sub> )	mg/kg	>60%	10	<10	<10	n/c	6,900	4,300	46	230	80	<u>97</u>
F3 (C <sub>16</sub> -C <sub>34</sub> )	mg/kg	>60%	50	67	76	n/c	650	800	21	290	130	n/c
F4 (C <sub>34</sub> -C <sub>50</sub> )	mg/kg	>60%	50	<50	<50	n/c	130	240	n/c	<50	<50	n/c

Sample Location	Units	Alert Limit	RDL	TP21-35-05	DUP V	RPD	TP21-36-05	DUP W	RPD	TP21-38-05	DUP X	RPD
Sample Depth (mbgs)				1.0	1.0		1.0	1.0		1.0	1.0	
Sample Collection Date				23-Aug-2021	23-Aug-2021		23-Aug-2021	23-Aug-2021		23-Aug-2021	23-Aug-2021	
BVL Sample ID				AFC308	AFC386		AFC322	AFC387		AFC329	AFC388	
Benzene	mg/kg	>100%	0.005	<0.0050	<0.0050	n/c	<0.013	<0.015	n/c	0.024	0.092	n/c
Toluene	mg/kg	>100%	0.05	<0.050	<0.050	n/c	1.7	5.7	<u>108</u>	0.68	1.6	81
Ethylbenzene	mg/kg	>100%	0.01	0.014	<0.010	n/c	0.073	0.22	n/c	0.17	0.64	<u>116</u>
Xylenes (Total)	mg/kg	>100%	0.045	<0.045	<0.045	n/c	0.63	1.8	n/c	1.3	4	<u>102</u>
F1 (C <sub>6</sub> -C <sub>10</sub> ) - BTEX	mg/kg	>60%	10	<10	<10	n/c	<20	<30	n/c	86	210	<u>84</u>
F2 (C <sub>10</sub> -C <sub>16</sub> )	mg/kg	>60%	10	66	39	n/c	53	75	n/c	930	990	6
F3 (C <sub>16</sub> -C <sub>34</sub> )	mg/kg	>60%	50	62	73	n/c	500	470	n/c	530	480	10
F4 (C <sub>34</sub> -C <sub>50</sub> )	mg/kg	>60%	50	<50	<50	n/c	<50	<50	n/c	150	71	n/c

Sample Location	Units	Alert Limit	RDL	TP21-52-05	DUP Y	RPD	TP21-55-03	DUP Z	RPD	TP21-162-02	DUP-AA	RPD
Sample Depth (mbgs)				1.0	1.0		0.5	0.5		0.3	0.3	
Sample Collection Date				23-Aug-2021	23-Aug-2021		24-Aug-2021	24-Aug-2021		24-Aug-2021	24-Aug-2021	
BVL Sample ID				AFC385	AFC389		AFA049	AFA050		AFA058	AFA059	
Benzene	mg/kg	>100%	0.005	<0.0050	<0.0050	n/c	<0.0050	<0.0050	n/c	<0.028	<0.033	n/c
Toluene	mg/kg	>100%	0.05	<0.050	0.16	n/c	0.097	<0.050	n/c	30	38	24
Ethylbenzene	mg/kg	>100%	0.01	<0.010	<0.010	n/c	<0.010	<0.010	n/c	<0.055	<0.065	n/c
Xylenes (Total)	mg/kg	>100%	0.045	<0.045	<0.045	n/c	<0.045	<0.045	n/c	<0.25	<0.29	n/c
F1 (C <sub>6</sub> -C <sub>10</sub> ) - BTEX	mg/kg	>60%	10	<10	<10	n/c	<10	<10	n/c	<24	<65	n/c
F2 (C <sub>10</sub> -C <sub>16</sub> )	mg/kg	>60%	10	<10	<10	n/c	38	180	n/c	360	160	n/c
F3 (C <sub>16</sub> -C <sub>34</sub> )	mg/kg	>60%	50	<50	<50	n/c	120	190	n/c	4,500	3,100	37
F4 (C <sub>34</sub> -C <sub>50</sub> )	mg/kg	>60%	50	<50	<50	n/c	<50	<50	n/c	1,600	1,100	37

**Notes:**  
**Bold/Underline** - RPD exceeds alert limit  
 BTEX - benzene, toluene, ethylbenzene, xylenes  
 BVL - Bureau Veritas Laboratories  
 F1, F2, F3, F4 - petroleum hydrocarbon fractions 1, 2, 3 and 4  
 mbgs - metres below ground surface  
 mg/kg - milligrams per kilogram  
 n/c - not calculated  
 RDL - reportable detection limit  
 RPD - relative percent difference  
 > - greater than  
 < - less than  
 RPD is not calculated if either the original or field duplicate sample has a result less than 5X the RDL

**Table G2**  
**Summary of Field Duplicate Sample Results - Soil Petroleum Hydrocarbons**  
**Camp Farewell, Inuvialuit Settlement Region, Northwest Territories**  
**Shell Canada Limited**

Sample Location	Units	Alert Limit	RDL	TP21-175-02	DUP-BB	RPD	TP21-176-02	DUP-CC	RPD	TP21-11-06	DUP DD	RPD
Sample Depth (mbgs)				0.3	0.3		0.3	0.3		1.5	1.5	
Sample Collection Date				24-Aug-2021	24-Aug-2021		24-Aug-2021	24-Aug-2021		26-Aug-2021	26-Aug-2021	
BVL Sample ID				AFA065	AFA066		AFA068	AFA070		AFA078	AFA079	
Benzene	mg/kg	>100%	0.005	<0.027	<0.018	n/c	<0.0050	<0.0050	n/c	0.0076	0.0076	n/c
Toluene	mg/kg	>100%	0.05	<0.080	<0.080	n/c	<0.050	<0.050	n/c	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>100%	0.01	<0.054	<0.035	n/c	0.055	0.055	0	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>100%	0.045	<0.24	<0.16	n/c	0.26	0.28	7	<0.045	<0.045	n/c
F1 (C <sub>6</sub> -C <sub>10</sub> ) - BTEX	mg/kg	>60%	10	<54	51	n/c	14	19	n/c	<10	<10	n/c
F2 (C <sub>10</sub> -C <sub>16</sub> )	mg/kg	>60%	10	430	860	<u>67</u>	180	390	<u>74</u>	<10	<10	n/c
F3 (C <sub>16</sub> -C <sub>34</sub> )	mg/kg	>60%	50	5,700	1,900	<u>100</u>	1,200	1,700	34	<50	<50	n/c
F4 (C <sub>34</sub> -C <sub>50</sub> )	mg/kg	>60%	50	2,100	520	n/c	450	670	39	<50	<50	n/c

Sample Location	Units	Alert Limit	RDL	TP21-08-05	DUP EE	RPD	TP21-06-03	DUP FF	RPD	TP21-22-05	DUP-GG	RPD
Sample Depth (mbgs)				1.0	1.0		0.5	0.5		1.0	1.0	
Sample Collection Date				26-Aug-2021	26-Aug-2021		26-Aug-2021	26-Aug-2021		27-Aug-2021	27-Aug-2021	
BVL Sample ID				AFA087	AFA091		AFA096	AFA097		AFA135	AFA136	
Benzene	mg/kg	>100%	0.005	0.064	0.077	18	<0.0050	<0.0050	n/c	0.088	0.091	3
Toluene	mg/kg	>100%	0.05	<0.050	<0.050	n/c	<0.050	<0.050	n/c	0.074	0.14	n/c
Ethylbenzene	mg/kg	>100%	0.01	0.13	0.14	7	<0.010	<0.010	n/c	0.065	0.29	<u>127</u>
Xylenes (Total)	mg/kg	>100%	0.045	0.052	0.056	n/c	<0.045	<0.045	n/c	0.25	1.2	<u>131</u>
F1 (C <sub>6</sub> -C <sub>10</sub> ) - BTEX	mg/kg	>60%	10	<10	<10	n/c	14	14	n/c	11	42	n/c
F2 (C <sub>10</sub> -C <sub>16</sub> )	mg/kg	>60%	10	<10	<10	n/c	72	200	<u>94</u>	64	3,300	<u>192</u>
F3 (C <sub>16</sub> -C <sub>34</sub> )	mg/kg	>60%	50	<50	<50	n/c	190	310	n/c	<50	<50	n/c
F4 (C <sub>34</sub> -C <sub>50</sub> )	mg/kg	>60%	50	<50	<50	n/c	<50	<50	n/c	<50	<50	n/c

Sample Location	Units	Alert Limit	RDL	TP21-23-06	DUP-HH	RPD	TP21-34-05	DUP-II	RPD	TP21-67-06	DUP-JJ	RPD
Sample Depth (mbgs)				1.5	1.5		1.0	1.0		1.4	1.4	
Sample Collection Date				27-Aug-2021	27-Aug-2021		27-Aug-2021	27-Aug-2021		28-Aug-2021	28-Aug-2021	
BVL Sample ID				AFA140	AFA141		AFA125	AFA126		AFA008	AFA009	
Benzene	mg/kg	>100%	0.005	0.56	0.23	84	<0.0050	<0.0050	n/c	<0.0050	<0.0050	n/c
Toluene	mg/kg	>100%	0.05	0.073	0.086	n/c	<0.050	<0.050	n/c	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>100%	0.01	0.6	0.56	7	<0.010	<0.010	n/c	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>100%	0.045	1.2	0.59	68	<0.045	<0.045	n/c	<0.045	<0.045	n/c
F1 (C <sub>6</sub> -C <sub>10</sub> ) - BTEX	mg/kg	>60%	10	44	230	n/c	<10	<10	n/c	<10	<10	n/c
F2 (C <sub>10</sub> -C <sub>16</sub> )	mg/kg	>60%	10	190	610	<u>105</u>	<10	<10	n/c	<10	<10	n/c
F3 (C <sub>16</sub> -C <sub>34</sub> )	mg/kg	>60%	50	94	120	n/c	<50	<50	n/c	<50	<50	n/c
F4 (C <sub>34</sub> -C <sub>50</sub> )	mg/kg	>60%	50	<50	<50	n/c	<50	<50	n/c	<50	<50	n/c

**Notes:**  
**Bold/Underline** - RPD exceeds alert limit  
 BTEX - benzene, toluene, ethylbenzene, xylenes  
 BVL - Bureau Veritas Laboratories  
 F1, F2, F3, F4 - petroleum hydrocarbon fractions 1, 2, 3 and 4  
 mbgs - metres below ground surface  
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 n/c - not calculated  
 RDL - reportable detection limit  
 RPD - relative percent difference  
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**Table G2**  
**Summary of Field Duplicate Sample Results - Soil Petroleum Hydrocarbons**  
**Camp Farewell, Inuvialuit Settlement Region, Northwest Territories**  
**Shell Canada Limited**

Sample Location	Units	Alert Limit	RDL	TP21-70-06	DUP-KK	RPD	TP21-84-05	DUP-LL	RPD	TP21-90-04	DUP-MM	RPD
Sample Depth (mbgs)				1.5	1.5		1.0	1.0		0.7	0.7	
Sample Collection Date				28-Aug-2021	28-Aug-2021		28-Aug-2021	28-Aug-2021		29-Aug-2021	29-Aug-2021	
BVL Sample ID				AFA016	AFA017		AFA032	AFA033		AFB113	AFB066	
Benzene	mg/kg	>100%	0.005	<0.0050	<0.0050	n/c	0.0099	0.016	n/c	<0.0050	<0.0050	n/c
Toluene	mg/kg	>100%	0.05	<0.050	<0.050	n/c	0.1	0.13	n/c	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>100%	0.01	<0.010	<0.010	n/c	0.021	0.028	n/c	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>100%	0.045	<0.045	<0.045	n/c	0.048	0.18	n/c	<0.045	<0.045	n/c
F1 (C <sub>6</sub> -C <sub>10</sub> ) - BTEX	mg/kg	>60%	10	<10	<10	n/c	<10	<10	n/c	<24	<10	n/c
F2 (C <sub>10</sub> -C <sub>16</sub> )	mg/kg	>60%	10	<10	<10	n/c	49	97	n/c	67	<10	n/c
F3 (C <sub>16</sub> -C <sub>34</sub> )	mg/kg	>60%	50	<50	<50	n/c	520	360	36	220	<50	n/c
F4 (C <sub>34</sub> -C <sub>50</sub> )	mg/kg	>60%	50	<50	<50	n/c	150	71	n/c	<50	<50	n/c

Sample Location	Units	Alert Limit	RDL	TP21-104-03	DUP NN	RPD	TP21-117-03	DUP OO	RPD	TP21-118-06	DUP PP	RPD
Sample Depth (mbgs)				0.5	0.5		0.5	0.5		1.5	1.5	
Sample Collection Date				31-Aug-2021	31-Aug-2021		31-Aug-2021	31-Aug-2021		31-Aug-2021	31-Aug-2021	
BVL Sample ID				AFU722	AFU724		AFU726	AFU728		AFU731	AFU732	
Benzene	mg/kg	>100%	0.005	<0.0050	<0.0050	n/c	<0.0050	<0.0050	n/c	<0.0050	<0.0050	n/c
Toluene	mg/kg	>100%	0.05	<0.050	<0.050	n/c	<0.050	<0.050	n/c	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>100%	0.01	<0.010	<0.010	n/c	<0.010	<0.010	n/c	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>100%	0.045	<0.045	<0.045	n/c	<0.045	<0.045	n/c	<0.045	<0.045	n/c
F1 (C <sub>6</sub> -C <sub>10</sub> ) - BTEX	mg/kg	>60%	10	<10	<10	n/c	<10	<10	n/c	<10	<10	n/c
F2 (C <sub>10</sub> -C <sub>16</sub> )	mg/kg	>60%	10	23	54	n/c	10	<10	n/c	<10	<10	n/c
F3 (C <sub>16</sub> -C <sub>34</sub> )	mg/kg	>60%	50	130	170	n/c	<50	<50	n/c	<50	<50	n/c
F4 (C <sub>34</sub> -C <sub>50</sub> )	mg/kg	>60%	50	<50	<50	n/c	<50	<50	n/c	<50	<50	n/c

Sample Location	Units	Alert Limit	RDL	TP21-119-03	DUP QQ	RPD	TP21-120-04	DUP RR	RPD	TP21-121-05	DUP SS	RPD
Sample Depth (mbgs)				0.5	0.5		0.7	0.7		1.0	1.0	
Sample Collection Date				31-Aug-2021	31-Aug-2021		31-Aug-2021	31-Aug-2021		31-Aug-2021	31-Aug-2021	
BVL Sample ID				AFU734	AFU735		AFU738	AFU739		AFU744	AFU745	
Benzene	mg/kg	>100%	0.005	<0.0050	<0.0050	n/c	<0.0050	<0.0050	n/c	<0.0050	<0.0050	n/c
Toluene	mg/kg	>100%	0.05	<0.050	0.079	n/c	<0.050	<0.050	n/c	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>100%	0.01	<0.010	<0.010	n/c	<0.010	<0.010	n/c	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>100%	0.045	<0.045	<0.045	n/c	<0.045	<0.045	n/c	<0.045	<0.045	n/c
F1 (C <sub>6</sub> -C <sub>10</sub> ) - BTEX	mg/kg	>60%	10	<10	<10	n/c	<10	<10	n/c	<10	<10	n/c
F2 (C <sub>10</sub> -C <sub>16</sub> )	mg/kg	>60%	10	51	68	29	<10	<10	n/c	15	<10	n/c
F3 (C <sub>16</sub> -C <sub>34</sub> )	mg/kg	>60%	50	200	180	n/c	81	<50	n/c	340	<50	n/c
F4 (C <sub>34</sub> -C <sub>50</sub> )	mg/kg	>60%	50	64	<50	n/c	<50	<50	n/c	54	<50	n/c

**Notes:**  
**Bold/Underline** - RPD exceeds alert limit  
 BTEX - benzene, toluene, ethylbenzene, xylenes  
 BVL - Bureau Veritas Laboratories  
 F1, F2, F3, F4 - petroleum hydrocarbon fractions 1, 2, 3 and 4  
 mbgs - metres below ground surface  
 mg/kg - milligrams per kilogram  
 n/c - not calculated  
 RDL - reportable detection limit  
 RPD - relative percent difference  
 > - greater than  
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 RPD is not calculated if either the original or field duplicate sample has a result less than 5X the RDL

**Table G2**  
**Summary of Field Duplicate Sample Results - Soil Petroleum Hydrocarbons**  
**Camp Farewell, Inuvialuit Settlement Region, Northwest Territories**  
**Shell Canada Limited**

Sample Location	Units	Alert Limit	RDL	TP21-122-06	DUP TT	RPD	TP21-129-03	DUP UU	RPD	TP21-130-04	DUP VV	RPD
Sample Depth (mbgs)				1.5	1.5		0.5	0.5		0.7	0.7	
Sample Collection Date				31-Aug-2021	31-Aug-2021		31-Aug-2021	31-Aug-2021		31-Aug-2021	31-Aug-2021	
BVL Sample ID				AFU748	AFU749		AFU751	AFU752		AFU755	AFU756	
Benzene	mg/kg	>100%	0.005	<0.0050	<0.0050	n/c	<0.0050	<0.0050	n/c	<0.0050	<0.0050	n/c
Toluene	mg/kg	>100%	0.05	<0.050	<0.050	n/c	<0.050	<0.050	n/c	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>100%	0.01	<0.010	<0.010	n/c	<0.010	<0.010	n/c	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>100%	0.045	<0.045	<0.045	n/c	<0.045	<0.045	n/c	<0.045	<0.045	n/c
F1 (C <sub>6</sub> -C <sub>10</sub> ) - BTEX	mg/kg	>60%	10	<10	<10	n/c	<10	<10	n/c	<10	<10	n/c
F2 (C <sub>10</sub> -C <sub>16</sub> )	mg/kg	>60%	10	<10	<10	n/c	10	16	n/c	130	160	21
F3 (C <sub>16</sub> -C <sub>34</sub> )	mg/kg	>60%	50	<50	<50	n/c	<50	60	n/c	190	200	n/c
F4 (C <sub>34</sub> -C <sub>50</sub> )	mg/kg	>60%	50	<50	<50	n/c	<50	<50	n/c	<50	<50	n/c

Sample Location	Units	Alert Limit	RDL	TP21-134-04	DUP WW	RPD	TP21-134-06	DUP XX	RPD	TP21-135-03	DUP YY	RPD
Sample Depth (mbgs)				0.7	0.7		1.5	1.5		0.5	0.5	
Sample Collection Date				1-Sep-2021	1-Sep-2021		1-Sep-2021	1-Sep-2021		1-Sep-2021	1-Sep-2021	
BVL Sample ID				AFU857	AFU864		AFU858	AFU859		AFU861	AFU863	
Benzene	mg/kg	>100%	0.005	<0.0050	<0.0050	n/c	<0.0050	<0.0050	n/c	<0.0050	<0.0050	n/c
Toluene	mg/kg	>100%	0.05	<0.050	<0.050	n/c	<0.050	<0.050	n/c	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>100%	0.01	<0.010	<0.010	n/c	<0.010	<0.010	n/c	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>100%	0.045	<0.045	<0.045	n/c	<0.045	<0.045	n/c	<0.045	<0.045	n/c
F1 (C <sub>6</sub> -C <sub>10</sub> ) - BTEX	mg/kg	>60%	10	<10	<10	n/c	<10	<10	n/c	<10	<10	n/c
F2 (C <sub>10</sub> -C <sub>16</sub> )	mg/kg	>60%	10	<10	<10	n/c	<10	<10	n/c	35	79	n/c
F3 (C <sub>16</sub> -C <sub>34</sub> )	mg/kg	>60%	50	<50	<50	n/c	<50	<50	n/c	<50	<50	n/c
F4 (C <sub>34</sub> -C <sub>50</sub> )	mg/kg	>60%	50	<50	<50	n/c	<50	<50	n/c	<50	<50	n/c

Sample Location	Units	Alert Limit	RDL	TP21-135-05	DUP ZZ	RPD	TP21-177-02	DUP AAA	RPD	TP21-177-04	DUP BBB	RPD
Sample Depth (mbgs)				1.0	1.0		0.3	0.3		0.7	0.7	
Sample Collection Date				1-Sep-2021	1-Sep-2021		1-Sep-2021	1-Sep-2021		1-Sep-2021	1-Sep-2021	
BVL Sample ID				AFU862	AFU865		AFU868	AFU869		AFU870	AFU871	
Benzene	mg/kg	>100%	0.005	<0.0050	<0.0050	n/c	<0.0050	<0.010	n/c	<0.0050	<0.0050	n/c
Toluene	mg/kg	>100%	0.05	<0.050	<0.050	n/c	<0.050	<0.10	n/c	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>100%	0.01	<0.010	<0.010	n/c	<0.010	<0.021	n/c	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>100%	0.045	<0.045	<0.045	n/c	<0.045	<0.093	n/c	<0.045	<0.045	n/c
F1 (C <sub>6</sub> -C <sub>10</sub> ) - BTEX	mg/kg	>60%	10	<10	<10	n/c	<10	<21	n/c	<10	<10	n/c
F2 (C <sub>10</sub> -C <sub>16</sub> )	mg/kg	>60%	10	<10	<10	n/c	52	36	n/c	<10	<10	n/c
F3 (C <sub>16</sub> -C <sub>34</sub> )	mg/kg	>60%	50	<50	<50	n/c	850	720	17	<50	<50	n/c
F4 (C <sub>34</sub> -C <sub>50</sub> )	mg/kg	>60%	50	<50	<50	n/c	290	240	n/c	<50	<50	n/c

**Notes:**  
**Bold/Underline** - RPD exceeds alert limit  
 BTEX - benzene, toluene, ethylbenzene, xylenes  
 BVL - Bureau Veritas Laboratories  
 F1, F2, F3, F4 - petroleum hydrocarbon fractions 1, 2, 3 and 4  
 mbgs - metres below ground surface  
 mg/kg - milligrams per kilogram  
 n/c - not calculated  
 RDL - reportable detection limit  
 RPD - relative percent difference  
 > - greater than  
 < - less than  
 RPD is not calculated if either the original or field duplicate sample has a result less than 5X the RDL

**Table G2**  
**Summary of Field Duplicate Sample Results - Soil Petroleum Hydrocarbons**  
**Camp Farewell, Inuvialuit Settlement Region, Northwest Territories**  
**Shell Canada Limited**

Sample Location	Units	Alert Limit	RDL	TP21-178-02	DUP CCC	RPD	TP21-178-04	DUP DDD	RPD	TP21-178-06	DUP EEE	RPD
Sample Depth (mbgs)				0.3	0.3		0.7	0.7		1.5	1.5	
Sample Collection Date				1-Sep-2021	1-Sep-2021		1-Sep-2021	1-Sep-2021		1-Sep-2021	1-Sep-2021	
BVL Sample ID				AFU872	AFU873		AFU874	AFU875		AFU876	AFU877	
Benzene	mg/kg	>100%	0.005	<0.0050	<0.0050	n/c	<0.0050	<0.0050	n/c	<0.0050	<0.0050	n/c
Toluene	mg/kg	>100%	0.05	<0.050	<0.050	n/c	<0.050	<0.050	n/c	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>100%	0.01	<0.010	<0.010	n/c	<0.010	<0.010	n/c	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>100%	0.045	<0.045	<0.045	n/c	<0.045	<0.045	n/c	<0.045	<0.045	n/c
F1 (C <sub>6</sub> -C <sub>10</sub> ) - BTEX	mg/kg	>60%	10	<10	<10	n/c	<10	<10	n/c	<10	<10	n/c
F2 (C <sub>10</sub> -C <sub>16</sub> )	mg/kg	>60%	10	<10	10	n/c	<10	<10	n/c	<10	<10	n/c
F3 (C <sub>16</sub> -C <sub>34</sub> )	mg/kg	>60%	50	<50	<50	n/c	<50	<50	n/c	<50	<50	n/c
F4 (C <sub>34</sub> -C <sub>50</sub> )	mg/kg	>60%	50	<50	<50	n/c	<50	<50	n/c	<50	<50	n/c

Sample Location	Units	Alert Limit	RDL	TP21-179-02	DUP FFF	RPD	TP21-179-04	DUP GGG	RPD	TP21-179-06	DUP HHH	RPD
Sample Depth (mbgs)				0.3	0.3		0.7	0.7		1.5	1.5	
Sample Collection Date				1-Sep-2021	1-Sep-2021		1-Sep-2021	1-Sep-2021		1-Sep-2021	1-Sep-2021	
BVL Sample ID				AFU881	AFU882		AFU883	AFU884		AFU885	AFU886	
Benzene	mg/kg	>100%	0.005	<0.0050	<0.0050	n/c	<0.0050	<0.0050	n/c	<0.0050	<0.0050	n/c
Toluene	mg/kg	>100%	0.05	<0.050	<0.050	n/c	<0.050	<0.050	n/c	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>100%	0.01	<0.010	<0.010	n/c	<0.010	<0.010	n/c	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>100%	0.045	<0.045	<0.045	n/c	<0.045	<0.045	n/c	<0.045	<0.045	n/c
F1 (C <sub>6</sub> -C <sub>10</sub> ) - BTEX	mg/kg	>60%	10	<10	<10	n/c	<10	<10	n/c	<10	<10	n/c
F2 (C <sub>10</sub> -C <sub>16</sub> )	mg/kg	>60%	10	<10	<10	n/c	<10	<10	n/c	<10	<10	n/c
F3 (C <sub>16</sub> -C <sub>34</sub> )	mg/kg	>60%	50	<50	<50	n/c	<50	<50	n/c	<50	<50	n/c
F4 (C <sub>34</sub> -C <sub>50</sub> )	mg/kg	>60%	50	<50	<50	n/c	<50	<50	n/c	<50	<50	n/c

Sample Location	Units	Alert Limit	RDL	TP21-180-03	DUP III	RPD	TP21-181-04	DUP JJJ	RPD	TP21-182-02	DUP KKK	RPD
Sample Depth (mbgs)				0.5	0.5		0.7	0.7		0.3	0.3	
Sample Collection Date				1-Sep-2021	1-Sep-2021		1-Sep-2021	1-Sep-2021		1-Sep-2021	1-Sep-2021	
BVL Sample ID				AFU888	AFU889		AFU893	AFU898		AFU895	AFU896	
Benzene	mg/kg	>100%	0.005	0.071	<0.0050	n/c	<0.0050	<0.0050	n/c	<0.0050	<0.0050	n/c
Toluene	mg/kg	>100%	0.05	0.24	<0.050	n/c	<0.050	<0.050	n/c	<0.050	<0.050	n/c
Ethylbenzene	mg/kg	>100%	0.01	0.026	<0.010	n/c	<0.010	<0.010	n/c	<0.010	<0.010	n/c
Xylenes (Total)	mg/kg	>100%	0.045	0.15	<0.045	n/c	<0.045	<0.045	n/c	<0.045	<0.045	n/c
F1 (C <sub>6</sub> -C <sub>10</sub> ) - BTEX	mg/kg	>60%	10	<10	<10	n/c	<10	<10	n/c	<10	<10	n/c
F2 (C <sub>10</sub> -C <sub>16</sub> )	mg/kg	>60%	10	190	380	<u>67</u>	<10	<10	n/c	11	18	n/c
F3 (C <sub>16</sub> -C <sub>34</sub> )	mg/kg	>60%	50	320	770	<u>83</u>	<50	<50	n/c	180	300	n/c
F4 (C <sub>34</sub> -C <sub>50</sub> )	mg/kg	>60%	50	240	370	n/c	<50	<50	n/c	<50	100	n/c

**Notes:**  
**Bold/Underline** - RPD exceeds alert limit  
 BTEX - benzene, toluene, ethylbenzene, xylenes  
 BVL - Bureau Veritas Laboratories  
 F1, F2, F3, F4 - petroleum hydrocarbon fractions 1, 2, 3 and 4  
 mbgs - metres below ground surface  
 mg/kg - milligrams per kilogram  
 n/c - not calculated  
 RDL - reportable detection limit  
 RPD - relative percent difference  
 > - greater than  
 < - less than  
 RPD is not calculated if either the original or field duplicate sample has a result less than 5X the RDL

**Table G3**  
**Summary of Field Duplicate Sample Results - Surface Water Petroleum Hydrocarbon Parameters**  
**Camp Farewell, Inuvialuit Settlement Region, Northwest Territories**  
**Shell Canada Limited**

Sample Location	Units	Alert Limit	RDL	SW21-01	DUP A	RPD %
Sample Collection Date				1-Sep-21	1-Sep-21	
BVL Sample ID				AFU653	AFU654	
Benzene	mg/L	>60%	0.0004	<0.00040	<0.00040	n/c
Toluene	mg/L	>60%	0.0004	<0.00040	<0.00040	n/c
Ethylbenzene	mg/L	>60%	0.0004	<0.00040	<0.00040	n/c
Xylenes (Total)	mg/L	>60%	0.0008	<0.00080	<0.00080	n/c
F1 (C <sub>6</sub> -C <sub>10</sub> ) - BTEX	mg/L	>60%	0.1	<0.10	<0.10	n/c
F2 (C <sub>10</sub> -C <sub>16</sub> )	mg/L	>60%	0.1	<0.10	<0.10	n/c

**Notes:**

**Bold/Underlined** - RPD exceeds alert limit

BTEX - benzene, toluene, ethylbenzene, xylenes

BVL - Bureau Veritas Laboratories

F1, F2 - petroleum hydrocarbon fractions 1 and 2

mg/L - milligrams per litre

n/c - not calculated

RDL - reportable detection limit

RPD - relative percent difference

> - greater than

< - less than

RPD is not calculated if either the original or field duplicate sample has a result less than 5X the RDL

Table G4

**Summary of Field Duplicate Sample Results - Surface Water Polycyclic Aromatic Hydrocarbon Parameters  
Camp Farewell, Inuvialuit Settlement Region, Northwest Territories  
Shell Canada Limited**

Sample Location	Units	Alert Limit	RDL	SW21-01	DUP A	RPD %
Sample Collection Date				1-Sep-21	1-Sep-21	
BVL Sample ID				AFU653	AFU654	
Low Molecular Weight PAHs	µg/L	>60%	0.2	<0.20	<0.20	n/c
High Molecular Weight PAHs	µg/L	>60%	0.05	<0.050	<0.050	n/c
Total PAH	µg/L	>60%	0.2	<0.20	<0.20	n/c
B(a)P Total Potency Equivalents	µg/L	>60%	0.01	<0.010	<0.010	n/c
Acenaphthene	µg/L	>60%	0.1	<0.10	<0.10	n/c
Acenaphthylene	µg/L	>60%	0.1	<0.10	<0.10	n/c
Acridine	µg/L	>60%	0.04	<0.040	<0.040	n/c
Anthracene	µg/L	>60%	0.01	<0.010	<0.010	n/c
Benzo(a)anthracene	µg/L	>60%	0.0085	<0.0085	<0.0085	n/c
Benzo(b&j)fluoranthene	µg/L	>60%	0.0085	<0.0085	<0.0085	n/c
Benzo(k)fluoranthene	µg/L	>60%	0.0085	<0.0085	<0.0085	n/c
Benzo(g,h,i)perylene	µg/L	>60%	0.0085	<0.0085	<0.0085	n/c
Benzo(c)phenanthrene	µg/L	>60%	0.05	<0.050	<0.050	n/c
B(a)P	µg/L	>60%	0.0075	<0.0075	<0.0075	n/c
Benzo(e)pyrene	µg/L	>60%	0.05	<0.050	<0.050	n/c
Chrysene	µg/L	>60%	0.0085	<0.0085	<0.0085	n/c
Dibenz(a,h)anthracene	µg/L	>60%	0.0075	<0.0075	<0.0075	n/c
Fluoranthene	µg/L	>60%	0.01	<0.010	<0.010	n/c
Fluorene	µg/L	>60%	0.05	<0.050	<0.050	n/c
Indeno(1,2,3-cd)pyrene	µg/L	>60%	0.0085	<0.0085	<0.0085	n/c
1-Methylnaphthalene	µg/L	>60%	0.1	<0.10	<0.10	n/c
2-Methylnaphthalene	µg/L	>60%	0.1	<0.10	<0.10	n/c
Naphthalene	µg/L	>60%	0.1	<0.10	<0.10	n/c
Phenanthrene	µg/L	>60%	0.05	<0.050	<0.050	n/c
Perylene	µg/L	>60%	0.05	<0.050	<0.050	n/c
Pyrene	µg/L	>60%	0.02	<0.020	<0.020	n/c
Quinoline	µg/L	>60%	0.2	<0.20	<0.20	n/c

**Notes:****Bold/Underlined** - RPD exceeds alert limit

B(a)P - benzo(a)pyrene

BVL - Bureau Veritas Laboratories

n/c - not calculated

RDL - reportable detection limit

RPD - relative percent difference

&gt; - greater than

&lt; - less than

µg/L - micrograms per litre

RPD is not calculated if either the original or field duplicate sample has a result less than 5X the RDL

**Table G5**  
**Summary of Field Duplicate Sample Results - Surface Water Routine Potability Parameters**  
**Camp Farewell, Inuvialuit Settlement Region, Northwest Territories**  
**Shell Canada Limited**

Sample Location	Units	Alert Limit	RDL	SW21-01	DUP A	RPD %
Sample Collection Date				6-Sep-21	6-Sep-21	
BVL Sample ID				AFU656	AFU657	
Dissolved Nitrate (N)	mg/L	>40%	0.01	<0.010	<0.010	n/c
Dissolved Nitrate (NO <sub>3</sub> )	mg/L	>40%	0.044	<0.044	<0.044	n/c
Dissolved Nitrite (NO <sub>2</sub> )	mg/L	>40%	0.033	<0.033	<0.033	n/c
Calculated Total Dissolved Solids	mg/L	>40%	10	210	210	0
Conductivity	µS/cm	>20%	2	390	380	3
pH	pH	+ or - 0.6	n/a	8.12	8.01	1
Dissolved Chloride (Cl)	mg/L	>40%	1	33	31	6
Dissolved Sulphate (SO <sub>4</sub> )	mg/L	>40%	1	45	45	0

**Notes:**

**Bold/Underlined** - RPD exceeds alert limit

BVL - Bureau Veritas Laboratories

mg/L - milligrams per litre

n/a - not applicable

n/c - not calculated

RDL - reportable detection limit

RPD - relative percent difference

> - greater than

< - less than

µS/cm - microSiemens per centimetre

RPD is not calculated if either the original or field duplicate sample has a result less than 5X the RDL

**Table G6**  
**Summary of Field Duplicate Sample Results - Surface Water Metals Parameters**  
**Camp Farewell, Inuvialuit Settlement Region, Northwest Territories**  
**Shell Canada Limited**

Sample Location Sample Collection Date BVL Sample ID	Units	Alert Limit	RDL	SW21-01	DUP A	RPD %
				1-Sep-21	1-Sep-21	
				AFU653	AFU654	
Total Cadmium (Cd)	µg/L	>40%	0.02	0.068	0.063	n/c
Total Aluminum (Al)	mg/L	>40%	0.003	2.2	1.1	67
Total Antimony (Sb)	mg/L	>40%	0.0006	<0.00060	<0.00060	n/c
Total Arsenic (As)	mg/L	>40%	0.0002	0.002	0.0019	5
Total Barium (Ba)	mg/L	>40%	0.01	0.14	0.13	7
Total Beryllium (Be)	mg/L	>40%	0.001	<0.0010	<0.0010	n/c
Total Boron (B)	mg/L	>40%	0.02	0.029	0.026	n/c
Total Calcium (Ca)	mg/L	>40%	0.3	35	34	3
Total Chromium (Cr)	mg/L	>40%	0.001	0.0036	0.003	n/c
Total Cobalt (Co)	mg/L	>40%	0.0003	0.0012	0.00085	n/c
Total Copper (Cu)	mg/L	>40%	0.0002	0.0045	0.0038	17
Total Iron (Fe)	mg/L	>40%	0.06	2.6	2	26
Total Lead (Pb)	mg/L	>40%	0.0002	0.0015	0.0012	22
Total Lithium (Li)	mg/L	>40%	0.02	<0.020	<0.020	n/c
Total Magnesium (Mg)	mg/L	>40%	0.2	15	15	0
Total Manganese (Mn)	mg/L	>40%	0.004	0.072	0.062	15
Total Molybdenum (Mo)	mg/L	>40%	0.0002	0.0025	0.0026	4
Total Nickel (Ni)	mg/L	>40%	0.0005	0.0056	0.0047	17
Total Phosphorus (P)	mg/L	>40%	0.1	<0.10	<0.10	n/c
Total Potassium (K)	mg/L	>40%	0.3	1.1	1	n/c
Total Selenium (Se)	mg/L	>40%	0.0002	0.00046	0.00033	n/c
Total Silicon (Si)	mg/L	>40%	0.1	2	1.5	29
Total Silver (Ag)	mg/L	>40%	0.0001	<0.00010	<0.00010	n/c
Total Sodium (Na)	mg/L	>40%	0.5	19	19	0
Total Strontium (Sr)	mg/L	>40%	0.02	0.24	0.24	0
Total Sulphur (S)	mg/L	>40%	0.2	15	15	0
Total Thallium (Tl)	mg/L	>40%	0.0002	<0.00020	<0.00020	n/c
Total Tin (Sn)	mg/L	>40%	0.001	<0.0010	<0.0010	n/c
Total Titanium (Ti)	mg/L	>40%	0.001	0.047	0.034	32
Total Uranium (U)	mg/L	>40%	0.0001	0.0012	0.0011	9
Total Vanadium (V)	mg/L	>40%	0.001	0.0055	0.0042	n/c
Total Zinc (Zn)	mg/L	>40%	0.003	0.015	0.012	n/c

**Notes:**

**Bold/Underlined** - RPD exceeds alert limit

BVL - Bureau Veritas Laboratories

mg/L - milligrams per litre

n/c - not calculated

RDL - reportable detection limit

RPD - relative percent difference

> - greater than

< - less than

µg/L - micrograms per litre

RPD is not calculated if either the original or field duplicate sample has a result less than 5X the RDL



**Table G7  
Summary of Field Blank and Trip Blank Sample Results  
Camp Farewell, Inuvialuit Settlement Region, Northwest Territories  
Shell Canada Limited**

Parameter	Units	Alert Limit	RDL	Field Blank	Trip Blank	Field Blank
Sample Collection Date				29-Aug-21	29-Aug-21	1-Sep-21
BVL Sample ID				AEZ791	AEZ789	AFU655
Benzene	mg/L	>5X RDL	0.0004	<0.00040	<0.00040	<0.00040
Toluene	mg/L	>5X RDL	0.0004	<0.00040	<0.00040	<0.00040
Ethylbenzene	mg/L	>5X RDL	0.0004	<0.00040	<0.00040	<0.00040
Xylenes (Total)	mg/L	>5X RDL	0.0008	<0.00080	<0.00080	<0.00080
F1 (C <sub>6</sub> -C <sub>10</sub> ) - BTEX	mg/L	>2X RDL	0.1	<0.10	<0.10	<0.10
F2 (C <sub>10</sub> -C <sub>16</sub> )	mg/L	>2X RDL	0.1	<0.10	<0.10	<0.10

**Notes:**

**Bold/Underlined** - value exceeds alert limit

BTEX - benzene, toluene, ethylbenzene, xylenes

BVL - Bureau Veritas Laboratories

F1, F2 - petroleum hydrocarbon fractions 1 and 2

mg/L - milligrams per litre

RDL - reportable detection limit

> - greater than

< - less than

Alert limit is 5X the RDL for BTEX and 2X the RDL for F1 and F2



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**APPENDIX B**

# Inuvialuit Water Board Licence



July 13, 2017

David A. Brown  
Staff Environmental Engineer  
Shell Canada Energy  
150 N. Dairy Ashford Road  
Houston, Texas 77079

Dear Mr. Brown:

**Re: N7L1-1834 – Shell Canada Energy, Camp Farewell – Term Amendment of Type “B” Water Licence**

The Inuvialuit Water Board (IWB) is pleased to approve a term amendment of Water Licence N7L1-1834 for closure and remediation and post monitoring activities. In this regard, all terms and conditions for N7L1-1834 will remain as originally issued with the exception of:

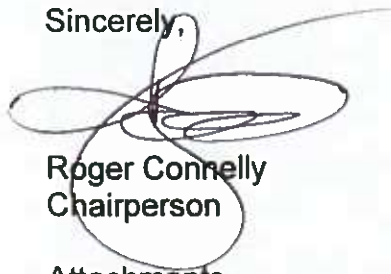
1. the extension of the expiry date to July 17, 2029;
2. Part B: General Conditions, Item 12; and
3. Part D: Conditions Applying to Waste Disposal, Item 16.

Each of these are detailed in the attached licence amendment.

A copy of the amended Terms and Conditions and all documentation associated with the term amendment of the licence has been filed in the Public Register. Copies are available at the IWB office and on the IWB Electronic Register located on the IWB website: [www.inuvwb.ca](http://www.inuvwb.ca).

The IWB appreciates the cooperation of Shell Canada Energy in complying with the Terms and Conditions of the Water Licence. Should you have any questions or concerns, please contact Mardy Semmler, Executive Director, at (867) 678-2942.

Sincerely,



Roger Connolly  
Chairperson

Attachments

Copied to: Lloyd Gruben, ENR Water Resources Officer - Inuvik Region



## INUVIALUIT WATER BOARD LICENCE AMENDMENT

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Licensee	Shell Canada Energy
Licence Number	N7L1-1834
Effective Date of Amendment	July 18, 2017

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Pursuant to the *Waters Act* and Waters Regulations the Inuvialuit Water Board hereby grants the following Licence Amendment.

### Term of Water Licence

The current expiry date has been extended to July 17, 2029 to ensure consistency with the Closure and Reclamation Plan that includes an eight (8) year monitoring, maintenance, and reporting program following the completion of the permanent closure activities.

### Part B: General Conditions

12. Consultation records, including a summary, with the Hunters and Trappers Committee (HTC) of Tuktoyaktuk must be submitted to the IWB at least thirty (30) days prior to conducting any activities at the site.

### Part D: Conditions Applying to Waste Disposal

16. A barge waste management and disposal plan must be submitted to the IWB at least thirty (30) days prior to mobilization of the barge to the site.

This Licence is amended and recorded at Inuvik, Northwest Territories.

INUVIALUIT WATER BOARD

A handwritten signature in black ink, appearing to be a stylized name, written over a horizontal line.

Chairperson

A handwritten date in black ink, written over a horizontal line.

Date July 13, 2017

**PART A: SCOPE AND DEFINITIONS**

**1. Scope**

- a) This Licence entitles Shell Canada Energy to use water and dispose of Waste as an industrial undertaking associated with oil and gas exploration and development in the Mackenzie Delta at Farewell Camp and Stockpile Site (Camp Farewell) located at Latitude 69°12'30" North, and Longitude 135°06'04" West, Northwest Territories;
- b) This Licence is issued subject to the conditions contained herein with respect to the taking of water and the depositing of Waste of any type in any Waters or in any place under any conditions where such Waste or any other Waste that results from the deposits of such Waste may enter any Waters. Whenever new Regulations are made or existing Regulations are amended by the Governor in Council under the *Northwest Territories Waters Act*, or other statutes imposing more stringent conditions relating to the quantity or type of Waste that may be so deposited or under which any such Waste may be so deposited, this Licence shall be deemed, upon promulgation of such Regulations, to be automatically amended to conforming to such Regulations; and
- c) Compliance with the terms and conditions of this Licence does not absolve the Licensee from responsibility for compliance with the requirements of all applicable Federal, Territorial and Municipal legislation.
- d) This Licence is issued subject to the conditions contained herein with respect to the use of Waters as prescribed in Section 8 of the *Act* and the deposit of Waste to any Waters as prescribed in Section 9 of the *Act*.

**2. Definitions**

In this Licence: **N7L1-1834**

**"Act"** means the *Northwest Territories Waters Act*;

**"Analyst"** means an Analyst designated by the Minister under Section 35(1) of the *Northwest Territories Waters Act*;

**“Average Concentration”** means the discrete average of up to four (4) consecutive analytical results submitted to the Board in accordance with the sampling and analysis requirements specified in the “Surveillance Network Program”;

**“Board”** means the Northwest Territories Water Board established under Section 10 of the *Northwest Territories Waters Act*;

**“Freeboard”** means the vertical distance between water line and the lowest elevation of the effective water containment crest on a dam or dyke’s upstream slope;

**“Geotechnical Engineer”** means a professional engineer registered with the Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists whose principal field of specialization is the design and construction of earthworks in a permafrost environment;

**“Greywater”** means all liquid Wastes from showers, baths, sinks, kitchens and domestic washing facilities, but does not include toilet Waste;

**“Inspector”** means an Inspector designated by the Minister under Section 35(1) of the *Northwest Territories Waters Act*;

**“Licensee”** means the holder of this Licence;

**“Minister”** means the Minister of Aboriginal Affairs and Northern Development Canada (AANDC);

**“Modification”** means an alteration to a physical work that introduces a new structure or replaces an existing structure and does not alter the purpose or function of the work, but does not include an expansion;

**“Regulations”** mean Regulations proclaimed pursuant to Section 33 of the *Northwest Territories Waters Act*;

**“Sewage”** means all toilet Wastes and Greywater;

**“Sewage Treatment Facilities”** comprises the area and engineered structures designed to contain Sewage as identified in the project description and also include a Sump constructed of impervious material and/or with an impervious liner;

**“Sump”** means an excavation for the purpose of catching or storing water and/or Waste;

**“Waste”** means Waste as defined by Section 2 of the *Northwest Territories Waters Act*;

**“Waste Disposal Facilities”** mean all facilities designated for the disposal of Waste and include the Sewage disposal facilities, solid Waste disposal facilities, and bagged toilet Wastes disposal facilities;

**“Water Supply Facilities”** mean all facilities designed to collect, treat and supply water for industrial purposes; and

**“Waters”** mean Waters as defined by Section 2 of the *Northwest Territories Waters Act*;

**PART B: GENERAL CONDITIONS**

1. The Licensee shall file an Annual Report with the Board not later than March 31<sup>st</sup> of the year following the calendar year reported which shall contain the following information:
  - a) the monthly and annual quantities in cubic metres of fresh water obtained from all sources;
  - b) the monthly and annual quantities in cubic metres of each and all Waste discharged;
  - c) the location and direction of flow of all Waste discharged to the water or the land;
  - d) a summary of the monthly and annual quantities of Waste stored on site and transported off site;
  - e) the results of sampling carried out under the “Surveillance Network Program”;
  - f) a summary of any Modifications carried out on the Water Supply Facilities and Sewage Treatment Facilities, including all associated structures;
  - g) a list of any spills and unauthorized discharges;
  - h) details on the restoration of any Sumps;
  - i) a summary of any abandonment and restoration work completed during the year and an outline of any work anticipated for the next year;



- j) a summary of any studies requested by the Board that relate to Waste disposal, water use, or reclamation, and a brief description of any future studies planned;
  - k) notation of updates and/or revisions to the approved Spill Contingency Plan, Waste Disposal Facilities operations and maintenance plan, and sewage treatment plan;
  - l) an outline of any spill training and communications exercises carried out; and
  - m) any other details on water use or Waste disposal requested by the Board within forty-five (45) days before the annual report is due.
2. The Licensee shall comply with the "Surveillance Network Program" annexed to this Licence, and any amendment to the said "Surveillance Network Program" as may be made from time to time, pursuant to the conditions of this Licence.
  3. The "Surveillance Network Program" and compliance dates specified in the Licence may be modified at the discretion of the Board.
  4. The Licensee shall, within thirty (30) days of the issuance of this Licence, submit to the Board for approval a map or drawing indicating the location of all Surveillance Network Program sampling stations.
  5. The Licensee shall, within thirty (30) days of the issuance of this Licence, post the necessary signs to identify the stations of the "Surveillance Network Program". All postings shall be located and maintained to the satisfaction of an Inspector.
  6. Any meters, devices or other such methods used for measuring the volumes of water used or Waste disposed and discharged shall be installed, operated and maintained by the Licensee to the satisfaction of an Inspector.
  7. The Licensee shall immediately report to the 24 Hour Spill Report Line (867-920-8130) any spills which are reported to, or observed by, the Licensee within the project boundaries.
  8. All monitoring data shall be submitted in printed form and electronically in spreadsheet format on a diskette or other electronic forms acceptable to the Board.
  9. All reports shall be submitted to the Board in printed format accompanied by an electronic copy in a common word processing format on diskette or other electronic forms acceptable to the Board.

10. Within thirty (30) days of issuance of this Licence, the Licensee shall have posted and shall maintain a security deposit in the amount of Two Million (\$2,000,000.00) Dollars pursuant to Section 17 of the Act and Section 12 of the Regulations, in a form suitable to the Minister. The security deposit shall be maintained until such time as it is fully or in part refunded by the Minister pursuant to Section 17 of the Act.
11. The Licensee shall ensure a copy of this Licence is maintained at the site of operation at all times.

**PART C: CONDITIONS APPLYING TO WATER USE**

1. The Licensee shall obtain water from the Middle Channel of the Mackenzie River in winter or the unnamed lake north of the camp in summer as described in the project description, or as otherwise approved by an Inspector.
2. The daily quantity of water used for all purposes shall not exceed 150 cubic metres.

**PART D: CONDITIONS APPLYING TO WASTE DISPOSAL**

1. The Licensee shall within thirty (30) days of the issuance of this Licence, submit to the Board for approval an updated operation and maintenance plan for the Waste Disposal Facilities. This plan shall include but not necessarily be limited to details on the design, operational capacity, management and maintenance, and disposal of sludges.
2. All Sewage shall be directed to the onsite Sewage Treatment Facilities as approved by an Inspector.
3. The Sewage Treatment Facilities shall be maintained and operated in such a manner as to prevent structural failure to the satisfaction of the Inspector.
4. All Waste discharged from the onsite Sewage lagoon shall be directed to the channel of the Mackenzie River at a location approved by an Inspector.
5. There should be no discharge of floating solids, garbage, grease, free oil or foam.

6. All effluent discharged by the Licensee from the Sewage lagoon at "Surveillance Network Program" Station Number 1834-1 shall meet the following effluent quality requirements:

Sample Parameter	Average Concentration
BOD <sub>5</sub>	70.0 mg/L
Total Suspended Solids	70.0 mg/L
Faecal Coliforms	1 X 10 <sup>4</sup> CFU/dL
Oil and Grease	5.0 mg/L
Total Residual Chlorine (TRC)	0.1 mg/L

7. The effluent discharged shall have a pH between six (6) and nine (9) and no visible sheen of oil and grease.
8. Introduction of water to Waste for the purpose of achieving effluent quality requirements in Part D, Item 7 is prohibited.
9. A Freeboard limit of 1.0 metre shall be maintained at all times in the Sewage lagoon, or as recommended by a qualified Geotechnical Engineer and/or as approved by the Board.
10. The Licensee shall advise an Inspector at least five (5) days prior to initiating and decant of the Sewage lagoon.
11. All analyses shall be conducted in accordance with methods prescribed in the current edition of "Standard Methods for the Examination of water and Wastewater" or by such other methods as may be approved by an Analyst.
12. The Licensee shall contain all contaminated soil or contaminated snow in such a manner as to minimize the potential for migration of contaminants into any Waters, to the satisfaction of an Inspector.
13. The Licensee shall store, segregate and dispose of all solid and hazardous Wastes in a manner acceptable to the Inspector.
14. Unless authorized by this Licence, the Licensee shall ensure that any Wastes associated with this undertaking do not enter any water body.
15. The Licensee shall submit to the Board a copy of each agreement(s) between third parties to store, transport or dispose of Wastes. The copy submitted to the Board shall include, at a minimum, the following:

- a. type of Waste;
- b. quantities of Waste;
- c. disposal location(s), and
- d. proof of acceptance from third parties.

**PART E: CONDITIONS APPLYING TO MODIFICATIONS**

1. The Licensee may, without written approval from the Board, carry out Modifications to the planned undertakings provided that such Modifications are consistent with the terms of this Licence and the following requirements are met:
  - a) the Licensee has notified an Inspector in writing of such proposed Modifications at least five (5) days prior to beginning the Modifications;
  - b) such Modifications do not place the Licensee in contravention of either the Licence or the Act;
  - c) an Inspector has not, during the five (5) days following notification of the proposed Modifications, informed the Licensee that review of the proposal will require more than five (5) days; and
  - d) an Inspector has not rejected the proposed Modifications.
2. Modifications for which all of the conditions referred to in Part F, Item 1 have not been met may be carried out only with written approval from an Inspector.
3. The Licensee shall provide to the Board as-built plans and drawings of the Modifications referred to in this Licence within ninety (90) days of completion of the Modifications.

**PART F: CONDITIONS APPLYING TO CONTINGENCY PLANNING**

1. The Licensee shall submit to the Board for approval within thirty (30) days of issuance of this Licence an updated Emergency Response & Spill Contingency Plan in accordance, for example, with the *Guidelines for Spill Contingency Planning, April 2007*, developed by AANDC-Water Resources Division.

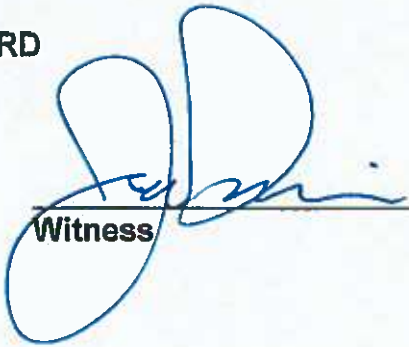
2. The Licensee will maintain a copy of the approved Emergency Response & Spill Contingency Plan onsite in a readily available location, to the satisfaction of an Inspector.
3. The Licensee shall ensure that petroleum products, hazardous material and other Wastes associated with the project do not enter any Waters.
4. The Licensee shall ensure that all containment berms are constructed of an impermeable material, to the satisfaction of an Inspector.
5. The Licensee shall ensure that fuel stored in each tank within the tank farm be no greater than 85% of the tank's capacity to allow for expansion and avoid overflows.
6. If, during the period of this Licence, an unauthorised discharge of Waste occurs, or if such a discharge is foreseeable, the Licensee shall:
  - a) report the incident immediately via the 24 Hour Spill Reporting Line (867) 920-8130; and
  - b) submit to an Inspector a detailed report on each occurrence not later than thirty (30) days after initially reporting the event.

**PART G: CONDITIONS APPLYING TO ABANDONMENT AND RESTORATION**

1. The Licensee shall submit to the Board for approval within one (1) year of issuance of this Licence, an updated Interim Abandonment and Restoration Plan including plans for the abandonment and restoration of the Sewage lagoon and a complete Phase II environmental site assessment of Camp Farewell. This assessment will include the full delineation of contamination (soil and water) associated with Camp Farewell operations, located both on and off the gravel base pad.
2. The Licensee shall implement this Plan as and when approved by the Board.
3. Following approval of the Plan, the Licensee shall review the Abandonment and Restoration Plan every two (2) years and shall modify the Plan as necessary to reflect changes in operations and technology. All proposed Modifications to the Plan shall be submitted to the Board for approval.

**NORTHWEST TERRITORIES WATER BOARD**

  
\_\_\_\_\_  
**Chairman**

  
\_\_\_\_\_  
**Witness**

Kyle Schepanow

June 6, 2019

IEG Consultants Ltd.

500 – 2618 Hopewell Place NE

Calgary, AB T1Y 7J7

Dear Mr. Schepanow:

**Inuvialuit Water Board License N7L1 – 1834 – Shell Canada Energy Camp Farewell**

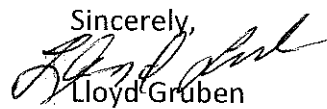
**Proposed Amendment to existing Water License Part C, Item 1.**

I am writing you regarding Water License N7L1 – 1834. Mr. Kyle Schepanow, representing IEG Consultants representing Shell Canada Energy regarding Water License N7L1 – 1834, requesting an amendment to the water license. Right now the current water license Part C, Item 1 states that

1. The licensee shall obtain water from the Middle Channel of the Mackenzir River in the winter or the unnamed lake north of the camp in summer as described in the project description, or as otherwise approved by an inspector.

The amendment requested would be to withdraw water directly from the Middle Channel of the Mackenzie River during summer activities. The water will be used as a potable water source in the Wurmlinger barge camp at the Site. Activities at the Site will be from approximately June 26 through August 31. 2019, **has been approved dated this 6<sup>th</sup> Day of June 2019.**

If you require more information regarding this letter, please call me at the number below.

Sincerely,  
  
Lloyd Gruben

Water Resources Officer

Environment and Natural Resources

P.O. Box 2749

Inuvik , NT X0E 0T0

Ph: 867 – 678 - 6676

**APPENDIX C**

# Waste Documentation





TOWN OF INUVIK  
2 FIRTH ST, PO BOX 1160  
INUVIK NT X0E 0T0

P 867.777.8600  
F 867.777.8601  
[WWW.INUVIK.CA](http://WWW.INUVIK.CA)

June 16, 2021

Golder Associates Ltd.  
201 Brownlow Avenue  
Suite 26  
Dartmouth, NS B3B 1W2

Attention: Ms. Stephanie Villeneuve

Re: Use of Sewage and Solid Waste Dumping Facilities for Camp Farewell Water License (N7L1-1834)

Ms. Villeneuve:

Please be advised that the Town of Inuvik acknowledges that Golder Associates may use the above-mentioned facilities in conjunction with the Camp Farewell Water License (N7L1-1834). As part of this approval Golder Associates or any contractor working on their behalf has acknowledged that there will be a fee for use of these facilities. In addition, they shall inform the Town of Inuvik Director of Public Services when they are to make use of the sewage dumping facility and report the volume of sewage brought in from this project.

The Town will accept in principle the above-mentioned products provided they follow the guidelines and fees as set out in the various Town of Inuvik by-laws. All the waste must be domestic use type only. None of it shall contain any drilling or industrial type waste.

We are required as part of our water license to account for these types of additional wastes entering our sewage lagoon and solid waste site, respectively.

If you have any questions or concerns, please do not hesitate to contact me. Thank-you in advance for your cooperation.

Regards

Town of Inuvik

Grant Hood  
Senior Administrative Officer

CC: Rick Campbell – Town of Inuvik – Director of Public Services

# DUMPING FEES BILL

Date: Sept 19/2011 44563

Bill to: EGTNW

Please check one:

Dumping Fees: Load Type	Category and Fees	
	Garbage	Out of Town Garbage
Extra Large Loads (End dump and any tractor trailer combinations)	<input type="checkbox"/> \$325.00 per load	<input type="checkbox"/> \$1,000.00 per load
Large Loads (Dump truck and any straight truck combinations)	<input type="checkbox"/> \$125.00 per load	<input type="checkbox"/> \$800.00 per load
Medium Loads (1 ton units, pick-up and trailer combinations)	<input checked="" type="checkbox"/> \$65.00 per load	<input type="checkbox"/> \$600.00 per load
Small Loads (1/2 ton up to 1 ton loads)	<input type="checkbox"/> \$35.00 per load	<input type="checkbox"/> \$400.00 per load

Driver: \_\_\_\_\_

Print

Signature

Hauled by: \_\_\_\_\_

GST: \$ \_\_\_\_\_

Total: \$ 65.00



Town of Inuvik

Solid Waste Facility  
Box 1160, #2 Firth Street, Inuvik, NT X0E 0T0  
Ph: (867) 777-8600 • Fax: (867) 777-8601

# DUMPING FEES BILL

Date: Sept 19/2011 44565

Bill to: EGTNW

Please check one:

Dumping Fees: Load Type	Category and Fees	
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Small Loads (1/2 ton up to 1 ton loads)	<input type="checkbox"/> \$35.00 per load	<input type="checkbox"/> \$400.00 per load

Driver: \_\_\_\_\_

Print

Signature

Hauled by: \_\_\_\_\_

GST: \$ \_\_\_\_\_

Total: \$ 65.00



Town of Inuvik

Solid Waste Facility  
Box 1160, #2 Firth Street, Inuvik, NT X0E 0T0  
Ph: (867) 777-8600 • Fax: (867) 777-8601



**Northwind Industries Ltd.**  
 Box 1130, 146 Navy Road  
 Inuvik, NT X0E 0T0  
 Tel: (867) 777-2426 Fax: (867) 777-3203  
 Email: northwind@northwestel.net

**TICKET**  
**191071**

Client: 802 camp

Project & Location: \_\_\_\_\_

Date: 09 / 10 / 2021  
Month Day Year

Equipment: #183 / \_\_\_\_\_  
Unit # Description

Loads (circle): 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Operator (print): Tom Bark

Work Description: \_\_\_\_\_

5 loads of sewage  
1 - camp  
4 - yellow tank

Time From: 6pm  
 To: 10pm  
 Total Hours: 4

**OFFICE USE ONLY**  
 Billing Units: \_\_\_\_\_  
 Rates per Unit: \$ \_\_\_\_\_

Operator Signature: [Signature]

Client Rep: \_\_\_\_\_ / \_\_\_\_\_  
Print Signature

**APPENDIX D**

# Spill Investigation Report

**DATE:** 2021/09/07 **PROJECT NO.:** 20368099-6000  
**TO:** Kyle Thompson  
**CC:** Chris Boyd  
**FROM:** Aur lie Bellavance-Godin **EMAIL:** abellavance@golder.com

## DIESEL SPILL

### 1.0 INCIDENT DETAILS

**DATE:** 2021/08/30 **TIME:** 15:30 am pm **LID NO:** 555256  
**PROJECT NO:** 20368099-6000 **PROJECT TITLE:** Camp Farewell Remediation Confirmation and Environmental Assessment  
**LOCATION:** Camp Farewell, NWT **CLIENT:** Shell  
**GOLDER PM:** Aur lie Bellavance-Godin **CLIENT PM:** Kyle Thompson  
**SUBCONTRACTOR COMPANY:** EGT

### 1.1 Incident Type (Select All That Apply)

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Near Miss                | <input type="checkbox"/> Injury / Illness | <input type="checkbox"/> Process / Equipment Damage |
| <input checked="" type="checkbox"/> Environmental | <input type="checkbox"/> Loss of Process  | <input type="checkbox"/> Security                   |
| <input type="checkbox"/> Vehicle Incident         | <input type="checkbox"/> Fire / Explosion | <input type="checkbox"/> pSIF / SIF                 |

### 2.0 INCIDENT DESCRIPTION

While conducting remedial test pitting on an abandoned oil and gas site, the site supervisor noticed a spill on the ground beside a fuel truck. The spill appeared to be small and came from the fueling nozzle on the fuel truck. Spill was controlled and estimated at 50 ml. The equipment operator had used the fuel truck approximately 1 hour before the spill was noticed. He did not notice a leak nor spill at the time. Impacted soil was shoveled (Hole size 0.3 m X 0.3 m ; 0.2m Deep) and confined in a lined soil-bag and a soil sample was taken for hydrocarbon analysis for confirmation purposes. Consulted onsite mechanic to determine the best way to stop nozzle from leaking. The nozzle will need to be replaced at the end of the program. However, due to the remote location of the site, the mechanic suggested to wrap absorbent on the nozzle after use. Additionally, the mechanic conducted daily follow ups for the following 3 days. No further spills.

### 2.1 Photos / Sketches




PHOTO	DESCRIPTION
	Spill



PHOTO	DESCRIPTION
	<p>Containment</p>
	<p>Remediation</p>

## 2.2 Immediate Actions Taken

Notified equipment owner. Added a spill tray and wrapped the leaking nozzle with absorbent pads.

## 3.0 INVESTIGATION FINDINGS

All equipment onsite are inspected daily. Additionally, all equipment are inspected before mobbing onsite. Spill trays should be added to all potential spill areas.

## 4.0 CORRECTIVE ACTIONS

LDB TASK ID	RECOMMENDATION	RESPONSIBLE PERSON	COMPLETION DATE
	Wrap an absorbent pad on the nozzle following use.	P. Tan	2020-08-30
	Adding a spill tray in the nozzle area.	P. Tan	2020-08-30
	Replace nozzle	EGT	End of program

## 5.0 INVESTIGATION TEAM

NAME	TITLE	COMPANY
Peter Tan	Site Supervisor	Golder
Aur�lie Bellavance-Godin	Project Manager	Golder
Lenz Haderlein	Project Director	Golder
Anita L'Arrivee	Regional HSSE Advisor	Golder
Worker	Equipment Operator	EGT

## 6.0 REPORT SIGNOFF

PROJECT DIRECTOR'S ACCEPTANCE OF FINDINGS AND COMMENTS:		
<b>Name:</b> Lenz Haderlein	<b>Signature:</b>	<b>Date:</b> 2021-09-08

**APPENDIX E**

**Drills Documentation**



- **System ID:** [62667](#)
- **Date/Time:** Saturday, August 21, 2021
- **Location Type:** Drill/Exercise
- **Location:** Northwest Territories | Territoires du Nord-Ouest
- **Location Desc:** Shell Camp Farewell
- **Work Area:** WSP – Golder – Golder Canada – Golder Remediation Program Management
- **Work Agreement:** Golder Employees
- **Reported By:** [Peter Tan](#) @ 8/22/2021 2:01:21 AM UTC

**Items Identified**

Type	Status	Category	Description	Corrected on Inspection?	Immediate / Recommended Actions
PositiveObservation	Closed	Other	Drill was based on the premise of an equipment operator slipping and falling off an IT28 loader while getting out of the machine. A dedicated onsite medic was present. Site is an abandoned oil and gas staging area. Soon after the IP "fell" the wildlife monitor nearby called for help on the radio. The site supervisor followed the steps outlined in the site ERP and called for the site medic to respond to the scene and proceeded to administer emergency first aid for the IP. The medic got suited up, left the barge camp and arrived at the scene (by pick up truck) in 3 mins. Medic conducted his assessment, simulated getting the IP stabilized and strapped in the stretcher. The assumption was that the IP had a spine injury from his fall. 4 Workers carried the stretcher (IP was not on it) down to the dock where the boat operator was standing by (as per the ERP) in preparation for an emergency boat trip to the nearest town (Inuvik). Elapsed time between the call for help and getting the IP (stretcher only) loaded onto the boat was 12 minutes. Learnings and improvements were shared with the crew onsite.	Not Applicable	Not Applicable

**General Remarks**

Conducted an emergency drill at a remote site in the Northwest Territories, NT. Injured person (IP) fell of a IT28 loader while getting out of the machine.

- **System ID:** [62469](#)
- **Date/Time:** Tuesday, August 17, 2021
- **Location Type:** Drill/Exercise
- **Location:** Northwest Territories | Territoires du Nord-Ouest
- **Location Desc:** Shell Camp Farewell
- **Work Area:** WSP → Golder → Golder Canada → Golder Remediation Program Management
- **Work Agreement:** Golder Employees
- **Reported By:** [Peter Tan](#) @ 8/19/2021 12:44:03 AM UTC

### Items Identified

Type	Status	Category	Description	Corrected on Inspection?	Immediate / Recommended Actions
IdentifiedHazard	Open	Fire / Explosion	An emergency shelter exists onsite in the event the barge experienced a catastrophic failure due to a fire. However, the shelter is not equipped with water and food.	No	Place a flat of water and some canned food in the shed for emergency use.
IdentifiedHazard	Closed	Fire / Explosion	Despite all 10 people making it to the muster point, floor fire-captains were not assigned.	Yes	Assigned floor captains
PositiveObservation	Closed	Fire / Explosion	A surprise fire drill was initiated and a crew of 10 were at the muster point in just under 2 minutes. Site supervisor had a satellite phone and tailgate in hand to do a headcount.	Not Applicable	Not Applicable

### General Remarks

Fire Drill to assess readiness and time it takes to get crew aboard a 2 story barge-camp off the barge and to the designated muster point on the beach.



**[golder.com](http://golder.com)**