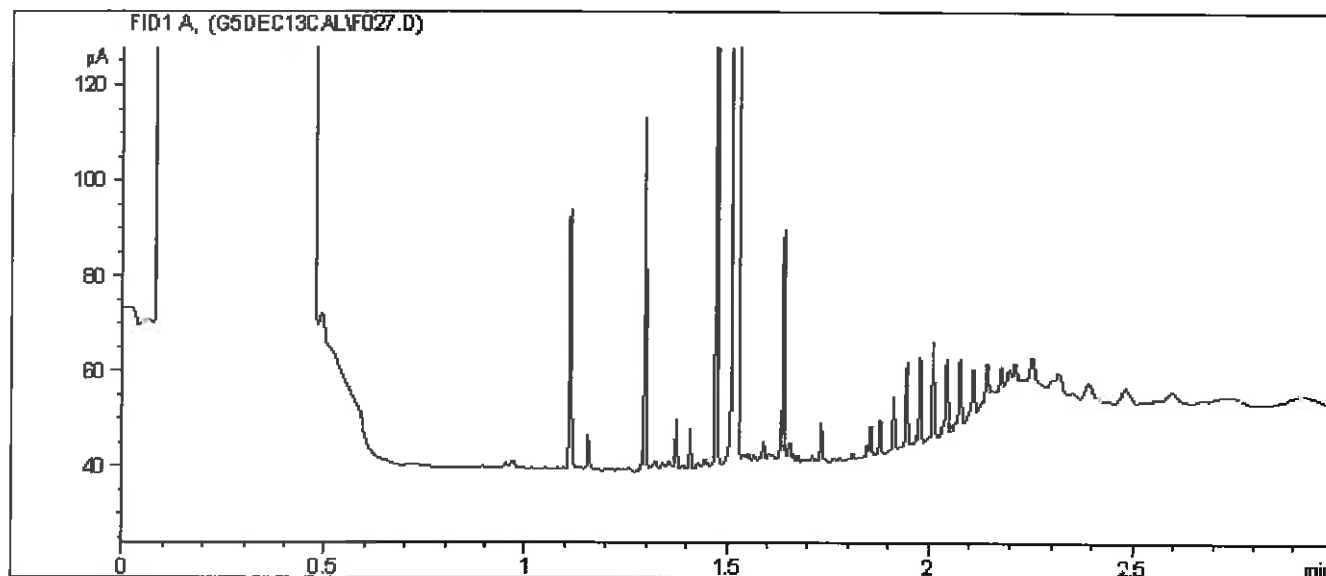


Report Date: 2013/12/16  
Maxxam Job #: B3B3708  
Maxxam Sample: IG7768

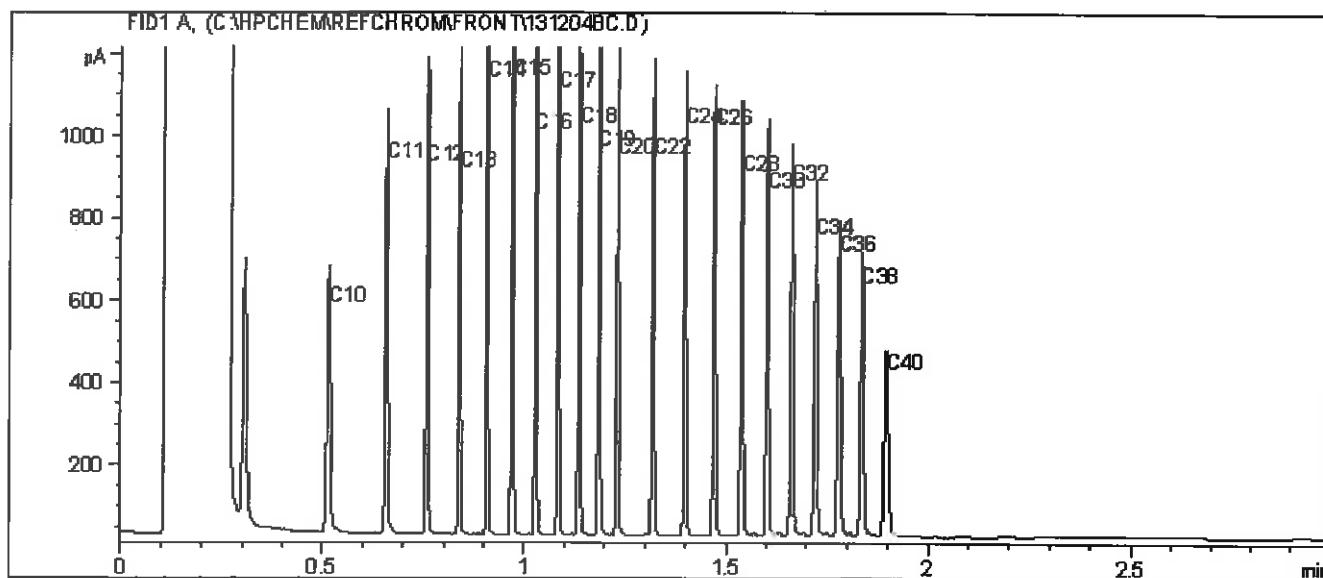
FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST

Client ID: DW-UNTREATED

Extrac. Petroleum HC in Water by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

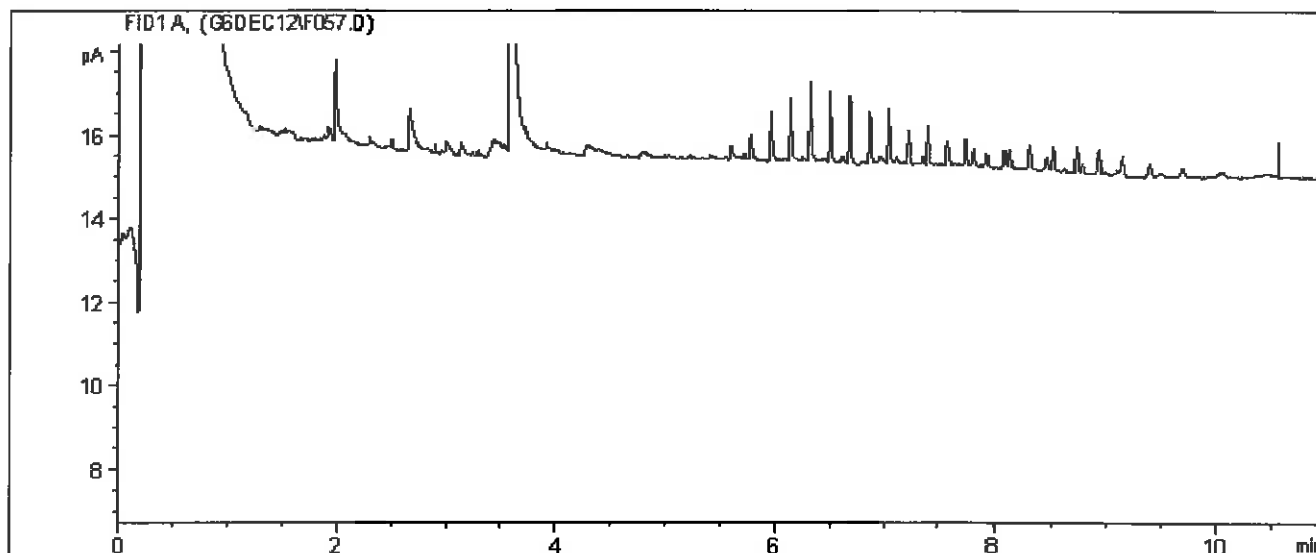
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/12/16  
Maxxam Job #: B3B3708  
Maxxam Sample: IG7768

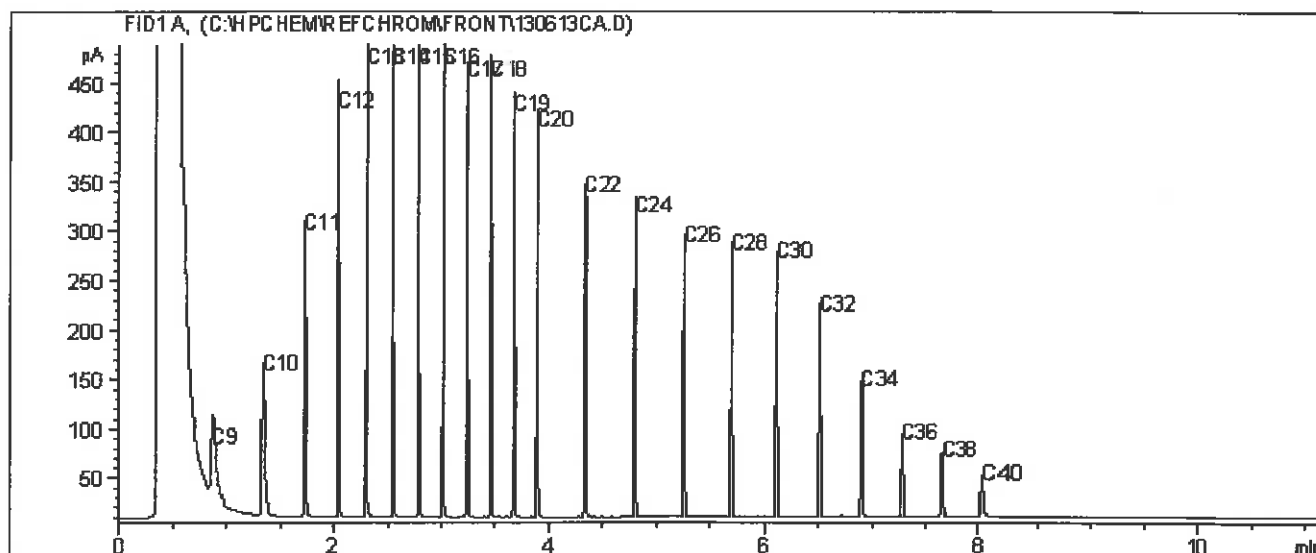
FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST

Client ID: DW-UNTREATED

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating Oils: C20 - C40

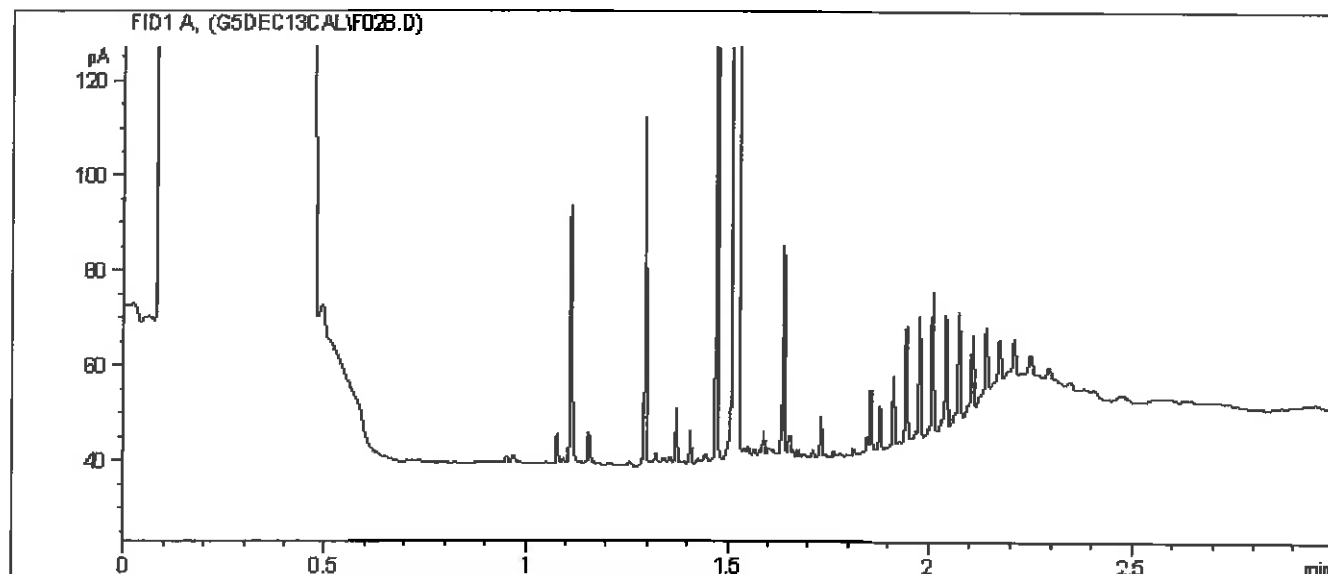
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/12/16  
Maxxam Job #: B3B3708  
Maxxam Sample: IG7769

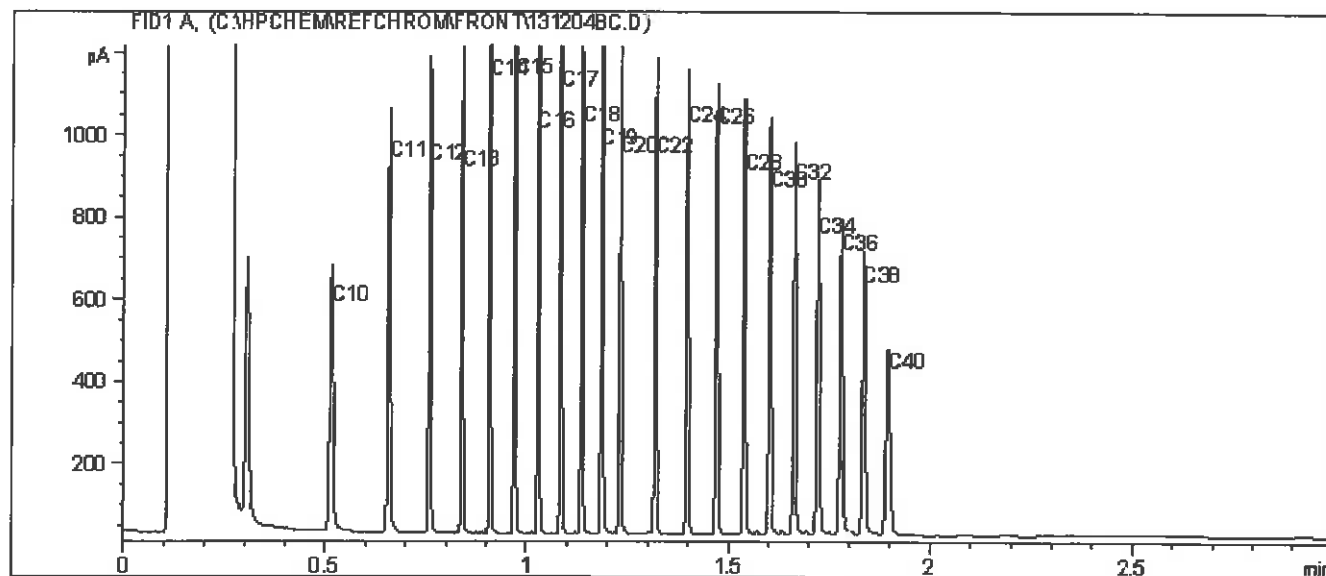
FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST

Client ID: DUP-00069-10

**Extrac. Petroleum HC in Water by GC/FID Chromatogram**



**Carbon Range Distribution - Reference Chromatogram**



**TYPICAL PRODUCT CARBON NUMBER RANGES**

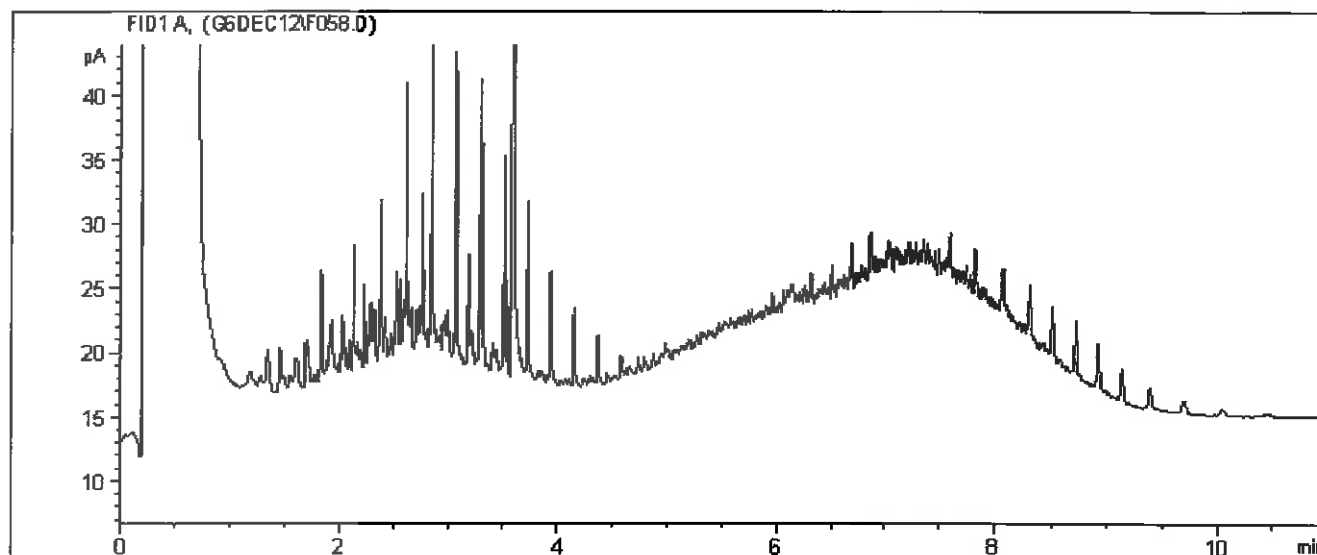
**Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.**

Report Date: 2013/12/16  
Maxxam Job #: B3B3708  
Maxxam Sample: IG7769

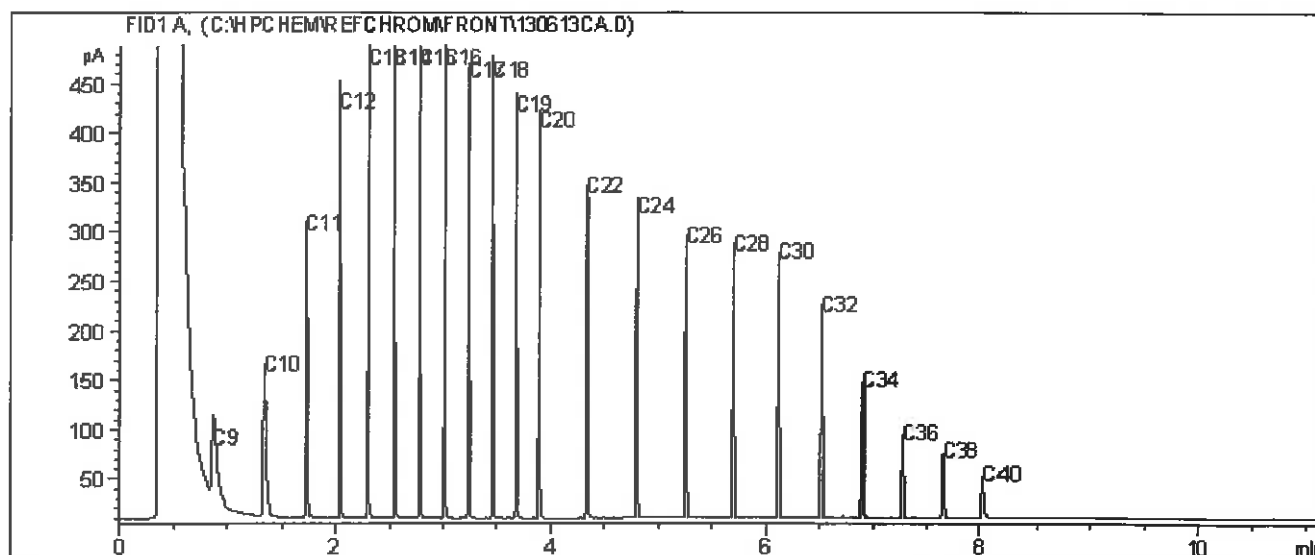
FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST

Client ID: DUP-00069-10

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

Your P.O. #: 700266127  
Your Project #: 0069  
Site Location: LOWER POST  
Your C.O.C. #: G032684

**Attention: John Taylor**  
FRANZ ENVIRONMENTAL INC.  
FRANZEN-VAN  
1080 MAINLAND STREET  
SUITE 308  
VANCOUVER, BC  
CANADA V6B 2T4

**Report Date: 2014/02/13**  
**Report #: R1516519**  
**Version: 2**

## CERTIFICATE OF ANALYSIS

**MAXXAM JOB #: B408778**  
**Received: 2014/02/04, 08:55**

Sample Matrix: Water  
# Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/MTBE LH, VH, F1 SIM/MS	3	2014/02/04	2014/02/04	BBY8-SOP-00010	EPA 8260C
CCME Hydrocarbons (F2-F4 in water)	2	2014/02/11	2014/02/11	BBY8SOP-00030	CCME Soil Tier1
CCME Hydrocarbons (F2-F4 in water)	1	2014/02/11	2014/02/12	BBY8SOP-00030	CCME Soil Tier1
Hardness Total (calculated as CaCO3)	3	N/A	2014/02/07	BBY7SOP-00002	EPA 6020A
Hardness (calculated as CaCO3)	3	N/A	2014/02/12	BBY7SOP-00002	EPA 6020A
Mercury (Dissolved) by CVAf	3	N/A	2014/02/11	BBY7SOP-00015	EPA 245.7
Mercury (Total) by CVAf	3	2014/02/11	2014/02/11	BBY7SOP-00015	EPA 245.7
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	3	N/A	2014/02/12	BBY7SOP-00002	EPA 6020A
Elements by CRC ICPMS (dissolved)	3	N/A	2014/02/12	BBY7SOP-00002	EPA 6020A
Na, K, Ca, Mg, S by CRC ICPMS (total)	3	2014/02/04	2014/02/07	BBY7SOP-00002	EPA 6020A
Elements by CRC ICPMS (total)	3	2014/02/06	2014/02/06	BBY7SOP-00002	EPA 6020A
Nitrate + Nitrite (N)	3	N/A	2014/02/05	BBY6SOP-00010	SM 4500NO3-I
Nitrite (N) by CFA	3	N/A	2014/02/05	BBY6SOP-00010	EPA 353.2
Nitrogen - Nitrate (as N)	3	N/A	2014/02/05	BBY6SOP-00010	SM 4500NO3-I
PAH in Water by GC/MS (SIM)	1	2014/02/08	2014/02/08	BBY8SOP-00021	EPA 8270D
PAH in Water by GC/MS (SIM)	2	2014/02/11	2014/02/11	BBY8SOP-00021	EPA 8270D
Total LMW, HMW, Total PAH Calc	1	N/A	2014/02/11	BBY WI-00033	BC MOE Lab Method
Total LMW, HMW, Total PAH Calc	2	N/A	2014/02/12	BBY WI-00033	BC MOE Lab Method
Filter and HNO3 Preserve for Metals	3	N/A	2014/02/04	BBY6WI-00001	EPA 200.2
EPH less PAH in Water by GC/FID	3	N/A	2014/02/12	BBY WI-00033	BC MOE Lab Method
Extrac. Petroleum HC in Water by GC/FID	3	2014/02/11	2014/02/11	BBY8SOP-00029	BC Env Lab Manual
Volatile F1-BTEX	3	N/A	2014/02/05	BBY WI-00033	BC MOE Lab Method

\* Results relate only to the items tested.

Encryption Key



Samantha Fregien

13 Feb 2014 18:26:28 -08:00

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

Crystal Ireland, B.Sc., Account Specialist  
Email: [Cireland@maxxam.ca](mailto:Cireland@maxxam.ca)  
Phone# (604) 638-5016

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.  
Total cover pages: 1

FRANZ ENVIRONMENTAL INC.  
Client Project #: 0069  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

## RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID	IP4878	IP4879	IP4880	
Sampling Date	2014/01/30	2014/01/30	2014/01/30	
	MW11-09	MW13-10	MW13-11	
Calculated Parameters	UNITS			QC Batch
Filter and HNO3 Preservation	N/A	FIELD	FIELD	N/A
				ONSITE

## PETROLEUM HYDROCARBONS (CCME)

Maxxam ID	IP4878	IP4879	IP4880	
Sampling Date	2014/01/30	2014/01/30	2014/01/30	
	MW11-09	MW13-10	MW13-11	
Extractable Hydrocarbons	UNITS			QC Batch
F2 (C10-C16 Hydrocarbons)	mg/L	<0.20	<0.20	0.20
F3 (C16-C34 Hydrocarbons)	mg/L	<0.20	<0.20	0.20
F4 (C34-C50 Hydrocarbons)	mg/L	<3.0	<3.0	3.0
Reached Baseline at C50	mg/L	YES	YES	N/A
Surrogate Recovery (%)				
O-TERPHENYL (sur.)	%	98	106	105
				7378496

Maxxam Job #: B408778  
Report Date: 2014/02/13

FRANZ ENVIRONMENTAL INC.  
Client Project #: 0069  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

## CCME&CSR BTEX/F1/PH IN WATER (WATER)

Maxxam ID	IP4878	IP4879	IP4880	
Sampling Date	2014/01/30	2014/01/30	2014/01/30	
	MW11-09	MW13-10	MW13-11	
Calculated Parameters				
	UNITS			QC Batch
F1 (C6-C10) - BTEX	ug/L	<300	<300	7371668
Volatiles				
VPH (VH6 to 10 - BTEX)	ug/L	<300	<300	7371668
Methyl-tert-butylether (MTBE)	ug/L	<4.0	<4.0	7371400
Benzene	ug/L	<0.40	<0.40	7371400
Toluene	ug/L	<0.40	<0.40	7371400
Ethylbenzene	ug/L	<0.40	<0.40	7371400
m & p-Xylene	ug/L	<0.40	<0.40	7371400
o-Xylene	ug/L	<0.40	<0.40	7371400
Styrene	ug/L	<0.40	<0.40	7371400
Xylenes (Total)	ug/L	<0.40	<0.40	7371400
VH C6-C10	ug/L	<300	<300	7371400
(C6-C10)	ug/L	<300	<300	7371400
Surrogate Recovery (%)				
1,4-Difluorobenzene (sur.)	%	107	106	7371400
4-BROMOFLUOROBENZENE (sur.)	%	97	97	7371400
D4-1,2-DICHLOROETHANE (sur.)	%	93	94	7371400

RDL = Reportable Detection Limit

FRANZ ENVIRONMENTAL INC.  
Client Project #: 0069  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

## LEPH & HEPH FOR CSR IN SOIL WITH LL PAH (WATER)

Maxxam ID	IP4878	IP4879	IP4880		
Sampling Date	2014/01/30	2014/01/30	2014/01/30		
	MW11-09	MW13-10	MW13-11	RDL	QC Batch
UNITS					
<b>Polycyclic Aromatics</b>					
Low Molecular Weight PAH's	ug/L	7371101	<0.50	<0.50	7371101
High Molecular Weight PAH's	ug/L	7371101	<0.050	<0.050	7371101
Total PAH	ug/L	7371101	<0.50	<0.50	7371101
Naphthalene	ug/L	7376354	<0.10	<0.10	7378249
2-Methylnaphthalene	ug/L	7376354	<0.10	<0.10	7378249
Quinoline	ug/L	7376354	<0.50	<0.50	7378249
Acenaphthylene	ug/L	7376354	<0.050	<0.050	7378249
Acenaphthene	ug/L	7376354	<0.050	<0.050	7378249
Fluorene	ug/L	7376354	<0.050	<0.050	7378249
Phenanthrene	ug/L	7376354	<0.050	<0.050	7378249
Anthracene	ug/L	7376354	<0.010	<0.010	7378249
Acridine	ug/L	7376354	<0.050	<0.050	7378249
Fluoranthene	ug/L	7376354	<0.020	<0.020	7378249
Pyrene	ug/L	7376354	<0.020	<0.020	7378249
Benzo(a)anthracene	ug/L	7376354	<0.010	<0.010	7378249
Chrysene	ug/L	7376354	<0.050	<0.050	7378249
Benzo(b&j)fluoranthene	ug/L	7376354	<0.050	<0.050	7378249
Benzo(k)fluoranthene	ug/L	7376354	<0.050	<0.050	7378249
Benzo(a)pyrene	ug/L	7376354	<0.0090	<0.0090	7378249
Indeno(1,2,3-cd)pyrene	ug/L	7376354	<0.050	<0.050	7378249
Dibenz(a,h)anthracene	ug/L	7376354	<0.050	<0.050	7378249
Benzo(g,h,i)perylene	ug/L	7376354	<0.050	<0.050	7378249
<b>Surrogate Recovery (%)</b>					
D10-ANTHRACENE (sur.)	%	96	100	101	7378249
D8-ACENAPHTHYLENE (sur.)	%	93	96	95	7378249
D8-NAPHTHALENE (sur.)	%	105	110	110	7378249
D9-Acridine	%	49(1)	39(2)	54	7378249
TERPHENYL-D14 (sur.)	%	77	83	84	7378249
<b>Calculated Parameters</b>					
LEPH (C10-C19 less PAH)	mg/L	<0.20	<0.20	<0.20	7371667
HEPH (C19-C32 less PAH)	mg/L	<0.20	<0.20	<0.20	7371667

RDL = Reportable Detection Limit

(1) - Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.  
(2) - Surrogate recovery below acceptance criteria due to matrix interference.

FRANZ ENVIRONMENTAL INC.  
Client Project #: 0069  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

## LEPH & HEPH FOR CSR IN SOIL WITH LL PAH (WATER)

Maxxam ID		IP4878		IP4879		IP4880	
Sampling Date		2014/01/30		2014/01/30		2014/01/30	
	UNITS	MW11-09	QC Batch	MW13-10	MW13-11	RDL	QC Batch
<b>Ext. Pet. Hydrocarbon</b>							
EPH (C10-C19)	mg/L	<0.20	7378482	<0.20	<0.20	0.20	7378482
EPH (C19-C32)	mg/L	<0.20	7378482	<0.20	<0.20	0.20	7378482
<b>Surrogate Recovery (%)</b>							
O-TERPHENYL (sur.)	%	100	7378482	104	105		7378482

FRANZ ENVIRONMENTAL INC.  
Client Project #: 0069  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

## CCME DISSOLVED METALS IN WATER (WATER)

Maxxam ID	IP4878	IP4879	IP4880		
Sampling Date	2014/01/30	2014/01/30	2014/01/30		
	MW11-09	MW13-10	MW13-11	RDL	QC Batch
<b>Misc. Inorganics</b>					
Dissolved Hardness (CaCO <sub>3</sub> )	558	681	436	0.50	7370764
<b>Elements</b>					
Dissolved Mercury (Hg)	<0.010	<0.010	<0.010	0.010	7378061

FRANZ ENVIRONMENTAL INC.  
Client Project #: 0069  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

## CCME DISSOLVED METALS IN WATER (WATER)

Maxxam ID	IP4878	IP4878	IP4880	
Sampling Date	2014/01/30	2014/01/30	2014/01/30	
	MW11-09	MW13-10	MW13-11	
Dissolved Metals by ICPMS				
	UNITS			QC Batch
Dissolved Aluminum (Al)	ug/L	7.4	388	3.0
Dissolved Antimony (Sb)	ug/L	<0.50	<0.50	0.50
Dissolved Arsenic (As)	ug/L	0.23	1.23	0.10
Dissolved Barium (Ba)	ug/L	123	107	1.0
Dissolved Beryllium (Be)	ug/L	<0.10	0.11	0.10
Dissolved Bismuth (Bi)	ug/L	<1.0	<1.0	1.0
Dissolved Boron (B)	ug/L	<50	<50	50
Dissolved Cadmium (Cd)	ug/L	0.050	0.947	0.010
Dissolved Chromium (Cr)	ug/L	<1.0	2.5	1.0
Dissolved Cobalt (Co)	ug/L	1.19	5.69	0.50
Dissolved Copper (Cu)	ug/L	1.57	9.21	0.20
Dissolved Iron (Fe)	ug/L	16.7	2680	5.0
Dissolved Lead (Pb)	ug/L	<0.20	5.80	0.20
Dissolved Lithium (Li)	ug/L	8.3	10.8	5.0
Dissolved Manganese (Mn)	ug/L	95.3	269	1.0
Dissolved Molybdenum (Mo)	ug/L	5.5	5.6	1.0
Dissolved Nickel (Ni)	ug/L	5.2	15.4	1.0
Dissolved Selenium (Se)	ug/L	22.7	28.2	0.10
Dissolved Silicon (Si)	ug/L	3600	4170	100
Dissolved Silver (Ag)	ug/L	<0.020	0.034	0.020
Dissolved Strontium (Sr)	ug/L	698	732	1.0
Dissolved Thallium (Tl)	ug/L	<0.050	0.085	0.050
Dissolved Tin (Sn)	ug/L	<5.0	<5.0	5.0
Dissolved Titanium (Ti)	ug/L	<5.0	15.2	5.0
Dissolved Uranium (U)	ug/L	5.94	7.91	0.10
Dissolved Vanadium (V)	ug/L	<5.0	<5.0	5.0
Dissolved Zinc (Zn)	ug/L	146(1)	32.0	5.0
Dissolved Zirconium (Zr)	ug/L	<0.50	0.64	0.50
Dissolved Calcium (Ca)	mg/L	100	128	0.050
Dissolved Magnesium (Mg)	mg/L	74.6	87.5	0.050
Dissolved Potassium (K)	mg/L	4.67	3.96	0.050
Dissolved Sodium (Na)	mg/L	18.4	5.00	0.050
Dissolved Sulphur (S)	mg/L	38.7	34.2	3.0

RDL = Reportable Detection Limit

(1) - Dissolved greater than total. Reanalysis yields similar results.

FRANZ ENVIRONMENTAL INC.  
Client Project #: 0069  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

## CCME TOTAL METALS IN WATER (WATER)

Maxxam ID	IP4878	IP4879	IP4880	
Sampling Date	2014/01/30	2014/01/30	2014/01/30	
	MW11-09	MW13-10	MW13-11	
UNITS				
Calculated Parameters				QC Batch
Total Hardness (CaCO3)	592	767	509	0.50
mg/L				7370643
Elements				
Total Mercury (Hg)	<0.010	<0.010	<0.010	0.010
ug/L				7378426

## CCME TOTAL METALS IN WATER (WATER)

Maxxam ID	IP4878	IP4879	IP4880	
Sampling Date	2014/01/30	2014/01/30	2014/01/30	
	MW11-09	MW13-10	MW13-11	
Total Metals by ICPMS				
	UNITS			QC Batch
Total Aluminum (Al)	ug/L	1330	8750	1410
Total Antimony (Sb)	ug/L	1.14	2.18	1.04
Total Arsenic (As)	ug/L	2.93	14.4	2.41
Total Barium (Ba)	ug/L	199	383	149
Total Beryllium (Be)	ug/L	0.14	0.58	<0.10
Total Bismuth (Bi)	ug/L	<1.0	<1.0	<1.0
Total Boron (B)	ug/L	<50	<50	<50
Total Cadmium (Cd)	ug/L	0.470	1.54	0.148
Total Chromium (Cr)	ug/L	4.3	23.8	3.6
Total Cobalt (Co)	ug/L	5.34	15.5	3.92
Total Copper (Cu)	ug/L	12.5	43.2	6.84
Total Iron (Fe)	ug/L	6020	28800	3610
Total Lead (Pb)	ug/L	5.78	18.2	2.12
Total Lithium (Li)	ug/L	9.0	19.9	8.6
Total Manganese (Mn)	ug/L	265	481	270
Total Molybdenum (Mo)	ug/L	8.1	10.8	8.9
Total Nickel (Ni)	ug/L	15.6	55.3	12.9
Total Selenium (Se)	ug/L	29.6	37.2	5.54
Total Silicon (Si)	ug/L	5440	18600	5230
Total Silver (Ag)	ug/L	0.074	0.235	0.059
Total Strontium (Sr)	ug/L	702	824	515
Total Thallium (Tl)	ug/L	0.096	0.402	0.077
Total Tin (Sn)	ug/L	<5.0	<5.0	<5.0
Total Titanium (Ti)	ug/L	69.2	400	60.0
Total Uranium (U)	ug/L	6.87	8.49	7.27
Total Vanadium (V)	ug/L	9.7	41.6	5.8
Total Zinc (Zn)	ug/L	41.9	183	21.7
Total Zirconium (Zr)	ug/L	0.69	4.13	0.66
Total Calcium (Ca)	mg/L	115	150	95.5
Total Magnesium (Mg)	mg/L	73.8	95.5	65.7
Total Potassium (K)	mg/L	4.40	5.08	3.12
Total Sodium (Na)	mg/L	18.3	4.89	4.30
Total Sulphur (S)	mg/L	40.0	37.0	27.5
				3.0

RDL = Reportable Detection Limit

FRANZ ENVIRONMENTAL INC.  
Client Project #: 0069  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

## NITRITE & NITRATE (WATER)

Maxxam ID	IP4878	IP4879	IP4880	
Sampling Date	2014/01/30	2014/01/30	2014/01/30	
UNITS	MW11-09	MW13-10	MW13-11	QC Batch
ANIONS	RDL	RDL	RDL	
Nitrite (N)	mg/L	mg/L	mg/L	mg/L
Calculated Parameters	0.0322 <sup>(1)</sup>	0.0112 <sup>(1)</sup>	<0.0050 <sup>(1)</sup>	7373291
Nitrate (N)	mg/L	mg/L	mg/L	mg/L
Nutrients	4.86	2.28	0.201	7370645
Nitrate plus Nitrite (N)	mg/L	mg/L	mg/L	mg/L
	4.90 <sup>(1)</sup>	2.28 <sup>(1)</sup>	0.201 <sup>(1)</sup>	7373290

RDL = Reportable Detection Limit

<sup>(1)</sup> - Sample arrived to laboratory past recommended hold time.

FRANZ ENVIRONMENTAL INC.  
Client Project #: 0069  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

Package 1 1.0°C

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

## General Comments

Maxxam Job #: B408778  
Report Date: 2014/02/13

FRANZ ENVIRONMENTAL INC.  
Client Project #: 0069  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

## QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7371400	1,4-Difluorobenzene (sur.)	2014/02/04	106	70 - 130	106	70 - 130	107	%		
7371400	4-BROMOFLUOROBENZENE (sur.)	2014/02/04	97	70 - 130	98	70 - 130	96	%		
7371400	D4-1,2-DICHLOROETHANE (sur.)	2014/02/04	93	70 - 130	93	70 - 130	93	%		
7371400	Methyl-tert-butylether (MTBE)	2014/02/04	90	70 - 130	89	70 - 130	<4.0	ug/L	NC	30
7371400	Benzene	2014/02/04	88	70 - 130	87	70 - 130	<0.40	ug/L	NC	30
7371400	Toluene	2014/02/04	86	70 - 130	85	70 - 130	<0.40	ug/L	NC	30
7371400	Ethylbenzene	2014/02/04	93	70 - 130	92	70 - 130	<0.40	ug/L	NC	30
7371400	m & p-Xylene	2014/02/04	89	70 - 130	88	70 - 130	<0.40	ug/L	NC	30
7371400	o-Xylene	2014/02/04	88	70 - 130	87	70 - 130	<0.40	ug/L	NC	30
7371400	Styrene	2014/02/04	86	70 - 130	87	70 - 130	<0.40	ug/L	NC	30
7371400	VH C6-C10	2014/02/04			79	70 - 130	<300	ug/L		
7371400	(C6-C10)	2014/02/04			86	70 - 130	<300	ug/L	NC	30
7371400	Xylenes (Total)	2014/02/04					<0.40	ug/L	NC	30
7373290	Nitrate plus Nitrite (N)	2014/02/05	NC	80 - 120	105	80 - 120	<0.020	mg/L	2.0	25
7373291	Nitrite (N)	2014/02/05	102	80 - 120	100	80 - 120	<0.0050	mg/L	NC	20
7374137	Dissolved Aluminum (Al)	2014/02/12	101	80 - 120	104	80 - 120	<3.0	ug/L	8.2	20
7374137	Dissolved Antimony (Sb)	2014/02/12	106	80 - 120	102	80 - 120	<0.50	ug/L	NC	20
7374137	Dissolved Arsenic (As)	2014/02/12	104	80 - 120	100	80 - 120	<0.10	ug/L	NC	20
7374137	Dissolved Barium (Ba)	2014/02/12	NC	80 - 120	98	80 - 120	<1.0	ug/L	1.7	20
7374137	Dissolved Beryllium (Be)	2014/02/12	100	80 - 120	94	80 - 120	<0.10	ug/L	NC	20
7374137	Dissolved Bismuth (Bi)	2014/02/12	100	80 - 120	100	80 - 120	<1.0	ug/L	NC	20
7374137	Dissolved Cadmium (Cd)	2014/02/12	103	80 - 120	101	80 - 120	<0.010	ug/L	NC	20
7374137	Dissolved Chromium (Cr)	2014/02/12	102	80 - 120	102	80 - 120	<1.0	ug/L	NC	20
7374137	Dissolved Cobalt (Co)	2014/02/12	101	80 - 120	102	80 - 120	<0.50	ug/L	NC	20
7374137	Dissolved Copper (Cu)	2014/02/12	101	80 - 120	99	80 - 120	<0.20	ug/L	NC	20
7374137	Dissolved Iron (Fe)	2014/02/12	NC	80 - 120	102	80 - 120	<5.0	ug/L	1.4	20
7374137	Dissolved Lead (Pb)	2014/02/12	97	80 - 120	97	80 - 120	<0.20	ug/L	NC	20
7374137	Dissolved Lithium (Li)	2014/02/12	98	80 - 120	96	80 - 120	<5.0	ug/L	NC	20
7374137	Dissolved Manganese (Mn)	2014/02/12	NC	80 - 120	101	80 - 120	<1.0	ug/L	1.0	20
7374137	Dissolved Molybdenum (Mo)	2014/02/12	96	80 - 120	101	80 - 120	<1.0	ug/L	NC	20
7374137	Dissolved Nickel (Ni)	2014/02/12	NC	80 - 120	100	80 - 120	<1.0	ug/L	0.9	20
7374137	Dissolved Selenium (Se)	2014/02/12	106	80 - 120	100	80 - 120	<0.10	ug/L	NC	20
7374137	Dissolved Silver (Ag)	2014/02/12	96	80 - 120	87	80 - 120	<0.020	ug/L	NC	20
7374137	Dissolved Strontium (Sr)	2014/02/12	NC	80 - 120	98	80 - 120	<1.0	ug/L	0.1	20
7374137	Dissolved Thallium (Tl)	2014/02/12	89	80 - 120	100	80 - 120	<0.050	ug/L	NC	20
7374137	Dissolved Tin (Sn)	2014/02/12	101	80 - 120	99	80 - 120	<5.0	ug/L	NC	20
7374137	Dissolved Titanium (Ti)	2014/02/12	106	80 - 120	98	80 - 120	<5.0	ug/L	NC	20
7374137	Dissolved Uranium (U)	2014/02/12	101	80 - 120	97	80 - 120	<0.10	ug/L	NC	20
7374137	Dissolved Vanadium (V)	2014/02/12	99	80 - 120	99	80 - 120	<5.0	ug/L	NC	20

FRANZ ENVIRONMENTAL INC.  
Client Project #: 0069  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

## QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7374137	Dissolved Zinc (Zn)	2014/02/12	NC	80 - 120	104	80 - 120	<5.0	ug/L	0.9	20
7374137	Dissolved Boron (B)	2014/02/12					<50	ug/L	NC	20
7374137	Dissolved Silicon (Si)	2014/02/12					<100	ug/L	1	20
7374137	Dissolved Zirconium (Zr)	2014/02/12					<0.50	ug/L	NC	20
7374169	Total Aluminum (Al)	2014/02/06	107	80 - 120	98	80 - 120	<3.0	ug/L		
7374169	Total Antimony (Sb)	2014/02/06	100	80 - 120	92	80 - 120	<0.50	ug/L		
7374169	Total Arsenic (As)	2014/02/06	NC	80 - 120	100	80 - 120	<0.10	ug/L		
7374169	Total Barium (Ba)	2014/02/06	NC	80 - 120	95	80 - 120	<1.0	ug/L		
7374169	Total Beryllium (Be)	2014/02/06	94	80 - 120	91	80 - 120	<0.10	ug/L		
7374169	Total Bismuth (Bi)	2014/02/06	92	80 - 120	92	80 - 120	<1.0	ug/L		
7374169	Total Cadmium (Cd)	2014/02/06	102	80 - 120	100	80 - 120	<0.010	ug/L		
7374169	Total Chromium (Cr)	2014/02/06	100	80 - 120	103	80 - 120	<1.0	ug/L		
7374169	Total Cobalt (Co)	2014/02/06	97	80 - 120	99	80 - 120	<0.50	ug/L		
7374169	Total Copper (Cu)	2014/02/06	95	80 - 120	100	80 - 120	<0.20	ug/L		
7374169	Total Iron (Fe)	2014/02/06	NC	80 - 120	126(1,2)	80 - 120	7.1, RDL=5.0	ug/L	2.6	20
7374169	Total Lead (Pb)	2014/02/06	92	80 - 120	94	80 - 120	<0.20	ug/L		
7374169	Total Lithium (Li)	2014/02/06	92	80 - 120	93	80 - 120	<5.0	ug/L		
7374169	Total Manganese (Mn)	2014/02/06	NC	80 - 120	101	80 - 120	<1.0	ug/L		
7374169	Total Molybdenum (Mo)	2014/02/06	NC	80 - 120	90	80 - 120	<1.0	ug/L		
7374169	Total Nickel (Ni)	2014/02/06	98	80 - 120	101	80 - 120	<1.0	ug/L		
7374169	Total Selenium (Se)	2014/02/06	107	80 - 120	103	80 - 120	<0.10	ug/L		
7374169	Total Silver (Ag)	2014/02/06	81	80 - 120	99	80 - 120	0.035, RDL=0.020	ug/L		
7374169	Total Strontium (Sr)	2014/02/06	NC	80 - 120	93	80 - 120	<1.0	ug/L		
7374169	Total Thallium (Tl)	2014/02/06	99	80 - 120	87	80 - 120	<0.050	ug/L		
7374169	Total Tin (Sn)	2014/02/06	93	80 - 120	90	80 - 120	<5.0	ug/L		
7374169	Total Titanium (Ti)	2014/02/06	102	80 - 120	83	80 - 120	<0.10	ug/L		
7374169	Total Uranium (U)	2014/02/06	95	80 - 120	94	80 - 120	<0.10	ug/L		
7374169	Total Vanadium (V)	2014/02/06	92	80 - 120	98	80 - 120	<5.0	ug/L		
7374169	Total Zinc (Zn)	2014/02/06	111	80 - 120	122(1,2)	80 - 120	<5.0	ug/L		
7374169	Total Boron (B)	2014/02/06					<50	ug/L		
7374169	Total Silicon (Si)	2014/02/06					<100	ug/L		
7374169	Total Zirconium (Zr)	2014/02/06					<0.50	ug/L		
7376354	D10-ANTHRACENE (sur.)	2014/02/08	104	60 - 130	100	60 - 130	105	%		
7376354	D8-ACENAPHTHYLENE (sur.)	2014/02/08	94	50 - 130	91	50 - 130	98	%		
7376354	D8-NAPHTHALENE (sur.)	2014/02/08	113	50 - 130	109	50 - 130	116	%		
7376354	D9-Acridine	2014/02/08	67	50 - 130	66	50 - 130	68	%		
7376354	TERPHENYL-D14 (sur.)	2014/02/08	85	60 - 130	82	60 - 130	88	%		
7376354	Naphthalene	2014/02/08	102	50 - 130	89	50 - 130	<0.10	ug/L	NC	40
7376354	2-Methylnaphthalene	2014/02/08	102	50 - 130	89	50 - 130	<0.10	ug/L	NC	40

FRANZ ENVIRONMENTAL INC.  
Client Project #: 0069  
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Your P.O. #: 700266127  
Sampler Initials: VR

## QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7376354	Quinoline	2014/02/08	118	50 - 130	117	50 - 130	<0.50	ug/L	NC	40
7376354	Acenaphthylene	2014/02/08	97	50 - 130	92	50 - 130	<0.050	ug/L	NC	40
7376354	Acenaphthene	2014/02/08	107	50 - 130	101	50 - 130	<0.050	ug/L	NC	40
7376354	Fluorene	2014/02/08	101	50 - 130	96	50 - 130	<0.050	ug/L	NC	40
7376354	Phenanthrene	2014/02/08	96	60 - 130	93	60 - 130	<0.050	ug/L	NC	40
7376354	Anthracene	2014/02/08	107	60 - 130	104	60 - 130	<0.050	ug/L	NC	40
7376354	Acridine	2014/02/08	69	50 - 130	69	50 - 130	<0.050	ug/L	NC	40
7376354	Fluoranthene	2014/02/08	99	60 - 130	96	60 - 130	<0.050	ug/L	NC	40
7376354	Pyrene	2014/02/08	101	60 - 130	98	60 - 130	<0.050	ug/L	NC	40
7376354	Benzo(a)anthracene	2014/02/08	97	60 - 130	93	60 - 130	<0.050	ug/L	NC	40
7376354	Chrysene	2014/02/08	102	60 - 130	97	60 - 130	<0.050	ug/L	NC	40
7376354	Benzo(b&f)fluoranthene	2014/02/08	97	60 - 130	94	60 - 130	<0.050	ug/L	NC	40
7376354	Benzo(k)fluoranthene	2014/02/08	101	60 - 130	94	60 - 130	<0.050	ug/L	NC	40
7376354	Benzo(a)pyrene	2014/02/08	100	60 - 130	96	60 - 130	<0.0090	ug/L	NC	40
7376354	Indeno(1,2,3-cd)pyrene	2014/02/08	106	60 - 130	102	60 - 130	<0.050	ug/L	NC	40
7376354	Dibenz(a,h)anthracene	2014/02/08	100	60 - 130	95	60 - 130	<0.050	ug/L	NC	40
7376354	Benzo(g,h,i)perylene	2014/02/08	102	60 - 130	97	60 - 130	<0.050	ug/L	NC	40
7378061	Dissolved Mercury (Hg)	2014/02/11	87	80 - 120	100	80 - 120	<0.010	ug/L	NC	20
7378249	D10-ANTHRACENE (sur.)	2014/02/11	100	60 - 130	98	60 - 130	99	%		
7378249	D8-ACENAPHTHYLENE (sur.)	2014/02/11	90	50 - 130	97	50 - 130	91	%		
7378249	D8-NAPHTHALENE (sur.)	2014/02/11	107	50 - 130	104	50 - 130	109	%		
7378249	D9-Acridine	2014/02/11	67	50 - 130	74	50 - 130	63	%		
7378249	TERPHENYL-D14 (sur.)	2014/02/11	82	60 - 130	79	60 - 130	81	%		
7378249	Naphthalene	2014/02/11	88	50 - 130	92	50 - 130	<0.10	ug/L	NC	40
7378249	2-Methylnaphthalene	2014/02/11	90	50 - 130	91	50 - 130	<0.10	ug/L	NC	40
7378249	Quinoline	2014/02/11	108	50 - 130	112	50 - 130	<0.50	ug/L	NC	40
7378249	Acenaphthylene	2014/02/11	84	50 - 130	91	50 - 130	<0.050	ug/L	NC	40
7378249	Acenaphthene	2014/02/11	94	50 - 130	96	50 - 130	<0.050	ug/L	NC	40
7378249	Fluorene	2014/02/11	88	50 - 130	91	50 - 130	<0.050	ug/L	NC	40
7378249	Phenanthrene	2014/02/11	83	60 - 130	84	60 - 130	<0.050	ug/L	NC	40
7378249	Anthracene	2014/02/11	92	60 - 130	96	60 - 130	<0.010	ug/L	NC	40
7378249	Acridine	2014/02/11	61	50 - 130	68	50 - 130	<0.050	ug/L	NC	40
7378249	Fluoranthene	2014/02/11	87	60 - 130	89	60 - 130	<0.020	ug/L	NC	40
7378249	Pyrene	2014/02/11	87	60 - 130	90	60 - 130	<0.020	ug/L	NC	40
7378249	Benzo(a)anthracene	2014/02/11	84	60 - 130	85	60 - 130	<0.010	ug/L	NC	40
7378249	Chrysene	2014/02/11	87	60 - 130	87	60 - 130	<0.050	ug/L	NC	40
7378249	Benzo(b&f)fluoranthene	2014/02/11	86	60 - 130	83	60 - 130	<0.050	ug/L	NC	40
7378249	Benzo(k)fluoranthene	2014/02/11	85	60 - 130	86	60 - 130	<0.050	ug/L	NC	40
7378249	Benzo(a)pyrene	2014/02/11	88	60 - 130	90	60 - 130	<0.0090	ug/L	NC	40

Maxxam Job #: B408778  
Report Date: 2014/02/13

FRANZ ENVIRONMENTAL INC.  
Client Project #: 0069  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

### QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7378249	Indeno(1,2,3-cd)pyrene	2014/02/11	91	60 - 130	91	60 - 130	<0.050	ug/L	NC	40
7378249	Dibenz(a,h)anthracene	2014/02/11	86	60 - 130	85	60 - 130	<0.050	ug/L	NC	40
7378249	Benzo(g,h,i)perylene	2014/02/11	88	60 - 130	87	60 - 130	<0.050	ug/L	NC	40
7378426	Total Mercury (Hg)	2014/02/11	102	80 - 120	99	80 - 120	<0.010	ug/L	NC	20
7378482	O-TERPHENYL (sur.)	2014/02/11	99	50 - 130	99	50 - 130	99	%		
7378482	EPH (C10-C19)	2014/02/11	97	50 - 130	99	50 - 130	<0.20	mg/L	NC	30
7378482	EPH (C19-C32)	2014/02/11	108	50 - 130	116	50 - 130	<0.20	mg/L	NC	30
7378496	F2(C10-C16 Hydrocarbons)	2014/02/11	113	80 - 120	105	80 - 120	<0.20	mg/L	NC	40
7378496	O-TERPHENYL (sur.)	2014/02/11	98	50 - 130	94	50 - 130	95	%		
7378496	Reached Baseline at C50	2014/02/11	YES	N/A	YES	N/A	YES, RDL=N/A	mg/L	NC	40
7378496	F3(C16-C34 Hydrocarbons)	2014/02/11					<0.20	mg/L	NC	40
7378496	F4(C34-C50 Hydrocarbons)	2014/02/11					<3.0	mg/L	NC	40

N/A = Not Applicable

RDL = Reportable Detection Limit

RPD = Relative Percent Difference

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

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

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

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

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

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

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

(2) - Blank Spike outside acceptance criteria (10% of analytes failure allowed).

## Validation Signature Page

**Maxxam Job #: B408778**

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

  
\_\_\_\_\_  
Rob Reinert, Data Validation Coordinator

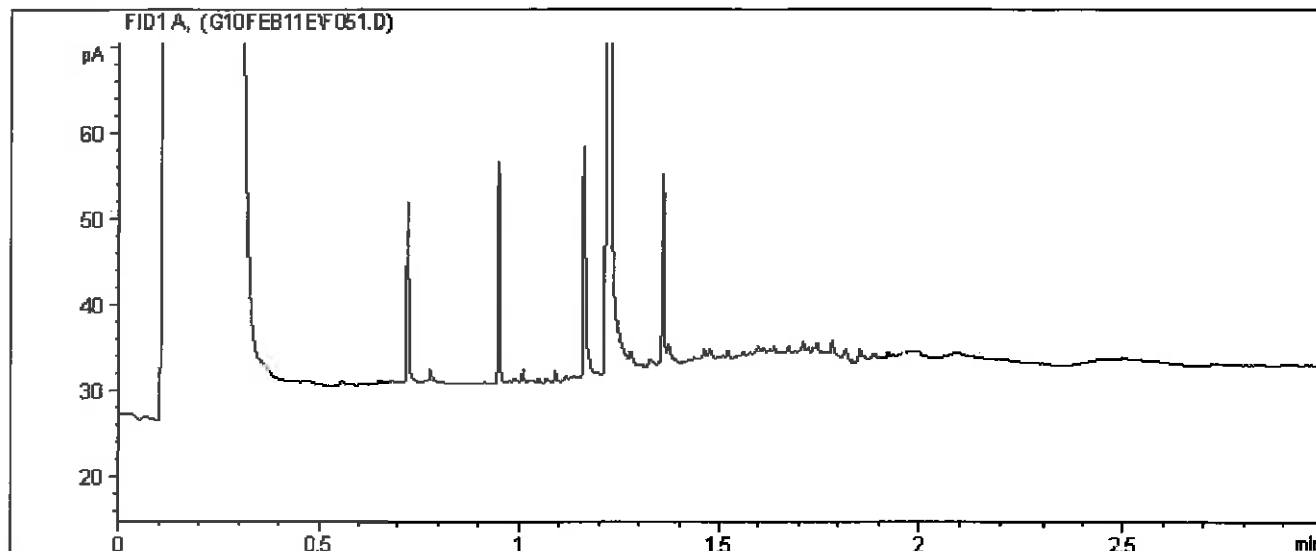
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



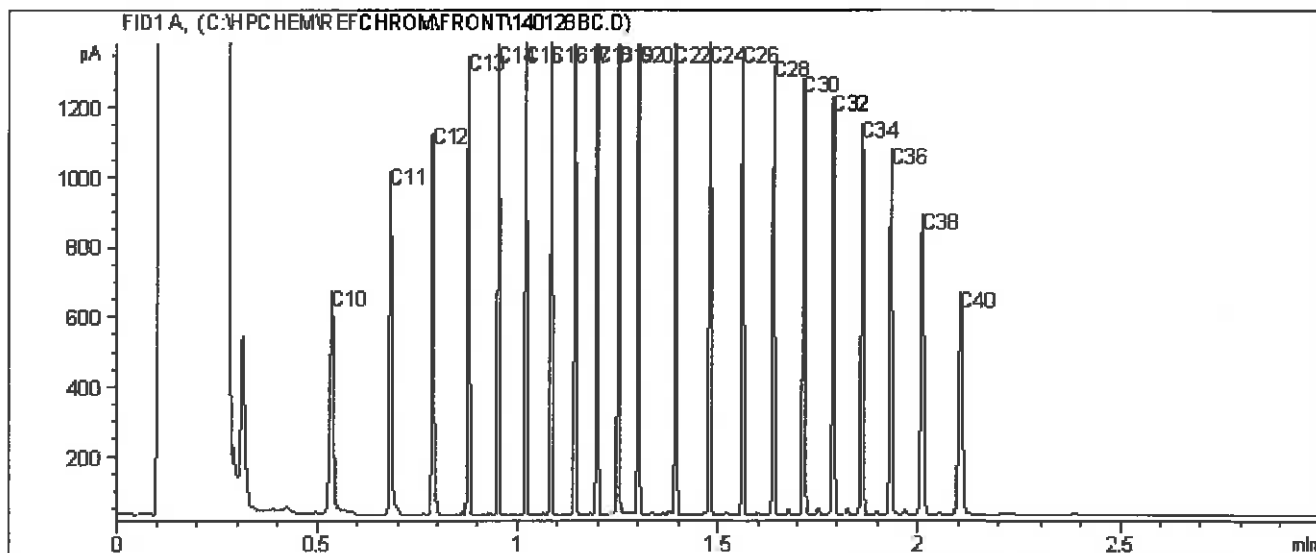
Report Date: 2014/02/13  
Maxxam Job #: B408778  
Maxxam Sample: IP4878

FRANZ ENVIRONMENTAL INC.  
Client Project #: 0069  
Site Reference: LOWER POST  
Client ID: MW11-09

## Extrac. Petroleum HC in Water by GC/FID Chromatogram



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

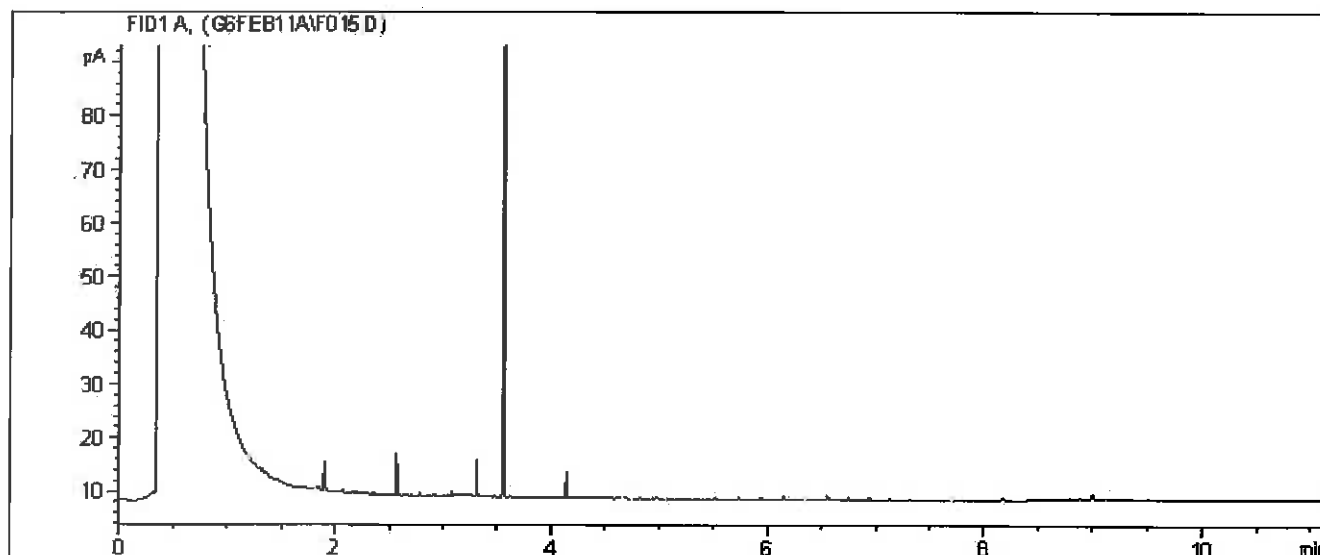
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

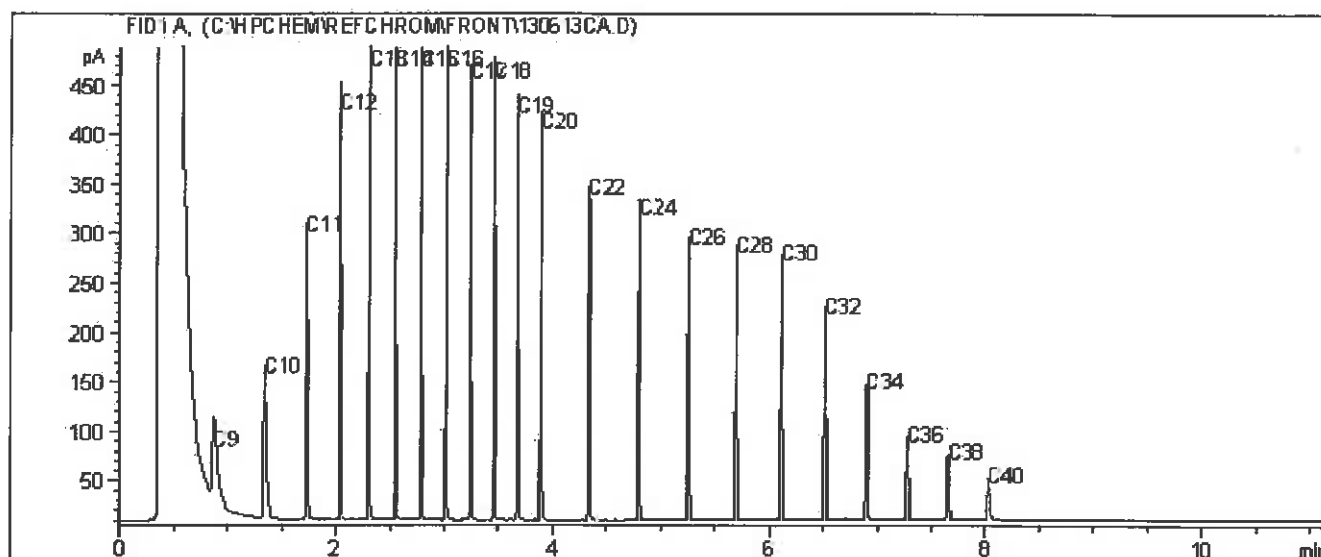
Report Date: 2014/02/13  
Maxxam Job #: B408778  
Maxxam Sample: IP4878

FRANZ ENVIRONMENTAL INC.  
Client Project #: 0069  
Site Reference: LOWER POST  
Client ID: MW11-09

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

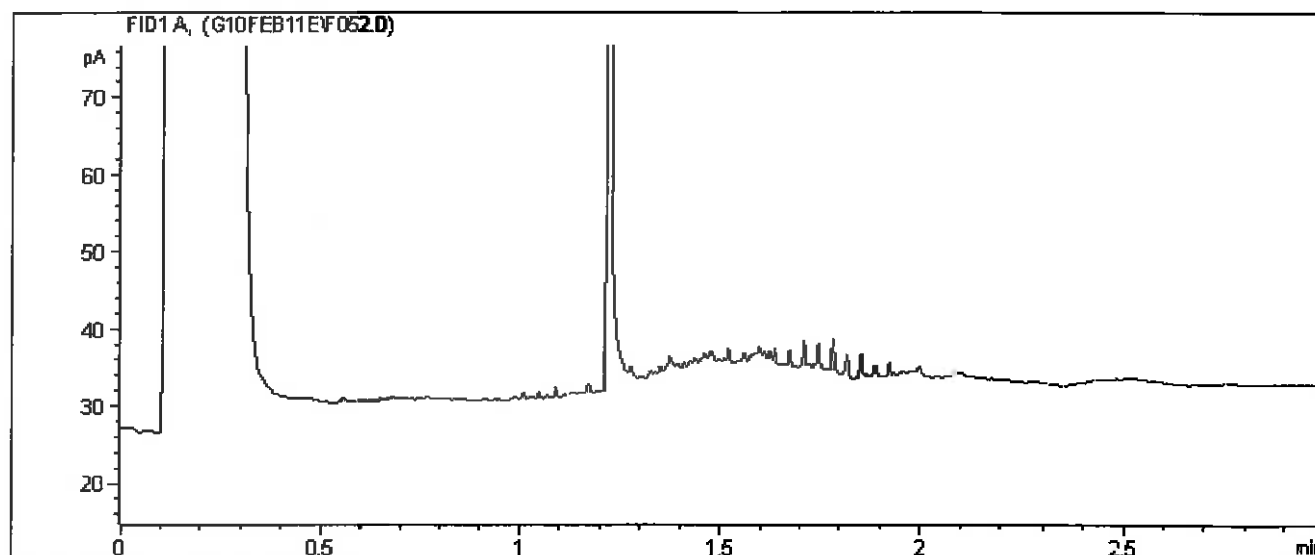
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

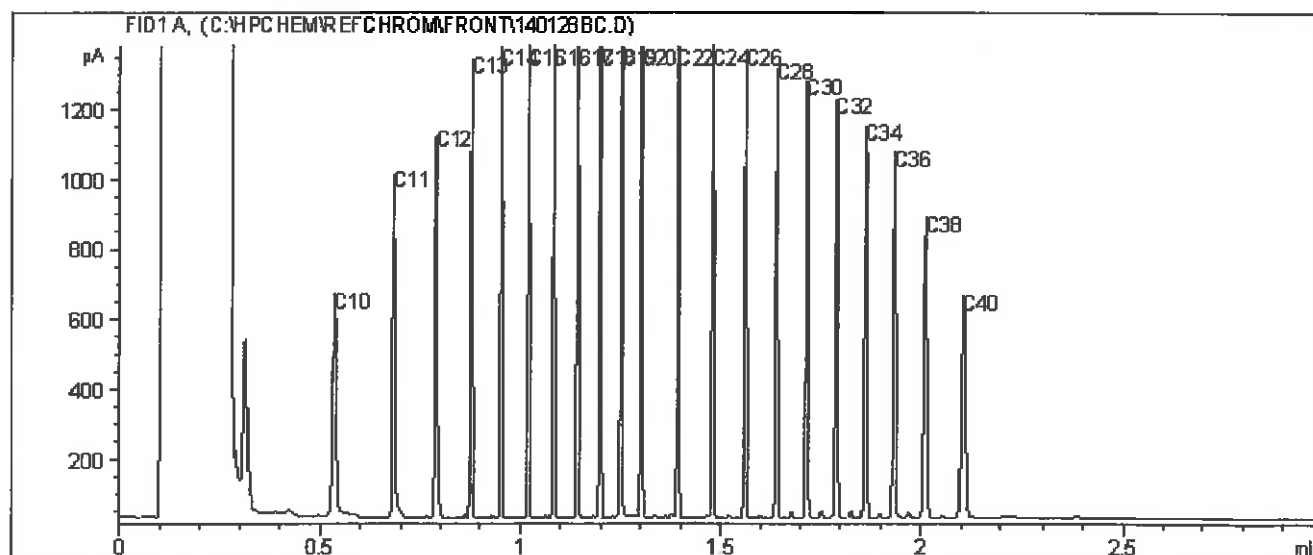
Report Date: 2014/02/13  
Maxxam Job #: B408778  
Maxxam Sample: IP4878 Lab-Dup

FRANZ ENVIRONMENTAL INC.  
Client Project #: 0069  
Site Reference: LOWER POST  
Client ID: MW11-09

## Extrac. Petroleum HC in Water by GC/FID Chromatogram



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

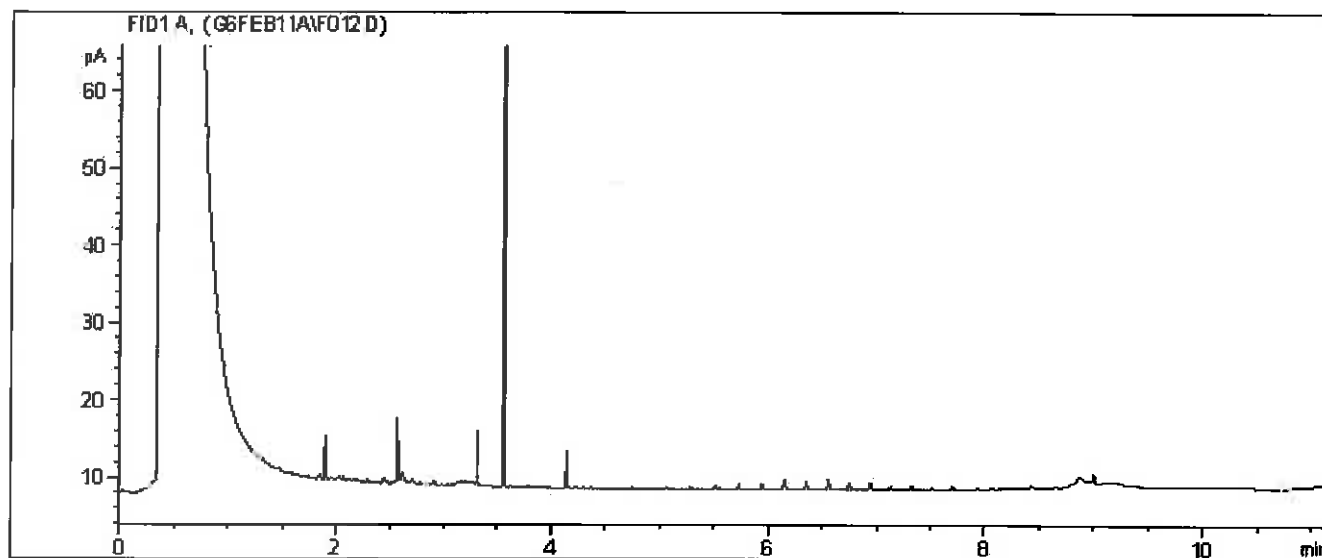
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

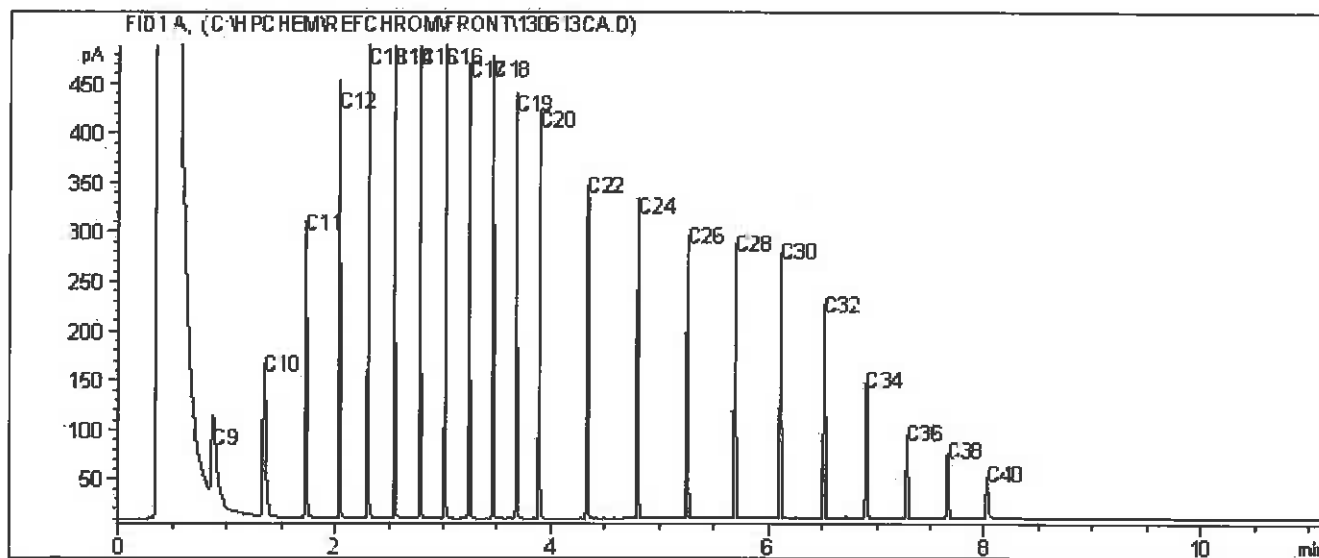
Report Date: 2014/02/13  
Maxxam Job #: B408778  
Maxxam Sample: IP4878 Lab-Dup

FRANZ ENVIRONMENTAL INC.  
Client Project #: 0069  
Site Reference: LOWER POST  
Client ID: MW11-09

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

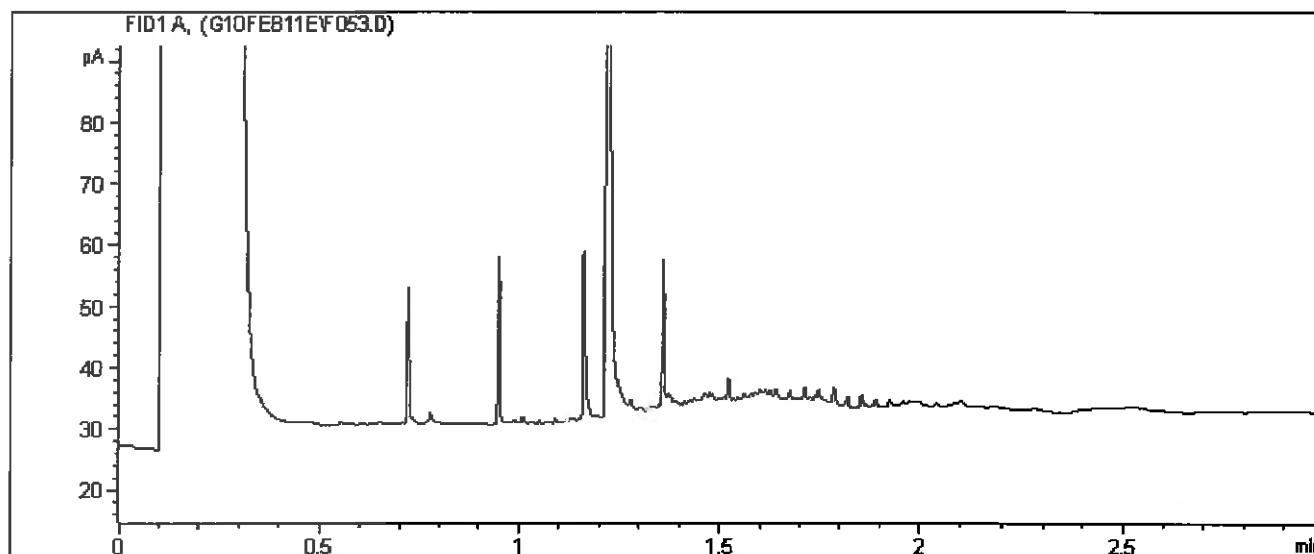
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

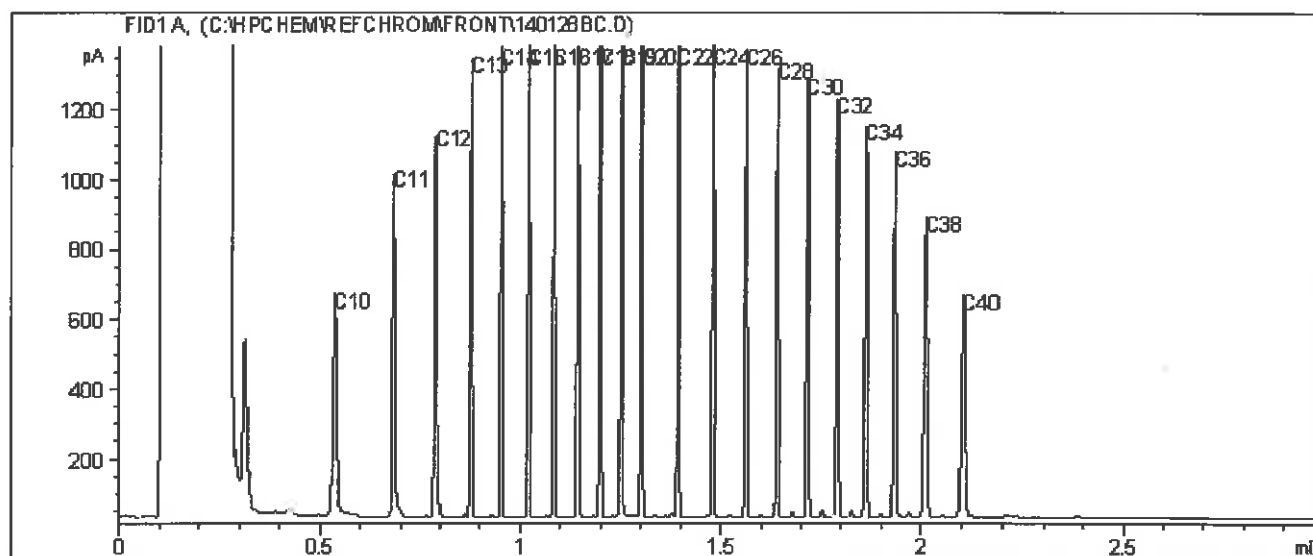
Report Date: 2014/02/13  
Maxxam Job #: B408778  
Maxxam Sample: IP4879

FRANZ ENVIRONMENTAL INC.  
Client Project #: 0069  
Site Reference: LOWER POST  
Client ID: MW13-10

## Extrac. Petroleum HC in Water by GC/FID Chromatogram



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

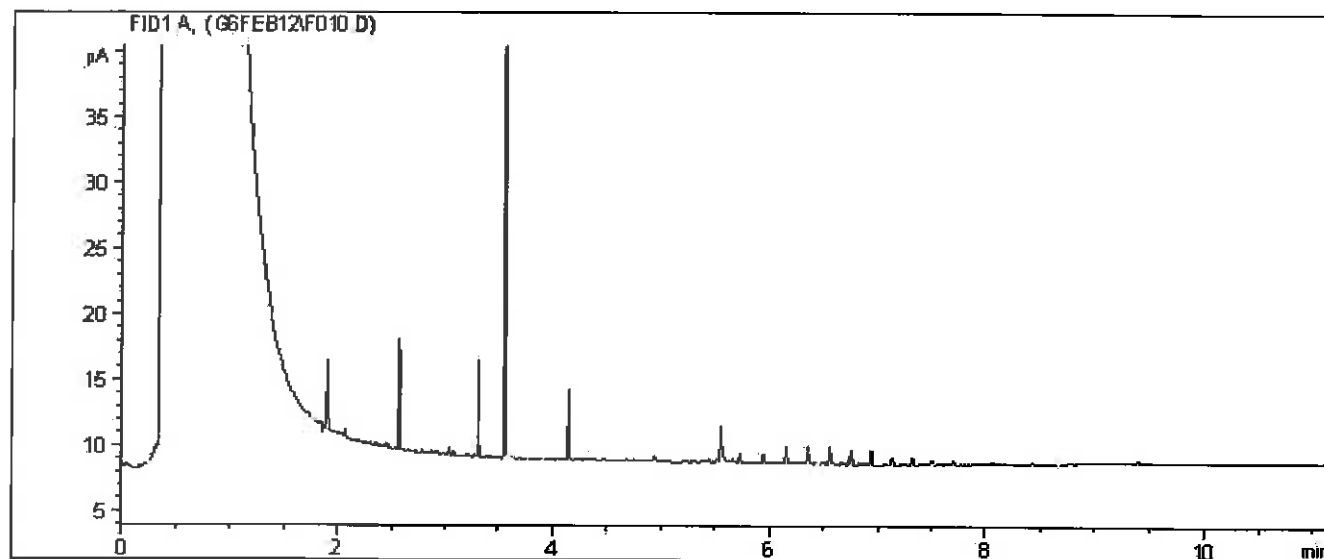
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

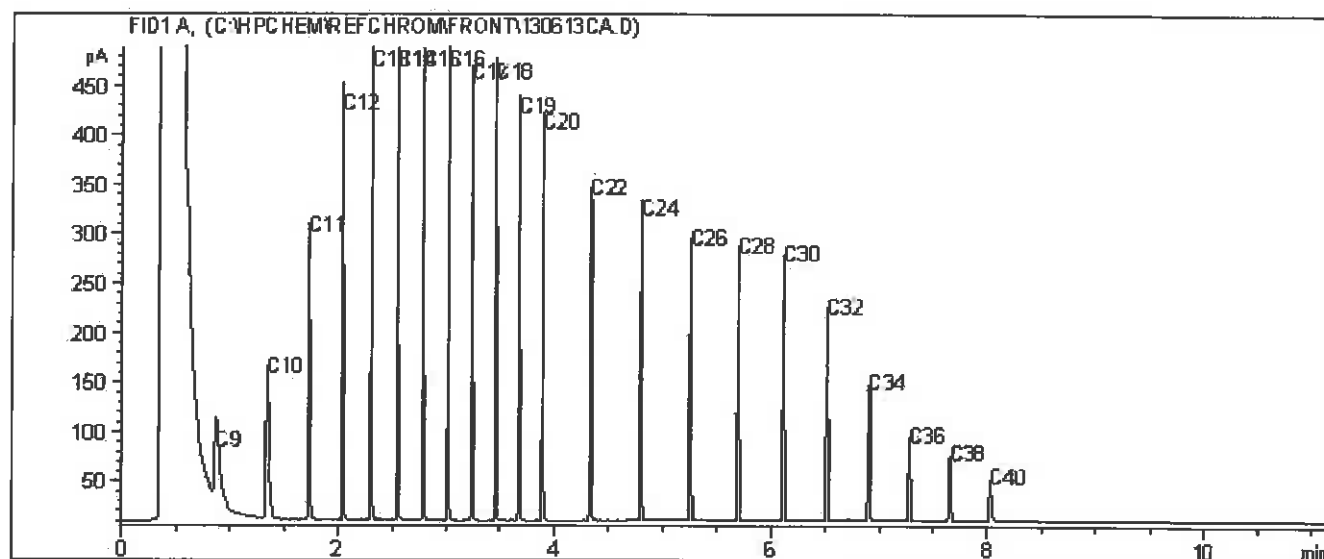
Report Date: 2014/02/13  
Maxxam Job #: B408778  
Maxxam Sample: IP4879

FRANZ ENVIRONMENTAL INC.  
Client Project #: 0069  
Site Reference: LOWER POST  
Client ID: MW13-10

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

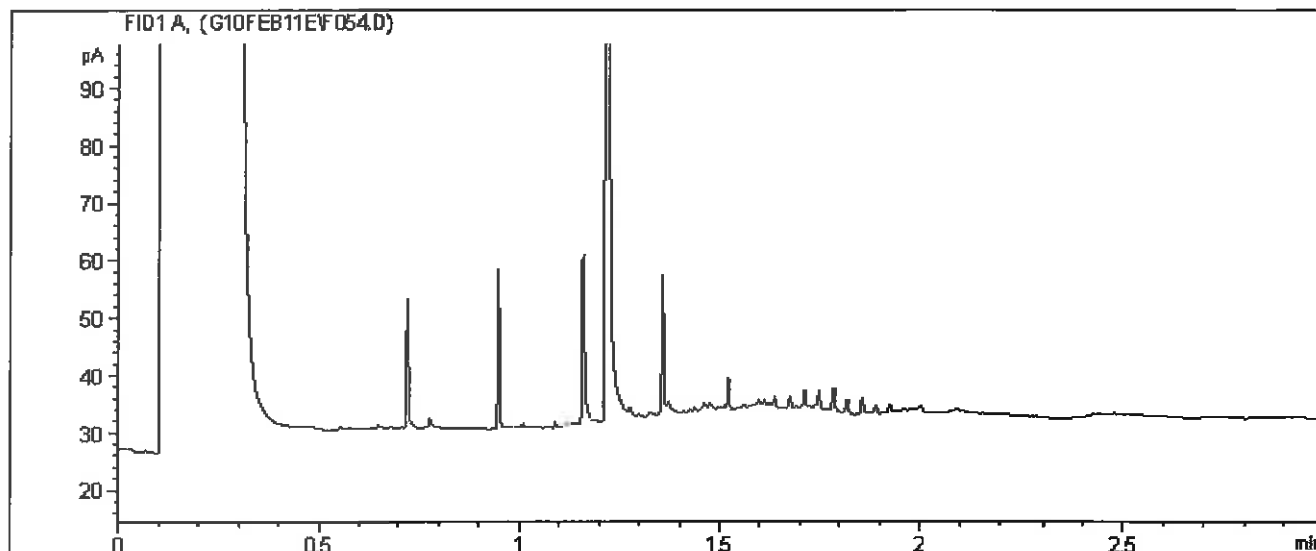
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

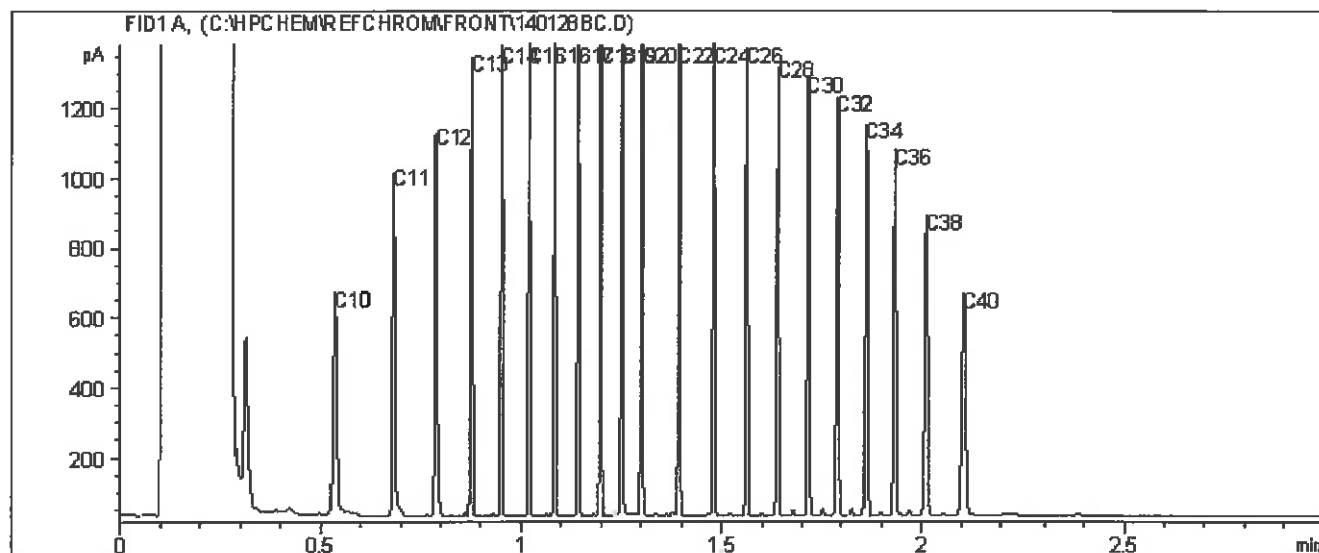
Report Date: 2014/02/13  
Maxxam Job #: B408778  
Maxxam Sample: IP4880

FRANZ ENVIRONMENTAL INC.  
Client Project #: 0069  
Site Reference: LOWER POST  
Client ID: MW13-11

## Extrac. Petroleum HC in Water by GC/FID Chromatogram



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

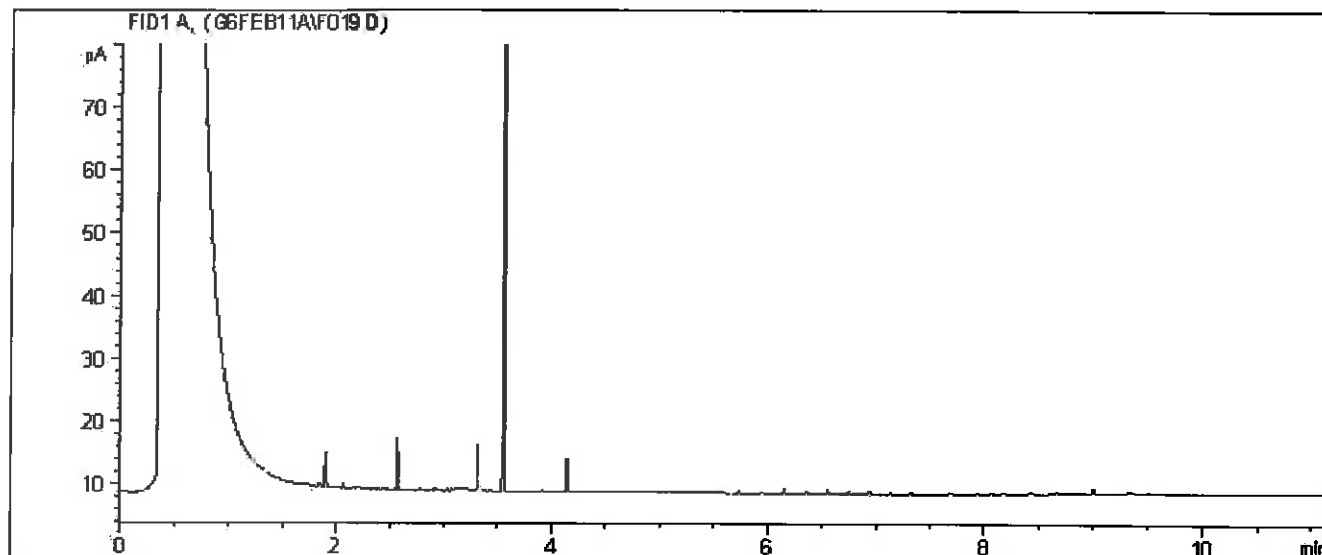
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

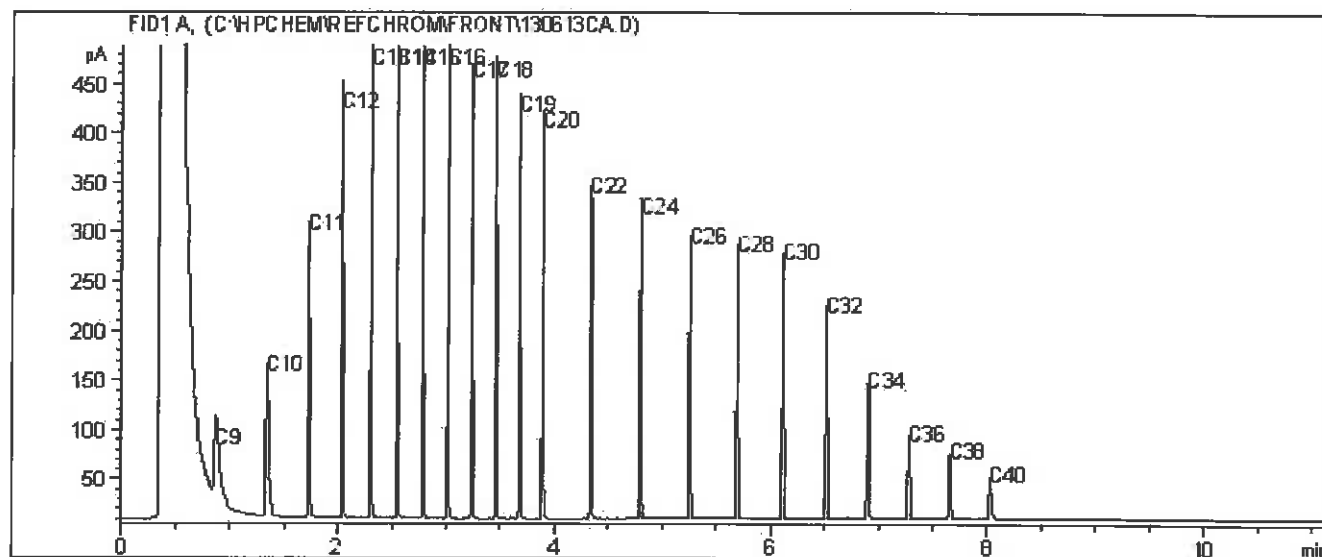
Report Date: 2014/02/13  
Maxxam Job #: B408778  
Maxxam Sample: IP4880

FRANZ ENVIRONMENTAL INC.  
Client Project #: 0069  
Site Reference: LOWER POST  
Client ID: MW13-11

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

Your P.O. #: 700266127  
Your Project #: LOWER POST  
Site Location: LOWER POST  
Your C.O.C. #: G032684

**Attention: John Taylor**  
FRANZ ENVIRONMENTAL INC.  
FRANZEN-VAN  
1080 MAINLAND STREET  
SUITE 308  
VANCOUVER, BC  
CANADA V6B 2T4

**Report Date: 2014/02/12**  
**Report #: R1515768**  
**Version: 1P**

## CERTIFICATE OF ANALYSIS – PARTIAL RESULTS

**MAXXAM JOB #: B408778**


**Received: 2014/02/04, 08:55**

Sample Matrix: Water  
# Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/MTBE LH, VH, F1 SIM/MS	3	2014/02/04	2014/02/04	BBY8-SOP-00010	EPA 8260C
CCME Hydrocarbons (F2-F4 in water)	2	2014/02/11	2014/02/11	BBY8SOP-00030	CCME Soil Tier1
CCME Hydrocarbons (F2-F4 in water)	1	2014/02/11	2014/02/12	BBY8SOP-00030	CCME Soil Tier1
Hardness Total (calculated as CaCO3)	3	N/A	2014/02/07	BBY7SOP-00002	EPA 6020A
Hardness (calculated as CaCO3)	3	N/A	2014/02/12	BBY7SOP-00002	EPA 6020A
Mercury (Dissolved) by CVAf	3	N/A	2014/02/11	BBY7SOP-00015	EPA 245.7
Mercury (Total) by CVAf	3	2014/02/11	2014/02/11	BBY7SOP-00015	EPA 245.7
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	3	N/A	2014/02/12	BBY7SOP-00002	EPA 6020A
Na, K, Ca, Mg, S by CRC ICPMS (total)	3	2014/02/04	2014/02/07	BBY7SOP-00002	EPA 6020A
Elements by CRC ICPMS (total)	3	2014/02/06	2014/02/06	BBY7SOP-00002	EPA 6020A
Nitrate + Nitrite (N)	3	N/A	2014/02/05	BBY6SOP-00010	SM 4500NO3-I
Nitrite (N) by CFA	3	N/A	2014/02/05	BBY6SOP-00010	EPA 353.2
Nitrogen - Nitrate (as N)	3	N/A	2014/02/05	BBY6SOP-00010	SM 4500NO3-I
PAH in Water by GC/MS (SIM)	1	2014/02/08	2014/02/08	BBY8SOP-00021	EPA 8270D
PAH in Water by GC/MS (SIM)	2	2014/02/11	2014/02/11	BBY8SOP-00021	EPA 8270D
Total LMW, HMW, Total PAH Calc	1	N/A	2014/02/11	BBY WI-00033	BC MOE Lab Method
Total LMW, HMW, Total PAH Calc	2	N/A	2014/02/12	BBY WI-00033	BC MOE Lab Method
Filter and HNO3 Preserve for Metals	3	N/A	2014/02/04	BBY6WI-00001	EPA 200.2
EPH less PAH in Water by GC/FID	3	N/A	2014/02/12	BBY WI-00033	BC MOE Lab Method
Extrac. Petroleum HC in Water by GC/FID	3	2014/02/11	2014/02/11	BBY8SOP-00029	BC Env Lab Manual
Volatile F1-BTEX	3	N/A	2014/02/05	BBY WI-00033	BC MOE Lab Method

\* Results relate only to the items tested.

Encryption Key

  
Jennifer Villocero  
12 Feb 2014 19:54:23 -08:00

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

Crystal Ireland, B.Sc., Account Specialist  
Email: [Cireland@maxxam.ca](mailto:Cireland@maxxam.ca)  
Phone# (604) 638-5016

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

## RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID	IP4878	IP4879	IP4880	
Sampling Date	2014/01/30	2014/01/30	2014/01/30	
UNITS	MW11-09	MW13-10	MW13-11	QC Batch
Filter and HNO3 Preservation	N/A	FIELD	FIELD	ONSITE

## PETROLEUM HYDROCARBONS (CCME)

Maxxam ID	IP4878	IP4879	IP4880	
Sampling Date	2014/01/30	2014/01/30	2014/01/30	
UNITS	MW11-09	MW13-10	MW13-11	QC Batch
Extractable Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	<0.20	<0.20	<0.20	0.20
F3 (C16-C34 Hydrocarbons)	<0.20	<0.20	<0.20	0.20
F4 (C34-C50 Hydrocarbons)	<3.0	<3.0	<3.0	3.0
Reached Baseline at C50	YES	YES	YES	N/A
Surrogate Recovery (%)				7378496
O-TERPHENYL (sur.)	98	106	105	7378496

## TOTAL PETROLEUM HYDROCARBONS (WATER)

Maxxam ID	IP4878	IP4879	IP4880	
Sampling Date	2014/01/30	2014/01/30	2014/01/30	
UNITS	MW11-09	MW13-10	MW13-11	QC Batch
Calculated Parameters				
LEPH (C10-C19 less PAH)	<0.20	<0.20	<0.20	0.20
HEPH (C19-C32 less PAH)	<0.20	<0.20	<0.20	0.20
Ext. Pet. Hydrocarbon				
EPH (C10-C19)	<0.20	<0.20	<0.20	0.20
EPH (C19-C32)	<0.20	<0.20	<0.20	0.20
Surrogate Recovery (%)				7378482
O-TERPHENYL (sur.)	100	104	105	7378482

N/A = Not Applicable  
RDL = Reportable Detection Limit

## CCME&CSR BTEX/F1/NPH IN WATER (WATER)

Maxxam ID	IP4878	IP4879	IP4880		
Sampling Date	2014/01/30	2014/01/30	2014/01/30		
UNITS	MW11-09	MW13-10	MW13-11	RDL	QC Batch
<b>Calculated Parameters</b>					
F1 (C6-C10) - BTEX	<300	<300	<300	300	7371688
<b>Volatiles</b>					
VPH (VH6 to 10 - BTEX)	<300	<300	<300	300	7371688
Methyl-tert-butylether (MTBE)	<4.0	<4.0	<4.0	4.0	7371400
Benzene	<0.40	<0.40	<0.40	0.40	7371400
Toluene	<0.40	<0.40	<0.40	0.40	7371400
Ethylbenzene	<0.40	<0.40	<0.40	0.40	7371400
m & p-Xylene	<0.40	<0.40	<0.40	0.40	7371400
o-Xylene	<0.40	<0.40	<0.40	0.40	7371400
Styrene	<0.40	<0.40	<0.40	0.40	7371400
Xylenes (Total)	<0.40	<0.40	<0.40	0.40	7371400
VH C6-C10	<300	<300	<300	300	7371400
(C6-C10)	<300	<300	<300	300	7371400
<b>Surrogate Recovery (%)</b>					
1,4-Difluorobenzene (sur.)	107	106	106		7371400
4-BROMOFLUOROBENZENE (sur.)	97	97	97		7371400
D4-1,2-DICHLOROETHANE (sur.)	93	94	93		7371400

RDL = Reportable Detection Limit

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

## CCME DISSOLVED METALS IN WATER (WATER)

Maxxam ID	IP4878	IP4879	IP4880	
Sampling Date	2014/01/30	2014/01/30	2014/01/30	
	MW11-09	MW13-10	MW13-11	
	UNITS			RDL
<b>Misc. Inorganics</b>				
Dissolved Hardness (CaCO <sub>3</sub> )	mg/L	558	436	0.50
<b>Elements</b>				
Dissolved Mercury (Hg)	ug/L	<0.010	<0.010	0.010
<b>Dissolved Metals by ICPMS</b>				
Dissolved Calcium (Ca)	mg/L	100	128	0.050
Dissolved Magnesium (Mg)	mg/L	74.6	87.5	0.050
Dissolved Potassium (K)	mg/L	4.67	3.96	0.050
Dissolved Sodium (Na)	mg/L	18.4	5.00	0.050
Dissolved Sulphur (S)	mg/L	38.7	34.2	3.0
				7370887

RDL = Reportable Detection Limit

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

## CCME TOTAL METALS IN WATER (WATER)

Maxxam ID	IP4878	IP4879	IP4880	
Sampling Date	2014/01/30	2014/01/30	2014/01/30	
	UNITS	MW13-10	MW13-11	QC Batch
Calculated Parameters				
Total Hardness (CaCO3)	mg/L	767	509	0.50
Elements				7370843
Total Mercury (Hg)	ug/L	<0.010	<0.010	0.010
				7378426

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

## CCME TOTAL METALS IN WATER (WATER)

Maxxam ID	IP4878	IP4879	IP4880	
Sampling Date	2014/01/30	2014/01/30	2014/01/30	
	MW11-09	MW13-10	MW13-11	
Total Metals by ICPMS				
	UNITS			RDL
Total Aluminum (Al)	ug/L	1330	8750	1410
Total Antimony (Sb)	ug/L	1.14	2.18	1.04
Total Arsenic (As)	ug/L	2.93	14.4	2.41
Total Barium (Ba)	ug/L	199	383	149
Total Beryllium (Be)	ug/L	0.14	0.58	<0.10
Total Bismuth (Bi)	ug/L	<1.0	<1.0	<1.0
Total Boron (B)	ug/L	<50	<50	<50
Total Cadmium (Cd)	ug/L	0.470	1.54	0.148
Total Chromium (Cr)	ug/L	4.3	23.8	3.6
Total Cobalt (Co)	ug/L	5.34	15.5	3.92
Total Copper (Cu)	ug/L	12.5	43.2	6.84
Total Iron (Fe)	ug/L	6020	28800	3610
Total Lead (Pb)	ug/L	5.78	18.2	2.12
Total Lithium (Li)	ug/L	9.0	19.9	8.6
Total Manganese (Mn)	ug/L	265	481	270
Total Molybdenum (Mo)	ug/L	8.1	10.8	8.9
Total Nickel (Ni)	ug/L	15.6	55.3	12.9
Total Selenium (Se)	ug/L	29.6	37.2	5.54
Total Silicon (Si)	ug/L	5440	18600	5230
Total Silver (Ag)	ug/L	0.074	0.235	0.059
Total Strontium (Sr)	ug/L	702	824	515
Total Thallium (Tl)	ug/L	0.096	0.402	0.077
Total Tin (Sn)	ug/L	<5.0	<5.0	<5.0
Total Titanium (Ti)	ug/L	69.2	400	60.0
Total Uranium (U)	ug/L	6.87	8.49	7.27
Total Vanadium (V)	ug/L	9.7	41.6	5.8
Total Zinc (Zn)	ug/L	41.9	183	21.7
Total Zirconium (Zr)	ug/L	0.89	4.13	0.66
Total Calcium (Ca)	mg/L	115	150	95.5
Total Magnesium (Mg)	mg/L	73.8	95.5	65.7
Total Potassium (K)	mg/L	4.40	5.08	3.12
Total Sodium (Na)	mg/L	18.3	4.89	4.30
Total Sulphur (S)	mg/L	40.0	37.0	27.5
				3.0

RDL = Reportable Detection Limit

Maxxam Job #: B408778  
Report Date: 2014/02/12

Maxxam Analytics - Patient/Rush Results

RDL = Reportable Detection Limit  
(1) - Sample arrived to laboratory past recommended hold time.

## CCME PAH IN WATER BY GC-MS (WATER)

Maxxam ID	IP4878	IP4879	IP4880	QC Batch	RDL	QC Batch
Sampling Date	2014/01/30	2014/01/30	2014/01/30	MW13-09	MW13-10	MW13-11
UNITS	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
<b>Polycyclic Aromatics</b>						
Low Molecular Weight PAH's	<0.50	<0.50	<0.50	7371101	<0.50	7371101
High Molecular Weight PAH's	<0.050	<0.050	<0.050	7371101	<0.050	7371101
Total PAH	<0.50	<0.50	<0.50	7371101	<0.50	7371101
Naphthalene	<0.10	<0.10	<0.10	7376354	<0.10	7378249
2-Methylnaphthalene	<0.10	<0.10	<0.10	7376354	<0.10	7378249
Quinoline	<0.50	<0.50	<0.50	7376354	<0.50	7378249
Acenaphthylene	<0.050	<0.050	<0.050	7376354	<0.050	7378249
Acenaphthene	<0.050	<0.050	<0.050	7376354	<0.050	7378249
Fluorene	<0.050	<0.050	<0.050	7376354	<0.050	7378249
Phenanthrene	<0.050	<0.050	<0.050	7376354	<0.050	7378249
Anthracene	<0.010	<0.010	<0.010	7376354	<0.010	7378249
Acridine	<0.050	<0.050	<0.050	7376354	<0.050	7378249
Fluoranthene	<0.020	<0.020	<0.020	7376354	<0.020	7378249
Pyrene	<0.020	<0.020	<0.020	7376354	<0.020	7378249
Benzo(a)anthracene	<0.010	<0.010	<0.010	7376354	<0.010	7378249
Chrysene	<0.050	<0.050	<0.050	7376354	<0.050	7378249
Benzo(b&j)fluoranthene	<0.050	<0.050	<0.050	7376354	<0.050	7378249
Benzo(k)fluoranthene	<0.050	<0.050	<0.050	7376354	<0.050	7378249
Benzo(a)pyrene	<0.0090	<0.0090	<0.0090	7376354	<0.0090	7378249
Indeno(1,2,3-cd)pyrene	<0.050	<0.050	<0.050	7376354	<0.050	7378249
Dibenz(a,h)anthracene	<0.050	<0.050	<0.050	7376354	<0.050	7378249
Benzo(g,h,i)perylene	<0.050	<0.050	<0.050	7376354	<0.050	7378249
<b>Surrogate Recovery (%)</b>						
D10-ANTHRACENE (sur.)	96	100	101			
D8-ACENAPHTHYLENE (sur.)	93	96	95			
D8-NAPHTHALENE (sur.)	105	110	110			
D9-Acridine	49(1)	39(2)	54			
TERPHENYL-D14 (sur.)	77	83	84			

RDL = Reportable Detection Limit

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

(2) - Surrogate recovery below acceptance criteria due to matrix interference.

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

Package 1 1.0°C

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

## General Comments

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

## QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7371400	1,4-Difluorobenzene (sur.)	2014/02/04	106	70 - 130	106	70 - 130	107	%		
7371400	4-BROMOFLUOROBENZENE (sur.)	2014/02/04	97	70 - 130	98	70 - 130	96	%		
7371400	D4-1,2-DICHLOROETHANE (sur.)	2014/02/04	93	70 - 130	93	70 - 130	93	%		
7371400	Methyl-tert-butylether(MTBE)	2014/02/04	90	70 - 130	89	70 - 130	<4.0	ug/L	NC	30
7371400	Benzene	2014/02/04	88	70 - 130	87	70 - 130	<0.40	ug/L	NC	30
7371400	Toluene	2014/02/04	86	70 - 130	85	70 - 130	<0.40	ug/L	NC	30
7371400	Ethylbenzene	2014/02/04	93	70 - 130	92	70 - 130	<0.40	ug/L	NC	30
7371400	m & p-Xylene	2014/02/04	89	70 - 130	88	70 - 130	<0.40	ug/L	NC	30
7371400	o-Xylene	2014/02/04	89	70 - 130	87	70 - 130	<0.40	ug/L	NC	30
7371400	Styrene	2014/02/04	86	70 - 130	87	70 - 130	<0.40	ug/L	NC	30
7371400	VH C6-C10	2014/02/04	79		79	70 - 130	<300	ug/L		
7371400	(C6-C10)	2014/02/04			86	70 - 130	<300	ug/L	NC	30
7371400	Xylenes (Total)	2014/02/04								
7373290	Nitrate plus Nitrite (N)	2014/02/05	NC	80 - 120	105	80 - 120	<0.020	mg/L	2.0	25
7373291	Nitrite (N)	2014/02/05	102	80 - 120	100	80 - 120	<0.0050	mg/L	NC	20
7374169	Total Aluminum (Al)	2014/02/06	107	80 - 120	98	80 - 120	<3.0	ug/L		
7374169	Total Antimony (Sb)	2014/02/06	100	80 - 120	92	80 - 120	<0.50	ug/L		
7374169	Total Arsenic (As)	2014/02/06	NC	80 - 120	100	80 - 120	<0.10	ug/L		
7374169	Total Barium (Ba)	2014/02/06	NC	80 - 120	95	80 - 120	<1.0	ug/L		
7374169	Total Beryllium (Be)	2014/02/06	94	80 - 120	91	80 - 120	<1.0	ug/L		
7374169	Total Bismuth (Bi)	2014/02/06	92	80 - 120	92	80 - 120	<1.0	ug/L		
7374169	Total Cadmium (Cd)	2014/02/06	102	80 - 120	100	80 - 120	<0.010	ug/L		
7374169	Total Chromium (Cr)	2014/02/06	100	80 - 120	103	80 - 120	<1.0	ug/L		
7374169	Total Cobalt (Co)	2014/02/06	97	80 - 120	99	80 - 120	<0.50	ug/L		
7374169	Total Copper (Cu)	2014/02/06	95	80 - 120	100	80 - 120	<0.20	ug/L		
7374169	Total Iron (Fe)	2014/02/06	NC	80 - 120	126(1.2)	80 - 120	7.1, RDL=5.0	ug/L	2.6	20
7374169	Total Lead (Pb)	2014/02/06	92	80 - 120	94	80 - 120	<0.20	ug/L		
7374169	Total Lithium (Li)	2014/02/06	92	80 - 120	93	80 - 120	<5.0	ug/L		
7374169	Total Manganese (Mn)	2014/02/06	NC	80 - 120	101	80 - 120	<1.0	ug/L		
7374169	Total Molybdenum (Mo)	2014/02/06	NC	80 - 120	90	80 - 120	<1.0	ug/L		
7374169	Total Nickel (Ni)	2014/02/06	98	80 - 120	101	80 - 120	<1.0	ug/L		
7374169	Total Selenium (Se)	2014/02/06	107	80 - 120	103	80 - 120	<0.10	ug/L		
7374169	Total Silver (Ag)	2014/02/06	81	80 - 120	99	80 - 120	0.035, RDL=0.020	ug/L		
7374169	Total Strontium (Sr)	2014/02/06	NC	80 - 120	93	80 - 120	<1.0	ug/L		
7374169	Total Thallium (Tl)	2014/02/06	99	80 - 120	87	80 - 120	<0.050	ug/L		
7374169	Total Tin (Sn)	2014/02/06	93	80 - 120	90	80 - 120	<5.0	ug/L		
7374169	Total Titanium (Ti)	2014/02/06	102	80 - 120	83	80 - 120	<5.0	ug/L		
7374169	Total Uranium (U)	2014/02/06	95	80 - 120	94	80 - 120	<0.10	ug/L		
7374169	Total Vanadium (V)	2014/02/06	92	80 - 120	98	80 - 120	<5.0	ug/L		

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

## QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7374169	Total Zinc (Zn)	2014/02/08	111	80 - 120	122 (1.2)	80 - 120	<5.0	ug/L		
7374169	Total Boron (B)	2014/02/06					<50	ug/L		
7374169	Total Silicon (Si)	2014/02/06					<100	ug/L		
7374169	Total Zirconium (Zr)	2014/02/06					<0.50	ug/L		
7376354	D10-ANTHRACENE (sur.)	2014/02/08	104	60 - 130	100	60 - 130	105	%		
7376354	D8-ACENAPHTHYLENE (sur.)	2014/02/08	94	50 - 130	91	50 - 130	99	%		
7376354	D8-NAPHTHALENE (sur.)	2014/02/08	113	50 - 130	109	50 - 130	116	%		
7376354	D9-ACRIDINE	2014/02/08	67	50 - 130	66	50 - 130	68	%		
7376354	TERPHENYL-D14 (sur.)	2014/02/08	85	60 - 130	82	60 - 130	88	%		
7376354	Naphthalene	2014/02/08	102	50 - 130	89	50 - 130	<0.10	ug/L	NC	40
7376354	2-Methylnaphthalene	2014/02/08	102	50 - 130	89	50 - 130	<0.10	ug/L	NC	40
7376354	Quinoline	2014/02/08	118	50 - 130	117	50 - 130	<0.50	ug/L	NC	40
7376354	Acenaphthylene	2014/02/08	97	50 - 130	92	50 - 130	<0.050	ug/L	NC	40
7376354	Acenaphthene	2014/02/08	107	50 - 130	101	50 - 130	<0.050	ug/L	NC	40
7376354	Fluorene	2014/02/08	101	50 - 130	96	50 - 130	<0.050	ug/L	NC	40
7376354	Phenanthrene	2014/02/08	96	60 - 130	93	60 - 130	<0.050	ug/L	NC	40
7376354	Anthracene	2014/02/08	107	60 - 130	104	60 - 130	<0.010	ug/L	NC	40
7376354	Acridine	2014/02/08	69	50 - 130	69	50 - 130	<0.050	ug/L	NC	40
7376354	Fluoranthene	2014/02/08	99	60 - 130	96	60 - 130	<0.020	ug/L	NC	40
7376354	Pyrene	2014/02/08	101	60 - 130	98	60 - 130	<0.020	ug/L	NC	40
7376354	Benzo(a)anthracene	2014/02/08	97	60 - 130	93	60 - 130	<0.010	ug/L	NC	40
7376354	Chrysene	2014/02/08	102	60 - 130	97	60 - 130	<0.050	ug/L	NC	40
7376354	Benzo(b&j)fluoranthene	2014/02/08	97	60 - 130	94	60 - 130	<0.050	ug/L	NC	40
7376354	Benzo(k)fluoranthene	2014/02/08	101	60 - 130	94	60 - 130	<0.050	ug/L	NC	40
7376354	Benzo(a)pyrene	2014/02/08	100	60 - 130	96	60 - 130	<0.0090	ug/L	NC	40
7376354	Indeno(1,2,3-cd)pyrene	2014/02/08	106	60 - 130	102	60 - 130	<0.050	ug/L	NC	40
7376354	Dibenz(a,h)anthracene	2014/02/08	100	60 - 130	95	60 - 130	<0.050	ug/L	NC	40
7376354	Benzo(g,h,i)perylene	2014/02/08	102	60 - 130	97	60 - 130	<0.050	ug/L	NC	40
7378061	Dissolved Mercury (Hg)	2014/02/11	87	80 - 120	100	80 - 120	<0.010	ug/L	NC	20
7378249	D10-ANTHRACENE (sur.)	2014/02/11	100	60 - 130	98	60 - 130	99	%		
7378249	D8-ACENAPHTHYLENE (sur.)	2014/02/11	90	50 - 130	97	50 - 130	91	%		
7378249	D8-NAPHTHALENE (sur.)	2014/02/11	107	50 - 130	104	50 - 130	109	%		
7378249	D9-ACRIDINE	2014/02/11	67	50 - 130	74	50 - 130	63	%		
7378249	TERPHENYL-D14 (sur.)	2014/02/11	82	60 - 130	79	60 - 130	81	%		
7378249	Naphthalene	2014/02/11	88	50 - 130	92	50 - 130	<0.10	ug/L	NC	40
7378249	2-Methylnaphthalene	2014/02/11	90	50 - 130	91	50 - 130	<0.10	ug/L	NC	40
7378249	Quinoline	2014/02/11	106	50 - 130	112	50 - 130	<0.50	ug/L	NC	40
7378249	Acenaphthylene	2014/02/11	84	50 - 130	91	50 - 130	<0.050	ug/L	NC	40
7378249	Acenaphthene	2014/02/11	94	50 - 130	96	50 - 130	<0.050	ug/L	NC	40

## QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7378249	Fluorene	2014/02/11	88	50 - 130	91	50 - 130	<0.050	ug/L	NC	40
7378249	Phenanthrene	2014/02/11	83	60 - 130	84	60 - 130	<0.050	ug/L	NC	40
7378249	Anthracene	2014/02/11	92	60 - 130	96	60 - 130	<0.010	ug/L	NC	40
7378249	Acridine	2014/02/11	61	50 - 130	68	50 - 130	<0.050	ug/L	NC	40
7378249	Fluoranthene	2014/02/11	87	60 - 130	89	60 - 130	<0.020	ug/L	NC	40
7378249	Pyrene	2014/02/11	87	60 - 130	90	60 - 130	<0.020	ug/L	NC	40
7378249	Benzo(a)anthracene	2014/02/11	84	60 - 130	85	60 - 130	<0.010	ug/L	NC	40
7378249	Chrysene	2014/02/11	87	60 - 130	87	60 - 130	<0.050	ug/L	NC	40
7378249	Benzo(b&j)fluoranthene	2014/02/11	86	60 - 130	83	60 - 130	<0.050	ug/L	NC	40
7378249	Benzo(k)fluoranthene	2014/02/11	85	60 - 130	86	60 - 130	<0.050	ug/L	NC	40
7378249	Benzo(a)pyrene	2014/02/11	88	60 - 130	90	60 - 130	<0.0090	ug/L	NC	40
7378249	Indeno(1,2,3-cd)pyrene	2014/02/11	91	60 - 130	91	60 - 130	<0.050	ug/L	NC	40
7378249	Dibenz(a,h)anthracene	2014/02/11	86	60 - 130	85	60 - 130	<0.050	ug/L	NC	40
7378249	Benzo(g,h,i)perylene	2014/02/11	88	60 - 130	87	60 - 130	<0.050	ug/L	NC	40
7378426	Total Mercury (Hg)	2014/02/11	102	80 - 120	99	80 - 120	<0.010	ug/L	NC	20
7378482	O-TERPHENYL (sur.)	2014/02/11	98	50 - 130	99	50 - 130	99	%		
7378482	EPH (C10-C19)	2014/02/11	97	50 - 130	99	50 - 130	<0.20	mg/L	NC	30
7378482	EPH (C19-C32)	2014/02/11	108	50 - 130	116	50 - 130	<0.20	mg/L	NC	30
7378496	F2 (C10-C16 Hydrocarbons)	2014/02/11	113	80 - 120	105	80 - 120	<0.20	mg/L	NC	40
7378496	O-TERPHENYL (sur.)	2014/02/11	98	50 - 130	94	50 - 130	95	%		
7378496	Reached Baseline at C50	2014/02/11	YES	N/A	YES	N/A	YES, RDL=N/A	mg/L	NC	40
7378496	F3 (C18-C34 Hydrocarbons)	2014/02/11					<0.20	mg/L	NC	40
7378496	F4 (C34-C50 Hydrocarbons)	2014/02/11					<3.0	mg/L	NC	40

N/A = Not Applicable

RDL = Reportable Detection Limit

RPD = Relative Percent Difference

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

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

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

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

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

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

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

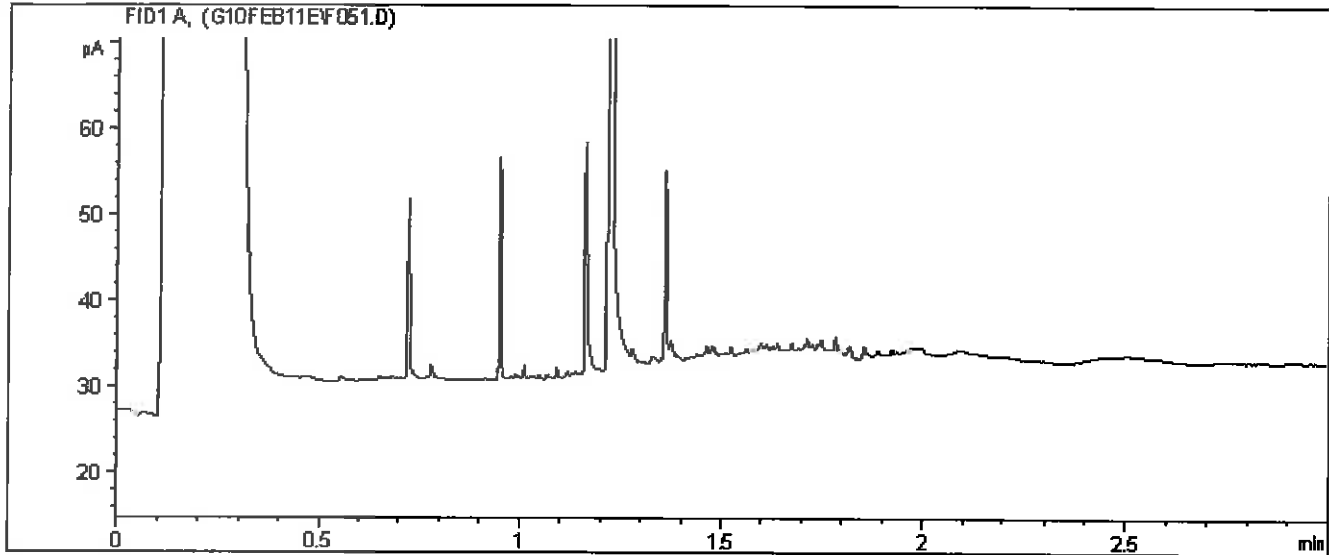
(2) - Blank Spike outside acceptance criteria (10% of analytes failure allowed).



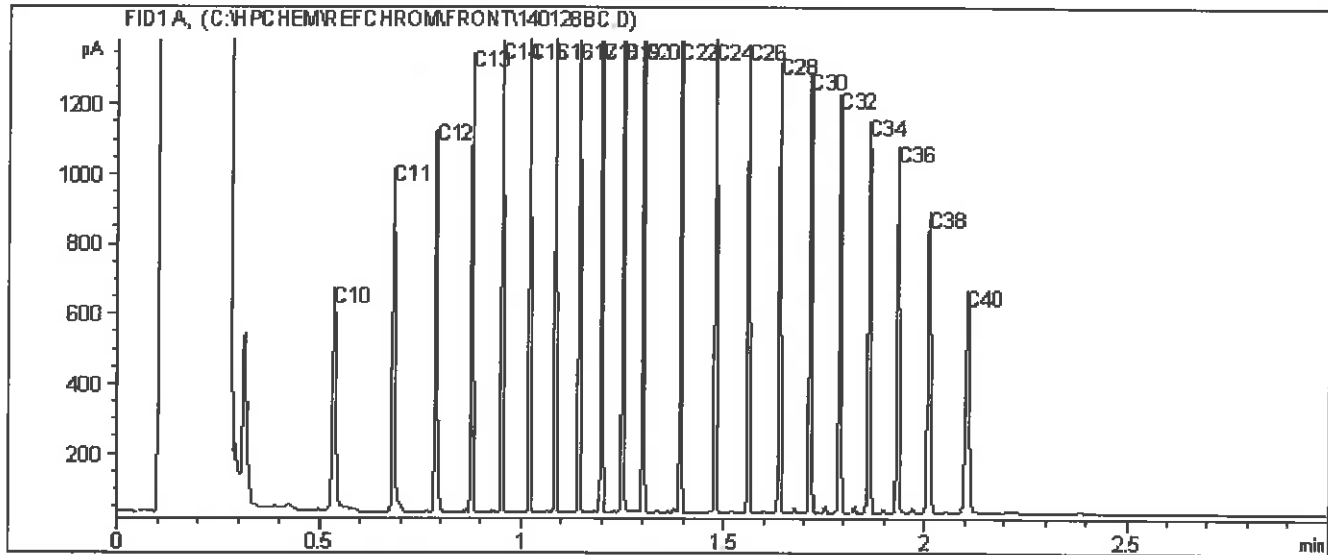
Report Date: 2014/02/12  
Maxxam Job #: B408778  
Maxxam Sample: IP4878

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Reference: LOWER POST  
Client ID: MW11-09

## Extrac. Petroleum HC in Water by GC/FID Chromatogram



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

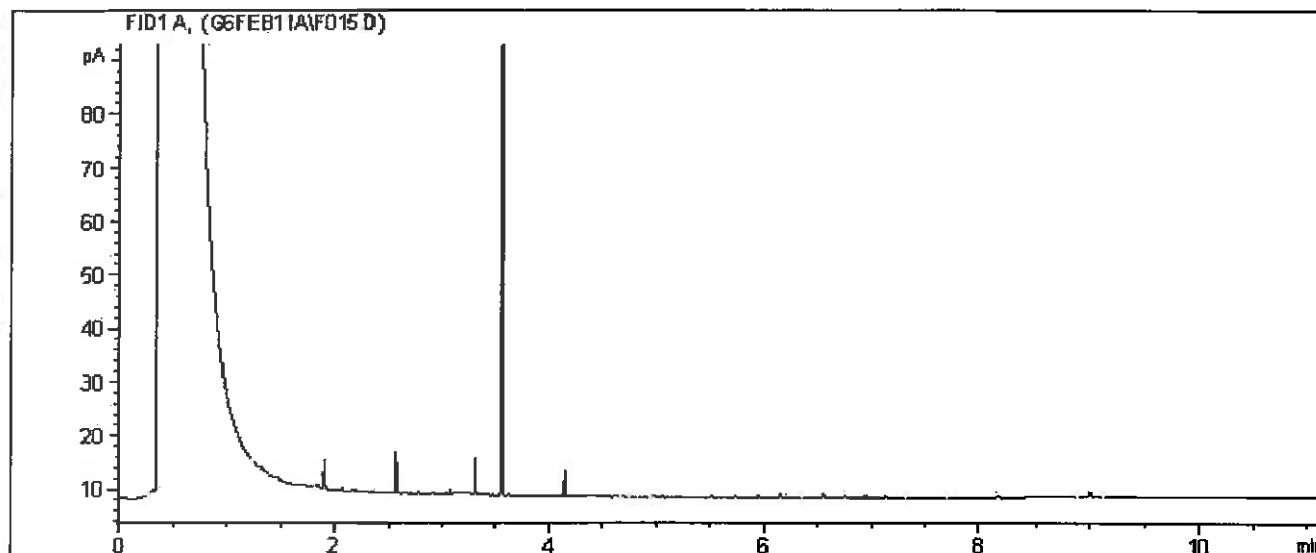
Diesel: C8 - C22  
Lubricating oils: C20 - C40

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

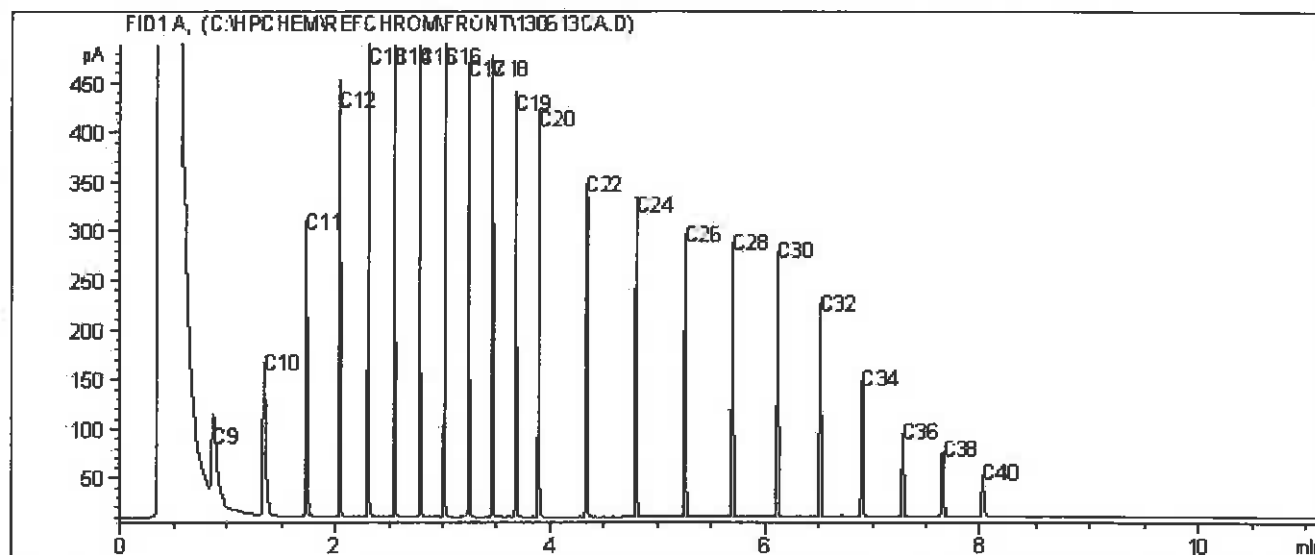
Report Date: 2014/02/12  
Maxxam Job #: B408778  
Maxxam Sample: IP4878

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Reference: LOWER POST  
Client ID: MW11-09

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

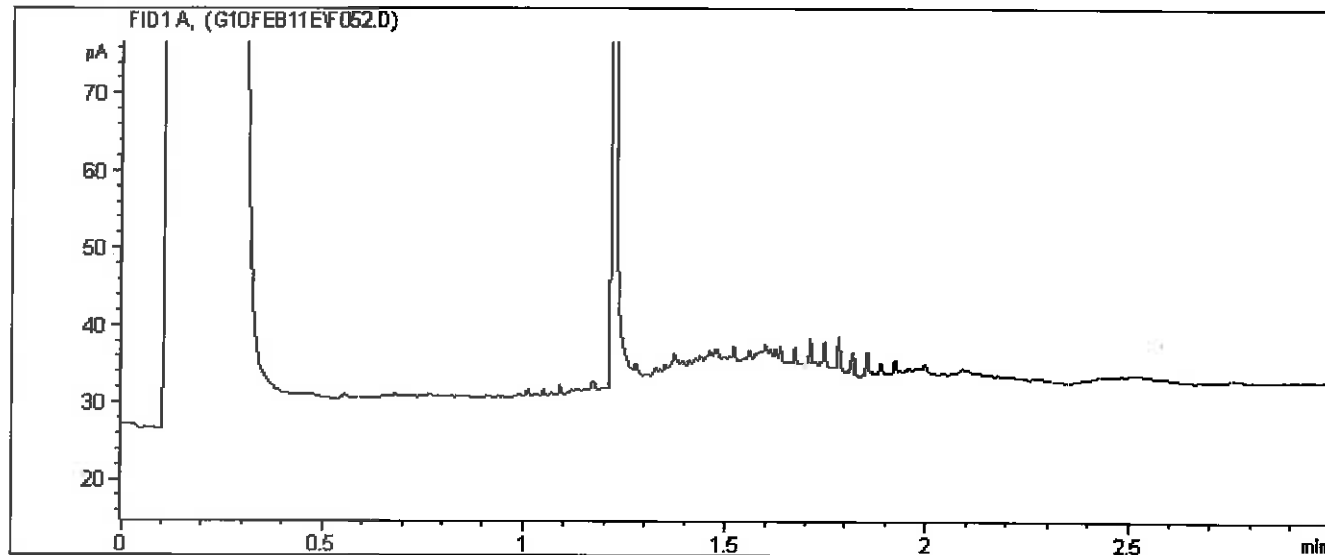
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

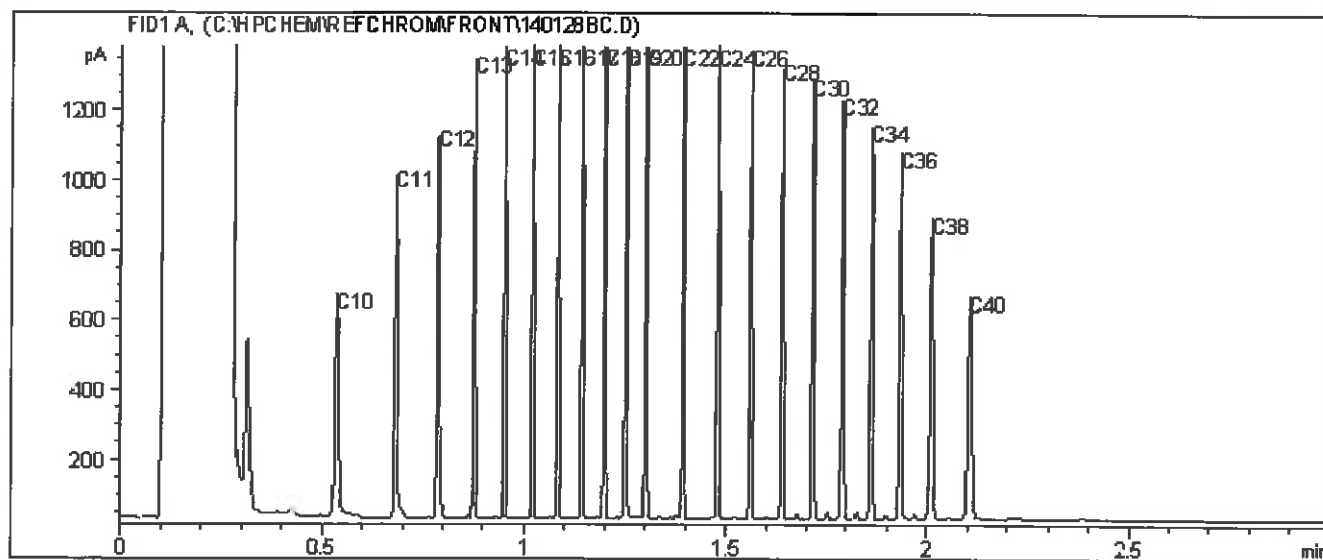
Report Date: 2014/02/12  
Maxxam Job #: B408778  
Maxxam Sample: IP4878 Lab-Dup

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Reference: LOWER POST  
Client ID: MW11-09

## Extrac. Petroleum HC in Water by GC/FID Chromatogram



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

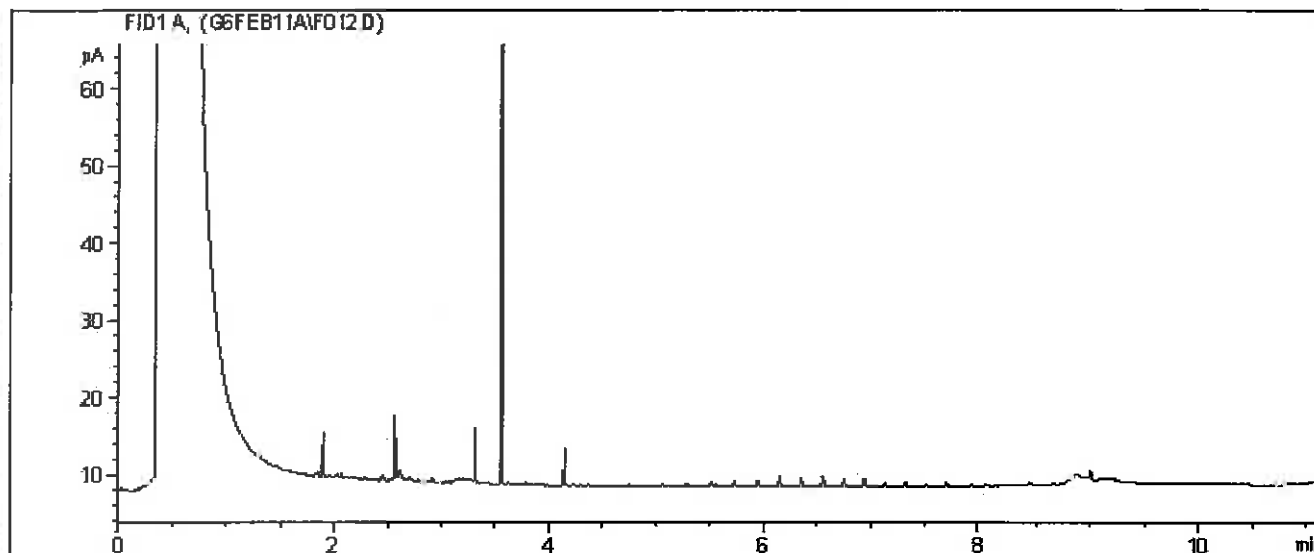
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

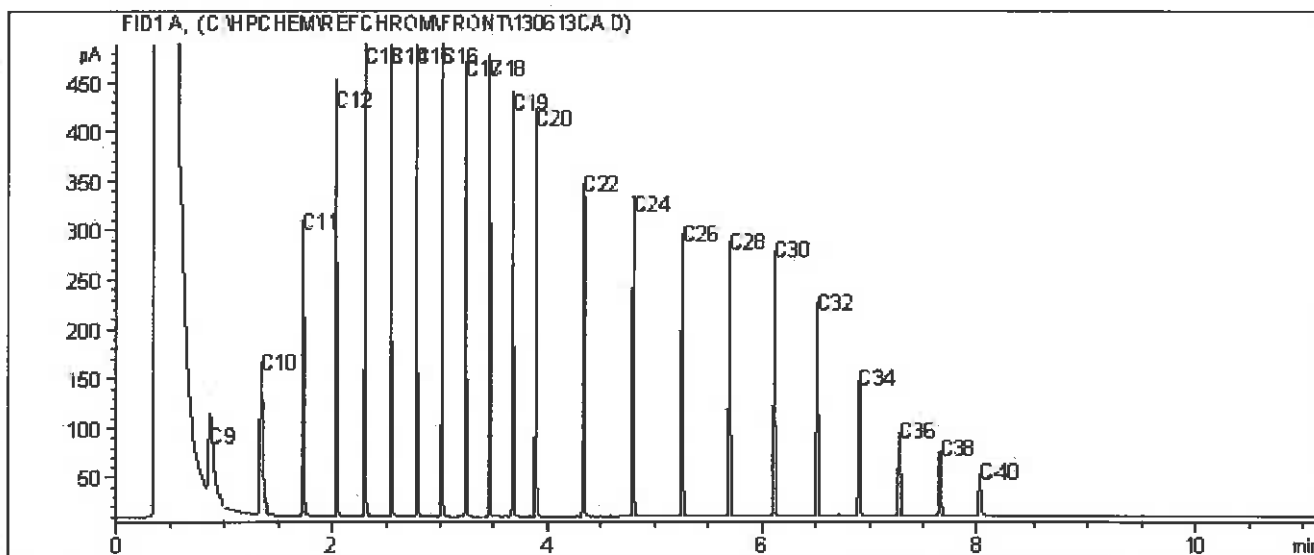
Report Date: 2014/02/12  
Maxxam Job #: B408778  
Maxxam Sample: IP4878 Lab-Dup

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Reference: LOWER POST  
Client ID: MW11-09

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

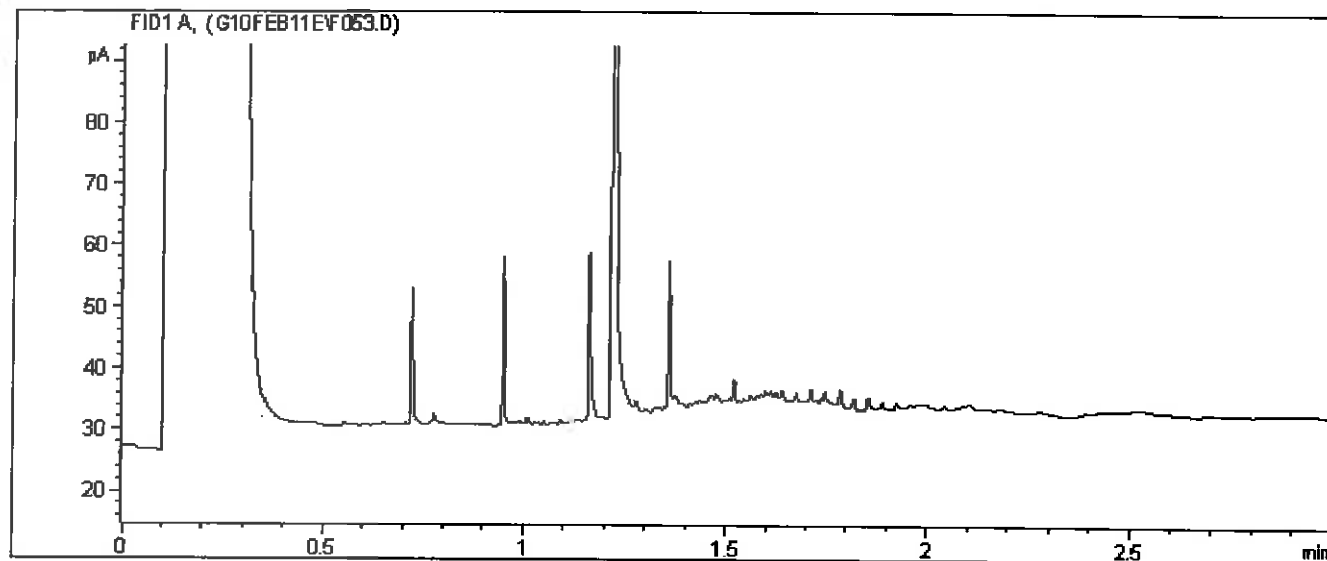
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

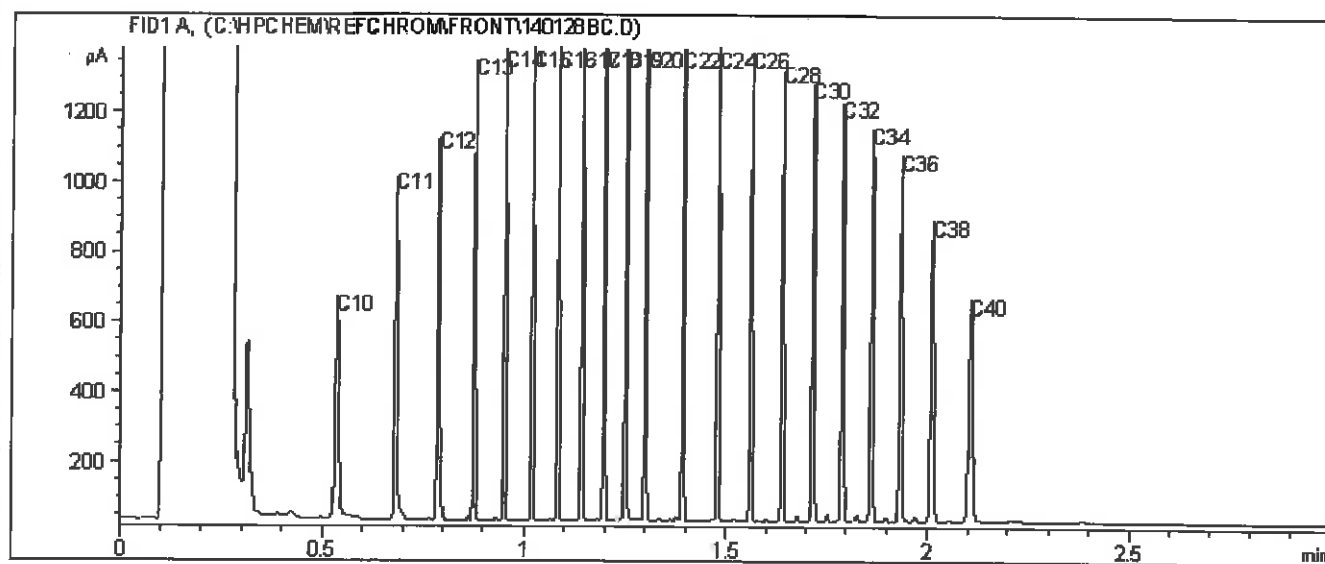
Report Date: 2014/02/12  
Maxxam Job #: B408778  
Maxxam Sample: IP4879

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Reference: LOWER POST  
Client ID: MW13-10

## Extrac. Petroleum HC in Water by GC/FID Chromatogram



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

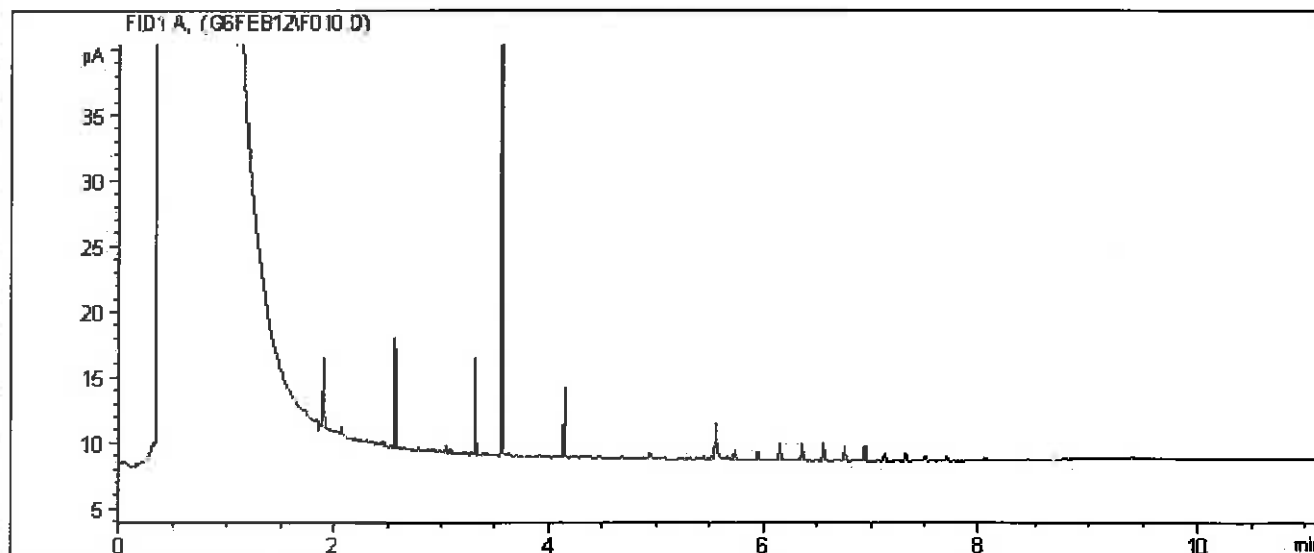
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

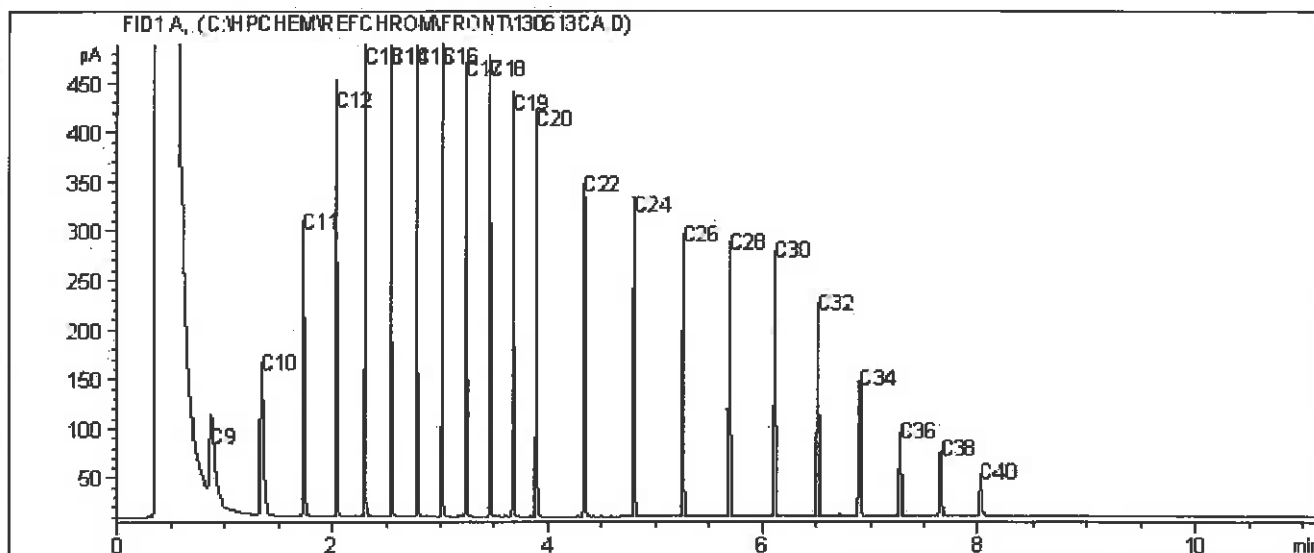
Report Date: 2014/02/12  
Maxxam Job #: B408778  
Maxxam Sample: IP4879

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Reference: LOWER POST  
Client ID: MW13-10

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

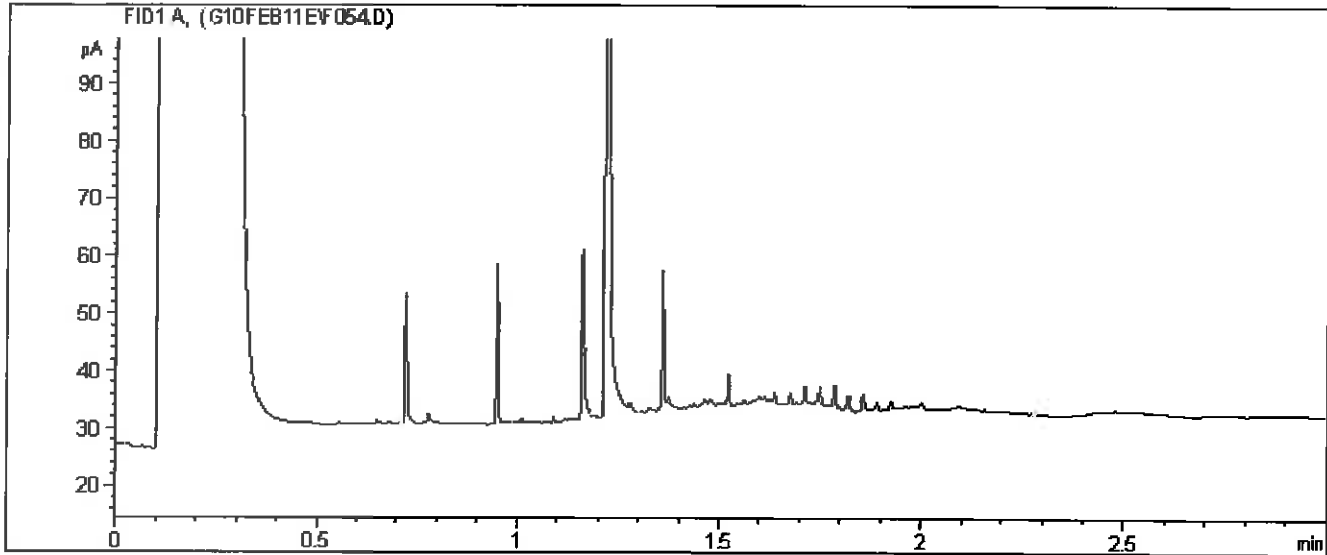
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

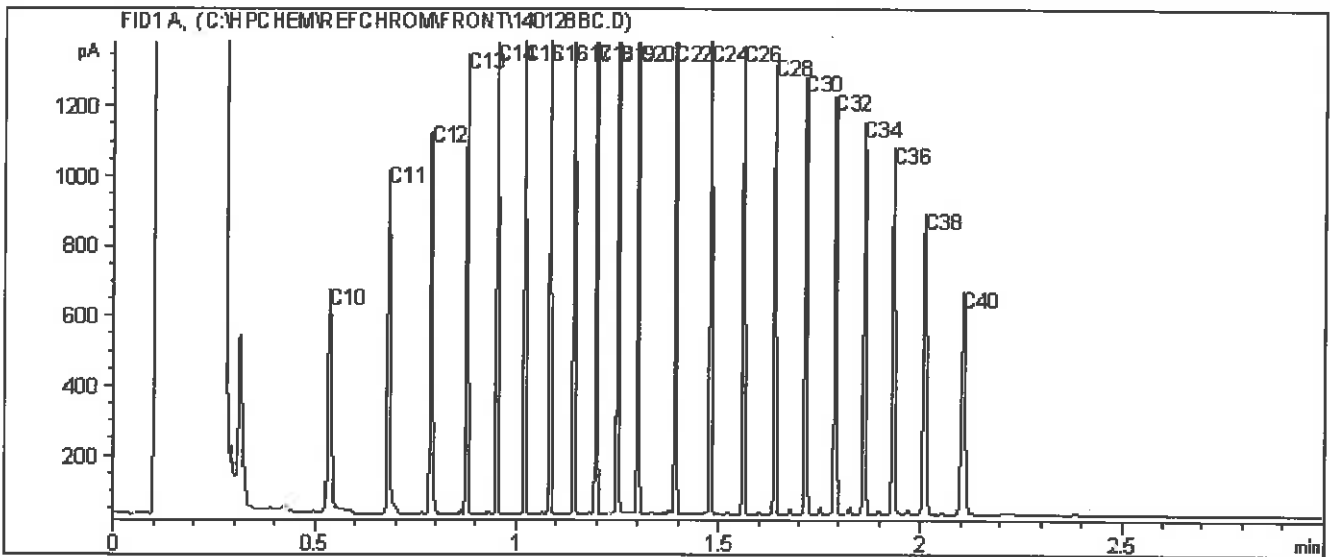
Report Date: 2014/02/12  
Maxxam Job #: B408778  
Maxxam Sample: IP4880

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Reference: LOWER POST  
Client ID: MW13-11

Extrac. Petroleum HC in Water by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

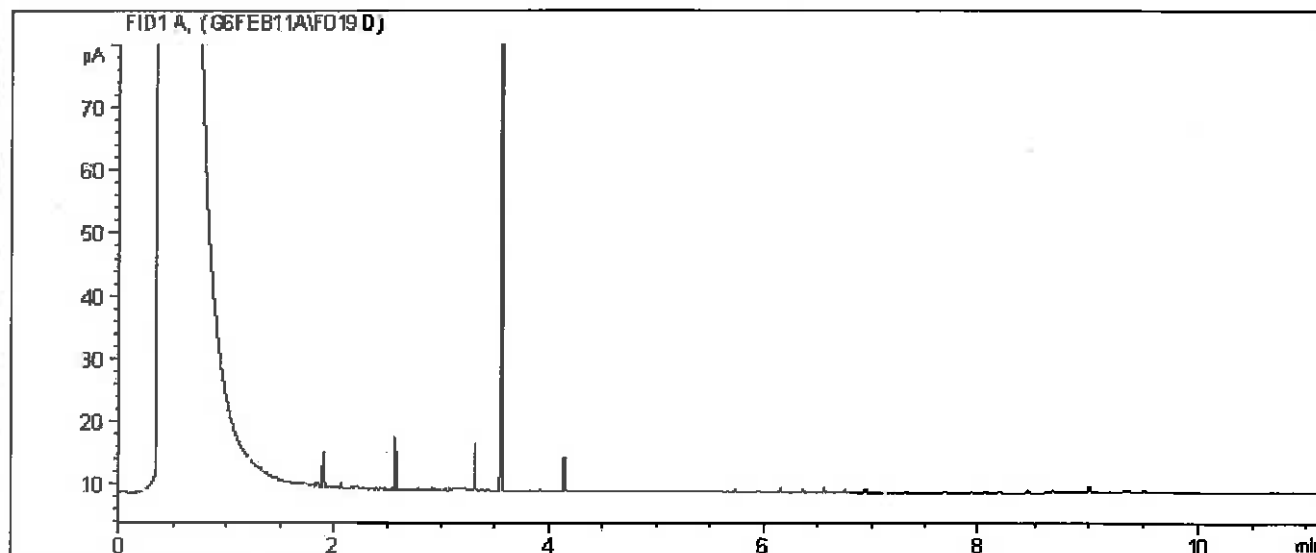
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

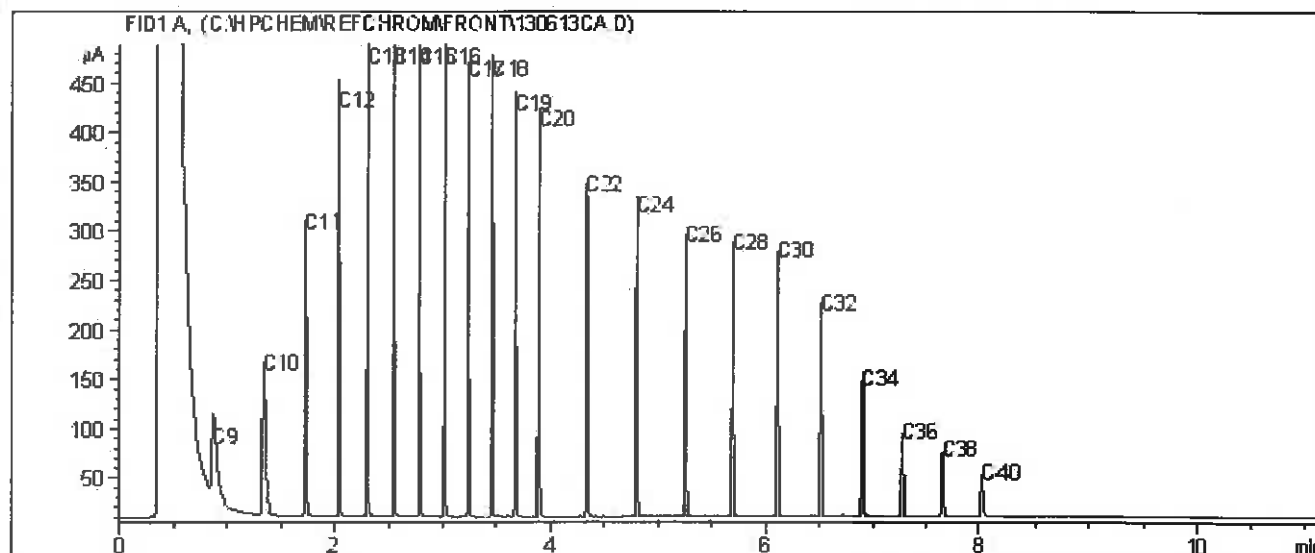
Report Date: 2014/02/12  
Maxxam Job #: B408778  
Maxxam Sample: IP4880

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Reference: LOWER POST  
Client ID: MW13-11

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

Your P.O. #: 700266127  
Your C.O.C. #: G032685

**Attention: Richard Wells**  
FRANZ ENVIRONMENTAL INC.  
FRANZENV-VAN  
1080 MAINLAND STREET  
SUITE 308  
VANCOUVER, BC  
CANADA V6B 2T4

Report Date: 2013/11/01

## CERTIFICATE OF ANALYSIS

**MAXXAM JOB #: B3A0822**

**Received: 2013/10/31, 09:30**

Sample Matrix: Soil

# Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/MTBE Soil LH, VH, F1 SIM/MS	7	2013/10/31	2013/10/31	BBY8-SOP-00010	EPA SW846 8260C
Volatile F1-BTEX	7	N/A	2013/11/01	BBY WI-00033	BC MOE Lab Method
Moisture	7	N/A	2013/11/01	BBY8SOP-00017	Ont MOE -E 3139
BC Hydrocarbons in Soil by GC/FID	7	2013/10/31	2013/10/31	BBY8SOP-00029	BC Env Lab Manual

\* Results relate only to the items tested.

Encryption Key



Crystal Ireland

01 Nov 2013 10:09:45 -07:00

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

Crystal Ireland, B.Sc., Account Specialist  
Email: [CIreland@maxxam.ca](mailto:CIreland@maxxam.ca)  
Phone# (604) 638-5016

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1

## PHYSICAL TESTING (SOIL)

Maxxam ID	HZ1572	HZ1573	HZ1574	HZ1575	HZ1576	HZ1577	HZ1578	
Sampling Date	2013/10/27	2013/10/29	2013/10/29	2013/10/29	2013/10/29	2013/10/29	2013/10/29	
UNITS	204	321-8	322-9	323-9	324-9	325-2	00069-DUP6	RDL QC Batch
Physical Properties								
Moisture	%	16	5.4	20	16	15	13	0.30 7257579

## CCME BTEX/F1 BY HS IN SOIL (SOIL)

Maxxam ID	HZ1572	HZ1573	HZ1574	HZ1575	HZ1576	HZ1577	HZ1578	
Sampling Date	2013/10/27	2013/10/29	2013/10/29	2013/10/29	2013/10/29	2013/10/29	2013/10/29	
UNITS	204	321-8	322-9	323-9	324-9	325-2	00069-DUP6	RDL QC Batch
Calculated Parameters								
F1 (C6-C10) - BTEX	mg/kg	310	<10	<10	<10	<10	<10	10 7256988
Volatiles								
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.10 7256963
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050 7256963
Toluene	mg/kg	0.042	0.020	<0.020	<0.020	<0.020	<0.020	0.020 7256963
Ethylbenzene	mg/kg	0.50	0.014	<0.010	<0.010	<0.010	<0.010	0.010 7256963
m & p-Xylene	mg/kg	0.79	0.057	<0.040	<0.040	<0.040	<0.040	0.040 7256963
o-Xylene	mg/kg	0.66	0.084	<0.040	<0.040	<0.040	<0.040	0.040 7256963
Styrene	mg/kg	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	0.030 7256963
Xylenes (Total)	mg/kg	1.4	0.14	<0.040	<0.040	<0.040	<0.040	0.040 7256963
(C6-C10)	mg/kg	310	<10	<10	<10	<10	<10	10 7256963
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	98	103	96	102	101	108	7256963
4-BROMOFLUOROBENZENE (sur.)	%	101	101	99	98	98	97	7256963
D10-ETHYLBENZENE (sur.)	%	99	98	100	98	97	96	7256963
D4-1,2-DICHLOROETHANE (sur.)	%	102	104	105	104	101	105	7256963

## LEPH & HEPH FOR CSR IN SOIL WITH LL PAH (SOIL)

Maxxam ID	HZ1572	HZ1573	HZ1574	HZ1575	HZ1576	HZ1577	HZ1578	
Sampling Date	2013/10/27	2013/10/29	2013/10/29	2013/10/29	2013/10/29	2013/10/29	2013/10/29	
UNITS	204	321-8	322-9	323-9	324-9	325-2	00069-DUP6	RDL
<b>Hydrocarbons</b>								
EPH (C10-C19)	2200	293	<100	<100	<100	<100	<100	100
EPH (C19-C32)	<100	<100	<100	<100	<100	<100	<100	100
<b>Surrogate Recovery (%)</b>								
O-TERPHENYL (sur.)	97	97	96	95	97	96	99	7257880
								7257880

Package 1 1.0°C

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

General Comments

## QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7256963	1,4-Difluorobenzene (sur.)	2013/10/31	105	70 - 130	99	70 - 130	110	%		
7256963	4-BROMOFLUOROBENZENE (sur.)	2013/10/31	98	70 - 130	98	70 - 130	94	%		
7256963	D10-ETHYLBENZENE (sur.)	2013/10/31	105	50 - 130	95	50 - 130	98	%		
7256963	D4-1,2-DICHLOROETHANE (sur.)	2013/10/31	101	70 - 130	101	70 - 130	100	%		
7256963	Benzene	2013/10/31	93	60 - 140	93	60 - 140	<0.0050	mg/kg	NC	40
7256963	Toluene	2013/10/31	89	60 - 140	88	60 - 140	<0.020	mg/kg	NC	40
7256963	Ethylbenzene	2013/10/31	90	60 - 140	89	60 - 140	<0.010	mg/kg	NC	40
7256963	m & p-Xylene	2013/10/31	87	60 - 140	86	60 - 140	<0.040	mg/kg	NC	40
7256963	o-Xylene	2013/10/31	88	60 - 140	87	60 - 140	<0.040	mg/kg	NC	40
7256963	(C6-C10)	2013/10/31			107	60 - 140	<10	mg/kg		
7256963	Methyl-tert-butylether(MTBE)	2013/10/31					<0.10	mg/kg		
7256963	Styrene	2013/10/31					<0.030	mg/kg		
7256963	Xylenes (Total)	2013/10/31					<0.040	mg/kg	NC	40
7257579	Moisture	2013/11/01					<0.30	%	9.3	20
7257880	Q-TERPHENYL (sur.)	2013/10/31	95	50 - 130	97	50 - 130	83	%		
7257880	EPH (C10-C19)	2013/10/31	81	50 - 130	91	50 - 130	<100	mg/kg	NC	40
7257880	EPH (C19-C32)	2013/10/31	87	50 - 130	94	50 - 130	<100	mg/kg	NC	40

N/A = Not Applicable

RPD = Relative Percent Difference

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 (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

B3A0822

Maximum Job#: 8398668

## Report To:

Franz / Core 6  
Richard Wells / Justin Taylor  
1410-717 Hornby St  
Vancouver BC V6Z 1S4  
PH: 604-585-2784  
F.wells@franzbc.com  
j.taylor@core6.ca

**Invoice To: Request Receipt?** ☐ Yes ☐ No

# 1756 PWASC  
 Brad Kilmer  
 641-800 Burnard St  
 Lancaster CA 93534  
 # 604 775 9547 Fax: 604 775 6295  
 brad.kilmer@pwasc.com

**REGULATORY REQUIREMENTS SERVICE REQUESTED:**

<input type="checkbox"/>	Regular Turn Around Time (TAT) (5 days for most tests)
<input checked="" type="checkbox"/>	RUSH (Please contact the lab)
<input checked="" type="checkbox"/>	1 Day
<input type="checkbox"/>	2 Day
<input type="checkbox"/>	3 Day
Date Required	
DRINKING WATER	
Special Instructions:	
Return Container <input type="checkbox"/>	Ship Samples Sealed (please specify) <input type="checkbox"/>

### Ship Sample Bottles (Pipes special)

**ANALYSIS REQUESTED**

Sample Identification	Lab Identification	Sample Type	Date/Time Sampled
204	W1512	Soil	13/10/27
321-8	W1513		13/10/29
322-9	W1514		
323-9	W1515		
324-9	W1516		
325-7	W1517		
00069 - Dup 6	W1518		

**CCME** ☒ **EC Water Quality** ☐ **Other** ☐

**DRINKING WATER** ☐

**Special Instructions:**

**Return Cooler** ☐

**Ship Sample Bottles (please specify)** ☐

**DATE REQUIRED:**

**1 Day** ☒ **2 Day** ☐ **3 Day** ☐

**RUSH (Please contact the lab)** ☒

**10 days for most tests**

**ANALYSIS REQUESTED**

<input type="checkbox"/> <b>Asbestos</b>	<input type="checkbox"/> <b>Barium</b>	<input type="checkbox"/> <b>Benzene</b>	<input type="checkbox"/> <b>Bismuth</b>	<input type="checkbox"/> <b>Boron</b>	<input type="checkbox"/> <b>Bromine</b>	<input type="checkbox"/> <b>Cadmium</b>	<input type="checkbox"/> <b>Calcium</b>	<input type="checkbox"/> <b>Chlorine</b>	<input type="checkbox"/> <b>Copper</b>	<input type="checkbox"/> <b>Fluoride</b>	<input type="checkbox"/> <b>Iron</b>	<input type="checkbox"/> <b>Lead</b>	<input type="checkbox"/> <b>Magnesium</b>	<input type="checkbox"/> <b>Manganese</b>	<input type="checkbox"/> <b>Mercury</b>	<input type="checkbox"/> <b>Molybdenum</b>	<input type="checkbox"/> <b>Nickel</b>	<input type="checkbox"/> <b>Phosphorus</b>	<input type="checkbox"/> <b>Potassium</b>	<input type="checkbox"/> <b>Selenium</b>	<input type="checkbox"/> <b>Silver</b>	<input type="checkbox"/> <b>Sulfate</b>	<input type="checkbox"/> <b>Sulfur</b>	<input type="checkbox"/> <b>Titanium</b>	<input type="checkbox"/> <b>Vanadium</b>	<input type="checkbox"/> <b>Zinc</b>
--	--	---	---	---------------------------------------	---	---	---	--	--	--	--------------------------------------	--------------------------------------	---	---	---	--	--	--	---	--	--	---	--	--	--	--------------------------------------

知不足而奋进

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### Temperature in Pocket (°C)

**QUICK-STARTING CEMENT**

●

●

IT IS THE RESPONSIBILITY OF THE BELONGERS TO SECURE THE GRANTING OF THE ABOVE BY THE GOVERNMENT. AN INDIVIDUAL MAY FREELY IN AN ALTERNATE WAY BELIEVE

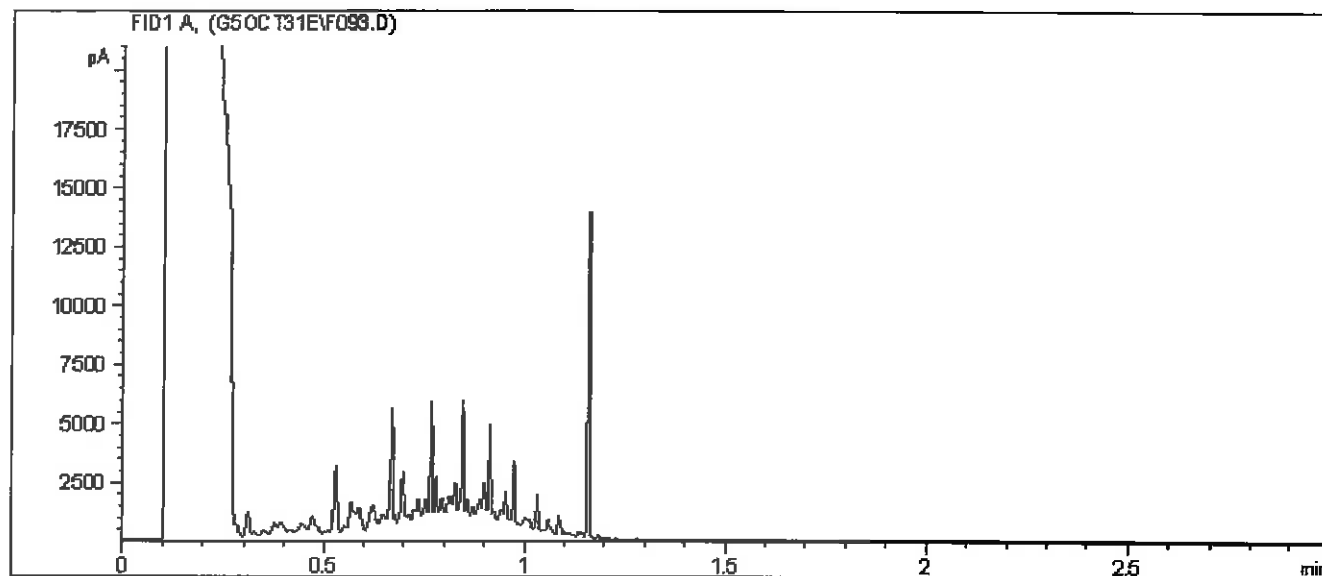
**901.5-1-220**

Report Date: 2013/11/01  
 Maxxam Job #: B3A0822  
 Maxxam Sample: HZ1572

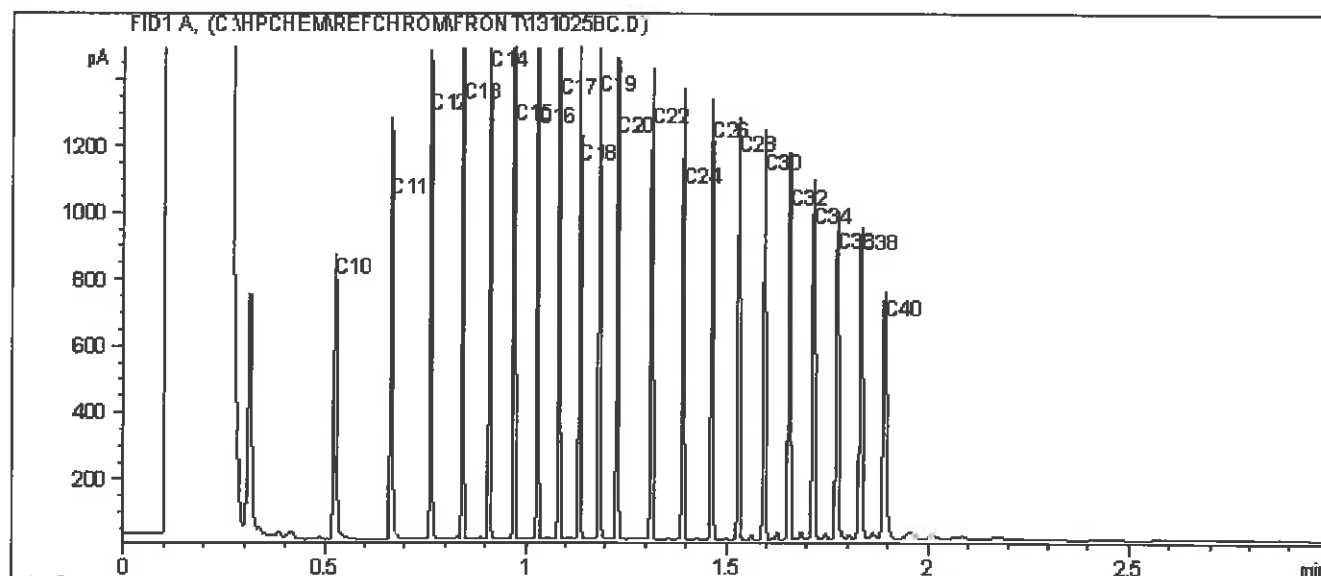
FRANZ ENVIRONMENTAL INC.

Client ID: 204

## BC Hydrocarbons in Soil by GC/FID Chromatogram



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

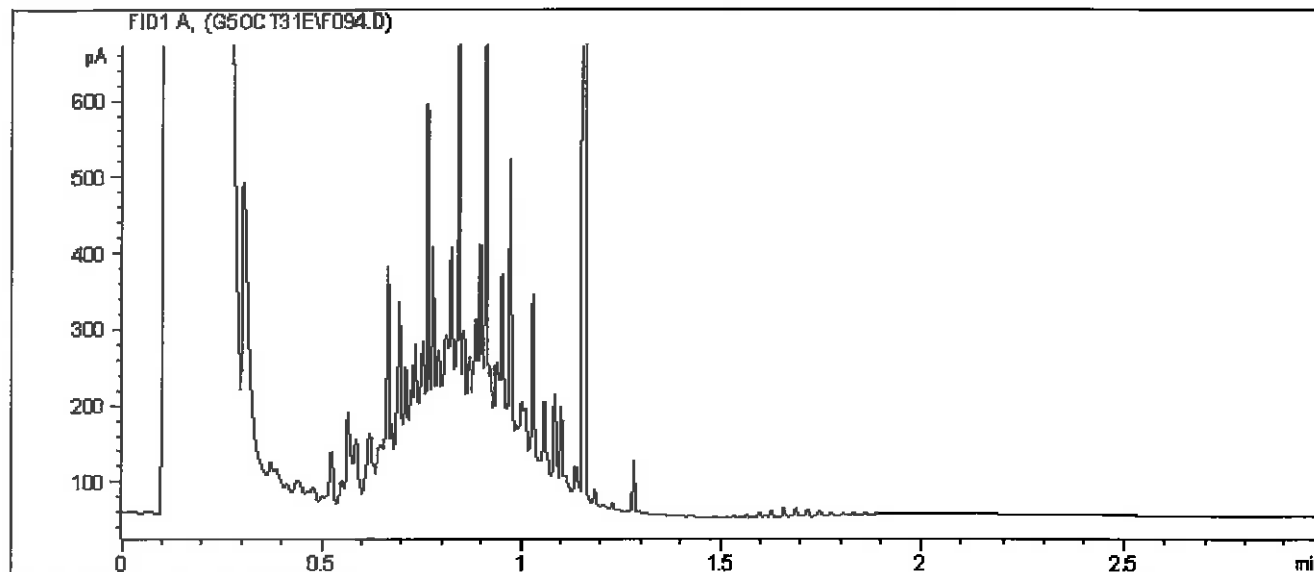
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/11/01  
Maxxam Job #: B3A0822  
Maxxam Sample: HZ1573

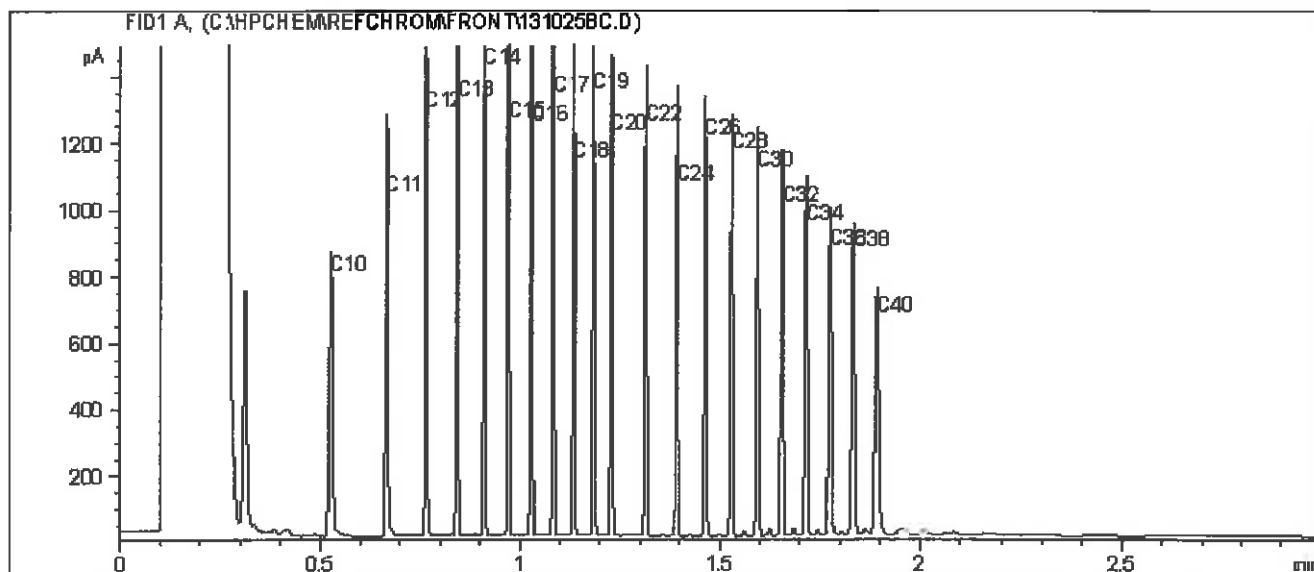
FRANZ ENVIRONMENTAL INC.

Client ID: 321-8

## BC Hydrocarbons in Soil by GC/FID Chromatogram



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

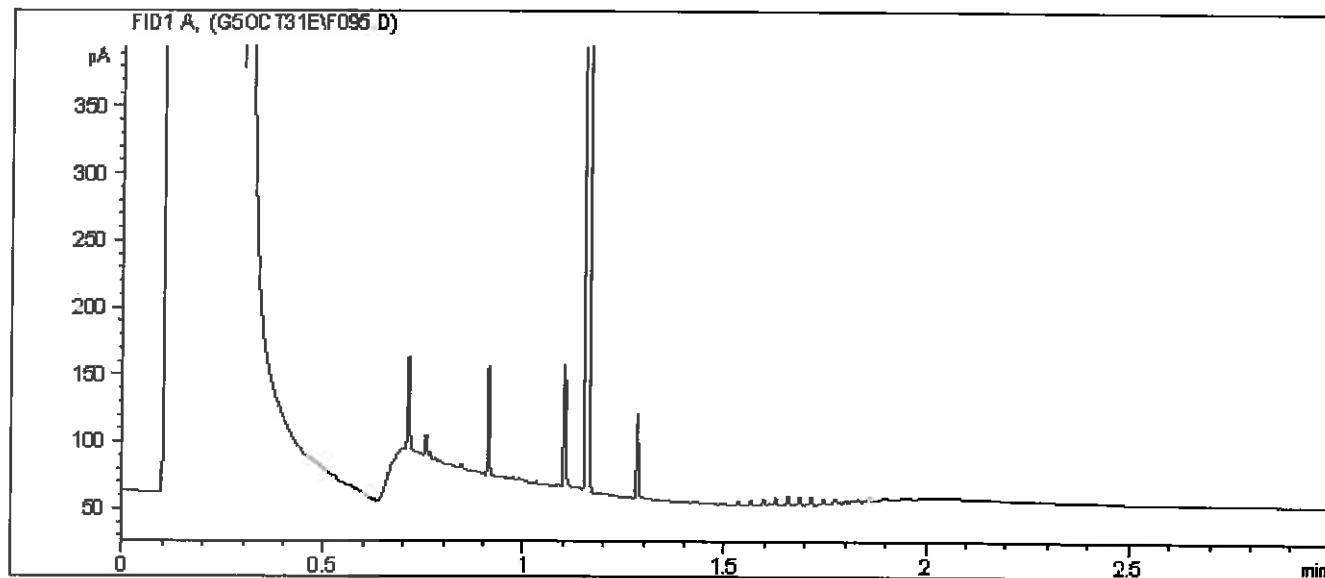
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/11/01  
Maxxam Job #: B3A0822  
Maxxam Sample: HZ1574

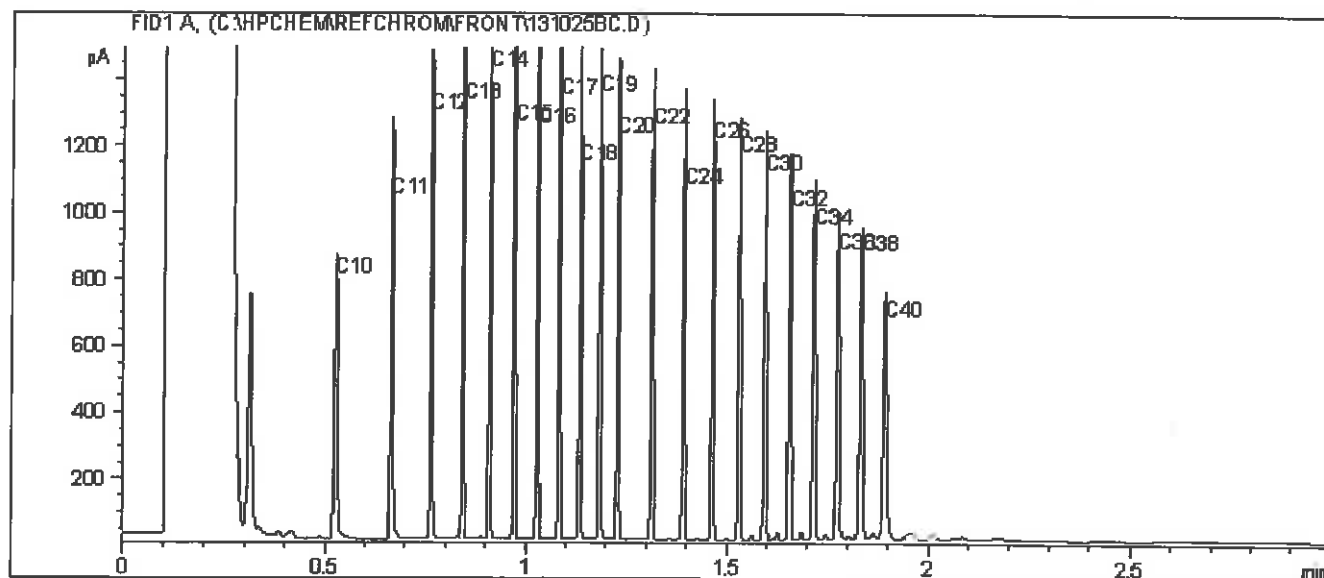
FRANZ ENVIRONMENTAL INC.

Client ID: 322-9

## BC Hydrocarbons in Soil by GC/FID Chromatogram



## Carbon Range Distribution - Reference Chromatogram



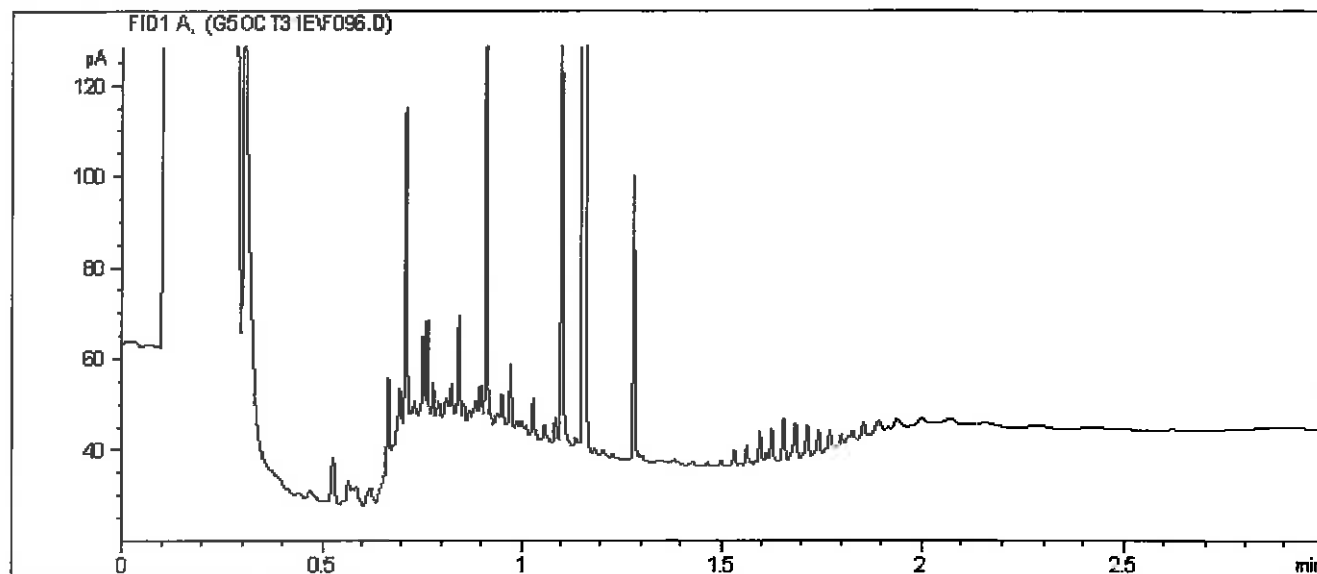
## TYPICAL PRODUCT CARBON NUMBER RANGES

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

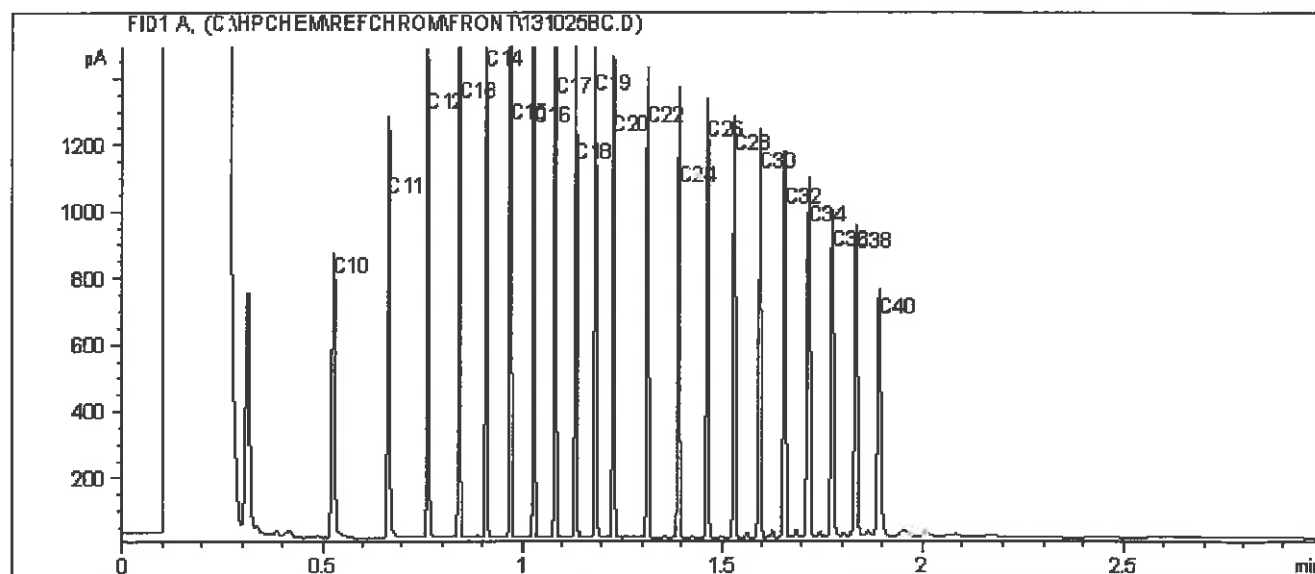
Report Date: 2013/11/01  
Maxxam Job #: B3A0822  
Maxxam Sample: HZ1575

Client ID: 323-9

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

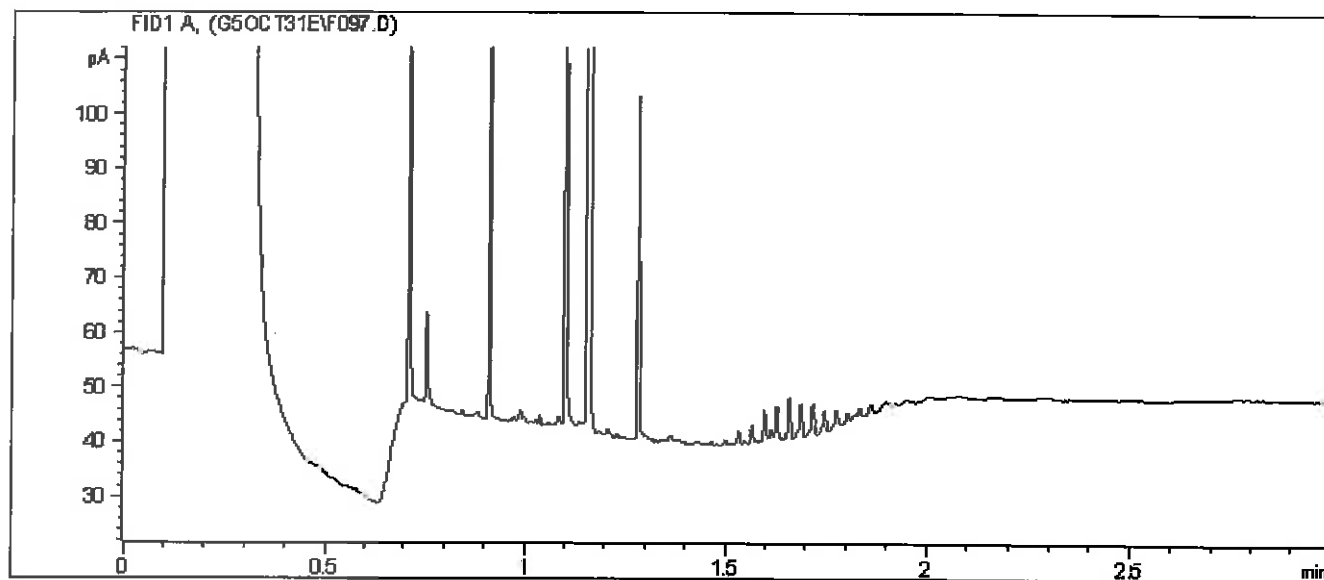
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/11/01  
Maxxam Job #: B3A0822  
Maxxam Sample: HZ1576

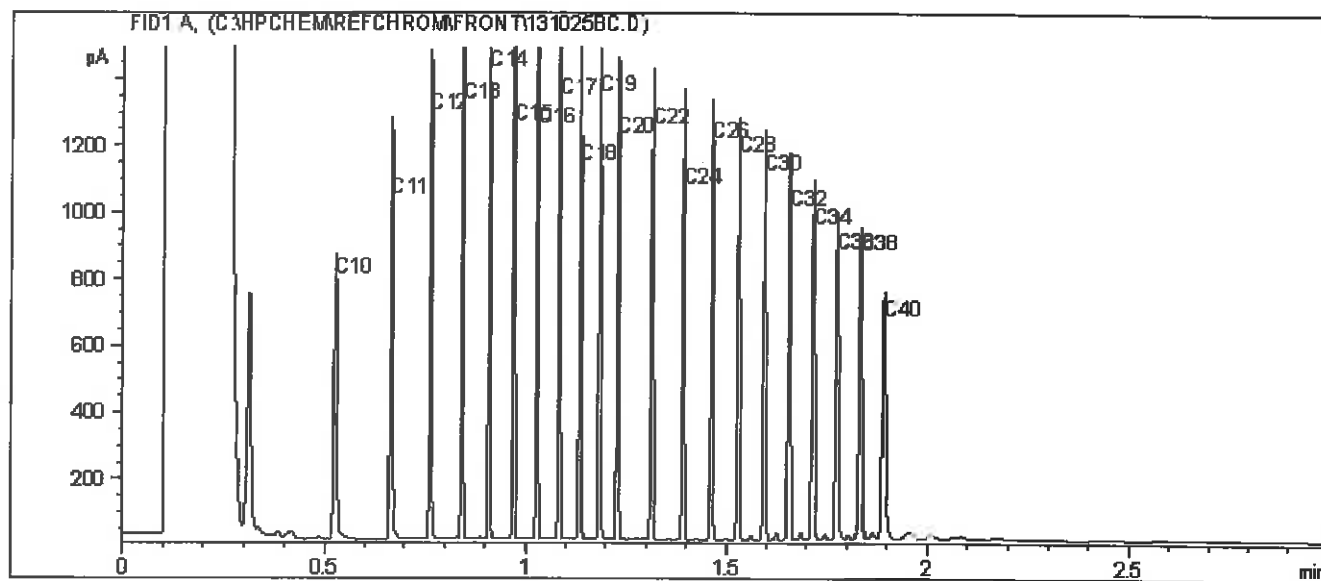
FRANZ ENVIRONMENTAL INC.

Client ID: 324-9

## BC Hydrocarbons in Soil by GC/FID Chromatogram



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

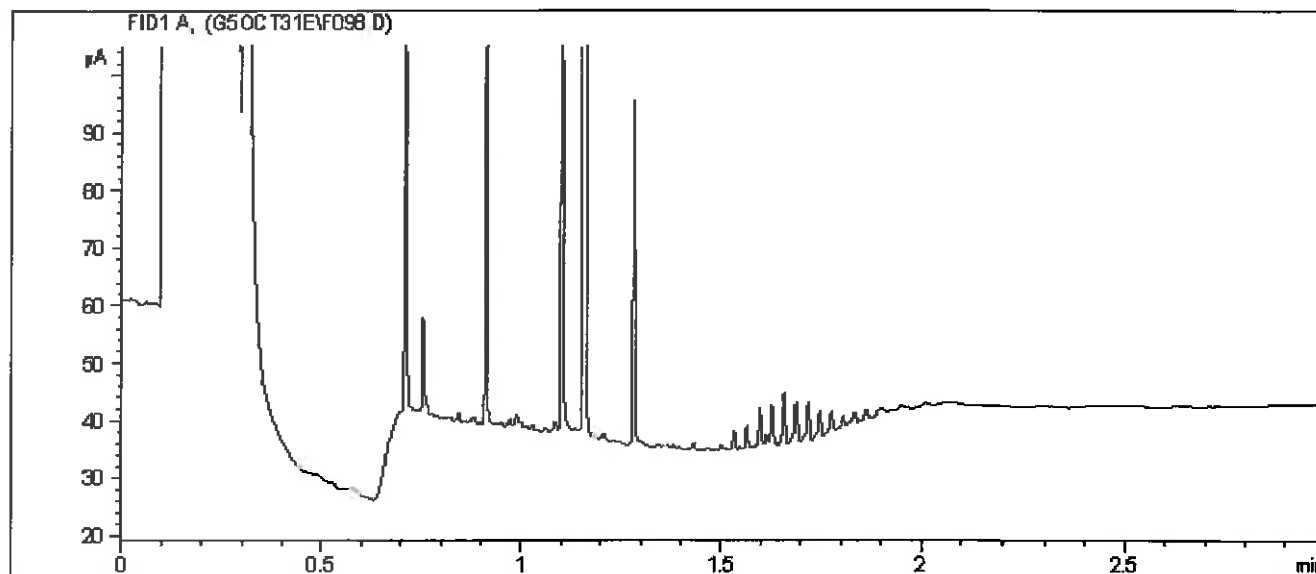
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/11/01  
 Maxxam Job #: B3A0822  
 Maxxam Sample: HZ1576 Lab-Dup

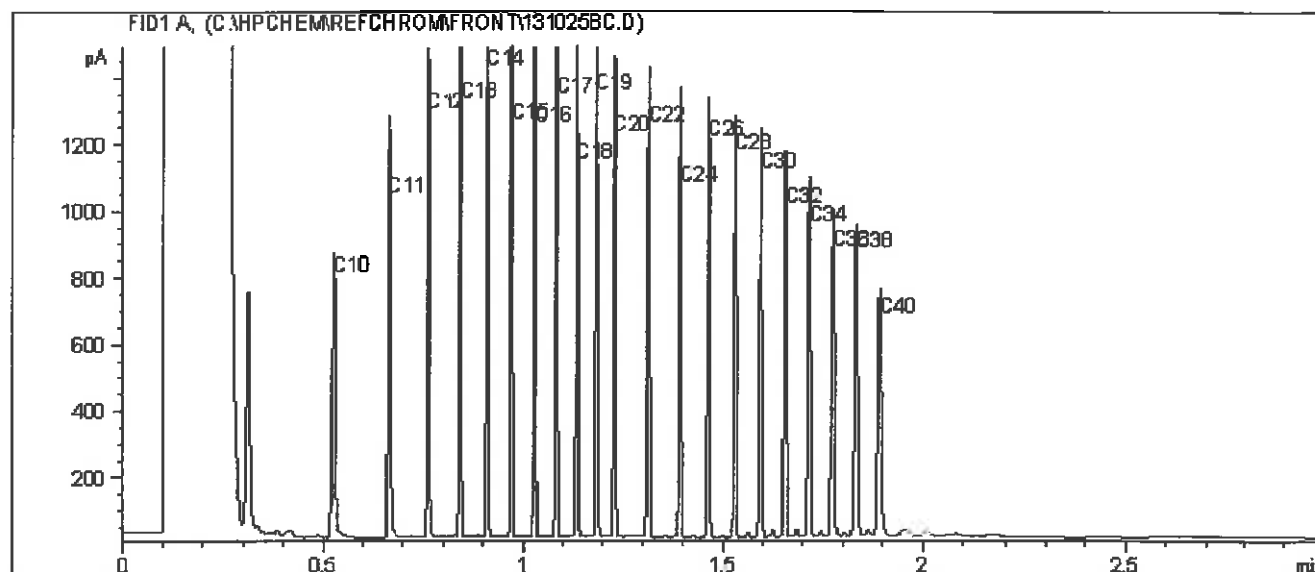
FRANZ ENVIRONMENTAL INC.

Client ID: 324-9

## BC Hydrocarbons in Soil by GC/FID Chromatogram



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

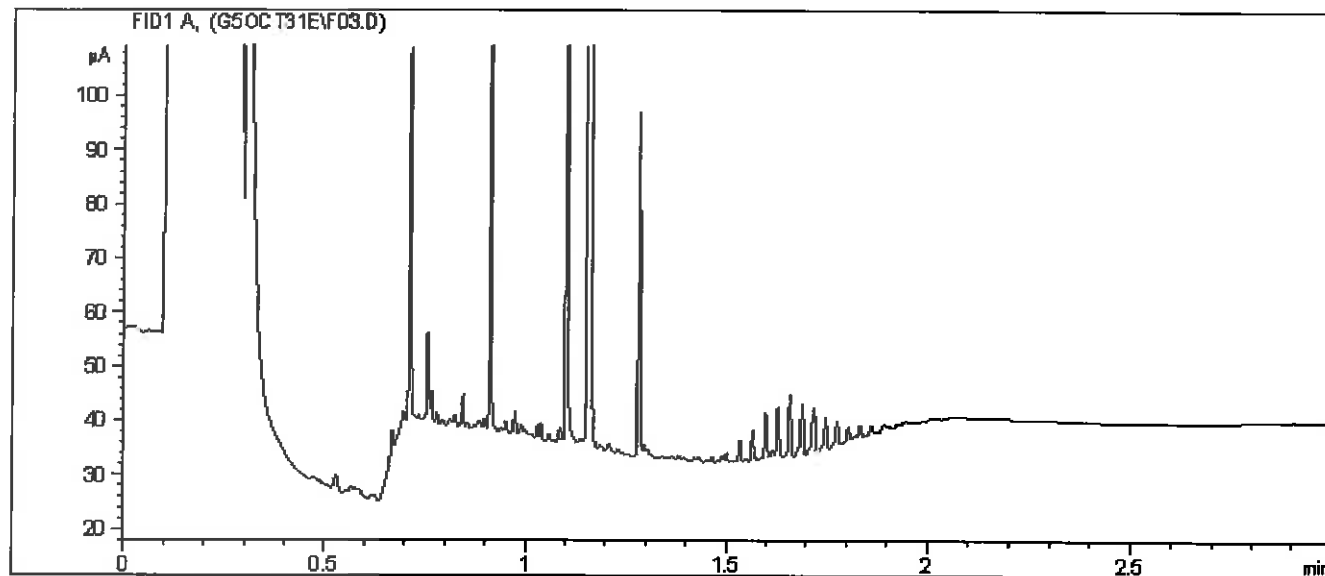
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/11/01  
Maxxam Job #: B3A0822  
Maxxam Sample: HZ1577

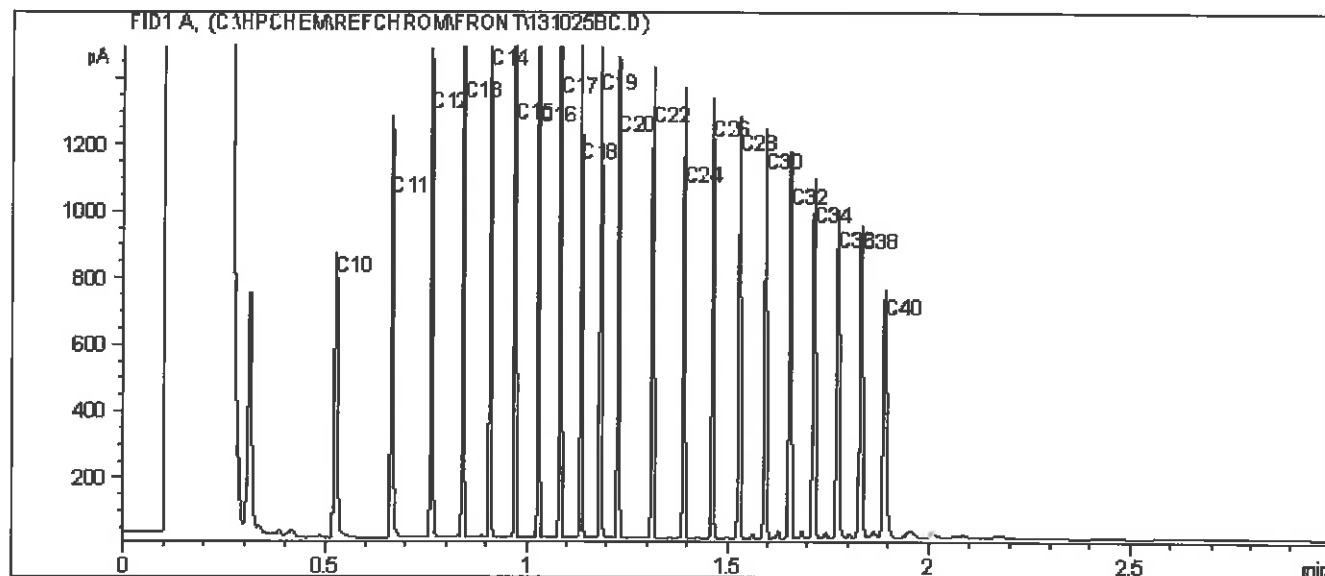
FRANZ ENVIRONMENTAL INC.

Client ID: 325-2

# BC Hydrocarbons in Soil by GC/FID Chromatogram



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

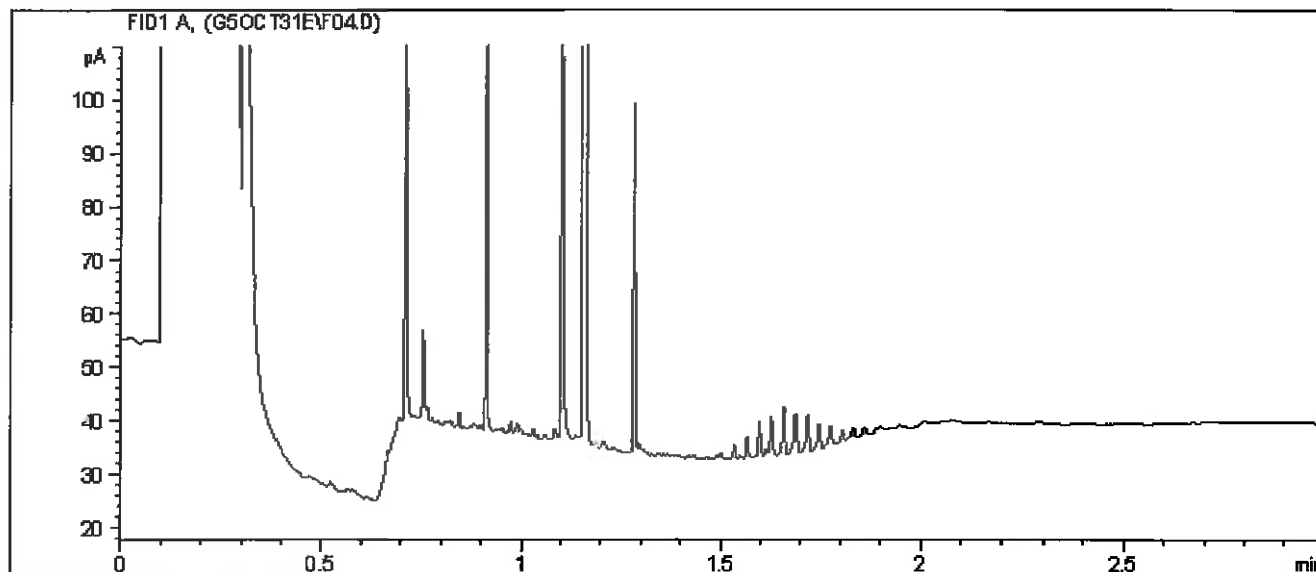
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/11/01  
Maxxam Job #: B3A0822  
Maxxam Sample: HZ1578

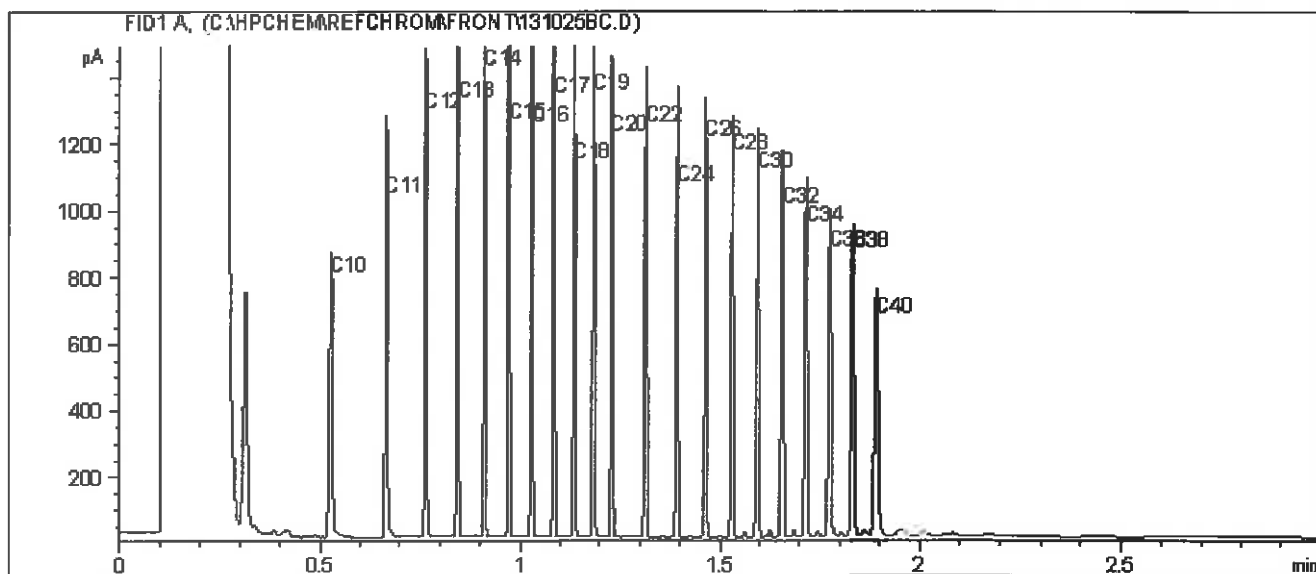
FRANZ ENVIRONMENTAL INC.

Client ID: 00069-DUP6

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

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

Your P.O. #: 700266127  
Your Project #: LOWER POST  
Site Location: LOWER POST  
Your C.O.C. #: G032687

**Attention: John Taylor**  
FRANZ ENVIRONMENTAL INC.  
FRANZEN-VAN  
1080 MAINLAND STREET  
SUITE 308  
VANCOUVER, BC  
CANADA V6B 2T4

**Report Date: 2014/02/12**  
**Report #: R1515723**  
**Version: 1**

## CERTIFICATE OF ANALYSIS

**MAXXAM JOB #: B408764**  
**Received: 2014/02/04, 08:55**

Sample Matrix: Soil  
# Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/MTBE Soil LH, VH, F1 SIM/MS	5	2014/02/04	2014/02/05	BBY8-SOP-00010	EPA SW846 8260C
Volatile F1-BTEX	5	N/A	2014/02/06	BBY WI-00033	BC MOE Lab Method
CCME Hydrocarbons (F2-F4 in soil) (1)	5	2014/02/04	2014/02/07	BBY8SOP-00030	CCME Soil Tier 1
Moisture	5	N/A	2014/02/05	BBY8SOP-00017	Ont MOE -E 3139
PAH in Soil by GC/MS (SIM) - CCME	1	2014/02/04	2014/02/07	BBY8SOP-00022	EPA 8270D
PAH in Soil by GC/MS (SIM) - CCME	4	2014/02/04	2014/02/12	BBY8SOP-00022	EPA 8270D
Benzo[a]pyrene Equivalency	1	N/A	2014/02/08	BBY WI-00033	CCME Guidelines
Benzo[a]pyrene Equivalency	4	N/A	2014/02/12	BBY WI-00033	CCME Guidelines
Total LMW, HMW, Total PAH Calc	1	N/A	2014/02/08	BBY WI-00033	BC MOE Lab Method
Total LMW, HMW, Total PAH Calc	4	N/A	2014/02/12	BBY WI-00033	BC MOE Lab Method
EPH less PAH in Soil By GC/FID	5	N/A	2014/02/12	BBY WI-00033	BC MOE Lab Method
BC Hydrocarbons in Soil by GC/FID	5	2014/02/04	2014/02/12	BBY8SOP-00029	BC Env Lab Manual

\* Results relate only to the items tested.

(1) The method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory; all deviations were justified and validated and are made available upon request; the chromatogram descends to baseline by the retention time of nC50 unless otherwise indicated; all QC criteria met; individual hydrocarbons (nC10, nC16, nC34) are within 10% of their average response factor; linearity is within 15%.

Encryption Key



Jennifer Villocero

12 Feb 2014 19:01:14 -08:00

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

Crystal Ireland, B.Sc., Account Specialist  
Email: C.Ireland@maxxam.ca  
Phone# (604) 638-5016

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1

Maxxam Job #: B408764  
Report Date: 2014/02/12

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

## PETROLEUM HYDROCARBONS (CCME)

Maxxam ID	IP4809	IP4810	IP4811	IP4812	IP4813	
Sampling Date	2014/01/31	2014/01/31	2014/01/29	2014/01/29	2014/01/31	
UNITS	BH13-14-3	BH13-14-4	BH13-19-3	BH13-19-4	DUP 8	QC Batch
<b>Ext. Pet. Hydrocarbon</b>						
F2 (C10-C16 Hydrocarbons)	<10	25	<10	<10	<10	10
F3 (C16-C34 Hydrocarbons)	42	44	<10	<10	61	10
F4 (C34-C50 Hydrocarbons)	16	28	<10	<10	22	10
Reached Baseline at C50	YES	YES	YES	YES	YES	N/A
<b>Surrogate Recovery (%)</b>						
O-TERPHENYL (sur.)	103	101	99	101	101	7375938

## PHYSICAL TESTING (SOIL)

Maxxam ID	IP4809	IP4810	IP4811	IP4812	IP4813	
Sampling Date	2014/01/31	2014/01/31	2014/01/29	2014/01/29	2014/01/31	
UNITS	BH13-14-3	BH13-14-4	BH13-19-3	BH13-19-4	DUP 8	QC Batch
<b>Physical Properties</b>						
Moisture	7.0	12	10	8.8	6.7	7371388

## TOTAL PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID	IP4809	IP4810	IP4811	IP4812	IP4813	
Sampling Date	2014/01/31	2014/01/31	2014/01/29	2014/01/29	2014/01/31	
UNITS	BH13-14-3	BH13-14-4	BH13-19-3	BH13-19-4	DUP 8	QC Batch
<b>Calculated Parameters</b>						
LEPH (C10-C19 less PAH)	<100	<100	<100	<100	<100	7371084
HEPH (C19-C32 less PAH)	<100	<100	<100	<100	<100	7371084
<b>Hydrocarbons</b>						
EPH (C10-C19)	<100	<100	<100	<100	<100	7379723
EPH (C19-C32)	<100	<100	<100	<100	<100	7379723
<b>Surrogate Recovery (%)</b>						
O-TERPHENYL (sur.)	113	109	115	118	114	7379723

N/A = Not Applicable  
RDL = Reportable Detection Limit

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

## CCME BTEX/F1 BY HS IN SOIL (SOIL)

Maxxam ID	IP4809	IP4810	IP4811	IP4812	IP4813	
Sampling Date	2014/01/31	2014/01/31	2014/01/29	2014/01/29	2014/01/31	
	BH13-14-3	BH13-14-4	BH13-19-3	BH13-19-4	DUP 8	
UNITS						QC Batch
<b>Calculated Parameters</b>						
F1 (C6-C10) - BTEX	<10	<10	<10	<10	<10	7371179
<b>Volatiles</b>						
Methyl-tert-butylether (MTBE)	<0.10	<0.10	<0.10	<0.10	<0.10	7372499
Benzene	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	7372499
Toluene	<0.020	<0.020	<0.020	<0.020	0.020	7372499
Ethylbenzene	<0.010	<0.010	<0.010	<0.010	0.010	7372499
m & p-Xylene	<0.040	<0.040	<0.040	<0.040	0.040	7372499
o-Xylene	<0.040	<0.040	<0.040	<0.040	0.040	7372499
Styrene	<0.030	<0.030	<0.030	<0.030	0.030	7372499
Xylenes (Total)	<0.040	<0.040	<0.040	<0.040	0.040	7372499
(C6-C10)	<10	<10	<10	<10	10	7372499
<b>Surrogate Recovery (%)</b>						
1,4-Difluorobenzene (sur.)	106	104	105	104	106	7372499
4-BROMOFLUOROBENZENE (sur.)	97	97	96	96	93	7372499
D10-ETHYLBENZENE (sur.)	86	87	88	85	87	7372499
D4-1,2-DICHLOROETHANE (sur.)	103	98	98	100	101	7372499

RDL = Reportable Detection Limit

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

## CCME PAH IN SOIL BY GC-MS (SOIL)

Maxxam ID	IP4809	IP4810	IP4811	IP4812	IP4813	
Sampling Date	2014/01/31	2014/01/31	2014/01/29	2014/01/29	2014/01/31	
UNITS	BH13-14-3	QC Batch	BH13-14-4	BH13-19-3	DUP 8	QC Batch
<b>Calculated Parameters</b>						
Index of Additive Cancer Risk(IARC)	N/A	7371134	0.31	7371134	0.31	7371134
Benzo(a)pyrene equivalency	N/A	7371134	<0.10	7371134	<0.10	7371134
<b>Polycyclic Aromatics</b>						
Naphthalene	mg/kg	7379739	<0.010	7376049	<0.010	7379739
2-Methylnaphthalene	mg/kg	7379739	<0.020	7376049	<0.020	7379739
Acenaphthylene	mg/kg	7379739	<0.0050	7376049	<0.0050	7379739
Acenaphthene	mg/kg	7379739	<0.0050	7376049	<0.0050	7379739
Fluorene	mg/kg	7379739	<0.020	7376049	<0.020	7379739
Phenanthrene	mg/kg	7379739	<0.020	7376049	<0.020	7379739
Anthracene	mg/kg	7379739	<0.0040	7376049	<0.0040	7379739
Fluoranthene	mg/kg	7379739	<0.020	7376049	<0.020	7379739
Pyrene	mg/kg	7379739	<0.020	7376049	<0.020	7379739
Benzo(a)anthracene	mg/kg	7379739	<0.020	7376049	<0.020	7379739
Chrysene	mg/kg	7379739	<0.020	7376049	<0.020	7379739
Benzo(b&k)fluoranthene	mg/kg	7379739	<0.020	7376049	<0.020	7379739
Benzo(b)fluoranthene	mg/kg	7379739	<0.020	7376049	<0.020	7379739
Benzo(k)fluoranthene	mg/kg	7379739	<0.020	7376049	<0.020	7379739
Benzo(a)pyrene	mg/kg	7379739	<0.020	7376049	<0.020	7379739
Indeno(1,2,3-cd)pyrene	mg/kg	7379739	<0.050	7376049	<0.050	7379739
Dibenz(a,h)anthracene	mg/kg	7379739	<0.050	7376049	<0.050	7379739
Benzo(g,h,i)perylene	mg/kg	7379739	<0.050	7376049	<0.050	7379739
Low Molecular Weight PAH's	mg/kg	7371083	<0.050	7371083	<0.050	7371083
High Molecular Weight PAH's	mg/kg	7371083	<0.050	7371083	<0.050	7371083
Total PAH	mg/kg	7371083	<0.050	7371083	<0.050	7371083
<b>Surrogate Recovery (%)</b>						
D10-ANTHRACENE (sur.)	%	114	7379739	100	7376049	7379739
D8-ACENAPHTHYLENE (sur.)	%	113	7379739	99	7376049	7379739
D8-NAPHTHALENE (sur.)	%	116	7379739	103	7376049	7379739
TERPHENYL-D14 (sur.)	%	124	7379739	106	7376049	7379739

N/A = Not Applicable  
RDL = Reportable Detection Limit

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

Package 1	1.0°C
-----------	-------

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

## General Comments

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

## QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7371388	Moisture	2014/02/05					<0.30	%	3.9	20
7372499	1,4-Difluorobenzene (sur.)	2014/02/05	101	70 - 130	104	70 - 130	104	%		
7372499	4-BROMOFLUOROBENZENE (sur.)	2014/02/05	100	70 - 130	98	70 - 130	98	%		
7372499	D10-ETHYLBENZENE (sur.)	2014/02/05	80	50 - 130	82	50 - 130	89	%		
7372499	D4-1,2-DICHLOROETHANE (sur.)	2014/02/05	95	70 - 130	97	70 - 130	104	%		
7372499	Benzene	2014/02/05	98	60 - 140	98	60 - 140	<0.0050	mg/kg	NC	40
7372499	Toluene	2014/02/05	91	60 - 140	90	60 - 140	<0.020	mg/kg	NC	40
7372499	Ethylbenzene	2014/02/05	93	60 - 140	93	60 - 140	<0.010	mg/kg	NC	40
7372499	m & p-Xylene	2014/02/05	89	60 - 140	88	60 - 140	<0.040	mg/kg	NC	40
7372499	o-Xylene	2014/02/05	87	60 - 140	86	60 - 140	<0.040	mg/kg	NC	40
7372499	(O6-C10)	2014/02/05			117	60 - 140	<10	mg/kg		
7372499	Methyl-tert-butylether(MTBE)	2014/02/05					<0.10	mg/kg		
7372499	Styrene	2014/02/05					<0.030	mg/kg		
7372499	Xylenes (Total)	2014/02/05					<0.040	mg/kg	NC	40
7375938	O-TERPHENYL (sur.)	2014/02/07	87	50 - 130	96	50 - 130	94	%		
7375938	F2 (C10-C16 Hydrocarbons)	2014/02/07	95	50 - 130	92	80 - 120	<10	mg/kg	NC	40
7375938	F3 (C16-C34 Hydrocarbons)	2014/02/07	98	50 - 130	95	80 - 120	<10	mg/kg	NC	40
7375938	F4 (C34-C50 Hydrocarbons)	2014/02/07	90	50 - 130	92	80 - 120	<10	mg/kg	NC	40
7375938	Reached Baseline at C50	2014/02/07					YES, RDL=N/A	mg/kg	NC	50
7376049	D10-ANTHRACENE (sur.)	2014/02/07	84	60 - 130	96	60 - 130	111	%		
7376049	DB-ACENAPHTHYLENE (sur.)	2014/02/07	97	50 - 130	98	50 - 130	104	%		
7376049	DB-NAPHTHALENE (sur.)	2014/02/07	101	50 - 130	99	50 - 130	104	%		
7376049	TERPHENYL-D14 (sur.)	2014/02/07	91	60 - 130	99	60 - 130	113	%		
7376049	Naphthalene	2014/02/07	84	50 - 130	76	50 - 130	<0.010	mg/kg	NC	50
7376049	2-Methylnaphthalene	2014/02/07	87	50 - 130	82	50 - 130	<0.020	mg/kg	NC	50
7376049	Acenaphthylene	2014/02/07	90	50 - 130	84	50 - 130	<0.0050	mg/kg	NC	50
7376049	Acenaphthene	2014/02/07	84	50 - 130	78	50 - 130	<0.0050	mg/kg	NC	50
7376049	Fluorene	2014/02/07	88	50 - 130	82	50 - 130	<0.020	mg/kg	NC	50
7376049	Phenanthrene	2014/02/07	84	60 - 130	81	60 - 130	<0.020	mg/kg	NC	50
7376049	Anthracene	2014/02/07	77	60 - 130	79	60 - 130	<0.0040	mg/kg	NC	50
7376049	Fluoranthene	2014/02/07	82	60 - 130	81	60 - 130	<0.020	mg/kg	NC	50
7376049	Pyrene	2014/02/07	93	60 - 130	90	60 - 130	<0.020	mg/kg	NC	50
7376049	Benzo(a)anthracene	2014/02/07	79	60 - 130	76	60 - 130	<0.020	mg/kg	NC	50
7376049	Chrysene	2014/02/07	80	60 - 130	78	60 - 130	<0.020	mg/kg	NC	50
7376049	Benzo(b,j)fluoranthene	2014/02/07	87	60 - 130	85	60 - 130	<0.020	mg/kg	NC	50
7376049	Benzo(k)fluoranthene	2014/02/07	76	60 - 130	76	60 - 130	<0.020	mg/kg	NC	50
7376049	Benzo(e)pyrene	2014/02/07	82	60 - 130	80	60 - 130	<0.020	mg/kg	NC	50
7376049	Indeno(1,2,3-cd)pyrene	2014/02/07	84	60 - 130	86	60 - 130	<0.050	mg/kg	NC	50
7376049	Dibenz(a,h)anthracene	2014/02/07	85	60 - 130	84	60 - 130	<0.050	mg/kg	NC	50

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

## QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7376049	Benzo(g,h,i)perylene	2014/02/07	83	60 - 130	85	60 - 130	<0.050	mg/kg	NC	50
7376049	Benzo(b)fluoranthene	2014/02/07					<0.020	mg/kg	NC	N/A
7379723	O-TERPHENYL (sur.)	2014/02/12	91	50 - 130	95	50 - 130	110	%		
7379723	EPH (C10-C19)	2014/02/12	103	50 - 130	93	50 - 130	<100	mg/kg	NC	40
7379723	EPH (C19-C32)	2014/02/12	101	50 - 130	92	50 - 130	<100	mg/kg	NC	40
7379739	D10-ANTHRACENE (sur.)	2014/02/12	99	60 - 130	102	60 - 130	113	%		
7379739	D8-ACENAPHTHYLENE (sur.)	2014/02/12	101	50 - 130	99	50 - 130	109	%		
7379739	D8-NAPHTHALENE (sur.)	2014/02/12	103	50 - 130	101	50 - 130	112	%		
7379739	TERPHENYL-D14 (sur.)	2014/02/12	107	60 - 130	108	60 - 130	119	%		
7379739	Naphthalene	2014/02/12	87	50 - 130	86	50 - 130	<0.010	mg/kg	NC	50
7379739	2-Methylnaphthalene	2014/02/12	91	50 - 130	89	50 - 130	<0.020	mg/kg	NC	50
7379739	Acenaphthylene	2014/02/12	92	50 - 130	90	50 - 130	<0.0050	mg/kg	NC	50
7379739	Acenaphthene	2014/02/12	91	50 - 130	89	50 - 130	<0.0050	mg/kg	NC	50
7379739	Fluorene	2014/02/12	94	50 - 130	93	50 - 130	<0.020	mg/kg	NC	50
7379739	Phenanthrene	2014/02/12	85	60 - 130	87	60 - 130	<0.020	mg/kg	NC	50
7379739	Anthracene	2014/02/12	95	60 - 130	95	60 - 130	<0.0040	mg/kg	NC	50
7379739	Fluoranthene	2014/02/12	98	60 - 130	99	60 - 130	<0.020	mg/kg	NC	50
7379739	Pyrene	2014/02/12	99	60 - 130	90	60 - 130	<0.020	mg/kg	NC	50
7379739	Benzo(a)anthracene	2014/02/12	92	60 - 130	92	60 - 130	<0.020	mg/kg	NC	50
7379739	Chrysene	2014/02/12	93	60 - 130	89	60 - 130	<0.020	mg/kg	NC	50
7379739	Benzo(b&l)fluoranthene	2014/02/12	93	60 - 130	86	60 - 130	<0.020	mg/kg	NC	50
7379739	Benzo(k)fluoranthene	2014/02/12	87	60 - 130	92	60 - 130	<0.020	mg/kg	NC	50
7379739	Benzo(e)pyrene	2014/02/12	89	60 - 130	109	60 - 130	<0.050	mg/kg	NC	50
7379739	Indeno(1,2,3-cd)pyrene	2014/02/12	103	60 - 130	109	60 - 130	<0.050	mg/kg	NC	50
7379739	Dibenz(a,h)anthracene	2014/02/12	105	60 - 130	105	60 - 130	<0.050	mg/kg	NC	50
7379739	Benzo(g,h,i)perylene	2014/02/12	99	60 - 130			<0.020	mg/kg		
7379739	Benzo(b)fluoranthene	2014/02/12								

N/A = Not Applicable

RDL = Reportable Detection Limit

RPD = Relative Percent Difference

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 (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

## Validation Signature Page

Maxxam Job #: B408764

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

  
\_\_\_\_\_  
Andy Lu, Data Validation Coordinator

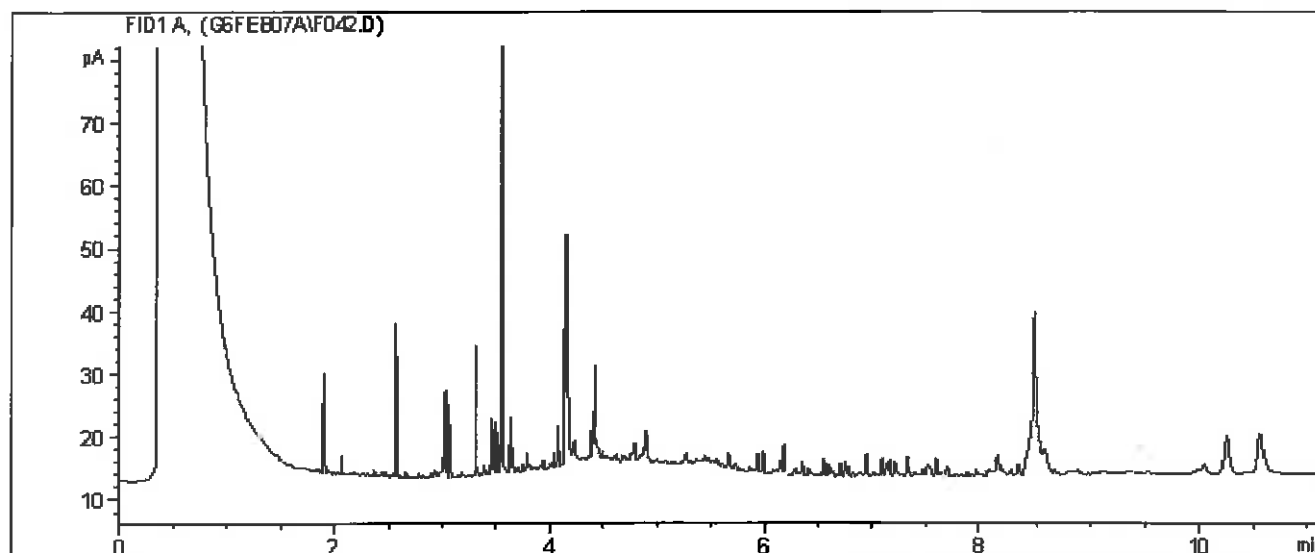
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



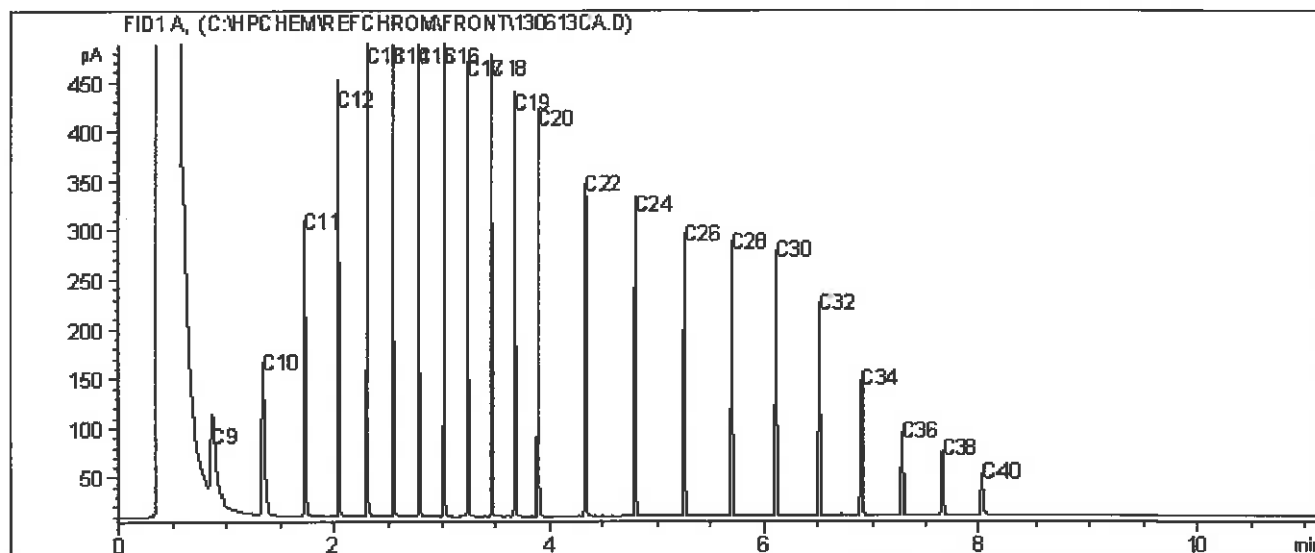
Report Date: 2014/02/12  
Maxxam Job #: B408764  
Maxxam Sample: IP4809

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Reference: LOWER POST  
Client ID: BH13-14-3

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

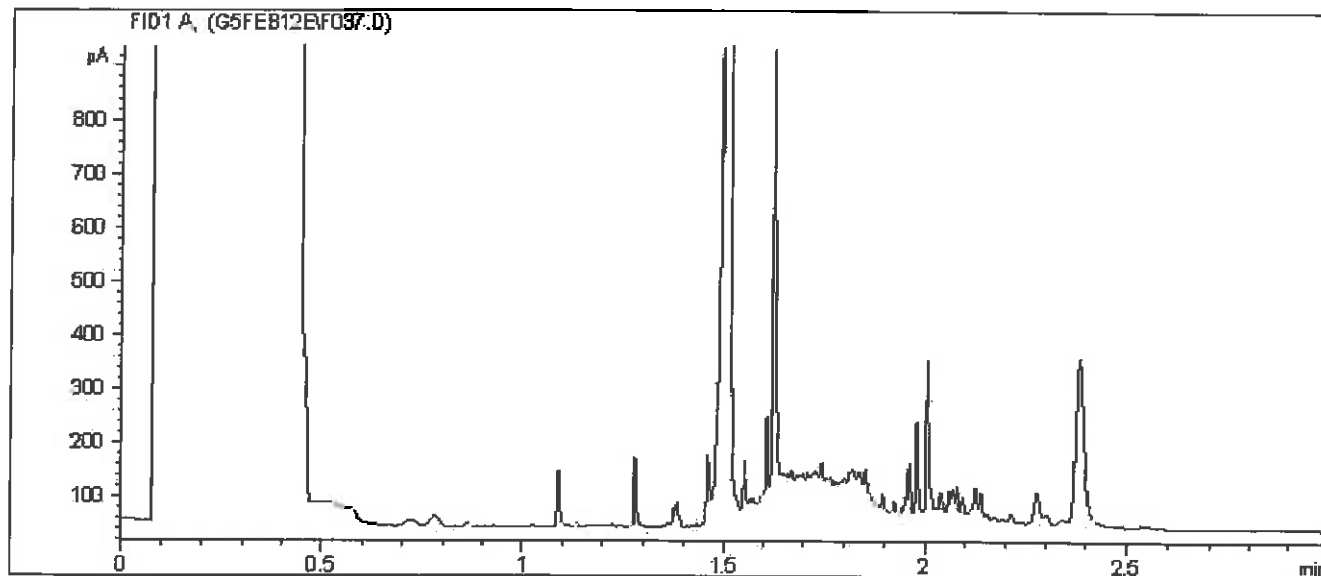
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

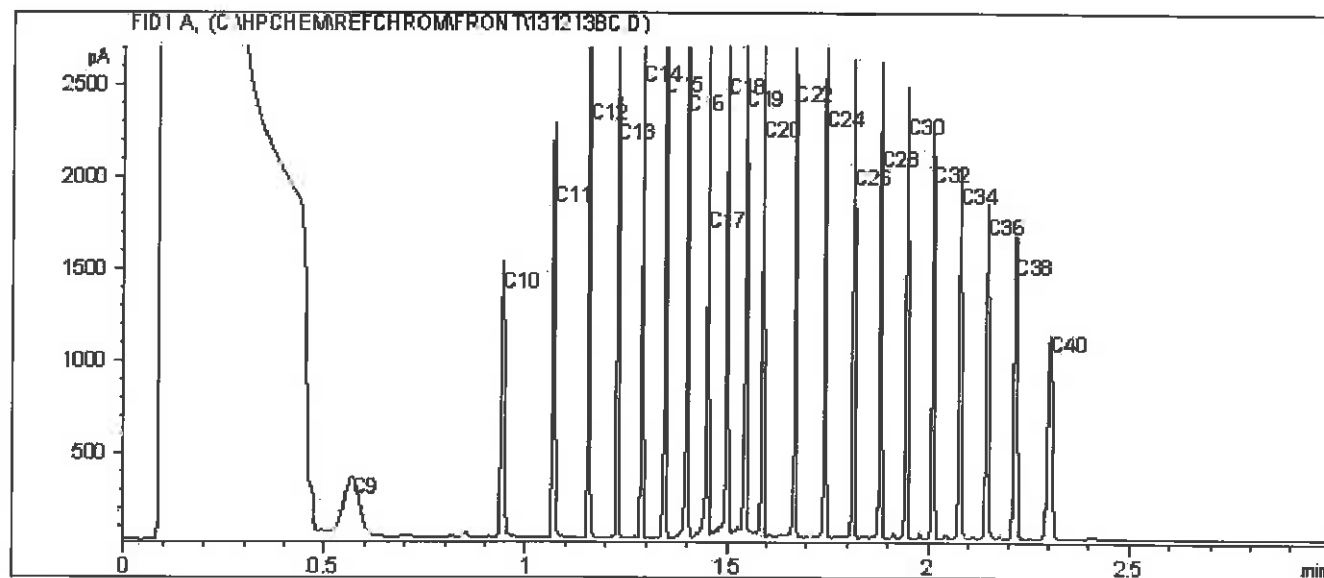
Report Date: 2014/02/12  
Maxxam Job #: B408764  
Maxxam Sample: IP4809

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Reference: LOWER POST  
Client ID: BH13-14-3

## BC Hydrocarbons in Soil by GC/FID Chromatogram



## Carbon Range Distribution - Reference Chromatogram



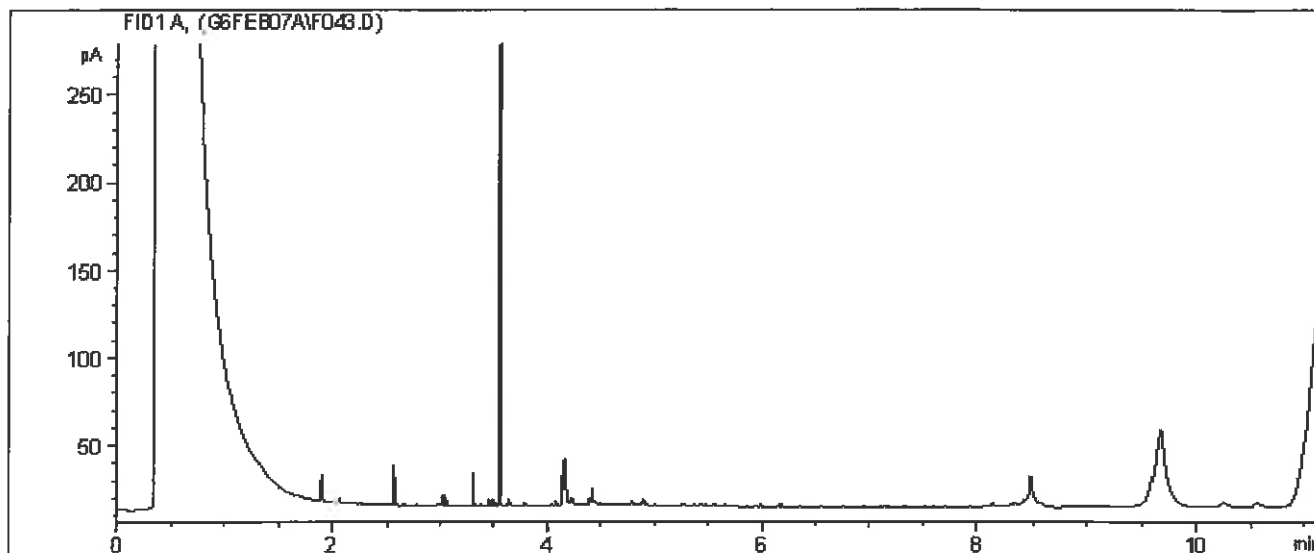
## TYPICAL PRODUCT CARBON NUMBER RANGES

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

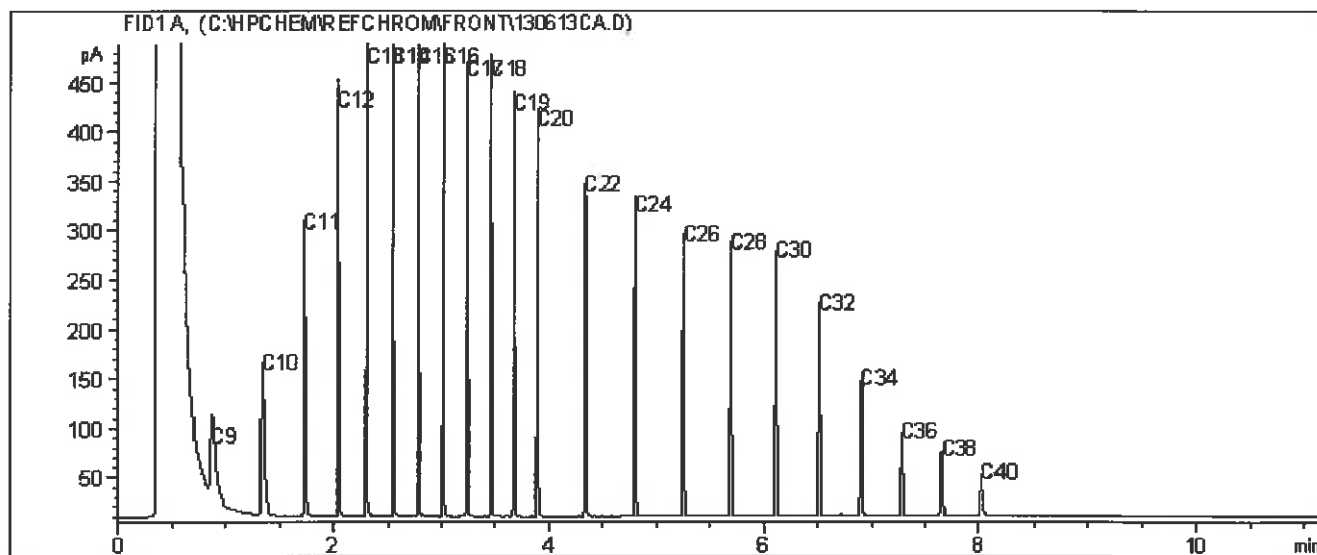
Report Date: 2014/02/12  
Maxxam Job #: B408764  
Maxxam Sample: IP4810

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Reference: LOWER POST  
Client ID: BH13-14-4

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

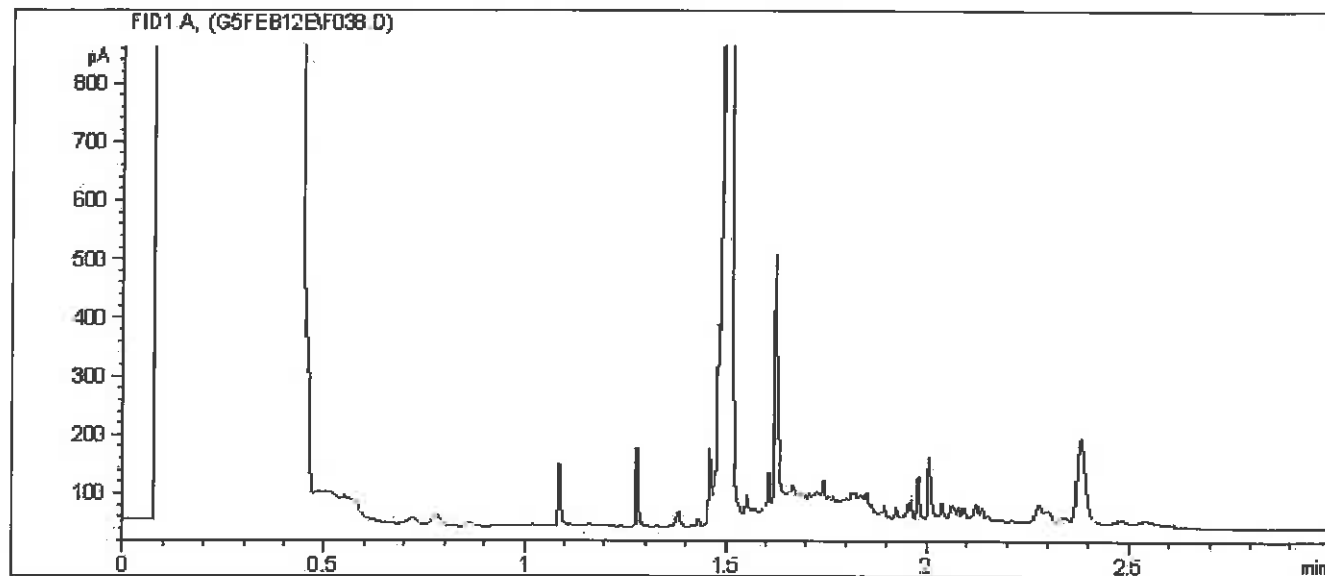
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

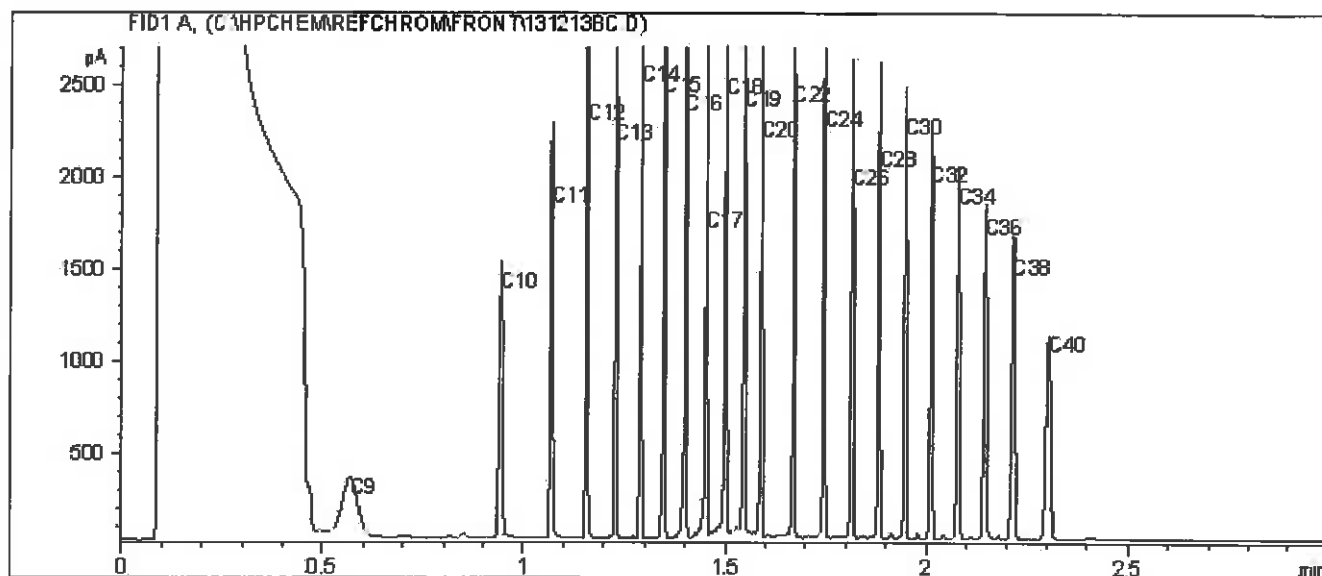
Report Date: 2014/02/12  
Maxxam Job #: B408764  
Maxxam Sample: IP4810

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Reference: LOWER POST  
Client ID: BH13-14-4

## BC Hydrocarbons in Soil by GC/FID Chromatogram



## Carbon Range Distribution - Reference Chromatogram



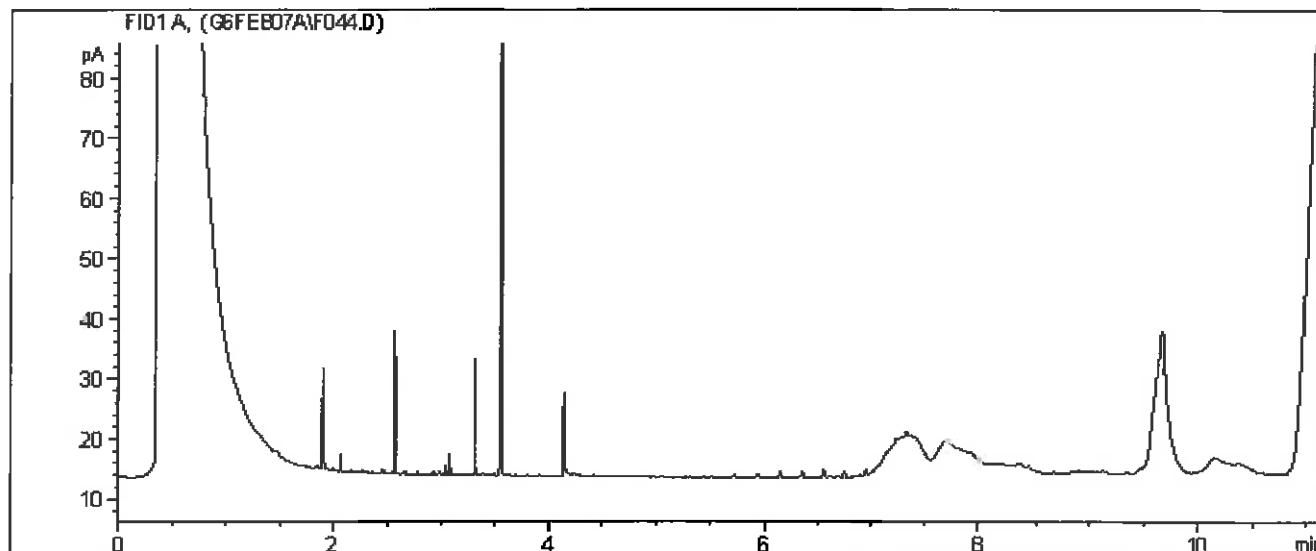
## TYPICAL PRODUCT CARBON NUMBER RANGES

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

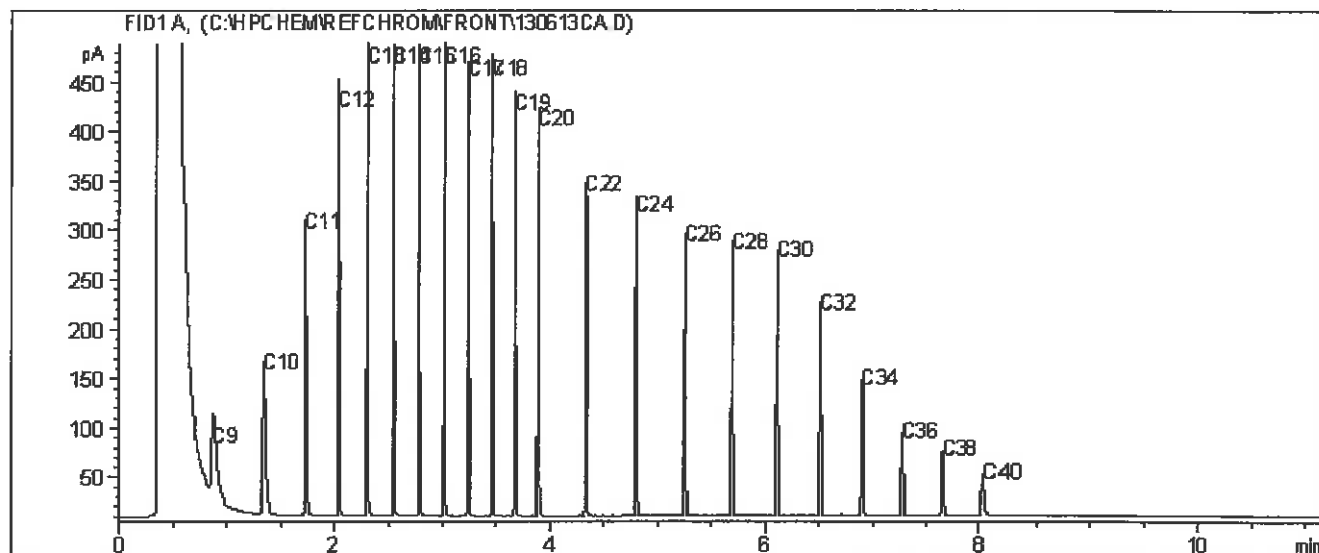
Report Date: 2014/02/12  
Maxxam Job #: B408764  
Maxxam Sample: IP4811

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Reference: LOWER POST  
Client ID: BH13-19-3

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

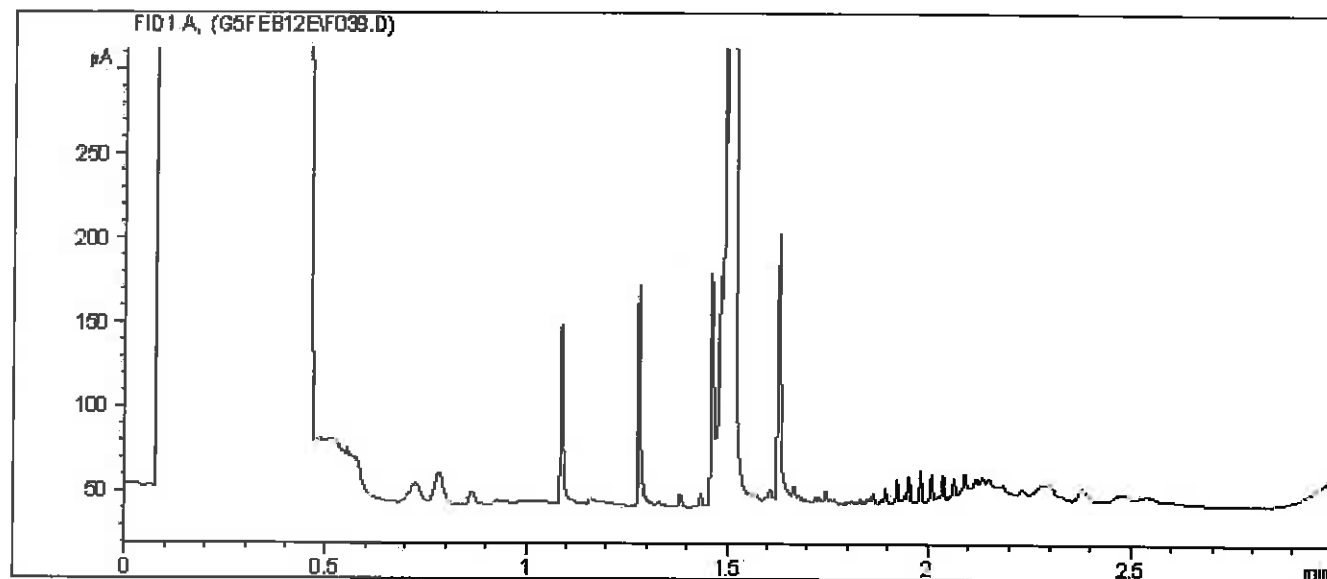
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

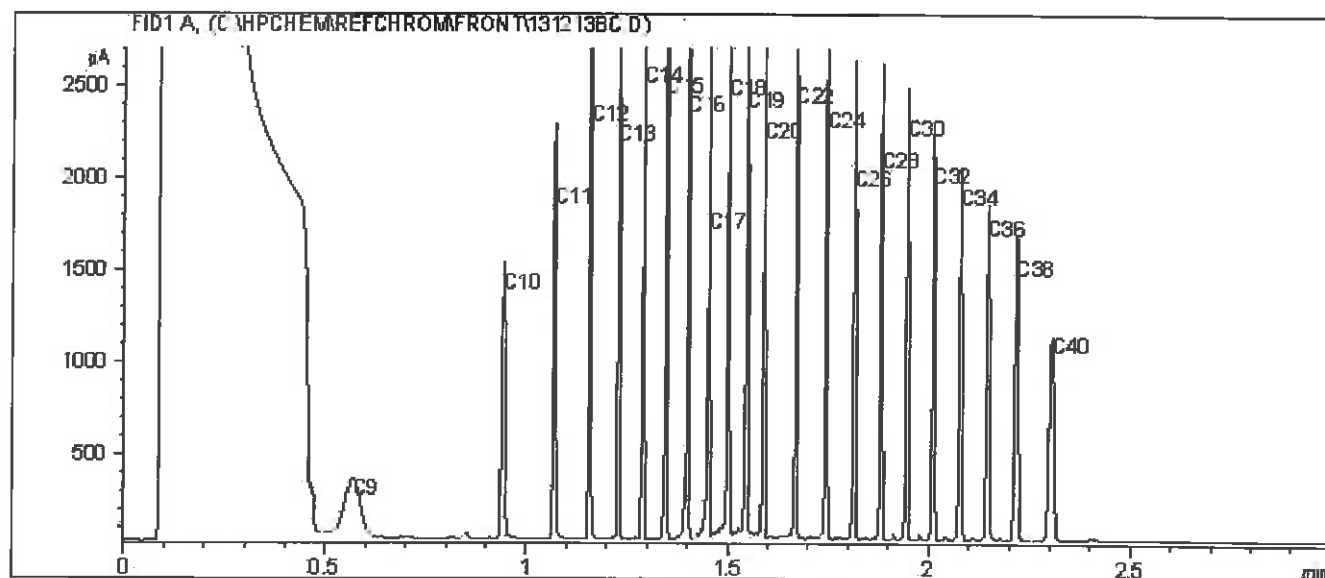
Report Date: 2014/02/12  
Maxxam Job #: B408764  
Maxxam Sample: IP4811

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Reference: LOWER POST  
Client ID: BH13-19-3

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



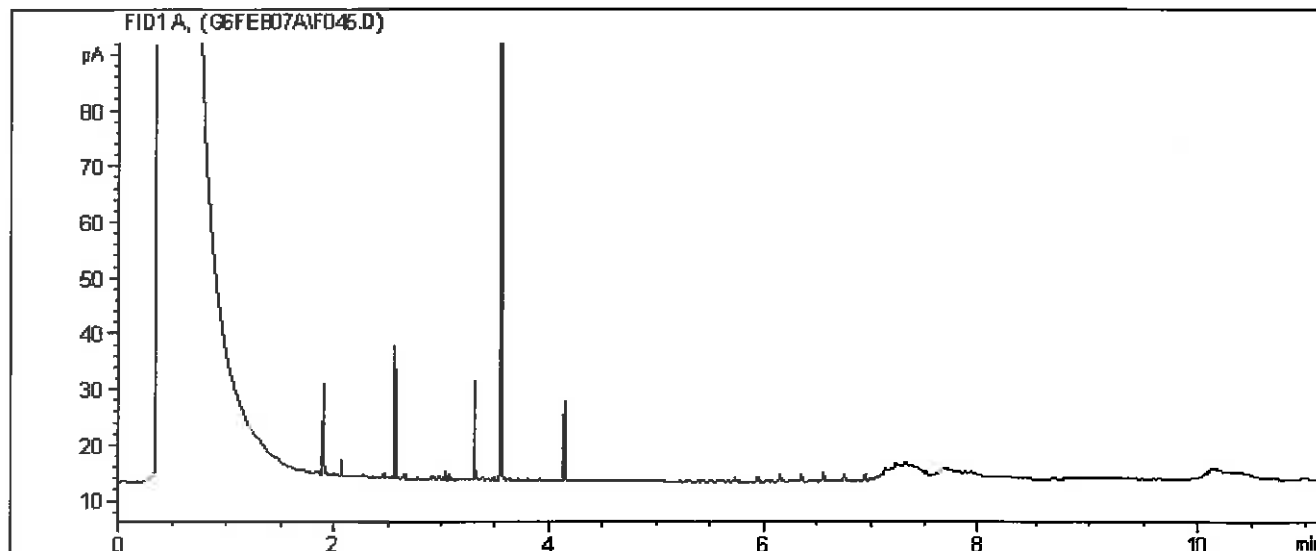
TYPICAL PRODUCT CARBON NUMBER RANGES

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

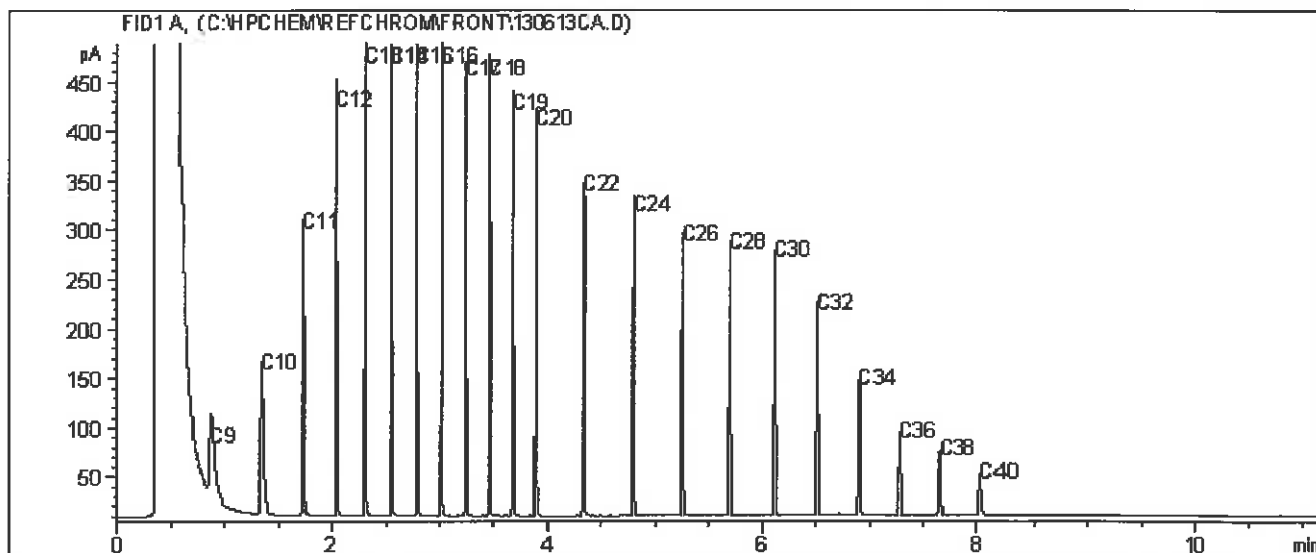
Report Date: 2014/02/12  
Maxxam Job #: B408764  
Maxxam Sample: IP4812

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Reference: LOWER POST  
Client ID: BH13-19-4

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

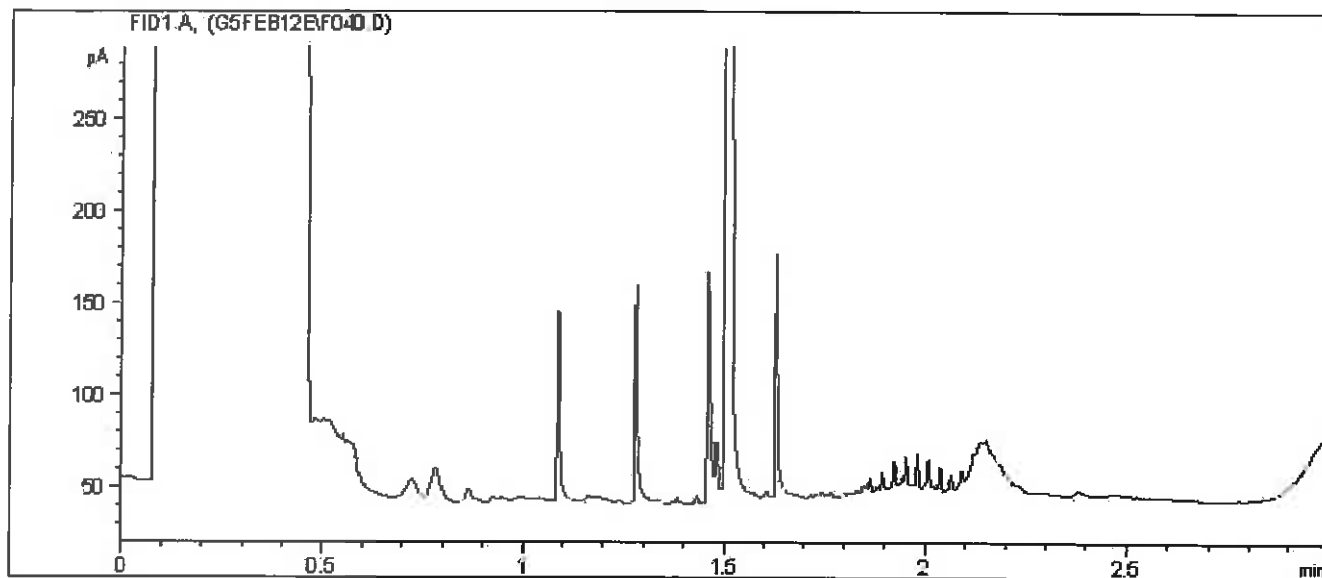
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

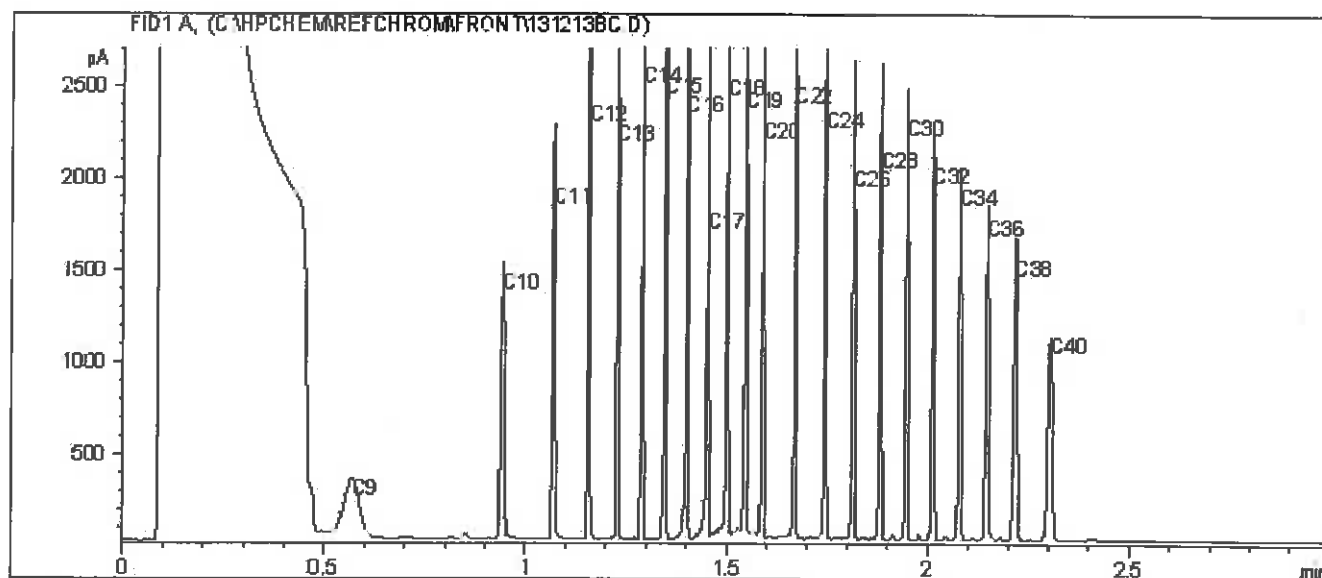
Report Date: 2014/02/12  
Maxxam Job #: B408764  
Maxxam Sample: IP4812

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Reference: LOWER POST  
Client ID: BH13-19-4

### BC Hydrocarbons in Soil by GC/FID Chromatogram



### Carbon Range Distribution - Reference Chromatogram



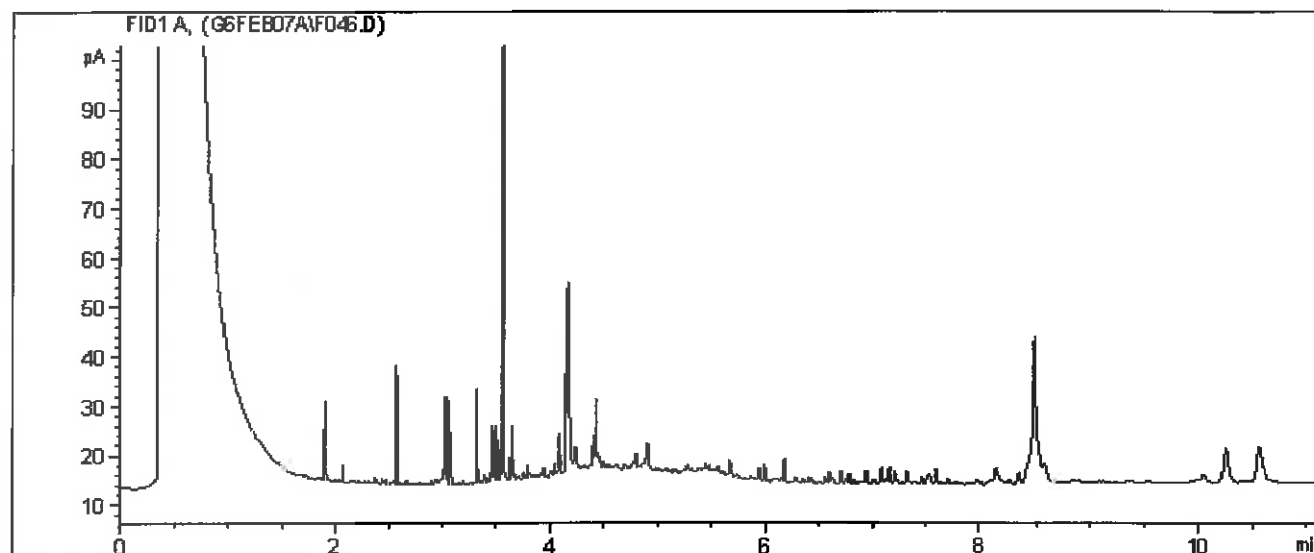
### TYPICAL PRODUCT CARBON NUMBER RANGES

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

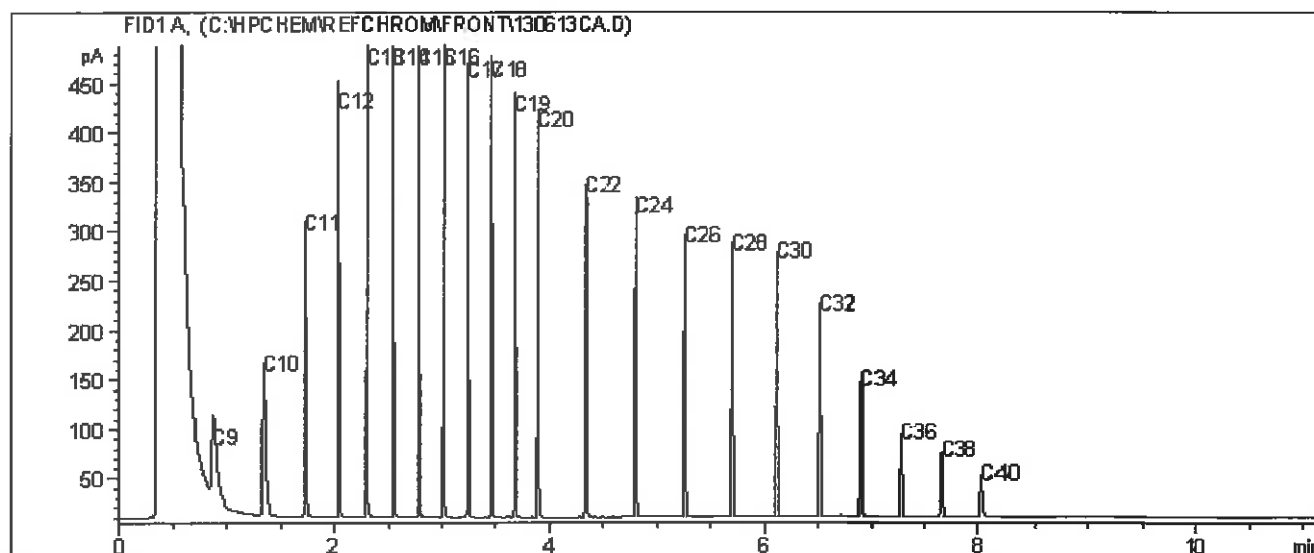
Report Date: 2014/02/12  
Maxxam Job #: B408764  
Maxxam Sample: IP4813

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Reference: LOWER POST  
Client ID: DUP 8

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

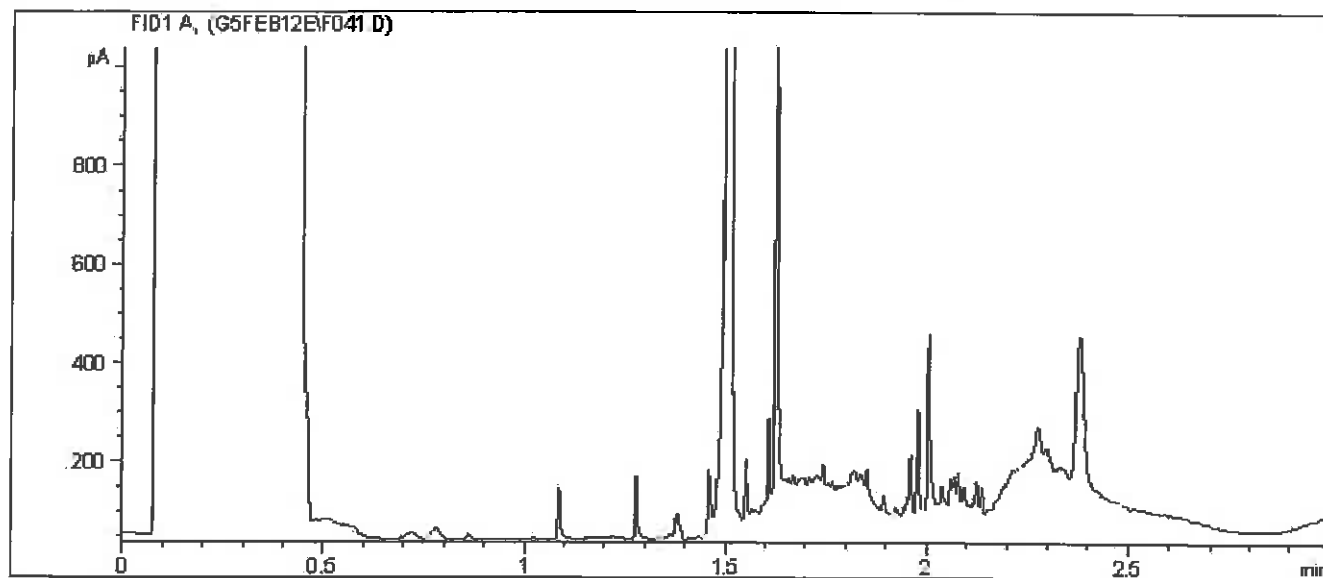
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

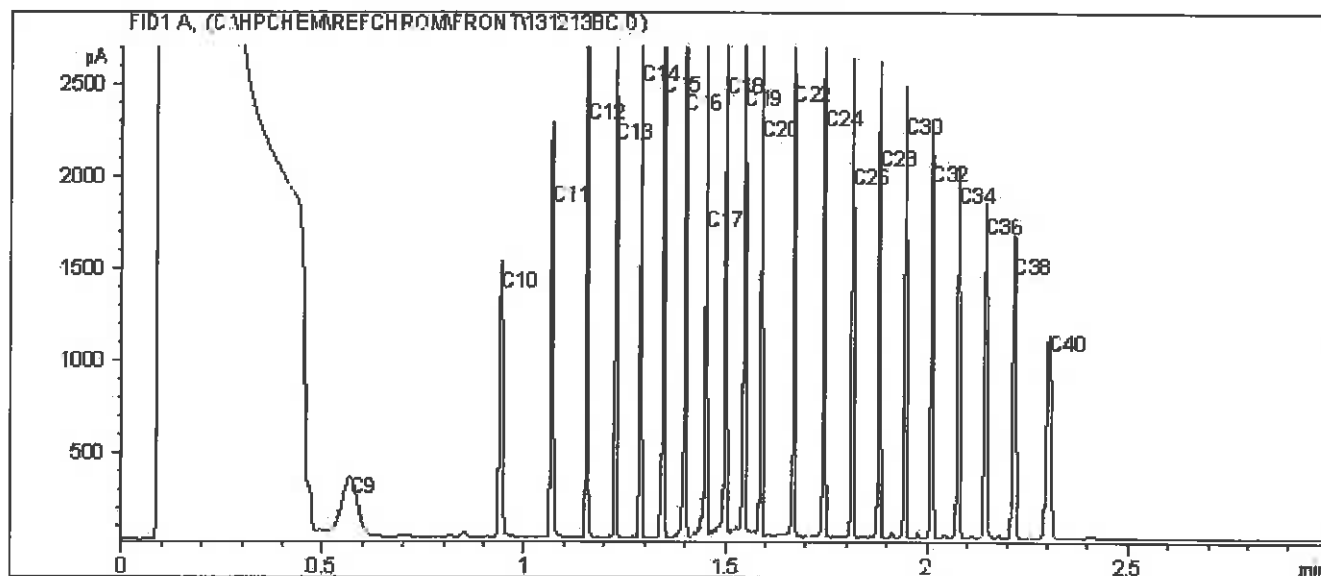
Report Date: 2014/02/12  
Maxxam Job #: B408764  
Maxxam Sample: IP4813

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Reference: LOWER POST  
Client ID: DUP 8

## BC Hydrocarbons in Soil by GC/FID Chromatogram



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

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

Your P.O. #: 700266127  
 Your Project #: LOWER POST  
 Site Location: LOWER POST  
 Your C.O.C. #: G026582, G026581, G026583

**Attention: John Taylor**  
 FRANZ/CORE 6  
 FRANZ/CORE 6  
 1410-777 Hornby Street  
 Vancouver, BC  
 Canada V6Z1S4

**Report Date: 2014/02/03**  
**Report #: R1509974**  
**Version: 1**

## CERTIFICATE OF ANALYSIS

**MAXXAM JOB #: B406342**  
**Received: 2014/01/27, 08:30**

Sample Matrix: Soil  
 # Samples Received: 9

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/MTBE Soil LH, VH, F1 SIM/MS	9	2014/01/27	2014/01/28	BBY8-SOP-00010	EPA SW846 8260C
Volatile F1-BTEX	9	N/A	2014/01/29	BBY WI-00033	BC MOE Lab Method
CCME Hydrocarbons (F2-F4 in soil) (1)	3	2014/01/27	2014/01/30	BBY8SOP-00030	CCME Soil Tier 1
CCME Hydrocarbons (F2-F4 in soil) (1)	5	2014/01/27	2014/01/31	BBY8SOP-00030	CCME Soil Tier 1
CCME Hydrocarbons (F2-F4 in soil) (1)	1	2014/01/27	2014/02/03	BBY8SOP-00030	CCME Soil Tier 1
Moisture	9	N/A	2014/01/28	BBY8SOP-00017	Ont MOE -E 3139
PAH in Soil by GC/MS (SIM) - CCME	9	2014/01/27	2014/01/31	BBY8SOP-00022	EPA 8270D
Benzo[a]pyrene Equivalency	3	N/A	2014/01/31	BBY WI-00033	CCME Guidelines
Benzo[a]pyrene Equivalency	6	N/A	2014/02/03	BBY WI-00033	CCME Guidelines
Total LMW, HMW, Total PAH Calc	3	N/A	2014/01/31	BBY WI-00033	BC MOE Lab Method
Total LMW, HMW, Total PAH Calc	6	N/A	2014/02/03	BBY WI-00033	BC MOE Lab Method

\* Results relate only to the items tested.

(1) The method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory; all deviations were justified and validated and are made available upon request; the chromatogram descends to baseline by the retention time of nC50 unless otherwise indicated; all QC criteria met; individual hydrocarbons (nC10, nC16, nC34) are within 10% of their average response factor; linearity is within 15%.

Encryption Key



Shanaz Akbar

03 Feb 2014 17:30:46 -08:00

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

Crystal Ireland, B.Sc., Account Specialist  
 Email: [Cireland@maxxam.ca](mailto:Cireland@maxxam.ca)  
 Phone# (604) 638-5016

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Total cover pages: 1

FRANZ/CORE 6  
Client Project #: LOWER POST  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

# PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		IN5241		IN5242		IN5247		IN5248		IN5266	
Sampling Date		2014/01/25		2014/01/25		2014/01/25		2014/01/25		2014/01/25	
	UNITS	BH13-6-3	QC Batch	BH13-6-4	QC Batch	BH13-7-3	QC Batch	BH13-7-4	QC Batch	BH13-8-3	QC Batch
<b>Ext. Pet. Hydrocarbon</b>											
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	7367011	<10	7365668	<10	7367011	<10	7365668	<10	7367011
F3 (C16-C34 Hydrocarbons)	mg/kg	<10	7367011	<10	7365668	<10	7367011	<10	7365668	<10	7367011
F4 (C34-C50 Hydrocarbons)	mg/kg	<10	7367011	<10	7365668	<10	7367011	<10	7365668	<10	7367011
Reached Baseline at C50	mg/kg	YES	7367011	YES	7365668	YES	7367011	YES	7365668	YES	7367011
<b>Surrogate Recovery (%)</b>											
O-TERPHENYL (sur.)	%	102	7367011	97	7365668	109	7367011	91	7365668	119	7367011

Maxxam ID		IN5267		IN5272		IN5273		IN5276	
Sampling Date		2014/01/25		2014/01/25		2014/01/25		2014/01/25	
UNITS		BH13-8-4	QC Batch	BH13-10-3	QC Batch	BH13-10-4	DUP 5	QC Batch	
Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	7367011	<10	7365668	<10	<10	10	7367011
F3 (C16-C34 Hydrocarbons)	mg/kg	11	7367011	<10	7365668	<10	<10	10	7367011
F4 (C34-C50 Hydrocarbons)	mg/kg	<10	7367011	<10	7365668	<10	<10	10	7367011
Reached Baseline at C50	mg/kg	YES	7367011	YES	7365668	YES	YES	N/A	7367011
Surrogate Recovery (%)									
O-TERPHENYL (sur.)	%	108	7367011	96	7365668	112	103	7367011	

## PHYSICAL TESTING (SOIL)

[illegible]

N/A = Not Applicable  
RDL = Reportable Detection Limit

Maxxam Job #: B406342  
Report Date: 2014/02/03

FRANZCORE 6  
Client Project #: LOWER POST  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

## CCME BTEX/F1 BY HS IN SOIL (SOIL)

Maxxam ID	IN5241	IN5242	IN5247	IN5248	IN5266	IN5267	IN5272	IN5273	IN5276		
Sampling Date	2014/01/25	2014/01/25	2014/01/25	2014/01/25	2014/01/25	2014/01/25	2014/01/25	2014/01/25	2014/01/25		
UNITS	BH13-6-3	BH13-6-4	BH13-7-3	BH13-7-4	BH13-8-3	BH13-8-4	BH13-10-3	BH13-10-4	DUP 5	RDL	QC Batch
<b>Calculated Parameters</b>											
F1 (C6-C10) - BTEX	<10	<10	<10	<10	<10	<10	<10	<10	<10	10	7361849
<b>Volatiles</b>											
Methyl-tert-butylether (MTBE)	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	7363619
Benzene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	7363619
Toluene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	7363619
Ethylbenzene	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	7363619
m & p-Xylene	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	7363619
o-Xylene	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	7363619
Styrene	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	0.030	7363619
Xylenes (Total)	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	7363619
(C6-C10)	<10	<10	<10	<10	<10	<10	<10	<10	<10	10	7363619
<b>Surrogate Recovery (%)</b>											
1,4-Difluorobenzene (sur.)	102	101	101	101	100	100	100	100	100		7363619
4-BROMOFLUOROBENZENE (sur.)	105	110	109	110	110	109	109	110	111		7363619
D10-ETHYLBENZENE (sur.)	82	82	83	83	83	84	84	84	86		7363619
D4-1,2-DICHLOROETHANE (sur.)	98	96	96	99	98	99	96	98	97		7363619

RDL = Reportable Detection Limit

FRANZ/CORE 6  
Client Project #: LOWER POST  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

## CCME PAH IN SOIL BY GC-MS (SOIL)

Maxxam ID	IN5241	IN5242	IN5247	IN5248	IN5266	
Sampling Date	2014/01/25	2014/01/25	2014/01/25	2014/01/25	2014/01/25	
UNITS	BH13-6-3	QC Batch	BH13-6-4	QC Batch	BH13-7-3	QC Batch
Calculated Parameters						
Index of Additive Cancer Risk(IARC)	N/A	0.31	7361852	0.31	7361852	0.31
Benz(a)pyrene equivalency	N/A	<0.10	7361852	<0.10	7361852	<0.10
Polycyclic Aromatics						
Naphthalene	mg/kg	<0.010	7367017	<0.010	7365717	<0.010
2-Methylnaphthalene	mg/kg	<0.020	7367017	<0.020	7365717	<0.020
Acenaphthylene	mg/kg	<0.0050	7367017	<0.0050	7365717	<0.0050
Acenaphthene	mg/kg	<0.0050	7367017	<0.0050	7365717	<0.0050
Fluorene	mg/kg	<0.020	7367017	<0.020	7365717	<0.020
Phenanthrene	mg/kg	<0.020	7367017	<0.020	7365717	<0.020
Anthracene	mg/kg	<0.0040	7367017	<0.0040	7365717	<0.0040
Fluoranthene	mg/kg	<0.020	7367017	<0.020	7365717	<0.020
Pyrene	mg/kg	<0.020	7367017	<0.020	7365717	<0.020
Benzo(a)anthracene	mg/kg	<0.020	7367017	<0.020	7365717	<0.020
Chrysene	mg/kg	<0.020	7367017	<0.020	7365717	<0.020
Benzo(b)fluoranthene	mg/kg	<0.020	7367017	<0.020	7365717	<0.020
Benzo(k)fluoranthene	mg/kg	<0.020	7367017	<0.020	7365717	<0.020
Benzo(a)pyrene	mg/kg	<0.020	7367017	<0.020	7365717	<0.020
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	7367017	<0.050	7365717	<0.050
Dibenz(a,h)anthracene	mg/kg	<0.050	7367017	<0.050	7365717	<0.050
Benzo(g,h,i)perylene	mg/kg	<0.050	7367017	<0.050	7365717	<0.050
Low Molecular Weight PAH's	mg/kg	<0.050	7361550	<0.050	7361550	<0.050
High Molecular Weight PAH's	mg/kg	<0.050	7361550	<0.050	7361550	<0.050
Total PAH	mg/kg	<0.050	7361550	<0.050	7361550	<0.050
Surrogate Recovery (%)						
D8-ANTHRACENE (sur.)	%	107	7367017	115	7365717	107
D8-ACENAPHTHYLENE (sur.)	%	92	7367017	96	7365717	89
D8-NAPHTHALENE (sur.)	%	98	7367017	104	7365717	96
TERPHENYL-D14 (sur.)	%	105	7367017	108	7365717	108

N/A = Not Applicable  
RDL = Reportable Detection Limit

Maxxam Job #: B406342  
Report Date: 2014/02/03

## CCME PAH IN SOIL BY GC-MS (SOIL)

Maxxam ID		IN5267		IN5272		IN5273		IN5276	
Sampling Date		2014/01/25		2014/01/25		2014/01/25		2014/01/25	
Calculated Parameters									
	UNITS	BH13-8-4	QC Batch	BH13-10-3	QC Batch	BH13-10-4	DUP 5	RDL	QC Batch
Index of Additive Cancer Risk(IARC)									
Benz[a]pyrene equivalency	N/A	0.31	7361852	0.31	7361852	0.31	0.31	0.10	7361852
Polycyclic Aromatics									
Naphthalene	mg/kg	<0.010	7367017	<0.010	7365717	<0.010	<0.010	0.010	7367017
2-Methylnaphthalene	mg/kg	<0.020	7367017	<0.020	7365717	<0.020	<0.020	0.020	7367017
Acenaphthylene	mg/kg	<0.0050	7367017	<0.0050	7365717	<0.0050	<0.0050	0.0050	7367017
Acenaphthene	mg/kg	<0.0050	7367017	<0.0050	7365717	<0.0050	<0.0050	0.0050	7367017
Fluorene	mg/kg	<0.020	7367017	<0.020	7365717	<0.020	<0.020	0.020	7367017
Phenanthrene	mg/kg	<0.020	7367017	<0.020	7365717	<0.020	<0.020	0.020	7367017
Anthracene	mg/kg	<0.0040	7367017	<0.0040	7365717	<0.0040	<0.0040	0.0040	7367017
Fluoranthene	mg/kg	<0.020	7367017	<0.020	7365717	<0.020	<0.020	0.020	7367017
Pyrene	mg/kg	<0.020	7367017	<0.020	7365717	<0.020	<0.020	0.020	7367017
Benzo(a)anthracene	mg/kg	<0.020	7367017	<0.020	7365717	<0.020	<0.020	0.020	7367017
Chrysene	mg/kg	<0.020	7367017	<0.020	7365717	<0.020	<0.020	0.020	7367017
Benzo(b)fluoranthene	mg/kg	<0.020	7367017	<0.020	7365717	<0.020	<0.020	0.020	7367017
Benzo(k)fluoranthene	mg/kg	<0.020	7367017	<0.020	7365717	<0.020	<0.020	0.020	7367017
Benzo(a)pyrene	mg/kg	<0.020	7367017	<0.020	7365717	<0.020	<0.020	0.020	7367017
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	7367017	<0.050	7365717	<0.050	<0.050	0.050	7367017
Dibenz(a,h)anthracene	mg/kg	<0.050	7367017	<0.050	7365717	<0.050	<0.050	0.050	7367017
Benzo(g,h,i)perylene	mg/kg	<0.050	7367017	<0.050	7365717	<0.050	<0.050	0.050	7367017
Low Molecular Weight PAH's	mg/kg	<0.050	7361550	<0.050	7361550	<0.050	<0.050	0.050	7361550
High Molecular Weight PAH's	mg/kg	<0.050	7361550	<0.050	7361550	<0.050	<0.050	0.050	7361550
Total PAH	mg/kg	<0.050	7361550	<0.050	7361550	<0.050	<0.050	0.050	7361550
Surrogate Recovery (%)									
D10-ANTHRACENE (sur.)	%	100	7367017	101	7365717	97	89		7367017
D8-ACENAPHTHYLENE (sur.)	%	91	7367017	88	7365717	88	82		7367017
D8-NAPHTHALENE (sur.)	%	98	7367017	96	7365717	94	90		7367017
TERPHENYL-D14 (sur.)	%	103	7367017	100	7365717	101	85		7367017

N/A = Not Applicable  
RDL = Reportable Detection Limit

FRANZ/CORE 6  
Client Project #: LOWER POST  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

Package 1	1.0°C
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Each temperature is the average of up to three cooler temperatures taken at receipt

## General Comments

FRANZ/CORE 6  
Client Project #: LOWER POST  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

## QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7362207	Moisture	2014/01/28					<0.30	%	4.9	20
7363619	1,4-Difluorobenzene (sur.)	2014/01/28	97	70 - 130	96	70 - 130	103	%		
7363619	4-BROMOFLUOROBENZENE (sur.)	2014/01/28	111	70 - 130	109	70 - 130	104	%		
7363619	D10-ETHYLBENZENE (sur.)	2014/01/28	85	50 - 130	74	50 - 130	84	%		
7363619	D4-1,2-DICHLOROETHANE (sur.)	2014/01/28	95	70 - 130	92	70 - 130	102	%		
7363619	Benzene	2014/01/28	78	60 - 140	70	60 - 140	<0.0050	mg/kg	NC	40
7363619	Toluene	2014/01/28	79	60 - 140	71	60 - 140	<0.020	mg/kg	NC	40
7363619	Ethylbenzene	2014/01/28	82	60 - 140	73	60 - 140	<0.010	mg/kg	NC	40
7363619	m & p-Xylene	2014/01/28	80	60 - 140	71	60 - 140	<0.040	mg/kg	NC	40
7363619	o-Xylene	2014/01/28	79	60 - 140	70	60 - 140	<0.040	mg/kg	NC	40
7363619	(C8-C10)	2014/01/28			112	60 - 140	<10	mg/kg		
7363619	Methyl-tert-butylether(MTBE)	2014/01/28					<0.10	mg/kg	NC	40
7363619	Styrene	2014/01/28					<0.030	mg/kg	NC	40
7363619	Xylenes (Total)	2014/01/28					<0.040	mg/kg	NC	40
7365668	O-TERPHENYL (sur.)	2014/01/30	88	50 - 130	88	50 - 130	95	%		
7365668	F2 (C10-C16 Hydrocarbons)	2014/01/30	104	50 - 130	98	80 - 120	<10	mg/kg	NC	40
7365668	F3 (C16-C34 Hydrocarbons)	2014/01/30	99	50 - 130	97	80 - 120	<10	mg/kg	NC	40
7365668	F4 (C34-C50 Hydrocarbons)	2014/01/30	84	50 - 130	84	80 - 120	<10	mg/kg	NC	40
7365668	Reached Baseline at C50	2014/01/30					YES, RDL=N/A	mg/kg	NC	50
7365717	D10-ANTHRACENE (sur.)	2014/01/30	91	60 - 130	106	60 - 130	103	%		
7365717	DB-ACENAPHTHYLENE (sur.)	2014/01/30	92	50 - 130	95	50 - 130	96	%		
7365717	DB-NAPHTHALENE (sur.)	2014/01/30	98	50 - 130	100	50 - 130	103	%		
7365717	TERPHENYL-D14 (sur.)	2014/01/30	88	60 - 130	99	60 - 130	99	%		
7365717	Naphthalene	2014/01/31	89	50 - 130	89	50 - 130	<0.010	mg/kg	NC	50
7365717	2-Methylnaphthalene	2014/01/31	90	50 - 130	88	50 - 130	<0.020	mg/kg	NC	50
7365717	Acenaphthylene	2014/01/31	90	50 - 130	89	50 - 130	<0.0050	mg/kg	NC	50
7365717	Acenaphthene	2014/01/31	92	50 - 130	91	50 - 130	<0.0050	mg/kg	NC	50
7365717	Fluorene	2014/01/31	89	50 - 130	91	50 - 130	<0.020	mg/kg	NC	50
7365717	Phenanthrene	2014/01/31	91	60 - 130	89	60 - 130	<0.020	mg/kg	NC	50
7365717	Anthracene	2014/01/31	99	60 - 130	107	60 - 130	<0.0040	mg/kg	NC	50
7365717	Fluoranthene	2014/01/31	96	60 - 130	98	60 - 130	<0.020	mg/kg	NC	50
7365717	Pyrene	2014/01/31	92	60 - 130	95	60 - 130	<0.020	mg/kg	NC	50
7365717	Benzofluoranthene	2014/01/31	83	60 - 130	85	60 - 130	<0.020	mg/kg	NC	50
7365717	Chrysene	2014/01/31	84	60 - 130	87	60 - 130	<0.020	mg/kg	NC	50
7365717	Benzobenzofluoranthene	2014/01/31	70	60 - 130	89	60 - 130	<0.020	mg/kg	NC	50
7365717	Benzokfluoranthene	2014/01/31	86	60 - 130	88	60 - 130	<0.020	mg/kg	NC	50
7365717	Benzofluoranthene	2014/01/31	88	60 - 130	94	60 - 130	<0.020	mg/kg	NC	50
7365717	Indeno(1,2,3-cd)pyrene	2014/01/31	84	60 - 130	98	60 - 130	<0.050	mg/kg	NC	50
7365717	Dibenz(a,h)anthracene	2014/01/31	88	60 - 130	99	60 - 130	<0.050	mg/kg	NC	50

FRANZ/CORE 6  
Client Project #: LOWER POST  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

## QUALITY ASSURANCE REPORT

QC Batch	Parameter	Data	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7365717	Benzo(g,h,i)perylene	2014/01/31	80	60 - 130	98	60 - 130	<0.050	mg/kg	NC	50
7365717	Benzo(b)fluoranthene	2014/01/31					<0.020	mg/kg	NC	N/A
7367011	O-TERPHENYL (sur.)	2014/01/31	94	50 - 130	100	50 - 130	114	%		
7367011	F2(C10-C16 Hydrocarbons)	2014/02/03	114	50 - 130	109	80 - 120	14, RDL=10	mg/kg	NC	40
7367011	F3(C18-C34 Hydrocarbons)	2014/02/03	105	50 - 130	101	80 - 120	<10	mg/kg	NC	40
7367011	F4(C34-C50 Hydrocarbons)	2014/02/03	91	50 - 130	85	80 - 120	<10	mg/kg	NC	40
7367011	Reached Baseline at C50	2014/02/03	YES	N/A	YES	N/A	YES, RDL=N/A	mg/kg	NC	50
7367017	D10-ANTHRACENE (sur.)	2014/01/31	98	60 - 130	108	60 - 130	114	%		
7367017	D8-ACENAPHTHYLENE (sur.)	2014/01/31	89	50 - 130	93	50 - 130	98	%		
7367017	D8-NAPHTHALENE (sur.)	2014/01/31	92	50 - 130	96	50 - 130	105	%		
7367017	TERPHENYL-D14 (sur.)	2014/01/31	98	60 - 130	104	60 - 130	111	%		
7367017	Naphthalene	2014/01/31	82	50 - 130	83	50 - 130	<0.010	mg/kg	NC	50
7367017	2-Methylnaphthalene	2014/01/31	86	50 - 130	86	50 - 130	<0.020	mg/kg	NC	50
7367017	Acenaphthylene	2014/01/31	84	50 - 130	83	50 - 130	<0.0050	mg/kg	NC	50
7367017	Acenaphthene	2014/01/31	85	50 - 130	84	50 - 130	<0.0050	mg/kg	NC	50
7367017	Fluorene	2014/01/31	87	50 - 130	85	50 - 130	<0.020	mg/kg	NC	50
7367017	Phenanthrene	2014/01/31	85	60 - 130	83	60 - 130	<0.020	mg/kg	NC	50
7367017	Anthracene	2014/01/31	98	60 - 130	104	60 - 130	<0.0040	mg/kg	NC	50
7367017	Fluoranthene	2014/01/31	94	60 - 130	96	60 - 130	<0.020	mg/kg	NC	50
7367017	Pyrene	2014/01/31	91	60 - 130	91	60 - 130	<0.020	mg/kg	NC	50
7367017	Benzo(a)anthracene	2014/01/31	81	60 - 130	83	60 - 130	<0.020	mg/kg	NC	50
7367017	Chrysene	2014/01/31	84	60 - 130	86	60 - 130	<0.020	mg/kg	NC	50
7367017	Benzo(b,f)fluoranthene	2014/01/31	71	60 - 130	71	60 - 130	<0.020	mg/kg	NC	50
7367017	Benzo(k)fluoranthene	2014/01/31	94	60 - 130	96	60 - 130	<0.020	mg/kg	NC	50
7367017	Benzo(a)pyrene	2014/01/31	84	60 - 130	85	60 - 130	<0.020	mg/kg	NC	50
7367017	Indeno(1,2,3-cd)pyrene	2014/01/31	82	60 - 130	89	60 - 130	<0.050	mg/kg	NC	50
7367017	Dibenz(a,h)anthracene	2014/01/31	83	60 - 130	88	60 - 130	<0.050	mg/kg	NC	50
7367017	Benzo(g,h,i)perylene	2014/01/31	76	60 - 130	84	60 - 130	<0.050	mg/kg	NC	50
7367017	Benzo(b)fluoranthene	2014/01/31					<0.020	mg/kg	NC	N/A

N/A = Not Applicable

RDL = Reportable Detection Limit

RPD = Relative Percent Difference

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.

FRANZICORE 8  
Client Project #: LOWER POST  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

## Validation Signature Page

Maxxam Job #: B406342

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

  
\_\_\_\_\_  
David Huang, BBA Scientific Specialist

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



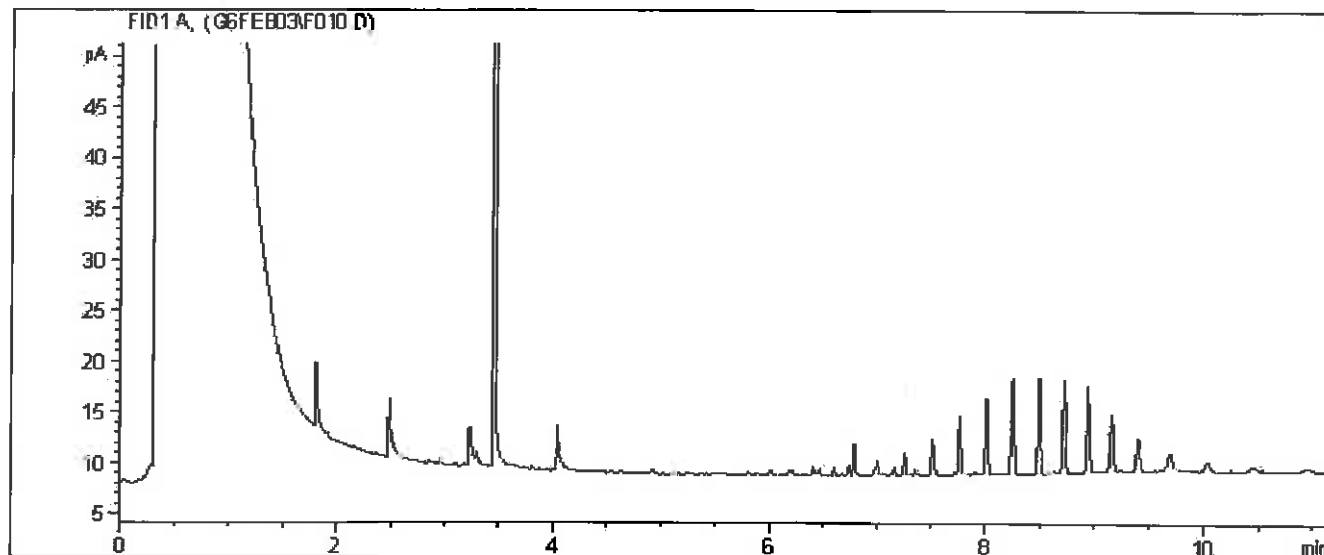




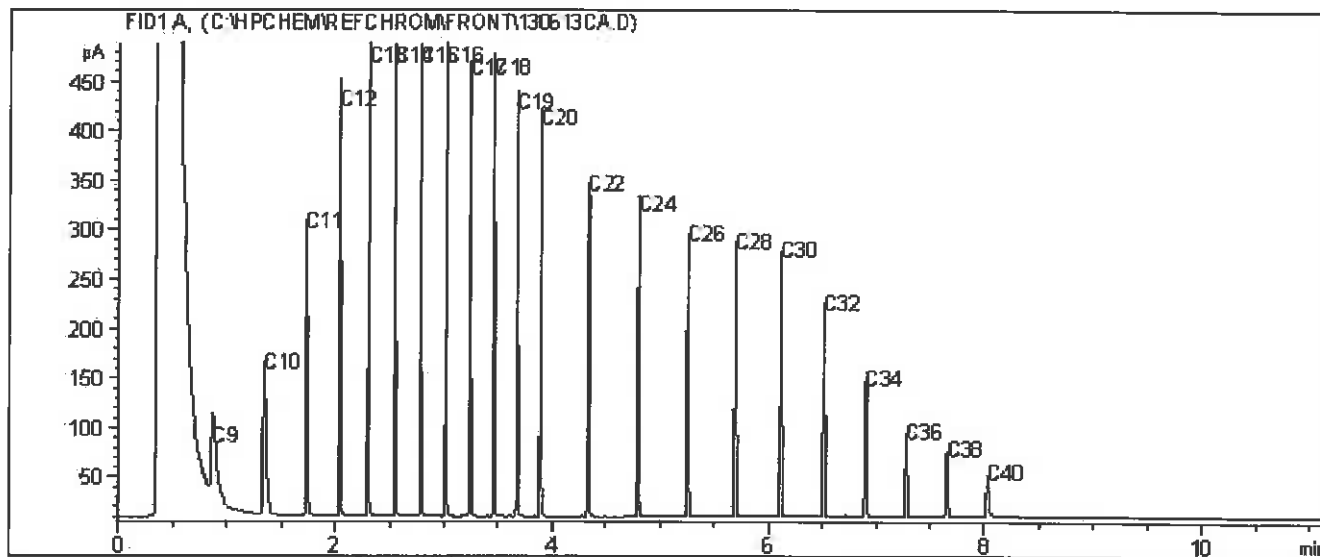
Report Date: 2014/02/03  
Maxxam Job #: B406342  
Maxxam Sample: IN5241

FRANZ/CORE 6  
Client Project #: LOWER POST  
Site Reference: LOWER POST  
Client ID: BH13-6-3

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

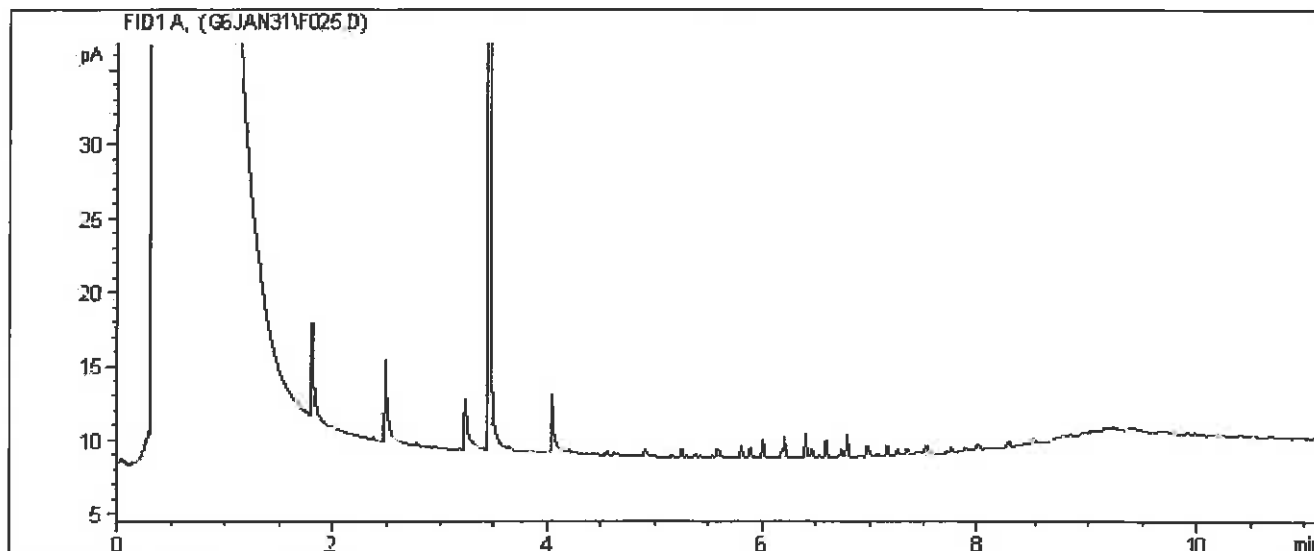
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

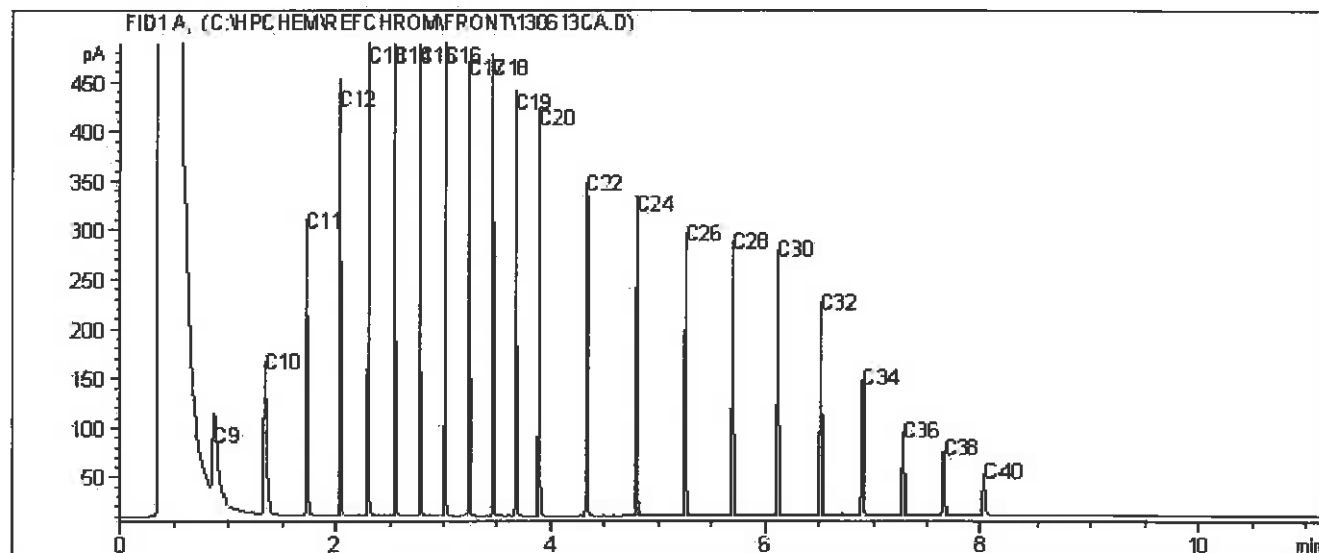
Report Date: 2014/02/03  
Maxxam Job #: B406342  
Maxxam Sample: IN5247

FRANZ/CORE 6  
Client Project #: LOWER POST  
Site Reference: LOWER POST  
Client ID: BH13-7-3

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C13

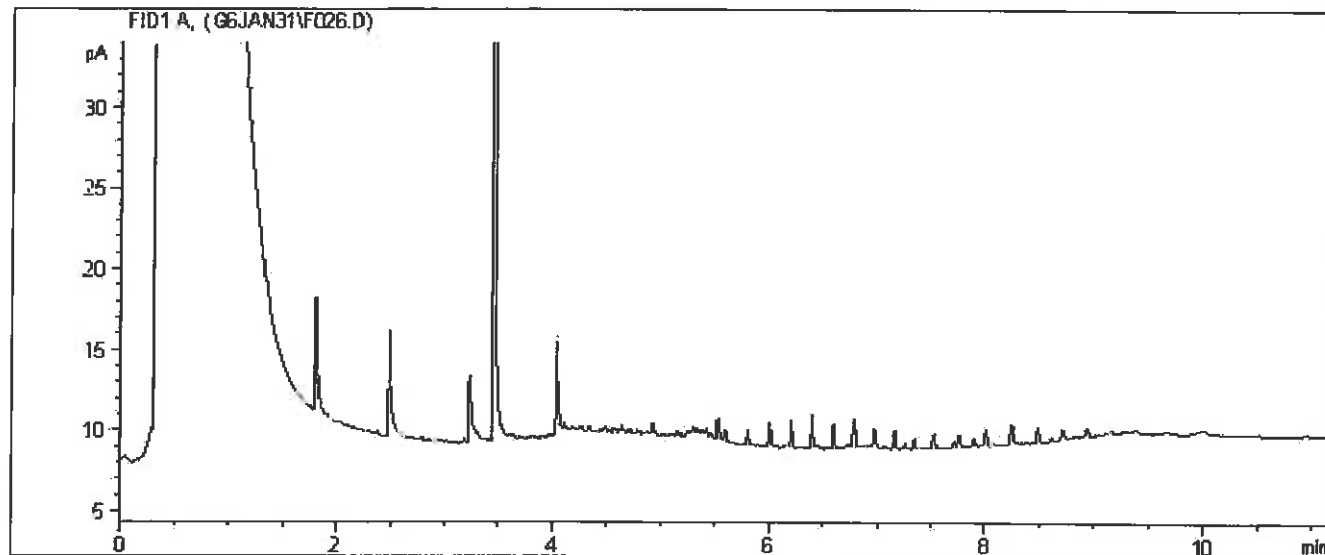
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

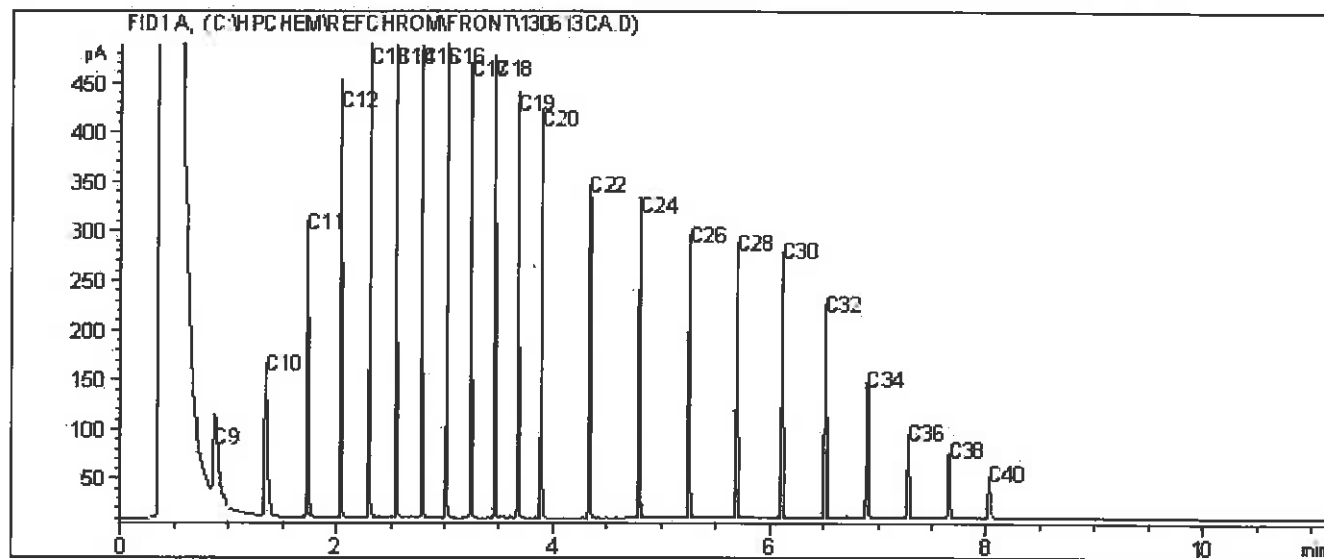
Report Date: 2014/02/03  
Maxxam Job #: B406342  
Maxxam Sample: IN5266

FRANZ/CORE 6  
Client Project #: LOWER POST  
Site Reference: LOWER POST  
Client ID: BH13-8-3

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

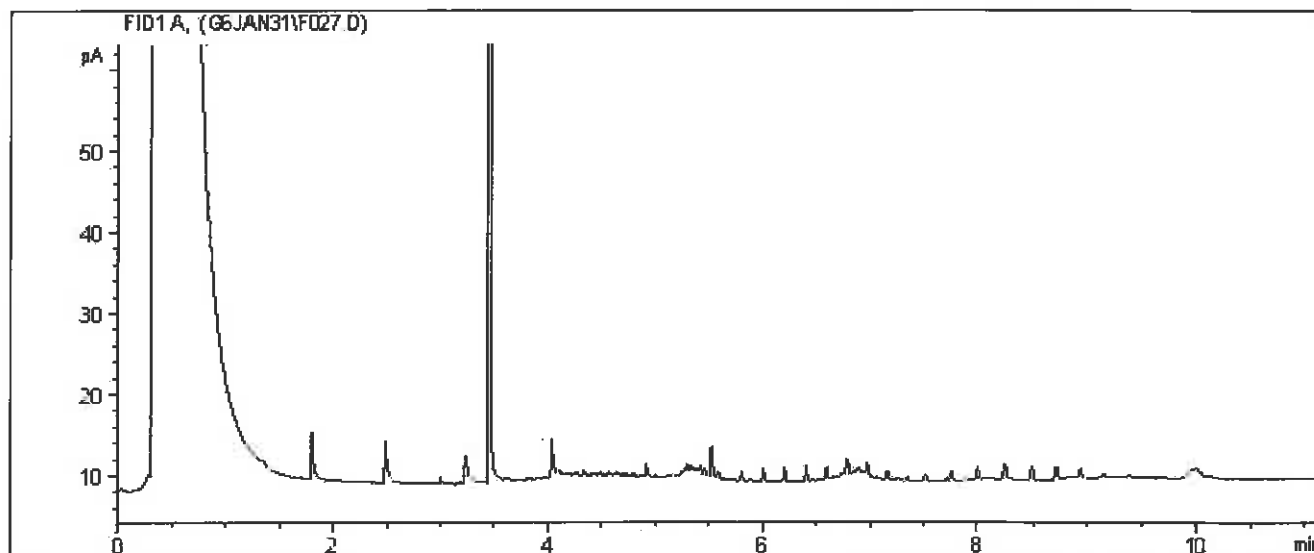
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

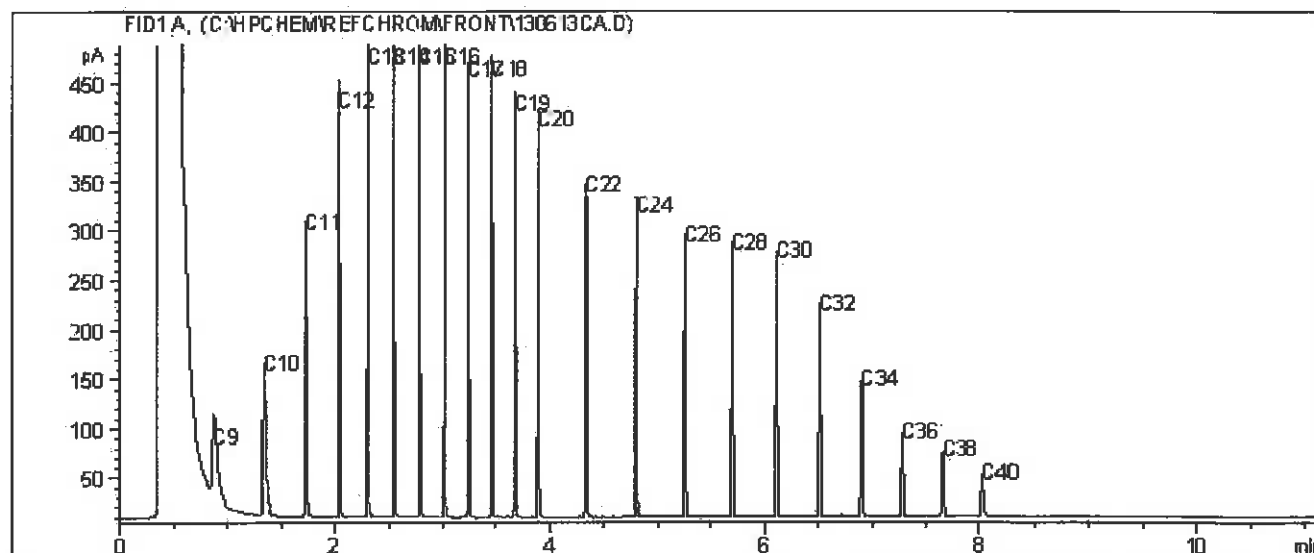
Report Date: 2014/02/03  
Maxxam Job #: B406342  
Maxxam Sample: IN5267

FRANZ/CORE 6  
Client Project #: LOWER POST  
Site Reference: LOWER POST  
Client ID: BH13-8-4

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

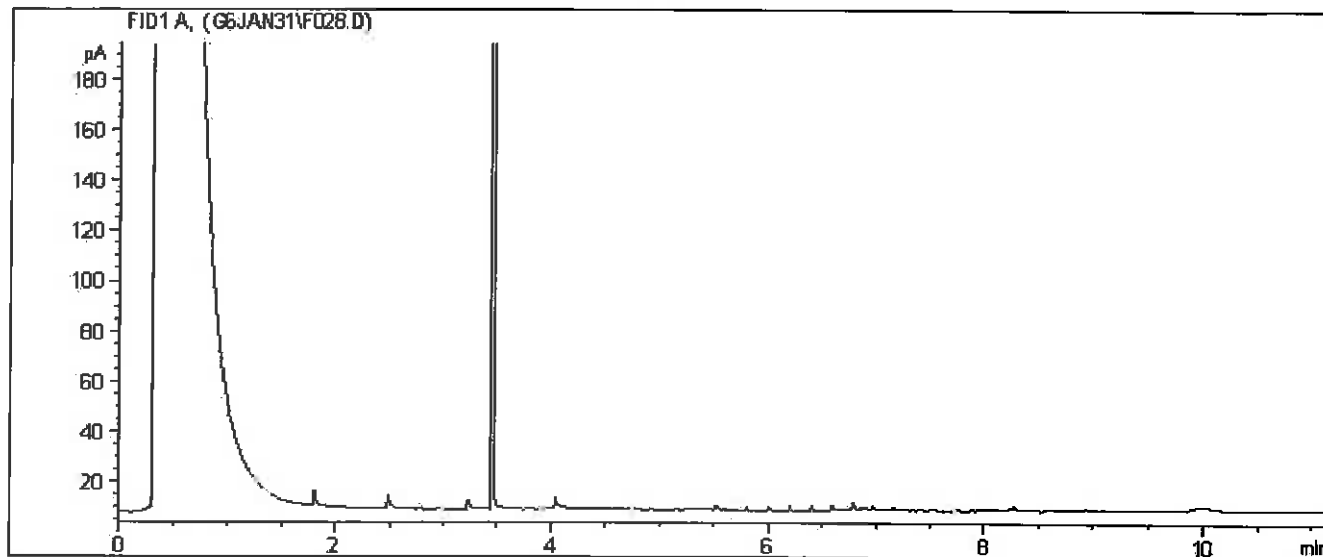
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

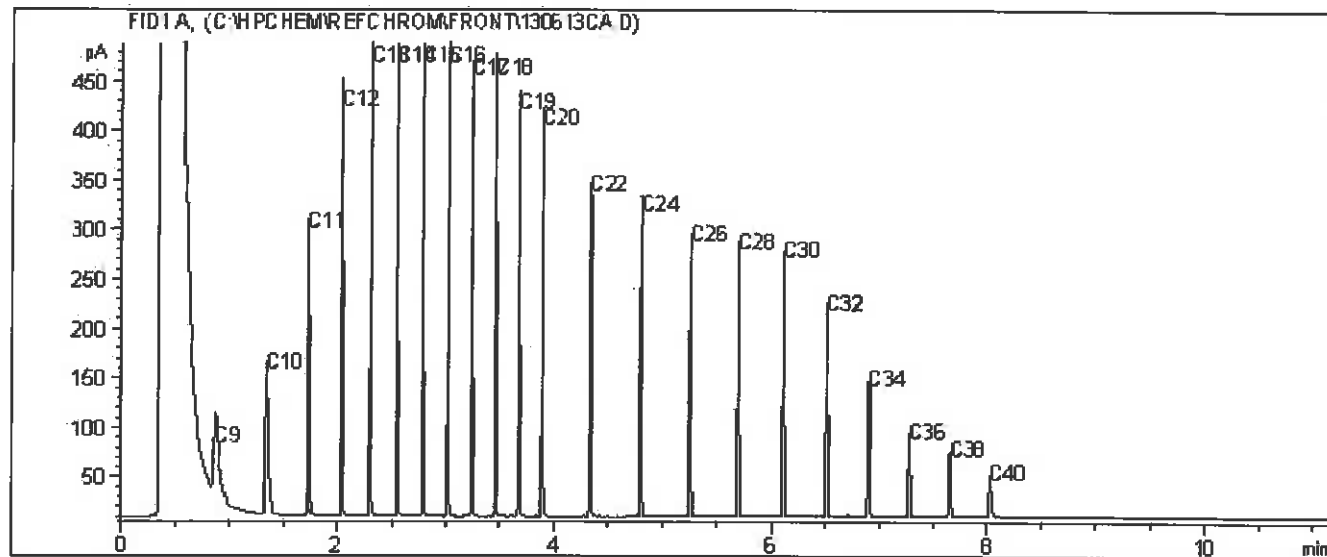
Report Date: 2014/02/03  
Maxxam Job #: B406342  
Maxxam Sample: IN5273

FRANZ/CORE 6  
Client Project #: LOWER POST  
Site Reference: LOWER POST  
Client ID: BH13-10-4

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

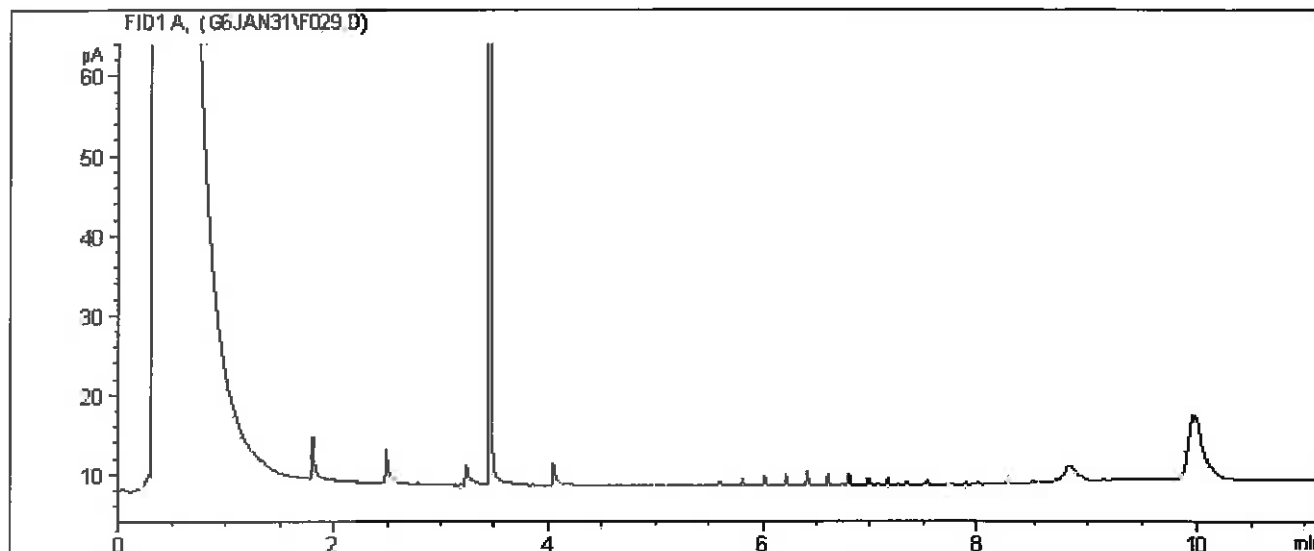
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

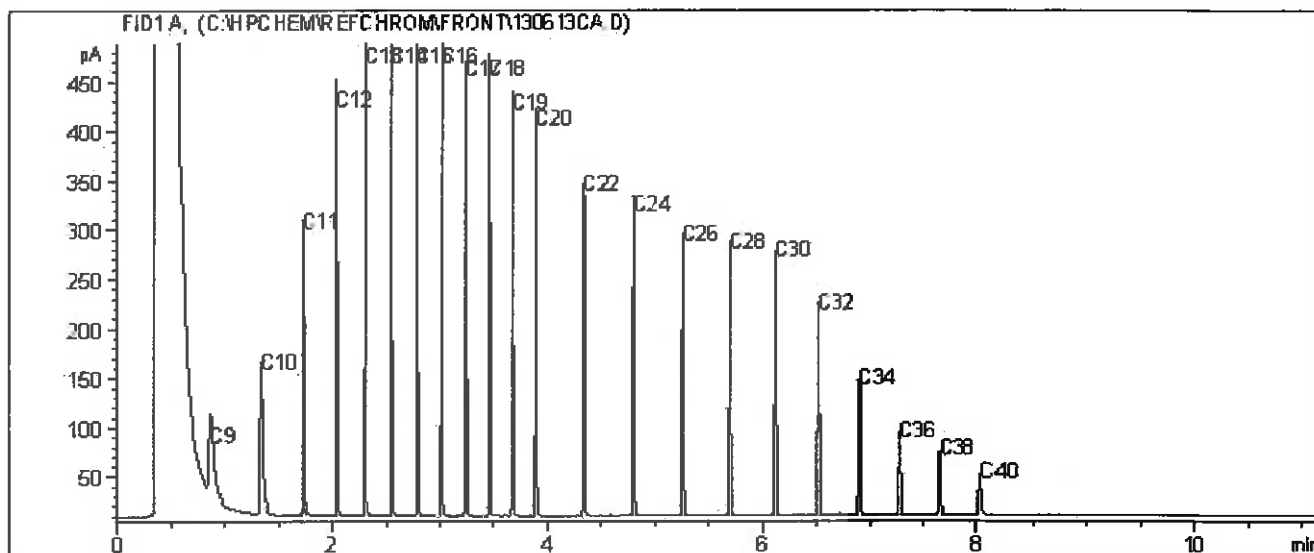
Report Date: 2014/02/03  
Maxxam Job #: B406342  
Maxxam Sample: IN5276

FRANZ/CORE 6  
Client Project #: LOWER POST  
Site Reference: LOWER POST  
Client ID: DUP 5

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



**Carbon Range Distribution - Reference Chromatogram**



**TYPICAL PRODUCT CARBON NUMBER RANGES**

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

Your P.O. #: 700266127  
 Your Project #: 1384-1301  
 Site Location: LOWER POST LAIRD FIRST NATIONS  
 Your C.O.C. #: G032693, G026632

**Attention: Chris Kam**  
 FRANZ ENVIRONMENTAL INC.  
 FRANZEN-VAN  
 1080 MAINLAND STREET  
 SUITE 308  
 VANCOUVER, BC  
 CANADA V6B 2T4

**Report Date: 2013/11/06**

## CERTIFICATE OF ANALYSIS

**MAXXAM JOB #: B3A3260**  
**Received: 2013/11/01, 13:41**

Sample Matrix: Soil  
 # Samples Received: 9

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Mobile Lab (BTEX, VPH, EH)	8	2013/10/31	2013/10/31	BBY8SOP-00032	BCELM 2007
Mobile Lab (BTEX, VPH, EH)	1	2013/11/01	2013/11/01	BBY8SOP-00032	BCELM 2007
Moisture	8	N/A	2013/10/31	BRN SOP-00321 R5.0	Ont MOE -E 3139
Moisture	1	N/A	2013/11/01	BRN SOP-00321 R5.0	Ont MOE -E 3139

\* Results relate only to the items tested.

Encryption Key

 Jas Khatkar  
 06 Nov 2013 16:26:32 -06:00

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

Crystal Ireland, B.Sc., Account Specialist  
 Email: C.Ireland@maxxam.ca  
 Phone# (604) 638-5016

=====

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1

## RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID	IA6837	IA6838	IA6839	IA6840	IA6841	IA6842	IA6843	IA6845	IA6955	
Sampling Date									2013/11/01	
UNITS	321-7	321-9	323-6	323-7	323-8	324-6	324-7	324-8	QC Batch	203
Physical Properties										
Moisture	%	6.8	19	5.6	5.2	5.5	5.1	7.6	7266390	6.6
										0.30
										7266454

## BTEX/VH/EPH MOBILE LAB DATA (SOIL)

Maxxam ID	IA6837	IA6838	IA6839	IA6840	IA6841	IA6842	IA6843	IA6845	IA6955	
Sampling Date									2013/11/01	
UNITS	321-7	321-9	323-6	323-7	323-8	324-6	324-7	324-8	QC Batch	203
Volatiles										
Benzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	7266373	<1.0
Toluene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	7266373	<1.0
Ethylbenzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	7266373	<1.0
m & p-Xylene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	7266373	<1.0
o-Xylene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	7266373	<1.0
Xylenes (Total)	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	7266373	<1.0
VPH (VH6 to 10 - BTEX)	mg/kg	<40	<40	<40	<40	<40	<40	<40	7266373	<40
EPH (C10-C19)	mg/kg	<200	<200	<200	<200	<200	<200	<200	7266373	310
EPH (C19-C32)	mg/kg	<200	<200	<200	<200	<200	<200	<200	7266373	<200
EPH (C10-C32)	mg/kg	<200	<200	<200	<200	<200	<200	<200	7266373	440
										200
										7266449

FRANZ ENVIRONMENTAL INC.  
Client Project #: 1384-1301  
Site Location: LOWER POST LAIRD FIRST NATIONS  
Your P.O. #: 700266127

General Comments

FRANZ ENVIRONMENTAL INC.  
Client Project #: 1384-1301  
Site Location: LOWER POST LAIRD FIRST NATIONS  
Your P.O. #: 700266127

## QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Method Blank		RPD	
			% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7266373	Benzene	2013/10/31	71	50 - 130	<1.0	mg/kg	NC	50
7266373	Toluene	2013/10/31	70	50 - 130	<1.0	mg/kg	NC	50
7266373	Ethylbenzene	2013/10/31	82	50 - 130	<1.0	mg/kg	NC	50
7266373	m & p-Xylene	2013/10/31	82	50 - 130	<1.0	mg/kg	NC	50
7266373	o-Xylene	2013/10/31	86	50 - 130	<1.0	mg/kg	NC	50
7266373	Xylenes (Total)	2013/10/31	84	50 - 130	<1.0	mg/kg	NC	50
7266373	EPH (C10-C19)	2013/10/31	81	50 - 130	<200	mg/kg	NC	50
7266373	EPH (C19-C32)	2013/10/31	88	50 - 130	<200	mg/kg	NC	50
7266373	EPH (C10-C32)	2013/10/31	86	50 - 130	<200	mg/kg	NC	50
7266373	VPH (VH6 to 10 - BTEX)	2013/10/31			<40	mg/kg	NC	50
7266449	Benzene	2013/11/01	124	50 - 130	<1.0	mg/kg	NC	50
7266449	Toluene	2013/11/01	107	50 - 130	<1.0	mg/kg	NC	50
7266449	Ethylbenzene	2013/11/01	118	50 - 130	<1.0	mg/kg	NC	50
7266449	m & p-Xylene	2013/11/01	119	50 - 130	<1.0	mg/kg	NC	50
7266449	o-Xylene	2013/11/01	123	50 - 130	<1.0	mg/kg	NC	50
7266449	Xylenes (Total)	2013/11/01	121	50 - 130	<1.0	mg/kg	NC	50
7266449	EPH (C10-C19)	2013/11/01	84	50 - 130	<200	mg/kg	NC	50
7266449	EPH (C19-C32)	2013/11/01	92	50 - 130	<200	mg/kg	NC	50
7266449	EPH (C10-C32)	2013/11/01	90	50 - 130	<200	mg/kg	NC	50
7266449	VPH (VH6 to 10 - BTEX)	2013/11/01			<40	mg/kg	NC	50

N/A = Not Applicable

RPD = Relative Percent Difference

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

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

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

## Validation Signature Page

Maxxam Job #: B3A3260

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

  
Jas Khatri, BBY Organics

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Your P.O. #: 700266127  
 Your Project #: 1384-1401  
 Site Location: LOWER POST  
 Your C.O.C. #: G085834, G085835

**Attention: John Taylor**  
 FRANZ ENVIRONMENTAL INC.  
 FRANZENV-VAN  
 1080 MAINLAND STREET  
 SUITE 308  
 VANCOUVER, BC  
 CANADA V6B 2T4

**Report Date: 2014/03/04**  
**Report #: R1527279**  
**Version: 1**

## CERTIFICATE OF ANALYSIS

**MAXXAM JOB #: B415026**  
**Received: 2014/02/25, 10:00**


Sample Matrix: Soil  
 # Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/MTBE Soil LH, VH, F1 SIM/MS	4	2014/02/26	2014/02/27	BBY8-SOP-00010	EPA SW846 8260C
BTEX/MTBE Soil LH, VH, F1 SIM/MS	1	2014/02/26	2014/02/28	BBY8-SOP-00010	EPA SW846 8260C
Volatile F1-BTEX	5	N/A	2014/02/28	BBY WI-00033	BC MOE Lab Method
CCME Hydrocarbons (F2-F4 in soil) (1)	4	2014/02/26	2014/03/03	BBY8SOP-00030	CCME Soil Tier 1
CCME Hydrocarbons (F2-F4 in soil) (1)	1	2014/03/04	2014/03/04	BBY8SOP-00030	CCME Soil Tier 1
Moisture	5	N/A	2014/02/27	BBY8SOP-00017	Ont MOE -E 3139
PAH in Soil by GC/MS (SIM) - CCME	4	2014/02/26	2014/03/03	BBY8SOP-00022	EPA 8270D
PAH in Soil by GC/MS (SIM) - CCME	1	2014/03/04	2014/03/04	BBY8SOP-00022	EPA 8270D
Benzo[a]pyrene Equivalency	5	N/A	2014/03/04	BBY WI-00033	CCME Guidelines
Total LMW, HMW, Total PAH Calc	5	N/A	2014/03/04	BBY WI-00033	BC MOE Lab Method
EPH less PAH in Soil By GC/FID	5	N/A	2014/03/04	BBY WI-00033	BC MOE Lab Method
BC Hydrocarbons in Soil by GC/FID	4	2014/02/26	2014/03/03	BBY8SOP-00029	BC Env Lab Manual
BC Hydrocarbons in Soil by GC/FID	1	2014/03/03	2014/03/04	BBY8SOP-00029	BC Env Lab Manual

\* Results relate only to the items tested.

(1) The method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory; all deviations were justified and validated and are made available upon request; the chromatogram descends to baseline by the retention time of nC50 unless otherwise indicated; all QC criteria met; individual hydrocarbons (nC10, nC16, nC34) are within 10% of their average response factor; linearity is within 15%.

Encryption Key



Morgan Melnychuk

04 Mar 2014 18:23:04 -08:00

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

Crystal Ireland, B.Sc., Account Specialist  
 Email: C Ireland@maxxam.ca  
 Phone# (604) 638-5016

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1

## PETROLEUM HYDROCARBONS (CCME)

Maxxam ID	IU8472	IU8473	IU8493	IU8495	IU8497	
Sampling Date	2014/02/21	2014/02/21	2014/02/21	2014/02/21	2014/02/21	
UNITS	BH13-16-10	BH13-16-11	BH13-17-08	BH13-17-10	BH13-DUP 1	QC Batch
<b>Ext. Pet. Hydrocarbon</b>						
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	<10	<10	<10	10 7400194
F3 (C16-C34 Hydrocarbons)	mg/kg	<10	<10	<10	<10	10 7400194
F4 (C34-C50 Hydrocarbons)	mg/kg	<10	<10	<10	<10	10 7400194
Reached Baseline at C50	mg/kg	YES	YES	YES	YES	N/A 7400194
<b>Surrogate Recovery (%)</b>						
O-TERPHENYL (sur.)	%	89	99	102	90	88 7400194

## PHYSICAL TESTING (SOIL)

Maxxam ID	IU8472	IU8473	IU8493	IU8495	IU8497	
Sampling Date	2014/02/21	2014/02/21	2014/02/21	2014/02/21	2014/02/21	
UNITS	BH13-16-10	BH13-16-11	QC Batch	QC Batch	BH13-DUP 1	QC Batch
<b>Physical Properties</b>						
Moisture	%	19	16	7394549	5.0	7394558 15 4.8 0.30 7394549

## TOTAL PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID	IU8472	IU8473	IU8493	IU8495	IU8497	
Sampling Date	2014/02/21	2014/02/21	2014/02/21	2014/02/21	2014/02/21	
UNITS	BH13-16-10	BH13-16-11	BH13-17-08	BH13-17-10	BH13-DUP 1	QC Batch
<b>Calculated Parameters</b>						
LEPH (C10-C19 less PAH)	mg/kg	<100	<100	<100	<100	100 7393994
HIEPH (C19-C32 less PAH)	mg/kg	<100	<100	<100	<100	100 7393994
<b>Hydrocarbons</b>						
EPH (C10-C19)	mg/kg	<100	<100	<100	<100	100 7400177
EPH (C19-C32)	mg/kg	<100	<100	<100	<100	100 7400177
<b>Surrogate Recovery (%)</b>						
O-TERPHENYL (sur.)	%	87	104	99	89	87 7400177

Maxxam Job #: B415026  
Report Date: 2014/03/04

Maxxam ID	IU8472	IU8473	IU8493	IU8495	IU8497		
Sampling Date	2014/02/21	2014/02/21	2014/02/21	2014/02/21	2014/02/21		
UNITS	BH13-16-10	QC Batch	BH13-16-11	QC Batch	BH13-17-08	QC Batch	
Calculated Parameters							
F1 (C6-C10) - BTEX	mg/kg	<10	7394430	<10	7394430	<10	7394430
Volatiles							
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	7396759	<0.10	7396730	<0.10	7396759
Benzene	mg/kg	<0.0050	7396759	<0.0050	7396730	<0.0050	7396759
Toluene	mg/kg	<0.020	7396759	<0.020	7396896	<0.020	7396759
Ethylbenzene	mg/kg	<0.010	7396759	<0.010	7396896	<0.010	7396759
m & p-Xylene	mg/kg	<0.040	7396759	<0.040	7396896	<0.040	7396759
o-Xylene	mg/kg	<0.040	7396759	<0.040	7396896	<0.040	7396759
Styrene	mg/kg	<0.030	7396759	<0.030	7396896	<0.030	7396759
Xylenes (Total)	mg/kg	<0.040	7396759	<0.040	7396896	<0.040	7396759
(C6-C10)	mg/kg	<10	7396759	<10	7396896	<10	7396759
Surrogate Recovery (%)							
1,4-Difluorobenzene (sur.)	%	97	7396759	104	7396896	104	7396759
4-BROMOFLUOROBENZENE (sur.)	%	102	7396759	97	7396896	98	7396759
D10-ETHYLBENZENE (sur.)	%	107	7396759	94	7396896	89	7396759
D4-1,2-DICHLOROETHANE (sur.)	%	105	7396759	98	7396896	103	7396759

Page 3 of 23

FRANZ ENVIRONMENTAL INC.  
Client Project #: 1384-1401  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: IK

## CCME PAH IN SOIL BY GC-MS (SOIL)

Maxxam ID	IU8472	IU8473	IU8493	IU8495	IU8497	
Sampling Date	2014/02/21	2014/02/21	2014/02/21	2014/02/21	2014/02/21	
	BH13-16-10	BH13-16-11	BH13-17-08	BH13-17-10	BH13-DUP 1	QC Batch
UNITS						RDL
<b>Calculated Parameters</b>						
Index of Additive Cancer Risk(IARC)	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(a)pyrene equivalency	N/A	N/A	N/A	N/A	N/A	N/A
<b>Polycyclic Aromatics</b>						
Naphthalene	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010
2-Methylnaphthalene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020
Acenaphthylene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Acenaphthene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Fluorene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020
Phenanthrene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020
Anthracene	mg/kg	<0.0040	<0.0040	<0.0040	<0.0040	0.0040
Fluoranthene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020
Pyrene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020
Benzo(a)anthracene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020
Chrysene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020
Benzo(b,k)fluoranthene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020
Benzo(k)fluoranthene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020
Benzo(a)pyrene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	<0.050	<0.050	<0.050	0.050
Dibenz(a,h)anthracene	mg/kg	<0.050	<0.050	<0.050	<0.050	0.050
Benzo(g,h,i)perylene	mg/kg	<0.050	<0.050	<0.050	<0.050	0.050
Low Molecular Weight PAH's	mg/kg	<0.050	<0.050	<0.050	<0.050	0.050
High Molecular Weight PAH's	mg/kg	<0.050	<0.050	<0.050	<0.050	0.050
Total PAH	mg/kg	<0.050	<0.050	<0.050	<0.050	0.050
<b>Surrogate Recovery (%)</b>						
D10-ANTHRACENE (sur.)	%	65	67	88	71	81
D8-ACENAPHTHYLENE (sur.)	%	81	82	93	82	86
D8-NAPHTHALENE (sur.)	%	84	87	96	81	82
TERPHENYL-D14 (sur.)	%	68	70	94	74	87

N/A = Not Applicable  
RDL = Reportable Detection Limit

FRANZ ENVIRONMENTAL INC.  
Client Project #: 1384-1401  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: IK

Package 1 1.0°C

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

## General Comments

FRANZ ENVIRONMENTAL INC.  
Client Project #: 1384-1401  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: IK

## QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7394549	Moisture	2014/02/27					<0.30	%	2.1	20
7394558	Moisture	2014/02/27					<0.30	%	12.8	20
7396730	1,4-Difluorobenzene (sur.)	2014/02/27	102	70 - 130	102	70 - 130	103	%		
7396730	4-BROMOFLUOROBENZENE (sur.)	2014/02/27	99	70 - 130	100	70 - 130	97	%		
7396730	D10-ETHYLBENZENE (sur.)	2014/02/27	90	50 - 130	78	50 - 130	84	%		
7396730	D4-1,2-DICHLOROETHANE (sur.)	2014/02/27	102	70 - 130	104	70 - 130	99	%		
7396730	Benzene	2014/02/27	95	60 - 140	89	60 - 140	<0.0050	mg/kg	NC	40
7396730	Toluene	2014/02/27	89	60 - 140	83	60 - 140	<0.020	mg/kg	NC	40
7396730	Ethylbenzene	2014/02/27	90	60 - 140	84	60 - 140	<0.010	mg/kg	NC	40
7396730	m & p-Xylene	2014/02/27	87	60 - 140	83	60 - 140	<0.040	mg/kg	NC	40
7396730	o-Xylene	2014/02/27	86	60 - 140	81	60 - 140	<0.040	mg/kg	NC	40
7396730	(C6-C10)	2014/02/27			122	60 - 140	<10	mg/kg	NC	40
7396730	Methyl-tert-butylether(MTBE)	2014/02/27					<0.10	mg/kg	NC	40
7396730	Styrene	2014/02/27					<0.030	mg/kg	NC	40
7396730	Xylenes (Total)	2014/02/27					<0.040	mg/kg	NC	40
7396759	1,4-Difluorobenzene (sur.)	2014/02/27	99	70 - 130	96	70 - 130	102	%		
7396759	4-BROMOFLUOROBENZENE (sur.)	2014/02/27	104	70 - 130	96	70 - 130	100	%		
7396759	D10-ETHYLBENZENE (sur.)	2014/02/27	103	50 - 130	92	50 - 130	99	%		
7396759	D4-1,2-DICHLOROETHANE (sur.)	2014/02/27	104	70 - 130	97	70 - 130	101	%		
7396759	Benzene	2014/02/27	116	60 - 140	100	60 - 140	<0.0050	mg/kg	NC	40
7396759	Toluene	2014/02/27	108	60 - 140	96	60 - 140	<0.020	mg/kg	NC	40
7396759	Ethylbenzene	2014/02/27	110	60 - 140	100	60 - 140	<0.010	mg/kg	NC	40
7396759	m & p-Xylene	2014/02/27	105	60 - 140	95	60 - 140	<0.040	mg/kg	NC	40
7396759	o-Xylene	2014/02/27	119	60 - 140	106	60 - 140	<0.040	mg/kg	NC	40
7396759	(C6-C10)	2014/02/27			110	60 - 140	<10	mg/kg	NC	40
7396759	Methyl-tert-butylether(MTBE)	2014/02/27					<0.10	mg/kg	NC	40
7396759	Styrene	2014/02/27					<0.030	mg/kg	NC	40
7396759	Xylenes (Total)	2014/02/27					<0.040	mg/kg	NC	40
7396896	1,4-Difluorobenzene (sur.)	2014/02/27	101	70 - 130	101	70 - 130	105	%		
7396896	4-BROMOFLUOROBENZENE (sur.)	2014/02/27	95	70 - 130	95	70 - 130	91	%		
7396896	D10-ETHYLBENZENE (sur.)	2014/02/27	98	50 - 130	92	50 - 130	98	%		
7396896	D4-1,2-DICHLOROETHANE (sur.)	2014/02/27	94	70 - 130	95	70 - 130	104	%		
7396896	Benzene	2014/02/28	99	60 - 140	101	60 - 140	<0.0050	mg/kg	NC	40
7396896	Toluene	2014/02/28	101	60 - 140	101	60 - 140	<0.020	mg/kg	NC	40
7396896	Ethylbenzene	2014/02/28	104	60 - 140	105	60 - 140	<0.010	mg/kg	NC	40
7396896	m & p-Xylene	2014/02/28	100	60 - 140	100	60 - 140	<0.040	mg/kg	NC	40
7396896	o-Xylene	2014/02/28	113	60 - 140	107	60 - 140	<0.040	mg/kg	NC	40
7396896	(C6-C10)	2014/02/27			87	60 - 140	<10	mg/kg	NC	40
7396896	Methyl-tert-butylether(MTBE)	2014/02/28					<0.10	mg/kg	NC	40

FRANZ ENVIRONMENTAL INC.  
Client Project #: 1384-1401  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: IK

## QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7396896	Styrene	2014/02/28					<0.030	mg/kg	NC	40
7396896	Xylenes (Total)	2014/02/28					<0.040	mg/kg	NC	40
7400177	O-TERPHENYL (sur.)	2014/03/03	92	50 - 130	100	50 - 130	98	%		
7400177	EPH (C10-C19)	2014/03/03	83	50 - 130	80	50 - 130	<100	mg/kg	NC	40
7400177	EPH (C19-C32)	2014/03/03	92	50 - 130	88	50 - 130	<100	mg/kg	NC	40
7400192	D10-ANTHRACENE (sur.)	2014/03/03			96	60 - 130	97	%		
7400192	DB-ACENAPHTHYLENE (sur.)	2014/03/03			95	50 - 130	99	%		
7400192	DB-NAPHTHALENE (sur.)	2014/03/03			97	50 - 130	101	%		
7400192	TERPHENYL-D14 (sur.)	2014/03/03			102	60 - 130	103	%		
7400192	Naphthalene	2014/03/03			78	50 - 130	<0.010	mg/kg		
7400192	2-Methylnaphthalene	2014/03/03			82	50 - 130	<0.020	mg/kg		
7400192	Acenaphthylene	2014/03/03			83	50 - 130	<0.0050	mg/kg		
7400192	Acenaphthene	2014/03/03			83	50 - 130	<0.0050	mg/kg		
7400192	Fluorene	2014/03/03			85	50 - 130	<0.020	mg/kg		
7400192	Phenanthrene	2014/03/03			76	60 - 130	<0.020	mg/kg		
7400192	Anthracene	2014/03/03			88	60 - 130	<0.0040	mg/kg		
7400192	Fluoranthene	2014/03/03			88	60 - 130	<0.020	mg/kg		
7400192	Pyrene	2014/03/03			88	60 - 130	<0.020	mg/kg		
7400192	Benzo(a)anthracene	2014/03/03			75	60 - 130	<0.020	mg/kg		
7400192	Chrysene	2014/03/03			77	60 - 130	<0.020	mg/kg		
7400192	Benzo(b&f)fluoranthene	2014/03/03			75	60 - 130	<0.020	mg/kg		
7400192	Benzo(k)fluoranthene	2014/03/03			73	60 - 130	<0.020	mg/kg		
7400192	Benzo(a)pyrene	2014/03/03			84	60 - 130	<0.020	mg/kg		
7400192	Indeno(1,2,3-cd)pyrene	2014/03/03			88	60 - 130	<0.050	mg/kg		
7400192	Dibenz(a,h)anthracene	2014/03/03			85	60 - 130	<0.050	mg/kg		
7400192	Benzo(g,h,i)perylene	2014/03/03			82	60 - 130	<0.050	mg/kg		
7400192	Benzo(b)fluoranthene	2014/03/03					<0.020	mg/kg		
7400194	O-TERPHENYL (sur.)	2014/03/03	74	50 - 130	85	50 - 130	101	%		
7400194	F2 (C10-C16 Hydrocarbons)	2014/03/03	95	50 - 130	92	80 - 120	<10	mg/kg	NC	40
7400194	F3 (C16-C34 Hydrocarbons)	2014/03/03	101	50 - 130	95	80 - 120	<10	mg/kg	NC	40

FRANZ ENVIRONMENTAL INC.  
Client Project #: 1384-1401  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: IK

## QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7400194	F4 (C34-C50 Hydrocarbons)	2014/03/03	101	50 - 130	110	80 - 120	<10	mg/kg	NC	40
7400194	Reached Baseline at C50	2014/03/03					YES, RDL=N/A	mg/kg	NC	50

N/A = Not Applicable

RDL = Reportable Detection Limit

RPD = Relative Percent Difference

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 (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

## Validation Signature Page

Maxxam Job #: B415026

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

  
\_\_\_\_\_  
Andy Lu, Data Validation Coordinator

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



# Maxxam

4528 Canada Way, Burnaby, BC Canada V5G 1K5 PH: 604 734 7275 Toll Free: 1 800 885 8888 Fax: 604 731 2089

CHAIN OF CUSTODY RECORD

Page: 2 of 2

G 085835

Maxxam Job#: B415026

Invoice To: Request/ Repeat? Yes ☐ No ☐

Report To:

Company Name: \_\_\_\_\_  
 Contact Name: Carol  
 Address: 1000  
 Phone / Fax: \_\_\_\_\_  
 E-mail: \_\_\_\_\_

Company Name: \_\_\_\_\_  
 Contact Name: Carol  
 Address: 1000  
 Phone / Fax: \_\_\_\_\_  
 E-mail: \_\_\_\_\_

Customer #: \_\_\_\_\_  
 Project #: \_\_\_\_\_  
 Priority: \_\_\_\_\_  
 Location: \_\_\_\_\_  
 Sampled By: \_\_\_\_\_

## REGULATORY REQUIREMENTS SERVICE REQUESTED:

☐ CSR ☒ Regular Turn Around Time (TAT)  
 (5 days for most tests)  
☐ CCME ☐ RUSH (Please contact the lab)  
 BC Water Quality ☐ 1 Day ☐ 2 Day ☐ 3 Day  
 Other ☐ Date Required: \_\_\_\_\_  
**DRINKING WATER**  
 Special Instructions: \_\_\_\_\_  
 Return Cooler ☐ Ship Sample Bottles (please specify) \_\_\_\_\_

## ANALYSIS REQUESTED

Asbestos	<input type="checkbox"/>	Barium	<input type="checkbox"/>	Bismuth	<input type="checkbox"/>	Boron	<input type="checkbox"/>	Calcium	<input type="checkbox"/>	Chloride	<input type="checkbox"/>	Copper	<input type="checkbox"/>	Fluoride	<input type="checkbox"/>	Iron	<input type="checkbox"/>	Lead	<input type="checkbox"/>	Manganese	<input type="checkbox"/>	Mercury	<input type="checkbox"/>	Nickel	<input type="checkbox"/>	Nitrate	<input type="checkbox"/>	Nitrite	<input type="checkbox"/>	Phosphate	<input type="checkbox"/>	Selenium	<input type="checkbox"/>	Silver	<input type="checkbox"/>	Sulfate	<input type="checkbox"/>	Tin	<input type="checkbox"/>	Total Dissolved Solids (TDS)	<input type="checkbox"/>	Total Hardness	<input type="checkbox"/>	Total Suspended Solids (TSS)	<input type="checkbox"/>	Vanadium	<input type="checkbox"/>	Zinc	<input type="checkbox"/>
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Sample Identification	Lab Identification	Sample Type	Date/Time Sampled
1 BH 13-17-01	148487	soil	2004/02/21
2	148488		
3	148489		
4	148490		
5	148491		
6	148492		
7	148493		
8	148494		
9	148495		
10	148496		
11 BH 13-DUP1	148497		
12			

"Relinquished by: Katie Cha Date (YYMMDD): 14/02/23 Time: 11:30"

Received by: [Signature] Date (YYMMDD): 2004/02/21 Time: 10:00

Temp. Sample at 10-30°C? 11 Time Sensitive? ☐ Guiding? Yes No ☐

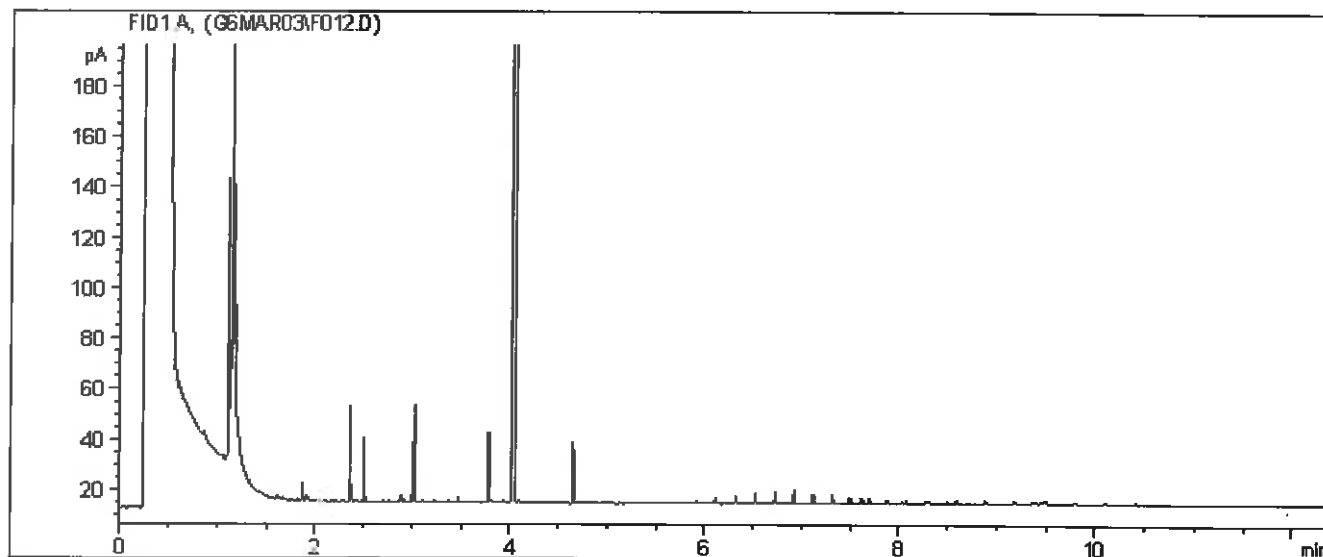
IT IS THE RESPONSIBILITY OF THE RELINQUISHING PARTY TO MAINTAIN THE INTEGRITY OF THE CHAIN OF CUSTODY RECORD. ALL MAXXAM LABS SHALL BE OPERATING WITHIN THE SCOPE OF THEIR ACCREDITATION. THE CHAIN OF CUSTODY RECORD IS THE PROPERTY OF MAXXAM. MAXXAM INTERNATIONAL CORPORATION IS MAXXAM ANALYTICS.

200-100-0019

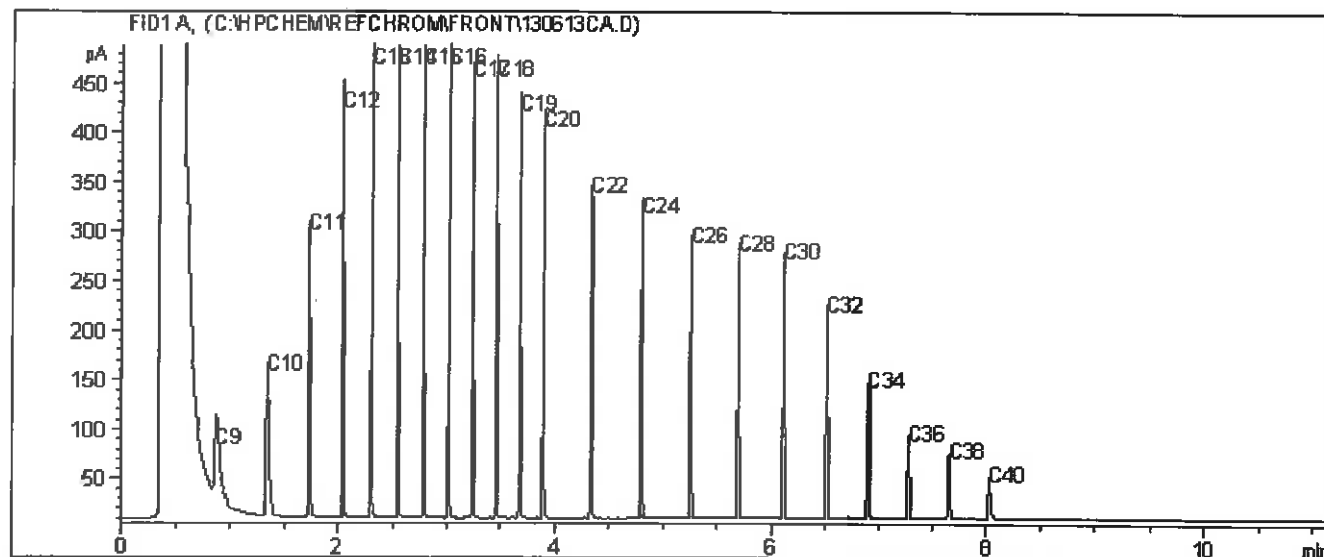
Report Date: 2014/03/04  
Maxxam Job #: B415026  
Maxxam Sample: IU8472

FRANZ ENVIRONMENTAL INC.  
Client Project #: 1384-1401  
Site Reference: LOWER POST  
Client ID: BH13-16-10

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

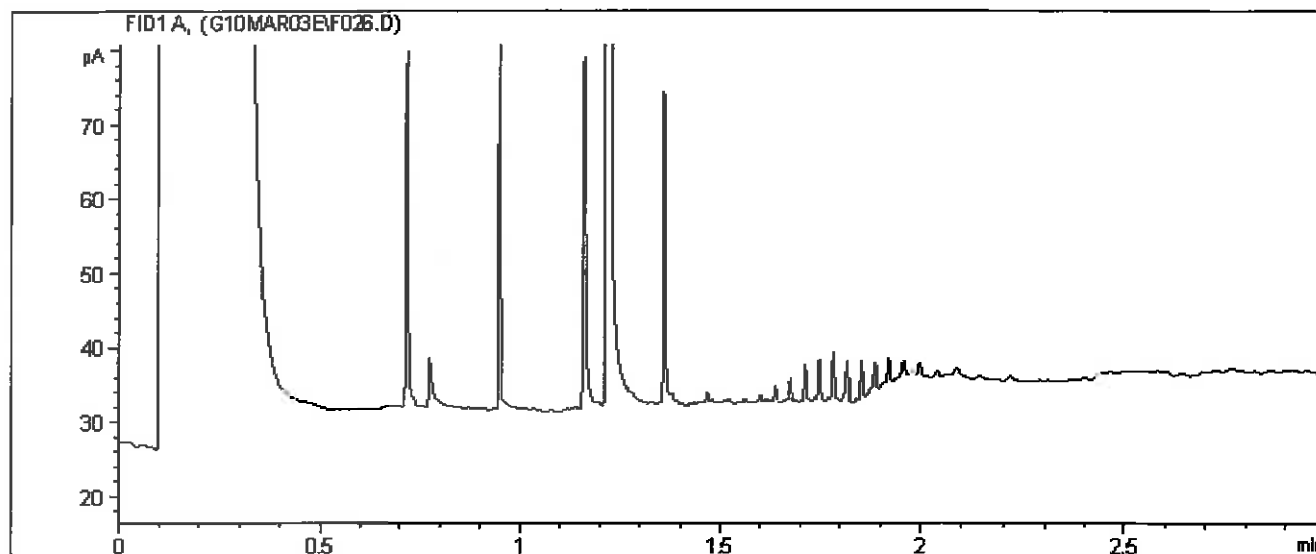
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

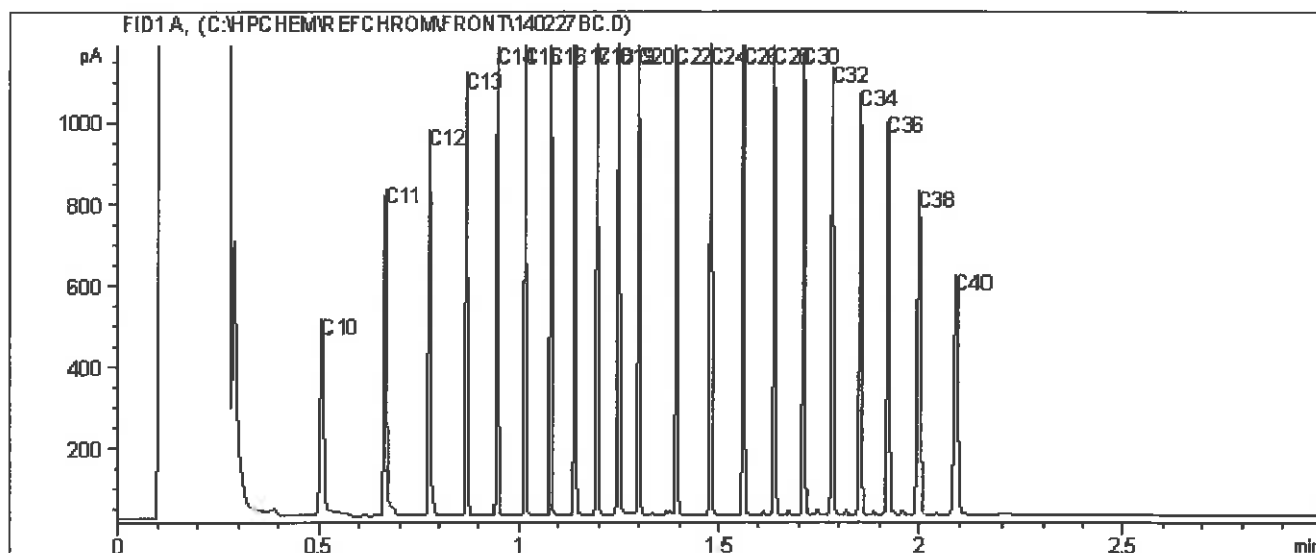
Report Date: 2014/03/04  
Maxxam Job #: B415026  
Maxxam Sample: IU8472

FRANZ ENVIRONMENTAL INC.  
Client Project #: 1384-1401  
Site Reference: LOWER POST  
Client ID: BH13-16-10

## BC Hydrocarbons in Soil by GC/FID Chromatogram



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

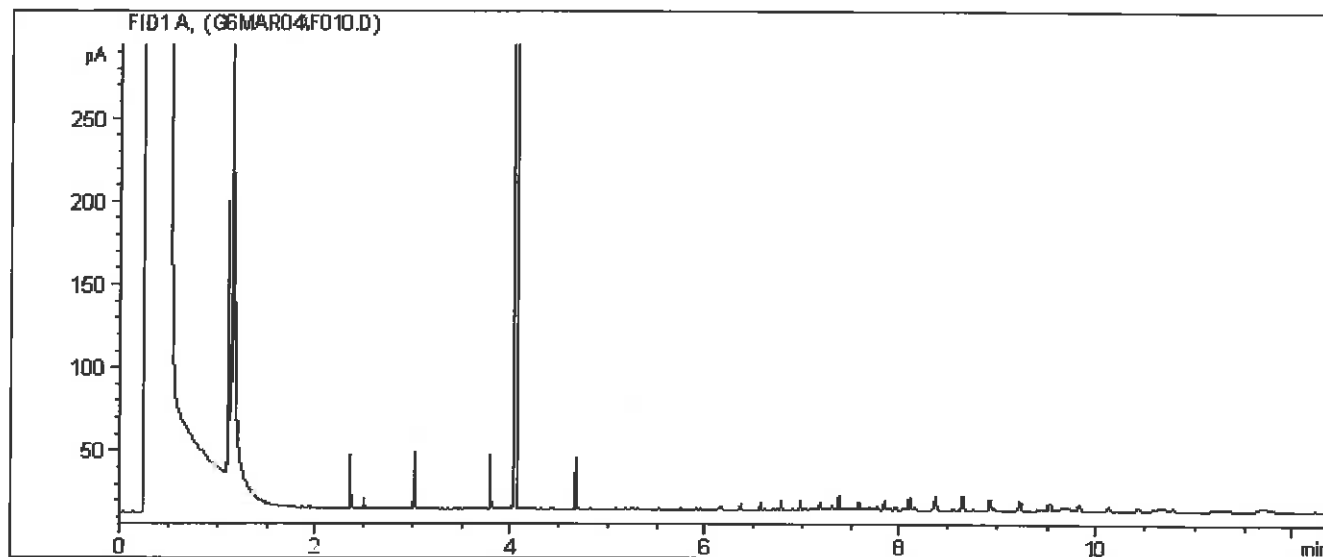
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

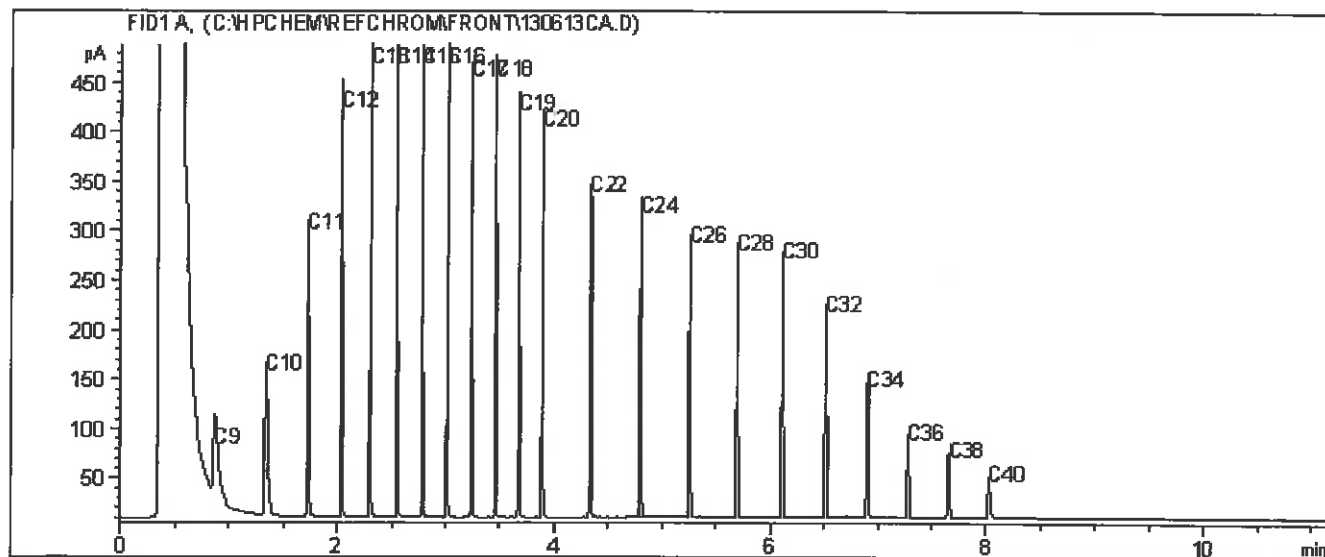
Report Date: 2014/03/04  
Maxxam Job #: B415026  
Maxxam Sample: IU8473

FRANZ ENVIRONMENTAL INC.  
Client Project #: 1384-1401  
Site Reference: LOWER POST  
Client ID: BH13-16-11

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

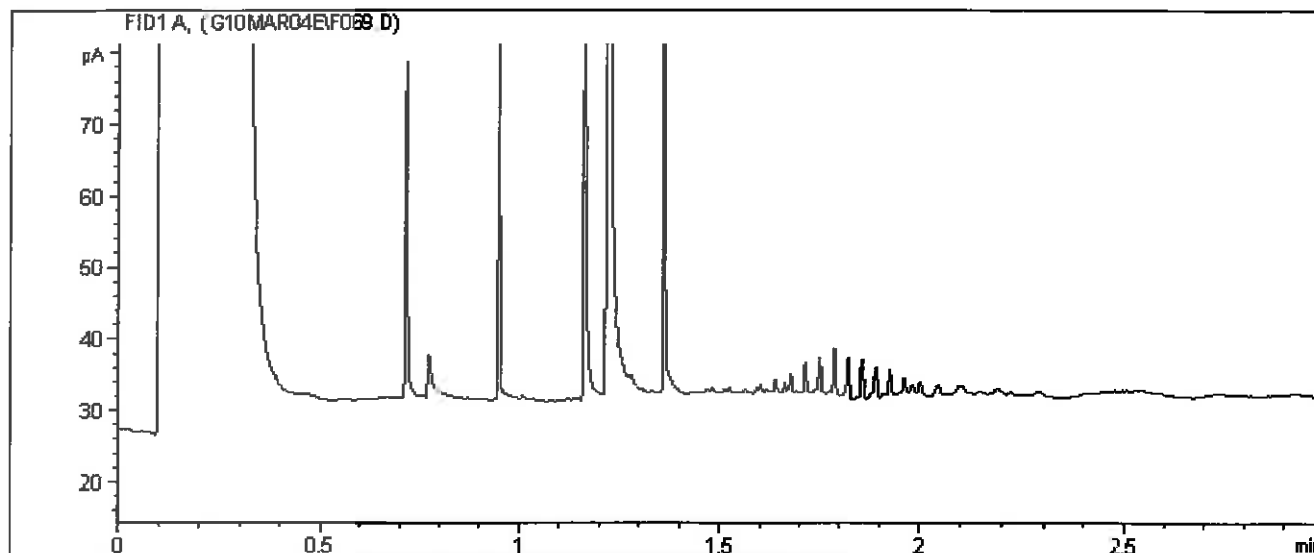
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

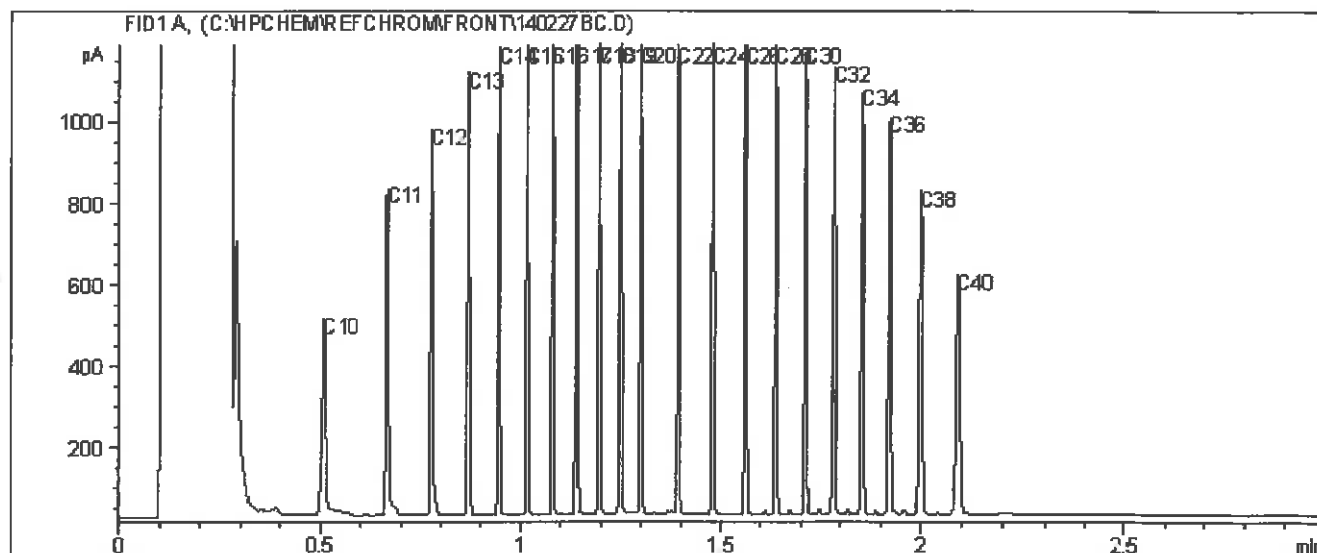
Report Date: 2014/03/04  
Maxxam Job #: B415026  
Maxxam Sample: IU8473

FRANZ ENVIRONMENTAL INC.  
Client Project #: 1384-1401  
Site Reference: LOWER POST  
Client ID: BH13-16-11

### BC Hydrocarbons in Soil by GC/FID Chromatogram



### Carbon Range Distribution - Reference Chromatogram



### TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

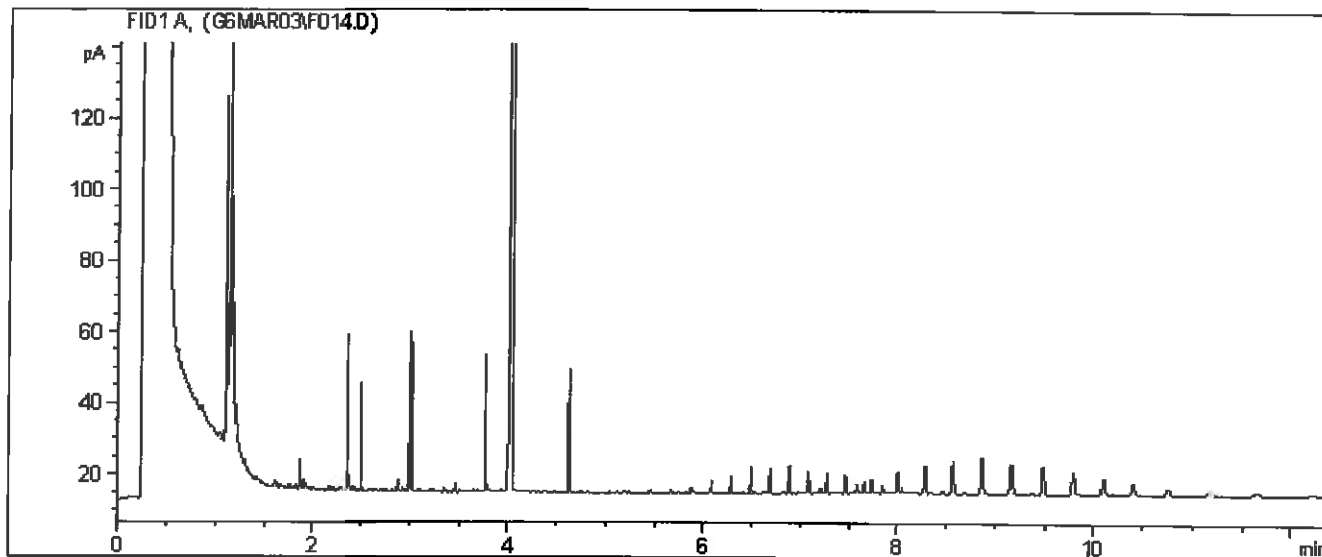
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

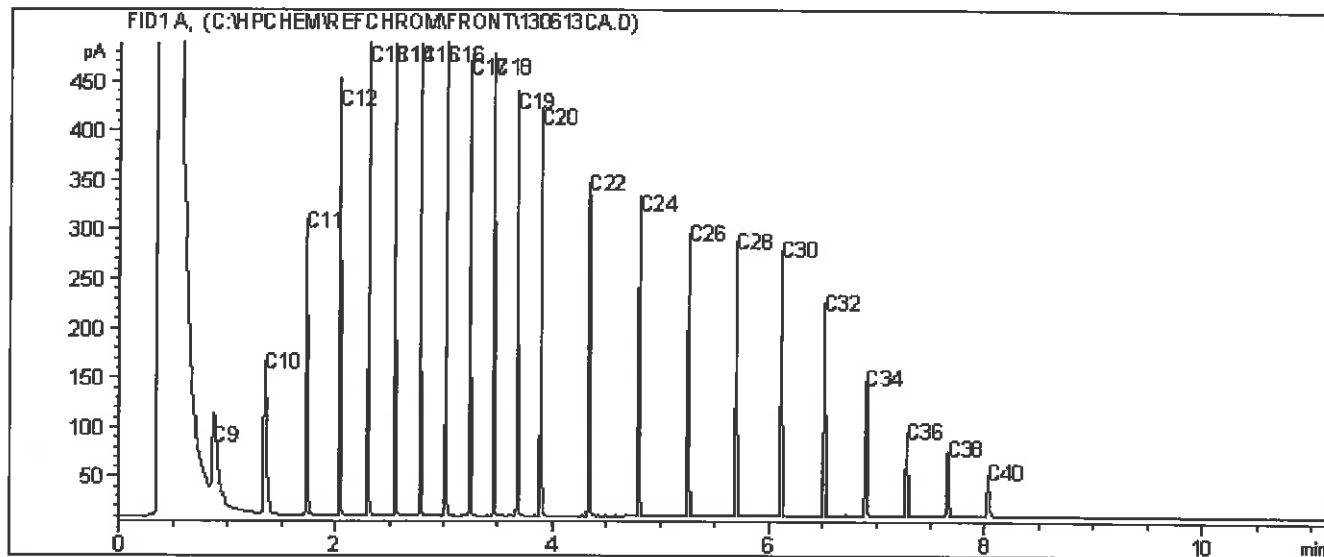
Report Date: 2014/03/04  
Maxxam Job #: B415026  
Maxxam Sample: IU8493

FRANZ ENVIRONMENTAL INC.  
Client Project #: 1384-1401  
Site Reference: LOWER POST  
Client ID: BH13-17-08

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

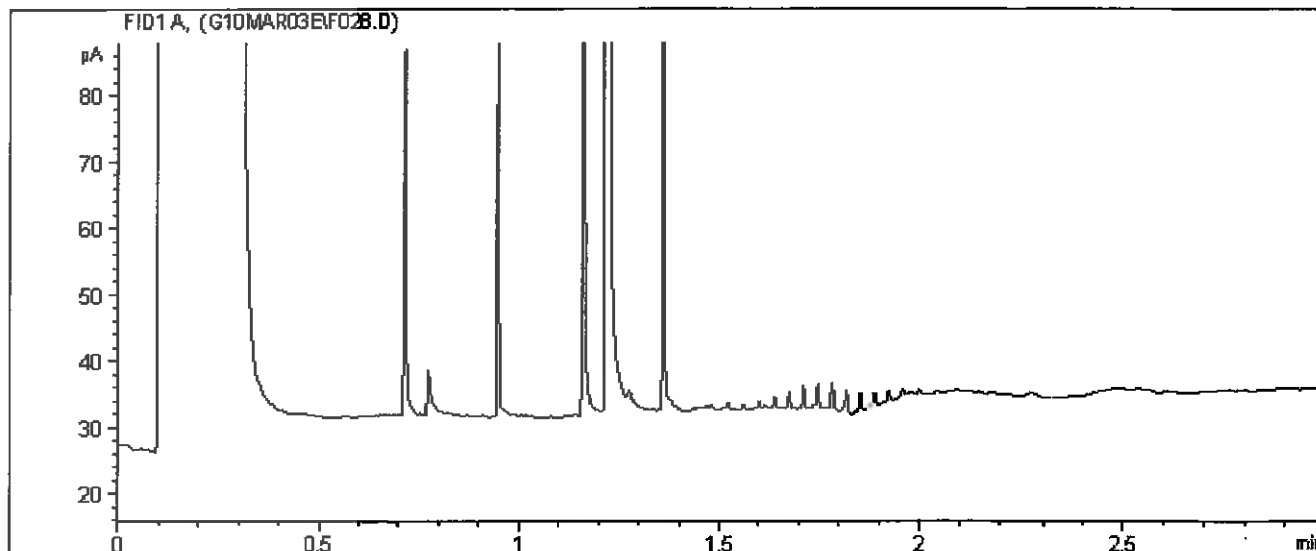
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

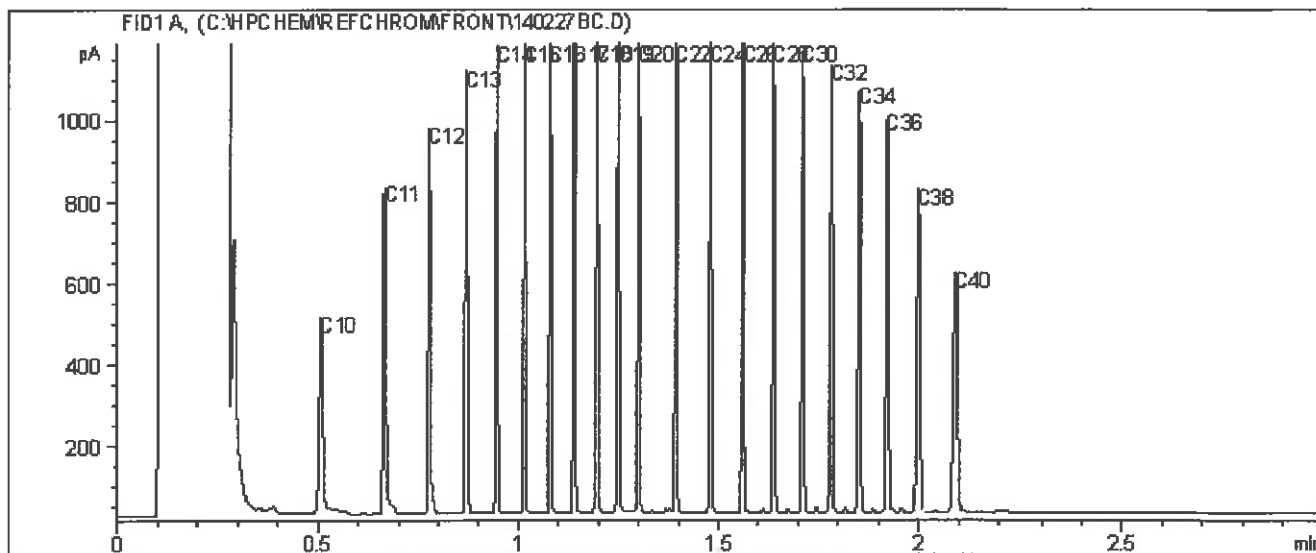
Report Date: 2014/03/04  
Maxxam Job #: B415026  
Maxxam Sample: IU8493

FRANZ ENVIRONMENTAL INC.  
Client Project #: 1384-1401  
Site Reference: LOWER POST  
Client ID: BH13-17-08

### BC Hydrocarbons in Soil by GC/FID Chromatogram



### Carbon Range Distribution - Reference Chromatogram



### TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

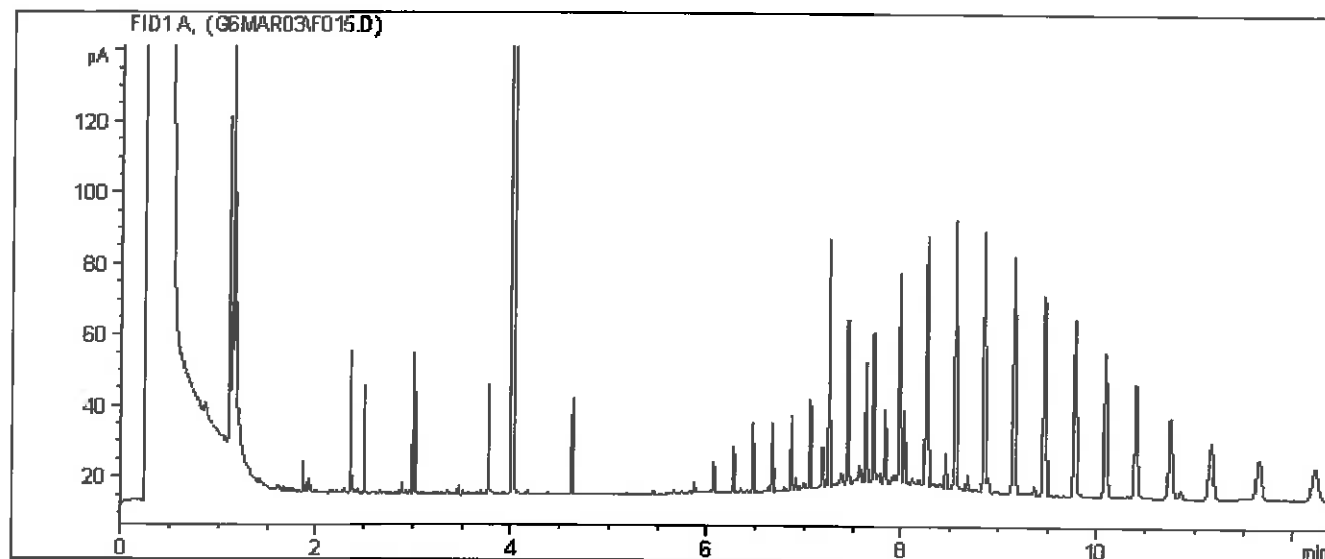
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

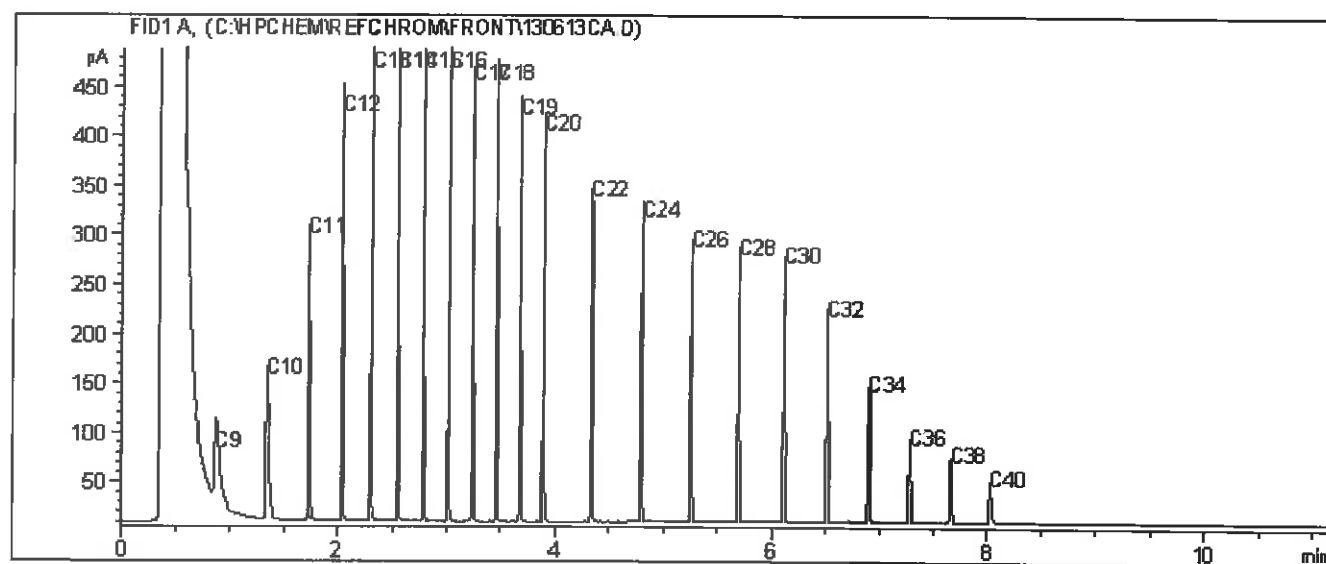
Report Date: 2014/03/04  
Maxxam Job #: B415026  
Maxxam Sample: IU8495

FRANZ ENVIRONMENTAL INC.  
Client Project #: 1384-1401  
Site Reference: LOWER POST  
Client ID: BH13-17-10

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

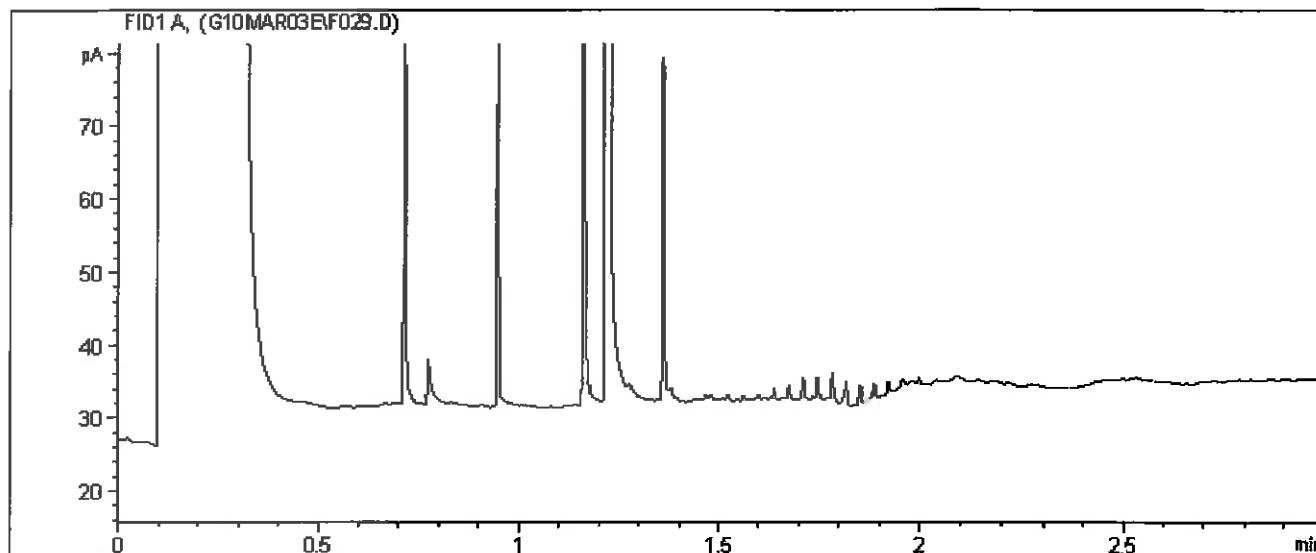
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

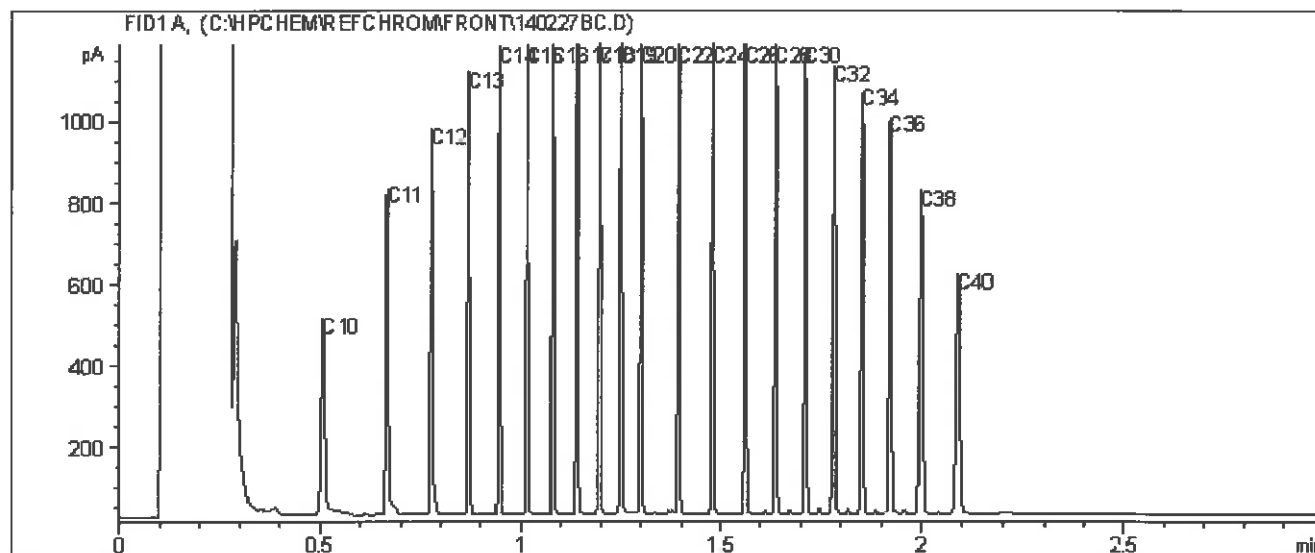
Report Date: 2014/03/04  
Maxxam Job #: B415026  
Maxxam Sample: IU8495

FRANZ ENVIRONMENTAL INC.  
Client Project #: 1384-1401  
Site Reference: LOWER POST  
Client ID: BH13-17-10

**BC Hydrocarbons in Soil by GC/FID Chromatogram**



**Carbon Range Distribution - Reference Chromatogram**



**TYPICAL PRODUCT CARBON NUMBER RANGES**

Gasoline: C4 - C12  
Varsol: C8 - C12

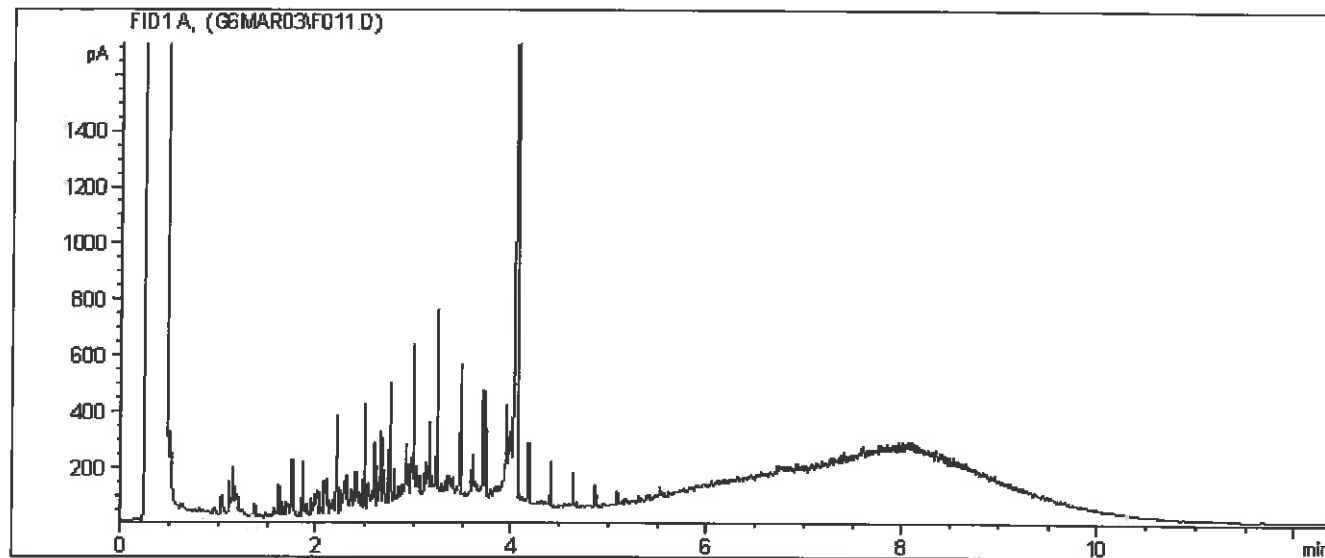
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

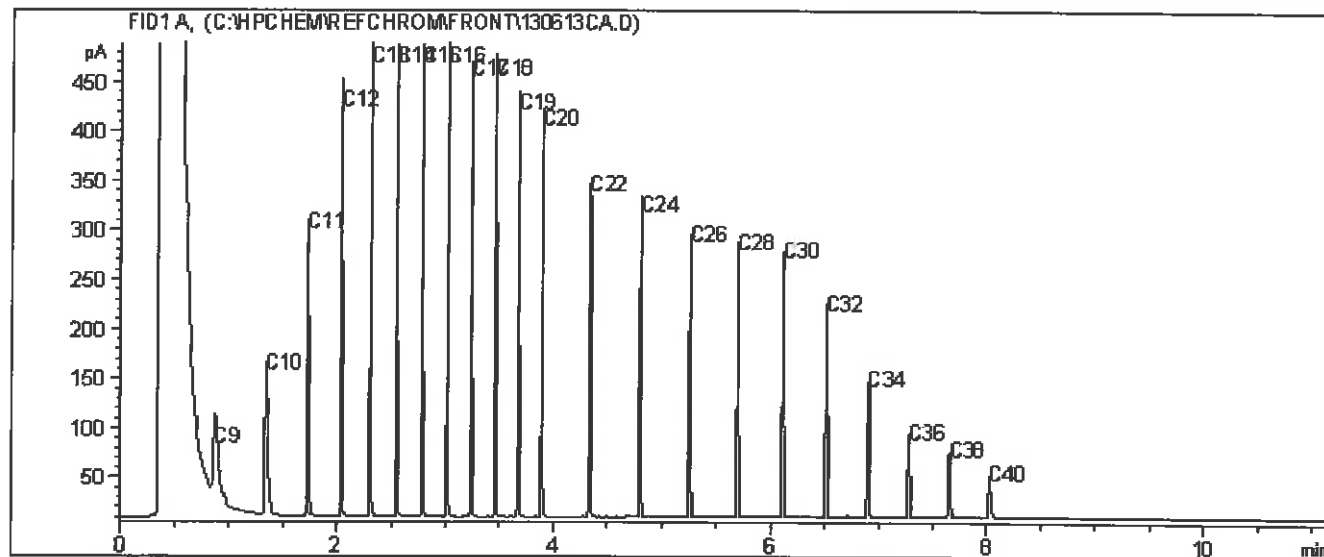
Report Date: 2014/03/04  
 Maxxam Job #: B415026  
 Maxxam Sample: IU8495 Lab-Dup

FRANZ ENVIRONMENTAL INC.  
 Client Project #: 1384-1401  
 Site Reference: LOWER POST  
 Client ID: BH13-17-10

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
 Varsol: C8 - C12

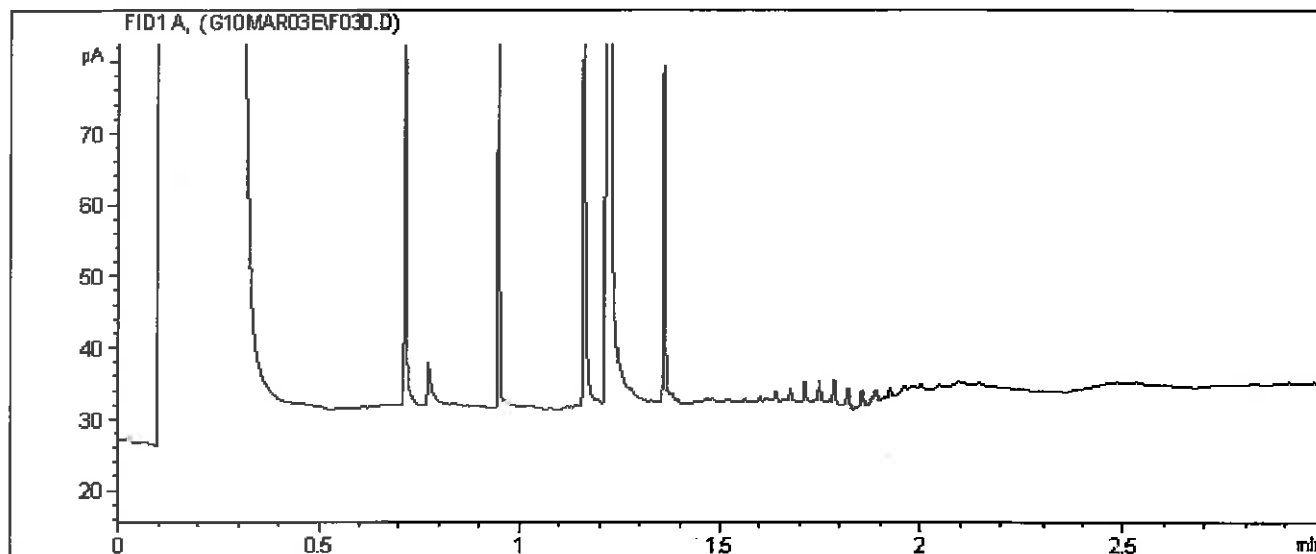
Diesel: C8 - C22  
 Lubricating Oils: C20 - C40

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

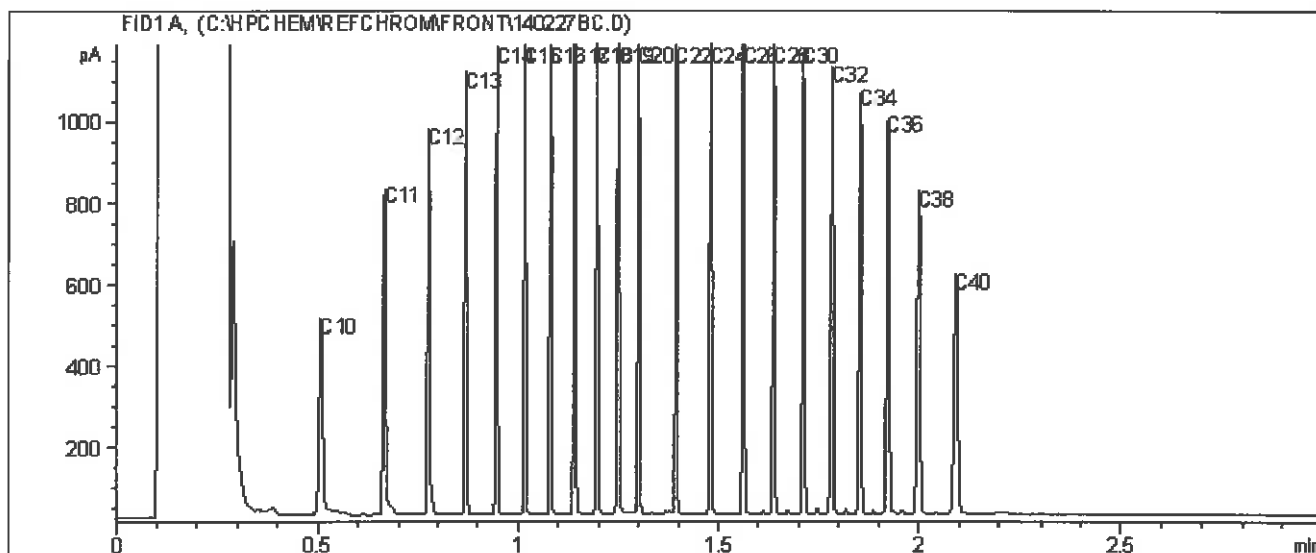
Report Date: 2014/03/04  
 Maxxam Job #: B415026  
 Maxxam Sample: IU8495 Lab-Dup

FRANZ ENVIRONMENTAL INC.  
 Client Project #: 1384-1401  
 Site Reference: LOWER POST  
 Client ID: BH13-17-10

## BC Hydrocarbons in Soil by GC/FID Chromatogram



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
 Varsol: C8 - C12

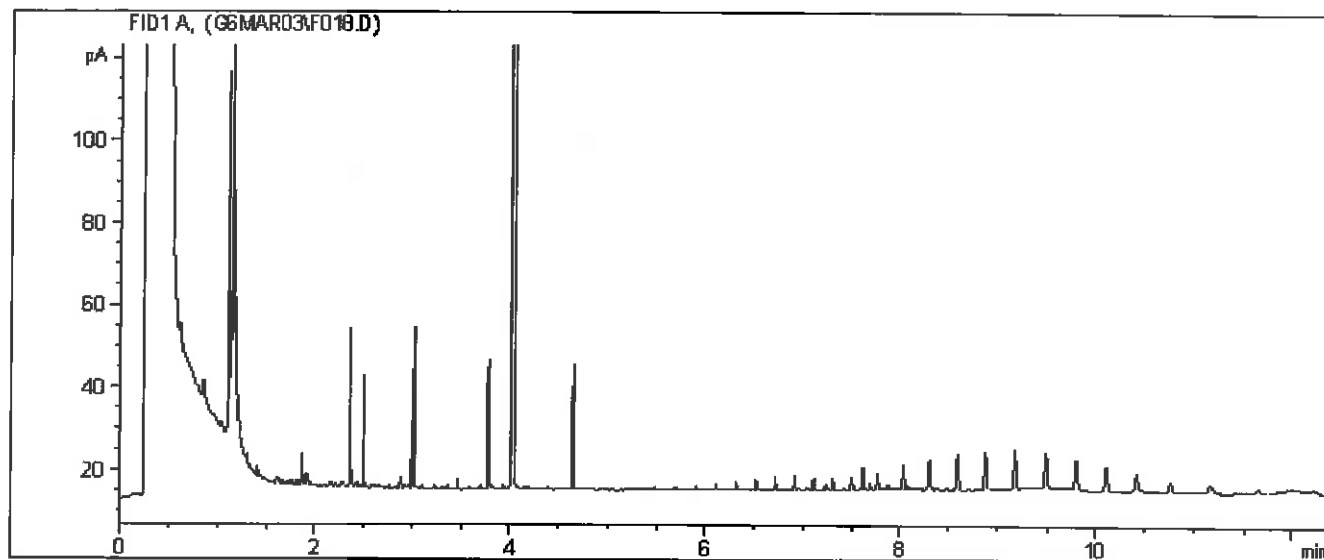
Diesel: C8 - C22  
 Lubricating Oils: C20 - C40

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

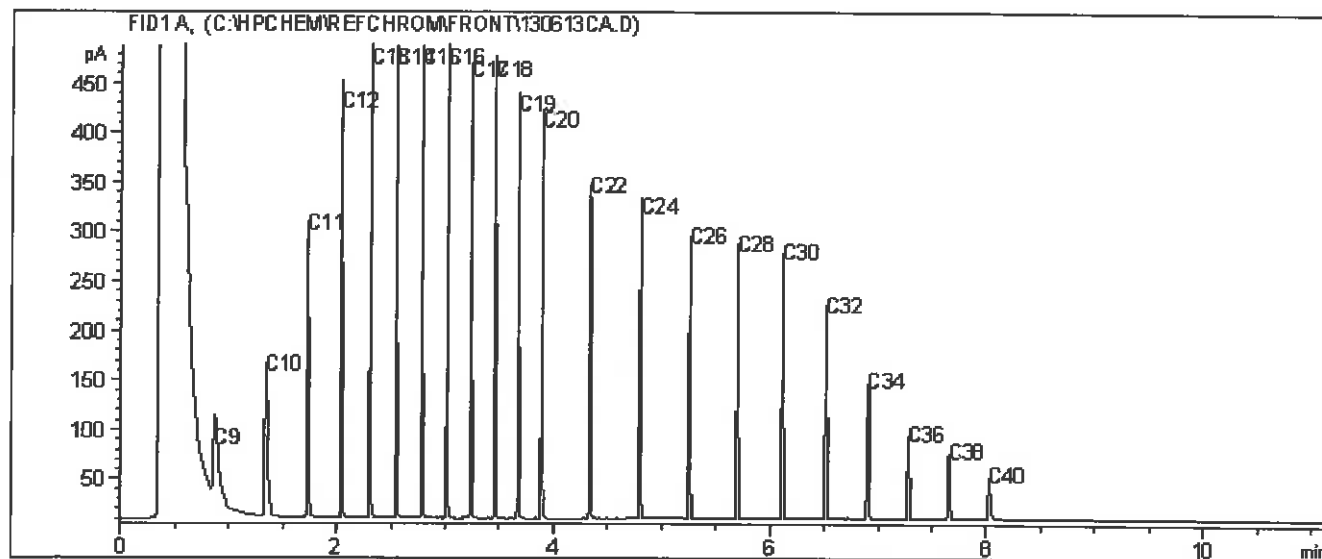
Report Date: 2014/03/04  
Maxxam Job #: B415026  
Maxxam Sample: IU8497

FRANZ ENVIRONMENTAL INC.  
Client Project #: 1384-1401  
Site Reference: LOWER POST  
Client ID: BH13-DUP 1

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

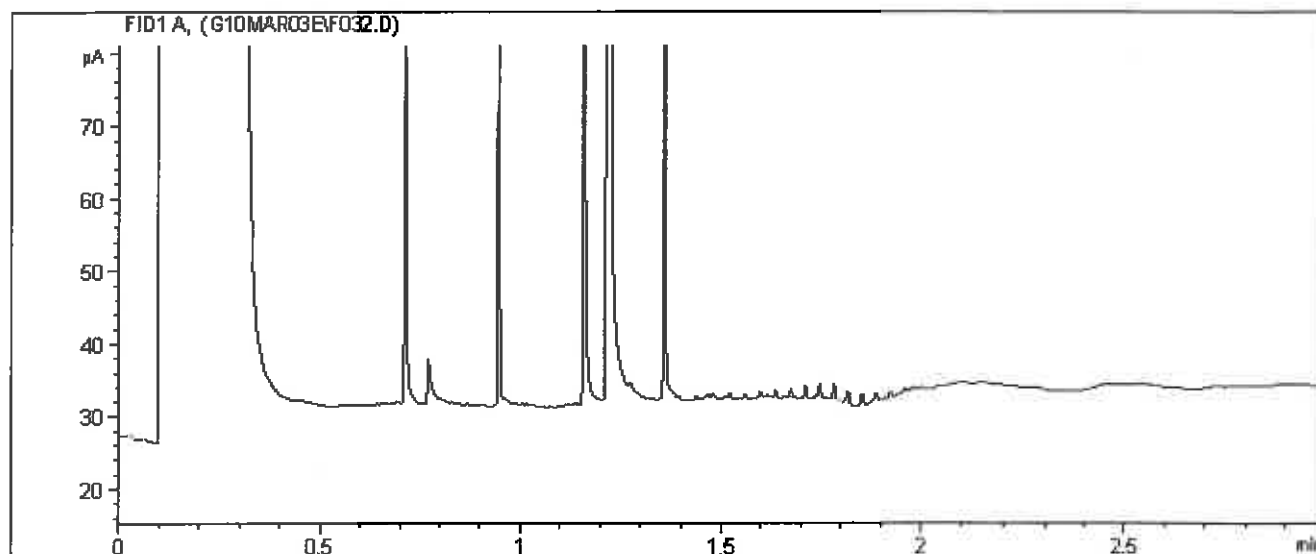
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

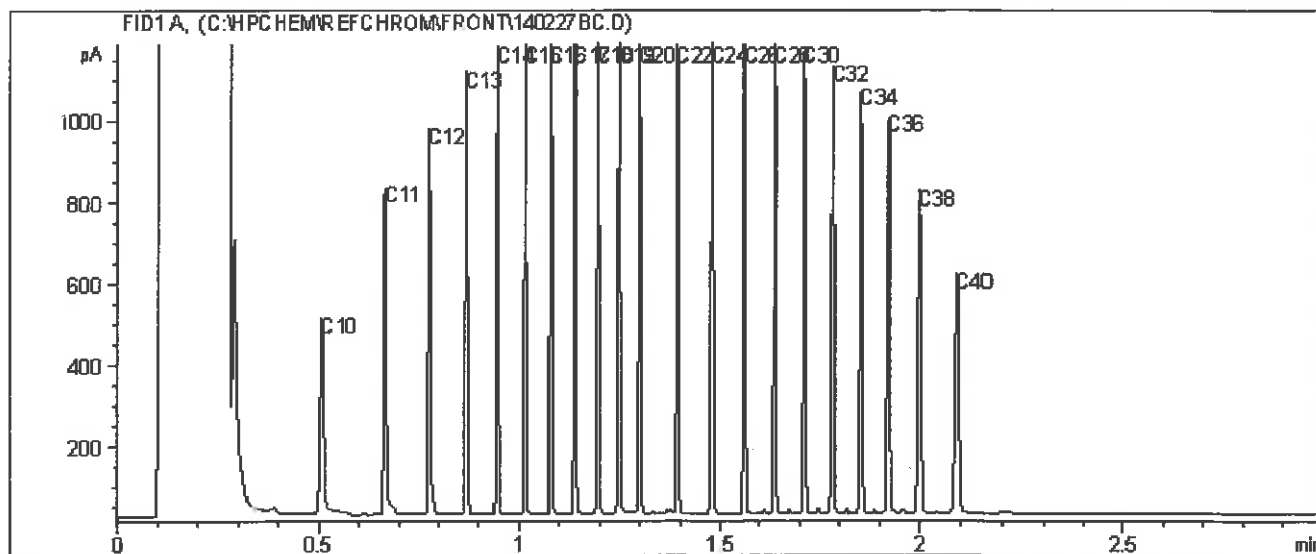
Report Date: 2014/03/04  
Maxxam Job #: B415026  
Maxxam Sample: IU8497

FRANZ ENVIRONMENTAL INC.  
Client Project #: 1384-1401  
Site Reference: LOWER POST  
Client ID: BH13-DUP 1

## BC Hydrocarbons in Soil by GC/FID Chromatogram



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

Your P.O. #: 700266127  
Your Project #: LOWER POST  
Your C.O.C. #: 42343703

**Attention: Richard Wells**  
FRANZ ENVIRONMENTAL INC.  
FRANZEN-VAN  
1080 MAINLAND STREET  
SUITE 308  
VANCOUVER, BC  
CANADA V6B 2T4

Report Date: 2013/12/15

## CERTIFICATE OF ANALYSIS

**MAXXAM JOB #: B3B3548**

**Received: 2013/12/09, 09:30**

Sample Matrix: Soil  
# Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/MTBE Soil LH, VH, F1 SIM/MS	2	2013/12/09	2013/12/10	BBY8-SOP-00010	EPA SW846 8260C
Volatile F1-BTEX	2	N/A	2013/12/11	BBY WI-00033	BC MOE Lab Method
CCME Hydrocarbons (F2-F4 in soil) (1)	2	2013/12/09	2013/12/12	BBY8SOP-00030	CCME Soil Tier 1
Moisture	2	N/A	2013/12/10	BBY8SOP-00017	Ont MOE -E 3139
PAH in Soil by GC/MS (SIM) - CCME	2	2013/12/09	2013/12/11	BBY8SOP-00022	EPA 8270D
Benzo[a]pyrene Equivalency	2	N/A	2013/12/12	BBY WI-00033	CCME Guidelines
Total LMW, HMW, Total PAH Calc	2	N/A	2013/12/12	BBY WI-00033	BC MOE Lab Method
EPH less PAH in Soil By GC/FID	2	N/A	2013/12/12	BBY WI-00033	BC MOE Lab Method
BC Hydrocarbons in Soil by GC/FID	2	2013/12/09	2013/12/11	BBY8SOP-00029	BC Env Lab Manual
Volatile HC-BTEX	2	N/A	2013/12/11	BBY WI-00033	BC MOE Lab Method

\* Results relate only to the items tested.

(1) The method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory; all deviations were justified and validated and are made available upon request; the chromatogram descends to baseline by the retention time of nC50 unless otherwise indicated; all QC criteria met; individual hydrocarbons (nC10, nC16, nC34) are within 10% of their average response factor; linearity is within 15%.

Encryption Key



Shanaz Akbar

16 Dec 2013 12:14:15 -06:00

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

Crystal Ireland, B.Sc., Account Specialist  
Email: C.Ireland@maxxam.ca  
Phone# (604) 638-5016

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
  
Your P.O. #: 700266127  
Sampler Initials: GB

## PETROLEUM HYDROCARBONS (CCME)

Maxxam ID	IG6699	IG6700	
Sampling Date	2013/12/05	2013/12/05	
	BH13-1-9	BH13-1-10	
UNITS			RDL
Ext. Pet. Hydrocarbon			QC Batch
F2 (C10-C16 Hydrocarbons)	mg/kg	240	<10
F3 (C16-C34 Hydrocarbons)	mg/kg	24	<10
F4 (C34-C50 Hydrocarbons)	mg/kg	<10	<10
Reached Baseline at C50	mg/kg	YES	N/A
Surrogate Recovery (%)			
O-TERPHENYL (sur.)	%	117	121
			7315457

## PHYSICAL TESTING (SOIL)

Maxxam ID	IG6699	IG6700	
Sampling Date	2013/12/05	2013/12/05	
	BH13-1-9	BH13-1-10	
UNITS			RDL
Physical Properties			QC Batch
Moisture	%	16	14
			0.30
			7312608

## TOTAL PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID	IG6699	IG6700	
Sampling Date	2013/12/05	2013/12/05	
	BH13-1-9	BH13-1-10	
UNITS			RDL
Calculated Parameters			QC Batch
LEPH (C10-C19 less PAH)	mg/kg	238	<100
HEPH (C19-C32 less PAH)	mg/kg	<100	<100
Hydrocarbons			
EPH (C10-C19)	mg/kg	238	<100
EPH (C19-C32)	mg/kg	<100	<100
Surrogate Recovery (%)			
O-TERPHENYL (sur.)	%	111	111
			7315440

N/A = Not Applicable  
RDL = Reportable Detection Limit

## CCME&CSR BTEX/F1/VPH IN SOIL (SOIL)

Maxxam ID		IG6699	IG6700		
Sampling Date		2013/12/05	2013/12/05		
<b>Calculated Parameters</b>		<b>UNITS</b>	<b>BH13-1-9</b>	<b>RDL</b>	<b>QC Batch</b>
F1 (C6-C10) - BTEX		mg/kg	11	<10	7313147
<b>Volatiles</b>					
VPH (VH6 to 10 - BTEX)		mg/kg	12	<10	7313118
Methyl-tert-butylether (MTBE)		mg/kg	<0.10	<0.10	7315142
Benzene		mg/kg	<0.0050	<0.0050	7315142
Toluene		mg/kg	<0.020	0.020	7315142
Ethylbenzene		mg/kg	0.064	<0.010	7315142
m & p-Xylene		mg/kg	0.20	<0.040	7315142
o-Xylene		mg/kg	0.12	<0.040	7315142
Styrene		mg/kg	<0.030	0.030	7315142
Xylenes (Total)		mg/kg	0.32	<0.040	7315142
VH C6-C10		mg/kg	12	<10	7315142
(C6-C10)		mg/kg	12	<10	7315142
<b>Surrogate Recovery (%)</b>					
1,4-Difluorobenzene (sur.)		%	103	103	7315142
4-BROMOFLUOROBENZENE (sur.)		%	101	94	7315142
D10-ETHYLBENZENE (sur.)		%	94	92	7315142
D4-1,2-DICHLOROETHANE (sur.)		%	98	99	7315142

RDL = Reportable Detection Limit

Maxxam Job #: B3B3548  
Report Date: 2013/12/15

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: GB

## CCME PAH IN SOIL BY GC-MS (SOIL)

Maxxam ID	IG6699	IG6700		
Sampling Date	2013/12/05	2013/12/05		
UNITS	BH13-1-9	BH13-1-10	RDL	QC Batch
<b>Calculated Parameters</b>				
Index of Additive Cancer Risk(IARC)				
Benzo(a)pyrene equivalency	N/A	0.31	0.10	0.10
	N/A	<0.10	0.10	0.10
<b>Polycyclic Aromatics</b>				
Naphthalene	mg/kg	0.16	0.010	0.010
2-Methylnaphthalene	mg/kg	0.35	0.020	0.020
Acenaphthylene	mg/kg	<0.011(1)	0.011	0.0050
Acenaphthene	mg/kg	0.058	0.0050	0.0050
Fluorene	mg/kg	0.11	0.020	0.020
Phenanthrene	mg/kg	0.030	0.020	0.020
Anthracene	mg/kg	<0.0040	0.0040	0.0040
Fluoranthene	mg/kg	<0.020	0.020	0.020
Pyrene	mg/kg	<0.020	0.020	0.020
Benzo(a)anthracene	mg/kg	<0.020	0.020	0.020
Chrysene	mg/kg	<0.020	0.020	0.020
Benzo(b&j)fluoranthene	mg/kg	<0.020	0.020	0.020
Benzo(b)fluoranthene	mg/kg	<0.020	0.020	0.020
Benzo(k)fluoranthene	mg/kg	<0.020	0.020	0.020
Benzo(a)pyrene	mg/kg	<0.020	0.020	0.020
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	0.050	0.050
Dibenz(a,h)anthracene	mg/kg	<0.050	0.050	0.050
Benzo(g,h,i)perylene	mg/kg	<0.050	0.050	0.050
Low Molecular Weight PAH's	mg/kg	0.70	0.050	0.050
High Molecular Weight PAH's	mg/kg	<0.050	0.050	0.050
Total PAH	mg/kg	0.70	0.050	0.050
<b>Surrogate Recovery (%)</b>				
D10-ANTHRACENE (sur.)	%	98	112	7315424
D8-ACENAPHTHYLENE (sur.)	%	99	98	7315424
D8-NAPHTHALENE (sur.)	%	90	93	7315424
TERPHENYL-D14 (sur.)	%	102	110	7315424

N/A = Not Applicable  
RDL = Reportable Detection Limit  
(1) - RDL raised due to sample matrix interference.

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST

Your P.O. #: 700266127  
Sampler Initials: GB

Package 1	1.0°C
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Each temperature is the average of up to three cooler temperatures taken at receipt

## General Comments

## QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7312608	Moisture	2013/12/10					<0.30	%	5.9	20
7315142	1,4-Difluorobenzene (sur.)	2013/12/10	99	70 - 130	100	70 - 130	102	%		
7315142	4-BROMOFLUOROBENZENE (sur.)	2013/12/10	101	70 - 130	101	70 - 130	94	%		
7315142	D10-ETHYLBENZENE (sur.)	2013/12/10	98	50 - 130	85	50 - 130	82	%		
7315142	D4-1,2-DICHLOROETHANE (sur.)	2013/12/10	97	70 - 130	96	70 - 130	100	%		
7315142	Benzene	2013/12/10	91	60 - 140	86	60 - 140	<0.0050	mg/kg	NC	40
7315142	Toluene	2013/12/10	92	60 - 140	86	60 - 140	<0.020	mg/kg	NC	40
7315142	Ethylbenzene	2013/12/10	99	60 - 140	94	60 - 140	<0.010	mg/kg	NC	40
7315142	m & p-Xylene	2013/12/10	98	60 - 140	93	60 - 140	<0.040	mg/kg	NC	40
7315142	o-Xylene	2013/12/10	102	60 - 140	96	60 - 140	<0.040	mg/kg	NC	40
7315142	VH C6-C10	2013/12/10			98	60 - 140	<10	mg/kg	NC	40
7315142	(C6-C10)	2013/12/10			101	60 - 140	<10	mg/kg		
7315142	Methyl-tert-butylether(MTBE)	2013/12/10					<0.10	mg/kg		
7315142	Styrene	2013/12/10					<0.030	mg/kg		
7315142	Xylenes (Total)	2013/12/10					<0.040	mg/kg	NC	40
7315424	D10-ANTHRACENE (sur.)	2013/12/11	104	60 - 130	116	60 - 130	118	%		
7315424	D8-ACENAPHTHYLENE (sur.)	2013/12/11	94	50 - 130	99	50 - 130	105	%		
7315424	D8-NAPHTHALENE (sur.)	2013/12/11	87	50 - 130	92	50 - 130	98	%		
7315424	TERPHENYL-D14 (sur.)	2013/12/11	103	60 - 130	114	60 - 130	117	%		
7315424	Naphthalene	2013/12/11	91	50 - 130	87	50 - 130	<0.010	mg/kg	36.8	50
7315424	2-Methylnaphthalene	2013/12/11	106	50 - 130	91	50 - 130	<0.020	mg/kg	45.3	50
7315424	Acenaphthylene	2013/12/11	99	50 - 130	94	50 - 130	<0.0050	mg/kg	NC(1)	50
7315424	Acenaphthene	2013/12/11	104	50 - 130	97	50 - 130	<0.0050	mg/kg	40.1	50
7315424	Fluorene	2013/12/11	101	50 - 130	97	50 - 130	<0.020	mg/kg	34.5	50
7315424	Phenanthrene	2013/12/11	94	60 - 130	93	60 - 130	<0.020	mg/kg	NC	50
7315424	Anthracene	2013/12/11	109	60 - 130	115	60 - 130	<0.0040	mg/kg	NC	50
7315424	Fluoranthene	2013/12/11	102	60 - 130	106	60 - 130	<0.020	mg/kg	NC	50
7315424	Pyrene	2013/12/11	100	60 - 130	103	60 - 130	<0.020	mg/kg	NC	50
7315424	Benzo(a)anthracene	2013/12/11	74	60 - 130	78	60 - 130	<0.020	mg/kg	NC	50
7315424	Chrysene	2013/12/11	75	60 - 130	80	60 - 130	<0.020	mg/kg	NC	50
7315424	Benzo(b,k)fluoranthene	2013/12/11	77	60 - 130	85	60 - 130	<0.020	mg/kg	NC	50
7315424	Benzo(k)fluoranthene	2013/12/11	85	60 - 130	85	60 - 130	<0.020	mg/kg	NC	50
7315424	Benzo(a)pyrene	2013/12/11	86	60 - 130	91	60 - 130	<0.020	mg/kg	NC	50
7315424	Indeno(1,2,3-cd)pyrene	2013/12/11	84	60 - 130	97	60 - 130	<0.050	mg/kg	NC	50
7315424	Dibenz(a,h)anthracene	2013/12/11	85	60 - 130	97	60 - 130	<0.050	mg/kg	NC	50
7315424	Benzo(g,h,i)perylene	2013/12/11	77	60 - 130	92	60 - 130	<0.050	mg/kg	NC	50
7315424	Benzo(b)fluoranthene	2013/12/11					<0.020	mg/kg	NC	N/A
7315440	O-TERPHEYL (sur.)	2013/12/11	93	50 - 130	103	50 - 130	103	%		
7315440	EPH (C10-C19)	2013/12/13	NC	50 - 130	105	50 - 130	<100	mg/kg	9.1(2)	40

## QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7315440	EPH (C19-C32)	2013/12/13	NC	50 - 130	107	50 - 130	<100	mg/kg	16.9(2)	40
7315457	O-TERPHENYL (sur.)	2013/12/12	105	50 - 130	100	50 - 130	100	%		
7315457	F2 (C10-C16 Hydrocarbons)	2013/12/12	86	50 - 130	91	80 - 120	<10	mg/kg	28.0	40
7315457	F3 (C16-C34 Hydrocarbons)	2013/12/12	107	50 - 130	100	80 - 120	<10	mg/kg	NC	40
7315457	F4 (C34-C50 Hydrocarbons)	2013/12/12	109	50 - 130	100	80 - 120	<10	mg/kg	NC	40
7315457	Reached Baseline at C50	2013/12/12					YES, RDL=N/A	mg/kg	NC	50

N/A = Not Applicable

RDL = Reportable Detection Limit

RPD = Relative Percent Difference

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

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

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

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

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

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

(1) - RDL raised due to sample matrix interference.

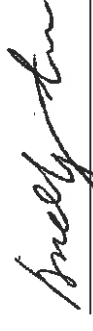
(2) - Detection limits raised due to dilution to bring analyte within the calibrated range.

## Validation Signature Page

Maxxam Job #: B3B3548

---

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

  
\_\_\_\_\_  
Andy Lu, Data Validation Coordinator

---

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



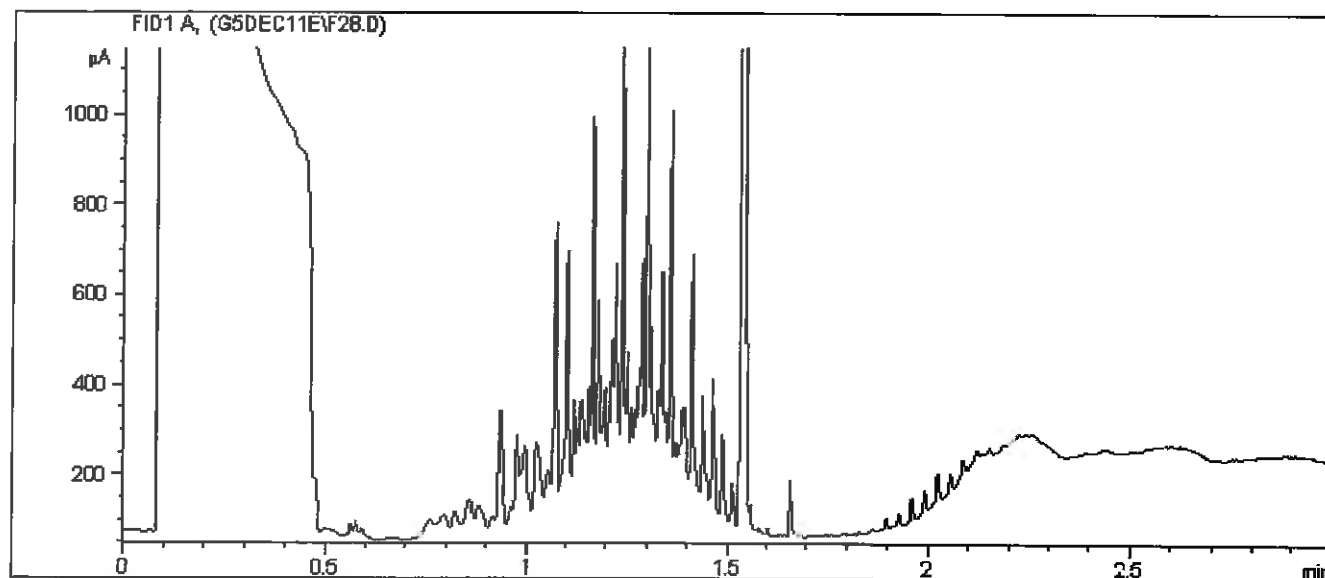


Report Date: 2013/12/15  
Maxxam Job #: B3B3548  
Maxxam Sample: IG6699

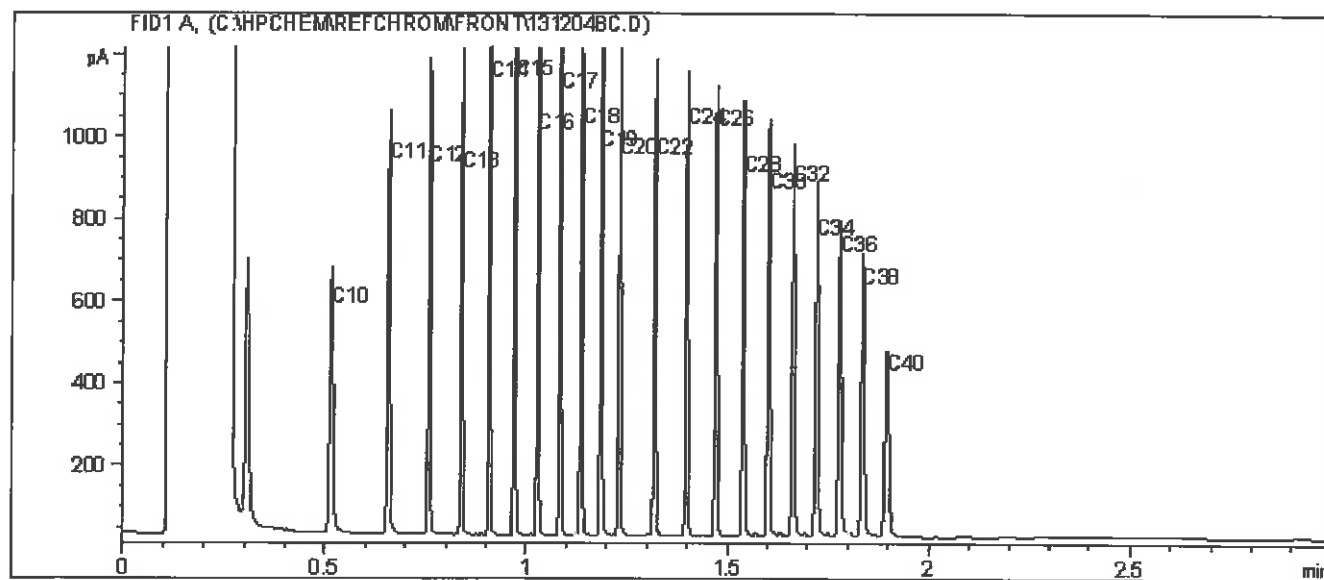
FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST

Client ID: BH13-1-9

### BC Hydrocarbons in Soil by GC/FID Chromatogram



### Carbon Range Distribution - Reference Chromatogram



### TYPICAL PRODUCT CARBON NUMBER RANGES

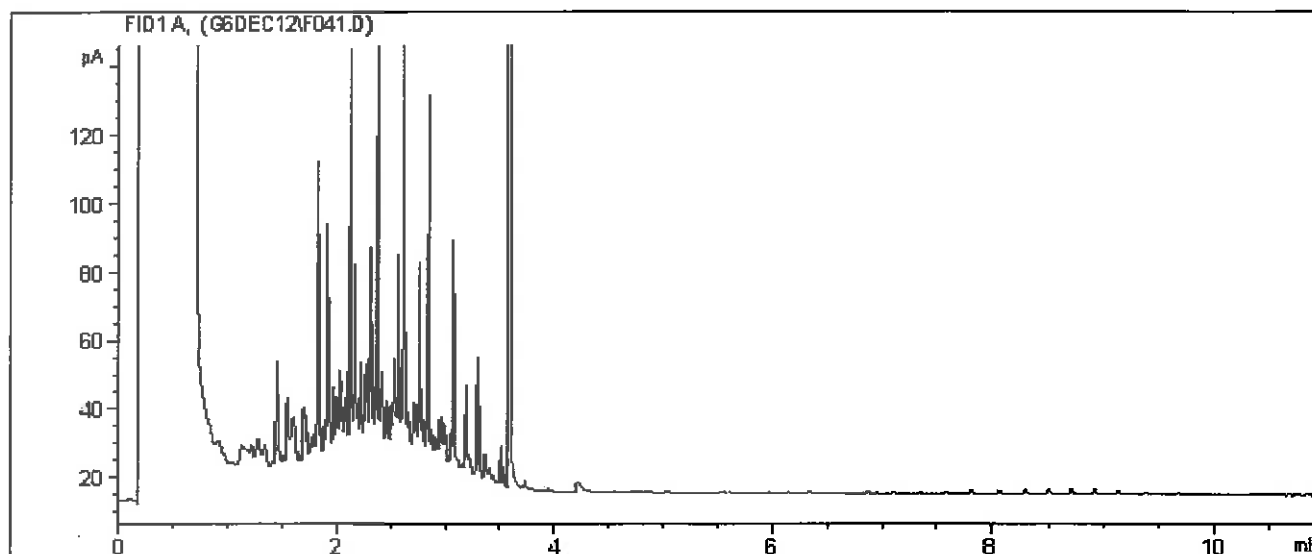
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/12/15  
Maxxam Job #: B3B3548  
Maxxam Sample: IG6699

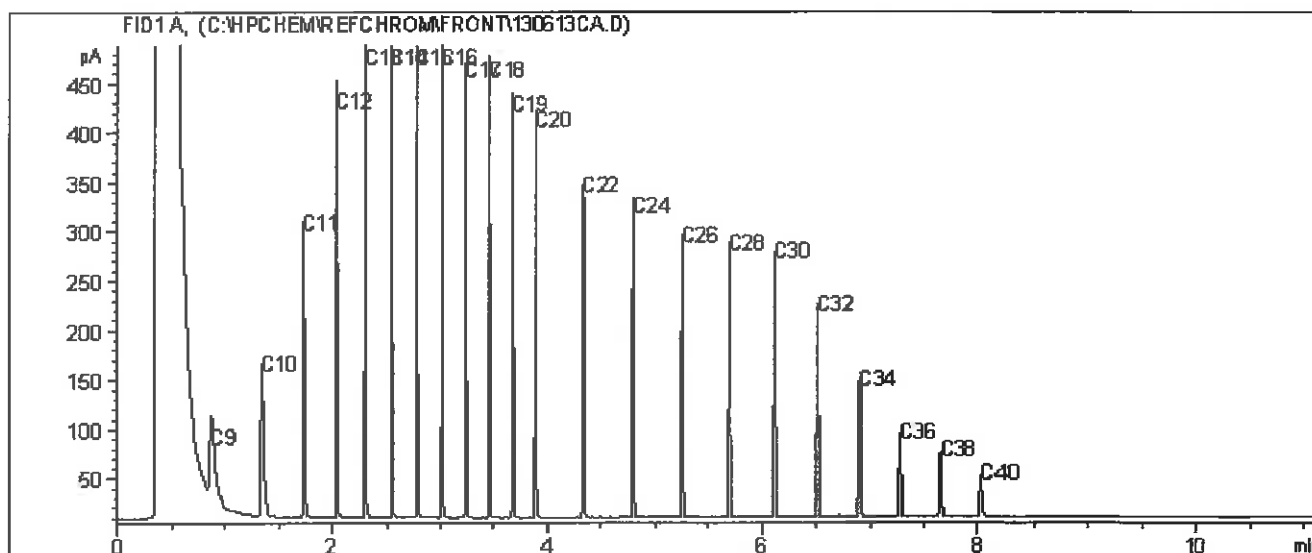
FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST

Client ID: BH13-1-9

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



**Carbon Range Distribution - Reference Chromatogram**



**TYPICAL PRODUCT CARBON NUMBER RANGES**

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating Oils: C20 - C40

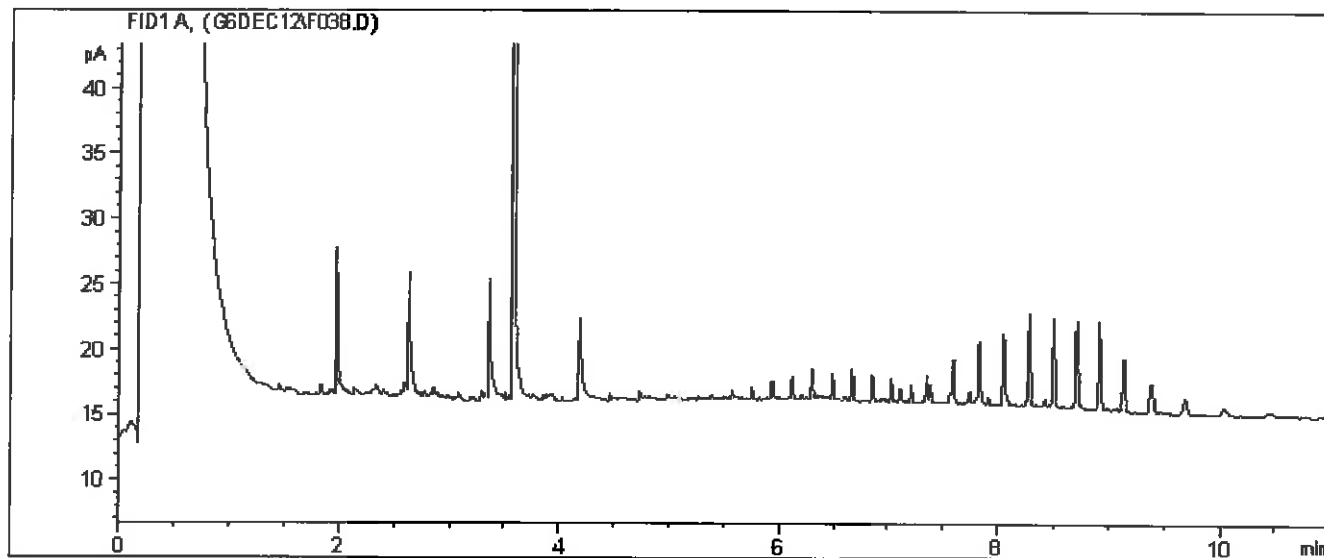
**Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.**

Report Date: 2013/12/15  
 Maxxam Job #: B3B3548  
 Maxxam Sample: IG6699 Lab-Dup

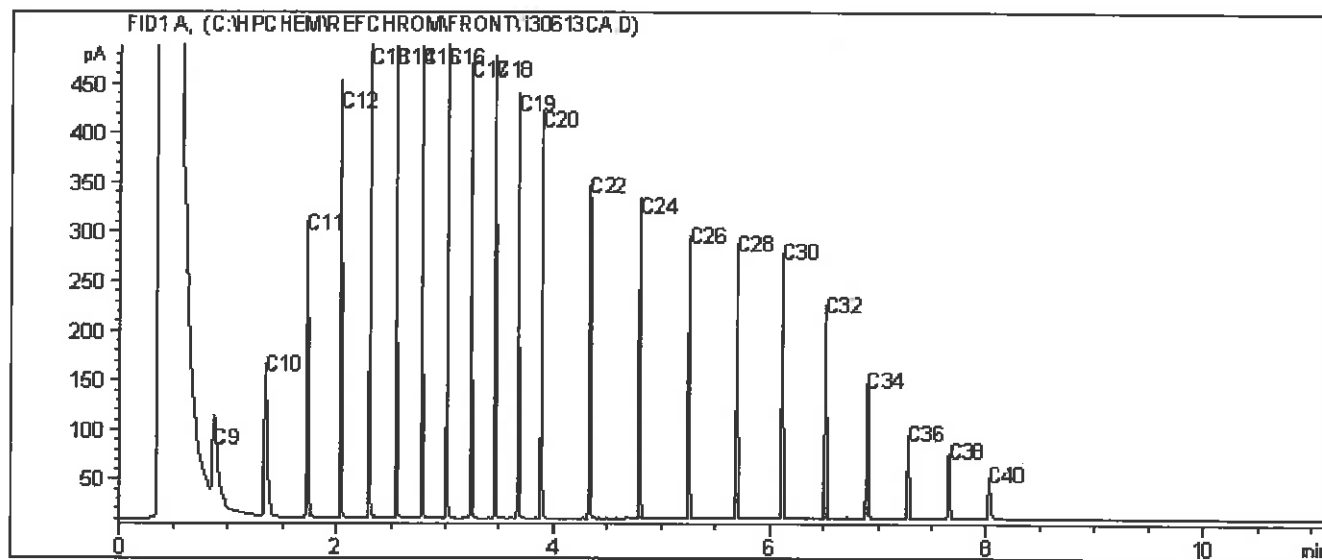
FRANZ ENVIRONMENTAL INC.  
 Client Project #: LOWER POST

Client ID: BH13-1-9

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
 Varsol: C8 - C12

Diesel: C8 - C22  
 Lubricating Oils: C20 - C40

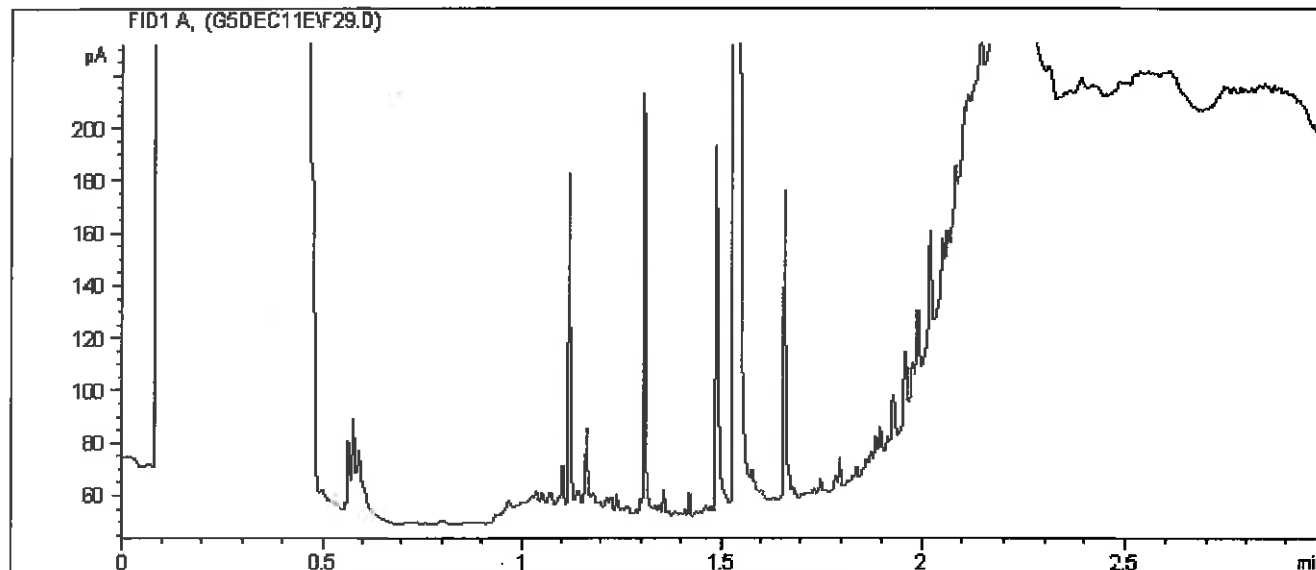
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/12/15  
Maxxam Job #: B3B3548  
Maxxam Sample: IG6700

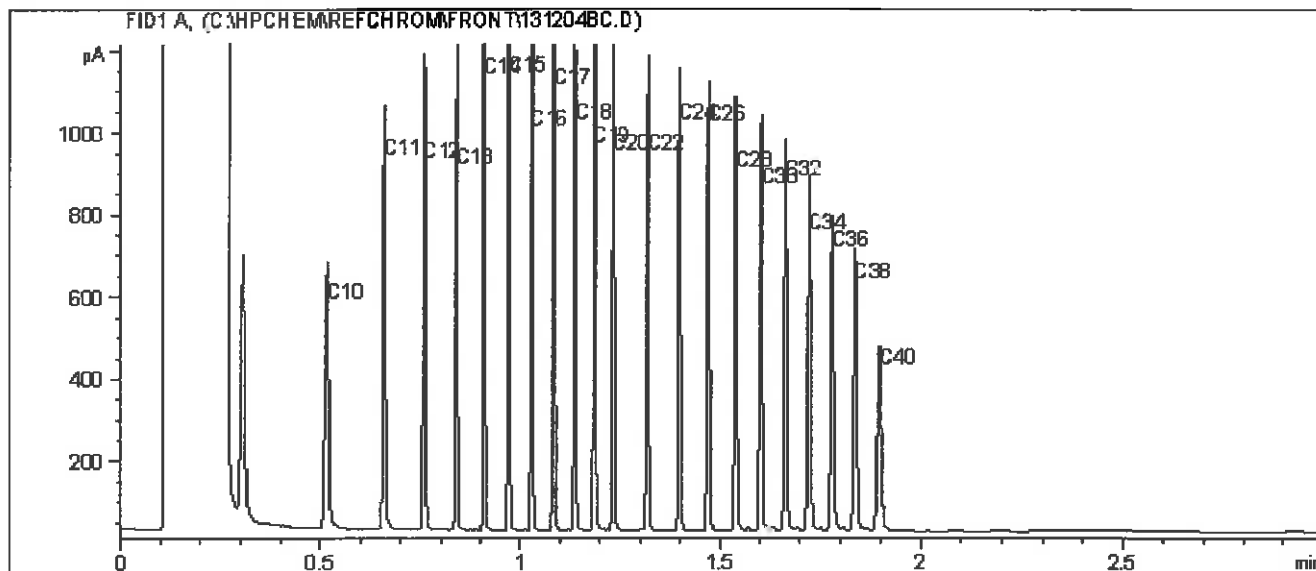
FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST

Client ID: BH13-1-10

**BC Hydrocarbons in Soil by GC/FID Chromatogram**



**Carbon Range Distribution - Reference Chromatogram**



**TYPICAL PRODUCT CARBON NUMBER RANGES**

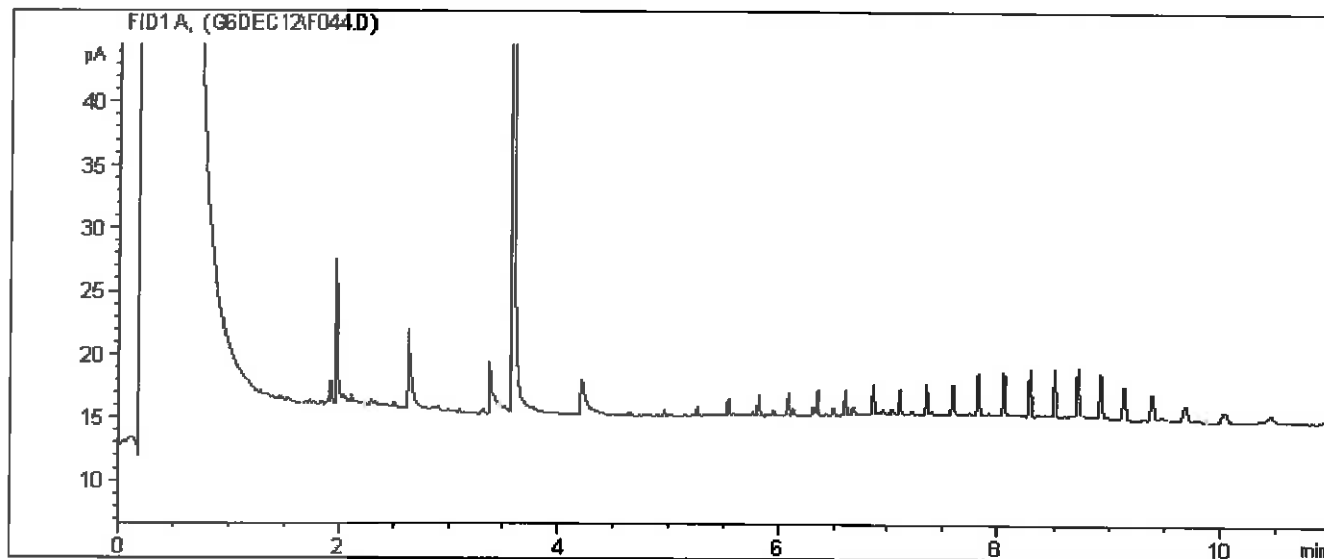
**Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.**

Report Date: 2013/12/15  
Maxxam Job #: B3B3548  
Maxxam Sample: IG6700

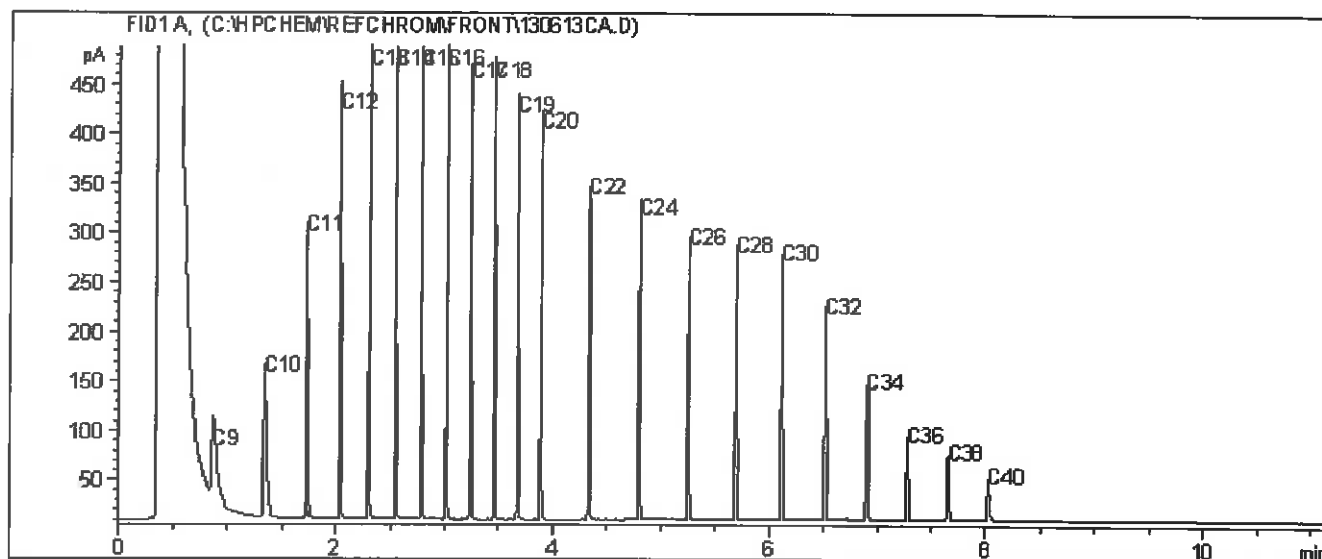
FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST

Client ID: BH13-1-10

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

Your P.O. #: 700266127  
 Site Location: LOWER POST  
 Your C.O.C. #: 40491601

**Attention: Richard Wells**  
 FRANZ ENVIRONMENTAL INC.  
 FRANZENV-VAN  
 1080 MAINLAND STREET  
 SUITE 308  
 VANCOUVER, BC  
 CANADA V6B 2T4

Report Date: 2013/07/26

## CERTIFICATE OF ANALYSIS

**MAXXAM JOB #: B361281**  
**Received: 2013/07/18, 10:20**

Sample Matrix: Water  
 # Samples Received: 10

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/MTBE LH, VH, F1 SIM/MS	7	2013/07/19	2013/07/19	BBY8-SOP-00010	EPA 8260C
BTEX/MTBE LH, VH, F1 SIM/MS	1	2013/07/19	2013/07/20	BBY8-SOP-00010	EPA 8260C
BTEX/MTBE LH, VH, F1 SIM/MS	2	2013/07/21	2013/07/22	BBY8-SOP-00010	EPA 8260C
CCME Hydrocarbons (F2-F4 in water)	8	2013/07/23	2013/07/23	BBY8SOP-00030	CCME Soil Tier1
CCME Hydrocarbons (F2-F4 in water)	2	2013/07/25	2013/07/26	BBY8SOP-00030	CCME Soil Tier1
Hardness Total (calculated as CaCO3)	2	N/A	2013/07/25	BBY7SOP-00002	EPA 6020A
Hardness (calculated as CaCO3)	8	N/A	2013/07/22	BBY7SOP-00002	EPA 6020A
Hardness (calculated as CaCO3)	2	N/A	2013/07/26	BBY7SOP-00002	EPA 6020A
Mercury (Dissolved) by CVAf	8	N/A	2013/07/24	BBY7SOP-00015	EPA 245.7
Mercury (Dissolved) by CVAf	2	N/A	2013/07/25	BBY7SOP-00015	EPA 245.7
Mercury (Total) by CVAf	2	2013/07/25	2013/07/25	BBY7SOP-00015	EPA 245.7
Extrac. Pet HC when LEPH/HEPH required	6	2013/07/18	2013/07/19	BBY8SOP-00029	BC Env. Lab Manual
Extrac. Pet HC when LEPH/HEPH required	2	2013/07/18	2013/07/22	BBY8SOP-00029	BC Env. Lab Manual
Extrac. Pet HC when LEPH/HEPH required	2	2013/07/22	2013/07/23	BBY8SOP-00029	BC Env. Lab Manual
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	8	N/A	2013/07/22	BBY7SOP-00002	EPA 6020A
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	2	N/A	2013/07/26	BBY7SOP-00002	EPA 6020A
Elements by CRC ICPMS (dissolved)	8	N/A	2013/07/22	BBY7SOP-00002	EPA 6020A
Elements by CRC ICPMS (dissolved)	2	N/A	2013/07/26	BBY7SOP-00002	EPA 6020A
Na, K, Ca, Mg, S by CRC ICPMS (total)	2	2013/07/19	2013/07/25	BBY7SOP-00002	EPA 6020A
Elements by CRC ICPMS (total)	2	2013/07/25	2013/07/25	BBY7SOP-00002	EPA 6020A
Nitrate + Nitrite (N)	8	N/A	2013/07/19	BBY6SOP-00010	SM 4500NO3-I
Nitrate + Nitrite (N)	2	N/A	2013/07/20	BBY6SOP-00010	SM 4500NO3-I
Nitrite (N) by CFA	8	N/A	2013/07/19	BBY6SOP-00010	EPA 353.2
Nitrite (N) by CFA	2	N/A	2013/07/20	BBY6SOP-00010	EPA 353.2
Nitrogen - Nitrate (as N)	10	N/A	2013/07/22	BBY6SOP-00010	SM 4500NO3-I
PAH in Water by GC/MS (SIM)	8	2013/07/18	2013/07/21	BBY8SOP-00021	EPA 8270D
PAH in Water by GC/MS (SIM)	2	2013/07/22	2013/07/23	BBY8SOP-00021	EPA 8270D
Total LMW, HMW, Total PAH Calc	8	N/A	2013/07/22	BBY WI-00033	BC MOE Lab Method
Total LMW, HMW, Total PAH Calc	2	N/A	2013/07/24	BBY WI-00033	BC MOE Lab Method
Filter and HNO3 Preserve for Metals	8	N/A	2013/07/18	BBY6WI-00001	EPA 200.2
Filter and HNO3 Preserve for Metals	2	N/A	2013/07/19	BBY6WI-00001	EPA 200.2
EPH less PAH in Water by GC/FID	8	N/A	2013/07/22	BBY WI-00033	BC MOE Lab Method
EPH less PAH in Water by GC/FID	2	N/A	2013/07/24	BBY WI-00033	BC MOE Lab Method
Volatile F1-BTEX	10	N/A	2013/07/22	BBY WI-00033	BC MOE Lab Method

\* Results relate only to the items tested.



Maxxam Job #: B361281  
Report Date: 2013/07/26

FRANZ ENVIRONMENTAL INC.

Site Location: LOWER POST  
Your P.O. #: 700266127

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Encryption Key

Crystal Ireland

26 Jul 2013 15:44:43 -07:00

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

Crystal Ireland, B.Sc., Account Specialist  
Email: [Cireland@maxxam.ca](mailto:Cireland@maxxam.ca)  
Phone# (604) 638-5016

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Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 2

Maxxam Job #: B361281  
Report Date: 2013/07/26

FRANZ ENVIRONMENTAL INC.

Site Location: LOWER POST  
Your P.O. #: 700266127

## RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		GY2449	GY2450	GY2451	GY2452	
Sampling Date		2013/07/16 09:35	2013/07/16 11:10	2013/07/16 15:30	2013/07/16 12:00	
	UNITS	MW11-1	MW11-2	MW11-3	MW11-4	QC Batch
<b>Calculated Parameters</b>						
Filter and HNO3 Preservation	N/A	FIELD	FIELD	FIELD	FIELD	ONSITE

Maxxam ID		GY2453	GY2454	GY2455	GY2456	GY2457	GY2458	
Sampling Date		2013/07/16 13:20	2013/07/16 14:00	2013/07/16 14:35	2013/07/16 12:00	2013/07/17 08:00	2013/07/17 08:30	
	UNITS	MW11-5	MW11-6	MW11-7	MW11-400	DW 1	DW	QC Batch
<b>Calculated Parameters</b>								
Filter and HNO3 Preservation	N/A	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	ONSITE

## PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GY2449	GY2450	GY2451	GY2452	GY2453	
Sampling Date		2013/07/16 09:35	2013/07/16 11:10	2013/07/16 15:30	2013/07/16 12:00	2013/07/16 13:20	
	UNITS	MW11-1	MW11-2	MW11-3	MW11-4	MW11-5	QC Batch
<b>Extractable Hydrocarbons</b>							
F2 (C10-C16 Hydrocarbons)	mg/L	<0.20	<0.20	<0.20	<0.20	<0.20	7011581
F3 (C16-C34 Hydrocarbons)	mg/L	<0.20	<0.20	<0.20	<0.20	<0.20	7011581
F4 (C34-C50 Hydrocarbons)	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	7011581
<b>Surrogate Recovery (%)</b>							
O-TERPHENYL (sur.)	%	97	111	100	119	100	7011581

N/A = Not Applicable  
RDL = Reportable Detection Limit

## PETROLEUM HYDROCARBONS (CCME)

Maxxam ID	GY2454	GY2455	GY2456	GY2457	GY2458		
Sampling Date	2013/07/16 14:00	2013/07/16 14:35	2013/07/16 12:00	2013/07/17 08:00	2013/07/17 08:30		
UNITS	MW11-6	MW11-7	MW11-400	QC Batch	DW 1	DW	QC Batch
<b>Extractable Hydrocarbons</b>							
F2 (C10-C16 Hydrocarbons)	<0.20	<0.20	<0.20	7011581	<0.20	<0.20	7019799
F3 (C16-C34 Hydrocarbons)	<0.20	<0.20	<0.20	7011581	<0.20	<0.20	7019799
F4 (C34-C50 Hydrocarbons)	<3.0	<3.0	<3.0	7011581	<3.0	<3.0	7019799
<b>Surrogate Recovery (%)</b>							
O-TERPHENYL (sur.)	101	99	120	7011581	91	93	7019799

## CCME&CSR BTEX/F1/PH IN WATER (WATER)

Maxxam ID	GY2449	GY2450	GY2451	GY2452	GY2453		
Sampling Date	2013/07/16 09:35	2013/07/16 11:10	2013/07/16 15:30	2013/07/16 12:00	2013/07/16 13:20		
UNITS	MW11-1	MW11-2	MW11-3	MW11-4	MW11-5	RDL	QC Batch
<b>Calculated Parameters</b>							
F1 (C6-C10) - BTEX	<300	<300	<300	<300	<300	300	6998421
<b>Volatiles</b>							
VPH (VH6 to 10 - BTEX)	<300	<300	<300	<300	<300	300	6998421
Methyl-tert-butylether (MTBE)	<4.0	<4.0	<4.0	<4.0	<4.0	4.0	7001753
Benzene	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	7001753
Toluene	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	7001753
Ethylbenzene	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	7001753
m & p-Xylene	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	7001753
o-Xylene	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	7001753
Styrene	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	7001753
Xylenes (Total)	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	7001753
VH C6-C10	<300	<300	<300	<300	<300	300	7001753
(C6-C10)	<300	<300	<300	<300	<300	300	7001753
<b>Surrogate Recovery (%)</b>							
1,4-Difluorobenzene (sur.)	100	100	99	100	100		7001753
4-BROMOFLUOROBENZENE (sur.)	103	102	103	103	103		7001753
D4-1,2-DICHLOROETHANE (sur.)	97	96	96	97	97		7001753

Maxxam Job #: B361281  
Report Date: 2013/07/26

FRANZ ENVIRONMENTAL INC.

Site Location: LOWER POST  
Your P.O. #: 700266127

## CCME&CSR BTEX/F1/VPH IN WATER (WATER)

Maxxam ID	GY2454	GY2455	GY2456	GY2457	GY2458		
Sampling Date	2013/07/16 14:00	2013/07/16 14:35	2013/07/16 12:00	2013/07/17 08:00	2013/07/17 08:30		
	MW11-6	MW11-7	MW11-400	QC Batch	DW 1	DW	QC Batch
UNITS							
						UNTREATED	RDL
<b>Calculated Parameters</b>							
F1 (C6-C10) - BTEX	ug/L	<300	<300	<300	<300	<300	7000876
<b>Volatiles</b>							
VPH (VH6 to 10 - BTEX)	ug/L	<300	<300	<300	<300	<300	7000876
Methyl-tert-butylether (MTBE)	ug/L	<4.0	<4.0	<4.0	<4.0	<4.0	7006664
Benzene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	7006664
Toluene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	7006664
Ethylbenzene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	7006664
m & p-Xylene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	7006664
o-Xylene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	7006664
Styrene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	7006664
Xylenes (Total)	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	7006664
VH C6-C10	ug/L	<300	<300	<300	<300	<300	7006664
(C6-C10)	ug/L	<300	<300	<300	<300	<300	7006664
<b>Surrogate Recovery (%)</b>							
1,4-Difluorobenzene (sur.)	%	99	99	100	102	101	7006664
4-BROMOFLUOROBENZENE (sur.)	%	102	103	103	99	98	7006664
D4-1,2-DICHLOROETHANE (sur.)	%	97	96	97	101	102	7006664

## LEPH & HEPH FOR CSR IN WATER (WATER)

Maxxam ID	GY2449	GY2450	GY2451	GY2452	GY2453	
Sampling Date	2013/07/16 09:35	2013/07/16 11:10	2013/07/16 15:30	2013/07/16 12:00	2013/07/16 13:20	
	UNITS	MW11-1	MW11-2	MW11-3	MW11-4	QC Batch
<b>Polycyclic Aromatics</b>						
Low Molecular Weight PAH's	ug/L	<0.50	<0.50	<0.50	<0.50	0.50
High Molecular Weight PAH's	ug/L	<0.050	<0.050	<0.050	<0.050	0.050
Total PAH	ug/L	<0.50	<0.50	<0.50	<0.50	0.50
Naphthalene	ug/L	<0.10	0.28	<0.10	<0.10	0.10
2-Methylnaphthalene	ug/L	<0.10	0.19	<0.10	<0.10	0.10
Quinoline	ug/L	<0.50	<0.50	<0.50	<0.50	0.50
Acenaphthylene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050
Acenaphthene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050
Fluorene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050
Phenanthrene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050
Anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	0.010
Acridine	ug/L	<0.050	<0.050	<0.050	<0.050	0.050
Fluoranthene	ug/L	<0.020	<0.020	<0.020	<0.020	0.020
Pyrene	ug/L	<0.020	<0.020	<0.020	<0.020	0.020
Benzo(a)anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	0.010
Chrysene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050
Benzo(b&f)fluoranthene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050
Benzo(k)fluoranthene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050
Benzo(a)pyrene	ug/L	<0.0090	<0.0090	<0.0090	<0.0090	0.0090
Indeno(1,2,3-cd)pyrene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050
Dibenz(a,h)anthracene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050
Benzo(g,h,i)perylene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050
<b>Surrogate Recovery (%)</b>						
D10-ANTHRACENE (sur.)	%	114	115	115	118	114
D8-ACENAPHTHYLENE (sur.)	%	117	114	114	118	112
D8-NAPHTHALENE (sur.)	%	115	111	117	117	113
D9-Acridine	%	82	86	84	86	83
TERPHENYL-D14 (sur.)	%	100	95	98	104	96
<b>Calculated Parameters</b>						
LEPH (C10-C19 less PAH)	mg/L	<0.20	<0.20	<0.20	<0.20	0.20
HEPH (C19-C32 less PAH)	mg/L	<0.20	<0.20	<0.20	<0.20	0.20
<b>Ext. Pet. Hydrocarbon</b>						
EPH (C10-C19)	mg/L	<0.20	<0.20	<0.20	<0.20	0.20
EPH (C19-C32)	mg/L	<0.20	<0.20	<0.20	<0.20	0.20

RDL = Reportable Detection Limit

## LEPH & HEPH FOR CSR IN WATER (WATER)

Maxxam ID	GY2449	GY2450	GY2451	GY2452	GY2453		
Sampling Date	2013/07/16 09:35	2013/07/16 11:10	2013/07/16 15:30	2013/07/16 12:00	2013/07/16 13:20		
	MW11-1	MW11-2	MW11-3	MW11-4	MW11-5	RDL	QC Batch
Surrogate Recovery (%)							
O-TERPHENYL (sur.)	103	96	105	98	103		6999198

## LEPH & HEPH FOR CSR IN WATER (WATER)

Maxxam ID	GY2454	GY2455	GY2456	GY2457	GY2458	
Sampling Date	2013/07/16 14:00	2013/07/16 14:35	2013/07/16 12:00	2013/07/17 08:00	2013/07/17 08:30	
UNITS	MW11-6	MW11-7	MW11-400	DW 1	DW	QC Batch
					UNTREATED	RDL
<b>Polycyclic Aromatics</b>						
Low Molecular Weight PAH's	ug/L	<0.50	<0.50	<0.50	<0.50	0.50
High Molecular Weight PAH's	ug/L	<0.050	<0.050	<0.050	<0.050	0.050
Total PAH	ug/L	<0.50	<0.50	<0.50	<0.50	0.50
Naphthalene	ug/L	<0.10	<0.10	<0.10	<0.10	0.10
2-Methylnaphthalene	ug/L	<0.10	<0.10	<0.10	<0.10	0.10
Quinoline	ug/L	<0.50	<0.50	<0.50	<0.50	0.50
Acenaphthylene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050
Acenaphthene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050
Fluorene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050
Phenanthrene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050
Anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	0.010
Acridine	ug/L	<0.050	<0.050	<0.050	<0.050	0.050
Fluoranthene	ug/L	<0.020	<0.020	<0.020	<0.020	0.020
Pyrene	ug/L	<0.020	<0.020	<0.020	<0.020	0.020
Benzo(a)anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	0.010
Chrysene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050
Benzo(b&l)fluoranthene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050
Benzo(k)fluoranthene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050
Benzo(a)pyrene	ug/L	<0.0090	<0.0090	<0.0090	<0.0090	0.0090
Indeno(1,2,3-cd)pyrene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050
Dibenz(a,h)anthracene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050
Benzo(g,h,i)perylene	ug/L	<0.050	<0.050	<0.050	<0.050	0.050
<b>Surrogate Recovery (%)</b>						
D10-ANTHRACENE (sur.)	%	106	113	116	128	125
D8-ACENAPHTHYLENE (sur.)	%	116	116	115	124	121
D8-NAPHTHALENE (sur.)	%	112	111	120	83	117
D9-Acridine	%	83	85	83	102	92
TERPHENYL-D14 (sur.)	%	56(1)	98	95	119	102
<b>Calculated Parameters</b>						
LEPH (C10-C19 less PAH)	mg/L	<0.20	<0.20	<0.20	<0.20	0.20
HEPH (C19-C32 less PAH)	mg/L	0.22	<0.20	<0.20	<0.20	0.20

RDL = Reportable Detection Limit

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

## LEPH & HEPH FOR CSR IN WATER (WATER)

Maxxam ID	GY2454	GY2455	GY2456	GY2457	GY2458		
Sampling Date	2013/07/16 14:00	2013/07/16 14:35	2013/07/16 12:00	2013/07/17 08:00	2013/07/17 08:30		
	MW11-6	MW11-7	MW11-400	DW 1	DW	RDL	QC Batch
UNITS					UNTREATED		
<b>Ext. Pet. Hydrocarbon</b>							
EPH (C10-C19)	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	7010080
EPH (C19-C32)	0.22	<0.20	<0.20	<0.20	<0.20	0.20	7010080
<b>Surrogate Recovery (%)</b>							
O-TERPHENYL (sur.)	%	103	102	101	101		7010080

FRANZ ENVIRONMENTAL INC.

Site Location: LOWER POST  
Your P.O. #: 700266127

## CCME DISSOLVED METALS IN WATER (WATER)

Maxxam ID		GY2449	GY2450	GY2451	GY2452	GY2453	
Sampling Date		2013/07/16 09:35	2013/07/16 11:10	2013/07/16 15:30	2013/07/16 12:00	2013/07/16 13:20	
	UNITS	MW11-1	MW11-2	MW11-3	MW11-4	MW11-5	QC Batch
<b>Misc. Inorganics</b>							
Dissolved Hardness (CaCO3)	mg/L	348	325	431	332	459	6996351
<b>Elements</b>							
Dissolved Mercury (Hg)	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	7015730
							RDL

RDL = Reportable Detection Limit

## CCME DISSOLVED METALS IN WATER (WATER)

Maxxam ID	GY2449	GY2450	GY2451	GY2452	GY2453	
Sampling Date	2013/07/16 09:35	2013/07/16 11:10	2013/07/16 15:30	2013/07/16 12:00	2013/07/16 13:20	
	MW11-1	MW11-2	MW11-3	MW11-4	MW11-5	QC Batch
UNITS						
<b>Dissolved Metals by ICPMS</b>						
Dissolved Aluminum (Al)	ug/L	3.6	3.1	3.9	3.8	3.0
Dissolved Antimony (Sb)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50
Dissolved Arsenic (As)	ug/L	1.76	0.99	<0.10	0.95	<0.10
Dissolved Barium (Ba)	ug/L	162	93.5	131	93.0	111
Dissolved Beryllium (Be)	ug/L	<0.10	<0.10	<0.10	<0.10	0.10
Dissolved Bismuth (Bi)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0
Dissolved Boron (B)	ug/L	<50	<50	<50	<50	50
Dissolved Cadmium (Cd)	ug/L	0.017	0.027	0.072	0.028	0.084
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0
Dissolved Cobalt (Co)	ug/L	1.51	1.46	<0.50	1.45	<0.50
Dissolved Copper (Cu)	ug/L	0.38	0.39	0.76	0.42	0.62
Dissolved Iron (Fe)	ug/L	674	736	<5.0	752	<5.0
Dissolved Lead (Pb)	ug/L	<0.20	<0.20	<0.20	<0.20	0.20
Dissolved Lithium (Li)	ug/L	<5.0	<5.0	6.3	<5.0	6.9
Dissolved Manganese (Mn)	ug/L	119	128	<1.0	128	43.2
Dissolved Molybdenum (Mo)	ug/L	2.8	6.0	3.1	5.8	4.5
Dissolved Nickel (Ni)	ug/L	4.2	3.9	2.4	3.8	2.9
Dissolved Selenium (Se)	ug/L	<0.10	<0.10	15.5	0.17	2.08
Dissolved Silicon (Si)	ug/L	4810	4120	3350	4030	3490
Dissolved Silver (Ag)	ug/L	<0.020	<0.020	<0.020	<0.020	<0.020
Dissolved Strontium (Sr)	ug/L	562	344	480	351	563
Dissolved Thallium (Tl)	ug/L	<0.050	<0.050	<0.050	<0.050(1)	<0.050
Dissolved Tin (Sn)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0
Dissolved Titanium (Ti)	ug/L	<5.0	<5.0	<5.0	<5.0	5.0
Dissolved Uranium (U)	ug/L	3.75	5.06	5.20	5.08	5.17
Dissolved Vanadium (V)	ug/L	<5.0	<5.0	<5.0	<5.0	5.0
Dissolved Zinc (Zn)	ug/L	23.8	7.2	9.8	7.5	5.4
Dissolved Zirconium (Zr)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50
Dissolved Calcium (Ca)	mg/L	93.8	81.4	92.4	84.2	92.4
Dissolved Magnesium (Mg)	mg/L	27.7	29.5	48.7	29.6	55.5
Dissolved Potassium (K)	mg/L	2.25	2.35	3.38	2.40	2.20
Dissolved Sodium (Na)	mg/L	3.72	6.37	6.73	6.43	6.01
Dissolved Sulphur (S)	mg/L	10.9	11.6	18.8	11.1	23.5
						3.0

RDL = Reportable Detection Limit

(1) - Matrix Spike outside acceptance criteria due to matrix interference.

## CCME DISSOLVED METALS IN WATER (WATER)

Maxxam ID		GY2454	GY2455	GY2456	GY2457	GY2458		
Sampling Date		2013/07/16 14:00	2013/07/16 14:35	2013/07/16 12:00	2013/07/17 08:00	2013/07/17 08:30		
	UNITS	MW11-6	MW11-7	MW11-400	QC Batch	DW 1	DW	QC Batch
<b>Misc. Inorganics</b>								
Dissolved Hardness (CaCO3)	mg/L	446	456	460	6996351	68.5	358	0.50
<b>Elements</b>								
Dissolved Mercury (Hg)	ug/L	<0.010	<0.010	<0.010	7015730	<0.010	<0.010	0.010
								7021248

Maxxam Job #: B361281  
Report Date: 2013/07/26

FRANZ ENVIRONMENTAL INC.

Site Location: LOWER POST  
Your P.O. #: 700266127

## CCME DISSOLVED METALS IN WATER (WATER)

Maxxam ID	GY2454	GY2455	GY2456	GY2457	GY2458	
Sampling Date	2013/07/16	2013/07/16	2013/07/16	2013/07/17	2013/07/17	
UNITS	MW11-6	MW11-7	MW11-400	DW 1	DW	QC Batch
					UNTREATED	RDL
<b>Dissolved Metals by ICPMS</b>						
Dissolved Aluminum (Al)	14.3	6.1	9.7	<3.0	<3.0	3.0
Dissolved Antimony (Sb)	<0.50	<0.50	<0.50	<0.50	<0.50	0.50
Dissolved Arsenic (As)	<0.10	0.12	<0.10	1.05	0.74	0.10
Dissolved Barium (Ba)	52.8	51.7	58.6	9.2	122	1.0
Dissolved Beryllium (Be)	<0.10	<0.10	<0.10	<0.10	<0.10	0.10
Dissolved Bismuth (Bi)	<1.0	<1.0	<1.0	<1.0	<1.0	1.0
Dissolved Boron (B)	<5.0	<5.0	<5.0	<5.0	<5.0	5.0
Dissolved Cadmium (Cd)	0.043	0.041	0.057	<0.010	0.014	0.010
Dissolved Chromium (Cr)	<1.0	<1.0	<1.0	<1.0	<1.0	1.0
Dissolved Cobalt (Co)	<0.50	<0.50	<0.50	<0.50	<0.50	0.50
Dissolved Copper (Cu)	1.32	0.72	0.99	16.6	1.50(1)	0.20
Dissolved Iron (Fe)	11.9	20.6	15.0	238	6.5	5.0
Dissolved Lead (Pb)	<0.20	<0.20	<0.20	<0.20	<0.20	0.20
Dissolved Lithium (Li)	7.8	8.1	8.0	<5.0	5.0	5.0
Dissolved Manganese (Mn)	2.2	38.3	1.9	8.6	25.0	1.0
Dissolved Molybdenum (Mo)	1.4	5.0	2.3	3.5	3.5	1.0
Dissolved Nickel (Ni)	2.9	3.0	3.6	<1.0	1.0	1.0
Dissolved Selenium (Se)	17.4	4.61	9.48	<0.10	<0.10	0.10
Dissolved Silicon (Si)	3740	3840	3940	5470	5580	100
Dissolved Silver (Ag)	<0.020	<0.020	<0.020	<0.020	<0.020	0.020
Dissolved Strontium (Sr)	584	685	531	54.9	424	1.0
Dissolved Thallium (Tl)	<0.050	0.058	<0.050	<0.050	<0.050	0.050
Dissolved Tin (Sn)	<5.0	<5.0	<5.0	<5.0	<5.0	5.0
Dissolved Titanium (Ti)	<5.0	<5.0	<5.0	<5.0	<5.0	5.0
Dissolved Vanadium (V)	4.25	6.98	6.82	3.20	3.30	0.10
Dissolved Zinc (Zn)	<5.0	<5.0	<5.0	<5.0	<5.0	5.0
Dissolved Zirconium (Zr)	11.0	7.9	15.2	8.6	10.0	5.0
Dissolved Calcium (Ca)	<0.50	<0.50	<0.50	<0.50	<0.50	0.50
Dissolved Magnesium (Mg)	85.1	85.8	107	6996377	89.4	0.050
Dissolved Potassium (K)	56.7	58.7	46.7	8.15	32.6	0.050
Dissolved Sodium (Na)	2.80	2.45	6.65	1.41	1.86	0.050
	26.0	10.2	15.0	136	5.69	0.050

RDL = Reportable Detection Limit

(1) - The variance (Dissolved> Total) is probably due to trace level contamination from field sampling or lab analysis. Or there was a discrepancy between the field-prepared sample bottles for DM and TM.

## CCME DISSOLVED METALS IN WATER (WATER)

Maxxam ID	GY2454	GY2455	GY2456	GY2457	GY2458		
Sampling Date	2013/07/16 14:00	2013/07/16 14:35	2013/07/16 12:00	2013/07/17 08:00	2013/07/17 08:30		
	MW11-6	MW11-7	MW11-400	DW 1	DW	RDL	QC Batch
UNITS					UNTREATED		
Dissolved Sulphur (S)	27.3	34.1	27.9	11.6	11.5	3.0	7000871
	mg/L						

## CCME TOTAL METALS IN WATER (WATER)

Maxxam ID		GY2457	GY2458	
Sampling Date		2013/07/17 08:00	2013/07/17 08:30	
	UNITS	DW 1	DW UNTREATED	RDL
Calculated Parameters				
Total Hardness (CaCO3)	mg/L	71.3	370	0.50
Elements				7001661
Total Mercury (Hg)	ug/L	<0.010	<0.010	0.010
				7020462

## CCME TOTAL METALS IN WATER (WATER)

Maxxam ID	GY2457	GY2458		
Sampling Date	2013/07/17 08:00	2013/07/17 08:30		
UNITS		DW 1	DW UNTREATED	QC Batch
Total Metals by IC-PMS				
Total Aluminum (Al)	ug/L	42.2	25.8	7020290
Total Antimony (Sb)	ug/L	<0.50	<0.50	7020290
Total Arsenic (As)	ug/L	1.07	0.89	7020290
Total Barium (Ba)	ug/L	9.4	124	7020290
Total Beryllium (Be)	ug/L	<0.10	<0.10	7020290
Total Bismuth (Bi)	ug/L	<1.0	<1.0	7020290
Total Boron (B)	ug/L	<50	<50	7020290
Total Cadmium (Cd)	ug/L	<0.010	<0.010	7020290
Total Chromium (Cr)	ug/L	<1.0	<1.0	7020290
Total Cobalt (Co)	ug/L	<0.50	<0.50	7020290
Total Copper (Cu)	ug/L	20.7	1.13	7020290
Total Iron (Fe)	ug/L	311	255	7020290
Total Lead (Pb)	ug/L	0.31	<0.20	7020290
Total Lithium (Li)	ug/L	<5.0	<5.0	7020290
Total Manganese (Mn)	ug/L	9.3	26.9	7020290
Total Molybdenum (Mo)	ug/L	3.7	3.4	7020290
Total Nickel (Ni)	ug/L	<1.0	<1.0	7020290
Total Selenium (Se)	ug/L	<0.10	<0.10	7020290
Total Silicon (Si)	ug/L	5310	5520	7020290
Total Silver (Ag)	ug/L	0.089	0.048	7020290
Total Strontium (Sr)	ug/L	53.3	442	7020290
Total Thallium (Tl)	ug/L	<0.050	<0.050	7020290
Total Tin (Sn)	ug/L	<5.0	<5.0	7020290
Total Titanium (Ti)	ug/L	<5.0	<5.0	7020290
Total Uranium (U)	ug/L	3.23	3.38	7020290
Total Vanadium (V)	ug/L	<5.0	<5.0	7020290
Total Zinc (Zn)	ug/L	11.3	<5.0	7020290
Total Zirconium (Zr)	ug/L	<0.50	<0.50	7020290
Total Calcium (Ca)	mg/L	14.3	90.5	7002668
Total Magnesium (Mg)	mg/L	8.61	34.9	7002668
Total Potassium (K)	mg/L	1.49	1.98	7002668
Total Sodium (Na)	mg/L	143	5.34	7002668
Total Sulphur (S)	mg/L	15.5	12.4	7002668

RDL = Reportable Detection Limit

FRANZ ENVIRONMENTAL INC.

Maxxam Job #: B361281  
Report Date: 2013/07/26

Site Location: LOWER POST  
Your P.O. #: 700266127

## NITRITE & NITRATE (WATER)

Maxxam ID	GY2449	GY2450	GY2451	GY2452	GY2453	GY2454		
Sampling Date	2013/07/16 09:35	2013/07/16 11:10	2013/07/16 15:30	2013/07/16 12:00	2013/07/16 13:20	2013/07/16 14:00		
UNITS	MW11-1	MW11-2	MW11-3	MW11-4	MW11-5	MW11-6	RDL	QC Batch
Nitrite (N)	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	7004494
<b>Calculated Parameters</b>								
Nitrate (N)	mg/L	0.036	0.497	1.55	0.020	3.19	0.040	6995408
<b>Nutrients</b>								
Nitrate plus Nitrite (N)	mg/L	0.036	0.497	1.55	0.020	3.19	0.040	7004395

Maxxam ID	GY2455	GY2456	GY2457	GY2458				
Sampling Date	2013/07/16 14:35	2013/07/16 12:00	2013/07/17 08:00	2013/07/17 08:30				
UNITS	MW11-7	RDL	MW11-400	RDL	QC Batch	DW 1	DW	QC Batch
Nitrite (N)	mg/L	0.0051	0.0050	0.0050	7004494	<0.0050	<0.0050	7006183
<b>Calculated Parameters</b>								
Nitrate (N)	mg/L	957	10	3.30	0.040	6995408	<0.020	7000872
<b>Nutrients</b>								
Nitrate plus Nitrite (N)	mg/L	957	10	3.30	0.040	7004395	<0.020	7006172

FRANZ ENVIRONMENTAL INC.

Site Location: LOWER POST

Your P.O. #: 700266127

Package 1	7.3°C
Package 2	9.0°C

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

## General Comments

FRANZ ENVIRONMENTAL INC.

Site Location: LOWER POST  
Your P.O. #: 700266127

## QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6999167	D10-ANTHRACENE (sur.)	2013/07/21	111	60 - 130	128	60 - 130	107	%		
6999167	D8-ACENAPHTHYLENE (sur.)	2013/07/21	109	50 - 130	133(1)	50 - 130	109	%		
6999167	D8-NAPHTHALENE (sur.)	2013/07/21	113	50 - 130	129	50 - 130	102	%		
6999167	D9-Acridine	2013/07/21	82	50 - 130	99	50 - 130	78	%		
6999167	TERPHENYL-D14 (sur.)	2013/07/21	96	60 - 130	116	60 - 130	94	%		
6999167	Naphthalene	2013/07/21	101	50 - 130	104	50 - 130	<0.10	ug/L	NC	40
6999167	2-Methylnaphthalene	2013/07/21	106	50 - 130	111	50 - 130	<0.10	ug/L	NC	40
6999167	Quinoline	2013/07/21	129	50 - 130	113	50 - 130	<0.50	ug/L	NC	40
6999167	Acenaphthylene	2013/07/21	104	50 - 130	111	50 - 130	<0.050	ug/L	NC	40
6999167	Acenaphthene	2013/07/21	105	50 - 130	114	50 - 130	<0.050	ug/L	NC	40
6999167	Fluorene	2013/07/21	100	50 - 130	109	50 - 130	<0.050	ug/L	NC	40
6999167	Phenanthrene	2013/07/21	99	60 - 130	108	60 - 130	<0.050	ug/L	NC	40
6999167	Anthracene	2013/07/21	103	60 - 130	108	60 - 130	<0.010	ug/L	NC	40
6999167	Acridine	2013/07/21	86	50 - 130	90	50 - 130	<0.050	ug/L	NC	40
6999167	Fluoranthene	2013/07/21	98	50 - 130	106	60 - 130	<0.020	ug/L	NC	40
6999167	Pyrene	2013/07/21	101	60 - 130	110	60 - 130	<0.020	ug/L	NC	40
6999167	Benzo(a)anthracene	2013/07/21	95	60 - 130	105	60 - 130	<0.010	ug/L	NC	40
6999167	Chrysene	2013/07/21	95	60 - 130	107	60 - 130	<0.050	ug/L	NC	40
6999167	Benzo(b,f)fluoranthene	2013/07/21	102	60 - 130	115	60 - 130	<0.050	ug/L	NC	40
6999167	Benzo(k)fluoranthene	2013/07/21	103	60 - 130	113	60 - 130	<0.050	ug/L	NC	40
6999167	Benzo(a)pyrene	2013/07/21	103	60 - 130	114	60 - 130	<0.0090	ug/L	NC	40
6999167	Indeno(1,2,3-cd)pyrene	2013/07/21	109	60 - 130	120	60 - 130	<0.050	ug/L	NC	40
6999167	Dibenz(a,h)anthracene	2013/07/21	88	60 - 130	97	60 - 130	<0.050	ug/L	NC	40
6999167	Benzo(g,h,i)perylene	2013/07/21	105	60 - 130	117	60 - 130	<0.050	ug/L	NC	40
6999198	O-TERPHENYL (sur.)	2013/07/19	105	50 - 130	103	50 - 130	104	%		
6999198	EPH (C10-C19)	2013/07/19	119	50 - 130	84	50 - 130	<0.20	mg/L	NC	30
6999198	EPH (C19-C32)	2013/07/19	114	50 - 130	74	50 - 130	<0.20	mg/L	NC	30
7001753	1,4-Difluorobenzene (sur.)	2013/07/19	101	70 - 130	100	70 - 130	100	%		
7001753	4-BROMOFLUOROBENZENE (sur.)	2013/07/19	103	70 - 130	102	70 - 130	104	%		
7001753	D4-1,2-DICHLOROETHANE (sur.)	2013/07/19	93	70 - 130	93	70 - 130	97	%		
7001753	Methyl-tert-butylether(MTBE)	2013/07/19	97	70 - 130	98	70 - 130	<4.0	ug/L		
7001753	Benzene	2013/07/20	91	70 - 130	91	70 - 130	<0.40	ug/L	NC	30
7001753	Toluene	2013/07/20	89	70 - 130	89	70 - 130	<0.40	ug/L	2.1	30
7001753	Ethylbenzene	2013/07/20	NC	70 - 130	90	70 - 130	<0.40	ug/L	2.4	30
7001753	m & p-Xylene	2013/07/20	NC	70 - 130	87	70 - 130	<0.40	ug/L	3.8	30
7001753	o-Xylene	2013/07/20	87	70 - 130	88	70 - 130	<0.40	ug/L	4.3	30
7001753	Styrene	2013/07/19	96	70 - 130	95	70 - 130	<0.40	ug/L		
7001753	VH C6-C10	2013/07/20			75	70 - 130	<300	ug/L	7.4	30
7001753	(C6-C10)	2013/07/19			75	70 - 130	<300	ug/L		

## QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7001753	Xylenes (Total)	2013/07/20					<0.40	ug/L	3.8	30
7004395	Nitrate plus Nitrite (N)	2013/07/19	108	80 - 120	105	80 - 120	<0.020	mg/L	NC	25
7004494	Nitrite (N)	2013/07/19	104	80 - 120	100	80 - 120	<0.0050	mg/L	NC	20
7006172	Nitrate plus Nitrite (N)	2013/07/20	104	80 - 120	102	80 - 120	<0.020	mg/L	0.3	25
7006183	Nitrite (N)	2013/07/20	99	80 - 120	95	80 - 120	<0.0050	mg/L	NC	20
7006664	1,4-Difluorobenzene (sur.)	2013/07/22	102	70 - 130	100	70 - 130	102	%		
7006664	4-BROMOFLUOROBENZENE (sur.)	2013/07/22	98	70 - 130	98	70 - 130	99	%		
7006664	D4-1,2-DICHLOROETHANE (sur.)	2013/07/22	102	70 - 130	98	70 - 130	101	%		
7006664	Methyl-tert-butylether(MTBE)	2013/07/22	107	70 - 130	98	70 - 130	<4.0	ug/L	NC	30
7006664	Benzene	2013/07/22	98	70 - 130	90	70 - 130	<0.40	ug/L	NC	30
7006664	Toluene	2013/07/22	96	70 - 130	87	70 - 130	<0.40	ug/L	NC	30
7006664	Ethylbenzene	2013/07/22	98	70 - 130	92	70 - 130	<0.40	ug/L	NC	30
7006664	m & p-Xylene	2013/07/22	94	70 - 130	88	70 - 130	<0.40	ug/L	NC	30
7006664	o-Xylene	2013/07/22	99	70 - 130	93	70 - 130	<0.40	ug/L	NC	30
7006664	Styrene	2013/07/22	104	70 - 130	92	70 - 130	<0.40	ug/L	NC	30
7006664	VH C6-C10	2013/07/22			90	70 - 130	<300	ug/L	NC	30
7006664	(C6-C10)	2013/07/22			94	70 - 130	<300	ug/L	NC	30
7006664	Xylenes (Total)	2013/07/22					<0.40	ug/L	NC	30
7007172	Dissolved Aluminum (Al)	2013/07/22	97	80 - 120	105	80 - 120	<3.0	ug/L	NC	20
7007172	Dissolved Antimony (Sb)	2013/07/22	103	80 - 120	100	80 - 120	<0.50	ug/L	NC	20
7007172	Dissolved Arsenic (As)	2013/07/22	101	80 - 120	98	80 - 120	<0.10	ug/L	0.5	20
7007172	Dissolved Barium (Ba)	2013/07/22	NC	80 - 120	101	80 - 120	<1.0	ug/L	0.7	20
7007172	Dissolved Beryllium (Be)	2013/07/22	98	80 - 120	99	80 - 120	<0.10	ug/L	NC	20
7007172	Dissolved Bismuth (Bi)	2013/07/22	94	80 - 120	98	80 - 120	<1.0	ug/L	NC	20
7007172	Dissolved Cadmium (Cd)	2013/07/22	98	80 - 120	99	80 - 120	<0.010	ug/L	NC	20
7007172	Dissolved Chromium (Cr)	2013/07/22	96	80 - 120	97	80 - 120	<1.0	ug/L	NC	20
7007172	Dissolved Cobalt (Co)	2013/07/22	94	80 - 120	98	80 - 120	<0.50	ug/L	NC	20
7007172	Dissolved Copper (Cu)	2013/07/22	91	80 - 120	95	80 - 120	<0.20	ug/L	NC	20
7007172	Dissolved Iron (Fe)	2013/07/22	NC	80 - 120	106	80 - 120	<5.0	ug/L	0.4	20
7007172	Dissolved Lead (Pb)	2013/07/22	93	80 - 120	97	80 - 120	<0.20	ug/L	NC	20
7007172	Dissolved Lithium (Li)	2013/07/22	93	80 - 120	101	80 - 120	<5.0	ug/L	NC	20
7007172	Dissolved Manganese (Mn)	2013/07/22	NC	80 - 120	98	80 - 120	<1.0	ug/L	2.2	20
7007172	Dissolved Molybdenum (Mo)	2013/07/22	NC	80 - 120	102	80 - 120	<1.0	ug/L	2.8	20
7007172	Dissolved Nickel (Ni)	2013/07/22	91	80 - 120	98	80 - 120	<1.0	ug/L	NC	20
7007172	Dissolved Selenium (Se)	2013/07/22	102	80 - 120	103	80 - 120	<0.10	ug/L	NC	20
7007172	Dissolved Silver (Ag)	2013/07/22	98	80 - 120	101	80 - 120	<0.020	ug/L	NC	20
7007172	Dissolved Strontium (Sr)	2013/07/22	NC	80 - 120	97	80 - 120	<1.0	ug/L	1	20
7007172	Dissolved Thallium (Tl)	2013/07/22	57 (U)	80 - 120	98	80 - 120	<0.050	ug/L	NC	20
7007172	Dissolved Tin (Sn)	2013/07/22	NC	80 - 120	101	80 - 120	<5.0	ug/L	NC	20

FRANZ ENVIRONMENTAL INC.

Site Location: LOWER POST  
Your P.O. #: 700266127

## QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7007172	Dissolved Titanium (Ti)	2013/07/22	96	80 - 120	106	80 - 120	<5.0	ug/L	NC	20
7007172	Dissolved Uranium (U)	2013/07/22	NC	80 - 120	101	80 - 120	<0.10	ug/L	1.5	20
7007172	Dissolved Vanadium (V)	2013/07/22	101	80 - 120	97	80 - 120	<5.0	ug/L	NC	20
7007172	Dissolved Zinc (Zn)	2013/07/22	NC	80 - 120	98	80 - 120	<5.0	ug/L	NC	20
7007172	Dissolved Boron (B)	2013/07/22					<50	ug/L	NC	20
7007172	Dissolved Silicon (Si)	2013/07/22					<100	ug/L	1.2	20
7007172	Dissolved Zirconium (Zr)	2013/07/22					<0.50	ug/L	NC	20
7010079	D10-ANTHRACENE (sur.)	2013/07/23	124	60 - 130	115	60 - 130	139(t)	%		
7010079	DB-ACENAPHTHYLENE (sur.)	2013/07/23	119	50 - 130	114	50 - 130	129	%		
7010079	DB-NAPHTHALENE (sur.)	2013/07/23	91	50 - 130	116	50 - 130	106	%		
7010079	D9-Acridine	2013/07/23	100	50 - 130	89	50 - 130	104	%		
7010079	TERPHENYL-D14 (sur.)	2013/07/23	111	60 - 130	108	60 - 130	126	%		
7010079	Naphthalene	2013/07/24	80	50 - 130	105	50 - 130	<0.10	ug/L	NC(2)	40
7010079	2-Methylnaphthalene	2013/07/24	94	50 - 130	112	50 - 130	<0.10	ug/L	NC(2)	40
7010079	Quinoline	2013/07/24	122	50 - 130	123	50 - 130	<0.50	ug/L	NC(2)	40
7010079	Acenaphthylene	2013/07/24	109	50 - 130	107	50 - 130	<0.050	ug/L	NC(2)	40
7010079	Acenaphthene	2013/07/24	111	50 - 130	106	50 - 130	<0.050	ug/L	NC(2)	40
7010079	Fluorene	2013/07/24	108	50 - 130	95	50 - 130	<0.050	ug/L	NC(2)	40
7010079	Phenanthrene	2013/07/24	108	60 - 130	104	60 - 130	<0.050	ug/L	NC	40
7010079	Anthracene	2013/07/24	108	60 - 130	102	60 - 130	<0.010	ug/L	NC	40
7010079	Acridine	2013/07/24	98	50 - 130	89	50 - 130	<0.050	ug/L	NC	40
7010079	Fluoranthene	2013/07/24	107	60 - 130	102	60 - 130	<0.020	ug/L	NC	40
7010079	Pyrene	2013/07/24	111	60 - 130	105	60 - 130	<0.020	ug/L	NC	40
7010079	Benzo(a)anthracene	2013/07/24	103	60 - 130	102	60 - 130	<0.010	ug/L	NC	40
7010079	Chrysene	2013/07/24	106	60 - 130	105	60 - 130	<0.050	ug/L	NC	40
7010079	Benzo(b&j)fluoranthene	2013/07/24	114	60 - 130	105	60 - 130	<0.050	ug/L	NC	40
7010079	Benzo(k)fluoranthene	2013/07/24	105	60 - 130	104	60 - 130	<0.050	ug/L	NC	40
7010079	Benzo(a)pyrene	2013/07/24	109	60 - 130	105	60 - 130	<0.0090	ug/L	NC	40
7010079	Indeno(1,2,3-cd)pyrene	2013/07/24	110	60 - 130	111	60 - 130	<0.050	ug/L	NC	40
7010079	Dibenz(a,h)anthracene	2013/07/24	107	60 - 130	106	60 - 130	<0.050	ug/L	NC	40
7010079	Benzo(g,h,i)perylene	2013/07/24	109	60 - 130	110	60 - 130	<0.050	ug/L	NC	40
7010080	O-TERPHENYL (sur.)	2013/07/23	102	50 - 130	103	50 - 130	103	%		
7010080	EPH (C10-C19)	2013/07/23	114	50 - 130	105	50 - 130	<0.20	mg/L	NC	30
7010080	EPH (C19-C32)	2013/07/23	115	50 - 130	102	50 - 130	<0.20	mg/L	NC	30
7011581	F2 (C10-C16 Hydrocarbons)	2013/07/23	103	80 - 120	114	80 - 120	<0.20	mg/L	NC	40
7011581	O-TERPHENYL (sur.)	2013/07/23	117	50 - 130	99	50 - 130	95	%		
7011581	F3 (C16-C34 Hydrocarbons)	2013/07/23					<0.20	mg/L	NC	40
7011581	F4 (C34-C50 Hydrocarbons)	2013/07/23					<3.0	mg/L	NC	40
7015730	Dissolved Mercury (Hg)	2013/07/24	86	80 - 120	91	80 - 120	<0.010	ug/L	NC	20

FRANZ ENVIRONMENTAL INC.

Site Location: LOWER POST  
Your P.O. #: 700266127

## QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7019799	F2 (C10-C16 Hydrocarbons)	2013/07/26	NC	80 - 120	98	80 - 120	<0.20	mg/L	NC	40
7019799	O-TERPHENYL (sur.)	2013/07/26	91	50 - 130	92	50 - 130	89	%		
7019799	F3 (C16-C34 Hydrocarbons)	2013/07/26					<0.20	mg/L	NC	40
7019799	F4 (C34-C50 Hydrocarbons)	2013/07/26					<3.0	mg/L	NC	40
7020290	Total Aluminum (Al)	2013/07/25	NC	80 - 120	109	80 - 120	5.8 RDL=3.0	ug/L	6.0	20
7020290	Total Antimony (Sb)	2013/07/25	75(1)	80 - 120	98	80 - 120	<0.50	ug/L	NC	20
7020290	Total Arsenic (As)	2013/07/25	103	80 - 120	106	80 - 120	<0.10	ug/L	NC	20
7020290	Total Barium (Ba)	2013/07/25	NC	80 - 120	110	80 - 120	<1.0	ug/L	11.3	20
7020290	Total Beryllium (Be)	2013/07/25	103	80 - 120	101	80 - 120	<0.10	ug/L	NC	20
7020290	Total Bismuth (Bi)	2013/07/25	95	80 - 120	103	80 - 120	<1.0	ug/L	NC	20
7020290	Total Cadmium (Cd)	2013/07/25	107	80 - 120	104	80 - 120	<0.010	ug/L	10.3	20
7020290	Total Chromium (Cr)	2013/07/25	NC	80 - 120	105	80 - 120	<1.0	ug/L	11.8	20
7020290	Total Cobalt (Co)	2013/07/25	82	80 - 120	104	80 - 120	<0.50	ug/L	NC	20
7020290	Total Copper (Cu)	2013/07/25	NC	80 - 120	106	80 - 120	<0.20	ug/L	10.8	20
7020290	Total Iron (Fe)	2013/07/25	NC	80 - 120	106	80 - 120	<5.0	ug/L	6.1	20
7020290	Total Lead (Pb)	2013/07/25	NC	80 - 120	105	80 - 120	<0.20	ug/L	8.6	20
7020290	Total Lithium (Li)	2013/07/25	108	80 - 120	102	80 - 120	<5.0	ug/L	NC	20
7020290	Total Manganese (Mn)	2013/07/25	NC	80 - 120	104	80 - 120	<1.0	ug/L	8.8	20
7020290	Total Molybdenum (Mo)	2013/07/25	NC	80 - 120	115	80 - 120	<1.0	ug/L	9.1	20
7020290	Total Nickel (Ni)	2013/07/25	NC	80 - 120	106	80 - 120	<1.0	ug/L	8.2	20
7020290	Total Selenium (Se)	2013/07/25	108	80 - 120	109	80 - 120	<0.10	ug/L	NC	20
7020290	Total Silver (Ag)	2013/07/25	NC	80 - 120	101	80 - 120	0.020 RDL=0.020	ug/L	7.4	20
7020290	Total Strontium (Sr)	2013/07/25	NC	80 - 120	108	80 - 120	<1.0	ug/L	9.4	20
7020290	Total Thallium (Tl)	2013/07/25	102	80 - 120	108	80 - 120	<0.050	ug/L	NC	20
7020290	Total Tin (Sn)	2013/07/25	NC	80 - 120	108	80 - 120	<5.0	ug/L	7.3	20
7020290	Total Titanium (Ti)	2013/07/25	NC	80 - 120	106	80 - 120	<5.0	ug/L	NC	20
7020290	Total Uranium (U)	2013/07/25	99	80 - 120	101	80 - 120	<0.10	ug/L	NC	20
7020290	Total Vanadium (V)	2013/07/25	100	80 - 120	109	80 - 120	<5.0	ug/L	NC	20
7020290	Total Zinc (Zn)	2013/07/25	NC	80 - 120	113	80 - 120	<5.0	ug/L	10.1	20
7020290	Total Boron (B)	2013/07/25					<50	ug/L	NC	20
7020290	Total Silicon (Si)	2013/07/25					<100	ug/L	8.9	20
7020290	Total Zirconium (Zr)	2013/07/25					<0.50	ug/L	NC	20
7020462	Total Mercury (Hg)	2013/07/25	NC	80 - 120	115	80 - 120	<0.010	ug/L	3.6	20
7021248	Dissolved Mercury (Hg)	2013/07/25	108	80 - 120	111	80 - 120	<0.010	ug/L	NC	20
7024134	Dissolved Aluminum (Al)	2013/07/26	101	80 - 120	104	80 - 120	<3.0	ug/L		
7024134	Dissolved Antimony (Sb)	2013/07/26	99	80 - 120	99	80 - 120	<0.50	ug/L		
7024134	Dissolved Arsenic (As)	2013/07/26	100	80 - 120	102	80 - 120	<0.10	ug/L		
7024134	Dissolved Barium (Ba)	2013/07/26	100	80 - 120	98	80 - 120	<1.0	ug/L		
7024134	Dissolved Beryllium (Be)	2013/07/26	101	80 - 120	103	80 - 120	<0.10	ug/L		

## QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7024134	Dissolved Bismuth (Bi)	2013/07/26	96	80 - 120	100	80 - 120	<1.0	ug/L		
7024134	Dissolved Cadmium (Cd)	2013/07/26	102	80 - 120	100	80 - 120	<0.010	ug/L		
7024134	Dissolved Chromium (Cr)	2013/07/26	101	80 - 120	101	80 - 120	<1.0	ug/L		
7024134	Dissolved Cobalt (Co)	2013/07/26	100	80 - 120	100	80 - 120	<0.50	ug/L		
7024134	Dissolved Copper (Cu)	2013/07/26	NC	80 - 120	98	80 - 120	<0.20	ug/L		
7024134	Dissolved Iron (Fe)	2013/07/26	103	80 - 120	104	80 - 120	<5.0	ug/L	NC	20
7024134	Dissolved Lead (Pb)	2013/07/26	97	80 - 120	99	80 - 120	<0.20	ug/L		
7024134	Dissolved Lithium (Li)	2013/07/26	99	80 - 120	104	80 - 120	<5.0	ug/L		
7024134	Dissolved Manganese (Mn)	2013/07/26	99	80 - 120	101	80 - 120	<1.0	ug/L	NC	20
7024134	Dissolved Molybdenum (Mo)	2013/07/26	100	80 - 120	98	80 - 120	<1.0	ug/L		
7024134	Dissolved Nickel (Ni)	2013/07/26	99	80 - 120	100	80 - 120	<1.0	ug/L		
7024134	Dissolved Selenium (Se)	2013/07/26	105	80 - 120	105	80 - 120	<0.10	ug/L		
7024134	Dissolved Silver (Ag)	2013/07/26	102	80 - 120	101	80 - 120	<0.020	ug/L		
7024134	Dissolved Strontium (Sr)	2013/07/26	98	80 - 120	100	80 - 120	<1.0	ug/L		
7024134	Dissolved Thallium (Tl)	2013/07/26	97	80 - 120	100	80 - 120	<0.050	ug/L		
7024134	Dissolved Tin (Sn)	2013/07/26	103	80 - 120	99	80 - 120	<5.0	ug/L		
7024134	Dissolved Titanium (Ti)	2013/07/26	96	80 - 120	98	80 - 120	<5.0	ug/L		
7024134	Dissolved Uranium (U)	2013/07/26	97	80 - 120	98	80 - 120	<0.10	ug/L		
7024134	Dissolved Vanadium (V)	2013/07/26	98	80 - 120	97	80 - 120	<5.0	ug/L		
7024134	Dissolved Zinc (Zn)	2013/07/26	100	80 - 120	102	80 - 120	<5.0	ug/L		
7024134	Dissolved Boron (B)	2013/07/26					<50	ug/L		
7024134	Dissolved Silicon (Si)	2013/07/26					<100	ug/L		
7024134	Dissolved Zirconium (Zr)	2013/07/26					<0.50	ug/L		

N/A = Not Applicable

RDL = Reportable Detection Limit

RPD = Relative Percent Difference

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

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

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

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

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

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.


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

(2) - RDL raised due to sample matrix interference.

## Validation Signature Page

Maxxam Job #: B361281

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

  
\_\_\_\_\_  
Andy Lu, Data Validation Coordinator

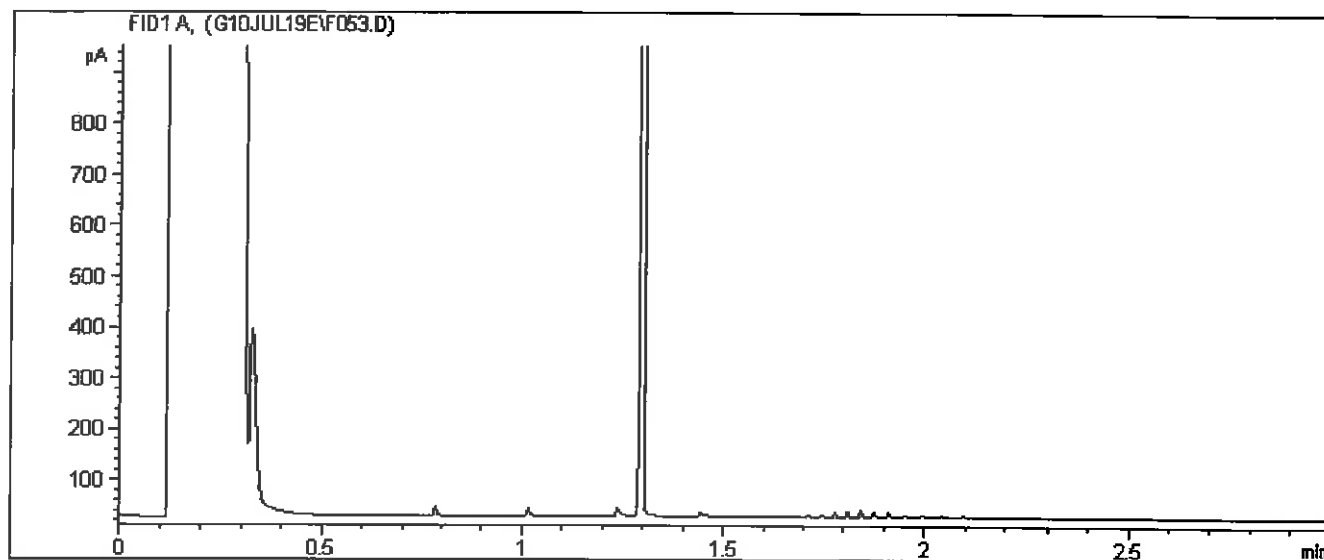
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



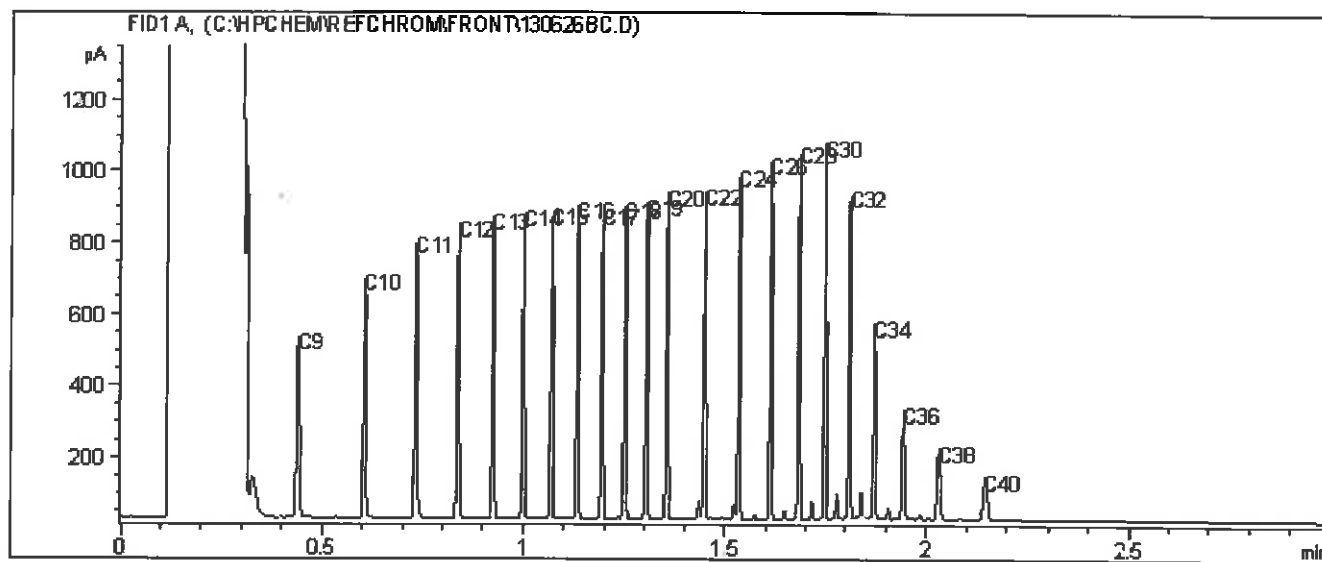
Report Date: 2013/07/26  
Maxxam Job #: B361281  
Maxxam Sample: GY2449

FRANZ ENVIRONMENTAL INC.  
Site Reference: LOWER POST  
Client ID: MW11-1

## Extrac. Pet HC when LEPH/HEPH required Chromatogram



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating Oils: C20 - C40

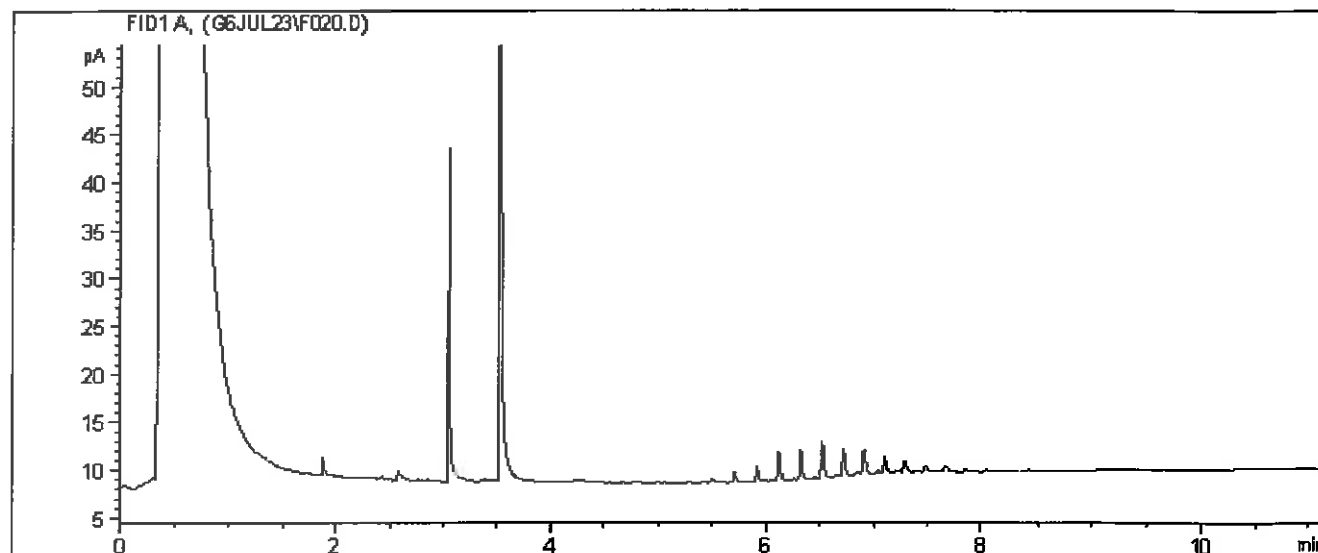
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/07/26  
Maxxam Job #: B361281  
Maxxam Sample: GY2449

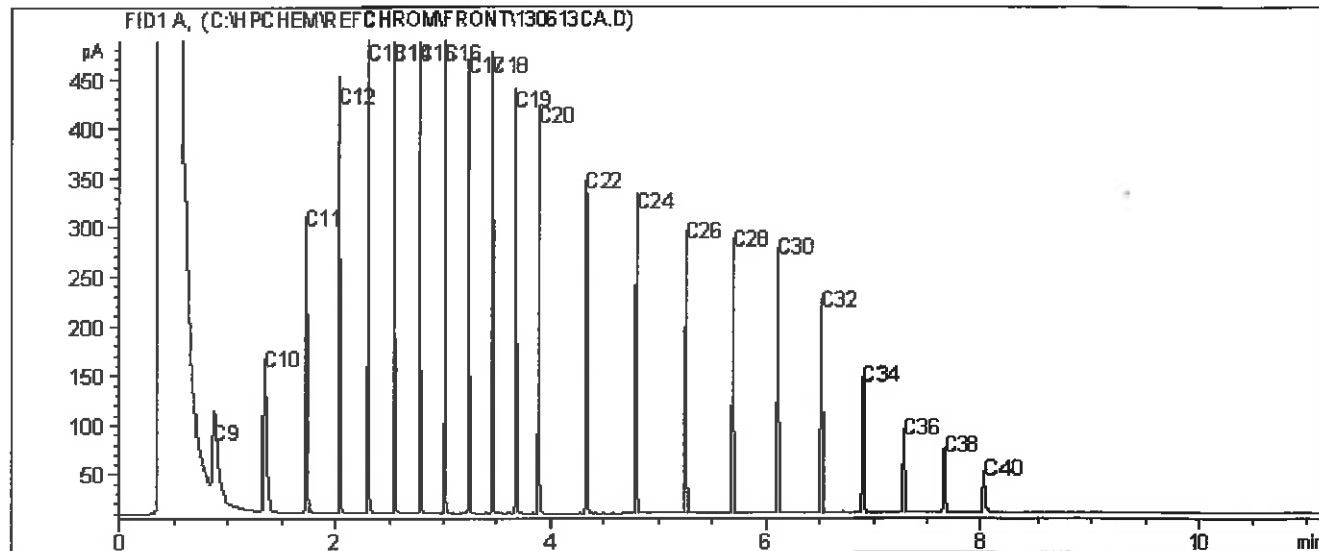
FRANZ ENVIRONMENTAL INC.

Site Reference: LOWER POST  
Client ID: MW11-1

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



**Carbon Range Distribution - Reference Chromatogram**



**TYPICAL PRODUCT CARBON NUMBER RANGES**

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating Oils: C20 - C40

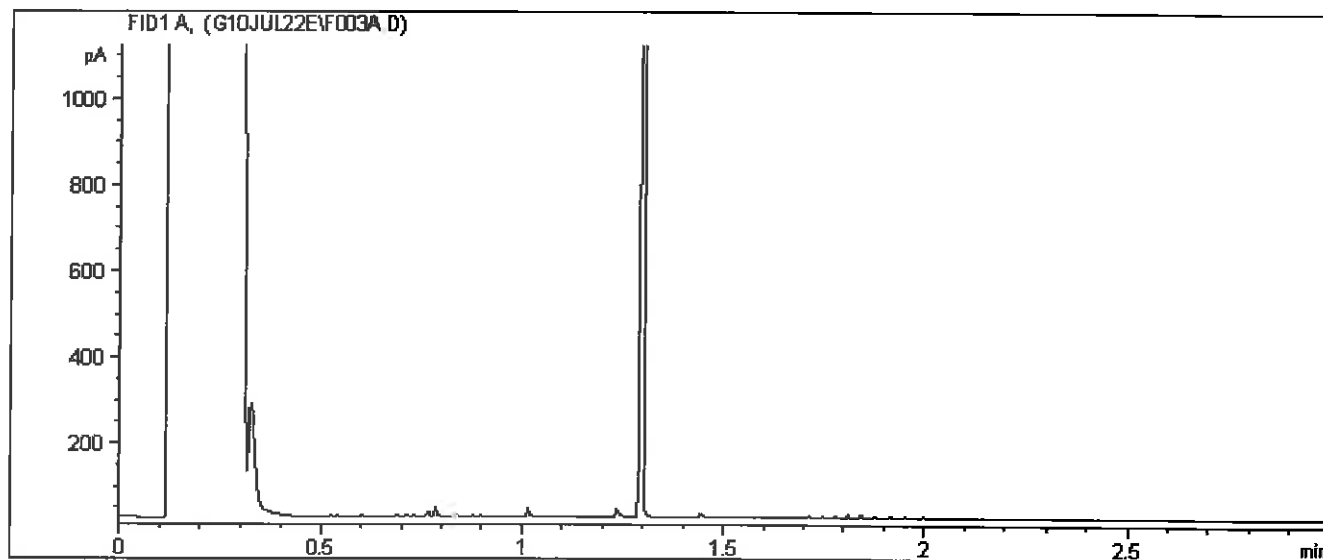
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/07/26  
Maxxam Job #: B361281  
Maxxam Sample: GY2450

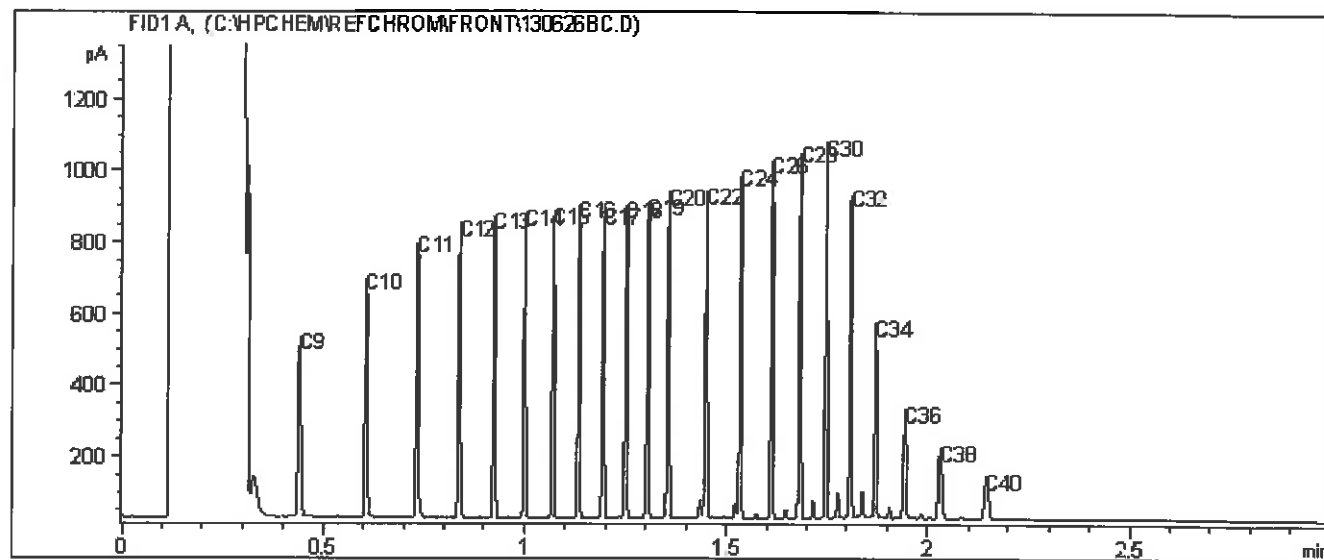
FRANZ ENVIRONMENTAL INC.

Site Reference: LOWER POST  
Client ID: MW11-2

## Extrac. Pet HC when LEPH/HEPH required Chromatogram



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating Oils: C20 - C40

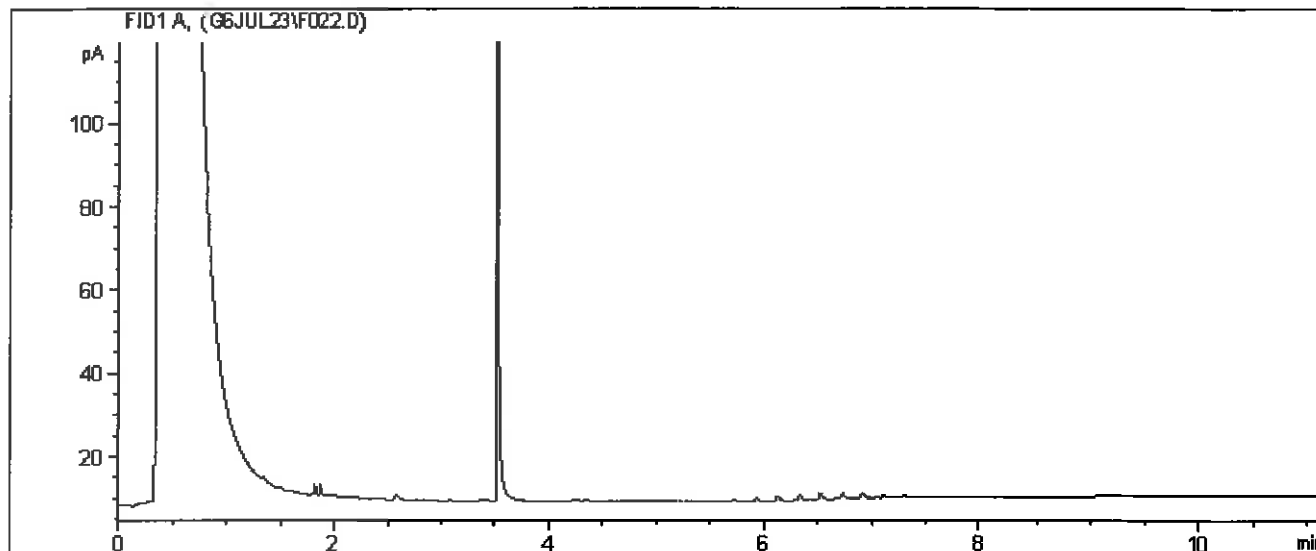
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/07/26  
Maxxam Job #: B361281  
Maxxam Sample: GY2450

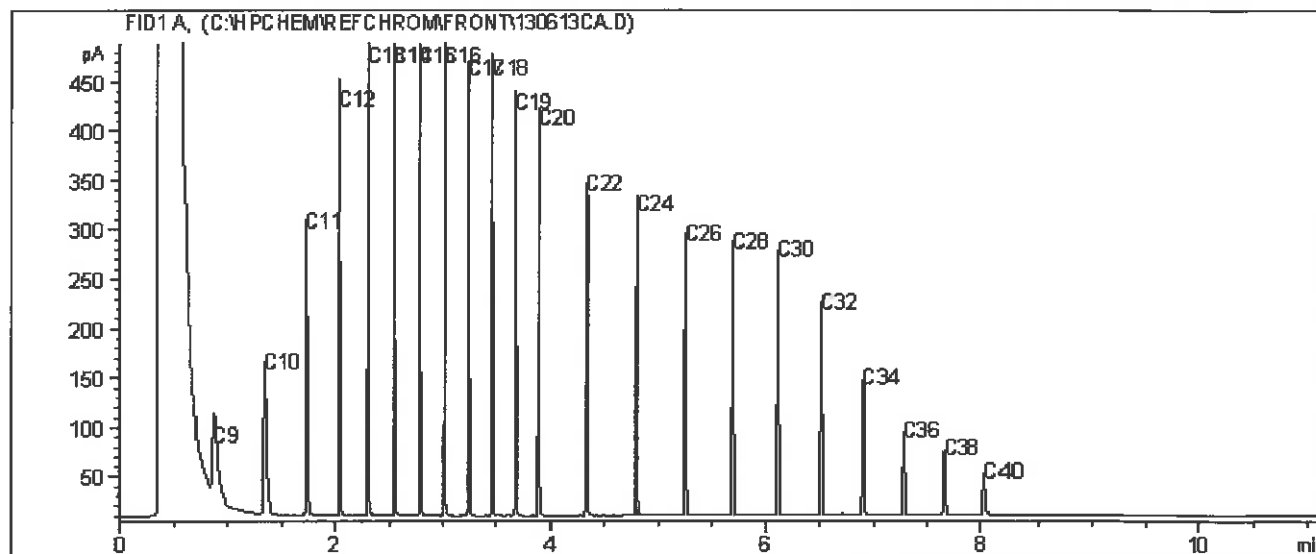
FRANZ ENVIRONMENTAL INC.

Site Reference: LOWER POST  
Client ID: MW11-2

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

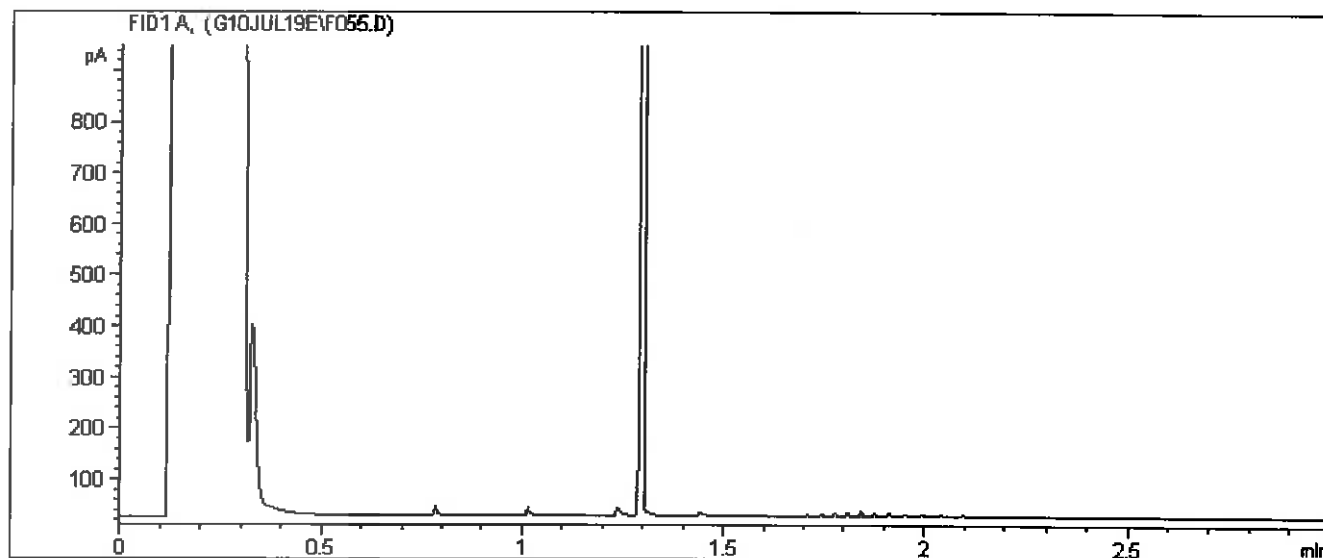
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

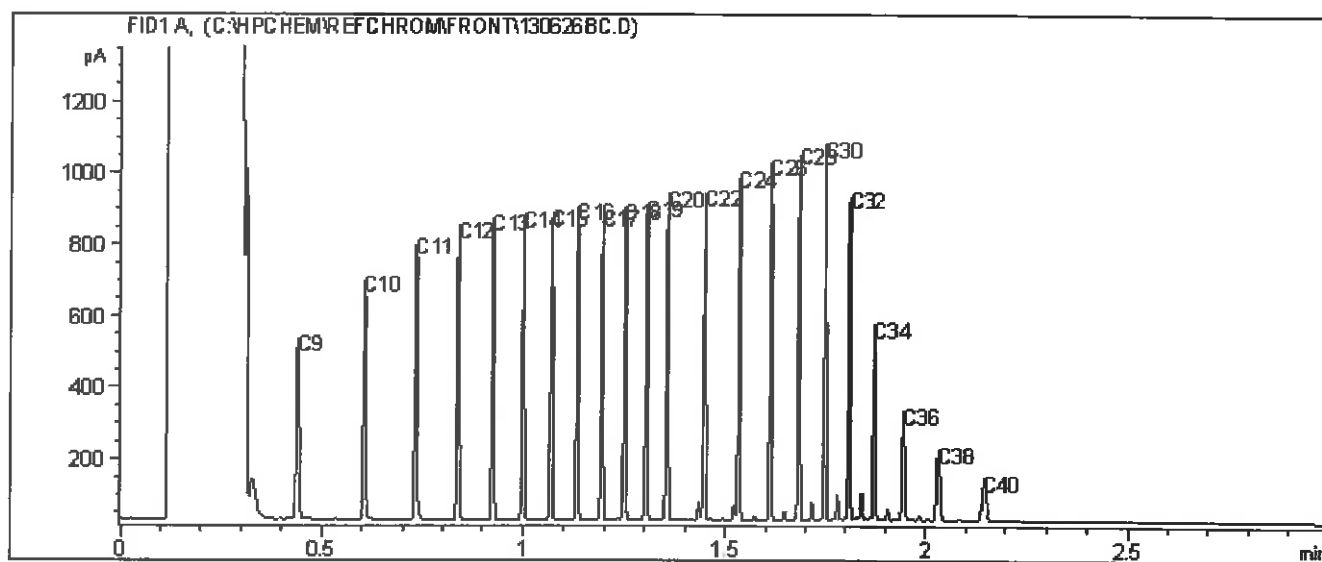
Report Date: 2013/07/26  
Maxxam Job #: B361281  
Maxxam Sample: GY2451

FRANZ ENVIRONMENTAL INC.  
Site Reference: LOWER POST  
Client ID: MW11-3

Extrac. Pet HC when LEPH/HEPH required Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating Oils: C20 - C40

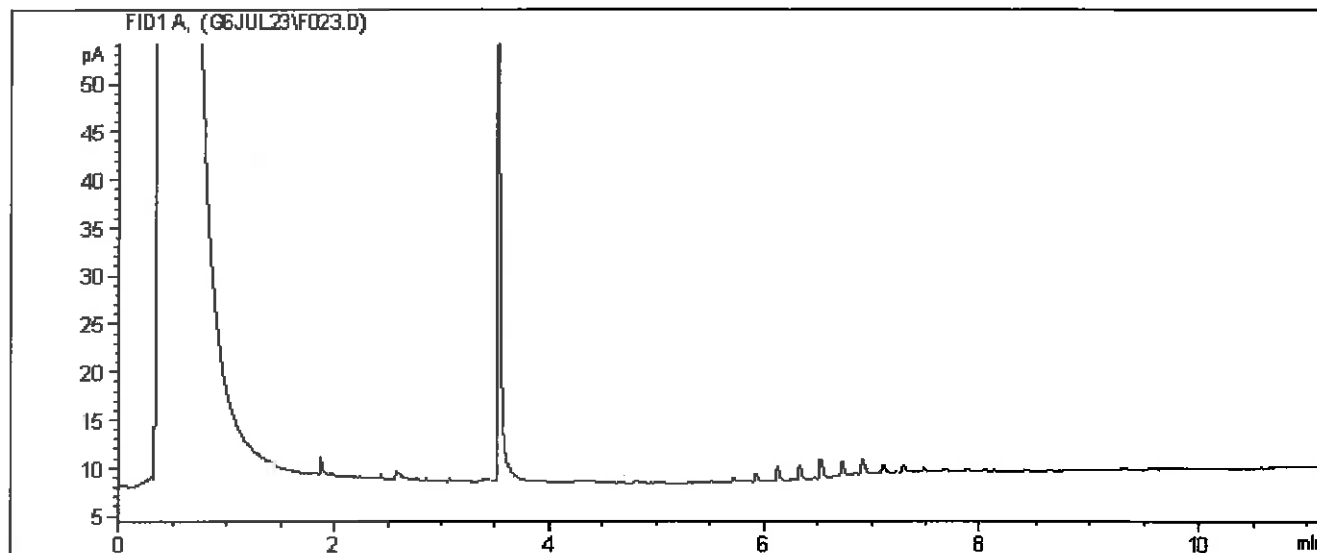
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/07/26  
Maxxam Job #: B361281  
Maxxam Sample: GY2451

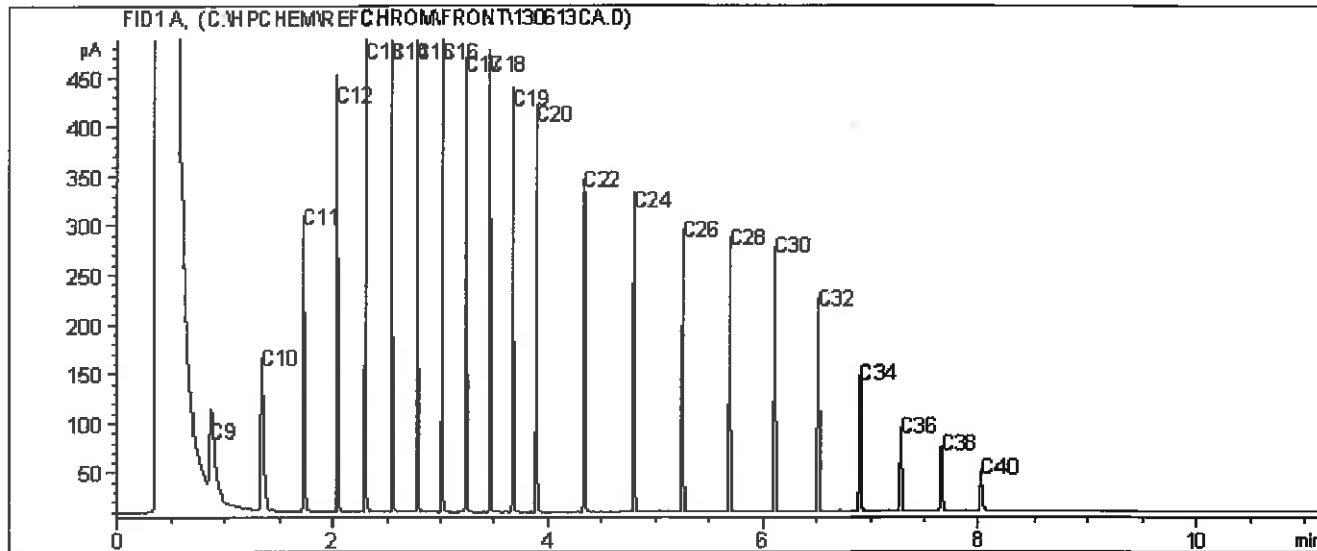
FRANZ ENVIRONMENTAL INC.

Site Reference: LOWER POST  
Client ID: MW11-3

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



**Carbon Range Distribution - Reference Chromatogram**



**TYPICAL PRODUCT CARBON NUMBER RANGES**

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating Oils: C20 - C40

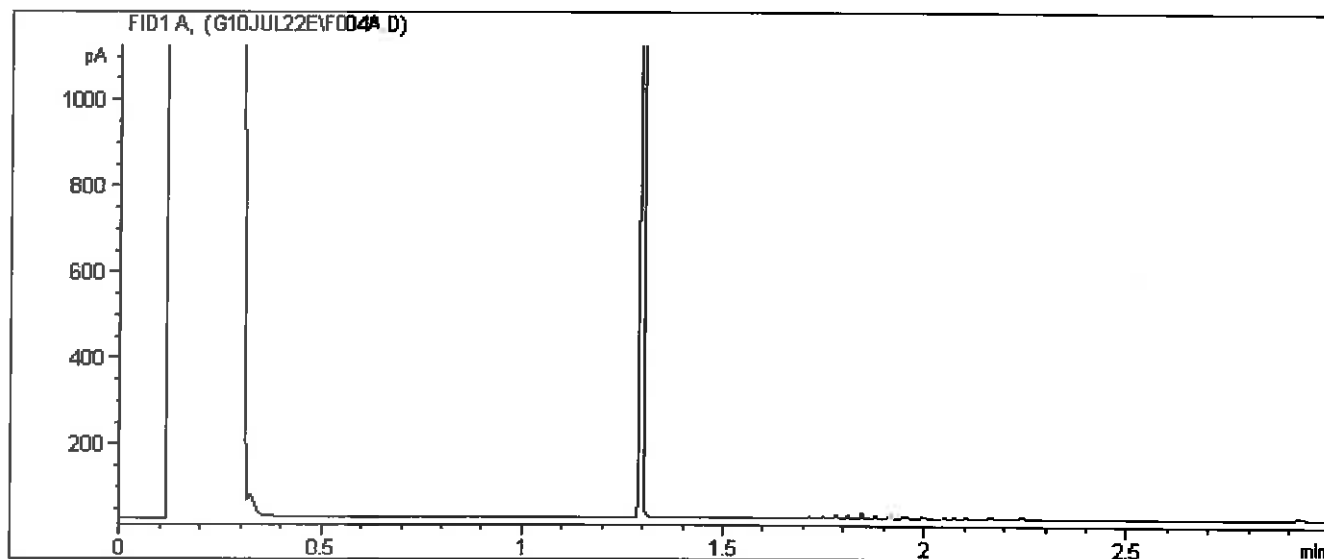
**Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.**

Report Date: 2013/07/26  
Maxxam Job #: B361281  
Maxxam Sample: GY2452

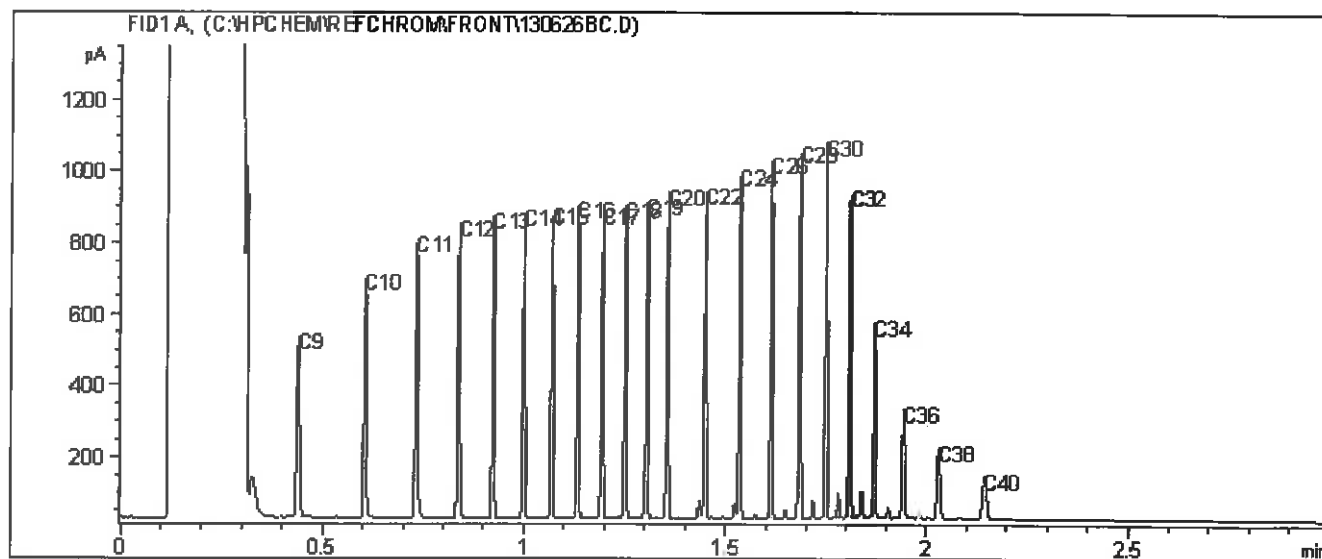
FRANZ ENVIRONMENTAL INC.

Site Reference: LOWER POST  
Client ID: MW11-4

## Extrac. Pet HC when LEPH/HEPH required Chromatogram



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating Oils: C20 - C40

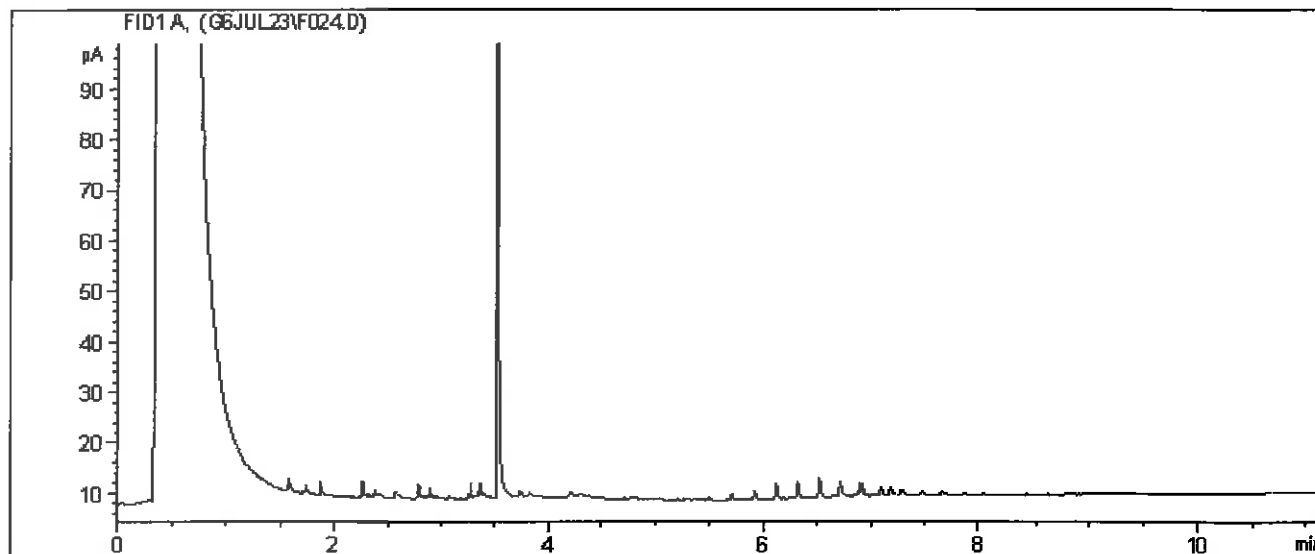
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/07/26  
Maxxam Job #: B361281  
Maxxam Sample: GY2452

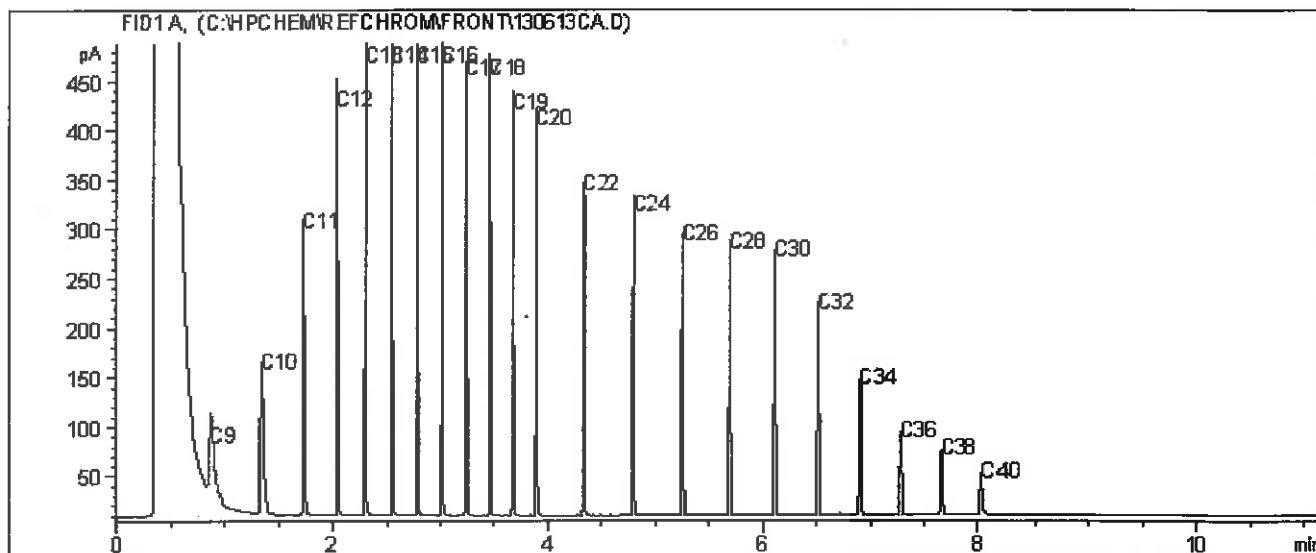
FRANZ ENVIRONMENTAL INC.

Site Reference: LOWER POST  
Client ID: MW11-4

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

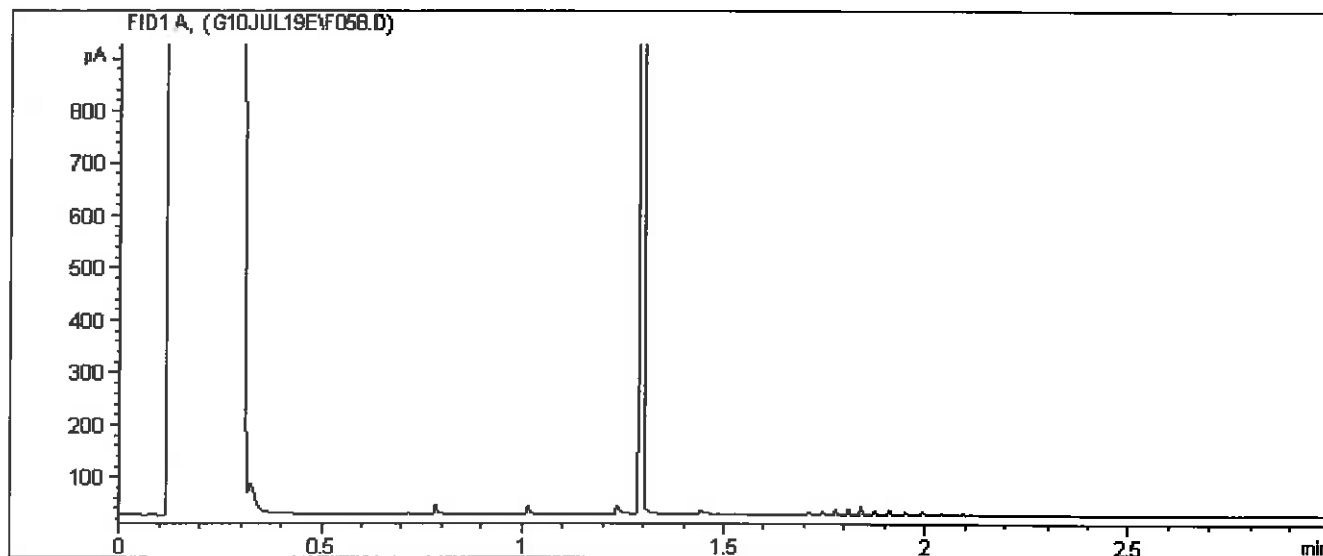
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

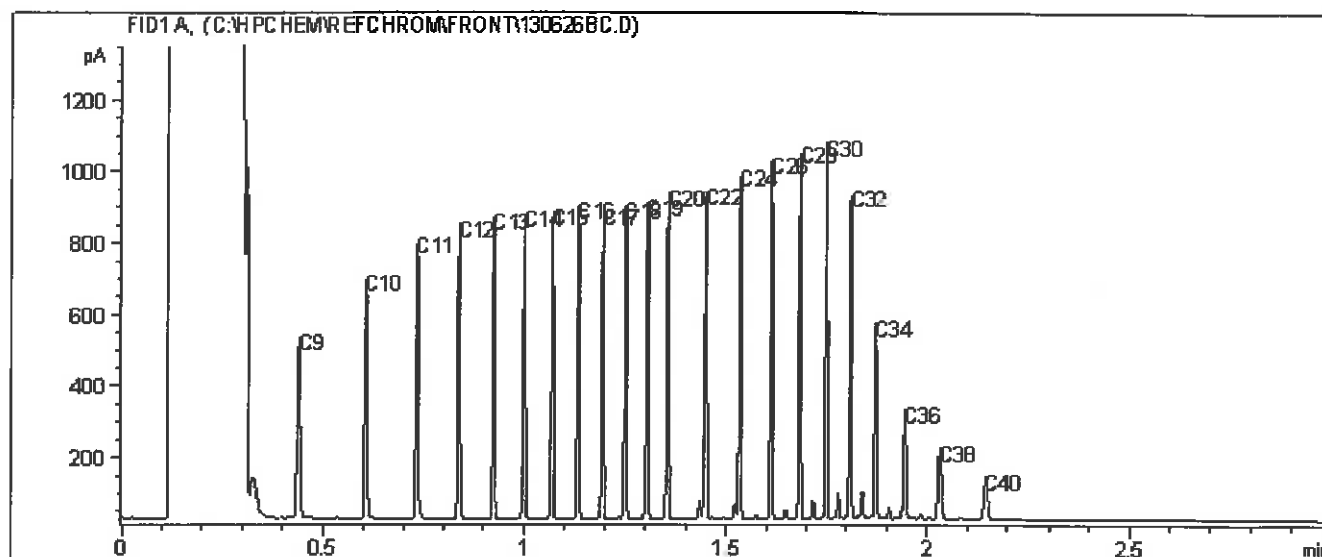
Report Date: 2013/07/26  
Maxxam Job #: B361281  
Maxxam Sample: GY2453

FRANZ ENVIRONMENTAL INC.  
Site Reference: LOWER POST  
Client ID: MW11-5

## Extrac. Pet HC when LEPH/HEPH required Chromatogram



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating Oils: C20 - C40

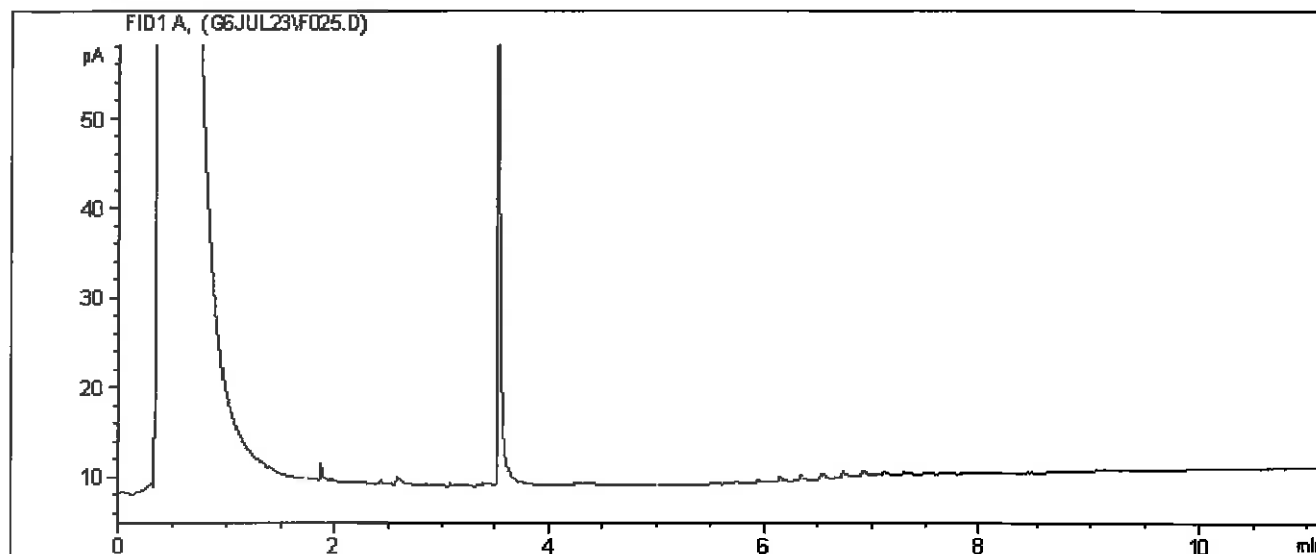
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/07/26  
Maxxam Job #: B361281  
Maxxam Sample: GY2453

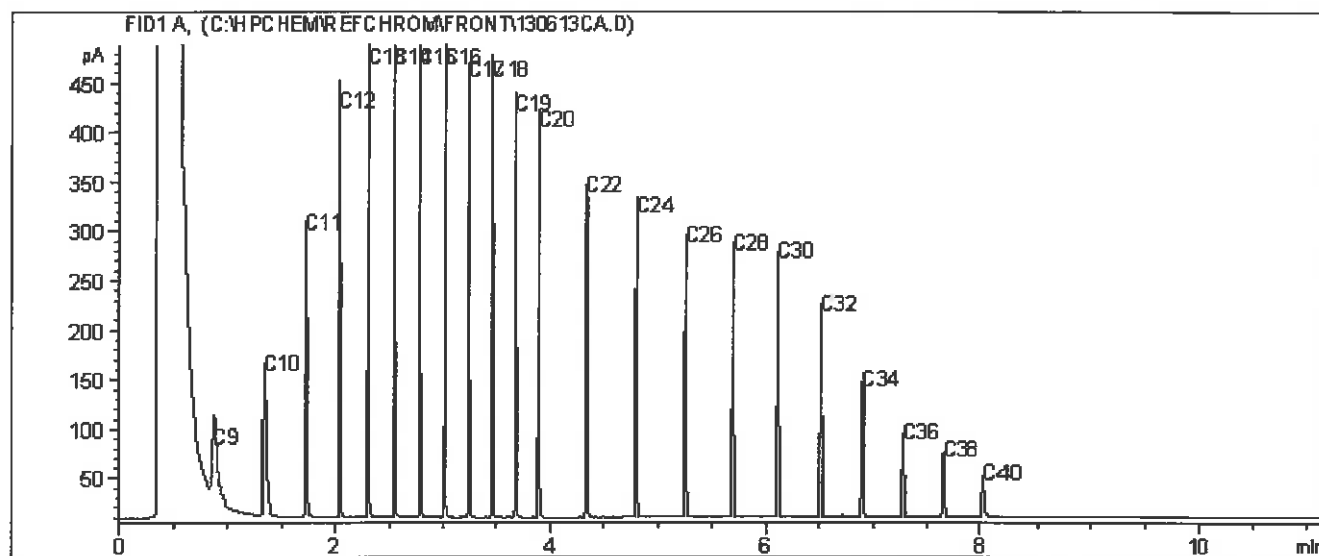
FRANZ ENVIRONMENTAL INC.

Site Reference: LOWER POST  
Client ID: MW11-5

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating Oils: C20 - C40

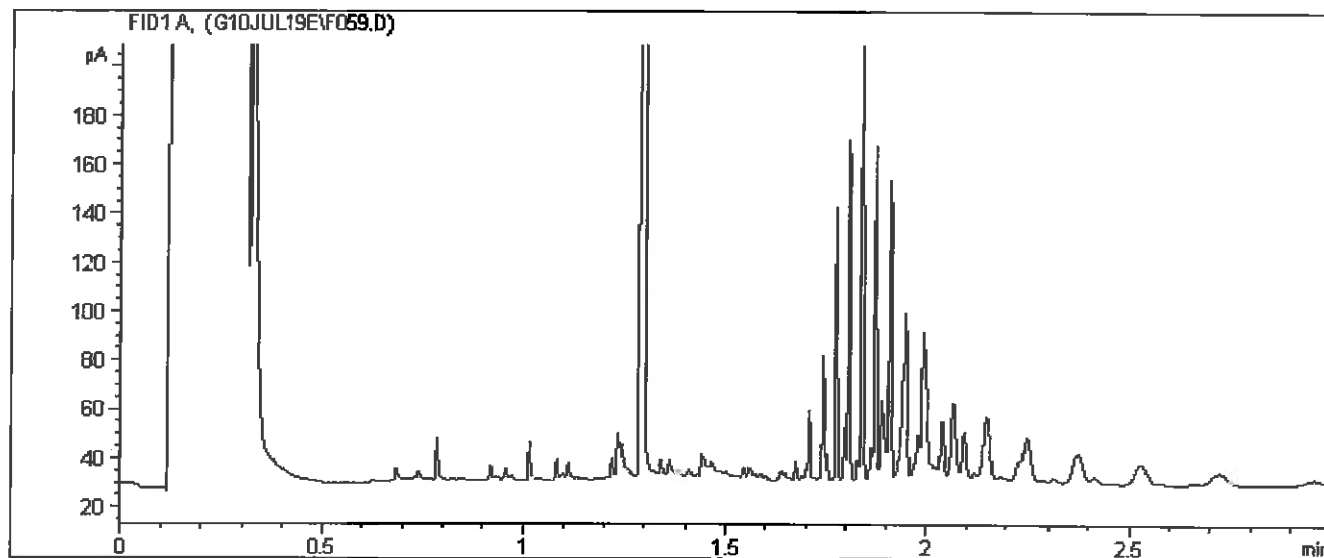
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/07/26  
Maxxam Job #: B361281  
Maxxam Sample: GY2454

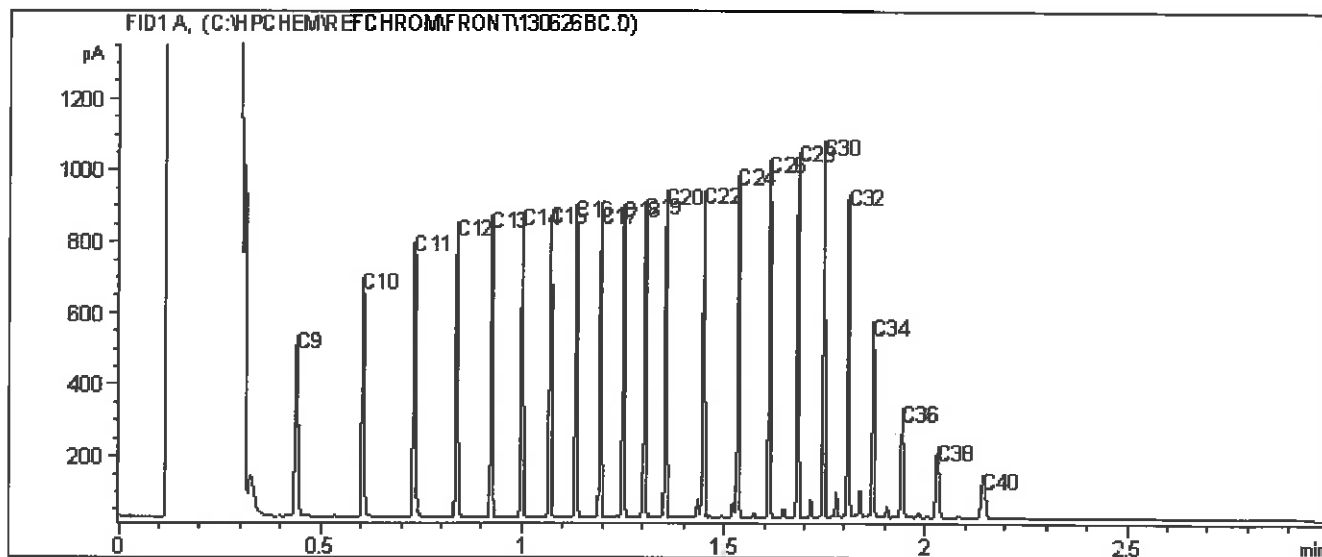
FRANZ ENVIRONMENTAL INC.

Site Reference: LOWER POST  
Client ID: MW11-6

## Extrac. Pet HC when LEPH/HEPH required Chromatogram



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating Oils: C20 - C40

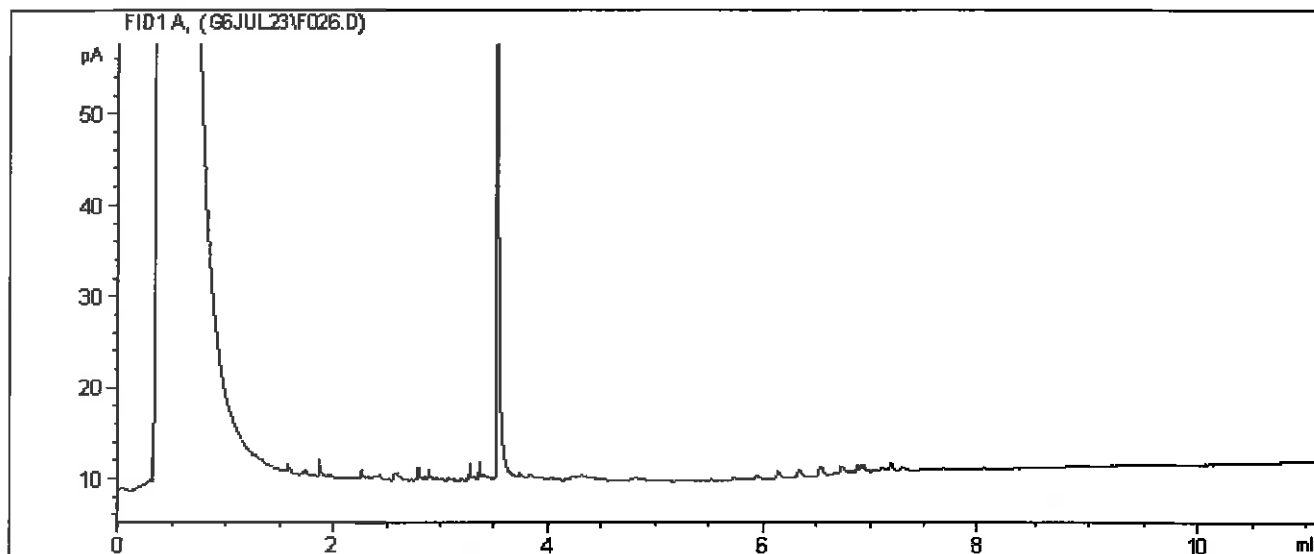
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/07/26  
Maxxam Job #: B361281  
Maxxam Sample: GY2454

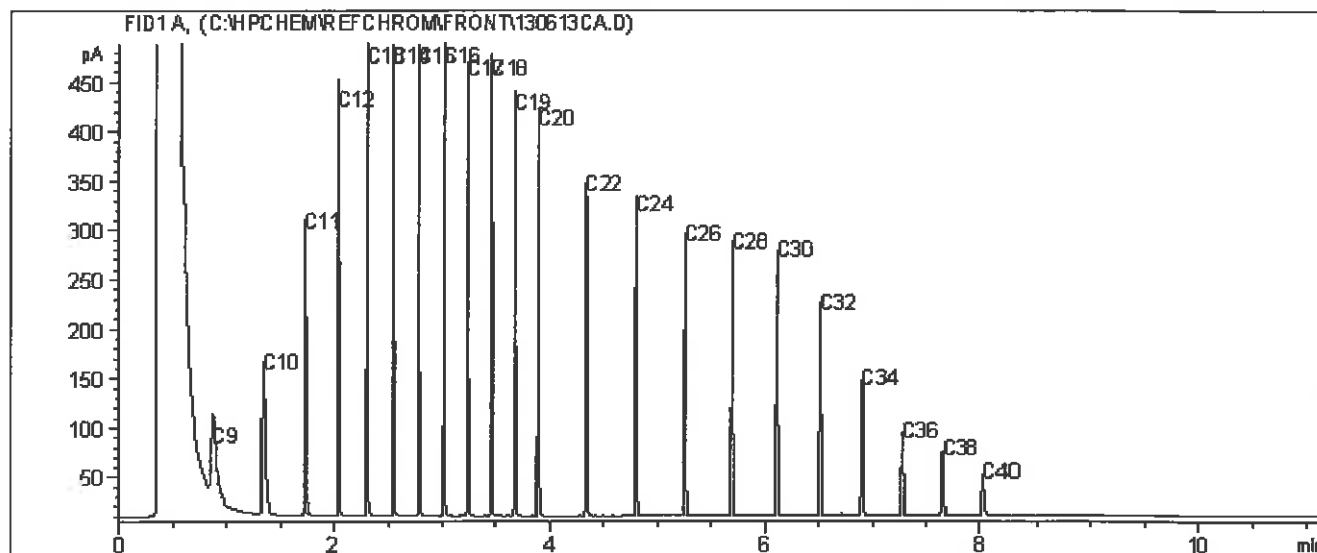
FRANZ ENVIRONMENTAL INC.

Site Reference: LOWER POST  
Client ID: MW11-6

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



**Carbon Range Distribution - Reference Chromatogram**



**TYPICAL PRODUCT CARBON NUMBER RANGES**

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating Oils: C20 - C40

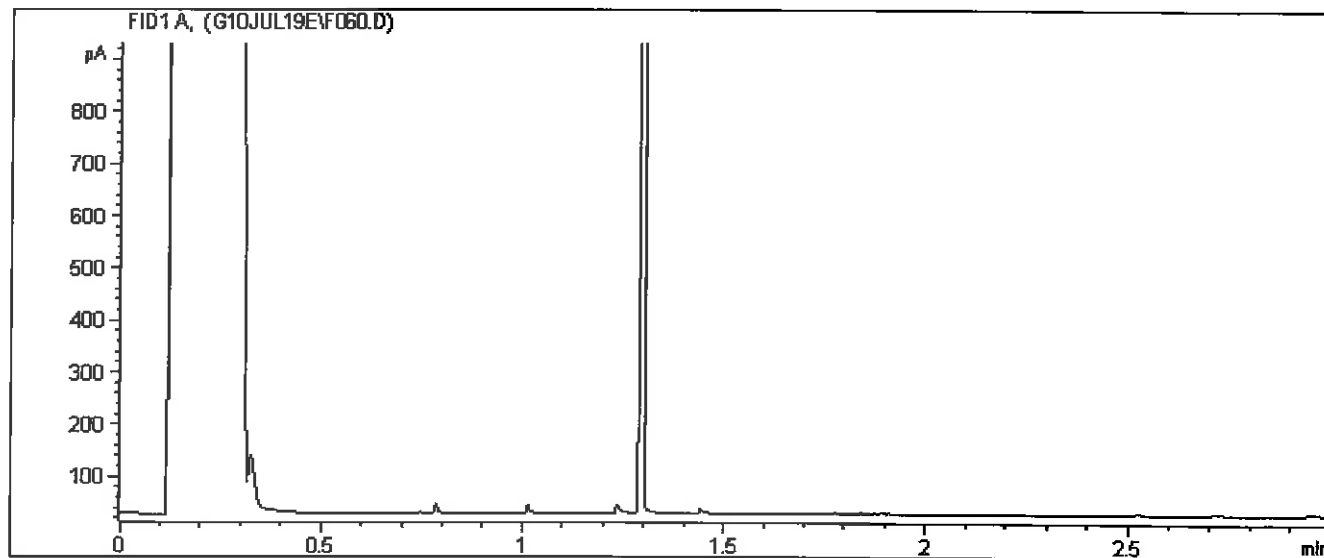
**Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.**

Report Date: 2013/07/26  
Maxxam Job #: B361281  
Maxxam Sample: GY2454 Lab-Dup

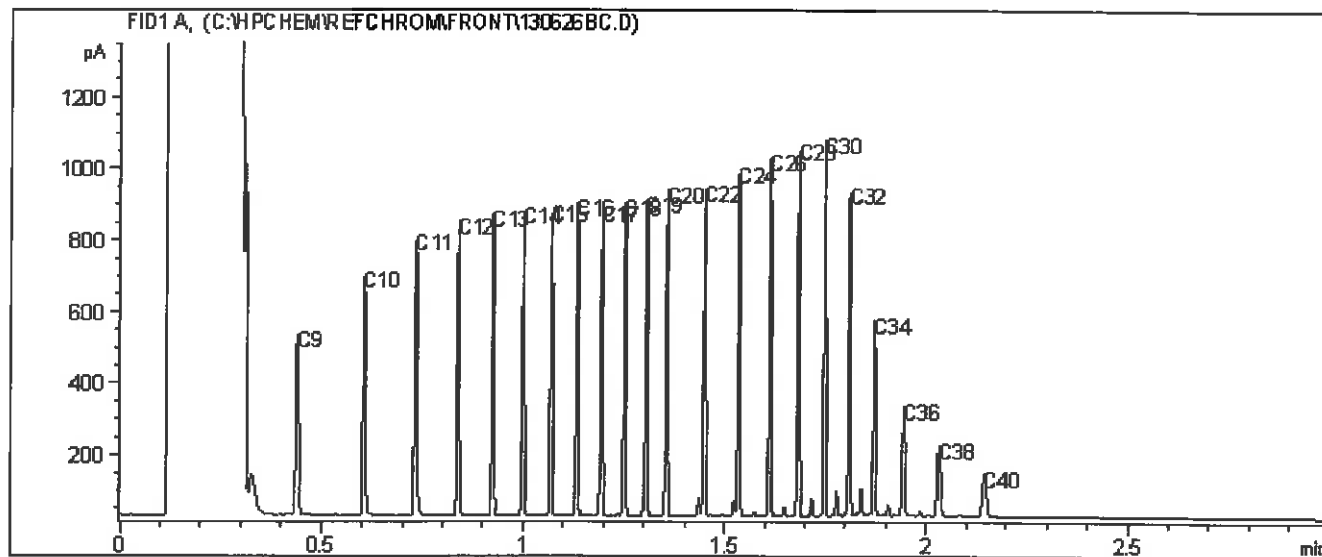
FRANZ ENVIRONMENTAL INC.

Site Reference: LOWER POST  
Client ID: MW11-6

## Extrac. Pet HC when LEPH/HEPH required Chromatogram



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating Oils: C20 - C40

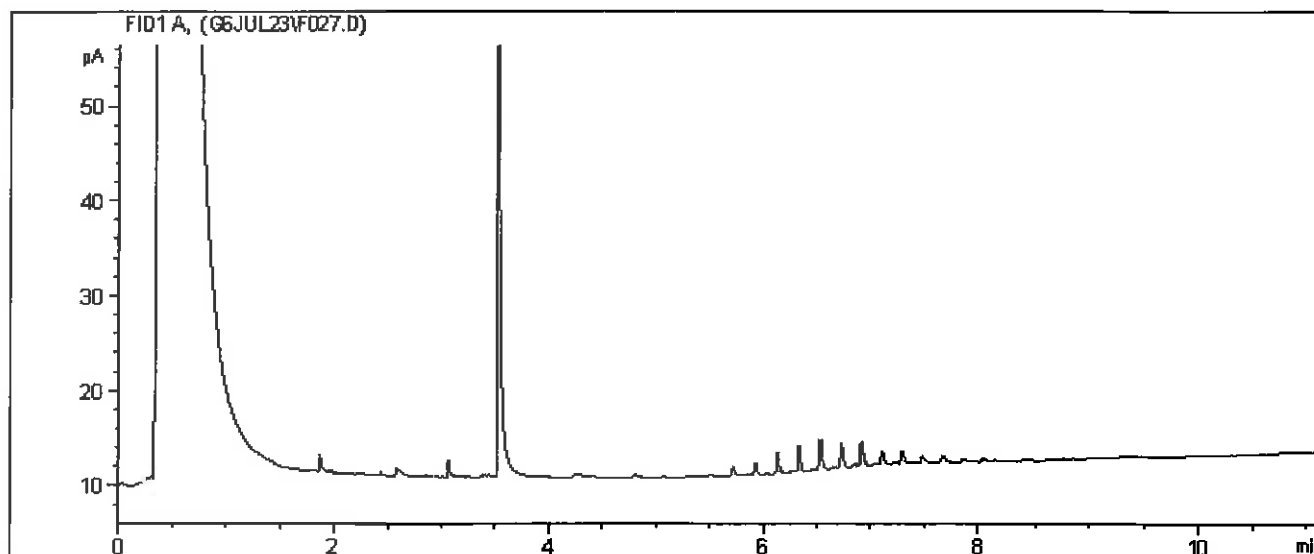
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/07/26  
Maxxam Job #: B361281  
Maxxam Sample: GY2454 Lab-Dup

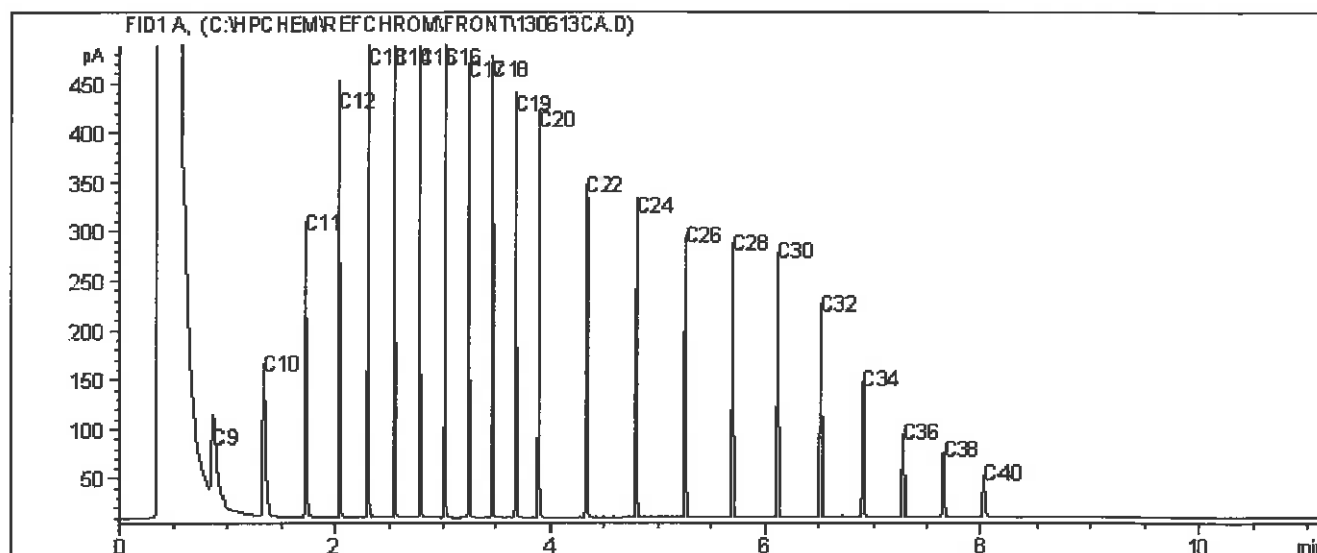
FRANZ ENVIRONMENTAL INC.

Site Reference: LOWER POST  
Client ID: MW11-6

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating Oils: C20 - C40

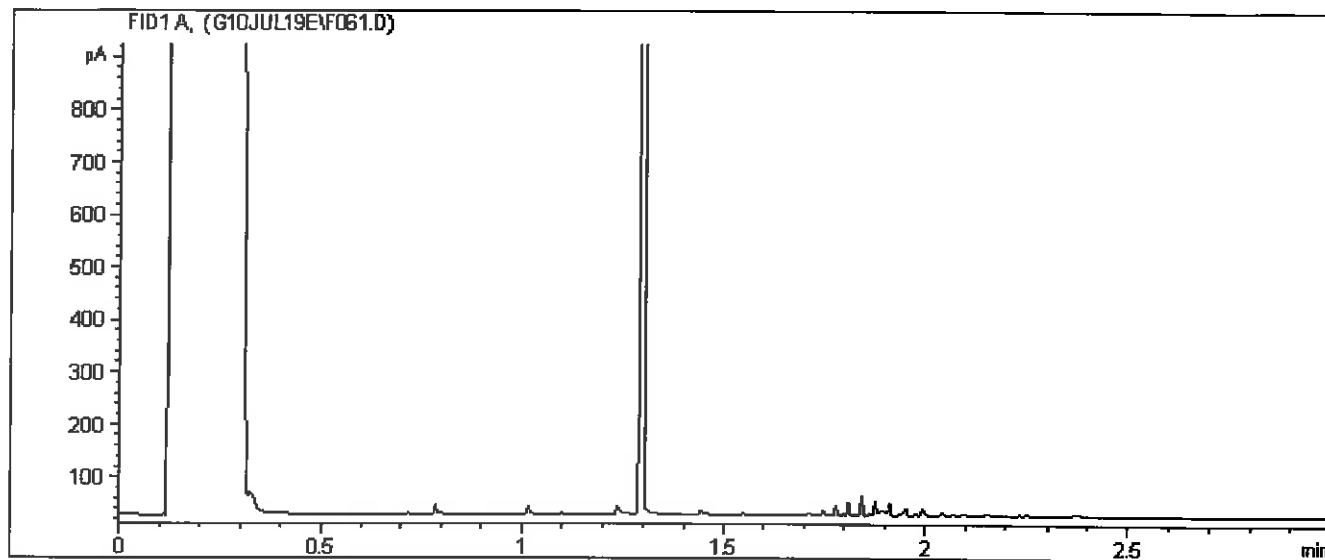
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/07/26  
Maxxam Job #: B361281  
Maxxam Sample: GY2455

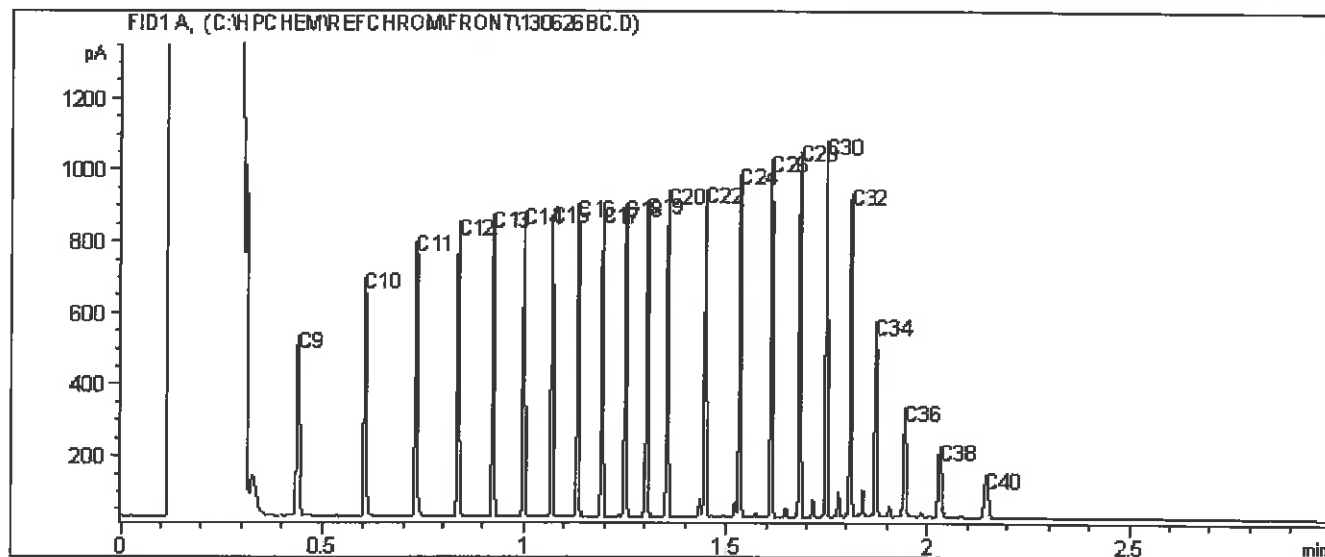
FRANZ ENVIRONMENTAL INC.

Site Reference: LOWER POST  
Client ID: MW11-7

## Extrac. Pet HC when LEPH/HEPH required Chromatogram



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating Oils: C20 - C40

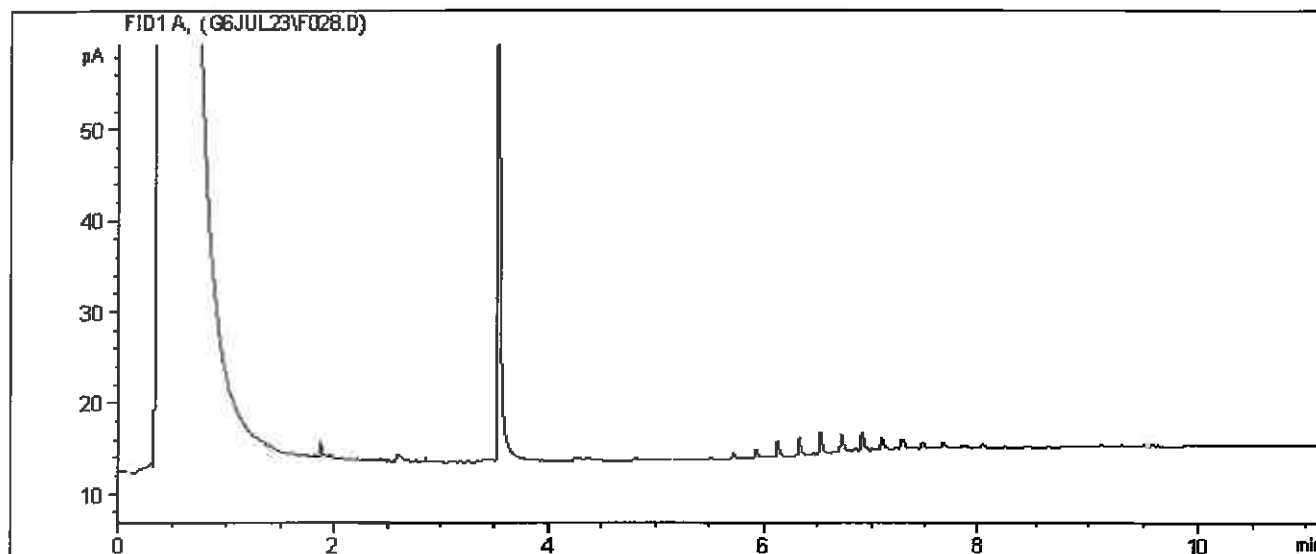
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/07/26  
Maxxam Job #: B361281  
Maxxam Sample: GY2455

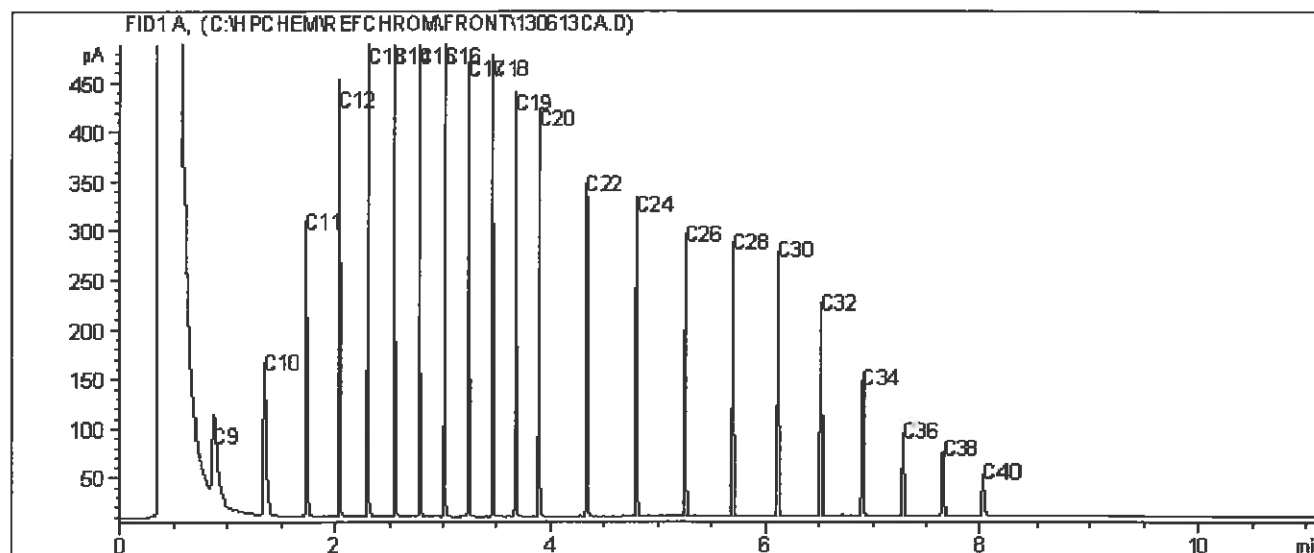
FRANZ ENVIRONMENTAL INC.

Site Reference: LOWER POST  
Client ID: MW11-7

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating Oils: C20 - C40

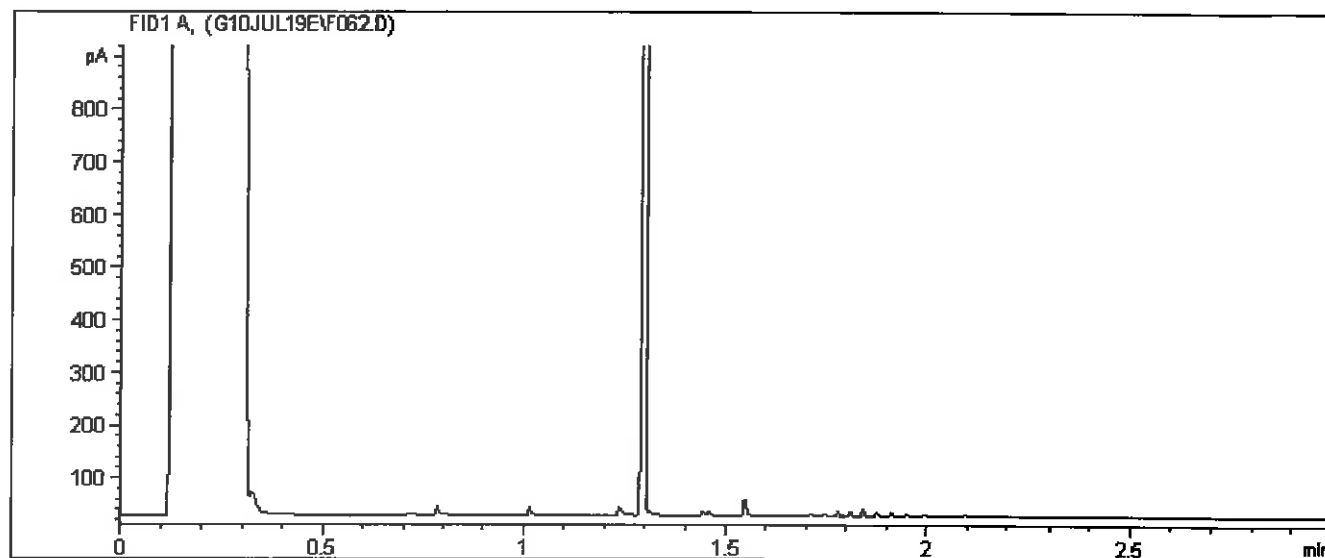
**Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.**

Report Date: 2013/07/26  
Maxxam Job #: B361281  
Maxxam Sample: GY2456

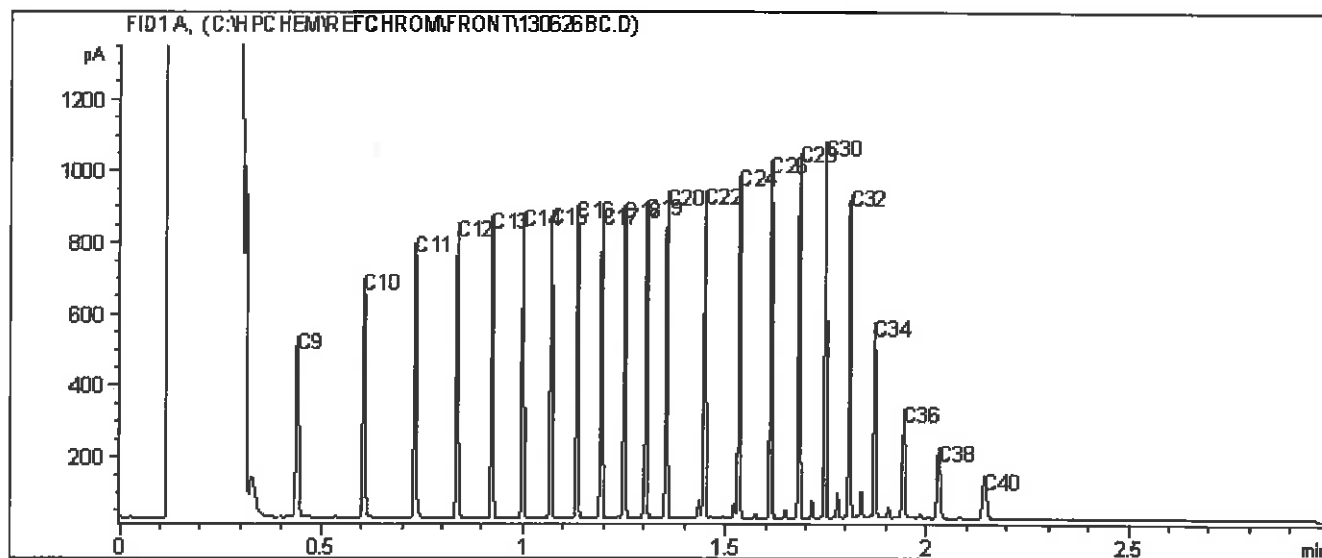
FRANZ ENVIRONMENTAL INC.

Site Reference: LOWER POST  
Client ID: MW11-400

## Extrac. Pet HC when LEPH/HEPH required Chromatogram



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating oils: C20 - C40

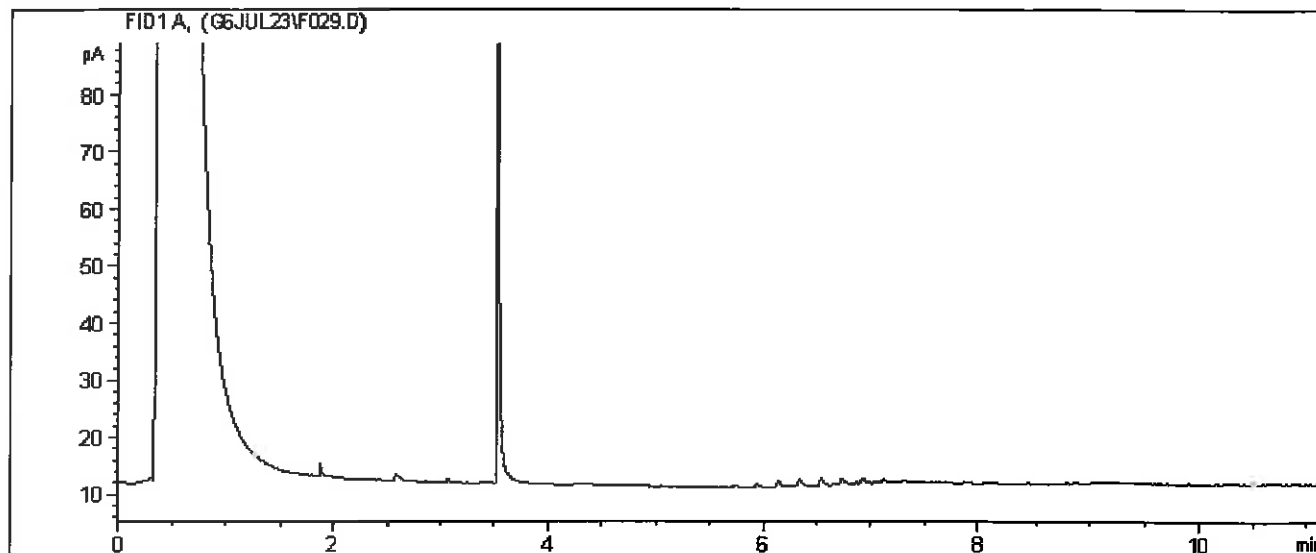
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/07/26  
Maxxam Job #: B361281  
Maxxam Sample: GY2456

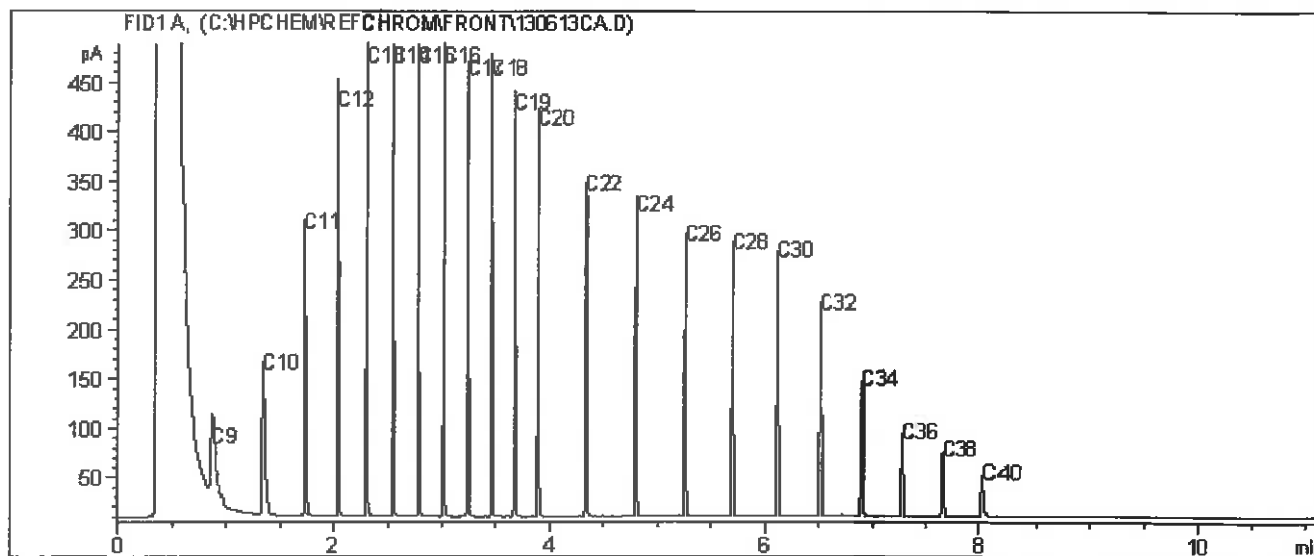
FRANZ ENVIRONMENTAL INC.

Site Reference: LOWER POST  
Client ID: MW11-400

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating Oils: C20 - C40

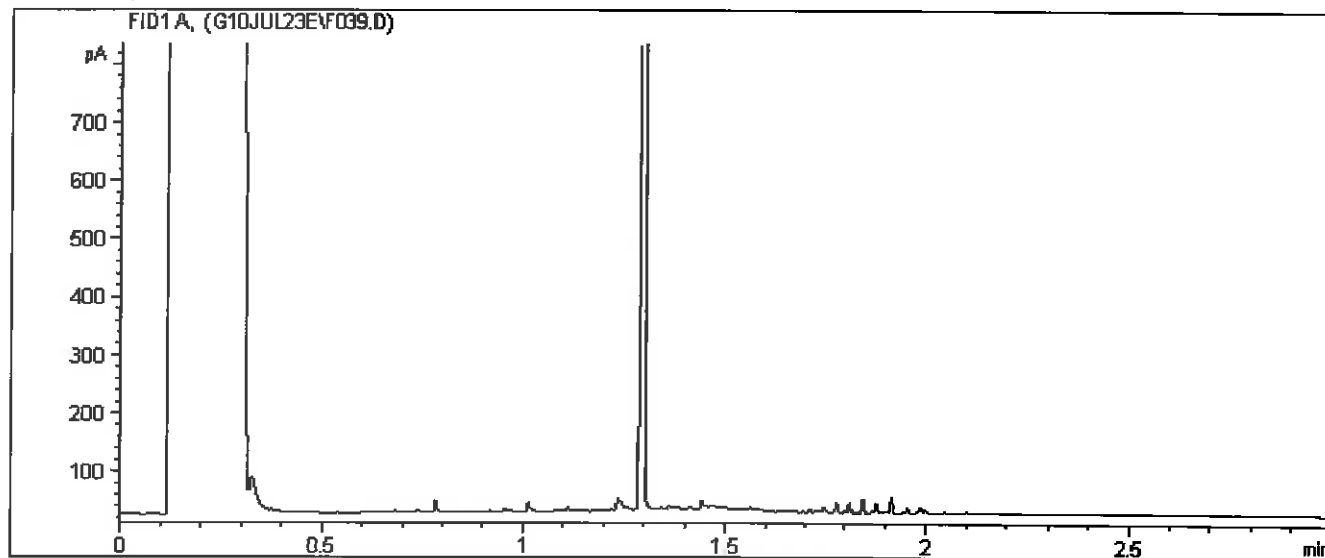
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/07/26  
Maxxam Job #: B361281  
Maxxam Sample: GY2457

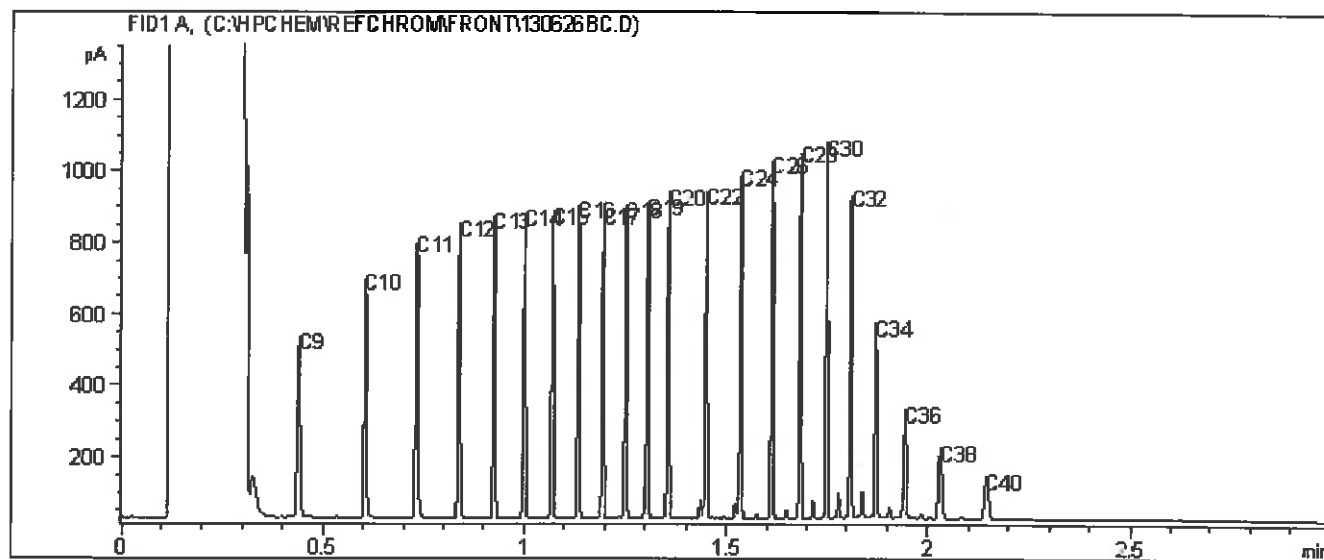
FRANZ ENVIRONMENTAL INC.

Site Reference: LOWER POST  
Client ID: DW 1

## Extrac. Pet HC when LEPH/HEPH required Chromatogram



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating Oils: C20 - C40

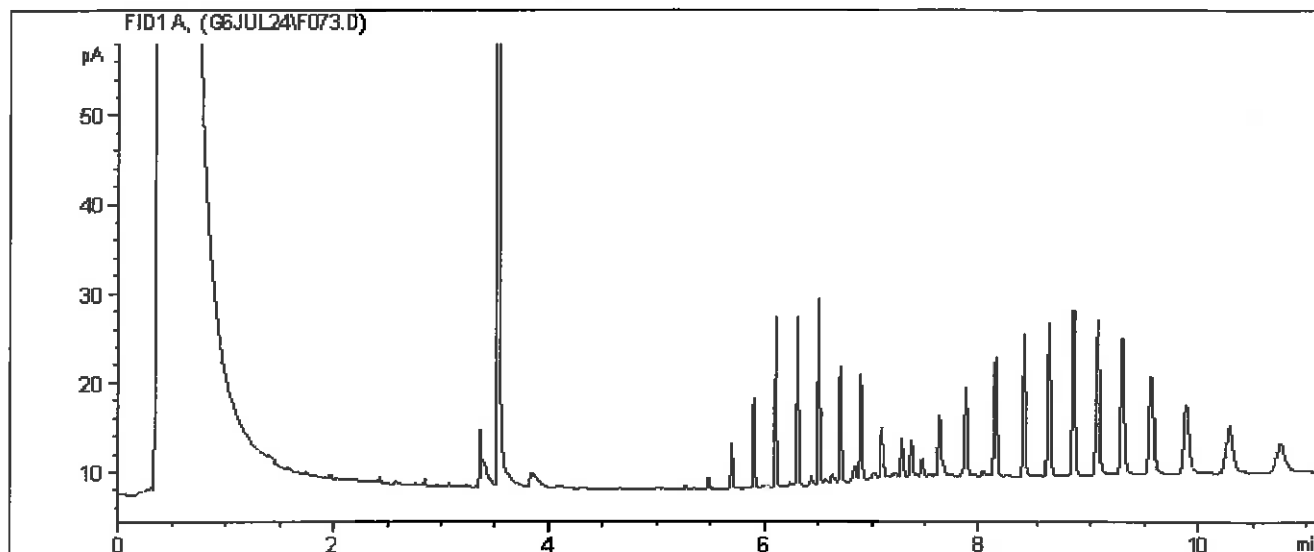
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/07/26  
Maxxam Job #: B361281  
Maxxam Sample: GY2457

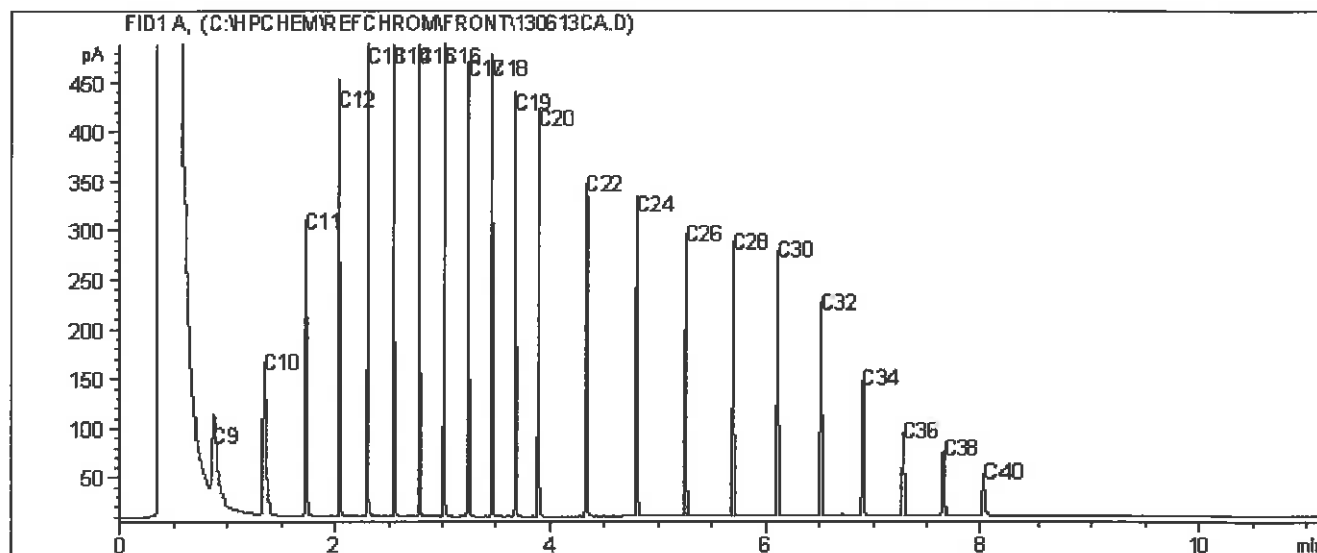
FRANZ ENVIRONMENTAL INC.

Site Reference: LOWER POST  
Client ID: DW 1

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating Oils: C20 - C40

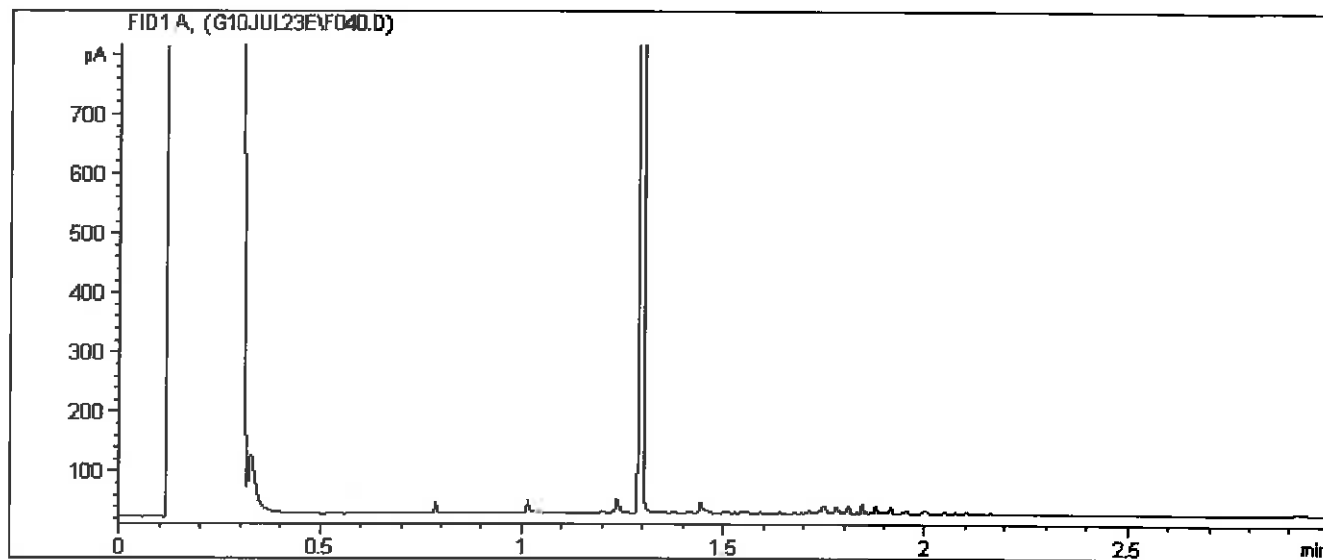
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/07/26  
Maxxam Job #: B361281  
Maxxam Sample: GY2458

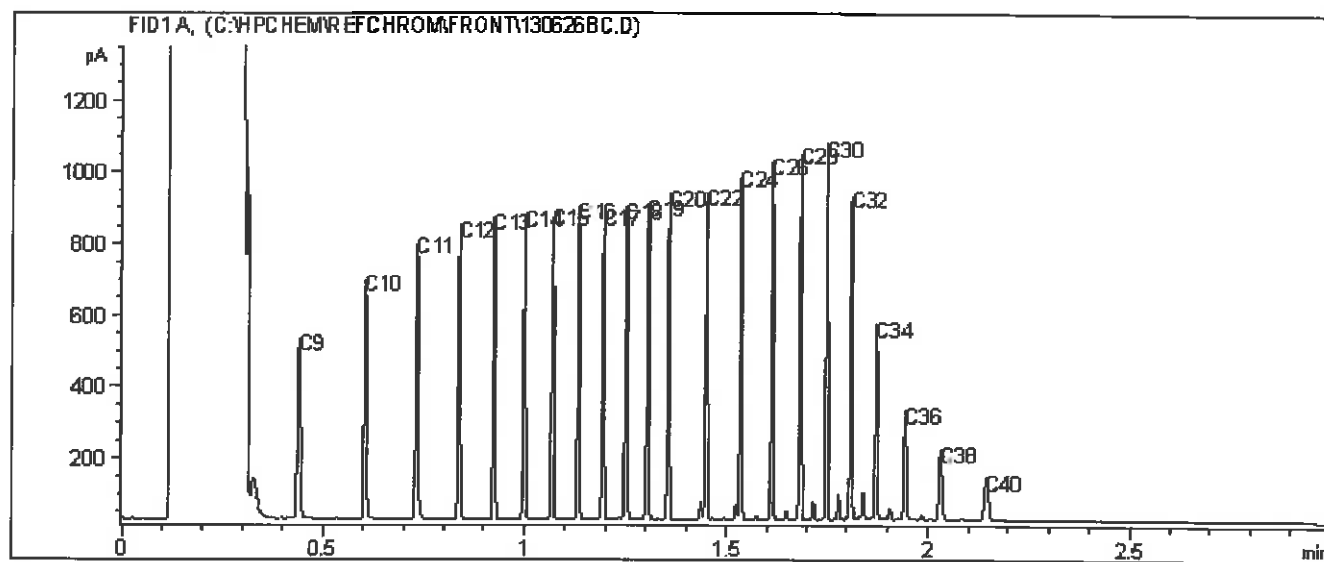
FRANZ ENVIRONMENTAL INC.

Site Reference: LOWER POST  
Client ID: DW UNTREATED

Extrac. Pet HC when LEPH/HEPH required Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating Oils: C20 - C40

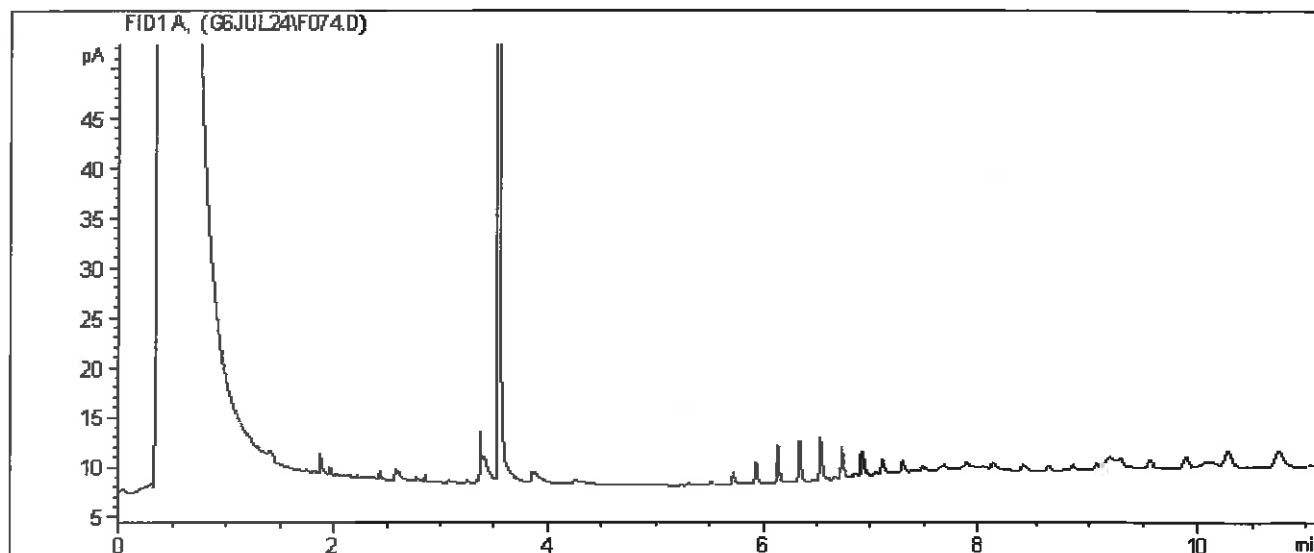
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/07/26  
Maxxam Job #: B361281  
Maxxam Sample: GY2458

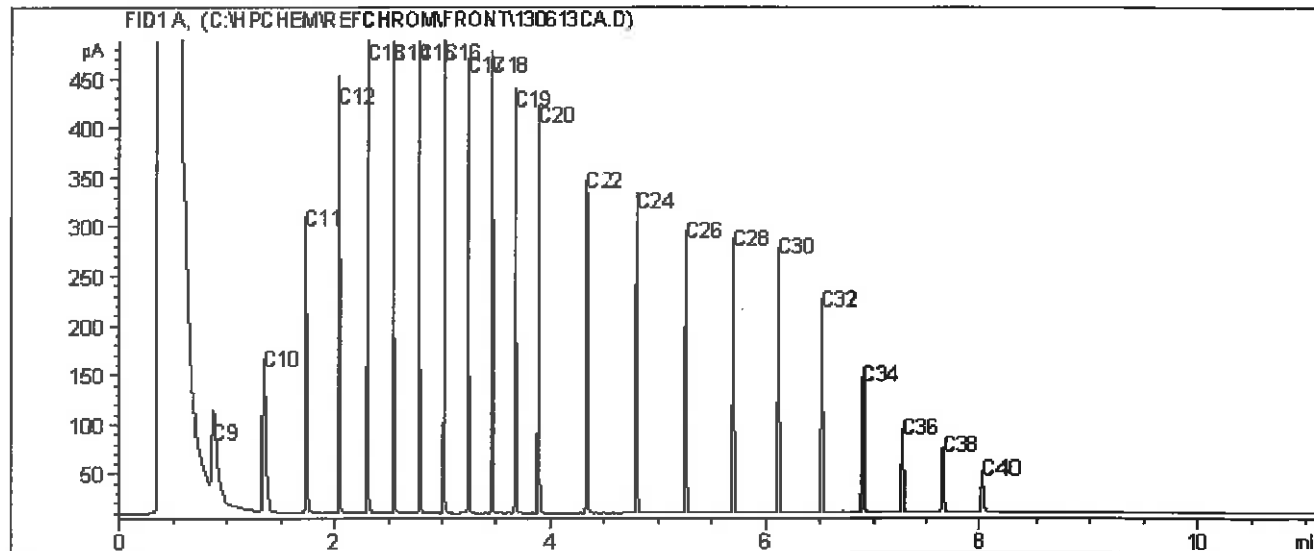
FRANZ ENVIRONMENTAL INC.

Site Reference: LOWER POST  
Client ID: DW UNTREATED

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

Your P.O. #: 700266127  
 Your Project #: LOWER POST  
 Site Location: Whitehorse  
 Your C.O.C. #: G032698, G032700

**Attention: Chris Kam**  
 FRANZ ENVIRONMENTAL INC.  
 FRANZEN-VAN  
 1080 MAINLAND STREET  
 SUITE 308  
 VANCOUVER, BC  
 CANADA V6B 2T4

**Report Date: 2013/11/12**

## CERTIFICATE OF ANALYSIS

**MAXXAM JOB #: B3A2682**

**Received: 2013/11/05, 08:35**

Sample Matrix: Soil  
 # Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/MTBE Soil LH, VH, F1 SIM/MS	1	2013/11/05	2013/11/08	BBY8-SOP-00010	EPA SW846 8260C
BTEX/MTBE Soil LH, VH, F1 SIM/MS	1	2013/11/05	2013/11/09	BBY8-SOP-00010	EPA SW846 8260C
Volatile F1-BTEX	2	N/A	2013/11/12	BBY WI-00033	BC MOE Lab Method
CCME Hydrocarbons (F2-F4 in soil) (1)	2	2013/11/05	2013/11/07	BBY8SOP-00030	CCME Soil Tier 1
Elements by ICPMS (total)	1	2013/11/06	2013/11/06	BBY7SOP-00001	EPA 6020a
Moisture	2	N/A	2013/11/06	BBY8SOP-00017	Ont MOE -E 3139
PAH in Soil by GC/MS (SIM) - CCME	2	2013/11/05	2013/11/08	BBY8SOP-00022	EPA 8270D
Benzo[a]pyrene Equivalency	2	N/A	2013/11/08	BBY WI-00033	CCME Guidelines
Total LMW, HMW, Total PAH Calc	2	N/A	2013/11/08	BBY WI-00033	BC MOE Lab Method
pH (2:1 DI Water Extract)	1	2013/11/06	2013/11/06	BBY6SOP-00028	BC Env Lab Manual
EPH less PAH in Soil By GC/FID	2	N/A	2013/11/08	BBY WI-00033	BC MOE Lab Method
BC Hydrocarbons in Soil by GC/FID	2	2013/11/05	2013/11/07	BBY8SOP-00029	BC Env Lab Manual

\* Results relate only to the items tested.

(1) The method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory; all deviations were justified and validated and are made available upon request; the chromatogram descends to baseline by the retention time of nC50 unless otherwise indicated; all QC criteria met; individual hydrocarbons (nC10, nC16, nC34) are within 10% of their average response factor; linearity is within 15%.

Encryption Key



Shanaz Akbar

12 Nov 2013 16:55:09 -08:00

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

Crystal Ireland, B.Sc., Account Specialist  
 Email: C.Ireland@maxxam.ca  
 Phone# (604) 638-5016

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1

Maxxam Job #: B3A2682  
Report Date: 2013/11/12

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Location: Whitehorse  
Your P.O. #: 700266127  
Sampler Initials: GB

## PETROLEUM HYDROCARBONS (CCME)

Maxxam ID	IA3948	IA3965	
Sampling Date	2013/11/03	2013/11/02	
	<b>UNITS</b>	<b>207</b>	<b>RDL</b>
<b>Ext. Pet. Hydrocarbon</b>			
F2 (C10-C16 Hydrocarbons)	mg/kg	4100	9000
F3 (C16-C34 Hydrocarbons)	mg/kg	640	1000
F4 (C34-C50 Hydrocarbons)	mg/kg	40	38
Reached Baseline at C50	mg/kg	YES	YES
Surrogate Recovery (%)			N/A
O-TERPHENYL (sur.)	%	87	119
			7268235

## PHYSICAL TESTING (SOIL)

Maxxam ID	IA3948	IA3965	
Sampling Date	2013/11/03	2013/11/02	
	<b>UNITS</b>	<b>207</b>	<b>RDL</b>
<b>Physical Properties</b>			
Moisture	%	17	12
			0.30
			7264131

## TOTAL PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID	IA3948	IA3965	
Sampling Date	2013/11/03	2013/11/02	
	<b>UNITS</b>	<b>207</b>	<b>RDL</b>
<b>Calculated Parameters</b>			
LEPH (C10-C19 less PAH)	mg/kg	3830	7930
HEPH (C19-C32 less PAH)	mg/kg	<100	<100
<b>Hydrocarbons</b>			
EPH (C10-C19)	mg/kg	3830	7940
EPH (C19-C32)	mg/kg	<100	<100
Surrogate Recovery (%)			
O-TERPHENYL (sur.)	%	89	107
			7268297

N/A = Not Applicable  
RDL = Reportable Detection Limit

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Location: Whitehorse  
Your P.O. #: 700266127  
Sampler Initials: GB

## RDL = Reportable Detection Limit

(1) - RDL raised due to sample matrix interference.

(2) - RDL raised due to sample dilution.

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Location: Whitehorse  
Your P.O. #: 700266127  
Sampler Initials: GB

## CSR/CCME METALS IN SOIL (SOIL)

Maxxam ID	IA3965		
Sampling Date	2013/11/02		
	207		
<b>Physical Properties</b>		<b>UNITS</b>	<b>RDL</b>
Soluble (2:1) pH		pH Units	
Total Metals by ICPMs	8.05		0.010
Total Aluminum (Al)	4750	mg/kg	100
Total Antimony (Sb)	0.65	mg/kg	0.10
Total Arsenic (As)	5.43	mg/kg	0.50
Total Barium (Ba)	136	mg/kg	0.10
Total Beryllium (Be)	<0.40	mg/kg	0.40
Total Bismuth (Bi)	<0.10	mg/kg	0.10
Total Cadmium (Cd)	0.496	mg/kg	0.050
Total Calcium (Ca)	58200	mg/kg	100
Total Chromium (Cr)	13.8	mg/kg	1.0
Total Cobalt (Co)	4.29	mg/kg	0.30
Total Copper (Cu)	13.2	mg/kg	0.50
Total Iron (Fe)	13300	mg/kg	100
Total Lead (Pb)	5.31	mg/kg	0.10
Total Lithium (Li)	5.7	mg/kg	5.0
Total Magnesium (Mg)	14400	mg/kg	100
Total Manganese (Mn)	255	mg/kg	0.20
Total Mercury (Hg)	0.065	mg/kg	0.050
Total Molybdenum (Mo)	0.77	mg/kg	0.10
Total Nickel (Ni)	19.8	mg/kg	0.80
Total Phosphorus (P)	876	mg/kg	10
Total Potassium (K)	471	mg/kg	100
Total Selenium (Se)	<0.50	mg/kg	0.50
Total Silver (Ag)	0.100	mg/kg	0.050
Total Sodium (Na)	<100	mg/kg	100
Total Strontium (Sr)	164	mg/kg	0.10
Total Thallium (Tl)	0.095	mg/kg	0.050
Total Tin (Sn)	0.15	mg/kg	0.10
Total Titanium (Ti)	216	mg/kg	1.0
Total Uranium (U)	0.914	mg/kg	0.050
Total Vanadium (V)	27.8	mg/kg	2.0
Total Zinc (Zn)	66.3	mg/kg	1.0
Total Zirconium (Zr)	2.72	mg/kg	0.50
			7264720

RDL = Reportable Detection Limit

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Location: Whitehorse  
Your P.O. #: 700266127  
Sampler Initials: GB

## CCME PAH IN SOIL BY GC-MS (SOIL)

Maxxam ID	IA3948	IA3965		
Sampling Date	2013/11/03	2013/11/02		
UNITS	341-9	207	RDL	QC Batch
<b>Calculated Parameters</b>				
Index of Additive Cancer Risk(IARC)	N/A	0.31	0.10	0.10
Benzo(a)pyrene equivalency	N/A	<0.10	0.10	0.10
<b>Polycyclic Aromatics</b>				
Naphthalene	mg/kg	<0.11(1)	0.11	0.010
2-Methylnaphthalene	mg/kg	0.45	0.020	0.020
Acenaphthylene	mg/kg	<0.22(1)	0.22	<0.28(1)
Acenaphthene	mg/kg	<0.47(1)	0.47	<0.60(1)
Fluorene	mg/kg	0.43	0.020	0.020
Phenanthrene	mg/kg	0.32	0.020	0.020
Anthracene	mg/kg	<0.0090(1)	0.0090	<0.020(1)
Fluoranthene	mg/kg	<0.020	0.020	<0.020
Pyrene	mg/kg	<0.020	0.020	<0.020
Benzo(a)anthracene	mg/kg	<0.020	0.020	<0.020
Chrysene	mg/kg	<0.020	0.020	<0.020
Benzo(b&f)fluoranthene	mg/kg	<0.020	0.020	<0.020
Benzo(k)fluoranthene	mg/kg	<0.020	0.020	<0.020
Benzo(a)pyrene	mg/kg	<0.020	0.020	<0.020
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	0.050	<0.050
Dibenz(a,h)anthracene	mg/kg	<0.050	0.050	<0.050
Benzo(g,h,i)perylene	mg/kg	<0.050	0.050	<0.050
Low Molecular Weight PAH's	mg/kg	1.2	0.47	5.8
High Molecular Weight PAH's	mg/kg	<0.050	0.050	<0.050
Total PAH	mg/kg	1.2	0.47	5.8
<b>Surrogate Recovery (%)</b>				
D10-ANTHRACENE (sur.)	%	78		91
D8-ACENAPHTHYLENE (sur.)	%	74		82
D8-NAPHTHALENE (sur.)	%	74		91
TERPHENYL-D14 (sur.)	%	77		92

N/A = Not Applicable

RDL = Reportable Detection Limit

(1) - RDL raised due to sample matrix interference.

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Location: Whitehorse  
Your P.O. #: 700266127  
Sampler Initials: GB

Package 1 2.0°C

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

**General Comments**

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Location: Whitehorse  
Your P.O. #: 700266127  
Sampler Initials: GB

## QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike % Recovery	QC Limits	Spiked Blank % Recovery	QC Limits	Method Blank Value	UNITS	RPD Value (%)	QC Limits	QC Standard % Recovery	QC Limits
7284131	Moisture	2013/11/06					<0.30	%	3.5	20		
7284720	Total Antimony (Sb)	2013/11/06	96	75 - 125	92	75 - 125	<0.10	mg/kg	NC	30	94	70 - 130
7284720	Total Arsenic (As)	2013/11/06	98	75 - 125	96	75 - 125	<0.50	mg/kg	NC	30	99	70 - 130
7284720	Total Barium (Ba)	2013/11/06	94	75 - 125	101	75 - 125	<0.10	mg/kg	3.7	35	97	70 - 130
7284720	Total Beryllium (Be)	2013/11/06	85	75 - 125	89	75 - 125	<0.40	mg/kg	NC	30		
7284720	Total Cadmium (Cd)	2013/11/06	101	75 - 125	102	75 - 125	<0.050	mg/kg	NC	30	101	70 - 130
7284720	Total Chromium (Cr)	2013/11/06	92	75 - 125	96	75 - 125	<1.0	mg/kg	NC	30	96	70 - 130
7284720	Total Cobalt (Co)	2013/11/06	93	75 - 125	96	75 - 125	<0.30	mg/kg	7.3	30	88	70 - 130
7284720	Total Copper (Cu)	2013/11/06	91	75 - 125	99	75 - 125	<0.50	mg/kg	6.1	30	92	70 - 130
7284720	Total Lead (Pb)	2013/11/06	97	75 - 125	105	75 - 125	<0.10	mg/kg	4.1	35	101	70 - 130
7284720	Total Lithium (Li)	2013/11/06	94	75 - 125	92	75 - 125	<5.0	mg/kg	NC	30		
7284720	Total Manganese (Mn)	2013/11/06	NC	75 - 125	99	75 - 125	<0.20	mg/kg	4.2	30	93	70 - 130
7284720	Total Mercury (Hg)	2013/11/06	100	75 - 125	99	75 - 125	<0.050	mg/kg	NC	35	79	70 - 130
7284720	Total Molybdenum (Mo)	2013/11/06	105	75 - 125	95	75 - 125	<0.10	mg/kg	NC	35	111	70 - 130
7284720	Total Nickel (Ni)	2013/11/06	94	75 - 125	97	75 - 125	<0.80	mg/kg	NC	30	96	70 - 130
7284720	Total Selenium (Se)	2013/11/06	107	75 - 125	106	75 - 125	<0.50	mg/kg	NC	30		
7284720	Total Silver (Ag)	2013/11/06	83	75 - 125	86	75 - 125	<0.050	mg/kg	NC	35		
7284720	Total Strontium (Sr)	2013/11/06	NC	75 - 125	97	75 - 125	<0.10	mg/kg	4.0	35	102	70 - 130
7284720	Total Thallium (Tl)	2013/11/06	95	75 - 125	100	75 - 125	<0.050	mg/kg	NC	30	93	70 - 130
7284720	Total Tin (Sn)	2013/11/06	92	75 - 125	94	75 - 125	<0.10	mg/kg	NC	35		
7284720	Total Titanium (Ti)	2013/11/06	NC	75 - 125	94	75 - 125	<1.0	mg/kg	2.7	35	101	70 - 130
7284720	Total Uranium (U)	2013/11/06	101	75 - 125	101	75 - 125	<0.050	mg/kg	3.0	30	97	70 - 130
7284720	Total Vanadium (V)	2013/11/06	94	75 - 125	95	75 - 125	<2.0	mg/kg	NC	30	98	70 - 130
7284720	Total Zinc (Zn)	2013/11/06	95	75 - 125	108	75 - 125	<1.0	mg/kg	3.4	30	95	70 - 130
7284720	Total Aluminum (Al)	2013/11/06					<100	mg/kg	4.4	35	104	70 - 130
7284720	Total Calcium (Ca)	2013/11/06					<100	mg/kg	3.6	30	95	70 - 130
7284720	Total Iron (Fe)	2013/11/06					<100	mg/kg	0.1	30	94	70 - 130
7284720	Total Magnesium (Mg)	2013/11/06					<100	mg/kg	0.6	30	97	70 - 130
7284720	Total Phosphorus (P)	2013/11/06					<10	mg/kg	29.9	30	93	70 - 130
7284720	Total Bismuth (Bi)	2013/11/06					<0.10	mg/kg	NC	30		
7284720	Total Potassium (K)	2013/11/06					<100	mg/kg	NC	35		
7284720	Total Sodium (Na)	2013/11/06					<100	mg/kg	NC	30		
7284720	Total Zirconium (Zr)	2013/11/06					<0.50	mg/kg	NC	30		
7264735	Soluble (2:1) pH	2013/11/06			100	97 - 103			0.3	20		
7265238	1,4-Difluorobenzene (sur.)	2013/11/08	119	70 - 130	115	70 - 130	104	%				
7265238	4-BROMOFLUOROBENZENE (sur.)	2013/11/08	95	70 - 130	97	70 - 130	94	%				
7265238	D10-ETHYL BENZENE (sur.)	2013/11/08	98	50 - 130	80	50 - 130	96	%				
7265238	D4-1,2-DICHLOROETHANE (sur.)	2013/11/08	97	70 - 130	93	70 - 130	92	%				
7265238	Benzene	2013/11/08	91	60 - 140	82	60 - 140	<0.0050	mg/kg	NC	40		

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Location: Whitehorse  
Your P.O. #: 700266127  
Sampler Initials: GB

## QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike % Recovery	QC Limits	Spiked Blank % Recovery	QC Limits	Method Blank Value	UNITS	RPD Value (%)	QC Limits	QC Standard % Recovery	QC Limits
7265238	Toluene	2013/11/08	90	60 - 140	82	60 - 140	<0.020	mg/kg	NC	40		
7265238	Ethylbenzene	2013/11/08	93	60 - 140	85	60 - 140	<0.010	mg/kg	NC	40		
7265238	m & p-Xylene	2013/11/08	91	60 - 140	84	60 - 140	<0.040	mg/kg	NC	40		
7265238	o-Xylene	2013/11/08	91	60 - 140	86	60 - 140	<0.040	mg/kg	NC	40		
7265238	(O6-C10)	2013/11/08			110	60 - 140	<10	mg/kg				
7265238	Methyl-tert-butylether(MTBE)	2013/11/08					<0.10	mg/kg	NC	40		
7265238	Styrene	2013/11/08					<0.030	mg/kg	NC	40		
7265238	Xylenes (Total)	2013/11/08					<0.040	mg/kg	NC	40		
7268235	O-TERPHENYL (sur.)	2013/11/07	87	50 - 130	90	50 - 130	78	%				
7268235	F2 (C10-C16 Hydrocarbons)	2013/11/12	NC	50 - 130	105	80 - 120	<10	mg/kg	95.3(t)	40		
7268235	F3 (C16-C34 Hydrocarbons)	2013/11/12	NC	50 - 130	104	80 - 120	<10	mg/kg	87.8(t)	40		
7268235	F4 (C34-C50 Hydrocarbons)	2013/11/12	85	50 - 130	100	80 - 120	<10	mg/kg	77.2(t)	40		
7268235	Reached Baseline at C50	2013/11/12					YES, RDL=N/A	mg/kg	NC	50		
7268297	O-TERPHENYL (sur.)	2013/11/07	100	50 - 130	99	50 - 130	98	%				
7268297	EPH (C10-C19)	2013/11/07	76	50 - 130	83	50 - 130	<100	mg/kg	NC	40		
7268297	EPH (C19-C32)	2013/11/07	85	50 - 130	92	50 - 130	<100	mg/kg	NC	40		
7268304	D10-ANTHRACENE (sur.)	2013/11/07			96	50 - 130	91	%				
7268304	D8-ACENAPHTHYLENE (sur.)	2013/11/07			91	50 - 130	85	%				
7268304	D8-NAPHTHALENE (sur.)	2013/11/07			88	50 - 130	83	%				
7268304	TERPHENYL-D14 (sur.)	2013/11/07			95	60 - 130	87	%				
7268304	Naphthalene	2013/11/07			83	50 - 130	<0.010	mg/kg				
7268304	2-Methylnaphthalene	2013/11/07			86	50 - 130	<0.020	mg/kg				
7268304	Acenaphthylene	2013/11/07			87	50 - 130	<0.0050	mg/kg				
7268304	Acenaphthene	2013/11/07			88	50 - 130	<0.0050	mg/kg				
7268304	Fluorene	2013/11/07			89	50 - 130	<0.020	mg/kg				
7268304	Phenanthrene	2013/11/07			81	60 - 130	<0.020	mg/kg				
7268304	Anthracene	2013/11/07			97	60 - 130	<0.0040	mg/kg				
7268304	Fluoranthene	2013/11/07			89	60 - 130	<0.020	mg/kg				
7268304	Pyrene	2013/11/07			88	60 - 130	<0.020	mg/kg				
7268304	Benzo(a)anthracene	2013/11/07			78	60 - 130	<0.020	mg/kg				
7268304	Chrysene	2013/11/07			79	60 - 130	<0.020	mg/kg				
7268304	Benzo(b,k)fluoranthene	2013/11/07			86	60 - 130	<0.020	mg/kg				
7268304	Benzo(k)fluoranthene	2013/11/07			79	60 - 130	<0.020	mg/kg				
7268304	Benzo(a)pyrene	2013/11/07			89	60 - 130	<0.020	mg/kg				
7268304	Indeno(1,2,3-cd)pyrene	2013/11/07			92	60 - 130	<0.050	mg/kg				
7268304	Dibenz(a,h)anthracene	2013/11/07			92	60 - 130	<0.050	mg/kg				

Maxxam Job #: B3A2682  
Report Date: 2013/11/12

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Location: Whitehorse  
Your P.O. #: 700266127  
Sampler Initials: GB

## QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7268304	Benzo(g,h,i)perylene	2013/11/07			89	60 - 130	<0.050	mg/kg				
7268304	Benzo(b)fluoranthene	2013/11/07					<0.020	mg/kg				

N/A = Not Applicable

RDL = Reportable Detection Limit

RPD = Relative Percent Difference

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

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

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

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

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

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

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

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

## Validation Signature Page

**Maxxam Job #: B3A2682**

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Rob Reiser, Data Validation Coordinator

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

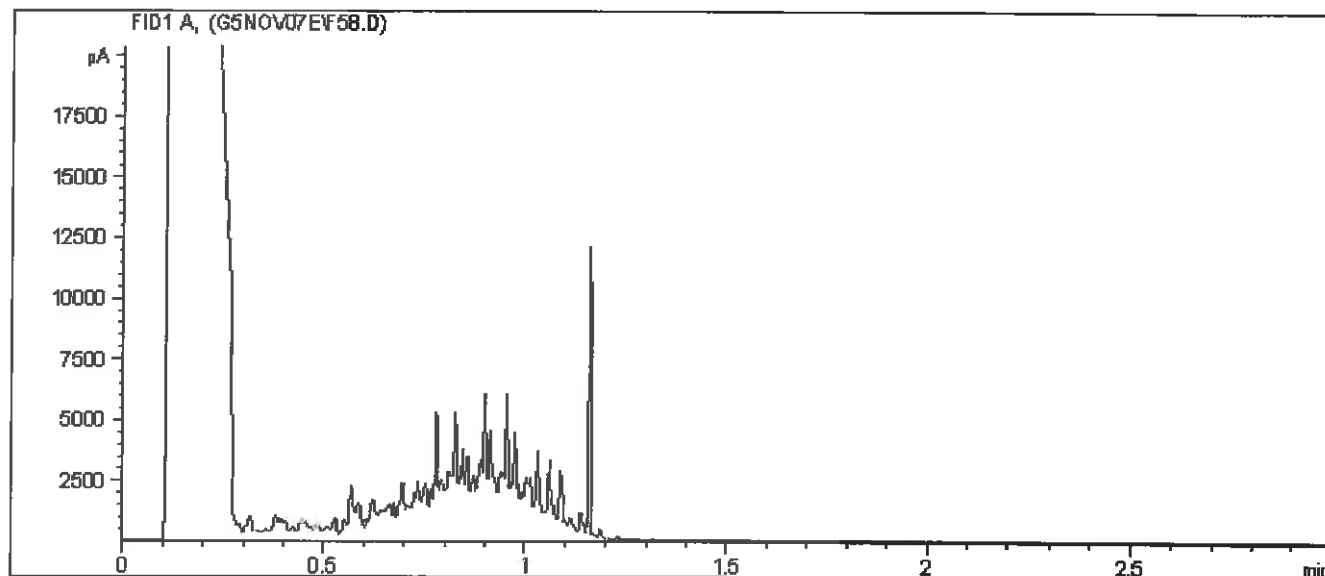




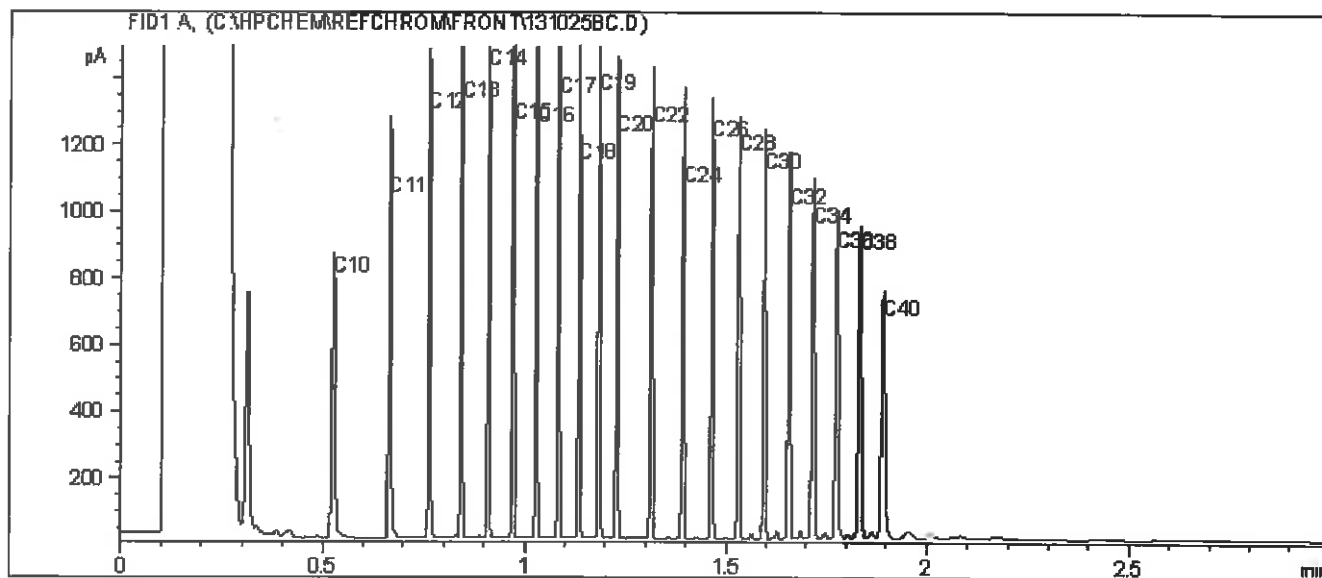
Report Date: 2013/11/12  
Maxxam Job #: B3A2682  
Maxxam Sample: IA3948

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Reference: Whitehorse  
Client ID: 341-9

# BC Hydrocarbons in Soil by GC/FID Chromatogram



## Carbon Range Distribution - Reference Chromatogram



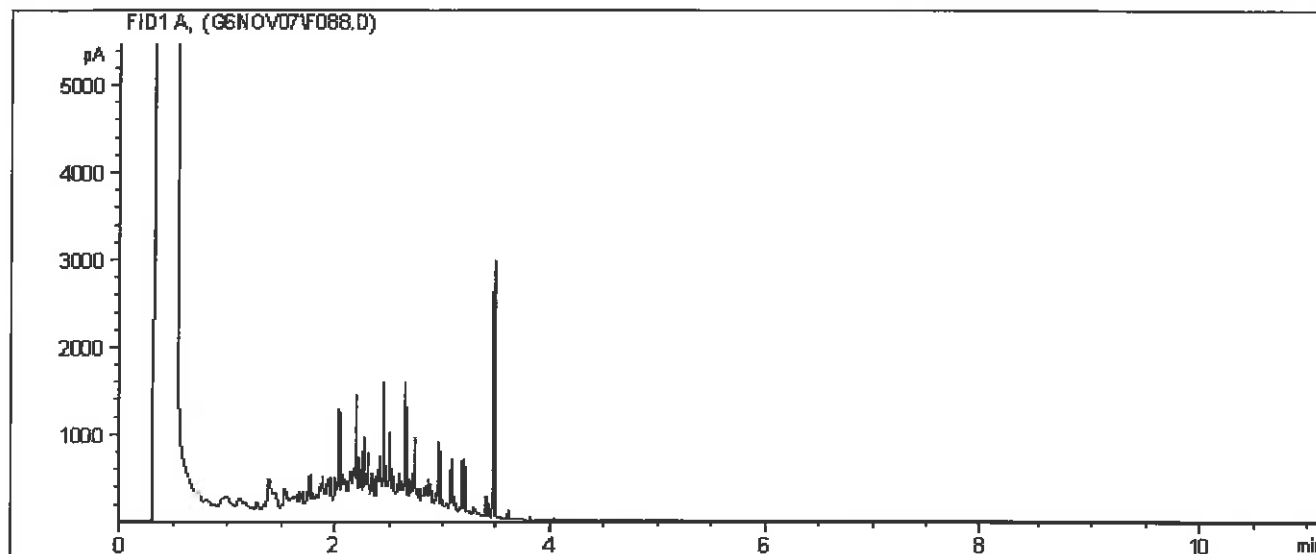
## TYPICAL PRODUCT CARBON NUMBER RANGES

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

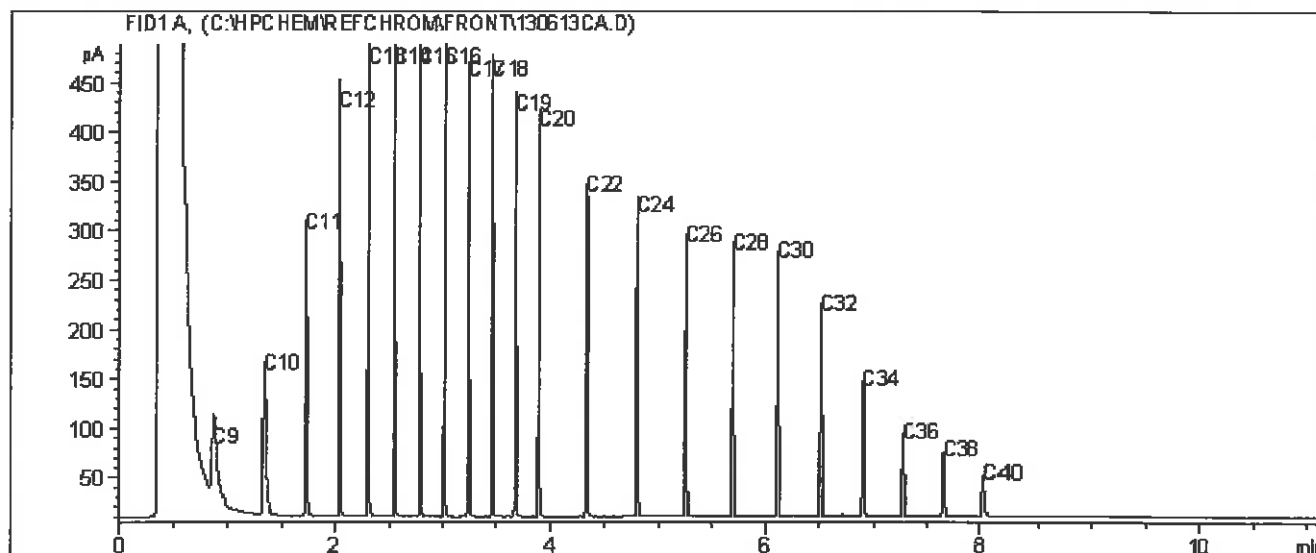
Report Date: 2013/11/12  
Maxxam Job #: B3A2682  
Maxxam Sample: IA3948

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Reference: Whitehorse  
Client ID: 341-9

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

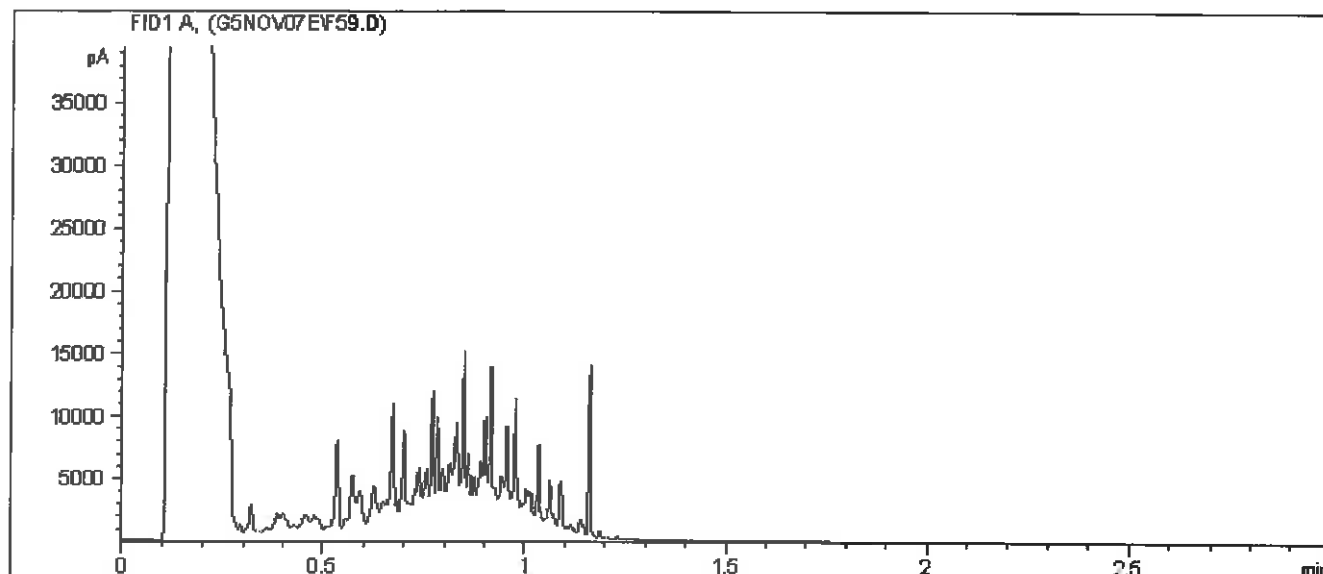
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

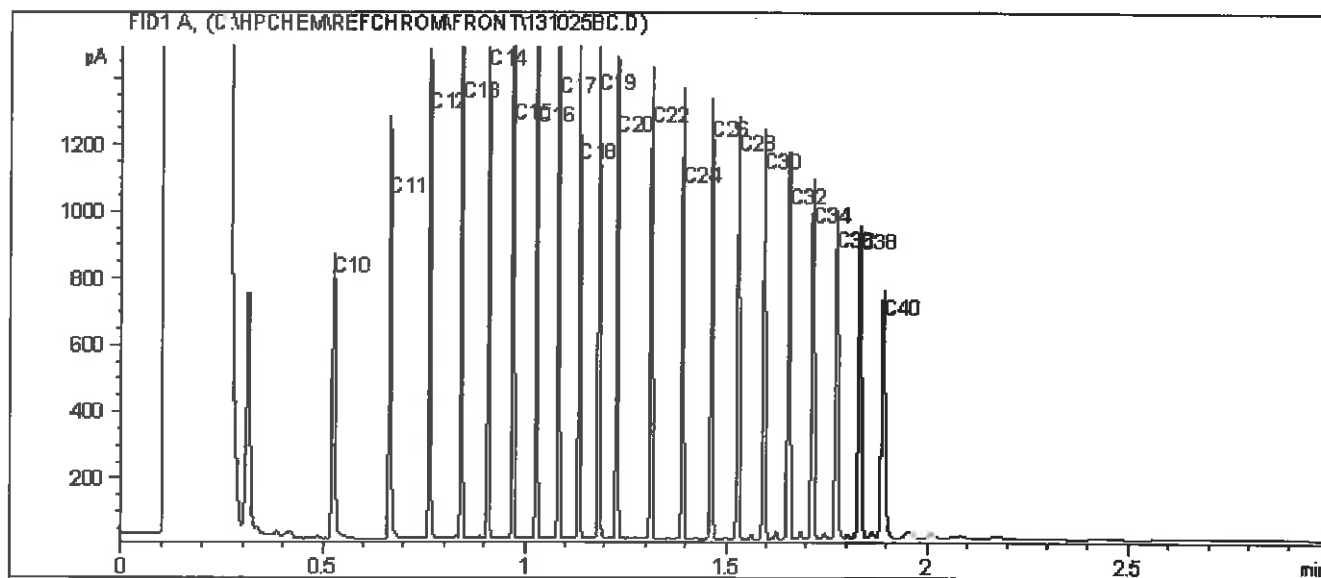
Report Date: 2013/11/12  
Maxxam Job #: B3A2682  
Maxxam Sample: IA3965

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Reference: Whitehorse  
Client ID: 207

# BC Hydrocarbons in Soil by GC/FID Chromatogram



## Carbon Range Distribution - Reference Chromatogram



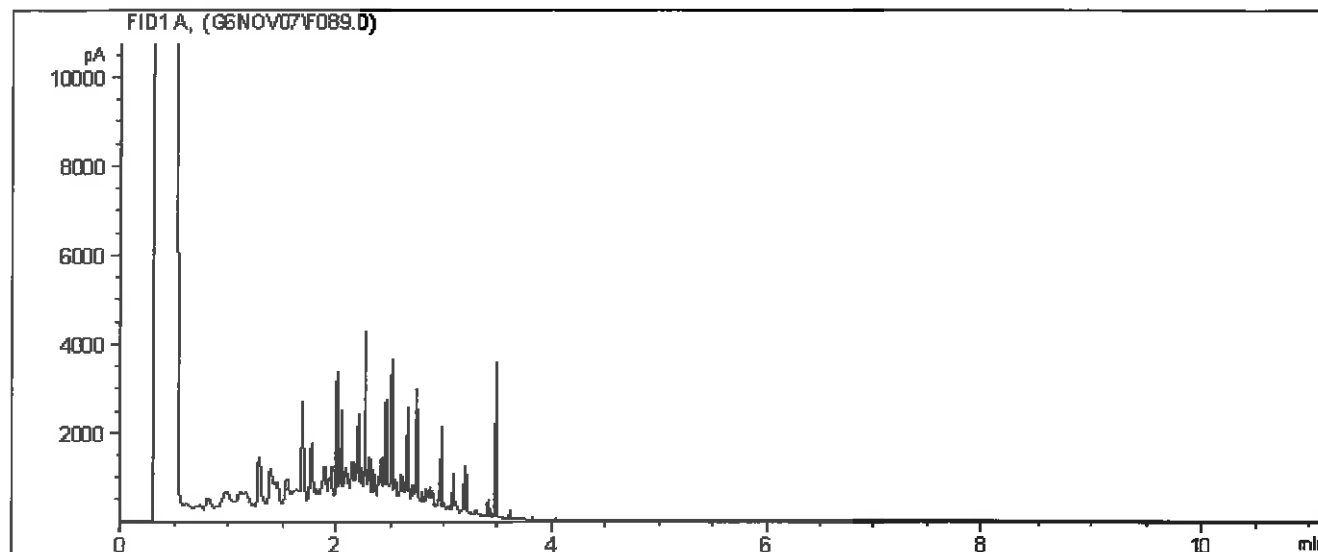
## TYPICAL PRODUCT CARBON NUMBER RANGES

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

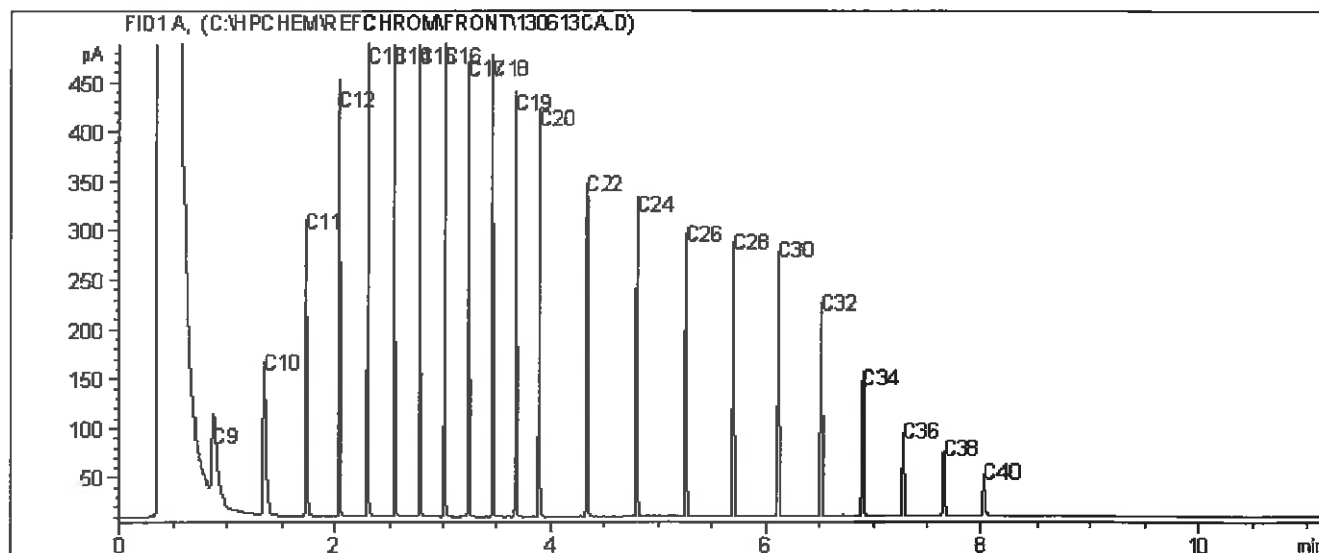
Report Date: 2013/11/12  
Maxxam Job #: B3A2682  
Maxxam Sample: IA3965

FRANZ ENVIRONMENTAL INC.  
Client Project #: LOWER POST  
Site Reference: Whitehorse  
Client ID: 207

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

Your P.O. #: 700266127  
 Your Project #: LOWER POST  
 Site Location: LOWER POST  
 Your C.O.C. #: G026578

**Attention: John Taylor**  
 FRANZ/CORE 6  
 FRANZ/CORE 6  
 1410-777 Hornby Street  
 Vancouver, BC  
 Canada V6Z1S4

**Report Date: 2014/02/03**  
**Report #: R1509968**  
**Version: 1**

## CERTIFICATE OF ANALYSIS

**MAXXAM JOB #: B406358**  
**Received: 2014/01/27, 08:30**

Sample Matrix: Soil  
 # Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/MTBE Soil LH, VH, F1 SIM/MS	2	2014/01/27	2014/01/28	BBY8-SOP-00010	EPA SW846 8260C
Volatile F1-BTEX	2	N/A	2014/01/29	BBY WI-00033	BC MOE Lab Method
CCME Hydrocarbons (F2-F4 in soil) (1)	2	2014/01/27	2014/01/31	BBY8SOP-00030	CCME Soil Tier 1
Moisture	2	N/A	2014/01/28	BBY8SOP-00017	Ont MOE -E 3139
PAH in Soil by GC/MS (SIM) - CCME	2	2014/01/27	2014/01/31	BBY8SOP-00022	EPA 8270D
Benzo[a]pyrene Equivalency	2	N/A	2014/02/03	BBY WI-00033	CCME Guidelines
Total LMW, HMW, Total PAH Calc	2	N/A	2014/02/03	BBY WI-00033	BC MOE Lab Method

\* Results relate only to the items tested.

(1) The method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory; all deviations were justified and validated and are made available upon request; the chromatogram descends to baseline by the retention time of nC50 unless otherwise indicated; all QC criteria met; individual hydrocarbons (nC10, nC16, nC34) are within 10% of their average response factor; linearity is within 15%.

Encryption Key



Shanaz Akbar

03 Feb 2014 17:23:14 -08:00

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

Crystal Ireland, B.Sc., Account Specialist  
 Email: C.Ireland@maxxam.ca  
 Phone# (604) 638-5016

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1

FRANZ/CORE 6  
Client Project #: LOWER POST  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

## PETROLEUM HYDROCARBONS (CCME)

Maxxam ID	IN5319	IN5320	
Sampling Date	2014/01/24	2014/01/24	
	BH13-4-9	BH13-4-10	
UNITS			RDL
Ext. Pet. Hydrocarbon			
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	10
F3 (C16-C34 Hydrocarbons)	mg/kg	<10	10
F4 (C34-C50 Hydrocarbons)	mg/kg	<10	10
Reached Baseline at C50	mg/kg	YES	N/A
Surrogate Recovery (%)			
O-TERPHENYL (sur.)	%	103	111
			7367011

## PHYSICAL TESTING (SOIL)

Maxxam ID	IN5319	IN5320	
Sampling Date	2014/01/24	2014/01/24	
	BH13-4-9	BH13-4-10	
UNITS			RDL
Physical Properties			
Moisture	%	4.1	0.30
		6.0	7361024

FRANZ/CORE 6  
Client Project #: LOWER POST  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

Complete initials. VK

L	QC Batch
0	7361849
0	7363619
50	7363619
20	7363619
10	7363619
40	7363619
40	7363619
30	7363619
40	7363619
0	7363619
	7363619
	7363619
	7363619

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FRANZ/CORE 6  
Client Project #: LOWER POST  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

## CCME PAH IN SOIL BY GC-MS (SOIL)

Maxxam ID	IN5319	IN5320		
Sampling Date	2014/01/24	2014/01/24		
UNITS	BH13-4-9	BH13-4-10	RDL	QC Batch
<b>Calculated Parameters</b>				
Index of Additive Cancer Risk(IARC)				
Benzo(a)pyrene equivalency	N/A	0.31	0.31	7361852
	N/A	<0.10	<0.10	7361852
<b>Polycyclic Aromatics</b>				
Naphthalene	mg/kg	<0.010	<0.010	7367017
2-Methylnaphthalene	mg/kg	<0.020	<0.020	7367017
Acenaphthylene	mg/kg	<0.0050	<0.0050	7367017
Acenaphthene	mg/kg	<0.0050	<0.0050	7367017
Fluorene	mg/kg	<0.020	<0.020	7367017
Phenanthrene	mg/kg	<0.020	<0.020	7367017
Anthracene	mg/kg	<0.0040	<0.0040	7367017
Fluoranthene	mg/kg	<0.020	<0.020	7367017
Pyrene	mg/kg	<0.020	<0.020	7367017
Benzo(a)anthracene	mg/kg	<0.020	<0.020	7367017
Chrysene	mg/kg	<0.020	<0.020	7367017
Benzo(b&j)fluoranthene	mg/kg	<0.020	<0.020	7367017
Benzo(b)fluoranthene	mg/kg	<0.020	<0.020	7367017
Benzo(k)fluoranthene	mg/kg	<0.020	<0.020	7367017
Benzo(a)pyrene	mg/kg	<0.020	<0.020	7367017
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	<0.050	7367017
Dibenz(a,h)anthracene	mg/kg	<0.050	<0.050	7367017
Benzo(g,h,i)perylene	mg/kg	<0.050	<0.050	7367017
Low Molecular Weight PAH's	mg/kg	<0.050	<0.050	7361550
High Molecular Weight PAH's	mg/kg	<0.050	<0.050	7361550
Total PAH	mg/kg	<0.050	<0.050	7361550
<b>Surrogate Recovery (%)</b>				
D10-ANTHRACENE (sur.)	%	106	107	7367017
D8-ACENAPHTHYLENE (sur.)	%	85	94	7367017
D8-NAPHTHALENE (sur.)	%	91	99	7367017
TERPHENYL-D14 (sur.)	%	101	107	7367017

N/A = Not Applicable  
RDL = Reportable Detection Limit

FRANZ/CORE 6  
Client Project #: LOWER POST  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

Package 1	1.0°C
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Each temperature is the average of up to three cooler temperatures taken at receipt

General Comments

FRANZ/CORE 6  
Client Project #: LOWER POST  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

## QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7361024	Moisture	2014/01/28								
7363619	1,4-Difluorobenzene (sur.)	2014/01/28	97	70 - 130	96	70 - 130	<0.30	%	8.7	20
7363619	4-BROMOFUOROBENZENE (sur.)	2014/01/28	111	70 - 130	109	70 - 130	103	%		
7363619	D10-ETHYLBENZENE (sur.)	2014/01/28	85	50 - 130	74	50 - 130	84	%		
7363619	D4-1,2-DICHLOROETHANE (sur.)	2014/01/28	95	70 - 130	92	70 - 130	102	%		
7363619	Benzene	2014/01/28	78	60 - 140	70	60 - 140	<0.0050	mg/kg	NC	40
7363619	Toluene	2014/01/28	79	60 - 140	71	60 - 140	<0.020	mg/kg	NC	40
7363619	Ethylbenzene	2014/01/28	82	60 - 140	73	60 - 140	<0.010	mg/kg	NC	40
7363619	m & p-Xylene	2014/01/28	80	60 - 140	71	60 - 140	<0.040	mg/kg	NC	40
7363619	o-Xylene	2014/01/28	79	60 - 140	70	60 - 140	<0.040	mg/kg	NC	40
7363619	(C6-C10)	2014/01/28			112	60 - 140	<10	mg/kg		
7363619	Methyl-tert-butyl-ether (MTBE)	2014/01/28					<0.10	mg/kg	NC	40
7363619	Styrene	2014/01/28					<0.030	mg/kg	NC	40
7363619	Xylenes (Total)	2014/01/28					<0.040	mg/kg	NC	40
7367011	O-TERPHENYL (sur.)	2014/01/31	94	50 - 130	100	50 - 130	114	%		
7367011	F2 (C10-C16 Hydrocarbons)	2014/02/03	114	50 - 130	109	80 - 120	14, RDL=10	mg/kg	NC	40
7367011	F3 (C16-C34 Hydrocarbons)	2014/02/03	105	50 - 130	101	80 - 120	<10	mg/kg	NC	40
7367011	F4 (C34-C50 Hydrocarbons)	2014/02/03	91	50 - 130	85	80 - 120	<10	mg/kg	NC	40
7367011	Reached Baseline at C50	2014/02/03	YES	N/A	YES	N/A	YES, RDL=N/A	mg/kg	NC	50
7367017	D10-ANTHRACENE (sur.)	2014/01/31	98	60 - 130	106	60 - 130	114	%		
7367017	D8-ACENAPHTHYLENE (sur.)	2014/01/31	89	50 - 130	93	50 - 130	98	%		
7367017	D8-NAPHTHALENE (sur.)	2014/01/31	92	50 - 130	96	50 - 130	105	%		
7367017	TERPHENYL-D14 (sur.)	2014/01/31	98	60 - 130	104	60 - 130	111	%		
7367017	Naphthalene	2014/01/31	82	50 - 130	83	50 - 130	<0.010	mg/kg	NC	50
7367017	2-Methylnaphthalene	2014/01/31	86	50 - 130	86	50 - 130	<0.020	mg/kg	NC	50
7367017	Acenaphthylene	2014/01/31	84	50 - 130	83	50 - 130	<0.0050	mg/kg	NC	50
7367017	Acenaphthene	2014/01/31	85	50 - 130	84	50 - 130	<0.0050	mg/kg	NC	50
7367017	Fluorene	2014/01/31	87	50 - 130	85	50 - 130	<0.020	mg/kg	NC	50
7367017	Phenanthrene	2014/01/31	85	60 - 130	83	60 - 130	<0.020	mg/kg	NC	50
7367017	Anthracene	2014/01/31	98	60 - 130	104	60 - 130	<0.0040	mg/kg	NC	50
7367017	Fluoranthene	2014/01/31	94	60 - 130	96	60 - 130	<0.020	mg/kg	NC	50
7367017	Pyrene	2014/01/31	91	60 - 130	91	60 - 130	<0.020	mg/kg	NC	50
7367017	Benzo(a)anthracene	2014/01/31	81	60 - 130	83	60 - 130	<0.020	mg/kg	NC	50
7367017	Chrysene	2014/01/31	84	60 - 130	86	60 - 130	<0.020	mg/kg	NC	50
7367017	Benzo(b)fluoranthene	2014/01/31	71	60 - 130	71	60 - 130	<0.020	mg/kg	NC	50
7367017	Benzo(k)fluoranthene	2014/01/31	94	60 - 130	96	60 - 130	<0.020	mg/kg	NC	50
7367017	Benzo(a)pyrene	2014/01/31	84	60 - 130	85	60 - 130	<0.020	mg/kg	NC	50
7367017	Indeno(1,2,3-cd)pyrene	2014/01/31	82	60 - 130	89	60 - 130	<0.050	mg/kg	NC	50
7367017	Dibenz(a,h)anthracene	2014/01/31	83	60 - 130	88	60 - 130	<0.050	mg/kg	NC	50

FRANZ/CORE 6  
Client Project #: LOWER POST  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: VR

## QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7367017	Benzo(g,h,i)perylene	2014/01/31	76	60 - 130	84	60 - 130	<0.050	mg/kg	NC	50
7367017	Benzo(b)fluoranthene	2014/01/31					<0.020	mg/kg	NC	N/A

N/A = Not Applicable

RDL = Reportable Detection Limit

RPD = Relative Percent Difference

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 (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

## Validation Signature Page

Maxxam Job #: B406358

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

  
David Huang, QBX Scientific Specialist

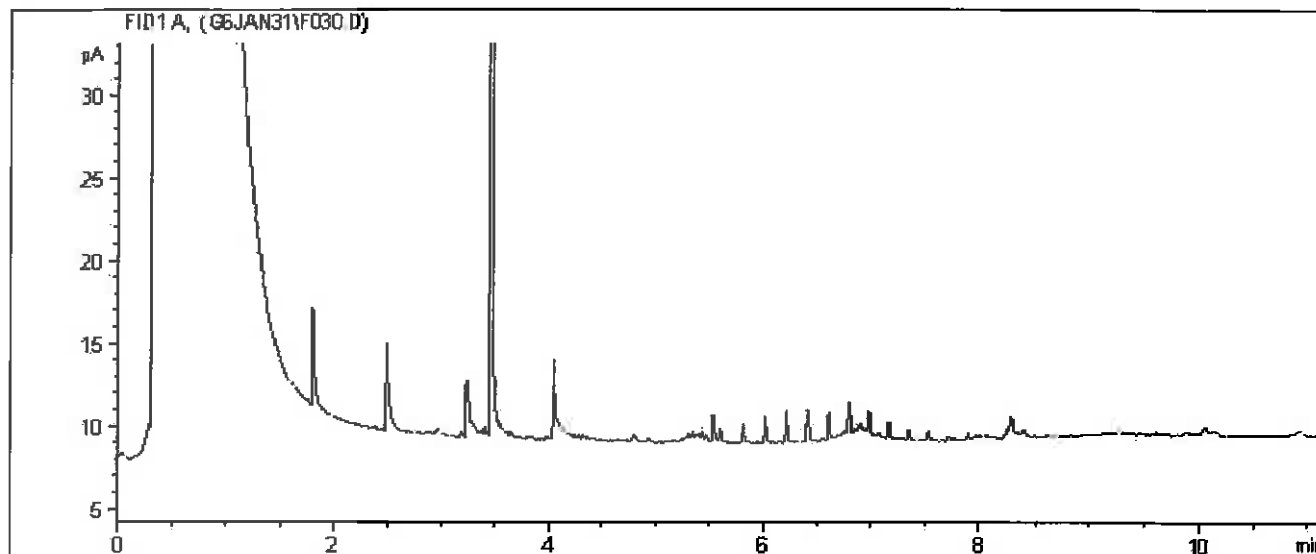
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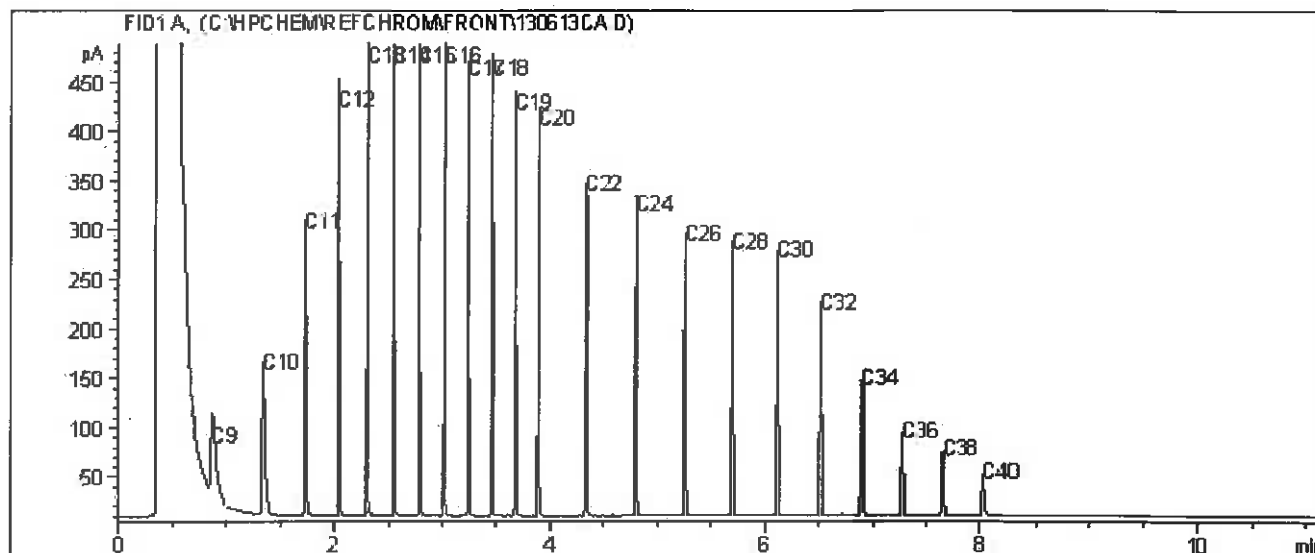
Report Date: 2014/02/03  
Maxxam Job #: B406358  
Maxxam Sample: IN5319

FRANZ/CORE 6  
Client Project #: LOWER POST  
Site Reference: LOWER POST  
Client ID: BH13-4-9

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C13

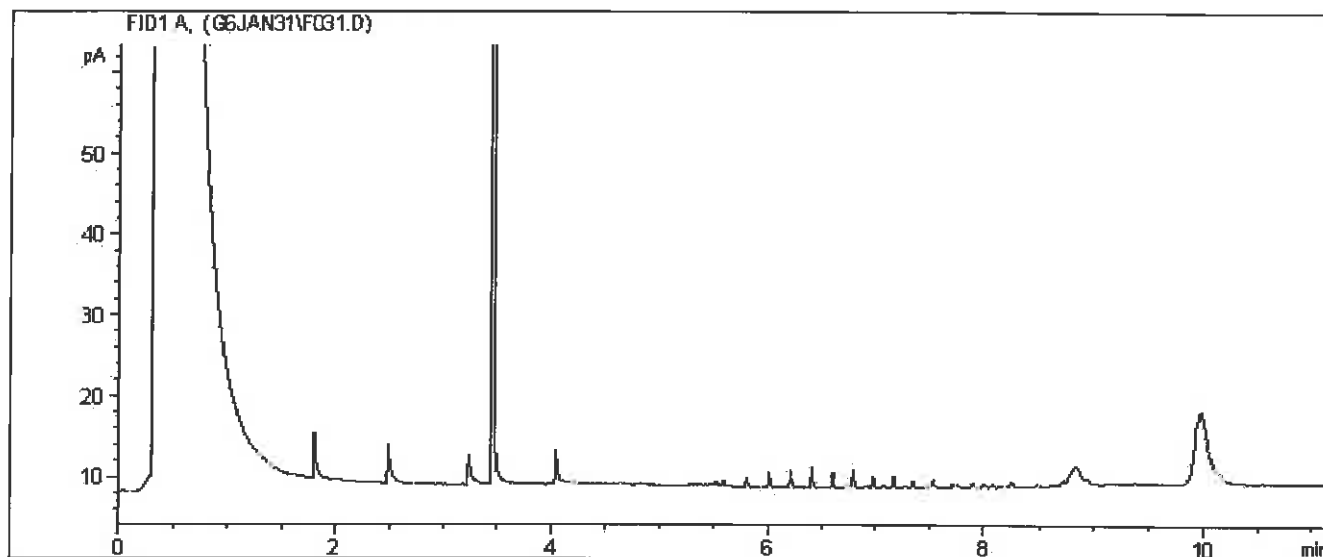
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

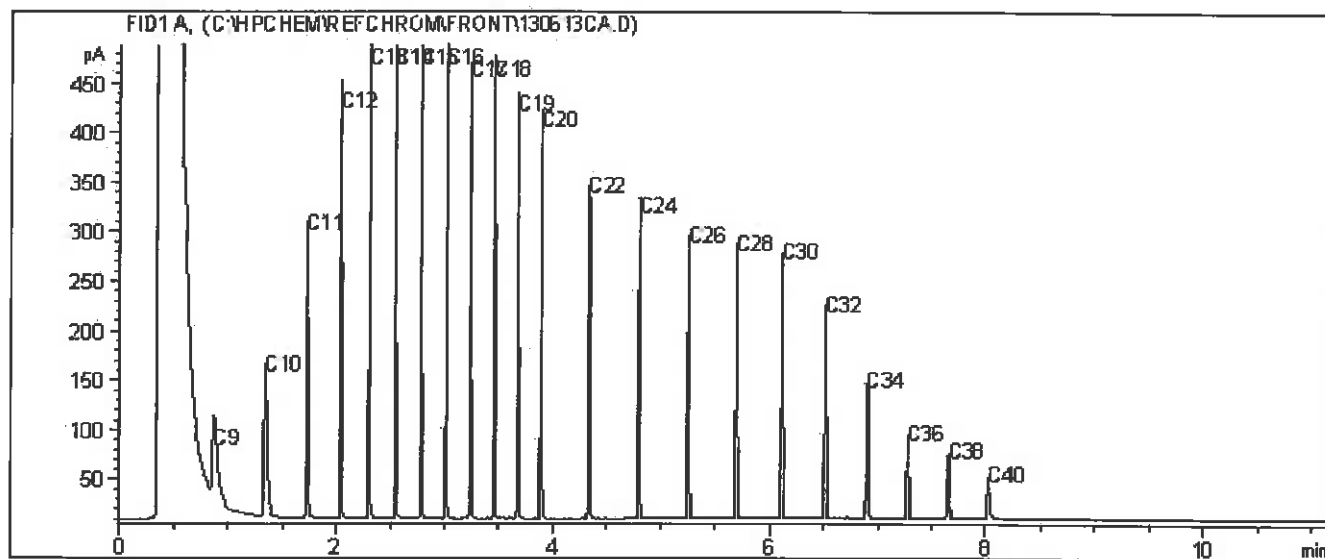
Report Date: 2014/02/03  
Maxxam Job #: B406358  
Maxxam Sample: IN5320

FRANZ/CORE 6  
Client Project #: LOWER POST  
Site Reference: LOWER POST  
Client ID: BH13-4-10

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

Your P.O. #: 700266127  
 Your Project #: 1384-1401  
 Site Location: LOWER POST  
 Your C.O.C. #: G090749

**Attention: John Taylor**  
 FRANZ/CORE 6  
 FRANZ/CORE 6  
 1410-777 Hornby Street  
 Vancouver, BC  
 Canada V6Z1S4

**Report Date: 2014/03/10**  
**Report #: R1530138**  
**Version: 1**

## CERTIFICATE OF ANALYSIS

**MAXXAM JOB #: B416567**  
**Received: 2014/03/03, 10:35**

Sample Matrix: Water  
 # Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/MTBE LH, VH, F1 SIM/MS	2	2014/03/04	2014/03/04	BBY8-SOP-00010	EPA 8260C
CCME Hydrocarbons (F2-F4 in water)	2	2014/03/06	2014/03/06	BBY8SOP-00030	CCME Soil Tier1
Hardness Total (calculated as CaCO3)	2	N/A	2014/03/04	BBY7SOP-00002	EPA 6020A
Hardness (calculated as CaCO3)	2	N/A	2014/03/04	BBY7SOP-00002	EPA 6020A
Mercury (Dissolved) by CVAf	2	N/A	2014/03/06	BBY7SOP-00015	EPA 245.7
Mercury (Total) by CVAf	2	2014/03/07	2014/03/07	BBY7SOP-00015	EPA 245.7
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	2	N/A	2014/03/04	BBY7SOP-00002	EPA 6020A
Elements by CRC ICPMS (dissolved)	2	N/A	2014/03/04	BBY7SOP-00002	EPA 6020A
Na, K, Ca, Mg, S by CRC ICPMS (total)	2	2014/03/03	2014/03/04	BBY7SOP-00002	EPA 6020A
Elements by CRC ICPMS (total)	2	2014/03/04	2014/03/04	BBY7SOP-00002	EPA 6020A
PAH in Water by GC/MS (SIM)	2	2014/03/05	2014/03/06	BBY8SOP-00021	EPA 8270D
Total LMW, HMW, Total PAH Calc	1	N/A	2014/03/06	BBY WI-00033	BC MOE Lab Method
Total LMW, HMW, Total PAH Calc	1	N/A	2014/03/07	BBY WI-00033	BC MOE Lab Method
Filter and HNO3 Preserve for Metals	2	N/A	2014/03/03	BBY6WI-00001	EPA 200.2
EPH less PAH in Water by GC/FID	2	N/A	2014/03/07	BBY WI-00033	BC MOE Lab Method
Extrac. Petroleum HC in Water by GC/FID	2	2014/03/07	2014/03/07	BBY8SOP-00029	BC Env Lab Manual
Volatile F1-BTEX	2	N/A	2014/03/05	BBY WI-00033	BC MOE Lab Method

\* Results relate only to the items tested.

Encryption Key



Samantha Fregien

10 Mar 2014 11:03:50 -07:00

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

Crystal Ireland, B.Sc., Account Specialist  
 Email: [CIreland@maxxam.ca](mailto:CIreland@maxxam.ca)  
 Phone# (604) 638-5016

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1

FRANZ/CORE 6  
Client Project #: 1384-1401  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: KC

## RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID	IW5336	IW5379	
Sampling Date	2014/02/27	2014/02/27	
<b>Calculated Parameters</b>			
Filter and HNO3 Preservation	N/A	FIELD	ONSITE
		DW-TREATED	QC Batch
		DW-UT	RDL

## PETROLEUM HYDROCARBONS (CCME)

Maxxam ID	IW5336	IW5379	
Sampling Date	2014/02/27	2014/02/27	
<b>Extractable Hydrocarbons</b>			
F2 (C10-C16 Hydrocarbons)	mg/L	<0.20	0.20
F3 (C16-C34 Hydrocarbons)	mg/L	<0.20	0.20
F4 (C34-C50 Hydrocarbons)	mg/L	<3.0	3.0
Reached Baseline at C50	mg/L	YES	N/A
Surrogate Recovery (%)	%	108	109
O-TERPHENYL (sur.)			7405196

## TOTAL PETROLEUM HYDROCARBONS (WATER)

Maxxam ID	IW5336	IW5379	
Sampling Date	2014/02/27	2014/02/27	
<b>Calculated Parameters</b>			
LEPH (C10-C19 less PAH)	mg/L	<0.20	0.20
HEPH (C19-C32 less PAH)	mg/L	<0.20	0.20
<b>Ext. Pet. Hydrocarbon</b>			
EPH (C10-C19)	mg/L	<0.20	0.20
EPH (C19-C32)	mg/L	<0.20	0.20
Surrogate Recovery (%)	%	117	116
O-TERPHENYL (sur.)			7406668

N/A = Not Applicable  
RDL = Reportable Detection Limit

Maxxam Job #: B416567  
Report Date: 2014/03/10

FRANZ/CORE 6  
Client Project #: 1384-1401  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: KC

## CCME BTEX/F1 IN WATER (WATER)

Maxxam ID	IW5336	IW5379		
Sampling Date	2014/02/27	2014/02/27		
	DW-TREATED	DW-UT	RDL	QC Batch
<b>Calculated Parameters</b>				
F1 (C6-C10) - BTEX	ug/L	<300	<300	7400909
<b>Volatiles</b>				
Methyl-tert-butylether (MTBE)	ug/L	<4.0	<4.0	7402552
Benzene	ug/L	<0.40	<0.40	7402552
Toluene	ug/L	<0.40	<0.40	7402552
Ethylbenzene	ug/L	<0.40	<0.40	7402552
m & p-Xylene	ug/L	<0.40	<0.40	7402552
o-Xylene	ug/L	<0.40	<0.40	7402552
Styrene	ug/L	<0.40	<0.40	7402552
Xylenes (Total)	ug/L	<0.40	<0.40	7402552
(C6-C10)	ug/L	<300	<300	7402552
<b>Surrogate Recovery (%)</b>				
1,4-Difluorobenzene (sur.)	%	104	104	7402552
4-BROMOFLUOROBENZENE (sur.)	%	98	99	7402552
D4-1,2-DICHLOROETHANE (sur.)	%	95	96	7402552

## CCME DISSOLVED METALS IN WATER (WATER)

Maxxam ID	IW5336	IW5379	
Sampling Date	2014/02/27	2014/02/27	
	DW-TREATED	DW-UT	
	UNITS		RDL
Misc. Inorganics			QC Batch
Dissolved Hardness (CaCO3)	mg/L	63.8	270
Elements			0.50
Dissolved Mercury (Hg)	ug/L	<0.010	<0.010
			0.010
			7405448

Maxxam Job #: B416567  
Report Date: 2014/03/10

FRANZ/CORE 6  
Client Project #: 1384-1401  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: KC

## CCME DISSOLVED METALS IN WATER (WATER)

Maxxam ID	Units	DW-TREATED	DW-UT	RDL	QC Batch
Sampling Date		2014/02/27	2014/02/27		
Dissolved Metals by ICPMS					
Dissolved Aluminum (Al)	ug/L	3.5	24.1(1)	3.0	7401810
Dissolved Antimony (Sb)	ug/L	<0.50	<0.50	0.50	7401810
Dissolved Arsenic (As)	ug/L	1.17	0.59	0.10	7401810
Dissolved Barium (Ba)	ug/L	7.8	97.7	1.0	7401810
Dissolved Beryllium (Be)	ug/L	<0.10	<0.10	0.10	7401810
Dissolved Bismuth (Bi)	ug/L	<1.0	<1.0	1.0	7401810
Dissolved Boron (B)	ug/L	<50	<50	50	7401810
Dissolved Cadmium (Cd)	ug/L	<0.010	<0.010	0.010	7401810
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	1.0	7401810
Dissolved Cobalt (Co)	ug/L	<0.50	<0.50	0.50	7401810
Dissolved Copper (Cu)	ug/L	3.80	2.79	0.20	7401810
Dissolved Iron (Fe)	ug/L	52.4	6.0	5.0	7401810
Dissolved Lead (Pb)	ug/L	<0.20	<0.20	0.20	7401810
Dissolved Lithium (Li)	ug/L	<5.0	<5.0	5.0	7401810
Dissolved Manganese (Mn)	ug/L	2.8	20.4	1.0	7401810
Dissolved Molybdenum (Mo)	ug/L	3.6	3.8	1.0	7401810
Dissolved Nickel (Ni)	ug/L	1.0	1.2	1.0	7401810
Dissolved Selenium (Se)	ug/L	<0.10	<0.10	0.10	7401810
Dissolved Silicon (Si)	ug/L	4840	4870	100	7401810
Dissolved Silver (Ag)	ug/L	<0.020	<0.020	0.020	7401810
Dissolved Strontium (Sr)	ug/L	41.4	327	1.0	7401810
Dissolved Thallium (Tl)	ug/L	<0.050	<0.050	0.050	7401810
Dissolved Tin (Sn)	ug/L	<5.0	<5.0	5.0	7401810
Dissolved Titanium (Ti)	ug/L	<5.0	<5.0	5.0	7401810
Dissolved Uranium (U)	ug/L	3.03	3.13	0.10	7401810
Dissolved Vanadium (V)	ug/L	<5.0	<5.0	5.0	7401810
Dissolved Zinc (Zn)	ug/L	6.3	13.3	5.0	7401810
Dissolved Zirconium (Zr)	ug/L	<0.50	<0.50	0.50	7401810
Dissolved Calcium (Ca)	mg/L	11.6	66.3	0.050	7400342
Dissolved Magnesium (Mg)	mg/L	8.45	25.4	0.050	7400342
Dissolved Potassium (K)	mg/L	1.43	1.62	0.050	7400342
Dissolved Sodium (Na)	mg/L	140	58.6	0.050	7400342
Dissolved Sulphur (S)	mg/L	9.8	11.1	3.0	7400342

RDL = Reportable Detection Limit

(1) - Dissolved greater than total. Reanalysis yields similar results.

## CCME TOTAL METALS IN WATER (WATER)

Maxxam ID	IW5336	IW5379		
Sampling Date	2014/02/27	2014/02/27		
	DW-TREATED	DW-UT	RDL	QC Batch
<b>Calculated Parameters</b>				
Total Hardness (CaCO3)	65.7	272	0.50	7400097
<b>Elements</b>				
Total Mercury (Hg)	<0.010	<0.010	0.010	7406634

FRANZ/CORE 6  
Client Project #: 1384-1401  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: KC

## CCME TOTAL METALS IN WATER (WATER)

Maxxam ID	UNITS	IW5336 2014/02/27 DW-TREATED	IW5379 2014/02/27 DW-UT	RDL	QC Batch
Total Metals by ICPMS					
Total Aluminum (Al)	ug/L	4.1	<3.0	3.0	7401973
Total Antimony (Sb)	ug/L	<0.50	<0.50	0.50	7401973
Total Arsenic (As)	ug/L	1.65	1.17	0.10	7401973
Total Barium (Ba)	ug/L	6.9	90.2	1.0	7401973
Total Beryllium (Be)	ug/L	<0.10	<0.10	0.10	7401973
Total Bismuth (Bi)	ug/L	<1.0	<1.0	1.0	7401973
Total Boron (B)	ug/L	<50	<50	50	7401973
Total Cadmium (Cd)	ug/L	<0.010	<0.010	0.010	7401973
Total Chromium (Cr)	ug/L	<1.0	<1.0	1.0	7401973
Total Cobalt (Co)	ug/L	<0.50	<0.50	0.50	7401973
Total Copper (Cu)	ug/L	3.99	2.54	0.50	7401973
Total Iron (Fe)	ug/L	176	436	10	7401973
Total Lead (Pb)	ug/L	<0.20	<0.20	0.20	7401973
Total Lithium (Li)	ug/L	<5.0	<5.0	5.0	7401973
Total Manganese (Mn)	ug/L	7.3	20.1	1.0	7401973
Total Molybdenum (Mo)	ug/L	3.5	3.4	1.0	7401973
Total Nickel (Ni)	ug/L	<1.0	<1.0	1.0	7401973
Total Selenium (Se)	ug/L	<0.10	<0.10	0.10	7401973
Total Silicon (Si)	ug/L	5230	5130	100	7401973
Total Silver (Ag)	ug/L	<0.020	<0.020	0.020	7401973
Total Strontium (Sr)	ug/L	38.0	316	1.0	7401973
Total Thallium (Tl)	ug/L	<0.050	<0.050	0.050	7401973
Total Tin (Sn)	ug/L	<5.0	<5.0	5.0	7401973
Total Titanium (Ti)	ug/L	<5.0	<5.0	5.0	7401973
Total Uranium (U)	ug/L	3.19	3.15	0.10	7401973
Total Vanadium (V)	ug/L	<5.0	<5.0	5.0	7401973
Total Zinc (Zn)	ug/L	<5.0	13.2	5.0	7401973
Total Zirconium (Zr)	ug/L	<0.50	<0.50	0.50	7401973
Total Calcium (Ca)	mg/L	11.6	65.8	0.050	7400511
Total Magnesium (Mg)	mg/L	8.96	26.1	0.050	7400511
Total Potassium (K)	mg/L	1.44	1.54	0.050	7400511
Total Sodium (Na)	mg/L	145	60.1	0.050	7400511
Total Sulphur (S)	mg/L	9.6	10.0	3.0	7400511

## CCME PAH IN WATER BY GC-MS (WATER)

Maxxam ID	IW5336	IW5379	
Sampling Date	2014/02/27	2014/02/27	
UNITS	DW-TREATED	DW-UT	QC Batch
<b>Polycyclic Aromatics</b>			
Low Molecular Weight PAH's	ug/L	<0.50	0.50
High Molecular Weight PAH's	ug/L	<0.050	0.050
Total PAH	ug/L	<0.50	0.50
Naphthalene	ug/L	<0.10	0.10
2-Methylnaphthalene	ug/L	<0.10	0.10
Quinoline	ug/L	<0.50	0.50
Acenaphthylene	ug/L	<0.050	0.050
Acenaphthene	ug/L	<0.050	0.050
Fluorene	ug/L	<0.050	0.050
Phenanthrene	ug/L	<0.050	0.050
Anthracene	ug/L	<0.010	0.010
Acridine	ug/L	<0.050	0.050
Fluoranthene	ug/L	<0.020	0.020
Pyrene	ug/L	<0.020	0.020
Benzo(a)anthracene	ug/L	<0.010	0.010
Chrysene	ug/L	<0.050	0.050
Benzo(b&l)fluoranthene	ug/L	<0.050	0.050
Benzo(k)fluoranthene	ug/L	<0.050	0.050
Benzo(a)pyrene	ug/L	<0.0090	0.0090
Indeno(1,2,3-cd)pyrene	ug/L	<0.050	0.050
Dibenz(a,h)anthracene	ug/L	<0.050	0.050
Benzo(g,h,i)perylene	ug/L	<0.050	0.050
<b>Surrogate Recovery (%)</b>			
D10-ANTHRACENE (sur.)	%	115	103
D8-ACENAPHTHYLENE (sur.)	%	111	96
D8-NAPHTHALENE (sur.)	%	103	96
D9-Acridine	%	86	73
TERPHENYL-D14 (sur.)	%	76	79

RDL = Reportable Detection Limit

FRANZ/CORE 6  
Client Project #: 1384-1401  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: KC

Package 1 23.0°C

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

General Comments

FRANZ/CORE 6  
Client Project #: 1384-1401  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: KC

## QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7401810	Dissolved Aluminum (Al)	2014/03/04	101	80 - 120	100	80 - 120	<3.0	ug/L	NC	20
7401810	Dissolved Antimony (Sb)	2014/03/04	103	80 - 120	101	80 - 120	<0.50	ug/L	NC	20
7401810	Dissolved Arsenic (As)	2014/03/04	NC	80 - 120	101	80 - 120	<0.10	ug/L	4.1	20
7401810	Dissolved Barium (Ba)	2014/03/04	NC	80 - 120	97	80 - 120	<1.0	ug/L	1.8	20
7401810	Dissolved Beryllium (Be)	2014/03/04	101	80 - 120	95	80 - 120	<0.10	ug/L	NC	20
7401810	Dissolved Bismuth (Bi)	2014/03/04	100	80 - 120	95	80 - 120	<1.0	ug/L	NC	20
7401810	Dissolved Cadmium (Cd)	2014/03/04	101	80 - 120	101	80 - 120	<0.010	ug/L	NC	20
7401810	Dissolved Chromium (Cr)	2014/03/04	97	80 - 120	99	80 - 120	<1.0	ug/L	NC	20
7401810	Dissolved Cobalt (Co)	2014/03/04	96	80 - 120	100	80 - 120	<0.50	ug/L	2.4	20
7401810	Dissolved Copper (Cu)	2014/03/04	95	80 - 120	100	80 - 120	<0.20	ug/L	NC	20
7401810	Dissolved Iron (Fe)	2014/03/04	NC	80 - 120	107	80 - 120	<5.0	ug/L	2.8	20
7401810	Dissolved Lead (Pb)	2014/03/04	97	80 - 120	97	80 - 120	<0.20	ug/L	NC	20
7401810	Dissolved Lithium (Li)	2014/03/04	98	80 - 120	93	80 - 120	<5.0	ug/L	NC	20
7401810	Dissolved Manganese (Mn)	2014/03/04	NC	80 - 120	100	80 - 120	<1.0	ug/L	0.5	20
7401810	Dissolved Molybdenum (Mo)	2014/03/04	NC	80 - 120	105	80 - 120	<1.0	ug/L	NC	20
7401810	Dissolved Nickel (Ni)	2014/03/04	NC	80 - 120	101	80 - 120	<1.0	ug/L	3.5	20
7401810	Dissolved Selenium (Se)	2014/03/04	105	80 - 120	102	80 - 120	<0.10	ug/L	NC	20
7401810	Dissolved Silver (Ag)	2014/03/04	102	80 - 120	99	80 - 120	<0.020	ug/L	NC	20
7401810	Dissolved Strontium (Sr)	2014/03/04	NC	80 - 120	98	80 - 120	<1.0	ug/L	0.4	20
7401810	Dissolved Thallium (Tl)	2014/03/04	95	80 - 120	101	80 - 120	<0.050	ug/L	NC	20
7401810	Dissolved Tin (Sn)	2014/03/04	101	80 - 120	105	80 - 120	<5.0	ug/L	NC	20
7401810	Dissolved Titanium (Ti)	2014/03/04	110	80 - 120	100	80 - 120	<5.0	ug/L	NC	20
7401810	Dissolved Uranium (U)	2014/03/04	101	80 - 120	98	80 - 120	<0.10	ug/L	NC	20
7401810	Dissolved Vanadium (V)	2014/03/04	100	80 - 120	103	80 - 120	<5.0	ug/L	NC	20
7401810	Dissolved Zinc (Zn)	2014/03/04	99	80 - 120	103	80 - 120	<5.0	ug/L	NC	20
7401810	Dissolved Boron (B)	2014/03/04					<50	ug/L	NC	20
7401810	Dissolved Silicon (Si)	2014/03/04					<100	ug/L	4.4	20
7401810	Dissolved Zirconium (Zr)	2014/03/04					<0.50	ug/L	NC	20
7401973	Total Aluminum (Al)	2014/03/04	108	80 - 120	107	80 - 120	<3.0	ug/L	8.7	20
7401973	Total Antimony (Sb)	2014/03/04	87	80 - 120	108	80 - 120	<0.50	ug/L	NC	20
7401973	Total Arsenic (As)	2014/03/04	101	80 - 120	104	80 - 120	<0.10	ug/L	NC	20
7401973	Total Barium (Ba)	2014/03/04	NC	80 - 120	101	80 - 120	<1.0	ug/L	3.9	20
7401973	Total Beryllium (Be)	2014/03/04	100	80 - 120	98	80 - 120	<0.10	ug/L	NC	20
7401973	Total Bismuth (Bi)	2014/03/04	99	80 - 120	94	80 - 120	<1.0	ug/L	NC	20
7401973	Total Cadmium (Cd)	2014/03/04	99	80 - 120	102	80 - 120	<0.010	ug/L	NC	20
7401973	Total Chromium (Cr)	2014/03/04	104	80 - 120	100	80 - 120	<1.0	ug/L	NC	20
7401973	Total Cobalt (Co)	2014/03/04	99	80 - 120	100	80 - 120	<0.50	ug/L	NC	20
7401973	Total Copper (Cu)	2014/03/04	NC	80 - 120	103	80 - 120	<0.50	ug/L	4.6	20
7401973	Total Iron (Fe)	2014/03/04	NC	80 - 120	118	80 - 120	<10	ug/L	4.3	20

Maxxam Job #: B416567  
Report Date: 2014/03/10

FRANZ/CORE 6  
Client Project #: 1384-1401  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: KC

## QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7401973	Total Lead (Pb)	2014/03/04	93	80 - 120	93	80 - 120	<0.20	ug/L	NC	20
7401973	Total Lithium (Li)	2014/03/04	100	80 - 120	96	80 - 120	<5.0	ug/L	NC	20
7401973	Total Manganese (Mn)	2014/03/04	94	80 - 120	95	80 - 120	<1.0	ug/L	NC	20
7401973	Total Molybdenum (Mo)	2014/03/04	NC	80 - 120	100	80 - 120	<1.0	ug/L	NC	20
7401973	Total Nickel (Ni)	2014/03/04	105	80 - 120	103	80 - 120	<1.0	ug/L	NC	20
7401973	Total Selenium (Se)	2014/03/04	105	80 - 120	102	80 - 120	<0.10	ug/L	2.0	20
7401973	Total Silver (Ag)	2014/03/04	107	80 - 120	99	80 - 120	0.036, RDL=0.020	ug/L	NC	20
7401973	Total Strontium (Sr)	2014/03/04	NC	80 - 120	99	80 - 120	<1.0	ug/L	5.3	20
7401973	Total Thallium (Tl)	2014/03/04	104	80 - 120	96	80 - 120	<0.050	ug/L	NC	20
7401973	Total Tin (Sn)	2014/03/04	90	80 - 120	93	80 - 120	<5.0	ug/L	NC	20
7401973	Total Titanium (Ti)	2014/03/04	117	80 - 120	109	80 - 120	<5.0	ug/L	NC	20
7401973	Total Uranium (U)	2014/03/04	102	80 - 120	97	80 - 120	<0.10	ug/L	NC	20
7401973	Total Vanadium (V)	2014/03/04	105	80 - 120	97	80 - 120	<5.0	ug/L	NC	20
7401973	Total Zinc (Zn)	2014/03/04	NC	80 - 120	125 (1.2)	80 - 120	<5.0	ug/L	NC	20
7401973	Total Boron (B)	2014/03/04					<50	ug/L	NC	20
7401973	Total Silicon (Si)	2014/03/04					<100	ug/L	3.5	20
7401973	Total Zirconium (Zr)	2014/03/04					<0.50	ug/L	NC	20
7402552	1,4-Difluorobenzene (sur.)	2014/03/04	103	70 - 130	103	70 - 130	104	%		
7402552	4-BROMOFLUOROBENZENE (sur.)	2014/03/04	99	70 - 130	100	70 - 130	99	%		
7402552	D4-1,2-DICHLOROETHANE (sur.)	2014/03/04	95	70 - 130	95	70 - 130	94	%		
7402552	Methyl-tert-butylether (MTBE)	2014/03/04	100	70 - 130	96	70 - 130	<4.0	ug/L	NC	30
7402552	Benzene	2014/03/04	103	70 - 130	99	70 - 130	<0.40	ug/L	NC	30
7402552	Toluene	2014/03/04	100	70 - 130	97	70 - 130	<0.40	ug/L	NC	30
7402552	Ethylbenzene	2014/03/04	102	70 - 130	99	70 - 130	<0.40	ug/L	NC	30
7402552	m & p-Xylene	2014/03/04	98	70 - 130	94	70 - 130	<0.40	ug/L	NC	30
7402552	o-Xylene	2014/03/04	101	70 - 130	97	70 - 130	<0.40	ug/L	NC	30
7402552	Styrene	2014/03/04	105	70 - 130	102	70 - 130	<0.40	ug/L	NC	30
7402552	(C6-C10)	2014/03/04			129	70 - 130	<300	ug/L	NC	30
7402552	Xylenes (Total)	2014/03/04					<0.40	ug/L	NC	30
7403504	D10-ANTHRACENE (sur.)	2014/03/05	106	60 - 130	102	60 - 130	111	%		
7403504	D8-ACENAPHTHYLENE (sur.)	2014/03/05	103	50 - 130	95	50 - 130	101	%		
7403504	D9-NAPHTHALENE (sur.)	2014/03/05	92	50 - 130	91	50 - 130	98	%		
7403504	D9-Acridine	2014/03/05	88	50 - 130	80	50 - 130	82	%		
7403504	TERPHENYL-D14 (sur.)	2014/03/05	81	60 - 130	98	60 - 130	102	%		
7403504	Naphthalene	2014/03/05	NC	50 - 130	89	50 - 130	<0.10	ug/L	NC	40
7403504	2-Methylnaphthalene	2014/03/05	NC	50 - 130	93	50 - 130	<0.10	ug/L	NC	40
7403504	Quinoline	2014/03/05	134 (1)	50 - 130	123	50 - 130	<0.50	ug/L	NC	40
7403504	Acenaphthylene	2014/03/05	108	50 - 130	93	50 - 130	<0.050	ug/L	NC	40
7403504	Acenaphthene	2014/03/05	112	50 - 130	99	50 - 130	<0.050	ug/L	NC	40

Maxxam Job #: B416567  
Report Date: 2014/03/10

FRANZ/CORE 6  
Client Project #: 1384-1401  
Site Location: LOWER POST  
Your P.O. #: 700266127  
Sampler Initials: KC

### QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7403504	Fluorene	2014/03/05	109	50 - 130	96	50 - 130	<0.050	ug/L	NC	40
7403504	Phenanthrene	2014/03/05	103	60 - 130	93	60 - 130	<0.050	ug/L	NC	40
7403504	Anthracene	2014/03/05	113	60 - 130	100	60 - 130	<0.010	ug/L	NC	40
7403504	Acridine	2014/03/05	90	50 - 130	78	50 - 130	<0.050	ug/L	NC	40
7403504	Fluoranthene	2014/03/05	111	60 - 130	98	60 - 130	<0.020	ug/L	NC	40
7403504	Pyrene	2014/03/05	110	60 - 130	99	60 - 130	<0.020	ug/L	NC	40
7403504	Benzo(a)anthracene	2014/03/05	101	60 - 130	93	60 - 130	<0.010	ug/L	NC	40
7403504	Chrysene	2014/03/05	103	60 - 130	96	60 - 130	<0.050	ug/L	NC	40
7403504	Benzo(b&j)fluoranthene	2014/03/05	108	60 - 130	98	60 - 130	<0.050	ug/L	NC	40
7403504	Benzo(k)fluoranthene	2014/03/05	108	60 - 130	101	60 - 130	<0.050	ug/L	NC	40
7403504	Benzo(a)pyrene	2014/03/05	105	60 - 130	92	60 - 130	<0.0090	ug/L	NC	40
7403504	Indeno(1,2,3-cd)pyrene	2014/03/05	106	60 - 130	82	60 - 130	<0.050	ug/L	NC	40
7403504	Dibenz(a,h)anthracene	2014/03/05	101	60 - 130	78	60 - 130	<0.050	ug/L	NC	40
7403504	Benzo(g,h,i)perylene	2014/03/05	102	60 - 130	79	60 - 130	<0.050	ug/L	NC	40
7405196	F2 (C10-C16 Hydrocarbons)	2014/03/06	103	80 - 120	103	80 - 120	<0.20	mg/L	NC	40
7405196	O-TERPHENYL (sur.)	2014/03/06	102	50 - 130	103	50 - 130	106	%		
7405196	Reached Baseline at C50	2014/03/06	YES	N/A	YES	N/A	YES, RDL=N/A	mg/L	NC	40
7405196	F3 (C16-C34 Hydrocarbons)	2014/03/06					<0.20	mg/L	NC	40
7405196	F4 (C34-C50 Hydrocarbons)	2014/03/06					<3.0	mg/L	NC	40
7405448	Dissolved Mercury (Hg)	2014/03/06	113	80 - 120	115	80 - 120	<0.010	ug/L	NC	20
7406634	Total Mercury (Hg)	2014/03/07	108	80 - 120	84	80 - 120	<0.010	ug/L	NC	20
7406668	O-TERPHENYL (sur.)	2014/03/07	115	50 - 130	114	50 - 130	117	%		
7406668	EPH (C10-C19)	2014/03/07	111	50 - 130	110	50 - 130	<0.20	mg/L	NC	30
7406668	EPH (C19-C32)	2014/03/07	113	50 - 130	113	50 - 130	<0.20	mg/L	NC	30

N/A = Not Applicable

RDL = Reportable Detection Limit

RPD = Relative Percent Difference

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

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

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

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

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

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

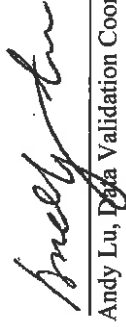
(1) - Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

(2) - Blank Spike outside acceptance criteria (10% of analytes failure allowed).

## Validation Signature Page

**Maxxam Job #: B416567**

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

  
\_\_\_\_\_  
Andy Lu, Data Validation Coordinator

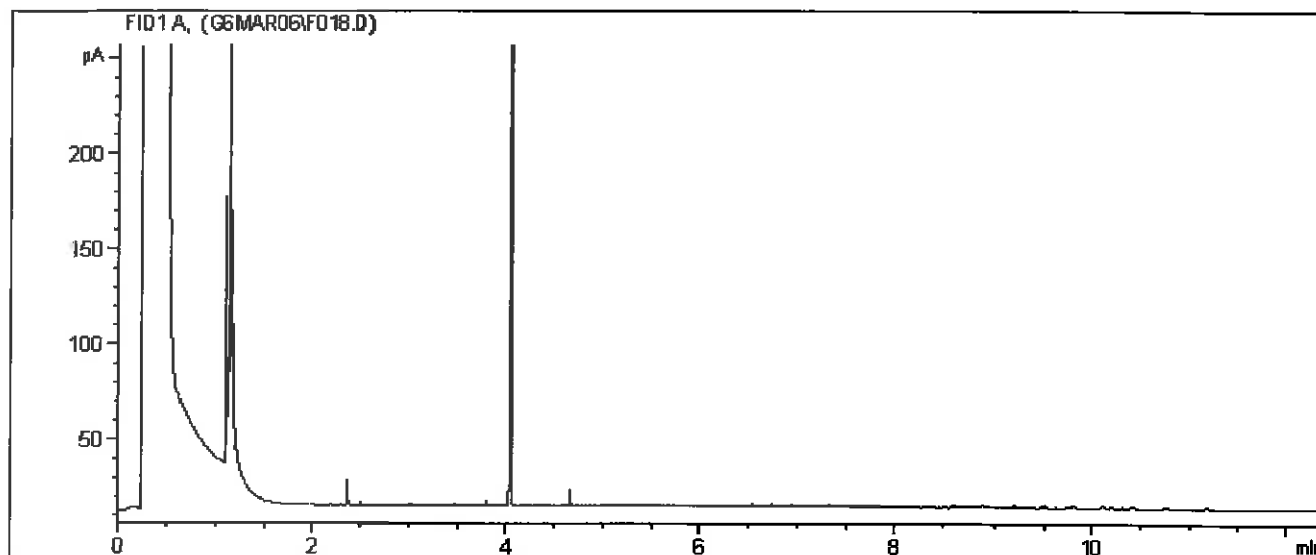
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



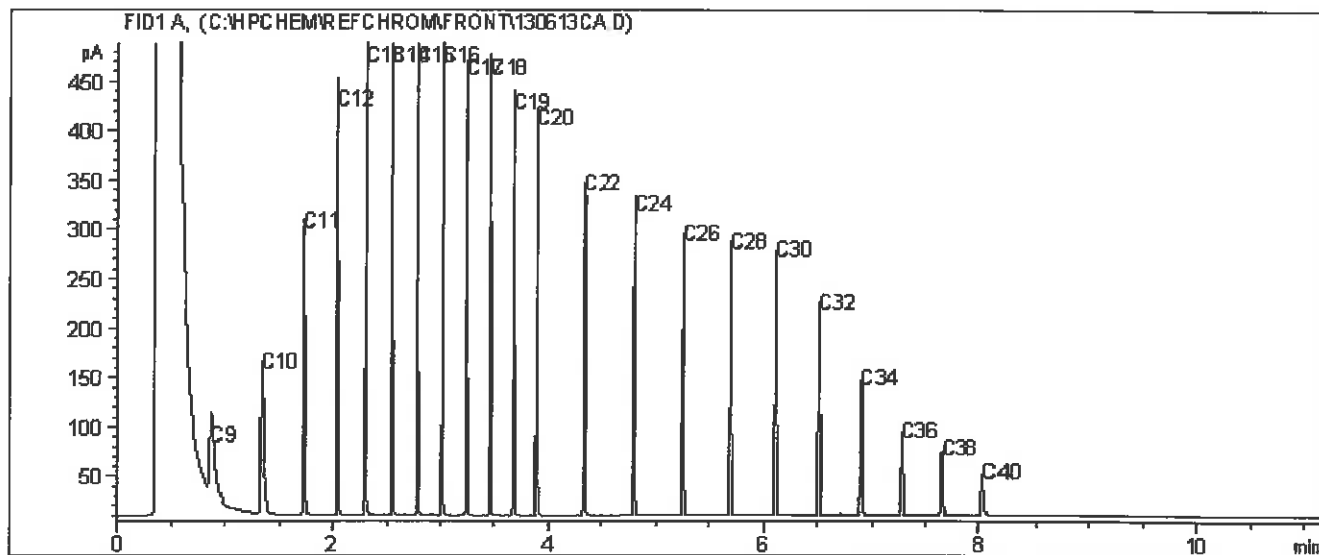
Report Date: 2014/03/10  
Maxxam Job #: B416567  
Maxxam Sample: IW5336

FRANZ/CORE 6  
Client Project #: 1384-1401  
Site Reference: LOWER POST  
Client ID: DW-TREATED

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

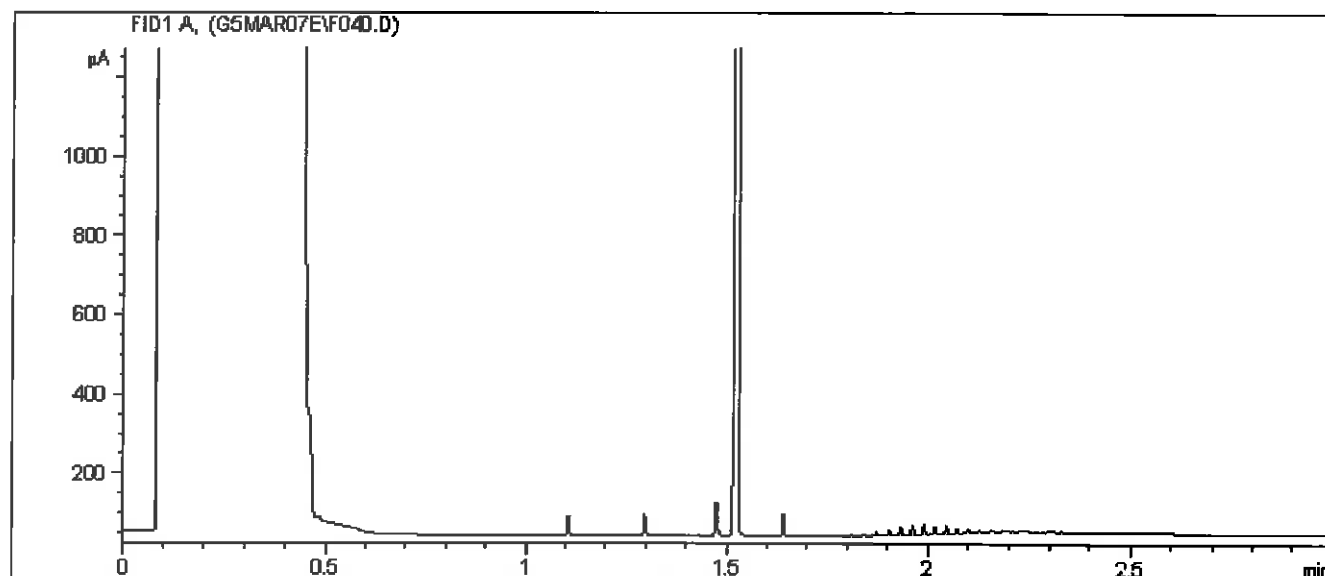
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

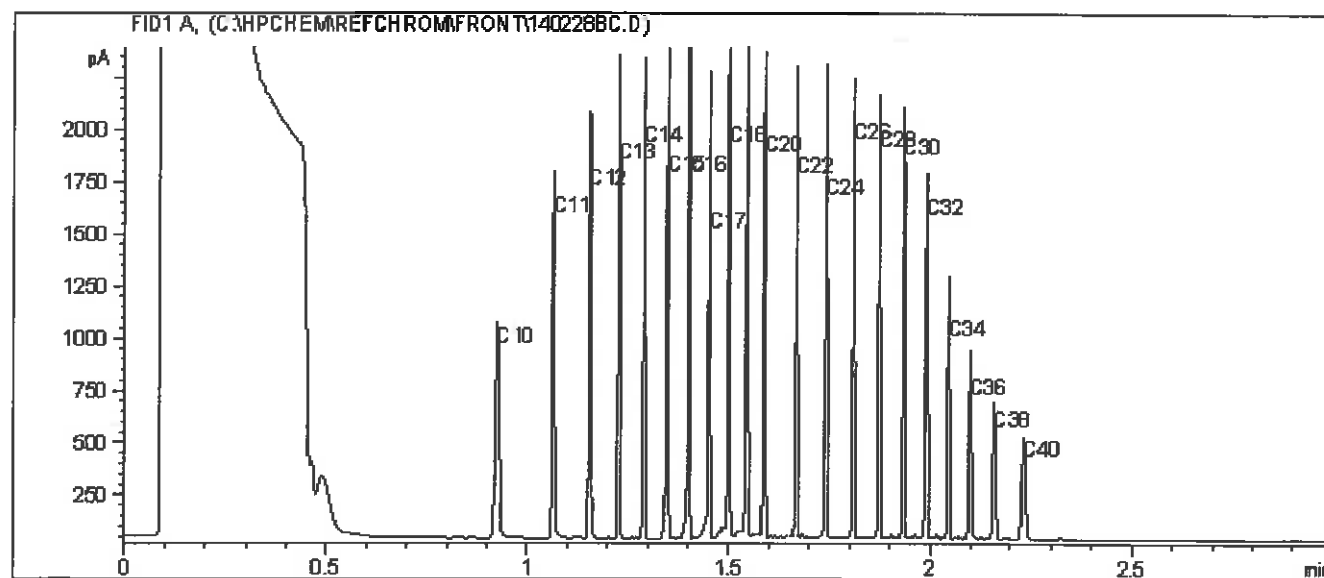
Report Date: 2014/03/10  
Maxxam Job #: B416567  
Maxxam Sample: IW5336

FRANZ/CORE 6  
Client Project #: 1384-1401  
Site Reference: LOWER POST  
Client ID: DW-TREATED

# Extrac. Petroleum HC in Water by GC/FID Chromatogram



## Carbon Range Distribution - Reference Chromatogram



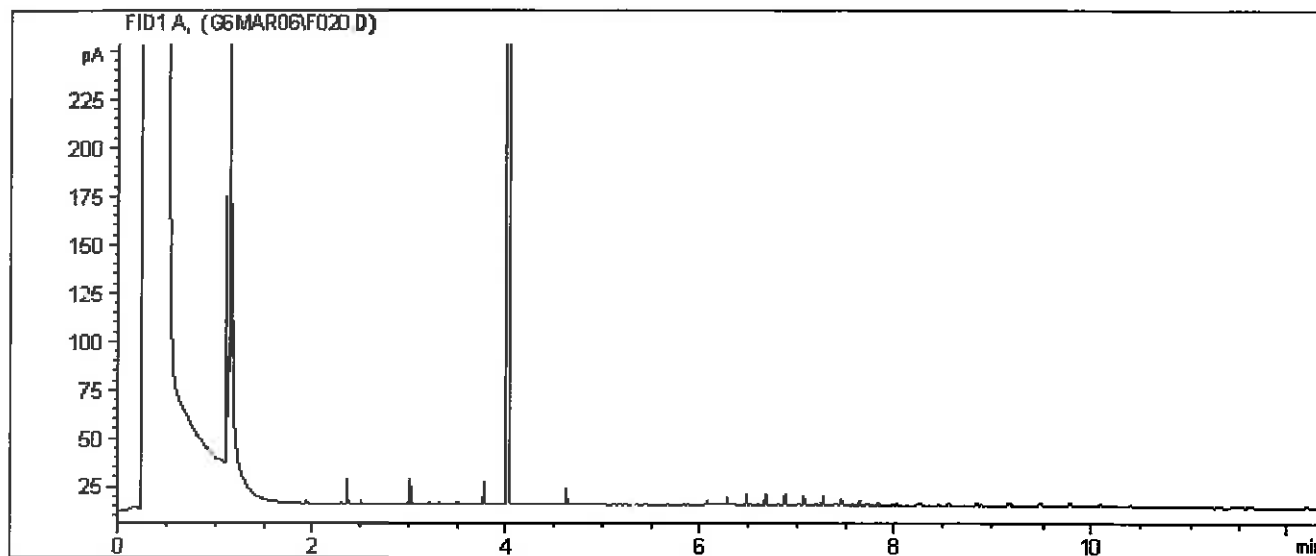
## TYPICAL PRODUCT CARBON NUMBER RANGES

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

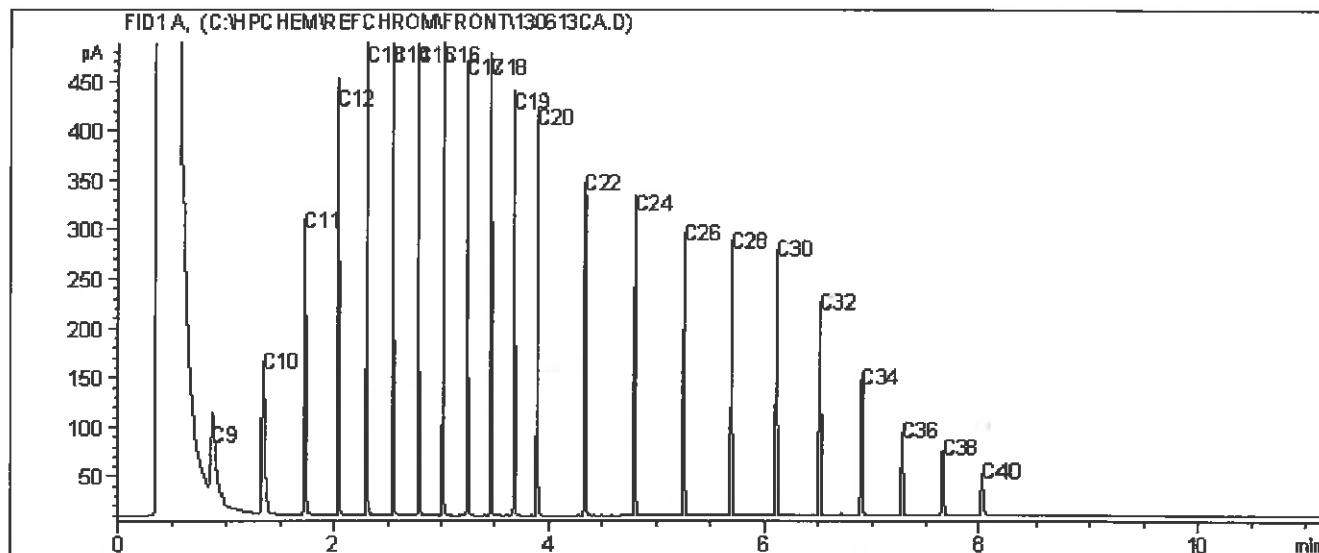
Report Date: 2014/03/10  
Maxxam Job #: B416567  
Maxxam Sample: IW5379

FRANZ/CORE 6  
Client Project #: 1384-1401  
Site Reference: LOWER POST  
Client ID: DW-UT

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



**Carbon Range Distribution - Reference Chromatogram**



**TYPICAL PRODUCT CARBON NUMBER RANGES**

Gasoline: C4 - C12  
Varsol: C8 - C12

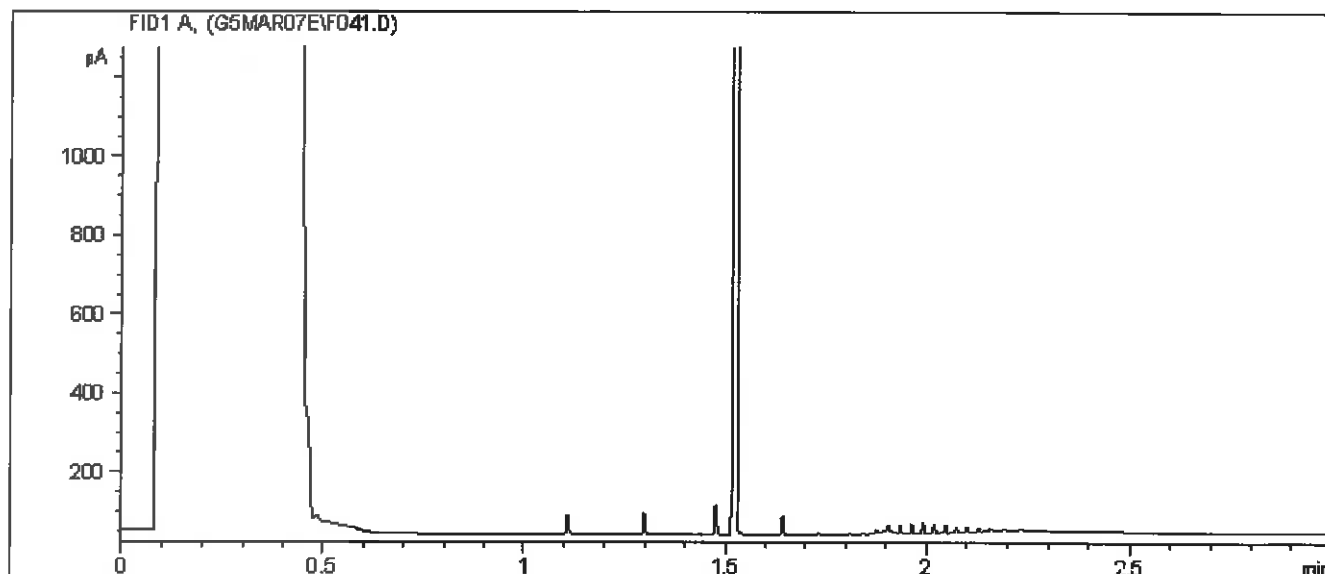
Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

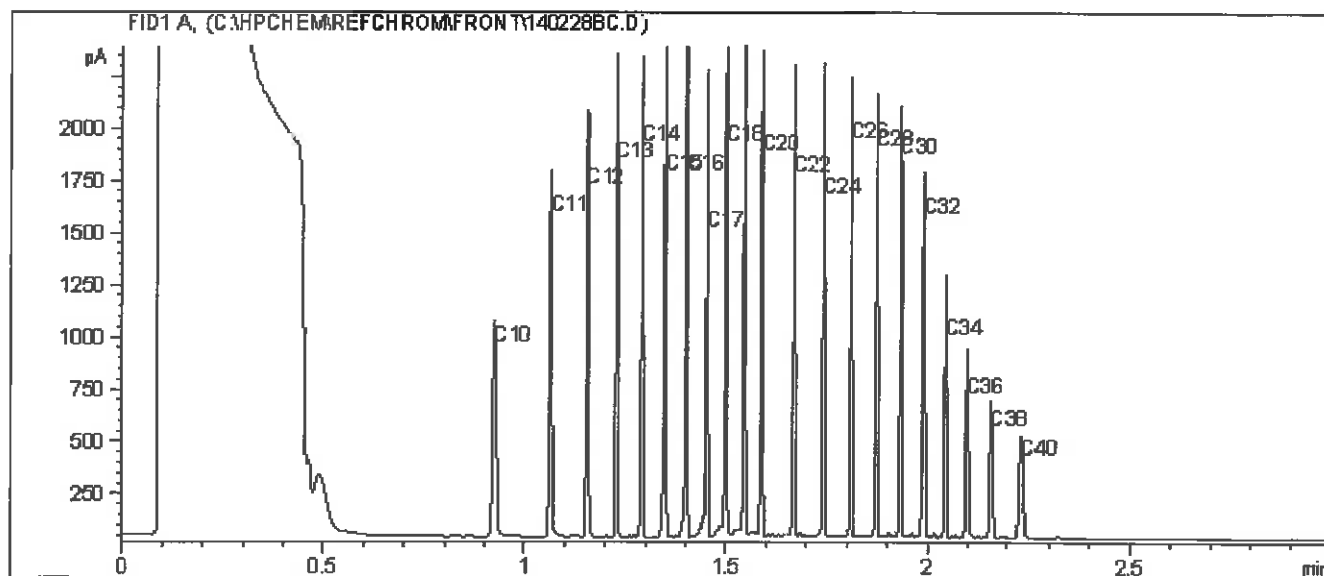
Report Date: 2014/03/10  
Maxxam Job #: B416567  
Maxxam Sample: IW5379

FRANZ/CORE 6  
Client Project #: 1384-1401  
Site Reference: LOWER POST  
Client ID: DW-UT

### Extrac. Petroleum HC in Water by GC/FID Chromatogram



### Carbon Range Distribution - Reference Chromatogram



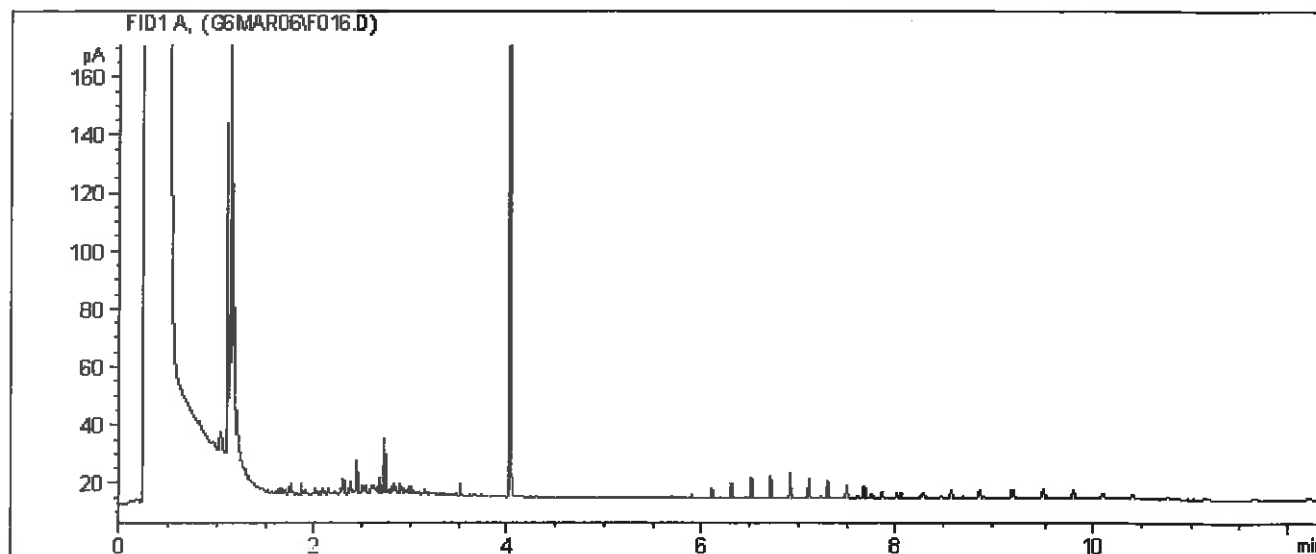
### TYPICAL PRODUCT CARBON NUMBER RANGES

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

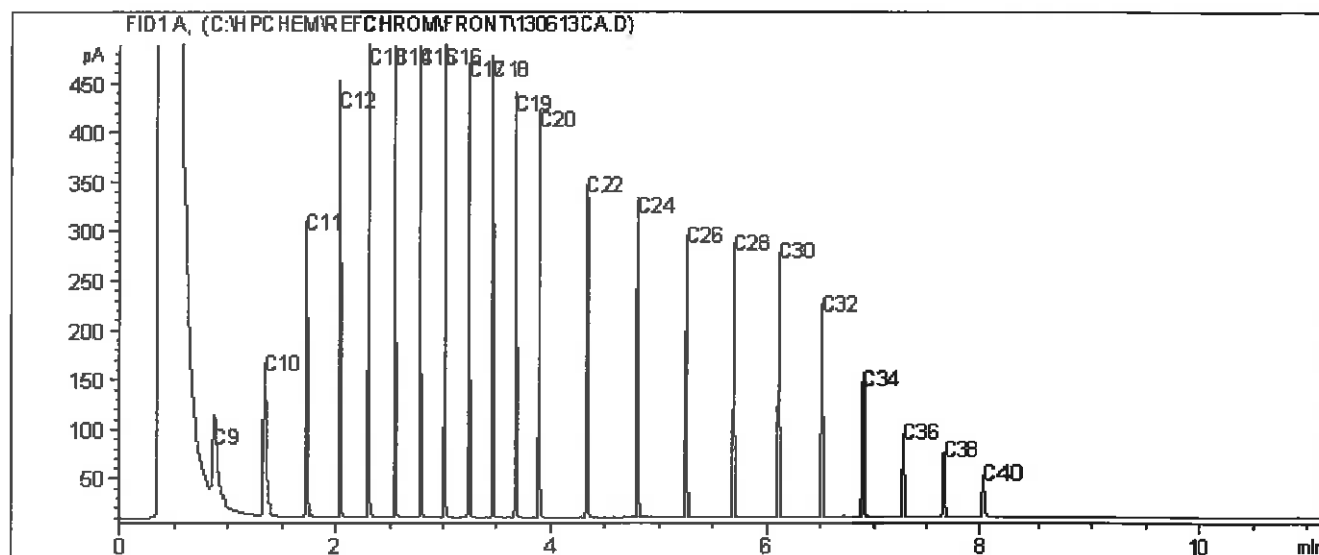
Report Date: 2014/03/10  
 Maxxam Job #: B416567  
 Maxxam Sample: IW5379 Lab-Dup

FRANZ/CORE 6  
 Client Project #: 1384-1401  
 Site Reference: LOWER POST  
 Client ID: DW-UT

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
 Varsol: C8 - C12

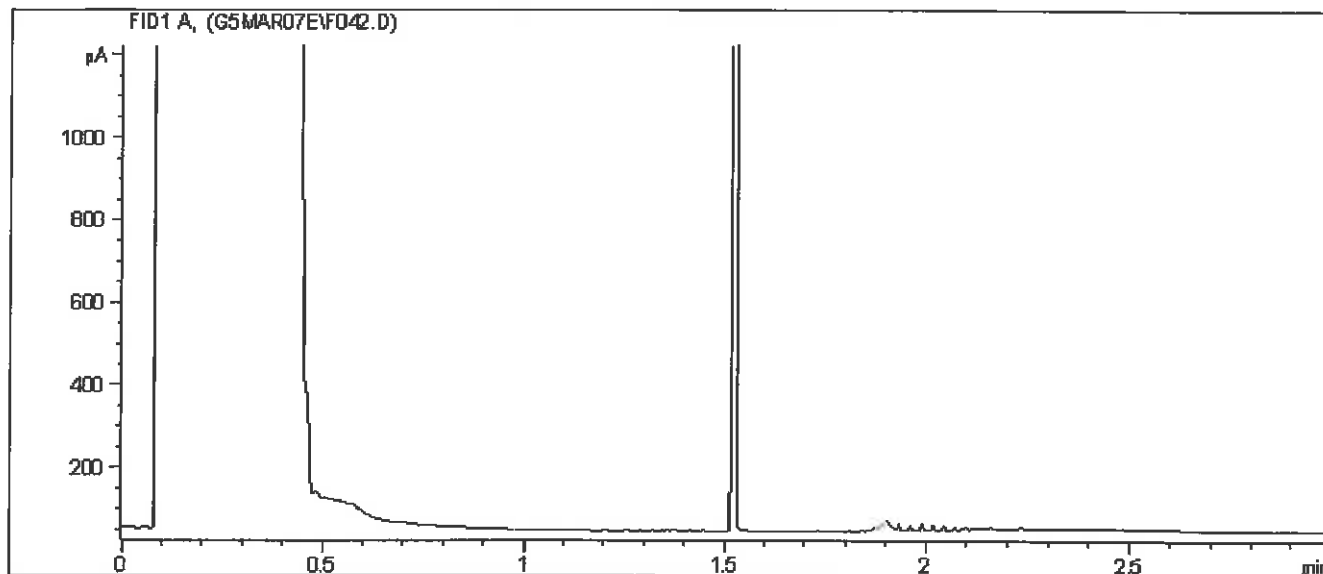
Diesel: C8 - C22  
 Lubricating Oils: C20 - C40

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

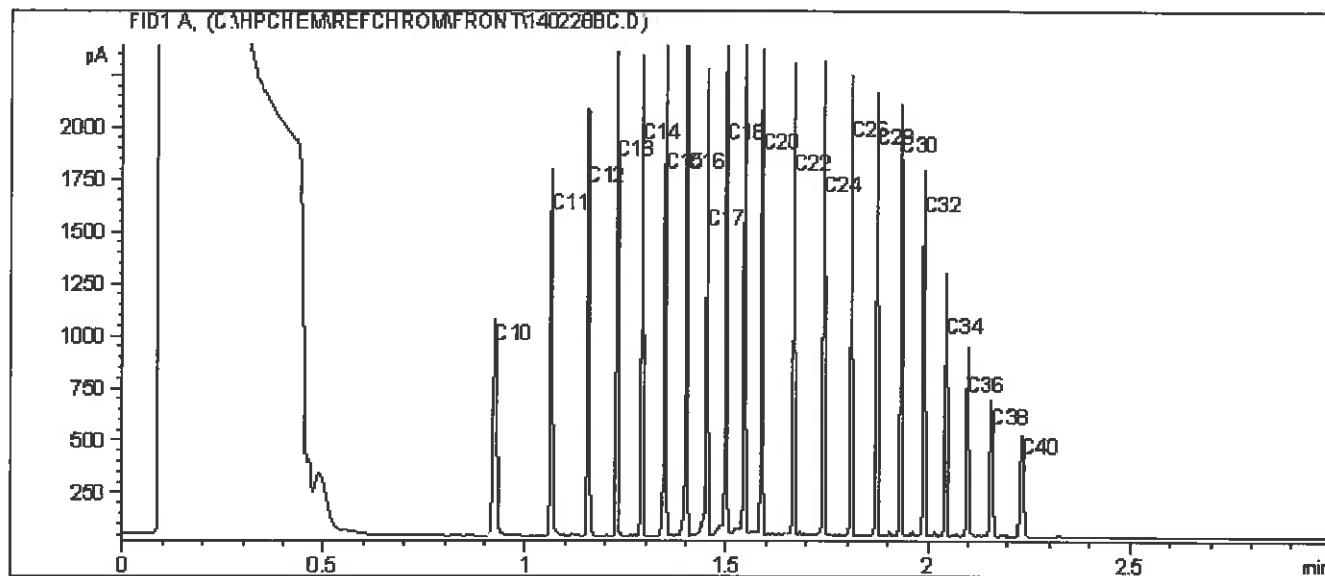
Report Date: 2014/03/10  
Maxxam Job #: B416567  
Maxxam Sample: IW5379 Lab-Dup

FRANZ/CORE 6  
Client Project #: 1384-1401  
Site Reference: LOWER POST  
Client ID: DW-UT

Extrac. Petroleum HC in Water by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

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

Your P.O. #: 700266127  
Your C.O.C. #: G032685

**Attention: Richard Wells**  
FRANZ ENVIRONMENTAL INC.  
FRANZENV-VAN  
1080 MAINLAND STREET  
SUITE 308  
VANCOUVER, BC  
CANADA V6B 2T4

Report Date: 2013/11/01

## CERTIFICATE OF ANALYSIS

**MAXXAM JOB #: B3A0822**  
**Received: 2013/10/31, 09:30**

Sample Matrix: Soil  
# Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/MTBE Soil LH, VH, F1 SIM/MS	7	2013/10/31	2013/10/31	BBY8-SOP-00010	EPA SW846 8260C
Volatile F1-BTEX	7	N/A	2013/11/01	BBY WI-00033	BC MOE Lab Method
CCME Hydrocarbons (F2-F4 in soil) (1)	7	2013/10/31	2013/10/31	BBY8SOP-00030	CCME Soil Tier 1
Moisture	7	N/A	2013/11/01	BBY8SOP-00017	Ont MOE -E 3139
PAH in Soil by GC/MS (SIM) - CCME	7	2013/10/31	2013/10/31	BBY8SOP-00022	EPA 8270D
Total LMW, HMW, Total PAH Calc	7	N/A	2013/11/01	BBY WI-00033	BC MOE Lab Method
EPH less PAH in Soil By GC/FID	7	N/A	2013/11/01	BBY WI-00033	BC MOE Lab Method
BC Hydrocarbons in Soil by GC/FID	7	2013/10/31	2013/10/31	BBY8SOP-00029	BC Env Lab Manual

\* Results relate only to the items tested.

(1) The method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory; all deviations were justified and validated and are made available upon request; the chromatogram descends to baseline by the retention time of nC50 unless otherwise indicated; all QC criteria met; individual hydrocarbons (nC10, nC16, nC34) are within 10% of their average response factor; linearity is within 15%.

Encryption Key



Crystal Ireland

01 Nov 2013 13:31:28 -07:00

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

Crystal Ireland, B.Sc., Account Specialist  
Email: [CIreland@maxxam.ca](mailto:CIreland@maxxam.ca)  
Phone# (604) 638-5016

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1

Maxxam Job #: B3A0822  
Report Date: 2013/11/01

FRANZ ENVIRONMENTAL INC.

Your P.O. #: 700266127  
Sampler Initials: JT

## PETROLEUM HYDROCARBONS (CCME)

Maxxam ID	HZ1572	HZ1573	HZ1574	HZ1575	HZ1576	HZ1577	HZ1578		
Sampling Date	2013/10/27	2013/10/29	2013/10/29	2013/10/29	2013/10/29	2013/10/29	2013/10/29		
UNITS	204	321-8	322-9	323-9	324-9	325-2	00069-DUP6	RDL	QC Batch
<b>Ext. Pet. Hydrocarbon</b>									
F2 (C10-C16 Hydrocarbons)	mg/kg	2800	300	<10	<10	<10	<10	10	7257818
F3 (C16-C34 Hydrocarbons)	mg/kg	170	<10	<10	<10	<10	<10	10	7257818
F4 (C34-C50 Hydrocarbons)	mg/kg	<10	<10	<10	<10	<10	<10	10	7257818
Reached Baseline at C50	mg/kg	YES	YES	YES	YES	YES	YES	N/A	7257818
<b>Surrogate Recovery (%)</b>									
O-TERPHENYL (sur.)	%	119	118	111	127	124	116	127	7257818

## PHYSICAL TESTING (SOIL)

Maxxam ID	HZ1572	HZ1573	HZ1574	HZ1575	HZ1576	HZ1577	HZ1578		
Sampling Date	2013/10/27	2013/10/29	2013/10/29	2013/10/29	2013/10/29	2013/10/29	2013/10/29		
UNITS	204	321-8	322-9	323-9	324-9	325-2	00069-DUP6	RDL	QC Batch
<b>Physical Properties</b>									
Moisture	%	16	5.4	20	16	15	13	0.30	7257579

N/A = Not Applicable  
RDL = Reportable Detection Limit

## CCME BTEX/F1 BY HS IN SOIL (SOIL)

Maxxam ID		HZ1572	HZ1573	HZ1574	HZ1575	HZ1576	HZ1577	HZ1578	
Sampling Date		2013/10/27	2013/10/29	2013/10/29	2013/10/29	2013/10/29	2013/10/29	2013/10/29	
	UNITS	204	321-8	322-9	323-9	324-9	325-2	00069-DUP6	RDL
Calculated Parameters									
F1 (C6-C10) - BTEX	mg/kg	310	<10	<10	<10	<10	<10	<10	10
Volatiles									
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.10
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Toluene	mg/kg	0.042	0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020
Ethylbenzene	mg/kg	0.50	0.014	<0.010	<0.010	<0.010	<0.010	<0.010	0.010
m & p-Xylene	mg/kg	0.79	0.057	<0.040	<0.040	<0.040	<0.040	<0.040	0.040
o-Xylene	mg/kg	0.66	0.084	<0.040	<0.040	<0.040	<0.040	<0.040	0.040
Styrene	mg/kg	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	0.030
Xylenes (Total)	mg/kg	1.4	0.14	<0.040	<0.040	<0.040	<0.040	<0.040	0.040
(C6-C10)	mg/kg	310	<10	<10	<10	<10	<10	<10	10
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	98	103	103	96	102	101	108	
4-BROMOFLUOROBENZENE (sur.)	%	101	101	99	99	98	98	97	
D10-ETHYLBENZENE (sur.)	%	99	98	100	98	98	97	96	
D4-1,2-DICHLOROETHANE (sur.)	%	102	104	104	105	104	101	105	
									7256963
									7256963
									7256963
									7256963

## LEPH & HEPH FOR CSR IN SOIL WITH LL PAH (SOIL)

Maxxam ID	HZ1572	HZ1573	HZ1574	HZ1575	HZ1576	HZ1577	HZ1578	
Sampling Date	2013/10/27	2013/10/29	2013/10/29	2013/10/29	2013/10/29	2013/10/29	2013/10/29	
UNITS	204	RDL	322-9	323-9	324-9	325-2	00069-DUP6	RDL
QC Batch								
<b>Polycyclic Aromatics</b>								
Naphthalene	mg/kg	0.80	0.010	0.027	<0.010	<0.010	<0.010	0.010
2-Methylnaphthalene	mg/kg	2.0	0.020	0.052	<0.020	<0.020	<0.020	0.020
Acenaphthylene	mg/kg	<0.050(1)	0.050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Acenaphthene	mg/kg	<0.0050	0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050
Fluorene	mg/kg	0.17	0.020	<0.020	<0.020	<0.020	<0.020	0.020
Phenanthrene	mg/kg	0.061	0.020	<0.020	<0.020	<0.020	<0.020	0.020
Anthracene	mg/kg	<0.0040	0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.0040
Fluoranthene	mg/kg	<0.020	0.020	<0.020	<0.020	<0.020	<0.020	0.020
Pyrene	mg/kg	<0.020	0.020	<0.020	<0.020	<0.020	<0.020	0.020
Benzo(a)anthracene	mg/kg	<0.020	0.020	<0.020	<0.020	<0.020	<0.020	0.020
Chrysene	mg/kg	<0.020	0.020	<0.020	<0.020	<0.020	<0.020	0.020
Benzo(b&j)fluoranthene	mg/kg	<0.020	0.020	<0.020	<0.020	<0.020	<0.020	0.020
Benzo(k)fluoranthene	mg/kg	<0.020	0.020	<0.020	<0.020	<0.020	<0.020	0.020
Benzo(a)pyrene	mg/kg	<0.020	0.020	<0.020	<0.020	<0.020	<0.020	0.020
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	0.050	<0.050	<0.050	<0.050	<0.050	0.050
Dibenz(a,h)anthracene	mg/kg	<0.050	0.050	<0.050	<0.050	<0.050	<0.050	0.050
Benzo(g,h,i)perylene	mg/kg	<0.050	0.050	<0.050	<0.050	<0.050	<0.050	0.050
Low Molecular Weight PAH's	mg/kg	3.0	0.050	0.079	<0.050	<0.050	<0.050	0.050
High Molecular Weight PAH's	mg/kg	<0.050	0.050	<0.050	<0.050	<0.050	<0.050	0.050
Total PAH	mg/kg	3.0	0.050	0.079	<0.050	<0.050	<0.050	0.050
<b>Surrogate Recovery (%)</b>								
D10-ANTHRACENE (sur.)	%	87		90	88	89	87	89
D8-ACENAPHTHYLENE (sur.)	%	89		93	89	86	88	86
D8-NAPHTHALENE (sur.)	%	85		91	91	90	91	90
TERPHENYL-D14 (sur.)	%	87		92	91	91	90	91
<b>Calculated Parameters</b>								
LEPH (C10-C19 less PAH)	mg/kg	2200	100	293	<100	<100	<100	100
HEPH (C19-C32 less PAH)	mg/kg	<100	100	<100	<100	<100	<100	100
<b>Hydrocarbons</b>								
EPH (C10-C19)	mg/kg	2200	100	293	<100	<100	<100	100
EPH (C19-C32)	mg/kg	<100	100	<100	<100	<100	<100	100
<b>Surrogate Recovery (%)</b>								
O-TERPHENYL (sur.)	%	97		97	96	95	97	96
							99	

RDL = Reportable Detection Limit

(1) - RDL raised due to sample matrix interference.

FRANZ ENVIRONMENTAL INC.

Your P.O. #: 700266127  
Sampler Initials: JT

Package 1 1.0°C

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

General Comments

## QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7256963	1,4-Difluorobenzene (sur.)	2013/10/31	105	70 - 130	99	70 - 130	110	%		
7256963	4-BROMOFLUOROBENZENE (sur.)	2013/10/31	98	70 - 130	98	70 - 130	94	%		
7256963	D10-ETHYLBENZENE (sur.)	2013/10/31	105	50 - 130	95	50 - 130	98	%		
7256963	D4-1,2-DICHLOROETHANE (sur.)	2013/10/31	101	70 - 130	101	70 - 130	100	%		
7256963	Benzene	2013/10/31	93	60 - 140	93	60 - 140	<0.0050	mg/kg	NC	40
7256963	Toluene	2013/10/31	89	60 - 140	88	60 - 140	<0.020	mg/kg	NC	40
7256963	Ethylbenzene	2013/10/31	90	60 - 140	89	60 - 140	<0.010	mg/kg	NC	40
7256963	m & p-Xylene	2013/10/31	87	60 - 140	86	60 - 140	<0.040	mg/kg	NC	40
7256963	o-Xylene	2013/10/31	88	60 - 140	87	60 - 140	<0.040	mg/kg	NC	40
7256963	(C6-C10)	2013/10/31			107	60 - 140	<10	mg/kg		
7256963	Methyl-tert-butylether (MTBE)	2013/10/31					<0.10	mg/kg		
7256963	Styrene	2013/10/31					<0.030	mg/kg		
7256963	Xylenes (Total)	2013/10/31					<0.040	mg/kg	NC	40
7257000	D10-ANTHRACENE (sur.)	2013/10/31	82	60 - 130	87	60 - 130	92	%		
7257000	D8-ACENAPHTHYLENE (sur.)	2013/10/31	86	50 - 130	87	50 - 130	89	%		
7257000	D8-NAPHTHALENE (sur.)	2013/10/31	89	50 - 130	87	50 - 130	89	%		
7257000	TERPHENYL-D14 (sur.)	2013/10/31	89	60 - 130	91	60 - 130	94	%		
7257000	Naphthalene	2013/10/31	80	50 - 130	81	50 - 130	<0.010	mg/kg	NC	50
7257000	2-Methylnaphthalene	2013/10/31	83	50 - 130	84	50 - 130	<0.020	mg/kg	NC	50
7257000	Acenaphthylene	2013/10/31	82	50 - 130	83	50 - 130	<0.0050	mg/kg	NC	50
7257000	Acenaphthene	2013/10/31	83	50 - 130	83	50 - 130	<0.0050	mg/kg	NC	50
7257000	Fluorene	2013/10/31	83	50 - 130	84	50 - 130	<0.020	mg/kg	NC	50
7257000	Phenanthrene	2013/10/31	75	60 - 130	77	60 - 130	<0.020	mg/kg	NC	50
7257000	Anthracene	2013/10/31	81	60 - 130	83	60 - 130	<0.0040	mg/kg	NC	50
7257000	Fluoranthene	2013/10/31	77	60 - 130	81	60 - 130	<0.020	mg/kg	NC	50
7257000	Pyrene	2013/10/31	76	60 - 130	80	60 - 130	<0.020	mg/kg	NC	50
7257000	Benzo(a)anthracene	2013/10/31	68	60 - 130	71	60 - 130	<0.020	mg/kg	NC	50
7257000	Chrysene	2013/10/31	69	60 - 130	73	60 - 130	<0.020	mg/kg	NC	50
7257000	Benzo(b&f)fluoranthene	2013/10/31	74	60 - 130	78	60 - 130	<0.020	mg/kg	NC	50
7257000	Benzo(k)fluoranthene	2013/10/31	63	60 - 130	67	60 - 130	<0.020	mg/kg	NC	50
7257000	Benzo(a)pyrene	2013/10/31	76	60 - 130	78	60 - 130	<0.020	mg/kg	NC	50
7257000	Indeno(1,2,3-cd)pyrene	2013/10/31	77	60 - 130	79	60 - 130	<0.050	mg/kg	NC	50
7257000	Dibenz(a,h)anthracene	2013/10/31	77	60 - 130	79	60 - 130	<0.050	mg/kg	NC	50
7257000	Benzo(g,h,i)perylene	2013/10/31	72	60 - 130	77	60 - 130	<0.050	mg/kg	NC	50
7257579	Moisture	2013/11/01					<0.30	%	9.3	20
7257818	O-TERPHENYL (sur.)	2013/10/31	113	50 - 130	105	50 - 130	96	%		
7257818	F2 (C10-C16 Hydrocarbons)	2013/10/31	120	50 - 130	116	80 - 120	<10	mg/kg	NC	40
7257818	F3 (C16-C34 Hydrocarbons)	2013/10/31	118	50 - 130	113	80 - 120	<10	mg/kg	NC	40
7257818	F4 (C34-C50 Hydrocarbons)	2013/10/31	116	50 - 130	109	80 - 120	<10	mg/kg	NC	40

FRANZ ENVIRONMENTAL INC.

Maxxam Job #: B3A0822  
Report Date: 2013/11/01

Your P.O. #: 700266127  
Sampler Initials: JT

## QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7257818	Reached Baseline at C50	2013/10/31					YES, RDL=N/A	mg/kg	NC	50
7257880	O-TERPHENYL (sur.)	2013/10/31	95	50 - 130	97	50 - 130	83	%		
7257880	EPH (C10-C19)	2013/10/31	81	50 - 130	91	50 - 130	<100	mg/kg	NC	40
7257880	EPH (C19-C32)	2013/10/31	87	50 - 130	94	50 - 130	<100	mg/kg	NC	40

N/A = Not Applicable

RDL = Reportable Detection Limit

RPD = Relative Percent Difference

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 (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

## Validation Signature Page

Maxxam Job #: B3A0822

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

  
\_\_\_\_\_  
Andy Lu, Data Validation Coordinator

\_\_\_\_\_  
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

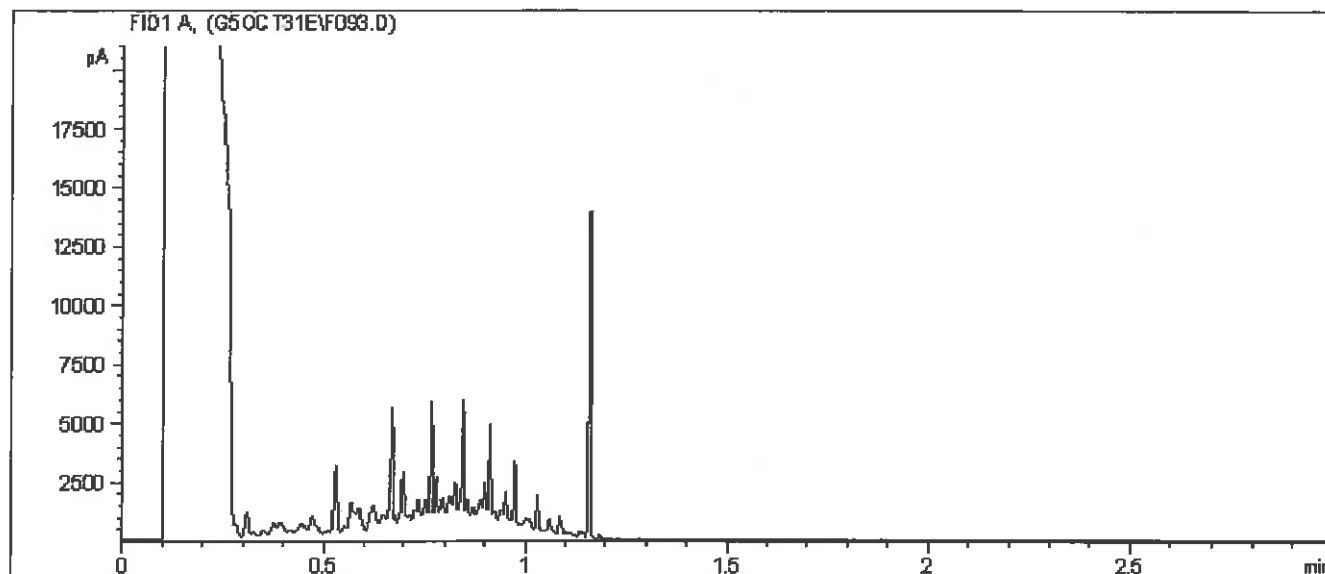


Report Date: 2013/11/01  
Maxxam Job #: B3A0822  
Maxxam Sample: HZ1572

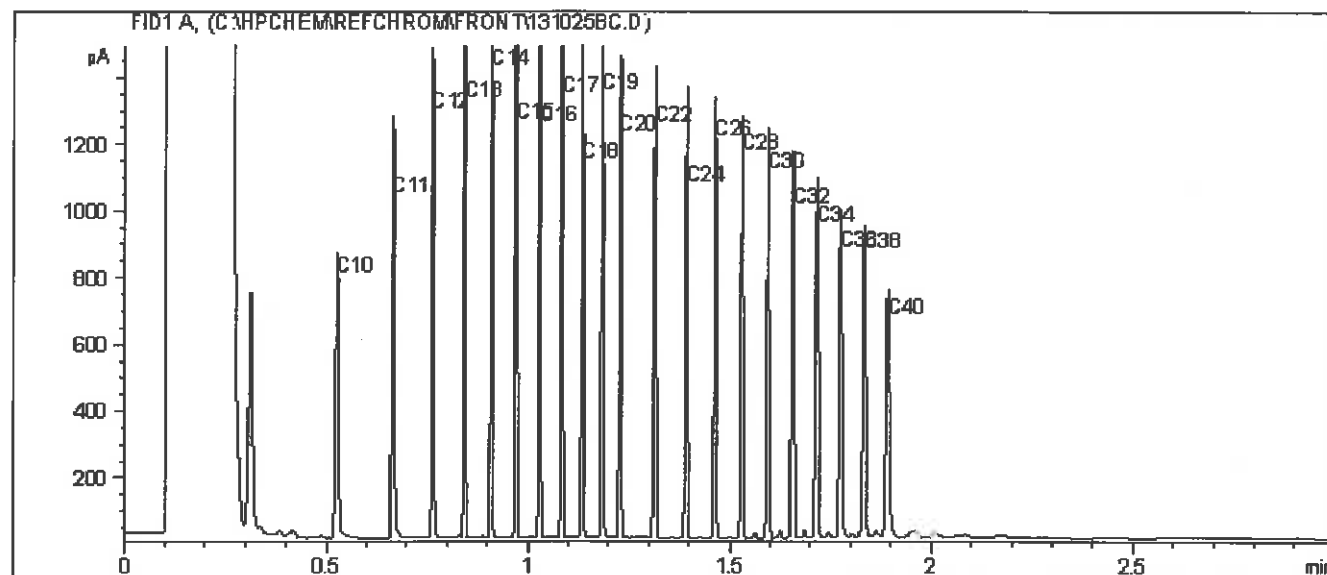
FRANZ ENVIRONMENTAL INC.

Client ID: 204

# BC Hydrocarbons in Soil by GC/FID Chromatogram



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

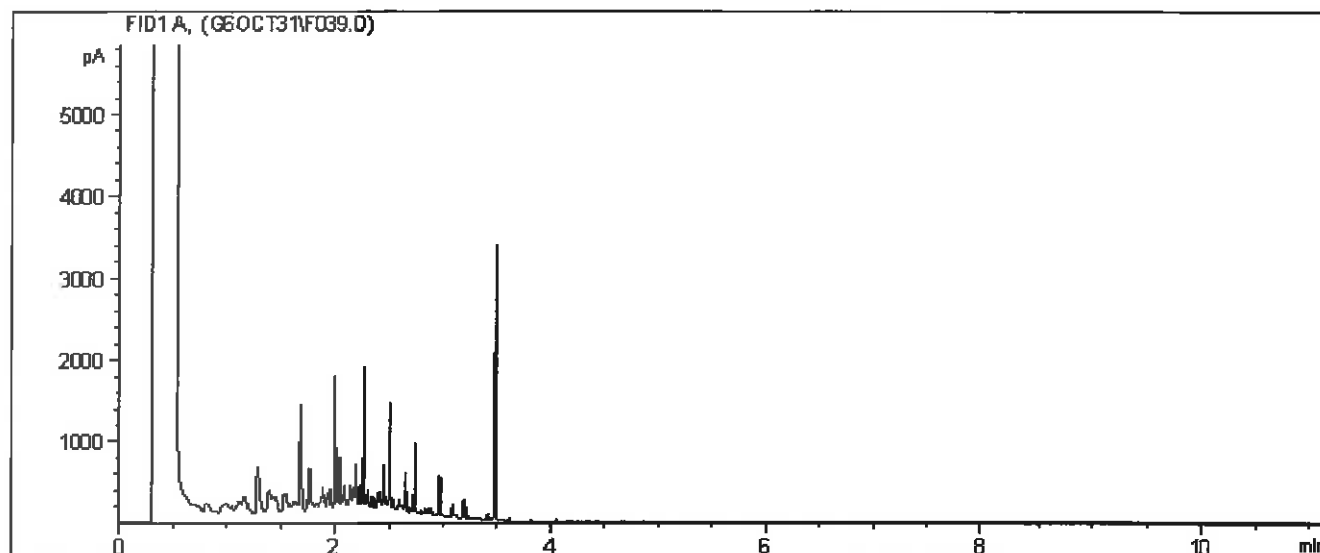
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/11/01  
Maxxam Job #: B3A0822  
Maxxam Sample: HZ1572

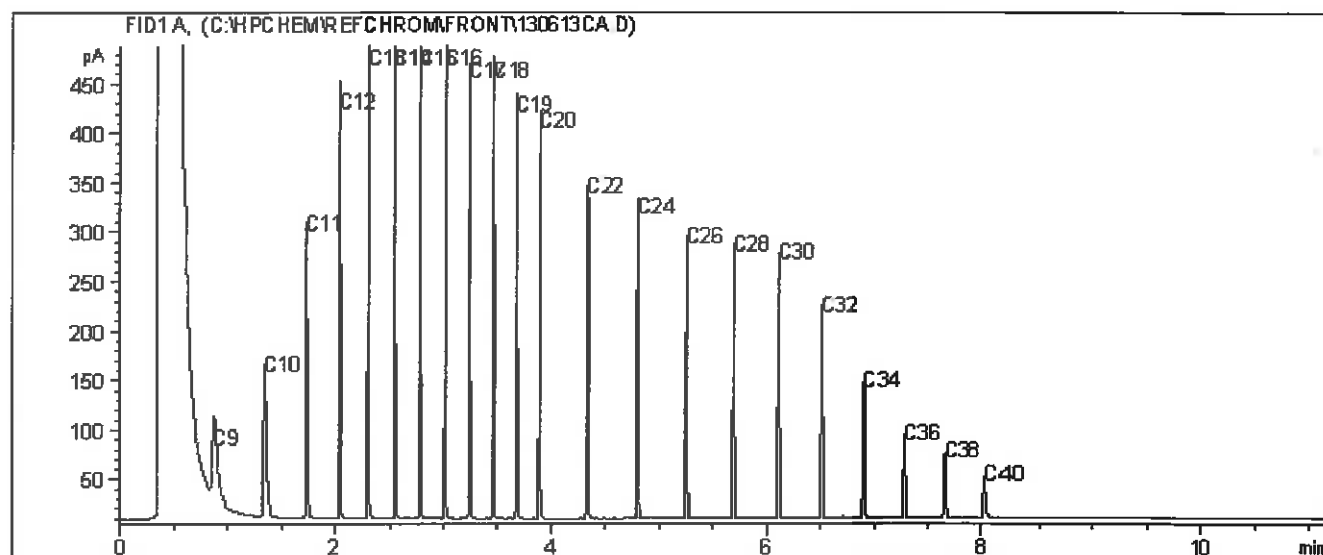
FRANZ ENVIRONMENTAL INC.

Client ID: 204

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating Oils: C20 - C40

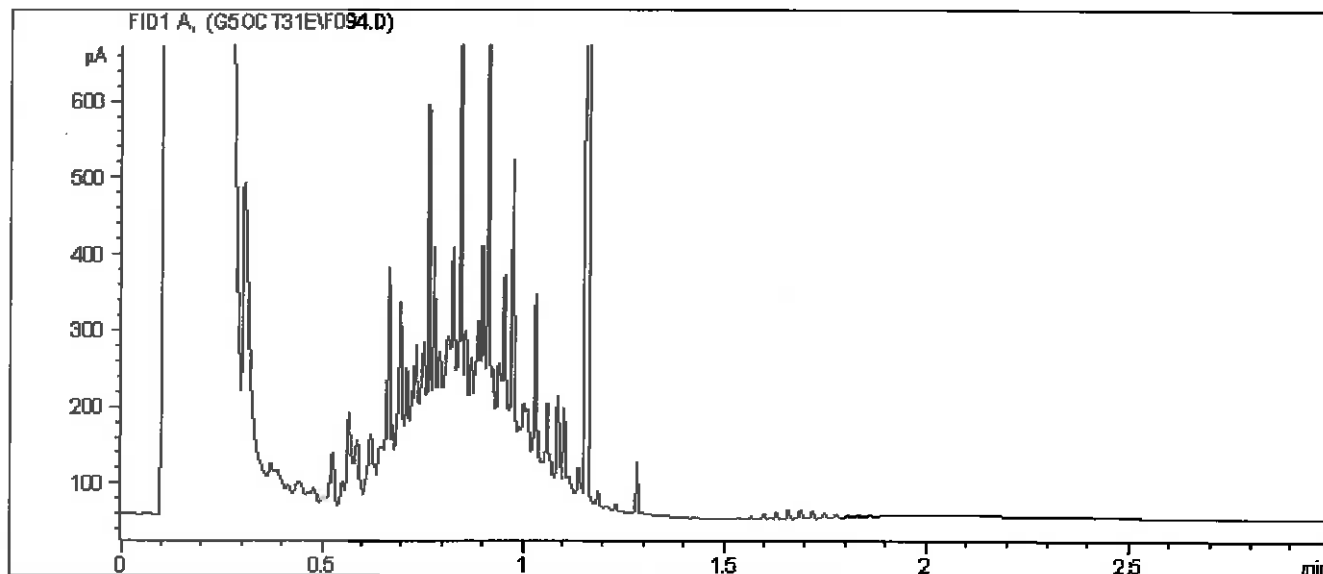
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/11/01  
Maxxam Job #: B3A0822  
Maxxam Sample: HZ1573

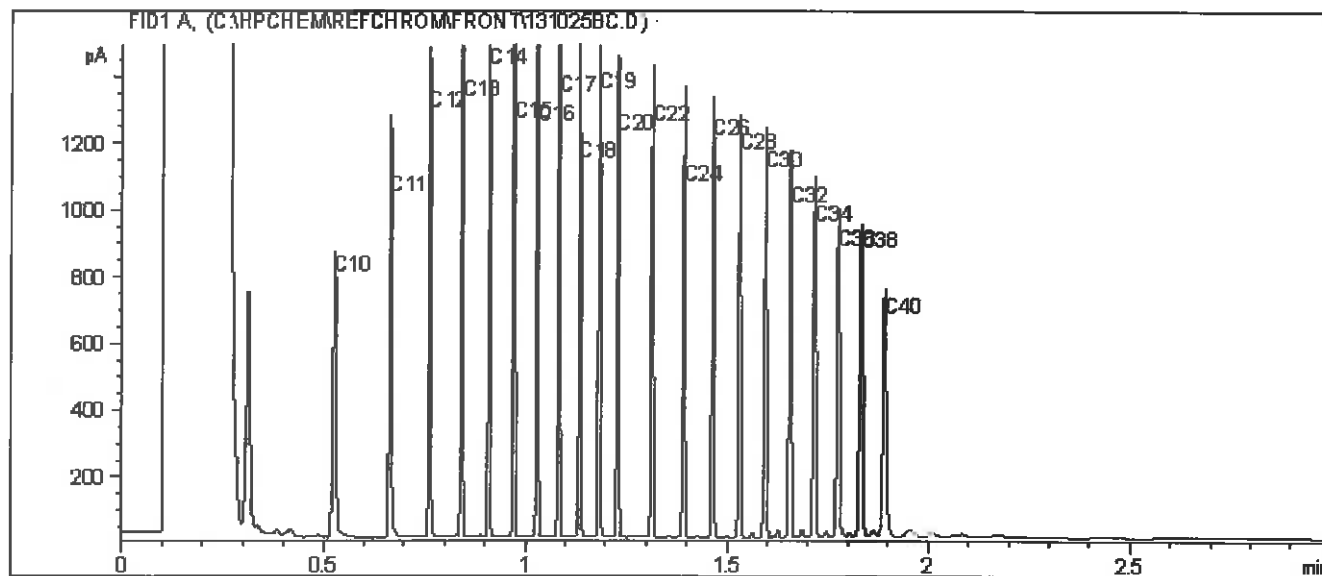
FRANZ ENVIRONMENTAL INC.

Client ID: 321-8

**BC Hydrocarbons in Soil by GC/FID Chromatogram**



**Carbon Range Distribution - Reference Chromatogram**



**TYPICAL PRODUCT CARBON NUMBER RANGES**

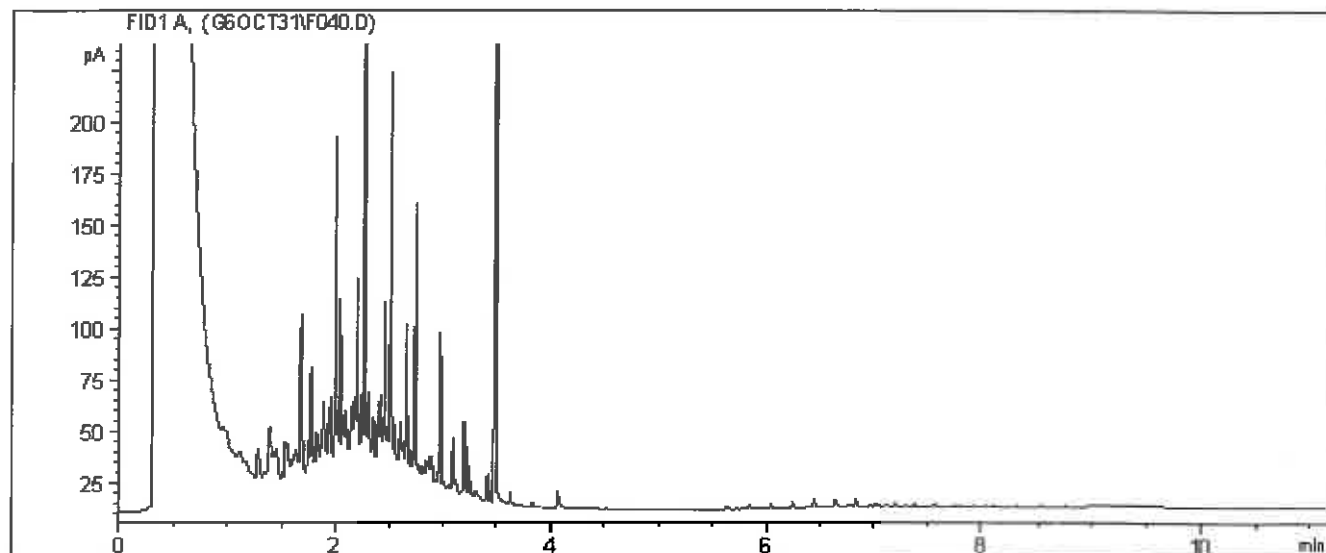
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/11/01  
Maxxam Job #: B3A0822  
Maxxam Sample: HZ1573

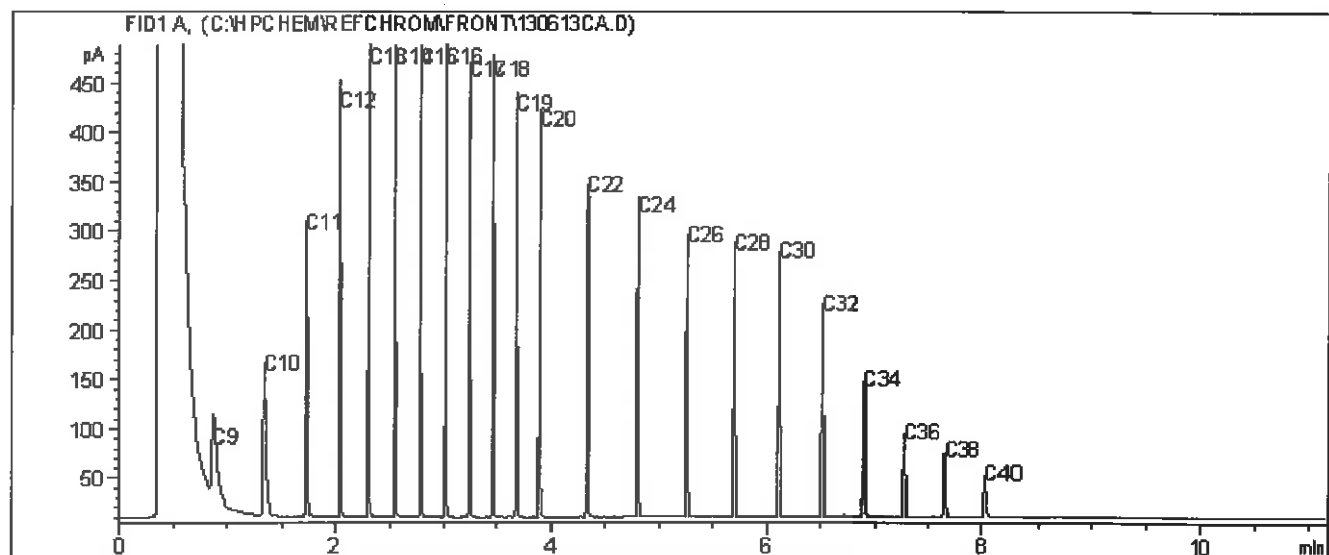
FRANZ ENVIRONMENTAL INC.

Client ID: 321-8

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating Oils: C20 - C40

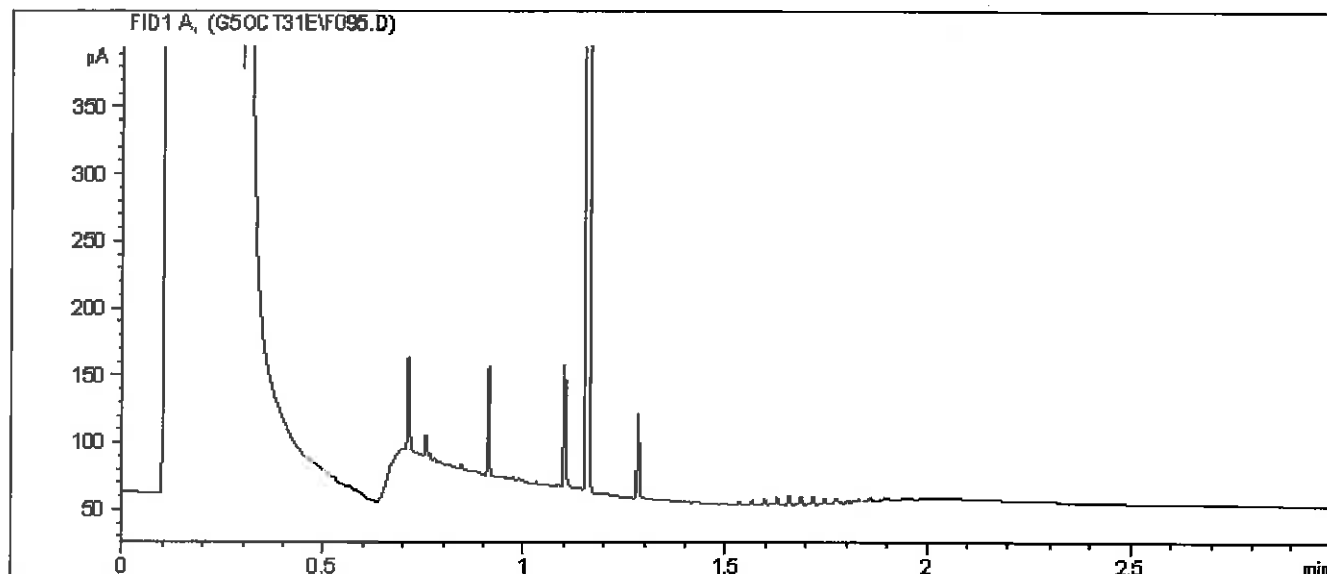
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/11/01  
Maxxam Job #: B3A0822  
Maxxam Sample: HZ1574

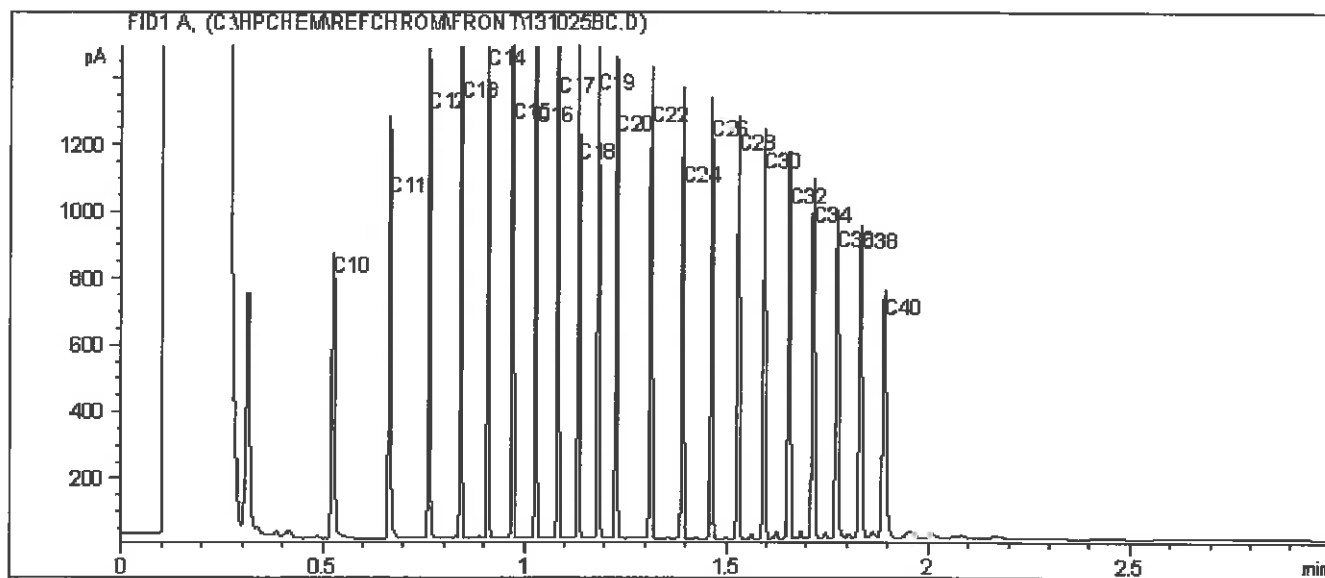
FRANZ ENVIRONMENTAL INC.

Client ID: 322-9

**BC Hydrocarbons in Soil by GC/FID Chromatogram**



**Carbon Range Distribution - Reference Chromatogram**



**TYPICAL PRODUCT CARBON NUMBER RANGES**

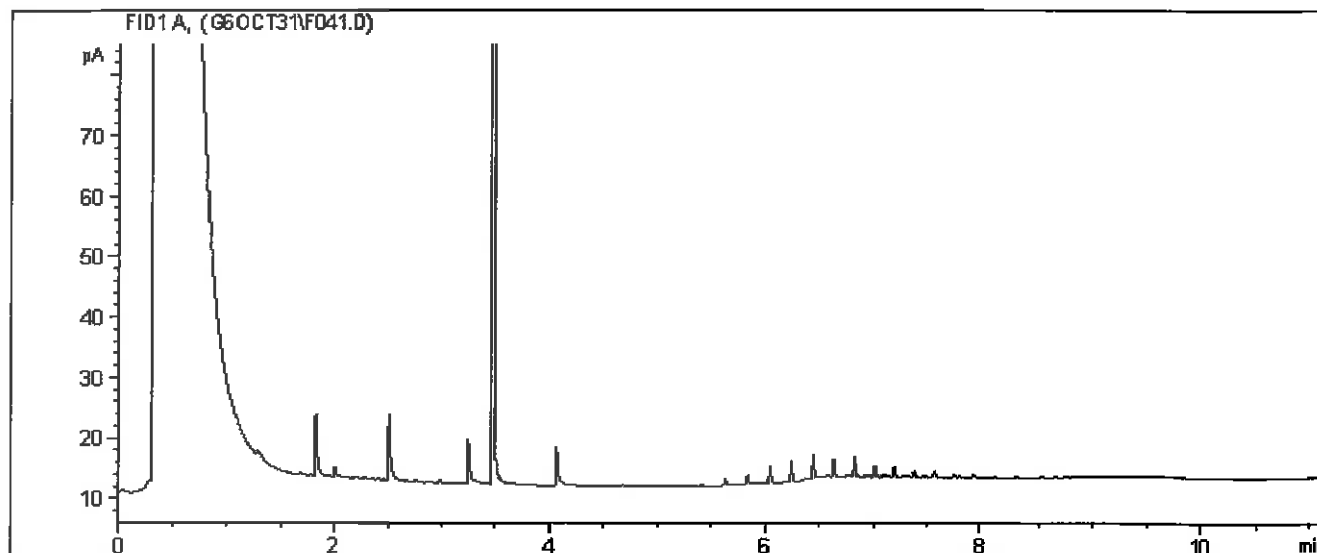
**Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.**

Report Date: 2013/11/01  
Maxxam Job #: B3A0822  
Maxxam Sample: HZ1574

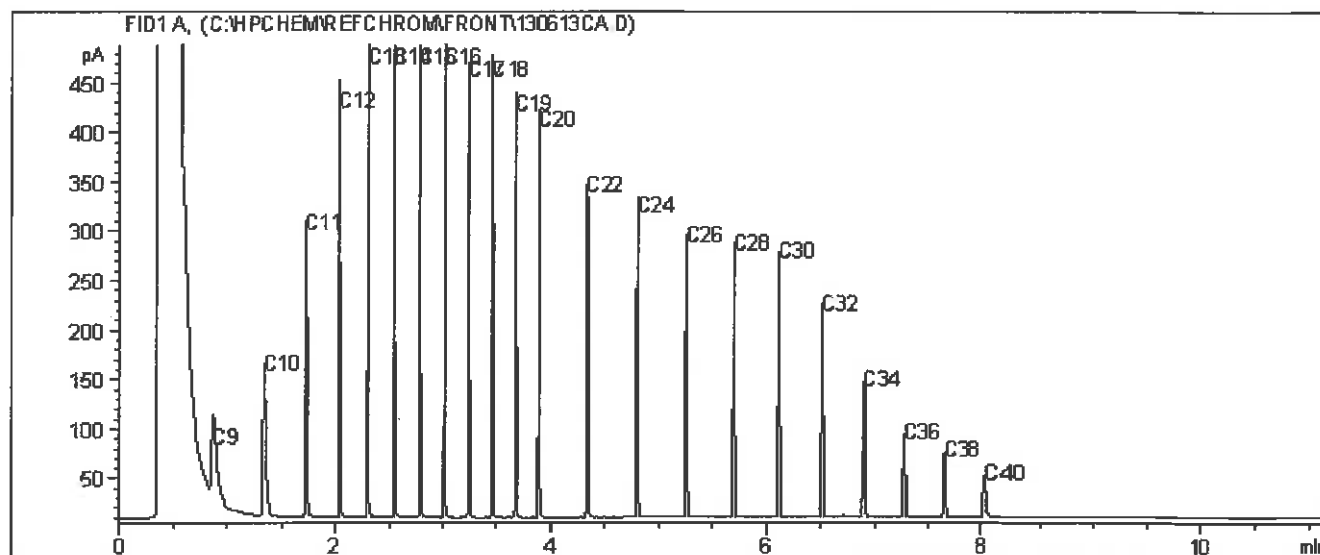
FRANZ ENVIRONMENTAL INC.

Client ID: 322-9

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating Oils: C20 - C40

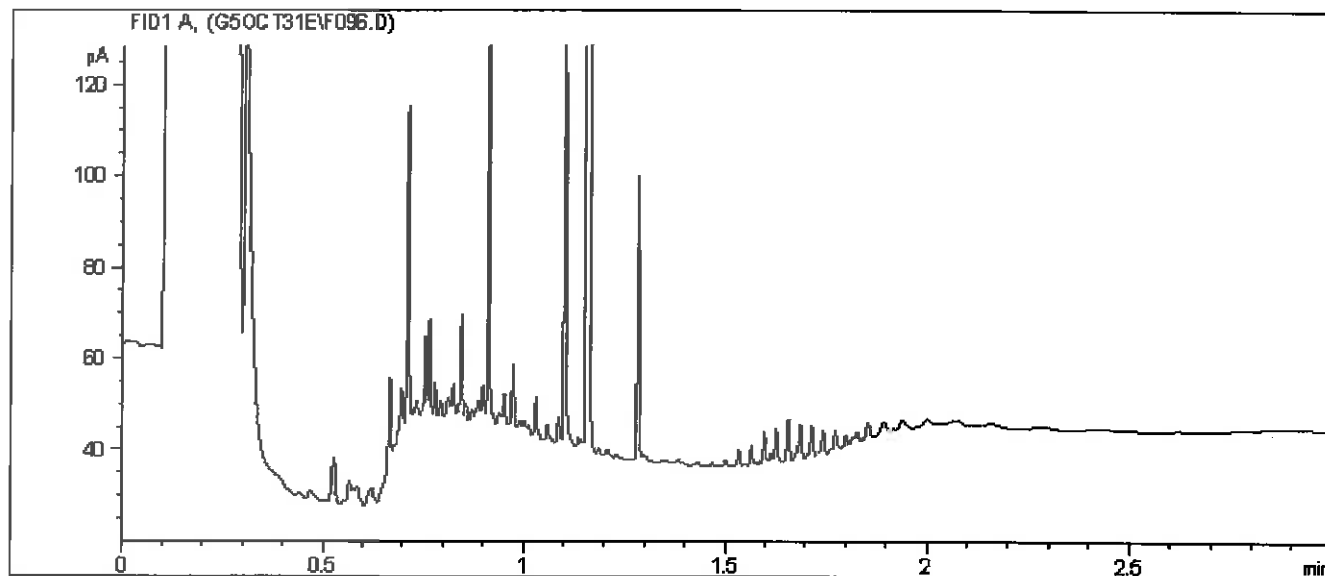
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/11/01  
Maxxam Job #: B3A0822  
Maxxam Sample: HZ1575

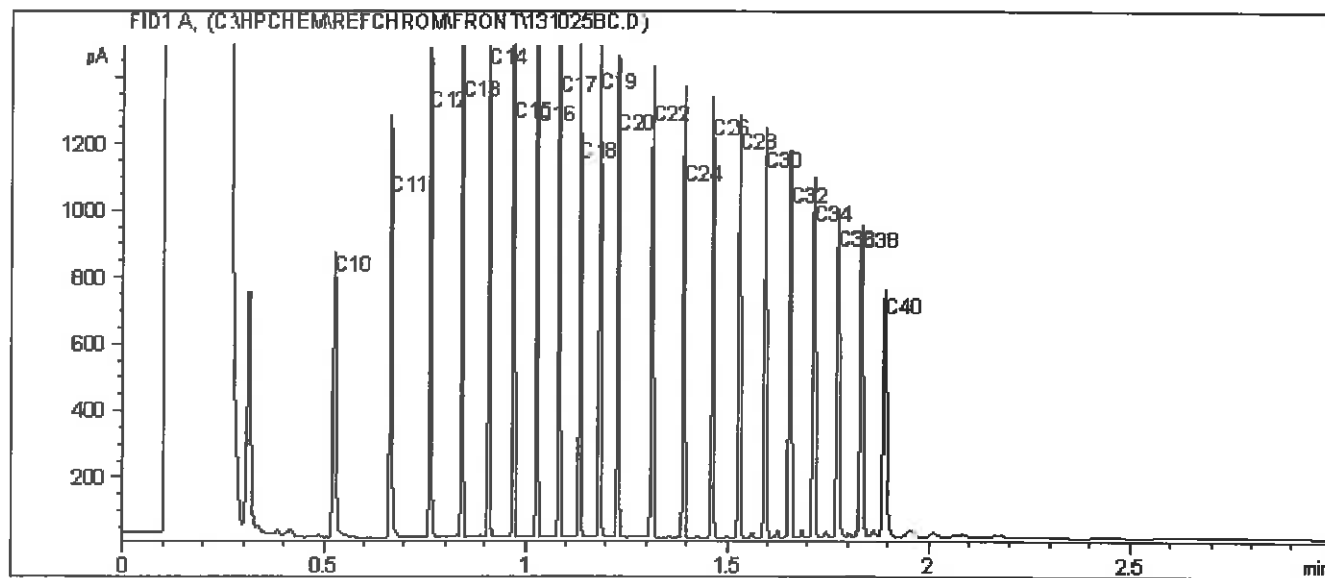
FRANZ ENVIRONMENTAL INC.

Client ID: 323-9

# BC Hydrocarbons in Soil by GC/FID Chromatogram



## Carbon Range Distribution - Reference Chromatogram



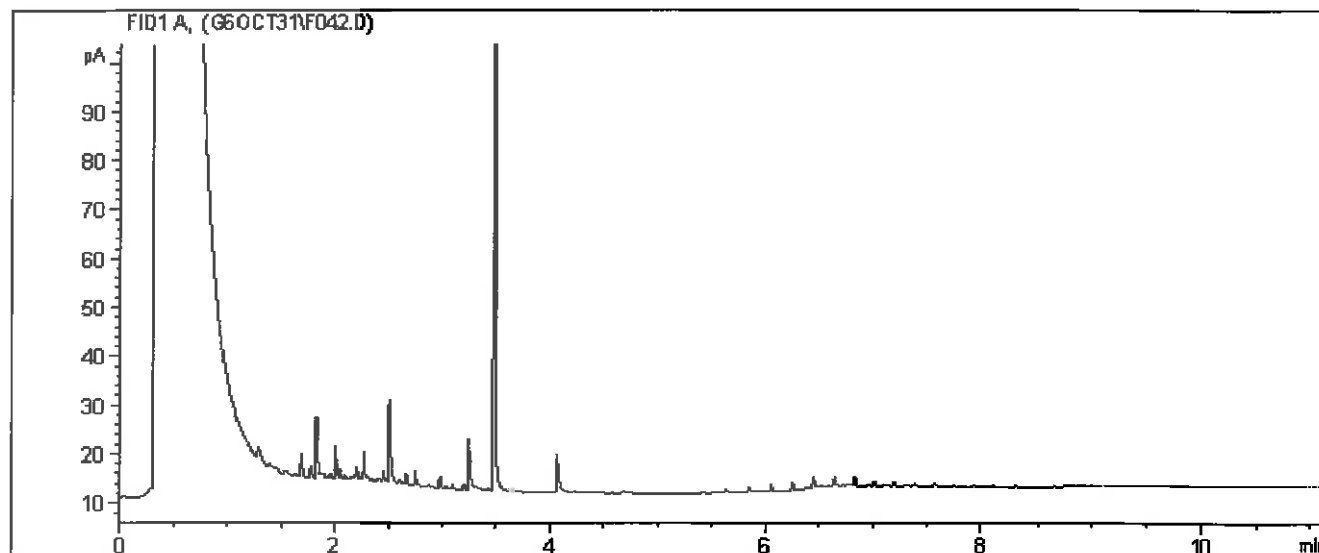
## TYPICAL PRODUCT CARBON NUMBER RANGES

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

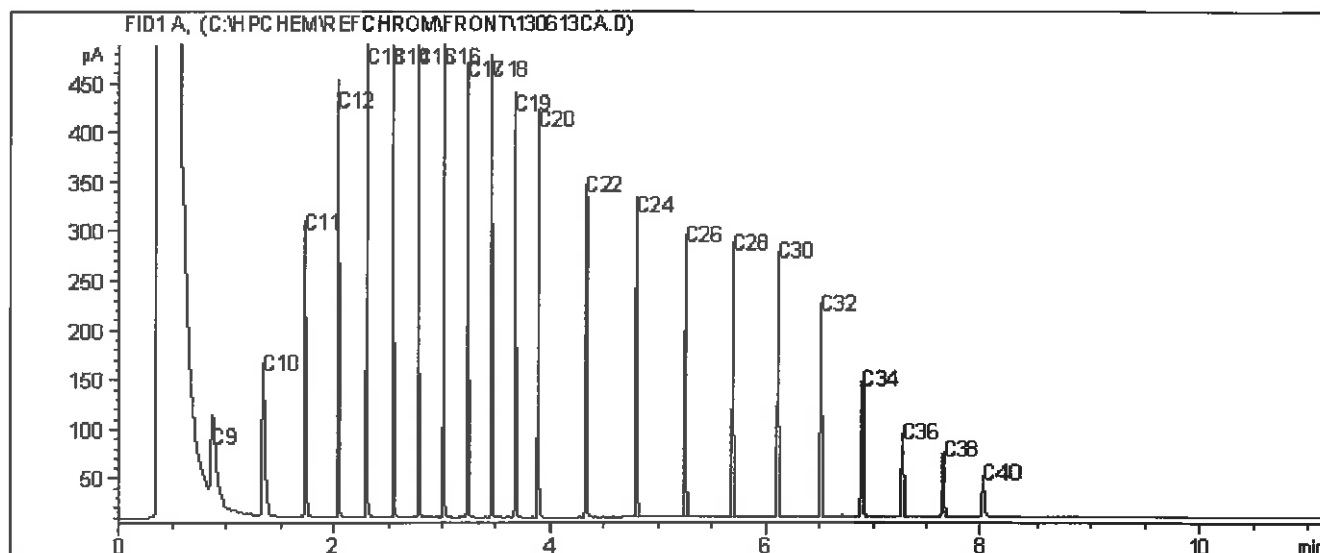
Report Date: 2013/11/01  
Maxxam Job #: B3A0822  
Maxxam Sample: HZ1575

Client ID: 323-9

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



**Carbon Range Distribution - Reference Chromatogram**



**TYPICAL PRODUCT CARBON NUMBER RANGES**

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating Oils: C20 - C40

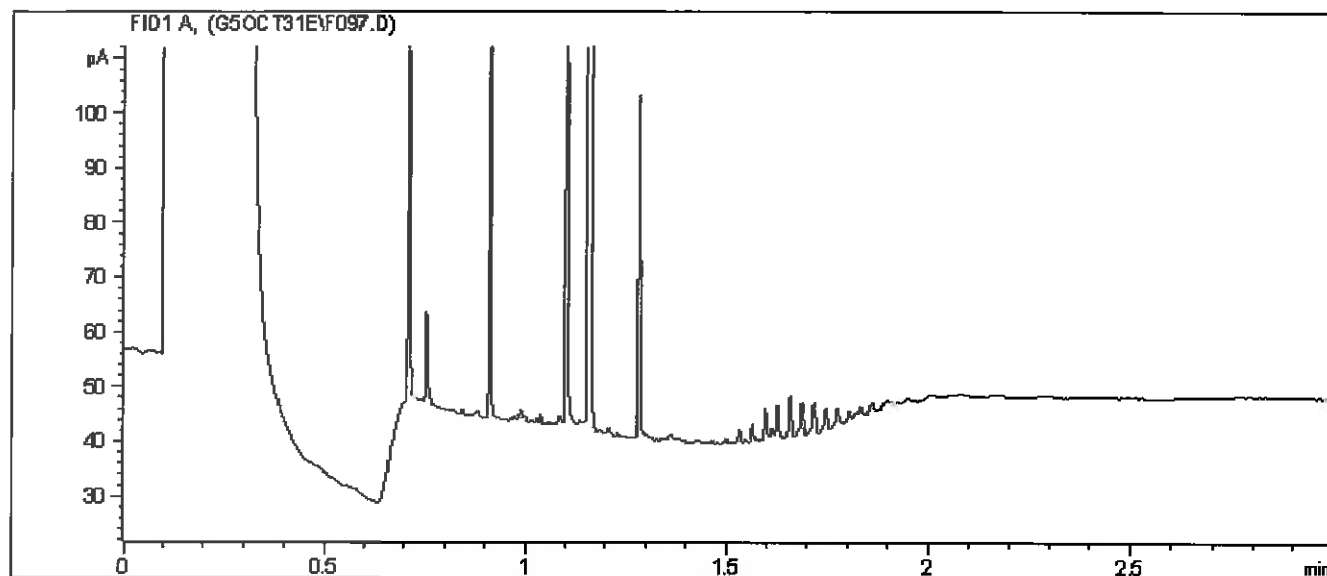
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/11/01  
Maxxam Job #: B3A0822  
Maxxam Sample: HZ1576

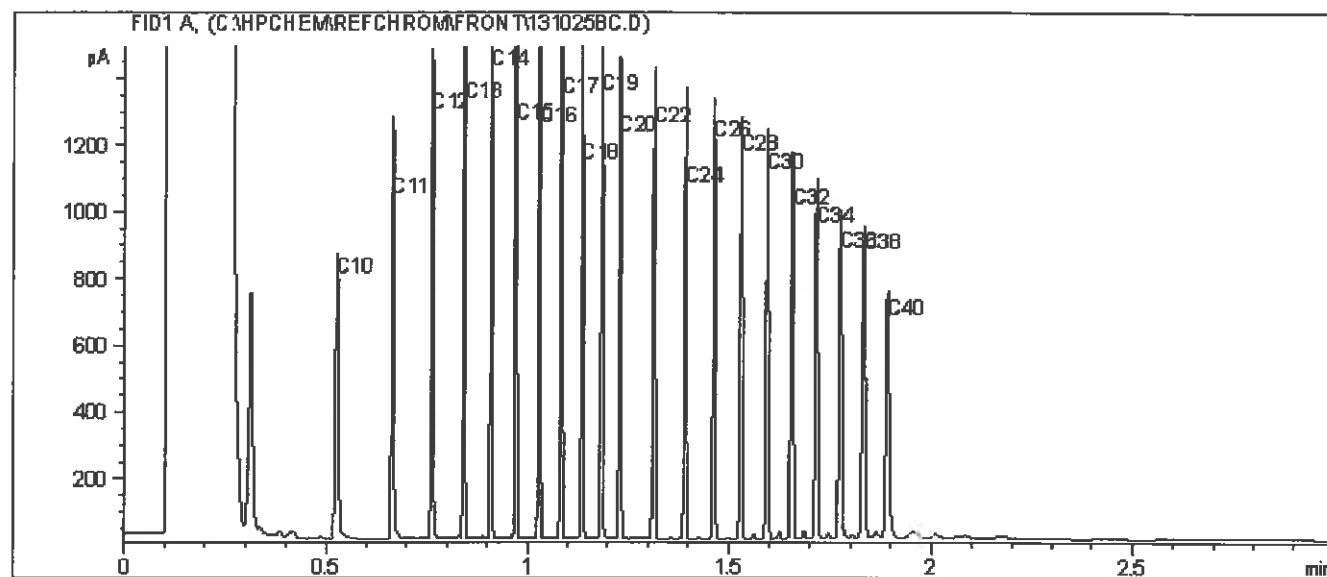
FRANZ ENVIRONMENTAL INC.

Client ID: 324-9

# BC Hydrocarbons in Soil by GC/FID Chromatogram



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

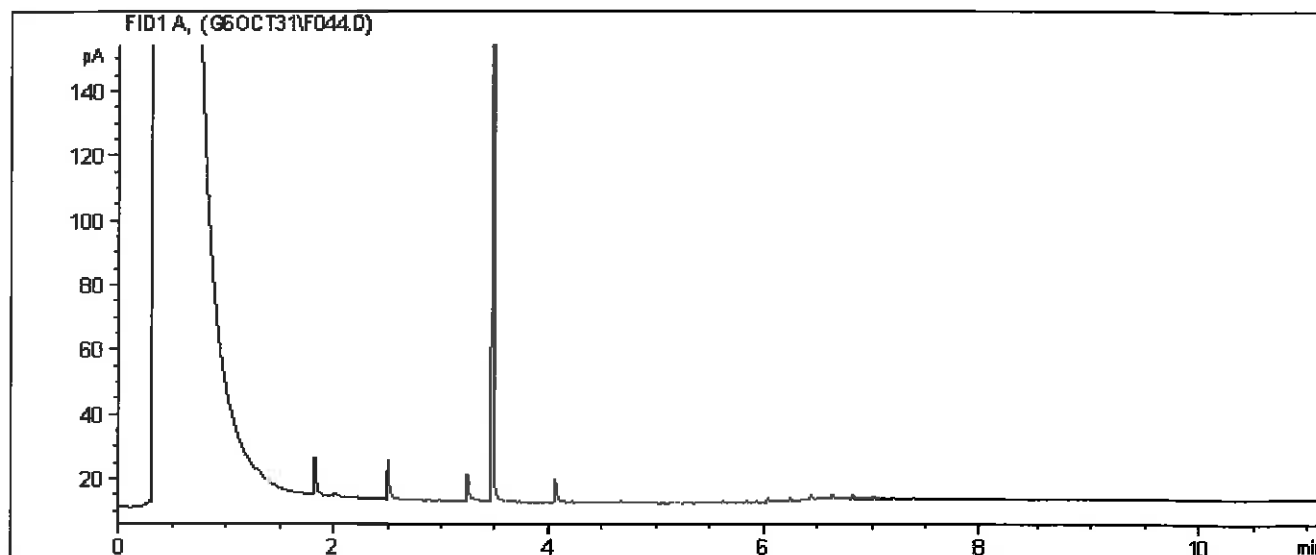
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/11/01  
Maxxam Job #: B3A0822  
Maxxam Sample: HZ1576

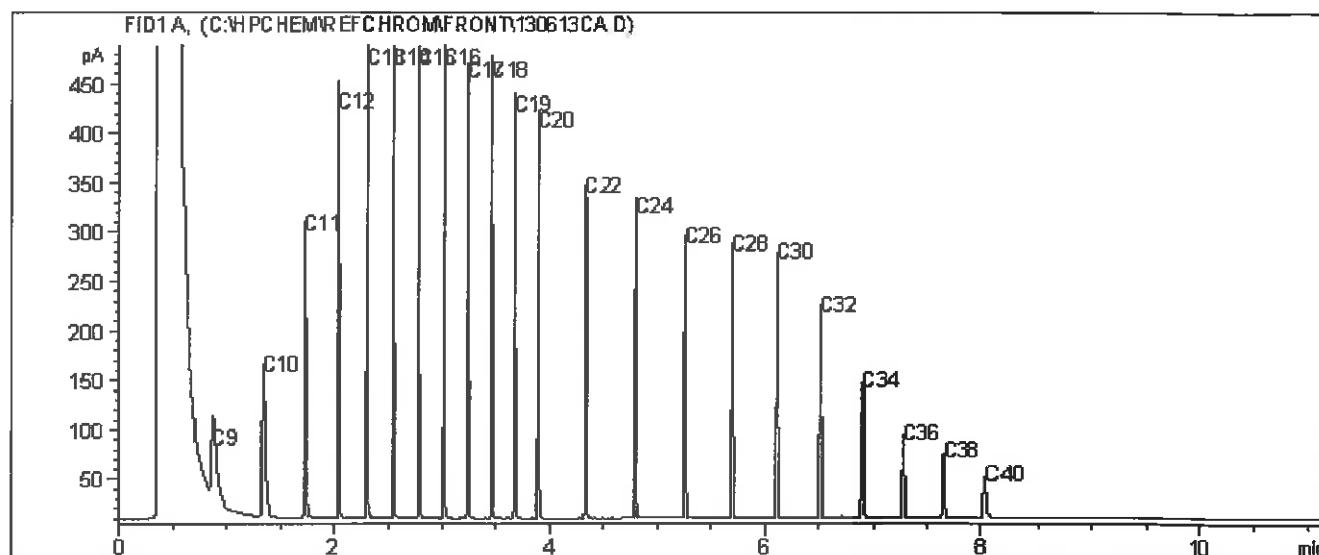
FRANZ ENVIRONMENTAL INC.

Client ID: 324-9

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating Oils: C20 - C40

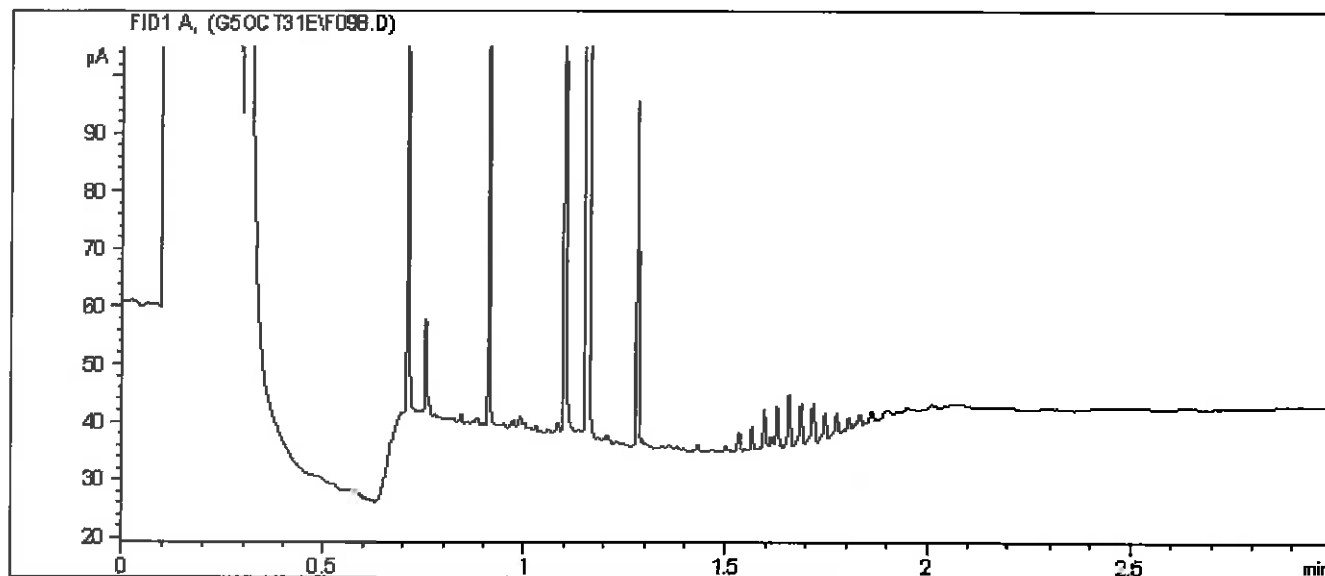
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/11/01  
Maxxam Job #: B3A0822  
Maxxam Sample: HZ1576 Lab-Dup

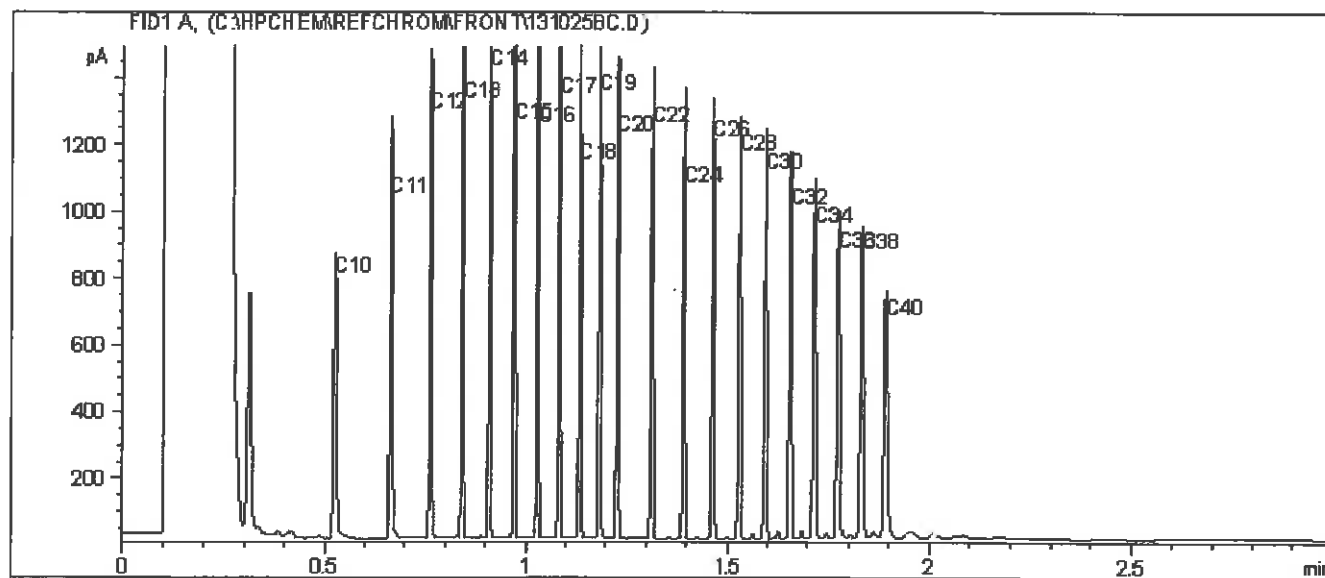
FRANZ ENVIRONMENTAL INC.

Client ID: 324-9

# BC Hydrocarbons in Soil by GC/FID Chromatogram



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

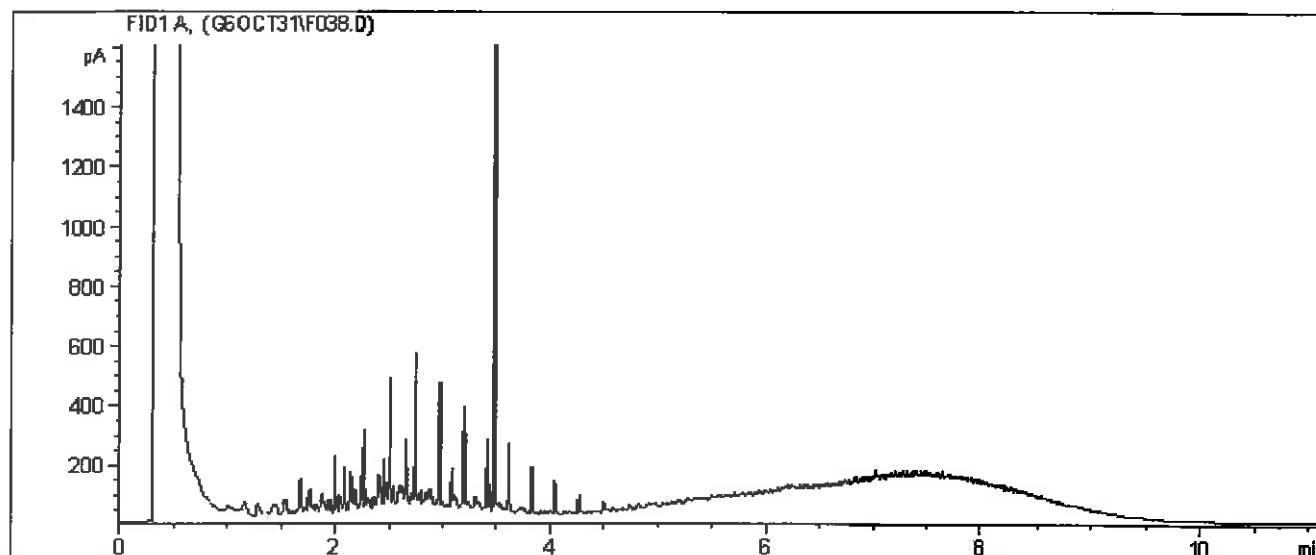
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/11/01  
 Maxxam Job #: B3A0822  
 Maxxam Sample: HZ1576 Lab-Dup

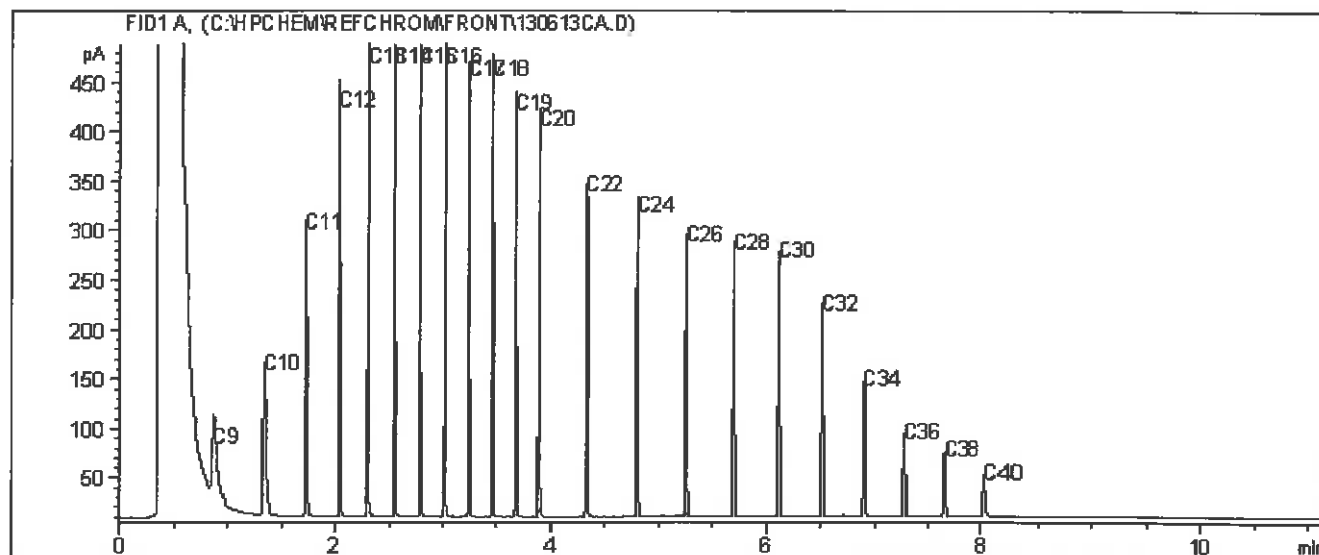
FRANZ ENVIRONMENTAL INC.

Client ID: 324-9

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
 Varsol: C8 - C12

Diesel: C8 - C22  
 Lubricating Oils: C20 - C40

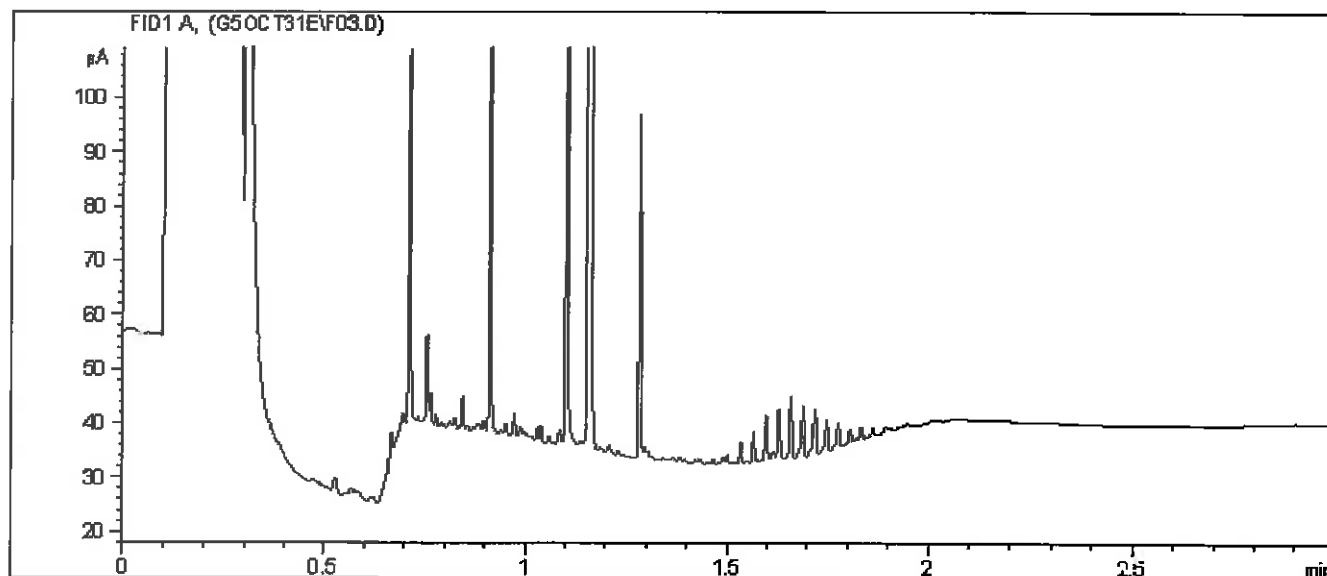
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/11/01  
Maxxam Job #: B3A0822  
Maxxam Sample: HZ1577

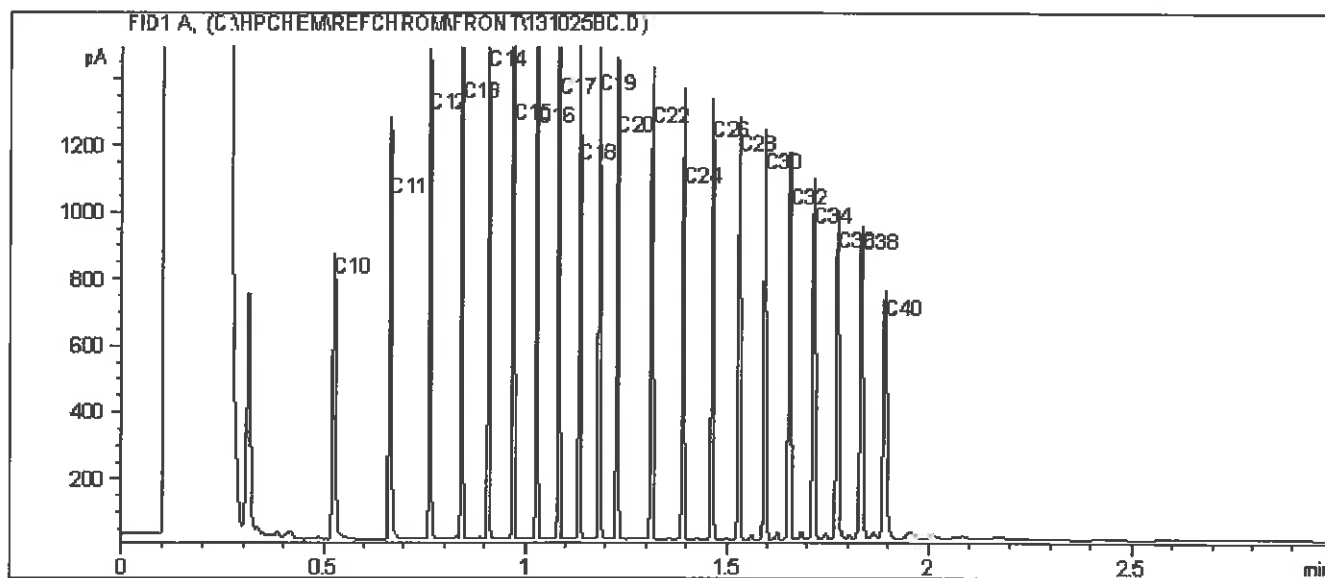
FRANZ ENVIRONMENTAL INC.

Client ID: 325-2

# BC Hydrocarbons in Soil by GC/FID Chromatogram



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

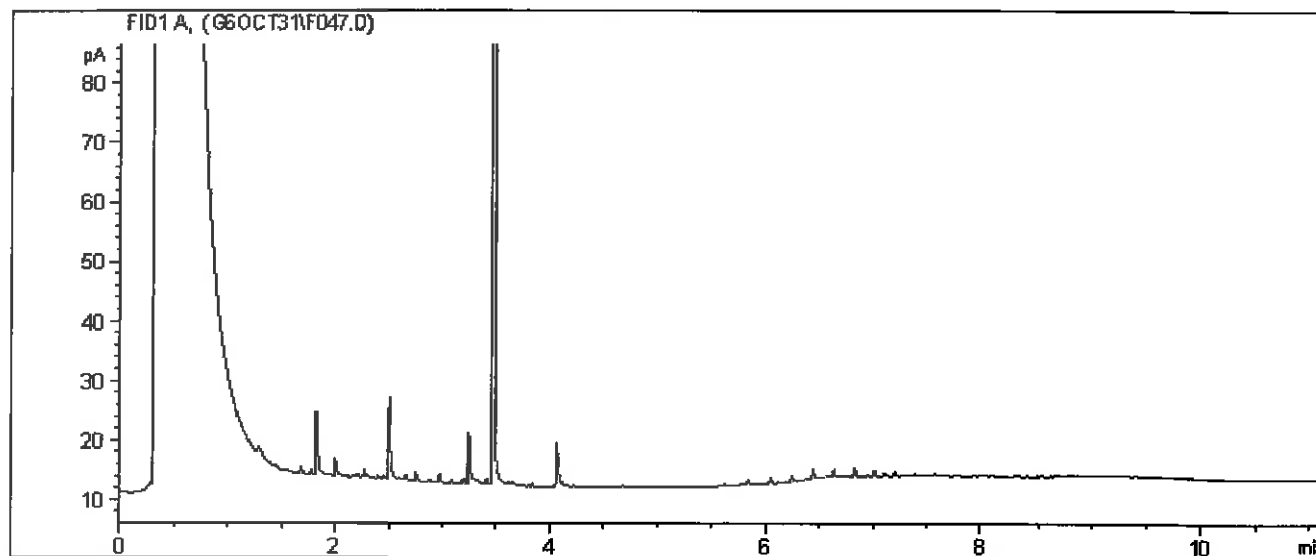
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/11/01  
Maxxam Job #: B3A0822  
Maxxam Sample: HZ1577

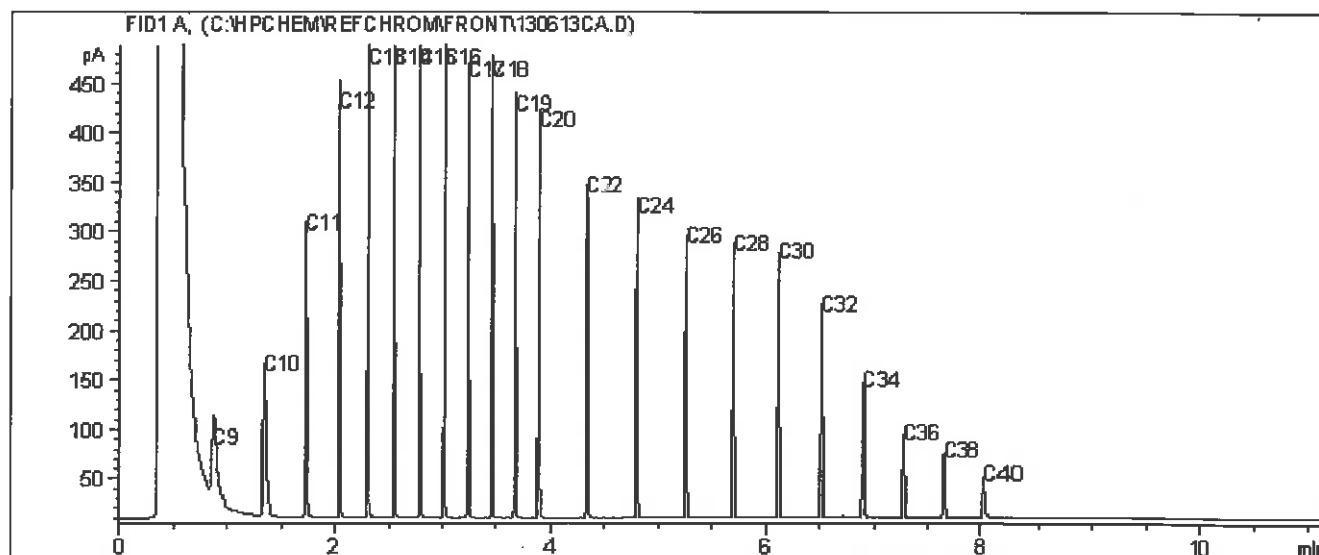
FRANZ ENVIRONMENTAL INC.

Client ID: 325-2

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating Oils: C20 - C40

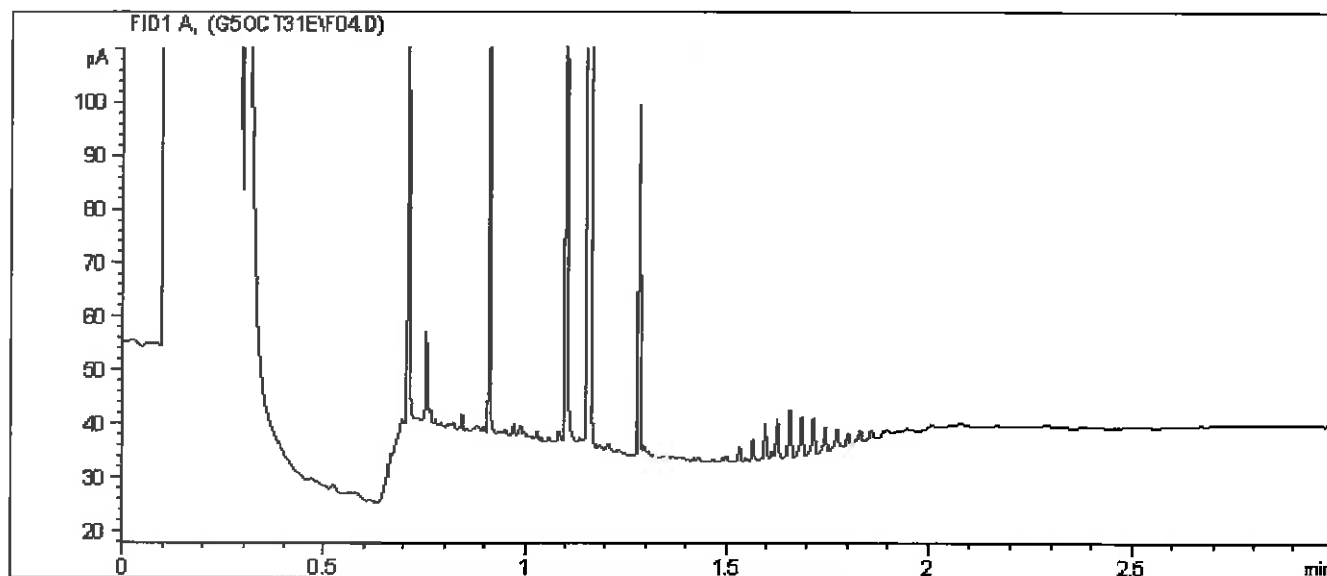
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/11/01  
Maxxam Job #: B3A0822  
Maxxam Sample: HZ1578

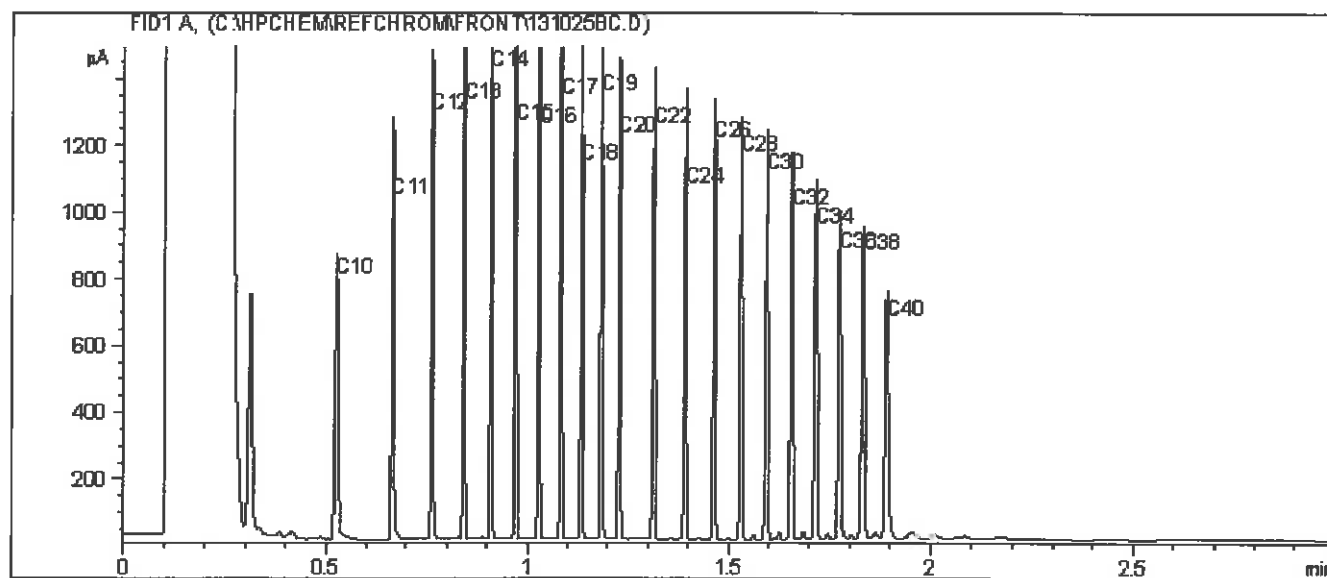
FRANZ ENVIRONMENTAL INC.

Client ID: 00069-DUP6

# BC Hydrocarbons in Soil by GC/FID Chromatogram



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

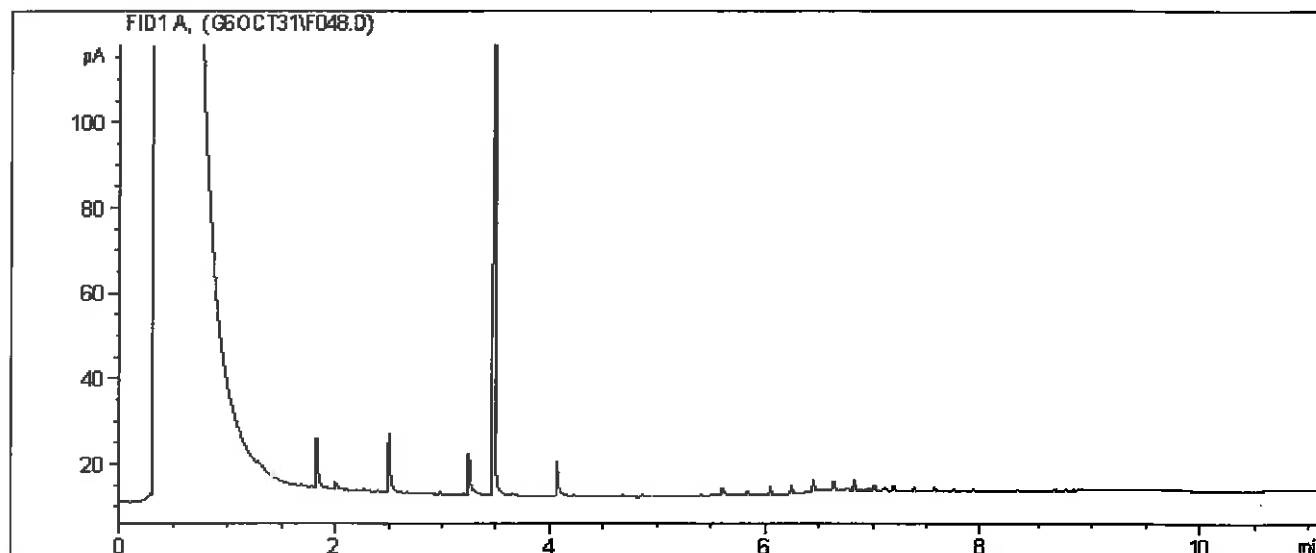
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Report Date: 2013/11/01  
Maxxam Job #: B3A0822  
Maxxam Sample: HZ1578

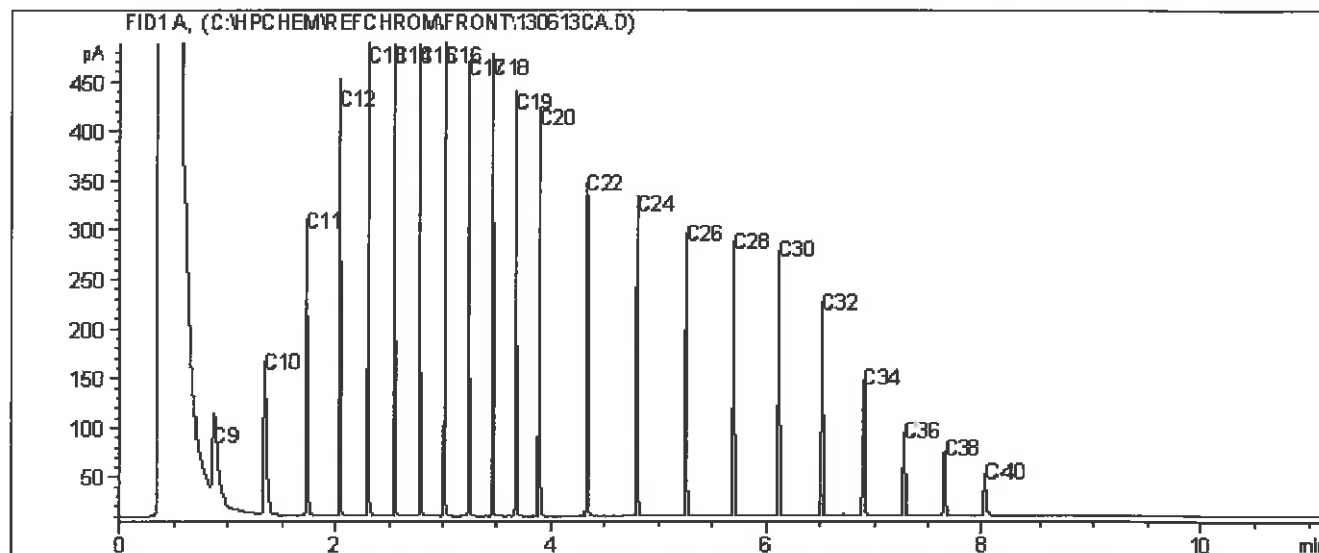
FRANZ ENVIRONMENTAL INC.

Client ID: 00069-DUP6

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



## Carbon Range Distribution - Reference Chromatogram



## TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12  
Varsol: C8 - C12

Diesel: C8 - C22  
Lubricating Oils: C20 - C40

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

Your Project #: 00069 LOWER POST  
 Site Location: LOWER POST, BC  
 Your C.O.C. #: G026588

**Attention: John Taylor**  
 Core6 Environmental  
 1410 – 777 Hornby Street  
 Vancouver, BC  
 CANADA V6Z 1S4

**Report Date: 2014/03/17**  
**Report #: R1534721**  
**Version: 1**

## CERTIFICATE OF ANALYSIS

**MAXXAM JOB #: B420203**  
**Received: 2014/03/13, 18:50**

Sample Matrix: Solid  
 # Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
ICP-AES Metals in TCLP Leachate	5	2014/03/17	2014/03/17	BBY7SOP-00018	EPA 200.7
TCLP pH Measurements	5	N/A	2014/03/17	BBY7SOP-00005	EPA 1311

\* Results relate only to the items tested.

Encryption Key



Maxxam

17 Mar 2014 11:43:55 -07:00

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

Amandeep Nagra, Account Specialist  
 Email: ANagra@maxxam.ca  
 Phone# (604) 639-2602

=====

This report has been generated and distributed using a secure automated process.  
 Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1

Maxxam Job #: B420203  
Report Date: 2014/03/17

Core6 Environmental  
Client Project #: 00069 LOWER POST  
Site Location: LOWER POST, BC  
Sampler Initials: KL

## RESULTS OF CHEMICAL ANALYSES OF SOLID

Maxxam ID	JA2151	JA2152	JA2153	JA2154	JA2155	
COC#	G026588	G026588	G026588	G026588	G026588	
UNITS	T2	T3	T4	T5	T6	QC Batch
Metals						
LEACHATE Lead (Pb)	0.37	0.53	ND	0.42	4.70	0.30 7417978

## ELEMENTS BY ATOMIC SPECTROSCOPY (SOLID)

Maxxam ID	JA2151	JA2152	JA2153	JA2154	JA2155	
COC#	G026588	G026588	G026588	G026588	G026588	
UNITS	T2	T3	T4	T5	T6	QC Batch
TCLP Extraction Procedure						
Initial pH of Sample	SEE NOTE(1)	SEE NOTE(1)	6.39	SEE NOTE(1)	SEE NOTE(1)	N/A 7415709
pH after HCl	SEE NOTE(1)	SEE NOTE(1)	1.17	SEE NOTE(1)	SEE NOTE(1)	N/A 7415709
Final pH of Leachate	6.03	5.91	5.93	5.44	5.60	N/A 7415709
pH of Leaching Fluid	4.90	4.90	4.90	4.90	4.90	N/A 7415709

N/A = Not Applicable  
ND = Not detected

RDL = Reportable Detection Limit

(1) - Insufficient sample to perform the preliminary evaluation and do the leachate, buffer solution #1 was used

Core6 Environmental  
Client Project #: 00069 LOWER POST  
Site Location: LOWER POST, BC  
Sampler Initials: KL

## General Comments

Samples JA2151,52,53,54,55: Sample insufficient and less than 100g was used for extraction.

Core6 Environmental  
Client Project #: 00069 LOWER POST  
Site Location: LOWER POST, BC  
Sampler Initials: KL

## QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7415709	Initial pH of Sample	2014/03/17			4.90, RDL=N/A	pH	1.9	20
7415709	Final pH of Leachate	2014/03/17			4.90, RDL=N/A	pH	0.2	20
7415709	pH of Leaching Fluid	2014/03/17			4.90, RDL=N/A	pH	0	20
7415709	pH after HCl	2014/03/17					0.9	20
7417978	LEACHATE Lead (Pb)	2014/03/17	105	75 - 125	ND, RDL=0.30	mg/L		

N/A = Not Applicable

RDL = Reportable Detection Limit

RPD = Relative Percent Difference

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

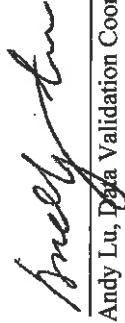
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

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

## Validation Signature Page

**Maxxam Job #: B420203**

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

  
\_\_\_\_\_  
Andy Lu, Data Validation Coordinator

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

# Maxxam

4808 Canada Way, Burnaby, BC Canada V6G 1K6 Ph: 604 754 7876 Toll Free: 1 800 866 6600 Fax: 604 751 2388

CHAIN OF CUSTODY RECORD

Page: 1 of 1

G 026588

Maxxam Job#: BY20202

Invoice To: ☒ Regular Report ☐ No ☐ CEANICS

Company Name: 1755 PUBLIC WORKS & GOVERNMENT Company Name: COSEC B.V.

Contact Name: BRAD KLAVER Contact Name: John Taylor-Vigano

Address: 641-800 BURNABY STREET Address: 1410-777 BURNABY STREET

City: VANCOUVER, B.C. City: VANCOUVER, B.C.

Phone / Fax: 604 754 7349 Phone / Fax: 604 754 6645

E-mail: brad.klaver@physc-physc.gc.ca E-mail: jtaylor@cosec.ca

REGULATORY REQUIREMENTS SERVICE REQUESTED:

☐ GSR ☐ Regular Turn Around Time (TAT)

☐ GCME (5 days for most tests)

☒ BC Water Quality (RUSH Please contact the lab)

☐ Other 1 Day ☐ 2 Day ☐ 3 Day

DRINKING WATER Date Required: 03/17/2014

Special Instructions:

Return Cooler ☐ Ship Sample Bottles (please specify) ☐

PO #: 700 266 127

Location #: 00069

Project #: 00069

Proj. Name: LOWER POST

Location: LOWER POST - B.C.

Sampled By: Kenny Wong

## ANALYSIS REQUESTED

Sample Identification	Lab Identification	Sample Type	Date/Time Sampled	MTBE	VOACPH	EPH	PAH	GCME-PH0 (Fractions 1-4 Plus BTB)	GCME-PH0 (Fractions 2-4)	GCME-BTEX (Fraction 1 Plus BTB)	PCB	Phenols by AAR	Phenols by GCMS	MOG	SWOG	Dispersed	Minerals	Trace Metals Field Analysis	Arsenic	Chloride	Sulfate	Total Suspended Solids-TSS	BH Conductivity	COB	COB	Coliform, Total & fecal	Residual	Does source supply multiple households?	Samples are from a Drinking Water Source?
1 T2	JA2157	SOLID																											
2 T3	JA2157																												
3 T4	JA2153																												
4 T5	JA2154																												
5 T6	JA2155																												
6																													
7																													
8																													
9																													
10																													
11																													
12																													



B420203

Relinquished by: BRAD KLAVER Date (YY/MM/DD): 05/13/2014 Time: 6:47pm

Received by: SARAH LIN Date (YY/MM/DD): 2014/07/13 Time: 18:50

Signature: BRAD KLAVER Signature: SARAH LIN

Temperature on Receipt (°C): N/A

Signature: BRAD KLAVER Signature: SARAH LIN

Does source supply multiple households? YES ☐ NO ☐

Samples are from a Drinking Water Source? YES ☐ NO ☐

Chain of Custody Form

IT IS THE RESPONSIBILITY OF THE RELINQUISHING TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY RECORD WILL RESULT IN ANALYTICAL DELAYS.

Maxxam Waterborne Corporation is a Canadian company.

CCO-1000 (09/10)