



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Washington, D.C. 20594

May 7, 2020

Attachment 15 – Fuel Analysis

OPERATIONAL FACTORS

ERA20MA001



Environmental Laboratories, Inc.
 587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
 Tel. [REDACTED] Fax [REDACTED]

Analysis Report
 October 07, 2019

FOR: Attn: [REDACTED]
 Environmental Services Inc
 90 Brookfield Street
 South Windsor, CT 06074

Sample Information

Matrix: OIL
 Location Code: ESI
 Rush Request: 24 Hour
 P.O.#: 80657

Custody Information

Collected by: CK
 Received by: CP
 Analyzed by: see "By" below

Date Time
 10/03/19 10:00
 10/03/19 15:40

Laboratory Data

SDG ID: GCE26466
 Phoenix ID: CE26466

Project ID: 2019-0841
 Client ID: TANK PRODUCT

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Lead	706	1.8	mg/kg	1	10/07/19	EK	SW6010D
Oil digestion for Metals	Completed				10/05/19	AG	SW3051A
Waste Dilution TPH	Completed				10/03/19	TAT/ATA	SW3580A

Gasoline Range Hydrocarbons (C6-C10)

GRO (C6-C10) 820000 100000 mg/Kg 100000 10/04/19 RM SW8015D GRO

QA/QC Surrogates

% 2,5-Dibromotoluene (FID) 105 % 100000 10/04/19 RM 70 - 130 %

TPH by GC (Extractable (C9-C36))

Aviation Fuel / Kerosene	ND	940	mg/kg	1	10/04/19	KCA	8015DRO
Diesel Fuel/Fuel Oil #2	ND	940	mg/kg	1	10/04/19	KCA	8015DRO
Fuel Oil #4	ND	940	mg/kg	1	10/04/19	KCA	8015DRO
Fuel Oil #6	ND	940	mg/kg	1	10/04/19	KCA	8015DRO
Motor Oil	ND	940	mg/kg	1	10/04/19	KCA	8015DRO
Other	**	940	mg/kg	1	10/04/19	KCA	8015DRO
Unidentified	12000	940	mg/kg	1	10/04/19	KCA	8015DRO

QA/QC Surrogates

% n-Pentacosane 135 % 1 10/04/19 KCA 50 - 150 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
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RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

This sample was not collected in accordance with EPA method 5035. NELAC requires the laboratory to qualify the GRO/VPH soil data as biased low.


The GRO (C6-C10) is quantitated using an gasoline standard.

TPH Comment:

**Petroleum hydrocarbon chromatogram contains a multicomponent hydrocarbon distribution in the range of C9 to C12. The sample was quantitated against a C9-C36 alkane hydrocarbon standard.

The pattern in the GRO and ETPH chromatograms most closely resemble gasoline.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.


Laboratory Director
October 07, 2019
Official Report Release To Follow

Sample Criteria Exceedances Report

Criteria: None

GCE26466 - ESI

State: CT

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units
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*** No Data to Display ***

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.



CHAIN OF CUSTODY RECORD

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040

Email: [redacted] Fax: [redacted]

Client Services [redacted]

Coolant: Yes No
 IPK ICE

Temp 2.10 Pg 1 of 1

Data Delivery/Contact Options:

Fax: [redacted]
 Phone: [redacted]
 Email: see below

Customer: ESI
 Address: 90 Brookfield St.
 5 Windsor CT 06074

Project: 2019-0841
 Report to: [redacted]
 Invoice to: ESI
 QUOTE #

Project P.O.: 80657

This section MUST be completed with Bottle Quantities.

Client Sample - Information - Identification

Sampler's Signature [redacted] Date: 10-2-19

Matrix Code:
 DW=Drinking Water GW=Ground Water SW=Surface Water WW=Waste Water
 RW=Raw Water SE=Sediment SL=Sludge S=Soil SD=Solid W=Wipe OIL=Oil
 B=Bulk L=Liquid X = (Other)

Petroleum Fingerprint

- Analysis Request
- GI Amber 8 oz. w/H3PO4
 - Soil VOA Vials | | methanol | | H2O
 - GL Soil container () oz
 - GL Soil container () oz
 - 40 ml VOA Vial | | As is | | HCl
 - PL Amber 1000ml | | 500ml | | H2SO4
 - PL As is | | 250ml | | 500ml | | 1000ml
 - PL HNO3 250ml | | 500ml | | 1000ml
 - Bacteria Bottle w/Info
 - Bacteria Bottle as is

PHOENIX USE ONLY SAMPLE #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	
26466	Tank Product	oil	10-2-19	10:00am	X

Relinquished by: [redacted] Accepted by: [redacted]
 Date: 10/3/19 Time: 1337
 10319 1510

Comments, Special Requirements or Regulations:
 Please email results to: [redacted]

Turnaround Time:
 1 Day*
 2 Days*
 3 Days*
 Standard
 Other
 * SURCHARGE APPLIES

RI

(Residential) Direct Exposure
 (Comm/Industrial) Direct Exposure
 GA Leachability
 GB Leachability
 GA-GW Objectives
 GB-GW Objectives

CT

RCP Cert
 GW Protection
 SW Protection
 GA Mobility
 GB Mobility
 Residential DEC
 I/C DEC
 Other

MA

MCP Certification
 GW-1 MWRA eSMART
 GW-2
 GW-3
 S-1 GW-1 S-1 GW-2 S-1 GW-3
 S-2 GW-1 S-2 GW-2 S-2 GW-3
 S-3 GW-1 S-3 GW-2 S-3 GW-3
 SW Protection

Data Format

Excel
 PDF
 GIS/Key
 EQuIS
 Other

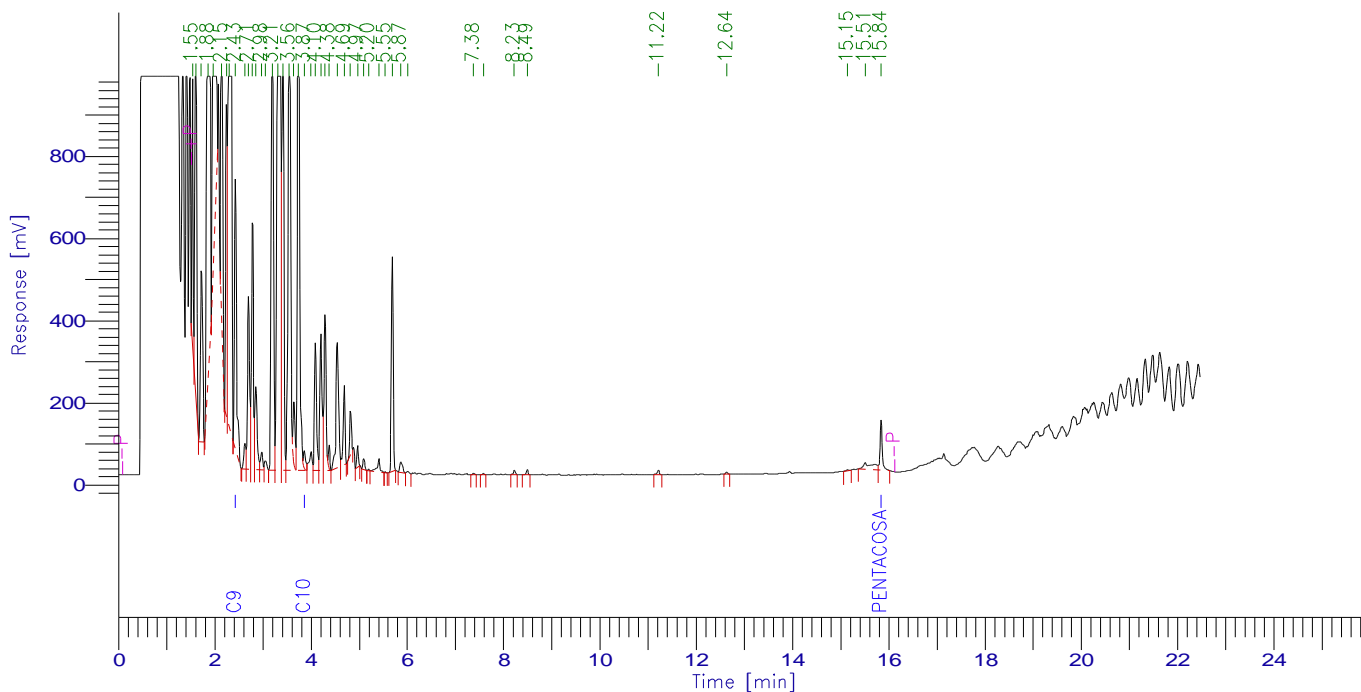
Data Package

Tier II Checklist
 Full Data Package*
 Phoenix Std Report
 Other

State where samples were collected: CT

* SURCHARGE APPLIES

Software Version: 4.1<1L22>
 Date: 10/4/2019 02:53 PM
 Sample Name : 26466 oil
 Data File : E:\TC2019\FID1\10-OCT\O03A044.RAW Date: 10/4/2019 02:29 PM
 Sequence File: E:\TC2019\FID1\10-OCT\ETPH.SEQ Cycle: 70 Channel : A
 Instrument : AUTO_FID Rack/Vial: 0/10 Operator: JRB
 Sample Amount : 1.0000 Dilution Factor : 1.00



Total Petroleum Hydrocarbons - DRO

Software Version: 4.1<1L22>

Date: 6/8/11 04:24 PM

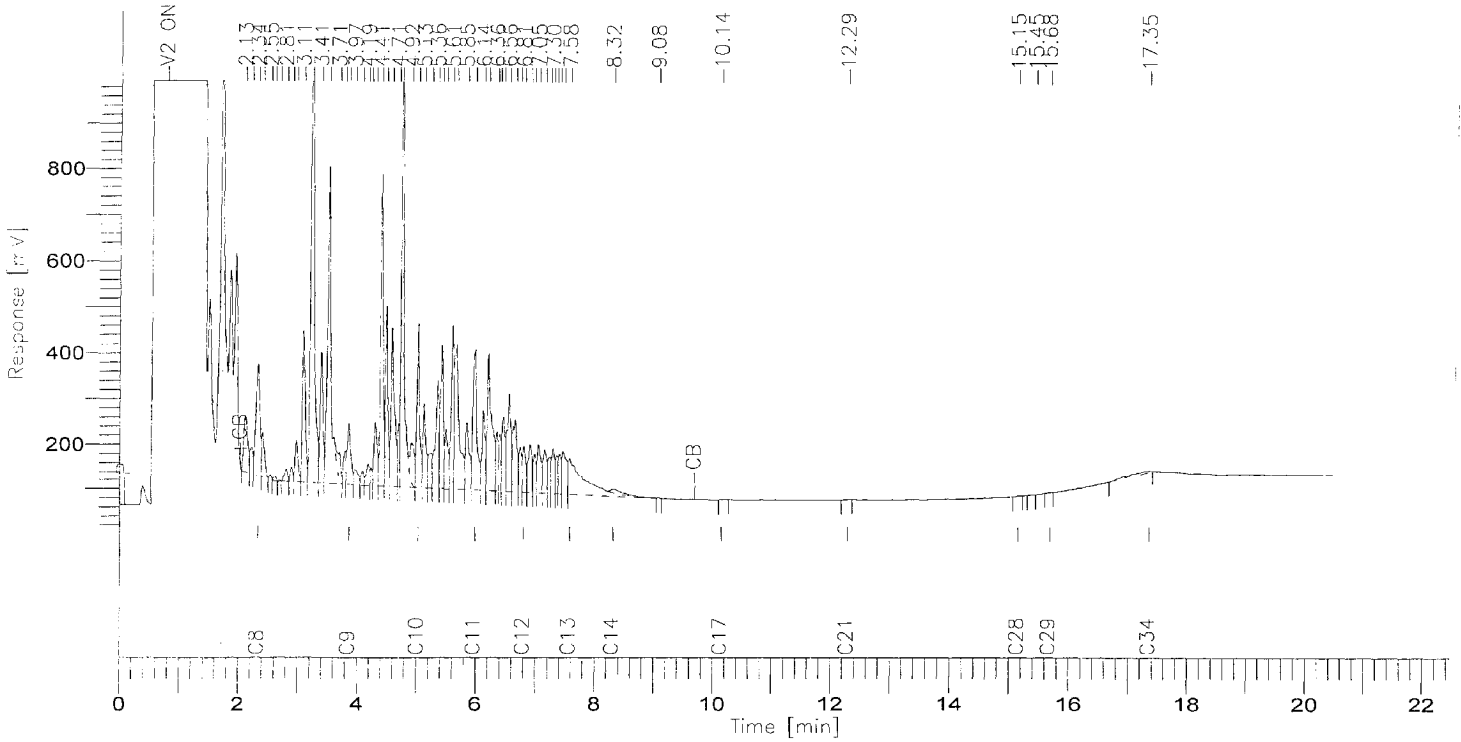
Sample Name : GAS REG UNLEADED 5000

Data File : E:\TC2011\FIDXL2\06-JUN\602A021.RAW Date: 6/2/11 09:20 PM

Sequence File: E:\TC2011\FIDXL2\06-JUN\TPH.SEQ Cycle: 32 Channel : A

Instrument : AUTOXL_FID2 Rack/Vial: 0/18 Operator:

Sample Amount : 1.0000 Dilution Factor : 1.00



Total Petroleum Hydrocarbons - DRO

Software Version: 4.1<1L22>

Date: 6/8/11 04:24 PM

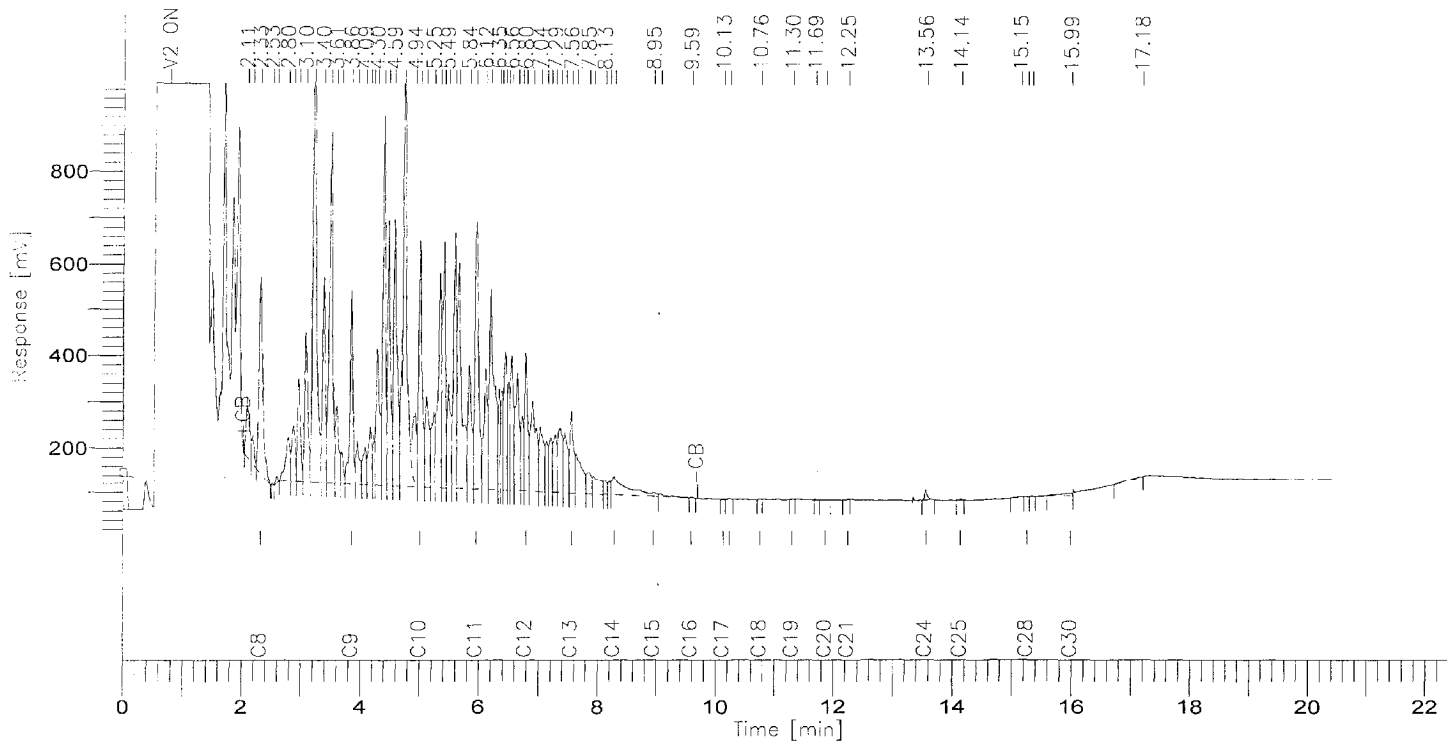
Sample Name : GAS REG LEADED 5000

Data File : E:\TC2011\FIDXL2\06-JUN\602A022.RAW Date: 6/2/11 09:52 PM

Sequence File: E:\TC2011\FIDXL2\06-JUN\TPH.SEQ Cycle: 33 Channel : A

Instrument : AUTOXL_FID2 Rack/Vial: 0/19 Operator:

Sample Amount : 1.0000 Dilution Factor : 1.00



Total Petroleum Hydrocarbons - DRO

Software Version: 4.1<1L22>

Date: 6/8/11 04:24 PM

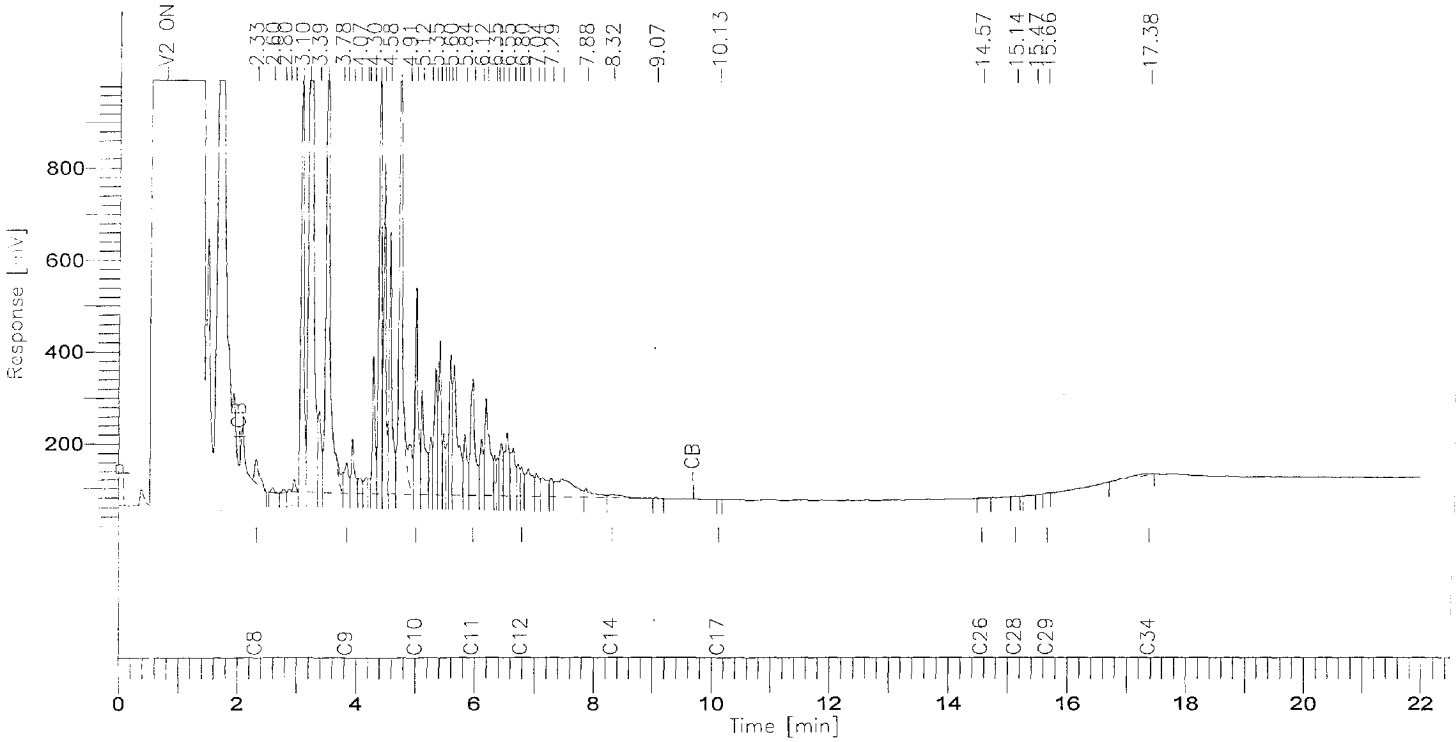
Sample Name : GAS PREMIUM UNLEADED 5000

Data File : E:\TC2011\FIDXL2\06-JUN\602A023.RAW Date: 6/2/11 10:25 PM

Sequence File: E:\TC2011\FIDXL2\06-JUN\TPH.SEQ Cycle: 34 Channel : A

Instrument : AUTOXL_FID2 Rack/Vial: 0/20 Operator:

Sample Amount : 1.0000 Dilution Factor : 1.00



Total Petroleum Hydrocarbons - DRO

Software Version: 4.1<1L22>

Date: 6/8/11 04:25 PM

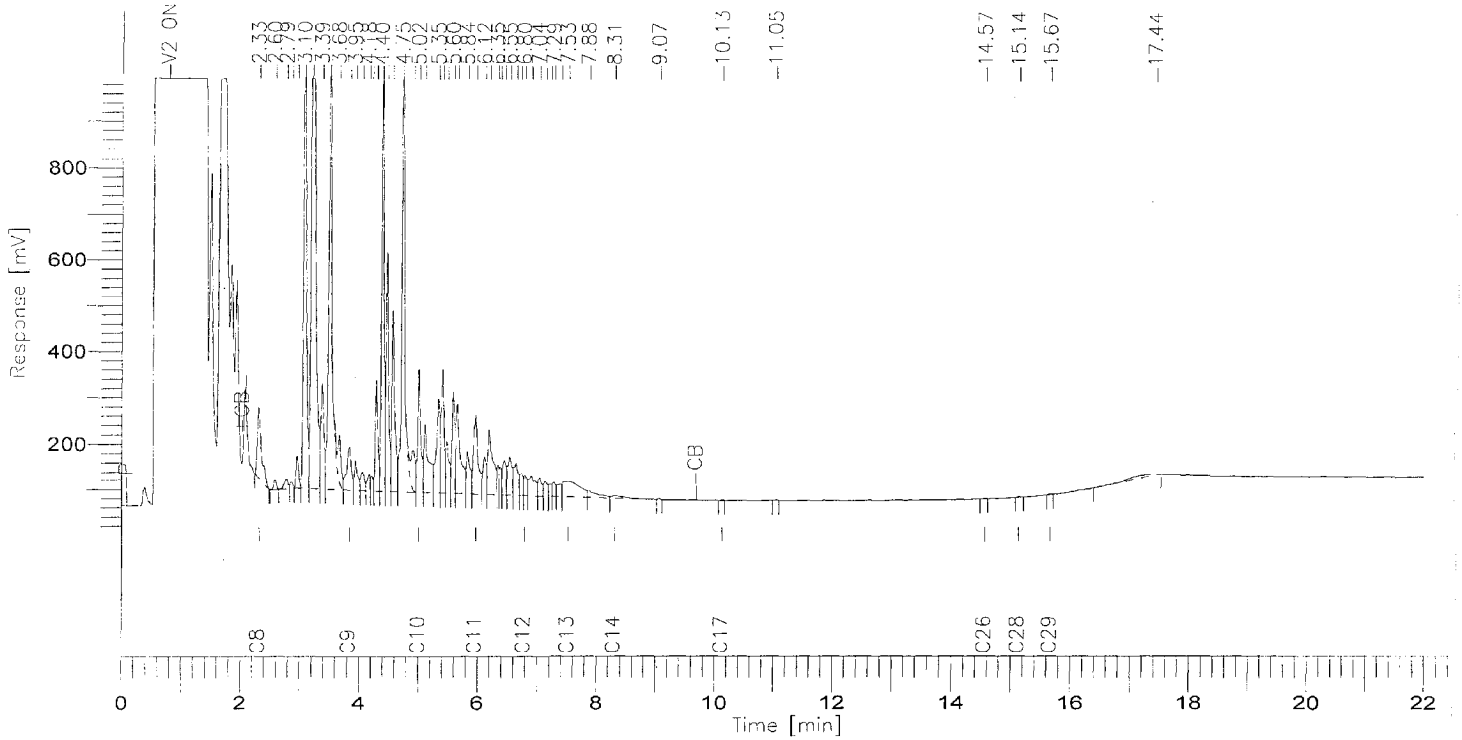
Sample Name : RFA 5000X

Data File : E:\TC2011\FIDXL2\06-JUN\602A024.RAW Date: 6/2/11 10:56 PM

Sequence File: E:\TC2011\FIDXL2\06-JUN\TPH.SEQ Cycle: 35 Channel : A

Instrument : AUTOXL_FID2 Rack/Vial: 0/21 Operator:

Sample Amount : 1.0000 Dilution Factor : 1.00

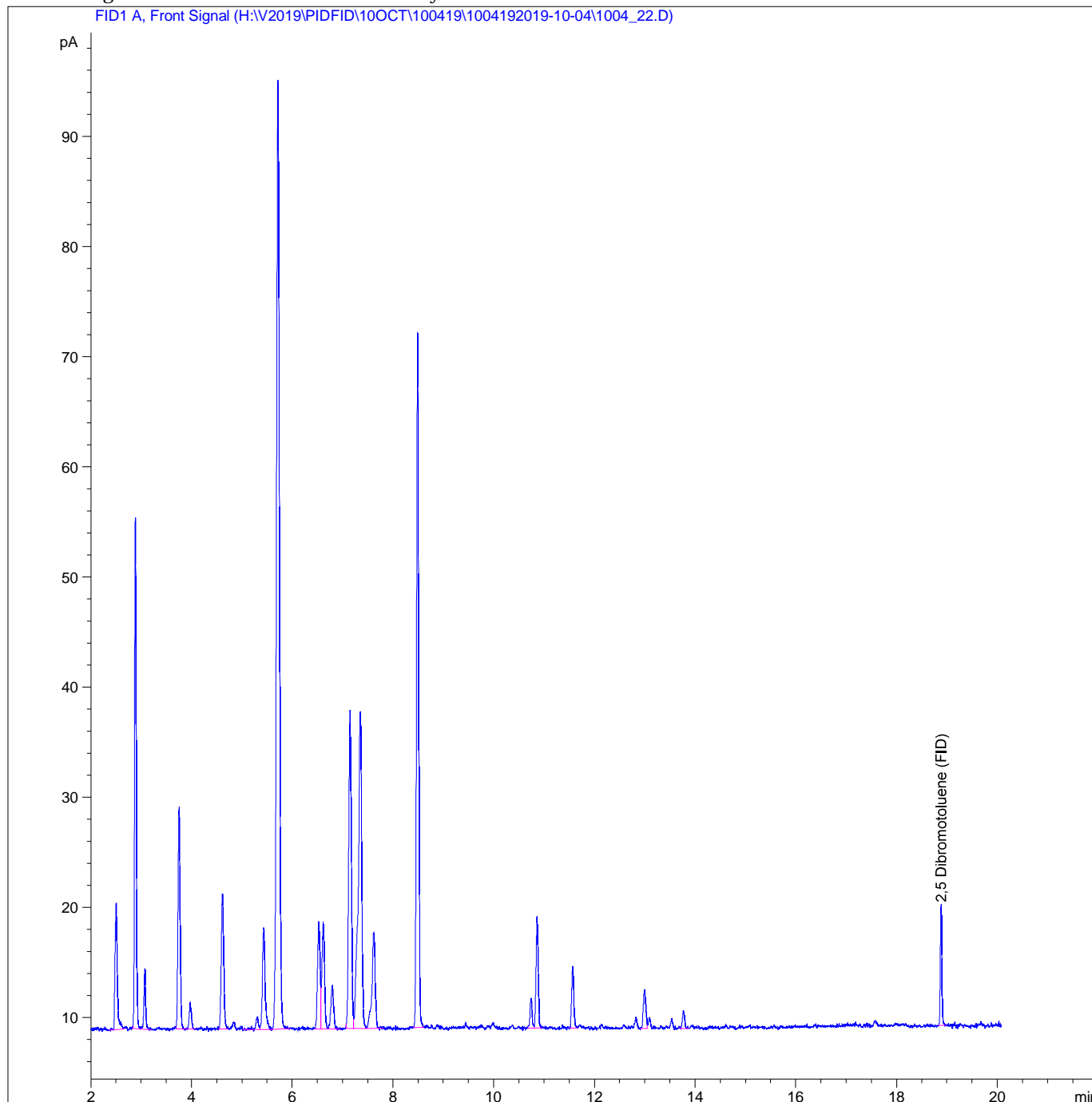


Total Petroleum Hydrocarbons - DRO

Sample Name: CE26466 100000X SM

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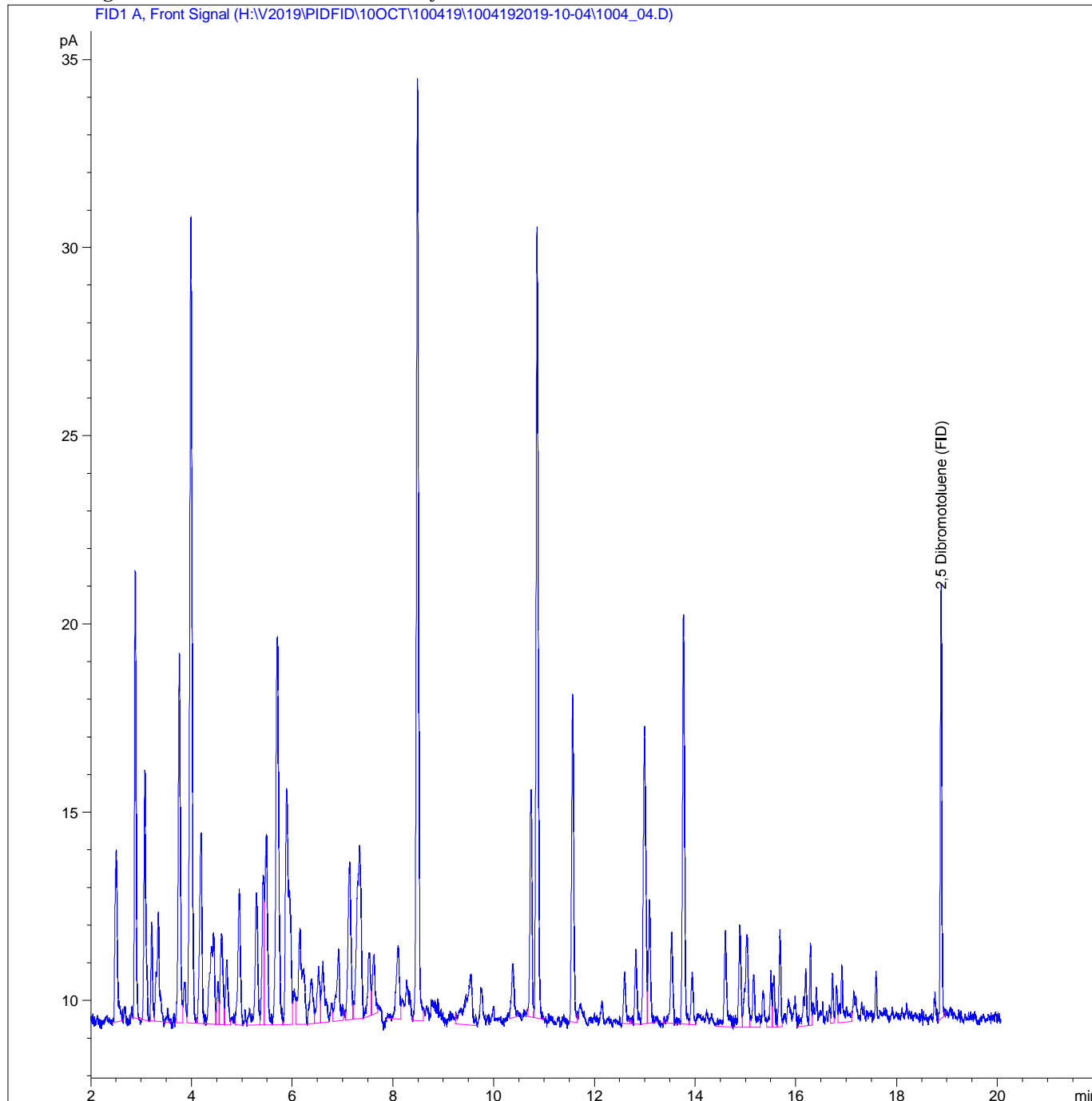
Acq. Operator : SYSTEM	Seq. Line : 22
Acq. Instrument : VPH PIDFID	Location : Vial 1
Injection Date : 10/4/2019 8:25:25 PM	Inj : 1
	Inj Volume : Manually
Acq. Method : C:\V2019\PIDFID\100CT\100419\1004192019-10-04\VPACQ060819.M	
Last changed : 10/4/2019 10:33:24 AM by SYSTEM	
Analysis Method : H:\V2019\PIDFID\METHODS\GRO_082719.M	
Last changed : 8/28/2019 1:48:12 PM by SYSTEM	



Sample Name: GRO 500PPB 15M V

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Acq. Operator : SYSTEM	Seq. Line : 4
Acq. Instrument : VPH PIDFID	Location : Vial 1
Injection Date : 10/4/2019 12:05:43 PM	Inj : 1
	Inj Volume : Manually
Acq. Method : C:\V2019\PIDFID\100CT\100419\1004192019-10-04\VPACQ060819.M	
Last changed : 10/4/2019 10:33:24 AM by SYSTEM	
Analysis Method : H:\V2019\PIDFID\METHODS\GRO_082719.M	
Last changed : 8/28/2019 1:48:12 PM by SYSTEM	



Sample Name: GRO 500PPB 15M V

External Standard Report

Sorted By : Signal
Calib. Data Modified : 8/28/2019 1:48:07 PM
Multiplier: : 1.0000
Dilution: : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, Front Signal

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ng/ul]	Grp	Name
18.881	VB	23.99875	4.48358	107.60037	2,5	Dibromotoluene (FID)

Totals : 107.60037

Summed Peaks Report

Signal 1: FID1 A, Front Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [ng/ul]
C6-C10 GRO	3.600	13.900	674.93921	491.6257

Totals : 491.6257

Final Summed Peaks Report

Signal 1: FID1 A, Front Signal

Name	Total Area [pA*s]	Amount [ng/ul]
C6-C10 GRO	674.93921	491.6257
2,5 Dibromotolu	23.99875	107.6004

Totals : 599.2261

*** End of Report ***