



908 North Temperance Ave. ▽ Clovis, CA 93611 ▽ Phone 559-275-2175 ▽ Fax 559-275-4422

Certification Number: CA1312
NELAP Certification number: CA00046
DoD-ELAP Certificate number: 4064.01

Data Validatable Report

June 15, 2020

AECOM
1001 Bishop Street, Suite 1600
Honolulu, Hawaii 96813

Attn: Margie Pascua

Title: Report of Data: Case 92186 Revision

Project: 60571032 CV18F0126 Red Hill Fuel Storage. HI

Contract #: Prime contract # for DoD: NAVY CLEAN N62742-17-F-1800, CV18F0126
Subcontract: 18S-22209-HI27

Dear Ms. Pascua:

Two water samples were received May 14, 2020. Revised written results for the requested analyses are being provided on this June 15, 2020.

Revision 05-29-2020: The extraction method was changed in the case narrative to reflect the laboratory procedure. Carbon ranges C8-C18 were added to the quantitation and Form 1s.

Revision 06-15-2020: A footnote was added to the Form 1's for ERH 1089 and ERH 1090 regarding the EPA 8015B TPH chromatographic pattern.

Results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

If you have any questions or require further information, please contact your APPL Project Manager, Libby Cheeseborough, libby@applinc.com, at your convenience. Thank you for choosing APPL, Inc.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. These test results meet all requirements of NELAC and DoD QSM. Release of the hard copy has been authorized by the Laboratory Manager or her designee, as verified by the following signature.

Sharon DeMolloy *for PM*
Paula McCartney, Laboratory Director
APPL, Inc.

PM/lac
Enclosure
cc: File

Data Validation Package
for
60481245 CIV 0053 Red Hill Fuel Storage
APPL SDG 92186
TABLE OF CONTENTS

LABORATORY NAME: APPL, Inc.

Case Narrative	<u>3</u>
Sample Management Records	<u>8</u>
Sample Results	<u>12</u>
QC Forms	<u>15</u>
Method 8015B Calibration Data	<u>22</u>
Method 8015B Raw Data	<u>51</u>

**SAMPLE RECORDS MANAGEMENT
CHAIN OF CUSTODY,
ARF, CRF, AND
CLIENT COMMUNICATION**

APPL - Analysis Request Form

92186



Client: **AECOM**
 Address: **1001 Bishop Street, Suite 1600**
Honolulu, HI 96813
 Attn: **Margie Pascua**
 Phone: **808-356-5373** Fax: **808-523-8950**
 Job: **60571032 CV18F0126 Red Hill Fuel Storage**
 PO #: **18S-22209-HI27 PO# 102604**
 Chain of Custody (Y/N): **Y** # **186**
 RAD Screen (Y/N): **Y** pH (Y/N): **N**
 Turn Around Type: **24 HOURS**

Received by: **RBR**
 Date Received: **05/14/20** Time: **10:15**
 Delivered by: **FEDEX**
 Shuttle Custody Seals (Y/N): **Y** Time Zone: **-10**
 Chest Temp(s): **3.5°C**
 Color: **K-PurpleYellow**
 Samples Chilled until Placed in Refrig/Freezer: **Y**
 Project Manager: **Libby Cheesebor**
 QC Report Type: **DVP4DOD/EQUIS/HI**
 Due Date: **05/15/20**

Comments:

PM: login and F1s to Margie.Pascua@aecom.com
AN: 7 day TAT for Form 1s; 21 day TAT for PKG STYLE 1; DOD v5.1; DOD Forms: LOD database
Wetlab: Nitrate by EPA 300 and 353.2; report MS/MSD/DUPs when AECOM sample used
8260: BTEX & TPH-G only; 8270 SIM: 1-methylnaphthalene, 2-methylnaphthalene & naphthalene only.
TPH D & O both with and w/o SGC, reverse surrogate for the SGC; analyze SGC if detections
RSK: Methane only; 8011: EDB only; \$87DC53W5: report phenol + TICs
FR: email ftp info to Margie, Stella, trommelfanger@lab-data.com & jcanlas@lab-data.com
EDD: AECOM EQUIS EDD 2.5.3 Red Hill 87DMEE->3535A to Margie.Pascua@aecom.com & jecklund@lab-data.com

Sample Distribution:
GC: 2-\$DOC53W5LIQ
Extractions: 2- LIQ005

Charges:

Invoice To:

ACCOUNTS PAYABLE
 1001 Bishop Street, Ste 1600
 USAPImaging@aecom.com
 mary.basano@aecom.com

Client ID	APPL ID	Sampled	Analyses Requested
1. ERH 1089	MS/MSD BA11198W	05/13/20 11:00	\$DOC53W5LIQ -- Extract with ultra pure DMC
2. ERH 1090	LCSD BA11199W	05/13/20 11:00	\$DOC53W5LIQ -- Extract with ultra pure DMC

APPL Sample Receipt Form

ARF# 92186

Sample	Container Type	Count	p
BA11198	17 Amber Liter	4	NA
BA11199	17 Amber Liter	2	NA

Sample Container Type Count p

COOLER RECEIPT FORM

ARF: 92186

- 1) Project: 60571032 CV18F0126 Red Hill Fuel Storage Date Received: 05/14/20
2) Coolers: Number of Coolers: 1
3) Yes Were custody seals present and intact? How many? 1 Name/Date on seal? Not Salvigable
4) YES Was there a shipping slip? Carrier name: FEDEX
5) Type of packing in cooler: X bubble wrap popcorn foam plastic bags other wet ice dry ice no ice X gel ice
6) YES Were cooler temperatures acceptable?
7) Serial number of certified NIST thermometer use IR @ +0.0°C
8) Cooler temp(s): In °C. Thermometer Temp / Corrected Temp
1: 3.5/3.5 2: 3: 4: 5: 6:
7: 8: 9: 10: 11: 12:

Chain of custody:

- 9) YES Was a chain of custody received?
10) YES Were the custody papers complete/signed in the appropriate places?

Sample Labels:

- 11) YES Were all sample labels complete (sample ID, date/time of sampling, etc.)?
12) YES Did all container labels agree with custody papers?

Sample Containers:

- 13) YES Were all containers sealed in separate bags?
14) YES Did all containers arrive in good condition:(unbroken, no leakage, no cracked/broken lids)?
15) YES Were correct containers and preservatives used for the tests indicated?
16) YES Was a sufficient amount of sample sent for tests indicated?
17) NA Were bubbles present in volatile samples?

If yes, the following were received with air bubbles:

Larger than a pea:

Smaller than a pea:

Preservation Hold time:

- 18) Yes Was a sufficient amount of holding time remaining to analyze the samples?
19) NA Was the pH taken of all non-VOA preserved samples and written on the sample container?
20) NA Was the pH of acid preserved non-VOA samples < 2?
21) NA Was the pH of the "basic" preserved samples for Cyanide > 12, Sulfide >9, Hexchrom >9?
22) NO Were unpreserved VOA Vials received?
23) NA Are unpreserved VOA vials noted in the ADD TEST FIELD on the ARF?

pH strip lot number:

Lab notified if pH was not adequate:

Notes/Deficiencies:

Personnel receiving samples: AA Second reviewer: AA
Personnel labeling samples: CMM
Project manager notified: AA Date/Time of notification 05/14/20 11:50:00 AM
Name of client notified: Date/Time of notification

CASE NARRATIVE

Case Narrative

ARF: 92186

Project: 60571032 CV18F0126 Red Hill Fuel Storage. HI

Sample Receipt Information:

Two water samples were received May 14, 2020, at 3.5°C. The sample group was assigned Analytical Request Form (ARF) number 92186.

Sample Preparation and Analysis Information:

For the EPA 8015B analysis, the sample was extracted according to EPA method 3520C. The sample extracts were silica gel cleaned according to APPL's SOP CLN004 and placed on hold.

Only the portion of the injection log relative to these samples is included. A full sequence log is available upon request. Measurement uncertainty can be reported upon request.

Analytical Exceptions, Deviations and Abnormalities.

EPA 8015B: Manual integrations were performed in accordance with APPL's SOP. Chromatograms of before and after manual integration are enclosed.

qryCOC_APPLCaseNarrativeReport

SDG	Received	Client ID	APPL ID	Collected DateTime	Matrix	Method	Method Description
92186	05/14/20	ERH 1089	BA11198	05/13/20 11:00:00 AM	WATER	EPA 8015B-eHL	EPA 8015B TPH LIQ-LIQ
92186	05/14/20	ERH 1090	BA11199	05/13/20 11:00:00 AM	WATER	EPA 8015B-eHL	EPA 8015B TPH LIQ-LIQ

Abbreviations and Flags

FLAG	DESCRIPTION
#	Recovery or RPD outside control limits
*	Recovery or RPD outside control limits
B	Analyte detected in associated method blank
C1	Reason for correction: wrote incorrect response
C2	Reason for correction: calculated incorrectly
C3	Reason for correction: needs to be rechecked
C4	Reason for correction: data not usable
DO	Diluted out
E	Exceeds linear range
F	Estimated value
G1	Includes a wide range of hydrocarbons which does not match our gasoline standard
G10	Includes a match to hydrocarbon profiles within the range of mineral spirits
G11	Includes a match to hydrocarbon profiles within the range of JP-4
G12	Pattern does not match the gasoline standard; the carbon range for this sample is consistent with JP8
G13	Closely resembles the hydrocarbon profile of aviation gasoline
G14	Analyte concentration may be biased due to carry over
G2	Closely resembles the boiling point hydrocarbon profile consistent with weathered gasoline
G3	Includes higher boiling hydrocarbons
G4	Includes dominant peak(s) not indicative of petroleum hydrocarbons
G5	Is mainly dominant peak(s) not indicative of petroleum hydrocarbons
G6	Contains recognizable contaminant peak(s) which has been removed from quantitation
G7	Is mainly a match to hydrocarbons within the range of gasoline
G8	Closely resembles the boiling point hydrocarbon profile consistent with weathered gasoline
G9	Includes hydrocarbons within the range of kerosene
J	Estimated value
M	Matrix effect
MI1	Manual integration: integration does not follow baseline
MI2	Manual integration: non-target peak interference
MI3	Manual integration: to split a peak that was integrated as one peak by the computer
MI4	Manual integration: to integrate a split peak
MI5	Manual integration: the whole peak or part of the peak was not integrated
MI6	Manual integration: computer integrated wrong peak
MI7	Manual integration: other - explain
MDL	Method detection limit
ND	Not detected
NT	Non-target
Q	Acceptance criteria not met
T1 I	Includes wide range of hydrocarbons not indicative of diesel
T1 M	Is mainly wide range of hydrocarbons not necessarily indicative of diesel
T2 I	Includes lower boiling hydrocarbons, i.e. mineral spirits, kerosene, stoddard solvent, white gas
T2 M	Is mainly lower boiling hydrocarbons, i.e. mineral spirits, kerosene, stoddard solvent, white gas
T3 I	Includes higher boiling hydrocarbons, i.e. asphaltene, waster oil, motor oil, or weathered diesel fuel
T3 M	Is mainly higher boiling hydrocarbons, i.e. asphaltene, waster oil, motor oil, or weathered diesel fuel
T4 I	Includes dominant peak(s) not indicative of hydrocarbons
T4 M	Is mainly dominant peak(s) not indicative of hydrocarbons
T5	Contains recognizable contaminant peak(s) which has been removed from quantitation
T6	Is mainly a match to hydrocarbons within range of diesel fuel
T7	Closely resembles the boiling point hydrocarbon profile consistent with diesel fuel
T8	Includes a match to hydrocarbon profiles within range of diesel and kerosene fuel
T9 I	Includes non-diesel hydrocarbons within boiling point range of diesel fuel
T9 M	Is mainly non-diesel hydrocarbons within boiling point range of diesel fuel.
Y	Percent difference between primary and confirmation column > 40%

SAMPLE RESULTS

EPA 8015B TPH LIQ-LIQ

AECOM
1001 Bishop Street, Suite 1600
Honolulu, HI 96813

Attn: Margie Pascua

Project: 60571032 CV18F0126 Red Hill Fuel Storage

Sample ID: ERH 1089

Sample Collection Date: 05/13/20

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

ARF: 92186

APPL ID: BA11198

QCG: #DOC53-200515A-252709

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8015B-e	C8-C18	260 J *	320	300.0	150.0	ug/L	05/15/20	05/18/20
EPA 8015B-e	DIESEL (C10-C24)	300.0 U	320	300.0	150.0	ug/L	05/15/20	05/18/20
EPA 8015B-e	OIL (C24-C40)	300.0 U	320	300.0	150.0	ug/L	05/15/20	05/18/20
EPA 8015B-e	SURROGATE: OCTACOSANE (S)	110	60-142			%	05/15/20	05/18/20
EPA 8015B-e	SURROGATE: ORTHO-TERPHENYL (S)	73.1	56-125			%	05/15/20	05/18/20

* Includes dominant peaks not indicative of diesel or fuel hydrocarbons

J = Estimated value.

Quant Method: DOC0310.M
Run #: 518009
Instrument: Apollo
Sequence: 200518
Dilution Factor: 1
Initials: SSE

Amended Page

EPA 8015B TPH LIQ-LIQ

AECOM
1001 Bishop Street, Suite 1600
Honolulu, HI 96813

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Margie Pascua

Project: 60571032 CV18F0126 Red Hill Fuel Storage

ARF: 92186

Sample ID: ERH 1090

APPL ID: BA11199

Sample Collection Date: 05/13/20

QCG: #DOC53-200515A-252709

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
EPA 8015B-e	C8-C18	260 J *	320	300.0	150.0	ug/L	05/15/20	05/18/20
EPA 8015B-e	DIESEL (C10-C24)	300.0 U	320	300.0	150.0	ug/L	05/15/20	05/18/20
EPA 8015B-e	OIL (C24-C40)	300.0 U	320	300.0	150.0	ug/L	05/15/20	05/18/20
EPA 8015B-e	SURROGATE: OCTACOSANE (S)	111	60-142			%	05/15/20	05/18/20
EPA 8015B-e	SURROGATE: ORTHO-TERPHENYL (S)	72.8	56-125			%	05/15/20	05/18/20

* Includes dominant peaks not indicative of diesel or fuel hydrocarbons

J = Estimated value.

Quant Method: DOC0310.M
Run #: 518010
Instrument: Apollo
Sequence: 200518
Dilution Factor: 1
Initials: SSE

Amended Page

Page 14 of 71

Printed: 05/28/20 8:55:23 AM
APPL-F1-SC-NoMC-REG MDLs-DOD

QC FORMS

EPA 8015B-eHL

Form 2 & 8

Surrogate Recovery

Lab Name: APPL, Inc.
Case No: 92186
Matrix: WATER

SDG No: 92186
Date Analyzed: 05/18/20
Instrument: Apollo

APPL ID.	Client Sample No.	SURROGATE: OCTACOSANE (S)			SURROGATE: ORTHO-TERPHENYL (S)		
		Limits	Result	Qualifier	Limits	Result	Qualifier
200515A-BLK	Blank	60-142	108		56-125	81.5	
200515A-LCS	Lab Control Spike	60-142	103		56-125	90.3	
BA11198-MS	Matrix Spike	60-142	107		56-125	92.3	
BA11198-MSD	Matrix SpikeD	60-142	108		56-125	93.2	
BA11198	ERH 1089	60-142	110		56-125	73.1	
BA11199	ERH 1090	60-142	111		56-125	72.8	

Comments: Batch: #DOC53-200515A

Printed: 05/28/20 8:55:43 AM
Form 2 & 8, Surrogate Recovery Summary

EPA 8015B-eH

Form 4

Blank Summary

Lab Name: APPL, Inc.

SDG No: 92186

Case No: 92186

Date Analyzed: 05/18/20

Matrix: WATER

Instrument: Apollo

Blank ID: 200515A-BLK

Time Analyzed: 1059

APPL ID.	Client Sample No.	File ID.	Date Analyzed
200515A-BLK	Blank	518005	05/18/20 1059
200515A-LCS	Lab Control Spike	518006	05/18/20 1122
200515A-MS	Matrix Spike	518007	05/18/20 1145
200515A-MSD	Matrix SpikeD	518008	05/18/20 1207
BA11198	ERH 1089	518009	05/18/20 1230
BA11199	ERH 1090	518010	05/18/20 1253

Comments: Batch: #DOC53-200515A

Printed: 05/28/20 8:55:43 AM
Form 4, Blank Summary

Method Blank
EPA 8015B TPH LIQ-LIQ

Blank Name/QCG: **200515W-11198 - 252709**
Batch ID: #DOC53-200515A

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Sample Type	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
BLANK	C8-C18	300.0 U	320	300.0	150.0	ug/L	05/15/20	05/18/20
BLANK	DIESEL (C10-C24)	300.0 U	320	300.0	150.0	ug/L	05/15/20	05/18/20
BLANK	OIL (C24-C40)	300.0 U	320	300.0	150.0	ug/L	05/15/20	05/18/20
BLANK	SURROGATE: OCTACOSANE (S)	108	60-142			%	05/15/20	05/18/20
BLANK	SURROGATE: ORTHO-TERPHEN	81.5	56-125			%	05/15/20	05/18/20

Quant Method:DOC0310.M
Run #:518005
Instrument:Apollo
Sequence:200518
Initials:SSE

GC SC-Blank-REG MDLs-DOD
Printed: 05/28/20 8:55:23 AM

EPA 8015B-eH

Form 4

LCS Summary

Lab Name: APPL, Inc.

SDG No: 92186

Case No: 92186

Date Analyzed: 05/18/20

Matrix: WATER

Instrument: Apollo

LCS ID: 200515A-LCS

Time Analyzed: 1122

APPL ID.	Client Sample No.	File ID.	Date Analyzed
200515A-BLK	Blank	518005	05/18/20 1059
200515A-LCS	Lab Control Spike	518006	05/18/20 1122
200515A-MS	Matrix Spike	518007	05/18/20 1145
200515A-MSD	Matrix SpikeD	518008	05/18/20 1207
BA11198	ERH 1089	518009	05/18/20 1230
BA11199	ERH 1090	518010	05/18/20 1253

Comments: Batch: #DOC53-200515A

Printed: 05/28/20 8:55:43 AM
Form 4, LCS Summary

Laboratory Control Spike Recovery

EPA 8015B TPH LIQ-LIQ

APPL ID: 200515W-11198 LCS - 252709

Batch ID: #DOC53-200515A

APPL Inc.

908 North Temperance Avenue

Clovis, CA 93611

Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits
C8-C18	1250	1040	83.2	36-132
DIESEL (C10-C24)	1250	1230	98.4	36-132
OIL (C24-C40)	1250	1210	96.8	41-113
<hr style="border-top: 1px dashed black;"/>				
SURROGATE: OCTACOSANE (S)	75.0	77.5	103	60-142
SURROGATE: ORTHO-TERPHENYL (S)	75.0	67.7	90.3	56-125

Comments: _____

<u>Primary</u>	<u>SPK</u>
Quant Method :	DOC0310.M
Extraction Date :	05/15/20
Analysis Date :	05/18/20
Instrument :	Apollo
Run :	518006
Initials :	SSE

Printed: 05/28/20 9:01:51 AM

APPL Standard LCS

Matrix Spike Recoveries

EPA 8015B TPH LIQ-LIQ

APPL ID: **200515W-11198 MS - 252709**
 Batch ID: #DOC53-200515A
 Sample ID: BA11198
 Client ID: ERH 1089

APPL Inc.
 908 North Temperance Avenue
 Clovis, CA 93611

Compound Name	Spike Lvl ug/L	Matrix Result ug/L	SPK Result ug/L	DUP Result ug/L	SPK % Recovery	DUP % Recovery	Recovery Limits	RPD %	RPD Limits
C8-C18	1250	260	1210	1190	76.0	74.4	36-132	1.7	30
DIESEL (C10-C24)	1250	120	1310	1330	95.2	96.8	36-132	1.5	30
OIL (C24-C40)	1250	74	1310	1280	98.9	96.5	41-113	2.3	30

SURROGATE: OCTACOSANE (S)	75.0	NA	80.1	81.3	107	108	60-142		
SURROGATE: ORTHO-TERPHENYL (S)	75.0	NA	69.2	69.9	92.3	93.2	56-125		

Comments: _____

<u>Primary</u>	<u>SPK</u>	<u>DUP</u>
Quant Method :	DOC0310.M	DOC0310.M
Extraction Date :	05/15/20	05/15/20
Analysis Date :	05/18/20	05/18/20
Instrument :	Apollo	Apollo
Run :	518007	518008
Initials :	SSE	

*Printed: 05/28/20 8:58:15 AM
 APPL MSD SCII*

ORGANICS
Calibration Data

TPH Extractables
D8C0310

Form 6
Initial Calibration

Lab Name: APPL, Inc.

Case No: _____

Matrix: Water

SDG No: _____

Initial Cal. Date: 03/10/20

Instrument: Apollo

Initials: SS / M

310003.D 310004.D 310005.D 310006.D 310007.D 310008.D

	Compound	1	2	3	4	5	6					Avg	%RSD	Type	r ²	Q
1	HATM (C8-C18)	1253485	1547853	1449197	1440724	1461156	1600910					1458888	8.2	HATM		
2	HATM Diesel (C10-C24)	1402793	2048774	1956346	1950680	1978298	2168778					1917612	14	HATM		
3	HBTM Motor Oil (C24-C40)	1787356	1629558	1383257	1334462	1324161	1387579					1474395	13	HBTM		
4	SA Ortho-Terphenyl(S)	2782070	2786055	2347676	2294556	2308475	2544283					2510519	9.2	SA		
5	SA Octacosane(S)	1771075	1912436	1683790	1654254	1670744	1785274					1746262	5.6	SA		
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																
17																
18																
19																
20																
21																
22																
23																
24																
25																
26																
27																
28																
29																
30																
31																
32																
33																
34																
35																

1.417594

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\200310\310003.D Vial: 3
 Acq On : 3-10-20 9:37:22 Operator: SS
 Sample : Diesel Motor Oil-1 3/5/20 Inst : Apollo
 Misc : water Multiplr: 1.00
 IntFile : events.e
 Quant Time: May 19 14:00 2020 Quant Results File: D8C0310.RES

Method : G:\APOLLO\DATA\200518\D8C0310.M (Chemstation Integrator)
 Title : 8015 B&C
 Last Update : Tue May 19 13:59:38 2020
 Response via : Multiple Level Calibration

Volume Inj. : 2UL
 Signal Phase : DB-5
 Signal Info : FID02A

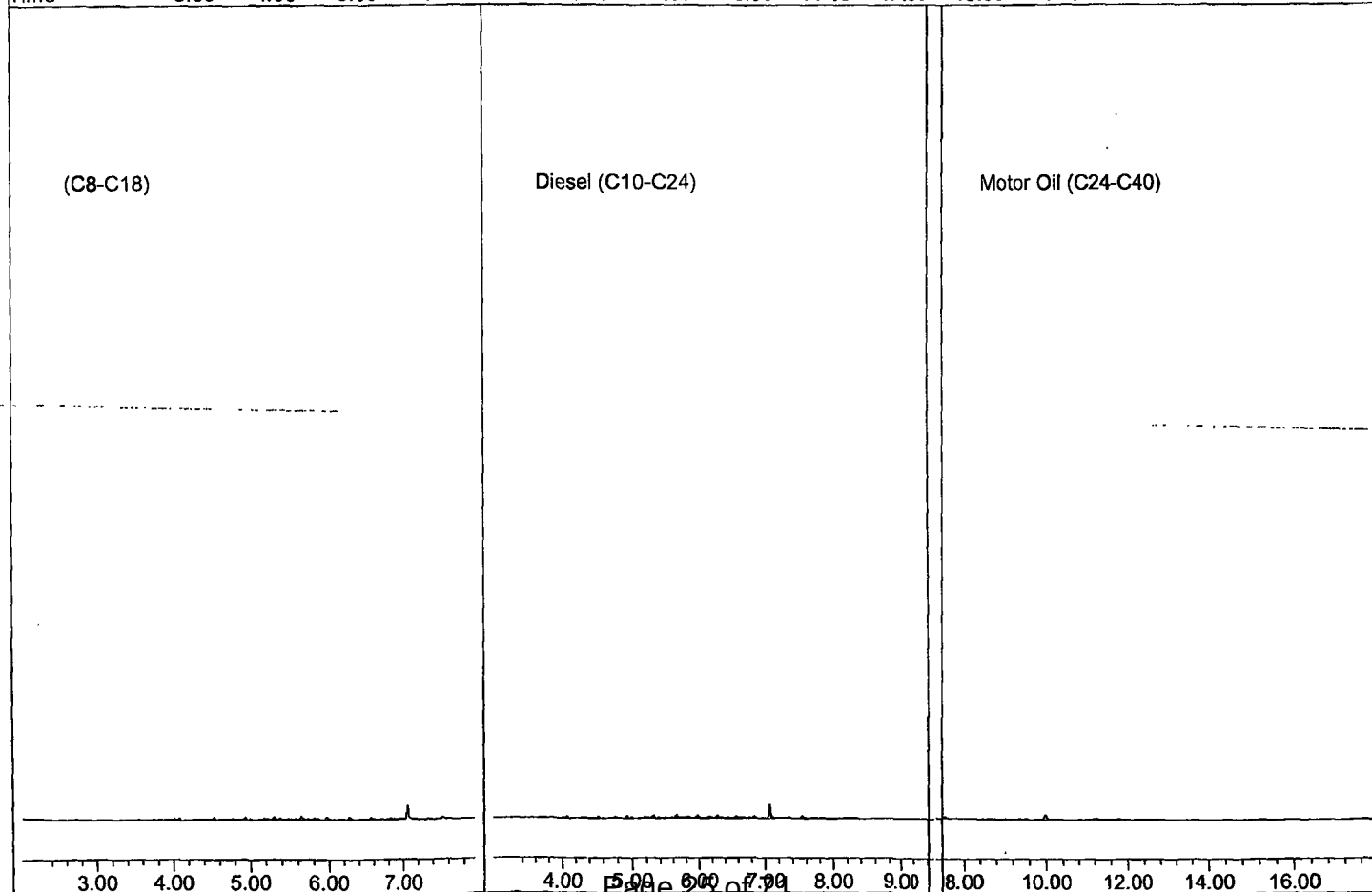
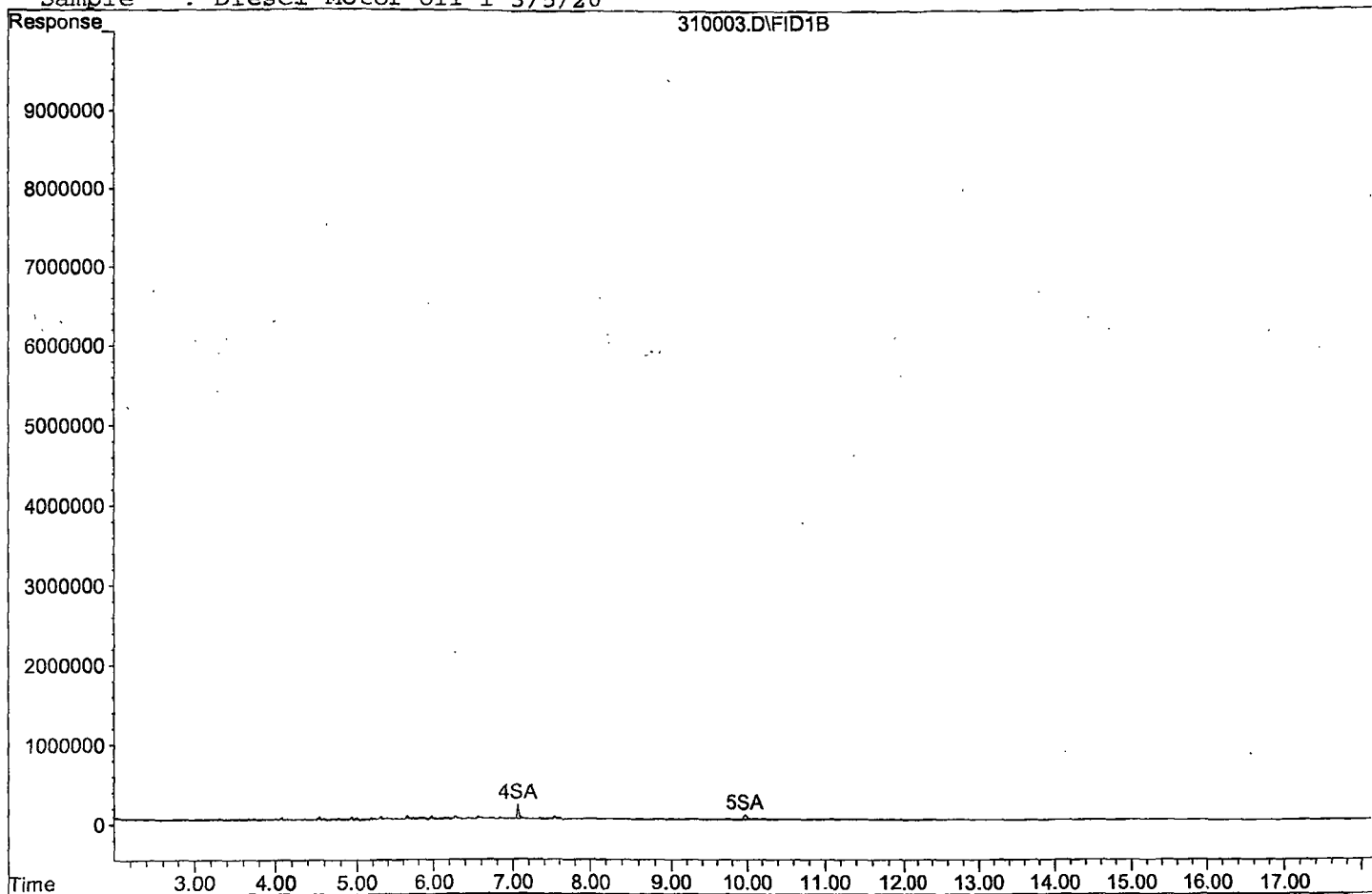
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
4) SA Ortho-Terphenyl(S)	7.06	2782070	0.554 ppb
Surrogate Spike 30.000		Recovery =	1.85%
5) SA Octacosane(S)	9.97	1771075	0.507 ppb
Surrogate Spike 30.000		Recovery =	1.69%
Target Compounds			
1) HATM (C8-C18)	4.87	25069707	8.592 ppb
2) HATM Diesel (C10-C24)	6.24	28055866	7.315 ppb
3) HBTM Motor Oil (C24-C40)	12.60	35747115	12.123 ppb

Target Compounds

Quantitation Report

Data File: G:\APOLLO\DATA\200310\310003.D

Sample : Diesel Motor Oil-1 3/5/20



Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\200310\310004.D Vial: 4
 Acq On : 3-10-20 9:59:49 Operator: SS
 Sample : Diesel Motor Oil-2 3/5/20 Inst : Apollo
 Misc : water Multiplr: 1.00
 IntFile : events.e
 Quant Time: May 19 14:00 2020 Quant Results File: D8C0310.RES

Method : G:\APOLLO\DATA\200518\D8C0310.M (Chemstation Integrator)
 Title : 8015 B&C
 Last Update : Tue May 19 13:59:38 2020
 Response via : Multiple Level Calibration

Volume Inj. : 2UL
 Signal Phase : DB-5
 Signal Info : FID02A

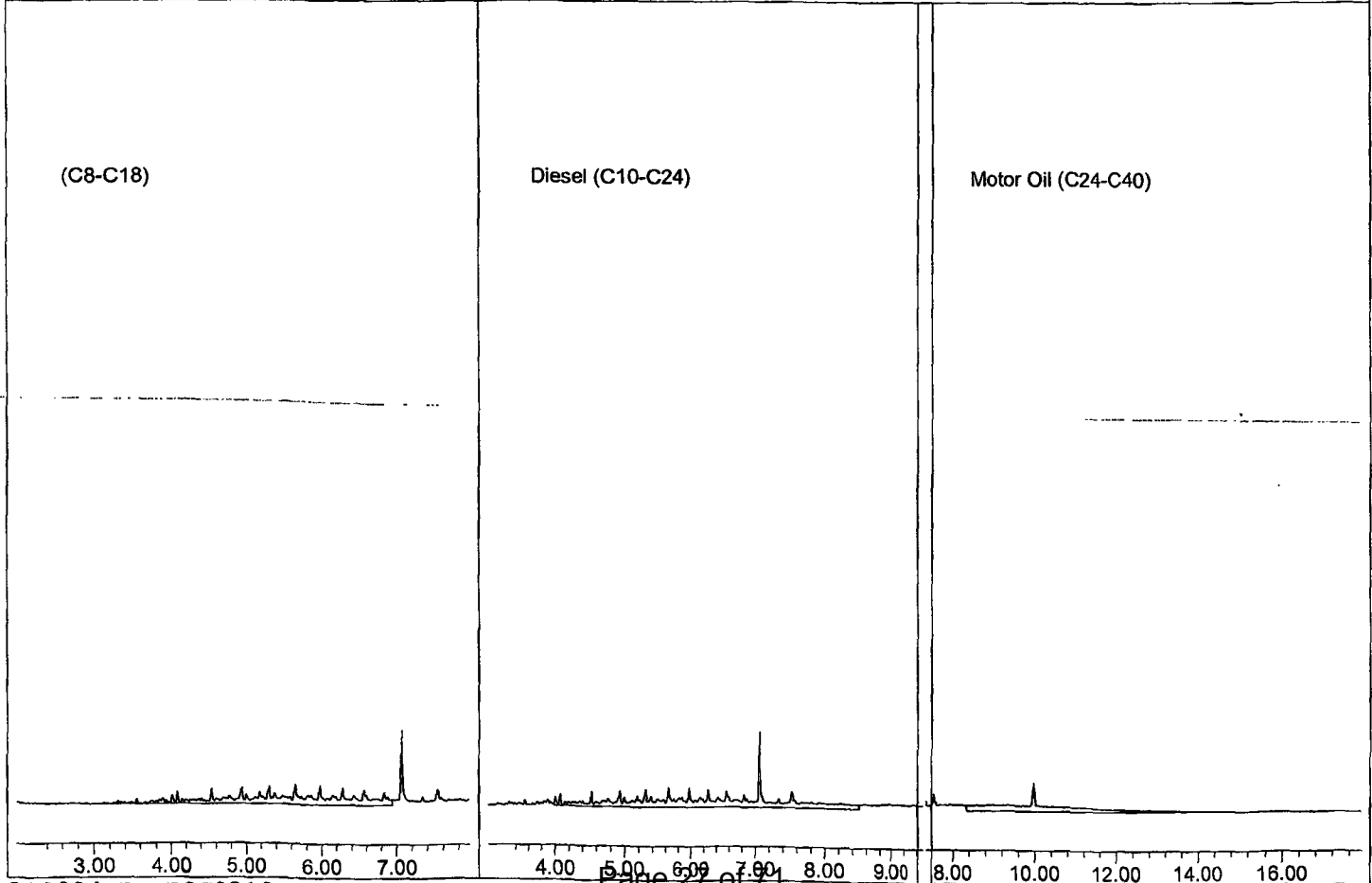
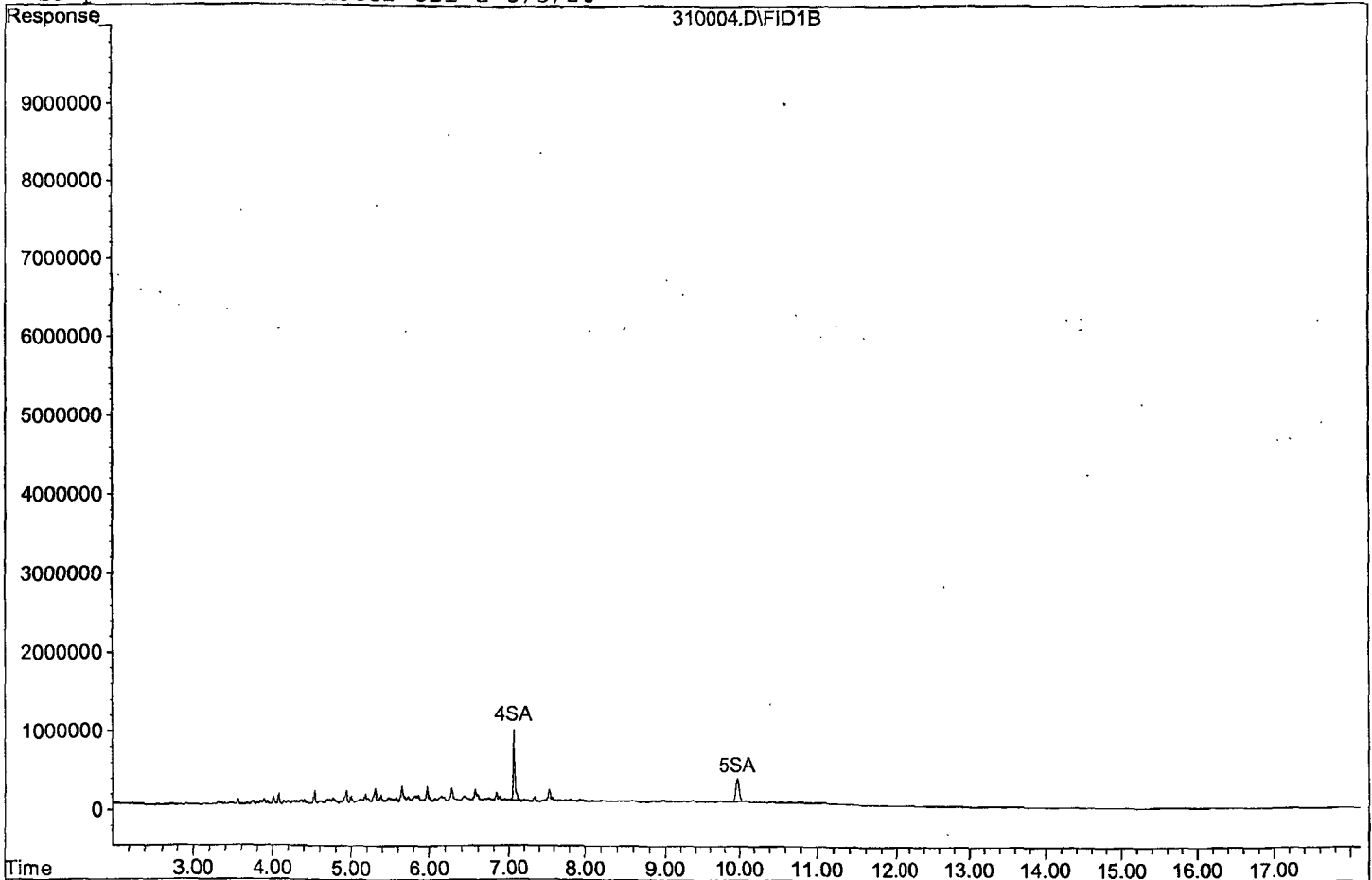
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
4) SA Ortho-Terphenyl(S)	7.06	13930276	2.774 ppb
Surrogate Spike 30.000		Recovery =	9.25%
5) SA Octacosane(S)	9.97	9562178	2.738 ppb
Surrogate Spike 30.000		Recovery =	9.13%
Target Compounds			
1) HATM (C8-C18)	4.87	154785311	53.049 ppb
2) HATM Diesel (C10-C24)	6.24	204877430	53.420 ppb
3) HBTM Motor Oil (C24-C40)	12.60	162955782	55.262 ppb

Target Compounds

Quantitation Report

Data File: G:\APOLLO\DATA\200310\310004.D

Sample : Diesel Motor Oil-2 3/5/20



Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\200310\310005.D Vial: 5
 Acq On : 3-10-20 10:22:19 Operator: SS
 Sample : Diesel Motor Oil-3 3/5/20 Inst : Apollo
 Misc : water Multiplr: 1.00
 IntFile : events.e
 Quant Time: May 19 14:00 2020 Quant Results File: D8C0310.RES

Method : G:\APOLLO\DATA\200518\D8C0310.M (Chemstation Integrator)
 Title : 8015 B&C
 Last Update : Tue May 19 13:59:38 2020
 Response via : Multiple Level Calibration

Volume Inj. : 2UL
 Signal Phase : DB-5
 Signal Info : FID02A

Compound	R.T.	Response	Conc Units
----------	------	----------	------------

System Monitoring Compounds

4) SA Ortho-Terphenyl(S)	7.06	58691912	11.689 ppb
Surrogate Spike 30.000		Recovery =	38.96%
5) SA Octacosane(S)	9.97	42094760	12.053 ppb
Surrogate Spike 30.000		Recovery =	40.18%

Target Compounds

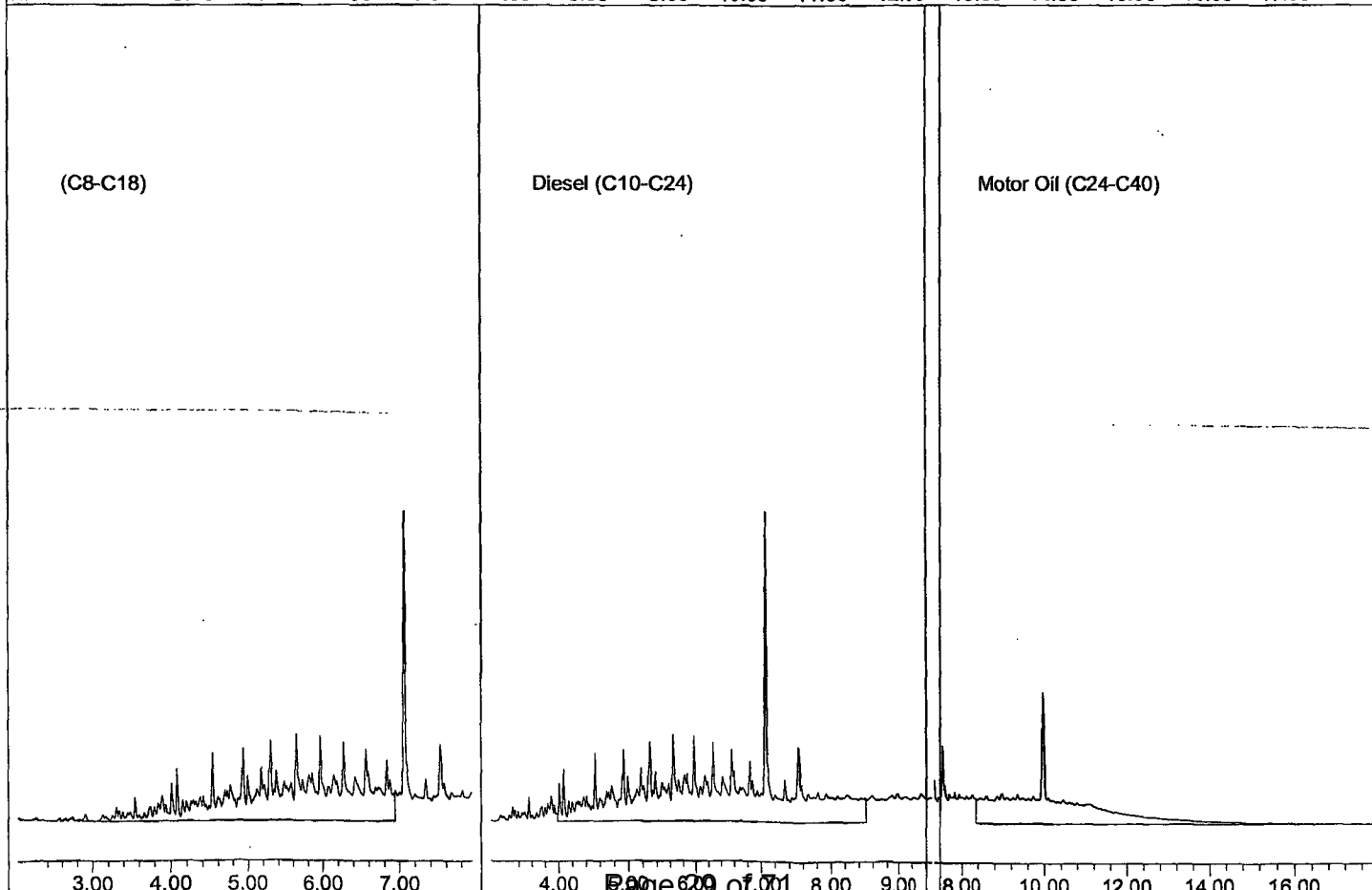
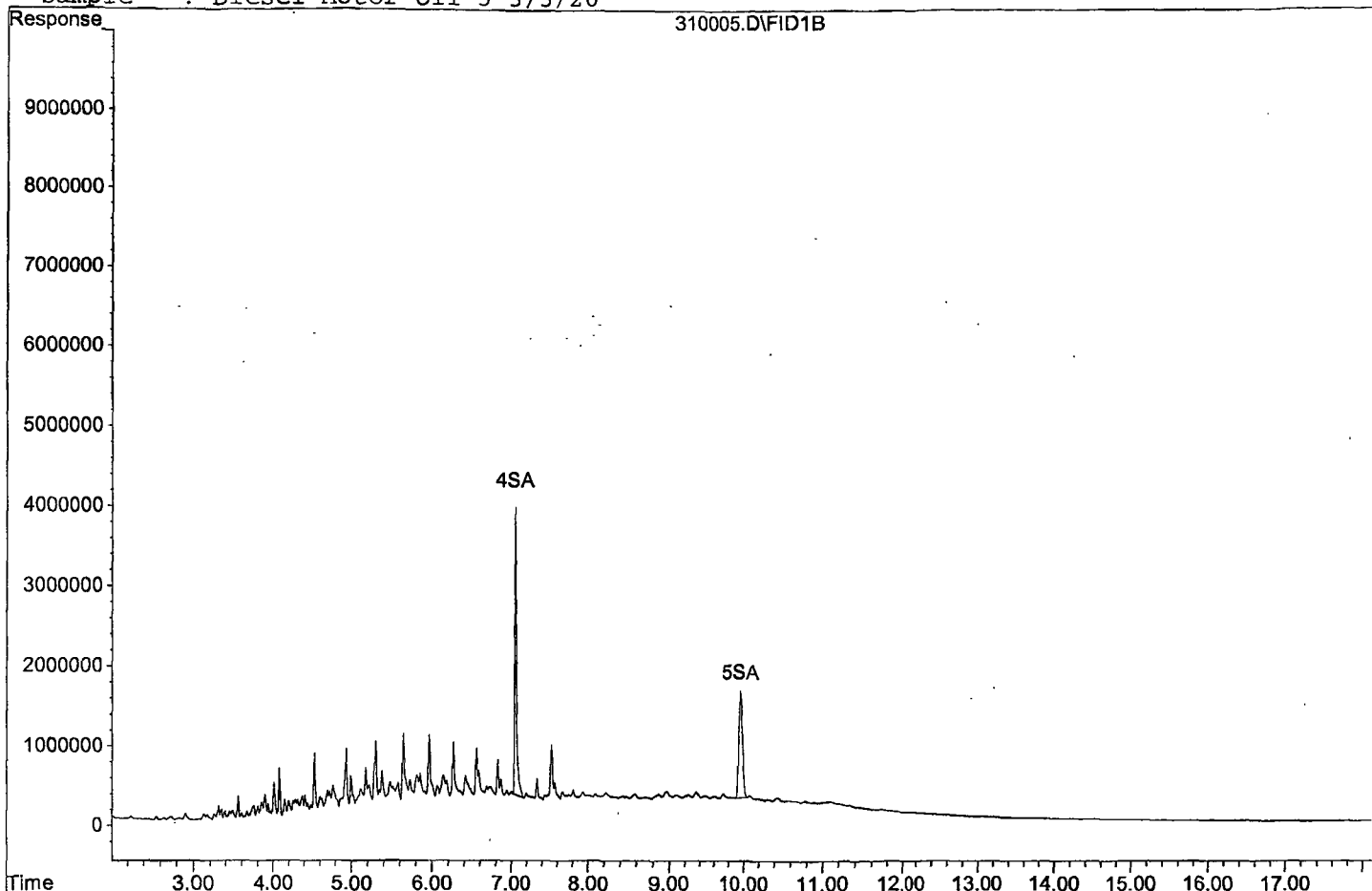
1) HATM (C8-C18)	4.87	724598658	248.339 ppb
2) HATM Diesel (C10-C24)	6.24	978173133	255.050 ppb
3) HBTM Motor Oil (C24-C40)	12.60	691628331	234.546 ppb

Target Compounds

Quantitation Report

Data File: G:\APOLLO\DATA\200310\310005.D

Sample : Diesel Motor Oil-3 3/5/20



Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\200310\310006.D Vial: 6
 Acq On : 3-10-20 10:44:50 Operator: SS
 Sample : Diesel Motor Oil-4 3/5/20 Inst : Apollo
 Misc : water Multiplr: 1.00
 IntFile : events.e
 Quant Time: May 19 14:00 2020 Quant Results File: D8C0310.RES

Method : G:\APOLLO\DATA\200518\D8C0310.M (Chemstation Integrator)
 Title : 8015 B&C
 Last Update : Tue May 19 13:59:38 2020
 Response via : Multiple Level Calibration

Volume Inj. : 2UL
 Signal Phase : DB-5
 Signal Info : FID02A

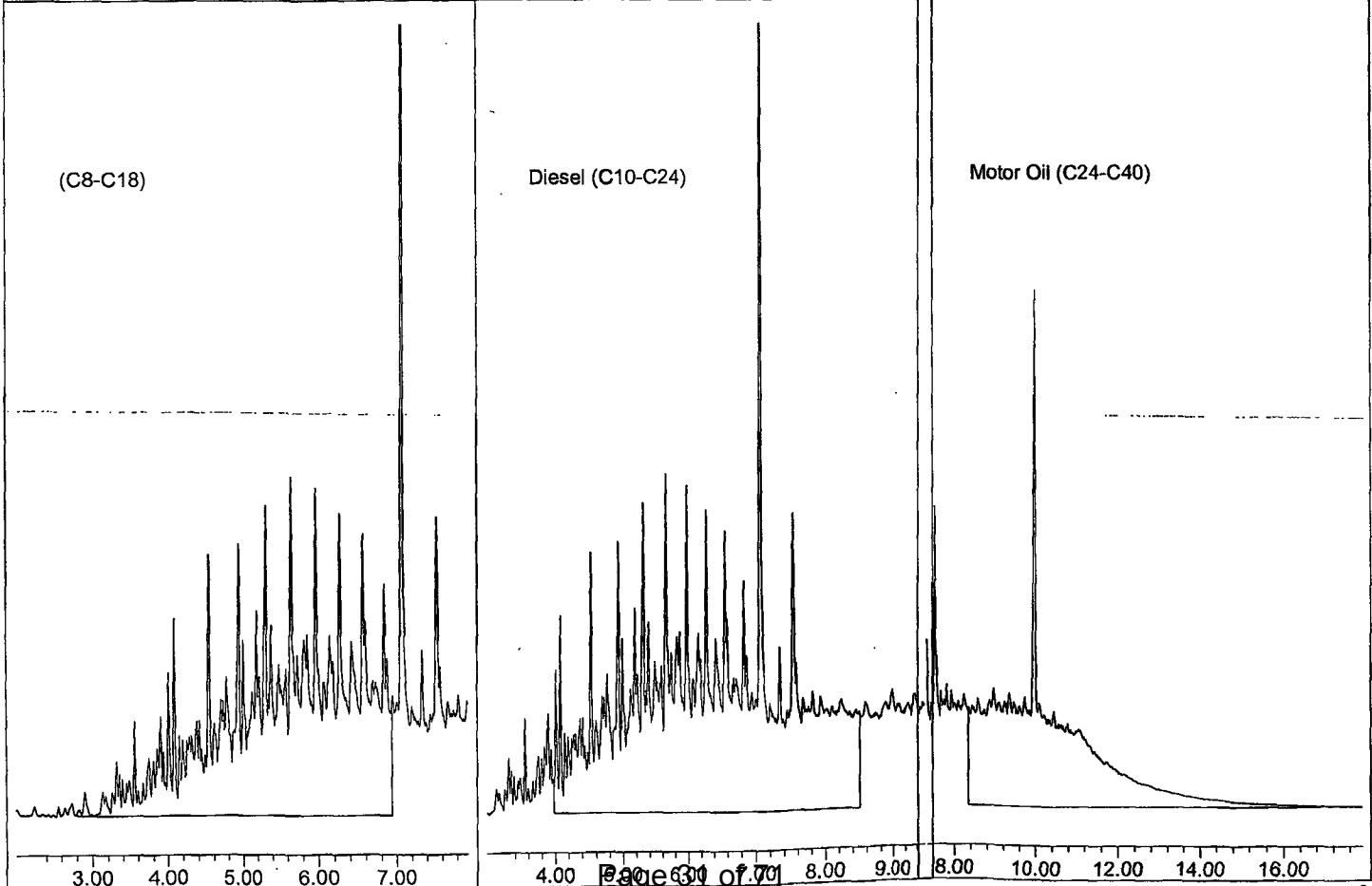
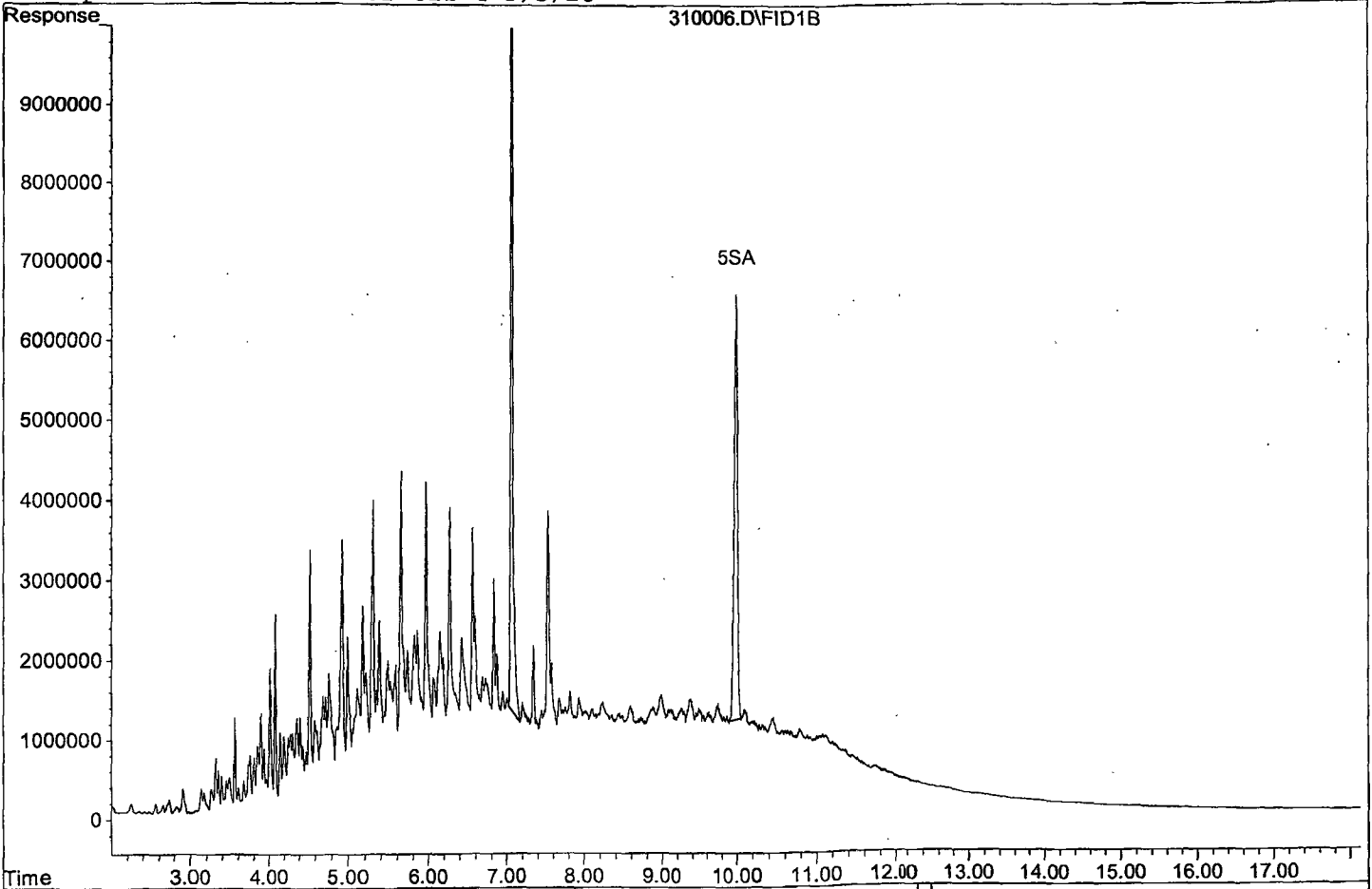
Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
4) SA Ortho-Terphenyl(S)	7.07	229455620	45.699 ppb
Surrogate Spike 30.000		Recovery =	152.33%
5) SA Octacosane(S)	9.98	165425400	47.366 ppb
Surrogate Spike 30.000		Recovery =	157.89%
Target Compounds			
1) HATM (C8-C18)	4.87	2881447253	987.549 ppb
2) HATM Diesel (C10-C24)	6.24	3901360613	1017.245 ppb
3) HBTM Motor Oil (C24-C40)	12.60	2668923786	905.091 ppb

Target Compounds

Quantitation Report

Data File: G:\APOLLO\DATA\200310\310006.D
Sample : Diesel Motor Oil-4 3/5/20



Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\200310\310007.D Vial: 7
 Acq On : 3-10-20 11:07:20 Operator: SS
 Sample : Diesel Motor Oil-5 3/5/20 Inst : Apollo
 Misc : water Multiplr: 1.00
 IntFile : events.e
 Quant Time: May 19 14:00 2020 Quant Results File: D8C0310.RES

Method : G:\APOLLO\DATA\200518\D8C0310.M (Chemstation Integrator)
 Title : 8015 B&C
 Last Update : Tue May 19 13:59:38 2020
 Response via : Multiple Level Calibration

Volume Inj. : 2UL
 Signal Phase : DB-5
 Signal Info : FID02A

Compound	R.T.	Response	Conc Units
----------	------	----------	------------

System Monitoring Compounds

4) SA Ortho-Terphenyl(S)	7.07	346271320	68.964 ppb
Surrogate Spike 30.000		Recovery =	229.88%
5) SA Octacosane(S)	9.98	250611670	71.757 ppb
Surrogate Spike 30.000		Recovery =	239.19%

Target Compounds

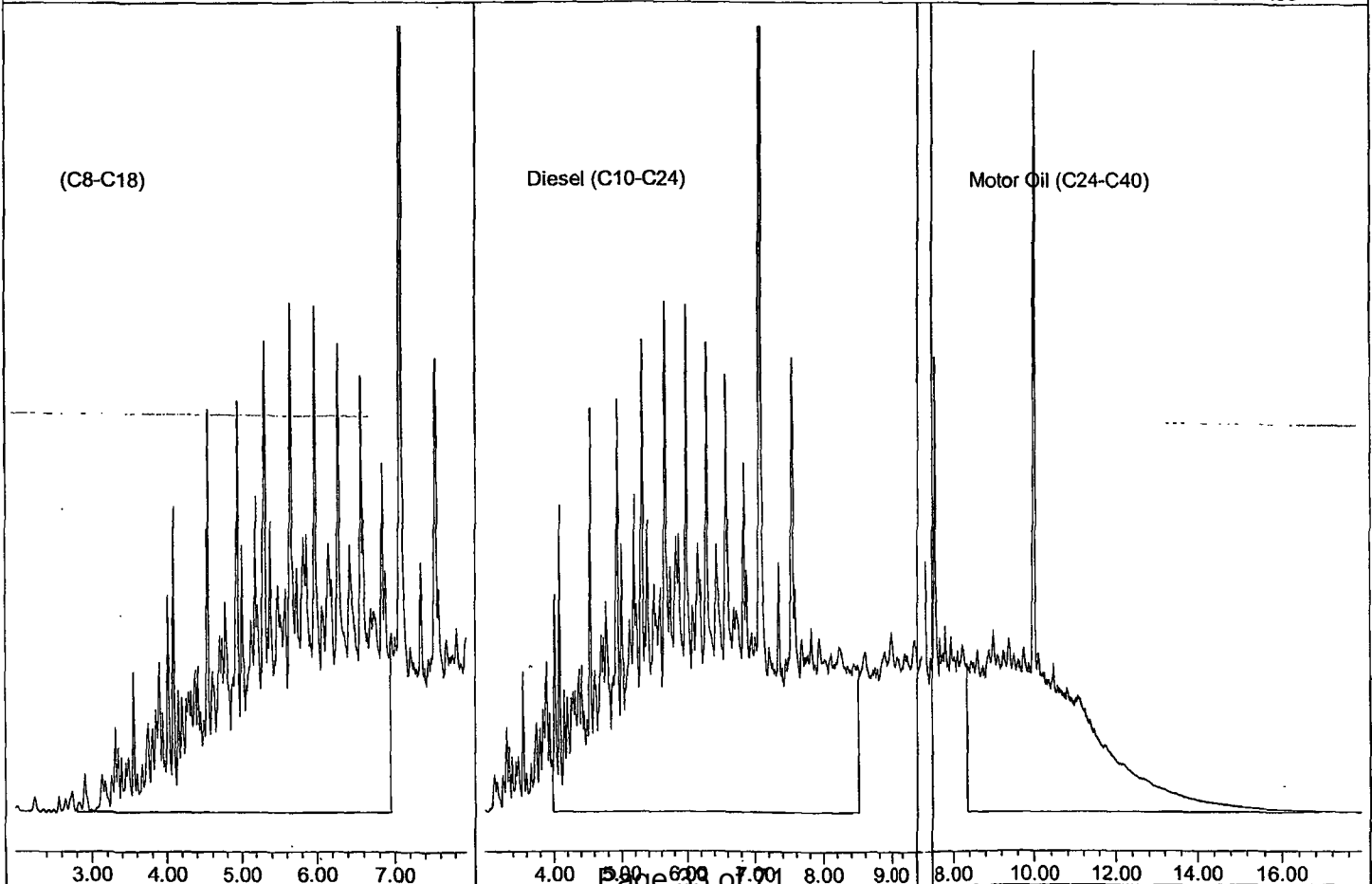
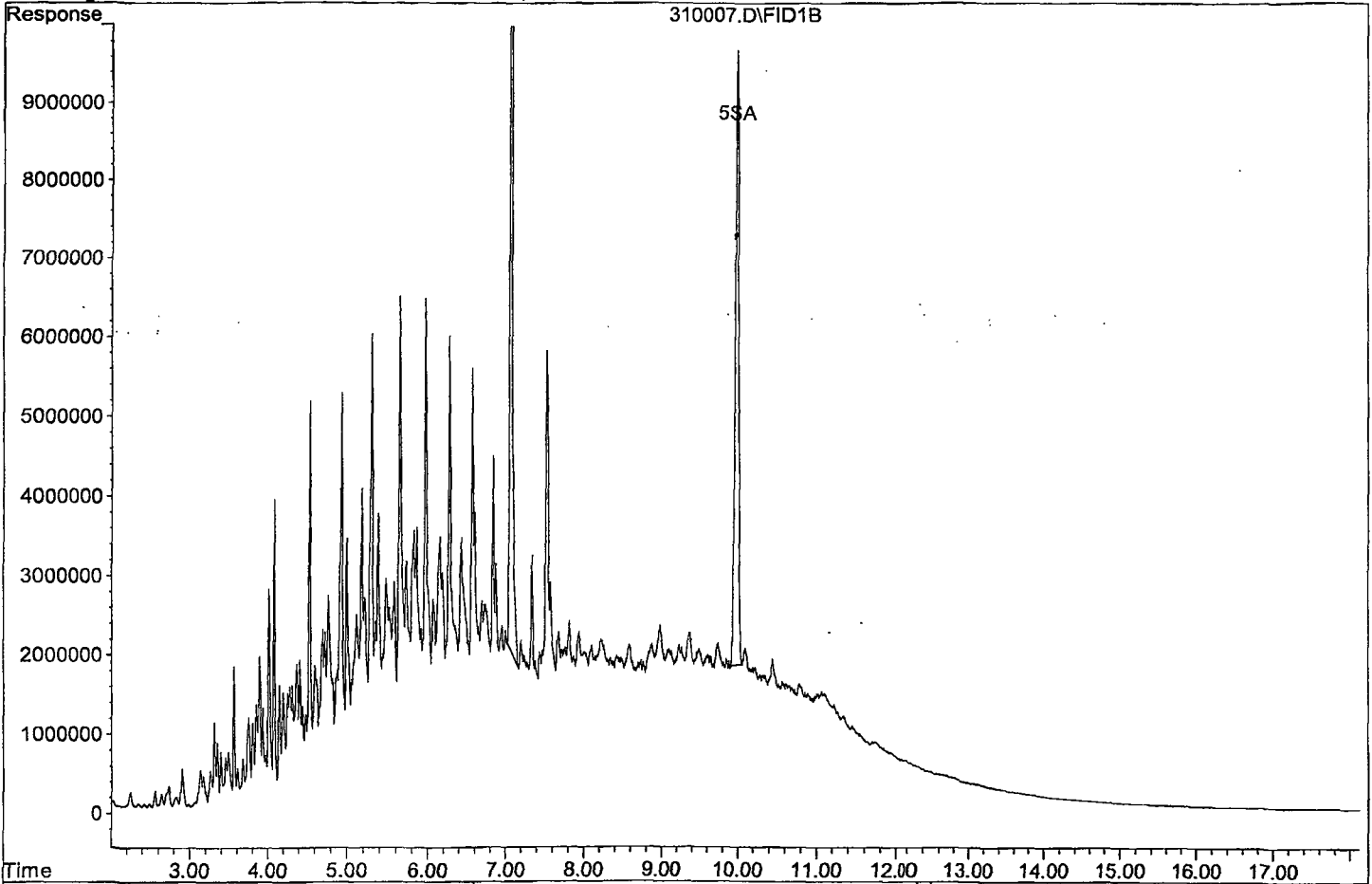
1) HATM (C8-C18)	4.87	4383469429	1502.333 ppb
2) HATM Diesel (C10-C24)	6.24	5934893648	1547.470 ppb
3) HBTM Motor Oil (C24-C40)	12.60	3972483300	1347.157 ppb

Target Compounds

Quantitation Report

Data File: G:\APOLLO\DATA\200310\310007.D

Sample : Diesel Motor Oil-5 3/5/20



Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\200310\310008.D Vial: 8
 Acq On : 3-10-20 11:29:51 Operator: SS
 Sample : Diesel Motor Oil-6 3/5/20 Inst : Apollo
 Misc : water Multiplr: 1.00
 IntFile : events.e
 Quant Time: May 19 14:00 2020 Quant Results File: D8C0310.RES

Method : G:\APOLLO\DATA\200518\D8C0310.M (Chemstation Integrator)
 Title : 8015 B&C
 Last Update : Tue May 19 13:59:38 2020
 Response via : Multiple Level Calibration

Volume Inj. : 2UL
 Signal Phase : DB-5
 Signal Info : FID02A

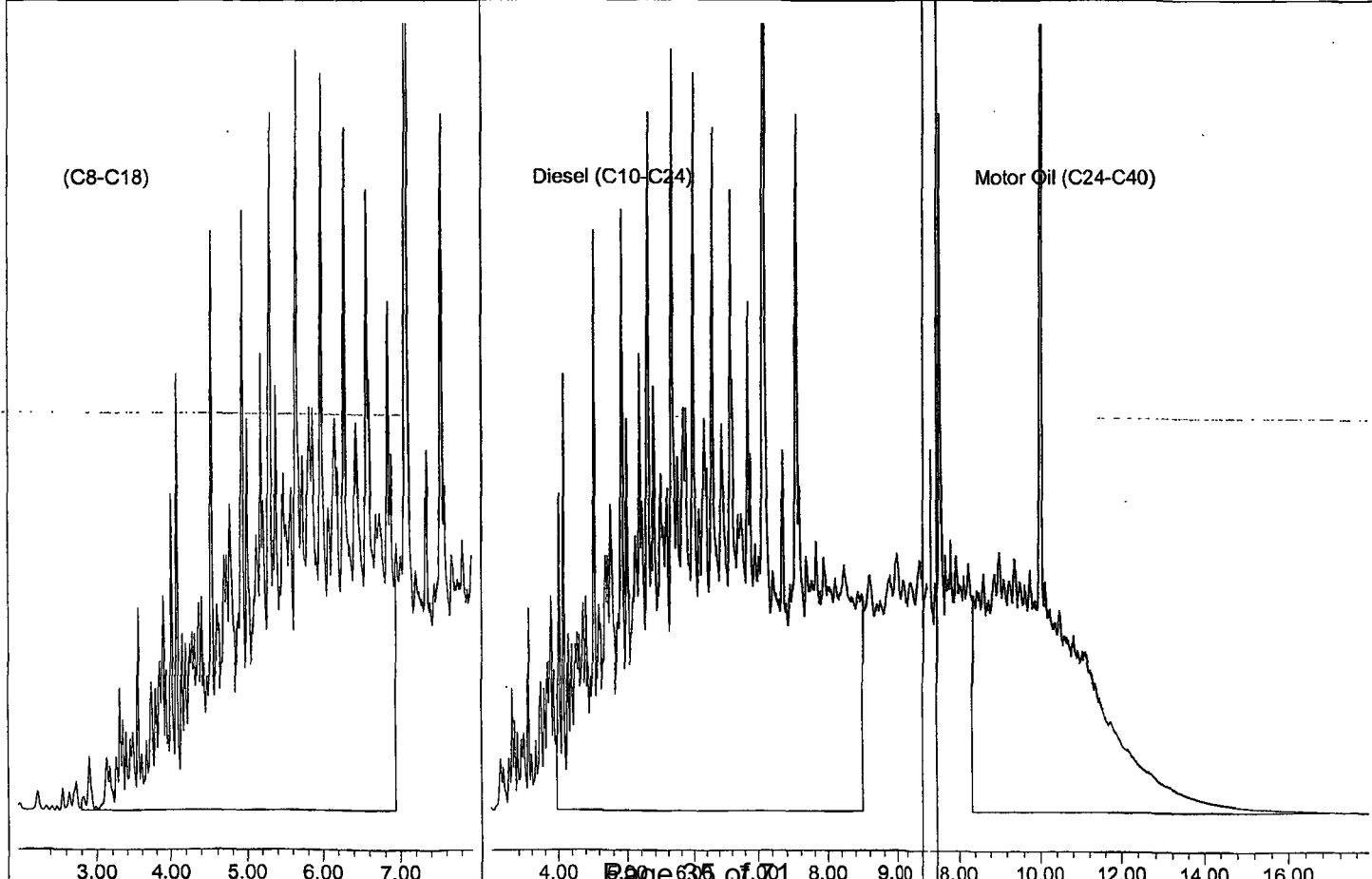
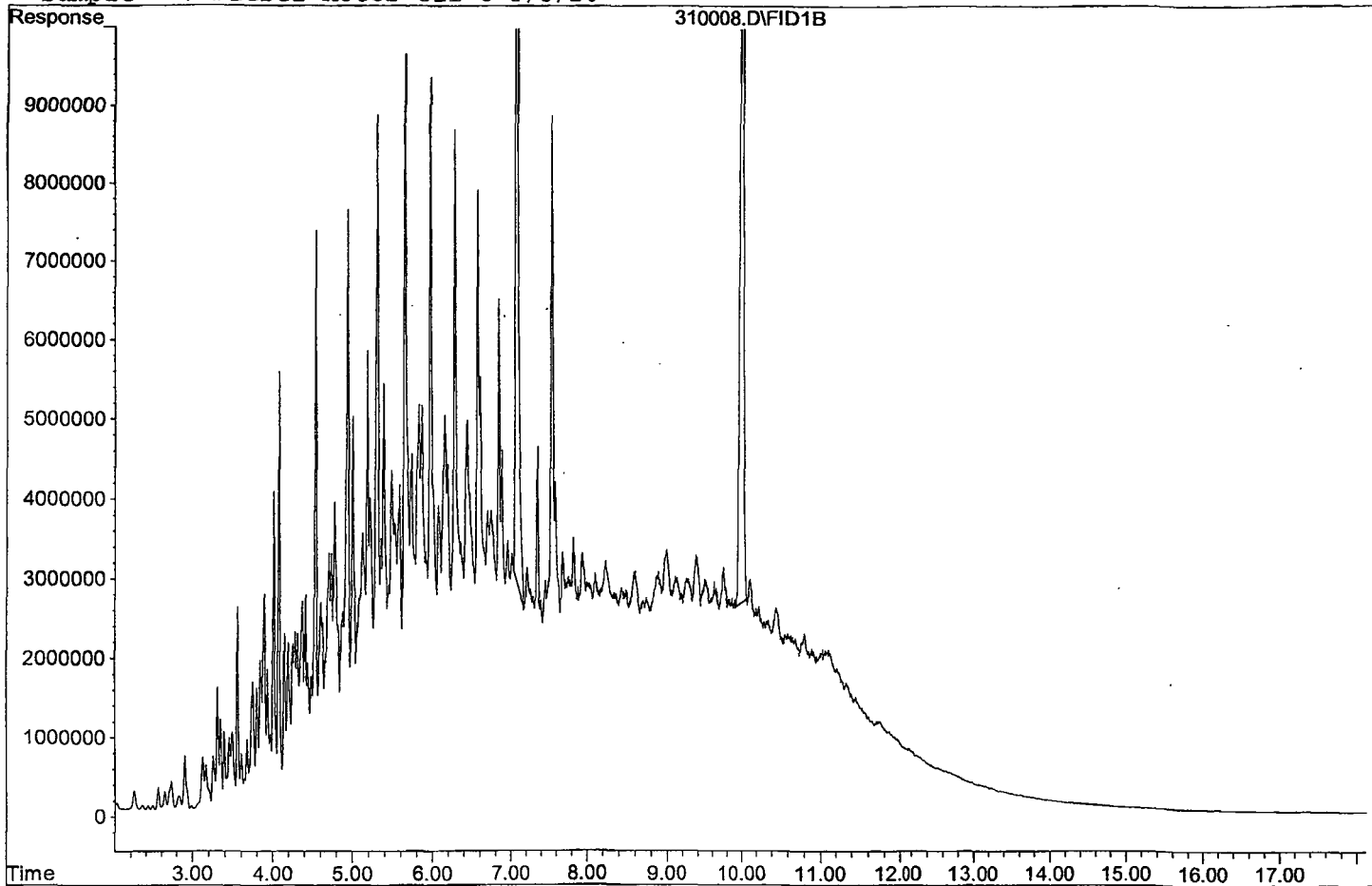
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
4) SA Ortho-Terphenyl(S)	7.07	508856564	101.345 ppb
Surrogate Spike 30.000		Recovery =	337.82%
5) SA Octacosane(S)	9.99	357054728	102.234 ppb
Surrogate Spike 30.000		Recovery =	340.78%
Target Compounds			
1) HATM (C8-C18)	4.87	6403641518	2194.700 ppb
2) HATM Diesel (C10-C24)	6.24	8675111292	2261.957 ppb
3) HBTM Motor Oil (C24-C40)	12.60	5550316563	1882.235 ppb

Target Compounds

Quantitation Report

Data File: G:\APOLLO\DATA\200310\310008.D

Sample : Diesel Motor Oil-6 3/5/20



TPH Extractables
D8C0310

Form 7

Second Source Calibration

Lab Name: APPL, Inc.
Case No: _____
Matrix: Water

SDG No: _____
Date Analyzed: 03/10/20
Instrument: Apollo
Initial Cal. Date: 03/10/20
Data File: 310009.D

	Compound	MEAN	CCRF	%D	%Drift
1	HATM (C8-C18)	1458890	1528870	4.8	HATM
2	HATM Diesel (C10-C24)	1917610	2127840	11	HATM
3	HBTM Motor Oil (C24-C40)	1474400	1535490	4.1	HBTM
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40	Average			6.6	

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\200310\310009.D Vial: 9
 Acq On : 3-10-20 11:52:24 Operator: SS
 Sample : Diesel Motor Oil-SS 3/5/20 Inst : Apollo
 Misc : water Multiplr: 1.00
 IntFile : events.e
 Quant Time: May 19 14:01 2020 Quant Results File: D8C0310.RES

Method : G:\APOLLO\DATA\200518\D8C0310.M (Chemstation Integrator)
 Title : 8015 B&C
 Last Update : Tue May 19 13:59:38 2020
 Response via : Multiple Level Calibration

Volume Inj. : 2UL
 Signal Phase : DB-5
 Signal Info : FID02A

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
4) SA Ortho-Terphenyl(S)	0.00	0	N.D.	ppb d
Surrogate Spike 30.000		Recovery =	0.00%	
5) SA Octacosane(S)	0.00	0	N.D.	ppb d
Surrogate Spike 30.000		Recovery =	0.00%	
Target Compounds				
1) HATM (C8-C18)	4.87	764434313	261.992	ppb
2) HATM Diesel (C10-C24)	6.24	1063920828	277.408	ppb
3) HBTM Motor Oil (C24-C40)	12.60	767745055	260.359	ppb

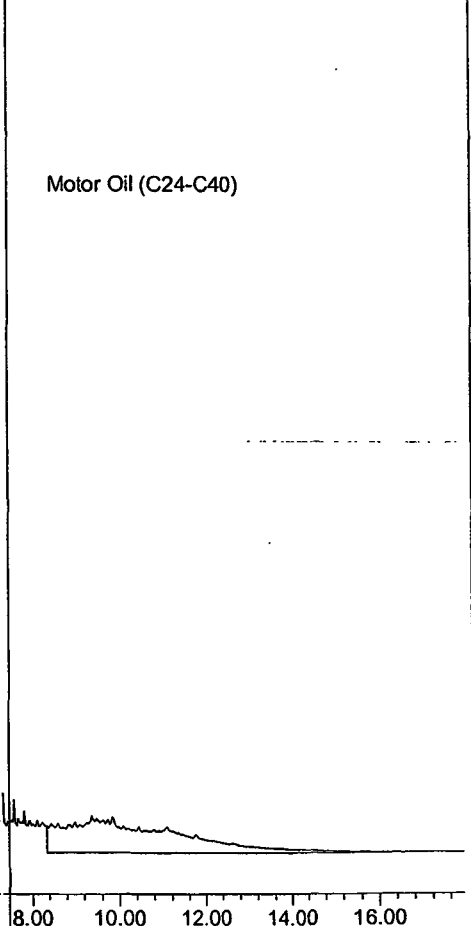
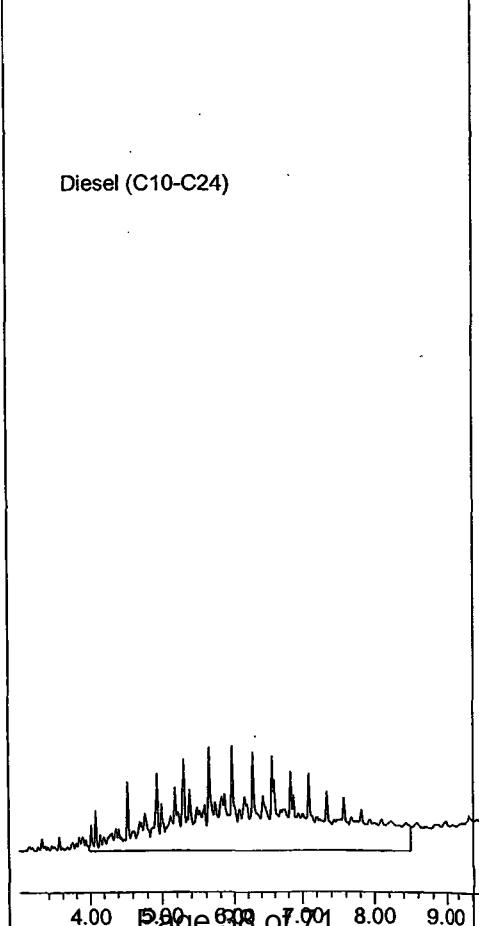
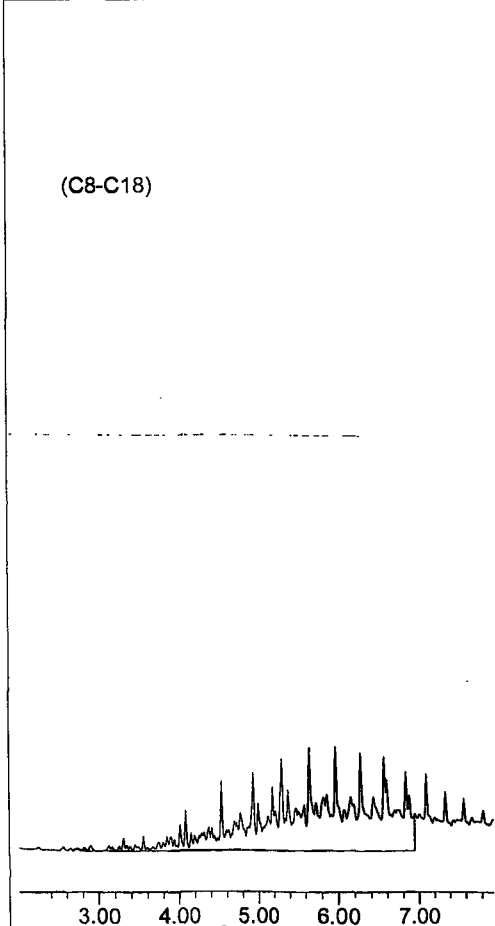
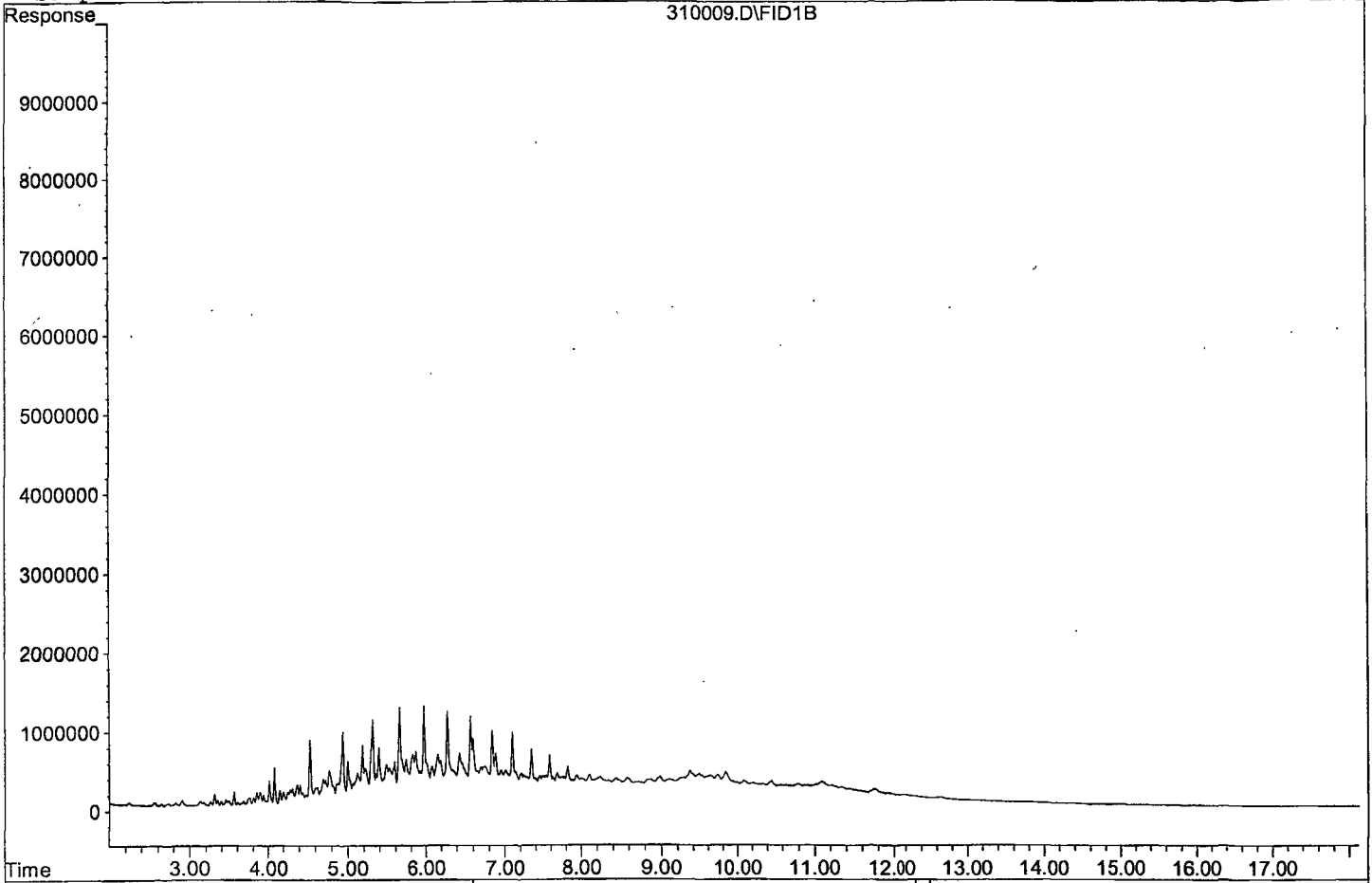
Target Compounds

Quantitation Report

Data File: G:\APOLLO\DATA\200310\310009.D

Sample : Diesel Motor Oil-SS 3/5/20

310009.D\FID1B



TPH Extractables
D8C0310

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No: _____
Matrix: Water

SDG No: _____
Date Analyzed: 05/18/20
Instrument: Apollo
Initial Cal. Date: 03/10/20
Data File: 518003.D

	Compound	MEAN	CCRF	%D	%Drift
1	HATM (C8-C18)	1458890	1449790	0.62	HATM
2	HATM Diesel (C10-C24)	1917610	1998570	4.2	HATM
3	HBTM Motor Oil (C24-C40)	1474400	1427210	3.2	HBTM
4	SA Ortho-Terphenyl(S)	2510520	2439060	2.8	SA
5	SA Octacosane(S)	1746260	1863830	6.7	SA
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					

Average

3.5

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\200518\518003.D Vial: 3
 Acq On : 5-18-20 10:06:22 Operator: SS
 Sample : Diesel Motor Oil-CCV 4/29/20 Inst : Apollo
 Misc : water Multiplr: 1.00
 IntFile : events.e
 Quant Time: May 19 14:02 2020 Quant Results File: D8C0310.RES

Method : G:\APOLLO\DATA\200518\D8C0310.M (Chemstation Integrator)
 Title : 8015 B&C
 Last Update : Tue May 19 13:59:38 2020
 Response via : Multiple Level Calibration

Volume Inj. : 2UL
 Signal Phase : DB-5
 Signal Info : FID02A

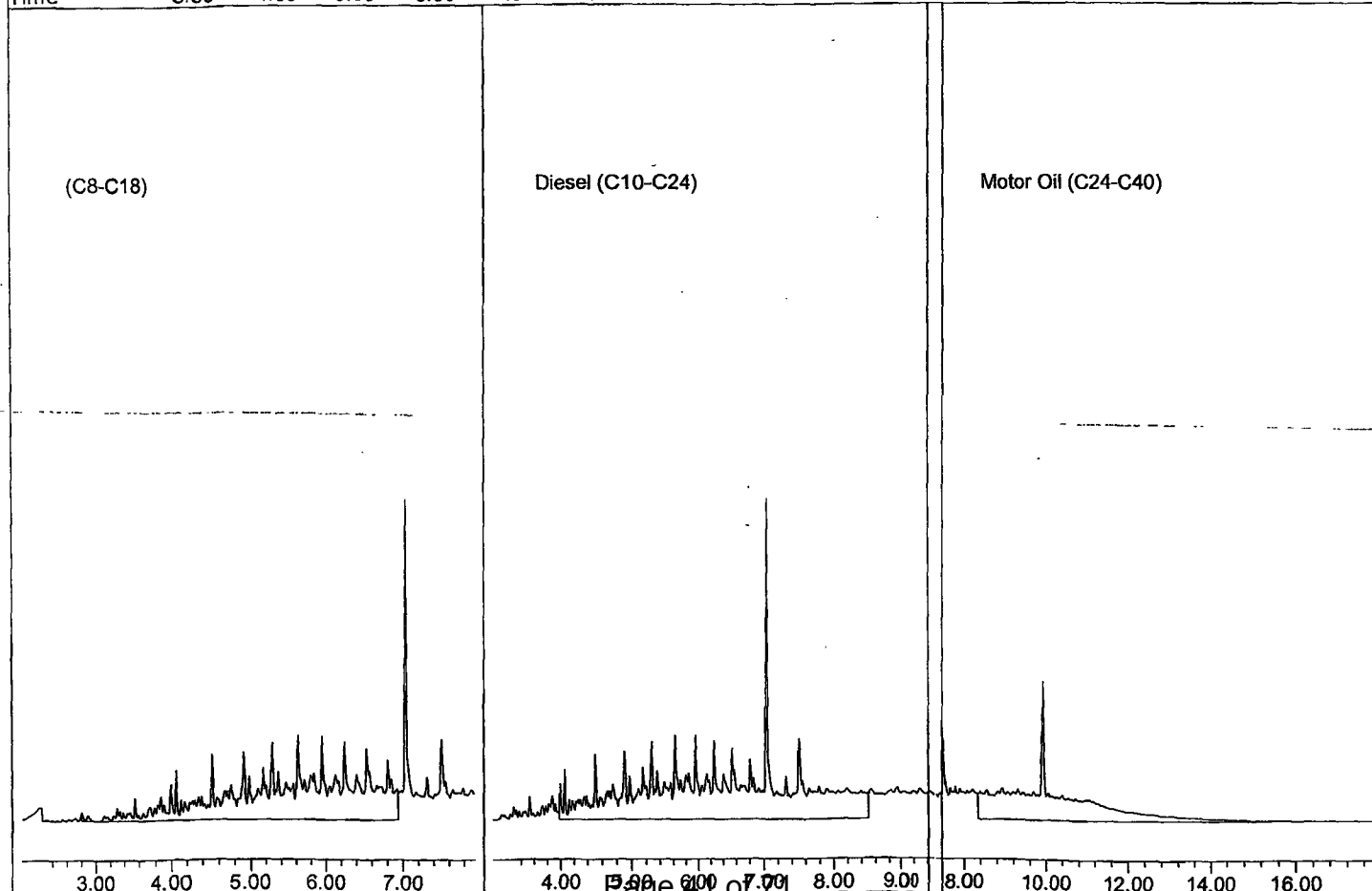
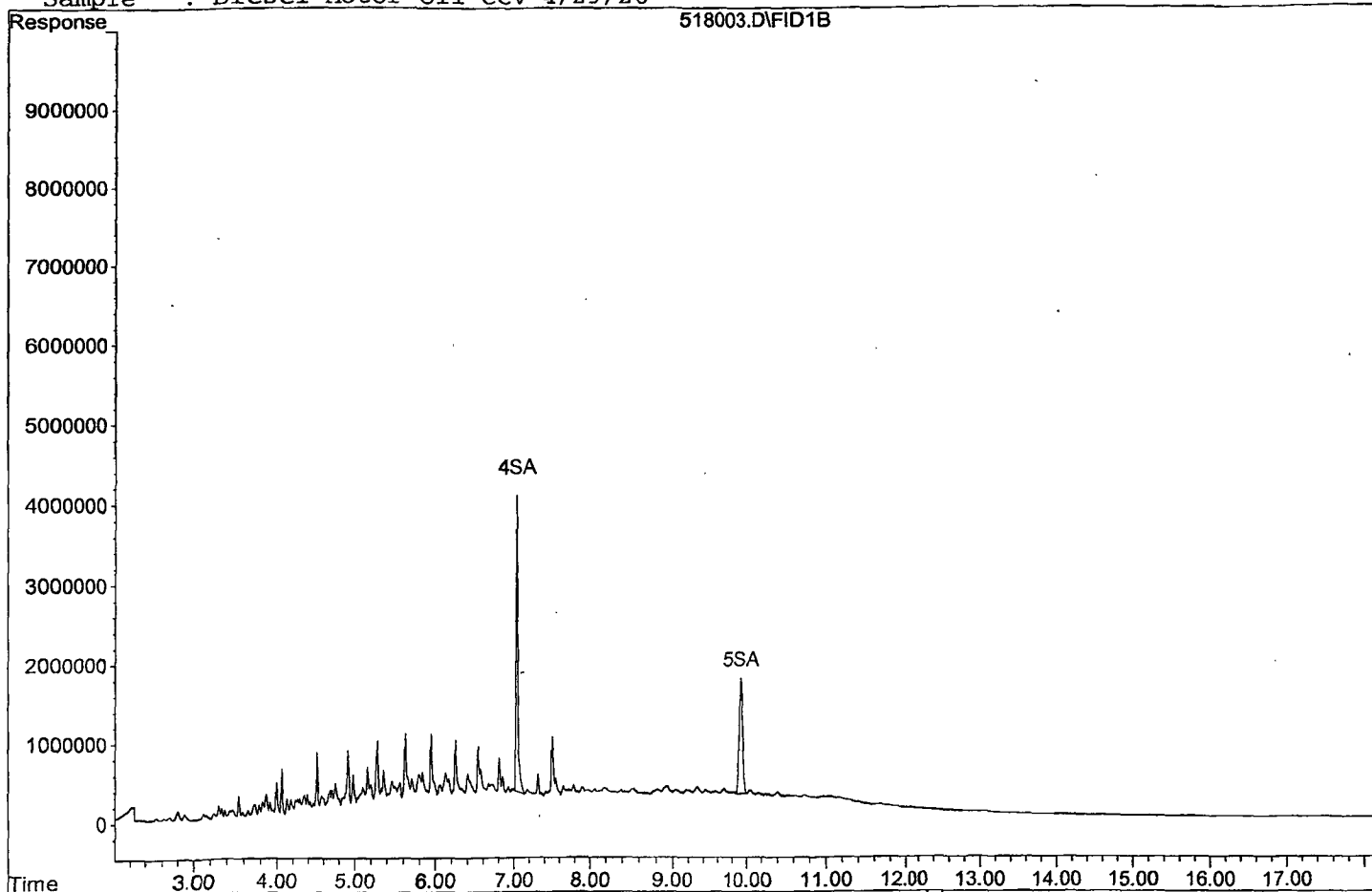
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
4) SA Ortho-Terphenyl(S)	7.04	60976474	12.144 ppb
Surrogate Spike 30.000		Recovery =	40.48%
5) SA Octacosane(S)	9.92	46595832	13.342 ppb
Surrogate Spike 30.000		Recovery =	44.47%
Target Compounds			
1) HATM (C8-C18)	4.87	724894207	248.441 ppb
2) HATM Diesel (C10-C24)	6.24	999286017	260.555 ppb
3) HBTM Motor Oil (C24-C40)	12.60	713603758	241.999 ppb

Target Compounds

Quantitation Report

Data File: G:\APOLLO\DATA\200518\518003.D

Sample : Diesel Motor Oil-CCV 4/29/20



TPH Extractables
D8C0310

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No: _____
Matrix: Water

SDG No: _____
Date Analyzed: 05/18/20
Instrument: Apollo
Initial Cal. Date: 03/10/20
Data File: 518012.D

	Compound	MEAN	CCRF	%D	%Drift
1	HATM (C8-C18)	1458890	1450650	0.56	HATM
2	HATM Diesel (C10-C24)	1917610	1980060	3.3	HATM
3	HBTM Motor Oil (C24-C40)	1474400	1403690	4.8	HBTM
4	SA Ortho-Terphenyl(S)	2510520	2422250	3.5	SA
5	SA Octacosane(S)	1746260	1823690	4.4	SA
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					

Average

3.3

Quantitation Report (QT Reviewed)

Data File : G:\APOLLO\DATA\200518\518012.D Vial: 12
 Acq On : 5-18-20 13:38:49 Operator: SS
 Sample : Diesel Motor Oil-CCV 4/29/20 Inst : Apollo
 Misc : water Multiplr: 1.00
 IntFile : events.e
 Quant Time: May 19 14:03 2020 Quant Results File: D8C0310.RES

Method : G:\APOLLO\DATA\200518\D8C0310.M (Chemstation Integrator)
 Title : 8015 B&C
 Last Update : Tue May 19 13:59:38 2020
 Response via : Multiple Level Calibration

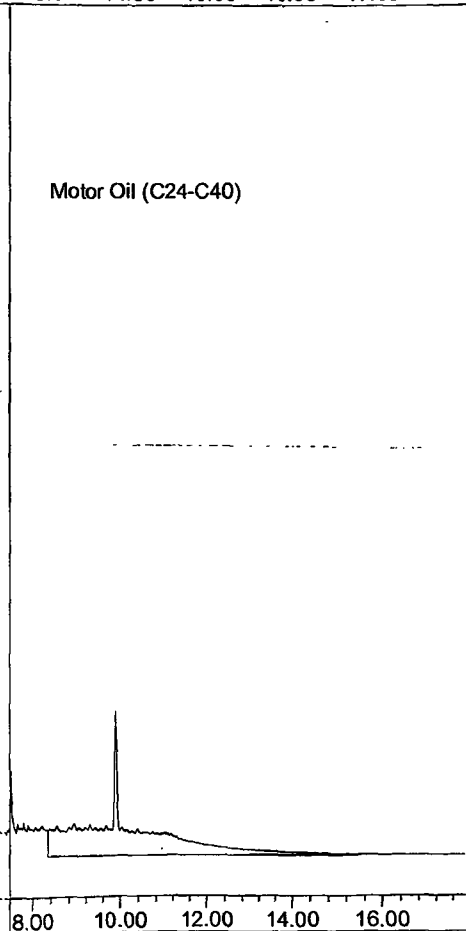
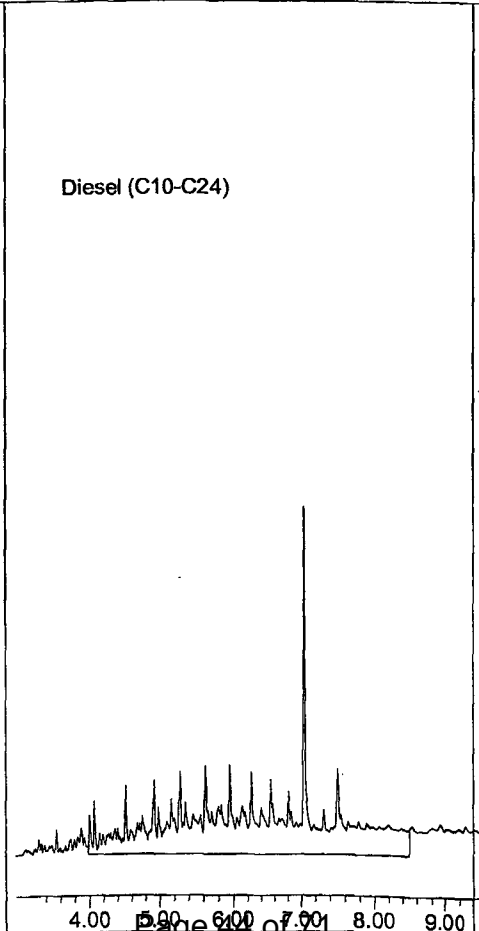
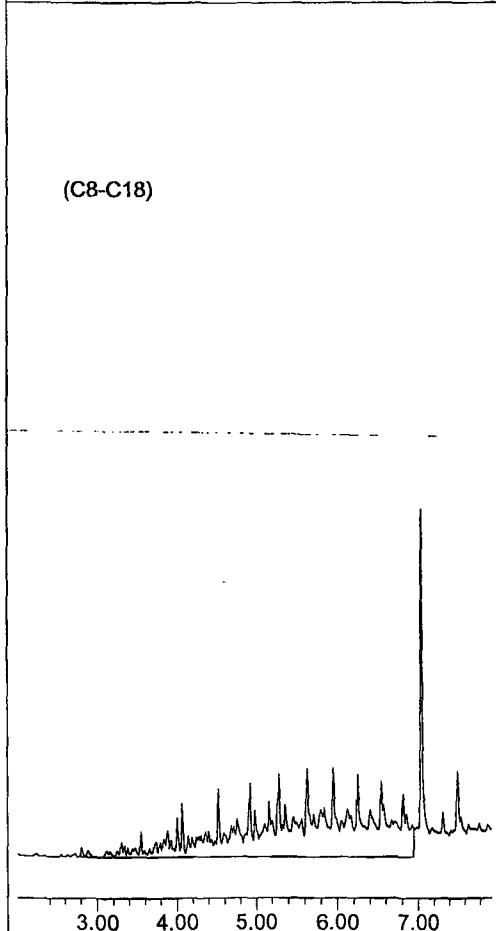
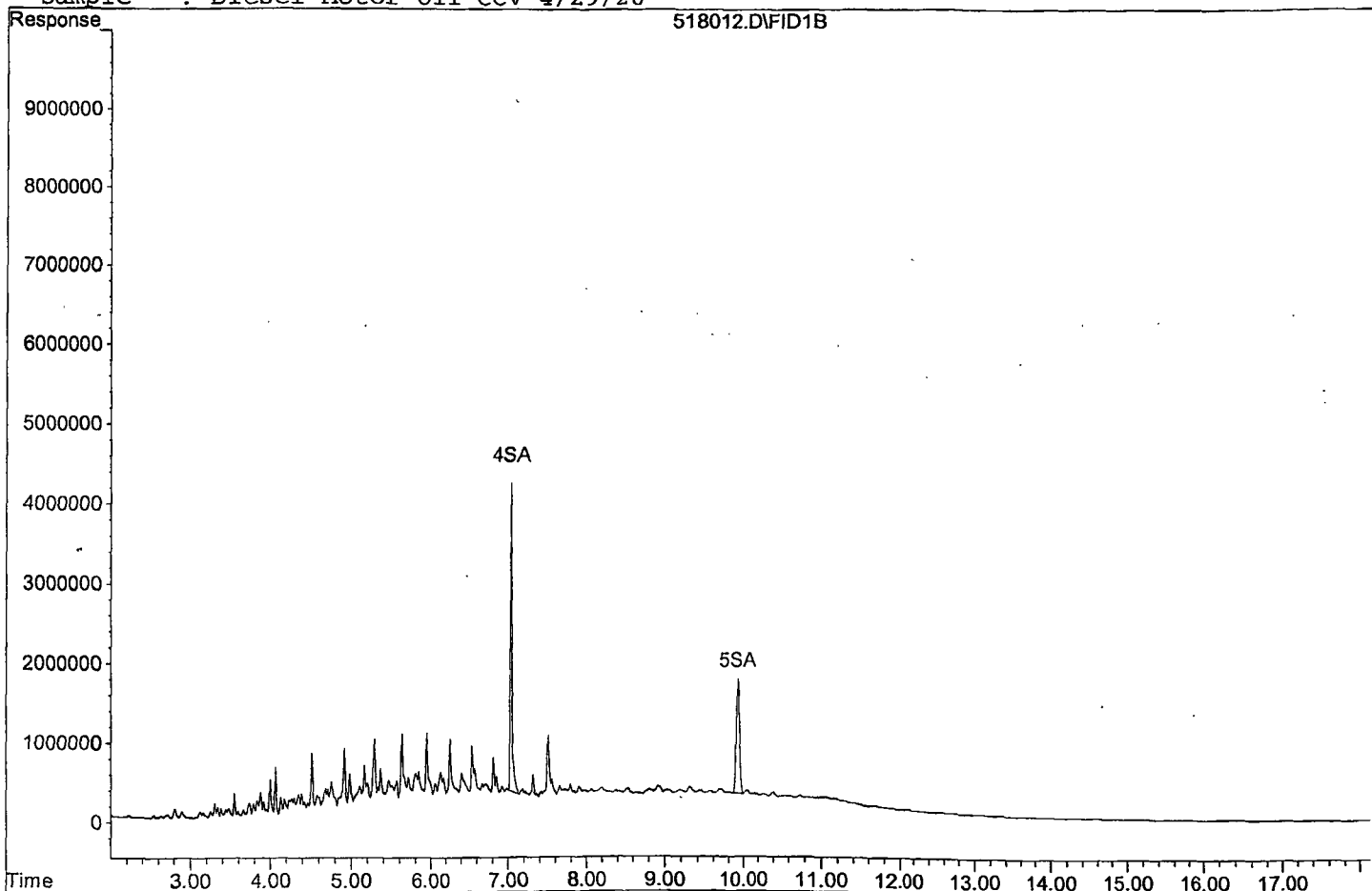
Volume Inj. : 2UL
 Signal Phase : DB-5
 Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
4) SA Ortho-Terphenyl(S)	7.04	60556259	12.061 ppb
Surrogate Spike 30.000		Recovery =	40.20%
5) SA Octacosane(S)	9.92	45592370	13.054 ppb
Surrogate Spike 30.000		Recovery =	43.51%
Target Compounds			
1) HATM (C8-C18)	4.87	725326748	248.589 ppb
2) HATM Diesel (C10-C24)	6.24	990031054	258.142 ppb
3) HBTM Motor Oil (C24-C40)	12.60	701843580	238.011 ppb
Target Compounds			

Quantitation Report

Data File: G:\APOLLO\DATA\200518\518012.D

Sample : Diesel Motor Oil-CCV 4/29/20



TPH Extractables
D8C0310

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No: _____
Matrix: Water

SDG No: _____
Date Analyzed: 05/18/20
Instrument: Apollo
Initial Cal. Date: 03/10/20
Data File: 518003.D

	Compound	MEAN	CCRF	%D	%Drift
1	HATM (C8-C18)	1458890	1449790	0.62	HATM
2	HATM Diesel (C10-C24)	1917610	1998570	4.2	HATM
3	HBTM Motor Oil (C24-C40)	1474400	1427210	3.2	HBTM
4	SA Ortho-Terphenyl(S)	2510520	2439060	2.8	SA
5	SA Octacosane(S)	1746260	1863830	6.7	SA
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40	Average			3.5	

Data File : G:\APOLLO\DATA\200518\518003.D Vial: 3
 Acq On : 5-18-20 10:06:22 Operator: SS
 Sample : Diesel Motor Oil-CCV 4/29/20 Inst : Apollo
 Misc : water Multiplr: 1.00
 IntFile : events.e
 Quant Time: May 28 8:28 2020 Quant Results File: D8C0310.RES

Method : G:\APOLLO\DATA\200518\D8C0310.M (Chemstation Integrator)
 Title : 8015 B&C
 Last Update : Tue May 19 13:59:38 2020
 Response via : Multiple Level Calibration

Volume Inj. : 2UL
 Signal Phase : DB-5
 Signal Info : FID02A

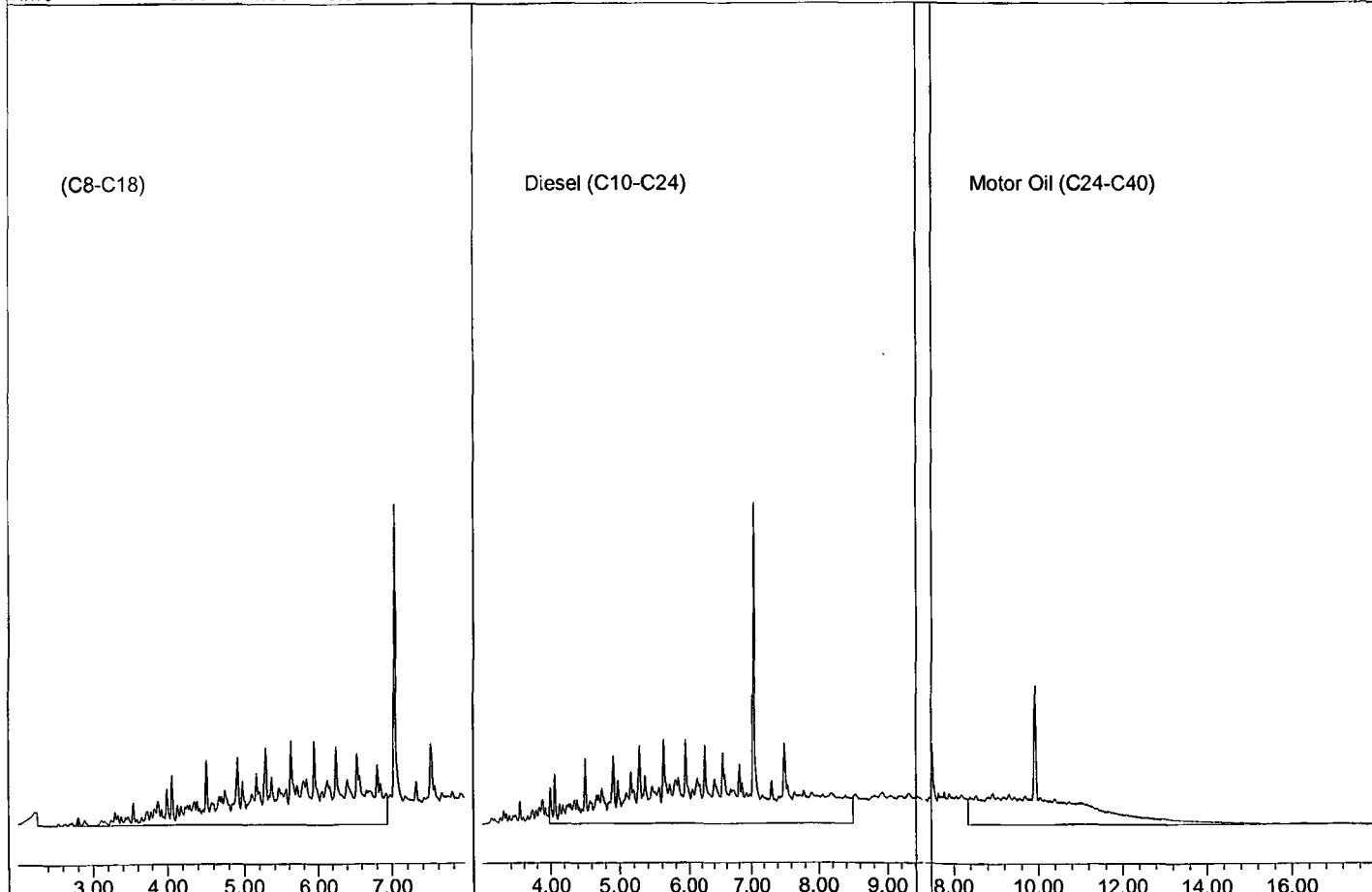
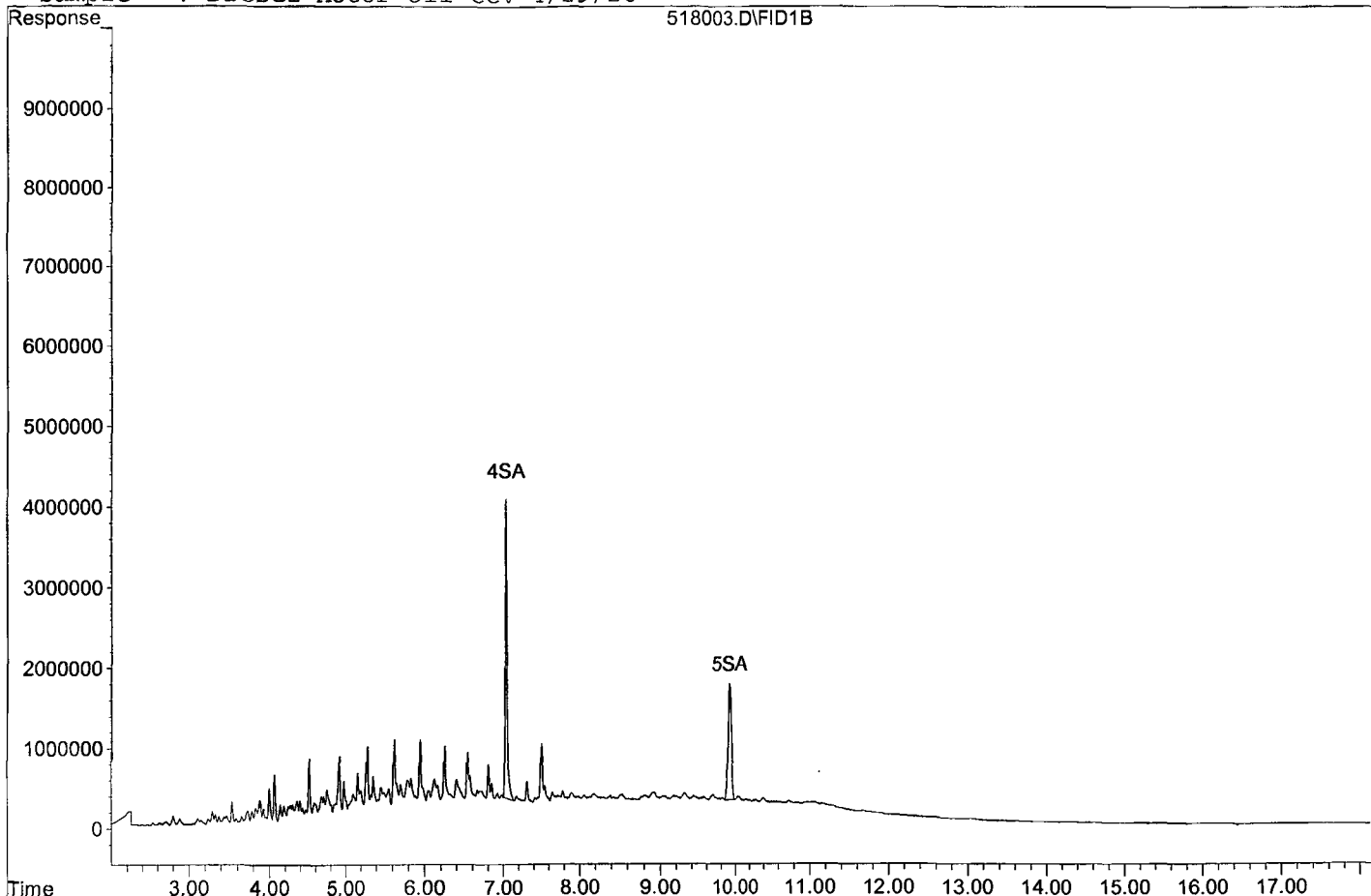
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
4) SA Ortho-Terphenyl(S)	7.04	60976474	12.144 ppb
Surrogate Spike 30.000		Recovery =	40.48%
5) SA Octacosane(S)	9.92	46595832	13.342 ppb
Surrogate Spike 30.000		Recovery =	44.47%
Target Compounds			
1) HATM (C8-C18)	4.87	724894207	248.441 ppb
2) HATM Diesel (C10-C24)	6.24	999286017	260.555 ppb
3) HBTM Motor Oil (C24-C40)	12.60	713603758	241.999 ppb

Target Compounds

Quantitation Report

Data File: G:\APOLLO\DATA\200518\518003.D

Sample : Diesel Motor Oil-CCV 4/29/20



TPH Extractables
D8C0310

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No: _____
Matrix: Water

SDG No: _____
Date Analyzed: 05/18/20
Instrument: Apollo
Initial Cal. Date: 03/10/20
Data File: 518012.D

	Compound	MEAN	CCRF	%D	%Drift
1	HATM (C8-C18)	1458890	1450650	0.56	HATM
2	HATM Diesel (C10-C24)	1917610	1980060	3.3	HATM
3	HBTM Motor Oil (C24-C40)	1474400	1403690	4.8	HBTM
4	SA Ortho-Terphenyl(S)	2510520	2422250	3.5	SA
5	SA Octacosane(S)	1746260	1823690	4.4	SA
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40	Average			3.3	

Data File : G:\APOLLO\DATA\200518\518012.D Vial: 12
 Acq On : 5-18-20 13:38:49 Operator: SS
 Sample : Diesel Motor Oil-CCV 4/29/20 Inst : Apollo
 Misc : water Multiplr: 1.00
 IntFile : events.e
 Quant Time: May 19 14:03 2020 Quant Results File: D8C0310.RES

Method : G:\APOLLO\DATA\200518\D8C0310.M (Chemstation Integrator)
 Title : 8015 B&C
 Last Update : Tue May 19 13:59:38 2020
 Response via : Multiple Level Calibration

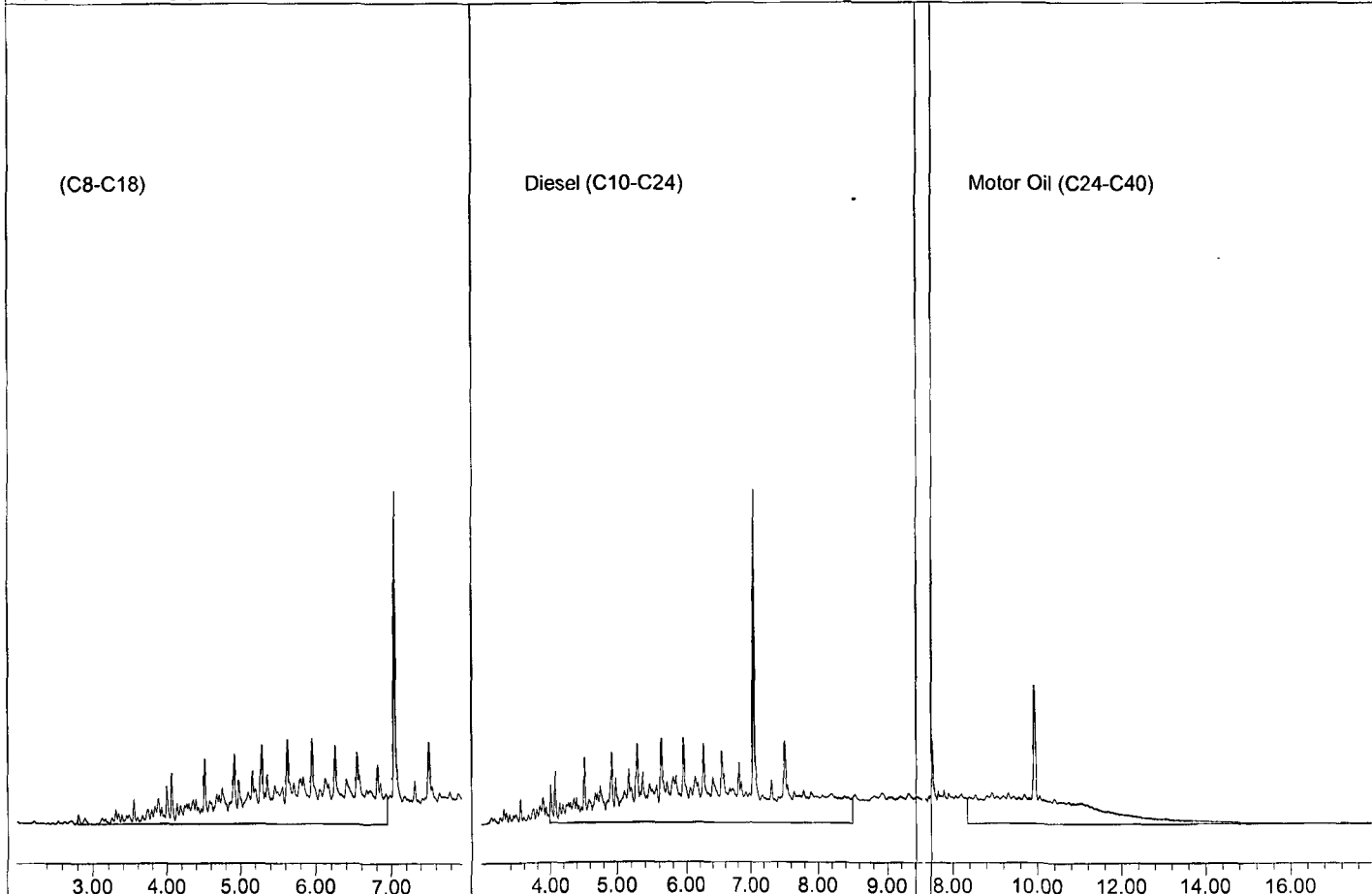
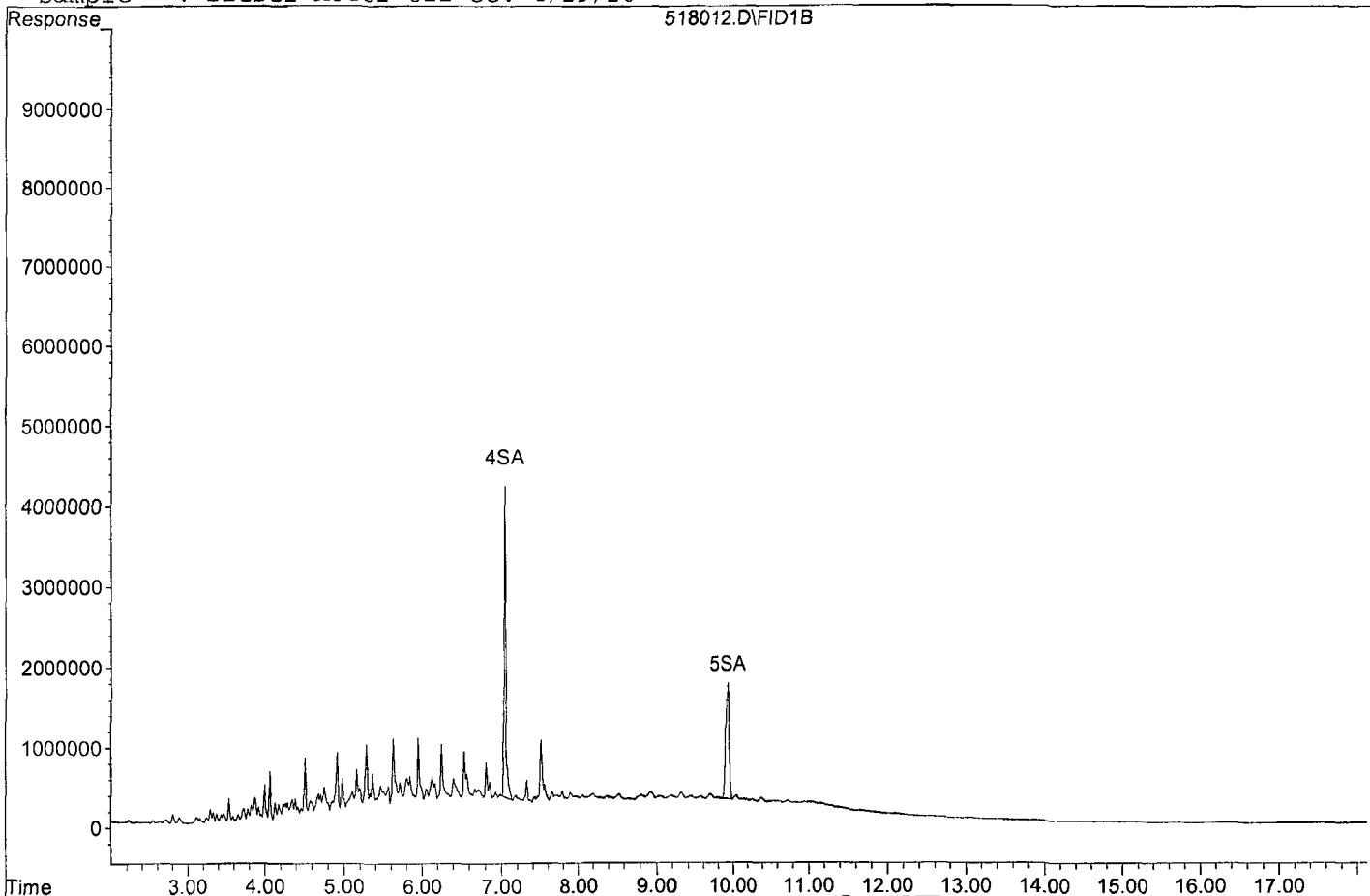
Volume Inj. : 2UL
 Signal Phase : DB-5
 Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
4) SA Ortho-Terphenyl(S)	7.04	60556259	12.061 ppb
Surrogate Spike 30.000		Recovery =	40.20%
5) SA Octacosane(S)	9.92	45592370	13.054 ppb
Surrogate Spike 30.000		Recovery =	43.51%
Target Compounds			
1) HATM (C8-C18)	4.87	725326748	248.589 ppb
2) HATM Diesel (C10-C24)	6.24	990031054	258.142 ppb
3) HBTM Motor Oil (C24-C40)	12.60	701843580	238.011 ppb

Target Compounds

Quantitation Report

Data File: G:\APOLLO\DATA\200518\518012.D
Sample : Diesel Motor Oil-CCV 4/29/20



ORGANICS

Raw Data

Data File : G:\APOLLO\DATA\200518\518009.D Vial: 9
 Acq On : 5-18-20 12:30:36 Operator: SS
 Sample : BA11198W03 2/800 Inst : Apollo
 Misc : water Multiplr: 2.50
 IntFile : events.e
 Quant Time: May 19 14:03 2020 Quant Results File: D8C0310.RES

Method : G:\APOLLO\DATA\200518\D8C0310.M (Chemstation Integrator)
 Title : 8015 B&C
 Last Update : Tue May 19 13:59:38 2020
 Response via : Multiple Level Calibration

Volume Inj. : 2UL
 Signal Phase : DB-5
 Signal Info : FID02A

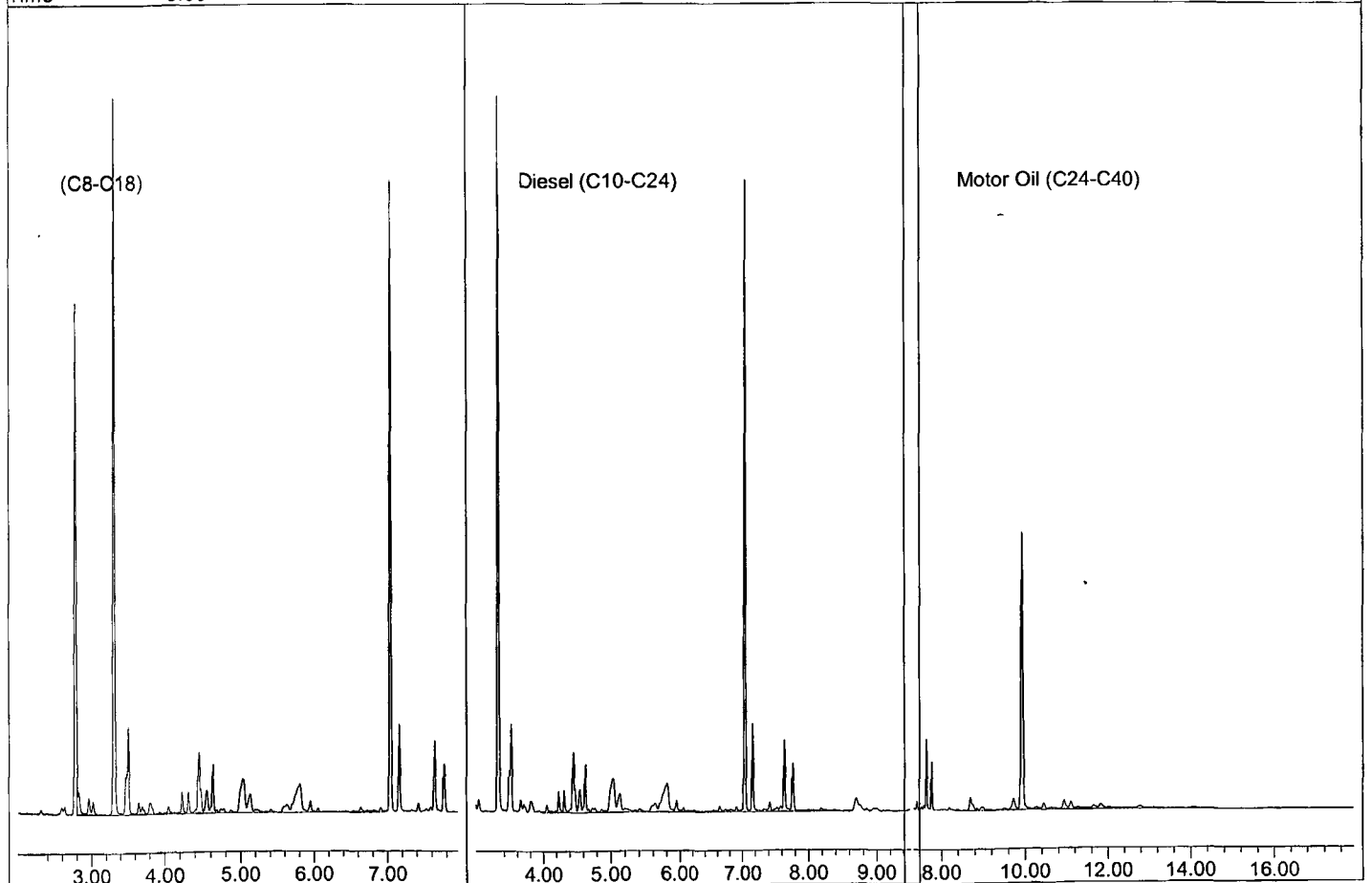
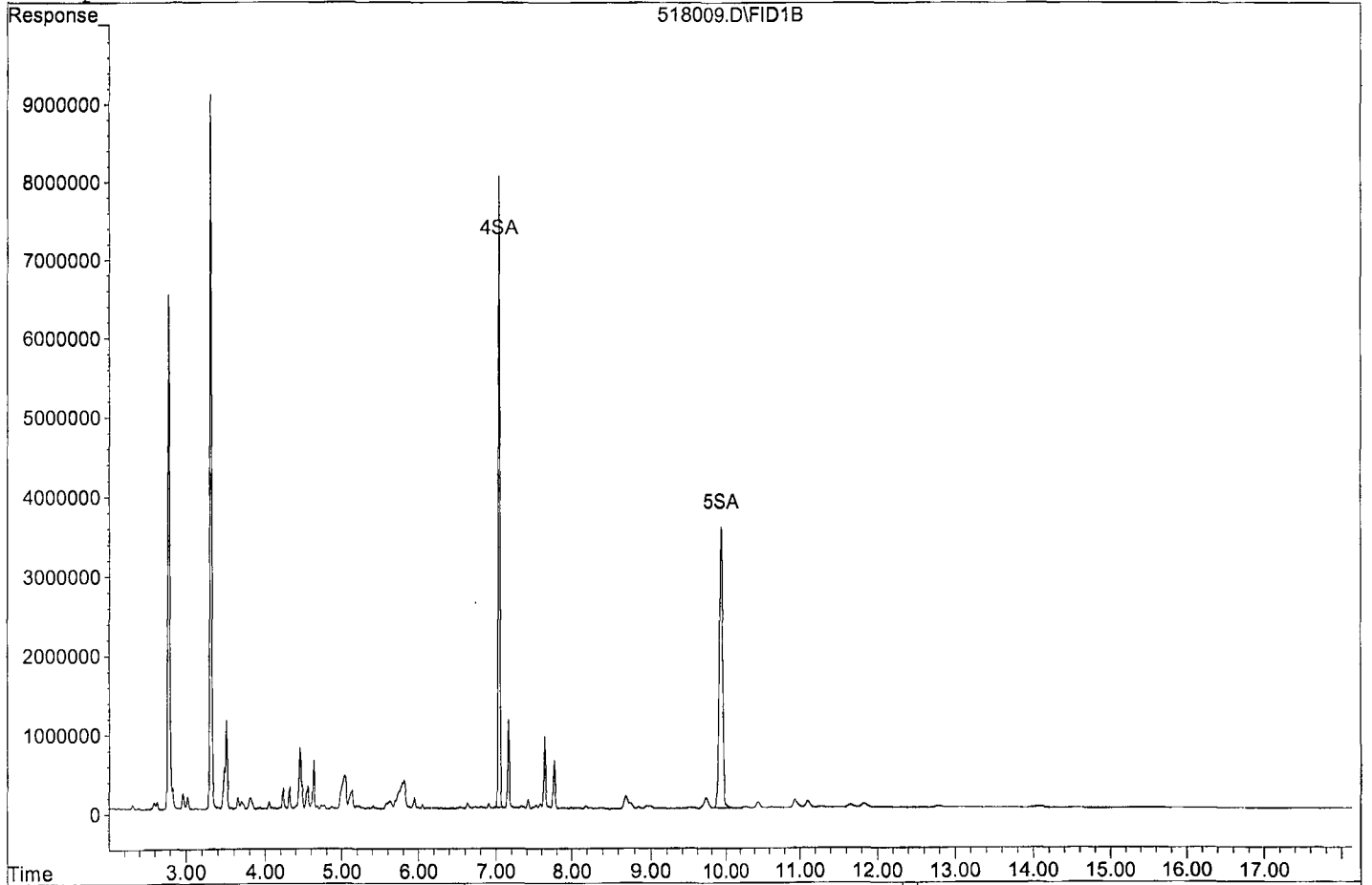
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
4) SA Ortho-Terphenyl(S)	7.04	110028233	54.784 ppb
Surrogate Spike 75.000		Recovery =	73.05%
5) SA Octacosane(S)	9.93	115092782	82.385 ppb
Surrogate Spike 75.000		Recovery =	109.85%
Target Compounds			
1) HATM (C8-C18)	4.87	305148090	261.456 ppb
2) HATM Diesel (C10-C24)	6.24	182149290	118.734 ppb
3) HBTM Motor Oil (C24-C40)	12.60	86703778	73.508 ppb

Target Compounds

Quantitation Report

Data File: G:\APOLLO\DATA\200518\518009.D

Sample : BA11198W03 2/800



Data File : G:\APOLLO\DATA\200518\518010.D Vial: 10
 Acq On : 5-18-20 12:53:19 Operator: SS
 Sample : BA11199W02 2/800 Inst : Apollo
 Misc : water Multiplr: 2.50
 IntFile : events.e
 Quant Time: May 19 14:03 2020 Quant Results File: D8C0310.RES

Method : G:\APOLLO\DATA\200518\D8C0310.M (Chemstation Integrator)
 Title : 8015 B&C
 Last Update : Tue May 19 13:59:38 2020
 Response via : Multiple Level Calibration

Volume Inj. : 2UL
 Signal Phase : DB-5
 Signal Info : FID02A

Compound	R.T.	Response	Conc Units

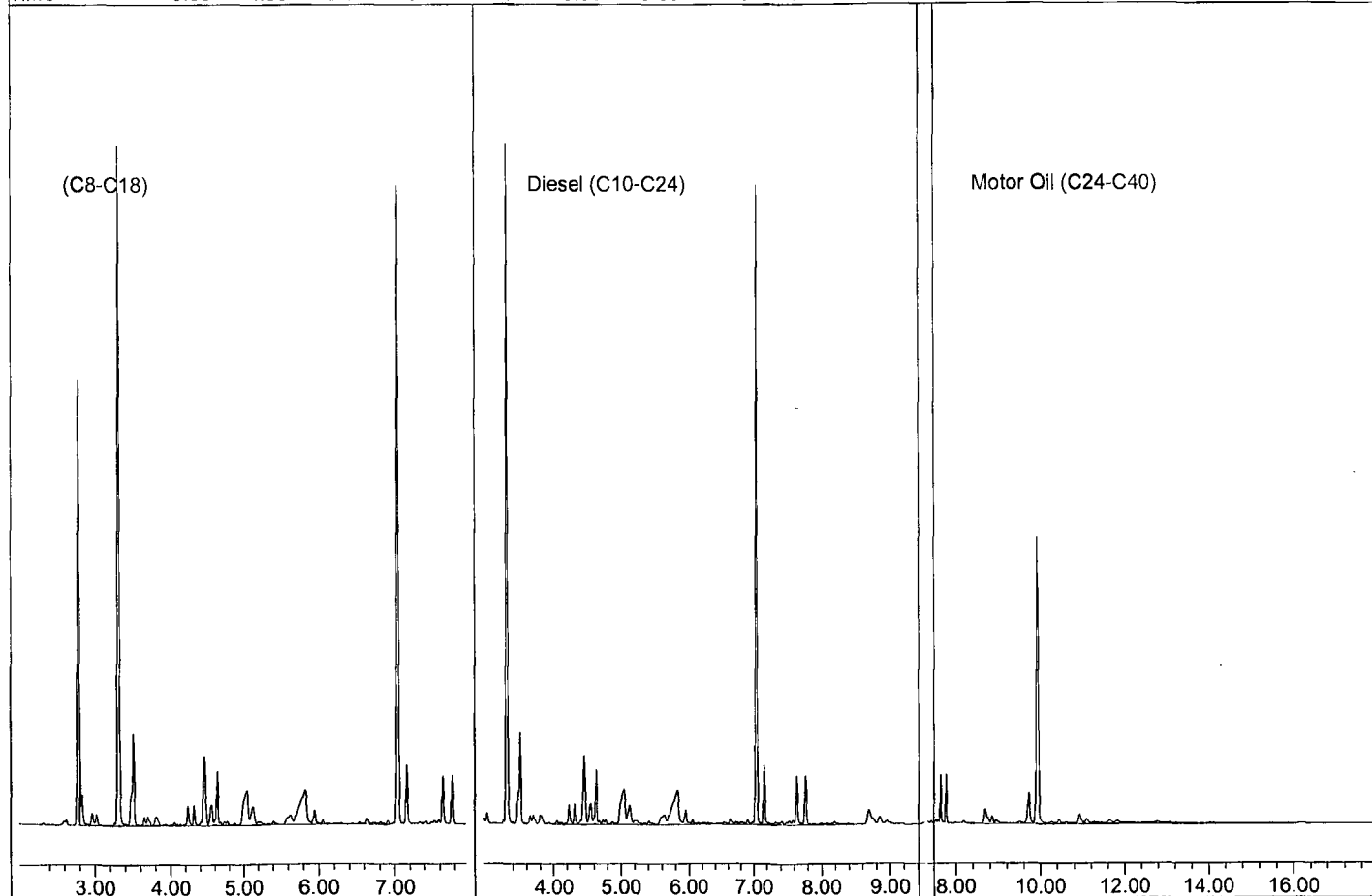
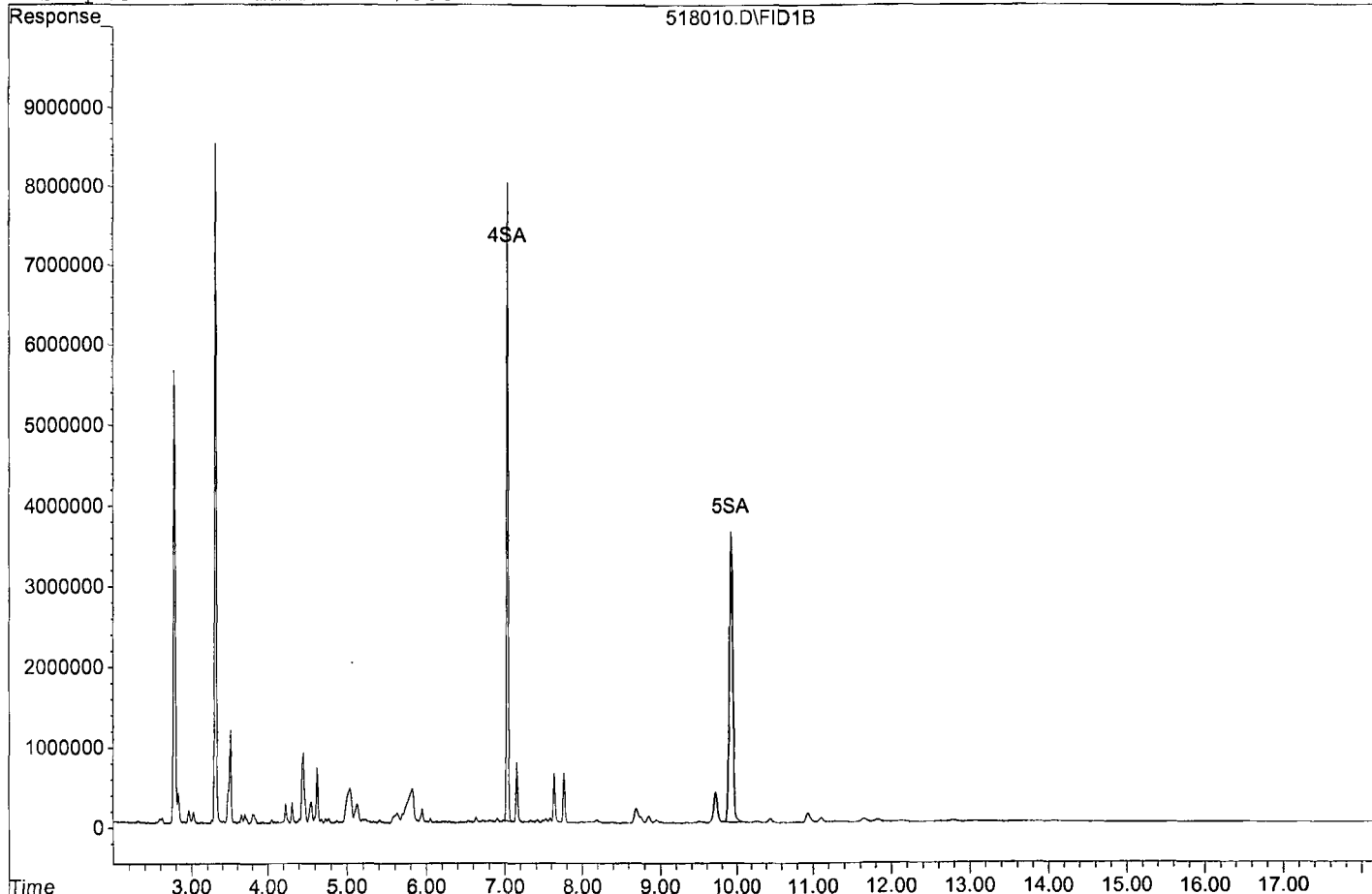
System Monitoring Compounds			
4) SA Ortho-Terphenyl(S)	7.04	109666386	54.603 ppb
Surrogate Spike 75.000		Recovery =	72.80%
5) SA Octacosane(S)	9.92	116698477	83.534 ppb
Surrogate Spike 75.000		Recovery =	111.38%
Target Compounds			
1) HATM (C8-C18)	4.87	302703989	259.362 ppb
2) HATM Diesel (C10-C24)	6.24	187449757	122.190 ppb
3) HBTM Motor Oil (C24-C40)	12.60	91631379	77.686 ppb

Target Compounds

Quantitation Report

Data File: G:\APOLLO\DATA\200518\518010.D

Sample : BA11199W02 2/800



Data File : G:\APOLLO\DATA\200518\518005.D Vial: 5
 Acq On : 5-18-20 10:59:56 Operator: SS
 Sample : 200515A BLK 2/800 Inst : Apollo
 Misc : water Multiplr: 2.50
 IntFile : events.e
 Quant Time: May 19 14:03 2020 Quant Results File: D8C0310.RES

Method : G:\APOLLO\DATA\200518\D8C0310.M (Chemstation Integrator)
 Title : 8015 B&C
 Last Update : Tue May 19 13:59:38 2020
 Response via : Multiple Level Calibration

Volume Inj. : 2UL
 Signal Phase : DB-5
 Signal Info : FID02A

Compound	R.T.	Response	Conc Units

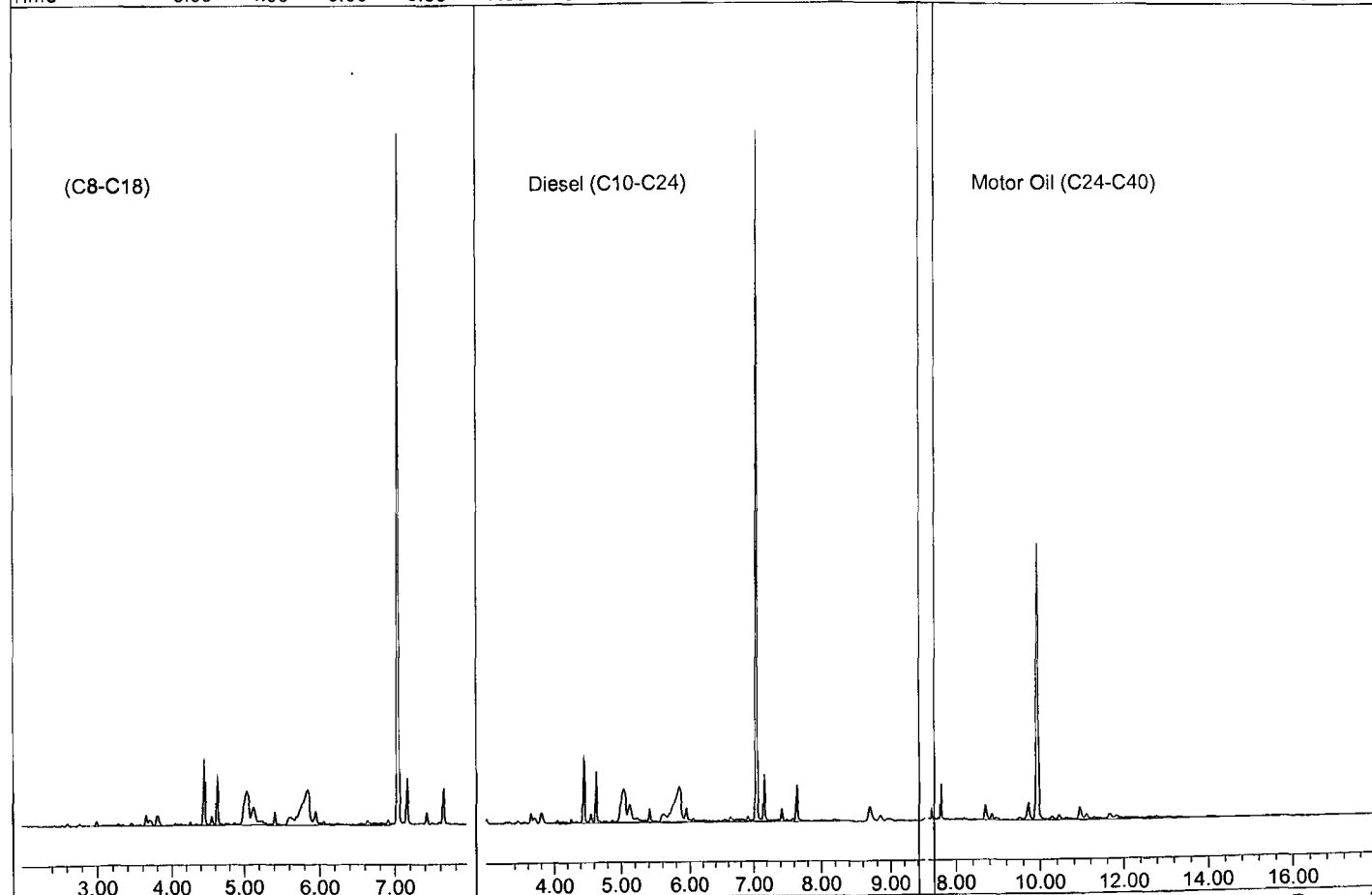
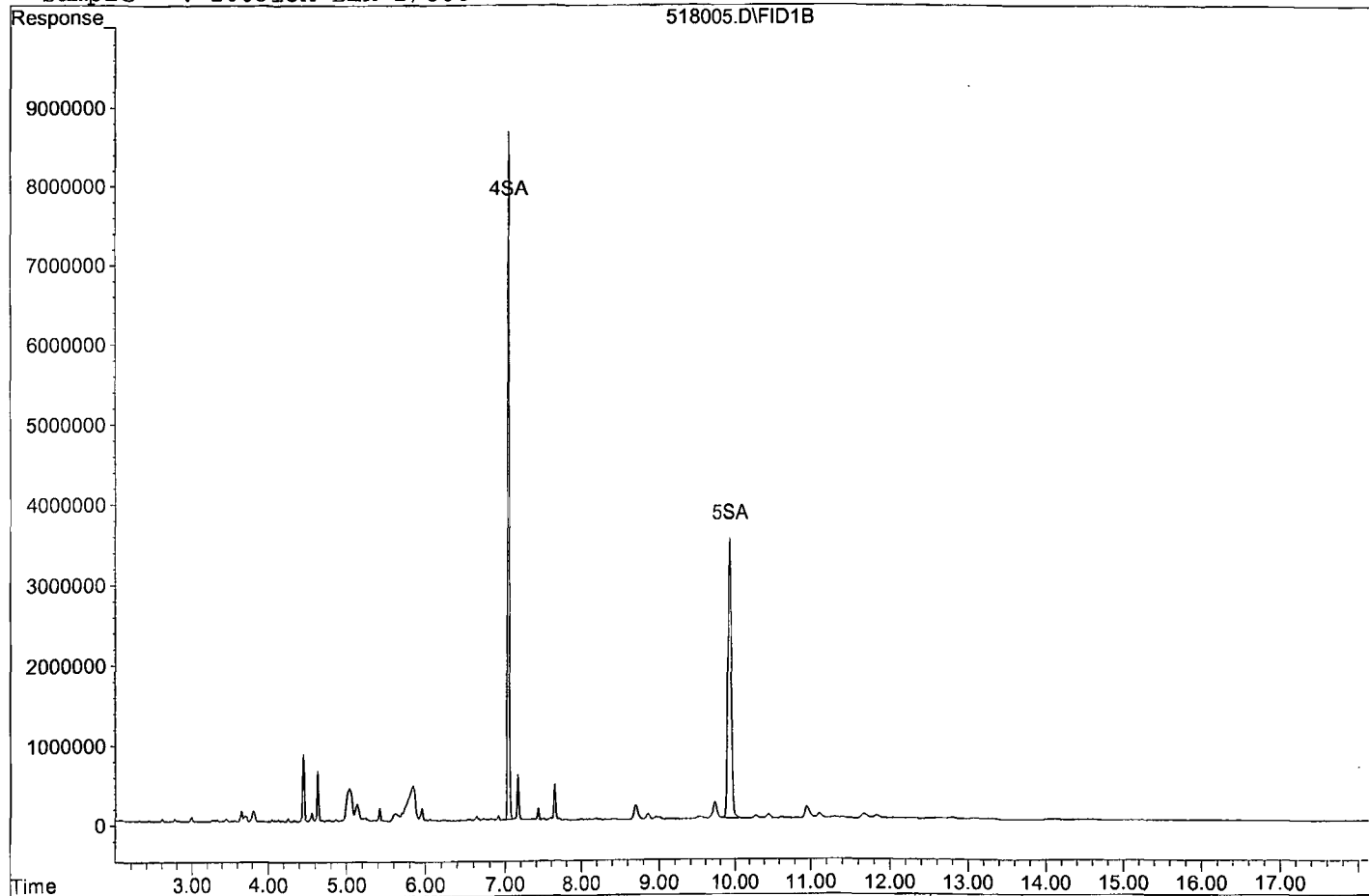
System Monitoring Compounds			
4) SA Ortho-Terphenyl(S)	7.04	122829601	61.157 ppb
Surrogate Spike 75.000		Recovery =	81.54%
5) SA Octacosane(S)	9.93	113299193	81.101 ppb
Surrogate Spike 75.000		Recovery =	108.13%
Target Compounds			
1) HATM (C8-C18)	4.87	130506419	111.820 ppb
2) HATM Diesel (C10-C24)	6.24	155805856	101.562 ppb
3) HBTM Motor Oil (C24-C40)	12.60	90573928	76.789 ppb

Target Compounds

Quantitation Report

Data File: G:\APOLLO\DATA\200518\518005.D

Sample : 200515A BLK 2/800



Data File : G:\APOLLO\DATA\200518\518006.D Vial: 6
 Acq On : 5-18-20 11:22:34 Operator: SS
 Sample : 200515A LCS-1 2/800 Inst : Apollo
 Misc : water Multiplr: 2.50
 IntFile : events.e
 Quant Time: May 19 14:03 2020 Quant Results File: D8C0310.RES

Method : G:\APOLLO\DATA\200518\D8C0310.M (Chemstation Integrator)
 Title : 8015 B&C
 Last Update : Tue May 19 13:59:38 2020
 Response via : Multiple Level Calibration

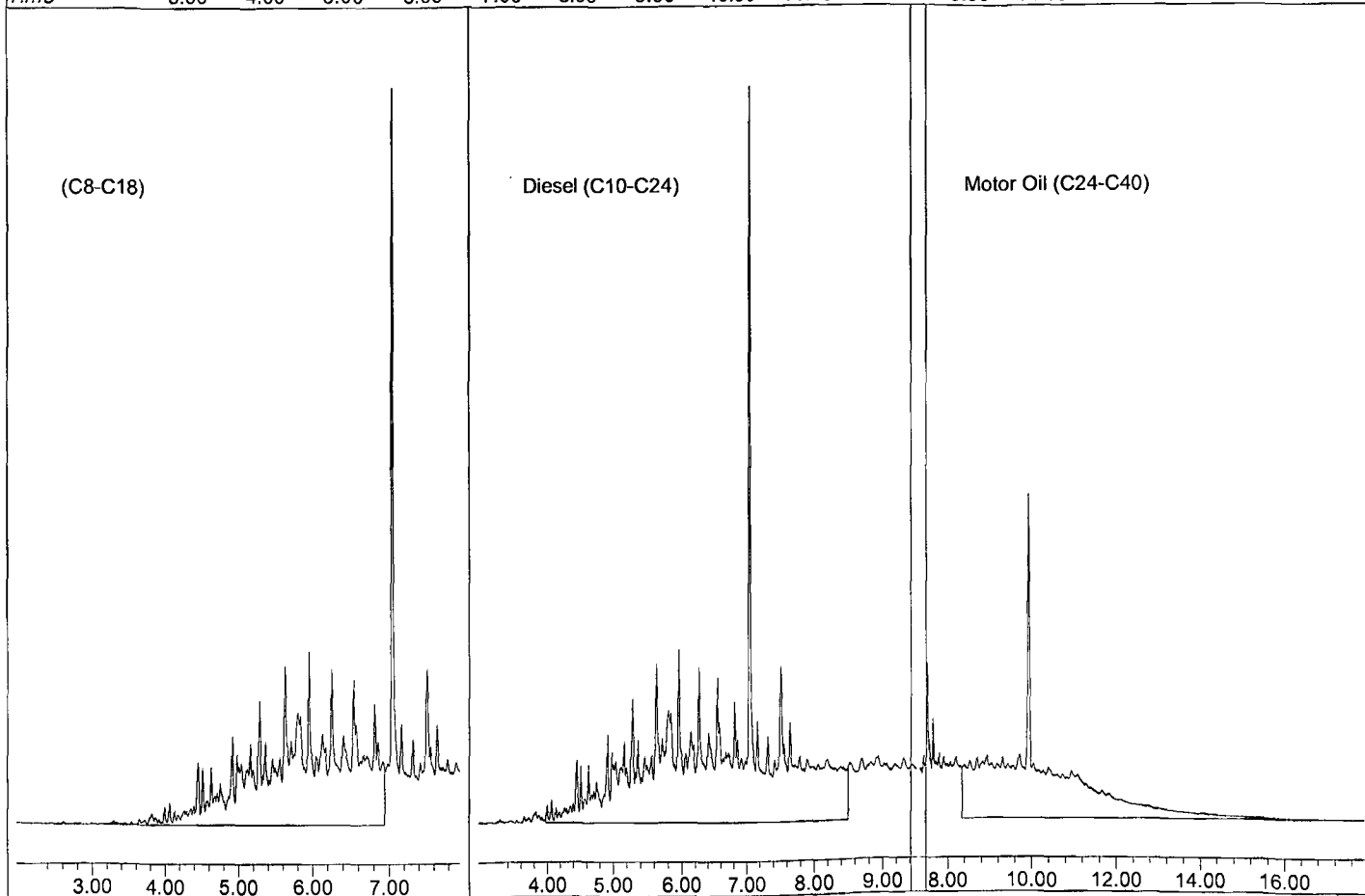
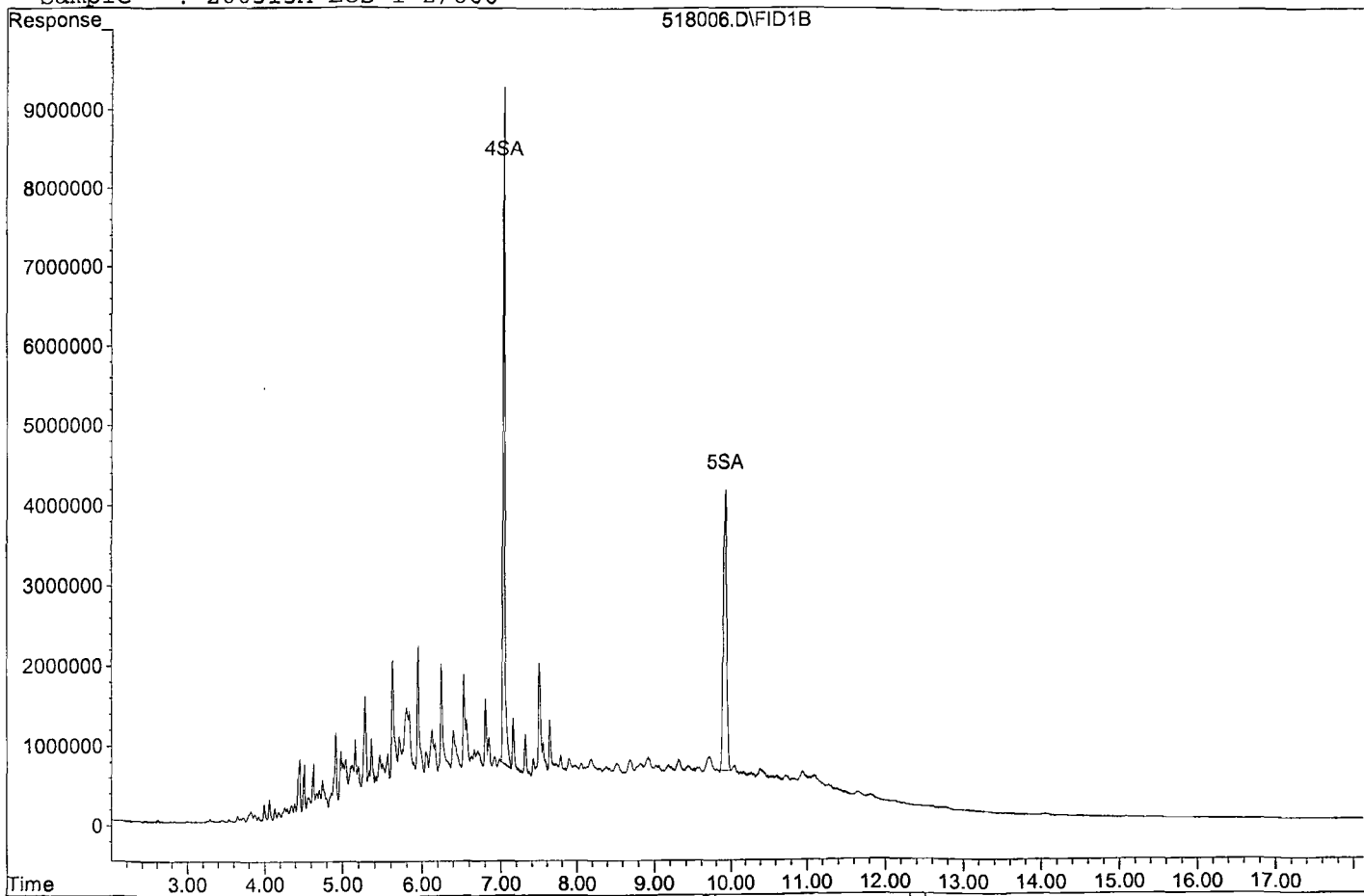
Volume Inj. : 2UL
 Signal Phase : DB-5
 Signal Info : FID02A

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
4) SA Ortho-Terphenyl(S)	7.04	136005466	67.718 ppb
Surrogate Spike 75.000		Recovery =	90.29%
5) SA Octacosane(S)	9.93	108260722	77.495 ppb
Surrogate Spike 75.000		Recovery =	103.33%
Target Compounds			
1) HATM (C8-C18)	4.87	1212536923	1038.922 ppb
2) HATM Diesel (C10-C24)	6.24	1888036464	1230.721 ppb
3) HBTM Motor Oil (C24-C40)	12.60	1432686550	1214.639 ppb

Target Compounds

Data File: G:\APOLLO\DATA\200518\518006.D

Sample : 200515A LCS-1 2/800



Data File : G:\APOLLO\DATA\200518\518007.D Vial: 7
 Acq On : 5-18-20 11:45:12 Operator: SS
 Sample : BA11198W01 MS-1 2/800 Inst : Apollo
 Misc : water Multiplr: 2.50
 IntFile : events.e
 Quant Time: May 19 14:03 2020 Quant Results File: D8C0310.RES

Method : G:\APOLLO\DATA\200518\D8C0310.M (Chemstation Integrator)
 Title : 8015 B&C
 Last Update : Tue May 19 13:59:38 2020
 Response via : Multiple Level Calibration

Volume Inj. : 2UL
 Signal Phase : DB-5
 Signal Info : FID02A

Compound	R.T.	Response	Conc Units

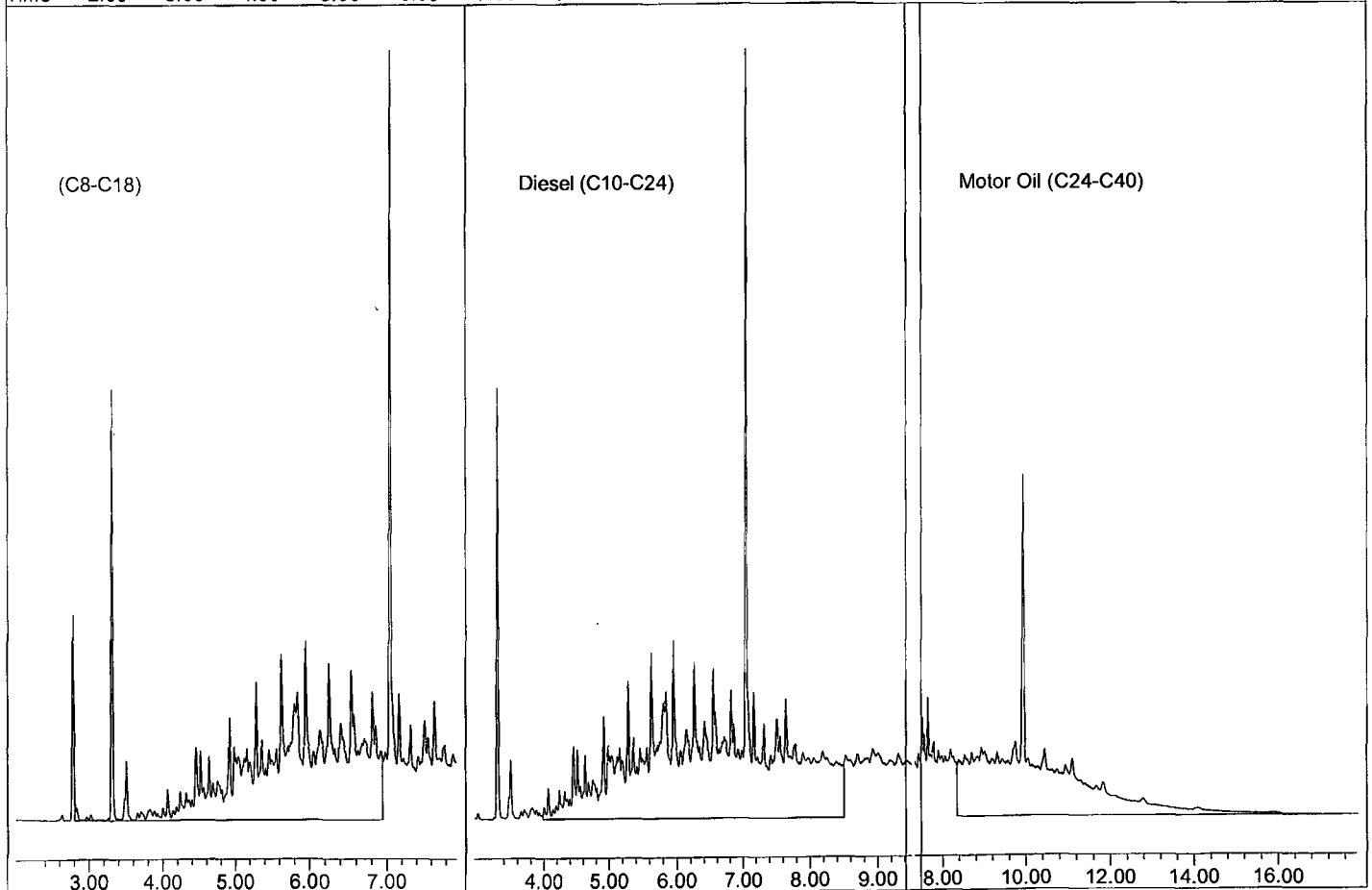
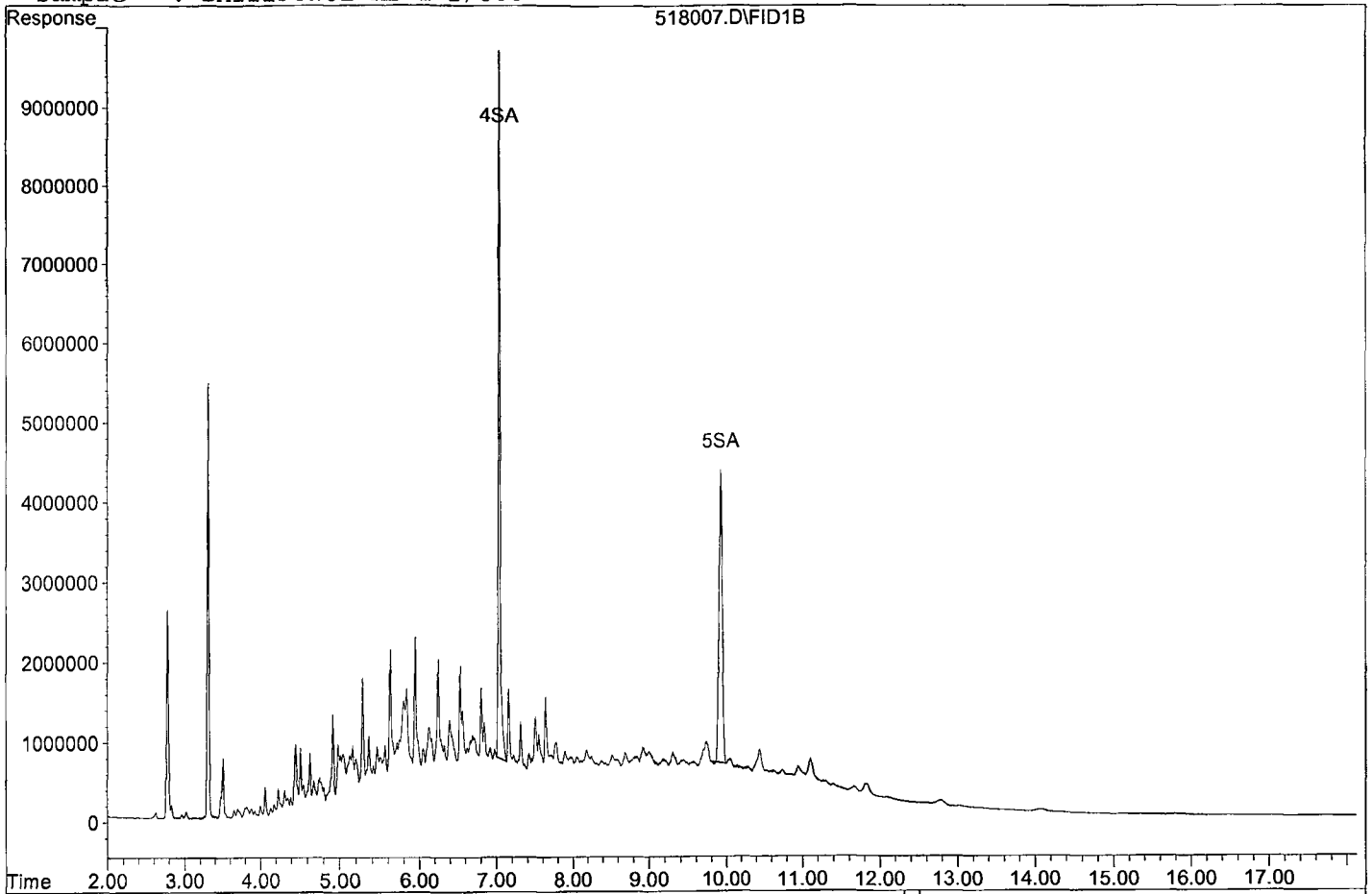
System Monitoring Compounds			
4) SA Ortho-Terphenyl(S)	7.04	138914056	69.166 ppb
Surrogate Spike 75.000		Recovery =	92.22%
5) SA Octacosane(S)	9.93	111875788	80.082 ppb
Surrogate Spike 75.000		Recovery =	106.78%
Target Compounds			
1) HATM (C8-C18)	4.87	1406802398	1205.372 ppb
2) HATM Diesel (C10-C24)	6.24	2015936964	1314.094 ppb
3) HBTM Motor Oil (C24-C40)	12.60	1544150628	1309.139 ppb

Target Compounds

Quantitation Report

Data File: G:\APOLLO\DATA\200518\518007.D

Sample : BA11198W01 MS-1 2/800



Data File : G:\APOLLO\DATA\200518\518008.D Vial: 8
 Acq On : 5-18-20 12:07:55 Operator: SS
 Sample : BA11198W02 MSD-1 2/800 Inst : Apollo
 Misc : water Multiplr: 2.50
 IntFile : events.e
 Quant Time: May 19 14:03 2020 Quant Results File: D8C0310.RES

Method : G:\APOLLO\DATA\200518\D8C0310.M (Chemstation Integrator)
 Title : 8015 B&C
 Last Update : Tue May 19 13:59:38 2020
 Response via : Multiple Level Calibration

Volume Inj. : 2UL
 Signal Phase : DB-5
 Signal Info : FID02A

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
4) SA Ortho-Terphenyl(S)	7.04	140368825	69.890 ppb
Surrogate Spike 75.000		Recovery =	93.19%
5) SA Octacosane(S)	9.93	113522693	81.261 ppb
Surrogate Spike 75.000		Recovery =	108.35%
Target Compounds			
1) HATM (C8-C18)	4.87	1390303750	1191.236 ppb
2) HATM Diesel (C10-C24)	6.24	2040937185	1330.390 ppb
3) HBTM Motor Oil (C24-C40)	12.60	1515409062	1284.772 ppb

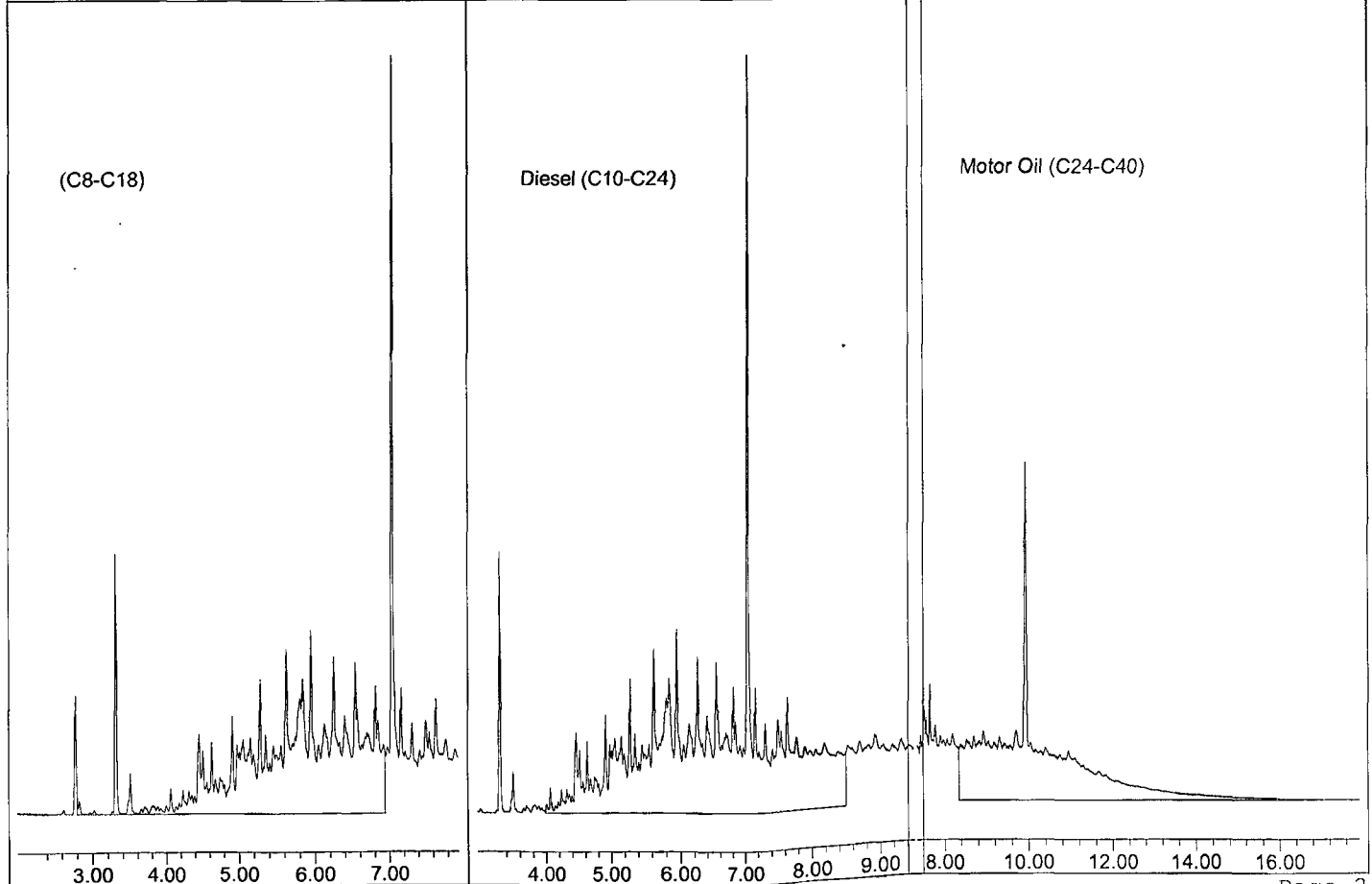
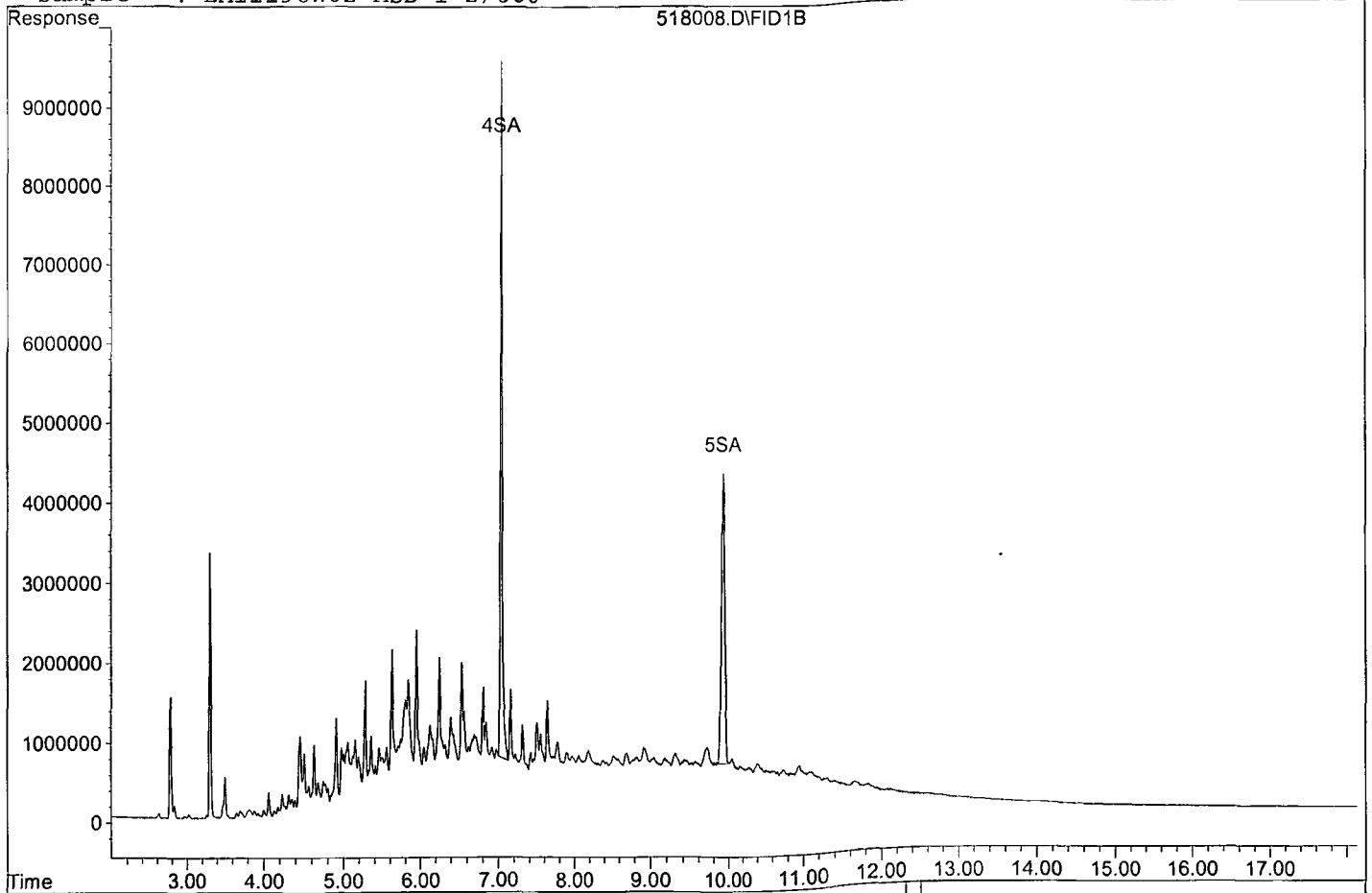
Target Compounds

Quantitation Report

Data File: G:\APOLLO\DATA\200518\518008.D

Sample : BA11198W02 MSD-1 2/800

518008.D\FID1B



THC Surrogate										
Prepared: 04/29/20					Prepared By (Initials): LP					
Expires: 04/29/21										
Initial Standard Information						Final Standard Information				
Name of Initial Standard (QAU Label)	Supplier	Supplier Part No.	Conc. (ug/mL)	Lot Number - QA Number	Exp. Date (1 yr.)	Exp. Date (Manufacturer)	Aliquot From Stock	Final Volume	Solvent	Final Standard Conc. (ug/mL)
O-terphenyl / Octacosane Mix	Phenova	ALO-130161	600	CL14921-49848	04/29/21	02/28/25	N/A	N/A	N/A	600

Diesel Motor Oil Mix										
Prepared: 04/01/20					Prepared By (Initials): BT					
Expires: 04/01/21										
Initial Standard Information						Final Standard Information				
Name of Initial Standard (QAU Label)	Supplier	Supplier Part No.	Conc. (ug/mL)	Lot Number - QA Number	Exp. Date (1 yr.)	Exp. Date (Manufacturer)	Aliquot From Stock	Final Volume	Solvent	Final Standard Conc. (ug/mL)
Diesel Fuel #2	Restek	31258	50,000	A0149066-41321, A0145169-49609, A0149169-49608	04/01/21	06/30/26	3.5 mL	7.0 mL	NA	25,000
Motor Oil Composite	Restek	31464	50,000	A0153599-49761, A0153599-49763, A0153577-49615	04/01/21	11/30/26	3.5 mL			25,000

Diesel / Motor Oil Second Source										
Prepared: 03/05/20										
Expires: 07/18/20										
Methylene Chloride Lot No. 58059										
Prepared By (Initials): <u>SS</u>										
Initial Standard Information							Final Standard Information			
Name of Initial Standard (QAU Label)	Supplier	Supplier Part No.	Conc. (ug/mL)	Lot Number - QA Number	Exp. Date (1 yr.)	Exp. Date (Manufacturer)	Aliquot From Stock	Final Volume	Solvent	Final Standard Conc. (ug/mL)
Diesel Fuel #2 Second Source	O2SI	G34-011598-03	50,000	G34-319187-38959	10/13/20	09/29/21	50uL	10mL	MC	250
Motor Oil Second Source	O2SI	116390-02-SS	50,000	010918-39582	07/18/20	03/05/22	50uL			

Diesel / Motor Oil Calibration Standard							Prepared By (Initials): <u>SS</u>			
Prepared: 03/05/20										
Expires: 03/05/21										
Methylene Chloride Lot No. 58059										
Initial Standard Information						Final Standard Information				
Name of Initial Standard (QAU Label)	Supplier	Supplier Part No.	Conc. (ug/mL)	Lot Number - QA Number	Exp. Date (1 yr.)	Exp. Date (Manufacturer)	Aliquot From Stock	Final Volume	Solvent	Final Standard Conc. (ug/mL)
Diesel Fuel #2	Restek	31258	50,000	A0153536-49756	04/13/21	06/30/26	400uL			2000
Motor Oil	Restek	31464	50,000	A0153577-49615	04/01/21	05/31/26	400uL	10mL	MC	2000
THC Surrogate	Phenova	ALO-130161	600	CL14921-49845	03/25/21	11/28/24	1666uL			100

Diesel / Motor Oil Calibration Curve										
Prepared: 03/05/20					Prepared By (Initials): SS					
Expires: 02/13/21										
Methylene Chloride Lot No. 58059										
Initial Standard Information							Final Standard Information			
Name of Initial Standard (QAU Label)	Supplier	APPL Mix Name	Conc. (ug/mL)	Reference to APPL Prep Date	Exp. Date	Exp. Date (Manufacturer)	Aliquot From Stock	Final Volume	Solvent	Final Standard Conc. (ug/mL)
Diesel / Motor Oil Calibration STD	Restek	Diesel / Motor Oil - 1	2,000	Prepared 03/05/20	02/13/21	N/A	5uL	1mL	MC	10
Diesel / Motor Oil Calibration STD	Restek	Diesel / Motor Oil - 2	2,000	Prepared 03/05/20	02/13/21	N/A	25uL	1mL	MC	50
Diesel / Motor Oil Calibration STD	Restek	Diesel / Motor Oil - 3	2,000	Prepared 03/05/20	02/13/21	N/A	125uL	1mL	MC	250
Diesel / Motor Oil Calibration STD	Restek	Diesel / Motor Oil - 4	2,000	Prepared 03/05/20	02/13/21	N/A	500uL	1mL	MC	1000
Diesel / Motor Oil Calibration STD	Restek	Diesel / Motor Oil - 5	2,000	Prepared 03/05/20	02/13/21	N/A	750uL	1mL	MC	1500
Diesel / Motor Oil Calibration STD	Restek	Diesel / Motor Oil - 6	2,000	Prepared 03/05/20	02/13/21	N/A	100uL	100uL	N/A	2,000

Diesel / Motor Oil CCV										
Prepared: <u>04/29/20</u>					Prepared By (Initials): <u>SS</u>					
Expires: <u>02/13/21</u>										
Methylene Chloride Lot No. 58059										
Initial Standard Information						Final Standard Information				
Name of Initial Standard (QAU Label)	Supplier	APPL Mix Name	Conc. (ug/mL)	Reference to APPL Prep Date	Exp. Date	Exp. Date (Manufacturer)	Aliquot From Stock	Final Volume	Solvent	Final Standard Conc. (ug/mL)
Diesel / Motor Oil STD	Restek	Diesel / Motor Oil CCV	2,000	04/13/20	03/25/21	03/25/21	1250uL	10mL	MC	250

Organic Extraction Worksheet

Method	Continuous Liq/Liq TPH-Diesel/MO 3520C	Extraction Set	200515A	Extraction Method	LIQ005	Units	mL
Spiked ID 1	Diesel Motor Oil Mix 4-1-20 4-1-21	Surrogate ID 1	THC Surrogate 4-29-20 4-29-21				
Spiked ID 2		Surrogate ID 2					
Spiked ID 3		Surrogate ID 3					
Spiked ID 4		Surrogate ID 4					
Spiked ID 5		Surrogate ID 5					
Spiked ID 6		Sufficient Vol for Matrix QC:		YES			
Spiked ID 7		Ext. Start Time:		05/15/20 13:00			
Spiked ID 8		Ext. End Time:		05/16/20 10:20			
GC Requires Extract By:							
pH1	2	05/15/20 11:20	Water Bath Temp 1 °C	35/38.5 °C			
pH2			Water Bath Temp 2 °C	35/34.5			
pH3			Water Bath Temp 3 °C	35/34.4 °C			

Spiked By: DL

Date 05/18/20 9:46:46 AM

Witnessed By: CFM

Date 05/18/20 9:46:49 AM

Sample	Sample Container	Spike Amount	Spike ID	Surrogate Amount	Surrogate ID	Extract Amount	Final Volume	pH	Extract Date/Time	Comments
1 200515A Bk				0.100	1	800	2	2	05/15/20 12:00	*
					equip	E-HP51 E-WB2				
2 200515A LCS-1		0.040	1	0.100	1	800	2	2	05/15/20 12:00	*
					equip	E-HP50 E-WB2				
3 BA11198 MS-1	BA11198W01	0.040	1	0.100	1	800	2	2	05/15/20 12:00	92186 *
					equip	E-HP49 E-WB2				
4 BA11198 MSD-1	BA11198W02	0.040	1	0.100	1	800	2	2	05/15/20 12:00	92186 *
					equip	E-HP48 E-WB2				
5 BA11198	BA11198W03			0.100	1	800	2	2	05/15/20 12:00	92186 *
					equip	E-HP47 E-WB3				
6 BA11199	BA11199W02			0.100	1	800	2	2	05/15/20 12:00	92186 *
					equip	E-HP25 E-WB2				

Solvent and Lot#	
1+1 HCL Amber Liter	2-15-20
PH Strips	HC998032
Dicholormethane	DY264-US
Filter Paper	400178
B. Sodium Sulfate	2019070279
Silica Gel (*)	050627T

Extraction COC Transfer	
Extraction lab employee Initials	KY
GC analyst's initials	CD
Date	
Time	
Refrigerator	HOBART

Technician's Initials	
Scanned By	DL
Sample Preparation	DL
Extraction	DL
Concentration	DL
Modified	05/18/20 9:48:13 AM

Reviewed By: KY

Date 05/18/20

Injection Log

Directory: G:\APOLLO\DATA\200310\

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	3	310003.D	1	Diesel Motor Oil-1 3/5/20	water	3-10-20 9:37:22
2	4	310004.D	1	Diesel Motor Oil-2 3/5/20	water	3-10-20 9:59:49
3	5	310005.D	1	Diesel Motor Oil-3 3/5/20	water	3-10-20 10:22:19
4	6	310006.D	1	Diesel Motor Oil-4 3/5/20	water	3-10-20 10:44:50
5	7	310007.D	1	Diesel Motor Oil-5 3/5/20	water	3-10-20 11:07:20
6	8	310008.D	1	Diesel Motor Oil-6 3/5/20	water	3-10-20 11:29:51
7	9	310009.D	1	Diesel Motor Oil-SS 3/5/20	water	3-10-20 11:52:24
8	3	518003.D	1	Diesel Motor Oil-CCV 4/29/20	water	5-18-20 10:06:22
9	5	518005.D	2.5	200515A BLK 2/800	water	5-18-20 10:59:56
10	6	518006.D	2.5	200515A LCS-1 2/800	water	5-18-20 11:22:34
11	7	518007.D	2.5	BA11198W01 MS-1 2/800	water	5-18-20 11:45:12
12	8	518008.D	2.5	BA11198W02 MSD-1 2/800	water	5-18-20 12:07:55
13	9	518009.D	2.5	BA11198W03 2/800	water	5-18-20 12:30:36
14	10	518010.D	2.5	BA11199W02 2/800	water	5-18-20 12:53:19
15	12	518012.D	1	Diesel Motor Oil-CCV 4/29/20	water	5-18-20 13:38:49