



Total Extractable Petroleum Hydrocarbons (Diesel)

Case Narrative

COGCC

Vondy #3

Work Order Number: 1701016

1. This report consists of 1 water sample. The sample was received cool and intact by ALS on 01/04/17.
2. The water sample was extracted by adding hexane to the water sample and shaking the resulting two phase solution according to the current revision of SOP 603, which was developed at ALS. The hydrocarbons partition into the hexane layer, which is then removed for analysis.
3. The sample was analyzed following the current revision of SOP 406 generally based on SW-846 Methods 8000C and 8015D. TEPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated in this test extends from C₁₀ to C₂₈.
4. All initial and continuing calibration criteria were met.
5. All method blank criteria were met.
6. All laboratory control sample and laboratory control sample duplicate recoveries and RPDs were within the acceptance criteria.
7. Sample 1701016-1 was designated as the quality control sample for this analysis.

Similarity of matrix and therefore relevance of the QC results should not be automatically inferred for any sample other than the native sample selected for QC.

All matrix spike recoveries were within acceptance criteria.

8. The sample was extracted and analyzed within the established holding time.



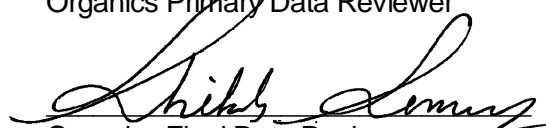
9. All surrogate recoveries were within acceptance criteria.
10. Manual integrations are performed when needed to provide consistent and defensible data following the guidelines in the current revision of SOP 939.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.



Megan Johnstone
Organics Primary Data Reviewer

1/17/17
Date



Shikha Sen
Organics Final Data Reviewer

1/18/17
Date

ALS
Data Qualifier Flags
Fuels

- G:** This flag indicates that a pattern resembling gasoline was detected in this sample.
- D:** This flag indicates that a pattern resembling diesel was detected in this sample.
- M:** This flag indicates that a pattern resembling motor oil was detected in this sample.
- C:** This flag indicates that a pattern resembling crude oil was detected in this sample.
- 4:** This flag indicates that a pattern resembling JP-4 was detected in this sample.
- 5:** This flag indicates that a pattern resembling JP-5 was detected in this sample.
- H:** This flag indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.
- L:** This flag indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.
- Z:** This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:
gasoline
JP-8
diesel
mineral spirits
motor oil
Stoddard solvent
bunker C

Multiple flags may be used to indicate the presence of more than one product or component.

ALS -- Fort Collins

Sample Number(s) Cross-Reference Table

OrderNum: 1701016

Client Name: COGCC

Client Project Name: Vondy #3

Client Project Number:

Client PO Number: CT 2017-0221

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
Vondy #3	1701016-1		WATER	30-Dec-16	12:30
TB	1701016-2		WATER	30-Dec-16	



ALS Environmental

225 Commerce Drive, Fort Collins, Colorado 80524
 TF: (970) 448-1511 PH: (970) 488-1511 FX: (970) 490-4522

Chain-of-Custody

Turnaround time for samples received after 2 p.m. will be calculated beginning from the next business day.
 Turnaround time for samples received Saturday will be calculated beginning from the next business day.

ALS WORKORDER #
1701016

PAGE of
 DISPOSAL BY LAB or RETURN

PROJECT NAME: Vondy #3
 PROJECT No.:
 COMPANY NAME: COGCC
 SEND REPORT TO: Robert Young
 ADDRESS:
 CITY/STATE/ZIP:
 PHONE: 303-252-0126
 FAX:
 E-MAIL: rob.young@siatec.co.us

TURNAROUND TIME: *Std.* SAMPLER: Robert Young

SITE ID:
 EDD FORMAT:
 PURCHASE ORDER: CT 2017-0221
 BILL TO COMPANY:
 INVOICE ATTN TO:
 ADDRESS:
 CITY/STATE/ZIP:
 PHONE:
 FAX:
 E-MAIL:

PARAMETER/METHOD REQUEST FOR ANALYSIS:
 A Alkalinity/Conductivity/Amones/pH (1L amber glass)
 B Dissolved metals/SAR (lab filtration)
 C Nitrate/Nitrite
 D 8260 - BTEX SS 11/5/17
 E RSK-175
 F 8015-GRO
 G TDS
 H 8015-DRO
 I 8270 SIM SS 11/5/17
 J TB

LAB ID	FIELD ID	MATRIX	SAMPLE DATE	SAMPLE TIME	# OF BOTTLES	PRESERVATIVE	QC	A	B	C	D	E	F	G	H	I	J	SEE NOTES SECTION
1	Vondy #3	Aq	12/30/16	1230	1	None	X											
2					1	None		X										
3					1	Sulfuric			X									
4					3	HCL				X								
5					3	HCL					X							
6					3	HCL						X						
7					1	None							X					
8					1	None								X				
9					1	None									X			
2109					Z	HCL												X

Form 2029

RELINQUISHED BY: *Robert Young* SIGNATURE: *Robert Young* DATE: 1-4-2017 TIME: 1445

RECEIVED BY: *JOSHUA DONATI-SUA* DATE: 1-4-17 TIME: 1450

REPORT LEVEL / QC REQUIRED:
 Summary (Standard QC)
 LEVEL II (Standard QC)
 LEVEL III (Std CC + forms)
 LEVEL IV (Std CC + forms - raw data)

PRESERVATION KEY: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaOH/H2O2/Aspirin 6-NaF/SC4 7-4°C 8-Other



ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: COGCC

Workorder No: COGCC1701016

Project Manager: SS

Initials: JWS Date: ~~1/5/17~~ 1/5/17

1. Does this project require any special handling in addition to standard ALS procedures?		YES	<input checked="" type="radio"/> NO
2. Are custody seals on shipping containers intact?	NONE	YES	NO
3. Are Custody seals on sample containers intact?	NONE	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		<input checked="" type="radio"/> YES	NO
5. Are the COC and bottle labels complete and legible?		<input checked="" type="radio"/> YES	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		<input checked="" type="radio"/> YES	NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF	YES	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	N/A	<input checked="" type="radio"/> YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	N/A	<input checked="" type="radio"/> YES	NO
10. Is there sufficient sample for the requested analyses?		<input checked="" type="radio"/> YES	NO
11. Were all samples placed in the proper containers for the requested analyses?		<input checked="" type="radio"/> YES	NO
12. Are all samples within holding times for the requested analyses?		<input checked="" type="radio"/> YES	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		<input checked="" type="radio"/> YES	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ___ < green pea ___ > green pea	N/A	YES	NO
15. Do any water samples contain sediment? Amount Amount of sediment: ___ dusting ___ moderate ___ heavy	N/A	YES	<input checked="" type="radio"/> NO
16. Were the samples shipped on ice?		<input checked="" type="radio"/> YES	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 #4		<input checked="" type="radio"/> YES	NO
Cooler #: <u>1</u>			
Temperature (°C): <u>2.7</u>			
No. of custody seals on cooler: <u>0</u>			
External µR/hr reading: <u>-</u>			
Background µR/hr reading: <u>-</u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? YES / NO / <input checked="" type="radio"/> NA (if no, see Form 008.)			

Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

Handwriting on labels faded and hard to make out.

If applicable, was the client contacted? YES / NO / NA, Contact: _____ Date/Time: _____

Project Manager Signature / Date: [Signature]

Diesel Range Organics

Method SW8015MD

Method Blank

Lab Name: ALS -- Fort Collins

Work Order Number: 1701016

Client Name: COGCC

ClientProject ID: Vondy #3

Lab ID: HC170113-101MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 13-Jan-17

Date Analyzed: 13-Jan-17

Prep Batch: HC170113-101

QCBatchID: HC170113-101-1

Run ID: HC170113-8A

Cleanup: NONE

Basis: N/A

File Name: 04144.dat

Sample Aliquot: 36.7 ml

Final Volume: 1.25 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	DF	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
68334-30-5	Diesel Range Organics	1	0.61	0.61	0.18	U	

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
84-15-1	O-TERPHENYL	0.917		0.851	108	63 - 126

Data Package ID: HCD1701016-1

Date Printed: Tuesday, January 17, 2017

ALS -- Fort Collins

Page 1 of 1

LIMS Version: 6.837

Diesel Range Organics

Method SW8015MD

Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1701016

Client Name: COGCC

ClientProject ID: Vondy #3

Field ID:	Vondy #3
Lab ID:	1701016-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 30-Dec-16

Date Extracted: 13-Jan-17

Date Analyzed: 13-Jan-17

Prep Method: METHOD

Prep Batch: HC170113-101

QCBatchID: HC170113-101-1

Run ID: HC170113-8A

Cleanup: NONE

Basis: As Received

File Name: 04148.dat

Analyst: Joel F. Nolte

Sample Aliquot: 38.6 ml

Final Volume: 1.25 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
68334-30-5	Diesel Range Organics	1	0.58	0.58	0.17	U	

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
84-15-1	O-TERPHENYL	0.848		0.81	105	63 - 126

Data Package ID: *HCD1701016-1*

Date Printed: Tuesday, January 17, 2017

ALS -- Fort Collins

Page 1 of 1

LIMS Version: 6.837

Diesel Range Organics

Method SW8015MD

Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS -- Fort Collins

Work Order Number: 1701016

Client Name: COGCC

ClientProject ID: Vondy #3

Lab ID: HC170113-101LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 01/13/2017
Date Analyzed: 01/13/2017
Prep Method: METHOD

Prep Batch: HC170113-101
QCBatchID: HC170113-101-1
Run ID: HC170113-8A
Cleanup: NONE
Basis: N/A
File Name: 04145.dat

Sample Aliquot: 37.7 ml
Final Volume: 1.25 ml
Result Units: MG/L
Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
68334-30-5	Diesel Range Organics	8.29	8.12	0.597		98	36 - 150%

Lab ID: HC170113-101LCSD

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 01/13/2017
Date Analyzed: 01/13/2017
Prep Method: METHOD

Prep Batch: HC170113-101
QCBatchID: HC170113-101-1
Run ID: HC170113-8A
Cleanup: NONE
Basis: N/A
File Name: 04146.dat

Sample Aliquot: 37.6 ml
Final Volume: 1.25 ml
Result Units: MG/L
Clean DF: 1

CASNO	Target Analyte	Spike Added	LCSD Result	Reporting Limit	Result Qualifier	LCSD % Rec.	RPD Limit	RPD
68334-30-5	Diesel Range Organics	8.31	8.02	0.598		96	20	1

Surrogate Recovery LCS/LCSD

CASNO	Target Analyte	Spike Added	LCS % Rec.	LCS Flag	LCSD % Rec.	LCSD Flag	Control Limits
84-15-1	O-TERPHENYL	0.829	103		104		63 - 126

Data Package ID: HCD1701016-1

Date Printed: Tuesday, January 17, 2017

ALS -- Fort Collins

Page 1 of 1

LIMS Version: 6.837

Diesel Range Organics

Method SW8015MD

Matrix Spike

Lab Name: ALS -- Fort Collins

Work Order Number: 1701016

Client Name: COGCC

ClientProject ID: Vondy #3

Field ID:	Vondy #3
LabID:	1701016-1MS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 30-Dec-16

Date Extracted: 13-Jan-17

Date Analyzed: 13-Jan-17

Prep Batch: HC170113-101

QCBatchID: HC170113-101-1

Run ID: HC170113-8A

Cleanup: NONE

Basis: As Received

Sample Aliquot: 38.8 ml

Final Volume: 1.25 ml

Result Units: MG/L

File Name: 04149.dat

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
68334-30-5	Diesel Range Organics	0.58	U	7.79		0.58	8.05	97	36 - 150%

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
84-15-1	O-TERPHENYL	0.85		0.805	106	63 - 126

Data Package ID: HCD1701016-1

Date Printed: Tuesday, January 17, 2017

ALS -- Fort Collins

Page 1 of 1

LIMS Version: 6.837

Total Extractable Petroleum Hydrocarbons / DRO (8015) Quantitation Report

ALSLG-Fort Collins

Sample : HC170113-101MB

Filename : \\gcserver\gdata\Projects\GC8\Data\2017\dro170113\04144.dat

Acquisition Date : 1/13/2017 7:49:42 PM

Instrument : GC8

Quantitation Date : 1/15/2017 12:30:30 PM

Data Acquired By : noltej

Last Method Update : 1/13/2017 2:25:36 PM

Data Processed By : noltej

Method : \\gcserver\gdata\Projects\GC8\Method\2016\dro161231b.met Inj. Vol. (uL) : 2

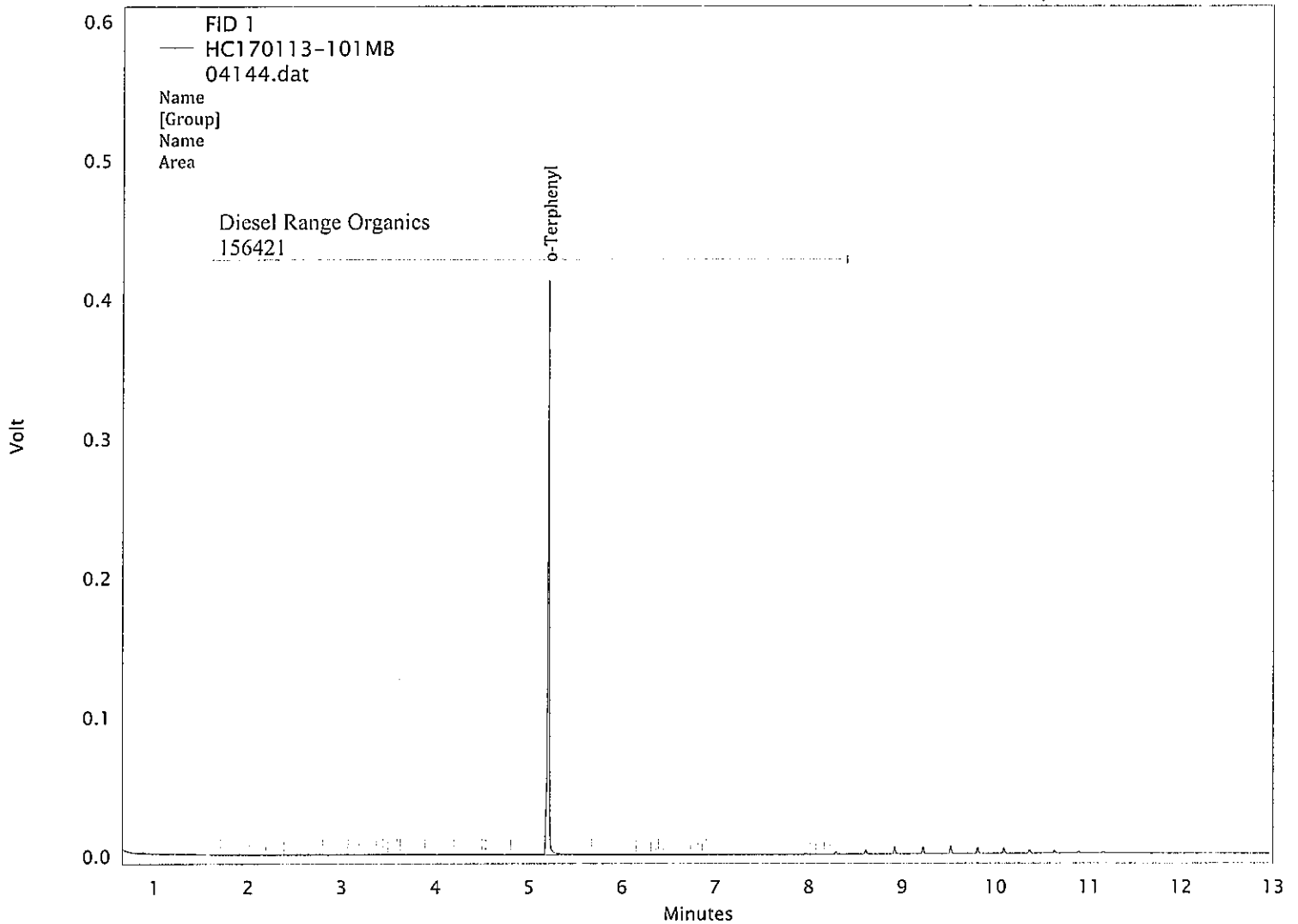
Sequence : \\gcserver\gdata\Projects\GC8\Sequence\2017\dro170113.seq

Vial : 16

Data Description : water

FID 1 Results

Compound Name	RT	Expected RT	Peak Area	Integration Codes	Conc.	Conc. Units
o-Terphenyl	5.21	5.22	468138	LL	108% 26.920	ug/mL
Diesel Range Organics			156421		3.203	ug/mL



Column : DB-5MS (15M x 0.25mm x 0.25u)

(1st int. code is for peak start, 2nd int code is for peak stop) B=baseline, f=force start or stop, l=ended by int. off event, N=begin negative peak, P=end negative peak, H=forward horiz, h=backward horiz, M=manual baseline or peak, m=move baseline start/stop, S=shoulder, T=tangent skim, V=valley, v=forced valley point, x=split peak, E=end of chromatogram encountered, R=reset baseline, L=lowest point horiz.

Printed On : 1/15/2017 12:30:32

PM

Total Extractable Petroleum Hydrocarbons / DRO (8015) Quantitation Report

ALSLG-Fort Collins

Sample : 1701016-1

Filename : \\gcserver\gcdata\Projects\GC8\Data\2017\dro170113\04148.dat

Acquisition Date : 1/13/2017 9:20:11 PM

Instrument : GC8

Quantitation Date : 1/15/2017 12:30:49 PM

Data Acquired By : noltej

Last Method Update : 1/13/2017 2:25:36 PM

Data Processed By : noltej

Method : \\gcserver\gcdata\Projects\GC8\Method\2016\dro161231b.met Inj. Vol. (uL) : 2

Sequence : \\gcserver\gcdata\Projects\GC8\Sequence\2017\dro170113.seq Vial : 20

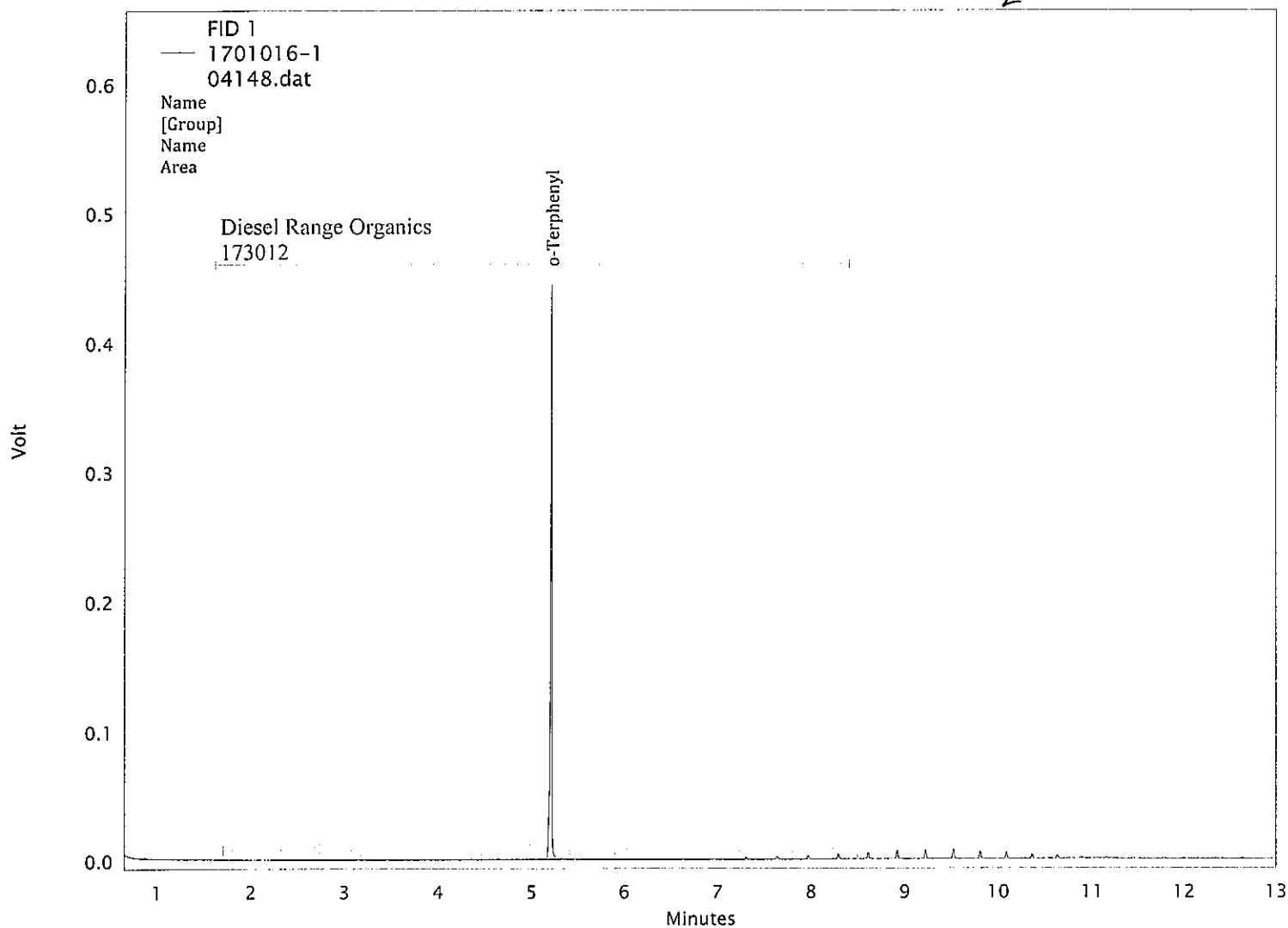
Data Description : water

FID 1 Results

Compound Name	RT	Expected RT	Peak Area	Integration Codes	Conc.	Conc. Units
o-Terphenyl	5.21	5.22	455522	TL	26.190	ug/mL
Diesel Range Organics			173012		4.143	ug/mL

105-6

← ml



Column : DB-5MS (15M x 0.25mm x 0.25u)

(1st int. code is for peak start, 2nd int code is for peak stop) B=baseline, f=force start or stop, l=ended by int. off event, N=begin negative peak, P=end negative peak, H=forward horiz, h=backward horiz, M=manual baseline or peak, m=move baseline start/stop, S=shoulder, T=tangent skim, V=valley, v=forced valley point, x=split peak, E=end of chromatogram encountered, R=reset baseline, L=lowest point horiz.

Total Extractable Petroleum Hydrocarbons / DRO (8015) Quantitation Report

ALSLG-Fort Collins

Sample : HC170113-101LCS

Filename : \\gcserver\gcdata\Projects\GC8\Data\2017\dro170113\04145.dat

Acquisition Date : 1/13/2017 8:12:19 PM

Instrument : GC8

Quantitation Date : 1/15/2017 12:30:36 PM

Data Acquired By : noltej

Last Method Update : 1/13/2017 2:25:36 PM

Data Processed By : noltej

Method : \\gcserver\gcdata\Projects\GC8\Method\2016\dro161231b.met Inj. Vol. (uL) : 2

Sequence : \\gcserver\gcdata\Projects\GC8\Sequence\2017\dro170113.seq

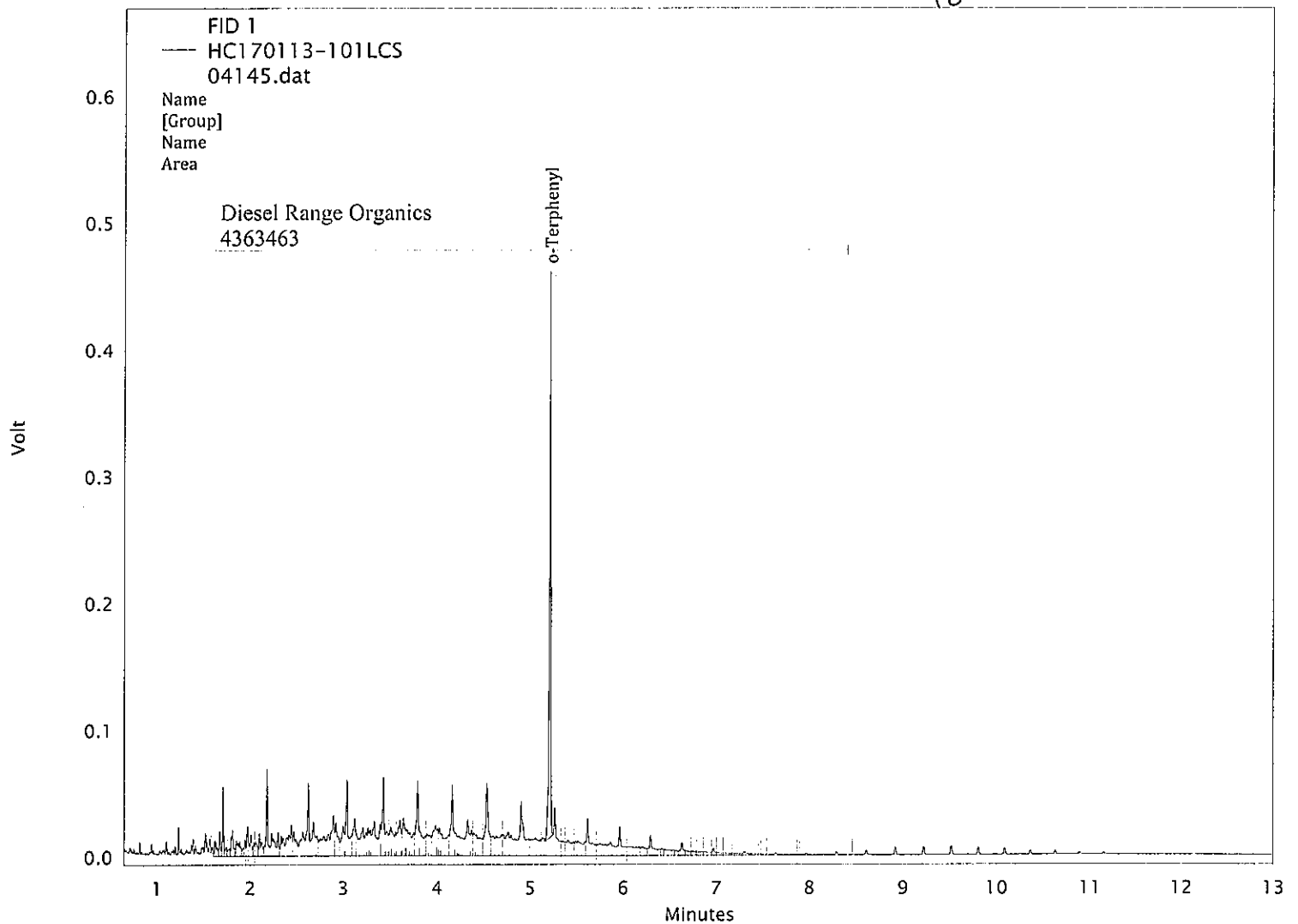
Vial : 17

Data Description : water, 250ppm

FID 1 Results

Compound Name	RT	Expected RT	Peak Area	Integration Codes	Conc.	Conc. Units
o-Terphenyl	5.22	5.22	446810	LL	25.685	ug/mL
Diesel Range Organics			4363463		244.764	ug/mL

103%
98%



Column : DB-5MS (15M x 0.25mm x 0.25u)

Total Extractable Petroleum Hydrocarbons / DRO (8015) Quantitation Report

ALSLG-Fort Collins

Sample : HC170113-101LCSD

Filename : \\gcserver\gcdata\Projects\GC8\Data\2017\dro170113\04146.dat

Acquisition Date : 1/13/2017 8:34:55 PM

Instrument : GC8

Quantitation Date : 1/15/2017 12:30:41 PM

Data Acquired By : noltej

Last Method Update : 1/13/2017 2:25:36 PM

Data Processed By : noltej

Method : \\gcserver\gcdata\Projects\GC8\Method\2016\dro161231b.met Inj. Vol. (uL) : 2

Sequence : \\gcserver\gcdata\Projects\GC8\Sequence\2017\dro170113.seq

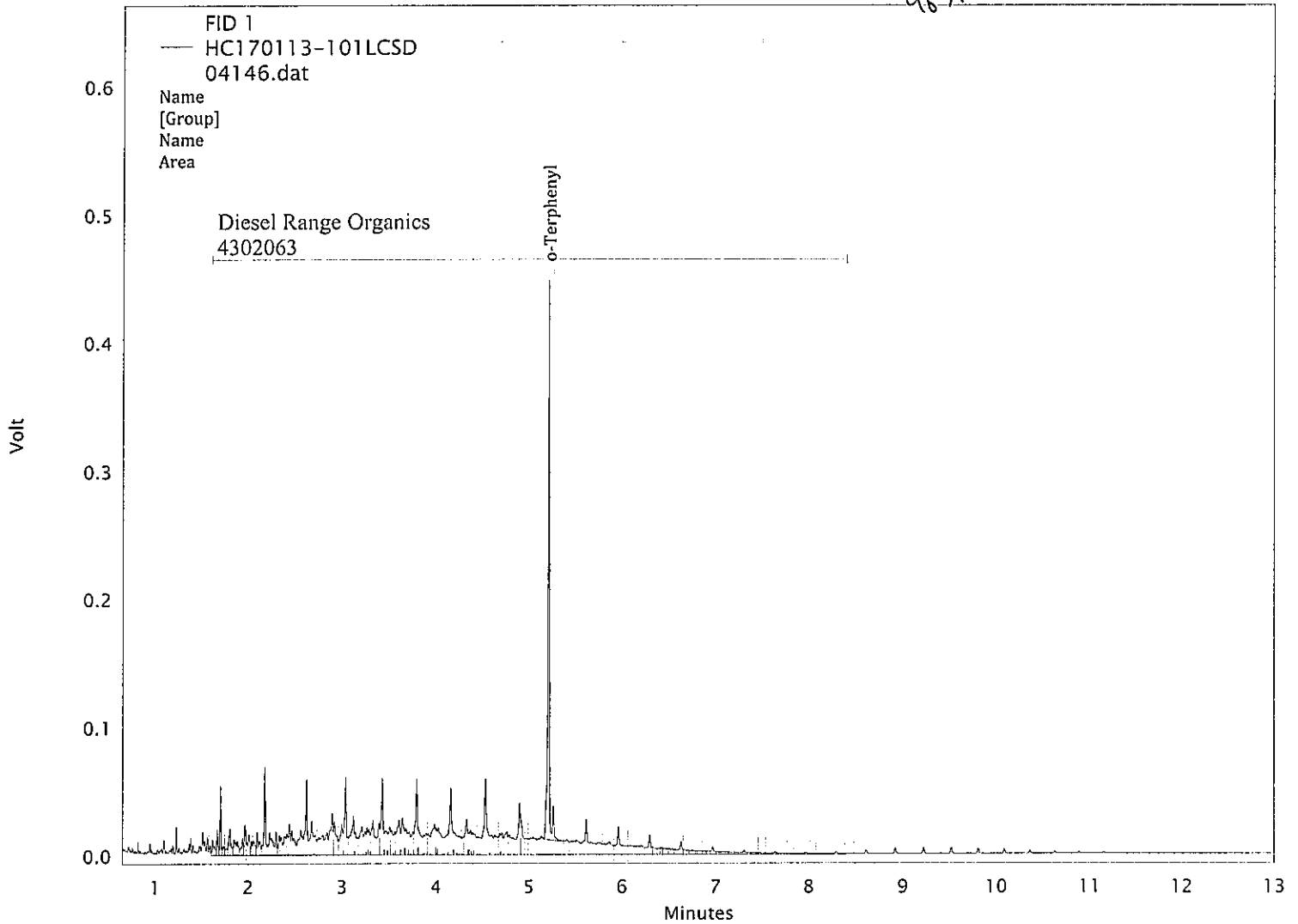
Vial : 18

Data Description : water, 250ppm

FID 1 Results

Compound Name	RT	Expected RT	Peak Area	Integration Codes	Conc.	Conc. Units
o-Terphenyl	5.21	5.22	453243	LL	26.058	ug/mL
Diesel Range Organics			4302063		241.191	ug/mL

104%
96%



Column : DB-5MS (15M x 0.25mm x 0.25u)

(1st int. code is for peak start, 2nd int code is for peak stop) B=baseline, f=force start or stop, l=ended by int. off event, N=begin negative peak, P=end negative peak, H=forward horiz, h=backward horiz, M=manual baseline or peak, m=move baseline start/stop, S=shoulder, T=tangent skim, V=valley, v=forced valley point, x=split peak, E=end of chromatogram encountered, R=reset baseline, L=lowest point horiz.

Total Extractable Petroleum Hydrocarbons / DRO (8015) Quantitation Report

ALSLG-Fort Collins

Sample : 1701016-1MS

Filename : \\gcserver\gcdata\Projects\GC8\Data\2017\dro170113\04149.dat

Acquisition Date : 1/13/2017 9:42:50 PM

Instrument : GC8

Quantitation Date : 1/15/2017 12:30:53 PM

Data Acquired By : noltej

Last Method Update : 1/13/2017 2:25:36 PM

Data Processed By : noltej

Method : \\gcserver\gcdata\Projects\GC8\Method\2016\dro161231b.met Inj. Vol. (uL) : 2

Sequence : \\gcserver\gcdata\Projects\GC8\Sequence\2017\dro170113.seq

Vial : 21

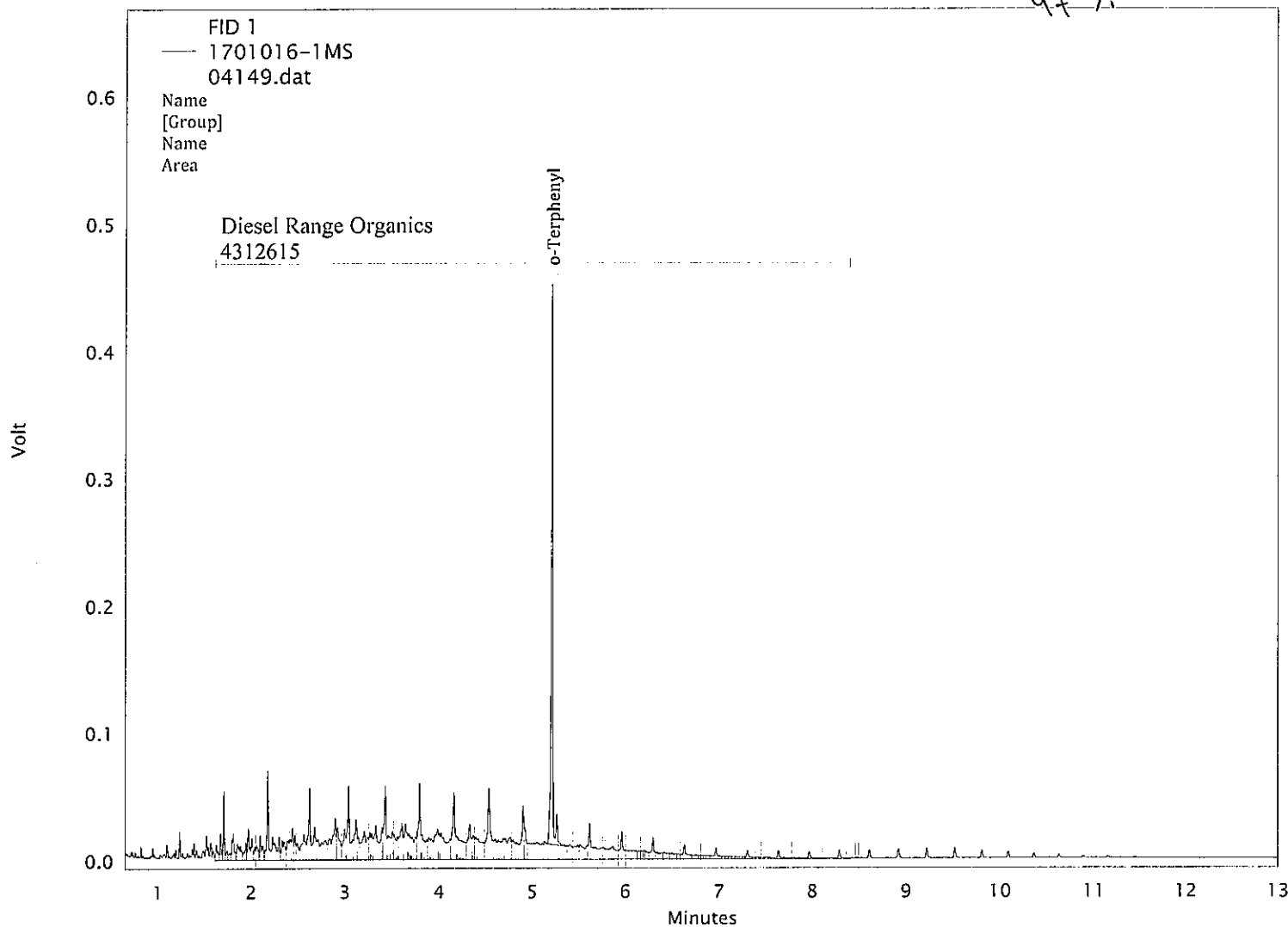
Data Description : water

FID 1 Results

Compound Name	RT	Expected RT	Peak Area	Integration Codes	Conc.	Conc. Units
o-Terphenyl	5.21	5.22	458889	LL	26.385	ug/mL
Diesel Range Organics			4312615		241.805	ug/mL

106%

97%



Column : DB-5MS (15M x 0.25mm x 0.25u)

(1st int. code is for peak start, 2nd int code is for peak stop) B=baseline, f=force start or stop, l=ended by int. off event, N=begin negative peak, P=end negative peak, H=forward horiz, h=backward horiz, M=manual baseline or peak, m=move baseline start/stop, S=shoulder, T=tangent skim, V=valley, v=forced valley point, x=split peak, E=end of chromatogram encountered, R=reset baseline, L=lowest point horiz.

Printed On : 1/15/2017 12:30:54