



# Total Extractable Petroleum Hydrocarbons (Diesel)

## Case Narrative

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### **NMED Hazardous Waste Bureau**

**KAFB – BFF 3Q11**

Work Order Number: 1108197

1. This report consists of 1 water sample. The sample was received cool and intact by ALS on 08/16/2011.
2. The water sample was extracted by adding hexane to the water sample and shaking the resulting two phase solution according to SOP 603 Revision 12, which was developed at ALS. The hydrocarbons partition into the hexane layer, which is then removed for analysis.
3. The extract was then analyzed using GC with a capillary column and a flame ionization detector (FID) according to SOP 406 Revision 15 generally based on SW-846 Method 8000B and Method 8015B. The procedures are based on this general method because SW-846 does not have a specific method for total extractable petroleum hydrocarbons (TEPH) or diesel range organics. The only true modification from this method is that TEPH is a multicomponent mixture and is quantitated by summing the entire range, rather than individual peaks. All positive results were quantitated using the responses from the initial calibration curve using the external standard technique. Also, a confirmation column is not used, because the analyte is a multicomponent mixture and the specific carbon range of the peaks detected is specified on the individual sample reporting forms.
4. All initial and continuing calibration criteria were met.
5. The method blank associated with this project was below the MDL for diesel range organics.
6. All laboratory control sample and laboratory control sample duplicate recoveries and RPDs were within the acceptance criteria.
7. Sample 1108197-5 was designated as the quality control sample for this analysis.



All matrix spike and matrix spike duplicate recoveries and RPDs were within the acceptance criteria.

8. The sample was extracted and analyzed within the established holding time.
9. All surrogate recoveries were within the acceptance criteria.
10. Manual integrations are performed when needed to provide consistent and defensible data following the guidelines in SOP 939 Revision 4.

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.

Mindy Norton  
Mindy Norton  
Organics Primary Data Reviewer

9.8.11  
Date

Eric Bayles  
Eric Bayles  
Organics Final Data Reviewer

9/9/11  
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**  
**Data Qualifier Flags**  
**Chromatography and Mass Spectrometry**

- U or ND:** This flag indicates that the compound was analyzed for but not detected.
- J:** This flag indicates an estimated value. This flag is used as follows : (1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; (2) when the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the reporting limit (RL) but greater than the method detection limit (MDL); (3) when the data indicate the presence of a compound that meets the identification criteria, and the result is less than the RL but greater than the MDL; and (4) the reported value is estimated.
- B:** This flag is used when the analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user. This flag shall be used for a tentatively identified compound (TIC) as well as for a positively identified target compound.
- E:** This flag identifies compounds whose concentration exceeds the upper level of the calibration range.
- A:** This flag indicates that a tentatively identified compound is a suspected aldol-condensation product.
- X:** This flag indicates that the analyte was diluted below an accurate quantitation level.
- \*:** This flag indicates that a spike recovery is outside the control criteria.
- +:** This flag indicates that the relative percent difference (RPD) exceeds the control criteria.

# ALS Environmental -- FC

## Sample Number(s) Cross-Reference Table

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**OrderNum:** 1108197

**Client Name:** NMED Hazardous Waste Bureau

**Client Project Name:** KAFB - BFF 3Q11

**Client Project Number:**

**Client PO Number:** 10-667-00-13453

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Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
106027-A	1108197-1		WATER	15-Aug-11	11:55
106027-B	1108197-2		WATER	15-Aug-11	11:57
106027-C	1108197-3		WATER	15-Aug-11	12:07
106027-D	1108197-4		WATER	15-Aug-11	12:12
106027-E	1108197-5		WATER	15-Aug-11	12:17
106027-F	1108197-6		WATER	15-Aug-11	12:18
106027-G	1108197-7		WATER	15-Aug-11	12:20
106027-H	1108197-8		WATER	15-Aug-11	12:21
106027-I	1108197-9		WATER	15-Aug-11	12:23
106027-J	1108197-10		WATER	15-Aug-11	12:25



# ALS Laboratory Group

225 Commerce Drive, Fort Collins, Colorado 80524  
TF (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

# Chain-of-Custody

Form 202e8

WORKORDER # 1102197

PAGE 1 of 1

DISPOSAL By Lab or Return to Client

SAMPLER 55B DATE 8/15/11

SITE ID KAFB-106027 TURNAROUND NORMAL

EDD FORMAT

PURCHASE ORDER

BILL TO COMPANY NMED/HUB

INVOICE ATTN TO DAVE COBRAIN

NE ADDRESS 2905 RODEO PARK DR

CITY/STATE/ZIP SANTA FE NM 87505

PHONE 505-476-6055

FAX

E-MAIL

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC
1	KAFB 106027-A	W	8/15/11	11:55	3	HQ	X
2	106027-B	W		11:57	3	HQ	X
3	106027-C	W		12:07	3	HQ	X
4	106027-D	W		12:12	1	-	X
5	106027-E	W		12:17	1	H504	X
6	106027-F	W		12:18	1	-	X
7	106027-G	W		12:20	1	H504	X
8	106027-H	W		12:21	1	Z604	X
9	106027-I	W		12:23	1	H504	X
10	106027-J	W	8/15/11	12:25	1	H504	X

RELINQUISHED BY J. Bradwein SIGNATURE J. Bradwein PRINTED NAME S. Bradwein DATE 8/15/11 TIME 1:25

RECEIVED BY Kandi B... DATE 8/16/11 TIME 09:55

RELINQUISHED BY

RECEIVED BY

RELINQUISHED BY

RECEIVED BY

OC PACKAGE (check below)

LEVEL II (Standard OC)

LEVEL III (Std OC + forms)

LEVEL IV (Std OC + forms + raw data)

Comments: TOTAL METAL - TAL6010  
6010 DISS METAL - Fe, Mn only

6 of

reservation key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035



CONDITION OF SAMPLE UPON RECEIPT FORM

Client: NMED  
Project Manager: LS

Workorder No: 1108197  
Initials: KR Date: 8-16-11

1. Does this project require any <b>special handling</b> in addition to standard Paragon procedures?		YES	<input checked="" type="radio"/> NO
2. Are custody seals on <b>shipping containers</b> intact?	NONE	<input checked="" type="radio"/> YES	NO
3. Are Custody seals on <b>sample containers</b> intact?	<input checked="" type="radio"/> NONE	YES	NO
4. Is there a <b>COC (Chain-of-Custody) present</b> or other representative documents?		<input checked="" type="radio"/> YES	NO
5. Are the <b>COC and bottle labels complete and legible</b> ?		<input checked="" type="radio"/> YES	NO
6. Is the <b>COC in agreement</b> with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		<input checked="" type="radio"/> YES	NO
7. Were <b>airbills / shipping documents</b> present and/or removable?	DROP OFF	<input checked="" type="radio"/> YES	NO
8. Are all <b>aqueous samples requiring preservation preserved correctly?</b> (excluding volatiles)	N/A	<input checked="" type="radio"/> YES	NO
9. Are all aqueous <b>non-preserved samples pH 4-9</b> ?	N/A	<input checked="" type="radio"/> YES	NO
10. Is there <b>sufficient sample</b> for the requested analyses?		<input checked="" type="radio"/> YES	NO
11. Were all samples placed in the <b>proper containers</b> for the requested analyses?		<input checked="" type="radio"/> YES	NO
12. Are all samples within <b>holding times</b> for the requested analyses?		<input checked="" type="radio"/> YES	NO
13. Were all sample containers received <b>intact?</b> (not broken or leaking, etc.)		<input checked="" type="radio"/> YES	NO
14. Are all samples requiring <b>no headspace</b> (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? <b>Size of bubble:</b> _____ < green pea _____ > green pea	N/A	<input checked="" type="radio"/> YES	NO
15. Do perchlorate LCMS-MS samples <b>have headspace?</b> (at least 1/3 of container required)	<input checked="" type="radio"/> N/A	YES	NO
16. Were samples checked for and free from the presence of <b>residual chlorine?</b> (Applicable when PM has indicated samples are from a chlorinated water source; note if field preservation with sodium thiosulfate was not observed.)	<input checked="" type="radio"/> N/A	YES	NO
17. Were the samples <b>shipped on ice?</b>		<input checked="" type="radio"/> YES	NO
18. Were cooler temperatures measured at 0.1-6.0°C? <b>IR gun used*:</b> #2 <input checked="" type="radio"/> #4		RAD ONLY	<input checked="" type="radio"/> YES
Cooler #: <u>1</u>			
Temperature (°C): <u>1.4</u>			
No. of custody seals on cooler: <u>2</u>			
External µR/hr reading: <u>16</u>			
Background µR/hr reading: <u>12</u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? <input checked="" type="radio"/> YES / NO / NA (If no, see Form 008.)			

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

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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

Project Manager Signature / Date: [Signature] 8/17/11

\*IR Gun #2: Oakton, SN 29922500201-0066  
Form 201r22.xls (6/1/09)

\*IR Gun #4: Oakton, SN 2372220101-0002



FedEx Tracking Number 8762 4637 7025

1 From Date 3/10/11

Sender's Name SID BARNACKIN Phone 515 229 754

Company TUBED / 11003

Address 7700 4th St NW, DC Dept./Floor/Room

City ALEX State VA ZIP 22304

2 Your Internal Billing Reference

3 To Recipient's Name ALBACORRE Phone 796 40 1011

Company ACS MISS

Address 25 W. COLLEGE DR. Dept./Floor/Room

Address 677 COLLEGE State VA ZIP 22702



8762 4637 7025

Recipient's Copy

Packages up to 150 lbs. For packages over 50 lbs., use the new FedEx Express Flight US Airbill.

4 Express Package Service \*To meet locations. NOTE: Service order has changed. Please select carefully.

2 or 3 Business Days

- FedEx First Overnight: Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- FedEx Priority Overnight: Next business morning. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- FedEx Standard Overnight: Next business afternoon. Saturday Delivery NOT available.
- FedEx Express Saver: Third business day. Saturday Delivery NOT available.

5 Packaging \*Declared value limit \$200.

- FedEx Envelope\*
- FedEx Pak\*
- FedEx Box
- FedEx Tube
- Other

6 Special Handling and Delivery Signature Options

- SATURDAY Delivery: NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.
- No Signature Required: Package may be left without obtaining a signature for delivery.
- Direct Signature: Someone at recipient's address may sign for delivery. Fee applies.
- Indirect Signature: If no one is available at recipient's address, someone at neighboring address may sign for delivery. Fee applies. Residential deliveries only. Fee applies.

Does this shipment contain dangerous goods?

- No: One box must be checked.
- Yes: Shipper's label used.
- Yes: Shipper's Declaration. Dry Ice, 5 UN 185 x kg
- Yes: Shipper's Declaration. DRY ICE, 5 UN 185 x kg
- Yes: Shipper's Declaration. CARGO AIRCRAFT ONLY

7 Payment Bill to:

- Sender: Enter FedEx Acct. No. or Credit Card No. below.
- Recipient
- Third Party
- Credit Card
- Cash/Check

Total Packages Total Weight Total Declared Value\* Credit Card Auth.



\*Our liability is limited to \$100 unless you declare a higher value. See the current FedEx Service Guide for details.

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# Diesel Range Organics

Method SW8015MB

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1108197

Client Name: NMED Hazardous Waste Bureau

ClientProject ID: KAFB - BFF 3Q11

Lab ID: EX110819-9MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 19-Aug-11

Date Analyzed: 22-Aug-11

Prep Batch: EX110819-9

QCBatchID: EX110819-9-1

Run ID: HCD110822-3A

Cleanup: NONE

Basis: N/A

File Name: F3F40276

Sample Aliquot: 160 ml

Final Volume: 4 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	DF	Result	Reporting Limit	MDL	Result Qualifier	EPA Qualifier
68334-30-5	Diesel Range Organics	1	0.5	0.5	0.17	U	

## Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
84-15-1	O-TERPHENYL	0.962		1.25	77	57 - 132

Data Package ID: HCD1108197-1

Date Printed: Thursday, September 08, 2011

ALS Environmental -- FC

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LIMS Version: 6.525

# Diesel Range Organics

## Method SW8015MB

### Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1108197

Client Name: NMED Hazardous Waste Bureau

ClientProject ID: KAFB - BFF 3Q11

Field ID:	106027-E
Lab ID:	1108197-5

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 15-Aug-11

Date Extracted: 19-Aug-11

Date Analyzed: 23-Aug-11

Prep Method: METHOD

Prep Batch: EX110819-9

QC Batch ID: EX110819-9-1

Run ID: HCD110822-3A

Cleanup: NONE

Basis: As Received

File Name: F3F40279

Sample Aliquot: 160 ml

Final Volume: 4 ml

Result Units: MG/L

Clean DF: 1

Analysis ReqCode: 163

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	MDL	Result Qualifier	EPA Qualifier
68334-30-5	Diesel Range Organics	1	0.5	0.5	0.17	U	

### Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
84-15-1	O-TERPHENYL	0.985		1.25	79	57 - 132

Data Package ID: HCD1108197-1

Date Printed: Thursday, September 08, 2011

ALS Environmental -- FC

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LIMS Version: 6.525

# Diesel Range Organics

## Method SW8015MB

### Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1108197

Client Name: NMED Hazardous Waste Bureau

ClientProject ID: KAFB - BFF 3Q11

Lab ID: EX110819-9LCS	Sample Matrix: WATER % Moisture: N/A Date Collected: N/A Date Extracted: 08/19/2011 Date Analyzed: 08/22/2011 Prep Method: METHOD	Prep Batch: EX110819-9 QCBatchID: EX110819-9-1 Run ID: HCD110822-3A Cleanup: NONE Basis: N/A File Name: F3F40277	Sample Aliquot: 160 ml Final Volume: 4 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	5	4.79	0.5		96	36 - 150%

Lab ID: EX110819-9LCSD	Sample Matrix: WATER % Moisture: N/A Date Collected: N/A Date Extracted: 08/19/2011 Date Analyzed: 08/22/2011 Prep Method: METHOD	Prep Batch: EX110819-9 QCBatchID: EX110819-9-1 Run ID: HCD110822-3A Cleanup: NONE Basis: N/A File Name: F3F40278	Sample Aliquot: 160 ml Final Volume: 4 ml Result Units: MG/L Clean DF: 1
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CASNO	Target Analyte	Spike Added	LCSD Result	Reporting Limit	Result Qualifier	LCSD % Rec.	RPD Limit	RPD
68334-30-5	Diesel Range Organics	5	4.59	0.5		92	20	4

### Surrogate Recovery LCS/LCSD

CASNO	Target Analyte	Spike Added	LCS % Rec.	LCS Flag	LCSD % Rec.	LCSD Flag	Control Limits
84-15-1	O-TERPHENYL	1.25	88		82		57 - 132

Data Package ID: HCD1108197-1

# Diesel Range Organics

## Method SW8015MB

### Matrix Spike And Matrix Spike Duplicate

**Lab Name:** ALS Environmental -- FC  
**Work Order Number:** 1108197  
**Client Name:** NMED Hazardous Waste Bureau  
**ClientProject ID:** KAFB - BFF 3Q11

Field ID: 106027-E
LabID: 1108197-5MS

**Sample Matrix:** WATER  
**% Moisture:** N/A  
**Date Collected:** 15-Aug-11  
**Date Extracted:** 19-Aug-11  
**Date Analyzed:** 23-Aug-11  
**Prep Method:** METHOD

**Prep Batch:** EX110819-9  
**QCBatchID:** EX110819-9-1  
**Run ID:** HCD110822-3A  
**Cleanup:** NONE  
**Basis:** As Received

**Sample Aliquot:** 160 ml  
**Final Volume:** 4 ml  
**Result Units:** MG/L  
**File Name:** F3F40280

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	0.5	U	4.35		0.5	5	87	36 - 150%

Field ID: 106027-E
LabID: 1108197-5MSD

**Sample Matrix:** WATER  
**% Moisture:** N/A  
**Date Collected:** 15-Aug-11  
**Date Extracted:** 19-Aug-11  
**Date Analyzed:** 23-Aug-11  
**Prep Method:** METHOD

**Prep Batch:** EX110819-9  
**QCBatchID:** EX110819-9-1  
**Run ID:** HCD110822-3A  
**Cleanup:** NONE  
**Basis:** As Received

**Sample Aliquot:** 160 ml  
**Final Volume:** 4 ml  
**Result Units:** MG/L  
**File Name:** F3F40281

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
68334-30-5	Diesel Range Organics	4.54		5	91	0.5	20	4

### Surrogate Recovery MS/MSD

CASNO	Target Analyte	Spike Added	MS % Rec.	MS Flag	MSD % Rec.	MSD Flag	Control Limits
84-15-1	O-TERPHENYL	1.25	78		80		57 - 132

**Data Package ID:** HCD1108197-1