



Total Extractable Petroleum Hydrocarbons (Diesel)

Case Narrative

NMED Hazardous Waste Bureau

KAFB - BFF

Work Order Number: 1105144

1. This report consists of 1 water sample. The sample was received cool and intact by ALS on 05/11/2011.
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 ZB-5HT 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 reporting limit, but above the MDL for diesel range organics. No diesel or other fuel pattern was present in the method blank. Typically, small fluctuations in the detector baseline are responsible for this type of low level analytical result with no observable fuel pattern.
6. All laboratory control sample and laboratory control sample duplicate recoveries and RPDs were within the acceptance criteria.



7. Sample 1105144-5 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

5-24-11
Date

Joel Norton
Organics Final Data Reviewer

5-24-11
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

OrderNum: 1105144

Client Name: NMED Hazardous Waste Bureau

Client Project Name: KAFB - BFF

Client Project Number:

Client PO Number: 10-667-00-13453

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
106062-A	1105144-1		WATER	10-May-11	13:31
106062-B	1105144-2		WATER	10-May-11	13:38
106062-C	1105144-3		WATER	10-May-11	13:36
106062-D	1105144-4		WATER	10-May-11	13:41
106062-E	1105144-5		WATER	10-May-11	13:45
106062-F	1105144-6		WATER	10-May-11	13:49
106062-G	1105144-7		WATER	10-May-11	13:51
106062-H	1105144-8		WATER	10-May-11	13:52
106062-I	1105144-9		WATER	10-May-11	13:53
106062-J	1105144-10		WATER	10-May-11	13:54



CONDITION OF SAMPLE UPON RECEIPT FORM

Client: NMED

Workorder No: 1105144

Project Manager: LPS

Initials: CAS Date: 3/11/11

1. Does this project require any special handling in addition to standard Paragon procedures?		YES	<input checked="" type="radio"/> NO
2. Are custody seals on shipping containers intact?	NONE	<input checked="" type="radio"/> YES	NO
3. Are Custody seals on sample containers intact?	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> YES	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	N/A	YES	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> YES	NO
15. Do perchlorate LCMS-MS samples have headspace? (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 residual chlorine? (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 shipped on ice?		<input checked="" type="radio"/> YES	NO
18. Were cooler temperatures measured at 0.1-6.0°C?	IR gun used*: <input checked="" type="radio"/> #2 <input type="radio"/> #4	<input checked="" type="radio"/> YES	NO

Cooler #: 1

Temperature (°C): 3,8

No. of custody seals on cooler: 2

External µR/hr reading: 16

Background µR/hr reading: 12

Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? 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.
 *1105144-5 (106062-E) had an initial pH=7. At 1025 on 3/11/11, LAS added 0.5mL H₂SO₄ (lot #49245) Final pH < 2

If applicable, was the client contacted? YES / NO / NA Contact: [Signature] Date/Time: 5/12/11

Project Manager Signature / Date: [Signature] 5/12/11

*IR Gun #2: Oakton, SN 29922500201-0066

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

FedEx Express NEW Package US Airbill

2A 15 2A 1105144
 FedEx Retrieval Copy

4 Express Package Service *To meet localities.
 NOTE: Service order has changed. Please select carefully.
 Packages up to 150 lbs.
 For pricing, please contact FedEx Express Freight US Adult.

Next Business Day
 FedEx First Overnight
 FedEx Priority Overnight
 FedEx Standard Overnight
 FedEx Express Saver

5 Packaging *Declared value limit \$500.
 FedEx Envelope* 02
 FedEx Pak* 03
 FedEx Box 04
 FedEx Tube 05
 Other 06

6 Special Handling and Delivery Signature Options
 03 SATURDAY DELIVERY

7 Payment Bill to:
 Sender's Account No. or Credit Card No. Invoice
 Recipient 3
 Third Party 4
 Credit Card 5
 Cash/Check 6

1 From
 Date 5/10/11
 Sender's FedEx Account Number 8758 3193 2332

Sender's Name S. BRANDVEIN
 Company NIEL
 Address 5500 SPR ANTONIO DR NE
 City ALBUQUERQUE
 State NM ZIP 87109

2 Your Internal Billing Reference
 Recipient's Name L. STEWART
 Company STEWART LAB
 Address 225 COMMERCE
 City FT. COLLINS
 State CO ZIP 80524

3 To
 Recipient's Name L. STEWART
 Company STEWART LAB
 Address 225 COMMERCE
 City FT. COLLINS
 State CO ZIP 80524

4 Express Package Service *To meet localities.
 NOTE: Service order has changed. Please select carefully.
 Packages up to 150 lbs.
 For pricing, please contact FedEx Express Freight US Adult.

5 Packaging *Declared value limit \$500.
 FedEx Envelope* 02
 FedEx Pak* 03
 FedEx Box 04
 FedEx Tube 05
 Other 06

6 Special Handling and Delivery Signature Options
 03 SATURDAY DELIVERY

7 Payment Bill to:
 Sender's Account No. or Credit Card No. Invoice
 Recipient 3
 Third Party 4
 Credit Card 5
 Cash/Check 6

8758 3193 2332

Diesel Range Organics

Method SW8015MB

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1105144

Client Name: NMED Hazardous Waste Bureau

ClientProject ID: KAFB - BFF

Lab ID: EX110512-1MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 12-May-11

Date Analyzed: 18-May-11

Prep Batch: EX110512-1

QCBatchID: EX110512-1-1

Run ID: HCD110518-3A

Cleanup: NONE

Basis: N/A

File Name: F3F39109

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	0.3	0.5	0.17	J	

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
84-15-1	O-TERPHENYL	1.08		1.25	86	57 - 132

Data Package ID: HCD1105144-1

Date Printed: Monday, May 23, 2011

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LIMS Version: 6.484

Diesel Range Organics

Method SW8015MB

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1105144

Client Name: NMED Hazardous Waste Bureau

ClientProject ID: KAFB - BFF

Field ID:	106062-E
Lab ID:	1105144-5

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 10-May-11

Date Extracted: 12-May-11

Date Analyzed: 18-May-11

Prep Method: METHOD

Prep Batch: EX110512-1

QC Batch ID: EX110512-1-1

Run ID: HCD110518-3A

Cleanup: NONE

Basis: As Received

File Name: F3F39112

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	0.34	0.5	0.17	B,J	

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
84-15-1	O-TERPHENYL	0.997		1.25	80	57 - 132

Data Package ID: HCD1105144-1

Date Printed: Monday, May 23, 2011

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LIMS Version: 6.484

Diesel Range Organics

Method SW8015MB

Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1105144

Client Name: NMED Hazardous Waste Bureau

ClientProject ID: KAFB - BFF

Lab ID: EX110512-1LCS	Sample Matrix: WATER % Moisture: N/A Date Collected: N/A Date Extracted: 05/12/2011 Date Analyzed: 05/18/2011 Prep Method: METHOD	Prep Batch: EX110512-1 QCBatchID: EX110512-1-1 Run ID: HCD110518-3A Cleanup: NONE Basis: N/A File Name: F3F39110	Sample Aliquot: 160 ml Final Volume: 4 ml Result Units: MG/L Clean DF: 1
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CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
68334-30-5	Diesel Range Organics	5	4.95	0.5		99	36 - 150%

Lab ID: EX110512-1LCSD	Sample Matrix: WATER % Moisture: N/A Date Collected: N/A Date Extracted: 05/12/2011 Date Analyzed: 05/18/2011 Prep Method: METHOD	Prep Batch: EX110512-1 QCBatchID: EX110512-1-1 Run ID: HCD110518-3A Cleanup: NONE Basis: N/A File Name: F3F39111	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	4.75	0.5		95	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	85		83		57 - 132

Data Package ID: HCD1105144-1

Diesel Range Organics

Method SW8015MB

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Environmental -- FC
Work Order Number: 1105144
Client Name: NMED Hazardous Waste Bureau
ClientProject ID: KAFB - BFF

Field ID: 106062-E
LabID: 1105144-5MS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 10-May-11
Date Extracted: 12-May-11
Date Analyzed: 19-May-11
Prep Method: METHOD

Prep Batch: EX110512-1
QCBatchID: EX110512-1-1
Run ID: HCD110518-3A
Cleanup: NONE
Basis: As Received

Sample Aliquot: 160 ml
Final Volume: 4 ml
Result Units: MG/L
File Name: F3F39113

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	0.34	B,J	4.82		0.5	5	90	36 - 150%

Field ID: 106062-E
LabID: 1105144-5MSD

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 10-May-11
Date Extracted: 12-May-11
Date Analyzed: 19-May-11
Prep Method: METHOD

Prep Batch: EX110512-1
QCBatchID: EX110512-1-1
Run ID: HCD110518-3A
Cleanup: NONE
Basis: As Received

Sample Aliquot: 160 ml
Final Volume: 4 ml
Result Units: MG/L
File Name: F3F39114

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
68334-30-5	Diesel Range Organics	4.88		5	91	0.5	20	1

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	84		83		57 - 132

Data Package ID: HCD1105144-1