

**From:** [Jim Nance](#)  
**To:** [Bratcher, Mike, EMNRD](#)  
**Cc:** [Juaquin Robles](#); [Raymond Dodd](#); [Brent Talbot](#); [djferguson@eprod.com](mailto:djferguson@eprod.com); [Billings, Bradford, EMNRD](#); [Patterson, Heather, EMNRD](#); [Collin Strawn](#)  
**Subject:** FW: Toothman Site Status  
**Date:** Wednesday, March 09, 2016 11:40:06 AM  
**Attachments:** Toothman Pit sample full report 20160224.pdf  
Toothman Tank Site Samples 20151210.pdf

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Mr. Bratcher,

Finley Resources is continuing to work with Enterprise on the Toothman site. I have just last night received an analysis of water contained in the open pit and we have seen some observable improvement in the accumulation of sheen or hydrocarbon on the water surface. With that in mind, we have recommended the procedure below to Enterprise as an initial step in the process for investigating and determining procedures going forward for the site. I would appreciate your comments regarding this change in the scope of investigation. Additionally, I have appended the reports from Cardinal Lab regarding the water sample taken in February and the soil samples (TraceAnalysis) originally taken by FRI underneath the tanks within the FRI portion of the berm.

Thanks,

JIM

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**From:** Jim Nance  
**Sent:** Wednesday, March 09, 2016 12:22 PM  
**To:** [djferguson@eprod.com](mailto:djferguson@eprod.com)  
**Subject:** Toothman Site Status

Dina,

Thanks for taking my call this morning. Per our discussion by phone today, it appears that we are seeing some improvement in the water quality that is accumulating in the open pit at the subject site. Appended for your review is an analysis of the water taken from the inside corner of the pit (SE corner of the berm tank area) at a sample depth of 6" below the surface of the water. Although solids exist in the results, no significant HC's were recorded, unless I am misinterpreting the report. Please let me know if you see it differently. Also appended is the report from December where we "rough cut" sampled under the FRI tank vessel site to an approximate depth of 8'. This report was not specific to New Mexico requirements and simply serves to demonstrate that some HC 's are in evidence.

Although Enterprise has gained approval for monitoring wells from the State Engineer's office as was discussed in the meeting with the OCD in Artesia, Finley recommends, with NMOCD approval, employing a specific process for continuing to remove waters from the pit according to the following procedure:

For a period 3 to 6 months, at the OCD's discretion and at each point in time where at least 1 foot of accumulation has occurred in the pit:

- 1) Make and document a visual observation of the sheen or saturation observed at the site
- 2) Obtain a water sample for analysis at a consistent location in the pit (such as the location used above) and publish report to the appropriate parties
- 3) Utilize absorbent pad or equivalent materials to pick up as much sheen or surface HC occurring on the surface of the water as practical
- 4) Remove as much water to deliver to disposal as practical given the physical conditions
- 5) Repeat steps 1 – 4 as necessary during the approved period

At the end of the approved specified period, if insufficient progress or improvement in the status of the site has occurred to satisfy agency requirements, preparation then can be made to move forward with further delineation efforts as previously described and documented. It would be helpful to get a scope of how much water has been removed from the pit to determine if such procedure above will be practical in improving conditions at the site. By separate email, I will be sending a copy of this proposal to Mr. Mike Bratcher, NMOCD to get his insights on this change is scope of the process. I will copy you with that communication. This proposal is subject to a cost sharing agreement with Enterprise and does not seek to establish determination of ultimate responsibilities in this matter.

Thanks,

JIM

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

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March 08, 2016

RAYMOND DODD

FINLEY RESOURCES INC.

1308 LAKE STREET

FORT WORTH, TX 76102

RE: WATER SAMPLES

Enclosed are the results of analyses for samples received by the laboratory on 02/24/16 12:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-15-7. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Total Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is fluid and cursive, with the first name "Celey" being more prominent.

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

**Analytical Results For:**FINLEY RESOURCES INC.  
1308 LAKE STREET  
FORT WORTH TX, 76102Project: WATER SAMPLES  
Project Number: TOOTHMON  
Project Manager: RAYMOND DODD  
Fax To: (817) 336-1709Reported:  
08-Mar-16 15:19

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TOOTHMON A	H600412-01	Water	24-Feb-16 09:30	24-Feb-16 12:30

Cardinal Laboratories

\*=Accredited Analyte

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

FINLEY RESOURCES INC.  
1308 LAKE STREET  
FORT WORTH TX, 76102

Project: WATER SAMPLES  
Project Number: TOOTHMON  
Project Manager: RAYMOND DODD  
Fax To: (817) 336-1709

Reported:  
08-Mar-16 15:19

**TOOTHMON A**  
**H600412-01 (Water)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories****Inorganic Compounds**

Alkalinity, Bicarbonate	488		5.00	mg/L	1	6021206	AP	26-Feb-16	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	6021206	AP	26-Feb-16	310.1	
Chloride*	5300		4.00	mg/L	1	6021909	AP	25-Feb-16	4500-Cl-B	
Conductivity*	17100		0.250	uS/cm	1	6022505	AP	25-Feb-16	120.1	
pH*	7.68		0.100	pH Units	1	6022504	AP	25-Feb-16	150.1	
Resistivity	0.0580			Ohms/m	1	6022505	AP	25-Feb-16	120.1	
Sulfate*	4340		1250	mg/L	125	6022503	AP	25-Feb-16	375.4	
TDS*	15500		5.00	mg/L	1	6021503	AP	01-Mar-16	160.1	
Alkalinity, Total*	400		4.00	mg/L	1	6021206	AP	26-Feb-16	310.1	

**Green Analytical Laboratories****Total Recoverable Metals by ICP (E200.7)**

Calcium*	766		0.200	mg/L	10	B603002	JLM	01-Mar-16	EPA200.7	
Magnesium*	1020		1.00	mg/L	10	B603002	JLM	01-Mar-16	EPA200.7	
Potassium*	72.3		10.0	mg/L	10	B603002	JLM	01-Mar-16	EPA200.7	
Sodium*	2950		10.0	mg/L	10	B603002	JLM	01-Mar-16	EPA200.7	

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

FINLEY RESOURCES INC.  
1308 LAKE STREET  
FORT WORTH TX, 76102

Project: WATER SAMPLES  
Project Number: TOOTHMON  
Project Manager: RAYMOND DODD  
Fax To: (817) 336-1709

Reported:  
08-Mar-16 15:19

**Inorganic Compounds - Quality Control**  
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 6021206 - General Prep - Wet Chem****Blank (6021206-BLK1)**

Prepared: 12-Feb-16 Analyzed: 15-Feb-16

Alkalinity, Carbonate	ND	0.00	mg/L							
Alkalinity, Bicarbonate	ND	5.00	mg/L							
Alkalinity, Total	ND	4.00	mg/L							

**LCS (6021206-BS1)**

Prepared: 12-Feb-16 Analyzed: 15-Feb-16

Alkalinity, Carbonate	ND	0.00	mg/L				80-120			
Alkalinity, Bicarbonate	126	5.00	mg/L				80-120			
Alkalinity, Total	104	4.00	mg/L	100		104	80-120			

**LCS Dup (6021206-BSD1)**

Prepared: 12-Feb-16 Analyzed: 15-Feb-16

Alkalinity, Carbonate	ND	0.00	mg/L				80-120		20	
Alkalinity, Bicarbonate	131	5.00	mg/L				80-120	3.89	20	
Alkalinity, Total	108	4.00	mg/L	100		108	80-120	3.77	20	

**Batch 6021503 - Filtration****Blank (6021503-BLK1)**

Prepared: 15-Feb-16 Analyzed: 16-Feb-16

TDS	ND	5.00	mg/L							
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**LCS (6021503-BS1)**

Prepared: 15-Feb-16 Analyzed: 16-Feb-16

TDS	518	5.00	mg/L	527		98.3	80-120			
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**Duplicate (6021503-DUP1)**

Source: H600326-01

Prepared: 15-Feb-16 Analyzed: 16-Feb-16

TDS	8880	5.00	mg/L		8800			0.995	20	
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**Batch 6021909 - General Prep - Wet Chem****Blank (6021909-BLK1)**

Prepared &amp; Analyzed: 19-Feb-16

Chloride	ND	4.00	mg/L							
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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

FINLEY RESOURCES INC.  
1308 LAKE STREET  
FORT WORTH TX, 76102

Project: WATER SAMPLES  
Project Number: TOOTHMON  
Project Manager: RAYMOND DODD  
Fax To: (817) 336-1709

Reported:  
08-Mar-16 15:19

**Inorganic Compounds - Quality Control****Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 6021909 - General Prep - Wet Chem****LCS (6021909-BS1)**

Prepared &amp; Analyzed: 19-Feb-16

Chloride	100	4.00	mg/L	100	100	80-120
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**LCS Dup (6021909-BSD1)**

Prepared &amp; Analyzed: 19-Feb-16

Chloride	100	4.00	mg/L	100	100	80-120	0.00	20
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**Batch 6022503 - General Prep - Wet Chem****Blank (6022503-BLK1)**

Prepared &amp; Analyzed: 25-Feb-16

Sulfate	ND	10.0	mg/L
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**LCS (6022503-BS1)**

Prepared &amp; Analyzed: 25-Feb-16

Sulfate	20.9	10.0	mg/L	20.0	105	80-120
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**LCS Dup (6022503-BSD1)**

Prepared &amp; Analyzed: 25-Feb-16

Sulfate	21.3	10.0	mg/L	20.0	106	80-120	1.61	20
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**Batch 6022504 - General Prep - Wet Chem****LCS (6022504-BS1)**

Prepared &amp; Analyzed: 25-Feb-16

pH	7.08		pH Units	7.00	101	90-110
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**Duplicate (6022504-DUP1)**

Source: H600412-01

Prepared &amp; Analyzed: 25-Feb-16

pH	7.73	0.100	pH Units	7.68	0.649	20
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**Batch 6022505 - General Prep - Wet Chem****LCS (6022505-BS1)**

Prepared &amp; Analyzed: 25-Feb-16

Conductivity	486		uS/cm	500	97.2	80-120
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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

FINLEY RESOURCES INC.  
1308 LAKE STREET  
FORT WORTH TX, 76102

Project: WATER SAMPLES  
Project Number: TOOTHMON  
Project Manager: RAYMOND DODD  
Fax To: (817) 336-1709

Reported:  
08-Mar-16 15:19

**Inorganic Compounds - Quality Control****Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 6022505 - General Prep - Wet Chem****Duplicate (6022505-DUP1)**

Source: H600412-01

Prepared &amp; Analyzed: 25-Feb-16

Conductivity	17500	0.250	uS/cm		17100			1.85	20	
Resistivity	0.0570		Ohms/m		0.0580			1.74	200	

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

FINLEY RESOURCES INC.  
1308 LAKE STREET  
FORT WORTH TX, 76102

Project: WATER SAMPLES  
Project Number: TOOTHMON  
Project Manager: RAYMOND DODD  
Fax To: (817) 336-1709

Reported:  
08-Mar-16 15:19

**Total Recoverable Metals by ICP (E200.7) - Quality Control****Green Analytical Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B603002 - EPA 200.2 Total Rec.****Blank (B603002-BLK1)**

Prepared &amp; Analyzed: 01-Mar-16

Calcium	ND	0.020	mg/L							
Magnesium	ND	0.100	mg/L							
Sodium	ND	1.00	mg/L							
Potassium	ND	1.00	mg/L							

**LCS (B603002-BS1)**

Prepared &amp; Analyzed: 01-Mar-16

Calcium	4.16	0.020	mg/L	4.00		104	85-115			
Sodium	6.72	1.00	mg/L	6.48		104	85-115			
Magnesium	20.6	0.100	mg/L	20.0		103	85-115			
Potassium	8.25	1.00	mg/L	8.00		103	85-115			

**LCS Dup (B603002-BSD1)**

Prepared &amp; Analyzed: 01-Mar-16

Magnesium	20.9	0.100	mg/L	20.0		104	85-115	1.44	20	
Calcium	4.22	0.020	mg/L	4.00		106	85-115	1.51	20	
Potassium	8.33	1.00	mg/L	8.00		104	85-115	0.909	20	
Sodium	6.75	1.00	mg/L	6.48		104	85-115	0.477	20	

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Celey D. Keene, Lab Director/Quality Manager

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**Notes and Definitions**

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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\*=Accredited Analyte

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A handwritten signature in black ink, appearing to read "Celey D. Keene", is written over a horizontal line.

Celey D. Keene, Lab Director/Quality Manager



## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

<b>Company Name:</b> <u>Finley Resources Inc.</u>				<b>P.O. #:</b>					
<b>Project Manager:</b> <u>Raymond O'Neil</u>				<b>Company:</b>					
<b>Address:</b>				<b>Attn:</b>					
<b>City:</b>				<b>State:</b>					
<b>Phone #:</b> <u>432-202-5269</u>				<b>Fax #:</b>					
<b>Project #:</b>				<b>Address:</b>					
<b>Project Name:</b> <u>Toothman</u>				<b>City:</b>					
<b>Project Location:</b> <u>Carlsbad</u>				<b>State:</b>					
<b>Sample Name:</b> <u>A</u>				<b>Phone #:</b>					
<b>FOR LAB USE ONLY</b>				<b>Fax #:</b>					
<b>Lab I.D.</b>		<b>Sample I.D.</b>		<b>MATRIX</b>		<b>PRESERV</b>		<b>SAMPLING</b>	
<b>A</b>		<b>(G)RAB OR (C)OMP.</b> <b># CONTAINERS</b> <b>GROUNDWATER</b> <b>WASTEWATER</b> <b>SOIL</b> <b>OIL</b> <b>SLUDGE</b> <b>OTHER</b> <b>ACID/BASE:</b> <b>ICE / COOL</b> <b>OTHER</b>		<b>DATE</b>		<b>TIME</b>		<b>&gt; Cation/Anion</b> <b>&gt; resistivity</b>	
<b>PLEASE NOTE: Liability and Damages. Cardinal's liability and clients exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analysis. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for moderate or consequential damages, including without limitation, business interruptions, loss of data, or loss of profits incurred by client, its subsidiaries, affiliates or those persons claiming on behalf of or related to the performance of services hereunder by Cardinal regardless of whether such claim is based upon any of the above stated reasons or otherwise.</b>									
<b>Relinquished By:</b> <u>[Signature]</u>		<b>Date:</b> <u>2/24/16</u>		<b>Received By:</b> <u>[Signature]</u>		<b>Phone Result:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No		<b>Add'l Phone #:</b>	
<b>Relinquished By:</b>		<b>Date:</b> <u>12:30</u>		<b>Received By:</b>		<b>Fax Result:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No		<b>Add'l Fax #:</b>	
<b>Delivered By: (Circle One)</b> <b>Sampler - UPS - Bus - Other:</b> <u>214CFTS4</u>		<b>Sample Condition</b> <b>Cool Intact</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>CHECKED BY:</b> <u>[Signature]</u>					
<b>REMARKS:</b>									





6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1296 806-794-1296 FAX 806-794-1298  
 200 East Sunset Road, Suite E El Paso, Texas 79922 915-585-3443 FAX 915-585-4944  
 5002 Basin Street, Suite A1 Midland, Texas 79703 432-689-6301 FAX 432-689-6313  
 (BioAquatic) 2501 Mayes Rd., Suite 100 Carripton, Texas 75006 972-242-7750  
 E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

## Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

# Analytical and Quality Control Report

Derek Plunkett  
 Plunkett Energy Service Co.  
 9723 Hwy 62/82  
 P. O. Box 910  
 Wolforth, TX, 79382

Report Date: December 15, 2015

Work Order: 15121116



Project Location: Carlsbad, NM  
 Project Name: Toothman #1  
 Project Number: Toothman #1

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

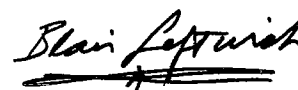
Sample	Description	Matrix	Date Taken	Time Taken	Date Received
410089	#1 E Tank 1 Surface	soil	2015-12-10	10:45	2015-12-11
410090	#1 W Tank 2 Surface	soil	2015-12-10	10:45	2015-12-11
410091	#1 E Tank 1 8"	soil	2015-12-10	10:50	2015-12-11
410092	#1 W Tank 2 8"	soil	2015-12-10	10:55	2015-12-11
410093	#1 E Tank 1 5'6"	soil	2015-12-10	11:00	2015-12-11
410094	#1 W Tank 2 5'6"	soil	2015-12-10	11:05	2015-12-11
410095	#1 E of Tanks (1) 4'	soil	2015-12-10	11:20	2015-12-11
410096	#1 E of Tanks (2) berm 6'	soil	2015-12-10	11:30	2015-12-11
410097	#1 E of Tanks (2) berm 8'	soil	2015-12-10	11:45	2015-12-11

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

TraceAnalysis, Inc. uses the attached chain of custody (COC) as the laboratory check-in documentation which includes sample receipt, temperature, sample preservation method and condition, collection date and time, testing requested, company, sampler, contacts and any special remarks.



This report consists of a total of 17 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

A handwritten signature in black ink, reading "Blair Leftwich". The signature is written in a cursive style and is positioned above a horizontal line.

---

Dr. Blair Leftwich, Director  
James Taylor, Assistant Director  
Brian Pellam, Operations Manager

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# Case Narrative

Samples for project Toothman #1 were received by TraceAnalysis, Inc. on 2015-12-11 and assigned to work order 15121116. Samples for work order 15121116 were received intact at a temperature of 10.1 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
TX1005 Extended	TX1005	107430	2015-12-11 at 14:00	126942	2015-12-14 at 09:50
TX1005 Extended	TX1005	107435	2015-12-14 at 08:00	126947	2015-12-14 at 12:19

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 15121116 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Report Date: December 15, 2015  
Toothman #1

Work Order: 15121116  
Toothman #1

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## Analytical Report

Sample: 410089 - #1 E Tank 1 Surface

Laboratory: Lubbock

Analysis: TX1005 Extended

QC Batch: 126942

Prep Batch: 107430

Analytical Method: TX1005

Date Analyzed: 2015-12-14

Sample Preparation: 2015-12-11

Prep Method: N/A

Analyzed By: HJ

Prepared By: HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
C6-C12		1	2990	mg/Kg	40	50.0
>C12-C35		1	68600	mg/Kg	40	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane	Qsr	Qsr	858	mg/Kg	40	25.0	3432	59.5 - 171
n-Octane	Qsr	Qsr	0.00	mg/Kg	40	25.0	0	56.2 - 143
n-Tricosane	Qsr	Qsr	5490	mg/Kg	40	25.0	21960	57.2 - 161

Sample: 410090 - #1 W Tank 2 Surface

Laboratory: Lubbock

Analysis: TX1005 Extended

QC Batch: 126947

Prep Batch: 107435

Analytical Method: TX1005

Date Analyzed: 2015-12-14

Sample Preparation: 2015-12-14

Prep Method: N/A

Analyzed By: HJ

Prepared By: HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
C6-C12		1	2040	mg/Kg	10	50.0
>C12-C35		1	5310	mg/Kg	10	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane	Qsr	Qsr	79.2	mg/Kg	10	25.0	317	59.5 - 171
n-Octane	Qsr	Qsr	54.5	mg/Kg	10	25.0	218	56.2 - 143
n-Tricosane	Qsr	Qsr	341	mg/Kg	10	25.0	1364	57.2 - 161

Report Date: December 15, 2015  
Toothman #1

Work Order: 15121116  
Toothman #1

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**Sample: 410091 - #1 E Tank 1 8"**

Laboratory: Lubbock

Analysis: TX1005 Extended

QC Batch: 126942

Prep Batch: 107430

Analytical Method: TX1005

Date Analyzed: 2015-12-14

Sample Preparation: 2015-12-11

Prep Method: N/A

Analyzed By: HJ

Prepared By: HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
C6-C12		1	3820	mg/Kg	1	50.0
>C12-C35		1	2500	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane	Qsr	Qsr	69.1	mg/Kg	1	25.0	276	59.5 - 171
n-Octane	Qsr	Qsr	154	mg/Kg	1	25.0	616	56.2 - 143
n-Tricosane	Qsr	Qsr	166	mg/Kg	1	25.0	664	57.2 - 161

**Sample: 410092 - #1 W Tank 2 8"**

Laboratory: Lubbock

Analysis: TX1005 Extended

QC Batch: 126942

Prep Batch: 107430

Analytical Method: TX1005

Date Analyzed: 2015-12-14

Sample Preparation: 2015-12-11

Prep Method: N/A

Analyzed By: HJ

Prepared By: HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
C6-C12		1	536	mg/Kg	1	50.0
>C12-C35		1	933	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane	Qsr	Qsr	55.4	mg/Kg	1	25.0	222	59.5 - 171
n-Octane	Qsr	Qsr	41.5	mg/Kg	1	25.0	166	56.2 - 143
n-Tricosane	Qsr	Qsr	83.0	mg/Kg	1	25.0	332	57.2 - 161

**Sample: 410093 - #1 E Tank 1 5'6"**

Laboratory: Lubbock

Analysis: TX1005 Extended

QC Batch: 126942

Prep Batch: 107430

Analytical Method: TX1005

Date Analyzed: 2015-12-14

Sample Preparation: 2015-12-11

Prep Method: N/A

Analyzed By: HJ

Prepared By: HJ

Report Date: December 15, 2015  
Toothman #1

Work Order: 15121116  
Toothman #1

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Parameter	Flag	Cert	RL Result	Units	Dilution	RL
C6-C12		1	<b>2670</b>	mg/Kg	1	50.0
>C12-C35		1	<b>1190</b>	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane			42.7	mg/Kg	1	25.0	171	59.5 - 171
n-Octane	Qsr	Qsr	134	mg/Kg	1	25.0	536	56.2 - 143
n-Tricosane	Qsr	Qsr	62.5	mg/Kg	1	25.0	250	57.2 - 161

Sample: 410094 - #1 W Tank 2 5'6"

Laboratory: Lubbock

Analysis: TX1005 Extended

QC Batch: 126942

Prep Batch: 107430

Analytical Method: TX1005

Date Analyzed: 2015-12-14

Sample Preparation: 2015-12-11

Prep Method: N/A

Analyzed By: HJ

Prepared By: HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
C6-C12		1	<b>2300</b>	mg/Kg	1	50.0
>C12-C35		1	<b>1460</b>	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane	Qsr	Qsr	47.0	mg/Kg	1	25.0	188	59.5 - 171
n-Octane	Qsr	Qsr	87.7	mg/Kg	1	25.0	351	56.2 - 143
n-Tricosane	Qsr	Qsr	72.4	mg/Kg	1	25.0	290	57.2 - 161

Sample: 410095 - #1 E of Tanks (1) 4'

Laboratory: Lubbock

Analysis: TX1005 Extended

QC Batch: 126947

Prep Batch: 107435

Analytical Method: TX1005

Date Analyzed: 2015-12-14

Sample Preparation: 2015-12-14

Prep Method: N/A

Analyzed By: HJ

Prepared By: HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
C6-C12		1	<b>52.1</b>	mg/Kg	1	50.0
>C12-C35		1	<b>&lt;50.0</b>	mg/Kg	1	50.0

Report Date: December 15, 2015  
Toothman #1

Work Order: 15121116  
Toothman #1

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Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane			26.4	mg/Kg	1	25.0	106	59.5 - 171
n-Octane			24.1	mg/Kg	1	25.0	96	56.2 - 143
n-Tricosane			27.1	mg/Kg	1	25.0	108	57.2 - 161

Sample: 410096 - #1 E of Tanks (2) berm 6'

Laboratory: Lubbock

Analysis: TX1005 Extended

QC Batch: 126942

Prep Batch: 107430

Analytical Method: TX1005

Date Analyzed: 2015-12-14

Sample Preparation: 2015-12-11

Prep Method: N/A

Analyzed By: HJ

Prepared By: HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
C6-C12		1	1240	mg/Kg	1	50.0
>C12-C35		1	418	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane			29.4	mg/Kg	1	25.0	118	59.5 - 171
n-Octane	Qsr	Qsr	82.1	mg/Kg	1	25.0	328	56.2 - 143
n-Tricosane	Qsr	Qsr	41.3	mg/Kg	1	25.0	165	57.2 - 161

Sample: 410097 - #1 E of Tanks (2) berm 8'

Laboratory: Lubbock

Analysis: TX1005 Extended

QC Batch: 126942

Prep Batch: 107430

Analytical Method: TX1005

Date Analyzed: 2015-12-14

Sample Preparation: 2015-12-11

Prep Method: N/A

Analyzed By: HJ

Prepared By: HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
C6-C12		1	1580	mg/Kg	1	50.0
>C12-C35		1	324	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane			30.0	mg/Kg	1	25.0	120	59.5 - 171
n-Octane	Qsr	Qsr	125	mg/Kg	1	25.0	500	56.2 - 143
n-Tricosane			36.2	mg/Kg	1	25.0	145	57.2 - 161

Report Date: December 15, 2015  
Toothman #1

Work Order: 15121116  
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## Method Blanks

Method Blank (1) QC Batch: 126942

QC Batch: 126942  
Prep Batch: 107430

Date Analyzed: 2015-12-14  
QC Preparation: 2015-12-11

Analyzed By: HJ  
Prepared By: HJ

Parameter	Flag	Cert	MDL Result	Units	RL
C6-C12		1	<5.43	mg/Kg	50
>C12-C35		1	<10.7	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane			23.4	mg/Kg	1	25.0	94	59.5 - 171
n-Octane			20.8	mg/Kg	1	25.0	83	56.2 - 143
n-Tricosane			23.3	mg/Kg	1	25.0	93	57.2 - 161

Method Blank (1) QC Batch: 126947

QC Batch: 126947  
Prep Batch: 107435

Date Analyzed: 2015-12-14  
QC Preparation: 2015-12-14

Analyzed By: HJ  
Prepared By: HJ

Parameter	Flag	Cert	MDL Result	Units	RL
C6-C12		1	<5.43	mg/Kg	50
>C12-C35		1	<10.7	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane			21.0	mg/Kg	1	25.0	84	59.5 - 171
n-Octane			24.2	mg/Kg	1	25.0	97	56.2 - 143
n-Tricosane			25.5	mg/Kg	1	25.0	102	57.2 - 161



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Toothman #1

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## Laboratory Control Spikes

### Laboratory Control Spike (LCS-1)

QC Batch: 126942  
Prep Batch: 107430

Date Analyzed: 2015-12-14  
QC Preparation: 2015-12-11

Analyzed By: HJ  
Prepared By: HJ

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
C6-C12		1	560	mg/Kg	1	500	<5.43	112	59.5 - 125
>C12-C35		1	414	mg/Kg	1	500	<10.7	83	59.2 - 132

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
C6-C12		1	507	mg/Kg	1	500	<5.43	101	59.5 - 125	10	20
>C12-C35		1	418	mg/Kg	1	500	<10.7	84	59.2 - 132	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Triacontane	22.7	23.2	mg/Kg	1	25.0	91	93	59.5 - 171
n-Octane	30.1	26.4	mg/Kg	1	25.0	120	106	56.2 - 143
n-Tricosane	25.9	26.1	mg/Kg	1	25.0	104	104	57.2 - 161

### Laboratory Control Spike (LCS-1)

QC Batch: 126947  
Prep Batch: 107435

Date Analyzed: 2015-12-14  
QC Preparation: 2015-12-14

Analyzed By: HJ  
Prepared By: HJ

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
C6-C12		1	469	mg/Kg	1	500	<5.43	94	59.5 - 125
>C12-C35		1	379	mg/Kg	1	500	<10.7	76	59.2 - 132

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
C6-C12		1	471	mg/Kg	1	500	<5.43	94	59.5 - 125	0	20
>C12-C35		1	404	mg/Kg	1	500	<10.7	81	59.2 - 132	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Report Date: December 15, 2015  
Toothman #1

Work Order: 15121116  
Toothman #1

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Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Triacontane	19.5	20.2	mg/Kg	1	25.0	78	81	59.5 - 171
n-Octane	24.9	26.7	mg/Kg	1	25.0	100	107	56.2 - 143
n-Tricosane	25.2	25.7	mg/Kg	1	25.0	101	103	57.2 - 161

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Report Date: December 15, 2015  
Toothman #1

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Toothman #1

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## Matrix Spikes

Matrix Spike (MS-1) Spiked Sample: 410097

QC Batch: 126942  
Prep Batch: 107430

Date Analyzed: 2015-12-14  
QC Preparation: 2015-12-11

Analyzed By: HJ  
Prepared By: HJ

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
C6-C12		1	2160	mg/Kg	1	500	1580	116	24.1 - 166
>C12-C35		1	803	mg/Kg	1	500	324	96	27.1 - 170

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
C6-C12		1	2180	mg/Kg	1	500	1580	120	24.1 - 166	1	20
>C12-C35		1	804	mg/Kg	1	500	324	96	27.1 - 170	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Triacontane	30.4	30.4	mg/Kg	1	25	122	122	59.5 - 171
n-Octane	129	129	mg/Kg	1	25	516	516	56.2 - 143
n-Tricosane	37.5	39.2	mg/Kg	1	25	150	157	57.2 - 161

Matrix Spike (MS-1) Spiked Sample: 410095

QC Batch: 126947  
Prep Batch: 107435

Date Analyzed: 2015-12-14  
QC Preparation: 2015-12-14

Analyzed By: HJ  
Prepared By: HJ

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
C6-C12		1	599	mg/Kg	1	500	52.1	109	24.1 - 166
>C12-C35		1	461	mg/Kg	1	500	44.4	83	27.1 - 170

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
C6-C12		1	602	mg/Kg	1	500	52.1	110	24.1 - 166	0	20
>C12-C35		1	450	mg/Kg	1	500	44.4	81	27.1 - 170	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Report Date: December 15, 2015  
Toothman #1

Work Order: 15121116  
Toothman #1

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Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Triacontane	25.9	25.1	mg/Kg	1	25	104	100	59.5 - 171
n-Octane	28.0	27.8	mg/Kg	1	25	112	111	56.2 - 143
n-Tricosane	30.8	29.9	mg/Kg	1	25	123	120	57.2 - 161

Report Date: December 15, 2015  
Toothman #1

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Toothman #1

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## Calibration Standards

### Standard (CCV-1)

QC Batch: 126942

Date Analyzed: 2015-12-14

Analyzed By: HJ

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
C6-C12		1	mg/Kg	500	466	93	75 - 125	2015-12-14
>C12-C35		1	mg/Kg	500	403	81	75 - 125	2015-12-14

### Standard (CCV-2)

QC Batch: 126942

Date Analyzed: 2015-12-14

Analyzed By: HJ

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
C6-C12		1	mg/Kg	500	501	100	75 - 125	2015-12-14
>C12-C35		1	mg/Kg	500	447	89	75 - 125	2015-12-14

### Standard (CCV-1)

QC Batch: 126947

Date Analyzed: 2015-12-14

Analyzed By: HJ

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
C6-C12		1	mg/Kg	500	466	93	75 - 125	2015-12-14
>C12-C35		1	mg/Kg	500	389	78	75 - 125	2015-12-14

### Standard (CCV-2)

QC Batch: 126947

Date Analyzed: 2015-12-14

Analyzed By: HJ

Report Date: December 15, 2015  
Toothman #1

Work Order: 15121116  
Toothman #1

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Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
C6-C12		1	mg/Kg	500	482	96	75 - 125	2015-12-14
>C12-C35		1	mg/Kg	500	399	80	75 - 125	2015-12-14

Report Date: December 15, 2015  
Toothman #1

Work Order: 15121116  
Toothman #1

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## Appendix

### Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

### Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	L-A-B	L2418	Lubbock

### Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less than ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

### Attachments

Report Date: December 15, 2015  
Toothman #1

Work Order: 15121116  
Toothman #1

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The scanned attachments will follow this page.  
Please note, each attachment may consist of more than one page.





Report Date: December 14, 2015

Work Order: 15121116

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## Summary Report

Derek Plunkett  
Plunkett Energy Service Co.  
9723 Hwy 62/82  
P. O. Box 910  
Wolfforth, TX 79382

Report Date: December 14, 2015

Work Order: 15121116



Project Location: Carlsbad, NM  
Project Name: Toothman #1

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
410089	#1 E Tank 1 Surface	soil	2015-12-10	10:45	2015-12-11
410090	#1 W Tank 2 Surface	soil	2015-12-10	10:45	2015-12-11
410091	#1 E Tank 1 8"	soil	2015-12-10	10:50	2015-12-11
410092	#1 W Tank 2 8"	soil	2015-12-10	10:55	2015-12-11
410093	#1 E Tank 1 5'6"	soil	2015-12-10	11:00	2015-12-11
410094	#1 W Tank 2 5'6"	soil	2015-12-10	11:05	2015-12-11
410095	#1 E of Tanks (1) 4'	soil	2015-12-10	11:20	2015-12-11
410096	#1 E of Tanks (2) berm 6'	soil	2015-12-10	11:30	2015-12-11
410097	#1 E of Tanks (2) berm 8'	soil	2015-12-10	11:45	2015-12-11

Sample - Field Code	TX1005 Extended	
	C6-C12 (mg/Kg)	>C12-C35 (mg/Kg)
410089 - #1 E Tank 1 Surface	2990	68600
410091 - #1 E Tank 1 8"	3820	2500
410092 - #1 W Tank 2 8"	536	933
410093 - #1 E Tank 1 5'6"	2670	1190
410094 - #1 W Tank 2 5'6"	2300	1460
410096 - #1 E of Tanks (2) berm 6'	1240	418
410097 - #1 E of Tanks (2) berm 8'	1580	324

TraceAnalysis, Inc. • 6701 Aberdeen Ave., Suite 9 • Lubbock, TX 79424-1515 • (806) 794-1296  
This is only a summary. Please, refer to the complete report package for quality control data.

**District I**  
1625 N. French Dr., Hobbs, NM 88240  
Phone:(575) 393-6161 Fax:(575) 393-0720

**District II**  
811 S. First St., Artesia, NM 88210  
Phone:(575) 748-1283 Fax:(575) 748-9720

**District III**  
1000 Rio Brazos Rd., Aztec, NM 87410  
Phone:(505) 334-6178 Fax:(505) 334-6170

**District IV**  
1220 S. St Francis Dr., Santa Fe, NM 87505  
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico  
Energy, Minerals and Natural Resources  
Oil Conservation Division  
1220 S. St Francis Dr.  
Santa Fe, NM 87505

CONDITIONS

Action 391936

CONDITIONS

Operator: MATADOR PRODUCTION COMPANY One Lincoln Centre Dallas, TX 75240	OGRID: 228937
	Action Number: 391936
	Action Type: [IM-SD] Incident File Support Doc (ENV) (IM-BNF)

CONDITIONS

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