

July 2, 2012

Mr. Mike Bratcher  
**NMOCD District 2**  
811 S. 1<sup>st</sup> Street  
Artesia, NM 88210

AMARILLO  
921 North Bivins  
Amarillo Texas 79107  
Phone 806 467 0607  
Fax 806 467 0622

ARTESIA  
408 West Texas Ave  
Artesia, New Mexico 88210  
Phone 575 746 8768  
Fax 575 746 8905

AUSTIN  
911 West Anderson Lane  
Suite 202  
Austin, Texas 78757  
Phone 512 989.3428  
Fax 512 989 3487

HOBBS  
318 East Taylor Street  
Hobbs, New Mexico 88240  
Phone 575 393 4261  
Fax 575 393 4658

MIDLAND  
2901 State Hwy 349  
Midland, Texas 79706  
Phone 432 522 2133  
Fax 432 522 2180

SAN ANTONIO  
11 Commercial Place  
Schertz, Texas 78154  
Phone 210 265 8025  
Fax 210 568 2191

TULSA  
525 South Main Street  
Suite 535  
Tulsa, Oklahoma 74103  
Phone 918 742 0871  
Fax 918 382 0232

ENVIRONMENTAL CONSULTING  
ENGINEERING  
DRILLING  
CONSTRUCTION  
SPILL MANAGEMENT  
GENERAL CONTRACTING

Subject: **Soil Assessment and Remediation Work Plan**  
Cimarex Energy  
West Shugart 31 Federal Com No. 3  
API # 30-015-37350

Dear Mr. Bratcher,

Cimarex Energy has contracted Talon/LPE (Talon) to perform soil assessment and remediation services at the referenced West Shugart 31 Federal Com No. 3 release. Talon's soil assessment results and proposed remediation activities consist of the following:

### **Background Information**

The West Shugart 31 Federal Com No. 3 is located approximately thirty-one (31) miles southeast of Artesia, New Mexico. The legal location for the site is Section 31, Township 18 South and Range 31 East in Eddy County, New Mexico. More Specifically the latitude and longitude for the release are 32.709384 North and -103.916043 West.

According to the soil survey provided by the United States Department of Agriculture National Resources Conservation Services, the soil in this area is made up of Simona gravelly fine sandy loam with 0 to 3 percent slopes. The local surface and shallow geology, Quaternary Age sedimentary deposits, is comprised of alluvium and eolian sands underlain by gravelly fine sandy loam and hard caliches. According to the Texaco/Chevron Eddy County Water Trend Data Map (2005) the depth to groundwater is approximately 175-feet deep.

The ranking for this site is 0 based on the as following:

Depth to ground water	>100'
Wellhead Protection Area	>1000'
Distance to surface water body	>1000'

### **Incident Description**

On May 11, 2012 a valve closed on the production equipment causing a pressure release valve (PRV) to malfunction causing 6 barrels hydrocarbons to spray inside the berm and behind the tank battery in the pasture. A site plan illustrating the work area is attached.

## **Actions Taken**

On May 15, 2012 Talon/LPE mobilized personnel to begin assessment and soil sampling activities for the construction of a work plan. Grab soil samples were collected utilizing a hand auger. Grab soil samples were collected from the surface of the impacted areas to a depth of 1-foot deep. The impacted area was then treated using a total of 500 gallons of fresh water and Micro-Blaze, a bio-remediation agent.

All soil samples were collected by Talon personnel wearing clean nitrile gloves. The samples were placed in laboratory provided sample containers, iced and transported to Cardinal Laboratories in Hobbs, New Mexico. The samples were tested for TPH (Total Petroleum Hydrocarbons) using EPA Method 8015M, volatile organics (BTEX) using EPA Method 8021B and analysis of Chlorides using Method SM4500CL-B. The complete laboratory report is attached as Appendix II.

## **Analytical Results**

Analytical results received from Cardinal Laboratories are summarized below:

May 18, 2012

<u>Sample</u>	<u>Depth</u>	<u>Location</u>	<u>Chlorides</u>	<u>BTEX</u>	<u>TPH (mg/kg)</u>
S-1	0'	Bermed Area	656	10.53	14,024
	0.5'		128	<0.150	33.7
	1'		704	<0.150	<10
S-2	0'	Pasture	448	<0.150	5,210
	0.5'		32	<0.150	32.6
	1'		32	<0.150	79.7

For this site's ranking, New Mexico Oil Conservation District action level criterion for BTEX is 50 mg/kg, Benzene is 10 mg/kg and TPH is 5,000 mg/kg. The chloride remediation standard is considered to be 1,000 mg/kg.

## **Summary**

- Groundwater in the project vicinity is greater than 100-feet below land surface per the New Mexico State Engineer Database.
- Based upon the results of the laboratory data obtained for this investigation, the vertical impacts of the hydrocarbon release have been documented to extend 0.5-feet below ground surface.

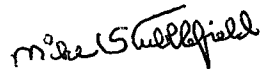
### **Proposed Remedial Actions**

- Confirmation samples will be collected from the treated (Micro-Blazed) overspray area located in the tank battery and pasture in 60 days.
- If analytical results report the TPH to be above the Recommended Remedial Action Levels (RRAL's) for the area, a total of 500-gallons of fresh water and Micro Blaze will be re-applied to the impacted areas. Follow up samples will be obtained in 60 days.
- When analytical results for soil samples collected from the treated area report the TPH to be under the RRAL for the area a final report documenting all field activities and lab reports will be provided to the NMOCD Artesia Office including Form C-141.

If we can provide additional information or be of further assistance please contact our office at 575.746.8768.

Respectfully submitted,

TALON/LPE



Mike Stubblefield  
Project Manager



David J. Adkins  
District Manager

**APPENDIX I**  
**INITIAL C-141**

District I  
1625 N French Dr , Hobbs, NM 88240  
District II  
1301 W Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S St Francis Dr , Santa Fe, NM 87505

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

Form C-141  
Revised October 10, 2003

Submit 2 Copies to appropriate  
District Office in accordance  
with Rule 116 on back  
side of form

## Release Notification and Corrective Action

### OPERATOR

☒ Initial Report ☐ Final Report

Name of Company-Cimarex Energy	Contact- James Tinney	
Address-600 N Marienfeld Ste 600, Midland TX 79701	Telephone No 575 706 0095	
Facility Name-West Shugart 31 fed com 3H	Facility Type- Tank battery	
Surface Owner	Mineral Owner	Lease No.NM-0560352

### LOCATION OF RELEASE

Unit Letter	Section 31	Township 18S	Range 31E	Feet from the 660	North/South Line North	Feet from the 280	East/West Line West	County - Eddy
-------------	---------------	-----------------	--------------	----------------------	---------------------------	----------------------	------------------------	---------------

Latitude-32.7086 Longitude- 103 91695

### NATURE OF RELEASE

Type of Release- crude oil	Volume of Release--6 bbls	Volume Recovered-0 bbls
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? BLM-Jim Amos (left message) BLM on call number Mike Bratch -NMOCD-(left message )	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

#### Describe Cause of Problem and Remedial Action Taken

Valve closed on production equipment causing PRV(pressure release valve) to release, causing hydro carbons to spray inside berm area and behind battery Called for vac truck and picked up standing oil inside berm and around equipment.

#### Describe Area Affected and Cleanup Action Taken

Inside berm area and pasture behind battery, cleaned up standing oil, planned to spray micro-blaze on pasture Notified Talon, LLP to do assessment and work plane.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

### OIL CONSERVATION DIVISION

Signature.

Printed Name James Tinney

Approved by District Supervisor -

Title: Production Foreman

Approval Date:

Expiration Date:

E-mail Address. jtinney@cimarex.com

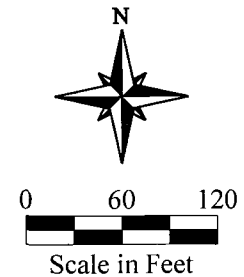
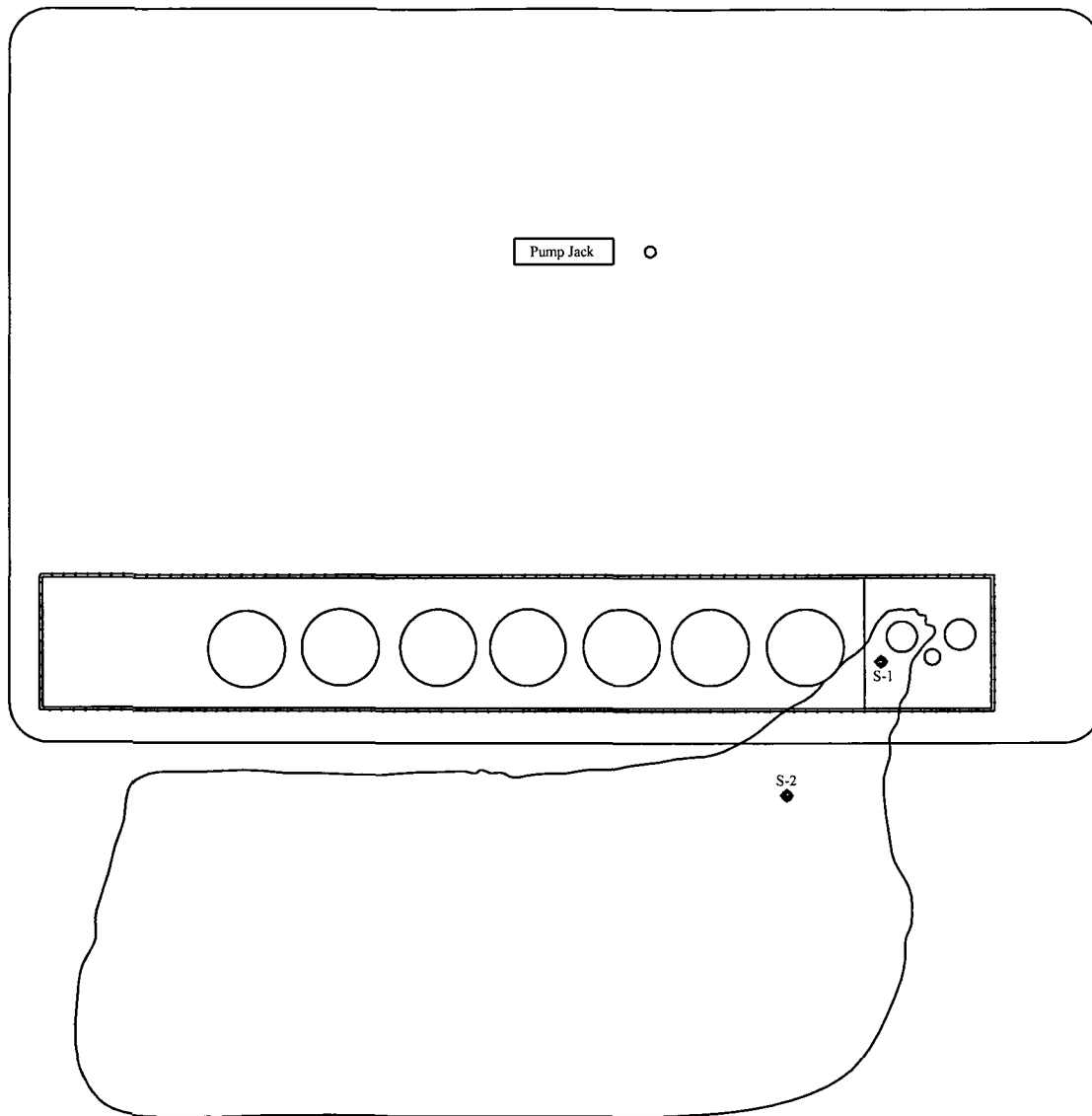
Conditions of Approval:

Attached ☐

Date 5-15-12 Phone. 575-706-0095

\* Attach Additional Sheets If Necessary

## SITE MAP



Legend

- ◆ - Sample Locations
- \*— - Fence line



Date: 06/06/2012

Scale: 1" = 120'

Drawn By: TJS

West Shugart 31 Fed Com #3H  
Cimarex Energy Company  
Artesia, New Mexico  
Figure 1 - Site Plan

**APPENDIX II**  
**LABORATORY RESULTS**



May 18, 2012

MIKE STUBBLEFIELD

TALON LPE

408 W. TEXAS AVE.

ARTESIA, NM 88210

RE: WEST SHUGART 31 FEDERAL COM NO 3H

Enclosed are the results of analyses for samples received by the laboratory on 05/16/12 10:10

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. 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).

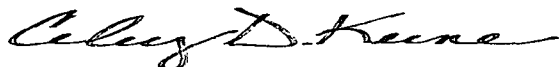
Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

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

Accreditation applies to public drinking water matrices.

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,



Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

TALON LPE  
MIKE STUBBLEFIELD  
408 W. TEXAS AVE.  
ARTESIA NM, 88210  
Fax To: (575) 745-8905

Received:	05/16/2012	Sampling Date:	05/15/2012
Reported:	05/18/2012	Sampling Type:	Soil
Project Name:	WEST SHUGART 31 FEDERAL COM NO. :	Sampling Condition:	Cool & Intact
Project Number:	701162.018.01	Sample Received By:	Jodi Henson
Project Location:	SEC 31-T18S-R31E		

**Sample ID: S-1 0' BGS BERMED AREA (H201093-01)**

BTEX 8021B		mg/kg	Analyzed By: ZZZ					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/17/2012	ND	2.14	107	2.00	4.14	
<b>Toluene*</b>	<b>0.430</b>	0.050	05/17/2012	ND	2.24	112	2.00	4.57	
<b>Ethylbenzene*</b>	<b>2.79</b>	0.050	05/17/2012	ND	2.22	111	2.00	4.16	
<b>Total Xylenes*</b>	<b>7.31</b>	0.150	05/17/2012	ND	6.86	114	6.00	4.40	

Surrogate 4-Bromofluorobenzene (PIL) 149 % 64 4-134

Chloride, SM4500Cl-B		mg/kg	Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>656</b>	16.0	05/17/2012	ND	400	100	400	0.00	

TPH 8015M		mg/kg	Analyzed By: MS					S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10</b>	<b>294</b>	50.0	05/16/2012	ND	205	103	200	5.10	
<b>DRO &gt;C10-C28</b>	<b>14000</b>	50.0	05/16/2012	ND	222	111	200	26.6	

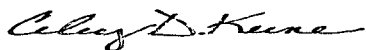
Surrogate 1-Chlorooctane 207 % 55 5-154

Surrogate 1-Chlorooctadecane 1060 % 57 6-158

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever, shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TALON LPE  
MIKE STUBBLEFIELD  
408 W. TEXAS AVE.  
ARTESIA NM, 88210  
Fax To: (575) 745-8905

Received:	05/16/2012	Sampling Date:	05/15/2012
Reported:	05/18/2012	Sampling Type:	Soil
Project Name:	WEST SHUGART 31 FEDERAL COM NO. 1	Sampling Condition:	Cool & Intact
Project Number:	701162 018.01	Sample Received By:	Jodi Henson
Project Location:	SEC.31-T18S-R31E		

**Sample ID: S-1 .5' BGS BERMED AREA (H201093-02)**

BTEX 8021B		mg/kg		Analyzed By: ZZZ						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/17/2012	ND	2.14	107	2.00	4.14		
Toluene*	<0.050	0.050	05/17/2012	ND	2.24	112	2.00	4.57		
Ethylbenzene*	<0.050	0.050	05/17/2012	ND	2.22	111	2.00	4.16		
Total Xylenes*	<0.150	0.150	05/17/2012	ND	6.86	114	6.00	4.40		

Surrogate 4-Bromofluorobenzene (PIE) 114 % 64.4-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	05/17/2012	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/16/2012	ND	205	103	200	5.10	
DRO >C10-C28	33.7	10.0	05/16/2012	ND	222	111	200	26.6	

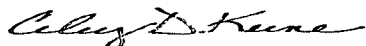
Surrogate 1-Chlorooctane 93.8 % 55.5-154

Surrogate 1-Chlorooctadecane 101 % 57.6-158

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages: Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TALON LPE  
MIKE STUBBLEFIELD  
408 W. TEXAS AVE.  
ARTESIA NM, 88210  
Fax To: (575) 745-8905

Received:	05/16/2012	Sampling Date:	05/15/2012
Reported:	05/18/2012	Sampling Type:	Soil
Project Name:	WEST SHUGART 31 FEDERAL COM NO 2	Sampling Condition:	Cool & Intact
Project Number:	701162.018.01	Sample Received By:	Jodi Henson
Project Location:	SEC.31-T18S-R31E		

**Sample ID: S-1 1' BGS BERMED AREA (H201093-03)**

BTEX 8021B		mg/kg		Analyzed By: ZZZ					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/17/2012	ND	2.14	107	2.00	4.14	
Toluene*	<0.050	0.050	05/17/2012	ND	2.24	112	2.00	4.57	
Ethylbenzene*	<0.050	0.050	05/17/2012	ND	2.22	111	2.00	4.16	
Total Xylenes*	<0.150	0.150	05/17/2012	ND	6.86	114	6.00	4.40	

Surrogate 4-Bromofluorobenzene (PIL) 118 % 64.4-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	704	16.0	05/17/2012	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/16/2012	ND	205	103	200	5.10	
DRO >C10-C28	<10.0	10.0	05/16/2012	ND	222	111	200	26.6	

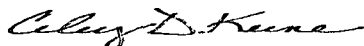
Surrogate 1-Chlorooctane 91.5 % 55.5-154

Surrogate 1-Chlorooctadecane 99.7 % 57.6-158

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever, shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TALON LPE  
MIKE STUBBLEFIELD  
408 W. TEXAS AVE  
ARTESIA NM, 88210  
Fax To: (575) 745-8905

Received:	05/16/2012	Sampling Date:	05/15/2012
Reported:	05/18/2012	Sampling Type:	Soil
Project Name:	WEST SHUGART 31 FEDERAL COM NO. 2	Sampling Condition:	Cool & Intact
Project Number:	701162.018.01	Sample Received By:	Jodi Henson
Project Location:	SEC.31-T18S-R31E		

**Sample ID: S-2 0' BGS PASTURE (H201093-04)**

BTEX 8021B		mg/kg		Analyzed By: ZZZ					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/18/2012	ND	2.26	113	2.00	0.638	
Toluene*	<0.050	0.050	05/18/2012	ND	2.39	120	2.00	2.28	
Ethylbenzene*	<0.050	0.050	05/18/2012	ND	2.40	120	2.00	2.75	
Total Xylenes*	<0.150	0.150	05/18/2012	ND	7.46	124	6.00	3.79	

Surrogate 4-Bromofluorobenzene (PIC) 113 % 64.4-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	448	16.0	05/17/2012	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS						S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	05/16/2012	ND	205	103	200	5.10		
DRO >C10-C28	5210	10.0	05/16/2012	ND	222	111	200	26.6		

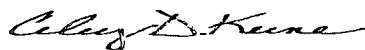
Surrogate 1-Chlorooctane 90.8 % 55.5-154

Surrogate 1-Chlorooctadecane 514 % 57.6-158

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages: Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever, shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TALON LPE  
MIKE STUBBLEFIELD  
408 W. TEXAS AVE  
ARTESIA NM, 88210  
Fax To: (575) 745-8905

Received:	05/16/2012	Sampling Date:	05/15/2012
Reported:	05/18/2012	Sampling Type:	Soil
Project Name:	WEST SHUGART 31 FEDERAL COM NO. 1	Sampling Condition:	Cool & Intact
Project Number:	701162.018.01	Sample Received By:	Jodi Henson
Project Location:	SEC.31-T18S-R31E		

**Sample ID: S-2 .5' BGS PASTURE (H201093-05)**

BTEX 8021B		mg/kg		Analyzed By: ZZZ						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/18/2012	ND	2.26	113	2.00	0.638		
Toluene*	<0.050	0.050	05/18/2012	ND	2.39	120	2.00	2.28		
Ethylbenzene*	<0.050	0.050	05/18/2012	ND	2.40	120	2.00	2.75		
Total Xylenes*	<0.150	0.150	05/18/2012	ND	7.46	124	6.00	3.79		

Surrogate 4-Bromofluorobenzene (PIL) 113 % 64.4-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	05/17/2012	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	05/16/2012	ND	205	103	200	5.10		
DRO >C10-C28	32.6	10.0	05/16/2012	ND	222	111	200	26.6		

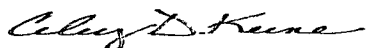
Surrogate 1-Chlorooctane 83.8 % 55.5-154

Surrogate 1-Chlorooctadecane 94.4 % 57.6-158

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TALON LPE  
MIKE STUBBLEFIELD  
408 W. TEXAS AVE.  
ARTESIA NM, 88210  
Fax To: (575) 745-8905

Received:	05/16/2012	Sampling Date:	05/15/2012
Reported:	05/18/2012	Sampling Type:	Soil
Project Name:	WEST SHUGART 31 FEDERAL COM NO. 2	Sampling Condition:	Cool & Intact
Project Number:	701162.018.01	Sample Received By:	Jodi Henson
Project Location:	SEC.31-T18S-R31E		

**Sample ID: S-2 1' BGS PASTURE (H201093-06)**

BTEx 8021B		mg/kg		Analyzed By: ZZZ					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/18/2012	ND	2.26	113	2.00	0.638	
Toluene*	<0.050	0.050	05/18/2012	ND	2.39	120	2.00	2.28	
Ethylbenzene*	<0.050	0.050	05/18/2012	ND	2.40	120	2.00	2.75	
Total Xylenes*	<0.150	0.150	05/18/2012	ND	7.46	124	6.00	3.79	

Surrogate 4-Bromofluorobenzene (PIE) 114 % 64.4-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	05/17/2012	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/17/2012	ND	194	97.2	200	3.47	
DRO >C10-C28	79.7	10.0	05/17/2012	ND	184	92.1	200	7.51	

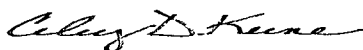
Surrogate 1-Chlorooctane 91.6 % 55.5-154

Surrogate 1-Chlorooctadecane 113 % 57.6-158

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages: Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

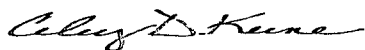
- S-06            The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's
- S-04            The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect
- ND             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

---

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE    Liability and Damages    Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



---

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

Company Name: <u>Talon / LPE</u>				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>																
Project Manager: <u>M. Steele</u>				P.O. #:																				
Address: <u>408 West Texas Ave.</u>				Company: <u>Talon / LPE</u>																				
City: <u>Albany</u> State: <u>NM</u> Zip: <u>88210</u>				Attn:																				
Phone #: <u>575-441-7254</u> Fax #:				Address:																				
Project #: <u>201162.018.01</u> Project Owner: <u>Cimarex Energy</u>				City:																				
Project Name: <u>West Shugart 31 Federal Com. No. 3H</u>				State: Zip:																				
Project Location: <u>see 31. T185-R31E</u>				Phone #:																				
Sampler Name: <u>M. Steele</u>				Fax #:																				
FOR LAB USE ONLY																								
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP	# CONTAINERS	MATRIX				PRESERV.		SAMPLING														
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER	ACID/BASE	ICE / COOL	OTHER	DATE	TIME										
<u>H201093</u>																								
<u>1</u>	<u>5-1 0' bgs bermed Area</u>	<u>5</u>				<u>/</u>				<u>/</u>			<u>5/15/2012</u>	<u>1:55 PM</u>	<u>/</u>	<u>/</u>	<u>/</u>							
<u>2</u>	<u>5-1.5' bgs bermed Area</u>	<u>5</u>				<u>/</u>				<u>/</u>			<u>5/15/2012</u>	<u>2:01 PM</u>	<u>/</u>	<u>/</u>	<u>/</u>							
<u>3</u>	<u>5-1 1' bgs bermed Area</u>	<u>5</u>				<u>/</u>				<u>/</u>			<u>5/15/2012</u>	<u>2:08 PM</u>	<u>/</u>	<u>/</u>	<u>/</u>							
<u>4</u>	<u>5-2 0' bgs pasture</u>	<u>5</u>				<u>/</u>				<u>/</u>			<u>5/15/2012</u>	<u>2:22 PM</u>	<u>/</u>	<u>/</u>	<u>/</u>							
<u>5</u>	<u>5-2.5' bgs pasture</u>	<u>5</u>				<u>/</u>				<u>/</u>			<u>5/15/2012</u>	<u>2:29 PM</u>	<u>/</u>	<u>/</u>	<u>/</u>							
<u>6</u>	<u>5-2 1' bgs pasture</u>	<u>5</u>				<u>/</u>				<u>/</u>			<u>5/15/2012</u>	<u>2:35 PM</u>	<u>/</u>	<u>/</u>	<u>/</u>							

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort shall be limited to the amount paid by the client for the analyses. 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 incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out 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.

Relinquished By:	Date: <u>5/16/2012</u>	Received By:	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
<u>M. Steele</u>	Time: <u>10:10</u>	<u>[Signature]</u>	Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS:	
	Time:			
Delivered By: (Circle One)		Sample Condition	CHECKED BY:	
Sampler - UPS - Bus - <u>Other</u>		Cool: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<u>[Signature]</u>	

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476