



## Cascade 29 Fed #1 release #2

## **CLOSURE REPORT**

Release Date: 6/6/2015

UL/D Sec 29, T25 south, R33 east, Lea County NM

API # 30-025-40346

December 1, 2015

#### Prepared by:

Lance Crenshaw, Project Manager Environmental Department Diversified Field Service, Inc. 206 West Snyder Hobbs, NM 88240 Phone: (575)964-8394

Fax: (575)393-8396

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### Cascade 29 Fed #1

#### 1 Introduction

Cimarex Energy has retained Diversified Field Service, Inc. (DFSI) to address environmental issues for the site detailed herein.

The site is located south of highway 128 NM and east of County Road 1, in Lea County. The leak occurred on 3/29/2015. The leak site resulted from a rig moving truck striking the line, causing it to rupture. The impacted area is in pasture land and on the lease road. Approximately 300 bbls of produced water was released, and 90 bbls recovered. A C-141 was submitted to the NMOCD on June 26, 2015.

#### 2 SITE ACTIVITIES

On June 9, 2015, DFSI personnel delineated 15 sample points of the leak area. Each sample was tested for chloride levels as well as BTEX. The BTEX samples were performed using a Mini Rae Photoionization Detector (PID). The results are attached.

On November 18, 2015, DFSI personnel returned to the location to begin excavation. The initial work plan had to be altered due to the fact that an unknown company had raised and leveled the lease road, and widened the lease road, covering parts of the spill path.

The area in the pasture was excavated to 1' BGS. All contaminated soil was hauled to an approved NM state disposal. Native topsoil was brought in for backfill, and the area was seeded with 1.5 acres of BLM #2 seed.

Photos can be viewed in Appendix II.

DFSI has conducted a groundwater study of the area and has determined that according to the New Mexico Office of the State Engineer the average depth to groundwater for this area is 260 foot below ground surface. Therefore, no eminent danger of groundwater impact or threat to life is anticipated.

#### 3 CONCLUSION

DFSI, on behalf of Cimarex, respectfully requests the closure of the regulatory file for the site.

# Appendix I

INITIAL FORM C-141

<u>District I</u> 1625 N. French Dr., Hobbs, NM 88240 District II 811 S. First St., 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**

Form C-141 Revised August 8, 2011

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe. NM 87505

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

			Rela	ease Notific		n and Co		ction			· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
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				_			103.60165					
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By Whom?	Christine A			110 🗀 1101			our 06/07/2015					:
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Describe Area fluids ran app creek bed 15	roximately	140 yards alc	ng the lea	ren.* se road (the truck ied assessed the re	s kept d elease a	lriving through	a it and got stuck) A work plan will o	), and then developed	approxir	nately 320 y	yards d	own a dry
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Signature:	husti	ine ale	derm	an		Approved by	OIL CONS  Environmental S		<u>TION</u>	DIVISIO	<u>)N</u>	
Printed Name	: Christine	Alderman				Approved by	Larynoninciral 5	ростаны:				
Title: ESH S	upervisor					Approval Dat	e;	Ex	piration l	Date:		
E-mail Addre	ss: caldern	nan@cimarex	.com			Conditions of	Approval:			Attached		

Phone: 432-853-7059

Date: 6/26/2015

<sup>\*</sup> Attach Additional Sheets If Necessary

# Appendix II

**SITE PHOTOS** 



# Cascade 29 Fed #1

## **PHOTO PAGE**





Initial spill photos around lease road





Initial spill photos around lease road and into arroyo





Initial spill photos into pasture and arroyo area





Initial spill photos into pasture and arroyo area





Initial spill photos into pasture and arroyo area



Photo of raised, leveled and widened lease road



Excavating spill area





Hand digging/excavation around high pressure lines





Seeding backfilled area with BLM #2 seed



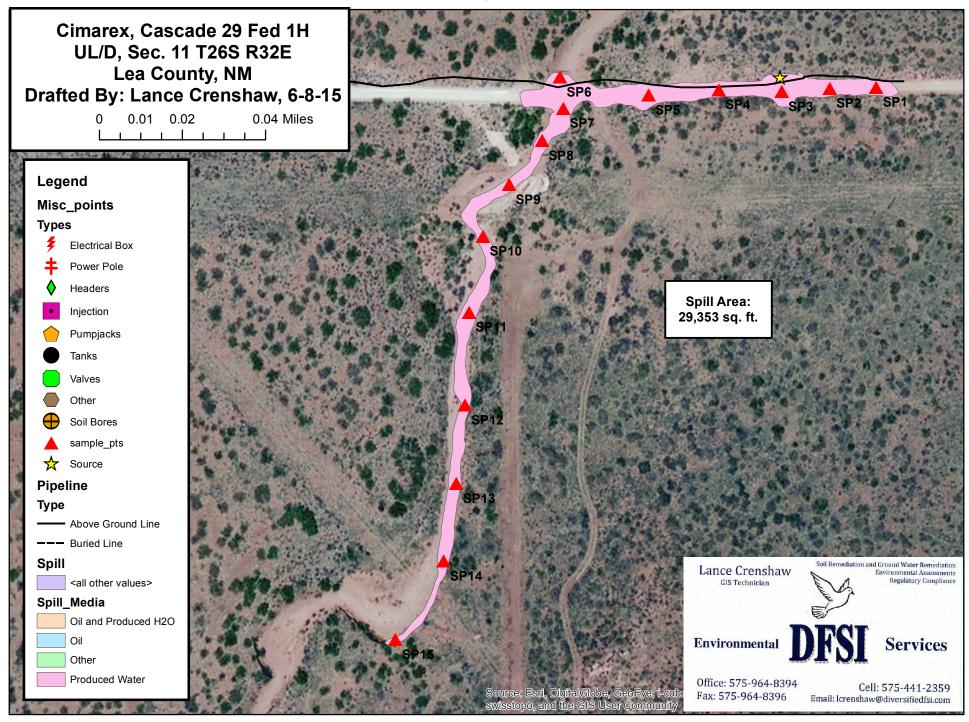


Completed, seeded and tilled location

# Appendix III

SITE MAP

### **Site Diagram**



# Appendix IV

### **LABORATORY ANALYSES**

#### **Diversified Environmental Services**

 Company Name:
 cimarex
 SP Date:
 6/9/2015
 6/10/2015

 Location Name:
 cascade 29 fed 3
 Rel Date:
 6/6/2015

SP1	CHL	PID	SP2	CHL	PID	SP3	CHL	PID	SP4	CHL	PID	SP5	CHL	PID
SURF	10,996		SURF	10,746		SURF	9,746		SURF	9,746		SURF	8,497	
1'	274		1'	249		1'	224		1'	224		1'	499	
2'	224		2'	199		2'	249		2'	224		2'	249	
3'	224		3'	274										
			4'	299										

CHL	PID	SP7	CHL	PID	SP8	CHL	PID	SP9	CHL	PID	SP10	CHL	PII
11,496		SURF	9,746		SURF	8,247		SURF	7,747		SURF	8,497	
349		1'	274		1'	999		1'	149		1'	499	
274		2'	49		2'	824		2'	149		2'	399	
349					3'	224							
349					4'	1149							
					5'	299							
					6'	249							
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	11,496 349 274 349	CHL PID  11,496  349  274  349  349  349	11,496 SURF 349 1' 274 2'	11,496     SURF     9,746       349     1'     274       274     2'     49       349     49	11,496     SURF     9,746       349     1'     274       274     2'     49       349     49	11,496     SURF     9,746     SURF       1'     274     1'       2'     49     2'       349     3'       349     4'       5'	11,496     SURF     9,746     SURF     8,247       1'     274     1'     999       274     2'     49     2'     824       349     3'     224       4'     1149       5'     299	11,496     SURF     9,746     SURF     8,247       1'     274     1'     999       274     2'     49     2'     824       349     3'     224       4'     1149       5'     299	11,496     SURF     9,746     SURF     8,247     SURF       1'     274     1'     999     1'       2'     49     2'     824     2'       349     3'     224     4'     1149       5'     299	11,496     SURF     9,746     SURF     8,247     SURF     7,747       1'     274     1'     999     1'     1'     149       2'     49     2'     824     2'     149       349     3'     224     2'     149       4'     1149     5'     299     299	11,496     SURF     9,746     SURF     8,247     SURF     7,747       1'     274     1'     999     1'     149       2'     49     2'     824     2'     149       349     3'     224     2'     149       4'     1149     5'     299     1'     149	11,496     SURF     9,746     SURF     8,247     SURF     7,747     SURF       349     1'     274     1'     999     1'     149     1'     1'     1'     1'     1'     2'     1'     1'     1'     1'     2'     1'     1'     1'     2'     1'     1'     2'     1'     2'     1'     2'     1'     2'     1'     2'     1'     2'     1'     2'     1'     2'     1'     2'     1'     2'     1'     2'     1'     2'     1'     2'     1'     2'     2'     1'     2'     1'     2'     2'     1'     2'     2'     3'     2'     2'     3'     2'     2'     3'     2'     3'     2'     3'     2'     3' <td>11,496     SURF     9,746     SURF     8,247     SURF     7,747     SURF     8,497       1'     274     1'     999     1'     149     1'     499       2'     49     2'     824     2'     149     2'     399       349     4'     1149     5'     299     1'     149     1'     499       5'     299     1149     149</td>	11,496     SURF     9,746     SURF     8,247     SURF     7,747     SURF     8,497       1'     274     1'     999     1'     149     1'     499       2'     49     2'     824     2'     149     2'     399       349     4'     1149     5'     299     1'     149     1'     499       5'     299     1149     149

SP11	CHL	PID	SP12	CHL	PID	SP13	CHL	PID	SP14	CHL	PID	SP15	CHL	PID
SURF	8,497		SURF	7,247		SURF	7,247		SURF	6,747		SURF	5,998	
1'	774		1'	324		1'	349		1'	249		1'	224	
2'	99		2'	224		2'	249		2'	74		2'	224	

Lab Confirmation Sample
Field Sampling
Needs Delineation and confirmation samples

6/9/2015 **Company Name:** SP Date: Cimerex

**Location Name:** Cascade 29-3 2nd spill LAB DATA

SP1	CHL	PID	SP2	CHL	PID	SP3	CHL	PID	SP4	CHL	PID	SP5	CHL	ΡI
2'	48	<10	1'	112	<10	1'	176	<10	1'	64.4	<10	1'	214	<1
3'	656	<10	2'	2200	<10	2'	576	<10	2'	784	<10	2'	288	<1
			3'	144	<10									
			4'	240	<10									
			7											

Lab Confirmation Sample Field Sampling Needs Delineation and confirmation samples

SP6	CHL	PID	SP7	CHL	PID	SP8	CHL	PID	SP9	CHL	PID	SP10	CHL	PID
1'		dro/941	1'	1070	<10	2'	1620	<10	1'	240	<10	1'	5	6 <10
2'	944	98.2/4070	2'	400	10.3	3'	1200	<10	2'	288	3 <10	2'	8	.6 <10
3'	240	<10				5'	352	<10						
4'	208	<10				6'	512	<10						

SP11	CHL	PID	SP12	CHL	PID	SP13	CHL	PID	SP14	CHL	PID	SP15	CHL	PID
		<10	1'	19	2 <10	1'		<10	1'		<10	1'		48 <10
2'	704	<10	2'	12	8 <10	2'		<10	2'	80	<10	2'		48 <10
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Lab Confirmation Sample
Field Sampling
Needs Delineation and confirmation samples



June 15, 2015

CHRISTINE ALDERMAN

CIMAREX ENERGY CO.-MIDLAND

600 N. MARIENFELD ST, SUITE 600

MIDLAND, TX 79701

RE: CASCADE #29-3

Enclosed are the results of analyses for samples received by the laboratory on 06/10/15 14:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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 <a href="https://www.tceq.texas.gov/field/ga/lab">www.tceq.texas.gov/field/ga/lab</a> accred certif.html.

Cardinal Laboratories is accreditated 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)

Celey D. Keine

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



CIMAREX ENERGY CO.-MIDLAND CHRISTINE ALDERMAN 600 N. MARIENFELD ST, SUITE 600 MIDLAND TX, 79701

Fax To: UNK-NOWN

Received: 06/10/2015

Reported: 06/15/2015
Project Name: CASCADE #29-3
Project Number: 2ND SPILL

Project Location: NOT GIVEN

Sampling Date: 06/09/2015

Sampling Type: Soil

Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

#### Sample ID: SP 1 @ 2' (H501497-01)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/11/2015	ND	2.02	101	2.00	0.107	
Toluene*	< 0.050	0.050	06/11/2015	ND	1.99	99.5	2.00	1.64	
Ethylbenzene*	<0.050	0.050	06/11/2015	ND	2.04	102	2.00	3.74	
Total Xylenes*	<0.150	0.150	06/11/2015	ND	5.60	93.4	6.00	4.04	
Total BTEX	<0.300	0.300	06/11/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	113 %	61-154							
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	06/11/2015	ND	416	104	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/11/2015	ND	183	91.6	200	0.400	
DRO >C10-C28	<10.0	10.0	06/11/2015	ND	194	97.0	200	3.81	
Surrogate: 1-Chlorooctane	106 %	6 47.2-15	7						
Surrogate: 1-Chlorooctadecane	133 %	52.1-17	6						

#### Cardinal Laboratories \*=Accredited Analyte

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CIMAREX ENERGY CO.-MIDLAND
CHRISTINE ALDERMAN
600 N. MARIENFELD ST, SUITE 600
MIDLAND TY, 70701

MIDLAND TX, 79701 Fax To: UNK-NOWN

Received: 06/10/2015 Reported: 06/15/2015

 06/10/2015
 Sampling Date:
 06/09/2015

 06/15/2015
 Sampling Type:
 Soil

Project Name: CASCADE #29-3
Project Number: 2ND SPILL
Project Location: NOT GIVEN

Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: SP 2 @ 1' (H501497-02)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/11/2015	ND	2.02	101	2.00	0.107	
Toluene*	<0.050	0.050	06/11/2015	ND	1.99	99.5	2.00	1.64	
Ethylbenzene*	<0.050	0.050	06/11/2015	ND	2.04	102	2.00	3.74	
Total Xylenes*	<0.150	0.150	06/11/2015	ND	5.60	93.4	6.00	4.04	
Total BTEX	<0.300	0.300	06/11/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	112 %	61-154	!						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	06/11/2015	ND	416	104	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/11/2015	ND	183	91.6	200	0.400	
DRO >C10-C28	<10.0	10.0	06/11/2015	ND	194	97.0	200	3.81	
Surrogate: 1-Chlorooctane	108 %	6 47.2-15	7						

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Celey D. Keine

Surrogate: 1-Chlorooctadecane

132 %

52.1-176



CIMAREX ENERGY CO.-MIDLAND
CHRISTINE ALDERMAN
600 N. MARIENFELD ST, SUITE 600

MIDLAND TX, 79701 Fax To: UNK-NOWN

Received: 06/10/2015

Reported: 06/15/2015

Project Name: CASCADE #29-3
Project Number: 2ND SPILL
Project Location: NOT GIVEN

Sampling Date: 06/09/2015

Sampling Type: Soil

Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

#### Sample ID: SP 3 @ 1' (H501497-03)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/11/2015	ND	2.02	101	2.00	0.107	
Toluene*	<0.050	0.050	06/11/2015	ND	1.99	99.5	2.00	1.64	
Ethylbenzene*	<0.050	0.050	06/11/2015	ND	2.04	102	2.00	3.74	
Total Xylenes*	<0.150	0.150	06/11/2015	ND	5.60	93.4	6.00	4.04	
Total BTEX	<0.300	0.300	06/11/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	114 %	61-154	!						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	06/11/2015	ND	416	104	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/11/2015	ND	183	91.6	200	0.400	
DRO >C10-C28	<10.0	10.0	06/11/2015	ND	194	97.0	200	3.81	
Surrogate: 1-Chlorooctane	107 9	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	133 9	6 52.1-17	6						

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CIMAREX ENERGY CO.-MIDLAND CHRISTINE ALDERMAN 600 N. MARIENFELD ST, SUITE 600 MIDLAND TX, 79701

Fax To: UNK-NOWN

Received: 06/10/2015 Reported: 06/15/2015

06/15/2015 CASCADE #29-3

Project Number: 2ND SPILL
Project Location: NOT GIVEN

Sampling Date: 06/09/2015

Sampling Type: Soil

Sampling Condition: Cool & Intact Sample Received By: Jodi Henson

#### Sample ID: SP 4 @ 1' (H501497-04)

Project Name:

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/11/2015	ND	2.02	101	2.00	0.107	
Toluene*	< 0.050	0.050	06/11/2015	ND	1.99	99.5	2.00	1.64	
Ethylbenzene*	< 0.050	0.050	06/11/2015	ND	2.04	102	2.00	3.74	
Total Xylenes*	<0.150	0.150	06/11/2015	ND	5.60	93.4	6.00	4.04	
Total BTEX	<0.300	0.300	06/11/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	112 %	6 61-154	!						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	06/11/2015	ND	416	104	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/11/2015	ND	183	91.6	200	0.400	
DRO >C10-C28	<10.0	10.0	06/11/2015	ND	194	97.0	200	3.81	
Surrogate: 1-Chlorooctane	104 %	6 47.2-15	7						
Surrogate: 1-Chlorooctadecane	129 %	6 52.1-17	6						

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CIMAREX ENERGY CO.-MIDLAND
CHRISTINE ALDERMAN
600 N. MARIENFELD ST, SUITE 600
MIDLAND TY, 70701

MIDLAND TX, 79701 Fax To: UNK-NOWN

Received: 06/10/2015 Reported: 06/15/2015

06/15/2015 CASCADE #29-3 2ND SPILL

Project Location: NOT GIVEN

Sampling Date: 06/09/2015

Sampling Type: Soil

Sampling Condition: Cool & Intact Sample Received By: Jodi Henson

#### Sample ID: SP 5 @ 1' (H501497-05)

Project Name:

Project Number:

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/11/2015	ND	2.02	101	2.00	0.107	
Toluene*	<0.050	0.050	06/11/2015	ND	1.99	99.5	2.00	1.64	
Ethylbenzene*	<0.050	0.050	06/11/2015	ND	2.04	102	2.00	3.74	
Total Xylenes*	<0.150	0.150	06/11/2015	ND	5.60	93.4	6.00	4.04	
Total BTEX	<0.300	0.300	06/11/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	115 %	61-154	!						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	224	16.0	06/11/2015	ND	416	104	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/11/2015	ND	183	91.6	200	0.400	
DRO >C10-C28	<10.0	10.0	06/11/2015	ND	194	97.0	200	3.81	
Surrogate: 1-Chlorooctane	94.9 9	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	122 %	6 52.1-17	6						

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CIMAREX ENERGY CO.-MIDLAND CHRISTINE ALDERMAN 600 N. MARIENFELD ST, SUITE 600

MIDLAND TX, 79701 Fax To: **UNK-NOWN** 

Received: 06/10/2015

06/15/2015

Sampling Date:

06/09/2015

Soil

Reported: Project Name:

CASCADE #29-3

Sampling Type: Sampling Condition:

Cool & Intact

Project Number: Project Location: 2ND SPILL NOT GIVEN

Sample Received By:

Jodi Henson

#### Sample ID: SP 6 @ 1' (H501497-06)

EX 8021B	mg/	kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/11/2015	ND	2.02	101	2.00	0.107	
Toluene*	< 0.050	0.050	06/11/2015	ND	1.99	99.5	2.00	1.64	
Ethylbenzene*	< 0.050	0.050	06/11/2015	ND	2.04	102	2.00	3.74	
Total Xylenes*	<0.150	0.150	06/11/2015	ND	5.60	93.4	6.00	4.04	
Total BTEX	<0.300	0.300	06/11/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	116 %	61-154	!						
Chloride, SM4500Cl-B	mg/	kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	400	16.0	06/11/2015	ND	416	104	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/11/2015	ND	183	91.6	200	0.400	
DRO >C10-C28	941	10.0	06/11/2015	ND	194	97.0	200	3.81	
Surrogate: 1-Chlorooctane	107 %	6 47.2-15	7						
Surrogate: 1-Chlorooctadecane	157 %	6 52.1-17	6						

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Sample Received By:

06/09/2015

Cool & Intact

Jodi Henson

Soil



#### Analytical Results For:

CIMAREX ENERGY CO.-MIDLAND
CHRISTINE ALDERMAN
600 N. MARIENFELD ST, SUITE 600

MIDLAND TX, 79701 Fax To: UNK-NOWN

Received: 06/10/2015 Reported: 06/15/2015

06/10/2015 Sampling Date: 06/15/2015 Sampling Type: CASCADE #29-3 Sampling Condition:

Project Number: 2ND SPILL
Project Location: NOT GIVEN

#### Sample ID: SP 7 @ 1' (H501497-07)

Project Name:

BTEX 8021B	mg/kg		Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/11/2015	ND	1.99	99.5	2.00	0.229	
Toluene*	< 0.050	0.050	06/11/2015	ND	1.98	98.9	2.00	0.356	
Ethylbenzene*	< 0.050	0.050	06/11/2015	ND	2.10	105	2.00	0.167	
Total Xylenes*	< 0.150	0.150	06/11/2015	ND	5.77	96.2	6.00	0.179	
Total BTEX	<0.300	0.300	06/11/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	115 %	61-154	!						
Chloride, SM4500CI-B	mg/	kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1090	16.0	06/11/2015	ND	416	104	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/11/2015	ND	183	91.6	200	0.400	
DRO >C10-C28	<10.0	10.0	06/11/2015	ND	194	97.0	200	3.81	
Surrogate: 1-Chlorooctane	107 %	6 47.2-15	7						
Surrogate: 1-Chlorooctadecane	131 %	6 52.1-17	6						

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CIMAREX ENERGY CO.-MIDLAND CHRISTINE ALDERMAN 600 N. MARIENFELD ST, SUITE 600 MIDLAND TX, 79701

MIDLAND 1X, 79701
Fax To: UNK-NOWN

Received: 06/10/2015

Reported: 06/15/2015
Project Name: CASCADE #29-3
Project Number: 2ND SPILL
Project Location: NOT GIVEN

Sampling Date: 06/09/2015

Sampling Type: Soil

Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

#### Sample ID: SP 8 @ 2' (H501497-08)

BTEX 8021B	mg/	mg/kg		d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/11/2015	ND	1.99	99.5	2.00	0.229	
Toluene*	<0.050	0.050	06/11/2015	ND	1.98	98.9	2.00	0.356	
Ethylbenzene*	<0.050	0.050	06/11/2015	ND	2.10	105	2.00	0.167	
Total Xylenes*	<0.150	0.150	06/11/2015	ND	5.77	96.2	6.00	0.179	
Total BTEX	<0.300	0.300	06/11/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	114 %	61-154	!						
Chloride, SM4500CI-B	mg/	kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1620	16.0	06/11/2015	ND	416	104	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/11/2015	ND	183	91.6	200	0.400	
DRO >C10-C28	<10.0	10.0	06/11/2015	ND	194	97.0	200	3.81	
Surrogate: 1-Chlorooctane	108 9	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	133 9	52.1-17	6						

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CHRISTINE ALDERMAN
600 N. MARIENFELD ST, SUITE 600

MIDLAND TX, 79701 Fax To: UNK-NOWN

Received: 06/10/2015 Reported: 06/15/2015

06/15/2015

Project Name: CASCADE #29-3
Project Number: 2ND SPILL
Project Location: NOT GIVEN

Sampling Date: 06/09/2015

Sampling Type: Soil

Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

#### Sample ID: SP 9 @ 1' (H501497-09)

TEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/11/2015	ND	1.99	99.5	2.00	0.229	
Toluene*	<0.050	0.050	06/11/2015	ND	1.98	98.9	2.00	0.356	
Ethylbenzene*	<0.050	0.050	06/11/2015	ND	2.10	105	2.00	0.167	
Total Xylenes*	<0.150	0.150	06/11/2015	ND	5.77	96.2	6.00	0.179	
Total BTEX	<0.300	0.300	06/11/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	115 9	61-154	!						
Chloride, SM4500Cl-B	mg/	kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	240	16.0	06/11/2015	ND	416	104	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/11/2015	ND	183	91.6	200	0.400	
DRO >C10-C28	<10.0	10.0	06/11/2015	ND	194	97.0	200	3.81	
Surrogate: 1-Chlorooctane	109 9	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	132 9	52.1-17	6						

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CIMAREX ENERGY CO.-MIDLAND CHRISTINE ALDERMAN 600 N. MARIENFELD ST, SUITE 600 MIDLAND TX, 79701

Fax To: UNK-NOWN

Received: 06/10/2015

0/2015 Sampling Date: 5/2015 Sampling Type:

Reported: 06/15/2015
Project Name: CASCADE #29-3
Project Number: 2ND SPILL
Project Location: NOT GIVEN

Sampling Condition: Cool & Intact Sample Received By: Jodi Henson

06/09/2015

Soil

Sample ID: SP 10 @ 1' (H501497-10)

BTEX 8021B	mg,	mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/11/2015	ND	1.99	99.5	2.00	0.229	
Toluene*	<0.050	0.050	06/11/2015	ND	1.98	98.9	2.00	0.356	
Ethylbenzene*	<0.050	0.050	06/11/2015	ND	2.10	105	2.00	0.167	
Total Xylenes*	<0.150	0.150	06/11/2015	ND	5.77	96.2	6.00	0.179	
Total BTEX	< 0.300	0.300	06/11/2015	ND					

Chloride, SM4500Cl-B	mg	/kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	576	16.0	06/11/2015	ND	416	104	400	3.77	
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	06/11/2015	ND	183	91.6	200	0.400	
DRO >C10-C28	<10.0	10.0	06/11/2015	ND	194	97.0	200	3.81	

Surrogate: 1-Chlorooctane 106 % 47.2-157
Surrogate: 1-Chlorooctadecane 130 % 52.1-176

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CIMAREX ENERGY CO.-MIDLAND CHRISTINE ALDERMAN 600 N. MARIENFELD ST, SUITE 600 MIDLAND TX, 79701

Fax To: **UNK-NOWN** 

Received: 06/10/2015

Sampling Date: Sampling Type:

Reported: 06/15/2015 Project Name: CASCADE #29-3 Project Number: 2ND SPILL

Sampling Condition: Cool & Intact Sample Received By: Jodi Henson

06/09/2015

Soil

Project Location: NOT GIVEN

#### Sample ID: SP 11 @ 1' (H501497-11)

BTEX 8021B	mg/	mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS % Recovery	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/11/2015	ND	1.99	99.5	2.00	0.229	
Toluene*	<0.050	0.050	06/11/2015	ND	1.98	98.9	2.00	0.356	
Ethylbenzene*	<0.050	0.050	06/11/2015	ND	2.10	105	2.00	0.167	
Total Xylenes*	<0.150	0.150	06/11/2015	ND	5.77	96.2	6.00	0.179	
Total BTEX	<0.300	0.300	06/11/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	115 %	61-154	!						
Chloride, SM4500Cl-B	mg/	kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	480	16.0	06/11/2015	ND	416	104	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/11/2015	ND	183	91.6	200	0.400	
DRO >C10-C28	<10.0	10.0	06/11/2015	ND	194	97.0	200	3.81	
Surrogate: 1-Chlorooctane	108 9	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	132 9	% 52 1-17	6						

Surrogate: 1-Chlorooctadecane 132 % 52.1-176

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CIMAREX ENERGY CO.-MIDLAND CHRISTINE ALDERMAN 600 N. MARIENFELD ST, SUITE 600 MIDLAND TX, 79701

Fax To: UNK-NOWN

Received: 06/10/2015

Sampling Date: 06/09/2015 Sampling Type: Soil

Reported: 06/15/2015 Project Name: CASCADE #29-3

2ND SPILL

Sampling Condition: Cool & Intact Sample Received By: Jodi Henson

Project Location: NOT GIVEN

#### Sample ID: SP 12 @ 1' (H501497-12)

Project Number:

BTEX 8021B	mg/kg		Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/11/2015	ND	1.99	99.5	2.00	0.229	
Toluene*	< 0.050	0.050	06/11/2015	ND	1.98	98.9	2.00	0.356	
Ethylbenzene*	< 0.050	0.050	06/11/2015	ND	2.10	105	2.00	0.167	
Total Xylenes*	< 0.150	0.150	06/11/2015	ND	5.77	96.2	6.00	0.179	
Total BTEX	<0.300	0.300	06/11/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	113 %	61-154							
Chloride, SM4500CI-B	mg/	kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	192	16.0	06/11/2015	ND	416	104	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/11/2015	ND	183	91.6	200	0.400	
DRO >C10-C28	<10.0	10.0	06/11/2015	ND	194	97.0	200	3.81	
Surrogate: 1-Chlorooctane	106 %	6 47.2-15	7						
Surrogate: 1-Chlorooctadecane	134 %	6 52.1-17	6						

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CIMAREX ENERGY CO.-MIDLAND CHRISTINE ALDERMAN 600 N. MARIENFELD ST, SUITE 600 MIDLAND TX, 79701

Fax To: UNK-NOWN

Received: 06/10/2015 Reported: 06/15/2015

06/15/2015 CASCADE #29-3

Project Number: 2ND SPILL
Project Location: NOT GIVEN

Sampling Date: 06/09/2015

Sampling Type: Soil

Sampling Condition: Cool & Intact Sample Received By: Jodi Henson

#### Sample ID: SP 13 @ 1' (H501497-13)

Project Name:

BTEX 8021B	mg/kg		Analyze	Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/11/2015	ND	1.99	99.5	2.00	0.229	
Toluene*	<0.050	0.050	06/11/2015	ND	1.98	98.9	2.00	0.356	
Ethylbenzene*	<0.050	0.050	06/11/2015	ND	2.10	105	2.00	0.167	
Total Xylenes*	<0.150	0.150	06/11/2015	ND	5.77	96.2	6.00	0.179	
Total BTEX	<0.300	0.300	06/11/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	114 %	61-154							
Chloride, SM4500CI-B	mg/	kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	416	16.0	06/12/2015	ND	432	108	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/11/2015	ND	183	91.6	200	0.400	
DRO >C10-C28	<10.0	10.0	06/11/2015	ND	194	97.0	200	3.81	
Surrogate: 1-Chlorooctane	105 %	6 47.2-15	7						
Surrogate: 1-Chlorooctadecane	129 %	6 52.1-17	6						

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CIMAREX ENERGY CO.-MIDLAND CHRISTINE ALDERMAN 600 N. MARIENFELD ST, SUITE 600

MIDLAND TX, 79701 Fax To: **UNK-NOWN** 

Received: 06/10/2015

06/15/2015

Reported: Project Name: CASCADE #29-3 Project Number: 2ND SPILL Project Location: NOT GIVEN

Sampling Date: 06/09/2015

Sampling Type: Soil

Sampling Condition: Cool & Intact Sample Received By: Jodi Henson

#### Sample ID: SP 14 @ 1' (H501497-14)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/11/2015	ND	1.99	99.5	2.00	0.229	
Toluene*	<0.050	0.050	06/11/2015	ND	1.98	98.9	2.00	0.356	
Ethylbenzene*	<0.050	0.050	06/11/2015	ND	2.10	105	2.00	0.167	
Total Xylenes*	<0.150	0.150	06/11/2015	ND	5.77	96.2	6.00	0.179	
Total BTEX	<0.300	0.300	06/11/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	110 9	61-154	!						
Chloride, SM4500CI-B	mg/	kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	06/12/2015	ND	432	108	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/11/2015	ND	183	91.6	200	0.400	
DRO >C10-C28	<10.0	10.0	06/11/2015	ND	194	97.0	200	3.81	
Surrogate: 1-Chlorooctane	101 9	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	125 9	52.1-17	6						

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CIMAREX ENERGY CO.-MIDLAND CHRISTINE ALDERMAN 600 N. MARIENFELD ST, SUITE 600 MIDLAND TX, 79701

Fax To: UNK-NOWN

Received: 06/10/2015

 06/10/2015
 Sampling Date:
 06/09/2015

 06/15/2015
 Sampling Type:
 Soil

Reported: 06/15/2015
Project Name: CASCADE #29-3
Project Number: 2ND SPILL

Sampling Condition: Cool & Intact Sample Received By: Jodi Henson

Project Location: NOT GIVEN

#### Sample ID: SP 15 @ 1' (H501497-15)

TEX 8021B	mg/	mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS % Recov	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/11/2015	ND	1.99	99.5	2.00	0.229	
Toluene*	<0.050	0.050	06/11/2015	ND	1.98	98.9	2.00	0.356	
Ethylbenzene*	<0.050	0.050	06/11/2015	ND	2.10	105	2.00	0.167	
Total Xylenes*	<0.150	0.150	06/11/2015	ND	5.77	96.2	6.00	0.179	
Total BTEX	<0.300	0.300	06/11/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	113 %	61-154	!						
Chloride, SM4500Cl-B	mg/	kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	06/12/2015	ND	432	108	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/11/2015	ND	183	91.6	200	0.400	
DRO >C10-C28	<10.0	10.0	06/11/2015	ND	194	97.0	200	3.81	
Surrogate: 1-Chlorooctane	103 9	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	131	% 52 1-17	6						

Surrogate: 1-Chlorooctadecane 131 % 52.1-176

Cardinal Laboratories \*=Accredited Analyte

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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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# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Project Manager: Lance Chenshaw
Company: Ciwa (
City: State: NI Zip: Attn: Chrish)
Phone #: Fax #: Address:
Project #: Project Owner: City:
Project Name: Cascade 29 Fed 3 (2nd 50;11) State: Zip:
Phone #:
Sampler Name: Cance Crenshaw Fax #:
FOR LAB USE ONLY MATRIX PRESERV.
R: BASE: COOL
# CON GROU
2 SP201' GII V
50301
C SMBI.
50561
7 200
2000
S SACA
SAC!
10 SDIDE1. 10:30

Sampler - UPS - Bus - Other:

4.600

CHECKED BY:

lerenshavediversified sicon

Delivered By: (Circle One)

Refinquished By:

and

Time: 00/ Date: Time:

Received By:

ived By

ions, loss of use, or loss of profits incurred by client, its subsidiaries

Fax Result:

E-mail Results To:

mburton@diversifiedfsi.com

Phone Result:

☐ Yes

No No

Add'l Phone #: Add'l Fax #:

Relinquished By



# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Clave / L	BILL TO	ANALYSIS REQUEST
Project Manager: Lance Cruns haw	P.O. #:	
Address:	Company: ( ) >> NA	
City: State: M Zip:		
Phone #: Fax #:	Address:	
Project #: Project Owner:		
Project Name: Cashade 20 Rd 3 (254 co; 1)		
Project Location:	Phone #:	
Sampler Name: (apr , Cringhan	Fax #:	
	MATRIX PRESERV SAMPLING	
	S ER R	
Lab I.D. Sample I.D.		10 73191 HdI
11 80110 1	# 0 V S S S S S S S S S S S S S S S S S S	
12 SMIR!	0	
13 SP1301	2,2	
12 2 Mas 1.	6	
13/1/61.	>	

Sampler - UPS - Bus - Other:

4.60

Sample Condition
Cool Intact
Nes Pres
No No

CHECKED BY

Delivered By: (Circle One)

Time:

Received By:

Received By:

Phone Result:
Fax Result:
REMARKS:

☐ Yes

No No

Add'l Phone #: Add'l Fax #:

E-mail Results To:

mburton@diversifiedfsi.com

lerenshanediversifials).com

Relinquished By:

Relinquished By:



June 15, 2015

CHRISTINE ALDERMAN

CIMAREX ENERGY CO.-MIDLAND

600 N. MARIENFELD ST, SUITE 600

MIDLAND, TX 79701

RE: CASCADE #29-3

Enclosed are the results of analyses for samples received by the laboratory on 06/10/15 14:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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 <a href="https://www.tceq.texas.gov/field/ga/lab">www.tceq.texas.gov/field/ga/lab</a> accred certif.html.

Cardinal Laboratories is accreditated 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)

Celey D. Keine

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



CIMAREX ENERGY CO.-MIDLAND CHRISTINE ALDERMAN 600 N. MARIENFELD ST, SUITE 600 MIDLAND TX, 79701

Fax To: UNK-NOWN

Received: 06/10/2015

Reported: 06/15/2015
Project Name: CASCADE #29-3
Project Number: 2ND SPILL
Project Location: NOT GIVEN

Sampling Date: 06/10/2015

Sampling Type: Soil

Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

### Sample ID: SP 1 @ 3' (H501498-01)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/12/2015	ND	1.99	99.5	2.00	0.229	
Toluene*	<0.050	0.050	06/12/2015	ND	1.98	98.9	2.00	0.356	
Ethylbenzene*	< 0.050	0.050	06/12/2015	ND	2.10	105	2.00	0.167	
Total Xylenes*	<0.150	0.150	06/12/2015	ND	5.77	96.2	6.00	0.179	
Total BTEX	<0.300	0.300	06/12/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	112 %	61-154							
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	656	16.0	06/12/2015	ND	432	108	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/11/2015	ND	185	92.3	200	3.51	
DRO >C10-C28	<10.0	10.0	06/11/2015	ND	202	101	200	5.08	
Surrogate: 1-Chlorooctane	99.3	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	124 9	52.1-17	5						

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Celeg D. Keene



CIMAREX ENERGY CO.-MIDLAND CHRISTINE ALDERMAN 600 N. MARIENFELD ST, SUITE 600

MIDLAND TX, 79701 Fax To: **UNK-NOWN** 

Received: 06/10/2015

06/15/2015

CASCADE #29-3

Project Name: Project Number: 2ND SPILL Project Location: NOT GIVEN Sampling Date: 06/10/2015

Sampling Type: Soil

Sampling Condition: Cool & Intact Sample Received By: Jodi Henson

### Sample ID: SP 2 @ 2' (H501498-02)

Reported:

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/12/2015	ND	1.99	99.5	2.00	0.229	
Toluene*	<0.050	0.050	06/12/2015	ND	1.98	98.9	2.00	0.356	
Ethylbenzene*	<0.050	0.050	06/12/2015	ND	2.10	105	2.00	0.167	
Total Xylenes*	<0.150	0.150	06/12/2015	ND	5.77	96.2	6.00	0.179	
Total BTEX	<0.300	0.300	06/12/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	113 %	61-154	!						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2200	16.0	06/12/2015	ND	432	108	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/11/2015	ND	185	92.3	200	3.51	
DRO >C10-C28	<10.0	10.0	06/11/2015	ND	202	101	200	5.08	
Surrogate: 1-Chlorooctane	90.8	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	117 9	6 52.1-17	6						

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CIMAREX ENERGY CO.-MIDLAND CHRISTINE ALDERMAN 600 N. MARIENFELD ST, SUITE 600

MIDLAND TX, 79701 Fax To: UNK-NOWN

Received: 06/10/2015 Reported: 06/15/2015

06/15/2015 CASCADE #29-3

Project Number: 2ND SPILL
Project Location: NOT GIVEN

Sampling Date: 06/10/2015

Sampling Type: Soil

Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

### Sample ID: SP 3 @ 2' (H501498-03)

Project Name:

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/12/2015	ND	1.99	99.5	2.00	0.229	
Toluene*	<0.050	0.050	06/12/2015	ND	1.98	98.9	2.00	0.356	
Ethylbenzene*	<0.050	0.050	06/12/2015	ND	2.10	105	2.00	0.167	
Total Xylenes*	<0.150	0.150	06/12/2015	ND	5.77	96.2	6.00	0.179	
Total BTEX	<0.300	0.300	06/12/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	113 %	61-154	!						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	544	16.0	06/12/2015	ND	432	108	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/11/2015	ND	185	92.3	200	3.51	
DRO >C10-C28	<10.0	10.0	06/11/2015	ND	202	101	200	5.08	
Surrogate: 1-Chlorooctane	99.9	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	120 9	52.1-17	6						

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CIMAREX ENERGY CO.-MIDLAND
CHRISTINE ALDERMAN
600 N. MARIENFELD ST, SUITE 600

MIDLAND TX, 79701 Fax To: UNK-NOWN

Received: 06/10/2015 Reported: 06/15/2015

06/15/2015 CASCADE #29-3 2ND SPILL

Project Number: 2ND SPILL
Project Location: NOT GIVEN

Sampling Date: 06/10/2015

Sampling Type: Soil

Sampling Condition: Cool & Intact Sample Received By: Jodi Henson

### Sample ID: SP 4 @ 2' (H501498-04)

Project Name:

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/12/2015	ND	1.99	99.5	2.00	0.229	
Toluene*	<0.050	0.050	06/12/2015	ND	1.98	98.9	2.00	0.356	
Ethylbenzene*	<0.050	0.050	06/12/2015	ND	2.10	105	2.00	0.167	
Total Xylenes*	<0.150	0.150	06/12/2015	ND	5.77	96.2	6.00	0.179	
Total BTEX	<0.300	0.300	06/12/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	110 %	61-154	!						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	784	16.0	06/12/2015	ND	432	108	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/11/2015	ND	185	92.3	200	3.51	
DRO >C10-C28	<10.0	10.0	06/11/2015	ND	202	101	200	5.08	
Surrogate: 1-Chlorooctane	89.0 9	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	115 %	6 52.1-17	6						

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CIMAREX ENERGY CO.-MIDLAND
CHRISTINE ALDERMAN
600 N. MARIENFELD ST, SUITE 600
MIDLAND TY, 70701

MIDLAND TX, 79701 Fax To: UNK-NOWN

Received: 06/10/2015 Reported: 06/15/2015

06/15/2015 CASCADE #29-3 2ND SPILL

Project Location: NOT GIVEN

Sampling Date: 06/10/2015

Sampling Type: Soil

Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

### Sample ID: SP 5 @ 2' (H501498-05)

Project Name:

Project Number:

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/12/2015	ND	1.99	99.5	2.00	0.229	
Toluene*	<0.050	0.050	06/12/2015	ND	1.98	98.9	2.00	0.356	
Ethylbenzene*	<0.050	0.050	06/12/2015	ND	2.10	105	2.00	0.167	
Total Xylenes*	<0.150	0.150	06/12/2015	ND	5.77	96.2	6.00	0.179	
Total BTEX	<0.300	0.300	06/12/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	112 %	61-154	!						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	288	16.0	06/12/2015	ND	432	108	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/11/2015	ND	185	92.3	200	3.51	
DRO >C10-C28	<10.0	10.0	06/11/2015	ND	202	101	200	5.08	
Surrogate: 1-Chlorooctane	88.3	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	106 9	6 52.1-17	6						

Cardinal Laboratories \*=Accredited Analyte

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CIMAREX ENERGY CO.-MIDLAND CHRISTINE ALDERMAN 600 N. MARIENFELD ST, SUITE 600

MIDLAND TX, 79701 Fax To: UNK-NOWN

Received: 06/10/2015 Reported: 06/15/2015

06/15/2015 CASCADE #29-3

186 %

52.1-176

Project Name: CASCADE #29
Project Number: 2ND SPILL
Project Location: NOT GIVEN

Sampling Date: 06/10/2015

Sampling Type: Soil

Sampling Condition: Cool & Intact Sample Received By: Jodi Henson

### Sample ID: SP 6 @ 2' (H501498-06)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/12/2015	ND	1.99	99.5	2.00	0.229	
Toluene*	<0.050	0.050	06/12/2015	ND	1.98	98.9	2.00	0.356	
Ethylbenzene*	<0.050	0.050	06/12/2015	ND	2.10	105	2.00	0.167	
Total Xylenes*	0.614	0.150	06/12/2015	ND	5.77	96.2	6.00	0.179	
Total BTEX	0.614	0.300	06/12/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	132 9	% 61-154	!						
Chloride, SM4500Cl-B	mg/	'kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	944	16.0	06/12/2015	ND	432	108	400	3.77	
TPH 8015M	mg/	'kg	Analyze	d By: MS					S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	98.2	10.0	06/11/2015	ND	185	92.3	200	3.51	
DRO >C10-C28	4070	10.0	06/11/2015	ND	202	101	200	5.08	
Surrogate: 1-Chlorooctane	114 9	% 47.2-15	7						

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Celey D. Keine

Surrogate: 1-Chlorooctadecane



CIMAREX ENERGY CO.-MIDLAND CHRISTINE ALDERMAN 600 N. MARIENFELD ST, SUITE 600

MIDLAND TX, 79701 Fax To: **UNK-NOWN** 

Received: 06/10/2015

06/15/2015

Reported: Project Name: CASCADE #29-3 Project Number: 2ND SPILL Project Location: NOT GIVEN

Sampling Date: 06/10/2015

Sampling Type: Soil

Sampling Condition: Cool & Intact Sample Received By: Jodi Henson

### Sample ID: SP 7 @ 2' (H501498-07)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/12/2015	ND	1.99	99.5	2.00	0.229	
Toluene*	<0.050	0.050	06/12/2015	ND	1.98	98.9	2.00	0.356	
Ethylbenzene*	<0.050	0.050	06/12/2015	ND	2.10	105	2.00	0.167	
Total Xylenes*	<0.150	0.150	06/12/2015	ND	5.77	96.2	6.00	0.179	
Total BTEX	<0.300	0.300	06/12/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	113 %	61-154	!						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	400	16.0	06/12/2015	ND	432	108	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/11/2015	ND	185	92.3	200	3.51	
DRO >C10-C28	10.3	10.0	06/11/2015	ND	202	101	200	5.08	
Surrogate: 1-Chlorooctane	90.4	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	111 9	6 52.1-17	6						

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MIDLAND TX, 79701 Fax To: **UNK-NOWN** 

Received: 06/10/2015 Reported:

06/15/2015

CASCADE #29-3

2ND SPILL

Project Location: NOT GIVEN Sampling Date: 06/10/2015

Sampling Type: Soil

Sampling Condition: Cool & Intact Sample Received By: Jodi Henson

### Sample ID: SP 8 @ 3' (H501498-08)

Project Name:

Project Number:

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/12/2015	ND	1.99	99.5	2.00	0.229	
Toluene*	< 0.050	0.050	06/12/2015	ND	1.98	98.9	2.00	0.356	
Ethylbenzene*	< 0.050	0.050	06/12/2015	ND	2.10	105	2.00	0.167	
Total Xylenes*	<0.150	0.150	06/12/2015	ND	5.77	96.2	6.00	0.179	
Total BTEX	<0.300	0.300	06/12/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	111 %	61-154	!						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1220	16.0	06/12/2015	ND	432	108	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/11/2015	ND	185	92.3	200	3.51	
DRO >C10-C28	<10.0	10.0	06/11/2015	ND	202	101	200	5.08	
Surrogate: 1-Chlorooctane	95.1 9	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	119 %	6 52.1-17	6						

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MIDLAND TX, 79701 Fax To: UNK-NOWN

Received: 06/10/2015 Reported: 06/15/2015

 06/10/2015
 Sampling Date:
 06/10/2015

 06/15/2015
 Sampling Type:
 Soil

Project Name: CASCADE #29-3
Project Number: 2ND SPILL
Project Location: NOT GIVEN

Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

### Sample ID: SP 9 @ 2' (H501498-09)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/12/2015	ND	1.99	99.5	2.00	0.229	
Toluene*	<0.050	0.050	06/12/2015	ND	1.98	98.9	2.00	0.356	
Ethylbenzene*	<0.050	0.050	06/12/2015	ND	2.10	105	2.00	0.167	
Total Xylenes*	<0.150	0.150	06/12/2015	ND	5.77	96.2	6.00	0.179	
Total BTEX	<0.300	0.300	06/12/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	111 %	61-154	!						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	288	16.0	06/12/2015	ND	432	108	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/11/2015	ND	185	92.3	200	3.51	
DRO >C10-C28	<10.0	10.0	06/11/2015	ND	202	101	200	5.08	
Surrogate: 1-Chlorooctane	96.8	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	117 9	6 52.1-17	6						

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MIDLAND 1X, 79701
Fax To: UNK-NOWN

Received: 06/10/2015 Reported: 06/15/2015

06/15/2015 CASCADE #29-3 2ND SPILL

Project Location: NOT GIVEN

Sampling Date: 06/10/2015

Sampling Type: Soil

Sampling Condition: Cool & Intact Sample Received By: Jodi Henson

### Sample ID: SP 10 @ 2' (H501498-10)

Project Name:

Project Number:

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/12/2015	ND	1.99	99.5	2.00	0.229	
Toluene*	<0.050	0.050	06/12/2015	ND	1.98	98.9	2.00	0.356	
Ethylbenzene*	<0.050	0.050	06/12/2015	ND	2.10	105	2.00	0.167	
Total Xylenes*	<0.150	0.150	06/12/2015	ND	5.77	96.2	6.00	0.179	
Total BTEX	<0.300	0.300	06/12/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	110 %	61-154	!						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	816	16.0	06/12/2015	ND	432	108	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/11/2015	ND	185	92.3	200	3.51	
DRO >C10-C28	<10.0	10.0	06/11/2015	ND	202	101	200	5.08	
Surrogate: 1-Chlorooctane	95.7 9	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	117 %	6 52.1-17	6						

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Fax To: **UNK-NOWN** 

Received: 06/10/2015

06/15/2015

Sampling Date: 06/10/2015 Sampling Type: Soil

Reported: Project Name: Project Number:

CASCADE #29-3 2ND SPILL

Sampling Condition: Cool & Intact Sample Received By: Jodi Henson

Project Location: NOT GIVEN

### Sample ID: SP 11 @ 2' (H501498-11)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/12/2015	ND	2.06	103	2.00	1.09	
Toluene*	< 0.050	0.050	06/12/2015	ND	2.08	104	2.00	2.48	
Ethylbenzene*	< 0.050	0.050	06/12/2015	ND	2.17	108	2.00	2.36	
Total Xylenes*	<0.150	0.150	06/12/2015	ND	5.99	99.8	6.00	2.88	
Total BTEX	<0.300	0.300	06/12/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	111 %	61-154							
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	704	16.0	06/12/2015	ND	432	108	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/11/2015	ND	185	92.3	200	3.51	
DRO >C10-C28	<10.0	10.0	06/11/2015	ND	202	101	200	5.08	
Surrogate: 1-Chlorooctane	91.0 9	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	111 %	6 52.1-17	6						

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600 N. MARIENFELD ST, SUITE 600

MIDLAND TX, 79701 Fax To: UNK-NOWN

Received: 06/10/2015

2015 Sampling Date: 2015 Sampling Type:

Reported: 06/15/2015
Project Name: CASCADE #29-3
Project Number: 2ND SPILL

Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

06/10/2015

Soil

Project Location: NOT GIVEN

### Sample ID: SP 12 @ 2' (H501498-12)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/12/2015	ND	2.06	103	2.00	1.09	
Toluene*	<0.050	0.050	06/12/2015	ND	2.08	104	2.00	2.48	
Ethylbenzene*	<0.050	0.050	06/12/2015	ND	2.17	108	2.00	2.36	
Total Xylenes*	<0.150	0.150	06/12/2015	ND	5.99	99.8	6.00	2.88	
Total BTEX	<0.300	0.300	06/12/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	113 %	61-154	!						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	06/12/2015	ND	432	108	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/11/2015	ND	185	92.3	200	3.51	
DRO >C10-C28	<10.0	10.0	06/11/2015	ND	202	101	200	5.08	
Surrogate: 1-Chlorooctane	94.2	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	118 9	52.1-17	6						

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600 N. MARIENFELD ST, SUITE 600

MIDLAND TX, 79701 Fax To: UNK-NOWN

Received: 06/10/2015 Reported: 06/15/2015

06/15/2015 CASCADE #29-3

Project Number: 2ND SPILL
Project Location: NOT GIVEN

Sampling Date: 06/10/2015

Sampling Type: Soil

Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

### Sample ID: SP 13 @ 2' (H501498-13)

Project Name:

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/12/2015	ND	2.06	103	2.00	1.09	
Toluene*	<0.050	0.050	06/12/2015	ND	2.08	104	2.00	2.48	
Ethylbenzene*	<0.050	0.050	06/12/2015	ND	2.17	108	2.00	2.36	
Total Xylenes*	<0.150	0.150	06/12/2015	ND	5.99	99.8	6.00	2.88	
Total BTEX	<0.300	0.300	06/12/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	112 %	61-154	!						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	320	16.0	06/12/2015	ND	432	108	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/11/2015	ND	185	92.3	200	3.51	
DRO >C10-C28	<10.0	10.0	06/11/2015	ND	202	101	200	5.08	
Surrogate: 1-Chlorooctane	100 9	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	121 9	6 52.1-17	6						

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Fax To: UNK-NOWN

Received: 06/10/2015

06/15/2015

Sampling Date: Sampling Type:

Sample Received By:

06/10/2015

Soil

Reported: Project Name:

06/15/2015 CASCADE #29-3 2ND SPILL

Sampling Condition:

Cool & Intact Jodi Henson

Project Number: Project Location:

NOT GIVEN

### Sample ID: SP 14 @ 2' (H501498-14)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/12/2015	ND	2.06	103	2.00	1.09	
Toluene*	<0.050	0.050	06/12/2015	ND	2.08	104	2.00	2.48	
Ethylbenzene*	<0.050	0.050	06/12/2015	ND	2.17	108	2.00	2.36	
Total Xylenes*	<0.150	0.150	06/12/2015	ND	5.99	99.8	6.00	2.88	
Total BTEX	<0.300	0.300	06/12/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	113 %	61-154	!						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	06/12/2015	ND	432	108	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/11/2015	ND	185	92.3	200	3.51	
DRO >C10-C28	<10.0	10.0	06/11/2015	ND	202	101	200	5.08	
Surrogate: 1-Chlorooctane	89.3	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	116 %	6 52.1-17	6						

52.1 170

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MIDLAND TX, 79701 Fax To: **UNK-NOWN** 

Received: 06/10/2015

06/15/2015

Sampling Date: Sampling Type: 06/10/2015

Soil

Reported: Project Name: CASCADE #29-3

Sampling Condition: Sample Received By:

Cool & Intact Jodi Henson

Project Number: 2ND SPILL Project Location: NOT GIVEN

### Sample ID: SP 15 @ 2' (H501498-15)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/12/2015	ND	2.06	103	2.00	1.09	
Toluene*	< 0.050	0.050	06/12/2015	ND	2.08	104	2.00	2.48	
Ethylbenzene*	< 0.050	0.050	06/12/2015	ND	2.17	108	2.00	2.36	
Total Xylenes*	<0.150	0.150	06/12/2015	ND	5.99	99.8	6.00	2.88	
Total BTEX	<0.300	0.300	06/12/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	111 %	61-154							
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	06/12/2015	ND	432	108	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/11/2015	ND	185	92.3	200	3.51	
DRO >C10-C28	<10.0	10.0	06/11/2015	ND	202	101	200	5.08	
Surrogate: 1-Chlorooctane	86.9 9	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	113 %	6 52.1-17	6						

Cardinal Laboratories \*=Accredited Analyte

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### **Notes and Definitions**

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

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Celeg D. Freene



# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

company Name: Cimarct	BILL TO	ANALYSIS REQUEST
Project Manager: Cance Cans han	P.O. #:	
	Company: () March	
City: State: Z	Zip: Attn: Christing /	
Phone #: Fax #:	Address:	
Project #: Project Owner:	City:	
Project Name: Castade 29 Fed 3 ()	State: Zip:	
Project Location:	Phone #:	
Sampler Name: / ance Cransham)	Fax #:	
	MATRIX PRESERV SAMPLING	
Lab I.D. Sample I.D.	SE:	3491
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50163	1 V V 6/0 9	
16 9695 2	1 1 1 1 6-16	
15 0503	019 7	
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10 5010 21	1:0/ 01-9 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\$/     /

+ Cardinal cannot accord workal change Plages favouritten change to IETE1 202-2226 Sample Condition
Cool Intact
Yes Yes
No No

Sampler - UPS - Bus - Other: Delivered By: (Circle One) Relinquished By:

Time: Date: 1神(00 Pate 10-15

Received By:

Received By

uptions, loss of use, or loss of profits incurred by client, its subsidiaries

REMARKS: Fax Result: Phone Result:

☐ Yes☐ Yes

No No

Add'l Phone #: Add'l Fax #:

E-mail Results To:

Ngladdenediversifiedisi.com (crushand).vursified quar

mbur hanediversitides, com

Racins adiversified in com

Relinquished By:



# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

State: Zip: Attn: Chast Attn:	Company warne: (IMA/CY	BILL TO	ANALYSIS REQUEST
State: Zip: Fax #: Project Owner:  Casual DIC 3 (3 Maje)  Spill 3  Spill 4  Spill 3  Spill 4  Spill 3  Spill 4  Spill 3  Spill 4  Spill 4  Spill 3  Spill 4	_		
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State: Zip:  (em a Cunchan Phone #:  Fax #:  Fax #:  Fax #:  Fax #:  Fax #:  Spille 2'  S	Project #: Project Owner		
Sample I.D.  Fax #:  Fax #:  Fax #:  Fax #:  Fax #:  Soil  Scilog J  Scilo	Project Name: Cascada 20 Fed 2 (2)	State:	
Sample I.D.  Sample I.D.  Spile 3  Spile 4  Spil	Project Location:	,	
Sample I.D.  Sample I.D.  Spiled  Spil	lence	Fax #:	
Sample I.D.  Spilled  Spilled  Spilled  Groundwater Wastewater Wastewater Soil Sludge Other: ACID/BASE: ACID/B		PRESERV.	
20102), Cellos, Cellos		CONTAINERS CROUNDWATER VASTEWATER COIL DIL CLUDGE OTHER: CCID/BASE: CCE / COOL OTHER:	12 12 14 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
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	S	1 × × 6-10	

+ Cardinal cannot account worked changes Bloace for written changes to 15751 202-2226 Sample Condition
Cool Intact
Yes Yes
No No

Sampler - UPS - Bus - Other:

Delivered By: (Circle One)

Relinquished By:

Type CO

Received By:

Received By:

by client, its subsidiaries,

Phone Result: Fax Result: REMARKS:

☐ Yes ☐ No

Add'l Phone #: Add'l Fax #:

E-mail Results To:

Rpons@diversifiedfsi.com

Ngladden@diversifiedfsi.com-

Time: Date: Relinquished By:



June 22, 2015

MIKE BURTON

DIVERSIFIED FIELD SERVICES, INC.

P. O. BOX 5966

HOBBS, NM 88241

RE: CASCADE 2A FED #3

Enclosed are the results of analyses for samples received by the laboratory on 06/16/15 16:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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 <a href="https://www.tceq.texas.gov/field/ga/lab">www.tceq.texas.gov/field/ga/lab</a> accred certif.html.

Cardinal Laboratories is accreditated 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.

Celey D. Keine

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



DIVERSIFIED FIELD SERVICES, INC. MIKE BURTON

P. O. BOX 5966 HOBBS NM, 88241

Fax To: (575) 393-2981

Received: 06/16/2015 Sampling Date: 06/16/2015

Reported: 06/22/2015 Sampling Type: Soil

Project Name: CASCADE 2A FED #3 Sampling Condition: Cool & Intact
Project Number: 2ND SPILL Sample Received By: Jodi Henson

Project Location: NONE GIVEN

### Sample ID: SP 2 @ 3' (H501569-01)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/19/2015	ND	1.74	86.8	2.00	1.25	
Toluene*	<0.050	0.050	06/19/2015	ND	1.73	86.6	2.00	1.70	
Ethylbenzene*	<0.050	0.050	06/19/2015	ND	1.82	91.2	2.00	2.34	
Total Xylenes*	<0.150	0.150	06/19/2015	ND	5.01	83.5	6.00	2.12	
Total BTEX	<0.300	0.300	06/19/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	103 9	61-154	!						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	06/22/2015	ND	432	108	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/18/2015	ND	177	88.7	200	3.58	
DRO >C10-C28	<10.0	10.0	06/18/2015	ND	175	87.6	200	3.54	
Surrogate: 1-Chlorooctane	88.2	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	93.6	% 52.1-17	6						

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Fax To: (575) 393-2981

Received: 06/16/2015 Sampling Date: 06/16/2015

Reported: 06/22/2015 Sampling Type: Soil

Project Name: CASCADE 2A FED #3 Sampling Condition: Cool & Intact
Project Number: 2ND SPILL Sample Received By: Jodi Henson

Project Location: NONE GIVEN

### Sample ID: SP 6 @ 3' (H501569-02)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/19/2015	ND	1.74	86.8	2.00	1.25	
Toluene*	<0.050	0.050	06/19/2015	ND	1.73	86.6	2.00	1.70	
Ethylbenzene*	<0.050	0.050	06/19/2015	ND	1.82	91.2	2.00	2.34	
Total Xylenes*	<0.150	0.150	06/19/2015	ND	5.01	83.5	6.00	2.12	
Total BTEX	<0.300	0.300	06/19/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	103 %	61-154	!						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	240	16.0	06/22/2015	ND	432	108	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/18/2015	ND	177	88.7	200	3.58	
DRO >C10-C28	<10.0	10.0	06/18/2015	ND	175	87.6	200	3.54	
Surrogate: 1-Chlorooctane	84.2	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	90.0	% 52.1-17	6						

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P. O. BOX 5966 HOBBS NM, 88241

Fax To: (575) 393-2981

Received: 06/16/2015 Sampling Date: 06/16/2015

Reported: 06/22/2015 Sampling Type: Soil

Project Name: CASCADE 2A FED #3 Sampling Condition: Cool & Intact Sample Received By: Project Number: 2ND SPILL Jodi Henson

Project Location: NONE GIVEN

### Sample ID: SP 8 @ 5' (H501569-03)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/19/2015	ND	1.74	86.8	2.00	1.25	
Toluene*	<0.050	0.050	06/19/2015	ND	1.73	86.6	2.00	1.70	
Ethylbenzene*	<0.050	0.050	06/19/2015	ND	1.82	91.2	2.00	2.34	
Total Xylenes*	<0.150	0.150	06/19/2015	ND	5.01	83.5	6.00	2.12	
Total BTEX	<0.300	0.300	06/19/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	106 9	% 61-154	!						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	352	16.0	06/22/2015	ND	432	108	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/18/2015	ND	177	88.7	200	3.58	
DRO >C10-C28	<10.0	10.0	06/18/2015	ND	175	87.6	200	3.54	
Surrogate: 1-Chlorooctane	98.3	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	103	% 52 1-17	6						

Surrogate: 1-Chlorooctadecane 103 % 52.1-176

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Fax To: (575) 393-2981

Received: 06/16/2015 Sampling Date: 06/16/2015

Reported: 06/22/2015 Sampling Type: Soil

Project Name: CASCADE 2A FED #3 Sampling Condition: Cool & Intact
Project Number: 2ND SPILL Sample Received By: Jodi Henson

Project Location: NONE GIVEN

### Sample ID: SP 2 @ 4' (H501569-04)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/19/2015	ND	1.74	86.8	2.00	1.25	
Toluene*	<0.050	0.050	06/19/2015	ND	1.73	86.6	2.00	1.70	
Ethylbenzene*	<0.050	0.050	06/19/2015	ND	1.82	91.2	2.00	2.34	
Total Xylenes*	<0.150	0.150	06/19/2015	ND	5.01	83.5	6.00	2.12	
Total BTEX	<0.300	0.300	06/19/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	105 %	% 61-154	!						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	240	16.0	06/22/2015	ND	432	108	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/18/2015	ND	177	88.7	200	3.58	
DRO >C10-C28	<10.0	10.0	06/18/2015	ND	175	87.6	200	3.54	
Surrogate: 1-Chlorooctane	92.9	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	98.0	% 52.1-17	6						

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Fax To: (575) 393-2981

Received: 06/16/2015 Sampling Date: 06/16/2015

Reported: 06/22/2015 Sampling Type: Soil

Project Name: CASCADE 2A FED #3 Sampling Condition: Cool & Intact
Project Number: 2ND SPILL Sample Received By: Jodi Henson

Project Location: NONE GIVEN

### Sample ID: SP 6 @ 4' (H501569-05)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/19/2015	ND	1.74	86.8	2.00	1.25	
Toluene*	<0.050	0.050	06/19/2015	ND	1.73	86.6	2.00	1.70	
Ethylbenzene*	<0.050	0.050	06/19/2015	ND	1.82	91.2	2.00	2.34	
Total Xylenes*	<0.150	0.150	06/19/2015	ND	5.01	83.5	6.00	2.12	
Total BTEX	<0.300	0.300	06/19/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	106 %	61-154	!						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	208	16.0	06/22/2015	ND	432	108	400	3.77	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/18/2015	ND	177	88.7	200	3.58	
DRO >C10-C28	<10.0	10.0	06/18/2015	ND	175	87.6	200	3.54	
Surrogate: 1-Chlorooctane	90.75	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	96.5	% 52.1-17	6						

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DIVERSIFIED FIELD SERVICES, INC. MIKE BURTON

P. O. BOX 5966 HOBBS NM, 88241

Fax To: (575) 393-2981

Received: 06/16/2015 Sampling Date: 06/16/2015

Reported: 06/22/2015 Sampling Type: Soil

Project Name: CASCADE 2A FED #3 Sampling Condition: Cool & Intact
Project Number: 2ND SPILL Sample Received By: Jodi Henson

Project Location: NONE GIVEN

### Sample ID: SP 8 @ 6' (H501569-06)

BTEX 8021B	mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/19/2015	ND	1.74	86.8	2.00	1.25	
Toluene*	<0.050	0.050	06/19/2015	ND	1.73	86.6	2.00	1.70	
Ethylbenzene*	<0.050	0.050	06/19/2015	ND	1.82	91.2	2.00	2.34	
Total Xylenes*	<0.150	0.150	06/19/2015	ND	5.01	83.5	6.00	2.12	
Total BTEX	<0.300	0.300	06/19/2015	ND					
Surrogate: 4-Bromofluorobenzene (PID	103 9	61-154	!						
Chloride, SM4500Cl-B	mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	512	16.0	06/22/2015	ND	432	108	400	3.77	
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	06/18/2015	ND	177	88.7	200	3.58	
DRO >C10-C28	<10.0	10.0	06/18/2015	ND	175	87.6	200	3.54	
Surrogate: 1-Chlorooctane	87.5	% 47.2-15	7						
Surrogate: 1-Chlorooctadecane	91.7	% 52.1-17	6						

Cardinal Laboratories \*=Accredited Analyte

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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

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 whistoever 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 related only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: Change	BILL TO	ANALYSIS REQUEST
0	P.O.# 18442	
Address:	company: Diversifical	
City: State:	Zip: Attn:	
Phone #: Fax #:	Address:	
Project #: Project Owner:	ner: City:	
ame: Cascade 2a	(2505/11) State: Zip:	
Project Location:	Phone #:	
Sampler Name: Lance Crenghan	Fax #:	
FOR LAB USE ONLY	MATRIX PRESERV. SAMPLING	
Lab I.D. Sample I.D.	G)RAB OR (C)OM CONTAINERS GROUNDWATER WASTEWATER SOIL DIL SLUDGE DTHER: ACID/BASE: CE / COOL DTHER:	10 10 10 10 10 10 10 10 10 10 10 10 10 1
19698	\ \	
2 3060 2	200 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
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5,0604	C 1 X X 5-16 03.50	
-		

+ Cardinal cannot account worked channes Bloace fav written channes to 15751 70xb226

Sample Condition
Cool Intact
Yes Pres
No No No

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:

Relinquished By:

Time:

anylow

Relinquished By:

analyses. All claims including those for negligence and any other service. In no event shall Cardinal be liable for incidental or consi

ng and received by Cardinal within 30 days after completion of the applicable tions, loss of use, or loss of profits incurred by client, its subsidiaries,

Phone Result:
Fax Result:
REMARKS:

☐ Yes ☐ No Add'I Phone #:

E-mail Results To:

Icompany diversified files

Ngladden@diversifiedfsi.com Rpons@diversifiedfsi.com PLEASE NOTE: Liability and Dan



### New Mexico Office of the State Engineer Water Column/Average Depth to Water

No records found.

Basin/County Search:

County: Lea

PLSS Search:

Section(s): 26

Township: 26S

Range: 32E

### DIVERSIFIED FIELD SERVICES, INC.

Project: Cres could 79 Fed Com

Seed and lbs. used: 15 acon of RM TT

Date Started: 11/24/15

Date Completed: 1/24/15

Curtis and Curtis, Inc.

4500 North Prince Clovis, NM 88130 Phone: (575) 762-4759 www.curtisseed.com

> Diversified Construction 1.5 Acre BLM #2, Broadcast Rate 1 - 1 Acre Bag @ 39.63 Bulk Pounds 1 - 1/2 Acre Bag @ 19.82 Bulk Pounds

Lot#: M-13398

	Origin New Mexico	Purity 10.51%	<u>Germ</u> 34.00%	Dormant 62.00%	Total Germination 96.00%	Test Date 06/15	Total PLS Pounds 6.00
	Missouri	15.93%	91.00%	4.00%	95.00%	09/15	9.00
	Colorado	11.22%	84.00%	6.00%	90.00%	09/15	6.00
ass	Oklahoma	26.28%	15.00%	81.00%	96.00%	03/15	15.00
1	New Mexico	16.46%	35.00%	57.00%	92.00%	06/15	9.00
			y . M .	-			
Other Crop: 0.17% Weed Seed: 0.08% Inert Matter: 19.35%		Bag Weig	hs 19.82 Bu	lk Pounds	Total Bulk Po	59	
	0.1 0.0	New Mexico  Missouri  Colorado  ass Oklahoma  New Mexico  0.17% The 0.08% This	New Mexico 10.51%  Missouri 15.93%  Colorado 11.22%  ass Oklahoma 26.28%  New Mexico 16.46%  0.17% There Are 2 B 0.08% This Bag Weig	New Mexico 10.51% 34.00%  Missouri 15.93% 91.00%  Colorado 11.22% 84.00%  ass Oklahoma 26.28% 15.00%  New Mexico 16.46% 35.00%  0.17% There Are 2 Bags For This 0.08% This Bag Weighs 19.82 Bu	New Mexico 10.51% 34.00% 62.00%  Missouri 15.93% 91.00% 4.00%  Colorado 11.22% 84.00% 6.00%  ass Oklahoma 26.28% 15.00% 81.00%  New Mexico 16.46% 35.00% 57.00%  0.17% There Are 2 Bags For This Mix 0.08% This Bag Weighs 19.82 Bulk Pounds	Origin   Purity   Germ   Dormant   Germination   96.00%     Missouri   15.93%   91.00%   4.00%   95.00%     Colorado   11.22%   84.00%   6.00%   90.00%     ass   Oklahoma   26.28%   15.00%   81.00%   96.00%     New Mexico   16.46%   35.00%   57.00%   92.00%     0.17%   There Are 2 Bags For This Mix   Total Bulk Pounds   Total Bulk Pounds   10.08%   This Bag Weighs 19.82 Bulk Pounds   10.08%   Total Bulk Pounds   10.0	New Mexico   Purity   34.00%   62.00%   96.00%   06/15

Curtis and Curtis, Inc.

4500 North Prince Clovis, NM 88130 Phone: (575) 762-4759 www.curtisseed.com

> Diversified Construction 15 Acre BLM #2, Broadcast Rate 1 - 1 Acre Bag @ 3963 Bulk Pounds 1 - 12 Acre Bag @ 1982 Bulk Pounds

Lot# M-13398

112 10050	100							
<u>Item</u> Sand Dropseed VNS	Or New		Purity 10.51%	Germ 34.00%	Dormant 62.00%	Total Germination 96.00%	Test Date 06/15	Tot Pt
Little Bluestem	Mis	souri	15.93%	91.00%	4.00%	95,00%	09/15	
Coreopsis Plains	Cole	orado	11.22%	84.00%	6.00%	90.00%	09/15	
Plains Bristlegr	ass Okla	homa 2	26.28%	15.00%	81.00%	96.00%	03/15	-10
Sideoats Grama El Reno	New I	Mexico 1	6.46%	35.00%	57.00%	92.00%	-06/15	
Other Crop: Weed Seed: Inert Matter:	0.17% 0.08% 19.35%	This E	ag Weig	ags For This hs 39.63 Bul or 1 Acres	Mix k Pounds	Total Bulk Po	unds:	5

Supervisor:

### Appendix V

**FINAL 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

1RP 3701

### Release Notification and Corrective Action **OPERATOR** Initial Report x Final Report Name of Company Cimarex Energy Contact Christine Alderman Telephone No. 432-853-7059 Address 600 N Marienfeld Ste 600 Midland TX Production Facility Name Cascade 29-1 Facility Type 30-025-40346 Surface Owner Federal Mineral Owner Lease No. LOCATION OF RELEASE East/West Line Unit Letter Section Township Range Feet from the North/South Line Feet from the County 33E 29 258 350 W Lea 330 D **Latitude** 32.10795 Longitude -103.60165 NATURE OF RELEASE Volume of Release 300 bbls Type of Release Produced Water Volume Recovered 90 bbls Date and Hour of Occurrence6/6/15 Date and Hour of Discovery 6/6/15 Poly Flowline Source of Release Was Immediate Notice Given? If YES, To Whom? X Yes No Not Required Kellie Jones/Jeffery Robertson By Whom? Christine Alderman Date and Hour 6/7/15 4:40 pm If YES, Volume Impacting the Watercourse. Was a Watercourse Reached? Yes X No If a Watercourse was Impacted, Describe Pully,\* Describe Cause of Problem and Remedial Action Taken.\* Trucking company was moving a rig down the pipeline road near location and part of the derrick sliced the poly line open. Describe Area Affected and Cleanup Action Taken.\* Fluids ran approximately 140 yards along lease road, and then approximately 320 yards down a dry creek bed. DFSI samples the spill area and excavated the pasture area to 1' BGS. Native topsoil was brought in and the area was seeded with BLM #2 seed. The location was restored to its previous state. 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 tine Alderman Signature: Approved by District Supervisor: Printed Name: Christine Alderman Expiration Date: /// 12/16/2015 Title: ESH Supervisor Approval Date: E-mail Address: calderman@cimarex.com Conditions of Approval: Attached

111

Phone: 432-853-7059

12/3/2015

<sup>\*</sup> Attach Additional Sheets If Necessary