



Laguna Deep Unit #007

WORK PLAN

Release Date: September 17, 2016

Unit Letter E, Section 36, T19S, R33E

Lea County, NM

API # 30-025-36255

January 11, 2017

Prepared by:

Michael Burton, Environmental Operations Director

Diversified Field Service, Inc.

206 West Snyder

Hobbs, NM 88240

Phone: (575)964-8394

Fax: (575)393-8396

INFORMATION ONLY

Christine Alderman
EHS Supervisor – Permian Basin
Cimarex Energy Co
600 N Marienfeld, Suite #600
Midland, TX 79701

RE: Cimarex – Laguna Deep Unit #007 – Remediation Work Plan
UL/E, Section 36, T19S, R33E
API No. 30-025-36255
NMOCD Score: 0

Ms. Alderman,

Cimarex Energy (Cimarex) has retained Diversified Field Service, Inc. (DFSI) to conduct initial site investigations of the site detailed herein.

The site is located west of Monument, NM, in Lea County. The release resulted from a lightning strike on a fiberglass produced water tank, incinerating the tank completely. A total of approximately 210 barrels of produced water was released with approximately 210 barrels of mixed produced water and water from fire extinguishing measures recovered. An initial C-141 was submitted to NMOCD on September 21, 2016 (Appendix I).

Site Assessment and Delineation

On September 30, 2016, DFSI personnel were on site to assist with the delineation of the impacted site (Appendix II). The area was sampled with the use of a soil sampler/auger. Five sample points were identified within the impacted area (Figure 1). Soil samples were taken from the five sample points and analyzed on site via a Mini Rae Photoionization Detector (PID) for volatile organic carbons (VOC).

The soil samples were sent to the respective labs for determination of BETX and soil salinity – Cardinal Laboratories of Hobbs, New Mexico and Texas A&M University of College Station, Texas (Appendix III, Figure 2). Note the soil samples sent to Texas A&M were composite samples of each sample point.

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 110 foot below ground surface (Appendix IV). Therefore, no eminent danger of groundwater impact or threat to life is anticipated.

Recommendation

After careful review, DFSI on behalf of Cimarex would like to propose the following:

Excavate the impacted soils to a depth of 3 feet below ground level (Figure 3). The excavated soil will be placed on a plastic liner and mixed with 13-13-13 fertilizer and turf grade gypsum at the respective rates, 70 lbs. fertilizer/2 cubic yards and 100 lbs. gypsum/1 cubic yard. At the base of the excavation, a 2-inch layer of gypsum will be placed uniformly across the excavation base and wetted in place with freshwater. The mixed/treated soil will be placed back into the excavation and hydro-mulch applied to the site. The pad will be addressed during site abandonment.

Following the approval of this plan, DFSI will submit all proper closure documentation to the NMOCD and BLM in accordance to the State and Federal Guidelines set forth.

Please feel free to contact me with any questions concerning this remediation plan request.

Sincerely,



Michael Burton
Environmental Operations Director | Diversified Field Service, Inc.
206 West Snyder | Hobbs, NM 88240
Office: (575)964-8394 | Mobile: (575)390-5454
Fax: (575)964-8396 | Email: Mburton@diversifiedfsi.com

Figure 1 – Initial Soil Delineation
Figure 2 – Laboratory Analysis Table
Figure 3 – Proposed Work
Appendix I – Initial C-141
Appendix II – Photo Documentation
Appendix III – Laboratory Analyses
Appendix IV – Groundwater Study

Soil Delineation



Cimarex
Laguna Deep Unit #007
Unit Letter E, Section 36, T19S, R33E
Lea County, NM
API #: 30-025-36255

Figure 1



Drafted by: L Flores
Date: 10/03/2016

0 5 10 20 30 40

Feet

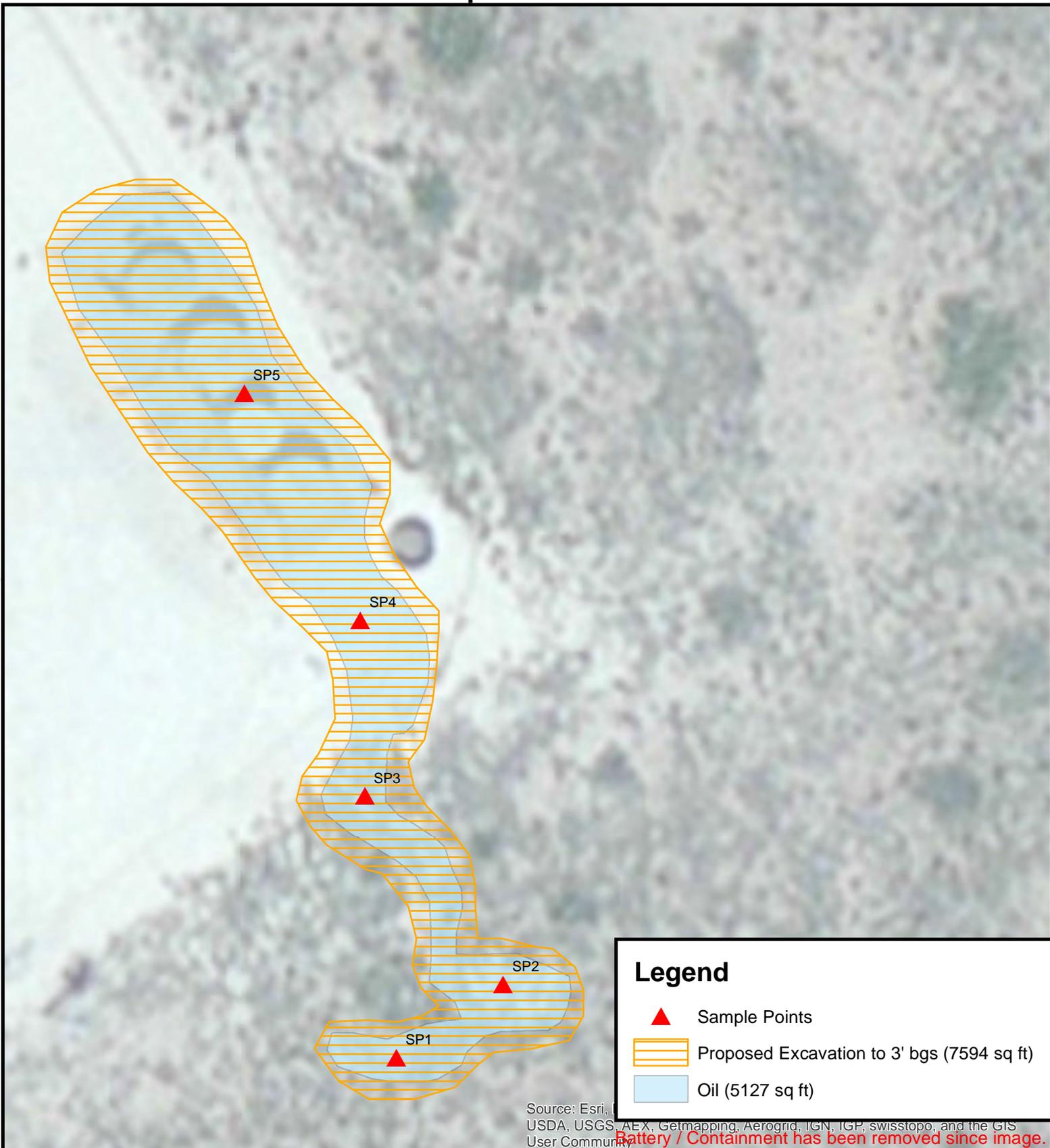
Figure 2

SP1																		
Depth	Cl-	PID	Lab Cl-	GRO	DRO	B	T	E	X	pH	Con	NO-3	P	K	Ca	Mg	S	Na
SS	249	22.6																
1'	199	23.1																
2'	174	3.8	32	<10	<10	<0.05	<0.05	<0.05	<0.05									
3'	174	20.3	<16	<10	31.8	<0.05	<0.05	<0.05	<0.05	8	144	0	5	165	1080	454	5	19
SP2																		
Depth	Cl-	PID	Lab Cl-	GRO	DRO	B	T	E	X	pH	Con	NO-3	P	K	Ca	Mg	S	Na
SS	1874	6																
1'	39	7.8																
2'	4948	1.8																
3'	2499	4.6																
4'	1499	2.6																
5'	474	0	624	<10	<10	<0.05	<0.05	<0.05	<0.05									
6'	199	0.5	224	<10	<10	<0.05	<0.05	<0.05	<0.05	7.9	3000	1	3	146	6109	462	29	3005
SP3																		
Depth	Cl-	PID	Lab Cl-	GRO	DRO	B	T	E	X	pH	Con	NO-3	P	K	Ca	Mg	S	Na
SS	824	0.9																
1'	1099	0.9																
2'	1449	0																
3'	4973	4.9																
4'	2674	0																
5'	624	3.1	592	<10	<10	<0.05	<0.05	<0.05	<0.05									
6'	224	0	352	<10	<10	<0.05	<0.05	<0.05	<0.05	8.2	1710	0	2	153	12755	518	32	1449
SP4																		
Depth	Cl-	PID	Lab Cl-	GRO	DRO	B	T	E	X	pH	Con	NO-3	P	K	Ca	Mg	S	Na
SS	199	4																
1'	174	32.4																
2'	149	0	48	<10	<10	<0.05	<0.05	<0.05	<0.05									
3'	117	0	48	<10	<10	<0.05	<0.05	<0.05	<0.05	8.2	265	15	12	98	1140	122	48	81

Figure 2

Depth	Cl-	PID	Lab Cl-	GRO	DRO	B	T	E	SP5	pH	Con	NO-3	P	K	Ca	Mg	S	Na
									X									
SS	1124	154.9																
1'	1099	83.9																
2'	974	89.6																
3'	324	20.8	208	<10	844	<0.05	<0.05	<0.05	<0.05									
4'	224	15.3	80	<10	267	<0.05	<0.05	<0.05	<0.05	8.4	1020	0	12	83	1241	88	6	554

Proposed Work



Legend

-  Sample Points
-  Proposed Excavation to 3' bgs (7594 sq ft)
-  Oil (5127 sq ft)

Source: Esri, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community. **Battery / Containment has been removed since image.**



Cimarex
Laguna Deep Unit #007
Unit Letter E, Section 36, T19S, R33E
Lea County, NM
API #: 30-025-36255

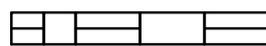
Figure 3



Drafted by: L Flores

Date: 10/03/2016

0 5 10 20 30 40

 Feet

Appendix I

INITIAL C-141

Diversified Field Service, Inc.
206 W. Snyder
Hobbs, NM 88240
(575) 964-8394

District I
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.

Release Notification and Corrective Action

OPERATOR

Initial Report Final Report

Name of Company Cimarex Energy	Contact Christine Alderman	
Address 600 N Marienfeld Ste 600 Midland TX	Telephone No. 432-853-7059	
Facility Name Laguna Deep 7	Facility Type Production	
Surface Owner	Mineral Owner	API No. 30-025-36255

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
E	36	19S	33E	1980	N	950	W	Lea

Latitude 32.61846 Longitude -103.62232

NATURE OF RELEASE

Type of Release Produced water	Volume of Release 210 bbls	Volume Recovered 210 bbls+
Source of Release fire burned FG PW tank	Date and Hour of Occurrence 9/17/2016	Date and Hour of Discovery 9/17/2016
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Kristen Lynch/Jaime Keyes	
By Whom? Gloria Garza	Date and Hour 9/18/2016 11:00am	
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. Lightning struck a fiberglass PW tank burning it to the ground. Fire departments finally put fire out. Approximately 210 bbls of produced water was in the tank before the fire. Fluids were inside an UNLINED berm. Approximately 10 bbls ran over the berm into the pasture area approximately 12" wide and 40' long (mixture of PW and water from fire department)

Describe Area Affected and Cleanup Action Taken. Crews were on location the next day and used shovels to turn soil in pasture area. Samples were collected of impacted areas and sent for analysis. A work plan will be developed and submitted.

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.

Signature: <i>Christine Alderman</i>	OIL CONSERVATION DIVISION	
Printed Name: Christine Alderman	Approved by Environmental Specialist:	
Title: ESH Supervisor	Approval Date:	Expiration Date:
E-mail Address: calderman@cimarex.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 9/21/2016 Phone: 432-853-7059		

* Attach Additional Sheets If Necessary

Appendix II

PHOTO DOCUMENTATION

Diversified Field Service, Inc.
206 W. Snyder
Hobbs, NM 88240
(575) 964-8394

Laguna Deep Unit #007

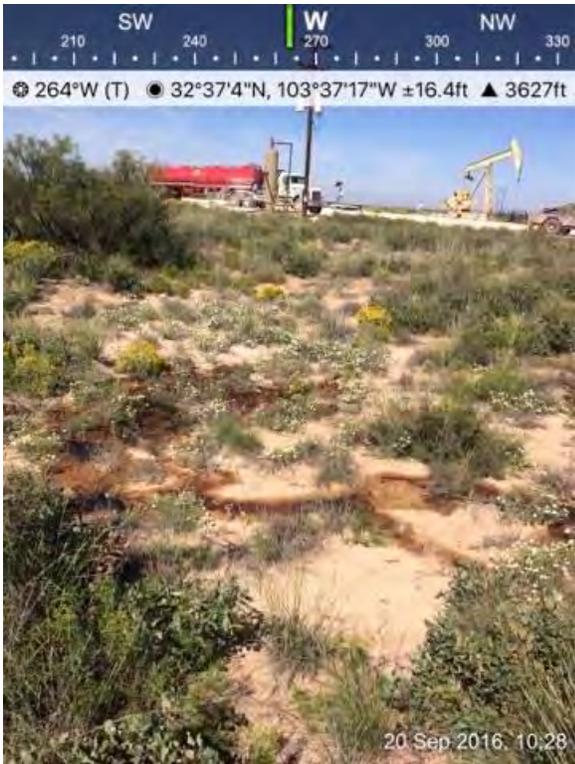
Photo Page



Site, facing east – southeast 9/20/2016



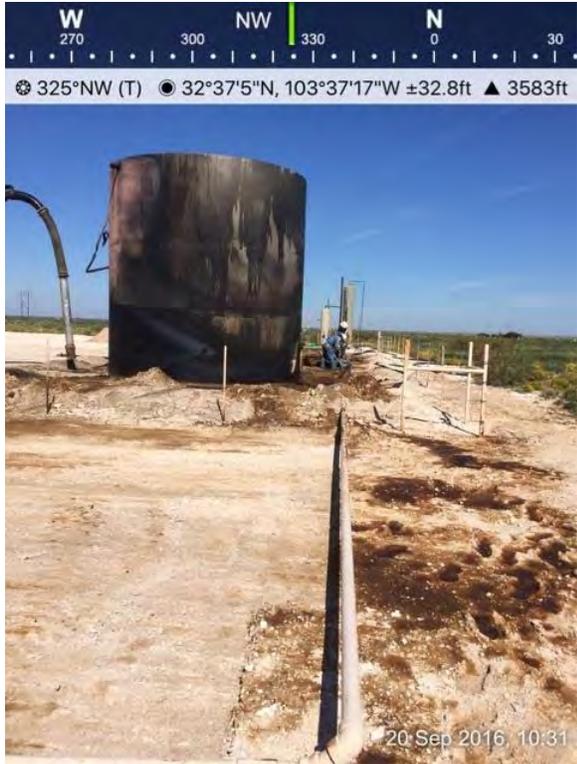
Excavating site, facing northwest 9/20/2016



Site prior, facing west 9/20/2016



Excavating site, facing west - northwest 9/20/2016



Hand shoveling release area, facing northwest 9/20/2016



Excavating site, facing southwest - west 9/20/2016

Appendix III

LABORATORY ANALYSES

Diversified Field Service, Inc.
206 W. Snyder
Hobbs, NM 88240
(575) 964-8394



October 07, 2016

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

RE: LAGUNA DEEP #7

Enclosed are the results of analyses for samples received by the laboratory on 10/03/16 8:50.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. 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.

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,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style with a large, flowing "C" and "K".

Celey D. Keene
Lab Director/Quality Manager

Analytical Results For:

 CIMAREX ENERGY CO.-MIDLAND
 CHRISTINE ALDERMAN
 600 N. MARIENFELD ST, SUITE 600
 MIDLAND TX, 79701
 Fax To: UNK-NOWN

Received:	10/03/2016	Sampling Date:	09/30/2016
Reported:	10/07/2016	Sampling Type:	Soil
Project Name:	LAGUNA DEEP #7	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 1 @ 2' (H602208-01)

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	10/04/2016	ND	2.26	113	2.00	0.650	
Toluene*	<0.050	0.050	10/04/2016	ND	2.31	115	2.00	0.673	
Ethylbenzene*	<0.050	0.050	10/04/2016	ND	2.23	112	2.00	0.532	
Total Xylenes*	<0.150	0.150	10/04/2016	ND	6.73	112	6.00	0.647	
Total BTEX	<0.300	0.300	10/04/2016	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.0 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	10/04/2016	ND	416	104	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	10/03/2016	ND	184	92.0	200	2.29	
DRO >C10-C28	<10.0	10.0	10/03/2016	ND	189	94.6	200	8.65	

Surrogate: 1-Chlorooctane 90.6 % 35-147
Surrogate: 1-Chlorooctadecane 97.1 % 28-171

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 CIMAREX ENERGY CO.-MIDLAND
 CHRISTINE ALDERMAN
 600 N. MARIENFELD ST, SUITE 600
 MIDLAND TX, 79701
 Fax To: UNK-NOWN

Received:	10/03/2016	Sampling Date:	09/30/2016
Reported:	10/07/2016	Sampling Type:	Soil
Project Name:	LAGUNA DEEP #7	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 1 @ 3' (H602208-02)

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	10/05/2016	ND	2.20	110	2.00	0.355		
Toluene*	<0.050	0.050	10/05/2016	ND	2.24	112	2.00	0.218		
Ethylbenzene*	<0.050	0.050	10/05/2016	ND	2.19	109	2.00	0.224		
Total Xylenes*	<0.150	0.150	10/05/2016	ND	6.68	111	6.00	0.295		
Total BTEX	<0.300	0.300	10/05/2016	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/04/2016	ND	416	104	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	10/03/2016	ND	184	92.0	200	2.29		
DRO >C10-C28	31.8	10.0	10/03/2016	ND	189	94.6	200	8.65		

Surrogate: 1-Chlorooctane 81.8 % 35-147

Surrogate: 1-Chlorooctadecane 85.6 % 28-171

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 CIMAREX ENERGY CO.-MIDLAND
 CHRISTINE ALDERMAN
 600 N. MARIENFELD ST, SUITE 600
 MIDLAND TX, 79701
 Fax To: UNK-NOWN

Received:	10/03/2016	Sampling Date:	09/30/2016
Reported:	10/07/2016	Sampling Type:	Soil
Project Name:	LAGUNA DEEP #7	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 2 @ 5' (H602208-03)

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	10/05/2016	ND	2.20	110	2.00	0.355		
Toluene*	<0.050	0.050	10/05/2016	ND	2.24	112	2.00	0.218		
Ethylbenzene*	<0.050	0.050	10/05/2016	ND	2.19	109	2.00	0.224		
Total Xylenes*	<0.150	0.150	10/05/2016	ND	6.68	111	6.00	0.295		
Total BTEX	<0.300	0.300	10/05/2016	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	624	16.0	10/04/2016	ND	416	104	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	10/03/2016	ND	184	92.0	200	2.29		
DRO >C10-C28	<10.0	10.0	10/03/2016	ND	189	94.6	200	8.65		

Surrogate: 1-Chlorooctane 90.4 % 35-147

Surrogate: 1-Chlorooctadecane 95.8 % 28-171

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*=Accredited Analyte

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 MIDLAND TX, 79701
 Fax To: UNK-NOWN

Received:	10/03/2016	Sampling Date:	09/30/2016
Reported:	10/07/2016	Sampling Type:	Soil
Project Name:	LAGUNA DEEP #7	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 2 @ 6' (H602208-04)

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	10/05/2016	ND	2.20	110	2.00	0.355		
Toluene*	<0.050	0.050	10/05/2016	ND	2.24	112	2.00	0.218		
Ethylbenzene*	<0.050	0.050	10/05/2016	ND	2.19	109	2.00	0.224		
Total Xylenes*	<0.150	0.150	10/05/2016	ND	6.68	111	6.00	0.295		
Total BTEX	<0.300	0.300	10/05/2016	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.8 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	224	16.0	10/04/2016	ND	416	104	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	10/04/2016	ND	198	98.8	200	2.21		
DRO >C10-C28	<10.0	10.0	10/04/2016	ND	182	90.8	200	2.55		

Surrogate: 1-Chlorooctane 95.2 % 35-147

Surrogate: 1-Chlorooctadecane 98.4 % 28-171

Cardinal Laboratories

*=Accredited Analyte

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Received:	10/03/2016	Sampling Date:	09/30/2016
Reported:	10/07/2016	Sampling Type:	Soil
Project Name:	LAGUNA DEEP #7	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 3 @ 5' (H602208-05)

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	10/05/2016	ND	2.20	110	2.00	0.355		
Toluene*	<0.050	0.050	10/05/2016	ND	2.24	112	2.00	0.218		
Ethylbenzene*	<0.050	0.050	10/05/2016	ND	2.19	109	2.00	0.224		
Total Xylenes*	<0.150	0.150	10/05/2016	ND	6.68	111	6.00	0.295		
Total BTEX	<0.300	0.300	10/05/2016	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	592	16.0	10/04/2016	ND	416	104	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	10/04/2016	ND	198	98.8	200	2.21		
DRO >C10-C28	<10.0	10.0	10/04/2016	ND	182	90.8	200	2.55		

Surrogate: 1-Chlorooctane 93.8 % 35-147

Surrogate: 1-Chlorooctadecane 98.7 % 28-171

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 CIMAREX ENERGY CO.-MIDLAND
 CHRISTINE ALDERMAN
 600 N. MARIENFELD ST, SUITE 600
 MIDLAND TX, 79701
 Fax To: UNK-NOWN

Received:	10/03/2016	Sampling Date:	09/30/2016
Reported:	10/07/2016	Sampling Type:	Soil
Project Name:	LAGUNA DEEP #7	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 3 @ 6' (H602208-06)

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	10/05/2016	ND	2.20	110	2.00	0.355		
Toluene*	<0.050	0.050	10/05/2016	ND	2.24	112	2.00	0.218		
Ethylbenzene*	<0.050	0.050	10/05/2016	ND	2.19	109	2.00	0.224		
Total Xylenes*	<0.150	0.150	10/05/2016	ND	6.68	111	6.00	0.295		
Total BTEX	<0.300	0.300	10/05/2016	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.9 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	352	16.0	10/04/2016	ND	416	104	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	10/04/2016	ND	198	98.8	200	2.21		
DRO >C10-C28	<10.0	10.0	10/04/2016	ND	182	90.8	200	2.55		

Surrogate: 1-Chlorooctane 96.2 % 35-147

Surrogate: 1-Chlorooctadecane 102 % 28-171

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 CIMAREX ENERGY CO.-MIDLAND
 CHRISTINE ALDERMAN
 600 N. MARIENFELD ST, SUITE 600
 MIDLAND TX, 79701
 Fax To: UNK-NOWN

Received:	10/03/2016	Sampling Date:	09/30/2016
Reported:	10/07/2016	Sampling Type:	Soil
Project Name:	LAGUNA DEEP #7	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 4 @ 2' (H602208-07)

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	10/05/2016	ND	2.20	110	2.00	0.355		
Toluene*	<0.050	0.050	10/05/2016	ND	2.24	112	2.00	0.218		
Ethylbenzene*	<0.050	0.050	10/05/2016	ND	2.19	109	2.00	0.224		
Total Xylenes*	<0.150	0.150	10/05/2016	ND	6.68	111	6.00	0.295		
Total BTEX	<0.300	0.300	10/05/2016	ND						

Surrogate: 4-Bromofluorobenzene (PID) 100 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	10/04/2016	ND	416	104	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	10/04/2016	ND	198	98.8	200	2.21		
DRO >C10-C28	<10.0	10.0	10/04/2016	ND	182	90.8	200	2.55		

Surrogate: 1-Chlorooctane 85.8 % 35-147

Surrogate: 1-Chlorooctadecane 89.5 % 28-171

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 CIMAREX ENERGY CO.-MIDLAND
 CHRISTINE ALDERMAN
 600 N. MARIENFELD ST, SUITE 600
 MIDLAND TX, 79701
 Fax To: UNK-NOWN

Received:	10/03/2016	Sampling Date:	09/30/2016
Reported:	10/07/2016	Sampling Type:	Soil
Project Name:	LAGUNA DEEP #7	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 4 @ 3' (H602208-08)

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	10/05/2016	ND	2.20	110	2.00	0.355	
Toluene*	<0.050	0.050	10/05/2016	ND	2.24	112	2.00	0.218	
Ethylbenzene*	<0.050	0.050	10/05/2016	ND	2.19	109	2.00	0.224	
Total Xylenes*	<0.150	0.150	10/05/2016	ND	6.68	111	6.00	0.295	
Total BTEX	<0.300	0.300	10/05/2016	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.8 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/04/2016	ND	416	104	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	10/04/2016	ND	198	98.8	200	2.21	
DRO >C10-C28	<10.0	10.0	10/04/2016	ND	182	90.8	200	2.55	

Surrogate: 1-Chlorooctane 84.7 % 35-147

Surrogate: 1-Chlorooctadecane 86.5 % 28-171

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 CIMAREX ENERGY CO.-MIDLAND
 CHRISTINE ALDERMAN
 600 N. MARIENFELD ST, SUITE 600
 MIDLAND TX, 79701
 Fax To: UNK-NOWN

Received:	10/03/2016	Sampling Date:	09/30/2016
Reported:	10/07/2016	Sampling Type:	Soil
Project Name:	LAGUNA DEEP #7	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 5 @ 3' (H602208-09)

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	10/05/2016	ND	2.20	110	2.00	0.355	
Toluene*	<0.050	0.050	10/05/2016	ND	2.24	112	2.00	0.218	
Ethylbenzene*	<0.050	0.050	10/05/2016	ND	2.19	109	2.00	0.224	
Total Xylenes*	<0.150	0.150	10/05/2016	ND	6.68	111	6.00	0.295	
Total BTEX	<0.300	0.300	10/05/2016	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	208	16.0	10/04/2016	ND	416	104	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	10/04/2016	ND	198	98.8	200	2.21	
DRO >C10-C28	844	10.0	10/04/2016	ND	182	90.8	200	2.55	

Surrogate: 1-Chlorooctane 98.5 % 35-147

Surrogate: 1-Chlorooctadecane 135 % 28-171

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 CIMAREX ENERGY CO.-MIDLAND
 CHRISTINE ALDERMAN
 600 N. MARIENFELD ST, SUITE 600
 MIDLAND TX, 79701
 Fax To: UNK-NOWN

Received:	10/03/2016	Sampling Date:	09/30/2016
Reported:	10/07/2016	Sampling Type:	Soil
Project Name:	LAGUNA DEEP #7	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 5 @ 4' (H602208-10)

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	10/05/2016	ND	2.20	110	2.00	0.355		
Toluene*	<0.050	0.050	10/05/2016	ND	2.24	112	2.00	0.218		
Ethylbenzene*	<0.050	0.050	10/05/2016	ND	2.19	109	2.00	0.224		
Total Xylenes*	<0.150	0.150	10/05/2016	ND	6.68	111	6.00	0.295		
Total BTEX	<0.300	0.300	10/05/2016	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.4 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	10/04/2016	ND	416	104	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	10/04/2016	ND	198	98.8	200	2.21		
DRO >C10-C28	267	10.0	10/04/2016	ND	182	90.8	200	2.55		

Surrogate: 1-Chlorooctane 87.0 % 35-147

Surrogate: 1-Chlorooctadecane 101 % 28-171

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Celey D. Keene, Lab Director/Quality Manager

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



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: <i>Cimarex</i>		BILL TO				ANALYSIS REQUEST																					
Project Manager:		P.O. #:																									
Address:		Company: <i>Cimarex</i>																									
City: State: Zip:		Attn: <i>Jodi Henson</i>																									
Phone #: Fax #:		Address:																									
Project #: Project Owner:		City:																									
Project Name: <i>Cimarex</i>		State: Zip:																									
Project Location: <i>Laguna Deep #7</i>		Phone #:																									
Sampler Name: <i>Pika Above</i>		Fax #:																									
FOR LAB USE ONLY				MATRIX		PRESERV		SAMPLING																			
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME													
<i>H602208</i>													<i>2016</i>	<i>Apr</i>	<i>CL</i>	<i>Tph</i>	<i>Bter</i>										
<i>1</i>	<i>Sp 1 @ 2'</i>	<i>5</i>	<i>1</i>										<i>9/30</i>	<i>7:15 AM</i>	<i>X</i>	<i>X</i>	<i>X</i>										
<i>2</i>	<i>Sp 1 @ 3'</i>	<i>5</i>	<i>1</i>										<i>9/30</i>	<i>7:29</i>	<i>X</i>	<i>X</i>	<i>X</i>										
<i>3</i>	<i>Sp 2 @ 5'</i>	<i>5</i>	<i>1</i>										<i>9/30</i>	<i>1:30 PM</i>	<i>X</i>	<i>X</i>	<i>X</i>										
<i>4</i>	<i>Sp 2 @ 6'</i>	<i>5</i>	<i>1</i>										<i>9/30</i>	<i>1:52 PM</i>	<i>X</i>	<i>X</i>	<i>X</i>										
<i>5</i>	<i>Sp 3 @ 5'</i>	<i>5</i>	<i>1</i>										<i>9/30</i>	<i>1:25 PM</i>	<i>X</i>	<i>X</i>	<i>X</i>										
<i>6</i>	<i>Sp 3 @ 6'</i>	<i>5</i>	<i>1</i>										<i>9/30</i>	<i>1:55 PM</i>	<i>X</i>	<i>X</i>	<i>X</i>										
<i>7</i>	<i>Sp 4 @ 2'</i>	<i>5</i>	<i>1</i>										<i>9/30</i>	<i>8:21 AM</i>	<i>X</i>	<i>X</i>	<i>X</i>										
<i>8</i>	<i>Sp 4 @ 3'</i>	<i>5</i>	<i>1</i>										<i>9/30</i>	<i>8:42 AM</i>	<i>X</i>	<i>X</i>	<i>X</i>										
<i>9</i>	<i>Sp 5 @ 3'</i>	<i>5</i>	<i>1</i>										<i>9/30</i>	<i>9:01 AM</i>	<i>X</i>	<i>X</i>	<i>X</i>										
<i>10</i>	<i>Sp 5 @ 4'</i>	<i>5</i>	<i>1</i>										<i>9/30</i>	<i>9:30 AM</i>	<i>X</i>	<i>X</i>	<i>X</i>										

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Relinquished By: <i>Pika Above</i>	Date: <i>10/3/16</i>	Received By: <i>Jodi Henson</i>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
Relinquished By:	Time: <i>3:50</i>	Received By:	Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Delivered By: (Circle One)		Sample Condition	CHECKED BY: (Initials)	
Sampler - UPS - Bus - Other: <i>4.10</i>		Cool <input type="checkbox"/> Yes <input type="checkbox"/> No Intact <input type="checkbox"/> Yes <input type="checkbox"/> No	<i>JH</i>	
			REMARKS: <i>email to: jflores@diversitiedfsc.com</i> <i>@ m above</i> <i>@ m baron</i> <i>@ Patterson</i>	

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

#75

Report generated for:
Michael Burton
Cimarex Laguna Deep #7
206 W Snyder
Hobbs, NM 88240

Outside TX County
Laboratory Number: 468420
Customer Sample ID: SP#1

Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS, GRAZING

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU

College Station, TX 77843-2478
979-845-4816 (phone)
979-845-5958 (FAX)

Visit our website: <http://soiltesting.tamu.edu>

Sample received on: 10/7/2016

Printed on: 10/17/2016

Area Represented: 4356 acres

SWFTL recommends <40 acres/sample

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.	Fertilizer Recommended	
pH	8.0	(5.8)	-	Mod. Alkaline								
Conductivity	144	(-)	umho/cm	None								
Nitrate-N	0	(-)	ppm**									55 lbs N/acre
Phosphorus	5	(50)	ppm									60 lbs P2O5/acre
Potassium	165	(125)	ppm									0 lbs K2O/acre
Calcium	1,080	(180)	ppm									0 lbs Ca/acre
Magnesium	454	(50)	ppm									0 lbs Mg/acre
Sulfur	5	(13)	ppm									15 lbs S/acre
Sodium	19	(-)	ppm									
Iron												
Zinc												
Manganese												
Copper												
Boron												
Limestone Requirement											0.00 tons 100ECCE/acre	

Detailed Salinity Test (Saturated Paste Extract)

pH	6.9	
Conductivity	0.27 mmhos/cm	
Sodium	32 ppm	1.383 meq/L
Potassium	5 ppm	0.136 meq/L
Calcium	11 ppm	0.569 meq/L
Magnesium	6 ppm	0.477 meq/L
SAR	1.91	
SSP	53.92	

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Nitrogen: Apply an additional 70 lbs/A of nitrogen for each subsequent heavy graze down.

Sulfur: Available sulfur may be found deeper in soil profile, thus limiting any response to added sulfur.

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
<http://soiltesting.tamu.edu/webpages/calculator.html>

Report generated for:
Michael Burton
Cimarex Laguna Deep #7
206 W Snyder
Hobbs, NM 88240

Outside TX County
Laboratory Number: 468421
Customer Sample ID: SP#2

Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS, GRAZING

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU

College Station, TX 77843-2478
979-845-4816 (phone)
979-845-5958 (FAX)

Visit our website: <http://soiltesting.tamu.edu>

Sample received on: 10/7/2016

Printed on: 10/17/2016

Area Represented: 4356 acres

SWFTL recommends <40 acres/sample

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.	Fertilizer Recommended
pH	7.9	(5.8)	-	Mod. Alkaline							
Conductivity	3,000	(-)	umho/cm	V. High							
Nitrate-N	1	(-)	ppm**								55 lbs N/acre
Phosphorus	3	(50)	ppm								60 lbs P2O5/acre
Potassium	146	(125)	ppm								0 lbs K2O/acre
Calcium	6,109	(180)	ppm								0 lbs Ca/acre
Magnesium	462	(50)	ppm								0 lbs Mg/acre
Sulfur	29	(13)	ppm								0 lbs S/acre
Sodium	3,005	(-)	ppm								
Iron											
Zinc											
Manganese											
Copper											
Boron											
Limestone Requirement											0.00 tons 100ECCE/acre

Detailed Salinity Test (Saturated Paste Extract)

pH	7.2	
Conductivity	24.50 mmhos/cm	
Sodium	4870 ppm	211.932 meq/L
Potassium	76 ppm	1.946 meq/L
Calcium	540 ppm	26.935 meq/L
Magnesium	64 ppm	5.254 meq/L
SAR	52.83	
SSP	86.13	

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water.

Nitrogen: Apply an additional 70 lbs/A of nitrogen for each subsequent heavy graze down.

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
<http://soiltesting.tamu.edu/webpages/calculator.html>

Report generated for:
Michael Burton
Cimarex Laguna Deep #7
206 W Snyder
Hobbs, NM 88240

Outside TX County
Laboratory Number: 468422
Customer Sample ID: SP#3

Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS, GRAZING

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU

College Station, TX 77843-2478
979-845-4816 (phone)
979-845-5958 (FAX)

Visit our website: <http://soiltesting.tamu.edu>

Sample received on: 10/7/2016
Printed on: 10/17/2016

Area Represented: 4356 acres
SWFTL recommends <40 acres/sample

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.	
pH	8.2	(5.8)									Mod. Alkaline
Conductivity	1,710	(-)	umho/cm								High
Nitrate-N	0	(-)	ppm**								CL*
Phosphorus	2	(50)	ppm								
Potassium	153	(125)	ppm								
Calcium	12,755	(180)	ppm								
Magnesium	518	(50)	ppm								
Sulfur	32	(13)	ppm								
Sodium	1,449	(-)	ppm								
Iron											
Zinc											
Manganese											
Copper											
Boron											
Limestone Requirement											0.00 tons 100ECCE/acre

Detailed Salinity Test (Saturated Paste Extract)

pH	7.6	
Conductivity	12.04 mmhos/cm	
Sodium	2308 ppm	100.437 meq/L
Potassium	90 ppm	2.294 meq/L
Calcium	190 ppm	9.497 meq/L
Magnesium	23 ppm	1.893 meq/L
SAR	42.09	
SSP	88.01	

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water.
Nitrogen: Apply an additional 70 lbs/A of nitrogen for each subsequent heavy graze down.

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
<http://soiltesting.tamu.edu/webpages/calculator.html>

Report generated for:
Michael Burton
Cimarex Laguna Deep #7
206 W Snyder
Hobbs, NM 88240

Outside TX County
Laboratory Number: 468423
Customer Sample ID: SP#4

Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (ESTABLISHMENT)

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU

College Station, TX 77843-2478
979-845-4816 (phone)
979-845-5958 (FAX)

Visit our website: <http://soiltesting.tamu.edu>

Sample received on: 10/7/2016

Printed on: 10/17/2016

Area Represented: 4356 acres

SWFTL recommends <40 acres/sample

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.		
pH	8.2	(5.8)	-	Mod. Alkaline								
Conductivity	265	(-)	umho/cm	None							CL*	Fertilizer Recommended
Nitrate-N	15	(-)	ppm**									5 lbs N/acre
Phosphorus	12	(50)	ppm									80 lbs P2O5/acre
Potassium	98	(125)	ppm									20 lbs K2O/acre
Calcium	1,140	(180)	ppm									0 lbs Ca/acre
Magnesium	122	(50)	ppm									0 lbs Mg/acre
Sulfur	48	(13)	ppm									0 lbs S/acre
Sodium	81	(-)	ppm									
Iron												
Zinc												
Manganese												
Copper												
Boron												
Limestone Requirement												0.00 tons 100ECCE/acre

Detailed Salinity Test (Saturated Paste Extract)

pH	7.5	
Conductivity	1.28 mmhos/cm	
Sodium	145 ppm	6.298 meq/L
Potassium	23 ppm	0.587 meq/L
Calcium	75 ppm	3.720 meq/L
Magnesium	13 ppm	1.061 meq/L
SAR	4.07	
SSP	53.98	

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Nitrogen: Apply an additional 40 lbs/A of nitrogen upon 75% vegetative cover.

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
<http://soiltesting.tamu.edu/webpages/calculator.html>

Report generated for:
Michael Burton
Cimarex Laguna Deep #7
206 W Snyder
Hobbs, NM 88240

Outside TX County
Laboratory Number: 468424
Customer Sample ID: SP#5

Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (ESTABLISHMENT)

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU

College Station, TX 77843-2478
979-845-4816 (phone)
979-845-5958 (FAX)

Visit our website: <http://soiltesting.tamu.edu>

Sample received on: 10/7/2016

Printed on: 10/17/2016

Area Represented: 4356 acres

SWFTL recommends <40 acres/sample

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.		
pH	8.4	(5.8)	-	Mod. Alkaline								
Conductivity	1,020	(-)	umho/cm	Moderate							CL*	Fertilizer Recommended
Nitrate-N	0	(-)	ppm**								35 lbs N/acre	
Phosphorus	12	(50)	ppm								80 lbs P2O5/acre	
Potassium	83	(125)	ppm								30 lbs K2O/acre	
Calcium	1,241	(180)	ppm								0 lbs Ca/acre	
Magnesium	88	(50)	ppm								0 lbs Mg/acre	
Sulfur	6	(13)	ppm								10 lbs S/acre	
Sodium	554	(-)	ppm									
Iron												
Zinc												
Manganese												
Copper												
Boron												
Limestone Requirement											0.00 tons 100ECCE/acre	

Detailed Salinity Test (Saturated Paste Extract)

pH	7.3	
Conductivity	7,32 mmhos/cm	
Sodium	1154 ppm	50.200 meq/L
Potassium	69 ppm	1.754 meq/L
Calcium	232 ppm	11.596 meq/L
Magnesium	36 ppm	2.948 meq/L
SAR	18.62	
SSP	75.49	

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water.

Nitrogen: Apply an additional 40 lbs/A of nitrogen upon 75% vegetative cover.

Sulfur: Available sulfur may be found deeper in soil profile, thus limiting any response to added sulfur.

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
<http://soiltesting.tamu.edu/webpages/calculator.html>

Appendix IV

GROUNDWATER STUDY

Diversified Field Service, Inc.
206 W. Snyder
Hobbs, NM 88240
(575) 964-8394



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced,
 O=orphaned,
 C=the file is closed)
 (quarters are 1=NW 2=NE 3=SW 4=SE)
 (quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
CP 00658			LE	2	2	4	26	19S	33E	628857	3611125*	100		

Average Depth to Water: --
 Minimum Depth: --
 Maximum Depth: --

Record Count: 1

PLSS Search:

Section(s): 25, 26, 35, 36 **Township:** 19S **Range:** 33E

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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 (quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
L 07213	L	LE		4	1	4	31	19S	34E	631700	3609351*	160	110	50

Average Depth to Water: **110 feet**
 Minimum Depth: **110 feet**
 Maximum Depth: **110 feet**

Record Count: 1

PLSS Search:

Section(s): 30, 31 **Township:** 19S **Range:** 34E

*UTM location was derived from PLSS - see Help

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

No records found.

PLSS Search:

Section(s): 6

Township: 20S

Range: 34E



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced,
 O=orphaned,
 C=the file is closed) (quarters are 1=NW 2=NE 3=SW 4=SE)
 (quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
CP 00748			LE	2	01	20S	33E			630197	3608428*			

Average Depth to Water: --
 Minimum Depth: --
 Maximum Depth: --

Record Count: 1

PLSS Search:

Section(s): 1, 2 **Township:** 20S **Range:** 33E

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.