



February 01, 2013

Bob Allen

Safety & Environmental Solutions

703 East Clinton

Hobbs, NM 88240

RE: EOG CAMANCHE STATE #4

Enclosed are the results of analyses for samples received by the laboratory on 01/29/13 14:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at <a href="https://www.tceq.texas.gov/field/ga/lab">www.tceq.texas.gov/field/ga/lab</a> accredited 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.

Celeg 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



## Analytical Results For:

Safety & Environmental Solutions

Bob Allen 703 East Clinton Hobbs NM, 88240

Fax To: (575) 393-4388

Received:

01/29/2013

Sampling Date:

01/29/2013

Reported:

02/01/2013

Sampling Type:

Soil

Chloride, SM4500Cl-B

Project Name:

**EOG CAMANCHE STATE #4** 

Sampling Condition:

Cool & Intact

Project Number:

GAN-12-001

Sample Received By:

Jodi Henson

Project Location:

LEA COUNTY, NM

mg/kg

## Sample ID: TT-1 2' BGS (H300260-01)

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2560	16.0	02/01/2013	ND	432	108	400	0.00	
Sample ID: TT-2 5' BGS (I	H300260-02)								
Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	288	<b>288</b> 16.0		02/01/2013 ND		108	400	0.00	
Sample ID: TT-3 2' BGS (F	H300260-03)								
Chloride, SM4500Cl-B		mg/kg		d By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3400	16.0	02/01/2013	ND	432	108	400	0.00	

Analyzed By: DW

Cardinal Laboratories \*=Accredited Analyte

unt paid by client for analyses. All claims, including those for neglig PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclu-PLEDGE REVIEE: Listancy and Demagnes. Learnings issuincy and clients exclusive remedy for any dam ansing, whether based in contract or tort, shall be limited to the adjusted. All claims, including the 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 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, regardiant is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keine

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

Cardinal Laboratories

\*=Accredited Analyte

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

Celey D. Keene

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

(505) 393-2326 Fax (505) 393-2476

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		703 East Clinton	Hobbs	575-397-0510	AN-12-00,	506 CH	162	Sessi		Sam	121	1	11-4	11-3		EASTE (10/2019 and Deinstgres, Caubard's Bisters and silent's sidelistics centerly for any claim details whether bosed to confered that thinked for be amount by the claim for the completion of the animals within 30 days after completion of the animals. All claims including those for registered and siny other causes whatevers is an animal animals and animals and animals animals. An animal animals and animals are completed on the animal animals. Confidence of the animal animals animals. The entail failure and animals animals.	uished:	THE STATE OF THE S	~	(Circle One)	- Bus - Other;	Cardinal cannot accept verbal changes. Please fax written changes to 575-393-260
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Page 4 of 4

District I 1301 W. Grand Avenue, Artesia, NM 882MAY 1 8 2011 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505 RECEIVED:  HÖBBS OCD  State of New Mexico  Form C-144 CLEZ  State of New Mexico  Form C-144 CLEZ  9 2011 For closed-loop systems that only use above ground steel tanks or haul-off bins and propose to implement waste removal for closure, submit 1220 South St. Francis Dr. RECEIVe the appropriate NMOCD District Office.  Santa Fe, NM 87505
Closed-Loop System Permit or Closure Plan Application  (that only use above ground steel tanks or haul-off bins and propose to implement waste removal for closure)  Type of action: Permit Closure
Instructions: Please submit one application (Form C-144 CLEZ) per individual closed-loop system request. For any application request other than for a closed-loop system that only use above ground steel tanks or haul-off bins and propose to implement waste removal for closure, please submit a Form C-144.
Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.
Operator: EOG Resources, Inc. OGRID #:7377
Address: P.O. Box 2267 Midland, TX 79702
Facility or well name: Comanche State Unit 4
API Number: 30-025-27828 OCD Permit Number: 91-03247
U/L or Qtr/Qtr H Section 2 Township 21S Range 33E County: Lea
Center of Proposed Design: Latitude Longitude NAD: 1927 1983
Surface Owner:  Federal State Private Tribal Trust or Indian Allotment
<ul> <li>         \( \subseteq \text{Closed-loop System} : \)         Subsection H of 19.15.17.11 NMAC         Operation:          \( \subseteq \text{Drilling a new well } \subseteq \)         Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent)          \( \subseteq \text{P&amp;A} \)         \( \subseteq \text{Above Ground Steel Tanks or } \subseteq \text{Haul-off Bins} \)     </li> </ul>
Signs: Subsection C of 19.15.17.11 NMAC  □ 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers  ☑ Signed in compliance with 19.15.3.103 NMAC
Closed-loop Systems Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC  Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.  Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC  Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC  Closure Plan (Please complete Box 5) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC  Previously Approved Design (attach copy of design)  API Number:
Previously Approved Operating and Maintenance Plan API Number:
5. <u>Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only</u> : (19.15.17.13.D NMAC)  Instructions: Please indentify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings. Use attachment if more than two facilities are required.
Disposal Facility Name: Controlled Recovery, Inc.  Disposal Facility Permit Number: NM-01-0006
Disposal Facility Name: Grady Marley, Inc.  Disposal Facility Permit Number: NM-01-0019
Will any of the proposed closed-loop system operations and associated activities occur on or in areas that will not be used for future service and operations?  Yes (If yes, please provide the information below) Revision No
Required for impacted areas which will not be used for future service and operations:  Soil Backfill and Cover Design Specifications based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC  Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC  Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC
Operator Application Certification:  I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.
Name (Print): Stan Wagner Title: Regulatory Analyst

e-mail address: stan\_wagner@eogresources.com
Form C-144 CLEZ

Signature:

Oil Conservation Division

Date: 5/12/2011

Telephone: 432-686-3689

Page 1 of 2

OCD Approval: Permit Application (including closure plan) Closure	Plan (only)  Approval Date:
Title: DISTRICT 1 SUPERVISOR	OCD Permit Number: 91-03247
Closure Report (required within 60 days of closure completion): Subsection Instructions: Operators are required to obtain an approved closure plan prior The closure report is required to be submitted to the division within 60 days of section of the form until an approved closure plan has been obtained and the content of the form until an approved closure plan has been obtained and the content of the form until an approved closure plan has been obtained and the content of the form until an approved closure plan has been obtained and the content of the form until an approved closure plan has been obtained and the content of the form until an approved closure plan has been obtained and the content of the form until an approved closure plan has been obtained and the content of the form until an approved closure plan has been obtained and the content of the form until an approved closure plan has been obtained and the content of the form until an approved closure plan has been obtained and the content of the form until an approved closure plan has been obtained and the content of the form until an approved closure plan has been obtained and the content of the form until an approved closure plan has been obtained and the content of the form until an approved closure plan has been obtained and the content of the form until an approved closure plan has been obtained and the content of the form until an approved closure plan has been obtained and the content of	to implementing any closure activities and submitting the closure report. The completion of the closure activities. Please do not complete this closure activities have been completed.
	Closure Completion Date: 09/22/11
Closure Report Regarding Waste Removal Closure For Closed-loop System Instructions: Please indentify the facility or facilities for where the liquids, dri two facilities were utilized. GANDY MARLEY	
Disposal Facility Name: CRI	
Disposal Facility Name: SUNDANCE	Disposal Facility Permit Number: NM 01-0003
Were the closed-loop system operations and associated activities performed on o  Yes (If yes, please demonstrate compliance to the items below) XX No	
Required for impacted areas which will not be used for future service and operation    Site Reclamation (Photo Documentation)   Soil Backfilling and Cover Installation   Re-vegetation Application Rates and Seeding Technique	tions:
Operator Closure Certification:  I hereby certify that the information and attachments submitted with this closure belief. I also certify that the closure complies with all applicable closure requires	
Name (Print): DAVID A. EYLER	Title: AGENT
Signature: DauSA.	Date: 09/23/11
e-mail address: deyler@milagro-res.com	Telephone: (432)687-3033

EG 10-3-2011

CLOSED LOOP 3/15/10

C-144CHZ 5/12/11 - INCLOD SITE RECLAMOSION PLAN?

WENT TO ZIANOY, CRI, SUMBANCE BUT DID AT?

deyler@milagro-res.com

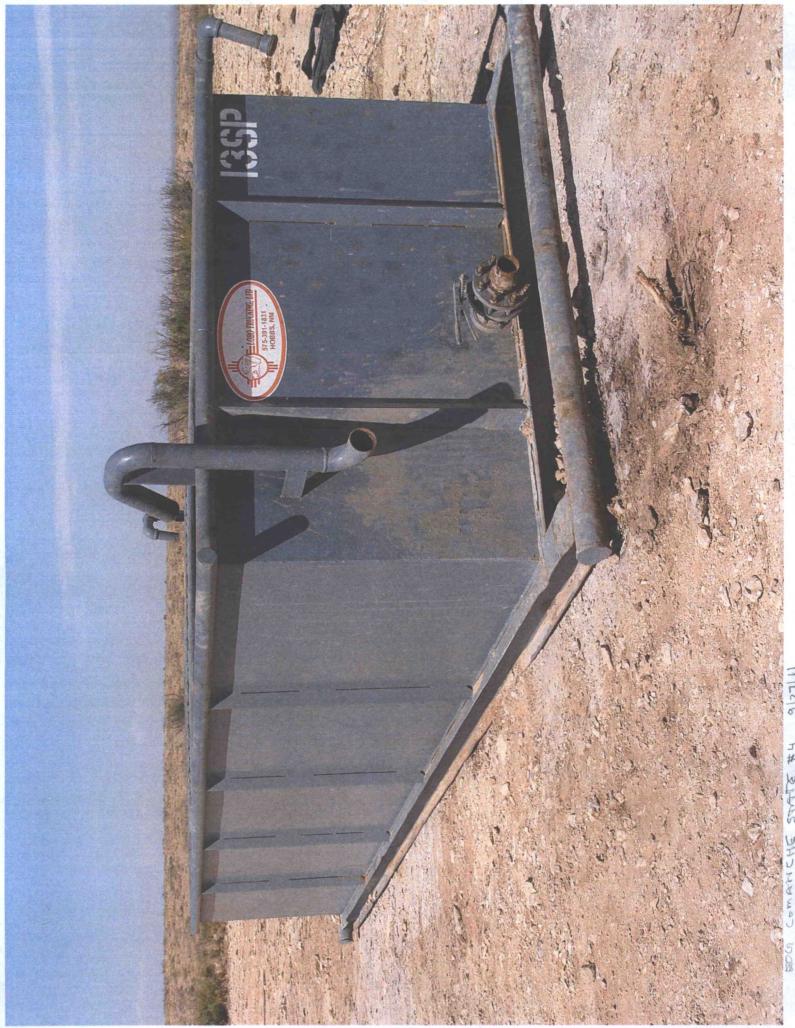
9/29/11 C-144 CLYZ

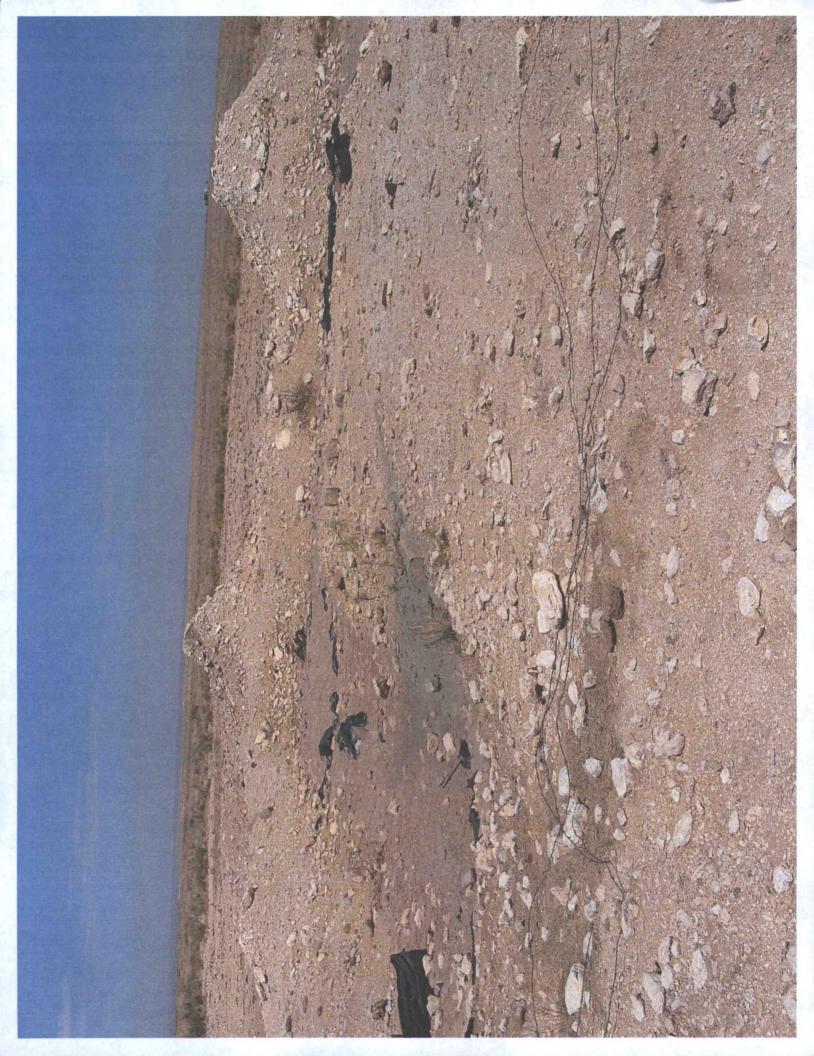
PUULING -16/3/11 - ER SIGNED OFF 9/29/11
5/12/11 CLEZ B. HILL SIGNOFF 5/18/11

3/15/10 CLEZ SIGNED OFF EL - 3/15/10 C-103 TO PLUG R CVD 3/12/10 SIGNED OFF 3/15/10

SOUTH OF 176 - LOOK FOR NEW COG RIGHT - GOES SHOWART THERE - 2.5 MI WEST OF DANNYS TOUSE

APPEARS PIT WAS FUR CLOSED LOOP SYST - WERE TO PLECLARM
SITE- NAVER DID









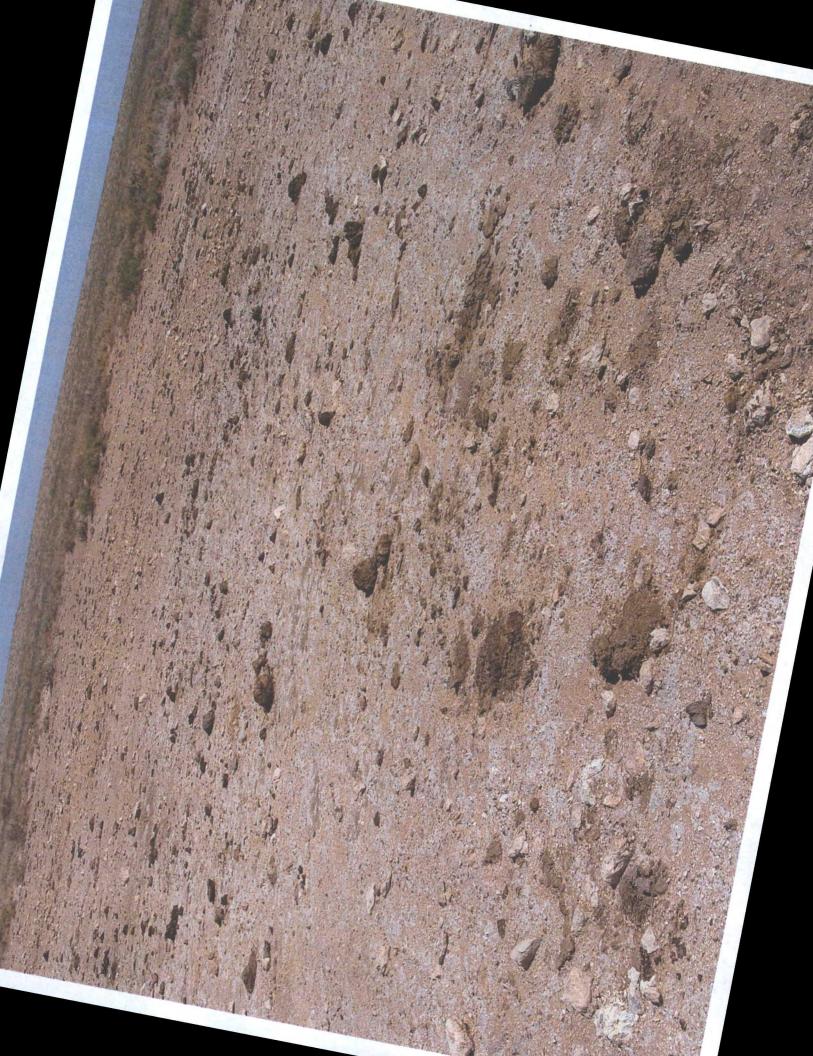








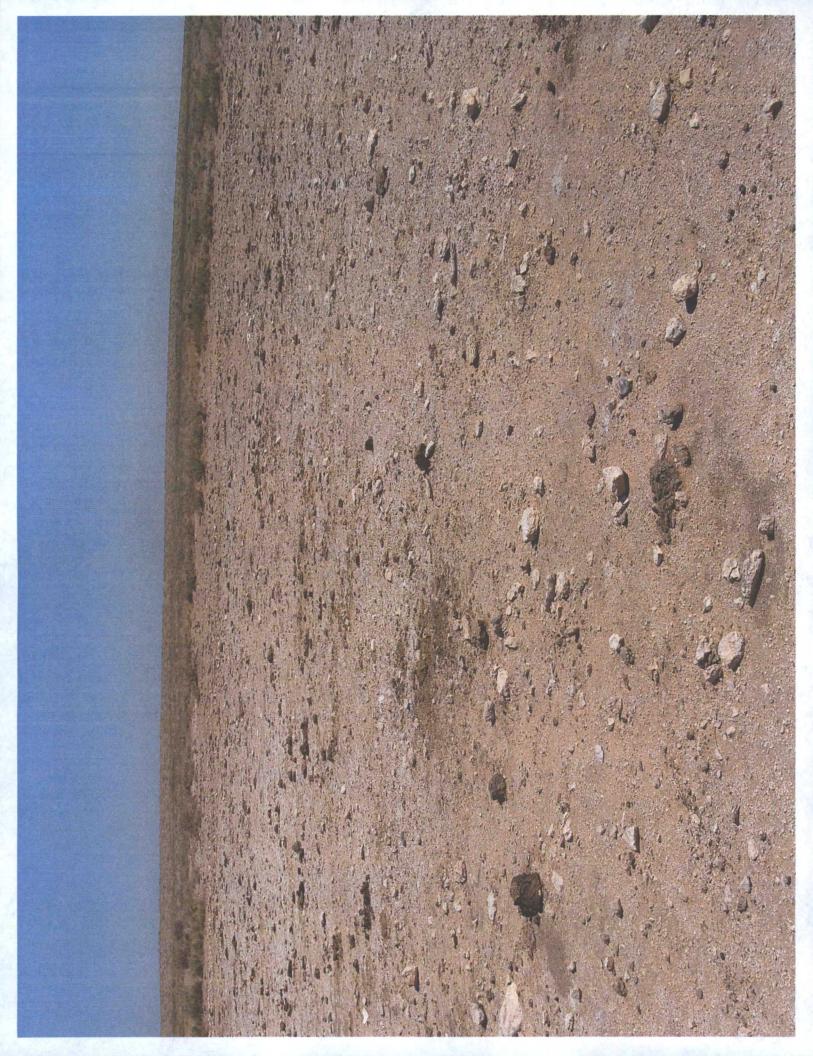










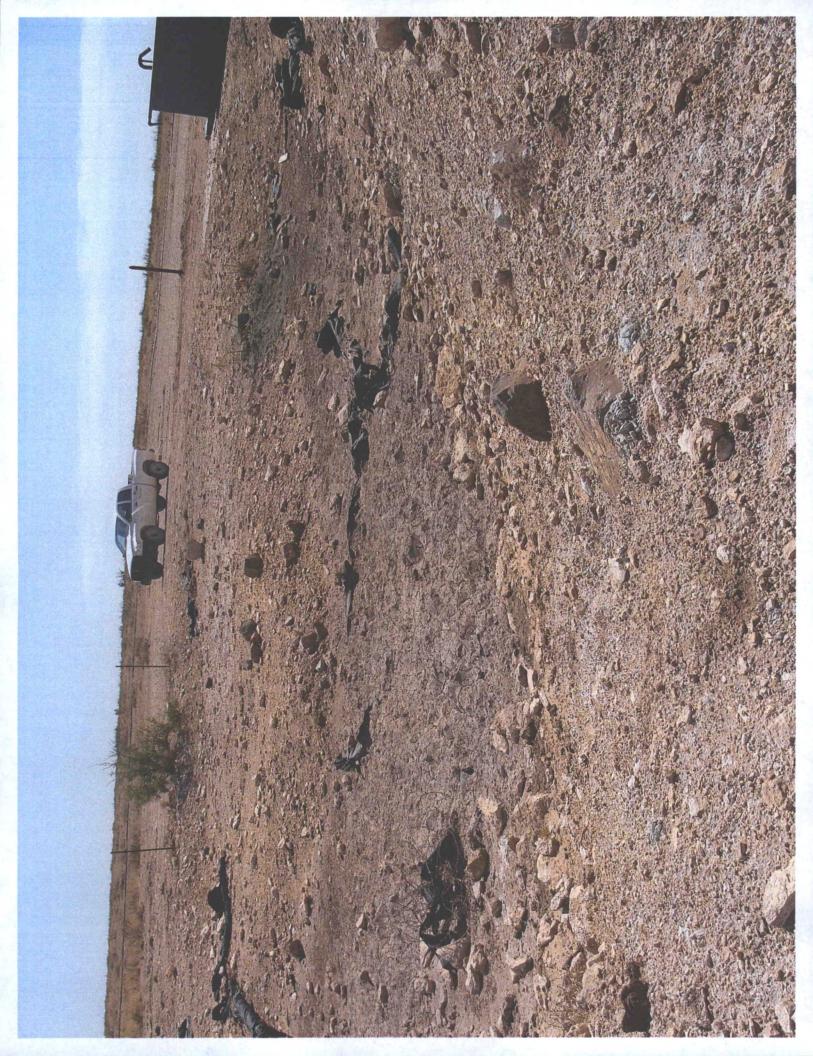


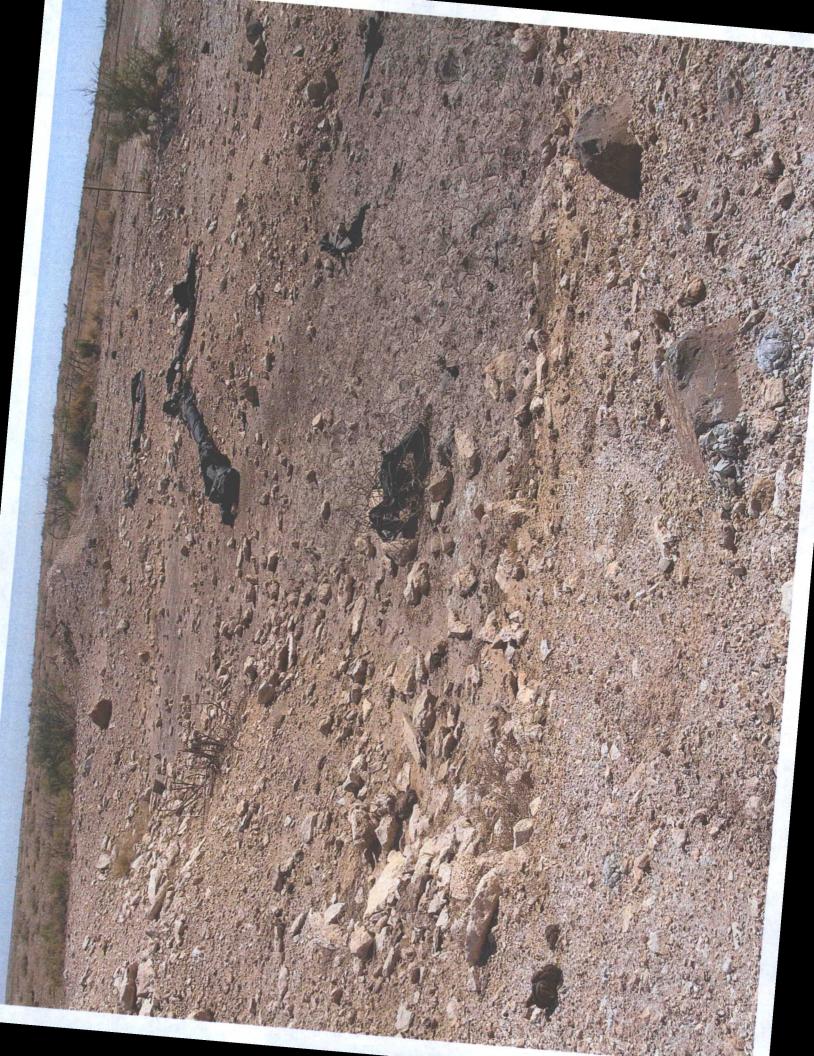








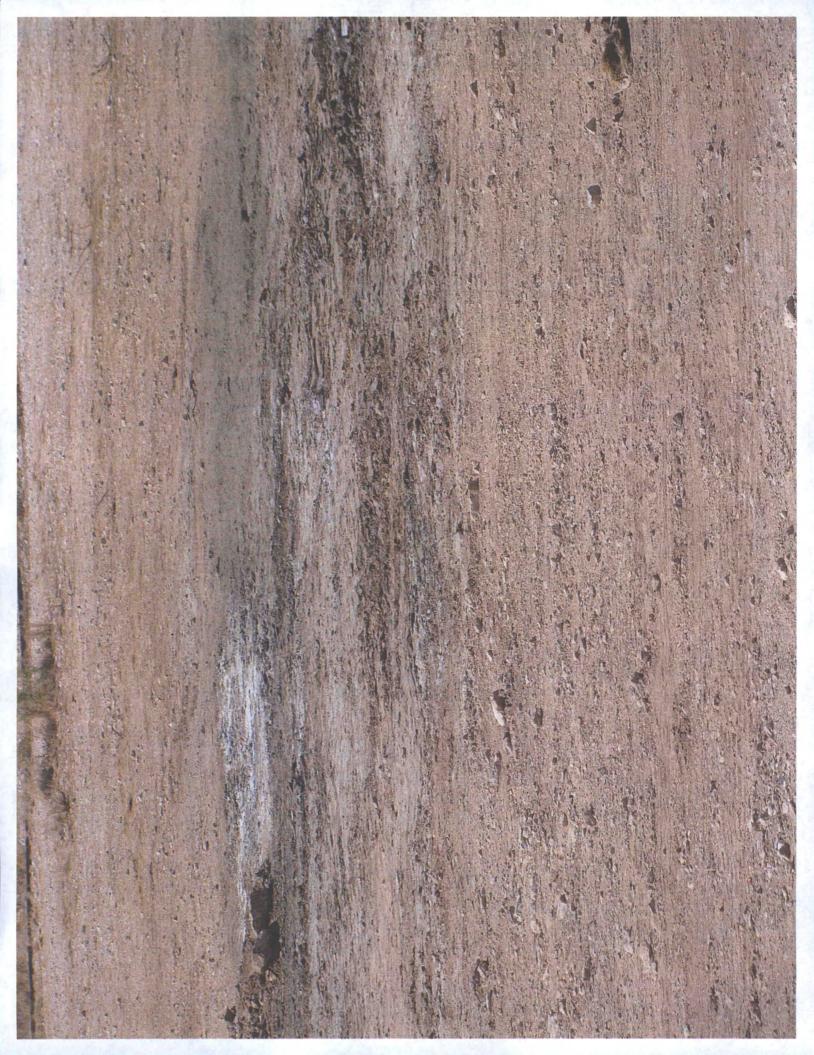






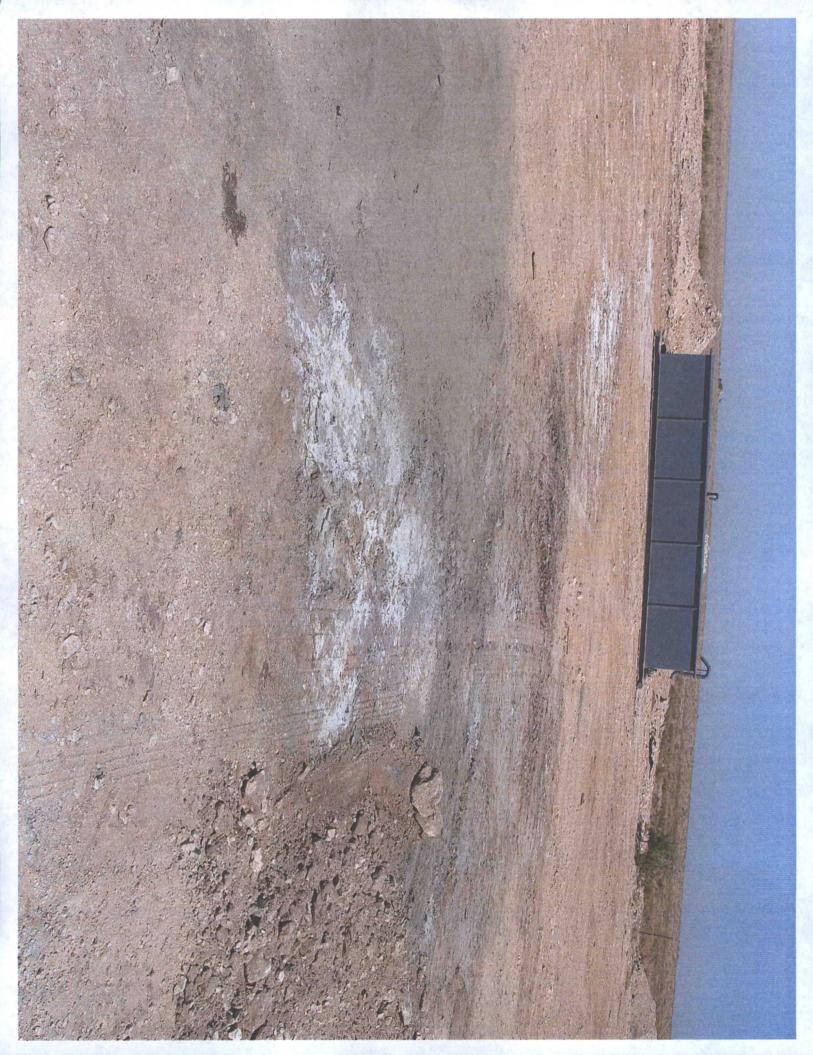














ECC, COMMANCHE SU #4 alz7/11 McDONNOLDLIU#14 Talz7/11 EDG COMANGHE SU #4 4- 9 LJU #14 - KENHY ROCKES, M-DONNOZD -MARINE ALBERT SANCHEZ BIG TIME 2' SCRIAPED @ AREA W OF FURNISH THUK MAKEN - 1' AT REST OF SITE - CALICHE NEAR WELLHEAD TO REPLACE FORMER CALIKHE SAND & SERO REST - WILL RETURN FOR CHECK OUT FINAL COVER PIA MARKER 17 ECC COMPANCINE STATE UNIT # 4 - PA MARKER FRACTANK & open runork pit (workover) PRESENT ECG COMANCITE 719 50 #44 GREAT VOLUME OF BRINE RELEASED 1455-HQ-31025 FROM PIT AND FRAC TANK-HUY STAIN & RESIDNE - TORN HIVER - RESIDUE IN -152--153-

Submit 3 Copies To Appropriate District State of New Mexico	Form C-103					
Office Energy, Minerals and Natural Resources District 1 1625 N. French Dr. Hobbs NM 87240	WELL API NO.					
District II  1301 W Grand Ave., Artesia, NM 88210  1220 South St. Francia Dr.	30-025-27828					
District IV.  1301 W Grand Ave., Artesia, NM 88210  District III  1000 Rio Brazos Rd, Aztec, NM 87470 12 2010  District IV.  1220 South St. Francis Dr.  Santa Fe, NM 87505	5. Indicate Type of Lease					
1000 Rio Brazos Rd, Aztec, NM 874101 1 5 Santa Fe, NM 87505	STATE X FEE					
1220 S St. Francis Dr., Santa FelyiOBBSOCD 87505	6. State Oil & Gas Lease No. LG-1145					
SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)	7. Lease Name or Unit Agreement Name:  (38071)  Comanche State Unit					
1. Type of Well: Oil Well Gas Well Other Dry Hole	8. Well Number					
2. Name of Operator	9. OGRID Number					
EOG Resources, Inc.  3. Address of Operator	7377 10. Pool name or Wildcat					
P.O. Box 2267 Midland, TX 79702	North Legg (Delaware)					
4. Well Location						
Unit Letter H : 1980 feet from the North line and	660 feet from the East line					
Section 9 Township 21S Range 33E	NMPM County Lea					
11. Elevation (Show whether DR, RKB, RT, GR, et 3840.4' GR						
12. Check Appropriate Box to Indicate Nature of Notice,	Report, or Other Data					
NOTICE OF INTENTION TO: SUB	SEQUENT REPORT OF:					
ERFORM REMEDIAL WORK PLUG AND ABANDON REMEDIAL WORK	ALTERING CASING					
EMPORARILY ABANDON . CHANGE PLANS . COMMENCE DRILL	ING OPNS. P AND A					
ULL OR ALTER CASING   MULTIPLE COMPL   CASING/CEMENT J	ОВ					
OWNHOLE COMMINGLE	7600					
	k 7520					
OTHER:						
13. Describe proposed or completed operations. (Clearly state all pertinent details, and give of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach or recompletion.						
1. Set CIBP @ +/- 8620' and cap w/ 35' of cement.	Move plugging rig out					
2. Cut and pull 5-1/2" casing @ +/- 5950'.  3. Spot 40 sx cement plug at 5-1/2" casing stub. Tag.						
5. Spot 40 sx cement plug from 3760' to 3860'. Tag.	AN camera on 6/10/11					
7. Dame 105 as compart plug from 6011 to surface	ICH - MC' RIH OF					
8. Cut off wellhead and weld on dry hole marker.	t 01 1 51 chi					
H6(e	10 get 1NTO 3 123 48					
Spud Date: Rig Release Date:	to get into 51/2 stub -					
hereby certify that the information above is true and complete to the best of my knowledg						
A- 70/						
GIGNATURE All PO CONTROL TITLE Regulato	ry Analyst DATE 3/9/10					
ype or print name Stan Wagner E-mail address:	PHONE <u>432-686-3689</u>					
For State Use Only						
APPROVED BY Jonepho TITLE STAFF	MAZ DATE 3-15-10					
Conditions of Approval (if any):  THE OIL CONSERVATION DIVISION MUST BE NOTIFIED 24 HOURS PRIOR TO THE BEGINNING OF PLUGGING OPERATIONS						



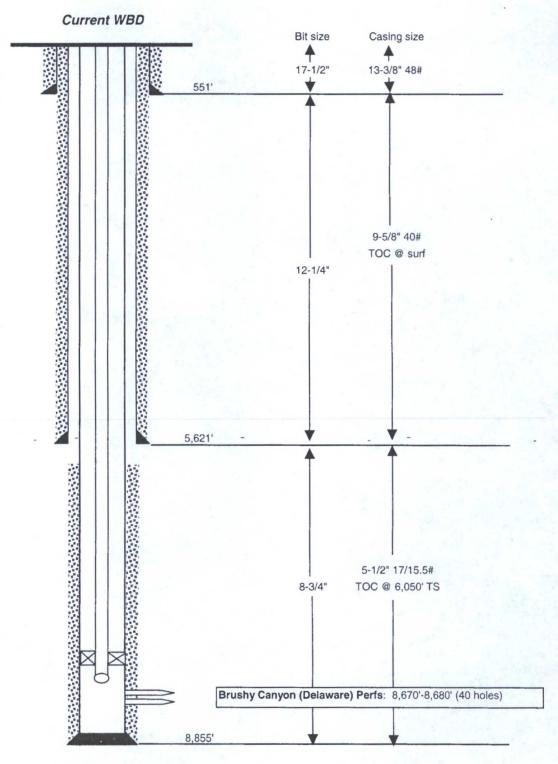
# Comanche State Unit No. 4

1,980' FNL & 660' FEL

→ Sec. 9, T21S, R33E

Lea County, New Mexico

API 30-025-27828

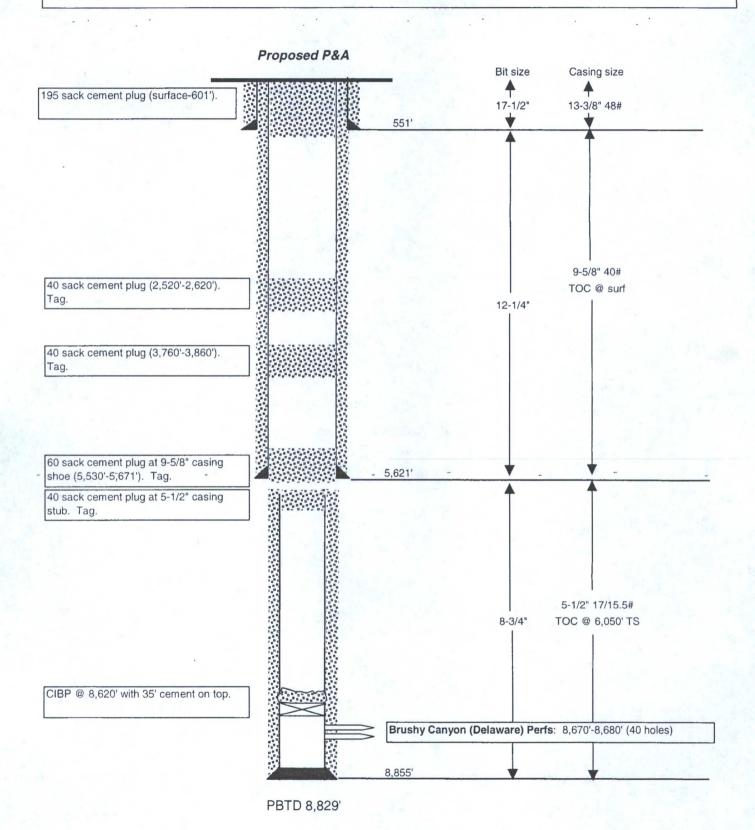


PBTD 8,829'



# Comanche State Unit No. 4

1,980' FNL & 660' FEL Sec. 9, T21S, R33E Lea County, New Mexico API 30-025-27828





March 14, 2013

HOBBS OCD

**Bob Allen** 

Safety & Environmental Solutions

MAR 1 5 2013

703 East Clinton

RECEIVED

Hobbs, NM 88240

**RE: COMMANCHE STATE #4** 

Enclosed are the results of analyses for samples received by the laboratory on 03/04/13 8:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at <a href="https://www.tceq.texas.gov/field/qa/lab">www.tceq.texas.gov/field/qa/lab</a> accredited 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.

Celeg 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

3/15



Safety & Environmental Solutions

**Bob Allen** 703 East Clinton Hobbs NM, 88240

Fax To:

(575) 393-4388

Received:

03/04/2013

Sampling Date:

03/01/2013

Reported:

03/14/2013

Sampling Type:

Soil

Project Name:

**COMMANCHE STATE #4** 

Sampling Condition:

Cool & Intact

Project Number:

GAN-12-001

Sample Received By:

Jodi Henson

Project Location:

Analyte

Analyte

Analyte

Analyte

LEA COUNTY, NM

Sample ID: BH-1 5' BGS (H300545-01)

Chloride, SM4500Cl-B	
----------------------	--

Result

5120

Analyzed By: DW

Analyzed

03/05/2013

Analyzed

Method Blank ND

BS % Recovery

448

True Value OC

400

RPD

Qualifier

Sample ID: BH-1 10' BGS (H300545-02)

Chloride, SM4500Cl-B

mg/kg

Analyzed By: DW

Chloride

Chloride

Result 8560

16.0

Reporting Limit

Reporting Limit

16.0

03/05/2013

448

BS

BS

448

% Recovery 112

112

True Value QC 400

Qualifier

Sample ID: BH-1 15' BGS (H300545-03)

Chloride, SM4500Cl-B

mg/kg

**Analyzed By: DW** 

ND

Method Blank

ND

3.64

**RPD** 

3.64

Chloride

Chloride

Result 13200

Result

2840

Reporting Limit

16.0

Reporting Limit

16.0

Analyzed 03/05/2013

Analyzed

03/05/2013

Method Blank

% Recovery

True Value QC

400

RPD

3.64

Qualifier

Sample ID: BH-1 20' BGS (H300545-04)

Chloride, SM4500CI-B

Analyzed By: DW

Method Blank

ND

BS 448 % Recovery

112

112

True Value OC

400

RPD

3.64

Oualifier

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. ors arising out of or related to the perform

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



Safety & Environmental Solutions

Bob Allen 703 East Clinton Hobbs NM, 88240

Fax To:

(575) 393-4388

Received:

03/04/2013

Sampling Date:

03/01/2013

Reported:

03/14/2013

Sampling Type:

Soil

Project Name:

**COMMANCHE STATE #4** 

Sampling Condition:

Cool & Intact

Project Number:

GAN-12-001

Sample Received By:

Jodi Henson

Project Location:

LEA COUNTY, NM

Sample ID: BH-1 25' BGS (H300545-05)

Chloride,	SM4500CI-B
	Analyte

mg/kg

Analyzed By: DW

BS % Recovery

True Value QC

Qualifier

Chloride

Result 1710

16.0 03/05/2013

Analyzed

Analyzed

Method Blank ND

448

BS

448

400

RPD 3.64

Sample ID: BH-1 30' BGS (H300545-06)

Chloride, SM4500Cl-B

Analyte

Analyte

Analyte

Analyzed By: DW

% Recovery

112

112

True Value QC

Qualifier

Chloride

Chloride

Result 1710

16.0

Reporting Limit

Reporting Limit

16.0

Reporting Limit

03/05/2013

Method Blank ND

400

RPD 3.64

Sample ID: BH-1 35' BGS (H300545-07)

Chloride, SM4500Cl-B

mg/kg

Result

576

**Analyzed By: DW** 

Analyzed

03/05/2013

Method Blank

ND

BS

448

% Recovery

112

True Value QC

**RPD** 

Qualifier

Sample ID: BH-1 40' BGS (H300545-08)

Chloride, SM4500Cl-B

mg/kg

**Analyzed By: DW** 

400

3.64

Qualifier

Chloride

Result 144

Reporting Limit 16.0

Analyzed 03/05/2013 Method Blank ND

BS 448 % Recovery 112

True Value QC 400

RPD 3.64

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Page 3 of 9



Safety & Environmental Solutions **Bob Allen** 703 East Clinton Hobbs NM, 88240

Fax To:

(575) 393-4388

Received:

03/04/2013

Sampling Date:

03/01/2013

Reported:

03/14/2013

Sampling Type:

Soil

Project Name:

**COMMANCHE STATE #4** 

Sampling Condition:

Cool & Intact

Project Number:

GAN-12-001

Sample Received By:

Jodi Henson

Project Location:

LEA COUNTY, NM

Sample ID: BH-1 45' BGS (H300545-09)

BTEX 8021B	mg	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/11/2013	ND	2.09	104	2.00	0.212	
Toluene*	<0.050	0.050	03/11/2013	ND	2.07	103	2.00	1.16	
Ethylbenzene*	<0.050	0.050	03/11/2013	ND	1.99	99.6	2.00	1.26	
Total Xylenes*	<0.150	0.150	03/11/2013	ND	6.02	100	6.00	1.76	
Total BTEX	<0.300	0.300	03/11/2013	ND					
Surrogate: 4-Bromofluorobenzene (PIL	116	% 89.4-12	26						
Chloride, SM4500CI-B	mg,	kg	Analyze	d By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	03/05/2013	ND	448	112	400	3.64	
TPH 418.1	mg/	kg	Analyze	d By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TPH 418.1	<10.0	10.0	03/13/2013	ND	140	107	131		SUB-SS
Sample ID: BH-2 10' BGS (H30	0545-10	))							
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	9040	16.0	03/05/2013	ND	432	108	400	0.00	

### **Cardinal Laboratories**

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Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager



Safety & Environmental Solutions

Bob Allen 703 East Clinton Hobbs NM, 88240

Fax To: (575) 393-4388

Received:

03/04/2013

Sampling Date:

03/01/2013

Reported:

03/14/2013

Sampling Type:

Soil

Project Name:

**COMMANCHE STATE #4** 

Reporting Limit

16.0

16.0

Reporting Limit

Reporting Limit

16.0

Sampling Condition:

Cool & Intact

Project Number:

GAN-12-001

Sample Received By:

Jodi Henson

Project Location:

Analyte

LEA COUNTY, NM

Sample ID: BH-2 15' BGS (H300545-11)

Chloride,	SM4500CI-B

Chloride

Chloride

mg/kg

Result

7760

**Analyzed By: DW** 

Analyzed

03/05/2013

03/05/2013

BS % Recovery

True Value QC 400

RPD

0.00

0.00

Qualifier

Sample ID: BH-2 20' BGS (H300545-12)

**Analyzed By: DW** 

108

Chloride, SM4500Cl-B

Analyte

Reporting Limit Result

Analyzed

Method Blank ND

Method Blank

ND

BS 432

432

% Recovery 108

True Value QC 400

RPD

Qualifier

Sample ID: BH-2 25' BGS (H300545-13)

Chloride, SM4500Cl-B

Analyte

Analyte

mg/kg

**Analyzed By: DW** 

True Value QC

Qualifier

Chloride

Result 288

2120

16.0

Analyzed 03/05/2013 Method Blank ND

BS 432 % Recovery 108

**RPD** 

Chloride

**Analyzed By: DW** 

400

0.00

Sample ID: BH-2 30' BGS (H300545-14)

Chloride, SM4500Cl-B

mg/kg

Result

240

03/05/2013

Analyzed

Method Blank ND

432

% Recovery 108

True Value QC

400

**RPD** 0.00

Qualifier

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Page 5 of 9



Safety & Environmental Solutions Bob Allen 703 East Clinton Hobbs NM, 88240

Fax To:

(575) 393-4388

Received:

03/04/2013

Sampling Date:

03/01/2013

Reported:

Sampling Type:

Soil

03/14/2013

Project Name:

**COMMANCHE STATE #4** 

Sampling Condition:

Cool & Intact

Project Number:

GAN-12-001

Sample Received By:

Jodi Henson

Project Location:

LEA COUNTY, NM

Sample ID: BH-2 35' BGS (H300545-15)

BTEX 8021B	mg	/kg	Analyze	d By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/11/2013	ND	2.09	104	2.00	0.212		
Toluene*	< 0.050	0.050	03/11/2013	ND	2.07	103	2.00	1.16		
Ethylbenzene*	<0.050	0.050	03/11/2013	ND	1.99	99.6	2.00	1.26		
Total Xylenes*	<0.150	0.150	03/11/2013	ND	6.02	100	6.00	1.76		
Total BTEX	<0.300	0.300	03/11/2013	ND						
Surrogate: 4-Bromofluorobenzene (PIL	115	% 89.4-12	26							
Chloride, SM4500CI-B	mg/	/kg	Analyze	d By: DW						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	03/05/2013	ND	432	108	400	0.00		
TPH 418.1	mg/	/kg	Analyze	d By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TPH 418.1	<10.0	10.0	03/13/2013	ND	140	107	131		SUB-SS	

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### **Notes and Definitions**

SUB-SS Analysis subcontracted to SunStar Laboratories, Inc.

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

ARDINAL LABORATORIES	01 East Marland, Hobbs, NM 88240
ARDINAL	101 East
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\*LEASE NOTE: Leviely van Dinzigual, Constant's Building and effects statistism nach from statistism builded in the constant statistism and the constant statistism and the constant statistism of the constant statistism and the constant statistism of the constant statistism and the constant statistism and the constant statistism.

Plone Result: Fax Result: RUMARISS. Sample Condillon Cool hitect 30 Termp. Time: Sampler - UPS - Bus - Other: Delivered By: (Circle One)

† Cardinal cannot accept verbal changes. Please fex written changes to 575-393-24/6.

# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

ARDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476			
	ARDINAL LABORATORIES	101 East Marland, Hobbs, NM 88240	(505) 393-2326 Fax (505) 393-2476

lutions, Inc. Bluc To Be Well REQUEST	P; 6. #:	Company: Same	s: 88240 Atm:	3-4388 Address:	6 Resources city:	State: Zip:	Phone #;		SERV SAMPLING	# CONTAINERS GROUNDWATER GROUNDWATER SOIL SOIL SOIL SOIL SOIL SOIL SOIL SOIL	X   X   Dislot (23c X	1 X 536, 1240 X	10	X 230 030 X		
Conipany Name: Safety & Environmental Solutions, Inc.	Project Manager: Bob Allen	Address: 703 East Clinton	Cily: Hobbs State; NM Zip:	Phone #: 575-397-0510 Fax #: 575-39	Project #: GAN-12-001 Project Owner Che Research	Project Name: Chunal City STATE +	Project Location: Le'2 County	Sampler Name:	POR LAB USE ONLY	Lab I.D. Sample I.D. (G)RAE OF (C)OWP.	10 BH-Z (0' 6	11 Bit 2 - 15 6	12 134-2 20 6	14 BH 2 30 C	6 8,42 35 6	

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Phone Result: O Yes C No Add'l Phone #:
Fak Result: O Yes D No Add'l Fax #:
REMARKS.

CHECKED BY: Sample Condition
Cool Antacl
Pres Pres 30 Temp. Time: Sampler - UPS - Bus - Other: Delivered By: (Circle One) Seliminglished By

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476.

MAY 1 0 2013

# Introduction

## RECEIVED

This report presents Corrective Action Plan (CAP) at the Shoebar 4 Well #2. The site is located in Unit Letter M, Section 4, Township 17S, Range 35E in Lea County, New Mexico. Impacted surface areas are owned by State of New Mexico. Diamondback Disposal Services, Inc. (Diamondback) was contacted April 30, 2013 by Mr. Justin Wright, of Conoco Phillips Inc, to perform remediation activities at the battery site. All work will be performed in general accordance with the New Mexico Oil Conservation Division (NMOCD) rules and regulations. The following sections present: an overview, and recommendations work to be performed on site.

## **Overview**

The spill site is located inside a bermed tank battery facility on a COPC location. Approximately 24 bbls of produced water was lost, with none being recovered due to absorption. Approximately 144 square feet of HDPE lined dike area was impacted. The depth to groundwater in the area is estimated to be 61' below ground surface (BGS) based on the information, reviewed at the New Mexico State Engineer's Office in Roswell, NM. The potential contaminates of concern are mid to high-level concentrations of Chlorides that were lost due to a ruptured 2" drain line valve.

# **Work Plan**

Diamondback Disposal Services proposes to excavate below ground surface to the depth of the HDPE liner throughout burmed area, excavating as close to the tanks as possible without affecting the structural integrity of the tanks. During the excavation process, special attention will be directed toward protecting the HDPE liners integrity. This process will generate approximately 20 cubic yards of impacted material that will be loaded, transported and disposed of at an NMOCD, COPC approved disposal facility. Import approved backfill material, place and compact around tanks, and re-contour any disturbed berms. With the initial installation of the HDPE liner, vadose zones should be protected from any remaining migrating contaminates. Therefore analytical confirmation shall be conducted upon final abatement of facility.

approved

**Environmental Specialist** 

NMOCD - DIST 1 5/14/13