

OCD-ARTESIA

ATS - 10-62 RM
EA - 10-272Form 3160-3
(April 2004)FORM APPROVED
OMB No 1004-0137
Expires March 31, 2007UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

FEB - 2 2010

NMOCD ARTESIA

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No NM-19423	
1b. Type of Well <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name	
2. Name of Operator Cimarex Energy Co. of Colorado		7. If Unit or CA Agreement, Name and No.	
3a. Address 600 N. Marienfeld St., Ste. 600; Midland, TX 79701		8. Lease Name and Well No. White City 14 Federal No. 9	
3b. Phone No (include area code) 432-571-7800		9. API Well No. 30-015- 37595	
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At Surface 2510 FSL & 2530 FWL At proposed prod Zone 330 FSL & 2530 FWL Horizontal Delaware		10. Field and Pool, or Exploratory Sulphate, Delaware, SW	
14. Distance in miles and direction from nearest town or post office*		11. Sec., T. R. M. or Blk and Survey or Area 14-25S-26E	
15. Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig. unit line if any) 110		12. County or Parish Eddy	
16. No of acres in lease 2560		13. State NM	
17. Spacing Unit dedicated to this well E2SW 80 acres			
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. N/A		20. BLM/BIA Bond No. on File NM-2575	
19. Proposed Depth Pilot Hole 3500' Lateral MD 5100' TVD 3052'			
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3310' GR		22. Approximate date work will start* 01.31.10	
		23. Estimated duration 15-20 days	

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No 1, shall be attached to this form

- | | |
|--|---|
| 1. Well plat certified by a registered surveyor | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above) |
| 2. A Drilling Plan | 5. Operator Certification |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office) | 6. Such other site specific information and/or plans as may be required by the authorized officer |

25. Signature <i>Zeno Farris</i>	Name (Printed/Typed) Zeno Farris	Date 12.31.09
Title Manager Operations Administration		
Approved By (Signature) <i>/s/ Don Peterson</i>	Name (Printed/Typed)	Date <i>Jan 20 2010</i>
Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Conditions of approval, if any, are attached

APPROVAL FOR TWO YEARS

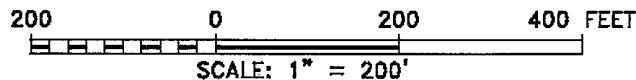
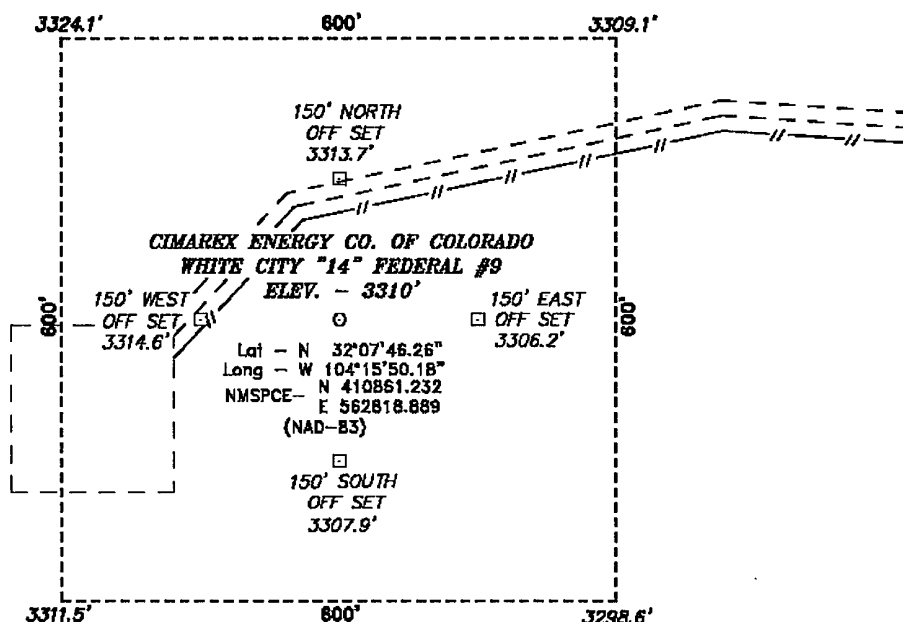
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious, or fraudulent statements or representations as to any matter within its jurisdiction

* (Instructions on page 2)

Carlsbad Controlled Water Basin

SEE ATTACHED FOR
CONDITIONS OF APPROVALApproval Subject to General Requirements
& Special Stipulations Attached

**SECTION 14, TOWNSHIP 25 SOUTH, RANGE 26 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.**



Directions to Location:

FROM THE JUNCTION OF MEANS AND PRICKLY PEAR, GO EASTERLY 4.7 MILES PRICKLY PEAR TO LEASE ROAD, ON LEASE ROAD GO EAST 0.6 MILS TO LEASE ROAD, GO NORTHERLY 1.6 MILES THRU 2 CATTLE GUARDS TO A DRY HOLE, GO NORTH 0.2 MILES TO A "T" AND GO WEST WINDING SOUTHERLY FOR 0.9 MILES TO PROPOSED LOCATION.

CIMAREX ENERGY CO. OF COLORADO

REF: WHITE CITY "14" FEDERAL #9 / WELL PAD TOPO

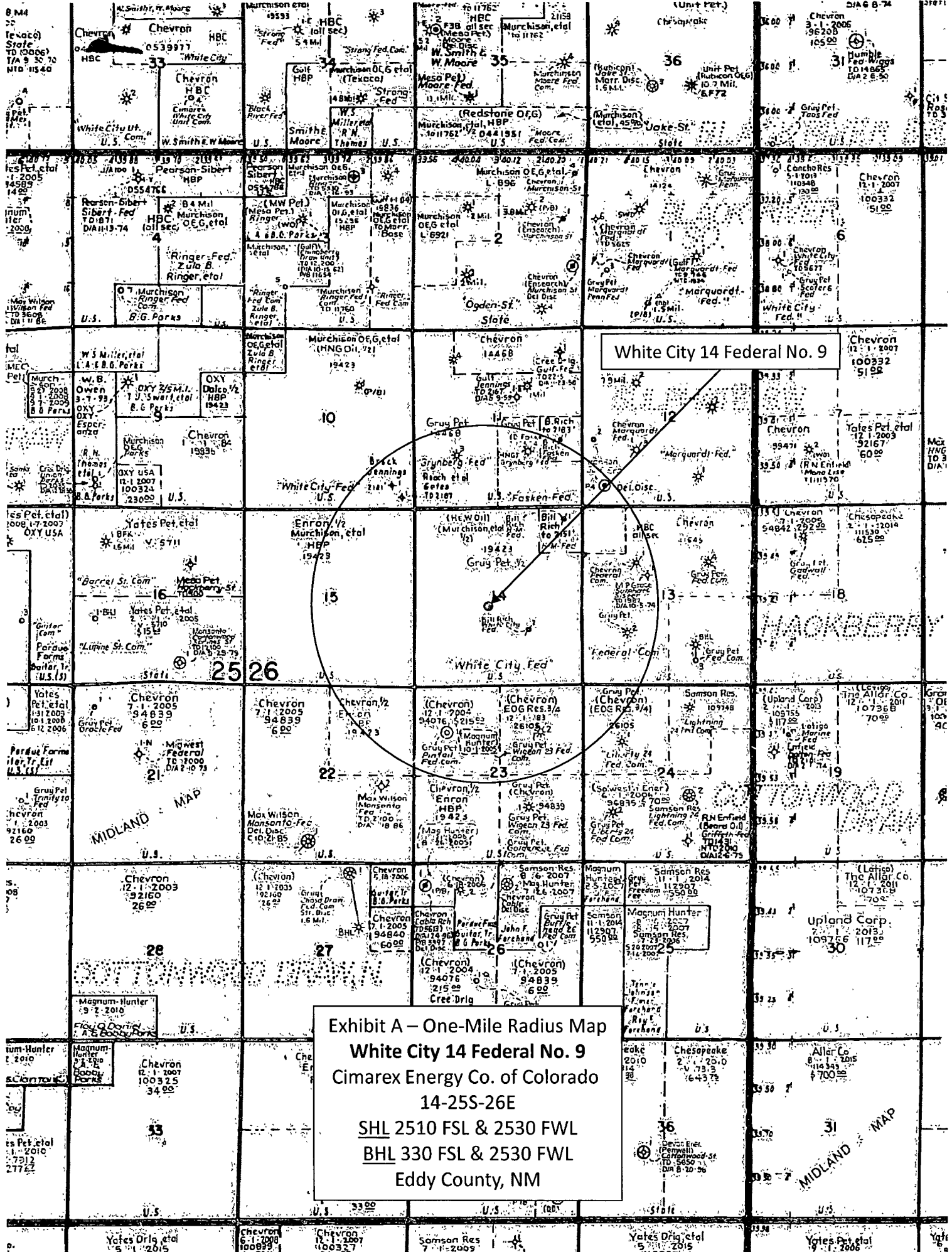
THE WHITE CITY "14" FEDERAL #9 LOCATED 2510'
FROM THE SOUTH LINE AND 2530' FROM THE WEST LINE OF
SECTION 14, TOWNSHIP 25 SOUTH, RANGE 26 EAST,
N.M.P.M., EDDY COUNTY, NEW MEXICO.

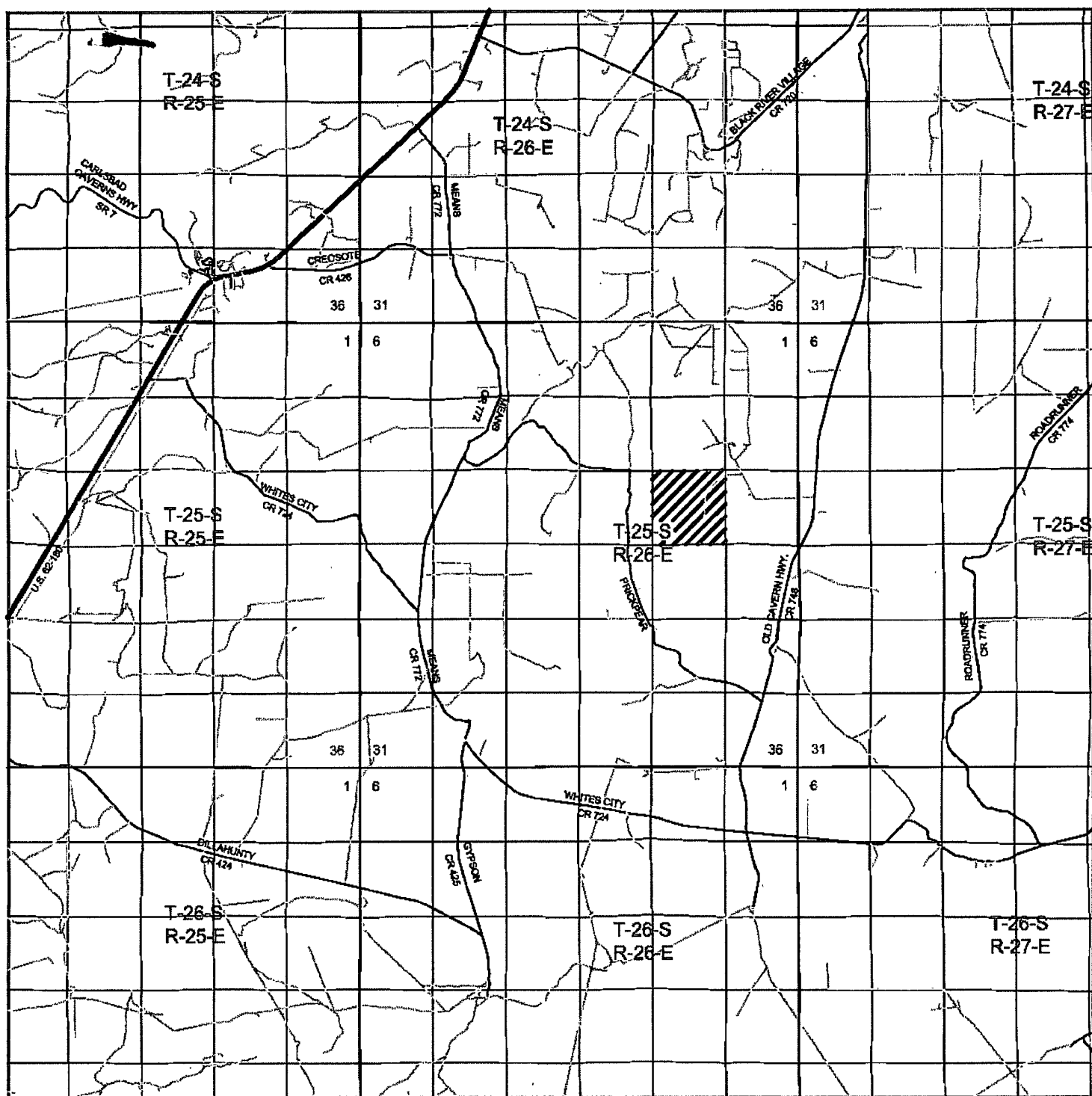
BASIN SURVEYS P.O. BOX 1786-HOBBS, NEW MEXICO

W.O. Number: 21887 Drawn By: J. SMALL

Date: 10-30-2009 Disk: JMS 21887

Survey Date: 10-29-2009 Sheet 1 of 1 Sheets

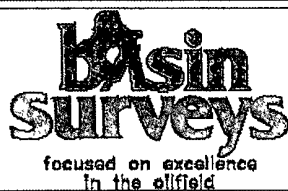




WHITE CITY "14" FEDERAL #9

Located 2510' FSL and 2530' FWL

Section 14, Township 25 South, Range 26 East,
N.M.P.M., Eddy County, New Mexico.



P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 - Office
(575) 392-2206 - Fax
basinsurveys.com

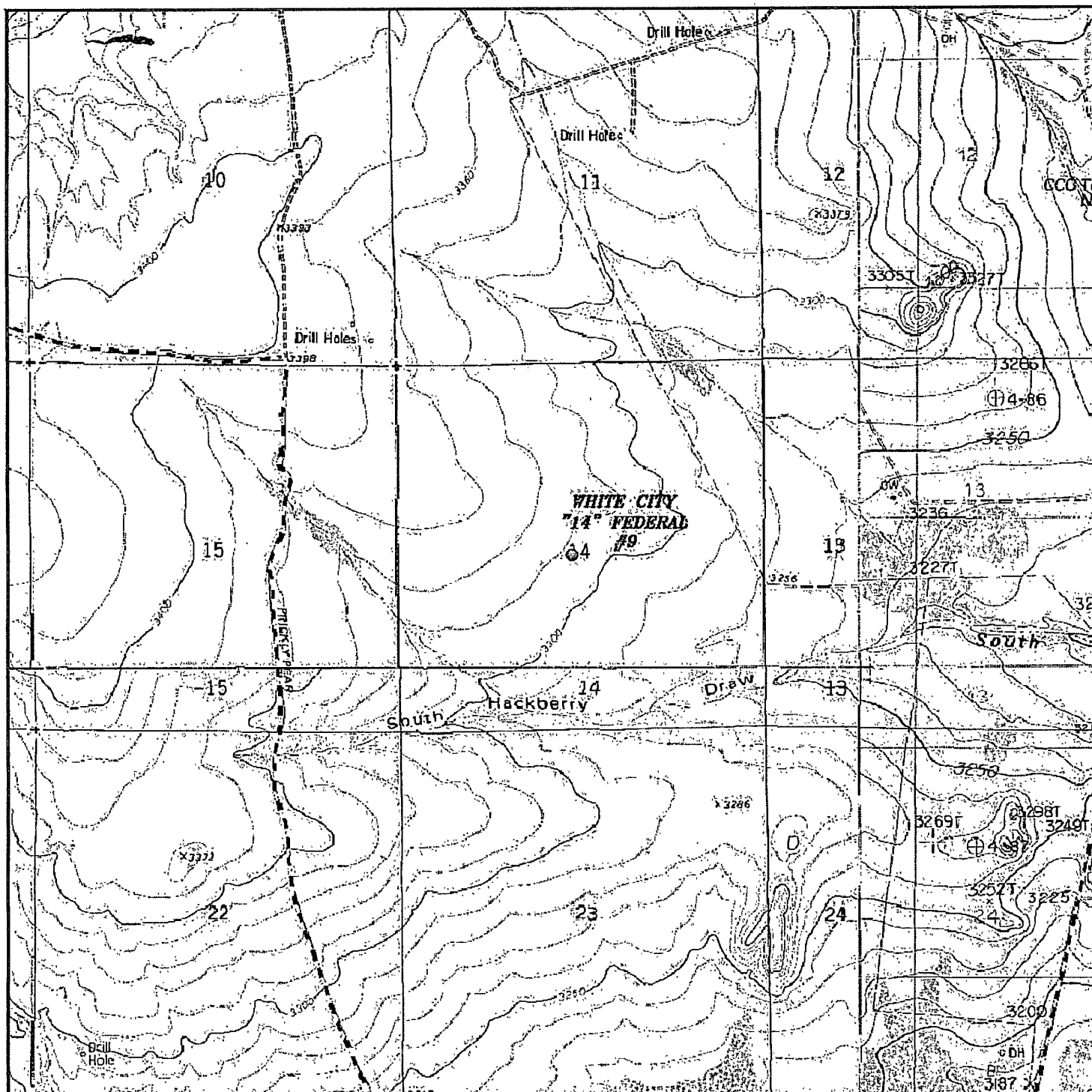
W.O. Number: JMS 21887

Survey Date: 10-29-2009

Scale: 1" = 2 Miles

Date: 10-30-2009

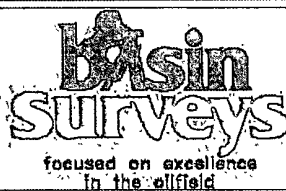
**CIMAREX
ENERGY CO.
OF COLORADO**



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Located 2510' FSL and 2530' FWL

Section 14, Township 25 South, Range 26 East,
N.M.P.M., Eddy County, New Mexico.



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W.O. Number: JMS 21887

Survey Date: 10-29-2009

Scale: 1" = 2000'

Date: 10-30-2009

**CIMAREX
ENERGY CO.
OF COLORADO**

Application to Drill
White City 14 Federal No. 9
Cimarex Energy Co. of Colorado
Unit Letter K, Section 14
T25S-R26E, Eddy County, NM

In response to questions asked under Section II B of Bulletin NTL-6, the following information is provided for your consideration:

1. Location: SHL 2510 FSL & 2530 FWL
 BHL 330 FSL & 2530 FWL

2. Elevation above sea level: 3310' GR

3. Geologic name of surface formation: Quaternary Alluvium Deposits

4. Drilling tools and associated equipment: Conventional rotary drilling rig using fluid as a circulating medium for solids removal.

5. Proposed drilling depth: Pilot Hole 3500' Lateral MD 5100' TVD 3052'

6. Estimated tops of geological markers:

Top Salt	1147'	Cherry Canyon M	2947'
Base Salt	1712'	Cherry Canyon M3	3012'
Bell Canyon	1917'	M3 TVD Target	3052'
Ramsey	1977'	Cherry Canyon L	3167'
Cherry Canyon	2887'	Cherry Canyon K	3227'

7. Possible mineral bearing formations:

Bell Canyon	Oil
Cherry Canyon	Oil

8. Proposed drilling Plan

Drill 12¼" hole to 440' and set 9⅝" casing. In case of excessive lost returns from 0-370,' POOH and ream hole with 17½" bit and set 13¾" casing from 0-370.' Drill 12¼" hole to 440' and set 9⅝" casing from 0-440.'

After drilling and setting surface casing and possible surface casing contingency, drill to vertical TD 3500' and log. Set 7" casing to 2800' and cross over to 2⅝" 2000 psi IJ fiberglass tubing underneath to 3500' and cement in place. Drill out of the bottom of the 7" with a 6⅞" bit and through cement and fiberglass tubing to KOP @ 2861' and kick off to drill the lateral. The fiberglass tubing effectively circulates cement to surface and plugs back the open hole.

Application to Drill
White City 14 Federal No. 9
 Cimarex Energy Co. of Colorado
 Unit Letter K, Section 14
 T25S-R26E, Eddy County, NM

9. Mud Circulating System:

Depth	Mud Wt	Visc	Fluid Loss	Type Mud
0' to 440'	8.4 - 8.6	30-32	NC	FW spud mud. Sweep as needed to clean hole.
440' to 2,800'	10	28-29	NC	Saturated Brine. Sweep as needed to clean hole.
2,861' to 5,100'	9.5 - 9.8	28-29	NC	Cut brine. Sweep as needed to clean hole.

Sufficient mud materials will be kept on location at all times in order to combat lost circulation or unexpected kicks. In order to run DSTs, open hole logs, and casing, the viscosity and water loss may have to be adjusted in order to meet these needs.

10. Casing Program:

	Hole Size	Depth	Casing OD	Weight	Collar	Grade
Surface	12½"	0' to 440'	New 9½"	36#	STC	J-55
Contingency	17½"	0' to 370'	New 13½"	48#	STC	H-40
Production	8½"	0' to 2800'	New 7"	26#	LTC	P-110
Fiberglass	8½"	0' to 3500'	New 2½"	2.18#	0	IJ
Lateral	6½"	2760' to 5100'	New 4½"	11.6#	LTC	P-110

11. Cementing Program:

Surface Casing	Lead: 150 sx (Class C) + 4% D20 + 0.2% D46 + 2% S1, (12.9 ppg, 1.97 cuft/sx) Tail: 150 sx (Class C) + 2% S1 (14.80 ppg, 1.34 cuft/sx) TOC Surface
Surface Contingency	310 sx Clas C + 2% S1 + 0.236# D-130 (14.8, yld 1.34) TOC Surface
Pilot Hole	Lead: 300 sx H + 0.65% D-65 + 0.05% D-13 (wt 17.0, yld 0.99) Tail: 190 sx C + 0.1% D-167 + 0.1% D-13 (wt 14.8, yld 1.33) TOC 2800' D
Lateral	No cement

See
COA

Fresh water zones will be protected by setting 9½" casing at 440' and cementing to surface. Hydrocarbon zones will be protected by setting 7" casing at 2800' and 2½" fiberglass tubing at 3500' and cementing to surface.

<u>Collapse Factor</u>	<u>Burst Factor</u>	<u>Tension Factor</u>
1.125	1.125	1.6

Application to Drill
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Unit Letter K, Section 14
T25S-R26E, Eddy County, NM

12. Pressure control Equipment: See COA

Exhibit "E". An 11" 5000 PSI working pressure B.O.P. consisting of one set of blind rams and one set of pipe rams and a 5000# annular type preventer. A choke manifold and 120 gallon accumulator with floor and remote operating stations and auxiliary power system. Rotating head below 440.' A kelly cock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor.

BOP unit will be hydraulically operated. BOP will be nipped up and operated at least once a day while drilling and the blind rams will be operated when out of hole during trips. No abnormal pressure or temperature is expected while drilling. From the base of the surface pipe through the running of production casing, the well will be equipped with a 5000 psi BOP system.

13. Testing, Logging and Coring Program: See COA

- A. Mud logging program: 2-man unit from 1500' to TD.
- B. Electric logging program: CNL / LDT / CAL / GR, DLL / CAL / GR
- C. No DSTs or cores are planned.

14. Potential Hazards:

No abnormal pressures or temperatures are expected. In accordance with Onshore Order 6, Cimarex has encountered H₂S in a one-time encounter in an Intra-salt Pocket and while drilling and completing wells in the Delaware Mountain Group. In this regard, attached is an H₂S Drilling Operations Plan. The ROEs encountered do not meet the BLM's minimum requirements for the submission of a "Public Protection Plan" for the drilling and completion of this well. Adequate flare lines will be installed off the mud / gas separator where gas may be flared safely. All personnel will be familiar with all aspects of safe operation of equipment being used.

Estimated BHP	2300 psi	Estimated BHT	110°
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15. Road and location construction will begin after BLM approval of APD. Anticipated spud date as soon as approved.

Drilling expected to take 15-20 days

If production casing is run an additional 30 days will be required to complete and construct surface facilities.

16. Other Facets of Operations:

After running casing, cased hole gamma ray neutron collar logs will be run from total depth over possible pay intervals.

Delaware pay will be perforated and stimulated.

The proposed well will be tested and potentialized as an oil well.

Cimarex Energy Co.

Eddy County (NM83E)

Sec 14-T25S-R26E

White City 14 Fed #9

Wellbore #1

Plan: Plan #1

Standard Planning Report

29 December, 2009

Great White Directional Services

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well White City 14 Fed #9
Company:	Cimarex Energy Co.	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Project:	Eddy County (NM83E)	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Sec 14-T25S-R26E	North Reference:	Grid
Well:	White City 14 Fed #9	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Project:	Eddy County (NM83E)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site		Sec 14-T25S-R26E			
Site Position:		Northing:	410,644.04 usft	Latitude:	32° 7' 44.123 N
From:	Map	Easting:	561,282.05 usft	Longitude:	104° 16' 8.052 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.03 °

Well	White City 14 Fed #9					
Well Position	+N/-S	217.2 usft	Northing:	410,861.23 usft	Latitude:	32° 7' 46.263 N
	+E/-W	1,536.8 usft	Easting:	562,818.89 usft	Longitude:	104° 15' 50.177 W
Position Uncertainty	0.0 usft	Wellhead Elevation:		Ground Level:	0.0 usft	

Wellbore		Wellbore #1			
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	2009/12/29	8.06	60.03	48,683

Design: Plan #1				
Audit Notes:				
Version:		Phase: PLAN	Tie On Depth: 0.0	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	179.29

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,861.0	0.00	0.00	2,861.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,161.0	90.00	179.29	3,052.0	-191.0	2.4	30.00	30.00	0.00	179.29	
5,149.4	90.00	179.29	3,052.0	-2,179.3	27.0	0.00	0.00	0.00	0.00	White City #9 PBH1

Great White Directional Services

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Project:	Eddy County (NM83E)	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Sec 14-T25S-R26E	North Reference:	Grid
Well:	White City 14 Fed #9	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
2,861.0	0.00	0.00	2,861.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP 30/100 DLS, 179.29 AZI									
2,870.0	2.70	179.29	2,870.0	-0.2	0.0	0.2	30.00	30.00	0.00
2,880.0	5.70	179.29	2,880.0	-0.9	0.0	0.9	30.00	30.00	0.00
2,890.0	8.70	179.29	2,889.9	-2.2	0.0	2.2	30.00	30.00	0.00
2,900.0	11.70	179.29	2,899.7	-4.0	0.0	4.0	30.00	30.00	0.00
2,910.0	14.70	179.29	2,909.5	-6.3	0.1	6.3	30.00	30.00	0.00
2,920.0	17.70	179.29	2,919.1	-9.0	0.1	9.0	30.00	30.00	0.00
2,930.0	20.70	179.29	2,928.5	-12.3	0.2	12.3	30.00	30.00	0.00
2,940.0	23.70	179.29	2,937.8	-16.1	0.2	16.1	30.00	30.00	0.00
2,950.0	26.70	179.29	2,946.8	-20.4	0.3	20.4	30.00	30.00	0.00
2,960.0	29.70	179.29	2,955.6	-25.1	0.3	25.1	30.00	30.00	0.00
2,970.0	32.70	179.29	2,964.2	-30.3	0.4	30.3	30.00	30.00	0.00
2,980.0	35.70	179.29	2,972.4	-35.9	0.4	35.9	30.00	30.00	0.00
2,990.0	38.70	179.29	2,980.4	-41.9	0.5	41.9	30.00	30.00	0.00
3,000.0	41.70	179.29	2,988.0	-48.4	0.6	48.4	30.00	30.00	0.00
3,010.0	44.70	179.29	2,995.3	-55.2	0.7	55.2	30.00	30.00	0.00
3,020.0	47.70	179.29	3,002.3	-62.4	0.8	62.5	30.00	30.00	0.00
3,030.0	50.70	179.29	3,008.8	-70.0	0.9	70.0	30.00	30.00	0.00
3,040.0	53.70	179.29	3,014.9	-77.9	1.0	77.9	30.00	30.00	0.00
3,050.0	56.70	179.29	3,020.6	-86.1	1.1	86.1	30.00	30.00	0.00
3,060.0	59.70	179.29	3,025.9	-94.6	1.2	94.6	30.00	30.00	0.00
3,070.0	62.70	179.29	3,030.7	-103.4	1.3	103.4	30.00	30.00	0.00
3,080.0	65.70	179.29	3,035.1	-112.4	1.4	112.4	30.00	30.00	0.00
3,090.0	68.70	179.29	3,038.9	-121.6	1.5	121.6	30.00	30.00	0.00
3,100.0	71.70	179.29	3,042.3	-131.0	1.6	131.0	30.00	30.00	0.00
3,110.0	74.70	179.29	3,045.2	-140.6	1.7	140.6	30.00	30.00	0.00
3,120.0	77.70	179.29	3,047.6	-150.3	1.9	150.3	30.00	30.00	0.00
3,130.0	80.70	179.29	3,049.5	-160.1	2.0	160.1	30.00	30.00	0.00
3,140.0	83.70	179.29	3,050.8	-170.0	2.1	170.0	30.00	30.00	0.00
3,150.0	86.70	179.29	3,051.7	-180.0	2.2	180.0	30.00	30.00	0.00
3,161.0	90.00	179.29	3,052.0	-191.0	2.4	191.0	30.00	30.00	0.00
EOC - Hold to TD									
3,200.0	90.00	179.29	3,052.0	-230.0	2.8	230.0	0.00	0.00	0.00
3,300.0	90.00	179.29	3,052.0	-330.0	4.1	330.0	0.00	0.00	0.00
3,400.0	90.00	179.29	3,052.0	-430.0	5.3	430.0	0.00	0.00	0.00
3,500.0	90.00	179.29	3,052.0	-529.9	6.6	530.0	0.00	0.00	0.00
3,600.0	90.00	179.29	3,052.0	-629.9	7.8	630.0	0.00	0.00	0.00
3,700.0	90.00	179.29	3,052.0	-729.9	9.0	730.0	0.00	0.00	0.00
3,800.0	90.00	179.29	3,052.0	-829.9	10.3	830.0	0.00	0.00	0.00
3,900.0	90.00	179.29	3,052.0	-929.9	11.5	930.0	0.00	0.00	0.00
4,000.0	90.00	179.29	3,052.0	-1,029.9	12.8	1,030.0	0.00	0.00	0.00
4,100.0	90.00	179.29	3,052.0	-1,129.9	14.0	1,130.0	0.00	0.00	0.00
4,200.0	90.00	179.29	3,052.0	-1,229.9	15.2	1,230.0	0.00	0.00	0.00
4,300.0	90.00	179.29	3,052.0	-1,329.9	16.5	1,330.0	0.00	0.00	0.00
4,400.0	90.00	179.29	3,052.0	-1,429.9	17.7	1,430.0	0.00	0.00	0.00
4,500.0	90.00	179.29	3,052.0	-1,529.9	19.0	1,530.0	0.00	0.00	0.00
4,600.0	90.00	179.29	3,052.0	-1,629.9	20.2	1,630.0	0.00	0.00	0.00
4,700.0	90.00	179.29	3,052.0	-1,729.9	21.4	1,730.0	0.00	0.00	0.00
4,800.0	90.00	179.29	3,052.0	-1,829.8	22.7	1,830.0	0.00	0.00	0.00
4,900.0	90.00	179.29	3,052.0	-1,929.8	23.9	1,930.0	0.00	0.00	0.00
5,000.0	90.00	179.29	3,052.0	-2,029.8	25.2	2,030.0	0.00	0.00	0.00
5,100.0	90.00	179.29	3,052.0	-2,129.8	26.4	2,130.0	0.00	0.00	0.00

Great White Directional Services

Planning Report

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Well:	White City 14 Fed #9	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Design Targets									
Target Name	hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	
Shape		(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)	Latitude Longitude
White City #9 PBHL		0.00	0.00	3,052.0	-2,179.3	26.9	408,681.97	562,845.81	32° 7' 24.696 N 104° 15' 49.881 W
- plan misses target center by 49.4usft at 5100.0usft MD (3052.0 TVD, -2129.8 N, 26.4 E)									
- Point									

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,861.0	2,861.0	0.0	0.0	KOP 30/100 DLS, 179.29 AZI
3,161.0	3,052.0	-191.0	2.4	EOC - Hold to TD
5,149.4	3,052.0	-2,179.3	27.0	TD at 5149.4

Cimarex Energy Co.

Project Eddy County (NM83E)
Site Sec 14-T25S-R26E
Well White City 14 Fed #9
Wellbore Wellbore #1
Design Plan #1

WELL DETAILS: White City 14 Fed #9



+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	410861.23	562818.89	32° 7' 46.263 N	104° 15' 50.177 W
SHL: 2310' FSL / 990' FWL					
BHL: 330' FSL / 990' FWL					



Azimuths to Grid North
True North -0.04°
Magnetic North 8.02°

Magnetic Field
Strength 48683.3nT
Dip Angle 60.03°
Date 2009/12/29
Model IGRF200510

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
White City #9 PBHL	3052.0	-2179.3	26.9	408681.97	562845.81

PLAN DETAILS

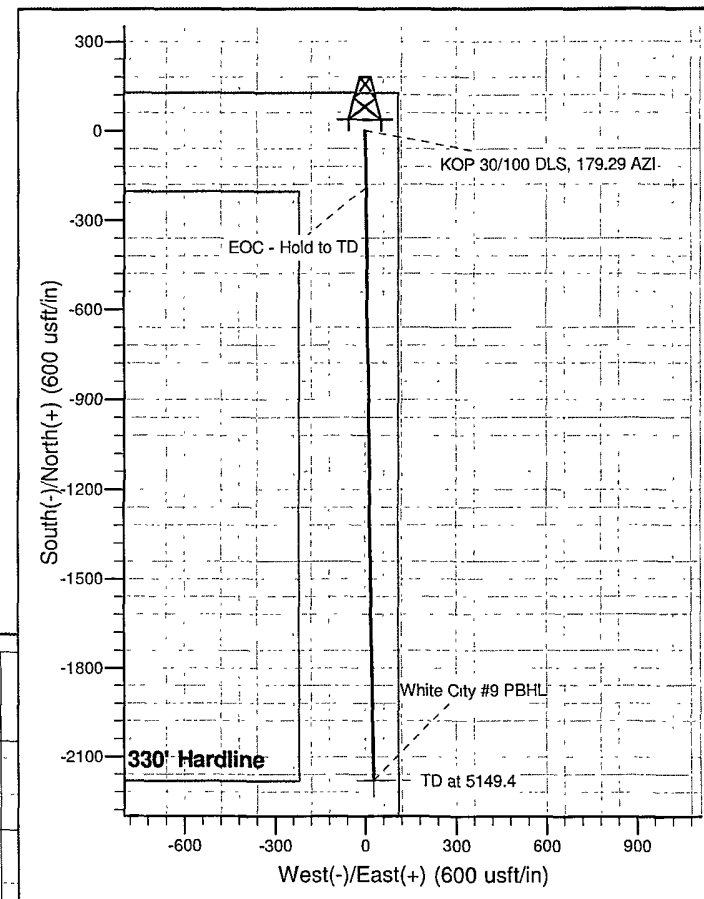
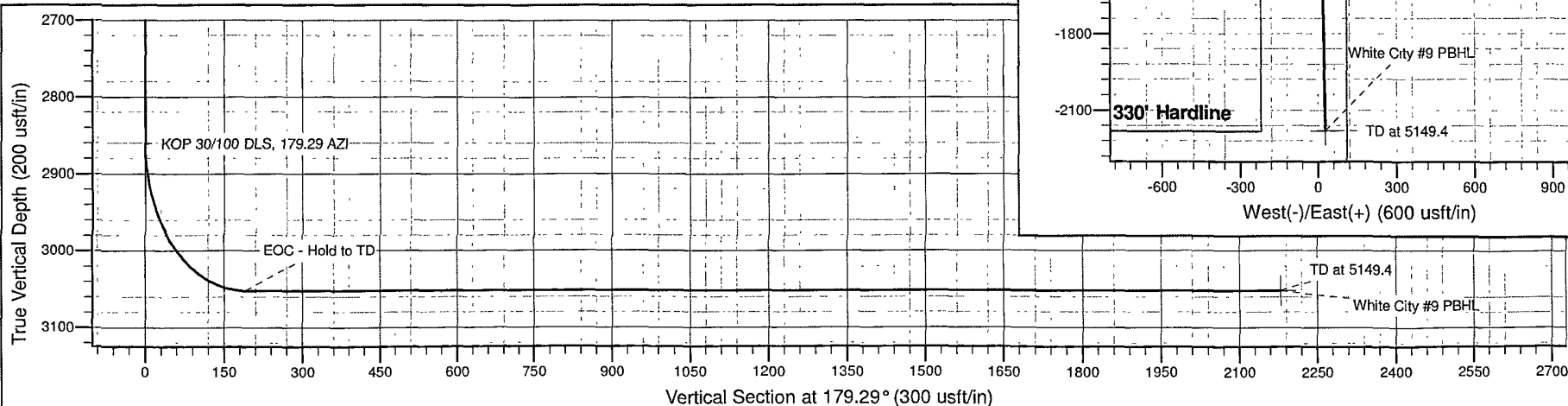
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2861.0	0.00	0.00	2861.0	0.0	0.0	0.00	0.00	0.0	
3161.0	90.00	179.29	3052.0	-191.0	2.4	30.00	179.29	191.0	
5149.4	90.00	179.29	3052.0	-2179.3	27.0	0.00	0.00	2179.4	White City #9 PBHL

ANNOTATIONS

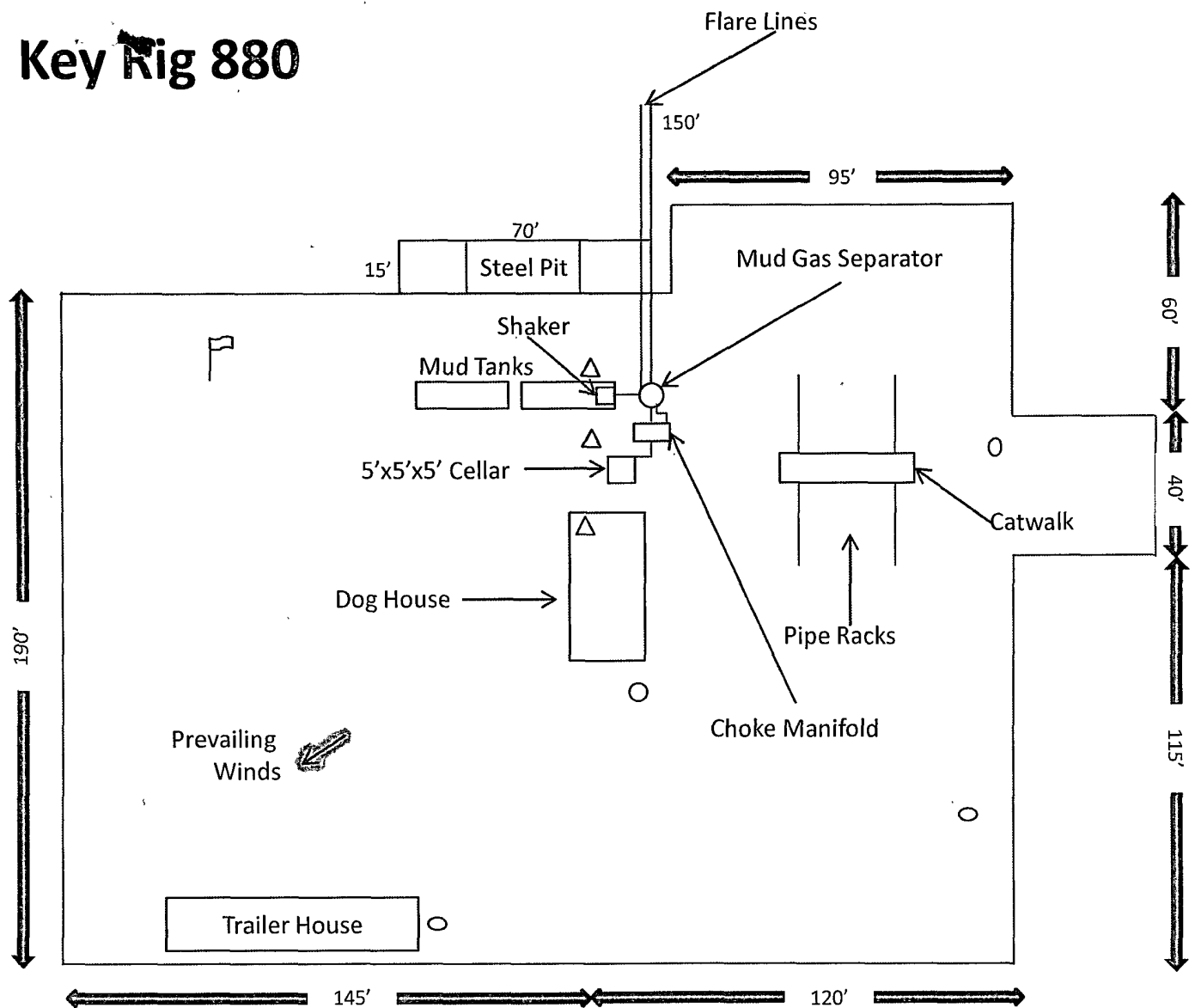
TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Departure	Annotation
2861.0	2861.0	0.00	0.00	0.0	0.0	0.0	0.0	KOP 30/100 DLS, 179.29 AZI
3052.0	3161.0	90.00	179.29	-191.0	2.4	191.0	191.0	EOC - Hold to TD
3052.0	5149.4	90.00	179.29	-2179.3	27.0	2179.4	2179.4	TD at 5149.4

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
2887.0	2887.1	Cherry Canyon	0.00	
2947.0	2950.2	Cherry Canyon M	0.00	
3012.0	3035.1	Cherry Canyon M3	0.00	
3052.0	3161.0	M3 TVD Target	0.00	



Key Rig 880







-  Wind Direction Indicators
(wind sock or streamers)
-  H2S Monitors
(alarms at bell nipple and shale shaker)
-  Briefing Areas
-  Remote BOP Closing Unit

Exhibit D – Rig Diagram
White City 14 Federal No. 9
 Cimarex Energy Co. of Colorado
 14-25S-26E
SHL 2510 FSL & 2530 FWL
BHL 330 FSL & 2530 FWL
 Eddy County, NM

SR & A

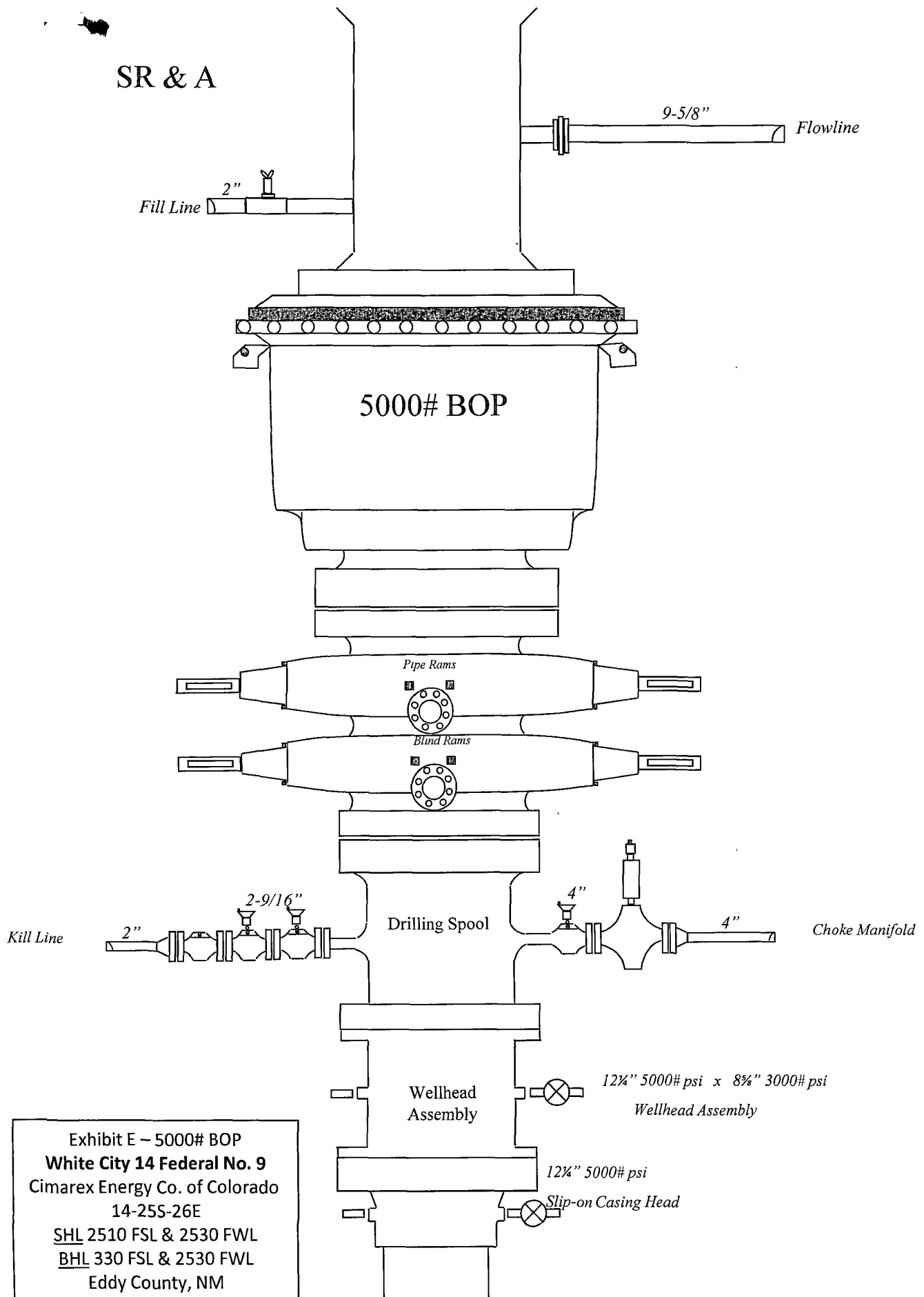
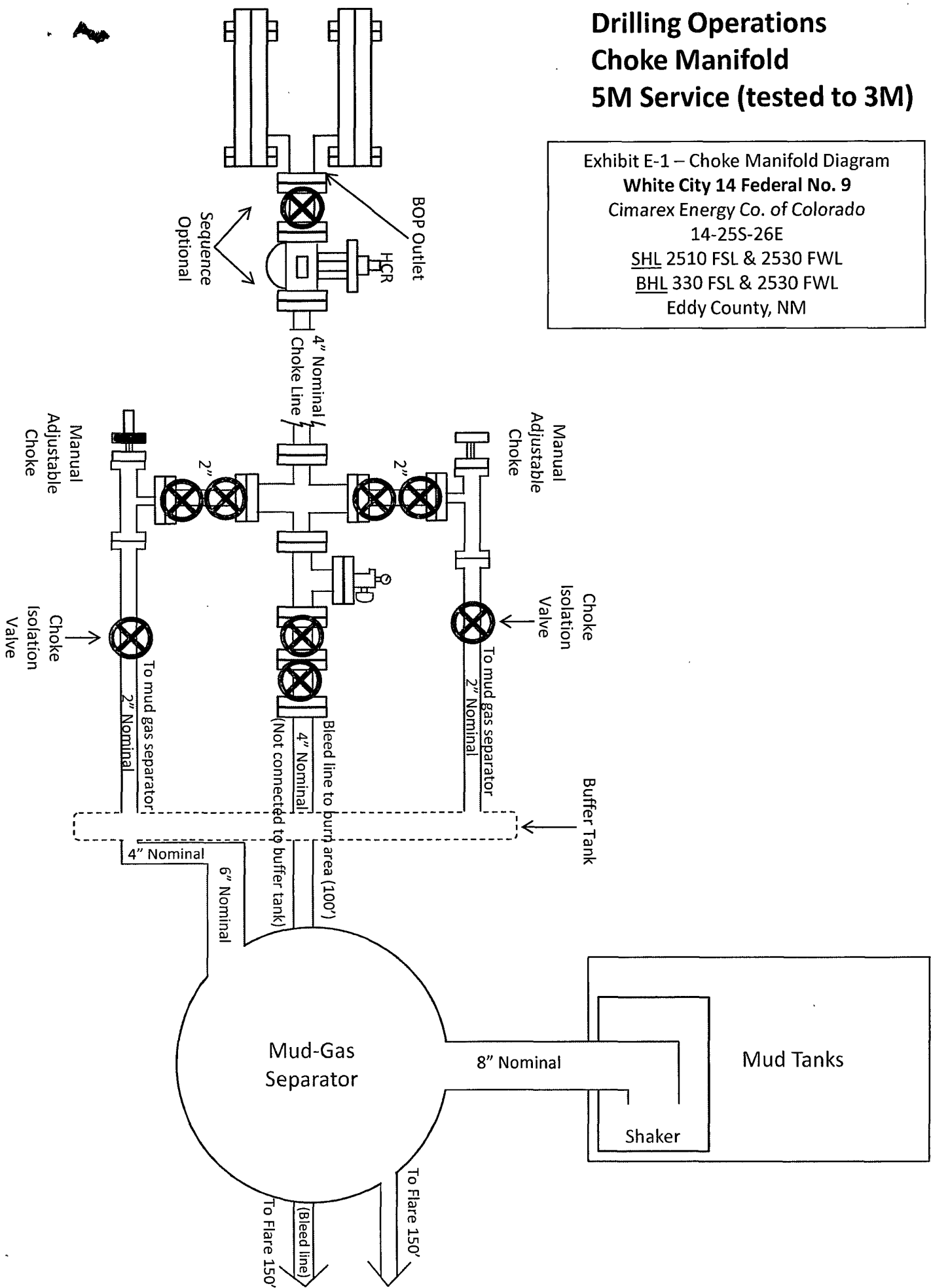


Exhibit E – 5000# BOP
White City 14 Federal No. 9
Cimarex Energy Co. of Colorado
14-25S-26E
SHL 2510 FSL & 2530 FWL
BHL 330 FSL & 2530 FWL
Eddy County, NM

Drilling Operations
Choke Manifold
5M Service (tested to 3M)

Exhibit E-1 – Choke Manifold Diagram
White City 14 Federal No. 9
Cimarex Energy Co. of Colorado
14-25S-26E
SHL 2510 FSL & 2530 FWL
BHL 330 FSL & 2530 FWL
Eddy County, NM



Hydrogen Sulfide Drilling Operations Plan

White City 14 Federal No. 9

Cimarex Energy Co. of Colorado

Unit Letter K, Section 14

T25S-R26E, Eddy County, NM

H₂S equipment will be rigged up at Surface. The plan should be implemented before drilling out from the surface.

1. Due to a one-time encounter on a previous well, an Intra-salt Pocket was charged with H₂S and a burnable amount of hydrocarbons.

First Potential Problem Zone:

Initial suspected problem zone	Salt Zone @ 1,333'
Potential Open Flow Capacity	1 mcf
Expected H ₂ S Concentration	11,000 ppm
100' ROE	6'
500' ROE	3'

Cimarex will have 24-hour H₂S Safety Supervisors on location while drilling the first 2,000' on this well.

2. Second Potential Problem Zone:

Initial suspected problem zone	Delaware Mountain Group @ 1,800'
Potential Open Flow Capacity	100 mcf
Expected H ₂ S Concentration	1,000 ppm
100' ROE	24'
500' ROE	11'

3. All Company and Contract personnel admitted on location must be trained by a qualified H₂S safety instructor to the following:

- A. Characteristics of H₂S
- B. Physical effects and hazards
- C. Proper use of safety equipment and life support systems.
- D. Principle and operation of H₂S detectors, warning system and briefing areas.
- E. Evacuation procedure, routes and first aid.
- F. Proper use of 30 minute pressure demand air pack.

4. H₂S Detection and Alarm Systems:

- A. H₂S detectors and audio alarm system to be located at bell nipple, end of flow line (mud pit) and on derrick floor or doghouse.

5. Windsock and/or wind streamers:

- A. Windsock at mudpit area should be high enough to be visible.
- B. Windsock at briefing area should be high enough to be visible.

6. Condition Flags and Signs:

- A. Warning sign on access road to location.
- B. Flags to be displayed on sign at entrance to location. Green flag indicates normal safe condition. Yellow flag indicates potential pressure and danger. Red flag indicates danger (H₂S present in dangerous concentration). Only emergency personnel admitted to location.

Hydrogen Sulfide Drilling Operations Plan

White City 14 Federal No. 9

Cimarex Energy Co. of Colorado

Unit Letter K, Section 14

T25S-R26E, Eddy County, NM

7. Well control equipment:

A. See exhibit "E"

8. Communication:

A. While working under masks chalkboards will be used for communication.

B. Hand signals will be used where chalk board is inappropriate.

C. Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at most drilling foreman's trailer or living quarters.

9. Drillstem Testing:

No DSTs are planned at this time.

10. Drilling contractor supervisor will be required to be familiar with the effects H₂S has on tubular goods and other mechanical equipment.

11. If H₂S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H₂S scavengers if necessary.

H₂S Contingency Plan
White City 14 Federal No. 9
Cimarex Energy Co. of Colorado
Unit Letter K, Section 14
T25S-R26E, Eddy County, NM

Emergency Procedures

In the event of a release of gas containing H₂S, the first responder(s) must:

- ★ Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- ★ Evacuate any public places encompassed by the 100 ppm ROE.
- ★ Be equipped with H₂S monitors and air packs in order to control the release.
- ★ Use the "buddy system" to ensure no injuries occur during the response.
- ★ Take precautions to avoid personal injury during this operation.
- ★ Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- ★ Have received training in the:
 - ◆ Detection of H₂S, and
 - ◆ Measures for protection against the gas,
 - ◆ Equipment used for protection and emergency response.

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO₂). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas.

Characteristics of H₂S and SO₂

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H ₂ S	1.189 Air=1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO ₂	2.21 Air=1	2 ppm	N/A	1000 ppm

Contacting Authorities

Cimarex Energy Co. of Colorado's personnel must liaise with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. Cimarex Energy Co. of Colorado's response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER).

H₂S Contingency Plan Emergency Contacts

White City 14 Federal No. 9

Cimarex Energy Co. of Colorado

Unit Letter K, Section 14

T25S-R26E, Eddy County, NM

Company Office

Cimarex Energy Co. of Colorado	800-969-4789
Co. Office and After-Hours Menu	

Key Personnel

Name	Title	Office	Mobile
Doug Park	Drilling Manager	432-620-1934	972-333-1407
Dee Smith	Drilling Super	432-620-1933	972-882-1010
Jim Evans	Drilling Super	432-620-1929	972-465-0564
Roy Shirley	Field Super		432-634-2136

Artesia

Ambulance	911
State Police	575-746-2703
City Police	575-746-2703
Sheriff's Office	575-746-9888
Fire Department	575-746-2701
Local Emergency Planning Committee	575-746-2122
New Mexico Oil Conservation Division	575-748-1283

Carlsbad

Ambulance	911
State Police	575-885-3137
City Police	575-885-2111
Sheriff's Office	575-887-7551
Fire Department	575-887-3798
Local Emergency Planning Committee	575-887-6544
US Bureau of Land Management	575-887-6544

Santa Fe

New Mexico Emergency Response Commission (Santa Fe)	505-476-9600
New Mexico Emergency Response Commission (Santa Fe) 24 Hrs	505-827-9126
New Mexico State Emergency Operations Center	505-476-9635

National

National Emergency Response Center (Washington, D.C.)	800-424-8802
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Medical

Flight for Life - 4000 24th St.; Lubbock, TX	806-743-9911
Aerocare - R3, Box 49F; Lubbock, TX	806-747-8923
Med Flight Air Amb - 2301 Yale Blvd S.E., #D3; Albuquerque, NM	505-842-4433
SB Air Med Service - 2505 Clark Carr Loop S.E.; Albuquerque, NM	505-842-4949

Other

Boots & Coots IWC	800-256-9688	or	281-931-8884
Cudd Pressure Control	432-699-0139	or	432-563-3356
Halliburton	575-746-2757		
B.J. Services	575-746-3569		

Surface Use Plan
White City 14 Federal No. 9
Cimarex Energy Co. of Colorado
Unit Letter K, Section 14
T25S-R26E, Eddy County, NM

1. Existing Roads: Area maps, Exhibit "B" is a reproduction of Eddy Co. General Highway Map. Exhibit "C" is a reproduction of a USGS Topographic Map, showing existing roads and proposed roads. All existing roads will be maintained in a condition equal to or better than current conditions. Any new roads will be constructed to BLM specifications.
 - A. Exhibit "A" shows the proposed well site as staked.
 - B. From the junction of Means and Prickly Pear, go Easterly 4.7 miles on Prickly Pear to lease road. On lease road, go East 0.6 miles to lease road. Go Northerly 1.6 miles through 2 cattle guards to a dry hole. Go North 0.2 miles to a T and go West winding Southerly for 0.9 miles to proposed location.
2. Planned Access Roads: No new lease roads are proposed.
3. Location of Existing Wells in a One-Mile Radius - Exhibit A
 - A. Water wells - None known
 - B. Disposal wells - None known
 - C. Drilling wells - None known
 - D. Producing wells - As shown on Exhibit "A"
 - E. Abandoned wells - As shown on Exhibit "A"
4. If on completion this well is a producer, Cimarex Energy Co. of Colorado will furnish maps and/or plats showing on site facilities or off site facilities if needed. This will be accompanied by a Sundry Notice.
5. Location and Type of Water Supply:

Water will be purchased locally from a commercial source and trucked over the access roads or piped in flexible lines laid on top of the ground.
6. Source of Construction Material:

If possible, construction will be obtained from the excavation of drill site. If additional material is needed, it will be purchased from a local source and transported over the access route as shown on Exhibit "C".
7. Methods of Handling Waste Material:
 - A. Drill cuttings will be separated by a series of solids removal equipment and stored in steel containment pits and then hauled to a state-approved disposal facility.
 - B. All trash, junk and other waste material will be contained in trash cages or bins to prevent scattering. When the job is completed all contents will be removed and disposed of in an approved sanitary land fill.
 - C. Salts remaining after completion of well will be picked up by supplier including broken sacks.
 - D. Sewage from living quarters will drain into holding tanks and be cleaned out periodically. A Porta-John will be provided for the rig crews. This equipment will be properly maintained during the drilling operations and removed upon completion of the well.
 - E. Drilling fluids will be contained in steel pits in a closed circulating system. Fluids will be cleaned and reused. Water produced during testing will be contained in the steel pits and disposed of at a state approved disposal facility. Any oil or condensate produced will be stored in test tanks until sold and hauled from the site.

Surface Use Plan
White City 14 Federal No. 9
Cimarex Energy Co. of Colorado
Unit Letter K, Section 14
T25S-R26E, Eddy County, NM

8. Ancillary Facilities:

- A. No camps or airstrips to be constructed.

9. Well Site Layout:

- A. Exhibit "D" shows location and rig layout.
- C. Mud pits in the closed circulating system will be steel pits and the cuttings will be stored in steel containment pits.
- D. Cuttings will be stored in steel pits until they are hauled to a state-approved disposal facility.
- E. If the well is a producer, those areas of the location not essential to production facilities will be reclaimed and seeded per BLM requirements.

10. Plans for Restoration of Surface:

Rehabilitation of the location will start in a timely manner after all drilling operations cease. The type of reclamation will depend on whether the well is a producer or a dry hole.

Drainage systems, if any, will be reshaped to the original configuration with provisions made to alleviate erosion. These may need to be modified in certain circumstances to prevent inundation of the location's pad and surface facilities. After the area has been shaped and contoured, topsoil from the spoil pile will be placed over the disturbed area to the extent possible. Revegetation procedures will comply with BLM standards.

If the well is a dry hole, the pad and road area will be recountoured to match the existing terrain. Topsoil will be spread to the extent possible. Revegetation will comply with BLM standards.

Should the well be a producer, the previously noted procedures will apply to those areas which are not required for production facilities.

11. Other Information

- A. Topography consists of a sloping plane with loose tan sands. Vegetation is mainly yucca, mesquite and shin oak.
- B. The wellsite is on surface owned by Department of the Interior, Bureau of Land Management. The land is used mainly for farming, cattle ranching, recreational use, and oil and gas production.
- C. An Archaeological survey will be conducted on the location and proposed roads, and this report will be filed with the Bureau of Land Management in the Carlsbad BLM office.
- D. There are no known dwellings within 1½ miles of this location.

Operator Certification Statement
White City 14 Federal No. 9
Cimarex Energy Co. of Colorado
Unit Letter K, Section 14
T25S-R26E, Eddy County, NM

Operator's Representative

Cimarex Energy Co. of Colorado
600 N. Marienfeld St., Ste. 600
Midland, TX 79701
Office Phone: (432) 620-1938
Zeno Farris

CERTIFICATION: I hereby certify that the statements and plans made in this APD are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed by Cimarex Energy Co. of Colorado and/or its contractors/subcontractors and is in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provision of U.S.C. 1001 for the filing of a false statement.

NAME: Zeno Farris
Zeno Farris
DATE: December 31, 2009
TITLE: Manager Operations Administration

PECOS DISTRICT CONDITIONS OF APPROVAL

*OPERATOR'S NAME:	CIMAREX ENERGY CO OF COLORADO
LEASE NO.:	NM-19423
WELL NAME & NO.:	WHITE CITY 14 FEDERAL #9
SURFACE HOLE FOOTAGE:	2510' FSL & 2530' FWL
BOTTOM HOLE FOOTAGE:	330' FSL & 2530' FWL
LOCATION:	Section 14, T. 25 S., R 26 E., NMPM
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
 - Cave/Karst
- ☒ **Construction**
 - Notification
 - V-Door Direction
 - Topsoil
 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
 - H2S Requirements-Onshore Order #6
 - Logging Requirements
 - High Cave/Karst
- ☐ **Production (Post Drilling)**
 - Well Structures & Facilities
 - Pipelines
 - Electric Lines
- ☒ **Interim Reclamation**
- ☒ **Final Abandonment & Reclamation**

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

GENERAL IMPACT ANALYSIS

Cave and karst features provide direct conduits leading to groundwater. These conduits can quickly transport surface and subsurface contaminants directly into underground water systems and freshwater aquifers without filtration or biodegradation. In addition, contaminants spilled or leaked into or onto cave/karst zone surfaces and subsurfaces may lead directly to the disruption, displacement, or extermination of cave species and critical biological processes. In extreme or rare cases, a buildup of hydrocarbons in cave systems due to surface leaks or spills could potentially cause underground ignitions or asphyxiation of wildlife or humans within the cave.

In cave and karst terrains, rainfall and surface runoff is directly channeled into natural underground water systems and aquifers. Changes in geologic formation integrity, runoff quantity/quality, drainage course, rainfall percolation factors, vegetation, surface contour, and other surface factors can negatively impact cave ecosystems and aquifer recharge processes. Blasting, heavy vibrations, and focusing of surface drainages can lead to slow subsidence, sudden collapse of subsurface voids, and/or cave ecosystem damage.

A more complete discussion of the impacts of oil and gas drilling can be found in the *Dark Canyon Environmental Impact Statement of 1993*, published by the U.S. Department of the Interior, Bureau of Land Management.

GENERAL MITIGATION

To mitigate or lessen the probability of impacts associated with the drilling and production of oil and gas wells in karst areas, the guidelines listed in Appendix 3, Practices for Oil and Gas Drilling and Production in Cave and Karst Areas, as approved in the Carlsbad Resource Management Plan Amendment of 1997, page AP3-4 through AP 3-7 will be followed.

BLM maintains up to date locations and surveys of known cave and karst features. Projects will be located away from these features whenever possible. Drilling pads, roads, utilities, pipelines and flowlines will be routed around cave and karst features at an adequate distance to mitigate adverse impacts. Wellbore engineering plans will incorporate required cave and aquifer protection protocols.

Highly sensitive cave and karst areas with critical freshwater aquifer recharge concerns may have a number of special surface and subsurface planning and construction requirements based upon the risk of adverse impacts created by a specific location or process.

CONSTRUCTION IMPACT ANALYSIS

The construction of roads, pipelines, well pads and utilities can impact bedrock integrity and reroute, impede, focus, or erode natural surface drainage systems. Increased silting and sedimentation from construction can plug downstream sinkholes, caves, springs, and other components of aquifer recharge systems and result in adverse impacts to aquifer

quality and cave environments. Any contaminants released into the environment during or after construction can impact aquifers and cave systems. A possibility exists for slow subsidence or sudden surface collapse during construction operations due to collapse of underlying cave passages and voids. This would cause associated safety hazards to the operator and the potential for increased environmental impact. Subsidence processes can be triggered by blasting, intense vibrations, rerouting of surface drainages, focusing of surface drainage, and general surface disturbance.

Blasting fractures in bedrock can serve as direct conduits for transfer of contaminants into cave and groundwater systems. Blasting also creates an expanded volume of rock rubble that cannot be reclaimed to natural contours, soil condition, or native vegetative condition. As such, surface and subsurface disruptions from blasting procedures can lead to permanent changes in vegetation, rainfall percolation, silting/erosion factors, aquifer recharge, and freshwater quality and can increase the risk of contaminant migration from drilling/production facilities built atop the blast area.

CONSTRUCTION MITIGATION

In order to mitigate the impacts from construction activities on cave and karst resources, the following Conditions of Approval will apply to this APD:

- In the event that any underground voids are encountered during construction activities, construction activities will be halted and the BLM will be notified immediately.
- No Blasting to prevent geologic structure instabilities.
- Pad Berming to minimize effects of any spilled contaminants.

DRILLING IMPACT ANALYSIS

During drilling, previously unknown cave and karst features could be encountered. If a void is encountered while drilling and a loss of circulation occurs, lost drilling fluids can directly contaminate groundwater recharge areas, aquifers, and groundwater quality. Drilling operations can also lead to sudden collapse of underground voids. Cementing operations may plug or alter groundwater flow, potentially reducing the water quantity at springs and water wells. Inadequate subsurface cementing, casing, and cave/aquifer protection measures can lead to the migration of oil, gas, drilling fluids, and produced saltwater into cave systems and freshwater aquifers.

DRILLING MITIGATION

Federal regulations and standard Conditions of Approval applied to all APDs require that adequate measures are taken to prevent contamination to the environment. Due to the extreme sensitivity of the cave and karst resources in this project area, the following additional Conditions of Approval will be added to this APD.

To prevent cave and karst resource contamination the following will be required.

Closed Mud System Using Steel Tanks with All Fluids and Cuttings Hauled Off.

- Rotary drilling with fresh water where cave or karst features are expected to prevent contamination of freshwater aquifers.
- Directional Drilling allowed after at least 100 feet below the cave occurrence zone to prevent additional impacts resulting from directional drilling.
- Lost Circulation zones logged and reported in the drilling report so BLM can assess the situation and work with the operator on corrective actions.
- Additional drilling, casing, and cementing procedures to protect cave zones and fresh water aquifers. See Drilling COAs.

PRODUCTION IMPACT ANALYSIS

Production facilities such as tank batteries, pump-jacks, compressors, transfer stations, and pipage may fail and allow contaminants to enter caves and freshwater systems. Downhole casing and cementing failures can allow migration of fluids and/or gas between formations and aquifers. Facilities may also be subject to slow subsidence or sudden collapse of the underlying bedrock.

PRODUCTION MITIGATION

In order to mitigate the impacts from production activities and due to the nature of karst terrain, the following Conditions of Approval will apply to this APD:

- Tank battery liners and berms to minimize the impact resulting from leaks.
- Leak detection system to provide an early alert to operators when a leak has occurred.
- Automatic shut off, check valves, or similar systems will be installed for pipelines and tanks to minimize the effects of line failures used in production or drilling.

RESIDUAL AND CUMULATIVE IMPACT ANALYSIS

Any industrial activities that take place upon or within karst terrains or freshwater aquifer zones have the potential to create both short-term and long-term negative impacts to freshwater aquifers and cave systems. While a number of mitigation measures can be implemented to mitigate many impacts, it is still possible for impacts to occur from containment failures, well blowouts, accidents, spills, and structural collapses. It is therefore necessary to implement long-term monitoring studies to determine if current mitigations measures are sufficient enough to prevent long-term or cumulative impacts.

RESIDUAL AND CUMULATIVE MITIGATION

- Nontoxic fluorescent dyes will be added to the drilling fluid when the hole is spudded and will be circulated to the bottom of the karst layers. This provides data as part of a long-term monitoring study.
- Annual pressure monitoring will be performed by the operator. If the test results indicate a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

PLUGGING AND ABANDONMENT IMPACT ANALYSIS

Failure of a plugged and abandoned well can lead to migration of contaminants to karst resources and fresh water aquifers. While this action does not specifically approve plugging and abandonment procedures, the operator should be made aware that additional or special Conditions of Approval may apply at that time.

PLUGGING AND ABANDONMENT MITIGATION

Abandonment Cementing: Upon well abandonment in high cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5972 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. V-DOOR DIRECTION: Northeast

C. TOPSOIL

The operator shall stockpile the topsoil in a low profile manner in order to prevent wind/water erosion of the topsoil. The topsoil will be used for interim and final reclamation.

D. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

E. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

F. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation.

The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

G. ON LEASE ACCESS ROADS

Road Width

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed thirty (30) feet.

Surfacing

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning

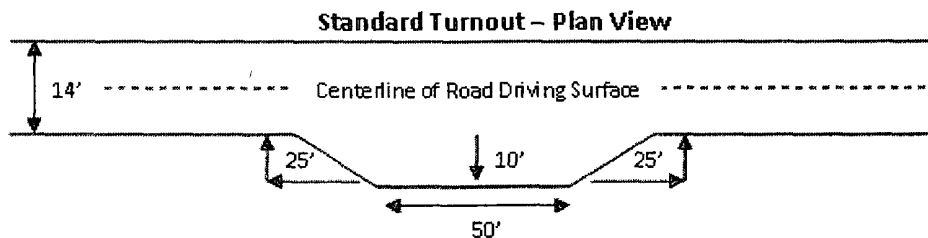
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching

Ditching shall be required on both sides of the road.

Turnouts

Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:

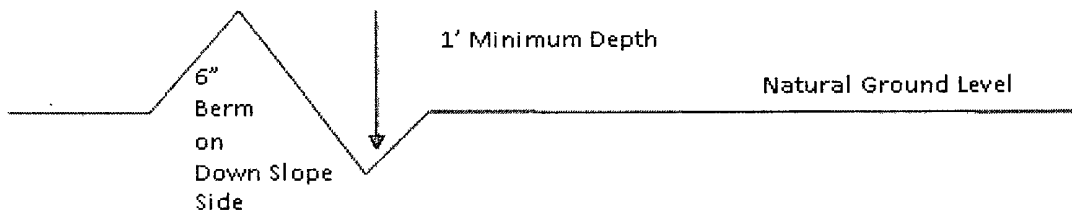


Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$400 \text{ foot road with } 4\% \text{ road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

Culvert Installations

Appropriately sized culvert(s) shall be installed at the deep waterway channel flow crossing.

Cattleguards

An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations.

A gate shall be constructed and fastened securely to H-braces.

Fence Requirement

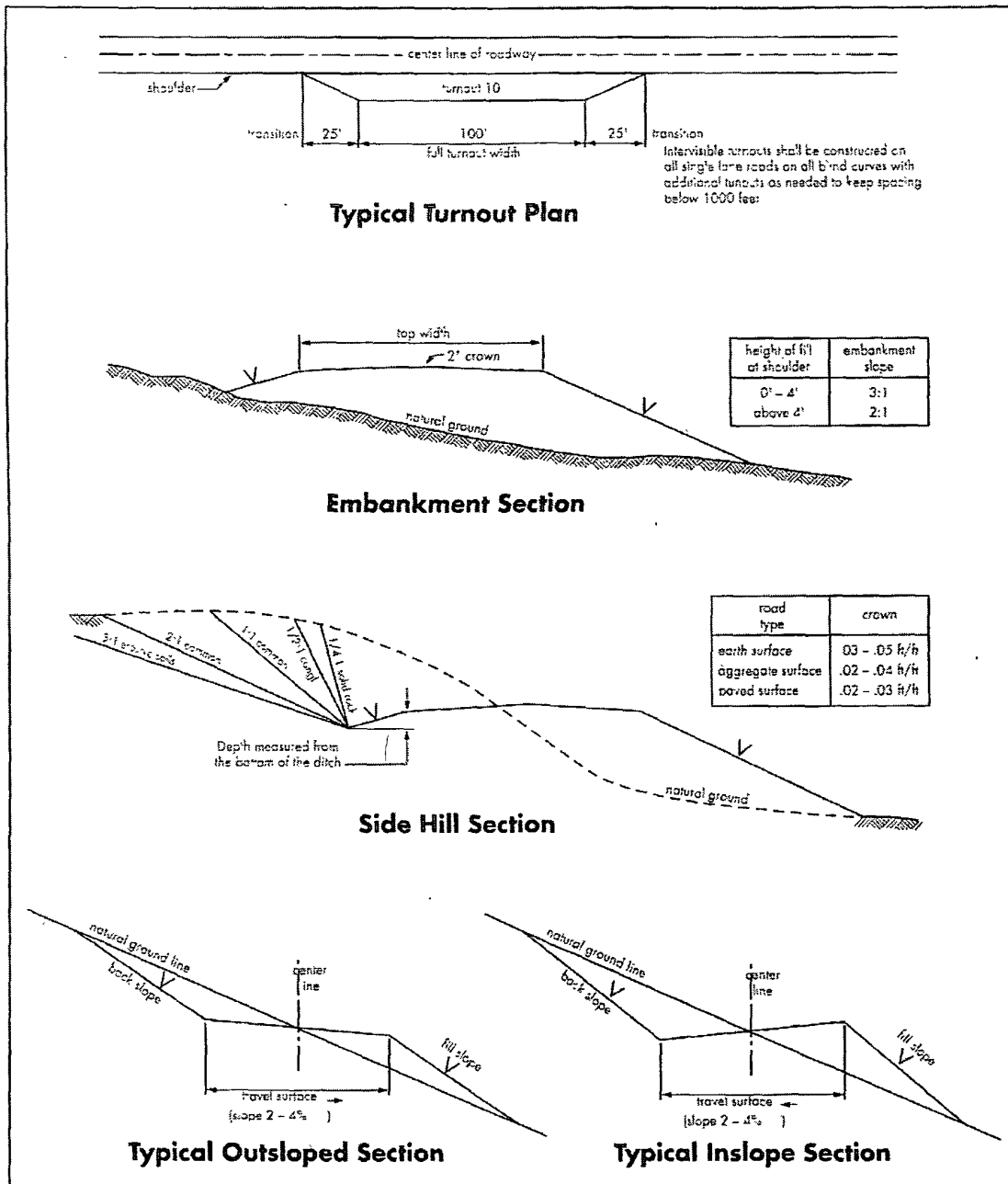
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Figure 1 – Cross Sections and Plans For Typical Road Sections



VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

- a. Spudding well
- b. Setting and/or Cementing of all casing strings
- c. BOPE tests

☒ Eddy County

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,
(575) 361-2822

1. A Hydrogen Sulfide (H₂S) Drilling Plan should be activated 500 feet prior to drilling into the Delaware formation. **As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.**
2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
4. **The record of the drilling rate along with the CAL/GR/N well log run from TD to surface will be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

Changes to the approved APD casing and cement program require submitting a sundry and receiving approval prior to work. Failure to obtain approval prior to work will result in an Incident of Non-Compliance being issued.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) time for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

HIGH CAVE/KARST – CONTINGENCY CASING WILL BE REQUIRED IF LOST CIRCULATION OCCURS WHILE DRILLING THE SURFACE HOLE. THE SURFACE HOLE WILL HAVE TO BE REAMED AND A LARGER CASING INSTALLED. IF LOST CIRCULATION OCCURS WHILE DRILLING THE 8-3/4" HOLE, THE CEMENT PROGRAM FOR THE 7" CASING WILL NEED TO BE MODIFIED AND THE BLM IS TO BE CONTACTED PRIOR TO RUNNING THE CASING. A MINIMUM OF TWO CASING STRINGS CEMENTED TO SURFACE IS REQUIRED IN HIGH CAVE/KARST AREAS. THE CEMENT MUST BE IN A SOLID SHEATH THEREFORE, ONE INCH OPERATIONS WILL NOT BE PERMITTED. A DV TOOL WILL BE REQUIRED.

Possible lost circulation in the Delaware.

Contingency Casing (BOP size change required for this casing):

- 0. The 13-3/8 inch surface casing shall be set at approximately 370 feet (a minimum of 25 feet above the salt) and cemented to surface.**
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.**
 - b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.**
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.**

Proposed Casing Program With No Lost Circulation:

2. The 9-5/8 inch surface casing shall be set **at approximately 440 feet (a minimum of 25 feet above the salt)** and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.
 - b. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
3. The minimum required fill of cement behind the 7 inch intermediate casing is:
☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst. Additional cement may be required, as the excess cement calculated to be 2%.**

Centralizers required on horizontal leg, must be type for horizontal service and minimum of one every other joint.

4. The minimum required fill of cement behind the 4-1/2 inch production liner is:
☒ Cement not required on the 4-1/2" casing. **Packer system being used.**
5. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M) psi. Operator is installing a 5M system but testing as a 3M.**
3. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. Casing cut-off and BOP installation will not be initiated until the cement has had 4-6 hours of setup time in a water basin and 12 hours in the potash areas. This time will start after the cement plug is bumped. Testing the BOP/BOPE against a plug can commence after meeting the above conditions plus the BOP installation time.
 - b. The tests shall be done by an independent service company utilizing a test plug.
 - c. The results of the test shall be reported to the appropriate BLM office.
 - d. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**
 - e. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

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VIII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities

Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Containment Structures

The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

Painting Requirement

All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color
Shale Green, Munsell Soil Color Chart # 5Y 4/2

B. PIPELINES

Not applied for in APD

C. ELECTRIC LINES

Not applied for in APD

IX. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

X. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared; these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Seed Mixture 1, for Loamy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (small/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

<u>Species</u>	<u>lb/acre</u>
Plains lovegrass (<i>Eragrostis intermedia</i>)	0.5
Sand dropseed (<i>Sporobolus cryptandrus</i>)	1.0
Sideoats grama (<i>Bouteloua curtipendula</i>)	5.0

*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed