

ATS-10-534 ✓

OCD-ARTESIA

Form 3160-3
(April 2004)

FORM APPROVED
OMB No 1004-0137
Expires March 31, 2007

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a Type of Work ☒ DRILL ☐ REENTER		5. Lease Serial No NM-92160
1b. Type of Well ☐ Oil Well ☒ Gas Well ☐ Other ☒ Single Zone ☐ 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	3b Phone No. (include area code) 432-571-7800	8 Lease Name and Well No Chosa Draw 27 Federal No. 5
4 Location of Well (Report location clearly and in accordance with any State requirements. *) At Surface 810 FSL & 400 FEL At proposed prod Zone 760 FSL & 660 FWL Horizontal Wolfcamp Test		9. API Well No. 30-015- 39389
14 Distance in miles and direction from nearest town or post office*		10 Field and Pool, or Exploratory Wolfcamp Wildcat
15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig unit line if any) 400		11 Sec , T. R. M or Blk. and Survey or Area 27-25S-26E
16 No of acres in lease NM-92160 - 1320 acres		12. County or Parish Eddy
17. Spacing Unit dedicated to this well S2 320 acres		13 State NM
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft 1730	19. Proposed Depth MD 13677, TVD 9465	20 BLM/BIA Bond No on File NM-2575
21 Elevations (Show whether DF, KDB, RT, GL, etc) 3309' GR	22. Approximate date work will start* 06.15.11	23 Estimated duration 30-35 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 02.22.11
Title Manager Operations Administration		
Approved By (Signature) <i>/s/ Don Peterson</i>	Name (Printed/Typed)	Date AUG 19 2011
Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE	

RECEIVED
AUG 24 2011
NMOCD ARTESIA

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

Title 18 U.S.S 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)

APPROVAL FOR TWO YEARS

Carlsbad Controlled Water Basin

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Approval Subject to General Requirements
& Special Stipulations Attached

Application to Drill
Chosa Draw 27 Federal No. 5
Cimarex Energy Co. of Colorado
Unit M, Section 27
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 810 FSL & 400 FEL
BHL 760 FSL & 660 FWL

2. Elevation above sea level: 3309' 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: MD 13677, TVD 9465

6. Estimated tops of geological markers:

Rustler	Spotty, N/A
Top Salt	1023
Base Salt	1616
Delaware	1816
Cherry Canyon	2802
Brushy Canyon	3825
Bone Spring	5341
Wolfcamp	8542

7. Possible mineral bearing formations:

Wolfcamp	Gas
Bone Spring	Gas
Delaware	Oil

8. Proposed drilling Plan

Drill 8¾" hole to 9168 and set 7" casing from 0-9168 and cement. Then drill out of 7" shoe with 6½" bit to pilot hole TD @ 10250 and log. Cement pilot hole with 250 Sks 16.5 ppg Yiled 1.06 PlugCem H + 0.6% CFR-3 +0.2% HR-601. Dress off cement and kick off of cement plug with 6½" bit @ 9268 to drill lateral. Drill to TD 13677 MD, 9645 TVD and run 4½" liner from liner hanger at 8968 to TD and cement liner.

Application to Drill
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9. Mud Circulating System:

Depth	Mud Wt	Visc	Fluid Loss	Type Mud
0' to 450'	8.4 - 8.8	30-32	NC	FW spud mud. Add FW to control weight & viscosity and paper to prevent seepage.
450' to 1766'	10	28-29	NC	Saturated Brine. Sweep as needed to clean hole.
1,766' to 9168	9.0	28-30	NC	Cut brine. Sweep as needed to clean hole.
9,268' to 13677	12.0	28-32	NC	OBM

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	17½"	0 to 450	New 13½"	48#	STC	H-40
Intermediate	12¼"	0 to 1766'	New 9½"	40#	LTC	J-55
Production	8½"	0 to 9168	New 7"	26#	LTC	P-110
Liner	6½"	8968 to 13677	New 4½"	11.6#	BTC/LTC*	P-110

*BTC from 8968-9724 (EOC) and LTC from 9724-13677

11. Cementing Program: See COA

Surface Excess 100%	Lead: 176 sx (C) +2% S1+2%D46 YIELD 1.97 Tail: 235 sx (C) +1% S1 YIELD 1.34. TOC Surface Centralizers per Onshorder 2.III.B.1.f
Intermediate Excess 75%	Lead: 249 sx (C) 4% D20 + .2% D46 + 1% S1. YIELD 1.96, MIX WATER 10.85, WT. 12.9 Tail: 173 sx (C) + .1% D13. YIELD 1.33, MIX WATER 3.36, WT. 14.8 TOC Surface
Production & Fiberglass Excess 28%	Lead: 683 sx Interfill H with 0.3% HR-601, 5 lb/ sx Gilsonite, 0.125 lb/ sx Poly-E-Flake, mixed at 11.9 ppg. Yield 2.47 cf/ sx. Tail: 128 sx Super H with 0.5% Halad ® 344, 0.25% D-Air 3000, 0.4% CFR-3, 1 lb/ sx Salt, 5 lb/ sx Gilsonite, 0.125 lb/ sx Poly-E-Flake, 0.35% HR-7 mixed at 13.2 ppf. Yield 1.61 cf/ sx TOC Surface
Liner Excess 25%	439 sx 50:50 Poz:H + 2%D20 + 0.2% D112 + 0.2% D65, Yield 1.24, 14.58 ppg Centralizers every 3rd joint in lateral to provide adequate cement coverage every 100' unless lateral doglegs require greater spacing between centralizers.

According to the State Engineer, depth to groundwater is 21. Fresh water zones will be protected by setting 13½" casing at 450 and cementing to surface. Hydrocarbon zones will be protected by setting 9½" casing at 1766 and 7" to 9168 and cementing to surface.

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

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12. Pressure control Equipment:

Exhibit "E". A 13 5/8" 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 215." 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. Mud gas separator will be utilized if drilling in potential H₂S area.

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.

BOPs will be tested by an independent service company to 250 psi low and 5000 psi high. Hydril will be tested to 250 psi low and 2500 psi high.

13. Testing, Logging and Coring Program:

see colt

- A. Mud logging program: No mud logging program.
- B. Electric logging program: CNL / LDT / CAL / GR, DLL / CAL / GR
- C. DSTs or Cores:

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 4000 psi Estimated BHT 175°

15. Road and location construction will begin after BLM approval of APD. Anticipated spud date as soon as approved.

Drilling expected to take 25-35 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.

Wolfcamp pay will be perforated and stimulated.

The proposed well will be tested and potentialized as a gas well.



Cimarex Energy Co.

Eddy County (NM83E)

Sec 27-T25S-R26E

Chosa Draw 27 Fed #5

Wellbore #1

Plan: Plan #1

Standard Planning Report

21 February, 2011



Great White Directional Services
Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Chosa Draw 27 Fed #5
Company:	Cimarex Energy Co.	TVD Reference:	WELL @ 3289.0usft (Original Well Elev)
Project:	Eddy County (NM83E)	MD Reference:	WELL @ 3289.0usft (Original Well Elev)
Site:	Sec 27-T25S-R26E	North Reference:	Grid
Well:	Chosa Draw 27 Fed #5	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 27-T25S-R26E		
Site Position:		Northing:	398,382.33 usft
From:	Map	Easting:	558,643.90 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 5' 42.793 N
		Longitude:	104° 16' 38.807 W
		Grid Convergence:	0.03 °

Well	Chosa Draw 27 Fed #5		
Well Position	+N/-S	198.2 usft	Northing:
	+E/-W	1,251.5 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	
		Latitude:	32° 5' 44.747 N
		Longitude:	104° 16' 24.256 W
		Ground Level:	3,272.0 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
	IGRF200510	02/21/11	(°)
			7.92
			Dip Angle
			(°)
			59.97
			Field Strength
			(nT)
			48,528

Design	Plan #1		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			269.52

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)	
(usft)			(usft)			(°/100usft)	(°/100usft)	(°/100usft)		
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
9,268.0	0.00	0.00	9,268.0	0.0	0.0	0.00	0.00	0.00	0.00	
9,724.4	91.29	269.52	9,554.4	-2.5	-292.9	20.00	20.00	0.00	269.52	
13,677.2	91.29	269.52	9,465.4	-35.6	-4,244.5	0.00	0.00	0.00	0.00	Chosa #5



Great White Directional Services
Planning Report

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Project:	Eddy County (NM83E)	MD Reference:	WELL @ 3289.0usft (Original Well Elev)
Site:	Sec 27-T25S-R26E	North Reference:	Grid
Well:	Chosa Draw 27 Fed #5	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 (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,268.0	0.00	0.00	9,268.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP 20°/100 DLS @ 269.52° AZI									
9,275.0	1.40	269.52	9,275.0	0.0	-0.1	0.1	20.00	20.00	0.00
9,300.0	6.40	269.52	9,299.9	0.0	-1.8	1.8	20.00	20.00	0.00
9,315.2	9.44	269.52	9,315.0	0.0	-3.9	3.9	20.00	20.00	0.00
Wolfcamp C									
9,325.0	11.40	269.52	9,324.6	0.0	-5.7	5.7	20.00	20.00	0.00
9,350.0	16.40	269.52	9,348.9	-0.1	-11.7	11.7	20.00	20.00	0.00
9,375.0	21.40	269.52	9,372.5	-0.2	-19.8	19.8	20.00	20.00	0.00
9,400.0	26.40	269.52	9,395.4	-0.3	-29.9	29.9	20.00	20.00	0.00
9,416.6	29.71	269.52	9,410.0	-0.3	-37.7	37.7	20.00	20.00	0.00
Wolfcamp D									
9,425.0	31.40	269.52	9,417.3	-0.4	-42.0	42.0	20.00	20.00	0.00
9,450.0	36.40	269.52	9,438.0	-0.5	-55.9	55.9	20.00	20.00	0.00
9,475.0	41.40	269.52	9,457.5	-0.6	-71.6	71.6	20.00	20.00	0.00
9,500.0	46.40	269.52	9,475.5	-0.7	-88.9	88.9	20.00	20.00	0.00
9,525.0	51.40	269.52	9,491.9	-0.9	-107.7	107.8	20.00	20.00	0.00
9,550.0	56.40	269.52	9,506.6	-1.1	-127.9	127.9	20.00	20.00	0.00
9,575.0	61.40	269.52	9,519.5	-1.3	-149.3	149.3	20.00	20.00	0.00
9,600.0	66.40	269.52	9,530.5	-1.4	-171.8	171.8	20.00	20.00	0.00
9,625.0	71.40	269.52	9,539.5	-1.6	-195.1	195.1	20.00	20.00	0.00
9,650.0	76.40	269.52	9,546.4	-1.8	-219.1	219.1	20.00	20.00	0.00
9,675.0	81.40	269.52	9,551.3	-2.0	-243.6	243.6	20.00	20.00	0.00
9,700.0	86.40	269.52	9,553.9	-2.2	-268.5	268.5	20.00	20.00	0.00
9,724.4	91.29	269.52	9,554.4	-2.5	-292.9	292.9	20.00	20.00	0.00
EOC - Hold to TD									
9,800.0	91.29	269.52	9,552.7	-3.1	-368.4	368.5	0.00	0.00	0.00
9,900.0	91.29	269.52	9,550.5	-3.9	-468.4	468.4	0.00	0.00	0.00
10,000.0	91.29	269.52	9,548.2	-4.8	-568.4	568.4	0.00	0.00	0.00
10,100.0	91.29	269.52	9,546.0	-5.6	-668.4	668.4	0.00	0.00	0.00
10,200.0	91.29	269.52	9,543.7	-6.4	-768.3	768.4	0.00	0.00	0.00
10,300.0	91.29	269.52	9,541.4	-7.3	-868.3	868.3	0.00	0.00	0.00
10,400.0	91.29	269.52	9,539.2	-8.1	-968.3	968.3	0.00	0.00	0.00
10,500.0	91.29	269.52	9,536.9	-8.9	-1,068.2	1,068.3	0.00	0.00	0.00
10,600.0	91.29	269.52	9,534.7	-9.8	-1,168.2	1,168.3	0.00	0.00	0.00
10,700.0	91.29	269.52	9,532.4	-10.6	-1,268.2	1,268.2	0.00	0.00	0.00
10,800.0	91.29	269.52	9,530.2	-11.5	-1,368.2	1,368.2	0.00	0.00	0.00
10,900.0	91.29	269.52	9,527.9	-12.3	-1,468.1	1,468.2	0.00	0.00	0.00
11,000.0	91.29	269.52	9,525.7	-13.1	-1,568.1	1,568.2	0.00	0.00	0.00
11,100.0	91.29	269.52	9,523.4	-14.0	-1,668.1	1,668.1	0.00	0.00	0.00
11,200.0	91.29	269.52	9,521.2	-14.8	-1,768.0	1,768.1	0.00	0.00	0.00
11,300.0	91.29	269.52	9,518.9	-15.6	-1,868.0	1,868.1	0.00	0.00	0.00
11,400.0	91.29	269.52	9,516.7	-16.5	-1,968.0	1,968.1	0.00	0.00	0.00
11,500.0	91.29	269.52	9,514.4	-17.3	-2,068.0	2,068.0	0.00	0.00	0.00
11,600.0	91.29	269.52	9,512.2	-18.2	-2,167.9	2,168.0	0.00	0.00	0.00
11,700.0	91.29	269.52	9,509.9	-19.0	-2,267.9	2,268.0	0.00	0.00	0.00
11,800.0	91.29	269.52	9,507.7	-19.8	-2,367.9	2,368.0	0.00	0.00	0.00
11,900.0	91.29	269.52	9,505.4	-20.7	-2,467.8	2,467.9	0.00	0.00	0.00
12,000.0	91.29	269.52	9,503.2	-21.5	-2,567.8	2,567.9	0.00	0.00	0.00
12,100.0	91.29	269.52	9,500.9	-22.4	-2,667.8	2,667.9	0.00	0.00	0.00
12,200.0	91.29	269.52	9,498.7	-23.2	-2,767.8	2,767.9	0.00	0.00	0.00
12,300.0	91.29	269.52	9,496.4	-24.0	-2,867.7	2,867.8	0.00	0.00	0.00
12,400.0	91.29	269.52	9,494.2	-24.9	-2,967.7	2,967.8	0.00	0.00	0.00

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Site:	Sec 27-T25S-R26E	North Reference:	Grid
Well:	Chosa Draw 27 Fed #5	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 (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,500.0	91.29	269.52	9,491.9	-25.7	-3,067.7	3,067.8	0.00	0.00	0.00
12,600.0	91.29	269.52	9,489.7	-26.5	-3,167.6	3,167.7	0.00	0.00	0.00
12,700.0	91.29	269.52	9,487.4	-27.4	-3,267.6	3,267.7	0.00	0.00	0.00
12,800.0	91.29	269.52	9,485.2	-28.2	-3,367.6	3,367.7	0.00	0.00	0.00
12,900.0	91.29	269.52	9,482.9	-29.1	-3,467.6	3,467.7	0.00	0.00	0.00
13,000.0	91.29	269.52	9,480.7	-29.9	-3,567.5	3,567.6	0.00	0.00	0.00
13,100.0	91.29	269.52	9,478.4	-30.7	-3,667.5	3,667.6	0.00	0.00	0.00
13,200.0	91.29	269.52	9,476.2	-31.6	-3,767.5	3,767.6	0.00	0.00	0.00
13,300.0	91.29	269.52	9,473.9	-32.4	-3,867.4	3,867.6	0.00	0.00	0.00
13,400.0	91.29	269.52	9,471.7	-33.2	-3,967.4	3,967.5	0.00	0.00	0.00
13,500.0	91.29	269.52	9,469.4	-34.1	-4,067.4	4,067.5	0.00	0.00	0.00
13,600.0	91.29	269.52	9,467.2	-34.9	-4,167.3	4,167.5	0.00	0.00	0.00
13,677.2	91.29	269.52	9,465.4	-35.6	-4,244.5	4,244.7	0.00	0.00	0.00
TD at 13677.2									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Chosa #5	0.00	0.01	9,465.0	-35.2	-4,244.5	398,545.25	555,650.88	32° 5' 44.419 N	104° 17' 13.601 W
- plan misses target center by 0.5usft at 13677.2usft MD (9465.4 TVD, -35.6 N, -4244.5 E)									
- Point									

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,023.0	1,023.0	Top Salt		0.00		
1,616.0	1,616.0	Base Salt		0.00		
1,816.0	1,816.0	Delware		0.00		
2,802.0	2,802.0	Cherry Canyon		0.00		
3,825.0	3,825.0	Brushy Canyon		0.00		
5,341.0	5,341.0	Bone Spring		0.00		
5,574.0	5,574.0	Bone Spring "A" Shale		0.00		
5,830.0	5,830.0	Bone Spring "C" Shale		0.00		
6,330.0	6,330.0	1st Bone Spring Ss		0.00		
6,882.0	6,882.0	2nd Bone Spring Ss		0.00		
7,608.0	7,608.0	2nd BS Ss Lower		0.00		
8,194.0	8,194.0	3rd Bone Spring Ss		0.00		
8,542.0	8,542.0	Wolfcamp		0.00		
9,144.0	9,144.0	Wolfcamp B		0.00		
9,315.2	9,315.0	Wolfcamp C		0.00		
9,416.6	9,410.0	Wolfcamp D		0.00		



Great White Directional Services
Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Chosa Draw 27 Fed #5
Company:	Cimarex Energy Co.	TVD Reference:	WELL @ 3289.0usft (Original Well Elev)
Project:	Eddy County (NM83E)	MD Reference:	WELL @ 3289.0usft (Original Well Elev)
Site:	Sec 27-T25S-R26E	North Reference:	Grid
Well:	Chosa Draw 27 Fed #5	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
9,268.0	9,268.0	0.0	0.0	KOP 20°/100 DLS @ 269.52° AZI
9,724.4	9,554.4	-2.5	-292.9	EOC - Hold to TD
13,677.2	9,465.4	-35.6	-4,244.5	TD at 13677.2



WELL DETAILS: Chosa Draw 27 Fed #5



Azimuths to Grid North

Total Correction: 7.89°

Magnetic Field
Strength: 48528.4nT
Dip Angle: 59.97°
Date: 02/21/2011
Model: IGRF200510

Project: Eddy County (NM83E)
Site: Sec 27-T25S-R26E
Well: Chosa Draw 27 Fed #5
Wellbore: Wellbore #1
Design: Plan #1

+N/-S +E/-W Northing Easting 3272.0 Latitude Longitude
0.0 398580.50 559895.40 32° 5' 44.747 N 104° 16' 24.256 W
SHL: 810' FSL / 400' FEL
BHL: 760' FSL / 660' FWL

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
Chosa #5	9465.0	-35.3	-4244.5	398545.25	555650.88

PLAN DETAILS

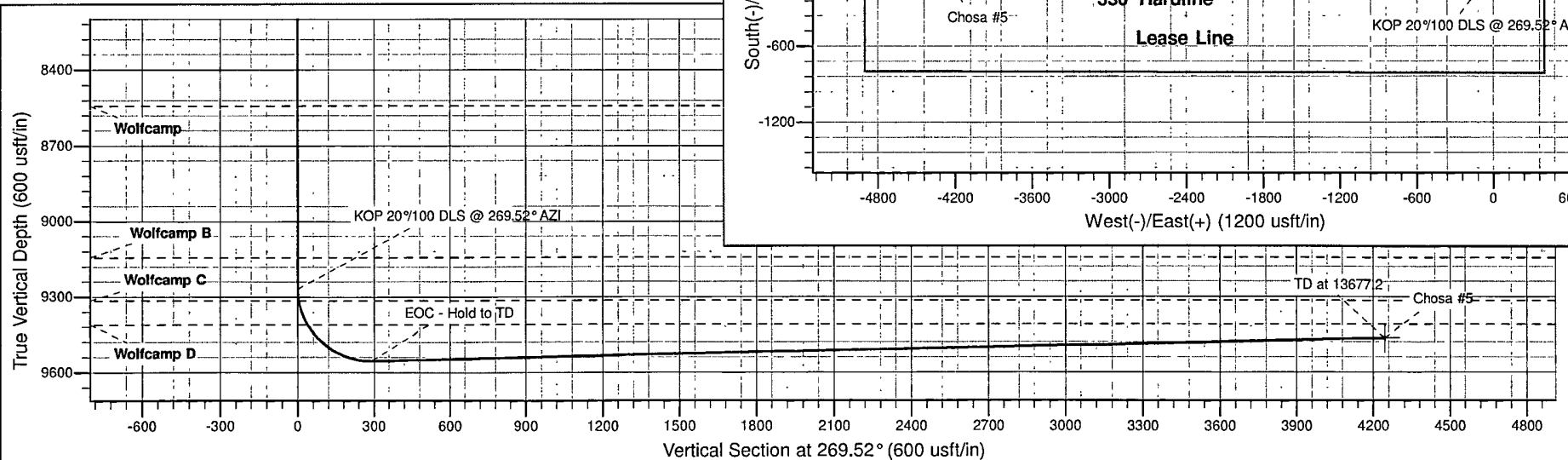
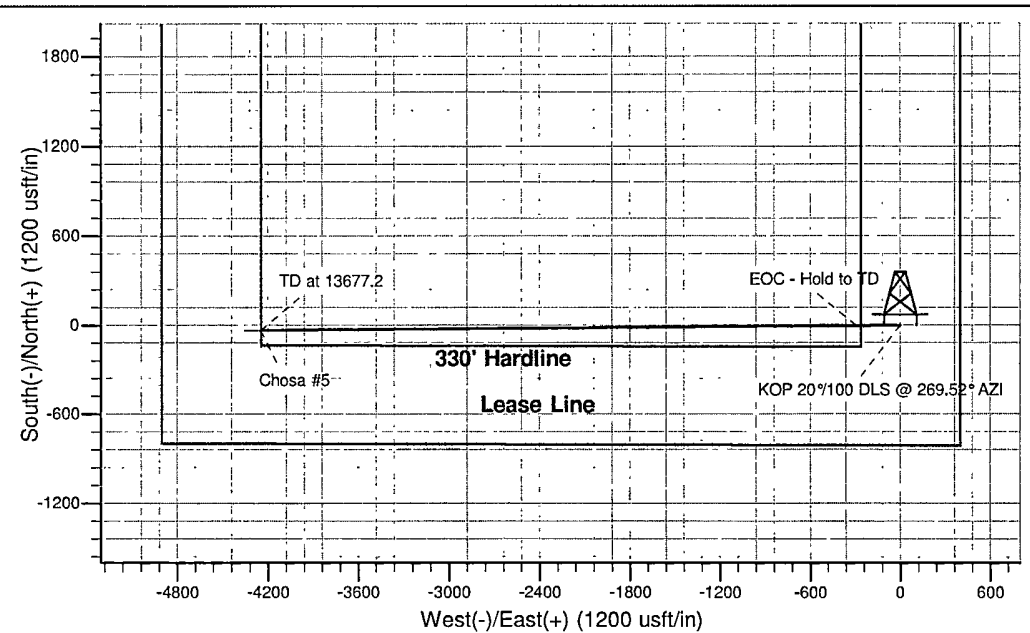
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSecl	Target
0.00.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.0	
9268.0	0.00	0.00	9268.0	0.0	0.0	0.00	0.00	0.0	
9724.4	91.29	269.52	9554.4	-2.5	-292.9	20.00	269.52	292.9	
14677.2	91.29	269.52	9465.4	-35.6	-4244.5	0.00	0.00	4244.7	Chosa #5

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSecl	Departure	Annotation
9268.0	9268.0	0.00	0.00	0.0	0.0	0.0	0.0	KOP 20°/100 DLS @ 269.52° AZI
9554.4	9724.4	91.29	269.52	-2.5	-292.9	292.9	292.9	EOC - Hold to TD
9465.4	13677.2	91.29	269.52	-35.6	-4244.5	4244.7	4244.7	TD at 13677.2

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
1023.0	1023.0	Top Salt	0.00	
1616.0	1616.0	Base Salt	0.00	
1816.0	1816.0	Delaware	0.00	
2802.0	2802.0	Cherry Canyon	0.00	
3825.0	3825.0	Brushy Canyon	0.00	
5341.0	5341.0	Bone Spring	0.00	
5574.0	5574.0	Bone Spring "A" Shale	0.00	
5830.0	5830.0	Bone Spring "C" Shale	0.00	
6330.0	6330.0	1st Bone Spring Ss	0.00	
6882.0	6882.0	2nd Bone Spring Ss	0.00	
7608.0	7608.0	2nd BS Ss Lower	0.00	
8194.0	8194.0	3rd Bone Spring Ss	0.00	
8542.0	8542.0	Wolfcamp	0.00	
9144.0	9144.0	Wolfcamp B	0.00	
9315.0	9315.2	Wolfcamp C	0.00	
9410.0	9416.6	Wolfcamp D	0.00	



SR & A

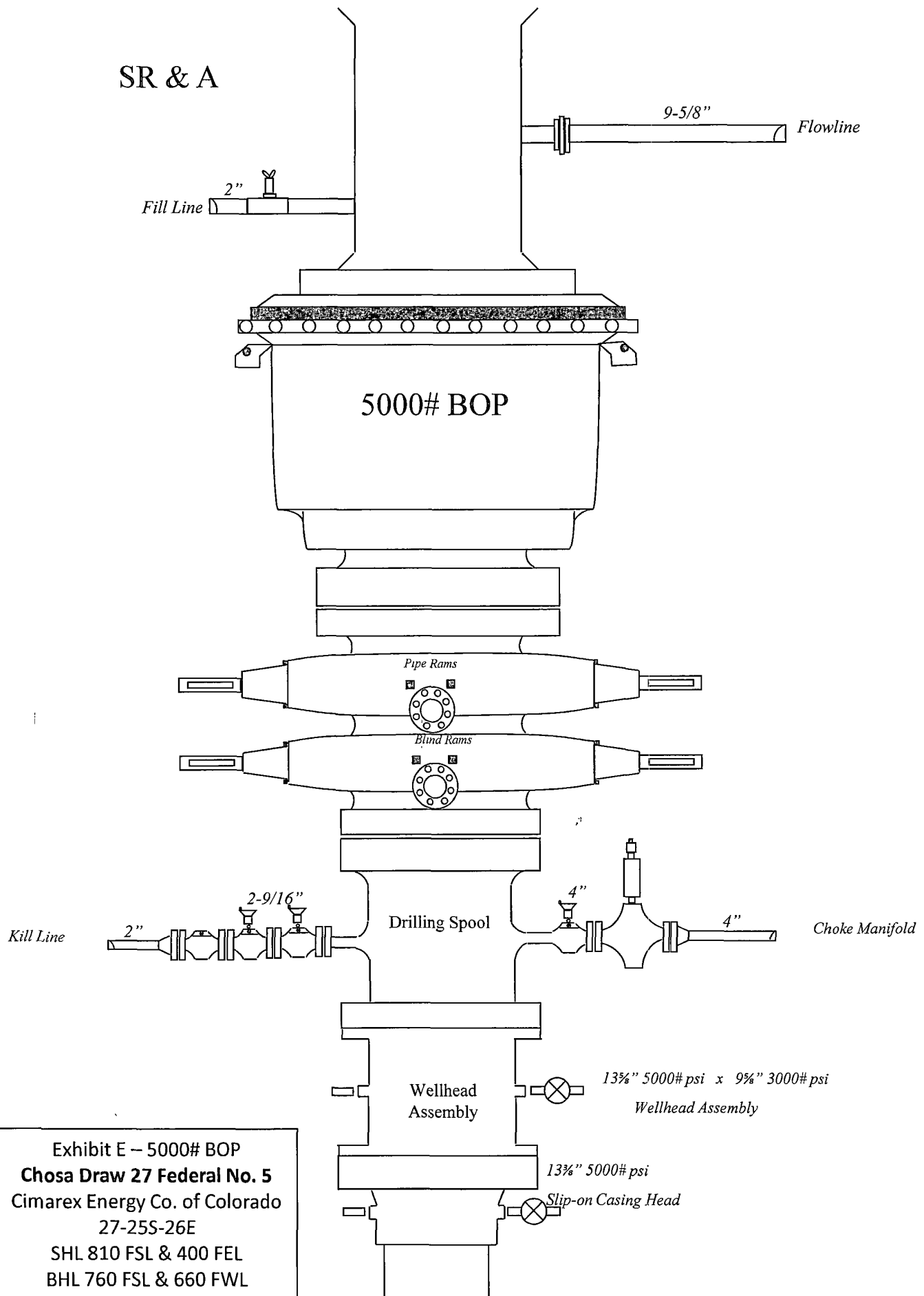


Exhibit E – 5000# BOP

Chosa Draw 27 Federal No. 5

Cimarex Energy Co. of Colorado

27-25S-26E

SHL 810 FSL & 400 FEL

BHL 760 FSL & 660 FWL

Eddy County, NM

Drilling Operations Choke Manifold 5M Service

Exhibit E-1 – Choke Manifold Diagram

Chosa Draw 27 Federal No. 5

Cimarex Energy Co. of Colorado

27-25S-26E

SHL 810 FSL & 400 FEL

BHL 760 FSL & 660 FWL

Eddy County, NM

