

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Hobbs

FORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018**SUNDRY NOTICES AND REPORTS ON WELLS**
Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.HOBBS OCD
NOV 29 2017
RECEIVED

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other		5. Lease Serial No. NMNM05792
2. Name of Operator CIMAREX ENERGY COMPANY OF CO		6. If Indian, Allottee or Tribe Name
3a. Address 202 S CHEYENNE AVE. SUITE 1000 TULSA, OK 74103		7. If Unit or CA/Agreement, Name and/or No. NMNM71019X
3b. Phone No. (include area code) Ph: 918.560.7060		8. Well Name and No. RED HILLS UNIT 16H
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 33 T25S R33E NWNW 150FNL 1240FWL 32.053800 N Lat, 103.345438 W Lon		9. API Well No. 30-025-42324-00-X1
		10. Field and Pool or Exploratory Area WC-025 G06 S253329D
		11. County or Parish, State LEA COUNTY, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Change to Original APD
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

Cimarex respectfully requests approval to change the SHL & BHL of the Red Hills Unit 16H well. A new drilling plan and new directional plan are attached for review and approval. Cimarex is also requesting approval to extend the pad to accommodate additional wells. Additional disturbance is required for the larger well pad.

Approved:

SHL: 150 FNL & 1240 FWL (Sec 33-25S-33E)

BHL: 330 FSL & 440 FWL (Sec 33-25S-33E)

Proposed

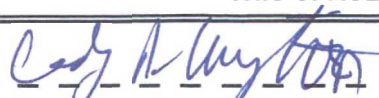
SHL: 506 FNL & 584 FWL (Sec 33-25S-33E)

BHL: 330 FSL & 380 FWL (Sec 4-26S-33E)

Eng OK 10/19/2017 CWells

14. I hereby certify that the foregoing is true and correct. Electronic Submission #383777 verified by the BLM Well Information System For CIMAREX ENERGY COMPANY OF CO, sent to the Hobbs Committed to AFMSS for processing by PRISCILLA PEREZ on 10/16/2017 (18PP0009SE)	
Name (Printed/Typed) ARICKA EASTERLING	Title REGULATORY ANALYST
Signature (Electronic Submission)	Date 08/04/2017

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By 	Title  FIELD MANAGER	Date 11/8/17
Conditions of approval, if any, are attached. Approval of this notice 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.		Office CARLSBAD FIELD OFFICE

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)

** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED **



Additional data for EC transaction #383777 that would not fit on the form

32. Additional remarks, continued

Please see attached plat, directional plan, and drilling plan for changes due to the SHL & BHL move.

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-42324		² Pool Code 97994	³ Pool Name WC-025 G-06 5253329D; Upper BS
⁴ Property Code 300945	⁵ Property Name RED HILLS UNIT		⁶ Well Number 16H
⁷ OGRID No. 162683	⁸ Operator Name CIMAREX ENERGY CO. OF COLORADO		⁹ Elevation 3377.9'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	33	25S	33E		506	NORTH	584	WEST	LEA

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	4	26S	33E		330	SOUTH	380	WEST	LEA

¹² Dedicated Acres 320	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

¹⁶ NOTE:

- Distances referenced on plat to section lines are perpendicular.
- Basis of Bearing is a Transverse Mercator Projection with a Central Meridian of W103°53'00"

NAD 83 (SURFACE HOLE LOCATION)	
LATITUDE = 32°05'34.49" (32.092914)	
LONGITUDE = 103°35'02.01" (103.583892)	
NAD 27 (SURFACE HOLE LOCATION)	
LATITUDE = 32°05'34.04" (32.092789)	
LONGITUDE = 103°35'00.32" (103.583422)	
STATE PLANE NAD 83 (N.M. EAST)	
N: 398345.12 E: 773423.61	
STATE PLANE NAD 27 (N.M. EAST)	
N: 398287.50 E: 732237.13	

NAD 83 (BOTTOM HOLE LOCATION)	
LATITUDE = 32°03'58.29" (32.066192)	
LONGITUDE = 103°35'04.38" (103.584550)	
NAD 27 (BOTTOM HOLE LOCATION)	
LATITUDE = 32°03'57.84" (32.066067)	
LONGITUDE = 103°35'02.69" (103.584081)	
STATE PLANE NAD 83 (N.M. EAST)	
N: 388623.08 E: 773287.67	
STATE PLANE NAD 27 (N.M. EAST)	
N: 388565.71 E: 732100.73	

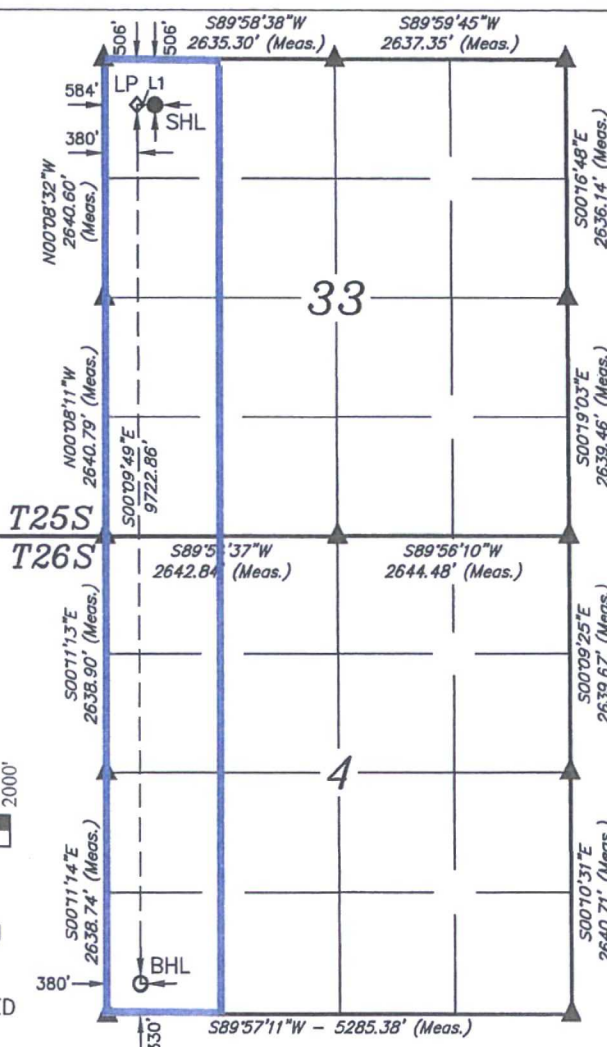
LINE TABLE

LINE	DIRECTION	LENGTH
L1	S89°56'11"W	204.28'



SCALE
DRAWN BY: S.F. 05-31-17

- = SURFACE HOLE LOCATION
- = BOTTOM HOLE LOCATION
- ▲ = SECTION CORNER LOCATED
- ◇ = LANDING POINT



¹⁷ OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature: *Aricka Easterling* Date: 7/28/17

Printed Name: Aricka Easterling

E-mail Address: aeasterling@cimarex.com

¹⁸ SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

May 05, 2017

Date of Survey
Signature and Seal of Professional Surveyor:



Certificate Number:

1. Geological Formations

TVD of target 9,285
MD at TD 18,773

Pilot Hole TD N/A
Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
Groundwater	185	N/A	
Rustler	995	N/A	
Salt	1140	N/A	
Castille	3380	N/A	
Lamar	4900	N/A	
Bell Canyon	4945	N/A	
Cherry Canyon	6190	N/A	
Brushy Canyon	7485	N/A	
Bone Spring	9045	Hydrocarbons	
U. Avalon (Leonard)	9080	Hydrocarbons	
L. Avalon	9680	Hydrocarbons	

2. Casing Program

Hole Size	Casing Depth From	Casing Depth To	Casing Size	Weight (lb/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17 1/2	0	1000	13-3/8"	48.00	H-40/J-55 Hybrid	ST&C	1.62	3.78	6.71
12 1/4	0	4850	9-5/8"	40.00	J-55	LT&C	1.24	1.21	2.68
8 3/4	0	8747	5-1/2"	17.00	L-80	LT&C	1.50	1.85	2.14
8 3/4	8747	18773	5-1/2"	17.00	L-80	BT&C	1.42	1.74	43.41
BLM Minimum Safety Factor							1.125	1	1.6 Dry 1.8 Wet

TVD was used on all calculations.

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	N
Is well within the designated 4 string boundary.	N
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	N
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	N
Is 2nd string set 100' to 600' below the base of salt?	N
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	N
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	N

Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	N

3. Cementing Program

Casing	# Sks	Wt. lb/gal	Yld ft ³ /sack	H ₂ O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surface	424	13.50	1.72	9.15	15.5	Lead: Class C + Bentonite
	195	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Intermediate	921	12.90	1.88	9.65	12	Lead: 35:65 (Poz:C) + Salt + Bentonite
	283	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Production	686	10.30	3.64	22.18		Lead: Tuned Light + LCM
	2144	14.20	1.30	5.86	14:30	Tail: 50:50 (Poz:H) + Salt + Bentonite + Fluid Loss + Dispersant + SMS

Casing String	TOC	% Excess
Surface	0	43
Intermediate	0	44
Production	0	14

4. Pressure Control Equipment

	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.				
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BOP installed and tested before drilling which hole?	Size	Min Required WP	Type		Tested To
12 1/4	13 5/8	2M	Annular	X	50% of working pressure
			Blind Ram		2M
			Pipe Ram	X	
			Double Ram	X	
			Other		
8 3/4	13 5/8	3M	Annular	X	50% of working pressure
			Blind Ram		3M
			Pipe Ram	X	
			Double Ram	X	
			Other		

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.				
X	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.				
N	Are anchors required by manufacturer?				

5. Mud Program

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0' to 1000'	FW Spud Mud	8.30 - 8.80	30-32	N/C
1000' to 4850'	Brine Water	12.40 - 12.90	30-32	N/C
4850' to 18773'	Oil Based Mud	8.70 - 9.20	50-70	N/C

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring
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6. Logging and Testing Procedures

Logging, Coring and Testing	
X	Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	No logs are planned based on well control or offset log information.
	Drill stem test?
	Coring?

Additional Logs Planned	Interval
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7. Drilling Conditions

Condition	
BH Pressure at deepest TVD	4441 psi
Abnormal Temperature	No

Hydrogen Sulfide (H₂S) monitors will be installed prior to drilling out the surface shoe. If H₂S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.

X	H ₂ S is present
X	H ₂ S plan is attached

8. Other Facets of Operation

9. Wellhead

A multi-bowl wellhead system will be utilized.

After running the 13-3/8" surface casing, a 13 5/8" BOP/BOPE system with a minimum working pressure of 3000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 3000 psi test. Annular will be tested to 50% of working pressure. The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2.

The multi-bowl wellhead will be installed by vendor's representative. A copy of the installation instructions has been sent to the BLM field office.

The wellhead will be installed by a third-party welder while being monitored by the wellhead vendor representative.

All BOP equipment will be tested utilizing a conventional test plug. Not a cup or J-packer type.

A solid steel body pack-off will be utilized after running and cementing the intermediate casing. After installation the pack-off and lower flange will be pressure tested to 3000 psi.

The surface casing string will be tested as per Onshore Order No. 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater.

The casing string utilizing steel body pack-off will be tested to 70% of casing burst.

If well conditions dictate conventional slips will be set and BOPE will be tested to appropriate pressures based on permitted pressure requirements.

Cimarex Red Hills Unit 16H Rev2 tmn 29Jun17

(Non-Def Plan)

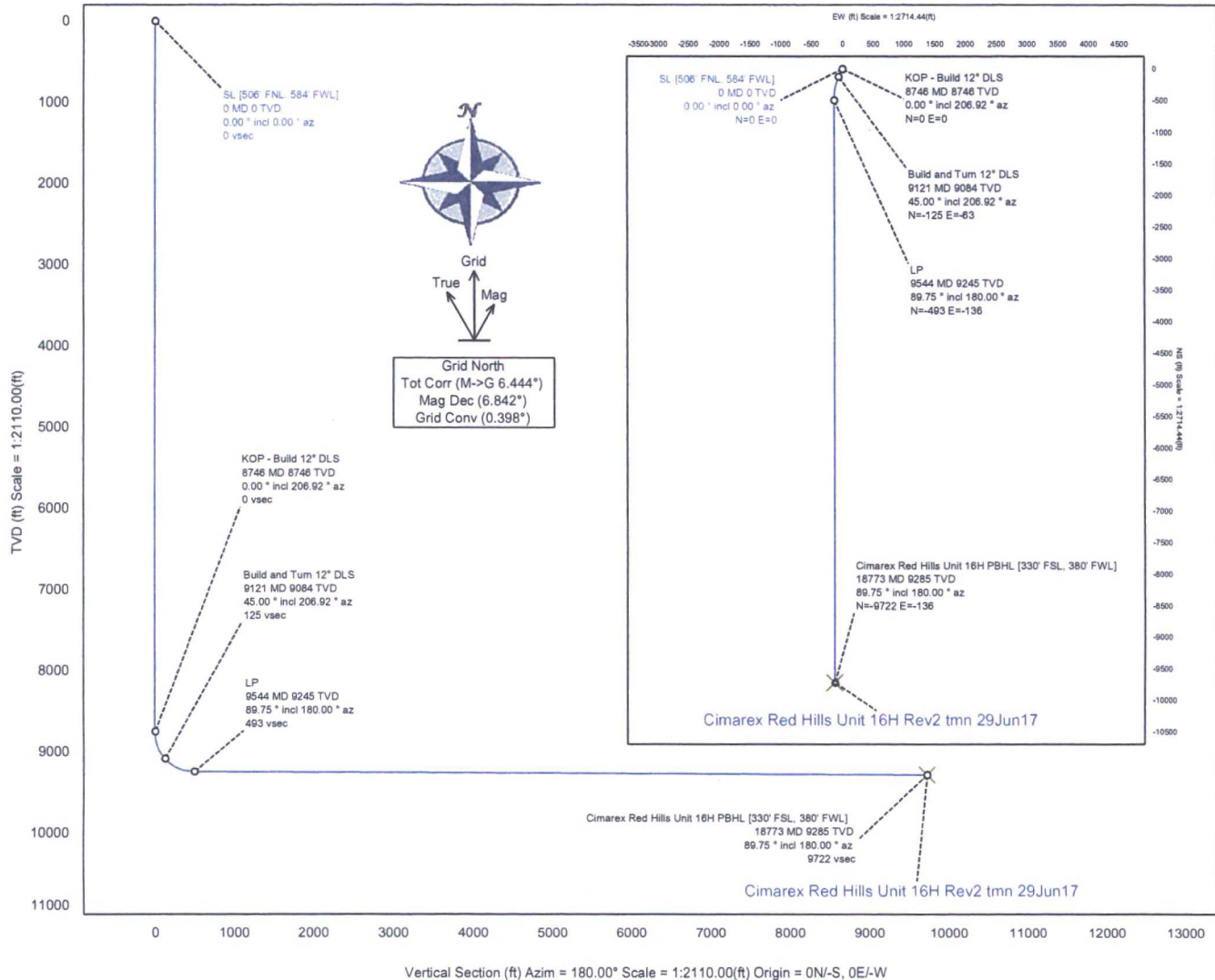
Report Date: June 29, 2017 - 11:29 AM
 Client: Cimarexq
 Field: NM Lea County (NAD 83)
 Structure / Slot: Cimarex Red Hills Unit #16H / Red Hills Unit #16H
 Well: Red Hills Unit #16H
 Borehole: Original Borehole
 UWI / API#: Unknown / Unknown
 Survey Name: Cimarex Red Hills Unit 16H Rev2 tmn 29Jun17
 Survey Date: June 29, 2017
 Tort / AHD / DDI / ERD Ratio: 95.687 ° / 9747.671 ft / 6.276 / 1.050
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 5' 34.48775", W 103° 35' 2.01217"
 Location Grid N/E Y/X: N 398345.120 ftUS, E 773423.610 ftUS
 CRS Grid Convergence Angle: 0.3982 °
 Grid Scale Factor: 0.99997078
 Version / Patch: 2.10.544.0

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 180.000 ° (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: RKB
 TVD Reference Elevation: 3402.900 ft above MSL
 Seabed / Ground Elevation: 3377.900 ft above MSL
 Magnetic Declination: 6.842 °
 Total Gravity Field Strength: 998.4329mgn (9.80665 Based)
 Gravity Model: GARM
 Total Magnetic Field Strength: 47966.231 nT
 Magnetic Dip Angle: 59.784 °
 Declination Date: June 29, 2017
 Magnetic Declination Model: HDGM 2017
 North Reference: Grid North
 Grid Convergence Used: 0.3982 °
 Total Corr Mag North->Grid North: 6.4439 °
 Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Closure (ft)	Closure Azimuth (°)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SL [506' FNL, 584' FWL]	0.00	0.00	206.92	0.00	-3402.90	0.00	0.00	0.00	N/A	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	100.00	0.00	206.92	100.00	-3302.90	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	200.00	0.00	206.92	200.00	-3202.90	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	300.00	0.00	206.92	300.00	-3102.90	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	400.00	0.00	206.92	400.00	-3002.90	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	500.00	0.00	206.92	500.00	-2902.90	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	600.00	0.00	206.92	600.00	-2802.90	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	700.00	0.00	206.92	700.00	-2702.90	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	800.00	0.00	206.92	800.00	-2602.90	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	900.00	0.00	206.92	900.00	-2502.90	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	1000.00	0.00	206.92	1000.00	-2402.90	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	1100.00	0.00	206.92	1100.00	-2302.90	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	1200.00	0.00	206.92	1200.00	-2202.90	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	1300.00	0.00	206.92	1300.00	-2102.90	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	1400.00	0.00	206.92	1400.00	-2002.90	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	1500.00	0.00	206.92	1500.00	-1902.90	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	1600.00	0.00	206.92	1600.00	-1802.90	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	1700.00	0.00	206.92	1700.00	-1702.90	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	1800.00	0.00	206.92	1800.00	-1602.90	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	1900.00	0.00	206.92	1900.00	-1502.90	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	2000.00	0.00	206.92	2000.00	-1402.90	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	2100.00	0.00	206.92	2100.00	-1302.90	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	2200.00	0.00	206.92	2200.00	-1202.90	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	2300.00	0.00	206.92	2300.00	-1102.90	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	2400.00	0.00	206.92	2400.00	-1002.90	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	2500.00	0.00	206.92	2500.00	-902.90	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	2600.00	0.00	206.92	2600.00	-802.90	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	2700.00	0.00	206.92	2700.00	-702.90	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	2800.00	0.00	206.92	2800.00	-602.90	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	2900.00	0.00	206.92	2900.00	-502.90	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	3000.00	0.00	206.92	3000.00	-402.90	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	3100.00	0.00	206.92	3100.00	-302.90	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	3200.00	0.00	206.92	3200.00	-202.90	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	3300.00	0.00	206.92	3300.00	-102.90	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	3400.00	0.00	206.92	3400.00	-2.90	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	3500.00	0.00	206.92	3500.00	97.10	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	3600.00	0.00	206.92	3600.00	197.10	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	3700.00	0.00	206.92	3700.00	297.10	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	3800.00	0.00	206.92	3800.00	397.10	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	3900.00	0.00	206.92	3900.00	497.10	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	4000.00	0.00	206.92	4000.00	597.10	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	4100.00	0.00	206.92	4100.00	697.10	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	4200.00	0.00	206.92	4200.00	797.10	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	4300.00	0.00	206.92	4300.00	897.10	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	4400.00	0.00	206.92	4400.00	997.10	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	4500.00	0.00	206.92	4500.00	1097.10	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01
	4600.00	0.00	206.92	4600.00	1197.10	0.00	0.00	0.00	0.00	0.00	0.00	398345.12	773423.61	N 32 5 34.49	W 103 35 2.01

Comments	Incl	Azim Grid	TVD	TVDSS	VSEC	NS	EW	DLS	Closure	Closure	Northing	Easting	Latitude	Longitude
	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)	(1/100ft)	(ft)	(ft)	(ftUS)	(ftUS)	(N/S...)	(E/W...)
12000.00	89.75	180.00	9255.64	5852.74	2949.50	-2949.50	-135.78	0.00	2962.63	182.64	386356.71	773287.84	N 32 5 53.1	W 103 35 3.83
12100.00	89.75	180.00	9256.08	5853.18	3049.50	-3049.50	-135.78	0.00	3052.52	182.65	386356.71	773287.83	N 32 5 43.2	W 103 35 3.84
12200.00	89.75	180.00	9256.61	5853.61	3149.50	-3149.50	-135.78	0.00	3152.43	182.67	386356.72	773287.83	N 32 5 33.3	W 103 35 3.84
12300.00	89.75	180.00	9256.94	5854.04	3249.50	-3249.50	-135.79	0.00	3252.34	182.69	386356.72	773287.83	N 32 5 23.4	W 103 35 3.85
12400.00	89.75	180.00	9257.38	5854.48	3349.50	-3349.50	-135.79	0.00	3352.25	182.72	386356.73	773287.83	N 32 5 13.5	W 103 35 3.86
12500.00	89.75	180.00	9257.81	5854.91	3449.50	-3449.50	-135.79	0.00	3452.17	182.75	386356.73	773287.82	N 32 5 03.6	W 103 35 3.87
12600.00	89.75	180.00	9258.24	5855.34	3549.50	-3549.50	-135.79	0.00	3552.09	182.78	386356.74	773287.82	N 32 4 53.7	W 103 35 3.88
12700.00	89.75	180.00	9258.68	5855.78	3649.50	-3649.50	-135.80	0.00	3652.02	182.83	386356.74	773287.82	N 32 4 43.8	W 103 35 3.89
12800.00	89.75	180.00	9259.11	5856.21	3749.50	-3749.50	-135.80	0.00	3751.95	182.87	386356.74	773287.82	N 32 4 33.9	W 103 35 3.89
12900.00	89.75	180.00	9259.54	5856.64	3849.50	-3849.50	-135.80	0.00	3851.89	182.92	386356.75	773287.81	N 32 4 24.0	W 103 35 3.90
13000.00	89.75	180.00	9259.98	5857.08	3949.49	-3949.49	-135.80	0.00	3951.83	181.97	386356.75	773287.81	N 32 4 14.1	W 103 35 3.92
13100.00	89.75	180.00	9260.41	5857.51	4049.49	-4049.49	-135.81	0.00	4051.77	181.92	386356.76	773287.81	N 32 4 04.2	W 103 35 3.93
13200.00	89.75	180.00	9260.84	5857.94	4149.49	-4149.49	-135.81	0.00	4151.71	181.87	386356.76	773287.80	N 32 3 54.3	W 103 35 3.93
13300.00	89.75	180.00	9261.28	5858.38	4249.49	-4249.49	-135.81	0.00	4251.66	181.83	386356.77	773287.80	N 32 3 44.4	W 103 35 3.94
13400.00	89.75	180.00	9261.71	5858.81	4349.49	-4349.49	-135.81	0.00	4351.61	181.79	386356.77	773287.80	N 32 3 34.5	W 103 35 3.95
13500.00	89.75	180.00	9262.14	5859.24	4449.49	-4449.49	-135.82	0.00	4451.56	181.75	386356.77	773287.80	N 32 3 24.6	W 103 35 3.95
13600.00	89.75	180.00	9262.58	5859.68	4549.49	-4549.49	-135.82	0.00	4551.52	181.71	386356.77	773287.80	N 32 3 14.7	W 103 35 3.96
13700.00	89.75	180.00	9263.01	5860.11	4649.49	-4649.49	-135.82	0.00	4651.47	181.67	386356.78	773287.79	N 32 3 04.8	W 103 35 3.97
13800.00	89.75	180.00	9263.44	5860.54	4749.49	-4749.49	-135.82	0.00	4751.43	181.64	386356.78	773287.79	N 32 2 54.9	W 103 35 3.98
13900.00	89.75	180.00	9263.88	5860.98	4849.49	-4849.49	-135.82	0.00	4851.39	181.60	386356.79	773287.79	N 32 2 45.0	W 103 35 3.99
14000.00	89.75	180.00	9264.31	5861.41	4949.48	-4949.48	-135.83	0.00	4951.35	181.57	386356.79	773287.79	N 32 2 35.1	W 103 35 3.99
14100.00	89.75	180.00	9264.74	5861.84	5049.48	-5049.48	-135.83	0.00	5051.31	181.54	386356.80	773287.78	N 32 2 25.2	W 103 35 4.00
14200.00	89.75	180.00	9265.18	5862.28	5149.48	-5149.48	-135.83	0.00	5151.27	181.51	386356.80	773287.78	N 32 2 15.3	W 103 35 4.01
14300.00	89.75	180.00	9265.61	5862.71	5249.48	-5249.48	-135.84	0.00	5251.24	181.48	386356.81	773287.78	N 32 2 05.4	W 103 35 4.02
14400.00	89.75	180.00	9266.05	5863.15	5349.48	-5349.48	-135.84	0.00	5351.21	181.45	386356.81	773287.78	N 32 1 55.5	W 103 35 4.03
14500.00	89.75	180.00	9266.48	5863.58	5449.48	-5449.48	-135.84	0.00	5451.17	181.43	386356.81	773287.77	N 32 1 45.6	W 103 35 4.04
14600.00	89.75	180.00	9266.91	5864.01	5549.48	-5549.48	-135.84	0.00	5551.14	181.40	386356.82	773287.77	N 32 1 35.7	W 103 35 4.05
14700.00	89.75	180.00	9267.35	5864.45	5649.48	-5649.48	-135.84	0.00	5651.11	181.38	386356.82	773287.77	N 32 1 25.8	W 103 35 4.06
14800.00	89.75	180.00	9267.78	5864.88	5749.48	-5749.48	-135.85	0.00	5751.08	181.35	386356.83	773287.77	N 32 1 15.9	W 103 35 4.07
14900.00	89.75	180.00	9268.21	5865.31	5849.48	-5849.48	-135.85	0.00	5851.05	181.33	386356.83	773287.76	N 32 1 06.0	W 103 35 4.08
15000.00	89.75	180.00	9268.65	5865.75	5949.48	-5949.48	-135.85	0.00	5951.03	181.30	386356.84	773287.76	N 32 0 56.1	W 103 35 4.09
15100.00	89.75	180.00	9269.08	5866.18	6049.47	-6049.47	-135.86	0.00	6051.00	181.29	386356.84	773287.76	N 32 0 46.2	W 103 35 4.10
15200.00	89.75	180.00	9269.51	5866.61	6149.47	-6149.47	-135.86	0.00	6150.97	181.27	386356.84	773287.76	N 32 0 36.3	W 103 35 4.11
15300.00	89.75	180.00	9269.95	5867.05	6249.47	-6249.47	-135.86	0.00	6250.95	181.25	386356.85	773287.76	N 32 0 26.4	W 103 35 4.12
15400.00	89.75	180.00	9270.38	5867.48	6349.47	-6349.47	-135.86	0.00	6350.93	181.23	386356.85	773287.75	N 32 0 16.5	W 103 35 4.13
15500.00	89.75	180.00	9270.81	5867.91	6449.47	-6449.47	-135.86	0.00	6450.90	181.21	386356.85	773287.75	N 32 0 06.6	W 103 35 4.14
15600.00	89.75	180.00	9271.25	5868.35	6549.47	-6549.47	-135.87	0.00	6550.88	181.19	386356.86	773287.75	N 32 0 00.0	W 103 35 4.15
15700.00	89.75	180.00	9271.68	5868.78	6649.47	-6649.47	-135.87	0.00	6650.86	181.17	386356.86	773287.75	N 32 0 00.0	W 103 35 4.16
15800.00	89.75	180.00	9272.11	5869.21	6749.46	-6749.46	-135.87	0.00	6750.84	181.15	386356.87	773287.74	N 32 0 00.0	W 103 35 4.17
15900.00	89.75	180.00	9272.55	5869.65	6849.47	-6849.47	-135.87	0.00	6850.82	181.13	386356.87	773287.74	N 32 0 00.0	W 103 35 4.18
16000.00	89.75	180.00	9272.98	5870.08	6949.46	-6949.46	-135.88	0.00	6950.79	181.12	386356.87	773287.74	N 32 0 00.0	W 103 35 4.19
16100.00	89.75	180.00	9273.42	5870.51	7049.47	-7049.47	-135.88	0.00	7050.77	181.10	386356.87	773287.74	N 32 0 00.0	W 103 35 4.20
16200.00	89.75	180.00	9273.85	5870.95	7149.46	-7149.46	-135.88	0.00	7150.76	181.09	386356.88	773287.73	N 32 0 00.0	W 103 35 4.21
16300.00	89.75	180.00	9274.28	5871.38	7249.46	-7249.46	-135.88	0.00	7250.74	181.07	386356.88	773287.73	N 32 0 00.0	W 103 35 4.22
16400.00	89.75	180.00	9274.71	5871.81	7349.46	-7349.46	-135.89	0.00	7350.72	181.06	386356.88	773287.73	N 32 0 00.0	W 103 35 4.23
16500.00	89.75	180.00	9275.15	5872.25	7449.46	-7449.46	-135.89	0.00	7450.69	181.05	386356.89	773287.72	N 32 0 00.0	W 103 35 4.24
16600.00	89.75	180.00	9275.58	5872.68	7549.46	-7549.46	-135.89	0.00	7550.67	181.04	386356.89	773287.72	N 32 0 00.0	W 103 35 4.25
16700.00	89.75	180.00	9276.01	5873.11	7649.46	-7649.46	-135.89	0.00	7650.65	181.02	386356.90	773287.72	N 32 0 00.0	W 103 35 4.26
16800.00	89.75	180.00	9276.45	5873.55	7749.46	-7749.46	-135.90	0.00	7750.63	181.00	386356.91	773287.72	N 32 0 00.0	W 103 35 4.27
16900.00	89.75	180.00	9276.88	5873.98	7849.46	-7849.46	-135.90	0.00	7850.62	180.99	386356.91	773287.72	N 32 0 00.0	W 103 35 4.28
17000.00	89.75	180.00	9277.32	5874.42	7949.46	-7949.46	-135.90	0.00	7950.62	180.97	386356.92	773287.71	N 32 0 00.0	W 103 35 4.29
17100.00	89.75	180.00	9277.75	5874.85	8049.46	-8049.46	-135.91	0.00	8050.60	180.96	386356.92	773287.71	N 32 0 00.0	W 103 35 4.30
17200.00	89.75	180.00	9278.18	5875.28	8149.45	-8149.45	-135.91	0.00	8150.59	180.94	386356.92	773287.71	N 32 0 00.0	W 103 35 4.31
17300.00	89.75	180.00	9278.62	5875.72	8249.45	-8249.45	-135.91	0.00	8250.57	180.93	386356.93	773287.71		

Borehole: Original Borehole	Well: Red Hills Unit #16H	Field: NM Lea County (NAD 83)	Structure: Cimarex Red Hills Unit #16H
Gravity & Magnetic Parameters Model: HDGM 2017 Dip: 58.784° Date: 28-Jun-2017 MagDec: 6.842° FS: 47966.231nT Gravity FS: 998.433mgn (9.80665 Based)		Surface Location NAD83 New Mexico State Plane, Eastern Zone, US Feet Lat: N 32 5 34.48 Northing: 398345.12ftUS Grid Conv: 0.3982° Lon: W 103 35 2.61 Easting: 773423.61ftUS Scale Fact: 0.99997078	
		Miscellaneous Slot: Red Hills Unit # 16H TVD Ref: RKB(3402.9ft above MSL) Plan: Cimarex Red Hills Unit 16H Rev2 tmn 29Jun17	



Critical Points								
Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SL [506' FNL, 584' FWL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
KOP - Build 12° DLS	8746.49	0.00	206.92	8746.49	0.00	0.00	0.00	0.00
Leonard Shale	9075.40	39.47	206.92	9050.00	97.08	-97.08	-49.30	12.00
Build and Turn 12° DLS	9121.49	45.00	206.92	9084.11	124.69	-124.69	-63.31	12.00
LP	9543.88	89.75	180.00	9245.00	493.41	-493.41	-135.72	12.00
Cimarex Red Hills Unit 16H PBHL [330° FSL, 380° FWL]	18772.90	89.75	180.00	9285.00	9722.34	-9722.34	-135.94	0.00

BLM LEASE NUMBER: NMNM05792

COMPANY NAME: Cimarex Energy Company of Colorado

ASSOCIATED WELL NAME: Red Hills Unit 16H & 17H

NEPA Number: DOI-BLM-NM-P020-2017-0873-EA

Conditions of Approval for Lesser Prairie Chicken:

Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken:

Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.