

OCD-ARTESIA

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MAR 14 2012

Form 3160-3
(April 2004)

OCD-ARTESIA

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB No. 1004-0137
Expires March 31, 2007

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-0560353	
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 Crescent Hale 12 Federal No. 2 [38624]	
3b. Phone No (include area code) 432-571-7800		9 API Well No. 30-015- 40054	
4 Location of Well (Report location clearly and in accordance with any State requirements. *) At Surface 525 FNL & 1535 FWL At proposed prod Zone 330 FSL & 1980 FWL UNORTHODOX LOCATION Horizontal Bone Spring test		10 Field and Pool, or Exploratory Benson; Bone Spring [5200]	
14 Distance in miles and direction from nearest town or post office*		11 Sec, T, R, M or Blk and Survey or Area 12-19S-30E	
15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig unit line if any) 330'		12. County or Parish Eddy	
16. No of acres in lease NM-0560353 - 2160.32 acres		13 State NM	
17. Spacing Unit dedicated to this well E2W2 160 acres			
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 486'		20 BLM/BIA Bond No on File NM-2575	
19 Proposed Depth MD 12923 TVD 8600			
21 Elevations (Show whether DF, KDB, RT, GL, etc) 3456' GR		22. Approximate date work will start* 02.28.11	
		23. Estimated duration 25-30 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 	Name (Printed/Typed) Terri Stathem	Date 12.29.11
Title Regulatory Analyst		
Approved By (Signature) 151 Felicia J. Probert	Name (Printed/Typed) 151 Felicia J. Probert	Date 3/7/12
Title for STATE DIRECTOR	Office NM STATE 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)

Capitan Controlled Water Basin

CONDITIONS OF APPROVAL

Approval Subject to General Requirements
& Special Stipulations Attached

Operator Certification Statement
Crescent Hale 12 Federal No. 2
Cimarex Energy Co. of Colorado
Unit C, Section 12
T19S-R30E, Eddy County, NM

Operator's Representative

Cimarex Energy Co. of Colorado
600 N. Marienfeld St., Ste. 600
Midland, TX 79701
Office Phone: (432) 571-7800
Zeno Farris

CERTIFICATION: I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

Executed this 1st day of December, 2011

NAME: 

TITLE: Regulatory Analyst

ADDRESS: 600 N. Marienfeld St., Ste. 600
Midland, TX 79701

TELEPHONE: (432) 620-1936

EMAIL: tstathem@cimarex.com

Field Representative: Same as above

DISTRICT I

1925 N. French Dr., Hobbs, NM 88240

DISTRICT II

1301 W. Grand Avenue, Artesia, NM 88210

DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV

1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102

Revised July 18, 2010

Submit one copy

to appropriate
District Office

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NMOCD ARTESIA

WELL LOCATION AND ACREAGE DEDICATION PLAT

AMENDED REPORT

API Number 30-DIS-40054		Pool Code 5200	Pool Name Benson; Bone Spring
Property Code 38624	Property Name CRESCENT HALE "12" FEDERAL		Well Number 2
GRID No. 162683	Operator Name CIMAREX ENERGY CO. OF COLORADO		Elevation 3456'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	12	19	30		525	NORTH	1535	WEST	EDDY

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
N	12	19	30		330	SOUTH	1980	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160			NSL Pending

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

<p>SURFACE LOCATION Lat - N 32°40'50.378" Long - W 103°55'44.715" NMSPC = N 611592.3 E 665714.7 (NAD-83)</p> <p>BOTTOM HOLE LOCATION Lat - N 32°40'06.604" Long - W 103°55'39.531" NMSPC = N 607170.4 E 666174.7 (NAD-83)</p>	<p>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.</p> <p>Signature: <i>Terri Stathem</i> Date: <i>12/14/11</i></p> <p>Printed Name: Terri Stathem Email Address: tstathem@cimarex.com</p> <p>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.</p> <p>Signature: <i>Gary L. Jones</i> Date: <i>SEP 10 2010</i></p> <p>Professional Surveyor Seal of Gary L. Jones, State of New Mexico, No. 3316</p> <p>Certificate No. Gary L. Jones 7977</p> <p>BASIN SURVEYS 23516</p>
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Application to Drill
Crescent Hale 12 Federal No. 2
 Cimarex Energy Co. of Colorado
 Unit C, Section 12
 T19S-R30E, 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 525 FNL & 1535 FWL
 BHL 330 FSL & 1980 FWL

- 2 Elevation above sea level: 3456 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 12923 TVD 8600

- 6 Estimated tops of geological markers:

Rustler	475	Delaware Sands	4170
T. Salt	700	Cherry Canyon	4080
B. Salt	1900	Brushy Canyon	5136
Yates	2256	Bone Spring	6150
7 Rivers	2470	FBSS	7690
Queen	3082	SBSS	8420

- 7 Possible mineral bearing formation:

Delaware	Oil	Bone Spring	Oil
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8 Proposed Mud Circulating System:

Depth	Mud Wt	Visc	Fluid Loss	Type Mud
0' to 500' 415	8.4 - 8.6	28	NC	FW
500' to 4000'	10.0	30-32	NC	Brine water
4000' to 12923'	8.4 - 9.5	30-32	NC	FW, brine

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.

Proposed drilling Plan

Drill surface and intermediate holes and set casing. Drill 8¾" hole to KOP @ 8314 and drill through curve to lateral TD @ 12923 MD, 8600 TVD. Set 5½" 17# P110 LTC casing from 0-12923. Cement as shown in cementing proposal.

Application to Drill
Crescent Hale 12 Federal No. 2
 Cimarex Energy Co. of Colorado
 Unit C, Section 12
 T19S-R30E, Eddy County, NM

9 Casing & Cementing Program:

String	Hole Size	Depth	Casing OD	Weight	Collar	Grade
<i>see</i> Surface	17½"	0' to 415 500'	New 13⅝"	48#	STC	H-40
Intermediate	12¼"	0' to 4000'	New 9⅝"	40#	LTC	J/K-55
Production	8¾"	0' to 12923'	New 5½"	17#	LTC	P-110

10 Cementing:

Surface	Lead: 250 sx Extendacem-CZ + 4% Bentonite + 2% CaCl (wt 13.5, yld 1.75) Tail: 233 sx Halcem C + 2% CaCl (wt 14.8, yld 1.35 - 100% excess)
Excess 100%	TOC Surface
Intermediate	Lead: 419 sx Econocem + 5% Salt + 5 lbm/sk Gilsonite (wt 12.9, yld 1.85 - 70% excess) Tail: 610 sks Halcem + 1% CaCl ₂ (wt 14.8, yld 1.34 - 25% excess)
Excess 25%	TOC Surface
Production	Lead: 533 sx EconoCem + 5# Gilsonite (wt 11.9, yld 2.48 - 50% excess) Tail: 1387 sx Halcem (wt 15.6, yld 1.19 - 25% excess)
Excess 25%	TOC 3500'

Depth to ground water is 125 according to the State Engineer. Fresh water zones will be protected by setting 13¾" casing at 500' and cementing to surface. Hydrocarbon zones will be protected by setting 9¾" casing at 4000 and cementing to surface, and by setting 5½" casing at 12923 and cementing to 3500.

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

11 Pressure control Equipment:

Exhibit "E". A 13¾" 5000 PSI working pressure BOP tested to 3000 psi 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 as needed. 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 tested to 3000 psi.

BOPS will be tested by an independent service company to 250 psi low and 3000 psi high. Hydril will be tested to 250 psi low and 3000 psi high.

Application to Drill
Crescent Hale 12 Federal No. 2
Cimarex Energy Co. of Colorado
Unit C, Section 12
T19S-R30E, Eddy County, NM

12 Testing, Logging and Coring Program: *See COA*

- A. Mud logging program: 2 man unit from 4000' to TD
- B. Electric logging program: CNL / LDT / CAL / GR, DLL / CAL / GR
- C. No DSTs or cores are planned at this time.

13 Potential Hazards:

No abnormal pressures or temperatures are expected. In accordance with Onshore Order 6, Cimarex does not anticipate that there will be enough H₂S from the surface to the Bone Spring formations to meet the BLM's minimum requirements for the submission of an "H₂S Drilling Operation Plan" or "Public Protection Plan" for the drilling and completion of this well. Since we have an H₂S Safety package on all wells, attached is an "H₂S Drilling Operations Plan." 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 **3870 psi** Estimated BHT **130°**

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

Drilling expected to take 30-35 days

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

15 Other Facets of Operations:

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

Bone Spring pay will be perforated and stimulated.

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



Cimarex Energy Co.

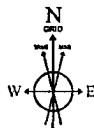
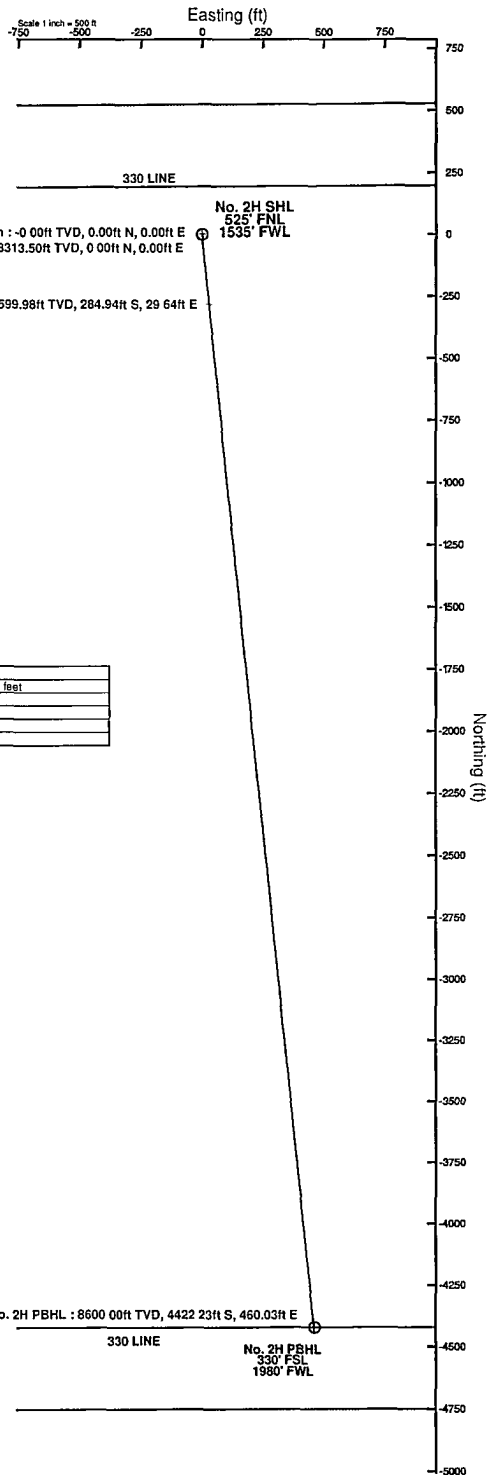
Location: Eddy County, NM
Field: (Crescent) Sec 11 & 12, T19S, R30E
Facility: Crescent Hale 12 Federal

Slot: No. 2H SHL
Well: No. 2H
Wellbore: No. 2H PWB



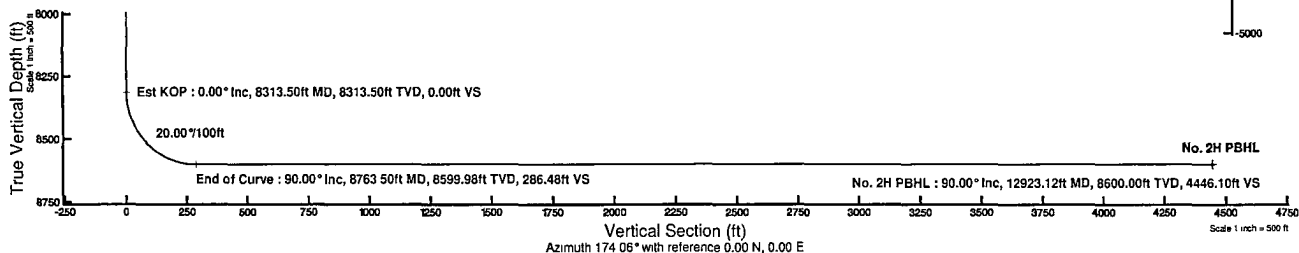
Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	0.00	0.000	174.061	0.00	0.00	0.00	0.00	0.00
Est KOP	8313.50	0.000	174.061	8313.50	0.00	0.00	0.00	0.00
End of Curve	8763.50	90.000	174.061	8599.98	-284.94	29.64	20.00	286.48
No. 2H PBHL	12923.12	90.000	174.061	8600.00	-4422.23	460.03	0.00	4446.10



BGGM (1945.0 to 2012.0) Dip: 80.54° Field: 48805.5 nT
Magnetic North is 7.77 degrees East of True North (at 11/29/2011)
Grid North is 0.22 degrees East of True North
To correct azimuth from True to Grid subtract 0.22 degrees
To correct azimuth from Magnetic to Grid add 7.56 degrees
For example: If the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 7.56 = 97.56

Plot reference wellpath is Prelim. 1	Grid System: NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet
True vertical depths are referenced to Rio on No. 2H SHL (KB)	North Reference: Grid north
Measured depths are referenced to Rio on No. 2H SHL (KB)	Scale: True distance
Rio on No. 2H SHL (KB) to Mean Sea Level: 3456 feet	Depths are in feet
Mean Sea Level to Mud line (At Slot No. 2H SHL): 0 feet	Created by: calphuk on 11/29/2011
Coordinates are in feet referenced to Slot	





Planned Wellpath Report

Prelim_1
Page 1 of 5



REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 2H SHL
Area	Eddy County, NM	Well	No. 2H
Field	(Crescent) Sec 11 & 12, T19S, R30E	Wellbore	No. 2H PWB
Facility	Crescent Hale 12 Federal		

REPORT SETUP INFORMATION			
Projection System	NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet	Software System	WellArchitect® 3.0.0
North Reference	Grid	User	Calhphik
Scale	0.999927	Report Generated	11/29/2011 at 8:55:22 AM
Convergence at slot	0.22° East	Database/Source file	WA_Midland/No. 2H_PWB.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-35.30	1004.98	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W
Facility Reference Pt			664709.80	611627.60	32°40'50.764"N	103°55'56.472"W
Field Reference Pt			663634.20	611763.80	32°40'52.152"N	103°56'09.051"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Rig on No. 2H SHL (KB) to GL	3456.00ft
Horizontal Reference Pt	Slot	Rig on No. 2H SHL (KB) to Mean Sea Level	3456.00ft
Vertical Reference Pt	Rig on No. 2H SHL (KB)	Rig on No. 2H SHL (KB) to Mud Line at Slot (No. 2H SHL)	3456.00ft
MD Reference Pt	Rig on No. 2H SHL (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	174.06°



Planned Wellpath Report

Prelim_1
Page 2 of 5



REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 2H SHL
Area	Eddy County, NM	Well	No. 2H
Field	(Crescent) Sec 11 & 12, T19S, R30E	Wellbore	No. 2H PWB
Facility	Crescent Hale 12 Federal		

WELLPATH DATA (137 stations) † = interpolated/extrapolated station												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	174.061	0.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	Tie On
100.00†	0.000	174.061	100.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
200.00†	0.000	174.061	200.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
300.00†	0.000	174.061	300.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
400.00†	0.000	174.061	400.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
500.00†	0.000	174.061	500.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
600.00†	0.000	174.061	600.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
700.00†	0.000	174.061	700.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
800.00†	0.000	174.061	800.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
900.00†	0.000	174.061	900.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
1000.00†	0.000	174.061	1000.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
1100.00†	0.000	174.061	1100.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
1200.00†	0.000	174.061	1200.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
1300.00†	0.000	174.061	1300.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
1400.00†	0.000	174.061	1400.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
1500.00†	0.000	174.061	1500.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
1600.00†	0.000	174.061	1600.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
1700.00†	0.000	174.061	1700.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
1800.00†	0.000	174.061	1800.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
1900.00†	0.000	174.061	1900.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
2000.00†	0.000	174.061	2000.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
2100.00†	0.000	174.061	2100.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
2200.00†	0.000	174.061	2200.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
2300.00†	0.000	174.061	2300.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
2400.00†	0.000	174.061	2400.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
2500.00†	0.000	174.061	2500.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
2600.00†	0.000	174.061	2600.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
2700.00†	0.000	174.061	2700.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
2800.00†	0.000	174.061	2800.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
2900.00†	0.000	174.061	2900.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
3000.00†	0.000	174.061	3000.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
3100.00†	0.000	174.061	3100.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
3200.00†	0.000	174.061	3200.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
3300.00†	0.000	174.061	3300.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
3400.00†	0.000	174.061	3400.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
3500.00†	0.000	174.061	3500.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
3600.00†	0.000	174.061	3600.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
3700.00†	0.000	174.061	3700.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
3800.00†	0.000	174.061	3800.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
3900.00†	0.000	174.061	3900.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
4000.00†	0.000	174.061	4000.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
4100.00†	0.000	174.061	4100.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
4170.00†	0.000	174.061	4170.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	Delaware Sands
4200.00†	0.000	174.061	4200.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
4300.00†	0.000	174.061	4300.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	



Planned Wellpath Report

Prelim_1
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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 2H SHL
Area	Eddy County, NM	Well	No. 2H
Field	(Crescent) Sec 11 & 12, T19S, R30E	Wellbore	No. 2H PWB
Facility	Crescent Hale 12 Federal		

WELLPATH DATA (137 stations) † = interpolated/extrapolated station												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4400.00†	0.000	174.061	4400.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
4500.00†	0.000	174.061	4500.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
4600.00†	0.000	174.061	4600.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
4700.00†	0.000	174.061	4700.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
4800.00†	0.000	174.061	4800.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
4900.00†	0.000	174.061	4900.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
5000.00†	0.000	174.061	5000.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
5100.00†	0.000	174.061	5100.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
5200.00†	0.000	174.061	5200.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
5300.00†	0.000	174.061	5300.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
5400.00†	0.000	174.061	5400.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
5500.00†	0.000	174.061	5500.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
5600.00†	0.000	174.061	5600.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
5700.00†	0.000	174.061	5700.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
5800.00†	0.000	174.061	5800.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
5900.00†	0.000	174.061	5900.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
6000.00†	0.000	174.061	6000.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
6100.00†	0.000	174.061	6100.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
6150.00†	0.000	174.061	6150.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	Bone Spring
6200.00†	0.000	174.061	6200.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
6300.00†	0.000	174.061	6300.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
6400.00†	0.000	174.061	6400.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
6500.00†	0.000	174.061	6500.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
6600.00†	0.000	174.061	6600.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
6700.00†	0.000	174.061	6700.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
6800.00†	0.000	174.061	6800.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
6900.00†	0.000	174.061	6900.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
7000.00†	0.000	174.061	7000.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
7100.00†	0.000	174.061	7100.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
7200.00†	0.000	174.061	7200.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
7300.00†	0.000	174.061	7300.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
7400.00†	0.000	174.061	7400.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
7500.00†	0.000	174.061	7500.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
7600.00†	0.000	174.061	7600.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
7690.00†	0.000	174.061	7690.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	1st BSS
7700.00†	0.000	174.061	7700.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
7800.00†	0.000	174.061	7800.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
7900.00†	0.000	174.061	7900.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
8000.00†	0.000	174.061	8000.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
8100.00†	0.000	174.061	8100.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
8200.00†	0.000	174.061	8200.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
8300.00†	0.000	174.061	8300.00	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	
8313.50	0.000	174.061	8313.50	0.00	0.00	0.00	665714.70	611592.30	32°40'50.377"N	103°55'44.716"W	0.00	Est KOP
8400.00†	17.300	174.061	8398.69	12.96	-12.89	1.34	665716.04	611579.41	32°40'50.250"N	103°55'44.700"W	20.00	
8422.62†	21.824	174.061	8420.00	20.53	-20.42	2.12	665716.82	611571.88	32°40'50.175"N	103°55'44.692"W	20.00	2nd BSS



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 2H SHL
Area	Eddy County, NM	Well	No. 2H
Field	(Crescent) Sec 11 & 12, T19S, R30E	Wellbore	No. 2H PWB
Facility	Crescent Hale 12 Federal		

WELLPATH DATA (137 stations) † = interpolated/extrapolated station												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8500.00†	37.300	174.061	8487.10	58.59	-58.28	6.06	665720.76	611534.03	32°40'49.800"N	103°55'44.647"W	20.00	
8600.00†	57.300	174.061	8554.58	131.71	-131.00	13.63	665728.33	611461.31	32°40'49.081"N	103°55'44.562"W	20.00	
8700.00†	77.300	174.061	8592.97	223.50	-222.30	23.13	665737.82	611370.02	32°40'48.177"N	103°55'44.455"W	20.00	
8763.50	90.000	174.061	8599.98	286.48	-284.94	29.64	665744.34	611307.38	32°40'47.557"N	103°55'44.382"W	20.00	End of Curve
8800.00†	90.000	174.061	8599.98	322.98	-321.25	33.42	665748.12	611271.08	32°40'47.197"N	103°55'44.339"W	0.00	
8900.00†	90.000	174.061	8599.98	422.98	-420.71	43.77	665758.46	611171.62	32°40'46.213"N	103°55'44.222"W	0.00	
9000.00†	90.000	174.061	8599.98	522.98	-520.17	54.11	665768.81	611072.17	32°40'45.228"N	103°55'44.106"W	0.00	
9100.00†	90.000	174.061	8599.98	622.98	-619.64	64.46	665779.15	610972.71	32°40'44.244"N	103°55'43.989"W	0.00	
9200.00†	90.000	174.061	8599.98	722.98	-719.10	74.81	665789.50	610873.26	32°40'43.259"N	103°55'43.872"W	0.00	
9300.00†	90.000	174.061	8599.98	822.98	-818.56	85.15	665799.85	610773.80	32°40'42.275"N	103°55'43.756"W	0.00	
9400.00†	90.000	174.061	8599.98	922.98	-918.02	95.50	665810.19	610674.34	32°40'41.290"N	103°55'43.639"W	0.00	
9500.00†	90.000	174.061	8599.98	1022.98	-1017.49	105.85	665820.54	610574.89	32°40'40.306"N	103°55'43.523"W	0.00	
9600.00†	90.000	174.061	8599.98	1122.98	-1116.95	116.19	665830.89	610475.43	32°40'39.321"N	103°55'43.406"W	0.00	
9700.00†	90.000	174.061	8599.98	1222.98	-1216.41	126.54	665841.23	610375.98	32°40'38.337"N	103°55'43.289"W	0.00	
9800.00†	90.000	174.061	8599.98	1322.98	-1315.88	136.89	665851.58	610276.52	32°40'37.352"N	103°55'43.173"W	0.00	
9900.00†	90.000	174.061	8599.98	1422.98	-1415.34	147.23	665861.92	610177.07	32°40'36.368"N	103°55'43.056"W	0.00	
10000.00†	90.000	174.061	8599.99	1522.98	-1514.80	157.58	665872.27	610077.61	32°40'35.383"N	103°55'42.940"W	0.00	
10100.00†	90.000	174.061	8599.99	1622.98	-1614.27	167.93	665882.62	609978.15	32°40'34.399"N	103°55'42.823"W	0.00	
10200.00†	90.000	174.061	8599.99	1722.98	-1713.73	178.28	665892.96	609878.70	32°40'33.414"N	103°55'42.706"W	0.00	
10300.00†	90.000	174.061	8599.99	1822.98	-1813.19	188.62	665903.31	609779.24	32°40'32.430"N	103°55'42.590"W	0.00	
10400.00†	90.000	174.061	8599.99	1922.98	-1912.66	198.97	665913.65	609679.79	32°40'31.445"N	103°55'42.473"W	0.00	
10500.00†	90.000	174.061	8599.99	2022.98	-2012.12	209.32	665924.00	609580.33	32°40'30.461"N	103°55'42.357"W	0.00	
10600.00†	90.000	174.061	8599.99	2122.98	-2111.58	219.66	665934.35	609480.87	32°40'29.476"N	103°55'42.240"W	0.00	
10700.00†	90.000	174.061	8599.99	2222.98	-2211.05	230.01	665944.69	609381.42	32°40'28.492"N	103°55'42.123"W	0.00	
10800.00†	90.000	174.061	8599.99	2322.98	-2310.51	240.36	665955.04	609281.96	32°40'27.507"N	103°55'42.007"W	0.00	
10900.00†	90.000	174.061	8599.99	2422.98	-2409.97	250.70	665965.39	609182.51	32°40'26.523"N	103°55'41.890"W	0.00	
11000.00†	90.000	174.061	8599.99	2522.98	-2509.44	261.05	665975.73	609083.05	32°40'25.538"N	103°55'41.774"W	0.00	
11100.00†	90.000	174.061	8599.99	2622.98	-2608.90	271.40	665986.08	608983.60	32°40'24.554"N	103°55'41.657"W	0.00	
11200.00†	90.000	174.061	8599.99	2722.98	-2708.36	281.74	665996.42	608884.14	32°40'23.569"N	103°55'41.540"W	0.00	
11300.00†	90.000	174.061	8599.99	2822.98	-2807.83	292.09	666006.77	608784.68	32°40'22.585"N	103°55'41.424"W	0.00	
11400.00†	90.000	174.061	8599.99	2922.98	-2907.29	302.44	666017.12	608685.23	32°40'21.600"N	103°55'41.307"W	0.00	
11500.00†	90.000	174.061	8599.99	3022.98	-3006.75	312.79	666027.46	608585.77	32°40'20.616"N	103°55'41.191"W	0.00	
11600.00†	90.000	174.061	8599.99	3122.98	-3106.22	323.13	666037.81	608486.32	32°40'19.631"N	103°55'41.074"W	0.00	
11700.00†	90.000	174.061	8599.99	3222.98	-3205.68	333.48	666048.15	608386.86	32°40'18.647"N	103°55'40.957"W	0.00	
11800.00†	90.000	174.061	8599.99	3322.98	-3305.14	343.83	666058.50	608287.41	32°40'17.662"N	103°55'40.841"W	0.00	
11900.00†	90.000	174.061	8599.99	3422.98	-3404.61	354.17	666068.85	608187.95	32°40'16.677"N	103°55'40.724"W	0.00	
12000.00†	90.000	174.061	8600.00	3522.98	-3504.07	364.52	666079.19	608088.49	32°40'15.693"N	103°55'40.608"W	0.00	
12100.00†	90.000	174.061	8600.00	3622.98	-3603.53	374.87	666089.54	607989.04	32°40'14.708"N	103°55'40.491"W	0.00	
12200.00†	90.000	174.061	8600.00	3722.98	-3703.00	385.21	666099.89	607889.58	32°40'13.724"N	103°55'40.374"W	0.00	
12300.00†	90.000	174.061	8600.00	3822.98	-3802.46	395.56	666110.23	607790.13	32°40'12.739"N	103°55'40.258"W	0.00	
12400.00†	90.000	174.061	8600.00	3922.98	-3901.92	405.91	666120.58	607690.67	32°40'11.755"N	103°55'40.141"W	0.00	
12500.00†	90.000	174.061	8600.00	4022.98	-4001.39	416.25	666130.92	607591.21	32°40'10.770"N	103°55'40.025"W	0.00	
12600.00†	90.000	174.061	8600.00	4122.98	-4100.85	426.60	666141.27	607491.76	32°40'09.786"N	103°55'39.908"W	0.00	
12700.00†	90.000	174.061	8600.00	4222.98	-4200.31	436.95	666151.62	607392.30	32°40'08.801"N	103°55'39.791"W	0.00	
12800.00†	90.000	174.061	8600.00	4322.98	-4299.78	447.30	666161.96	607292.85	32°40'07.817"N	103°55'39.675"W	0.00	



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 2H SHL
Area	Eddy County, NM	Well	No. 2H
Field	(Crescent) Sec 11 & 12, T19S, R30E	Wellbore	No. 2H PWB
Facility	Crescent Hale 12 Federal		

WELLPATH DATA (137 stations) † = interpolated/extrapolated station												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12900.00†	90.000	174.061	8600.00	4422.98	-4399.24	457.64	666172.31	607193.39	32°40'06.832"N	103°55'39.558"W	0.00	
12923.12	90.000	174.061	8600.00†	4446.10	-4422.23	460.03	666174.70	607170.40	32°40'06.605"N	103°55'39.531"W	0.00	No. 2H PBHL

HOLE & CASING SECTIONS - Ref Wellbore: No. 2H PWB Ref Wellpath: Prelim_1									
String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
5.5in Casing	0.00	12923.12	12923.12	0.00	NA	0.00	0.00	NA	NA

TARGETS										
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape	
1) No. 2H PBHL	12923.12	8600.00	-4422.23	460.03	666174.70	607170.40	32°40'06.605"N	103°55'39.531"W	point	

SURVEY PROGRAM - Ref Wellbore: No. 2H PWB Ref Wellpath: Prelim_1				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
3456.00	12923.12	NaviTrak (Standard)		No. 2H PWB

SR & A

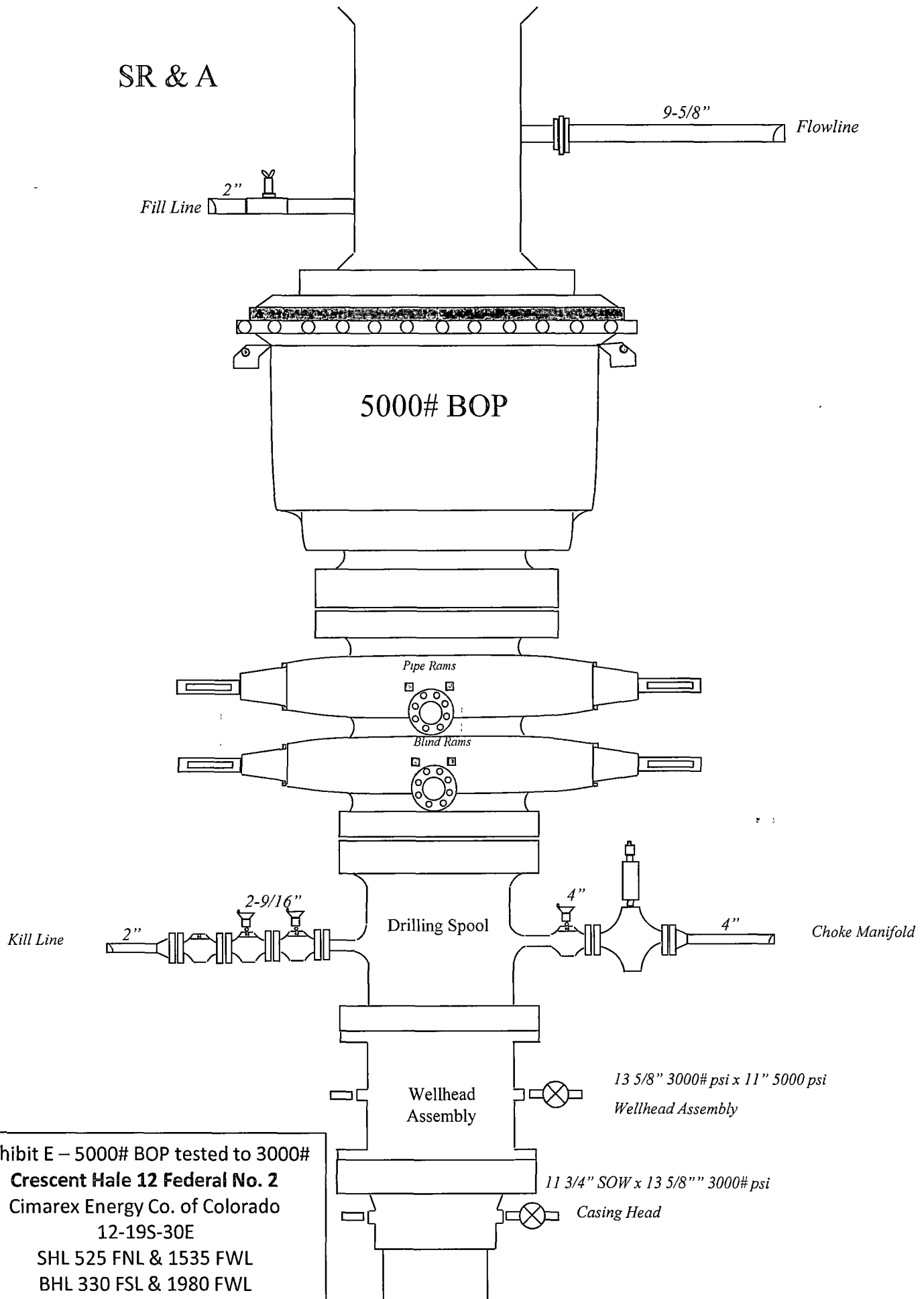
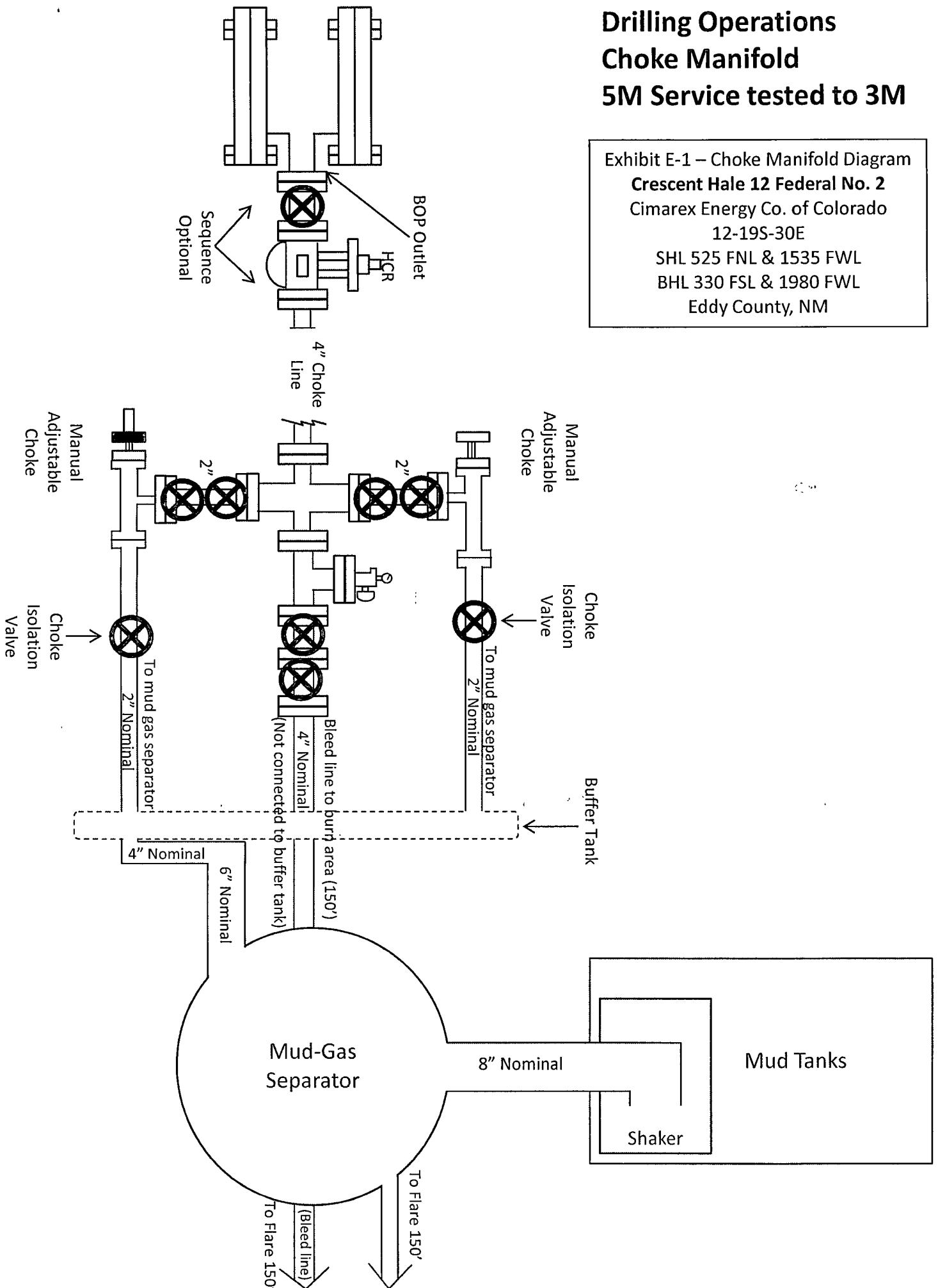


Exhibit E – 5000# BOP tested to 3000#
Crescent Hale 12 Federal No. 2
Cimarex Energy Co. of Colorado
12-19S-30E
SHL 525 FNL & 1535 FWL
BHL 330 FSL & 1980 FWL
Eddy County, NM

Exhibit E-1 – Choke Manifold Diagram
Crescent Hale 12 Federal No. 2
 Cimarex Energy Co. of Colorado
 12-19S-30E
 SHL 525 FNL & 1535 FWL
 BHL 330 FSL & 1980 FWL
 Eddy County, NM



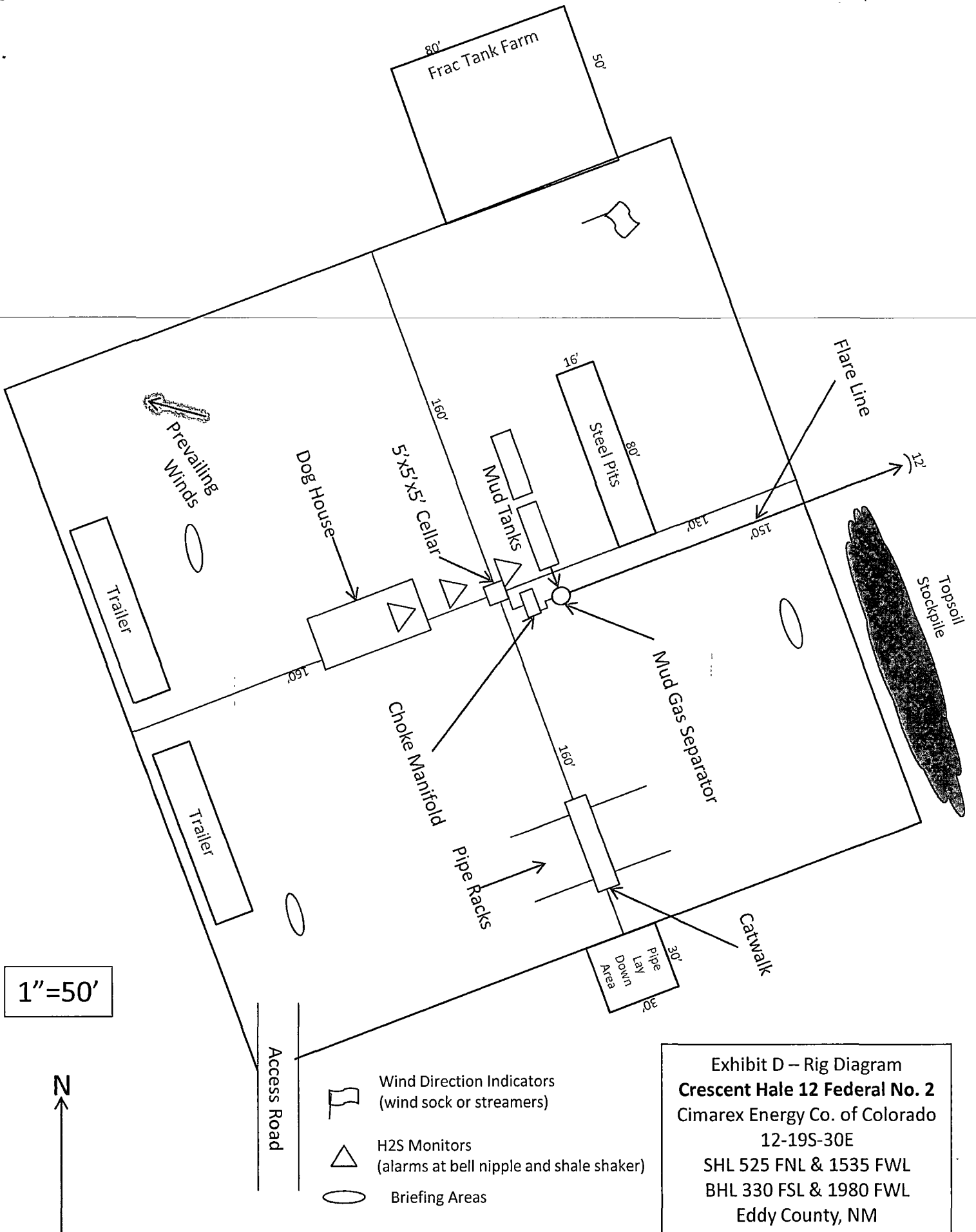


Exhibit D – Rig Diagram
Crescent Hale 12 Federal No. 2
 Cimarex Energy Co. of Colorado
 12-19S-30E
 SHL 525 FNL & 1535 FWL
 BHL 330 FSL & 1980 FWL
 Eddy County, NM

Hydrogen Sulfide Drilling Operations Plan
Crescent Hale 12 Federal No. 2
Cimarex Energy Co. of Colorado
Unit C, Section 12
T19S-R30E, Eddy County, NM

- 1 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.
- 2 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.
- 3 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.
- 4 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.
- 5 Well control equipment:
 - A. See exhibit "E"
- 6 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.
- 7 Drillstem Testing:

No DSTs or cores are planned at this time.
- 8 Drilling contractor supervisor will be required to be familiar with the effects H₂S has on tubular goods and other mechanical equipment.
- 9 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
Crescent Hale 12 Federal No. 2
Cimarex Energy Co. of Colorado
Unit C, Section 12
T19S-R30E, 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
Crescent Hale 12 Federal No. 2
 Cimarex Energy Co. of Colorado
 Unit C, Section 12
 T19S-R30E, 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		

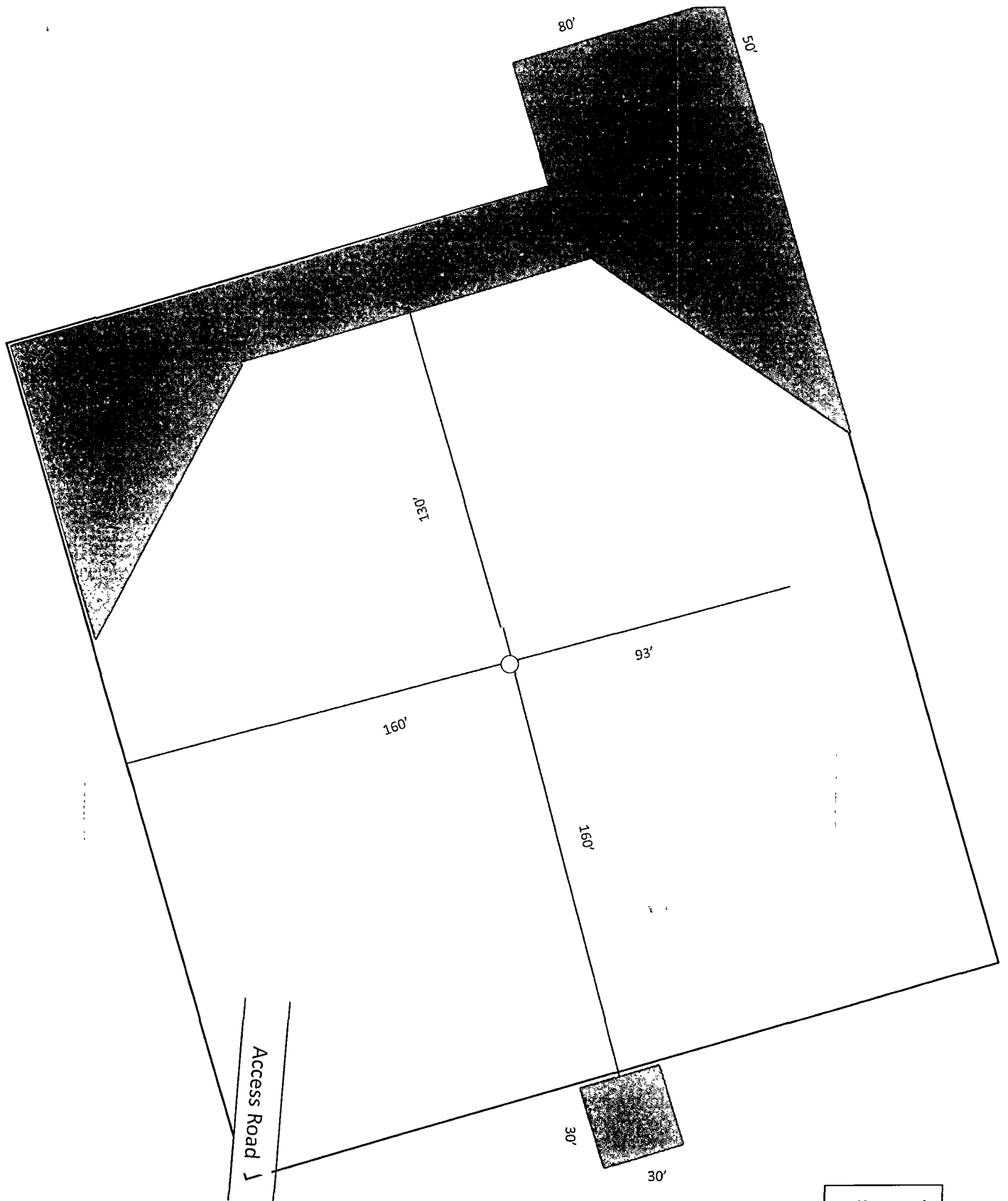


Exhibit D-1
Production Facilities Layout Diagram
Crescent Hale 12 Federal No. 2
Cimarex Energy Co. of Colorado
12-19S-30E
SHL 525 FNL & 1535 FWL
BHL 330 FSL & 1980 FWL
Eddy County, NM

PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Cimarex Energy Co. of Colorado
LEASE NO.:	NMNM560353
WELL NAME & NO.:	Crescent Hale 12 Federal 2
SURFACE HOLE FOOTAGE:	525' FNL & 1535' FWL
BOTTOM HOLE FOOTAGE:	330' FSL & 1980' FWL
LOCATION:	Section 12, T. 19 S., R. 30 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**
 - Hackberry OHV**
- ☐ **Construction**
 - Notification
 - Topsoil
 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
 - H₂S – Onshore Order #6
 - Secretary's Potash
 - Logging requirements
 - Waste Material and Fluids
- ☐ **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)

Hackberry OHV

The pipeline/poly lines shall be buried a minimum of 24 inches under all roads, "two-tracks," and trails. Burial of the pipe/poly line will continue for 20 feet on each side of each crossing. During all phases of construction, open ditches shall have proper signage notifying trail users of potential hazards. Upon completion of construction, the road/trail shall be returned to pre-construction condition with no bumps or dips. Power line poles will be spaced to avoid pole placement within trails and "two tracks." All vehicle and equipment operators will observe speed limits and practice responsible defensive driving habits. If trails need to be re-located around the edge of the pad, this will be done at the company's expense.

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. TOPSOIL

The operator shall stockpile the topsoil in a low profile manner in order to prevent wind/water erosion of the topsoil. The topsoil to be stripped is approximately 4 inches in depth. The topsoil will be used for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

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

D. 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.

E. 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.

F. 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 twenty (20) 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.

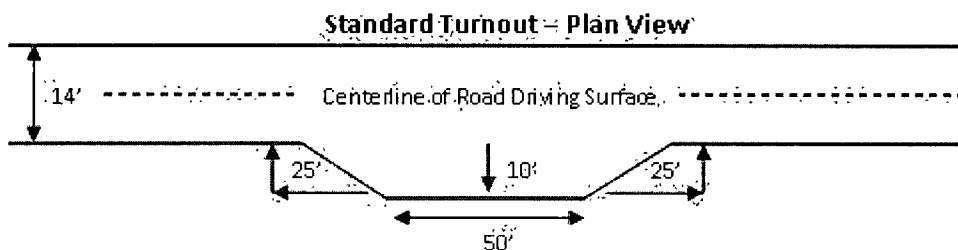
The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing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

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:

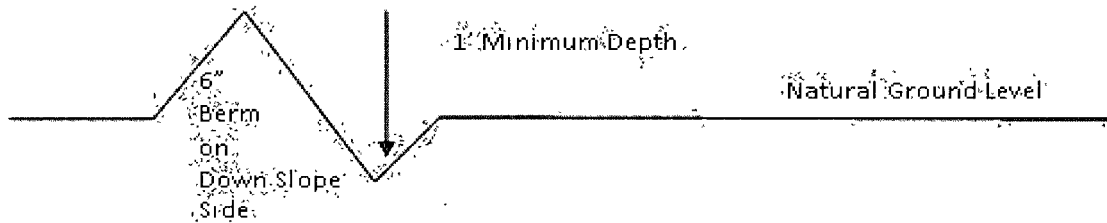


Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outslowing 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

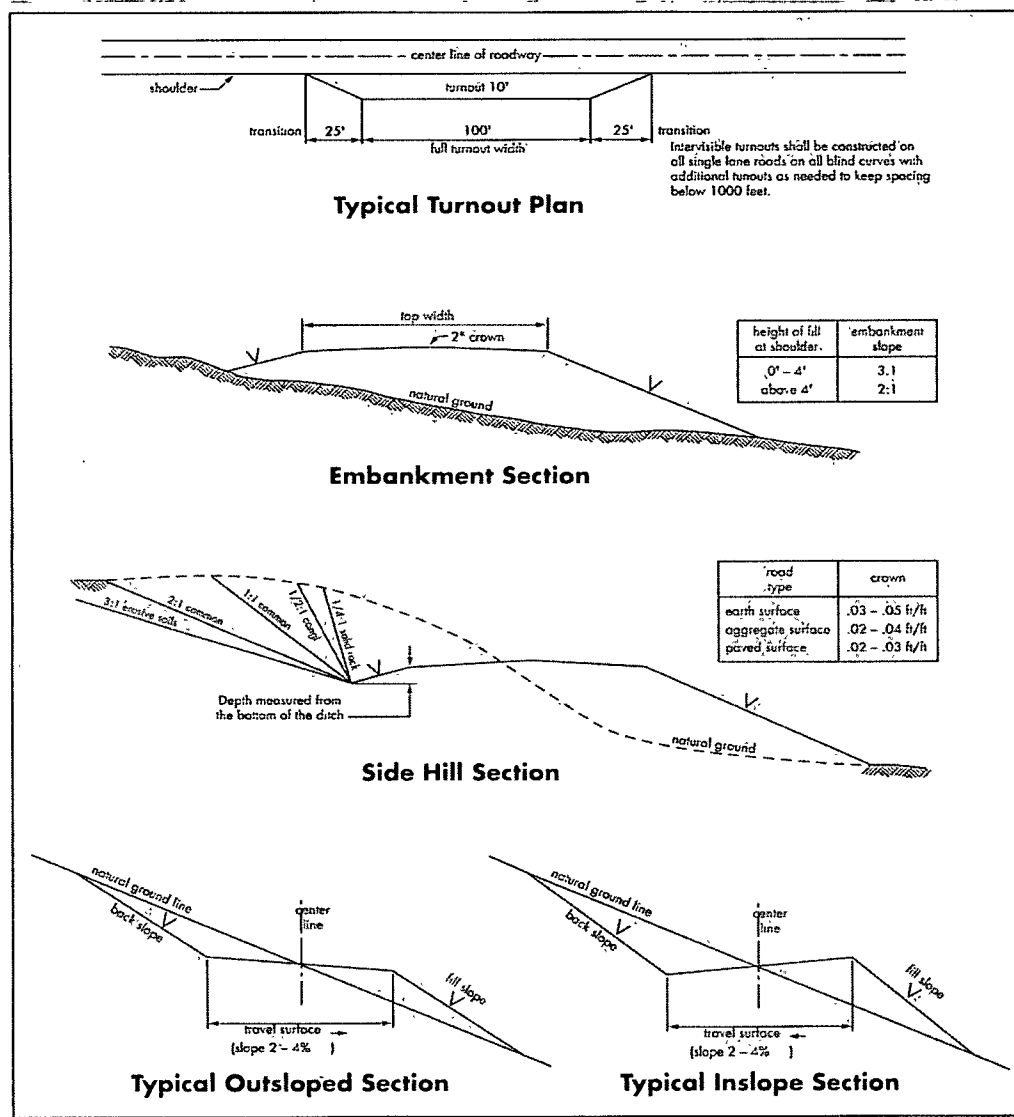
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

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. **Due to recent H2S encounters in the salt formation, it is recommended that monitoring equipment be onsite for potential Hydrogen Sulfide prior to drilling out the surface shoe. If Hydrogen Sulfide is encountered, please report measurements 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. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**
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 GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall 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 Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#).

Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.).

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

Wait on cement (WOC) time prior to drilling out 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. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. 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.

Secretary's Potash

Possible brine and water flows in the Artesia and Salado Groups.

Possible lost circulation in the Capitan Reef (if encountered) and the Artesia Group.

1. The 13-3/8 inch surface casing shall be set at **approximately 415 feet (a minimum of 25 feet into the Rustler Anhydrite and 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 surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - 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.
2. The minimum required fill of cement behind the **9-5/8 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 potash.**

Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every third joint unless lateral doglegs require greater spacing between centralizers.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:

- ☒ Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification.

4. 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 installing a 5M 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. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.
 - b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (18 hours) or potash (24 hours) prior to initiating the test.
 - 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.

E. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

CRW 022312

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

STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

A copy of the APD and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the

release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to activity of the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. The holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. The holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:

- a. Activities of the holder including, but not limited to construction, operation, maintenance, and termination of the facility.
- b. Activities of other parties including, but not limited to:
 - (1) Land clearing.
 - (2) Earth-disturbing and earth-moving work.
 - (3) Blasting.
 - (4) Vandalism and sabotage.
- c. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars (\$1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any responsibility as provided herein.

6. All construction and maintenance activity will be confined to the authorized right-of-way width of 20 feet.
7. No blading or clearing of any vegetation will be allowed unless approved in writing by the Authorized Officer.
8. The holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky or dune areas, the pipeline will be "snaked" around hummocks and dunes rather than suspended across these features.
9. The pipeline shall be buried with a minimum of 24 inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.
10. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.
11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.
12. Excluding the pipe, all above-ground structures not subject to safety requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.
13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. Signs will be maintained in a legible condition for the life of the pipeline.
14. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

15. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder 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 will be made by the authorized officer to determine appropriate cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.

C. ELECTRIC LINES

STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES

A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.

5. Powerlines shall be constructed in accordance to standards outlined in "Suggested Practices for Raptor Protection on Powerlines, " Raptor Research Foundation, Inc., 1981. The holder shall assume the burden and expense of proving that pole designs not shown in the above publication are "raptor safe." Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

6. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures as prescribed by the Authorized Officer.

9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.

10. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder 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 will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

11. Special Stipulations:

- For reclamation remove poles, lines, transformer, etc. and dispose of properly.
- Fill in any holes from the poles removed.

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.

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 2, for Sandy 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 of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/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>
Sand dropseed (<i>Sporobolus cryptandrus</i>)	1.0
Sand love grass (<i>Eragrostis trichodes</i>)	1.0
Plains bristlegrass (<i>Setaria macrostachya</i>)	2.0

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

DISTRICT I --- CHECKLIST FOR INTENTS TO DRILL

Operator C. Marlex OGRID # 162683
Well Name & # CRESCENT HALL 72 FEB 002 Surface Type (F) (S) (P)
Location: UL C Sect 12 Township 5 s, RNG 30 e, Sub-surface Type (F) (S) (P)

A. Date C101 rec'd 3/14/2012 C101 reviewed 3/15/2012

B. 1. Check mark, Information is OK on Forms:

OGRID ☒ BONDING ☒ PROP CODE ☒ WELL # ☒ SIGNATURE ☒

2. Inactive Well list as of: 3/14/2012 # wells 1288 # Inactive wells 5

a. District Grant APD but see number of inactive wells:

No letter required ☒; Sent Letter to Operator ☐ to Santa Fe ☐

3. Additional Bonding as of: 3/14/2012

a. District Denial because operator needs addition bonding:

No Letter required ☒; Sent Letter to Operator ☐ To Santa Fe ☐

b. District Denial because of Inactive well list and Financial Assurance:

No Letter required ☒; Sent Letter to Operator ☐ To Santa Fe ☐

C. C102 YES ☒ NO ☐ Signature ☒

1. Pool Benson, B.S. Code 5200

a. Dedicated acreage ☐ What Units ☐

b. SUR. Location Standard ☐: Non-Standard Location ☐

c. Well shares acres: Yes ☐ No ☐ # of wells ☐ plus this well # ☐

2. 2nd. Operator in same acreage, Yes ☐ No ☐

Agreement Letter ☐ Disagreement letter ☐

3. Intent to Directional Drill Yes ☒ No ☐

a. Dedicated acreage 160 What Units C-F-K-N

b. Bottomhole Location Standard ☒ Non-Standard Bottomhole ☐

4. Downhole Commingle: Yes ☐ No ☒

a. Pool #2 ☐ Code ☐ Acres ☐

Pool #3 ☐ Code ☐ Acres ☐

Pool #4 ☐ Code ☐ Acres ☐

5. POTASH Area Yes ☐ No ☒

D. Blowout Preventer Yes ☒ No ☐

E. H2S Yes ☒ No ☐

F. C144 Pit Registration Yes ☒ No ☐

G. Does APD require Santa Fe Approval:

1. Non-Standard Location: Yes ☐ No ☒ NSL # ☐

2. Non-Standard Proration: Yes ☐ No ☒ NSP # ☐

3. Simultaneous Dedication: Yes ☐ No ☒ SD # ☐

Number of wells ☐ Plus # ☐

4. Injection order Yes ☐ No ☒ PMX # ☐ or WFX # ☐

5. SWD order Yes ☐ NO ☒ SWD # ☐

6. DHC from SF ☐; DHC-HOB ☐; Holding ☐

7. OCD Approval Date 3/14/2012

API #30-0 15-40054

8. Reviewers TCS