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SECRETARY'S POTASH

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work ☒ DRILL ☐ REENTER		5. Lease Serial No. NM-0144698
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator Cimarex Energy Co. of Colorado		7. If Unit or CA Agreement, Name and No.
3a. Address 600 N. Marienfeld St., Ste. 600; Midland, TX 79701		8. Lease Name and Well No. Superior Federal No. 11 H
3b. Phone No. (include area code) 432-571-7800		9. API Well No. 30-015-39333
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At Surface 330 FSL & 2080 FWL ✓ At proposed prod. Zone 330 FNL & 1980 FWL Horizontal Bone Spring test		10. Field and Pool, or Exploratory Parkway; Bone Spring
14. Distance in miles and direction from nearest town or post office*		11. Sec., T. R. M. or Blk. and Survey or Area 1-20S-29E
15. Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig unit line if any) 330'	16. No of acres in lease 1743.54	12. County or Parish Eddy
17. Spacing Unit dedicated to this well E2W2 160.39	13. State NM	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 661'	19. Proposed Depth Pilot Hole 8550 MD 12744 TVD 8300	20. BLM/BIA Bond No. on File NM-2575
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3309' GR ✓	22. Approximate date work will start* 03.31.11	23. Estimated duration 30-35 days
24. Attachments		

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

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

25. Signature <i>Natalie Krueger</i>	Name (Printed/Typed) Natalie Krueger	Date 01.13.11
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Title Regulatory Analyst	
Approved By (Signature) <i>/s/ Robert A. Casias</i>	Name (Printed/Typed) Date AUG 4 2011
Title acting 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.S. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious, or fraudulent statements or representations as to any matter within its jurisdiction.

* (Instructions on page 2)

Capitan Controlled Water Basin

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

Application to Drill
Superior Federal No. 11
 Cimarex Energy Co. of Colorado
 Unit N, Section 1
 T20S-R29E, 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 330 FSL & 2080 FWL
BHL 330 FNL & 1980 FWL
- 2 Elevation above sea level: 3309' GR
- 3 Geologic name of surface formation: Quaternary Alluvium Deposits
- 4 Drilling tools and associated equipment: Conventional rotary drilling rig using fluid as a circulating medium for solids removal.
- 5 Proposed drilling depth: Pilot Hole 8550 MD 12744 TVD 8300
- 6 Estimated tops of geological markers:

Rustler	174'
T. Salt	415'
B. Salt	750'
Yates	1150'
7 Rivers/Capitan	1700'
Delaware Sands	3500'
Bone Spring	6120'
FBSS	7460'
SBSS	8150'
- 7 Possible mineral bearing formation:
Bone Spring Oil

8 Proposed Mud Circulating System:

Depth	Mud Wt	Visc	Fluid Loss	Type Mud
0' to 320'	8.4 - 8.6	28	NC	FW
320' to 1600' 7945'	10.0	30-32	NC	Brine water
1600' to 3200' 7945'	8.4 - 8.8	28	NC	FW
3200' to 12744'	8.4	28-32	NC	2% KCl

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

After drilling and setting surface 1 & 2 and intermediate casing, drill to vertical TD 8550' and log. Set kick off plug from 7885-8550 with 531 sks Halcem H 0.5% CFR--3 o.1% HR-601 16.5ppg, yield 1.06 and kick off @ 7945' and drill to TD @ 12744. Run 7" 26# P-110 from 0-7895 and 5½" 17# P-110 LTC from 7895-12744 and cement.

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9 Casing & Cementing Program:

String	Hole Size	Depth	Casing OD	Weight	Collar	Grade
Surface 1	26"	0' to 320'	New 20"	94#	BTC	J/K-55
Surface 2	17½"	0' to 145' 1600'	New 13½"	61#	BTC	J-55
Intermediate	12¼"	0' to 345' 3200'	New 9½"	36#	LTC	J-55
Production	8¾"	0' to 12744'	New 5½"	17#	*BTC/LTC*	P-110

** Use LTC from 0-7945, BTC from 7945-8388, and LTC from 8388-12744

10 Cementing:

See COA

Surface 1 1850 sx Halcem C + 2% CaCl 14.8ppg 1.35 yield 400% Excess
TOC Surface Centralizers per Onshore Order 2.III.B.1.f

Surface 2 Lead: 715 sx EconoCem + 5% salt + 5 lbm gilsonite 13.5ppg 1.75yield 70% Excess
 Tail: 300 sx HalCem + 2% CaCl 14.8ppg 1.35 yield 10% excess
TOC Surface

Intermediate Lead: 635 sx EconoCem + 5% salt + 5 lbm gilsonite 12.9ppg 1.85yield 70% Excess
 Tail: 145 sx HalCem + 1% CaCl 14.8ppg 1.34 yield 10% excess
TOC Surface

Production Lead: 465 sx EconoCem - H + 0.2 % HR-601 2.44 11.9ppg 2.44yield 50% % Excess
 Tail: 1315 sx Versacem - H + 0.5% Halad(R)-344 + 0.4% CFR-3 + 1 lbm/sk salt + 0.1% HR-601 14.5ppg
 1.22 yield 25% excess
TOC 3000' Centralizers every 3rd joint in lateral to provide adequate cement coverage every 100' unless lateral
 doglegs require greater spacing between centralizers.

Depth to ground water, according to the State Engineer, is 57.' Fresh water zones will be protected by setting 20" casing at 320' and cementing to surface. Fresh water Capitan Reef will be protected by setting 13½" casing at 1600' and 9½" casing to 3200' and cementing to surface. Hydrocarbon zones will be protected by setting 5½" casing at 12744' and cementing to 3000'.

See COA

<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 13½" 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 20" surface pipe the well will be equipped with a 2M diverter system. (See Exhibit "E-1"). From the base of the 13 3/8" casing through the running of of production casing, the well will be equipped with a 5000 psi BOP system tested to 3000 psi.

See COA

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 1500 psi high.

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Unit N, Section 1
T20S-R29E, Eddy County, NM

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

- A. Mud logging program: 2 man unit from 3435 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 **3000 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 (Superior) Sec 1, T20S, R29E
Facility Superior Fed No. 11H

Slot No. 11H SHL
Well No. 11H
Wellbore No. 11H PWB

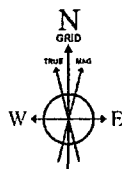


INTEQ

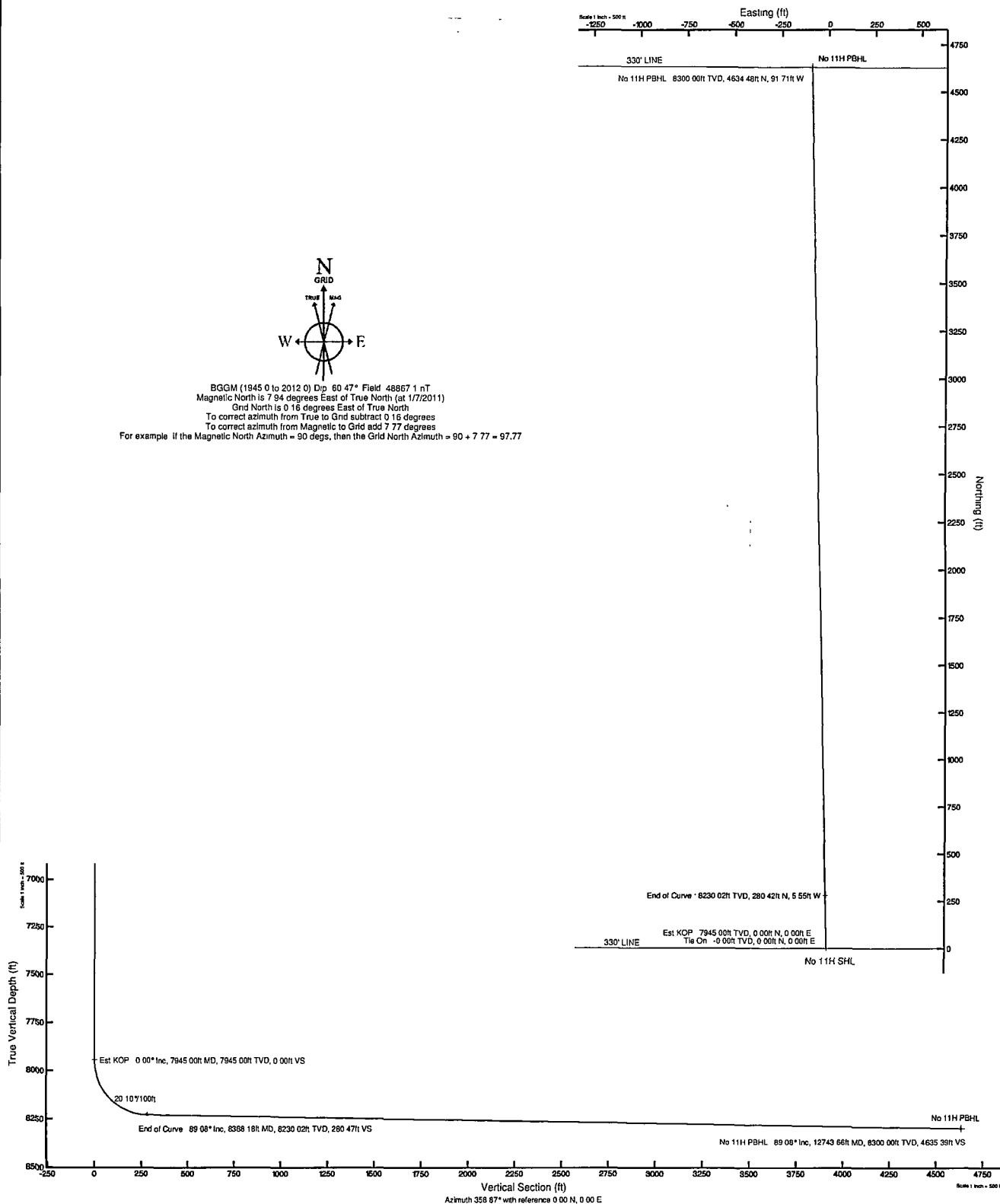
Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	0 00	0 000	358 866	0 00	0 00	0 00	0 00	0 00
Est KOP	7945 00	0 000	358 866	7945 00	0 00	0 00	0 00	0 00
End of Curve	8388 18	89 079	358 866	8230 02	280 42	-5 55	20 10	280 47
No 11H PBHL	12743 66	89 079	358 866	8300 00	4634 48	-91 71	0 00	4635 99

Plot reference wellpath is Prelim. 1	Grid System NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet
True vertical depths are referenced to Rig on No 11H SHL (RT)	North Reference Grid north
Measured depths are referenced to Rig on No 11H SHL (RT)	Scale True distance
Rig on No 11H SHL (RT) to Mean Sea Level 3309 feet	Depths are in feet
Mean Sea Level to Mud line (Facility Superior Fed No 11H) -3309 feet	Created by gomeoscr on 1/8/2011
Coordinates are in feet referenced to Slot	



BGGM (1945 0 to 2012 0) Dip 60 47° Field 48867 1 nT
Magnetic North is 7 94 degrees East of True North (at 1/7/2011)
Grid North is 0 16 degrees East of True North
To correct azimuth from True to Grid subtract 0 16 degrees
To correct azimuth from Magnetic to Grid add 7 77 degrees
For example if the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 7 77 = 97 77





Planned Wellpath Report

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INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No.11H SHL
Area	Eddy County, NM	Well	No.11H
Field	(Superior) Sec 1, T20S, R29E	Wellbore	No.11H PWB
Facility	Superior Fed No.11H		

REPORT SETUP INFORMATION

Projection System	NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet	Software System	WellArchitect® 2.0
North Reference	Grid	User	Gomeoscr
Scale	0.999919	Report Generated	1/8/2011 at 11:39:19 AM
Convergence at slot	0.16° East	Database/Source file	WA Midland/No.11H_PWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[USft]	Northing[USft]	Latitude	Longitude
Slot Location	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W
Facility Reference Pt			634651.50	580723.70	32°35'45.949"N	104°01'49.198"W
Field Reference Pt			633140.30	585364.20	32°36'31.910"N	104°02'06.711"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No.11H SHL (RT) to Facility Vertical Datum	0.00ft
Horizontal Reference Pt	Slot	Rig on No.11H SHL (RT) to Mean Sea Level	3309.00ft
Vertical Reference Pt	Rig on No.11H SHL (RT)	Facility Vertical Datum to Mud Line (Facility)	0.00ft
MD Reference Pt	Rig on No.11H SHL (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	358.87°



Planned Wellpath Report

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INTEQ

REFERENCE WELLPATH IDENTIFICATION

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Field	(Superior) Sec 1, T20S, R29E	Wellbore	No.11H PWB
Facility	Superior Fed No.11H		

WELLPATH DATA (131 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	358.866	0.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	Tie On
100.00†	0.000	358.866	100.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
200.00†	0.000	358.866	200.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
300.00†	0.000	358.866	300.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
400.00†	0.000	358.866	400.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
500.00†	0.000	358.866	500.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
600.00†	0.000	358.866	600.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
700.00†	0.000	358.866	700.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
800.00†	0.000	358.866	800.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
900.00†	0.000	358.866	900.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
1000.00†	0.000	358.866	1000.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
1100.00†	0.000	358.866	1100.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
1200.00†	0.000	358.866	1200.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
1300.00†	0.000	358.866	1300.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
1400.00†	0.000	358.866	1400.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
1500.00†	0.000	358.866	1500.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
1600.00†	0.000	358.866	1600.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
1700.00†	0.000	358.866	1700.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
1800.00†	0.000	358.866	1800.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
1900.00†	0.000	358.866	1900.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
2000.00†	0.000	358.866	2000.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
2100.00†	0.000	358.866	2100.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
2200.00†	0.000	358.866	2200.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
2300.00†	0.000	358.866	2300.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
2400.00†	0.000	358.866	2400.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
2500.00†	0.000	358.866	2500.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
2600.00†	0.000	358.866	2600.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
2700.00†	0.000	358.866	2700.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
2800.00†	0.000	358.866	2800.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
2900.00†	0.000	358.866	2900.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
3000.00†	0.000	358.866	3000.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
3100.00†	0.000	358.866	3100.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
3200.00†	0.000	358.866	3200.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
3300.00†	0.000	358.866	3300.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
3400.00†	0.000	358.866	3400.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
3500.00†	0.000	358.866	3500.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
3600.00†	0.000	358.866	3600.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
3700.00†	0.000	358.866	3700.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
3800.00†	0.000	358.866	3800.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
3900.00†	0.000	358.866	3900.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
4000.00†	0.000	358.866	4000.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
4100.00†	0.000	358.866	4100.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
4200.00†	0.000	358.866	4200.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
4300.00†	0.000	358.866	4300.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
4400.00†	0.000	358.866	4400.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No.11H SHL
Area	Eddy County, NM	Well	No.11H
Field	(Superior) Sec 1, T20S, R29E	Wellbore	No.11H PWB
Facility	Superior Fed No.11H		

WELLPATH DATA (131 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4500.00†	0.000	358.866	4500.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
4600.00†	0.000	358.866	4600.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
4700.00†	0.000	358.866	4700.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
4800.00†	0.000	358.866	4800.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
4900.00†	0.000	358.866	4900.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
5000.00†	0.000	358.866	5000.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
5100.00†	0.000	358.866	5100.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
5200.00†	0.000	358.866	5200.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
5300.00†	0.000	358.866	5300.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
5400.00†	0.000	358.866	5400.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
5500.00†	0.000	358.866	5500.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
5600.00†	0.000	358.866	5600.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
5700.00†	0.000	358.866	5700.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
5800.00†	0.000	358.866	5800.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
5900.00†	0.000	358.866	5900.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
6000.00†	0.000	358.866	6000.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
6100.00†	0.000	358.866	6100.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
6200.00†	0.000	358.866	6200.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
6300.00†	0.000	358.866	6300.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
6400.00†	0.000	358.866	6400.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
6500.00†	0.000	358.866	6500.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
6600.00†	0.000	358.866	6600.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
6700.00†	0.000	358.866	6700.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
6800.00†	0.000	358.866	6800.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
6900.00†	0.000	358.866	6900.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
7000.00†	0.000	358.866	7000.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
7100.00†	0.000	358.866	7100.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
7200.00†	0.000	358.866	7200.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
7300.00†	0.000	358.866	7300.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
7400.00†	0.000	358.866	7400.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
7500.00†	0.000	358.866	7500.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
7600.00†	0.000	358.866	7600.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
7700.00†	0.000	358.866	7700.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
7800.00†	0.000	358.866	7800.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
7900.00†	0.000	358.866	7900.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	
7945.00	0.000	358.866	7945.00	0.00	0.00	0.00	634651.50	580723.70	32°35'45.949"N	104°01'49.198"W	0.00	Est KOP
8000.00†	11.055	358.866	7999.66	5.29	5.29	-0.10	634651.40	580728.99	32°35'46.001"N	104°01'49.199"W	20.10	
8100.00†	31.155	358.866	8092.47	41.11	41.10	-0.81	634650.69	580764.80	32°35'46.356"N	104°01'49.206"W	20.10	
8200.00†	51.255	358.866	8167.32	106.65	106.63	-2.11	634649.39	580830.32	32°35'47.004"N	104°01'49.219"W	20.10	
8300.00†	71.355	358.866	8215.09	193.92	193.88	-3.84	634647.66	580917.57	32°35'47.867"N	104°01'49.236"W	20.10	
8388.18	89.079	358.866	8230.02	280.47	280.42	-5.55	634645.95	581004.10	32°35'48.724"N	104°01'49.253"W	20.10	End of Curve
8400.00†	89.079	358.866	8230.21	292.29	292.23	-5.78	634645.72	581015.91	32°35'48.840"N	104°01'49.256"W	0.00	
8500.00†	89.079	358.866	8231.81	392.28	392.20	-7.76	634643.74	581115.87	32°35'49.830"N	104°01'49.276"W	0.00	
8600.00†	89.079	358.866	8233.42	492.27	492.17	-9.74	634641.76	581215.83	32°35'50.819"N	104°01'49.295"W	0.00	
8700.00†	89.079	358.866	8235.03	592.25	592.14	-11.72	634639.78	581315.79	32°35'51.808"N	104°01'49.315"W	0.00	



Planned Wellpath Report

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INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No.11H SHL
Area	Eddy County, NM	Well	No.11H
Field	(Superior) Sec 1, T20S, R29E	Wellbore	No.11H PWB
Facility	Superior Fed No.11H		

WELLPATH DATA (131 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8800.00†	89.079	358.866	8236.63	692.24	692.10	-13.70	634637.81	581415.75	32°35'52.797"N	104°01'49.335"W	0.00	
8900.00†	89.079	358.866	8238.24	792.23	792.07	-15.67	634635.83	581515.71	32°35'53.786"N	104°01'49.355"W	0.00	
9000.00†	89.079	358.866	8239.85	892.21	892.04	-17.65	634633.85	581615.67	32°35'54.776"N	104°01'49.374"W	0.00	
9100.00†	89.079	358.866	8241.45	992.20	992.01	-19.63	634631.87	581715.62	32°35'55.765"N	104°01'49.394"W	0.00	
9200.00†	89.079	358.866	8243.06	1092.19	1091.97	-21.61	634629.89	581815.58	32°35'56.754"N	104°01'49.414"W	0.00	
9300.00†	89.079	358.866	8244.67	1192.17	1191.94	-23.59	634627.92	581915.54	32°35'57.743"N	104°01'49.434"W	0.00	
9400.00†	89.079	358.866	8246.27	1292.16	1291.91	-25.56	634625.94	582015.50	32°35'58.732"N	104°01'49.454"W	0.00	
9500.00†	89.079	358.866	8247.88	1392.15	1391.88	-27.54	634623.96	582115.46	32°35'59.722"N	104°01'49.473"W	0.00	
9600.00†	89.079	358.866	8249.49	1492.14	1491.84	-29.52	634621.98	582215.42	32°36'00.711"N	104°01'49.493"W	0.00	
9700.00†	89.079	358.866	8251.09	1592.12	1591.81	-31.50	634620.00	582315.38	32°36'01.700"N	104°01'49.513"W	0.00	
9800.00†	89.079	358.866	8252.70	1692.11	1691.78	-33.48	634618.03	582415.34	32°36'02.689"N	104°01'49.533"W	0.00	
9900.00†	89.079	358.866	8254.31	1792.10	1791.75	-35.46	634616.05	582515.30	32°36'03.678"N	104°01'49.553"W	0.00	
10000.00†	89.079	358.866	8255.92	1892.08	1891.71	-37.43	634614.07	582615.26	32°36'04.667"N	104°01'49.572"W	0.00	
10100.00†	89.079	358.866	8257.52	1992.07	1991.68	-39.41	634612.09	582715.22	32°36'05.657"N	104°01'49.592"W	0.00	
10200.00†	89.079	358.866	8259.13	2092.06	2091.65	-41.39	634610.11	582815.18	32°36'06.646"N	104°01'49.612"W	0.00	
10300.00†	89.079	358.866	8260.74	2192.05	2191.62	-43.37	634608.14	582915.14	32°36'07.635"N	104°01'49.632"W	0.00	
10400.00†	89.079	358.866	8262.34	2292.03	2291.58	-45.35	634606.16	583015.09	32°36'08.624"N	104°01'49.652"W	0.00	
10500.00†	89.079	358.866	8263.95	2392.02	2391.55	-47.32	634604.18	583115.05	32°36'09.613"N	104°01'49.671"W	0.00	
10600.00†	89.079	358.866	8265.56	2492.01	2491.52	-49.30	634602.20	583215.01	32°36'10.603"N	104°01'49.691"W	0.00	
10700.00†	89.079	358.866	8267.16	2591.99	2591.49	-51.28	634600.22	583314.97	32°36'11.592"N	104°01'49.711"W	0.00	
10800.00†	89.079	358.866	8268.77	2691.98	2691.45	-53.26	634598.25	583414.93	32°36'12.581"N	104°01'49.731"W	0.00	
10900.00†	89.079	358.866	8270.38	2791.97	2791.42	-55.24	634596.27	583514.89	32°36'13.570"N	104°01'49.751"W	0.00	
11000.00†	89.079	358.866	8271.98	2891.96	2891.39	-57.22	634594.29	583614.85	32°36'14.559"N	104°01'49.770"W	0.00	
11100.00†	89.079	358.866	8273.59	2991.94	2991.36	-59.19	634592.31	583714.81	32°36'15.548"N	104°01'49.790"W	0.00	
11200.00†	89.079	358.866	8275.20	3091.93	3091.32	-61.17	634590.33	583814.77	32°36'16.538"N	104°01'49.810"W	0.00	
11300.00†	89.079	358.866	8276.80	3191.92	3191.29	-63.15	634588.36	583914.73	32°36'17.527"N	104°01'49.830"W	0.00	
11400.00†	89.079	358.866	8278.41	3291.90	3291.26	-65.13	634586.38	584014.69	32°36'18.516"N	104°01'49.850"W	0.00	
11500.00†	89.079	358.866	8280.02	3391.89	3391.23	-67.11	634584.40	584114.65	32°36'19.505"N	104°01'49.869"W	0.00	
11600.00†	89.079	358.866	8281.62	3491.88	3491.19	-69.08	634582.42	584214.61	32°36'20.494"N	104°01'49.889"W	0.00	
11700.00†	89.079	358.866	8283.23	3591.87	3591.16	-71.06	634580.44	584314.56	32°36'21.484"N	104°01'49.909"W	0.00	
11800.00†	89.079	358.866	8284.84	3691.85	3691.13	-73.04	634578.47	584414.52	32°36'22.473"N	104°01'49.929"W	0.00	
11900.00†	89.079	358.866	8286.44	3791.84	3791.10	-75.02	634576.49	584514.48	32°36'23.462"N	104°01'49.949"W	0.00	
12000.00†	89.079	358.866	8288.05	3891.83	3891.06	-77.00	634574.51	584614.44	32°36'24.451"N	104°01'49.968"W	0.00	
12100.00†	89.079	358.866	8289.66	3991.81	3991.03	-78.97	634572.53	584714.40	32°36'25.440"N	104°01'49.988"W	0.00	
12200.00†	89.079	358.866	8291.26	4091.80	4091.00	-80.95	634570.55	584814.36	32°36'26.430"N	104°01'50.008"W	0.00	
12300.00†	89.079	358.866	8292.87	4191.79	4190.97	-82.93	634568.58	584914.32	32°36'27.419"N	104°01'50.028"W	0.00	
12400.00†	89.079	358.866	8294.48	4291.77	4290.93	-84.91	634566.60	585014.28	32°36'28.408"N	104°01'50.048"W	0.00	
12500.00†	89.079	358.866	8296.08	4391.76	4390.90	-86.89	634564.62	585114.24	32°36'29.397"N	104°01'50.067"W	0.00	
12600.00†	89.079	358.866	8297.69	4491.75	4490.87	-88.87	634562.64	585214.20	32°36'30.386"N	104°01'50.087"W	0.00	
12700.00†	89.079	358.866	8299.30	4591.74	4590.84	-90.84	634560.66	585314.16	32°36'31.375"N	104°01'50.107"W	0.00	
12743.66	89.079	358.866	8300.00†	4635.39	4634.48	-91.71	634559.80	585357.80	32°36'31.807"N	104°01'50.116"W	0.00	No.11H PBHL



Planned Wellpath Report

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INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No.11H SHL
Area	Eddy County, NM	Well	No.11H
Field	(Superior) Sec 1, T20S, R29E	Wellbore	No.11H PWB
Facility	Superior Fed No.11H		

HOLE & CASING SECTIONS Ref Wellbore: No.11H 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]
9.625in Casing	0.00	3200.00	3200.00	0.00	3200.00	0.00	0.00	0.00	0.00
8.75in Open Hole	3200.00	12743.66	9543.66	3200.00	8300.00	0.00	0.00	4634.48	-91.71

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
1) No.11H PBHL	12743.66	8300.00	4634.48	-91.71	634559.80	585357.80	32°36'31.807"N	104°01'50.116"W	point
2nd Bone Spring									

SURVEY PROGRAM Ref Wellbore: No.11H PWB Ref Wellpath: Prelim_1

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	12743.66	NaviTrak (Standard)		No.11H PWB

SR & A

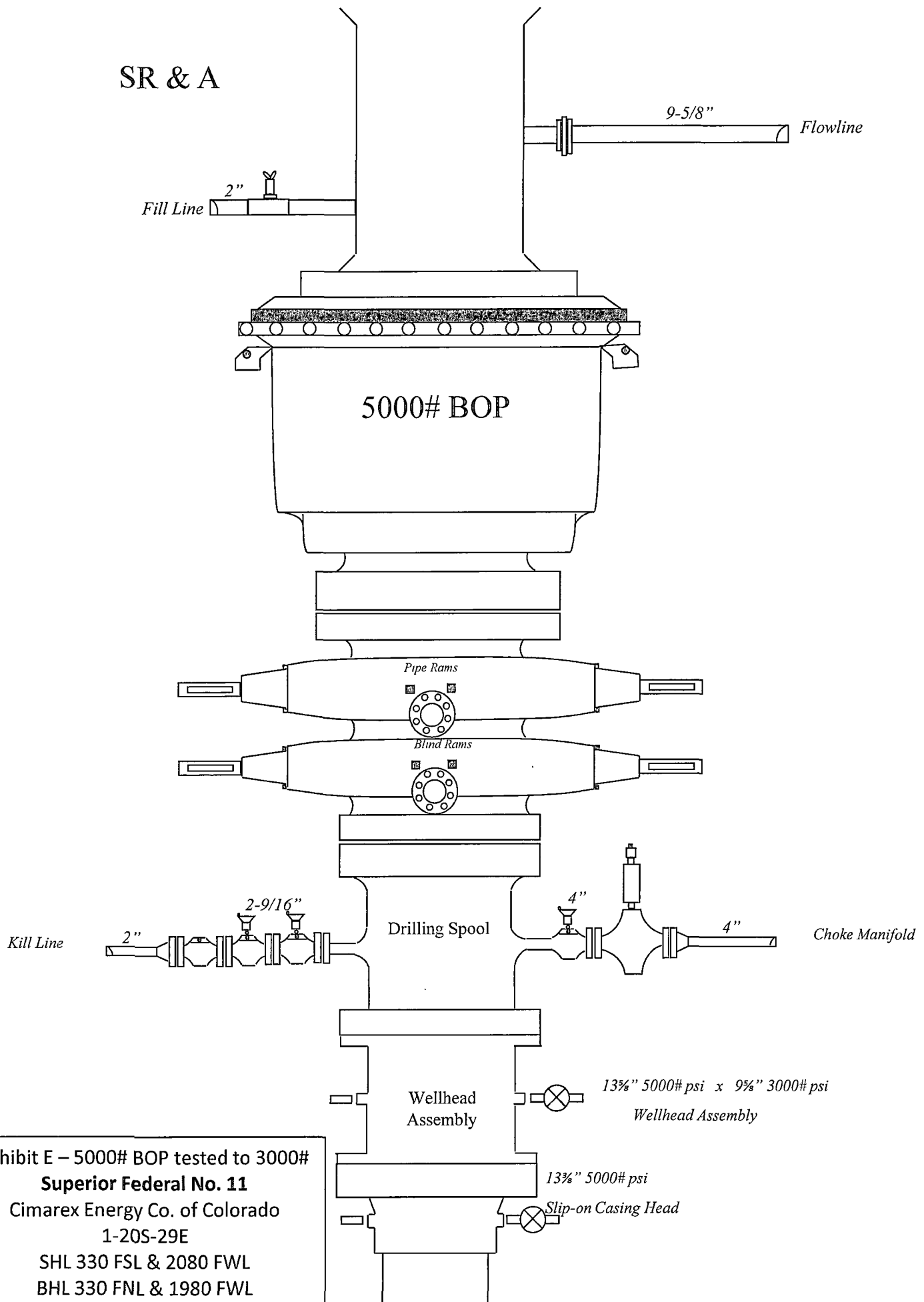


Exhibit E – 5000# BOP tested to 3000#
Superior Federal No. 11
Cimarex Energy Co. of Colorado
1-20S-29E
SHL 330 FSL & 2080 FWL
BHL 330 FNL & 1980 FWL
Eddy County, NM

20" Diverter System

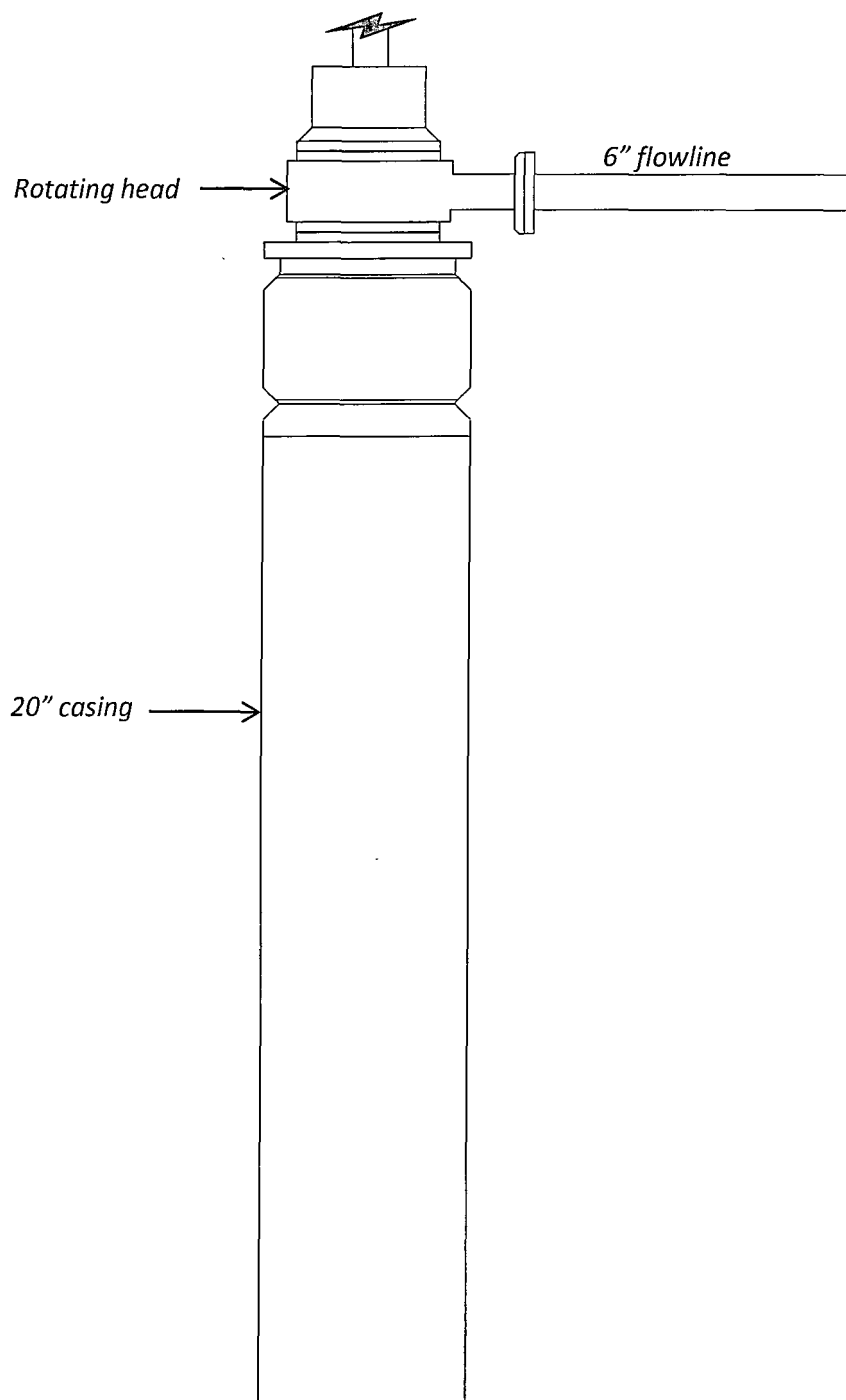


Exhibit E-1 – 20" Diverter System
Superior Federal No. 11
Cimarex Energy Co. of Colorado
1-20S-29E
SHL 330 FSL & 2080 FWL
BHL 330 FNL & 1980 FWL
Eddy County, NM

Exhibit E-2 – Choke Manifold Diagram
Superior Federal No. 11
 Cimarex Energy Co. of Colorado
 1-20S-29E
 SHL 330 FSL & 2080 FWL
 BHL 330 FNL & 1980 FWL
 Eddy County, NM

