

OCD Artesia

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

RECEIVED

MAY 03 2011

APPLICATION FOR PERMIT TO DRILL OR REENTER

MOCD ARTESIA

1a. Type of Work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NM-14847	
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. Pere Marquette 18 Federal No. 4 ☒	
3b. Phone No. (include area code) 432-571-7800		9. API Well No. 30-015- 39032	
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At Surface 600 FNL & 990 FEL At proposed prod. Zone 330 FNL & 990 FEL		10. Field and Pool, or Exploratory Empire; Glorieta-Yeso	
14. Distance in miles and direction from nearest town or post office*		11. Sec., T. R. M. or Blk. and Survey or Area 18-17S-29E	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line if any) 600		12. County or Parish Eddy	
16. No of acres in lease 1054.42		13. State NM	
17. Spacing Unit dedicated to this well NENE 40			
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 469'		19. Proposed Depth MD 5314, TVD 5300	
20. BLM/BIA Bond No. on File NM-2575			
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3664' GR ☒		22. Approximate date work will start* 04.15.11	
		23. Estimated duration 10-15 days	

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

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

25. Signature <i>Zeno Farris</i>	Name (Printed/Typed) Zeno Farris	Date 02.04.11
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Title Manager Operations Administration		
Approved By (Signature) <i>/s/ Don Peterson</i>	Name (Printed/Typed) Don Peterson	Date APR 29 2011
Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE	

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

Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

Title 18 U.S.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)

Roswell Controlled Water Basin

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

Application to Drill
Pere Marquette 18 Federal No. 4
Cimarex Energy Co. of Colorado
Unit A, Section 18
T17S 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 600 FNL & 990 FEL
BHL 330 FNL & 990 FEL
- 2 Elevation above sea level: 3664' 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 5314, TVD 5300
- 6 Estimated tops of geological markers:

Rustler	Surface
Top of Salt	200'
Base of Salt	700'
Tansill	777'
Yates	884'
Seven Rivers	1150'
San Andres	2403'
Glorieta	3797'
Paddock	3890'
Blaine	4455'
Tubb	5225'
- 7 Possible mineral bearing formation:

Paddock	Oil
Blaine	Oil

8 Proposed Mud Circulating System:

Depth	Mud Wt	Visc	Fluid Loss	Type Mud
0' to 300' 250'	8.4 - 8.8	40-45	NC	FW
300' to 5314'	9.9 - 10.1	28-32	NC	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.

Application to Drill
Pere Marquette 18 Federal No. 4
Cimarex Energy Co. of Colorado
Unit A, Section 18
T17S R29E, Eddy County, NM

9 Casing Plan:

See COA

String	Hole Size	Depth	Casing OD	Weight	Thread	Collar	Grade
Surface	12¼"	0' to 250-300'	New 9⅝"	36#	8-R	STC	J55
Production	8¾"	0' to 5314'	New 5½"	17#	8-R	LTC	N80

Drilling Plan

Drill 8¾" hole to KOP @ 2600'. Build and hold to TD @ MD 5314, TVD 5300. Set and cement 5½" production casing from 0-5314.

10 Cementing:

Surface

Lead: 150 sx Class "C" + 4% D020 (Extender) + 2% S001 (CaCl2) + 0.2% D046 (Defoamer) , Mixed at 12.9 ppg, 1.97 ft3/sx

Tail: 200 sx Class C + 1% S001 (CaCl2), Mixed at 14.8 ppg, 1.34 ft3/sx

100% Excess

TOC Surface Centralizers per Onshorder 2.III.B.1.f

Production

See
COA

Lead: 500 sacks 35/65 Poz/ C + 5% Salt (D044) + 10% Extender Gel (D020) + 0.02% Anti Foam (D046) + 1% Fluid Loss (D112) + 3 lbs/sx Extender (D042) + 0.125 lbs/sx Lost Circ Flakes, wt 12.4 ppg, yld 2.19 ft3/sx

Tail: 250 sx PVL+ 0.2% D167 + .2% D65 + .1% D13 + 1.3% NaCl, wt 13.0 ppg, yld 1.4 ft3/sk

25% Excess

TOC Surface

According to the State Engineer, average depth to ground water is 75.' Fresh water zones will be protected by setting 9⅝" casing at 300' and cementing to surface. Hydrocarbon zones will be protected by setting 5½" casing at 5314 and cementing to surface.

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

Application to Drill
Pere Marquette 18 Federal No. 4
Cimarex Energy Co. of Colorado
Unit A, Section 18
T17S R29E, Eddy County, NM

11 Pressure control Equipment:

Exhibit "E-1" - An 11" 3000 PSI working pressure B.O.P. consisting of a one set of blind rams and one set of pipe rams and a 3000 psi annular-type preventor. A choke manifold and 120 gallon accumulator with floor and remote operating stations and auxiliary power system. A kelly cock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor. Mud gas separator will be utilized if drilling in H2S areas.

BOP unit will be hydraulically operated. Below intermediate casing shoe, BOP will be 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 3000 psi BOP system.

Test BOP equipment and choke manifold to 250 psi low and 3000 psi high and annular BOP to 250 psi low and 1500 psi high by an independent service company.

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

- A. Mud logging No mud logging program.
- 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. The area has a potential H2S hazard. An H2S drilling plan is attached. Adequate flare lines will be installed off the mud / gas separator where gas may be flared safely. All personnel will be familiar with all aspects of safe operation of equipment being used.

Estimated BHP **2300 psi** Estimated BHT **110°**

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

Drilling expected to take 10-15 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.

Blindbry 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: Paddock Blinberry Field
Facility: Pere Marquette 18 Federal No.4

Slot: No.4 SHL
Well: No.4
Wellbore: No.4 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	359.835	0.00	0.00	0.00	0.00	0.00
Est KOP	2600.09	0.000	359.835	2600.00	0.00	0.00	0.00	0.00
EOB	2838.99	5.975	359.835	2838.56	12.45	-0.04	2.50	12.45
No.4 PBHL	5313.88	5.975	359.835	5300.00	270.06	-0.78	0.00	270.06

Plot reference wellpath is Prelim. 1

True vertical depths are referenced to Rig on No.4 SHL (RT)

Measured depths are referenced to Rig on No.4 SHL (RT)

Rig on No.4 SHL (RT) to Mean Sea Level: 3654 feet

Mean Sea Level to Mud line (Facility: Pere Marquette 18 Federal No.4): -3664 feet

Coordinates are in feet referenced to Slot

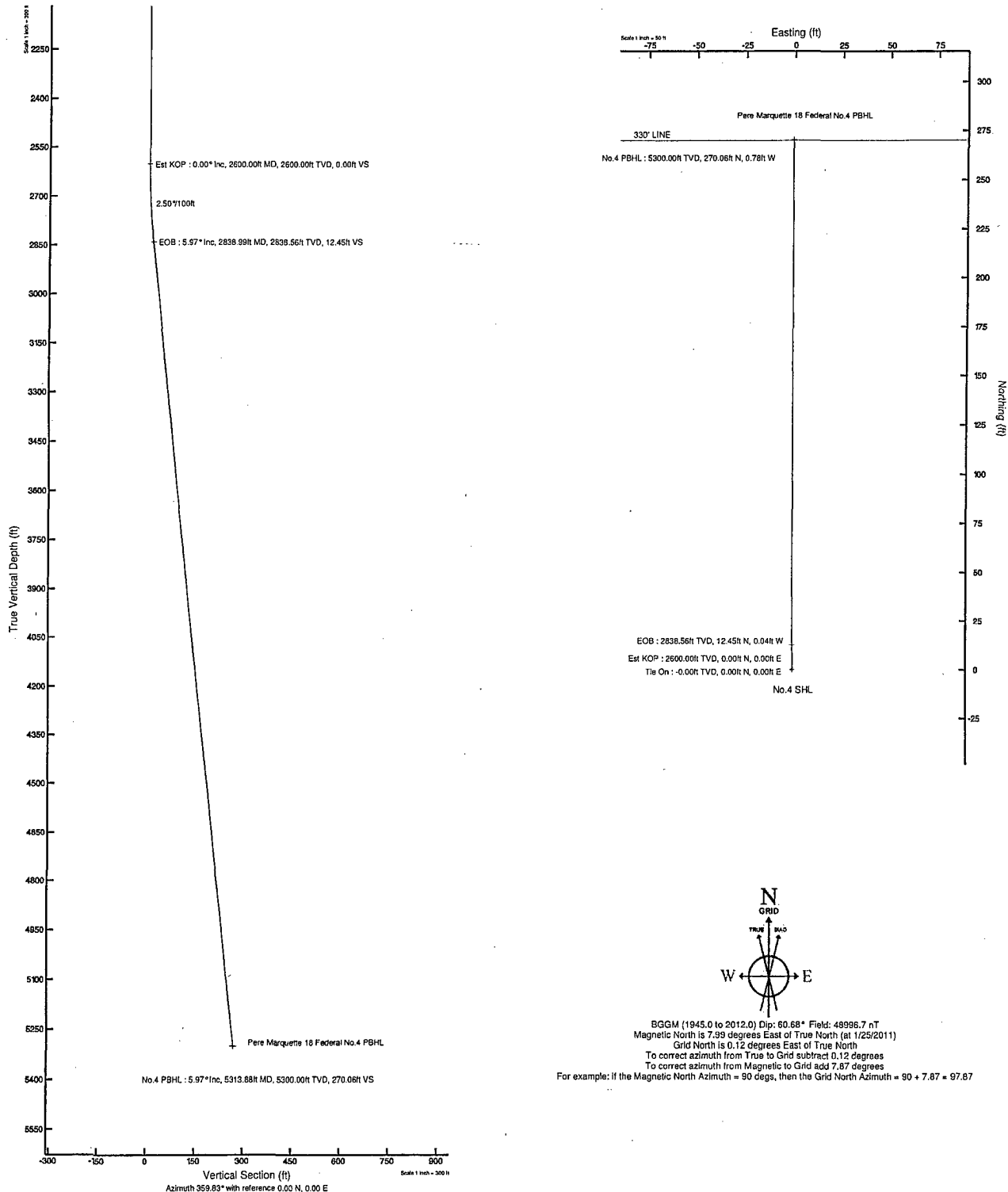
Grid System: NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet

North Reference: Grid north

Scale: True distance

Depths are in feet

Created by: gomesos on 1/26/2011





Planned Wellpath Report

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INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No.4 SHL
Area	Eddy County, NM	Well	No.4
Field	Paddock Blinbry Filed	Wellbore	No.4 PWB
Facility	Pere Marquette 18 Federal No.4		

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	0.999915	Report Generated	1/26/2011 at 3:54:17 PM
Convergence at slot	0.12° East	Database/Source file	WA Midland/No.4_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	610290.50	669464.60	32°50'24.656"N	104°06'31.769"W
Facility Reference Pt			610290.50	669464.60	32°50'24.656"N	104°06'31.769"W
Field Reference Pt			594612.60	661200.10	32°49'03.170"N	104°09'35.695"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No.4 SHL (RT) to Facility Vertical Datum	0.00ft
Horizontal Reference Pt	Slot	Rig on No.4 SHL (RT) to Mean Sea Level	3664.00ft
Vertical Reference Pt	Rig on No.4 SHL (RT)	Facility Vertical Datum to Mud Line (Facility)	0.00ft
MD Reference Pt	Rig on No.4 SHL (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	359.83°



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

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Area	Eddy County, NM	Well	No.4
Field	Paddock Blinebry Filed	Wellbore	No.4 PWB
Facility	Pere Marquette 18 Federal No.4		

WELLPATH DATA (56 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	359.835	0.00	0.00	0.00	0.00	610290.50	669464.60	32°50'24.656"N	104°06'31.769"W	0.00	Tie On
100.00†	0.000	359.835	100.00	0.00	0.00	0.00	610290.50	669464.60	32°50'24.656"N	104°06'31.769"W	0.00	
200.00†	0.000	359.835	200.00	0.00	0.00	0.00	610290.50	669464.60	32°50'24.656"N	104°06'31.769"W	0.00	
300.00†	0.000	359.835	300.00	0.00	0.00	0.00	610290.50	669464.60	32°50'24.656"N	104°06'31.769"W	0.00	
400.00†	0.000	359.835	400.00	0.00	0.00	0.00	610290.50	669464.60	32°50'24.656"N	104°06'31.769"W	0.00	
500.00†	0.000	359.835	500.00	0.00	0.00	0.00	610290.50	669464.60	32°50'24.656"N	104°06'31.769"W	0.00	
600.00†	0.000	359.835	600.00	0.00	0.00	0.00	610290.50	669464.60	32°50'24.656"N	104°06'31.769"W	0.00	
700.00†	0.000	359.835	700.00	0.00	0.00	0.00	610290.50	669464.60	32°50'24.656"N	104°06'31.769"W	0.00	
800.00†	0.000	359.835	800.00	0.00	0.00	0.00	610290.50	669464.60	32°50'24.656"N	104°06'31.769"W	0.00	
900.00†	0.000	359.835	900.00	0.00	0.00	0.00	610290.50	669464.60	32°50'24.656"N	104°06'31.769"W	0.00	
1000.00†	0.000	359.835	1000.00	0.00	0.00	0.00	610290.50	669464.60	32°50'24.656"N	104°06'31.769"W	0.00	
1100.00†	0.000	359.835	1100.00	0.00	0.00	0.00	610290.50	669464.60	32°50'24.656"N	104°06'31.769"W	0.00	
1200.00†	0.000	359.835	1200.00	0.00	0.00	0.00	610290.50	669464.60	32°50'24.656"N	104°06'31.769"W	0.00	
1300.00†	0.000	359.835	1300.00	0.00	0.00	0.00	610290.50	669464.60	32°50'24.656"N	104°06'31.769"W	0.00	
1400.00†	0.000	359.835	1400.00	0.00	0.00	0.00	610290.50	669464.60	32°50'24.656"N	104°06'31.769"W	0.00	
1500.00†	0.000	359.835	1500.00	0.00	0.00	0.00	610290.50	669464.60	32°50'24.656"N	104°06'31.769"W	0.00	
1600.00†	0.000	359.835	1600.00	0.00	0.00	0.00	610290.50	669464.60	32°50'24.656"N	104°06'31.769"W	0.00	
1700.00†	0.000	359.835	1700.00	0.00	0.00	0.00	610290.50	669464.60	32°50'24.656"N	104°06'31.769"W	0.00	
1800.00†	0.000	359.835	1800.00	0.00	0.00	0.00	610290.50	669464.60	32°50'24.656"N	104°06'31.769"W	0.00	
1900.00†	0.000	359.835	1900.00	0.00	0.00	0.00	610290.50	669464.60	32°50'24.656"N	104°06'31.769"W	0.00	
2000.00†	0.000	359.835	2000.00	0.00	0.00	0.00	610290.50	669464.60	32°50'24.656"N	104°06'31.769"W	0.00	
2100.00†	0.000	359.835	2100.00	0.00	0.00	0.00	610290.50	669464.60	32°50'24.656"N	104°06'31.769"W	0.00	
2200.00†	0.000	359.835	2200.00	0.00	0.00	0.00	610290.50	669464.60	32°50'24.656"N	104°06'31.769"W	0.00	
2300.00†	0.000	359.835	2300.00	0.00	0.00	0.00	610290.50	669464.60	32°50'24.656"N	104°06'31.769"W	0.00	
2400.00†	0.000	359.835	2400.00	0.00	0.00	0.00	610290.50	669464.60	32°50'24.656"N	104°06'31.769"W	0.00	
2500.00†	0.000	359.835	2500.00	0.00	0.00	0.00	610290.50	669464.60	32°50'24.656"N	104°06'31.769"W	0.00	
2600.00†	0.000	359.835	2600.00	0.00	0.00	0.00	610290.50	669464.60	32°50'24.656"N	104°06'31.769"W	0.00	Est KOP
2700.00†	2.500	359.835	2699.97	2.18	2.18	-0.01	610290.49	669466.78	32°50'24.677"N	104°06'31.769"W	2.50	
2800.00†	5.000	359.835	2799.75	8.72	8.72	-0.03	610290.47	669473.32	32°50'24.742"N	104°06'31.769"W	2.50	
2838.99†	5.975	359.835	2838.56	12.45	12.45	-0.04	610290.46	669477.05	32°50'24.779"N	104°06'31.769"W	2.50	EOB
2900.00†	5.975	359.835	2899.24	18.80	18.80	-0.05	610290.45	669483.40	32°50'24.842"N	104°06'31.769"W	0.00	
3000.00†	5.975	359.835	2998.69	29.21	29.21	-0.08	610290.42	669493.81	32°50'24.945"N	104°06'31.769"W	0.00	
3100.00†	5.975	359.835	3098.15	39.62	39.62	-0.11	610290.39	669504.21	32°50'25.048"N	104°06'31.769"W	0.00	
3200.00†	5.975	359.835	3197.61	50.03	50.03	-0.14	610290.36	669514.62	32°50'25.151"N	104°06'31.769"W	0.00	
3300.00†	5.975	359.835	3297.06	60.44	60.44	-0.17	610290.33	669525.03	32°50'25.254"N	104°06'31.769"W	0.00	
3400.00†	5.975	359.835	3396.52	70.85	70.85	-0.20	610290.30	669535.44	32°50'25.357"N	104°06'31.769"W	0.00	
3500.00†	5.975	359.835	3495.98	81.26	81.25	-0.23	610290.27	669545.85	32°50'25.460"N	104°06'31.769"W	0.00	
3600.00†	5.975	359.835	3595.43	91.66	91.66	-0.26	610290.24	669556.26	32°50'25.563"N	104°06'31.769"W	0.00	
3700.00†	5.975	359.835	3694.89	102.07	102.07	-0.29	610290.21	669566.66	32°50'25.666"N	104°06'31.770"W	0.00	
3800.00†	5.975	359.835	3794.35	112.48	112.48	-0.32	610290.18	669577.07	32°50'25.769"N	104°06'31.770"W	0.00	
3900.00†	5.975	359.835	3893.80	122.89	122.89	-0.35	610290.15	669587.48	32°50'25.872"N	104°06'31.770"W	0.00	
4000.00†	5.975	359.835	3993.26	133.30	133.30	-0.39	610290.12	669597.89	32°50'25.975"N	104°06'31.770"W	0.00	
4100.00†	5.975	359.835	4092.72	143.71	143.71	-0.42	610290.08	669608.30	32°50'26.078"N	104°06'31.770"W	0.00	
4200.00†	5.975	359.835	4192.17	154.12	154.12	-0.45	610290.05	669618.71	32°50'26.181"N	104°06'31.770"W	0.00	
4300.00†	5.975	359.835	4291.63	164.53	164.53	-0.48	610290.02	669629.11	32°50'26.284"N	104°06'31.770"W	0.00	



Planned Wellpath Report

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INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No.4 SHL
Area	Eddy County, NM	Well	No.4
Field	Paddock Blinebry Filed	Wellbore	No.4 PWB
Facility	Pere Marquette 18 Federal No.4		

WELLPATH DATA (56 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
4400.00†	5.975	359.835	4391.09	174.94	174.94	-0.51	610289.99	669639.52	32°50'26.387"N	104°06'31.770"W	0.00	
4500.00†	5.975	359.835	4490.54	185.35	185.35	-0.54	610289.96	669649.93	32°50'26.490"N	104°06'31.770"W	0.00	
4600.00†	5.975	359.835	4590.00	195.76	195.76	-0.57	610289.93	669660.34	32°50'26.593"N	104°06'31.770"W	0.00	
4700.00†	5.975	359.835	4689.46	206.17	206.16	-0.60	610289.90	669670.75	32°50'26.696"N	104°06'31.770"W	0.00	
4800.00†	5.975	359.835	4788.91	216.57	216.57	-0.63	610289.87	669681.15	32°50'26.799"N	104°06'31.771"W	0.00	
4900.00†	5.975	359.835	4888.37	226.98	226.98	-0.66	610289.84	669691.56	32°50'26.902"N	104°06'31.771"W	0.00	
5000.00†	5.975	359.835	4987.83	237.39	237.39	-0.69	610289.81	669701.97	32°50'27.005"N	104°06'31.771"W	0.00	
5100.00†	5.975	359.835	5087.28	247.80	247.80	-0.72	610289.78	669712.38	32°50'27.108"N	104°06'31.771"W	0.00	
5200.00†	5.975	359.835	5186.74	258.21	258.21	-0.75	610289.75	669722.79	32°50'27.211"N	104°06'31.771"W	0.00	
5300.00†	5.975	359.835	5286.20	268.62	268.62	-0.78	610289.72	669733.20	32°50'27.314"N	104°06'31.771"W	0.00	
5313.88	5.975	359.835	5300.00†	270.06	270.06	-0.78	610289.72	669734.64	32°50'27.328"N	104°06'31.771"W	0.00	No.4 PBHL

HOLE & CASING SECTIONS Ref Wellbore: No.4 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]
9.375in Casing Surface	0.00	300.00	300.00	0.00	300.00	0.00	0.00	0.00	0.00
8.75in Open Hole	300.00	5313.88	5013.88	300.00	5300.00	0.00	0.00	270.06	-0.78

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
1) Pere Marquette 18 Federal No.4 PBHL	5313.88	5300.00	270.06	-0.78	610289.72	669734.64	32°50'27.328"N	104°06'31.771"W	point

SURVEY PROGRAM Ref Wellbore: No.4 PWB Ref Wellpath: Prelim_1

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	5313.88	NaviTrak (Standard)		No.4 PWB

SR & A

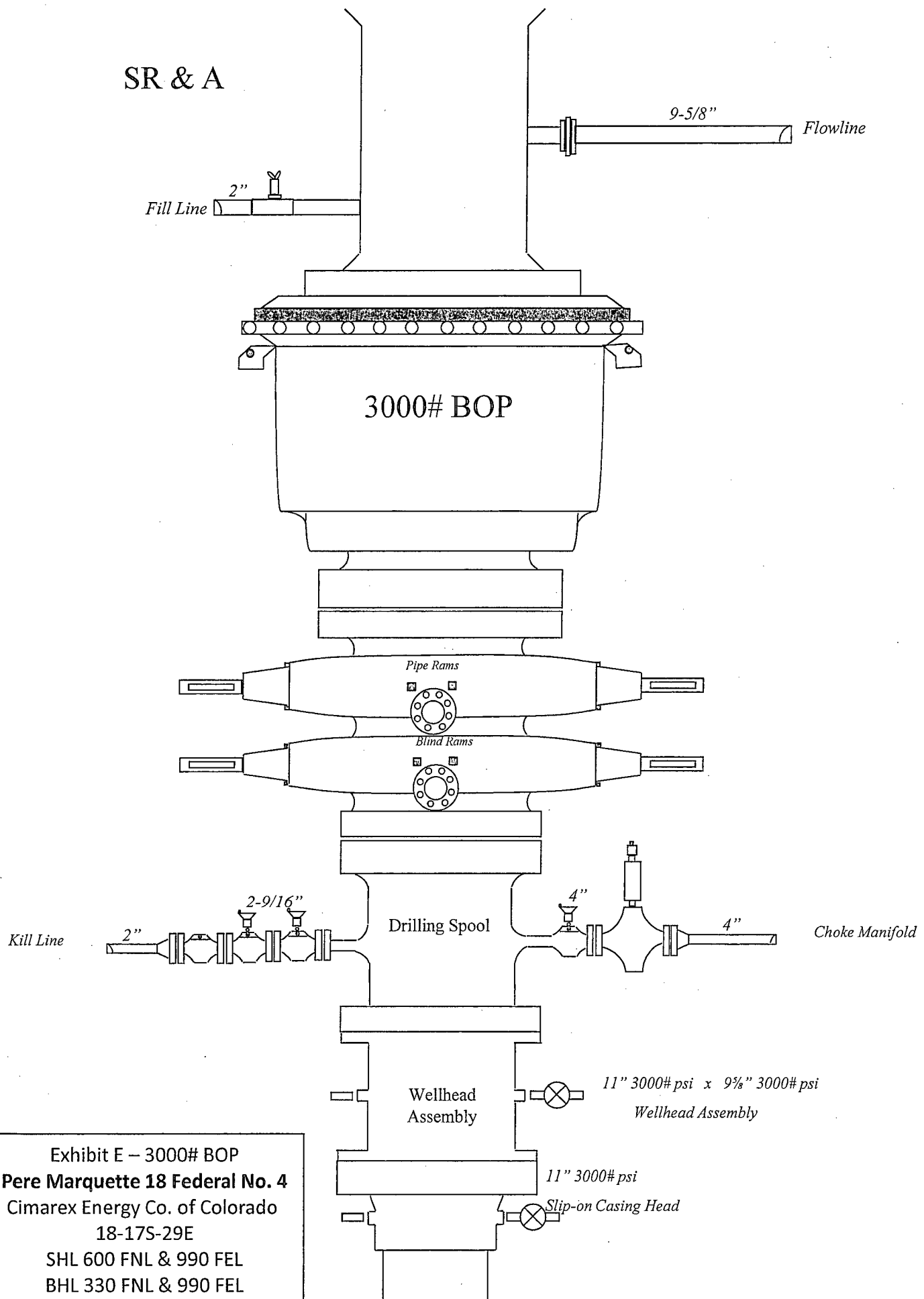


Exhibit E – 3000# BOP
Pere Marquette 18 Federal No. 4
Cimarex Energy Co. of Colorado
18-175-29E
SHL 600 FNL & 990 FEL
BHL 330 FNL & 990 FEL
Eddy County, NM

Drilling Operations
Choke Manifold
3M Service

Exhibit E-1 – Choke Manifold Diagram
Pere Marquette 18 Federal No. 4
Cimarex Energy Co. of Colorado
18-17S-29E
SHL 600 FNL & 990 FEL
BHL 330 FNL & 990 FEL
Eddy County, NM

