

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-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. 2 H
3b. Phone No. (include area code) 432-571-7800		9. API Well No. 30-015- 39030
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At Surface 594 FNL & 1210 FWL At proposed prod. Zone 330 FNL & 1210 FWL		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) 594'	16. No of acres in lease 1054.42	12. County or Parish Eddy
17. Spacing Unit dedicated to this well NENW 40	13. State NM	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 550'	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.) 3707' 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)	Date APR 29 2011
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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)

RECEIVED

MAY 03 2011

NMOCD ARTESIA

Roswell Controlled Water Basin

Approval Subject to General Requirements
& Special Stipulations AttachedSEE ATTACHED FOR
CONDITIONS OF APPROVAL

Application to Drill
Pere Marquette 18 Federal No. 2
Cimarex Energy Co. of Colorado
Unit C, 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 594 FNL & 1210 FWL
BHL 330 FNL & 1210 FWL
- 2 Elevation above sea level: 3707' 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.

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9 Casing Plan:

String	Hole Size	Depth	Casing OD	Weight	Thread	Collar	Grade
See COA Surface	12¼"	0' to 250' 300'	New 9½"	36#	8-R	STC	J55
Production	8¾"	0' to 5314'	New 5½"	17#	8-R	LTC	N80

Drilling Plan

Drill 8¾" hole to KOP 2700'. Build and hold to TD @ 5314' MD 5300' TVD. 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

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 9½" 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

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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 COR*

- 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

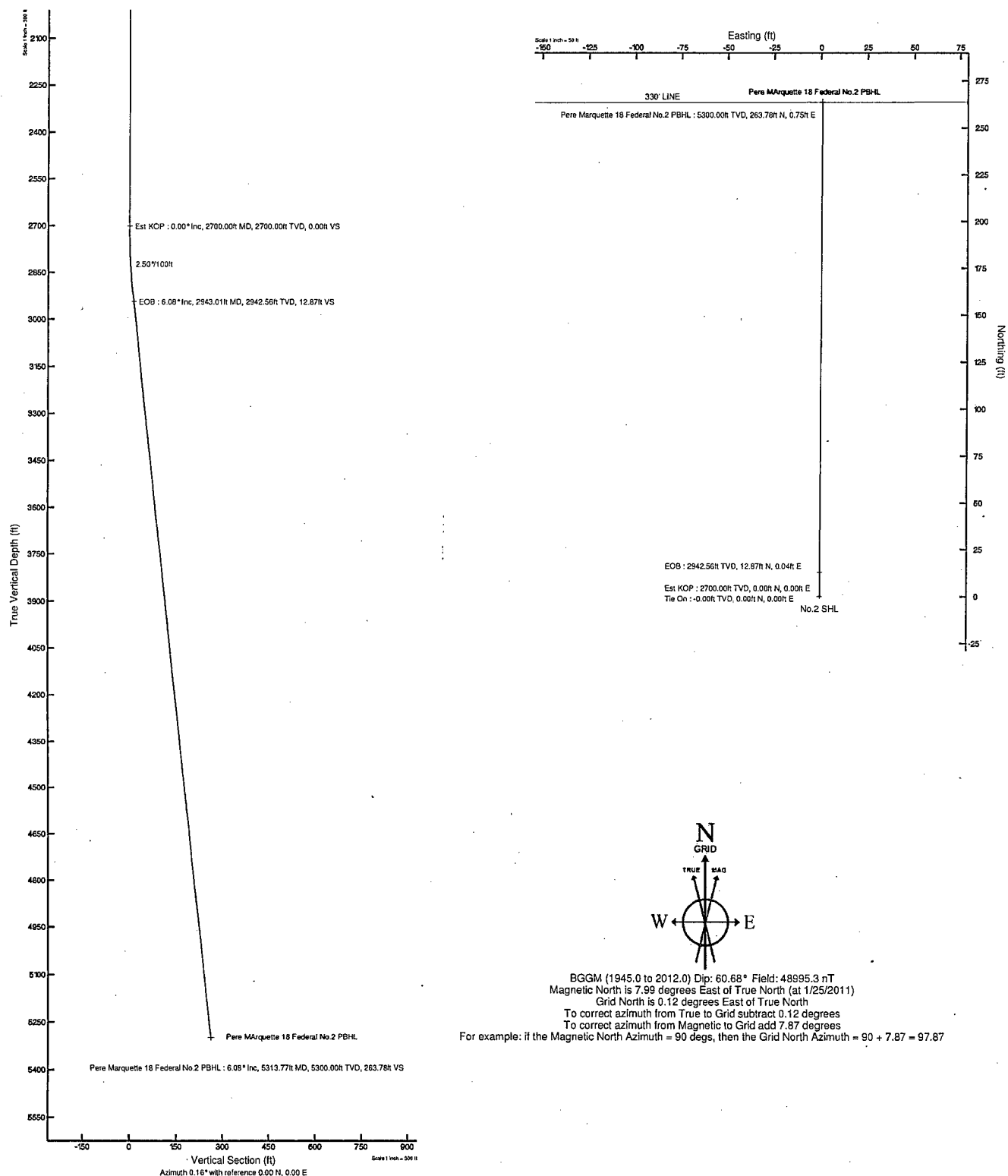
If production casing is run an additional 30 days will be required to complete and construct surface facilities.

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.

Blinebry pay will be perforated and stimulated.

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





Planned Wellpath Report

Prelim_1
Page 1 of 3



REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No.2 SHL
Area	Eddy County, NM	Well	No.2
Field	Paddock Blinbry Filed	Wellbore	No.2 PWB
Facility	Pere Marquette 18 Federal No.2		

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	0.999914	Report Generated	1/26/2011 at 3:21:16 PM
Convergence at slot	0.12° East	Database/Source file	WA Midland/No.2_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	607648.10	669464.80	32°50'24.712"N	104°07'02.741"W
Facility Reference Pt			607648.10	669464.80	32°50'24.712"N	104°07'02.741"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.2 SHL (RT) to Facility Vertical Datum	0.00ft
Horizontal Reference Pt	Slot	Rig on No.2 SHL (RT) to Mean Sea Level	3707.00ft
Vertical Reference Pt	Rig on No.2 SHL (RT)	Facility Vertical Datum to Mud Line (Facility)	0.00ft
MD Reference Pt	Rig on No.2 SHL (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	0.16°



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Prelim 1
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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]
0.00	0.000	0.163	0.00	0.00	0.00	0.00	607648.10	669464.80	32°50'24.712"N	104°07'02.741"W	0.00
100.00†	0.000	0.163	100.00	0.00	0.00	0.00	607648.10	669464.80	32°50'24.712"N	104°07'02.741"W	0.00
200.00†	0.000	0.163	200.00	0.00	0.00	0.00	607648.10	669464.80	32°50'24.712"N	104°07'02.741"W	0.00
300.00†	0.000	0.163	300.00	0.00	0.00	0.00	607648.10	669464.80	32°50'24.712"N	104°07'02.741"W	0.00
400.00†	0.000	0.163	400.00	0.00	0.00	0.00	607648.10	669464.80	32°50'24.712"N	104°07'02.741"W	0.00
500.00†	0.000	0.163	500.00	0.00	0.00	0.00	607648.10	669464.80	32°50'24.712"N	104°07'02.741"W	0.00
600.00†	0.000	0.163	600.00	0.00	0.00	0.00	607648.10	669464.80	32°50'24.712"N	104°07'02.741"W	0.00
700.00†	0.000	0.163	700.00	0.00	0.00	0.00	607648.10	669464.80	32°50'24.712"N	104°07'02.741"W	0.00
800.00†	0.000	0.163	800.00	0.00	0.00	0.00	607648.10	669464.80	32°50'24.712"N	104°07'02.741"W	0.00
900.00†	0.000	0.163	900.00	0.00	0.00	0.00	607648.10	669464.80	32°50'24.712"N	104°07'02.741"W	0.00
1000.00†	0.000	0.163	1000.00	0.00	0.00	0.00	607648.10	669464.80	32°50'24.712"N	104°07'02.741"W	0.00
1100.00†	0.000	0.163	1100.00	0.00	0.00	0.00	607648.10	669464.80	32°50'24.712"N	104°07'02.741"W	0.00
1200.00†	0.000	0.163	1200.00	0.00	0.00	0.00	607648.10	669464.80	32°50'24.712"N	104°07'02.741"W	0.00
1300.00†	0.000	0.163	1300.00	0.00	0.00	0.00	607648.10	669464.80	32°50'24.712"N	104°07'02.741"W	0.00
1400.00†	0.000	0.163	1400.00	0.00	0.00	0.00	607648.10	669464.80	32°50'24.712"N	104°07'02.741"W	0.00
1500.00†	0.000	0.163	1500.00	0.00	0.00	0.00	607648.10	669464.80	32°50'24.712"N	104°07'02.741"W	0.00
1600.00†	0.000	0.163	1600.00	0.00	0.00	0.00	607648.10	669464.80	32°50'24.712"N	104°07'02.741"W	0.00
1700.00†	0.000	0.163	1700.00	0.00	0.00	0.00	607648.10	669464.80	32°50'24.712"N	104°07'02.741"W	0.00
1800.00†	0.000	0.163	1800.00	0.00	0.00	0.00	607648.10	669464.80	32°50'24.712"N	104°07'02.741"W	0.00
1900.00†	0.000	0.163	1900.00	0.00	0.00	0.00	607648.10	669464.80	32°50'24.712"N	104°07'02.741"W	0.00
2000.00†	0.000	0.163	2000.00	0.00	0.00	0.00	607648.10	669464.80	32°50'24.712"N	104°07'02.741"W	0.00
2100.00†	0.000	0.163	2100.00	0.00	0.00	0.00	607648.10	669464.80	32°50'24.712"N	104°07'02.741"W	0.00
2200.00†	0.000	0.163	2200.00	0.00	0.00	0.00	607648.10	669464.80	32°50'24.712"N	104°07'02.741"W	0.00
2300.00†	0.000	0.163	2300.00	0.00	0.00	0.00	607648.10	669464.80	32°50'24.712"N	104°07'02.741"W	0.00
2400.00†	0.000	0.163	2400.00	0.00	0.00	0.00	607648.10	669464.80	32°50'24.712"N	104°07'02.741"W	0.00
2500.00†	0.000	0.163	2500.00	0.00	0.00	0.00	607648.10	669464.80	32°50'24.712"N	104°07'02.741"W	0.00
2600.00†	0.000	0.163	2600.00	0.00	0.00	0.00	607648.10	669464.80	32°50'24.712"N	104°07'02.741"W	0.00
2700.00	0.000	0.163	2700.00	0.00	0.00	0.00	607648.10	669464.80	32°50'24.712"N	104°07'02.741"W	0.00
2800.00†	2.500	0.163	2799.97	2.18	2.18	0.01	607648.11	669466.98	32°50'24.734"N	104°07'02.741"W	2.50
2900.00†	5.000	0.163	2899.75	8.72	8.72	0.02	607648.12	669473.52	32°50'24.799"N	104°07'02.741"W	2.50
2943.01	6.075	0.163	2942.56	12.87	12.87	0.04	607648.14	669477.67	32°50'24.840"N	104°07'02.741"W	2.50
3000.00†	6.075	0.163	2999.22	18.90	18.90	0.05	607648.15	669483.70	32°50'24.899"N	104°07'02.740"W	0.00
3100.00†	6.075	0.163	3098.66	29.49	29.49	0.08	607648.18	669494.28	32°50'25.004"N	104°07'02.740"W	0.00
3200.00†	6.075	0.163	3198.10	40.07	40.07	0.11	607648.21	669504.87	32°50'25.109"N	104°07'02.739"W	0.00
3300.00†	6.075	0.163	3297.54	50.65	50.65	0.14	607648.24	669515.45	32°50'25.213"N	104°07'02.738"W	0.00
3400.00†	6.075	0.163	3396.98	61.24	61.24	0.17	607648.27	669526.03	32°50'25.318"N	104°07'02.738"W	0.00
3500.00†	6.075	0.163	3496.42	71.82	71.82	0.20	607648.30	669536.61	32°50'25.423"N	104°07'02.737"W	0.00
3600.00†	6.075	0.163	3595.85	82.40	82.40	0.23	607648.33	669547.20	32°50'25.528"N	104°07'02.737"W	0.00
3700.00†	6.075	0.163	3695.29	92.99	92.99	0.26	607648.36	669557.78	32°50'25.632"N	104°07'02.736"W	0.00
3800.00†	6.075	0.163	3794.73	103.57	103.57	0.29	607648.39	669568.36	32°50'25.737"N	104°07'02.735"W	0.00
3900.00†	6.075	0.163	3894.17	114.16	114.16	0.32	607648.42	669578.95	32°50'25.842"N	104°07'02.735"W	0.00
4000.00†	6.075	0.163	3993.61	124.74	124.74	0.35	607648.45	669589.53	32°50'25.947"N	104°07'02.734"W	0.00
4100.00†	6.075	0.163	4093.05	135.32	135.32	0.38	607648.48	669600.11	32°50'26.051"N	104°07'02.734"W	0.00
4200.00†	6.075	0.163	4192.49	145.91	145.91	0.41	607648.51	669610.69	32°50'26.156"N	104°07'02.733"W	0.00
4300.00†	6.075	0.163	4291.92	156.49	156.49	0.44	607648.54	669621.28	32°50'26.261"N	104°07'02.732"W	0.00



Planned Wellpath Report

Prelim_1

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INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No.2 SHL
Area	Eddy County, NM	Well	No.2
Field	Paddock Blinebry Filed	Wellbore	No.2 PWB
Facility	Pere Marquette 18 Federal No.2		

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]
4400.00†	6.075	0.163	4391.36	167.07	167.07	0.48	607648.58	669631.86	32°50'26.365"N	104°07'02.732"W	0.00
4500.00†	6.075	0.163	4490.80	177.66	177.66	0.51	607648.61	669642.44	32°50'26.470"N	104°07'02.731"W	0.00
4600.00†	6.075	0.163	4590.24	188.24	188.24	0.54	607648.64	669653.02	32°50'26.575"N	104°07'02.731"W	0.00
4700.00†	6.075	0.163	4689.68	198.82	198.82	0.57	607648.67	669663.61	32°50'26.680"N	104°07'02.730"W	0.00
4800.00†	6.075	0.163	4789.12	209.41	209.41	0.60	607648.70	669674.19	32°50'26.784"N	104°07'02.729"W	0.00
4900.00†	6.075	0.163	4888.55	219.99	219.99	0.63	607648.73	669684.77	32°50'26.889"N	104°07'02.729"W	0.00
5000.00†	6.075	0.163	4987.99	230.58	230.57	0.66	607648.76	669695.35	32°50'26.994"N	104°07'02.728"W	0.00
5100.00†	6.075	0.163	5087.43	241.16	241.16	0.69	607648.79	669705.94	32°50'27.098"N	104°07'02.727"W	0.00
5200.00†	6.075	0.163	5186.87	251.74	251.74	0.72	607648.82	669716.52	32°50'27.203"N	104°07'02.727"W	0.00
5300.00†	6.075	0.163	5286.31	262.33	262.33	0.75	607648.85	669727.10	32°50'27.308"N	104°07'02.726"W	0.00
5313.77	6.075	0.163	5300.00†	263.78	263.78	0.75	607648.85	669728.56	32°50'27.322"N	104°07'02.726"W	0.00

HOLE & CASING SECTIONS Ref Wellbore: No.2 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	5313.77	5013.77	300.00	5300.00	0.00	0.00	263.78	0.75

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.2 PBHL	5313.77	5300.00	263.78	0.75	607648.85	669728.56	32°50'27.322"N	104°07'02.726"W	point

SURVEY PROGRAM Ref Wellbore: No.2 PWB Ref Wellpath: Prelim_1

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	5313.77	NaviTrak (Standard)		No.2 PWB

SR & A

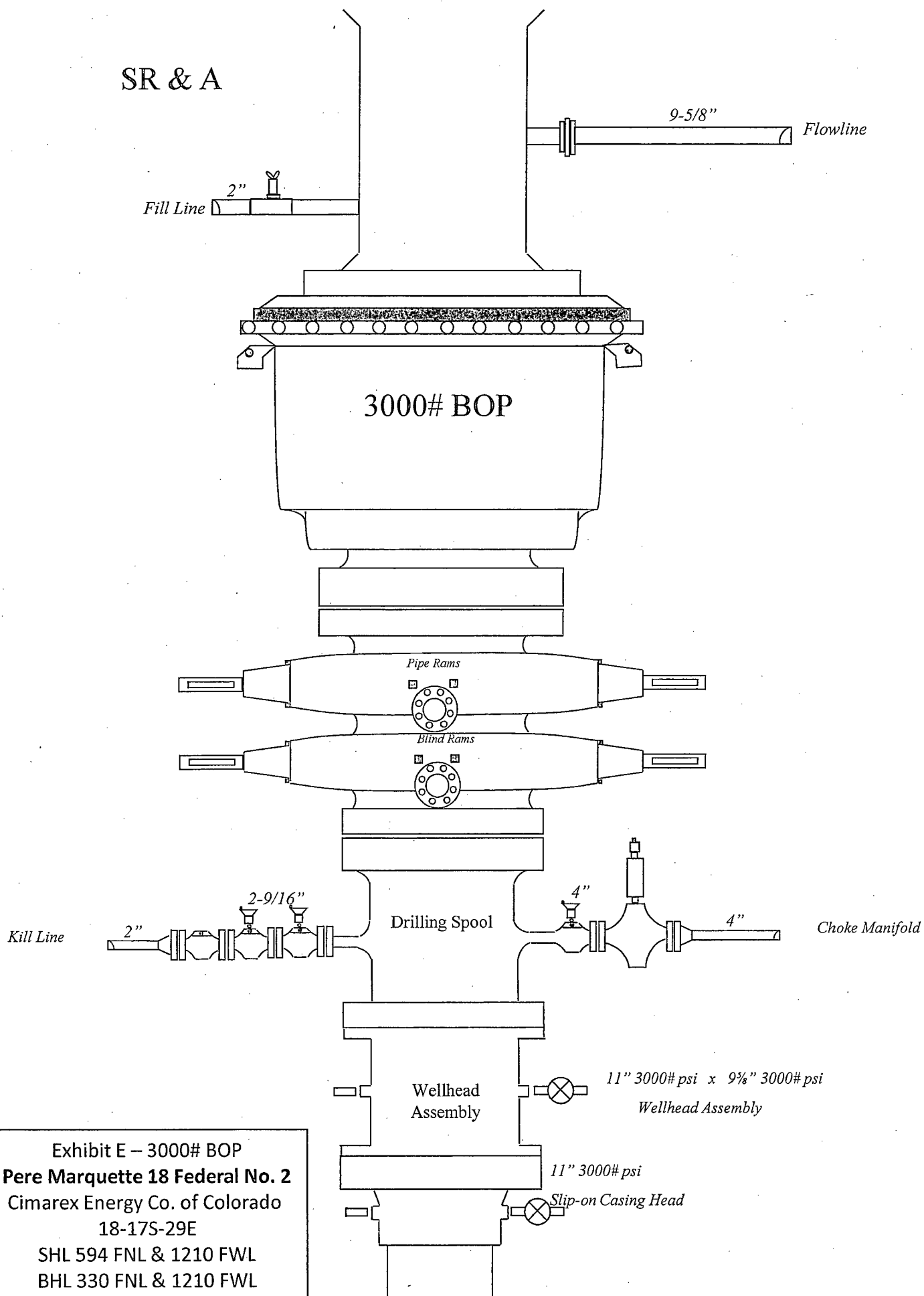


Exhibit E – 3000# BOP
Pere Marquette 18 Federal No. 2
Cimarex Energy Co. of Colorado
18-175-29E
SHL 594 FNL & 1210 FWL
BHL 330 FNL & 1210 FWL
Eddy County, NM

Drilling Operations Choke Manifold 3M Service

Exhibit E-1 – Choke Manifold Diagram

Pere Marquette 18 Federal No. 2

Cimarex Energy Co. of Colorado

18-17S-29E

SHL 594 FNL & 1210 FWL

BHL 330 FNL & 1210 FWL

Eddy County, NM

