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Form 3160-3
(April 2004)

AUG 26 2010
HOBBSOCD

FORM APPROVED
OMB No 1004-0137
Expires March 31, 2007

UNITED 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. LC-063586	
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. <u><37921></u> Southern California 29 Federal No. 18H	
3b Phone No (include area code) 432-571-7800		9. API Well No. 30-025- <u>39889</u>	
4 Location of Well (Report location clearly and in accordance with any State requirements. *) At Surface 1140 FNL & 330 FEL <u>Unit 11 NORTHDOX</u> At proposed prod Zone 660 FNL & 1650 FWL <u>Unit 16 LOCATION</u>		10 Field and Pool, or Exploratory Lusk; Bone Spring, South <u><41460></u>	
14 Distance in miles and direction from nearest town or post office*		11. Sec , T. R. M or Blk and Survey or Area 29-19S-32E	
15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig unit line if any) 180'		12 County or Parish Lea	
16 No of acres in lease 640		13 State NM	
17 Spacing Unit dedicated to this well N2NE & NENW 120 acres		18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft N/A	
19. Proposed Depth Pilot Hole 9550' MD 12518' TVD 9300'		20 BLM/BIA Bond No. on File NM-2575	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3369' GR		22 Approximate date work will start* 07.15.10	
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 <u>Natalie Krueger</u>	Name (Printed/Typed) Natalie Krueger	Date 06.01.10
Title Regulatory Analyst		
Approved By (Signature) <u>/s/ Don Peterson</u>	Name (Printed/Typed) /s/ Don Peterson	Date AUG 24 2010
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

OCD CONDITION OF APPROVAL-of Drilling.

Intent to drill ONLY --- CANNOT produce until the Non-Standard Location has been approved by OCD Santa Fe office

APPROVAL FOR TWO YEARS

person knowingly and willfully to make to any department or agency of the United within its jurisdiction

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Capitan Controlled Water Basin

PETROLEUM ENGINEER

Approval Subject to General Requirements
& Special Stipulations Attached

KZ 08/31/10

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DISTRICT I
1625 N. French Dr., Hobbs, NM 88240DISTRICT II
1301 W. Grand Avenue, Artesia, NM 88210DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

AUG 26 2010

HOBBSCO

State of New Mexico
Energy, Minerals and Natural Resources DepartmentForm C-102
Revised October 15, 2009Submit one copy to appropriate
District Office

OIL CONSERVATION DIVISION

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-025-39889	Pool Code 41460	Pool Name Lusk; Bone Spring, S
Property Code 37971	Property Name SOUTHERN CALIFORNIA "29" FEDERAL	Well Number 18 H
OGRID No. 162683	Operator Name CIMAREX ENERGY CO. OF COLORADO	Elevation 3369'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	29	19 S	32 E		1140	NORTH	330	EAST	LEA

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
C	29	19 S	32 E		660	NORTH	1650	WEST	LEA

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
140			

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

			OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. Signature: <u>Natalie Krueger</u> Date: <u>6/1/2010</u> Printed Name: <u>Natalie Krueger</u>	
PROPOSED BOTTOM HOLE LOCATION Lat - N 32°38'12.78" Long - W 103°47'29.68" NMSPC - N 595854.10 E 708103.83 (NAD-83)			SURFACE LOCATION Lat - N 32°38'07.98" Long - W 103°46'50.94" NMSPC - N 595383.7 E 711420.3 (NAD-83)	
BHL/End of Prod Interval 660 FNL & 1650 FWL	EOC/Beg of Prod Interval 1114 FNL & 516 FEL	SHL & P.P. Bone Spring 1140 FNL & 330 FEL	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. Date Surveyed: <u>6/1/2010</u> Signature & Seal of Professional Surveyor: Certificate No. Gary L. Jones 7977 BASIN SURVEYS	

Application to Drill
Southern California 29 Federal No. 18
 Cimarex Energy Co. of Colorado
 Unit A, Section 29
 T19S-R32E, Lea 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 1140 FNL & 330 FEL
 BHL 660 FNL & 1650 FWL

- 2 Elevation above sea level: 3369' 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 9550' MD 12518' TVD 9300'

- 6 Estimated tops of geological markers:

Rustler	882'	7 Rivers	2725'
Capitan	2844'	Delaware Sands	4400'
T. Salt	4500'	Bone Spring	7201'
B. Salt	2224'	FBSS	8400'
Yates	2387'	SBSS	9050'

- 7 Possible mineral bearing formation:
 Bone Spring Oil

8 Proposed Mud Circulating System:

Depth	Mud Wt	Visc	Fluid Loss	Type Mud
0' to 920'	8.4 - 8.6	28	NC	FW
920' to 4000'	10.0	30-32	NC	Brine water
4000' to 9550'	8.4 - 9.5	30-32	NC	FW, brine
9059' to 12618'	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 casing, drill to vertical TD 9550' and log. Set 7" casing to 9000' and cross over to 2 7/8" 2000 psi IJ fiberglass tubing underneath to 9550' and cement in place. Drill out of the bottom of the 7" with a 6 1/8" bit and through cement and fiberglass tubing to KOP @ 9059' and kick off to drill the lateral. The fiberglass tubing effectively circulates cement to surface and plugs back the open hole.

Application to Drill
Southern California 29 Federal No. 18
 Cimarex Energy Co. of Colorado
 Unit A, Section 29
 T19S-R32E, Lea County, NM

9 Casing & Cementing Program:

String	Hole Size	Depth		Casing OD		Weight	Collar	Grade
Surface	17½"	0'	to 920'	New	13⅜"	48#	STC	H-40
Intermediate	12¼"	0'	to 4000'	New	9⅝"	40#	LTC	J/K-55
Production	8¾"	0'	to 9000'	New	7"	26#	LTC	P-110
Production	8¾"	9000'	to 9550'	New	2⅞"	2.18#	0	IJ
Lateral Pt. 1	6⅝"	8900'	to 9356'	New	4½"	11.6#	BTC	P-110
Lateral Pt. 2	6⅝"	9356'	to 12618'	New	4½"	11.6#	LTC	P-110

10 Cementing:

Surface 820 sx Premium Plus + 2% CaCl₂ (wt 14.8, yld 1.35)

TOC Surface

Intermediate Lead: 215 sx Econocem + 3% Salt + 2% CaCl₂ + 3 lbm/sk Gilsonite (wt 11.7, yld 2.06)

Tail: 650 sks Premium Plus + 1% CaCl₂ (wt 14.8, yld 1.34)

TOC Surface

Production Lead: 460 sx EconoCem + 3% Salt + 5 lbm/sk gilsonite (wt 13.0, yld 1.71)

Tail: 400 sx HalCem (wt 14.8, yld 1.34)

TOC 3800'

Lateral No cement needed. Peak completion assembly.

Fresh water zones will be protected by setting 13⅜" casing at 920' and cementing to surface. Hydrocarbon zones will be protected by setting 9⅝" casing at 4000' and cementing to surface, and by setting 7" casing at 9000' and fiberglass to 9550' and cementing to 3800'.

<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 13⅜" 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 1500 psi high.

Application to Drill
Southern California 29 Federal No. 18
Cimarex Energy Co. of Colorado
Unit A, Section 29
T19S-R32E, Lea 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 **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: Lea County, NM
Field: (SC) Sec 29, T19S, R32E
Facility: Southern California 29 Fed No. 18H

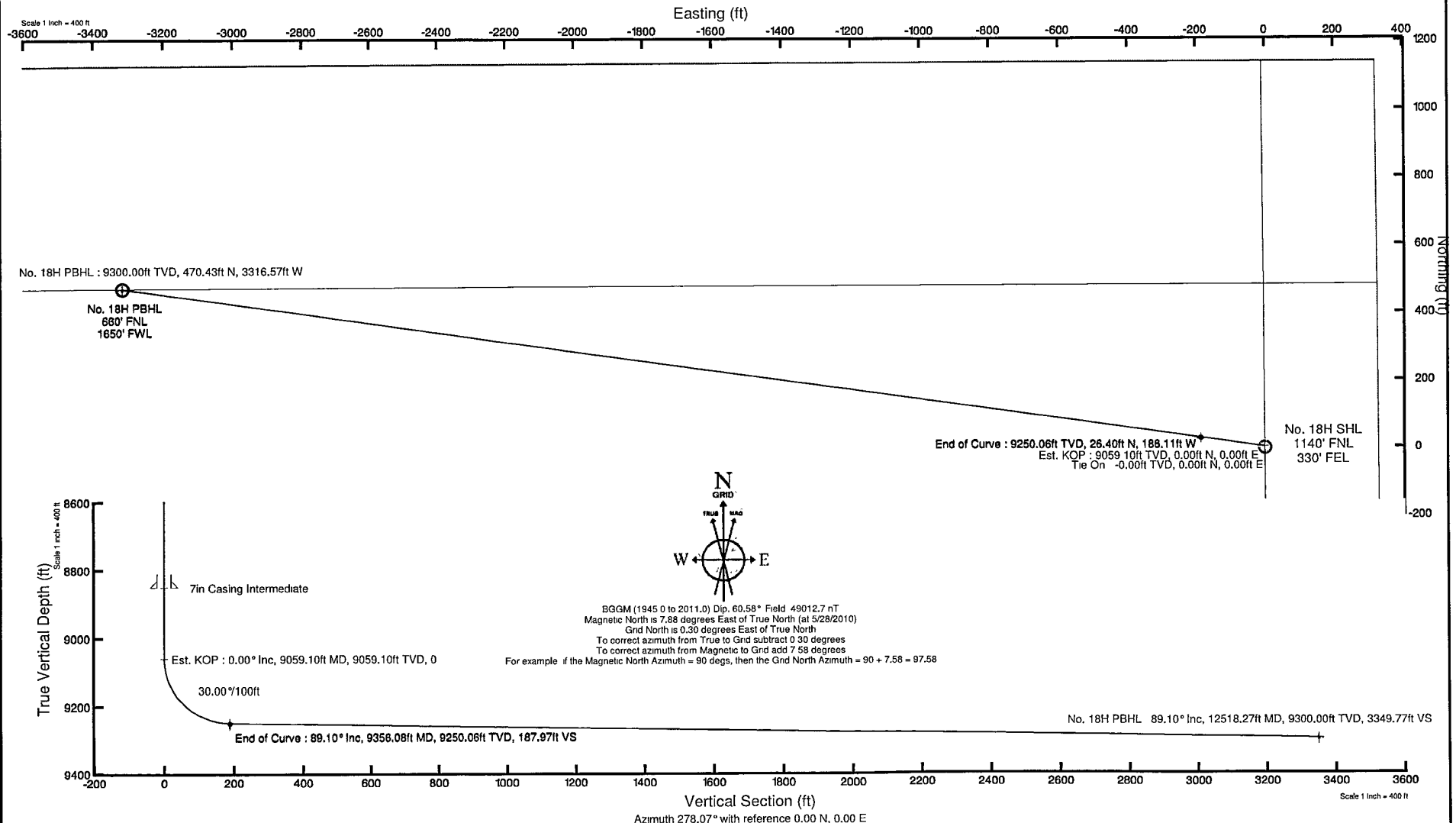
Slot: No. 18H SHL
Well: No. 18H
Wellbore: No. 18H PWB



Plot reference wellpath is Prelim_1	
True vertical depths are referenced to Rig on No. 18H SHL (GL)	Grid System NAD83 / TM New Mexico State Planes Eastern Zone (3001), US feet
Measured depths are referenced to Rig on No. 18H SHL (GL)	North Reference Grid north
Rig on No. 18H SHL (GL) to Mean Sea Level 3369 feet	Scale True distance
Mean Sea Level to Mud line (Facility Southern California 29 Fed No. 18H) -3369 feet	Depths are in feet
Coordinates are in feet referenced to Slot Location	Created by Roland Flores on 5/28/2010

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	278.073	0.00	0.00	0.00	0.00	0.00
Est. KOP	9059.10	0.000	278.073	9059.10	0.00	0.00	0.00	0.00
End of Curve	9356.08	89.095	278.073	9250.06	26.40	-186.11	30.00	187.97
No. 18H PBHL	12518.27	89.095	278.073	9300.00	470.43	-3316.57	0.00	3349.77



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Planned Wellpath Report

Prelim_1

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**INTEQ****REFERENCE WELLPATH IDENTIFICATION**

Operator	Cimarex Energy Co.	Slot	No. 18H SHL
Area	Lea County, NM	Well	No. 18H
Field	(SC) Sec 29, T19S, R32E	Wellbore	No. 18H PWB
Facility	Southern California 29 Fed No. 18H		

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	Florroll
Scale	0.999942	Report Generated	5/28/2010 at 2:47:10 PM
Convergence at slot	0.30° East	Database/Source file	WA_Midland/No._18H_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	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W
Facility Reference Pt			711420.30	595383.70	32°38'07.955"N	103°46'50.939"W
Field Reference Pt			706799.20	591606.30	32°37'30.812"N	103°47'45.203"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No. 18H SHL (GL) to Ground Level	0.00ft
Horizontal Reference Pt	Slot Location	Rig on No. 18H SHL (GL) to Mean Sea Level	3369.00ft
Vertical Reference Pt	Rig on No. 18H SHL (GL)	Ground Level to Mud Line (Facility)	0.00ft
MD Reference Pt	Rig on No. 18H SHL (GL)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	278.07°



Planned Wellpath Report

Prelim_1
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INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 18H SHL
Area	Lea County, NM	Well	No. 18H
Field	(SC) Sec 29, T19S, R32E	Wellbore	No. 18H PWB
Facility	Southern California 29 Fed No. 18H		

WELLPATH DATA (129 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	278.073	0.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	Tie On
100.00†	0.000	278.073	100.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
200.00†	0.000	278.073	200.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
300.00†	0.000	278.073	300.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
400.00†	0.000	278.073	400.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
500.00†	0.000	278.073	500.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
600.00†	0.000	278.073	600.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
700.00†	0.000	278.073	700.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
800.00†	0.000	278.073	800.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
900.00†	0.000	278.073	900.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
1000.00†	0.000	278.073	1000.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
1100.00†	0.000	278.073	1100.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
1200.00†	0.000	278.073	1200.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
1300.00†	0.000	278.073	1300.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
1400.00†	0.000	278.073	1400.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
1500.00†	0.000	278.073	1500.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
1600.00†	0.000	278.073	1600.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
1700.00†	0.000	278.073	1700.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
1800.00†	0.000	278.073	1800.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
1900.00†	0.000	278.073	1900.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
2000.00†	0.000	278.073	2000.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
2100.00†	0.000	278.073	2100.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
2200.00†	0.000	278.073	2200.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
2300.00†	0.000	278.073	2300.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
2400.00†	0.000	278.073	2400.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
2500.00†	0.000	278.073	2500.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
2600.00†	0.000	278.073	2600.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
2700.00†	0.000	278.073	2700.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
2800.00†	0.000	278.073	2800.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
2900.00†	0.000	278.073	2900.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	



Planned Wellpath Report

Prelim 1
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INTEQ

REFERENCE WELLPATH IDENTIFICATION				
Operator	Cimarex Energy Co.	Slot	No. 18H SHL	
Area	Lea County, NM	Well	No. 18H	
Field	(SC) Sec 29, T19S, R32E	Wellbore	No. 18H PWB	
Facility	Southern California 29 Fed No. 18H			

WELLPATH DATA (129 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
3000.00†	0.000	278.073	3000.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
3100.00†	0.000	278.073	3100.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
3200.00†	0.000	278.073	3200.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
3300.00†	0.000	278.073	3300.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
3400.00†	0.000	278.073	3400.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
3500.00†	0.000	278.073	3500.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
3600.00†	0.000	278.073	3600.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
3700.00†	0.000	278.073	3700.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
3800.00†	0.000	278.073	3800.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
3900.00†	0.000	278.073	3900.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
4000.00†	0.000	278.073	4000.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
4100.00†	0.000	278.073	4100.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
4200.00†	0.000	278.073	4200.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
4300.00†	0.000	278.073	4300.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
4400.00†	0.000	278.073	4400.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
4500.00†	0.000	278.073	4500.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
4600.00†	0.000	278.073	4600.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
4700.00†	0.000	278.073	4700.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
4800.00†	0.000	278.073	4800.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
4900.00†	0.000	278.073	4900.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
5000.00†	0.000	278.073	5000.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
5100.00†	0.000	278.073	5100.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
5200.00†	0.000	278.073	5200.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
5300.00†	0.000	278.073	5300.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
5400.00†	0.000	278.073	5400.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
5500.00†	0.000	278.073	5500.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
5600.00†	0.000	278.073	5600.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
5700.00†	0.000	278.073	5700.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
5800.00†	0.000	278.073	5800.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
5900.00†	0.000	278.073	5900.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	



Planned Wellpath Report

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INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 18H SHL
Area	Lea County, NM	Well	No. 18H
Field	(SC) Sec 29, T19S, R32E	Wellbore	No. 18H PWB
Facility	Southern California 29 Fed No. 18H		

WELLPATH DATA (129 stations) † = interpolated/extrapolated station												Comments
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]	
6000.00†	0.000	278.073	6000.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
6100.00†	0.000	278.073	6100.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
6200.00†	0.000	278.073	6200.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
6300.00†	0.000	278.073	6300.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
6400.00†	0.000	278.073	6400.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
6500.00†	0.000	278.073	6500.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
6600.00†	0.000	278.073	6600.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
6700.00†	0.000	278.073	6700.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
6800.00†	0.000	278.073	6800.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
6900.00†	0.000	278.073	6900.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
7000.00†	0.000	278.073	7000.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
7100.00†	0.000	278.073	7100.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
7200.00†	0.000	278.073	7200.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
7300.00†	0.000	278.073	7300.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
7400.00†	0.000	278.073	7400.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
7500.00†	0.000	278.073	7500.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
7600.00†	0.000	278.073	7600.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
7700.00†	0.000	278.073	7700.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
7800.00†	0.000	278.073	7800.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
7900.00†	0.000	278.073	7900.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
8000.00†	0.000	278.073	8000.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
8100.00†	0.000	278.073	8100.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
8200.00†	0.000	278.073	8200.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
8300.00†	0.000	278.073	8300.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
8400.00†	0.000	278.073	8400.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
8500.00†	0.000	278.073	8500.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
8600.00†	0.000	278.073	8600.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
8700.00†	0.000	278.073	8700.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
8800.00†	0.000	278.073	8800.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
8900.00†	0.000	278.073	8900.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	



Planned Wellpath Report

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INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 18H SHL
Area	Lea County, NM	Well	No. 18H
Field	(SC) Sec 29, T19S, R32E	Wellbore	No. 18H PWB
Facility	Southern California 29 Fed No. 18H		

WELLPATH DATA (129 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
9000.00†	0.000	278.073	9000.00	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	
9059.10	0.000	278.073	9059.10	0.00	0.00	0.00	711420.30	595383.70	32°38'07.955"N	103°46'50.939"W	0.00	Est. KOP
9100.00†	12.270	278.073	9099.69	4.36	0.61	-4.32	711415.98	595384.31	32°38'07.961"N	103°46'50.990"W	30.00	
9200.00†	42.270	278.073	9187.56	49.66	6.97	-49.17	711371.14	595390.67	32°38'08.026"N	103°46'51.514"W	30.00	
9300.00†	72.270	278.073	9241.01	132.82	18.65	-131.51	711288.80	595402.35	32°38'08.146"N	103°46'52.476"W	30.00	
9356.08	89.095	278.073	9250.06	187.97	26.40	-186.11	711234.20	595410.10	32°38'08.226"N	103°46'53.114"W	30.00	End of Curve
9400.00†	89.095	278.073	9250.76	231.88	32.56	-229.58	711190.73	595416.26	32°38'08.289"N	103°46'53.622"W	0.00	
9500.00†	89.095	278.073	9252.33	331.87	46.61	-328.58	711091.74	595430.30	32°38'08.433"N	103°46'54.779"W	0.00	
9600.00†	89.095	278.073	9253.91	431.86	60.65	-427.58	710992.75	595444.34	32°38'08.577"N	103°46'55.936"W	0.00	
9700.00†	89.095	278.073	9255.49	531.84	74.69	-526.57	710893.76	595458.39	32°38'08.721"N	103°46'57.092"W	0.00	
9800.00†	89.095	278.073	9257.07	631.83	88.73	-625.57	710794.77	595472.43	32°38'08.865"N	103°46'58.249"W	0.00	
9900.00†	89.095	278.073	9258.65	731.82	102.77	-724.57	710695.78	595486.47	32°38'09.009"N	103°46'59.406"W	0.00	
10000.00†	89.095	278.073	9260.23	831.81	116.82	-823.56	710596.79	595500.51	32°38'09.153"N	103°47'00.563"W	0.00	
10100.00†	89.095	278.073	9261.81	931.79	130.86	-922.56	710497.80	595514.55	32°38'09.297"N	103°47'01.719"W	0.00	
10200.00†	89.095	278.073	9263.39	1031.78	144.90	-1021.56	710398.81	595528.59	32°38'09.441"N	103°47'02.876"W	0.00	
10300.00†	89.095	278.073	9264.97	1131.77	158.94	-1120.55	710299.81	595542.63	32°38'09.585"N	103°47'04.033"W	0.00	
10400.00†	89.095	278.073	9266.55	1231.76	172.98	-1219.55	710200.82	595556.67	32°38'09.729"N	103°47'05.190"W	0.00	
10500.00†	89.095	278.073	9268.13	1331.74	187.02	-1318.55	710101.83	595570.71	32°38'09.873"N	103°47'06.347"W	0.00	
10600.00†	89.095	278.073	9269.71	1431.73	201.07	-1417.54	710002.84	595584.75	32°38'10.017"N	103°47'07.503"W	0.00	
10700.00†	89.095	278.073	9271.29	1531.72	215.11	-1516.54	709903.85	595598.80	32°38'10.161"N	103°47'08.660"W	0.00	
10800.00†	89.095	278.073	9272.86	1631.71	229.15	-1615.54	709804.86	595612.84	32°38'10.305"N	103°47'09.817"W	0.00	
10900.00†	89.095	278.073	9274.44	1731.69	243.19	-1714.53	709705.87	595626.88	32°38'10.449"N	103°47'10.974"W	0.00	
11000.00†	89.095	278.073	9276.02	1831.68	257.23	-1813.53	709606.88	595640.92	32°38'10.593"N	103°47'12.130"W	0.00	
11100.00†	89.095	278.073	9277.60	1931.67	271.28	-1912.53	709507.89	595654.96	32°38'10.737"N	103°47'13.287"W	0.00	
11200.00†	89.095	278.073	9279.18	2031.66	285.32	-2011.52	709408.90	595669.00	32°38'10.881"N	103°47'14.444"W	0.00	
11300.00†	89.095	278.073	9280.76	2131.64	299.36	-2110.52	709309.91	595683.04	32°38'11.025"N	103°47'15.601"W	0.00	
11400.00†	89.095	278.073	9282.34	2231.63	313.40	-2209.52	709210.92	595697.08	32°38'11.169"N	103°47'16.758"W	0.00	
11500.00†	89.095	278.073	9283.92	2331.62	327.44	-2308.51	709111.93	595711.12	32°38'11.313"N	103°47'17.914"W	0.00	
11600.00†	89.095	278.073	9285.50	2431.61	341.49	-2407.51	709012.94	595725.16	32°38'11.457"N	103°47'19.071"W	0.00	
11700.00†	89.095	278.073	9287.08	2531.59	355.53	-2506.51	708913.94	595739.21	32°38'11.601"N	103°47'20.228"W	0.00	



Planned Wellpath Report

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INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 18H SHL
Area	Lea County, NM	Well	No. 18H
Field	(SC) Sec 29, T19S, R32E	Wellbore	No. 18H PWB
Facility	Southern California 29 Fed No. 18H		

WELLPATH DATA (129 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
11800.00†	89.095	278.073	9288.66	2631.58	369.57	-2605.50	708814.95	595753.25	32°38'11.745"N	103°47'21.385"W	0.00	
11900.00†	89.095	278.073	9290.24	2731.57	383.61	-2704.50	708715.96	595767.29	32°38'11.889"N	103°47'22.542"W	0.00	
12000.00†	89.095	278.073	9291.82	2831.56	397.65	-2803.49	708616.97	595781.33	32°38'12.033"N	103°47'23.698"W	0.00	
12100.00†	89.095	278.073	9293.39	2931.54	411.69	-2902.49	708517.98	595795.37	32°38'12.176"N	103°47'24.855"W	0.00	
12200.00†	89.095	278.073	9294.97	3031.53	425.74	-3001.49	708418.99	595809.41	32°38'12.320"N	103°47'26.012"W	0.00	
12300.00†	89.095	278.073	9296.55	3131.52	439.78	-3100.48	708320.00	595823.45	32°38'12.464"N	103°47'27.169"W	0.00	
12400.00†	89.095	278.073	9298.13	3231.51	453.82	-3199.48	708221.01	595837.49	32°38'12.608"N	103°47'28.325"W	0.00	
12500.00†	89.095	278.073	9299.71	3331.49	467.86	-3298.48	708122.02	595851.53	32°38'12.752"N	103°47'29.482"W	0.00	
12518.27	89.095	278.073	9300.00	3349.77	470.43	-3316.57	708103.93	595854.10	32°38'12.779"N	103°47'29.694"W	0.00	No. 18H PBHL

HOLE & CASING SECTIONS - Ref Wellbore: No. 18H 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]
7in Casing Intermediate	0.00	8850.00	8850.00	0.00	8850.00	0.00	0.00	0.00	0.00

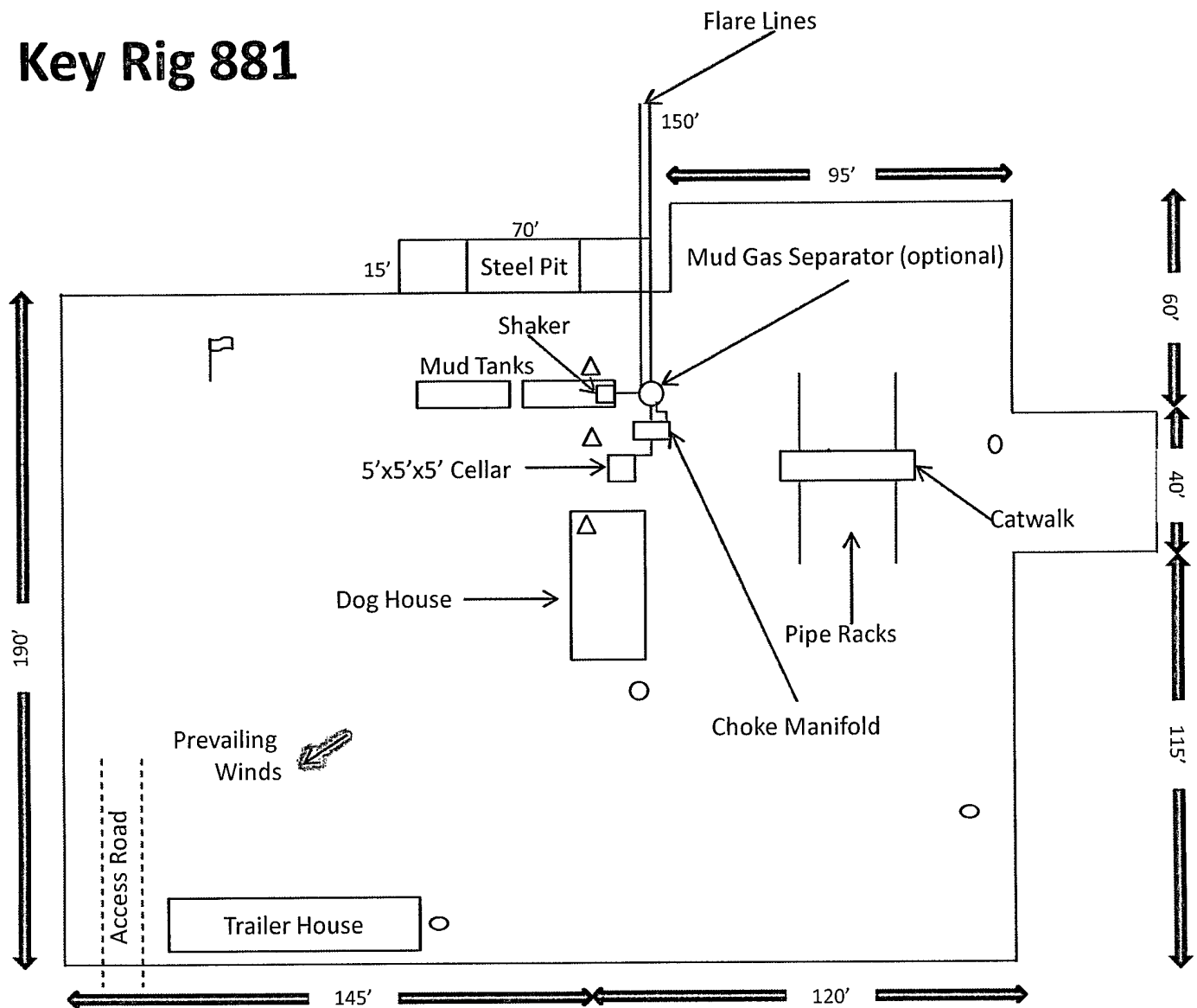
TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
1) No. 18H PBHL	12518.27	9300.00	470.43	-3316.57	708103.93	595854.10	32°38'12.779"N	103°47'29.694"W	point

SURVEY PROGRAM Ref Wellbore: No. 18H PWB Ref Wellpath: Prelim_1

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	12518.27	NaviTrak (Standard)		No. 18H PWB

Key Rig 881



-  Wind Direction Indicators
(wind sock or streamers)
-  H2S Monitors
(alarms at bell nipple and shale shaker)
-  Briefing Areas
-  Remote BOP Closing Unit

Exhibit D – Rig Diagram
Southern California 29 Federal No. 18
 Cimarex Energy Co. of Colorado
 29-19S-32E
 SHL 1140 FNL & 330 FEL
 BHL 660 FNL & 1650 FWL
 Lea County, NM

SR & A

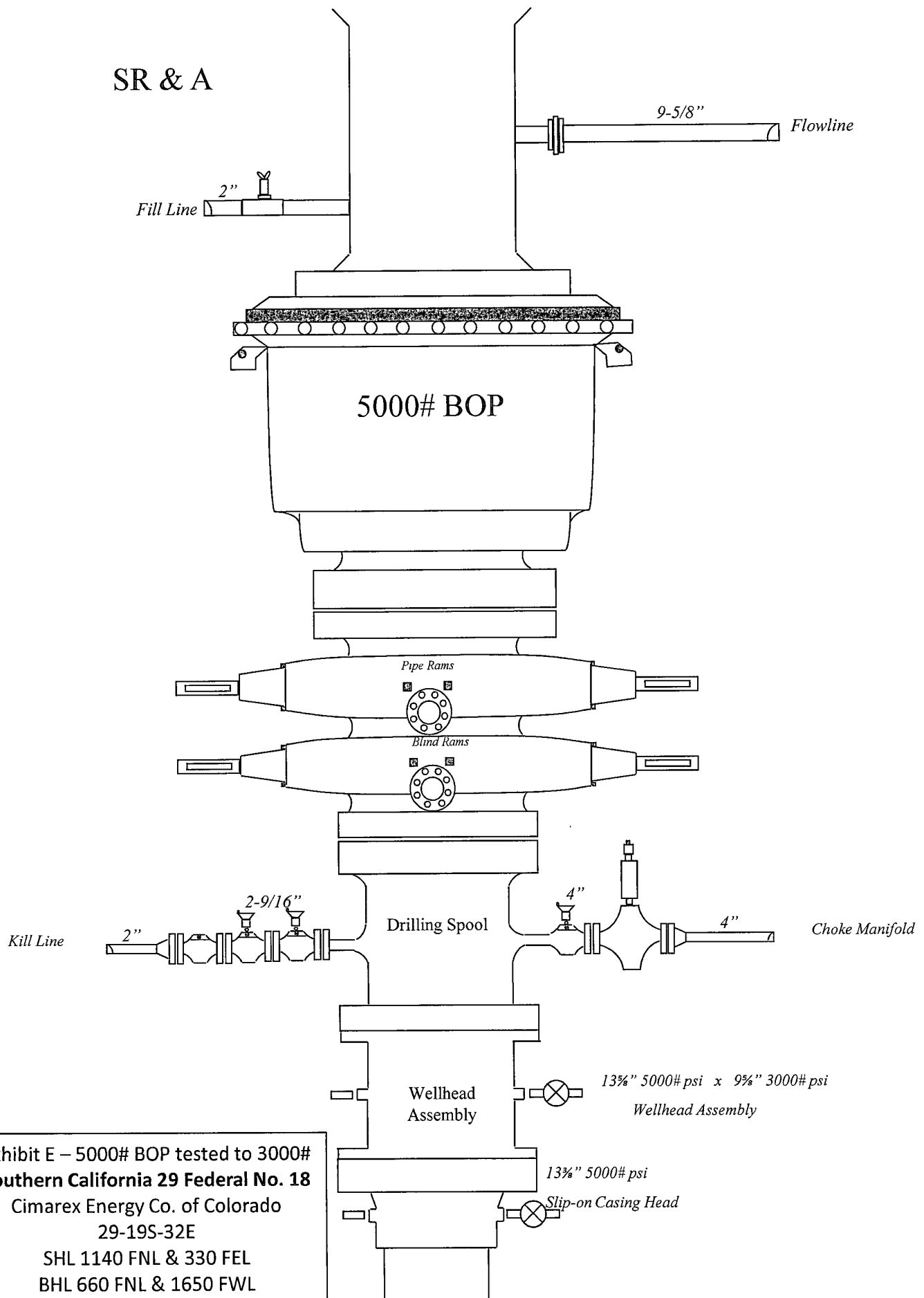


Exhibit E – 5000# BOP tested to 3000#
Southern California 29 Federal No. 18

Cimarex Energy Co. of Colorado
29-19S-32E

SHL 1140 FNL & 330 FEL
BHL 660 FNL & 1650 FWL

Lea County, NM

Drilling Operations Choke Manifold 5M Service (tested to 3M)

Exhibit E-1 – Choke Manifold Diagram
Southern California 29 Federal No. 18

Cimarex Energy Co. of Colorado

29-19S-32E

SHL 1140 FNL & 330 FEL

BHL 660 FNL & 1650 FWL

Lea County, NM

