

6-27-2011

DISTRICT I

1825 N. French Dr., Hobbs, NM 88240

DISTRICT II

1301 W. Grand Avenue, Artesia, NM 88210

DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV

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

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102

Revised July 18, 2010

Submit 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 30-015-39158	Pool Code 65010	Pool Name Winchester; Bone Spring
Property Code 38681	Property Name CHAPARRAL STATE	Well Number 4H
OGRID No. 162683	Operator Name CIMAREX ENERGY CO. OF COLORADO	Elevation 3308'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	32	19 S	29 E		330	NORTH	1980	WEST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	32	19 S	29 E		330	SOUTH	1980	WEST	EDDY

Dedicated Acres 160	Joint or Infill	Consolidation Code	Order No.
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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. <u>Natalie Krueger</u> 6/27/2011 Signature Date Printed Name nkrueger@cimarex.com Email Address
	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 Signature & Seal of Professional Surveyor W.G. No. 24721 Certificate No. Gary L. Jones 7977 BASIN SURVEYS 24721

Mud, Casing, Cementing, and BOP Attachment

Chaparral State No. 4

Cimarex Energy Co. of Colorado

Unit C, Section 32

T19S-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:

Location: SHL 330 FNL & 1980 FWL
BHL 330 FSL & 1980 FWL

Elevation above sea level: 3308' GR

Proposed drilling depth: Lateral MD 12877 Lateral TVD 8338

Proposed Mud Circulating System:

Depth	Mud Wt	Visc	Fluid Loss	Type Mud
0' to 1590'	8.4 - 8.6	28	NC	FW
0' to 3500'	10.0	30-32	NC	Brine water
0' to 12877'	8.4 - 9.5	30-32	NC	FW, brine

Sufficient mud materials will be kept on location at all times in order to combat lost circulation or unexpected kicks. In order to run DSTs, open hole logs, and casing, the viscosity and water loss may have to be adjusted in order to meet these needs.

Proposed drilling Plan

Drill 8¾" hole to KOP @ 8052 and drill through curve to TD @ 12877 MD, 8338 TVD. Run 5½" casing and from 0-TD cement.

Mud, Casing, Cementing, and BOP Attachment
Chaparral State No. 4
 Cimarex Energy Co. of Colorado
 Unit O, Section 15
 T19S-R29E, Eddy County, NM

Casing & Cementing Plan:

String	Hole Size	Depth	Casing OD	Weight	Collar	Grade
<i>Surface</i>	17½"	0' to 1590'	New 13¾"	48#	STC	H-40
<i>Intermediate</i>	12¼"	0' to 3500'	New 9⅝"	40#	LTC	J/K-55
<i>Production</i>	8¾"	0' to 12877'	New 5½"	26#	LTC	P-110

Cementing Plan:

Surface Lead: 970SKS EconoCem + 5% salt + 5 lbm gilsonite 13.5ppg 1.75yield 70% Excess
 Tail: 300SKS HalCem + 2% CaCl 14.8ppg 1.35 yield 10% excess

TOC Surface

Intermediate Lead: 838SKS EconoCem + 5% salt + 5 lbm gilsonite 12.9ppg 1.85yield 70% Excess
 Tail: 145SKS HalCem + 1% CaCl 14.8ppg 1.34 yield 10% excess

TOC Surface

Production Lead: 575 sks 11.8 ppg 50:50 Poz:H lead cement with 5% Salt, 10% D20, 0.125 lb/sk D130, 1% D112, 0.2% D46, 11.8 ppg, 2.59 ft³/sk
 Tail: 120 sks 13 ppg PVL with 0.2% D167, 1.3% Salt, 2% D174, 0.2% D46, 0.3% D800, 13ppg, yield 1.43 ft³/sk, 7.44 gal/sk
TOC 3200'

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

Pressure control Equipment:

Exhibit "E". A 13¾" 5000 PSI working pressure B.O.P. 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 below 6000.' 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.

We are requesting a variance for testing the 13¾" surface casing from Onshore Order No. 2, which states that all casing strings below the conductor shall be pressure tested to 0.22 psi per foot or 1500 psi, whichever is greater, but not to exceed 70% of the manufacturer's stated maximum internal yield. We are requesting to test the 13¾" casing to 1000 psi using rig pumps. The BOP will be tested to 3000 psi by an independent service company.



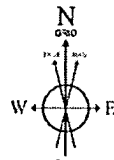
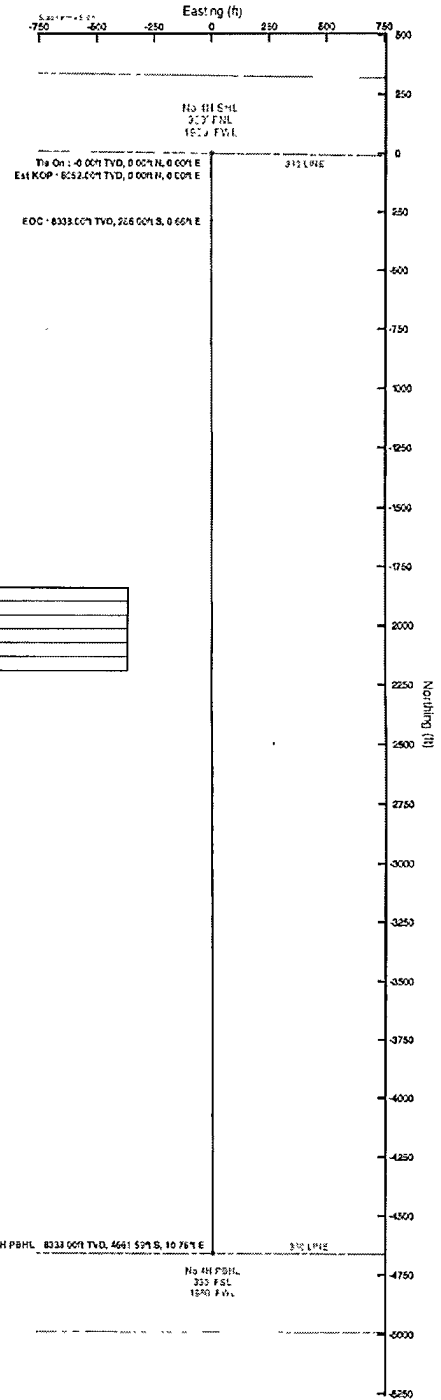
Cimarex Energy Co.

Location: Eddy County, NM
Field: (Chaparral) Sec 32, T19S, R29E
Facility: Chaparral State No. 4H

Slot: No. 4H SHL
Well: No. 4H
Wellbore: No. 4H PWB

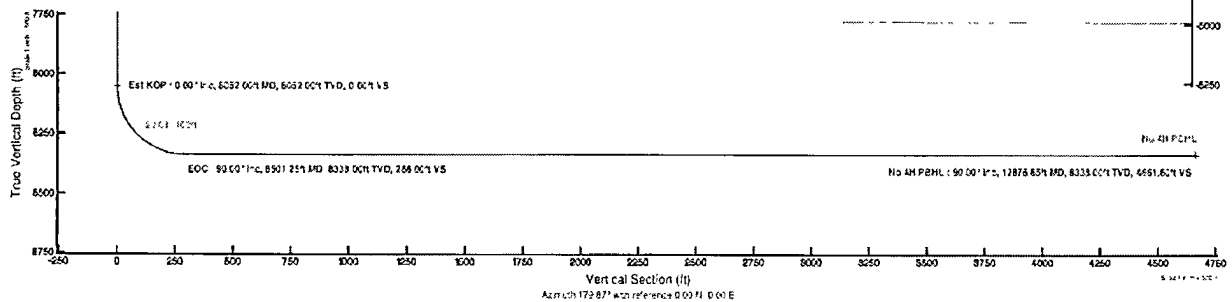


Well Profile Data							
Design Comment	MD (ft)	Inc. (°)	Az. (°)	TVD (ft)	Local N (ft)	Local E (ft)	VS (ft)
Tie On	0.00	0.000	179.868	0.00	0.00	0.00	0.00
Est KOP	8052.00	0.000	179.868	8052.00	0.00	0.00	0.00
EOC	8501.25	90.000	179.868	8338.00	-286.00	0.66	266.00
No. 4H PWB	-12876.85	90.000	179.868	8338.00	-4661.59	10.76	4661.60



BGGM (1945.0 to 2012.0) Dp: 60.47° Field: 46349.4 nT
Magnetic North is 7.91 degrees East of True North (at 6/27/2011)
Grid North is 0.13 degrees East of True North
To correct azimuth from True to Grid subtract 0.13 degrees
To correct azimuth from Magnetic to Grid add 7.78 degrees
For example: if the Magnetic North Azimuth = 90 degrees, then the Grid North Azimuth = 93 + 7.78 = 97.78

File Name: Chaparral PWB	Grid System: NAD83 / TM1983 NAD83 SP. Edition: 2011. US State
Transverse Mercator Projection: 4484-L (P.B.)	North Reference: Grid North
Map Coordinate Reference: P.B. 4484-L (P.B.)	Scale: True to Scale
Point: 4484-L (P.B.) with Scale of 3128.54	Units: Feet
Map Scale: 1 inch = 4.15 miles	Created by: 12/27/2011
Coordinate System: NAD83	





Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No.4H SHL
Area	Eddy County, NM	Well	No.4H
Field	(Chaparral) Sec 32,T19S, R29E	Wellbore	No.4H PWB
Facility	Chaparral State No.4H		

REPORT SETUP INFORMATION

Projection System	NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet	Software System	WellArchitect® 3.0.0
North Reference	Grid	User	Callphik
Scale	0.999915	Report Generated	6/27/2011 at 10:36:29 AM
Convergence at slot	0.13° East	Database/Source file	WA Midland/No.4H_PWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W
Facility Reference Pt			613435.50	590743.60	32°37'25.630"N	104°05'56.944"W
Field Reference Pt			613435.50	590743.60	32°37'25.630"N	104°05'56.944"W

WELLPATH DATA

Calculation method	Minimum curvature	Rig on No.4H SHL (RKB) to GL	3308.00ft
Horizontal Reference Pt	Slot	Rig on No.4H SHL (RKB) to Mean Sea Level	3308.00ft
Vertical Reference Pt	Rig on No.4H SHL (RKB)	Rig on No.4H SHL (RKB) to Mud Line at Slot (No.4H SHL)	3308.00ft
MD Reference Pt	Rig on No.4H SHL (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	179.87°



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No.4H SHL
Area	Eddy County, NM	Well	No.4H
Field	(Chaparral) Sec 32,T19S, R29E	Wellbore	No.4H PWB
Facility	Chaparral State No.4H		

WELLPATH DATA (132 stations) † = interpolated/extrapolated station												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	179.868	0.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	Tie On
100.00†	0.000	179.868	100.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
200.00†	0.000	179.868	200.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
300.00†	0.000	179.868	300.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
400.00†	0.000	179.868	400.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
500.00†	0.000	179.868	500.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
600.00†	0.000	179.868	600.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
700.00†	0.000	179.868	700.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
800.00†	0.000	179.868	800.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
900.00†	0.000	179.868	900.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
1000.00†	0.000	179.868	1000.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
1100.00†	0.000	179.868	1100.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
1200.00†	0.000	179.868	1200.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
1300.00†	0.000	179.868	1300.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
1400.00†	0.000	179.868	1400.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
1500.00†	0.000	179.868	1500.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
1600.00†	0.000	179.868	1600.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
1700.00†	0.000	179.868	1700.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
1800.00†	0.000	179.868	1800.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
1900.00†	0.000	179.868	1900.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
2000.00†	0.000	179.868	2000.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
2100.00†	0.000	179.868	2100.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
2200.00†	0.000	179.868	2200.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
2300.00†	0.000	179.868	2300.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
2400.00†	0.000	179.868	2400.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
2500.00†	0.000	179.868	2500.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
2600.00†	0.000	179.868	2600.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
2700.00†	0.000	179.868	2700.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
2800.00†	0.000	179.868	2800.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
2900.00†	0.000	179.868	2900.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
3000.00†	0.000	179.868	3000.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
3100.00†	0.000	179.868	3100.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
3200.00†	0.000	179.868	3200.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
3300.00†	0.000	179.868	3300.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
3400.00†	0.000	179.868	3400.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
3500.00†	0.000	179.868	3500.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
3600.00†	0.000	179.868	3600.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
3700.00†	0.000	179.868	3700.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
3800.00†	0.000	179.868	3800.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
3900.00†	0.000	179.868	3900.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
4000.00†	0.000	179.868	4000.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
4100.00†	0.000	179.868	4100.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
4200.00†	0.000	179.868	4200.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
4300.00†	0.000	179.868	4300.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
4400.00†	0.000	179.868	4400.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No.4H SHL
Area	Eddy County, NM	Well	No.4H
Field	(Chaparral) Sec 32,T19S, R29E	Wellbore	No.4H PWB
Facility	Chaparral State No.4H		

WELLPATH DATA (132 stations) † = interpolated/extrapolated station												Comments
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	
4500.00†	0.000	179.868	4500.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
4600.00†	0.000	179.868	4600.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
4700.00†	0.000	179.868	4700.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
4800.00†	0.000	179.868	4800.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
4900.00†	0.000	179.868	4900.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
5000.00†	0.000	179.868	5000.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
5100.00†	0.000	179.868	5100.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
5200.00†	0.000	179.868	5200.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
5300.00†	0.000	179.868	5300.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
5400.00†	0.000	179.868	5400.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
5500.00†	0.000	179.868	5500.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
5600.00†	0.000	179.868	5600.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
5700.00†	0.000	179.868	5700.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
5800.00†	0.000	179.868	5800.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
5900.00†	0.000	179.868	5900.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
6000.00†	0.000	179.868	6000.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
6100.00†	0.000	179.868	6100.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
6200.00†	0.000	179.868	6200.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
6300.00†	0.000	179.868	6300.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
6400.00†	0.000	179.868	6400.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
6500.00†	0.000	179.868	6500.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
6600.00†	0.000	179.868	6600.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
6700.00†	0.000	179.868	6700.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
6800.00†	0.000	179.868	6800.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
6900.00†	0.000	179.868	6900.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
7000.00†	0.000	179.868	7000.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
7100.00†	0.000	179.868	7100.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
7200.00†	0.000	179.868	7200.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
7300.00†	0.000	179.868	7300.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
7400.00†	0.000	179.868	7400.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
7500.00†	0.000	179.868	7500.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
7600.00†	0.000	179.868	7600.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
7700.00†	0.000	179.868	7700.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
7800.00†	0.000	179.868	7800.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
7900.00†	0.000	179.868	7900.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
8000.00†	0.000	179.868	8000.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	
8052.00	0.000	179.868	8052.00	0.00	0.00	0.00	613435.50	590743.60	32°37'25.630"N	104°05'56.944"W	0.00	Est KOP
8100.00†	9.616	179.868	8099.77	4.02	-4.02	0.01	613435.51	590739.58	32°37'25.590"N	104°05'56.944"W	20.03	
8200.00†	29.650	179.868	8193.48	37.45	-37.45	0.09	613435.59	590706.16	32°37'25.259"N	104°05'56.944"W	20.03	
8300.00†	49.683	179.868	8270.07	100.95	-100.95	0.23	613435.73	590642.66	32°37'24.631"N	104°05'56.944"W	20.03	
8400.00†	69.717	179.868	8320.26	186.85	-186.85	0.43	613435.93	590556.76	32°37'23.781"N	104°05'56.944"W	20.03	
8500.00†	89.750	179.868	8338.00	284.75	-284.75	0.66	613436.16	590458.87	32°37'22.812"N	104°05'56.944"W	20.03	
8501.25	90.000	179.868	8338.00	286.00	-286.00	0.66	613436.16	590457.63	32°37'22.800"N	104°05'56.944"W	20.03	EOC
8600.00†	90.000	179.868	8338.00	384.75	-384.75	0.89	613436.39	590358.88	32°37'21.823"N	104°05'56.944"W	0.00	
8700.00†	90.000	179.868	8338.00	484.75	-484.75	1.12	613436.62	590258.89	32°37'20.833"N	104°05'56.943"W	0.00	



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No.4H SHL
Area	Eddy County, NM	Well	No.4H
Field	(Chaparral) Sec 32,T19S, R29E	Wellbore	No.4H PWB
Facility	Chaparral State No.4H		

WELLPATH DATA (132 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8800.00†	90.000	179.868	8338.00	584.75	-584.75	1.35	613436.85	590158.90	32°37'19.844"N	104°05'56.943"W	0.00	
8900.00†	90.000	179.868	8338.00	684.75	-684.75	1.58	613437.08	590058.91	32°37'18.854"N	104°05'56.943"W	0.00	
9000.00†	90.000	179.868	8338.00	784.75	-784.75	1.81	613437.31	589958.92	32°37'17.865"N	104°05'56.943"W	0.00	
9100.00†	90.000	179.868	8338.00	884.75	-884.75	2.04	613437.54	589858.93	32°37'16.875"N	104°05'56.943"W	0.00	
9200.00†	90.000	179.868	8338.00	984.75	-984.75	2.27	613437.77	589758.94	32°37'15.886"N	104°05'56.943"W	0.00	
9300.00†	90.000	179.868	8338.00	1084.75	-1084.75	2.50	613438.00	589658.94	32°37'14.896"N	104°05'56.943"W	0.00	
9400.00†	90.000	179.868	8338.00	1184.75	-1184.75	2.73	613438.23	589558.95	32°37'13.907"N	104°05'56.943"W	0.00	
9500.00†	90.000	179.868	8338.00	1284.75	-1284.75	2.97	613438.47	589458.96	32°37'12.918"N	104°05'56.943"W	0.00	
9600.00†	90.000	179.868	8338.00	1384.75	-1384.75	3.20	613438.70	589358.97	32°37'11.928"N	104°05'56.942"W	0.00	
9700.00†	90.000	179.868	8338.00	1484.75	-1484.75	3.43	613438.93	589258.98	32°37'10.939"N	104°05'56.942"W	0.00	
9800.00†	90.000	179.868	8338.00	1584.75	-1584.75	3.66	613439.16	589158.99	32°37'09.949"N	104°05'56.942"W	0.00	
9900.00†	90.000	179.868	8338.00	1684.75	-1684.75	3.89	613439.39	589059.00	32°37'08.960"N	104°05'56.942"W	0.00	
10000.00†	90.000	179.868	8338.00	1784.75	-1784.75	4.12	613439.62	588959.01	32°37'07.970"N	104°05'56.942"W	0.00	
10100.00†	90.000	179.868	8338.00	1884.75	-1884.75	4.35	613439.85	588859.02	32°37'06.981"N	104°05'56.942"W	0.00	
10200.00†	90.000	179.868	8338.00	1984.75	-1984.75	4.58	613440.08	588759.03	32°37'05.991"N	104°05'56.942"W	0.00	
10300.00†	90.000	179.868	8338.00	2084.75	-2084.75	4.81	613440.31	588659.03	32°37'05.002"N	104°05'56.942"W	0.00	
10400.00†	90.000	179.868	8338.00	2184.75	-2184.75	5.04	613440.54	588559.04	32°37'04.012"N	104°05'56.941"W	0.00	
10500.00†	90.000	179.868	8338.00	2284.75	-2284.75	5.27	613440.77	588459.05	32°37'03.023"N	104°05'56.941"W	0.00	
10600.00†	90.000	179.868	8338.00	2384.75	-2384.75	5.51	613441.00	588359.06	32°37'02.034"N	104°05'56.941"W	0.00	
10700.00†	90.000	179.868	8338.00	2484.75	-2484.75	5.74	613441.24	588259.07	32°37'01.044"N	104°05'56.941"W	0.00	
10800.00†	90.000	179.868	8338.00	2584.75	-2584.75	5.97	613441.47	588159.08	32°37'00.055"N	104°05'56.941"W	0.00	
10900.00†	90.000	179.868	8338.00	2684.75	-2684.75	6.20	613441.70	588059.09	32°36'59.065"N	104°05'56.941"W	0.00	
11000.00†	90.000	179.868	8338.00	2784.75	-2784.74	6.43	613441.93	587959.10	32°36'58.076"N	104°05'56.941"W	0.00	
11100.00†	90.000	179.868	8338.00	2884.75	-2884.74	6.66	613442.16	587859.11	32°36'57.086"N	104°05'56.941"W	0.00	
11200.00†	90.000	179.868	8338.00	2984.75	-2984.74	6.89	613442.39	587759.12	32°36'56.097"N	104°05'56.940"W	0.00	
11300.00†	90.000	179.868	8338.00	3084.75	-3084.74	7.12	613442.62	587659.12	32°36'55.107"N	104°05'56.940"W	0.00	
11400.00†	90.000	179.868	8338.00	3184.75	-3184.74	7.35	613442.85	587559.13	32°36'54.118"N	104°05'56.940"W	0.00	
11500.00†	90.000	179.868	8338.00	3284.75	-3284.74	7.58	613443.08	587459.14	32°36'53.129"N	104°05'56.940"W	0.00	
11600.00†	90.000	179.868	8338.00	3384.75	-3384.74	7.81	613443.31	587359.15	32°36'52.139"N	104°05'56.940"W	0.00	
11700.00†	90.000	179.868	8338.00	3484.75	-3484.74	8.04	613443.54	587259.16	32°36'51.150"N	104°05'56.940"W	0.00	
11800.00†	90.000	179.868	8338.00	3584.75	-3584.74	8.28	613443.77	587159.17	32°36'50.160"N	104°05'56.940"W	0.00	
11900.00†	90.000	179.868	8338.00	3684.75	-3684.74	8.51	613444.01	587059.18	32°36'49.171"N	104°05'56.940"W	0.00	
12000.00†	90.000	179.868	8338.00	3784.75	-3784.74	8.74	613444.24	586959.19	32°36'48.181"N	104°05'56.939"W	0.00	
12100.00†	90.000	179.868	8338.00	3884.75	-3884.74	8.97	613444.47	586859.20	32°36'47.192"N	104°05'56.939"W	0.00	
12200.00†	90.000	179.868	8338.00	3984.75	-3984.74	9.20	613444.70	586759.20	32°36'46.202"N	104°05'56.939"W	0.00	
12300.00†	90.000	179.868	8338.00	4084.75	-4084.74	9.43	613444.93	586659.21	32°36'45.213"N	104°05'56.939"W	0.00	
12400.00†	90.000	179.868	8338.00	4184.75	-4184.74	9.66	613445.16	586559.22	32°36'44.223"N	104°05'56.939"W	0.00	
12500.00†	90.000	179.868	8338.00	4284.75	-4284.74	9.89	613445.39	586459.23	32°36'43.234"N	104°05'56.939"W	0.00	
12600.00†	90.000	179.868	8338.00	4384.75	-4384.74	10.12	613445.62	586359.24	32°36'42.245"N	104°05'56.939"W	0.00	
12700.00†	90.000	179.868	8338.00	4484.75	-4484.74	10.35	613445.85	586259.25	32°36'41.255"N	104°05'56.939"W	0.00	
12800.00†	90.000	179.868	8338.00	4584.75	-4584.74	10.58	613446.08	586159.26	32°36'40.266"N	104°05'56.938"W	0.00	
12876.85	90.000	179.868	8338.00	4661.60	-4661.59	10.76	613446.26	586082.42	32°36'39.505"N	104°05'56.938"W	0.00	No.4H PBHL



Planned Wellpath Report

Prelim_1

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No.4H SHL
Area	Eddy County, NM	Well	No.4H
Field	(Chaparral) Sec 32,T19S, R29E	Wellbore	No.4H PWB
Facility	Chaparral State No.4H		

HOLE & CASING SECTIONS - Ref Wellbore: No.4H 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]
12.25in Open Hole	0.00	3454.00	3454.00	0.00	3454.00	0.00	0.00	0.00	0.00
9.625in Casing	0.00	3454.00	3454.00	0.00	3454.00	0.00	0.00	0.00	0.00
8.75in Open Hole	3454.00	8057.00	4603.00	3454.00	8057.00	0.00	0.00	-0.04	0.00
5.5in Casing	0.00	8057.00	8057.00	0.00	8057.00	0.00	0.00	-0.04	0.00
6.125in Open Hole	8057.00	12876.85	4819.85	8057.00	NA	-0.04	0.00	NA	NA
4.5in Casing	0.00	12876.85	12876.85	0.00	NA	0.00	0.00	NA	NA

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
1) No.4H PBHL	12876.85	8338.00	-4661.59	10.76	613446.26	586082.42	32°36'39.505"N	104°05'56.938"W	point

SURVEY PROGRAM - Ref Wellbore: No.4H PWB Ref Wellpath: Prelim_1				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
3308.00	12876.85	NaviTrak (Standard)		No.4H PWB