

DISTRICT I
1626 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 16, 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 30-015-38138	Pool Code 55510	Pool Name Scanlon Draw; Bone Spring
Property Code 26354	Property Name MAGNUM "16" STATE	Well Number 4
OGRID No. 162683	Operator Name CIMAREX ENERGY CO. OF COLORADO	Elevation 3362'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	16	19 S	29 E		390	NORTH	1980	EAST	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
O	16	19 S	29 E		330	SOUTH	1980	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160			

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

SURFACE LOCATION Lat - N 32°40'01.19" Long - W 104°04'39.54" NMSPCE- N 606479.1 E 620017.3 (NAD-83) SHL & PP Bone Spring 390 FNL & 1980 FEL EOC/Beginning of Prod Interval 592 FNL & 1980 FEL BHL/End of Prod Interval 330 FSL & 1980 FEL PROPOSED BOTTOM HOLE LOCATION Lat - N 32°39'16.08" Long - W 104°04'39.43" NMSPCE- N 601920.35 E 620038.01 (NAD-83) Diagram showing well location with coordinates and distances (390', 1980', 330').	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. <i>Zeno Farris</i> 8/31/2010 Signature Date Zeno Farris Printed Name zfarris@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. <i>GARY L. JONES</i> Date Surveyed Signature & Seal of Professional Surveyor Certificate No. Gary L. Jones 7977 BASIN SURVEYS 23206
---	---

Mud, Casing, Cementing, and BOP Attachment
Magnum 16 State No. 4
Cimarex Energy Co. of Colorado
Unit B, Section 16
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 390 FNL & 1980 FEL
BHL 330 FSL & 1980 FEL

Elevation above sea level: 3362' GR

Proposed drilling depth: MD 12332' TVD 7920'

Proposed Mud Circulating System:

Depth	Mud Wt	Visc	Fluid Loss	Type Mud
0' to 450'	8.4 - 8.6	28	NC	FW
0' to 2520'	10.0	30-32	NC	Brine water
0' to 12332'	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 8¼" hole to pilot hole depth of 8100' and log. Set kick off plug from 7406-8100' and kick off 8¼" lateral @ 7656' and drill through curve to TD @ 12332.' Run 5½" 17# P-110 LTC from 0-12332.' Cement to 2320.'

Mud, Casing, Cementing, and BOP Attachment
Magnum 16 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 450'	New	13½"	48#	STC	H-40
<i>Intermediate</i>	12¼"	0'	to 2520'	New	9¾"	40#	LTC	J/K-55
<i>Production</i>	8¾"	0'	to 12332'	New	5½"	17#	LTC	P-110

Cementing Plan:

Surface First Lead: 100 sx Thixotropic + 10# Gilsonite + 10# Cal-Seal-60 + 1% CaCl₂ + 0.125# Poly-e-flake (wt 14.2, yld 1.63)
Second Lead: 220 sx Econocem + 2% Salt + 4# Bentonite (wt 13.5, yld 1.75)
Tail: 220 sx Halcem-C + 2% CaCl₂ (wt 14.8, yld 1.35)
TOC Surface

Intermediate Lead: 600 sx Econocem-HLC + 5% Salt + 5# Gilsonite (wt 12.9, yld 1.85)
Tail: 215 sx Halcem-C + 1% CaCl₂ (wt 14.8, yld 1.34).
TOC Surface

Production Lead: 500 sx EconoCem + 5# Gilsonite (wt 11.9, yld 2.48)
Tail: 1730 sx Halcem (wt 15.6, yld 1.19)
TOC 2300'

Fresh water zones will be protected by setting 13½" casing at 450' and cementing to surface. Hydrocarbon zones will be protected by setting 9¾" casing at 2520' and cementing to surface, and by setting 5½" casing at 12332' and cementing to 2320.'

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

Pressure control Equipment:

Exhibit "E". A 13½" 5000 PSI working pressure BOP tested to 3000 psi consisting of one set of blind rams and one set of pipe rams and a 5000# annular type preventer. A choke manifold and 120 gallon accumulator with floor and remote operating stations and auxiliary power system. Rotating head as needed. A kelly cock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor.

BOP unit will be hydraulically operated. BOP will be nipped up and operated at least once a day while drilling and the blind rams will be operated when out of hole during trips. No abnormal pressure or temperature is expected while drilling. From the base of the 13½" casing 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.



Cimarex Energy Co.

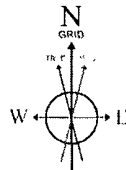
Location Eddy County, NM
Field (Magnum) Sec 16, T19S, R29E
Facility Magnum 16 State No. 4H

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)	DLS (°/100ft)	VS (ft)
Tie On	0 00	0 000	179 740	0 00	0 00	0 00	0 00	0 00
EST KOP	7656 00	0 000	179 740	7656 00	0 00	0 00	0 00	0 00
END OF CURVE	7974 64	89 219	179 740	7860 61	-201 84	0 92	28 00	201 84
No 4H PBHL	12332 39	89 219	179 740	7920 00	-4559 14	20 71	0 00	4559 19

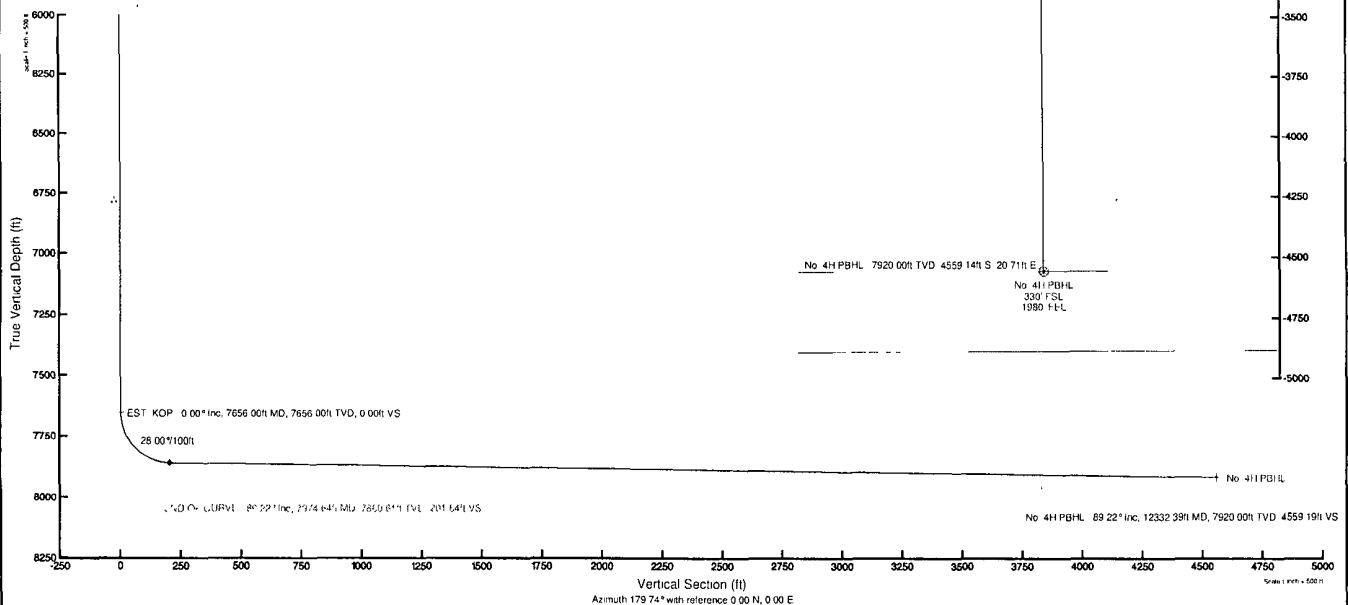


BGGM (1945 0 to 2011 0) Dip 60 54° Field 48971 5 nT
Magnetic North is 7 99 degrees East of True North (at 8/31/2010)
Grid North is 0 14 degrees East of True North

To correct azimuth from True to Grid subtract 0 14 degrees
To correct azimuth from Magnetic to Grid add 7 85 degrees

For example if the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 7 85 = 97 85

Plot reference azimuth is Profile 1	Grid System NAD83 / TM New Mexico State Planes, Eastern Zone (2011) US feet
True vertical depths are referenced to Rig on No. 4H SHL (GL)	North Reference: Grid north
Measured depths are referenced to Rig on No. 4H SHL (GL)	Scale: True distance
Rig on No. 4H SHL (GL) to Mean Sea Level 3362 feet	Depths are in feet
Mean Sea Level to Mud line (Facility: Magnum 16 State No. 4H) 3362 feet	Created by: Victor Hernandez on 8/31/2010
Corrections are in feet referenced to SL	





Planned Wellpath Report

Prelim_1
Page 1 of 6



REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 4H SHL
Area	Eddy County, NM	Well	No. 4H
Field	(Magnum) Sec 16, T19S, R29E	Wellbore	No. 4H PWB
Facility	Magnum 16 State No. 4H		

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	Victor Hernandez
Scale	0.999916	Report Generated	8/31/2010 at 10:11:45 AM
Convergence at slot	0.14° East	Database/Source file	WA_Midland/No._4H_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	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W
Facility Reference Pt			620017.30	606479.10	32°40'01.187"N	104°04'39.540"W
Field Reference Pt			621207.50	601919.00	32°39'16.035"N	104°04'25.746"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No. 4H SHL (GL) to GL	0.00ft
Horizontal Reference Pt	SL	Rig on No. 4H SHL (GL) to Mean Sea Level	3362.00ft
Vertical Reference Pt	Rig on No. 4H SHL (GL)	GL to Mud Line (Facility)	0.00ft
MD Reference Pt	Rig on No. 4H SHL (GL)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	179.74°



Planned Wellpath Report

Prelim_1

Page 2 of 6



REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 4H SHL
Area	Eddy County, NM	Well	No. 4H
Field	(Magnum) Sec 16, T19S, R29E	Wellbore	No. 4H PWB
Facility	Magnum 16 State No. 4H		

WELLPATH DATA (127 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	179.740	0.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	Tie On
100.00†	0.000	179.740	100.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
200.00†	0.000	179.740	200.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
300.00†	0.000	179.740	300.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
400.00†	0.000	179.740	400.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
500.00†	0.000	179.740	500.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
600.00†	0.000	179.740	600.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
700.00†	0.000	179.740	700.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
800.00†	0.000	179.740	800.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
900.00†	0.000	179.740	900.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
1000.00†	0.000	179.740	1000.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
1100.00†	0.000	179.740	1100.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
1200.00†	0.000	179.740	1200.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
1300.00†	0.000	179.740	1300.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
1400.00†	0.000	179.740	1400.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
1500.00†	0.000	179.740	1500.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
1600.00†	0.000	179.740	1600.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
1700.00†	0.000	179.740	1700.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
1800.00†	0.000	179.740	1800.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
1900.00†	0.000	179.740	1900.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
2000.00†	0.000	179.740	2000.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
2100.00†	0.000	179.740	2100.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
2200.00†	0.000	179.740	2200.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
2300.00†	0.000	179.740	2300.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
2400.00†	0.000	179.740	2400.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
2500.00†	0.000	179.740	2500.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
2600.00†	0.000	179.740	2600.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
2700.00†	0.000	179.740	2700.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
2800.00†	0.000	179.740	2800.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
2900.00†	0.000	179.740	2900.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	



Planned Wellpath Report

Prelim_1
Page 3 of 6



REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 4H SHL
Area	Eddy County, NM	Well	No. 4H
Field	(Magnum) Sec 16, T19S, R29E	Wellbore	No. 4H PWB
Facility	Magnum 16 State No. 4H		

WELLPATH DATA (127 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	179.740	3000.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
3100.00†	0.000	179.740	3100.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
3200.00†	0.000	179.740	3200.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
3300.00†	0.000	179.740	3300.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
3400.00†	0.000	179.740	3400.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
3500.00†	0.000	179.740	3500.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
3600.00†	0.000	179.740	3600.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
3700.00†	0.000	179.740	3700.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
3800.00†	0.000	179.740	3800.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
3900.00†	0.000	179.740	3900.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
4000.00†	0.000	179.740	4000.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
4100.00†	0.000	179.740	4100.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
4200.00†	0.000	179.740	4200.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
4300.00†	0.000	179.740	4300.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
4400.00†	0.000	179.740	4400.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
4500.00†	0.000	179.740	4500.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
4600.00†	0.000	179.740	4600.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
4700.00†	0.000	179.740	4700.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
4800.00†	0.000	179.740	4800.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
4900.00†	0.000	179.740	4900.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
5000.00†	0.000	179.740	5000.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
5100.00†	0.000	179.740	5100.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
5200.00†	0.000	179.740	5200.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
5300.00†	0.000	179.740	5300.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
5400.00†	0.000	179.740	5400.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
5500.00†	0.000	179.740	5500.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
5600.00†	0.000	179.740	5600.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
5700.00†	0.000	179.740	5700.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
5800.00†	0.000	179.740	5800.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
5900.00†	0.000	179.740	5900.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	



Planned Wellpath Report

Prelim_1

Page 4 of 6



REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 4H SHL
Area	Eddy County, NM	Well	No. 4H
Field	(Magnum) Sec 16, T19S, R29E	Wellbore	No. 4H PWB
Facility	Magnum 16 State No. 4H		

WELLPATH DATA (127 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
6000.00†	0.000	179.740	6000.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
6100.00†	0.000	179.740	6100.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
6200.00†	0.000	179.740	6200.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
6300.00†	0.000	179.740	6300.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
6400.00†	0.000	179.740	6400.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
6500.00†	0.000	179.740	6500.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
6600.00†	0.000	179.740	6600.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
6700.00†	0.000	179.740	6700.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
6800.00†	0.000	179.740	6800.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
6900.00†	0.000	179.740	6900.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
7000.00†	0.000	179.740	7000.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
7100.00†	0.000	179.740	7100.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
7200.00†	0.000	179.740	7200.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
7300.00†	0.000	179.740	7300.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
7400.00†	0.000	179.740	7400.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
7500.00†	0.000	179.740	7500.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
7600.00†	0.000	179.740	7600.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	
7656.00	0.000	179.740	7656.00	0.00	0.00	0.00	620017.30	606479.10	32°40'01.187"N	104°04'39.540"W	0.00	EST KOP
7700.00†	12.320	179.740	7699.66	4.71	-4.71	0.02	620017.32	606474.39	32°40'01.140"N	104°04'39.539"W	28.00	
7800.00†	40.320	179.740	7788.41	48.61	-48.61	0.22	620017.52	606430.49	32°40'00.706"N	104°04'39.538"W	28.00	
7900.00†	68.320	179.740	7846.15	129.03	-129.03	0.59	620017.89	606350.08	32°39'59.910"N	104°04'39.536"W	28.00	
7974.64	89.219	179.740	7860.61	201.84	-201.84	0.92	620018.22	606277.28	32°39'59.190"N	104°04'39.534"W	28.00	END OF CURVE
8000.00†	89.219	179.740	7860.95	227.20	-227.19	1.03	620018.33	606251.92	32°39'58.939"N	104°04'39.534"W	0.00	
8100.00†	89.219	179.740	7862.32	327.19	-327.18	1.49	620018.79	606151.94	32°39'57.950"N	104°04'39.531"W	0.00	
8200.00†	89.219	179.740	7863.68	427.18	-427.17	1.94	620019.24	606051.96	32°39'56.960"N	104°04'39.529"W	0.00	
8300.00†	89.219	179.740	7865.04	527.17	-527.16	2.39	620019.69	605951.98	32°39'55.971"N	104°04'39.526"W	0.00	
8400.00†	89.219	179.740	7866.41	627.16	-627.15	2.85	620020.15	605852.00	32°39'54.982"N	104°04'39.524"W	0.00	
8500.00†	89.219	179.740	7867.77	727.15	-727.14	3.30	620020.60	605752.02	32°39'53.992"N	104°04'39.521"W	0.00	
8600.00†	89.219	179.740	7869.13	827.14	-827.13	3.76	620021.06	605652.04	32°39'53.003"N	104°04'39.519"W	0.00	
8700.00†	89.219	179.740	7870.49	927.13	-927.12	4.21	620021.51	605552.06	32°39'52.014"N	104°04'39.516"W	0.00	



Planned Wellpath Report

Prelim_1
Page 5 of 6



REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 4H SHL
Area	Eddy County, NM	Well	No. 4H
Field	(Magnum) Sec 16, T19S, R29E	Wellbore	No. 4H PWB
Facility	Magnum 16 State No. 4H		

WELLPATH DATA (127 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8800.00†	89.219	179.740	7871.86	1027.12	-1027.11	4.67	620021.97	605452.08	32°39'51.024"N	104°04'39.514"W	0.00	
8900.00†	89.219	179.740	7873.22	1127.11	-1127.10	5.12	620022.42	605352.09	32°39'50.035"N	104°04'39.511"W	0.00	
9000.00†	89.219	179.740	7874.58	1227.10	-1227.09	5.57	620022.87	605252.11	32°39'49.046"N	104°04'39.509"W	0.00	
9100.00†	89.219	179.740	7875.95	1327.09	-1327.08	6.03	620023.33	605152.13	32°39'48.056"N	104°04'39.506"W	0.00	
9200.00†	89.219	179.740	7877.31	1427.09	-1427.07	6.48	620023.78	605052.15	32°39'47.067"N	104°04'39.504"W	0.00	
9300.00†	89.219	179.740	7878.67	1527.08	-1527.06	6.94	620024.24	604952.17	32°39'46.078"N	104°04'39.501"W	0.00	
9400.00†	89.219	179.740	7880.03	1627.07	-1627.05	7.39	620024.69	604852.19	32°39'45.088"N	104°04'39.499"W	0.00	
9500.00†	89.219	179.740	7881.40	1727.06	-1727.04	7.85	620025.15	604752.21	32°39'44.099"N	104°04'39.496"W	0.00	
9600.00†	89.219	179.740	7882.76	1827.05	-1827.03	8.30	620025.60	604652.23	32°39'43.109"N	104°04'39.494"W	0.00	
9700.00†	89.219	179.740	7884.12	1927.04	-1927.02	8.75	620026.05	604552.25	32°39'42.120"N	104°04'39.491"W	0.00	
9800.00†	89.219	179.740	7885.49	2027.03	-2027.01	9.21	620026.51	604452.27	32°39'41.131"N	104°04'39.489"W	0.00	
9900.00†	89.219	179.740	7886.85	2127.02	-2127.00	9.66	620026.96	604352.28	32°39'40.141"N	104°04'39.486"W	0.00	
10000.00†	89.219	179.740	7888.21	2227.01	-2226.99	10.12	620027.42	604252.30	32°39'39.152"N	104°04'39.484"W	0.00	
10100.00†	89.219	179.740	7889.58	2327.00	-2326.98	10.57	620027.87	604152.32	32°39'38.163"N	104°04'39.481"W	0.00	
10200.00†	89.219	179.740	7890.94	2426.99	-2426.97	11.03	620028.32	604052.34	32°39'37.173"N	104°04'39.479"W	0.00	
10300.00†	89.219	179.740	7892.30	2526.98	-2526.96	11.48	620028.78	603952.36	32°39'36.184"N	104°04'39.476"W	0.00	
10400.00†	89.219	179.740	7893.66	2626.97	-2626.95	11.93	620029.23	603852.38	32°39'35.195"N	104°04'39.474"W	0.00	
10500.00†	89.219	179.740	7895.03	2726.96	-2726.94	12.39	620029.69	603752.40	32°39'34.205"N	104°04'39.471"W	0.00	
10600.00†	89.219	179.740	7896.39	2826.96	-2826.93	12.84	620030.14	603652.42	32°39'33.216"N	104°04'39.469"W	0.00	
10700.00†	89.219	179.740	7897.75	2926.95	-2926.92	13.30	620030.60	603552.44	32°39'32.227"N	104°04'39.466"W	0.00	
10800.00†	89.219	179.740	7899.12	3026.94	-3026.91	13.75	620031.05	603452.45	32°39'31.237"N	104°04'39.464"W	0.00	
10900.00†	89.219	179.740	7900.48	3126.93	-3126.90	14.21	620031.50	603352.47	32°39'30.248"N	104°04'39.461"W	0.00	
11000.00†	89.219	179.740	7901.84	3226.92	-3226.89	14.66	620031.96	603252.49	32°39'29.259"N	104°04'39.459"W	0.00	
11100.00†	89.219	179.740	7903.20	3326.91	-3326.87	15.11	620032.41	603152.51	32°39'28.269"N	104°04'39.456"W	0.00	
11200.00†	89.219	179.740	7904.57	3426.90	-3426.86	15.57	620032.87	603052.53	32°39'27.280"N	104°04'39.454"W	0.00	
11300.00†	89.219	179.740	7905.93	3526.89	-3526.85	16.02	620033.32	602952.55	32°39'26.290"N	104°04'39.451"W	0.00	
11400.00†	89.219	179.740	7907.29	3626.88	-3626.84	16.48	620033.78	602852.57	32°39'25.301"N	104°04'39.449"W	0.00	
11500.00†	89.219	179.740	7908.66	3726.87	-3726.83	16.93	620034.23	602752.59	32°39'24.312"N	104°04'39.446"W	0.00	
11600.00†	89.219	179.740	7910.02	3826.86	-3826.82	17.38	620034.68	602652.61	32°39'23.322"N	104°04'39.444"W	0.00	
11700.00†	89.219	179.740	7911.38	3926.85	-3926.81	17.84	620035.14	602552.62	32°39'22.333"N	104°04'39.441"W	0.00	



Planned Wellpath Report

Prelim_1

Page 6 of 6



REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 4H SHL
Area	Eddy County, NM	Well	No. 4H
Field	(Magnum) Sec 16, T19S, R29E	Wellbore	No. 4H PWB
Facility	Magnum 16 State No. 4H		

WELLPATH DATA (127 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†	89.219	179.740	7912.74	4026.84	-4026.80	18.29	620035.59	602452.64	32°39'21.344"N	104°04'39.439"W	0.00	
11900.00†	89.219	179.740	7914.11	4126.83	-4126.79	18.75	620036.05	602352.66	32°39'20.354"N	104°04'39.436"W	0.00	
12000.00†	89.219	179.740	7915.47	4226.83	-4226.78	19.20	620036.50	602252.68	32°39'19.365"N	104°04'39.434"W	0.00	
12100.00†	89.219	179.740	7916.83	4326.82	-4326.77	19.66	620036.95	602152.70	32°39'18.376"N	104°04'39.432"W	0.00	
12200.00†	89.219	179.740	7918.20	4426.81	-4426.76	20.11	620037.41	602052.72	32°39'17.386"N	104°04'39.429"W	0.00	
12300.00†	89.219	179.740	7919.56	4526.80	-4526.75	20.56	620037.86	601952.74	32°39'16.397"N	104°04'39.427"W	0.00	
12332.39	89.219	179.740	7920.00†	4559.19	-4559.14	20.71	620038.01	601920.35	32°39'16.076"N	104°04'39.426"W	0.00	No. 4H PBHL

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
1) No. 4H PBHL	12332.39	7920.00	-4559.14	20.71	620038.01	601920.35	32°39'16.076"N	104°04'39.426"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
0.00	12332.39	NaviTrak (Standard)		No. 4H PWB