

New Mexico Oil Conservation Division, District I
1625 N. French Drive
Hobbs, NM 88240

Form 3160-3
(April 2004)

HOBBS OCD

DEC 19 2011

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a Type of Work: ☒ DRILL ☐ REENTER		5 Lease Serial No. Private Minerals, LC-060850
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. Pending
3a. Address 600 N. Marienfeld St., Ste. 600; Midland, TX 79701	3b. Phone No. (include area code) 432-571-7800	8 Lease Name and Well No. <38905> Boxer 3 Federal Com No. 2
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At Surface 1190 FNL & 330 FEL Unit A At proposed prod. Zone 990 FNL & 330 FWL Unit A Abo Wolfcamp Horizontal Base Spring test		9. API Well No. 30-005- 29199
14. Distance in miles and direction from nearest town or post office*		10. Field and Pool, or Exploratory Abo/Wolfcamp Wildcat <97715>
15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig unit line if any) 330'		11. Sec, T, R. M. or Blk. and Survey or Area 3-15S-31E
16. No of acres in lease LC-060850 - 442.24 acres		12 County or Parish Chaves
17. Spacing Unit dedicated to this well N2N2 160 acres		13 State NM
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft 705'		19. Proposed Depth MD 13307 TVD 8770'
20 BLM/BIA Bond No. on File NM-2575		21 Elevations (Show whether DF, KDB, RT, GL, etc) 4403' GR
22. Approximate date work will start* 10.01.11		23 Estimated duration 25-30 days

24. Attachments **Roswell Controlled Water Basin**

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 Zeno Farris	Name (Printed/Typed) Zeno Farris	Date 8.11.11
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Title

Manager Operations Administration

Approved By (Signature) /s/ Angel Mayes	Name (Printed/Typed) ANGEL MAYES	Date DEC 14 2011
Title Assistant Field Manager, Lands And Minerals	Office ROS WELL FIELD OFFICE	APPROVED FOR 2 YEARS

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.

Title 18 U.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)

DECLARED WATER BASIN

CEMENT BEHIND THE 133" CASING MUST BE CIRCULATED

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED
WITNESS

DEC 19 2011

Form C-102

Revised July 16, 2010

DISTRICT I

1625 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

OIL CONSERVATION DIVISION

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

RECEIVED

Submit one copy to appropriate
District Office

WELL LOCATION AND ACREAGE DEDICATION PLAT

AMENDED REPORT

API Number 30-005-29199	Pool Code 97715	Pool Name Abo/Wolfcamp Wildcat
Property Code 38925	Property Name BOXER "3" FEDERAL COM	Well Number 2
GRID No. 162683	Operator Name CIMAREX ENERGY CO. OF COLORADO	Elevation 4404'

Surface Location

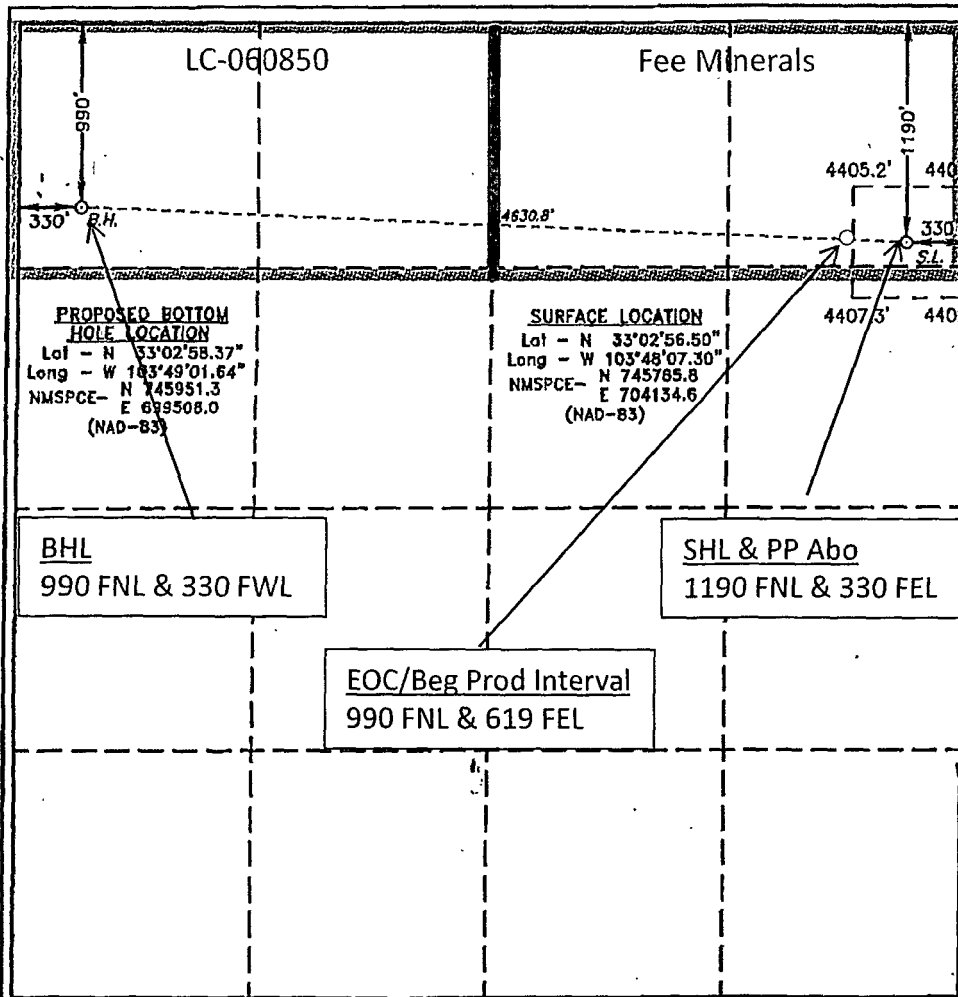
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	3	15 S	31 E		1190	NORTH	330	EAST	CHAVES

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
D	3	15 S	31 E		990	NORTH	330	WEST	CHAVES

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160			NSL PENDING

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.

Zeno Farris 8/11/11

Signature Date

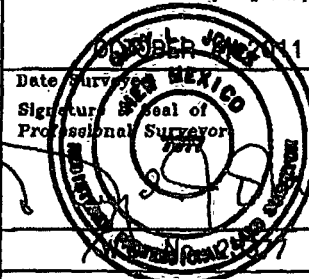
Zeno Farris

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.



Certificate No. Gary L. Jones 7977

BASIN SURVEYS 25377

Application to Drill
Boxer 3 Federal Com No. 2
 Cimarex Energy Co. of Colorado
 Unit A, Section 3
 T15S-R31E; Chaves 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 1190 FNL & 330 FEL
BHL 990 FNL & 330 FWL

- 2 Elevation above sea level: 4403 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 13307 TVD 8770

- 6 Estimated tops of geological markers:

Yates	2375
Queen	3200
San Andres	3900
Tubb	6731
Abo	7420

- 7 Possible mineral bearing formation:

Abo	Oil
Wolfcamp	Oil

8 Proposed Mud Circulating System:

Depth	Mud Wt	Visc	Fluid Loss	Type Mud
0' to 365'	8.4 - 8.6	30-32	May Lose Circ	FW
365' to 3950'	10.0	28-29	May Lose Circ	Brine
3950' to 8444'	8.6 - 9.5	28-29	NC	FW, Brine, use hi-vis sweeps to keep hole clean
8444' to 13307'	8.4 - 8.9	28	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.

Application to Drill
Boxer 3 Federal Com No. 2
 Cimarex Energy Co. of Colorado
 Unit A, Section 3
 T15S-R31E; Chaves County, NM

8 Proposed drilling Plan

After setting surface and production casing (and intermediate if needed), drill out of the bottom of the 7" casing shoe and kick off 6½" lateral @ 8514. Drill to TD @ 13303 MD, 8770 TVD and set 4½" PEAK Completion liner as shown below.

9 Casing & Cementing Program:

String	Hole Size	Depth	Casing OD	Weight	Collar	Grade
Surface	17½"	0' to 365'	New 13½"	48#	STC	H40
Intermediate**	12½"	0' to 3950'	New 9½"	40#	LTC	J55
Production	8½"	0' to 8444'	New 7"	26#	LTC	P110
Liner	6½"	8244' to 13303'	New 4½"	11.6#	LTC/BTC*	P-110

* Use BTC from 8244-EOC @ 8965 and LTC from 8965-TD

10 Cementing:

Surface	Lead:320SKS C + 4% Bentonite + 2% CaCl 13.5ppg, 1.75yld, 100% Excess Tail:220SKS Class C + 2% CaCl 14.8ppg 1.35 yield 25% Excess TOC Surface Centralizers per Onshorder 2.III.B.1.f
Intermediate Contingency*	Lead:950SKS Econocem + 3% Salt + 2% CaCl + 3# Gilsonite 11.7ppg 2.06yield 75% Excess Tail:215SKS Halcem + 1% CaCl 14.8ppg 1.34 yield 25% Excess TOC Surface
Production	Lead:2270SKS Econocem + 5% Salt + 5# Gilsonite 14.6ppg 1.54yield 70% Excess Tail:500SKS Halcem + 1% CaCl 14.8ppg 1.34 yield 25% Excess TOC 3750
Liner	No Cement, PEAK Completion Liner Centralizers every 3rd joint in lateral to provide adequate cement coverage every 100' unless lateral doglegs require greater spacing between centralizers.

**** Please note that the intermediate string is a contingency string only. Cimarex plans to drill 8½" production hole out of the bottom of the 13½" shoe. If wellbore integrity cannot be maintained while drilling the 8½" hole, it will be reamed out to 12½" and 9½" intermediate casing will be set at 3950 and cemented as shown above.**

Depth to ground water is 280 according to the State Engineer. Fresh water zones will be protected by setting 13½" casing at 365 and cementing to surface. Hydrocarbon zones will be protected by setting 7" casing at 8444 and cementing to 3750 and possible 9½" casing at 3950 and cementing to surface, if needed.

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

Application to Drill
Boxer 3 Federal Com No. 2
Cimarex Energy Co. of Colorado
Unit A, Section 3
T15S-R31E; Chaves County, NM

11 Pressure control Equipment:

Exhibit "E". A 13 $\frac{3}{8}$ " 5000 PSI working pressure B.O.P. 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 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. Mud-Gas separator will be utilized if drilling in potential H2S area.

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.

12 Testing, Logging and Coring Program:

- A. Mud logging program: 2 man unit from 3950 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.

Abo/Wolfcam pay will be perforated and stimulated.

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

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	272.049	0.00	0.00	0.00	0.00	0.00
Est KOP	8513.53	0.000	272.049	8513.53	0.00	0.00	0.00	0.00
End of Curve	8965.51	90.396	272.049	8800.00	10.31	-288.27	20.00	288.46
No. 2H PBHL	13307.00	90.396	272.049	8770.00	165.51	-4626.89	0.00	4629.85

Plot reference wellpath is Prelim 2

True vertical depths are referenced to Rig on No. 2H SHL (KB)	Grid System: NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet
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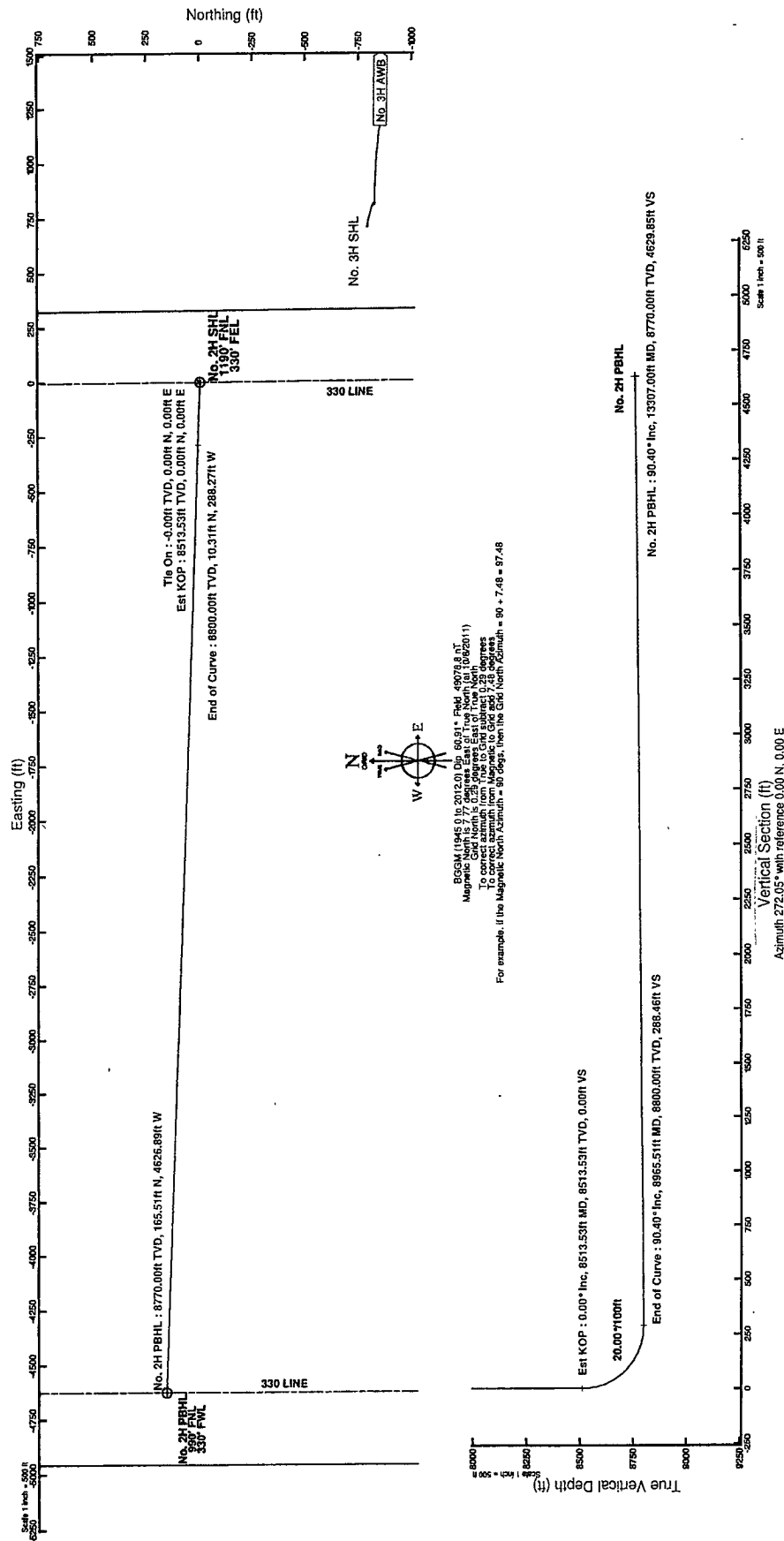
Measured depths are referenced to Rig on No. 2H SHL (KB)

Measured depths are referenced to High on No. 2H SHL

Rig on No. 2H SHL (RB) to Mean Sea Level 4404 feet

Mean Sea Level to Mud line (At Slot: No. 2H SHL) 0 feet

Coordinates are in feet referenced to Slot

[illegible]



Planned Wellpath Report

Prelim_2
Page 1 of 5



REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 2H SHL
Area	Chaves County, NM	Well	No. 2H
Field	(Boxer) Sec 3, T15S, R31E	Wellbore	No. 2H PWB
Facility	Boxer 3 Fed Com		

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	Calhphik
Scale	0.999939	Report Generated	10/6/2011 at 9:39:13 AM
Convergence at slot	0.29° East	Database/Source file	WA_Midland/No. 2H_PWB.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	943.56	-166.11	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W
Facility Reference Pt			704300.70	744842.30	33°02'47.157"N	103°48'05.399"W
Field Reference Pt			702479.90	746588.40	33°03'04.524"N	103°48'26.688"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Rig on No. 2H SHL (KB) to GL	4404.00ft
Horizontal Reference Pt	Slot	Rig on No. 2H SHL (KB) to Mean Sea Level	4404.00ft
Vertical Reference Pt	Rig on No. 2H SHL (KB)	Rig on No. 2H SHL (KB) to Mud Line at Slot (No. 2H SHL)	4404.00ft
MD Reference Pt	Rig on No. 2H SHL (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	272.05°



Planned Wellpath Report

Prelim_2

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 2H SHL
Area	Chaves County, NM	Well	No. 2H
Field	(Boxer) Sec 3, T15S, R31E	Wellbore	No. 2H PWB
Facility	Boxer 3 Fed Com		

WELLPATH DATA (138 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	272.049	0.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	Tie On
100.00†	0.000	272.049	100.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
200.00†	0.000	272.049	200.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
300.00†	0.000	272.049	300.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
400.00†	0.000	272.049	400.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
500.00†	0.000	272.049	500.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
600.00†	0.000	272.049	600.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
700.00†	0.000	272.049	700.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
800.00†	0.000	272.049	800.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
900.00†	0.000	272.049	900.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
1000.00†	0.000	272.049	1000.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
1100.00†	0.000	272.049	1100.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
1200.00†	0.000	272.049	1200.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
1300.00†	0.000	272.049	1300.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
1400.00†	0.000	272.049	1400.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
1500.00†	0.000	272.049	1500.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
1600.00†	0.000	272.049	1600.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
1700.00†	0.000	272.049	1700.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
1800.00†	0.000	272.049	1800.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
1900.00†	0.000	272.049	1900.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
2000.00†	0.000	272.049	2000.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
2100.00†	0.000	272.049	2100.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
2200.00†	0.000	272.049	2200.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
2300.00†	0.000	272.049	2300.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
2400.00†	0.000	272.049	2400.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
2500.00†	0.000	272.049	2500.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
2600.00†	0.000	272.049	2600.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
2700.00†	0.000	272.049	2700.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
2800.00†	0.000	272.049	2800.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
2900.00†	0.000	272.049	2900.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
3000.00†	0.000	272.049	3000.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
3100.00†	0.000	272.049	3100.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
3200.00†	0.000	272.049	3200.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
3300.00†	0.000	272.049	3300.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
3400.00†	0.000	272.049	3400.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
3500.00†	0.000	272.049	3500.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
3600.00†	0.000	272.049	3600.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
3700.00†	0.000	272.049	3700.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
3800.00†	0.000	272.049	3800.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
3900.00†	0.000	272.049	3900.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
4000.00†	0.000	272.049	4000.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
4100.00†	0.000	272.049	4100.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
4200.00†	0.000	272.049	4200.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
4300.00†	0.000	272.049	4300.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
4400.00†	0.000	272.049	4400.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	



Planned Wellpath Report

Prelim 2

Page 3 of 5



REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 2H SHL
Area	Chaves County, NM	Well	No. 2H
Field	(Boxer) Sec 3, T15S, R31E	Wellbore	No. 2H PWB
Facility	Boxer 3 Fed Com		

WELLPATH DATA (138 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
4500.00†	0.000	272.049	4500.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
4600.00†	0.000	272.049	4600.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
4700.00†	0.000	272.049	4700.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
4800.00†	0.000	272.049	4800.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
4900.00†	0.000	272.049	4900.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
5000.00†	0.000	272.049	5000.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
5100.00†	0.000	272.049	5100.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
5200.00†	0.000	272.049	5200.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
5300.00†	0.000	272.049	5300.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
5400.00†	0.000	272.049	5400.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
5500.00†	0.000	272.049	5500.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
5600.00†	0.000	272.049	5600.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
5700.00†	0.000	272.049	5700.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
5800.00†	0.000	272.049	5800.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
5900.00†	0.000	272.049	5900.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
6000.00†	0.000	272.049	6000.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
6100.00†	0.000	272.049	6100.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
6200.00†	0.000	272.049	6200.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
6300.00†	0.000	272.049	6300.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
6400.00†	0.000	272.049	6400.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
6500.00†	0.000	272.049	6500.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
6600.00†	0.000	272.049	6600.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
6700.00†	0.000	272.049	6700.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
6800.00†	0.000	272.049	6800.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
6900.00†	0.000	272.049	6900.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
7000.00†	0.000	272.049	7000.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
7100.00†	0.000	272.049	7100.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
7200.00†	0.000	272.049	7200.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
7300.00†	0.000	272.049	7300.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
7400.00†	0.000	272.049	7400.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
7500.00†	0.000	272.049	7500.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	Abo Shale
7600.00†	0.000	272.049	7600.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
7700.00†	0.000	272.049	7700.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
7800.00†	0.000	272.049	7800.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
7900.00†	0.000	272.049	7900.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
8000.00†	0.000	272.049	8000.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
8100.00†	0.000	272.049	8100.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
8200.00†	0.000	272.049	8200.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
8300.00†	0.000	272.049	8300.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
8400.00†	0.000	272.049	8400.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
8500.00†	0.000	272.049	8500.00	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	
8513.53	0.000	272.049	8513.53	0.00	0.00	0.00	704134.60	745785.80	33°02'56.500"N	103°48'07.294"W	0.00	Est KOP
8600.00†	17.294	272.049	8598.69	12.95	0.46	-12.94	704121.66	745786.26	33°02'56.506"N	103°48'07.446"W	20.00	
8700.00†	37.294	272.049	8687.11	58.57	2.09	-58.54	704076.07	745787.89	33°02'56.524"N	103°48'07.982"W	20.00	
8791.69†	55.633	272.049	8750.00	124.76	4.46	-124.68	704009.92	745790.26	33°02'56.551"N	103°48'08.759"W	20.00	Lower Abo Dolomite



Planned Wellpath Report

Prelim_2
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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 2H SHL
Area	Chaves County, NM	Well	No. 2H
Field	(Boxer) Sec 3, T15S, R31E	Wellbore	No. 2H PWB
Facility	Boxer 3 Fed Com		

WELLPATH DATA (138 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†	57.294	272.049	8754.59	131.69	4.71	-131.60	704003.01	745790.51	33°02'56.554"N	103°48'08.840"W	20.00	
8900.00†	77.294	272.049	8792.99	223.47	7.99	-223.33	703911.29	745793.79	33°02'56.591"N	103°48'09.918"W	20.00	
8965.51	90.396	272.049	8800.00	288.46	10.31	-288.27	703846.34	745796.11	33°02'56.617"N	103°48'10.680"W	20.00	End of Curve
9000.00†	90.396	272.049	8799.76	322.95	11.54	-322.74	703811.88	745797.34	33°02'56.631"N	103°48'11.085"W	0.00	
9100.00†	90.396	272.049	8799.07	422.95	15.12	-422.68	703711.95	745800.92	33°02'56.671"N	103°48'12.259"W	0.00	
9200.00†	90.396	272.049	8798.38	522.94	18.69	-522.61	703612.02	745804.49	33°02'56.711"N	103°48'13.433"W	0.00	
9300.00†	90.396	272.049	8797.69	622.94	22.27	-622.54	703512.10	745808.07	33°02'56.752"N	103°48'14.607"W	0.00	
9400.00†	90.396	272.049	8797.00	722.94	25.84	-722.48	703412.17	745811.64	33°02'56.792"N	103°48'15.780"W	0.00	
9500.00†	90.396	272.049	8796.31	822.94	29.42	-822.41	703312.24	745815.22	33°02'56.832"N	103°48'16.954"W	0.00	
9600.00†	90.396	272.049	8795.62	922.93	32.99	-922.34	703212.31	745818.79	33°02'56.873"N	103°48'18.128"W	0.00	
9700.00†	90.396	272.049	8794.93	1022.93	36.57	-1022.28	703112.39	745822.37	33°02'56.913"N	103°48'19.302"W	0.00	
9800.00†	90.396	272.049	8794.24	1122.93	40.14	-1122.21	703012.46	745825.94	33°02'56.953"N	103°48'20.476"W	0.00	
9900.00†	90.396	272.049	8793.54	1222.93	43.72	-1222.14	702912.53	745829.52	33°02'56.994"N	103°48'21.649"W	0.00	
10000.00†	90.396	272.049	8792.85	1322.92	47.29	-1322.08	702812.60	745833.09	33°02'57.034"N	103°48'22.823"W	0.00	
10100.00†	90.396	272.049	8792.16	1422.92	50.87	-1422.01	702712.68	745836.66	33°02'57.074"N	103°48'23.997"W	0.00	
10200.00†	90.396	272.049	8791.47	1522.92	54.44	-1521.95	702612.75	745840.24	33°02'57.115"N	103°48'25.171"W	0.00	
10300.00†	90.396	272.049	8790.78	1622.92	58.02	-1621.88	702512.82	745843.81	33°02'57.155"N	103°48'26.345"W	0.00	
10400.00†	90.396	272.049	8790.09	1722.91	61.59	-1721.81	702412.89	745847.39	33°02'57.195"N	103°48'27.518"W	0.00	
10500.00†	90.396	272.049	8789.40	1822.91	65.17	-1821.75	702312.97	745850.96	33°02'57.236"N	103°48'28.692"W	0.00	
10600.00†	90.396	272.049	8788.71	1922.91	68.74	-1921.68	702213.04	745854.54	33°02'57.276"N	103°48'29.866"W	0.00	
10700.00†	90.396	272.049	8788.02	2022.91	72.32	-2021.61	702113.11	745858.11	33°02'57.316"N	103°48'31.040"W	0.00	
10800.00†	90.396	272.049	8787.32	2122.91	75.89	-2121.55	702013.18	745861.69	33°02'57.357"N	103°48'32.214"W	0.00	
10900.00†	90.396	272.049	8786.63	2222.90	79.47	-2221.48	701913.26	745865.26	33°02'57.397"N	103°48'33.387"W	0.00	
11000.00†	90.396	272.049	8785.94	2322.90	83.04	-2321.42	701813.33	745868.84	33°02'57.437"N	103°48'34.561"W	0.00	
11100.00†	90.396	272.049	8785.25	2422.90	86.62	-2421.35	701713.40	745872.41	33°02'57.478"N	103°48'35.735"W	0.00	
11200.00†	90.396	272.049	8784.56	2522.90	90.19	-2521.28	701613.47	745875.98	33°02'57.518"N	103°48'36.909"W	0.00	
11300.00†	90.396	272.049	8783.87	2622.89	93.76	-2621.22	701513.55	745879.56	33°02'57.558"N	103°48'38.083"W	0.00	
11400.00†	90.396	272.049	8783.18	2722.89	97.34	-2721.15	701413.62	745883.13	33°02'57.598"N	103°48'39.256"W	0.00	
11500.00†	90.396	272.049	8782.49	2822.89	100.91	-2821.08	701313.69	745886.71	33°02'57.639"N	103°48'40.430"W	0.00	
11600.00†	90.396	272.049	8781.80	2922.89	104.49	-2921.02	701213.76	745890.28	33°02'57.679"N	103°48'41.604"W	0.00	
11700.00†	90.396	272.049	8781.11	3022.88	108.06	-3020.95	701113.84	745893.86	33°02'57.719"N	103°48'42.778"W	0.00	
11800.00†	90.396	272.049	8780.41	3122.88	111.64	-3120.89	701013.91	745897.43	33°02'57.760"N	103°48'43.952"W	0.00	
11900.00†	90.396	272.049	8779.72	3222.88	115.21	-3220.82	700913.98	745901.01	33°02'57.800"N	103°48'45.125"W	0.00	
12000.00†	90.396	272.049	8779.03	3322.88	118.79	-3320.75	700814.06	745904.58	33°02'57.840"N	103°48'46.299"W	0.00	
12100.00†	90.396	272.049	8778.34	3422.87	122.36	-3420.69	700714.13	745908.16	33°02'57.880"N	103°48'47.473"W	0.00	
12200.00†	90.396	272.049	8777.65	3522.87	125.94	-3520.62	700614.20	745911.73	33°02'57.921"N	103°48'48.647"W	0.00	
12300.00†	90.396	272.049	8776.96	3622.87	129.51	-3620.55	700514.27	745915.30	33°02'57.961"N	103°48'49.821"W	0.00	
12400.00†	90.396	272.049	8776.27	3722.87	133.09	-3720.49	700414.35	745918.88	33°02'58.001"N	103°48'50.994"W	0.00	
12500.00†	90.396	272.049	8775.58	3822.86	136.66	-3820.42	700314.42	745922.45	33°02'58.041"N	103°48'52.168"W	0.00	
12600.00†	90.396	272.049	8774.89	3922.86	140.24	-3920.35	700214.49	745926.03	33°02'58.082"N	103°48'53.342"W	0.00	
12700.00†	90.396	272.049	8774.19	4022.86	143.81	-4020.29	700114.56	745929.60	33°02'58.122"N	103°48'54.516"W	0.00	
12800.00†	90.396	272.049	8773.50	4122.86	147.39	-4120.22	700014.64	745933.18	33°02'58.162"N	103°48'55.690"W	0.00	
12900.00†	90.396	272.049	8772.81	4222.85	150.96	-4220.16	699914.71	745936.75	33°02'58.202"N	103°48'56.864"W	0.00	
13000.00†	90.396	272.049	8772.12	4322.85	154.54	-4320.09	699814.78	745940.33	33°02'58.243"N	103°48'58.037"W	0.00	
13100.00†	90.396	272.049	8771.43	4422.85	158.11	-4420.02	699714.85	745943.90	33°02'58.283"N	103°48'59.211"W	0.00	



Planned Wellpath Report

Prelim_2

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 2H SHL
Area	Chaves County, NM	Well	No. 2H
Field	(Boxer) Sec 3, T15S, R31E	Wellbore	No. 2H PWB
Facility	Boxer 3 Fed Com		

WELLPATH DATA (138 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
13200.00†	90.396	272.049	8770.74	4522.85	161.69	-4519.96	699614.93	745947.48	33°02'58.323"N	103°49'00.385"W	0.00	
13300.00†	90.396	272.049	8770.05	4622.85	165.26	-4619.89	699515.00	745951.05	33°02'58.363"N	103°49'01.559"W	0.00	
13307.00	90.396	272.049	8770.00 ¹	4629.85	165.51	-4626.89	699508.00	745951.30	33°02'58.366"N	103°49'01.641"W	0.00	No. 2H PBHL

HOLE & CASING SECTIONS - Ref Wellbore: No. 2H PWB Ref Wellpath: Prelim_2									
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	0.00	8500.00	8500.00	0.00	8500.00	0.00	0.00	0.00	0.00
5.5in Casing	0.00	13307.00	13307.00	0.00	8770.00	0.00	0.00	165.51	-4626.89

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
1) No. 2H PBHL	13307.00	8770.00	165.51	-4626.89	699508.00	745951.30	33°02'58.366"N	103°49'01.641"W	point

SURVEY PROGRAM - Ref Wellbore: No. 2H PWB Ref Wellpath: Prelim_2				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
4404.00	13307.00	NaviTrak (Standard)		No. 2H PWB