

AT-11-766

OCD-HOBBS HOBBS OCD

AUG 25 2011

Form 3160-3
(April 2004)FORM APPROVED
OMB No 1004-0137
Expires March 31, 2007UNITED 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 NM-0392082-A	
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 <i>(38778)</i> Hallertau 5 Federal No. 4H	
3b Phone No (include area code) 432-571-7800		9 API Well No. 30-025- <i>40254</i>	
4 Location of Well (Report location clearly and in accordance with any State requirements. *) At Surface 350 FSL & 660 FWL <i>Unit m</i> At proposed prod Zone 330 FNL & 660 FWL <i>Lot 4 Horizontal Bone Spring test</i>		10. Field and Pool, or Exploratory Bone Spring <i>Wildcat</i> 11 Sec., T R M or Blk and Survey of Area <i>(97838)</i>	
14 Distance in miles and direction from nearest town or post office*		12 County or Parish Lea	
15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig unit line if any) 350'		13 State NM	
16. No of acres in lease 1720.49 acres		17 Spacing Unit dedicated to this well W2W2 160 acres	
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft		20 BLM/BIA Bond No. on File NM-2575	
21 Elevations (Show whether DF, KDB, RT, GL, etc) 3271' GR		22 Approximate date work will start* 10.01.11	
		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 <i>Zeno Farris</i>	Name (Printed/Typed) Zeno Farris	Date 06.07.11
Title Manager Operations Administration		
Approved By (Signature) <i>/s/ Don Peterson</i>	Name (Printed/Typed)	Date AUG 23 2011
Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon

Conditions of approval, if any, are attached

APPROVAL FOR TWO YEARS

Title 18 U S S Section 1001 and Title 43 U S C Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious, or fraudulent statements or representations as to any matter within its jurisdiction

* (Instructions on page 2)

Carlsbad Controlled Water Basin

*KE 08/01/11*SEE ATTACHED FOR
CONDITIONS OF APPROVALApproval Subject to General Requirements
& Special Stipulations Attached

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240

DISTRICT II
7301 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

HOBBS OGD Form C-102
Revised July 16, 2010

Submit one copy to appropriate
District Office

OIL CONSERVATION DIVISION AUG 25 2011
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

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☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-02540254	Pool Code 97838	Pool Name Bone Spring Wildcat
Property Code 38778	Property Name HALLERTAU "5" FEDERAL	Well Number 4H
OGRID No. 162683	Operator Name CIMAREX ENERGY CO. OF COLORADO	Elevation 3271'

Surface Location

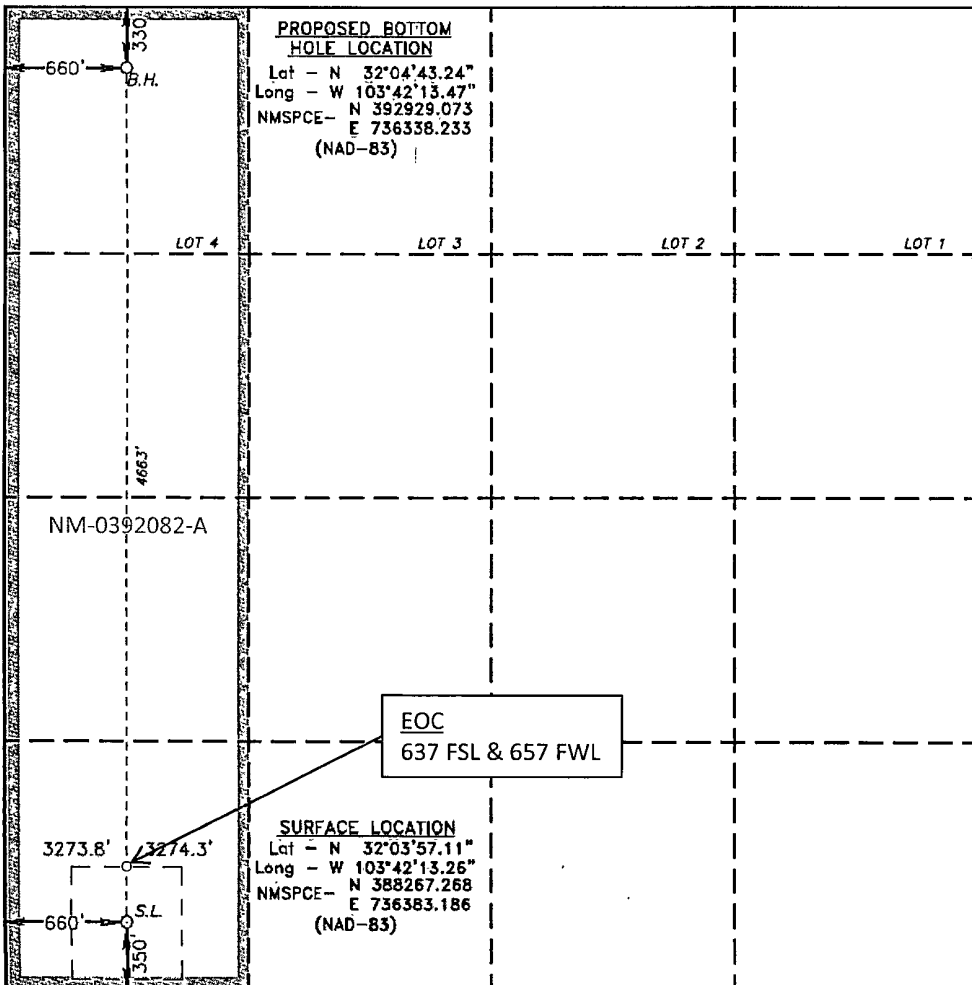
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	5	26 S	32 E		350	SOUTH	660	WEST	LEA

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
LOT 4	5	26 S	32 E		330	NORTH	660	WEST	LEA

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>Zeno Farris</u> 6/7/2011 Signature Date <u>Zeno Farris</u> Printed Name <u>zfarris@cimarex.com</u> 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. <u>GARY L. JONES</u> Date Surveyed Signature & Seal of Professional Surveyor Certificate No. Gary L. Jones 7977 BASIN SURVEYS 24497
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Application to Drill
Hallertau 5 Federal No. 4
 Cimarex Energy Co. of Colorado
 Unit M, Section 5
 T26S-R32E; Lea County, NM

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In response to questions asked under Section II B of Bulletin NTL-6, the following information is provided for your consideration:

- 1 Location: SHL 350 FSL & 660 FWL
 BHL 330 FNL & 660 FWL

- 2 Elevation above sea level: 3271 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 9750 MD 13471 TVD 8932

- 6 Estimated tops of geological markers:

Rustler	1100
T. Salt	1337
B. Salt	4207
Delaware	4417
Cherry Canyon	5547
Lower Brushy Canyon	8232
Bone Spring	8427

- 7 Possible mineral bearing formation:
 Bone Spring Oil

8 Proposed Mud Circulating System:

Depth	Mud Wt	Visc	Fluid Loss	Type Mud
0' to ¹²¹⁰ 1100 '	8.4 - 8.6	28	NC	FW
1100 ' to ⁴⁴⁰⁰ 4800 '	10.0	30-32	NC	Brine water
4800 ' to 13471'	8.4 - 9.5	30-32	NC	FW, brine, and 2% KCl in the lateral

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" pilot hole to 9750 and log. Pump 30bbls MUDPUSHII 12ppg, followed by 495 sks Type H Cement, D080 (Dispersant) 0.080 gal/sk, D177 (Retarder) 0.045gal/sk 17.5 ppg yield 0.94 & 0% Excess. Set whipstock and kick off 8¾" lateral @ 8646 and drill to TD @ 13471 MD, 8932 TVD. Run 5½" 17# P-110 LTC from 0-13471 and cement.

Application to Drill
Hallertau 5 Federal No. 41
 Cimarex Energy Co. of Colorado
 Unit M, Section 5
 T26S-R32E; Lea County, NM

9 Casing & Cementing Program:

String	Hole Size	Depth	Casing OD	Weight	Collar	Grade
2P Surface	17½"	0' to 1210 1100'	New 13¾"	48#	STC	H-40
1P Intermediate	12¼"	0' to 4400 4800'	New 9¾"	40 36#	LTC	J-55
Production	8¾"	0' to 13471'	New 5½"	17#	LTC	P-110

per Operator 8/16/11 CRW

10 Cementing:

Surface 835SKS Class C Cement + 4% Bentomite + 2% CaCl 13.5ppg 1.75yield 100% Excess
TOC Surface Centralizers per Onshorder 2.III.B.1.f

Intermediate Lead:1240SKS Type C Cement, 5% NaCl WOW, D132 (ext) 27.522 lb/sk, D020 (ext) 6%, D042 (ext) 3lb/sk, D130 (LCM) 0.125lb/sk 12.6ppg 2.06yield 70% Excess
 Tail:200SKS Type C Cement 14.8ppg 1.33 yield 25% Excess
TOC Surface

Production Lead:945SKS Type H cement, NaCl 5% WOW, D132 (ext) 39.39lb/sk, D020 (ext) 10%, D046 Antifoam 0.20%, D130 LCM 0.125lb/sk, D112 1% 11.8ppg 2.56 yield 45% Excess
 Tail:745SKS D049 Cement, 1.3% NaCl, 0.4% D207 fluid loss, 0.2% AnitFoam, 0.3% retarder, 2.0% D174 Expanding Agent 14.5ppg 1.44 yield 25% Excess
TOC ~~4600'~~ 4200' Centralizers every 3rd joint in lateral to provide adequate cement coverage every 100' unless lateral doglegs require greater spacing between centralizers.

Depth to ground water is 275 according to the State Engineer. Fresh water zones will be protected by setting 13¾" casing at ~~1100~~ and cementing to surface. Hydrocarbon zones will be protected by setting 9¾" casing at ~~4800~~ and cementing to surface, and by setting 5½" casing at ~~14913~~ 13471' and cementing to ~~4600~~ 13,471'.

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

11 Pressure control Equipment:

A 13¾" 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. Mud gas separator to be used when drilling in H2S areas.

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 13¾" 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. of Colorado (operator) requests a variance if Cactus 101 (rig name) is used to drill this well to use a co-flex line between the BOP and choke manifold.

Manufacturer: Midwest Hose & Specialty

Serial Number: 59473

Length: 35' Size: 4-1/16" Ends flanges/clamps

WP rating: 10,000 psi Anchors required by manufacturer – Yes/No

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12 Testing, Logging and Coring Program: *See COA*

- A. Mud logging program: 2 man unit from 4800' 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

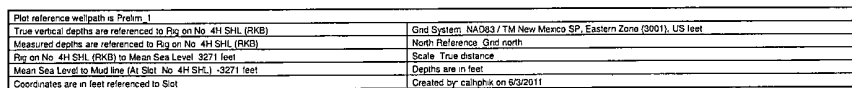
If production casing is run an additional 30 days will be required to complete and construct surface facilities.

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.**





Planned Wellpath Report

Prelim_1
Page 1 of 5

HOBBS OCD

AUG 25 2011



REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 4H SHL
Area	Lea County, NM	Well	No. 4H
Field	(Hallertau) Sec5, T26S, R32E	Wellbore	No. 4H PWB
Facility	Hallertau 5 Federal 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	Calhphik
Scale	0.999953	Report Generated	6/3/2011 at 10:14:48 AM
Convergence at slot	0.33° 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	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W
Facility Reference Pt			736383.19	388267.27	32°03'57.105"N	103°42'13.264"W
Field Reference Pt			736383.19	388267.27	32°03'57.105"N	103°42'13.264"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No. 4H SHL (RKB) to GL	0.00ft
Horizontal Reference Pt	Slot	Rig on No. 4H SHL (RKB) to Mean Sea Level	3271.00ft
Vertical Reference Pt	Rig on No. 4H SHL (RKB)	Rig on No. 4H SHL (RKB) to Mud Line at Slot (No. 4H SHL)	0.00ft
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	359.45°



Planned Wellpath Report

Prelim 1

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Facility	Hallertau 5 Federal No. 4H		

WELLPATH DATA (142 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	359.447	0.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	Tie On
100.00†	0.000	359.447	100.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
200.00†	0.000	359.447	200.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
300.00†	0.000	359.447	300.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
400.00†	0.000	359.447	400.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
500.00†	0.000	359.447	500.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
600.00†	0.000	359.447	600.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
700.00†	0.000	359.447	700.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
800.00†	0.000	359.447	800.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
900.00†	0.000	359.447	900.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
1000.00†	0.000	359.447	1000.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
1100.00†	0.000	359.447	1100.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
1200.00†	0.000	359.447	1200.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
1300.00†	0.000	359.447	1300.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
1400.00†	0.000	359.447	1400.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
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1600.00†	0.000	359.447	1600.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
1700.00†	0.000	359.447	1700.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
1800.00†	0.000	359.447	1800.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
1900.00†	0.000	359.447	1900.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
2000.00†	0.000	359.447	2000.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
2100.00†	0.000	359.447	2100.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
2200.00†	0.000	359.447	2200.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
2300.00†	0.000	359.447	2300.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
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2500.00†	0.000	359.447	2500.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
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2700.00†	0.000	359.447	2700.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
2800.00†	0.000	359.447	2800.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
2900.00†	0.000	359.447	2900.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
3000.00†	0.000	359.447	3000.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
3100.00†	0.000	359.447	3100.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
3200.00†	0.000	359.447	3200.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
3300.00†	0.000	359.447	3300.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
3400.00†	0.000	359.447	3400.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
3500.00†	0.000	359.447	3500.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
3600.00†	0.000	359.447	3600.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
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3900.00†	0.000	359.447	3900.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
4000.00†	0.000	359.447	4000.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
4100.00†	0.000	359.447	4100.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
4200.00†	0.000	359.447	4200.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
4300.00†	0.000	359.447	4300.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
4400.00†	0.000	359.447	4400.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	



Planned Wellpath Report

Prelim 1
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REFERENCE WELLPATH IDENTIFICATION			
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Area	Lea County, NM	Well	No. 4H
Field	(Hallertau) Sec5, T26S, R32E	Wellbore	No. 4H PWB
Facility	Hallertau 5 Federal No. 4H		

WELLPATH DATA (142 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	359.447	4500.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
4600.00†	0.000	359.447	4600.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
4700.00†	0.000	359.447	4700.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
4800.00†	0.000	359.447	4800.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
4900.00†	0.000	359.447	4900.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
5000.00†	0.000	359.447	5000.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
5100.00†	0.000	359.447	5100.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
5200.00†	0.000	359.447	5200.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
5300.00†	0.000	359.447	5300.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
5400.00†	0.000	359.447	5400.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
5500.00†	0.000	359.447	5500.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
5547.00†	0.000	359.447	5547.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	Cherry Canyon
5600.00†	0.000	359.447	5600.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
5700.00†	0.000	359.447	5700.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
5800.00†	0.000	359.447	5800.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
5900.00†	0.000	359.447	5900.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
6000.00†	0.000	359.447	6000.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
6100.00†	0.000	359.447	6100.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
6200.00†	0.000	359.447	6200.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
6300.00†	0.000	359.447	6300.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
6400.00†	0.000	359.447	6400.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
6500.00†	0.000	359.447	6500.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
6600.00†	0.000	359.447	6600.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
6700.00†	0.000	359.447	6700.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
6800.00†	0.000	359.447	6800.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
6900.00†	0.000	359.447	6900.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
7000.00†	0.000	359.447	7000.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
7100.00†	0.000	359.447	7100.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
7200.00†	0.000	359.447	7200.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
7300.00†	0.000	359.447	7300.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
7400.00†	0.000	359.447	7400.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
7500.00†	0.000	359.447	7500.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
7600.00†	0.000	359.447	7600.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
7700.00†	0.000	359.447	7700.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
7800.00†	0.000	359.447	7800.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
7900.00†	0.000	359.447	7900.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
8000.00†	0.000	359.447	8000.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
8100.00†	0.000	359.447	8100.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
8200.00†	0.000	359.447	8200.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
8232.00†	0.000	359.447	8232.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	Brushy Canyon Lower
8300.00†	0.000	359.447	8300.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
8400.00†	0.000	359.447	8400.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
8427.00†	0.000	359.447	8427.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	Bone Spring
8500.00†	0.000	359.447	8500.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
8532.00†	0.000	359.447	8532.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	Bone Spring A Shale



Planned Wellpath Report

Prelim 1
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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 4H SHL
Area	Lea County, NM	Well	No. 4H
Field	(Hallertau) Sec5, T26S, R32E	Wellbore	No. 4H PWB
Facility	Hallertau 5 Federal No. 4H		

WELLPATH DATA (142 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
8600.00†	0.000	359.447	8600.00	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	
8645.50	0.000	359.447	8645.50	0.00	0.00	0.00	736383.19	388267.27	32°03'57.105"N	103°42'13.264"W	0.00	Est. KOP
8700.00†	10.899	359.447	8699.67	5.17	5.17	-0.05	736383.14	388272.44	32°03'57.156"N	103°42'13.265"W	20.00	
8800.00†	30.898	359.447	8792.62	40.66	40.66	-0.39	736382.80	388307.92	32°03'57.507"N	103°42'13.266"W	20.00	
8900.00†	50.896	359.447	8867.83	105.80	105.79	-1.02	736382.17	388373.06	32°03'58.151"N	103°42'13.269"W	20.00	
9000.00†	70.895	359.447	8916.22	192.73	192.72	-1.86	736381.33	388459.98	32°03'59.012"N	103°42'13.273"W	20.00	
9095.53	90.000	359.447	8932.00	286.50	286.49	-2.76	736380.43	388553.74	32°03'59.940"N	103°42'13.277"W	20.00	EOC
9100.00†	90.000	359.447	8932.00	290.97	290.95	-2.81	736380.38	388558.21	32°03'59.984"N	103°42'13.277"W	0.00	
9200.00†	90.000	359.447	8932.00	390.97	390.95	-3.77	736379.42	388658.20	32°04'00.973"N	103°42'13.282"W	0.00	
9300.00†	90.000	359.447	8932.00	490.97	490.94	-4.73	736378.46	388758.19	32°04'01.963"N	103°42'13.286"W	0.00	
9400.00†	90.000	359.447	8932.00	590.97	590.94	-5.70	736377.49	388858.18	32°04'02.952"N	103°42'13.290"W	0.00	
9500.00†	90.000	359.447	8932.00	690.97	690.93	-6.66	736376.53	388958.17	32°04'03.942"N	103°42'13.295"W	0.00	
9600.00†	90.000	359.447	8932.00	790.97	790.93	-7.63	736375.56	389058.16	32°04'04.931"N	103°42'13.299"W	0.00	
9700.00†	90.000	359.447	8932.00	890.97	890.93	-8.59	736374.60	389158.15	32°04'05.921"N	103°42'13.304"W	0.00	
9800.00†	90.000	359.447	8932.00	990.97	990.92	-9.56	736373.63	389258.14	32°04'06.910"N	103°42'13.308"W	0.00	
9900.00†	90.000	359.447	8932.00	1090.97	1090.92	-10.52	736372.67	389358.13	32°04'07.900"N	103°42'13.313"W	0.00	
10000.00†	90.000	359.447	8932.00	1190.97	1190.91	-11.48	736371.71	389458.12	32°04'08.890"N	103°42'13.317"W	0.00	
10100.00†	90.000	359.447	8932.00	1290.97	1290.91	-12.45	736370.74	389558.11	32°04'09.879"N	103°42'13.321"W	0.00	
10200.00†	90.000	359.447	8932.00	1390.97	1390.90	-13.41	736369.78	389658.10	32°04'10.869"N	103°42'13.326"W	0.00	
10300.00†	90.000	359.447	8932.00	1490.97	1490.90	-14.38	736368.81	389758.09	32°04'11.858"N	103°42'13.330"W	0.00	
10400.00†	90.000	359.447	8932.00	1590.97	1590.89	-15.34	736367.85	389858.08	32°04'12.848"N	103°42'13.335"W	0.00	
10500.00†	90.000	359.447	8932.00	1690.97	1690.89	-16.31	736366.88	389958.07	32°04'13.837"N	103°42'13.339"W	0.00	
10600.00†	90.000	359.447	8932.00	1790.97	1790.88	-17.27	736365.92	390058.07	32°04'14.827"N	103°42'13.344"W	0.00	
10700.00†	90.000	359.447	8932.00	1890.97	1890.88	-18.24	736364.96	390158.06	32°04'15.816"N	103°42'13.348"W	0.00	
10800.00†	90.000	359.447	8932.00	1990.97	1990.87	-19.20	736363.99	390258.05	32°04'16.806"N	103°42'13.352"W	0.00	
10900.00†	90.000	359.447	8932.00	2090.97	2090.87	-20.16	736363.03	390358.04	32°04'17.795"N	103°42'13.357"W	0.00	
11000.00†	90.000	359.447	8932.00	2190.97	2190.86	-21.13	736362.06	390458.03	32°04'18.785"N	103°42'13.361"W	0.00	
11100.00†	90.000	359.447	8932.00	2290.97	2290.86	-22.09	736361.10	390558.02	32°04'19.774"N	103°42'13.366"W	0.00	
11200.00†	90.000	359.447	8932.00	2390.97	2390.86	-23.06	736360.13	390658.01	32°04'20.764"N	103°42'13.370"W	0.00	
11300.00†	90.000	359.447	8932.00	2490.97	2490.85	-24.02	736359.17	390758.00	32°04'21.753"N	103°42'13.375"W	0.00	
11400.00†	90.000	359.447	8932.00	2590.97	2590.85	-24.99	736358.21	390857.99	32°04'22.743"N	103°42'13.379"W	0.00	
11500.00†	90.000	359.447	8932.00	2690.97	2690.84	-25.95	736357.24	390957.98	32°04'23.733"N	103°42'13.383"W	0.00	
11600.00†	90.000	359.447	8932.00	2790.97	2790.84	-26.91	736356.28	391057.97	32°04'24.722"N	103°42'13.388"W	0.00	
11700.00†	90.000	359.447	8932.00	2890.97	2890.83	-27.88	736355.31	391157.96	32°04'25.712"N	103°42'13.392"W	0.00	
11800.00†	90.000	359.447	8932.00	2990.97	2990.83	-28.84	736354.35	391257.95	32°04'26.701"N	103°42'13.397"W	0.00	
11900.00†	90.000	359.447	8932.00	3090.97	3090.82	-29.81	736353.38	391357.94	32°04'27.691"N	103°42'13.401"W	0.00	
12000.00†	90.000	359.447	8932.00	3190.97	3190.82	-30.77	736352.42	391457.93	32°04'28.680"N	103°42'13.406"W	0.00	
12100.00†	90.000	359.447	8932.00	3290.97	3290.81	-31.74	736351.46	391557.92	32°04'29.670"N	103°42'13.410"W	0.00	
12200.00†	90.000	359.447	8932.00	3390.97	3390.81	-32.70	736350.49	391657.91	32°04'30.659"N	103°42'13.414"W	0.00	
12300.00†	90.000	359.447	8932.00	3490.97	3490.80	-33.66	736349.53	391757.90	32°04'31.649"N	103°42'13.419"W	0.00	
12400.00†	90.000	359.447	8932.00	3590.97	3590.80	-34.63	736348.56	391857.89	32°04'32.638"N	103°42'13.423"W	0.00	
12500.00†	90.000	359.447	8932.00	3690.97	3690.80	-35.59	736347.60	391957.88	32°04'33.628"N	103°42'13.428"W	0.00	
12600.00†	90.000	359.447	8932.00	3790.97	3790.79	-36.56	736346.63	392057.87	32°04'34.617"N	103°42'13.432"W	0.00	
12700.00†	90.000	359.447	8932.00	3890.97	3890.79	-37.52	736345.67	392157.86	32°04'35.607"N	103°42'13.436"W	0.00	
12800.00†	90.000	359.447	8932.00	3990.97	3990.78	-38.49	736344.71	392257.85	32°04'36.596"N	103°42'13.441"W	0.00	



Planned Wellpath Report

Prelim_1

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 4H SHL
Area	Lea County, NM	Well	No. 4H
Field	(Hallertau) Sec5, T26S, R32E	Wellbore	No. 4H PWB
Facility	Hallertau 5 Federal No. 4H		

WELLPATH DATA (142 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
12900.00†	90.000	359.447	8932.00	4090.97	4090.78	-39.45	736343.74	392357.84	32°04'37.586"N	103°42'13.445"W	0.00	
13000.00†	90.000	359.447	8932.00	4190.97	4190.77	-40.41	736342.78	392457.84	32°04'38.575"N	103°42'13.450"W	0.00	
13100.00†	90.000	359.447	8932.00	4290.97	4290.77	-41.38	736341.81	392557.83	32°04'39.565"N	103°42'13.454"W	0.00	
13200.00†	90.000	359.447	8932.00	4390.97	4390.76	-42.34	736340.85	392657.82	32°04'40.555"N	103°42'13.459"W	0.00	
13300.00†	90.000	359.447	8932.00	4490.97	4490.76	-43.31	736339.88	392757.81	32°04'41.544"N	103°42'13.463"W	0.00	
13400.00†	90.000	359.447	8932.00	4590.97	4590.75	-44.27	736338.92	392857.80	32°04'42.534"N	103°42'13.467"W	0.00	
13471.28	90.000	359.447	8932.00 ¹	4662.25	4662.03	-44.96	736338.23	392929.07	32°04'43.239"N	103°42'13.471"W	0.00	No. 4H PBHL

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	13471.28	8932.00	4662.03	-44.96	736338.23	392929.07	32°04'43.239"N	103°42'13.471"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	13471.28	NaviTrak (Standard)		No. 4H PWB

SR & A

HOBBS OCD

AUG 25 2011

RECEIVED

9-5/8"

Flowline

Fill Line 2"

5000# BOP

Pipe Rams

Blind Rams

Drilling Spool

Kill Line

2"

2-9/16"

4"

Choke Manifold

4"

Wellhead Assembly

13 5/8" 5000# psi x 9" 3000# psi
Wellhead Assembly

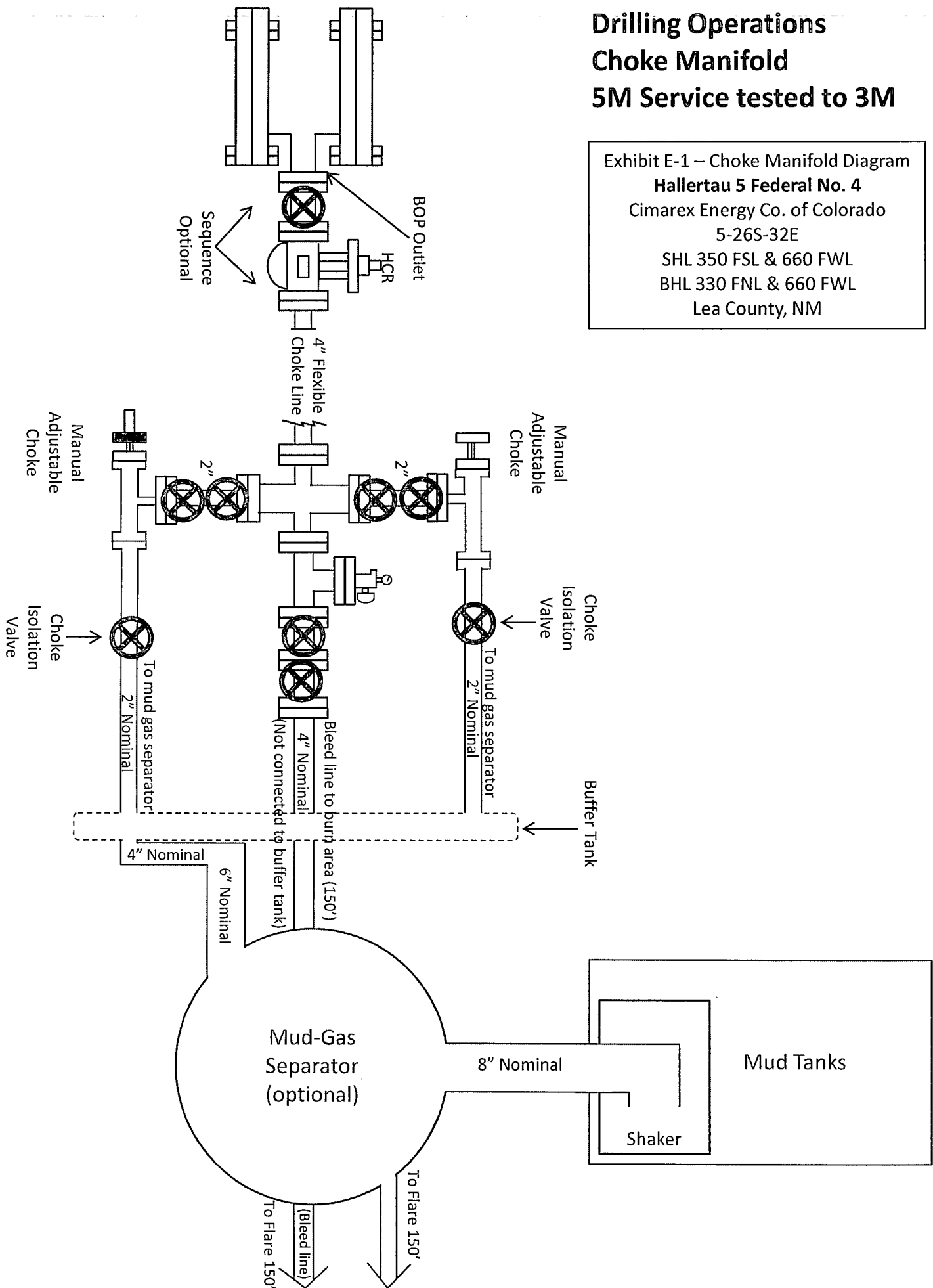
13 5/8" 5000# psi

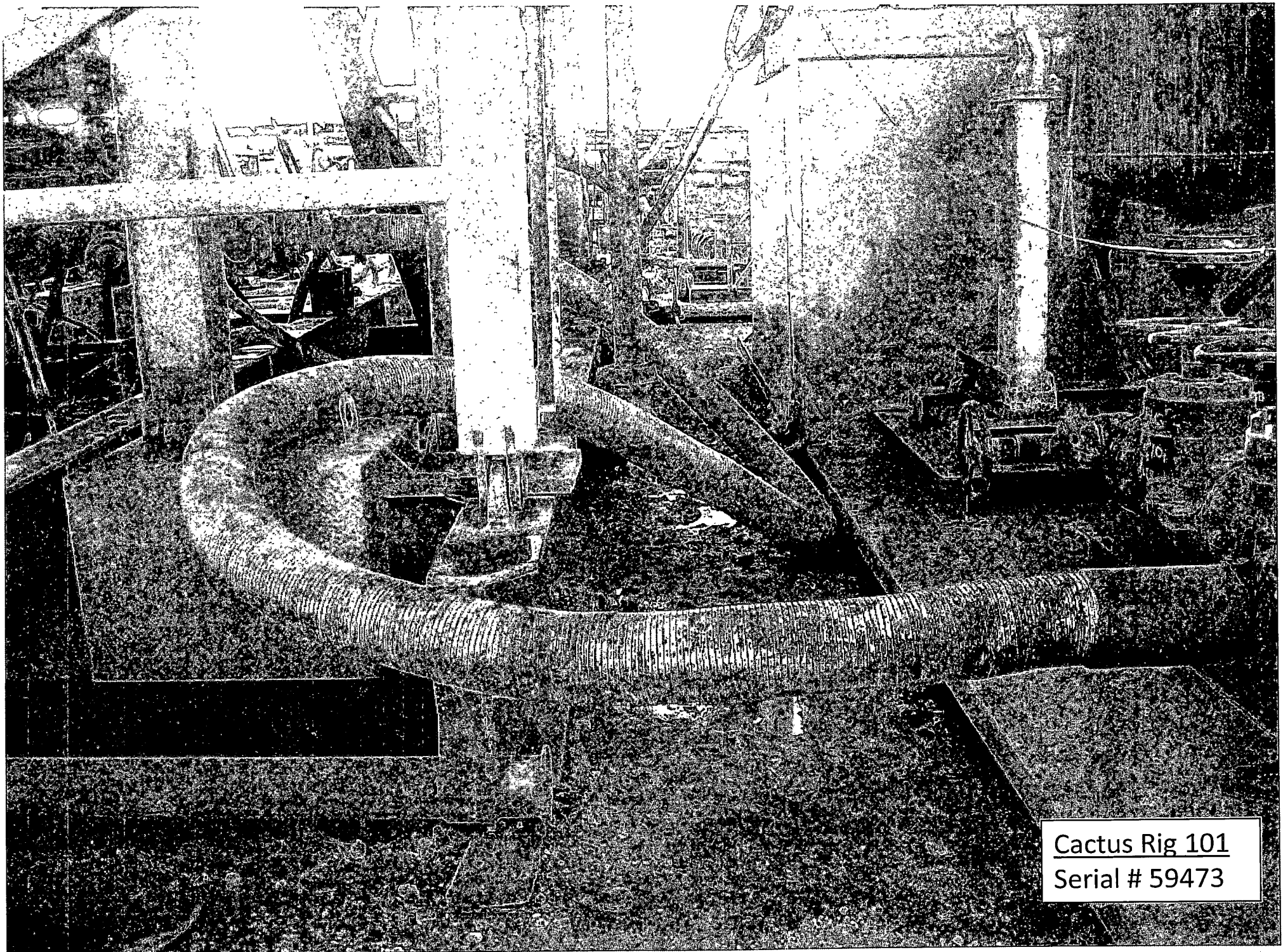
Slip-on Casing Head

Exhibit E – 5000# BOP tested to 3000#
Hallertau 5 Federal No. 4
Cimarex Energy Co. of Colorado
5-26S-32E
SHL 350 FSL & 660 FWL
BHL 330 FNL & 660 FWL
Lea County, NM

Drilling Operations
Choke Manifold
5M Service tested to 3M

Exhibit E-1 – Choke Manifold Diagram
Hallertau 5 Federal No. 4
Cimarex Energy Co. of Colorado
5-26S-32E
SHL 350 FSL & 660 FWL
BHL 330 FNL & 660 FWL
Lea County, NM





Cactus Rig 101
Serial # 59473

HOBBS OCD

AUG 25 2011

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M I D W E S T**HOSE AND SPECIALTY INC.**

INTERNAL HYDROSTATIC TEST REPORT			
Customer: CACTUS		P.O. Number: Rig#101 Asset#M5358	
HOSE SPECIFICATIONS			
Type: CHOKER LINE		Length: 35'	
I.D. 4" INCHES		O.D. 8" INCHES	
WORKING PRESSURE 10,000 PSI	TEST PRESSURE 15,000 PSI		BURST PRESSURE PSI
COUPLINGS			
Type of End Fitting 4 1/16 10K FLANGE			
Type of Coupling: SWEDGED		MANUFACTURED BY MIDWEST HOSE & SPECIALTY	
PROCEDURE			
<i>Hose assembly pressure tested with water at ambient temperature.</i>			
TIME HELD AT TEST PRESSURE 15 MIN.		ACTUAL BURST PRESSURE: 0 PSI	
COMMENTS: s/n#59473 Asset#M5358 Hose is covered with stainless steel armour cover and wrapped with fire resistant vermiculite coated fiberglass insulation rated for 1500 degrees complete with lifting eyes			
Date: 5/19/2010	Tested By: BOBBY FINK		Approved: MENDI JACKSON



Midwest Hose
& Specialty, Inc.

HOBBS OCD

AUG 25 2011

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Specification Sheet Choke & Kill Hose

The Midwest Hose & Specialty Choke & Kill hose is manufactured with only premium components. The reinforcement cables, inner liner and cover are made of the highest quality material to handle the tough drilling applications of today's industry. The end connections are available with API flanges, API male threads, hubs, hammer unions or other special fittings upon request. Hose assembly is manufactured to API 7K. This assembly is wrapped with fire resistant vermiculite coated fiberglass insulation, rated at 2000 degrees with stainless steel armor cover.

Working Pressure:	5,000 or 10,000 psi working pressure
Test Pressure:	10,000 or 15,000 psi test pressure
Reinforcement:	Multiple steel cables
Cover:	Stainless Steel Armor
Inner Tube:	Petroleum resistant, Abrasion resistant
End Fitting:	API flanges, API male threads, threaded or butt weld hammer unions, unbolt and other special connections
Maximum Length:	110 Feet
ID:	2-1/2", 3", 3-1/2", 4"
Operating Temperature:	-22 deg F to +180 deg F (-30 deg C to +82 deg C)

Cactus 101

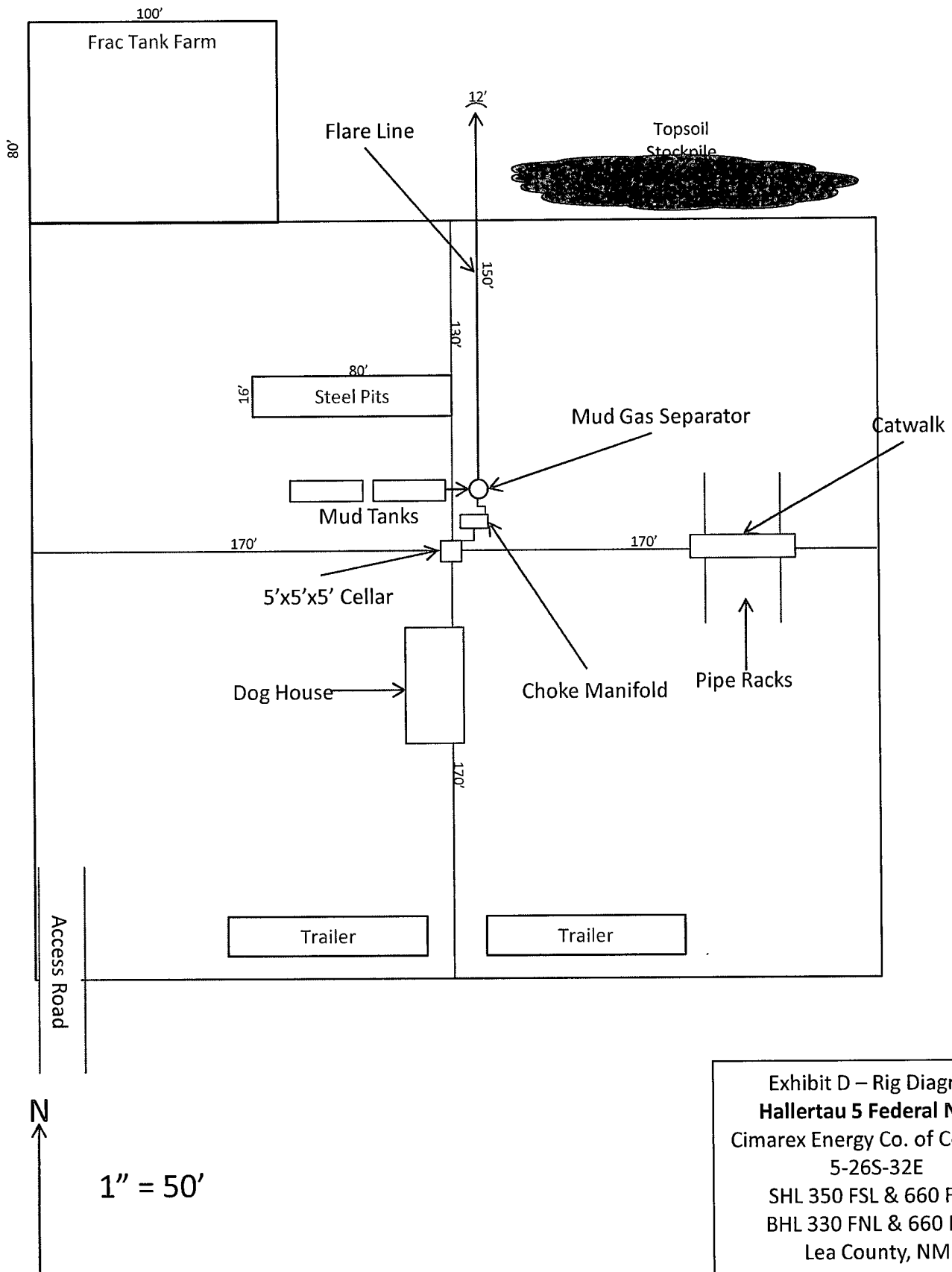


Exhibit D – Rig Diagram
Hallertau 5 Federal No. 4
Cimarex Energy Co. of Colorado
5-26S-32E
SHL 350 FSL & 660 FWL
BHL 330 FNL & 660 FWL
Lea County, NM