

OCD-HOBBS

Form 3160-3
(April 2004)

HOBBS OCD

SEP 20 2012

RECEIVED

FORM APPROVED
OMB No. 1004-0137
Expires March 31, 2007UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a Type of Work ☒ DRILL ☐ REENTER		5 Lease Serial No NMNM127894	
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.		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 Diamondtail 23 Federal No. 3 #39458	
3b Phone No (include area code) 432-571-7800		9 API Well No 30-025-40769	
4 Location of Well (Report location clearly and in accordance with any State requirements *) At Surface 330 FNL & 1805 FWL Unit C At proposed prod Zone 330 FSL & 1650 FWL Unit N Horizontal Bone Spring test		10 Field and Pool, or Exploratory Diamondtail; Bone Spring 176 44	
14 Distance in miles and direction from nearest town or post office*		11 Sec, T R M or Blk and Survey or Area 23-23S-32E	
15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drg unit line if any) 330'		12 County or Parish Lea	
16 No of acres in lease 640		13 State NM	
17 Spacing Unit dedicated to this well E2W2 160 acres			
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft 150'		19 Proposed Depth Pilot Hole 11250'	
20 BLM/BIA Bond No on File NM-2575			
21 Elevations (Show whether DF, KDB, RT, GL, etc) 3711' GR		22 Approximate date work will start* 06 30.12	
23 Estimated duration 30-35 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 04.16.12
------------------------------------	-------------------------------------	------------------

Title

Manager Operations Administration

Approved By (Signature) <i>/s/ Don Peterson</i>	Name (Printed/Typed) <i>/s/ Don Peterson</i>	Date
Title <i>FIELD MANAGER</i>	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

Approval Subject to General Requirements
& Special Stipulations AttachedSEE ATTACHED FOR
CONDITIONS OF APPROVAL

SEP 25 2012

Application to Drill
Diamondtail 23 Federal 3
 Cimarex Energy Co.
 Unit C, Section 23
 T23S-R32E; Lea County, NM

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

- 1 Location: SHL 330 FNL & 1805 FWL
 BHL 330 FSL & 1650 FWL

- 2 Elevation above sea level: 3711 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 15421 TVD 10920 Pilot Hole 11250'

- 6 Estimated tops of geological markers:

Rustler	1200
T. Salt	1520
Castille	3590
B. Salt	4680
Delaware	4980
Basal Brushy Canyon	8470
Bone Spring	8750
Avalon Shale	9430
1st Bone Spring	9930
2nd Bone Spring	10625
3rd Bone Spring	11100

- 7 Possible mineral bearing formation:

Bone Spring	Oil
Avalon Shale	Oil

- 8 Proposed Mud Circulating System:

Depth	Mud Wt	Visc	Fluid Loss	Type Mud
0' to 1225' 1325'	8.4 - 8.6	28	NC	FW
1225' to 4900'	10.0	30-32	NC	Brine water
4900' to 15421'	8.4	30-32	NC	2% KCL

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

Proposed Drilling Plan

Drill 8¾" pilot hole to 11250 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 from 11250 to 10634. Set whipstock and kick off 8¾" lateral @ 10634 and drill to TD @ 15421 MD, 10920 TVD. Run 5½" 17# P-110 LTC from 0-15421 and cement.

Application to Drill
Diamondtail 23 Federal 3
 Cimarex Energy Co
 Unit C, Section 23
 T23S-R32E, Lea County, NM

See COA

9 Casing & Cementing Program

String	Hole Size	Depth	Casing OD	Weight	Collar	Grade
Surface	17 1/2"	0' to 1225'	New 13 3/8"	48#	STC	H-40
Intermediate	12 1/4"	0' to 4900'	New 9 5/8"	40#	LTC	J-55
Production	7 7/8" or 8 3/4"	0' to 15421'	New 5 1/2"	17#	LTC	P-110

10 Cementing

Surface Lead 810 SKS Class C + Bentonite + Calcium Chloride + LCM MW 13.5 ppg, Yield 1.75
 Tail 200 SKS Class C + LCM MW 14.8 ppg, Yield 1.34
 85% Excess **TOC Surface Centralizers per Onshorder 2.III.B.1.f**

Intermediate Lead 1555 SKS 35 65 (POZ C) + Slat + Bentonite + LCM + retarder MW 12.9 ppg, Yield 1.88
 Tail 235 SKS Class C + retarder + LCM. MW 14.8 ppg, yield 1.32
 60% Excess **TOC Surface**

Production Lead 835 SKS 36 65 (POZ H) + Salt + Sodium Metasilicate + Bentonite + Fluid loss + Dispersant + LCM + Retarder MW 11.9 ppg, Yield 2.4
 Tail 1385 SKS 50 50 (POZ H) + Bentonite + Salt + Fluid loss + Dispersant + LCM + Retarder MW 14.5 ppg, Yield 1.24 **Cement volumes will be adjusted depending on hole size.**
 25% Excess **TOC 3600'**
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 475' according to the State Engineer Fresh water zones will be protected by setting 13 3/8" casing at 1245' and cementing to surface and 9 5/8" casing at 4900' and cementing to surface Hydrocarbon zones will be protected by setting 5 1/2" casing at 14179' and cementing to 3600'

Collapse Factor Burst Factor Tension Factor
 1.125 1.125 1.6

11 Pressure control Equipment

Exhibit "E" A 13 3/8" 5000 PSI working pressure B.O.P. consisting of one set of blind rams and one set of pipe rams and a 5000# annular type preventer A choke manifold and 120 gallon accumulator with floor and remote operating stations and auxiliary power system Rotating head below 4900' 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 available if 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 surface pipe through the running of production casing, the well will be equipped with a 5000 psi BOP system

Before drilling out of the surface pipe BOP's will be tested to 250 psi low and 3000 psi high by an independent service company Hydril will be tested to 250 psi low and 1500 psi high Before drilling out of the intermediate pipe BOP's will be tested by an independent service company to 250 psi low and 5000 psi high Hydril will be tested to 250 psi low and 2500 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

Application to Drill
Diamondtail 23 Federal 3
Cimarex Energy Co.
Unit C, Section 23
T23S-R32E; Lea County, NM

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

- A. Mud logging program: 2 man unit from 4900 to TD
- B. Electric logging program: CNL / LDT / CAL / GR, DLL / CAL / GR Surface to TD
- 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 **5062 psi** Estimated BHT **138°**

14 Road and location construction will begin after BLM approval of APD. Anticipated spud date as soon as approved.

Drilling expected to take 30-35 days

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

15 Other Facets of Operations:

After running casing, cased hole gamma ray neutron collar logs will be run from total depth over possible pay intervals.

Bone Spring pay will be perforated and stimulated.

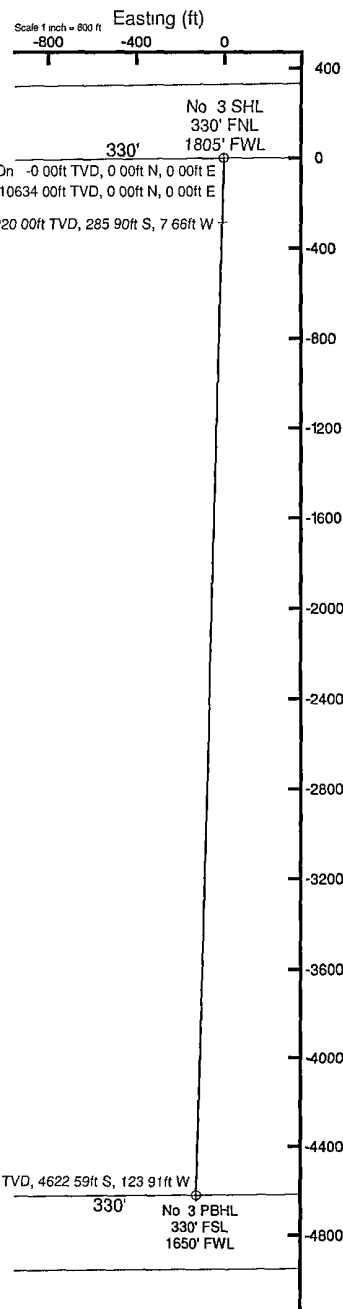
The proposed well will be tested and potentialized as **an oil well.**



Cimarex Energy Co.

Location Lea County, NM
Field (Diamondtail) Sec 23, T23S, R32E
Facility Diamondtail 23 Federal No. 3

Slot No. 3 SHL
Well No. 3
Wellbore No. 3 PWB

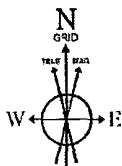


Well Profile Data

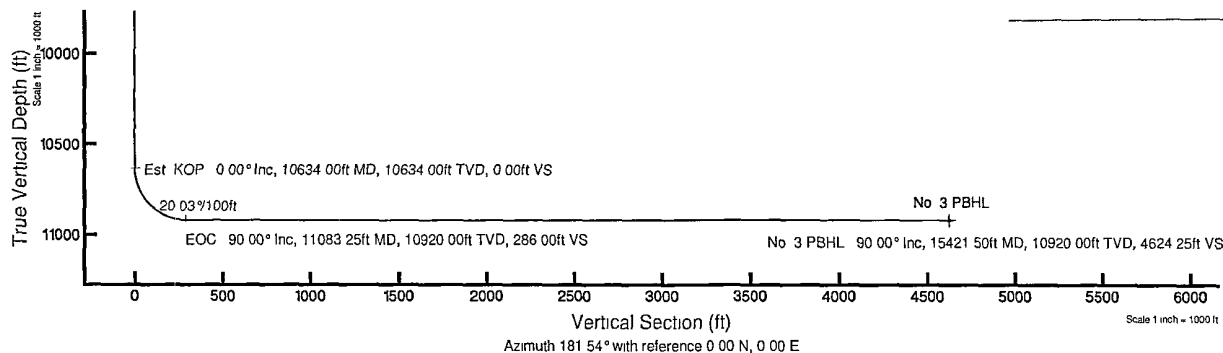
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	0.00	0.000	181.535	0.00	0.00	0.00	0.00	0.00
Est KOP	10634.00	0.000	181.535	10634.00	0.00	0.00	0.00	0.00
EOC	11083.25	90.000	181.535	10920.00	-285.90	-7.66	20.03	286.00
No. 3 PWB	15421.50	90.000	181.535	10920.00	-4622.59	-123.91	0.00	4624.25

Plot reference wellpath is Rev A.0

True vertical depths are referenced to Rig on No. 3 SHL (RT)	Gnd System NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet
Measured depths are referenced to Rig on No. 3 SHL (RT)	North Reference Gnd north
Rig on No. 3 SHL (RT) to Mean Sea Level 3711 feet	Scale True distance
Mean Sea Level to Mud line (At Slot No. 3 SHL) -3711 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by harkol on 3/28/2012



BGGM (1945.0 to 2013.0) Dip 60.19° Field 48576.1 nT
Magnetic North is 7.61 degrees East of True North (at 3/28/2012)
Gnd North is 0.37 degrees East of True North
To correct azimuth from True to Gnd subtract 0.37 degrees
To correct azimuth from Magnetic to Gnd add 7.24 degrees
For example if the Magnetic North Azimuth = 90 degs, then the Gnd North Azimuth = 90 + 7.24 = 97.24





Planned Wellpath Report

Rev-A.0
Page n of nn



REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 3 SHL
Area	Lea County, NM	Well	No. 3
Field	(Diamondtail) Sec 23, T23S, R32E	Wellbore	No. 3 PWB
Facility	Diamondtail 23 Federal No. 3		

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	Harrkol
Scale	0.99996	Report Generated	3/28/2012 at 3:52:06 PM
Convergence at slot	0.37° East	Database/Source file	WA Midland/No._3_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	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W
Facility Reference Pt			753067.10	472297.00	32°17'47.610"N	103°38'53.162"W
Field Reference Pt			753067.10	472297.00	32°17'47.610"N	103°38'53.162"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Rig on No. 3 SHL (RT) to Facility Vertical Datum	0.00ft
Horizontal Reference Pt	Slot	Rig on No. 3 SHL (RT) to Mean Sea Level	3711.00ft
Vertical Reference Pt	Rig on No. 3 SHL (RT)	Rig on No. 3 SHL (RT) to Mud Line at Slot (No. 3 SHL)	0.00ft
MD Reference Pt	Rig on No. 3 SHL (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	181.54°



Planned Wellpath Report

 Rev-A.0
 Page n of nn


REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 3 SHL
Area	Lea County, NM	Well	No. 3
Field	(Diamondtail) Sec 23, T23S, R32E	Wellbore	No. 3 PWB
Facility	Diamondtail 23 Federal No. 3		

WELLPATH DATA (167 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	181.535	0 00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	Tie On
100 00†	0.000	181.535	100.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	
200 00†	0.000	181.535	200.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	
300 00†	0.000	181.535	300.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	
400 00†	0.000	181.535	400.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	
500 00†	0.000	181.535	500.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	
600 00†	0.000	181.535	600.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	
700 00†	0.000	181.535	700.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	
800 00†	0.000	181.535	800.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	
900 00†	0.000	181.535	900.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	
1000 00†	0.000	181.535	1000.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	
1100 00†	0.000	181.535	1100.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	
1200 00†	0.000	181.535	1200.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	Rustler
1300 00†	0.000	181.535	1300.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	
1400 00†	0.000	181.535	1400.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	
1500 00†	0.000	181.535	1500.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	
1520 00†	0.000	181.535	1520.00	0.00	0 00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0 00	Salt
1600 00†	0.000	181.535	1600.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	
1700 00†	0.000	181.535	1700.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	
1800 00†	0.000	181.535	1800.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	
1900 00†	0.000	181.535	1900.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	
2000 00†	0.000	181.535	2000.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	
2100 00†	0.000	181.535	2100.00	0.00	0 00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0 00	
2200 00†	0.000	181.535	2200.00	0.00	0 00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0 00	
2300 00†	0.000	181.535	2300.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	
2400 00†	0.000	181.535	2400.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	
2500 00†	0.000	181.535	2500.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	
2600 00†	0.000	181.535	2600.00	0.00	0 00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0 00	
2700 00†	0.000	181.535	2700.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	
2800 00†	0.000	181.535	2800.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	
2900 00†	0.000	181.535	2900.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	
3000 00†	0.000	181.535	3000.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	
3100 00†	0.000	181.535	3100.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	
3200 00†	0.000	181.535	3200.00	0.00	0 00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0 00	
3300 00†	0.000	181.535	3300.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	
3400 00†	0.000	181.535	3400.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	
3500 00†	0.000	181.535	3500.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	
3590 00†	0.000	181.535	3590.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	Castille
3600 00†	0.000	181.535	3600.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	
3700 00†	0.000	181.535	3700.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	
3800 00†	0.000	181.535	3800.00	0.00	0 00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0 00	
3900 00†	0.000	181.535	3900.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	
4000 00†	0.000	181.535	4000.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	
4100 00†	0.000	181.535	4100.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	
4200 00†	0.000	181.535	4200.00	0.00	0 00	0.00	753067.10	472297 00	32°17'47.610"N	103°38'53.162"W	0 00	



Planned Wellpath Report

 Rev-A.0
 Page n of nn


REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 3 SHL
Area	Lea County, NM	Well	No. 3
Field	(Diamondtail) Sec 23, T23S, R32E	Wellbore	No. 3 PWB
Facility	Diamondtail 23 Federal No. 3		

WELLPATH DATA (167 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
4300.00†	0.000	181.535	4300.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
4400.00†	0.000	181.535	4400.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
4500.00†	0.000	181.535	4500.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
4600.00†	0.000	181.535	4600.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
4680.00†	0.000	181.535	4680.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	Base last salt
4700.00†	0.000	181.535	4700.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
4800.00†	0.000	181.535	4800.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
4900.00†	0.000	181.535	4900.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
4980.00†	0.000	181.535	4980.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	Delaware Sands
5000.00†	0.000	181.535	5000.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
5100.00†	0.000	181.535	5100.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
5200.00†	0.000	181.535	5200.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
5300.00†	0.000	181.535	5300.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
5400.00†	0.000	181.535	5400.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
5500.00†	0.000	181.535	5500.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
5600.00†	0.000	181.535	5600.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
5700.00†	0.000	181.535	5700.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
5800.00†	0.000	181.535	5800.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
5900.00†	0.000	181.535	5900.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
6000.00†	0.000	181.535	6000.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
6100.00†	0.000	181.535	6100.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
6200.00†	0.000	181.535	6200.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
6300.00†	0.000	181.535	6300.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
6400.00†	0.000	181.535	6400.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
6500.00†	0.000	181.535	6500.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
6600.00†	0.000	181.535	6600.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
6700.00†	0.000	181.535	6700.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
6800.00†	0.000	181.535	6800.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
6900.00†	0.000	181.535	6900.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
7000.00†	0.000	181.535	7000.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
7100.00†	0.000	181.535	7100.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
7200.00†	0.000	181.535	7200.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
7300.00†	0.000	181.535	7300.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
7400.00†	0.000	181.535	7400.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
7500.00†	0.000	181.535	7500.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
7600.00†	0.000	181.535	7600.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
7700.00†	0.000	181.535	7700.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
7800.00†	0.000	181.535	7800.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
7900.00†	0.000	181.535	7900.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
8000.00†	0.000	181.535	8000.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
8100.00†	0.000	181.535	8100.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
8200.00†	0.000	181.535	8200.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
8300.00†	0.000	181.535	8300.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
8400.00†	0.000	181.535	8400.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
8470.00†	0.000	181.535	8470.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	Basal Brushy Canyon



Planned Wellpath Report

 Rev-A.0
 Page n of nn


REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 3 SHL
Area	Lea County, NM	Well	No. 3
Field	(Diamondtail) Sec 23, T23S, R32E	Wellbore	No. 3 PWB
Facility	Diamondtail 23 Federal No. 3		

WELLPATH DATA (167 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
8500.00†	0.000	181.535	8500.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
8600.00†	0.000	181.535	8600.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
8700.00†	0.000	181.535	8700.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
8750.00†	0.000	181.535	8750.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	Bone Spring
8800.00†	0.000	181.535	8800.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
8900.00†	0.000	181.535	8900.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
9000.00†	0.000	181.535	9000.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
9100.00†	0.000	181.535	9100.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
9200.00†	0.000	181.535	9200.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
9300.00†	0.000	181.535	9300.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
9400.00†	0.000	181.535	9400.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
9430.00†	0.000	181.535	9430.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	Avalon Shale
9500.00†	0.000	181.535	9500.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
9600.00†	0.000	181.535	9600.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
9700.00†	0.000	181.535	9700.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
9800.00†	0.000	181.535	9800.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
9900.00†	0.000	181.535	9900.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
9930.00†	0.000	181.535	9930.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	1st BSS
10000.00†	0.000	181.535	10000.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
10100.00†	0.000	181.535	10100.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
10200.00†	0.000	181.535	10200.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
10300.00†	0.000	181.535	10300.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
10400.00†	0.000	181.535	10400.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
10500.00†	0.000	181.535	10500.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
10600.00†	0.000	181.535	10600.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	
10625.00†	0.000	181.535	10625.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	2nd BSS
10634.00	0.000	181.535	10634.00	0.00	0.00	0.00	753067.10	472297.00	32°17'47.610"N	103°38'53.162"W	0.00	Est. KOP
10700.00†	13.222	181.535	10699.42	7.58	-7.58	-0.20	753066.90	472289.42	32°17'47.535"N	103°38'53.165"W	20.03	
10800.00†	33.256	181.535	10790.84	46.84	-46.82	-1.25	753065.85	472250.18	32°17'47.147"N	103°38'53.180"W	20.03	
10900.00†	53.289	181.535	10863.28	115.04	-114.99	-3.08	753064.02	472182.01	32°17'46.472"N	103°38'53.207"W	20.03	
11000.00†	73.323	181.535	10907.97	203.92	-203.85	-5.46	753061.64	472093.16	32°17'45.593"N	103°38'53.241"W	20.03	
11083.25	90.000	181.535	10920.00	286.00	-285.90	-7.66	753059.44	472011.11	32°17'44.781"N	103°38'53.273"W	20.03	EOC
11100.00†	90.000	181.535	10920.00	302.75	-302.64	-8.11	753058.99	471994.37	32°17'44.616"N	103°38'53.279"W	0.00	
11200.00†	90.000	181.535	10920.00	402.75	-402.61	-10.79	753056.31	471894.41	32°17'43.627"N	103°38'53.318"W	0.00	
11300.00†	90.000	181.535	10920.00	502.75	-502.57	-13.47	753053.63	471794.45	32°17'42.638"N	103°38'53.357"W	0.00	
11400.00†	90.000	181.535	10920.00	602.75	-602.54	-16.15	753050.95	471694.49	32°17'41.649"N	103°38'53.395"W	0.00	
11500.00†	90.000	181.535	10920.00	702.75	-702.50	-18.83	753048.27	471594.53	32°17'40.660"N	103°38'53.434"W	0.00	
11600.00†	90.000	181.535	10920.00	802.75	-802.46	-21.51	753045.59	471494.57	32°17'39.671"N	103°38'53.473"W	0.00	
11700.00†	90.000	181.535	10920.00	902.75	-902.43	-24.19	753042.91	471394.61	32°17'38.682"N	103°38'53.511"W	0.00	
11800.00†	90.000	181.535	10920.00	1002.75	-1002.39	-26.87	753040.23	471294.65	32°17'37.693"N	103°38'53.550"W	0.00	
11900.00†	90.000	181.535	10920.00	1102.75	-1102.36	-29.55	753037.55	471194.69	32°17'36.704"N	103°38'53.589"W	0.00	
12000.00†	90.000	181.535	10920.00	1202.75	-1202.32	-32.23	753034.87	471094.73	32°17'35.715"N	103°38'53.627"W	0.00	
12100.00†	90.000	181.535	10920.00	1302.75	-1302.28	-34.91	753032.19	470994.77	32°17'34.726"N	103°38'53.666"W	0.00	
12200.00†	90.000	181.535	10920.00	1402.75	-1402.25	-37.59	753029.52	470894.81	32°17'33.737"N	103°38'53.705"W	0.00	
12300.00†	90.000	181.535	10920.00	1502.75	-1502.21	-40.27	753026.84	470794.85	32°17'32.748"N	103°38'53.743"W	0.00	



Planned Wellpath Report

Rev-A.0
Page n of nn



REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 3 SHL
Area	Lea County, NM	Well	No. 3
Field	(Diamondtail) Sec 23, T23S, R32E	Wellbore	No. 3 PWB
Facility	Diamondtail 23 Federal No. 3		

WELLPATH DATA (167 stations) † = interpolated/extrapolated station												Comments
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	
12400.00†	90.000	181.535	10920.00	1602.75	-1602.18	-42.95	753024.16	470694.89	32°17'31.759"N	103°38'53.782"W	0.00	
12500.00†	90.000	181.535	10920.00	1702.75	-1702.14	-45.62	753021.48	470594.93	32°17'30.770"N	103°38'53.821"W	0.00	
12600.00†	90.000	181.535	10920.00	1802.75	-1802.10	-48.30	753018.80	470494.97	32°17'29.781"N	103°38'53.859"W	0.00	
12700.00†	90.000	181.535	10920.00	1902.75	-1902.07	-50.98	753016.12	470395.01	32°17'28.792"N	103°38'53.898"W	0.00	
12800.00†	90.000	181.535	10920.00	2002.75	-2002.03	-53.66	753013.44	470295.05	32°17'27.804"N	103°38'53.937"W	0.00	
12900.00†	90.000	181.535	10920.00	2102.75	-2102.00	-56.34	753010.76	470195.09	32°17'26.815"N	103°38'53.975"W	0.00	
13000.00†	90.000	181.535	10920.00	2202.75	-2201.96	-59.02	753008.08	470095.13	32°17'25.826"N	103°38'54.014"W	0.00	
13100.00†	90.000	181.535	10920.00	2302.75	-2301.93	-61.70	753005.40	469995.17	32°17'24.837"N	103°38'54.052"W	0.00	
13200.00†	90.000	181.535	10920.00	2402.75	-2401.89	-64.38	753002.72	469895.21	32°17'23.848"N	103°38'54.091"W	0.00	
13300.00†	90.000	181.535	10920.00	2502.75	-2501.85	-67.06	753000.04	469795.25	32°17'22.859"N	103°38'54.130"W	0.00	
13400.00†	90.000	181.535	10920.00	2602.75	-2601.82	-69.74	752997.36	469695.29	32°17'21.870"N	103°38'54.168"W	0.00	
13500.00†	90.000	181.535	10920.00	2702.75	-2701.78	-72.42	752994.68	469595.33	32°17'20.881"N	103°38'54.207"W	0.00	
13600.00†	90.000	181.535	10920.00	2802.75	-2801.75	-75.10	752992.00	469495.37	32°17'19.892"N	103°38'54.246"W	0.00	
13700.00†	90.000	181.535	10920.00	2902.75	-2901.71	-77.78	752989.33	469395.41	32°17'18.903"N	103°38'54.284"W	0.00	
13800.00†	90.000	181.535	10920.00	3002.75	-3001.67	-80.46	752986.65	469295.45	32°17'17.914"N	103°38'54.323"W	0.00	
13900.00†	90.000	181.535	10920.00	3102.75	-3101.64	-83.14	752983.97	469195.49	32°17'16.925"N	103°38'54.362"W	0.00	
14000.00†	90.000	181.535	10920.00	3202.75	-3201.60	-85.82	752981.29	469095.53	32°17'15.936"N	103°38'54.400"W	0.00	
14100.00†	90.000	181.535	10920.00	3302.75	-3301.57	-88.50	752978.61	468995.57	32°17'14.947"N	103°38'54.439"W	0.00	
14200.00†	90.000	181.535	10920.00	3402.75	-3401.53	-91.18	752975.93	468895.61	32°17'13.958"N	103°38'54.478"W	0.00	
14300.00†	90.000	181.535	10920.00	3502.75	-3501.49	-93.85	752973.25	468795.65	32°17'12.969"N	103°38'54.516"W	0.00	
14400.00†	90.000	181.535	10920.00	3602.75	-3601.46	-96.53	752970.57	468695.69	32°17'11.980"N	103°38'54.555"W	0.00	
14500.00†	90.000	181.535	10920.00	3702.75	-3701.42	-99.21	752967.89	468595.73	32°17'10.991"N	103°38'54.594"W	0.00	
14600.00†	90.000	181.535	10920.00	3802.75	-3801.39	-101.89	752965.21	468495.77	32°17'10.002"N	103°38'54.632"W	0.00	
14700.00†	90.000	181.535	10920.00	3902.75	-3901.35	-104.57	752962.53	468395.81	32°17'09.013"N	103°38'54.671"W	0.00	
14800.00†	90.000	181.535	10920.00	4002.75	-4001.32	-107.25	752959.85	468295.85	32°17'08.024"N	103°38'54.709"W	0.00	
14900.00†	90.000	181.535	10920.00	4102.75	-4101.28	-109.93	752957.17	468195.89	32°17'07.035"N	103°38'54.748"W	0.00	
15000.00†	90.000	181.535	10920.00	4202.75	-4201.24	-112.61	752954.49	468095.93	32°17'06.046"N	103°38'54.787"W	0.00	
15100.00†	90.000	181.535	10920.00	4302.75	-4301.21	-115.29	752951.81	467995.97	32°17'05.057"N	103°38'54.825"W	0.00	
15200.00†	90.000	181.535	10920.00	4402.75	-4401.17	-117.97	752949.13	467896.01	32°17'04.068"N	103°38'54.864"W	0.00	
15300.00†	90.000	181.535	10920.00	4502.75	-4501.14	-120.65	752946.46	467796.05	32°17'03.080"N	103°38'54.903"W	0.00	
15400.00†	90.000	181.535	10920.00	4602.75	-4601.10	-123.33	752943.78	467696.09	32°17'02.091"N	103°38'54.941"W	0.00	
15421.50	90.000	181.535	10920.00	4624.25	-4622.59	-123.91	752943.20	467674.60	32°17'01.878"N	103°38'54.950"W	0.00	No 3 PBHL



Planned Wellpath Report

Rev-A.0
Page n of nn



REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 3 SHL
Area	Lea County, NM	Well	No. 3
Field	(Diamondtail) Sec 23, T23S, R32E	Wellbore	No. 3 PWB
Facility	Diamondtail 23 Federal No. 3		

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
1) No. 3 PBHL	15421.50	10920.00	-4622.59	-123.91	752943.20	467674.60	32°17'01.878"N	103°38'54.950"W	point

SURVEY PROGRAM - Ref Wellbore: No. 3 PWB Ref Wellpath: Rev-A.0				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	15421.50	NaviTrak (Standard)		No. 3 PWB

SR & A

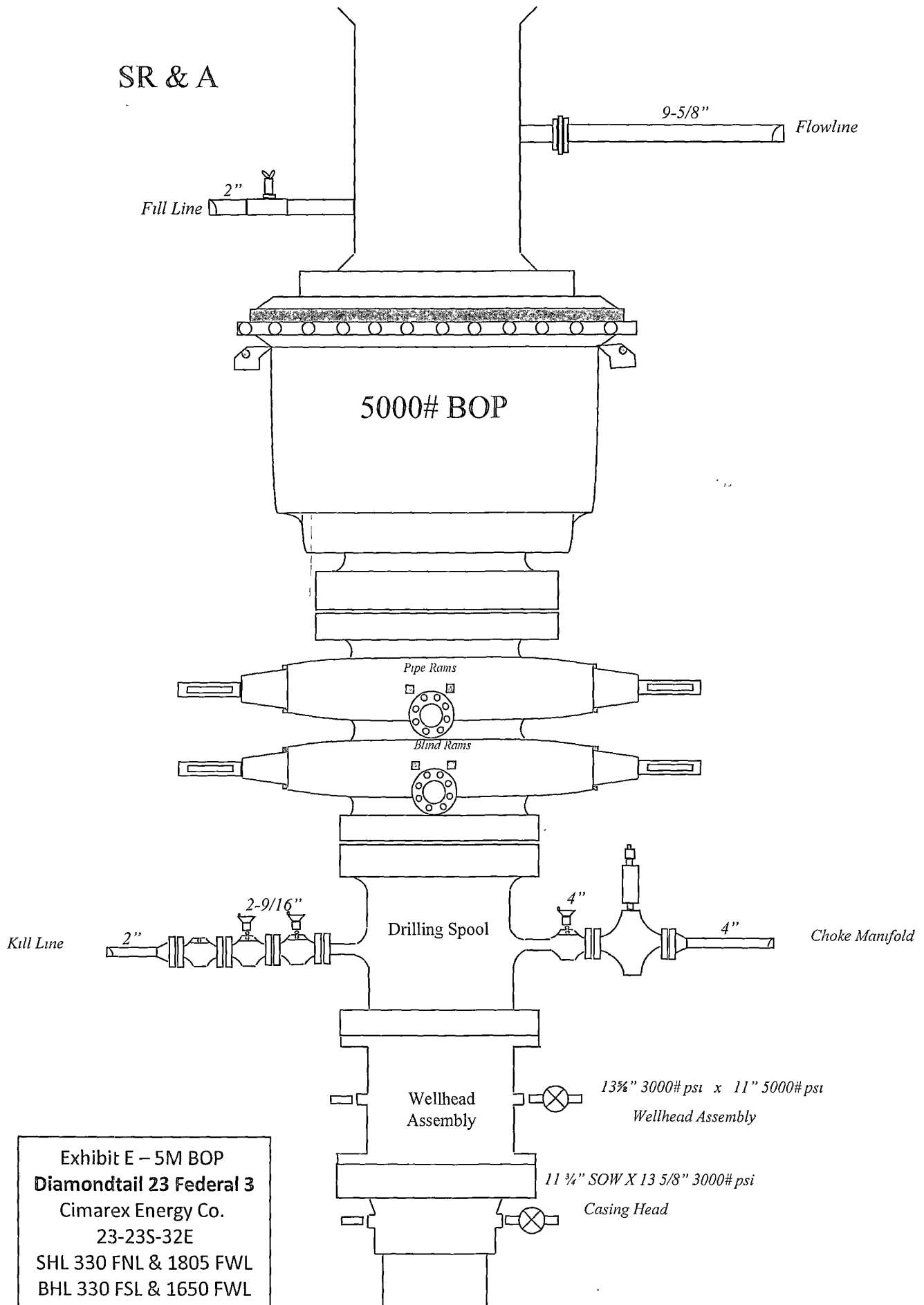
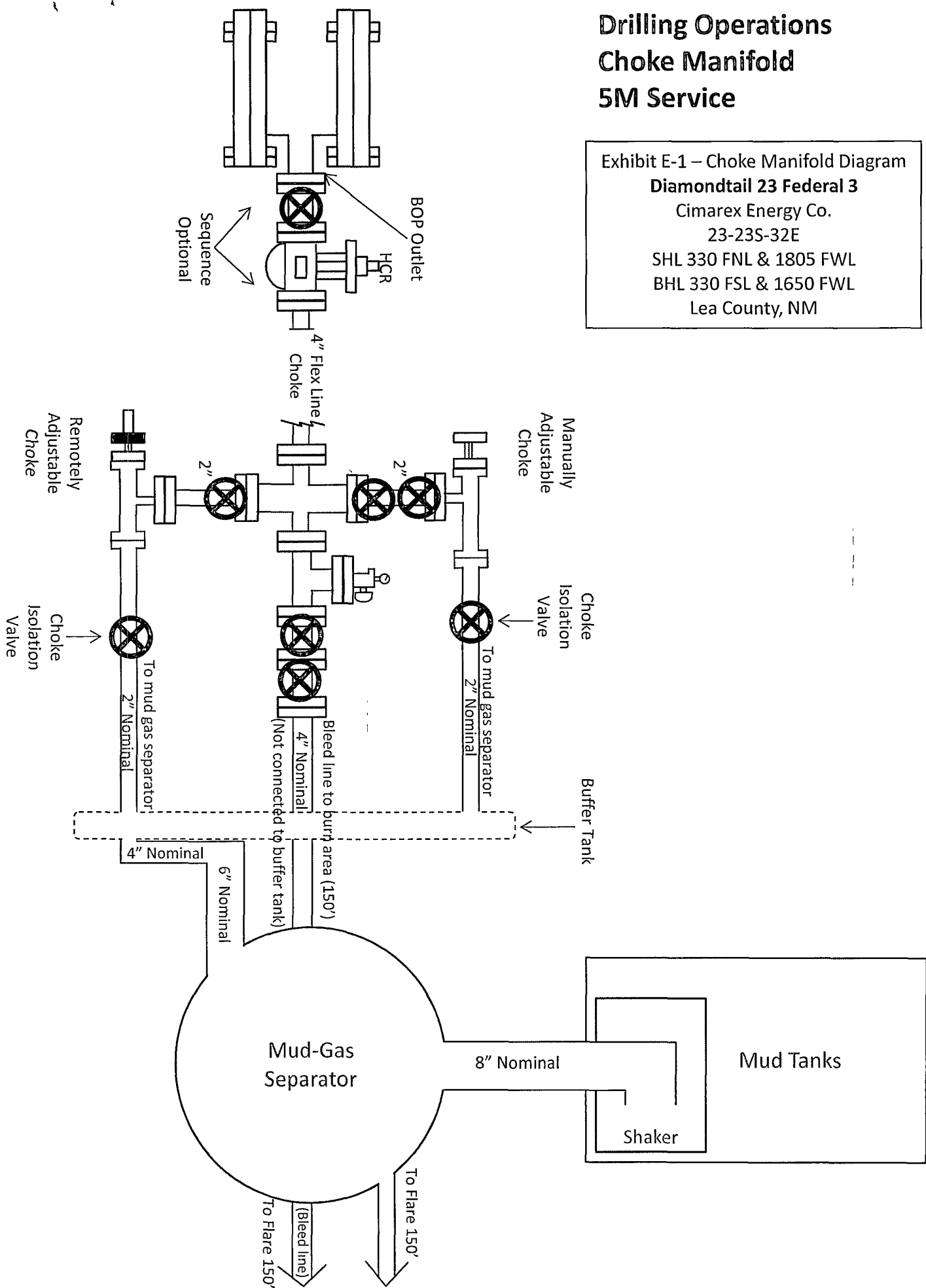
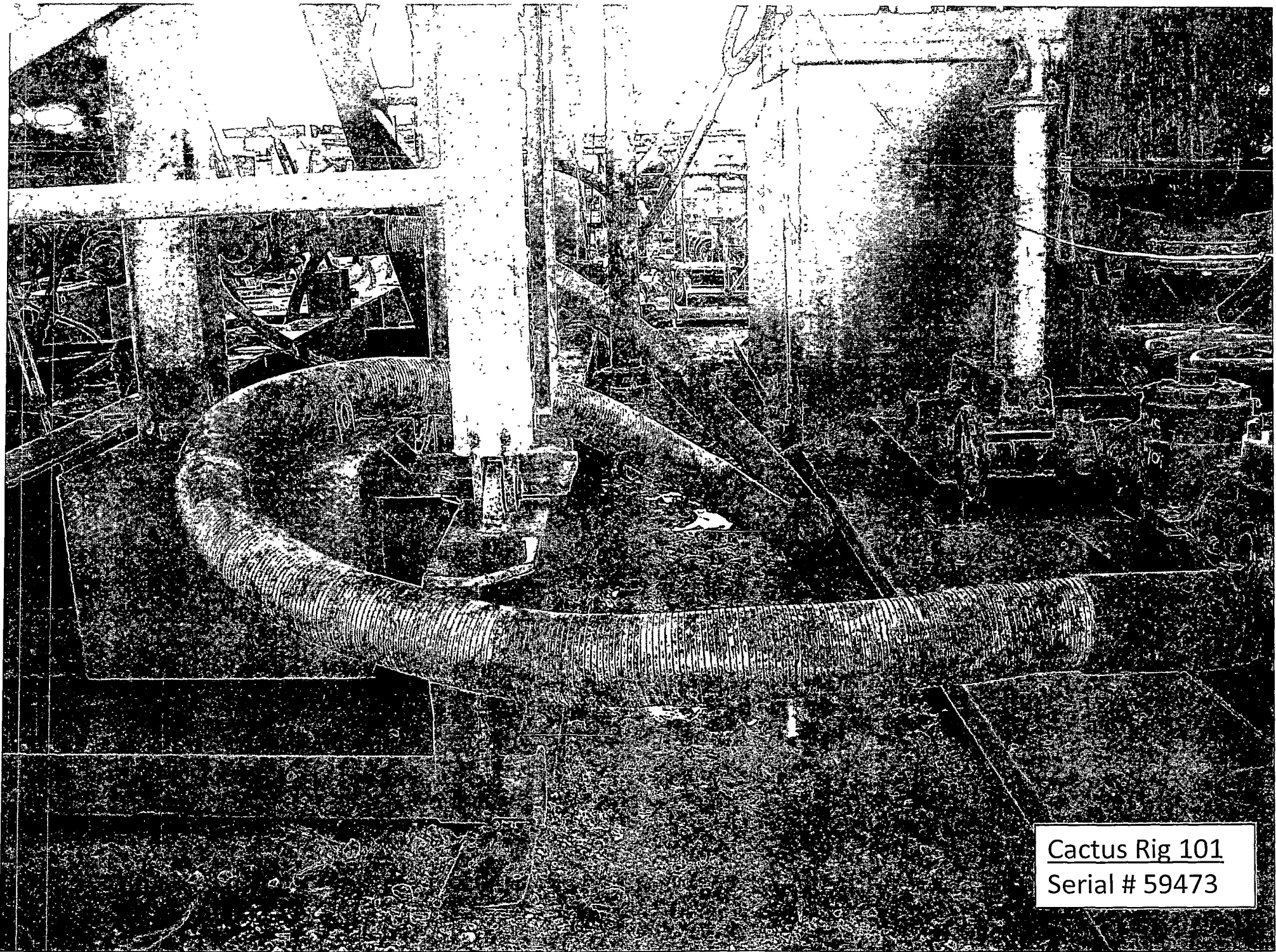


Exhibit E – 5M BOP
Diamondtail 23 Federal 3
Cimarex Energy Co.
23-23S-32E
SHL 330 FNL & 1805 FWL
BHL 330 FSL & 1650 FWL
Lea County, NM

Drilling Operations
Choke Manifold
5M Service

Exhibit E-1 – Choke Manifold Diagram
Diamondtail 23 Federal 3
Cimarex Energy Co.
23-23S-32E
SHL 330 FNL & 1805 FWL
BHL 330 FSL & 1650 FWL
Lea County, NM





Cactus Rig 101
Serial # 59473

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

INTERNAL HYDROSTATIC TEST REPORT			
Customer: CACTUS		P.O. Number: Rig#101 <i>Asset#M5358</i>	
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



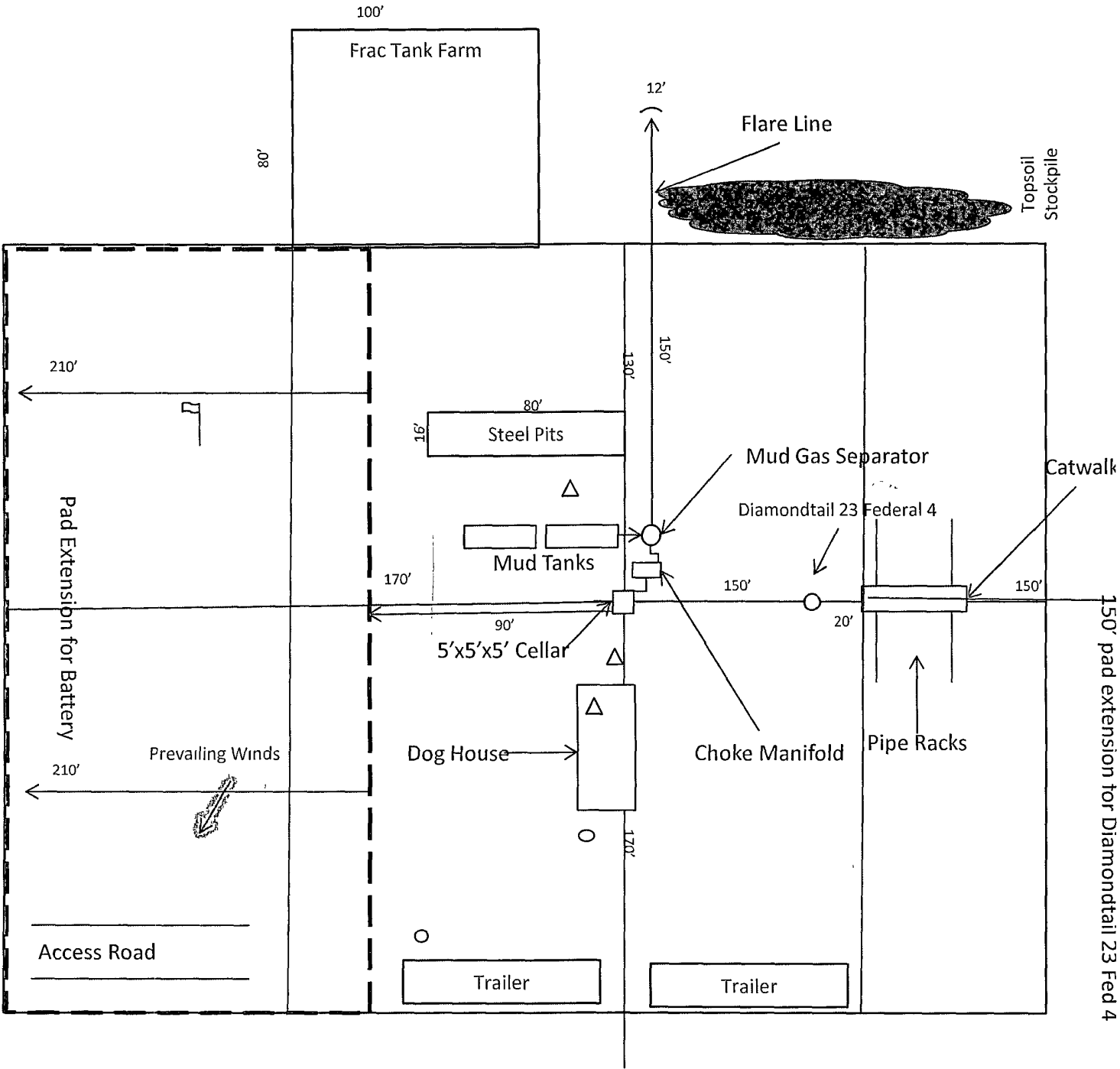
Midwest Hose
& Specialty, Inc.

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



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

Exhibit D – Rig Diagram
Diamondtail 23 Federal 3
Cimarex Energy Co.
23-23S-32E
SHL 330 FNL & 1805 FWL
BHL 330 FSL & 1650 FWL
Lea County, NM

