

OCD-HOBBS HOBBS OCD

SEP 21 2012

RECEIVED

Form 3160-3
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

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. <i>(215099)</i>		7. If Unit or CA Agreement, Name and No
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 <i>(39458)</i> Diamondtail 23 Federal No. 1
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At Surface 330 FNL & 600' FWL At proposed prod Zone 330 FSL & 375 FWL Horizontal Bone Spring test		9. API Well No. 30-025- 40780
14. Distance in miles and direction from nearest town or post office*		10. Field and Pool, or Exploratory Diamondtail; Bone Spring <i>(17644)</i>
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 23-23S-32E
16. No of acres in lease 640		12. County or Parish Lea
17. Spacing Unit dedicated to this well W2W2 160 acres		13. State NM
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 150' from #2		19. Proposed Depth MD 15425' TVD 10920'
20. BLM/BIA Bond No. on File NM-2575		21. Elevations (Show whether DF, KDB, RT, GL, etc) 3705' GR
22. Approximate date work will start* 12.01.12		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>Celeste G. Dale</i>	Name (Printed/Typed) Celeste G. Dale	Date 04.17.12
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Title Regulatory Analyst	
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Approved By (Signature) /s/ Don Peterson	Name (Printed/Typed) /s/ Don Peterson	Date SEP 18 2012
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Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE
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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 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)

APPROVAL FOR TWO YEARS

Carlsbad Controlled Water Basin

Approval Subject to General Requirements
& Special Stipulations Attached

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

SEP 26 2012

Drilling Plan
Diamondtail 23 Federal 1
 Cimarex Energy Co.
 Unit D, 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 & 600' FWL
 BHL 330 FSL & 375 FWL

- 2 **Elevation above sea level:** 3705 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 15425' TVD 10920'

- 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 formations:**

Bone Spring	Oil
Avalon Shale	Oil

8 **Proposed Mud Circulating System:**

Depth	Mud Wt	Visc	Fluid Loss	Type Mud
0' to 1225' 1310	8.4 - 8.6	28	NC	FW
1225' to 4900'	10.0	30-32	NC	Brine water
4900' to 15425'	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" hole to 10634'. Drill 8¾" lateral through the curve to TD @ 15425' MD, 10920' TVD. Run 5½" 17# P-110 LTC from 0-15425' and cement.

Drilling Plan
Diamondtail 23 Federal 1
 Cimarex Energy Co.
 Unit D, Section 23
 T23S-R32E; Lea County, NM

9 Casing & Cementing Program:

See COA

String	Hole Size	Depth	1310	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"	0'	to 15425'	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

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 ~~1225'~~ 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 15425' and cementing to 3600'.

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

11 Pressure control Equipment:

Exhibit "E" A 13 5/8" 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 No

Drilling Plan
Diamondtail 23 Federal 1
Cimarex Energy Co.
Unit D, 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 **4900 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.**



Cimarex Energy Co.

Location: Lea County, NM
Field: (Diamondtail) Sec 23, T23S, R32E
Facility: Diamondtail 23 Federal No 1

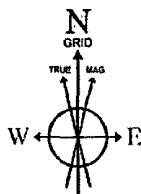
Slot: No.1 SHL
Well: No.1
Wellbore: No 1 PWB



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	182.402	0.00	0.00	0.00	0.00	0.00
Est KOP	10634.00	0.000	182.402	10634.00	0.00	0.00	0.00	0.00
EOC	11083.25	90.000	182.402	10920.00	-285.75	-11.98	20.03	286.00
No 1 PBHL	15424.71	90.000	182.402	10920.00	-4623.39	-193.91	0.00	4627.46

Plot reference wellpath is Rev-A 0	
True vertical depths are referenced to Rig on No 1 SHL (RT)	Grid System NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet
Measured depths are referenced to Rig on No 1 SHL (RT)	North Reference Grid north
Rig on No 1 SHL (RT) to Mean Sea Level 3705 feet	Scale True distance
Mean Sea Level to Mud line (At Slot No 1 SHL) -3705 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by gentry on 4/11/2012

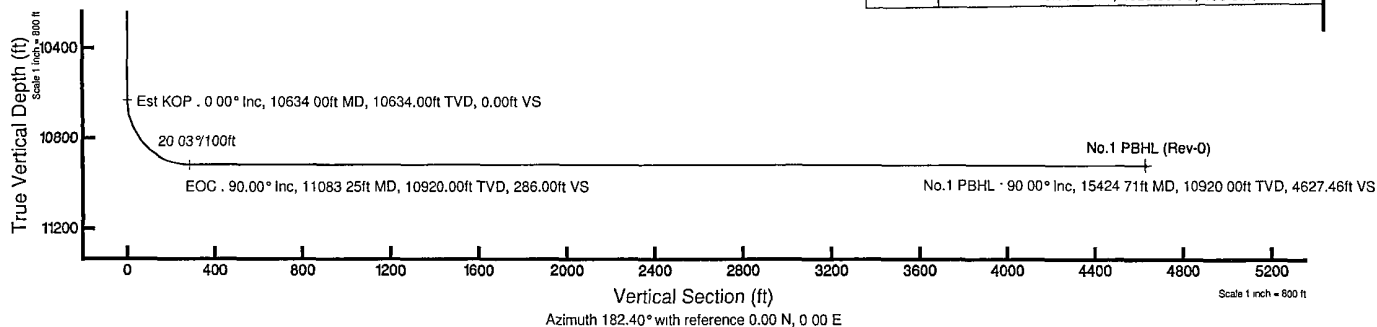
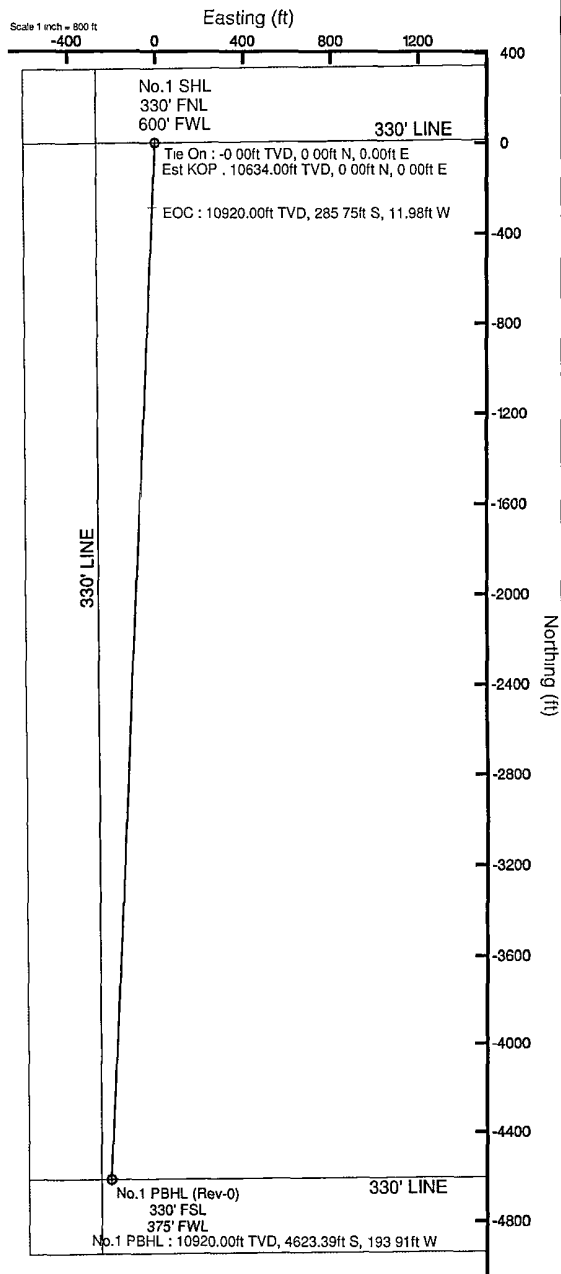


BGGM (1945 0 to 2013 0) Dip: 60 18° Field: 48570 9 nT
Magnetic North is 7 61 degrees East of True North (at 4/11/2012)
Grid North is 0 36 degrees East of True North

To correct azimuth from True to Grid subtract 0 36 degrees

To correct azimuth from Magnetic to Grid add 7 24 degrees

For example: if the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 7 24 = 97 24





Planned Wellpath Report

Rev-A.0
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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No.1 SHL
Area	Lea County, NM	Well	No.1
Field	(Diamondtail) Sec 23, T23S, R32E	Wellbore	No.1 PWB
Facility	Diamondtail 23 Federal No.1		

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	Gentbry
Scale	0.99996	Report Generated	4/11/2012 at 10:15:17 AM
Convergence at slot	0.36° East	Database/Source file	WA Midland/No.1_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	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W
Facility Reference Pt			751862.50	472284.00	32°17'47.557"N	103°39'07.197"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.1 SHL (RT) to Facility Vertical Datum	0.00ft
Horizontal Reference Pt	Slot	Rig on No.1 SHL (RT) to Mean Sea Level	3705.00ft
Vertical Reference Pt	Rig on No.1 SHL (RT)	Rig on No.1 SHL (RT) to Mud Line at Slot (No.1 SHL)	0.00ft
MD Reference Pt	Rig on No.1 SHL (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	182.40°



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION			
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Field	(Diamondtail) Sec 23, T23S, R32E	Wellbore	No.1 PWB
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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	182.402	0.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	Tie On
100.00†	0.000	182.402	100.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
200.00†	0.000	182.402	200.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
300.00†	0.000	182.402	300.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
400.00†	0.000	182.402	400.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
500.00†	0.000	182.402	500.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
600.00†	0.000	182.402	600.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
700.00†	0.000	182.402	700.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
800.00†	0.000	182.402	800.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
900.00†	0.000	182.402	900.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
1000.00†	0.000	182.402	1000.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
1100.00†	0.000	182.402	1100.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
1200.00†	0.000	182.402	1200.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	Rustler
1300.00†	0.000	182.402	1300.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
1400.00†	0.000	182.402	1400.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
1500.00†	0.000	182.402	1500.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
1520.00†	0.000	182.402	1520.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	Salt
1600.00†	0.000	182.402	1600.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
1700.00†	0.000	182.402	1700.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
1800.00†	0.000	182.402	1800.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
1900.00†	0.000	182.402	1900.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
2000.00†	0.000	182.402	2000.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
2100.00†	0.000	182.402	2100.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
2200.00†	0.000	182.402	2200.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
2300.00†	0.000	182.402	2300.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
2400.00†	0.000	182.402	2400.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
2500.00†	0.000	182.402	2500.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
2600.00†	0.000	182.402	2600.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
2700.00†	0.000	182.402	2700.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
2800.00†	0.000	182.402	2800.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
2900.00†	0.000	182.402	2900.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
3000.00†	0.000	182.402	3000.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
3100.00†	0.000	182.402	3100.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
3200.00†	0.000	182.402	3200.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
3300.00†	0.000	182.402	3300.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
3400.00†	0.000	182.402	3400.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
3500.00†	0.000	182.402	3500.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
3590.00†	0.000	182.402	3590.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	Castille
3600.00†	0.000	182.402	3600.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
3700.00†	0.000	182.402	3700.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
3800.00†	0.000	182.402	3800.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
3900.00†	0.000	182.402	3900.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
4000.00†	0.000	182.402	4000.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
4100.00†	0.000	182.402	4100.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
4200.00†	0.000	182.402	4200.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	



Planned Wellpath Report

Rev-A.0
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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No.1 SHL
Area	Lea County, NM	Well	No.1
Field	(Diamondtail) Sec 23, T23S, R32E	Wellbore	No.1 PWB
Facility	Diamondtail 23 Federal No.1		

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	182.402	4300.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
4400.00†	0.000	182.402	4400.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
4500.00†	0.000	182.402	4500.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
4600.00†	0.000	182.402	4600.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
4680.00†	0.000	182.402	4680.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	Base last salt
4700.00†	0.000	182.402	4700.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
4800.00†	0.000	182.402	4800.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
4900.00†	0.000	182.402	4900.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
4980.00†	0.000	182.402	4980.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	Delaware Sands
5000.00†	0.000	182.402	5000.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
5100.00†	0.000	182.402	5100.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
5200.00†	0.000	182.402	5200.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
5300.00†	0.000	182.402	5300.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
5400.00†	0.000	182.402	5400.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
5500.00†	0.000	182.402	5500.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
5600.00†	0.000	182.402	5600.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
5700.00†	0.000	182.402	5700.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
5800.00†	0.000	182.402	5800.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
5900.00†	0.000	182.402	5900.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
6000.00†	0.000	182.402	6000.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
6100.00†	0.000	182.402	6100.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
6200.00†	0.000	182.402	6200.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
6300.00†	0.000	182.402	6300.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
6400.00†	0.000	182.402	6400.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
6500.00†	0.000	182.402	6500.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
6600.00†	0.000	182.402	6600.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
6700.00†	0.000	182.402	6700.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
6800.00†	0.000	182.402	6800.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
6900.00†	0.000	182.402	6900.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
7000.00†	0.000	182.402	7000.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
7100.00†	0.000	182.402	7100.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
7200.00†	0.000	182.402	7200.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
7300.00†	0.000	182.402	7300.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
7400.00†	0.000	182.402	7400.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
7500.00†	0.000	182.402	7500.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
7600.00†	0.000	182.402	7600.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
7700.00†	0.000	182.402	7700.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
7800.00†	0.000	182.402	7800.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
7900.00†	0.000	182.402	7900.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
8000.00†	0.000	182.402	8000.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
8100.00†	0.000	182.402	8100.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
8200.00†	0.000	182.402	8200.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
8300.00†	0.000	182.402	8300.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
8400.00†	0.000	182.402	8400.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
8470.00†	0.000	182.402	8470.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	Basal Brushy Canyon



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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No.1 SHL
Area	Lea County, NM	Well	No.1
Field	(Diamondtail) Sec 23, T23S, R32E	Wellbore	No.1 PWB
Facility	Diamondtail 23 Federal No.1		

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	182.402	8500.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
8600.00†	0.000	182.402	8600.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
8700.00†	0.000	182.402	8700.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
8750.00†	0.000	182.402	8750.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	Bone Spring
8800.00†	0.000	182.402	8800.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
8900.00†	0.000	182.402	8900.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
9000.00†	0.000	182.402	9000.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
9100.00†	0.000	182.402	9100.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
9200.00†	0.000	182.402	9200.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
9300.00†	0.000	182.402	9300.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
9400.00†	0.000	182.402	9400.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
9430.00†	0.000	182.402	9430.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	Avalon Shale
9500.00†	0.000	182.402	9500.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
9600.00†	0.000	182.402	9600.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
9700.00†	0.000	182.402	9700.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
9800.00†	0.000	182.402	9800.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
9900.00†	0.000	182.402	9900.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
9930.00†	0.000	182.402	9930.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	1st BSS
10000.00†	0.000	182.402	10000.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
10100.00†	0.000	182.402	10100.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
10200.00†	0.000	182.402	10200.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
10300.00†	0.000	182.402	10300.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
10400.00†	0.000	182.402	10400.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
10500.00†	0.000	182.402	10500.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
10600.00†	0.000	182.402	10600.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	
10625.00†	0.000	182.402	10625.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	2nd BSS
10634.00	0.000	182.402	10634.00	0.00	0.00	0.00	751862.50	472284.00	32°17'47.557"N	103°39'07.197"W	0.00	Est KOP
10700.00†	13.222	182.402	10699.42	7.58	-7.57	-0.32	751862.18	472276.43	32°17'47.482"N	103°39'07.201"W	20.03	
10800.00†	33.256	182.402	10790.84	46.84	-46.80	-1.96	751860.54	472237.21	32°17'47.094"N	103°39'07.223"W	20.03	
10900.00†	53.289	182.402	10863.28	115.04	-114.93	-4.82	751857.68	472169.07	32°17'46.420"N	103°39'07.262"W	20.03	
11000.00†	73.323	182.402	10907.97	203.92	-203.74	-8.55	751853.96	472080.26	32°17'45.542"N	103°39'07.312"W	20.03	
11083.25	90.000	182.402	10920.00	286.00	-285.75	-11.98	751850.52	471998.26	32°17'44.731"N	103°39'07.358"W	20.03	EOC
11100.00†	90.000	182.402	10920.00	302.75	-302.49	-12.69	751849.81	471981.53	32°17'44.565"N	103°39'07.367"W	0.00	
11200.00†	90.000	182.402	10920.00	402.75	-402.40	-16.88	751845.62	471881.62	32°17'43.577"N	103°39'07.424"W	0.00	
11300.00†	90.000	182.402	10920.00	502.75	-502.31	-21.07	751841.43	471781.71	32°17'42.588"N	103°39'07.480"W	0.00	
11400.00†	90.000	182.402	10920.00	602.75	-602.22	-25.26	751837.24	471681.80	32°17'41.600"N	103°39'07.536"W	0.00	
11500.00†	90.000	182.402	10920.00	702.75	-702.13	-29.45	751833.05	471581.89	32°17'40.612"N	103°39'07.592"W	0.00	
11600.00†	90.000	182.402	10920.00	802.75	-802.05	-33.64	751828.86	471481.99	32°17'39.623"N	103°39'07.648"W	0.00	
11700.00†	90.000	182.402	10920.00	902.75	-901.96	-37.83	751824.67	471382.08	32°17'38.635"N	103°39'07.705"W	0.00	
11800.00†	90.000	182.402	10920.00	1002.75	-1001.87	-42.02	751820.48	471282.17	32°17'37.647"N	103°39'07.761"W	0.00	
11900.00†	90.000	182.402	10920.00	1102.75	-1101.78	-46.21	751816.29	471182.26	32°17'36.658"N	103°39'07.817"W	0.00	
12000.00†	90.000	182.402	10920.00	1202.75	-1201.70	-50.40	751812.10	471082.35	32°17'35.670"N	103°39'07.873"W	0.00	
12100.00†	90.000	182.402	10920.00	1302.75	-1301.61	-54.59	751807.91	470982.45	32°17'34.681"N	103°39'07.929"W	0.00	
12200.00†	90.000	182.402	10920.00	1402.75	-1401.52	-58.78	751803.72	470882.54	32°17'33.693"N	103°39'07.986"W	0.00	
12300.00†	90.000	182.402	10920.00	1502.75	-1501.43	-62.97	751799.53	470782.63	32°17'32.705"N	103°39'08.042"W	0.00	



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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No.1 SHL
Area	Lea County, NM	Well	No.1
Field	(Diamondtail) Sec 23, T23S, R32E	Wellbore	No.1 PWB
Facility	Diamondtail 23 Federal No.1		

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
12400.00†	90.000	182.402	10920.00	1602.75	-1601.34	-67.16	751795.34	470682.72	32°17'31.716"N	103°39'08.098"W	0.00	
12500.00†	90.000	182.402	10920.00	1702.75	-1701.26	-71.35	751791.15	470582.82	32°17'30.728"N	103°39'08.154"W	0.00	
12600.00†	90.000	182.402	10920.00	1802.75	-1801.17	-75.54	751786.96	470482.91	32°17'29.740"N	103°39'08.210"W	0.00	
12700.00†	90.000	182.402	10920.00	1902.75	-1901.08	-79.73	751782.77	470383.00	32°17'28.751"N	103°39'08.267"W	0.00	
12800.00†	90.000	182.402	10920.00	2002.75	-2000.99	-83.92	751778.58	470283.09	32°17'27.763"N	103°39'08.323"W	0.00	
12900.00†	90.000	182.402	10920.00	2102.75	-2100.91	-88.11	751774.39	470183.18	32°17'26.775"N	103°39'08.379"W	0.00	
13000.00†	90.000	182.402	10920.00	2202.75	-2200.82	-92.30	751770.20	470083.28	32°17'25.786"N	103°39'08.435"W	0.00	
13100.00†	90.000	182.402	10920.00	2302.75	-2300.73	-96.49	751766.01	469983.37	32°17'24.798"N	103°39'08.491"W	0.00	
13200.00†	90.000	182.402	10920.00	2402.75	-2400.64	-100.68	751761.82	469883.46	32°17'23.810"N	103°39'08.548"W	0.00	
13300.00†	90.000	182.402	10920.00	2502.75	-2500.55	-104.87	751757.63	469783.55	32°17'22.821"N	103°39'08.604"W	0.00	
13400.00†	90.000	182.402	10920.00	2602.75	-2600.47	-109.07	751753.44	469683.64	32°17'21.833"N	103°39'08.660"W	0.00	
13500.00†	90.000	182.402	10920.00	2702.75	-2700.38	-113.26	751749.25	469583.74	32°17'20.845"N	103°39'08.716"W	0.00	
13600.00†	90.000	182.402	10920.00	2802.75	-2800.29	-117.45	751745.06	469483.83	32°17'19.856"N	103°39'08.772"W	0.00	
13700.00†	90.000	182.402	10920.00	2902.75	-2900.20	-121.64	751740.87	469383.92	32°17'18.868"N	103°39'08.829"W	0.00	
13800.00†	90.000	182.402	10920.00	3002.75	-3000.11	-125.83	751736.68	469284.01	32°17'17.879"N	103°39'08.885"W	0.00	
13900.00†	90.000	182.402	10920.00	3102.75	-3100.03	-130.02	751732.49	469184.10	32°17'16.891"N	103°39'08.941"W	0.00	
14000.00†	90.000	182.402	10920.00	3202.75	-3199.94	-134.21	751728.30	469084.20	32°17'15.903"N	103°39'08.997"W	0.00	
14100.00†	90.000	182.402	10920.00	3302.75	-3299.85	-138.40	751724.11	468984.29	32°17'14.914"N	103°39'09.053"W	0.00	
14200.00†	90.000	182.402	10920.00	3402.75	-3399.76	-142.59	751719.92	468884.38	32°17'13.926"N	103°39'09.110"W	0.00	
14300.00†	90.000	182.402	10920.00	3502.75	-3499.68	-146.78	751715.73	468784.47	32°17'12.938"N	103°39'09.166"W	0.00	
14400.00†	90.000	182.402	10920.00	3602.75	-3599.59	-150.97	751711.54	468684.56	32°17'11.949"N	103°39'09.222"W	0.00	
14500.00†	90.000	182.402	10920.00	3702.75	-3699.50	-155.16	751707.35	468584.66	32°17'10.961"N	103°39'09.278"W	0.00	
14600.00†	90.000	182.402	10920.00	3802.75	-3799.41	-159.35	751703.16	468484.75	32°17'09.973"N	103°39'09.334"W	0.00	
14700.00†	90.000	182.402	10920.00	3902.75	-3899.32	-163.54	751698.97	468384.84	32°17'08.984"N	103°39'09.391"W	0.00	
14800.00†	90.000	182.402	10920.00	4002.75	-3999.24	-167.73	751694.78	468284.93	32°17'07.996"N	103°39'09.447"W	0.00	
14900.00†	90.000	182.402	10920.00	4102.75	-4099.15	-171.92	751690.59	468185.02	32°17'07.008"N	103°39'09.503"W	0.00	
15000.00†	90.000	182.402	10920.00	4202.75	-4199.06	-176.11	751686.40	468085.12	32°17'06.019"N	103°39'09.559"W	0.00	
15100.00†	90.000	182.402	10920.00	4302.75	-4298.97	-180.30	751682.21	467985.21	32°17'05.031"N	103°39'09.615"W	0.00	
15200.00†	90.000	182.402	10920.00	4402.75	-4398.89	-184.49	751678.02	467885.30	32°17'04.043"N	103°39'09.672"W	0.00	
15300.00†	90.000	182.402	10920.00	4502.75	-4498.80	-188.68	751673.83	467785.39	32°17'03.054"N	103°39'09.728"W	0.00	
15400.00†	90.000	182.402	10920.00	4602.75	-4598.71	-192.87	751669.64	467685.48	32°17'02.066"N	103°39'09.784"W	0.00	
15424.71	90.000	182.402	10920.00	4627.46	-4623.39	-193.91	751668.60	467660.80	32°17'01.822"N	103°39'09.798"W	0.00	No.1 PBHL



Planned Wellpath Report

Rev-A.0
Page 6 of 6



REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No.1 SHL
Area	Lea County, NM	Well	No.1
Field	(Diamondtail) Sec 23, T23S, R32E	Wellbore	No.1 PWB
Facility	Diamondtail 23 Federal No.1		

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
1) No.1 PBHL (Rev-0)	15424.71	10920.00	-4623.39	-193.91	751668.60	467660.80	32°17'01.822"N	103°39'09.798"W	point

SURVEY PROGRAM - Ref Wellbore: No.1 PWB Ref Wellpath: Rev-A.0

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	15424.71	NaviTrak (Standard)		No.1 PWB

SR & A

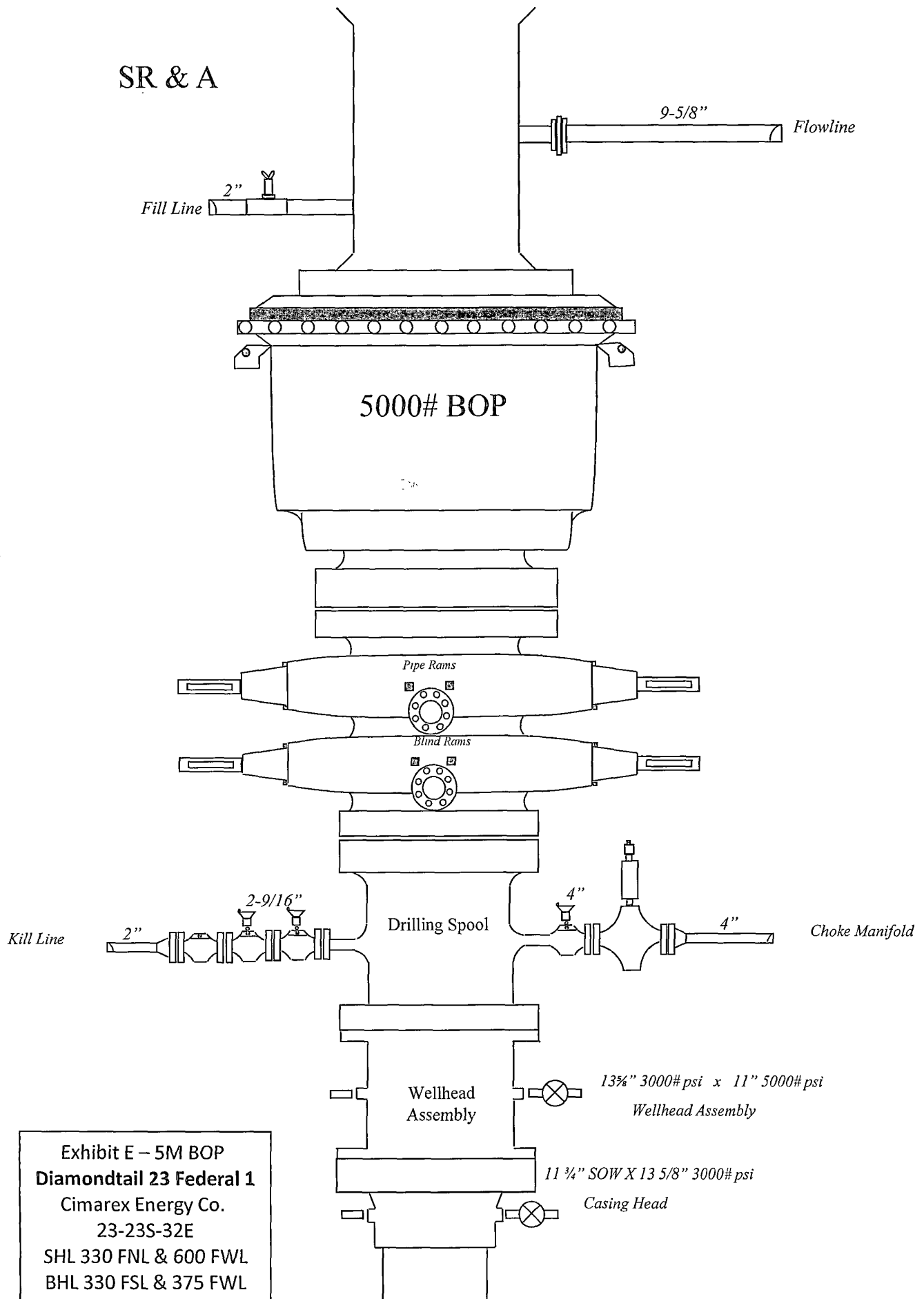


Exhibit E – 5M BOP
Diamondtail 23 Federal 1
Cimarex Energy Co.
23-23S-32E
SHL 330 FNL & 600 FWL
BHL 330 FSL & 375 FWL
Lea County, NM

Drilling Operations Choke Manifold 5M Service

Exhibit E-1 — Choke Manifold Diagram

Diamondtail 23 Federal 1

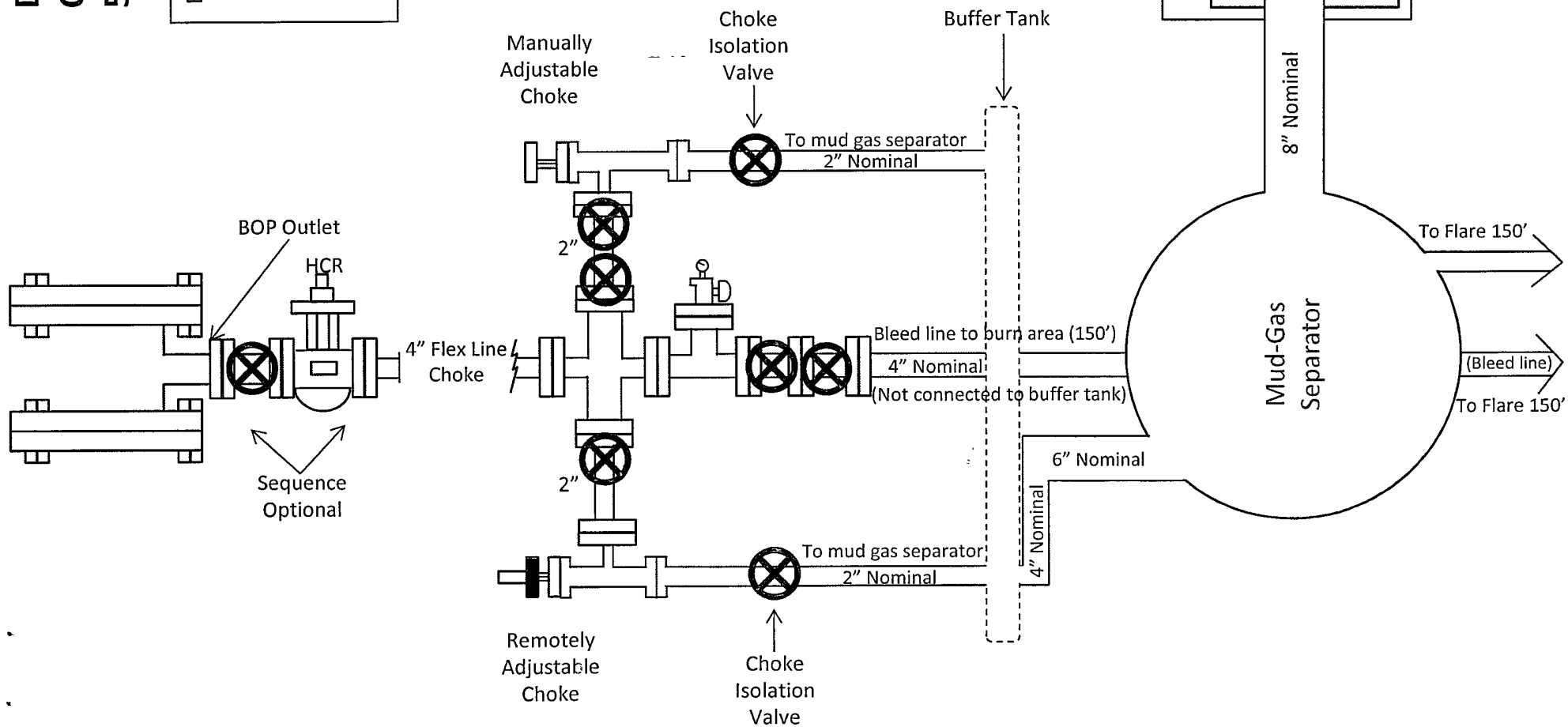
Cimarex Energy Co.

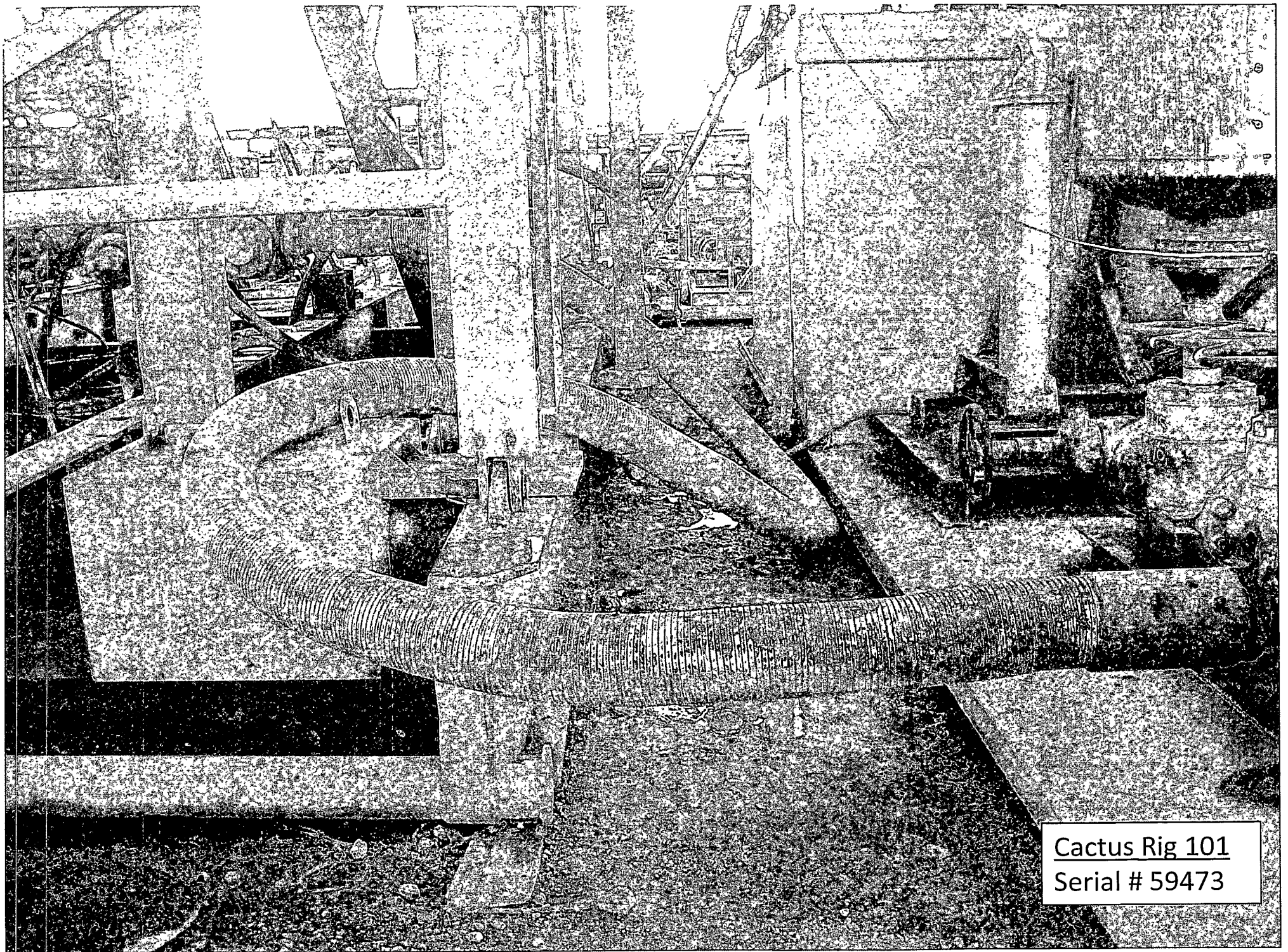
23-23S-32E

SHL 330 FNL & 600 FWL

BHL 330 FSL & 375 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 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.

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)

Cimarex Energy Co. of Colorado – Closed-Loop System Design Plan

Equipment List

- Primary Shakers
- Mud Cleaner – hydro-cyclones
- 1 or 2 Centrifuges (depending on well depth)
- De-watering system with pH adjustment, coagulant mixing and dosing, and polymer mixing and dosing (may not be necessary for shallower wells)
- Drying Augur
- Sump Drying Augur
- Sump
- Cuttings Boxes
- Reserve Fluids Tank Farm
- Wire Mesh Trash Enclosure (spent motor oils kept in separate containers and later sent to approved landfill)

Operation and Maintenance

The Cimarex Zero Discharge system is designed to maintain drill solids at or below 5%. The equipment is arranged to progressively remove solids from the largest to the smallest size. Drilling fluids can thus be reused and savings is realized on mud and disposal costs. Dewatering may be required with the centrifuges to insure removal of ultra fine solids.

The drilling location is constructed to allow storm water to flow to a central sump normally the cellar. This ensures no contamination leaves the drilling pad in the event of a spill. Storm water is reused in the mud system or stored in a reserve fluid tank farm until it can be reused. All lubricants, oils, or chemicals are removed immediately from the ground to prevent the contamination of storm water. An oil trap is normally installed on the sump if an oil spill occurs during a storm.

A tank farm is utilized to store drilling fluids including fresh water and brine fluids. The tank farm is constructed on a 20 ml plastic lined, bermed pad to prevent the contamination of the drilling site during a spill. Fluids from other sites may be stored in these tanks for processing by the solids control equipment and reused in the mud system. At the end of the well the fluids are transported from the tank farm to an adjoining well or to the next well for the rig.

These closed loop operations can be monitored by our service technicians. Daily logs are maintained to ensure optimal equipment operation and maintenance. Screen and chemical use is logged to maintain inventory control. Fluid properties are monitored and recorded and drilling mud volumes are accounted for in the mud storage farm. This data is kept for end of well review to insure performance goals are met. Lessons learned are logged and used to help with continuous improvement.

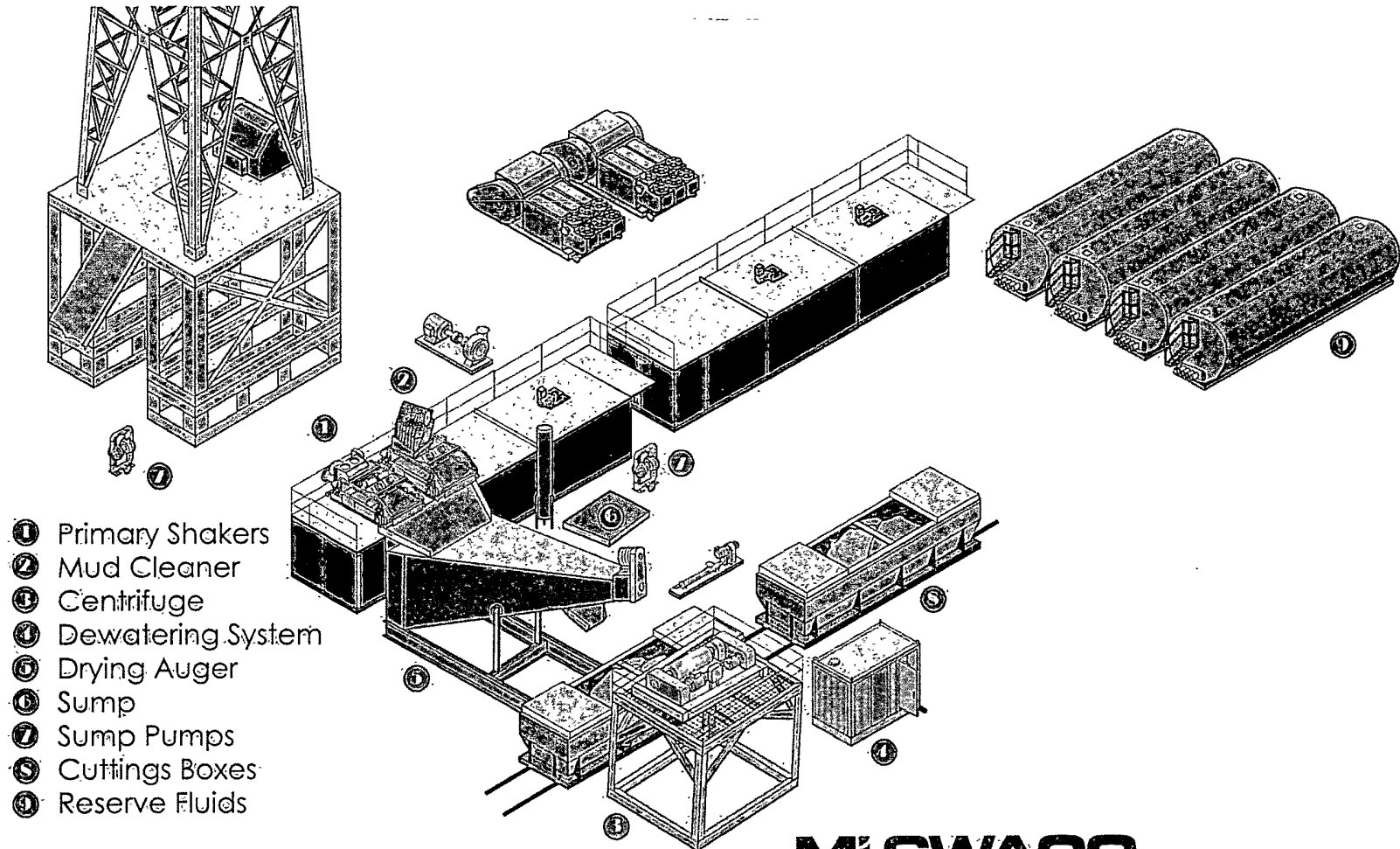
Spill prevention is accomplished by maintaining pump packing, hoses, and pipe fittings to insure no leaks are occurring. During an upset condition the source of the spill is isolated and repaired as soon as it is discovered. Free liquid is removed by a diaphragm pump and returned to the mud system. Loose topsoil may be used to stabilize the spill and the contaminated soil is excavated and placed in the cuttings boxes. After the well is finished and the rig has moved, the entire location is scrapped and tested for all regulated toxic materials. If found they are removed and disposed of per regulatory requirements.

Closure Plan

During drilling operations, all liquids, drilling fluids, and cuttings will be hauled off via CRI (Controlled Recovery Incorporated, Permit R-9166).

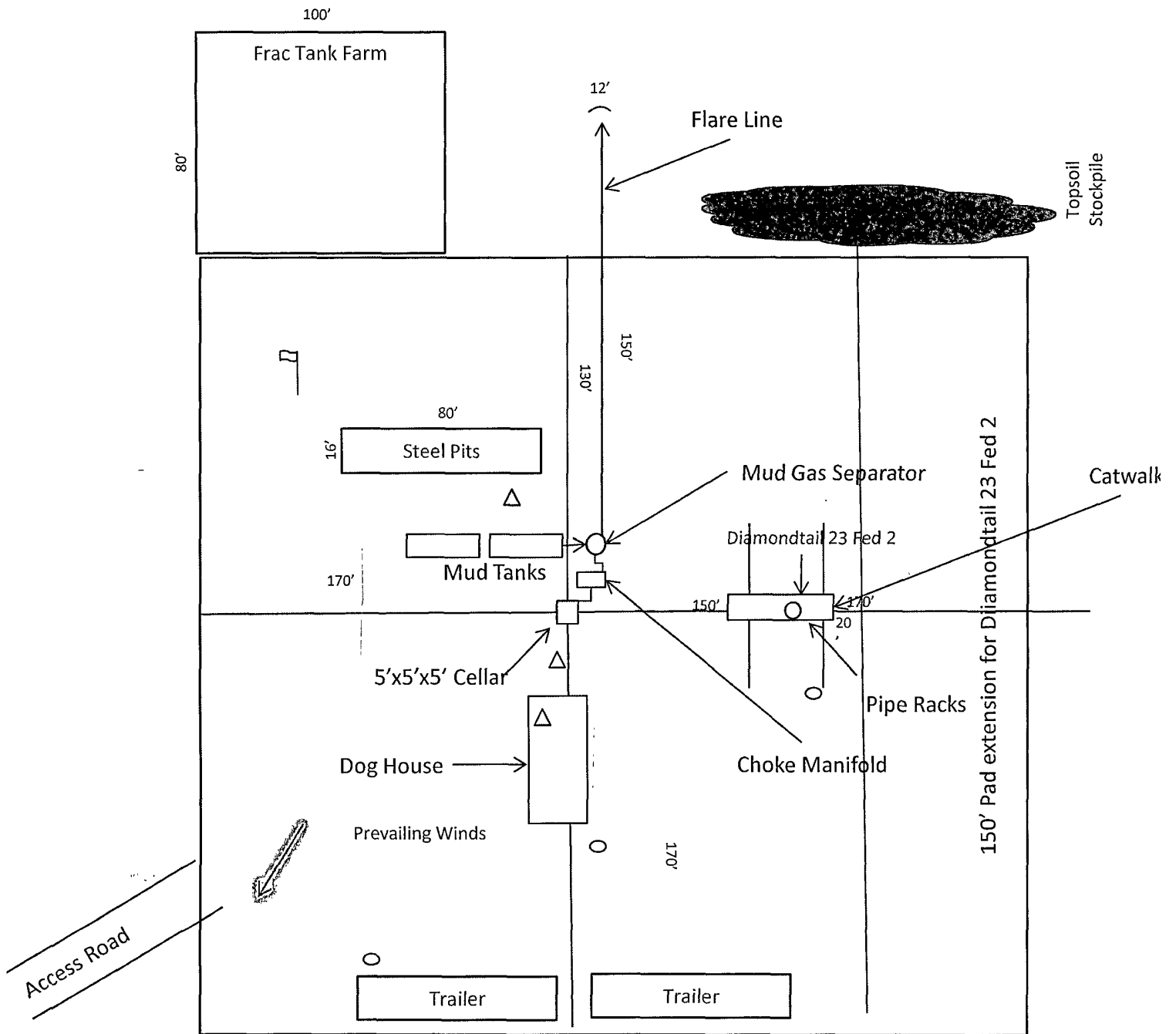


Closed Loop with Drying Auger and Dewatering System



MI SWACO

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 1
Cimarex Energy Co.
23-23S-32E
SHL 330 FNL & 600 FWL
BHL 330 FSL & 375 FWL
Lea County, NM

N

