

ATS-12-758

OCD-HOBBS

Form 3160-3
(April 2004)

HOBBS OCD

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

SEP 19 2012

APPLICATION FOR PERMIT TO DRILL OR REENTER **RECEIVED**

1a. Type of Work ☒ DRILL ☐ REENTER		5 Lease Serial No SHL NM 0 001917 BHL NM 0 002889	
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. Dos Equis 12 Federal Com No. 3 #39370	
3b. Phone No (include area code) 432-571-7800		9. API Well No. 30-025-40792	
4 Location of Well (Report location clearly and in accordance with any State requirements. *) At Surface 330 FNL & 1980 FWL At proposed prod Zone 330 FSL & 1980 FWL Horizontal Bone Spring test		10. Field and Pool, or Exploratory Triple X; Bone Spring, West 96674	
14 Distance in miles and direction from nearest town or post office*		11 Sec, T R M. or Blk. and Survey or Area 12-24S-32E	
15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig unit line if any) 330'		12. County or Parish Lea	
16. No of acres in lease NM 0 002889 680 acres NM 0 001917 800 acres		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 1320' from #2	
19. Proposed Depth MD 15657' TVD 11250'		20 BLM/BIA Bond No on File NM-2575/NM-B000835	
21 Elevations (Show whether DF, KDB, RT, GL, etc) 3612' GR		22 Approximate date work will start* 01.01.13	
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>Celeste G. Dale</i>	Name (Printed/Typed) Celeste G. Dale	Date 04.26.12
Regulatory Analyst		
Approved By (Signature) <i>/s/ Don Peterson</i>	Name (Printed/Typed) <i>/s/ Don Peterson</i>	Date SEP 17 2012
Title <i>FM</i> 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

**SEE ATTACHED FOR
CONDITIONS OF APPROVAL****Approval Subject to General Requirements
& Special Stipulations Attached**

SEP 27 2012

Drilling Plan
Dos Equis 12 Federal Com No. 3
 Cimarex Energy Co. of Colorado
 Unit C, Section 12
 T24S-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 & 1980 FWL
 BHL 330 FSL & 1980 FWL

- 2 **Elevation above sea level:** 3612' 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 15657' TVD 11250'

- 6 **Estimated tops of geological markers:**

Rustler	1220'
Top of Salt	1380'
Castile	3565'
Base of Salt	4700'
Delaware Sands	5000'
Cherry Canyon	5969'
Brushy Canyon	7000'
Bone Spring	8770'
FBSS	9930'
SBSS	10600'
3rd BS Carbonate	11100'

- 7 **Possible mineral bearing formations:**

Bone Spring	Oil
Delaware	Oil

8 **Proposed Mud Circulating System:**

Depth	Mud Wt	Visc	Fluid Loss	Type Mud
0' to 1250' 1275'	8.4 - 8.6	28	NC	FW
1250' to 4900'	10.0	30-32	NC	Brine
4900' to 15657'	8.4-9.5	27-45	NC	FW and brine

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

Proposed drilling Plan

Drill 8¾" hole with kickoff point @ 10864' TVD. Drill through curve to 15657' TMD, 11250' TVD. Run 5½" 17# P-110 LTC from 0-15657' and cement.

Drilling Plan
Dos Equis 12 Federal Com No. 3
 Cimarex Energy Co. of Colorado
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 T24S-R32E, Lea County, NM

9 Casing & Cementing Program:

See log

String	Hole Size	Depth	Casing OD	Weight	Collar	Grade
Surface 1	17 1/2"	0' to 1250'	New 13 3/8"	48#	STC	H-40
Intermediate	12 1/4"	0' to 4900'	New 9 5/8"	40#	LTC	J-55
Production	8 3/4"	0' to 15657'	New 5 1/2"	17#	LTC	P-110

10 Cementing:

Surface

Lead: 545SKS Halcem C + 4% Bentomite + 2% CaCl 13.5ppg 1.75 yield 100% Excess

Tail: 420SKS Halcem C + 2% CaCl 14.2ppg 1.34 yield 50% Excess

TOC Surface Centralizers per Onshore order 2.III.B.1.f

Intermediate

Lead: 1655SKS Econocem + 5% Salt + 5# Gilsontite 14.6ppg 1.54 yield 70% Excess

Tail: 200SKS Halcem + 1% CaCl 14.8ppg 1.34 yield 25% Excess

TOC Surface

Production

Lead: 1030SKS Econocem H + 0.5% CFR-3 + 0.1% HR-601 11.9ppg 2.44 yield 50% Excess

Tail: 1305SKS Versacem H + 0.5% Halad-344 + 0.4% CFR-3 + 1# Salt + 0.1% HR-601 14.5ppg 1.22 yield 25% Excess

TOC 3800' Centralizers every 3rd joint in lateral to provide adequate cement coverage every 100' unless lateral doglegs require greater spacing between centralizers.

According to the NM State Engineer, depth to ground water is 200 feet. Fresh water zones will be protected by setting 13 3/8" casing at 1250' and 9 5/8" casing at 4900' and cementing to surface. Hydrocarbon zones will be protected by setting 5 1/2" casing at 15657' and cementing to 3800'.

<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 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.

Before drilling out of the surface casing BOPs 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 casing BOPs will be tested to 250 psi low and 5000 psi high. Hydril will be tested to 250 psi low and 2500 high.

Cimarex Energy Co. of Colorado (operator) requests a variance if Cactus 115 (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: 63270

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

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

Drilling Plan
Dos Equis 12 Federal Com No. 3
Cimarex Energy Co. of Colorado
Unit C, Section 12
T24S-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 **5100 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 (Dos Equis) Sec 12, T24S, R32E
Facility Dos Equis 12 Fed Com 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	179.799	0.00	0.00	0.00	0.00	0.00
Est KOP	10864.00	0.000	179.799	10864.00	0.00	0.00	0.00	0.00
EOC	11306.79	88.683	179.799	11150.00	-279.50	0.98	20.03	279.50
Target Line	11306.82	88.683	179.799	11150.00	-279.52	0.98	2.00	279.53
No 3 PBHL	15657.15	88.683	179.799	11250.00	-4628.58	16.20	0.00	4628.71

Plot reference wellpath is Prelim. 1

True vertical depths are referenced to Rig on No 3 SHL (RT)

Measured depths are referenced to Rig on No 3 SHL (RT)

Rig on No 3 SHL (RT) to Mean Sea Level: 3612 feet

Mean Sea Level to Mud line (At Slot No 3 SHL): -3612 feet

Coordinates are in feet referenced to Slot

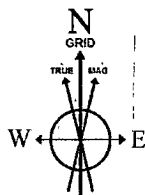
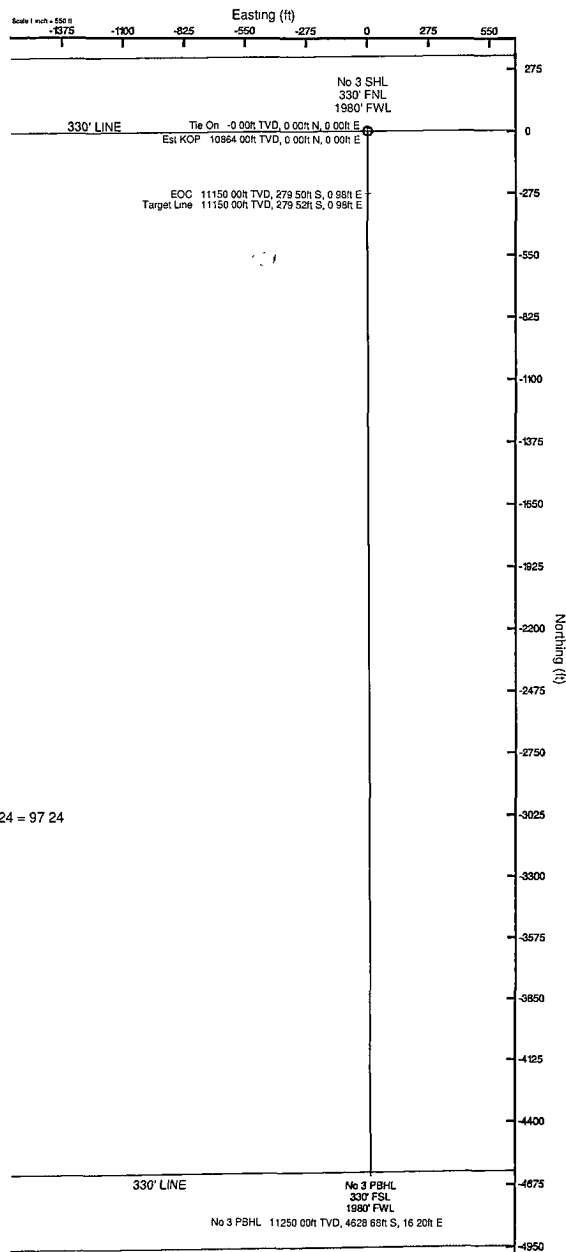
Grid System NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet

North Reference: Grid north

Scale: True distance

Depths are in feet

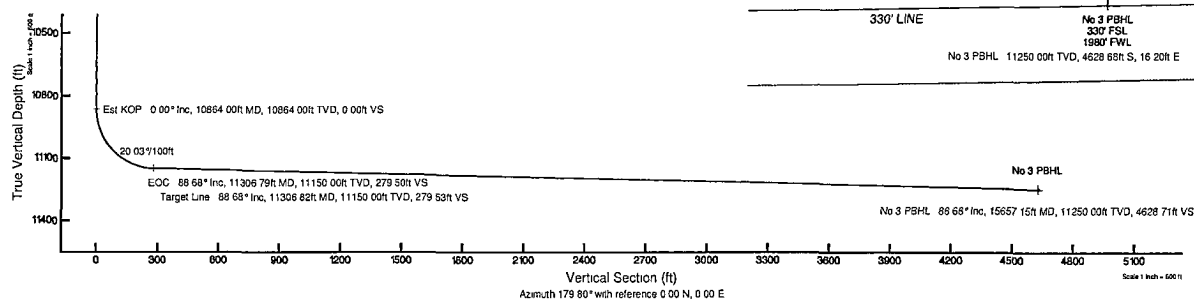
Created by: gentbry on 1/23/2012



BGGM (1945.0 to 2013.0) Dip: 60.14° Field: 48565.8 nT
Magnetic North is 7.62 degrees East of True North (at 1/23/2012)
Grid North is 0.37 degrees East of True North

To correct azimuth from True to Grid subtract 0.37 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

Prelim_1
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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No.3 SHL
Area	Lea County, NM	Well	No.3
Field	(Dos Equis) Sec 12, T24S, R32E	Wellbore	No.3 PWB
Facility	Dos Equis 12 Fed Com 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	Gentbry
Scale	0.999963	Report Generated	1/23/2012 at 10:16:17 AM
Convergence at slot	0.37° East	Database/Source file	WellArchitect_DB/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	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W
Facility Reference Pt			758677.40	451241.90	32°14'18.905"N	103°37'49.408"W
Field Reference Pt			761153.10	451258.60	32°14'18.909"N	103°37'20.583"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	3612.00ft
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	179.80°



Planned Wellpath Report

Prelim_1

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Field	(Dos Equis) Sec 12, T24S, R32E	Wellbore	No.3 PWB
Facility	Dos Equis 12 Fed Com No.3		

WELLPATH DATA (169 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	179.799	0.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	Tie On
100.00†	0.000	179.799	100.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
200.00†	0.000	179.799	200.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
300.00†	0.000	179.799	300.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
400.00†	0.000	179.799	400.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
500.00†	0.000	179.799	500.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
600.00†	0.000	179.799	600.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
700.00†	0.000	179.799	700.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
800.00†	0.000	179.799	800.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
900.00†	0.000	179.799	900.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
1000.00†	0.000	179.799	1000.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
1100.00†	0.000	179.799	1100.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
1200.00†	0.000	179.799	1200.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	Rustler
1300.00†	0.000	179.799	1300.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
1400.00†	0.000	179.799	1400.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
1500.00†	0.000	179.799	1500.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
1600.00†	0.000	179.799	1600.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
1640.00†	0.000	179.799	1640.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	Salt
1700.00†	0.000	179.799	1700.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
1800.00†	0.000	179.799	1800.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
1900.00†	0.000	179.799	1900.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
2000.00†	0.000	179.799	2000.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
2100.00†	0.000	179.799	2100.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
2200.00†	0.000	179.799	2200.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
2300.00†	0.000	179.799	2300.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
2400.00†	0.000	179.799	2400.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
2500.00†	0.000	179.799	2500.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
2600.00†	0.000	179.799	2600.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
2700.00†	0.000	179.799	2700.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
2800.00†	0.000	179.799	2800.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
2900.00†	0.000	179.799	2900.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
3000.00†	0.000	179.799	3000.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
3100.00†	0.000	179.799	3100.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
3200.00†	0.000	179.799	3200.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
3300.00†	0.000	179.799	3300.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
3400.00†	0.000	179.799	3400.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
3430.00†	0.000	179.799	3430.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	Castille
3500.00†	0.000	179.799	3500.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
3600.00†	0.000	179.799	3600.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
3700.00†	0.000	179.799	3700.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
3800.00†	0.000	179.799	3800.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
3900.00†	0.000	179.799	3900.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
4000.00†	0.000	179.799	4000.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
4100.00†	0.000	179.799	4100.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
4200.00†	0.000	179.799	4200.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	



Planned Wellpath Report

Prelim_1
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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No.3 SHL
Area	Lea County, NM	Well	No.3
Field	(Dos Equis) Sec 12, T24S, R32E	Wellbore	No.3 PWB
Facility	Dos Equis 12 Fed Com No.3		

WELLPATH DATA (169 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	179.799	4300.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
4400.00†	0.000	179.799	4400.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
4500.00†	0.000	179.799	4500.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
4600.00†	0.000	179.799	4600.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
4670.00†	0.000	179.799	4670.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	Base Last Salt
4700.00†	0.000	179.799	4700.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
4800.00†	0.000	179.799	4800.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
4900.00†	0.000	179.799	4900.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
4960.00†	0.000	179.799	4960.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	Delaware Sands
5000.00†	0.000	179.799	5000.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
5100.00†	0.000	179.799	5100.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
5200.00†	0.000	179.799	5200.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
5300.00†	0.000	179.799	5300.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
5400.00†	0.000	179.799	5400.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
5500.00†	0.000	179.799	5500.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
5600.00†	0.000	179.799	5600.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
5700.00†	0.000	179.799	5700.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
5800.00†	0.000	179.799	5800.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
5900.00†	0.000	179.799	5900.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
6000.00†	0.000	179.799	6000.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
6100.00†	0.000	179.799	6100.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
6200.00†	0.000	179.799	6200.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
6300.00†	0.000	179.799	6300.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
6400.00†	0.000	179.799	6400.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
6500.00†	0.000	179.799	6500.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
6600.00†	0.000	179.799	6600.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
6700.00†	0.000	179.799	6700.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
6800.00†	0.000	179.799	6800.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
6900.00†	0.000	179.799	6900.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
7000.00†	0.000	179.799	7000.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
7100.00†	0.000	179.799	7100.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
7200.00†	0.000	179.799	7200.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
7300.00†	0.000	179.799	7300.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
7400.00†	0.000	179.799	7400.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
7500.00†	0.000	179.799	7500.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
7600.00†	0.000	179.799	7600.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
7700.00†	0.000	179.799	7700.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
7800.00†	0.000	179.799	7800.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
7900.00†	0.000	179.799	7900.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
8000.00†	0.000	179.799	8000.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
8100.00†	0.000	179.799	8100.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
8200.00†	0.000	179.799	8200.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
8300.00†	0.000	179.799	8300.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
8400.00†	0.000	179.799	8400.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
8500.00†	0.000	179.799	8500.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No.3 SHL
Area	Lea County, NM	Well	No.3
Field	(Dos Equis) Sec 12, T24S, R32E	Wellbore	No.3 PWB
Facility	Dos Equis 12 Fed Com No.3		

WELLPATH DATA (169 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	179.799	8600.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
8625.00†	0.000	179.799	8625.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	Basal Brushy Canyon
8700.00†	0.000	179.799	8700.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
8800.00†	0.000	179.799	8800.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
8850.00†	0.000	179.799	8850.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	Bone Spring
8900.00†	0.000	179.799	8900.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
9000.00†	0.000	179.799	9000.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
9100.00†	0.000	179.799	9100.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
9200.00†	0.000	179.799	9200.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
9300.00†	0.000	179.799	9300.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	Avalon Shale
9400.00†	0.000	179.799	9400.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
9500.00†	0.000	179.799	9500.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
9600.00†	0.000	179.799	9600.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
9700.00†	0.000	179.799	9700.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
9800.00†	0.000	179.799	9800.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
9900.00†	0.000	179.799	9900.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
10000.00†	0.000	179.799	10000.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
10050.00†	0.000	179.799	10050.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	1st BSS
10100.00†	0.000	179.799	10100.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
10200.00†	0.000	179.799	10200.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
10300.00†	0.000	179.799	10300.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
10400.00†	0.000	179.799	10400.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
10500.00†	0.000	179.799	10500.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
10600.00†	0.000	179.799	10600.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
10675.00†	0.000	179.799	10675.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	2nd BSS
10700.00†	0.000	179.799	10700.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
10800.00†	0.000	179.799	10800.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	
10864.00	0.000	179.799	10864.00	0.00	0.00	0.00	758677.40	451241.90	32°14'18.905"N	103°37'49.408"W	0.00	Est KOP
10900.00†	7.210	179.799	10899.91	2.26	-2.26	0.01	758677.41	451239.64	32°14'18.883"N	103°37'49.408"W	20.03	
11000.00†	27.238	179.799	10994.93	31.72	-31.72	0.11	758677.51	451210.18	32°14'18.591"N	103°37'49.409"W	20.03	
11100.00†	47.267	179.799	11074.13	91.95	-91.95	0.32	758677.72	451149.96	32°14'17.995"N	103°37'49.412"W	20.03	
11200.00†	67.295	179.799	11127.91	175.65	-175.65	0.62	758678.02	451066.25	32°14'17.167"N	103°37'49.415"W	20.03	
11300.00†	87.323	179.799	11149.76	272.71	-272.71	0.96	758678.36	450969.20	32°14'16.206"N	103°37'49.418"W	20.03	
11306.79	88.683	179.799	11150.00	279.50	-279.50	0.98	758678.38	450962.41	32°14'16.139"N	103°37'49.418"W	20.03	EOC
11306.82	88.683	179.799	11150.00	279.53	-279.52	0.98	758678.38	450962.39	32°14'16.139"N	103°37'49.418"W	2.00	Target Line
11400.00†	88.683	179.799	11152.14	372.69	-372.68	1.31	758678.71	450869.23	32°14'15.217"N	103°37'49.421"W	0.00	
11500.00†	88.683	179.799	11154.44	472.66	-472.66	1.66	758679.06	450769.26	32°14'14.228"N	103°37'49.425"W	0.00	
11600.00†	88.683	179.799	11156.74	572.63	-572.63	2.01	758679.41	450669.29	32°14'13.239"N	103°37'49.429"W	0.00	
11700.00†	88.683	179.799	11159.04	672.61	-672.60	2.36	758679.76	450569.32	32°14'12.249"N	103°37'49.432"W	0.00	
11800.00†	88.683	179.799	11161.34	772.58	-772.57	2.71	758680.11	450469.36	32°14'11.260"N	103°37'49.436"W	0.00	
11900.00†	88.683	179.799	11163.64	872.55	-872.55	3.06	758680.46	450369.39	32°14'10.271"N	103°37'49.439"W	0.00	
12000.00†	88.683	179.799	11165.93	972.53	-972.52	3.41	758680.81	450269.42	32°14'09.282"N	103°37'49.443"W	0.00	
12100.00†	88.683	179.799	11168.23	1072.50	-1072.49	3.76	758681.16	450169.45	32°14'08.293"N	103°37'49.446"W	0.00	
12200.00†	88.683	179.799	11170.53	1172.47	-1172.47	4.11	758681.51	450069.48	32°14'07.303"N	103°37'49.450"W	0.00	
12300.00†	88.683	179.799	11172.83	1272.45	-1272.44	4.46	758681.86	449969.51	32°14'06.314"N	103°37'49.453"W	0.00	



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No.3 SHL
Area	Lea County, NM	Well	No.3
Field	(Dos Equis) Sec 12, T24S, R32E	Wellbore	No.3 PWB
Facility	Dos Equis 12 Fed Com No.3		

WELLPATH DATA (169 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†	88.683	179.799	11175.13	1372.42	-1372.41	4.81	758682.21	449869.54	32°14'05.325"N	103°37'49.457"W	0.00	
12500.00†	88.683	179.799	11177.43	1472.39	-1472.39	5.16	758682.55	449769.57	32°14'04.336"N	103°37'49.460"W	0.00	
12600.00†	88.683	179.799	11179.73	1572.37	-1572.36	5.50	758682.90	449669.60	32°14'03.346"N	103°37'49.464"W	0.00	
12700.00†	88.683	179.799	11182.03	1672.34	-1672.33	5.85	758683.25	449569.63	32°14'02.357"N	103°37'49.468"W	0.00	
12800.00†	88.683	179.799	11184.32	1772.32	-1772.30	6.20	758683.60	449469.66	32°14'01.368"N	103°37'49.471"W	0.00	
12900.00†	88.683	179.799	11186.62	1872.29	-1872.28	6.55	758683.95	449369.70	32°14'00.379"N	103°37'49.475"W	0.00	
13000.00†	88.683	179.799	11188.92	1972.26	-1972.25	6.90	758684.30	449269.73	32°13'59.389"N	103°37'49.478"W	0.00	
13100.00†	88.683	179.799	11191.22	2072.24	-2072.22	7.25	758684.65	449169.76	32°13'58.400"N	103°37'49.482"W	0.00	
13200.00†	88.683	179.799	11193.52	2172.21	-2172.20	7.60	758685.00	449069.79	32°13'57.411"N	103°37'49.485"W	0.00	
13300.00†	88.683	179.799	11195.82	2272.18	-2272.17	7.95	758685.35	448969.82	32°13'56.422"N	103°37'49.489"W	0.00	
13400.00†	88.683	179.799	11198.12	2372.16	-2372.14	8.30	758685.70	448869.85	32°13'55.432"N	103°37'49.492"W	0.00	
13500.00†	88.683	179.799	11200.41	2472.13	-2472.12	8.65	758686.05	448769.88	32°13'54.443"N	103°37'49.496"W	0.00	
13600.00†	88.683	179.799	11202.71	2572.10	-2572.09	9.00	758686.40	448669.91	32°13'53.454"N	103°37'49.499"W	0.00	
13700.00†	88.683	179.799	11205.01	2672.08	-2672.06	9.35	758686.75	448569.94	32°13'52.465"N	103°37'49.503"W	0.00	
13800.00†	88.683	179.799	11207.31	2772.05	-2772.03	9.70	758687.10	448469.97	32°13'51.475"N	103°37'49.507"W	0.00	
13900.00†	88.683	179.799	11209.61	2872.02	-2872.01	10.05	758687.45	448370.00	32°13'50.486"N	103°37'49.510"W	0.00	
14000.00†	88.683	179.799	11211.91	2972.00	-2971.98	10.40	758687.80	448270.04	32°13'49.497"N	103°37'49.514"W	0.00	
14100.00†	88.683	179.799	11214.21	3071.97	-3071.95	10.75	758688.15	448170.07	32°13'48.508"N	103°37'49.517"W	0.00	
14200.00†	88.683	179.799	11216.51	3171.95	-3171.93	11.10	758688.50	448070.10	32°13'47.518"N	103°37'49.521"W	0.00	
14300.00†	88.683	179.799	11218.80	3271.92	-3271.90	11.45	758688.85	447970.13	32°13'46.529"N	103°37'49.524"W	0.00	
14400.00†	88.683	179.799	11221.10	3371.89	-3371.87	11.80	758689.20	447870.16	32°13'45.540"N	103°37'49.528"W	0.00	
14500.00†	88.683	179.799	11223.40	3471.87	-3471.84	12.15	758689.55	447770.19	32°13'44.551"N	103°37'49.531"W	0.00	
14600.00†	88.683	179.799	11225.70	3571.84	-3571.82	12.50	758689.90	447670.22	32°13'43.561"N	103°37'49.535"W	0.00	
14700.00†	88.683	179.799	11228.00	3671.81	-3671.79	12.85	758690.25	447570.25	32°13'42.572"N	103°37'49.538"W	0.00	
14800.00†	88.683	179.799	11230.30	3771.79	-3771.76	13.20	758690.60	447470.28	32°13'41.583"N	103°37'49.542"W	0.00	
14900.00†	88.683	179.799	11232.60	3871.76	-3871.74	13.55	758690.95	447370.31	32°13'40.594"N	103°37'49.545"W	0.00	
15000.00†	88.683	179.799	11234.89	3971.73	-3971.71	13.90	758691.30	447270.34	32°13'39.604"N	103°37'49.549"W	0.00	
15100.00†	88.683	179.799	11237.19	4071.71	-4071.68	14.25	758691.65	447170.38	32°13'38.615"N	103°37'49.553"W	0.00	
15200.00†	88.683	179.799	11239.49	4171.68	-4171.66	14.60	758692.00	447070.41	32°13'37.626"N	103°37'49.556"W	0.00	
15300.00†	88.683	179.799	11241.79	4271.65	-4271.63	14.95	758692.35	446970.44	32°13'36.637"N	103°37'49.560"W	0.00	
15400.00†	88.683	179.799	11244.09	4371.63	-4371.60	15.30	758692.70	446870.47	32°13'35.647"N	103°37'49.563"W	0.00	
15500.00†	88.683	179.799	11246.39	4471.60	-4471.57	15.65	758693.05	446770.50	32°13'34.658"N	103°37'49.567"W	0.00	
15600.00†	88.683	179.799	11248.69	4571.58	-4571.55	16.00	758693.40	446670.53	32°13'33.669"N	103°37'49.570"W	0.00	
15657.15	88.683	179.799	11250.00†	4628.71	-4628.68	16.20	758693.60	446613.40	32°13'33.104"N	103°37'49.572"W	0.00	No 3 PBHL



Planned Wellpath Report

Prelim_1
Page 6 of 6



REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No.3 SHL
Area	Lea County, NM	Well	No.3
Field	(Dos Equis) Sec 12, T24S, R32E	Wellbore	No.3 PWB
Facility	Dos Equis 12 Fed Com 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	15657.15	11250.00	-4628.68	16.20	758693.60	446613.40	32°13'33.104"N	103°37'49.572"W	point

SURVEY PROGRAM - Ref Wellbore: No.3 PWB Ref Wellpath: Prelim_1				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	15657.15	NaviTrak (Standard)		No.3 PWB

SR & A

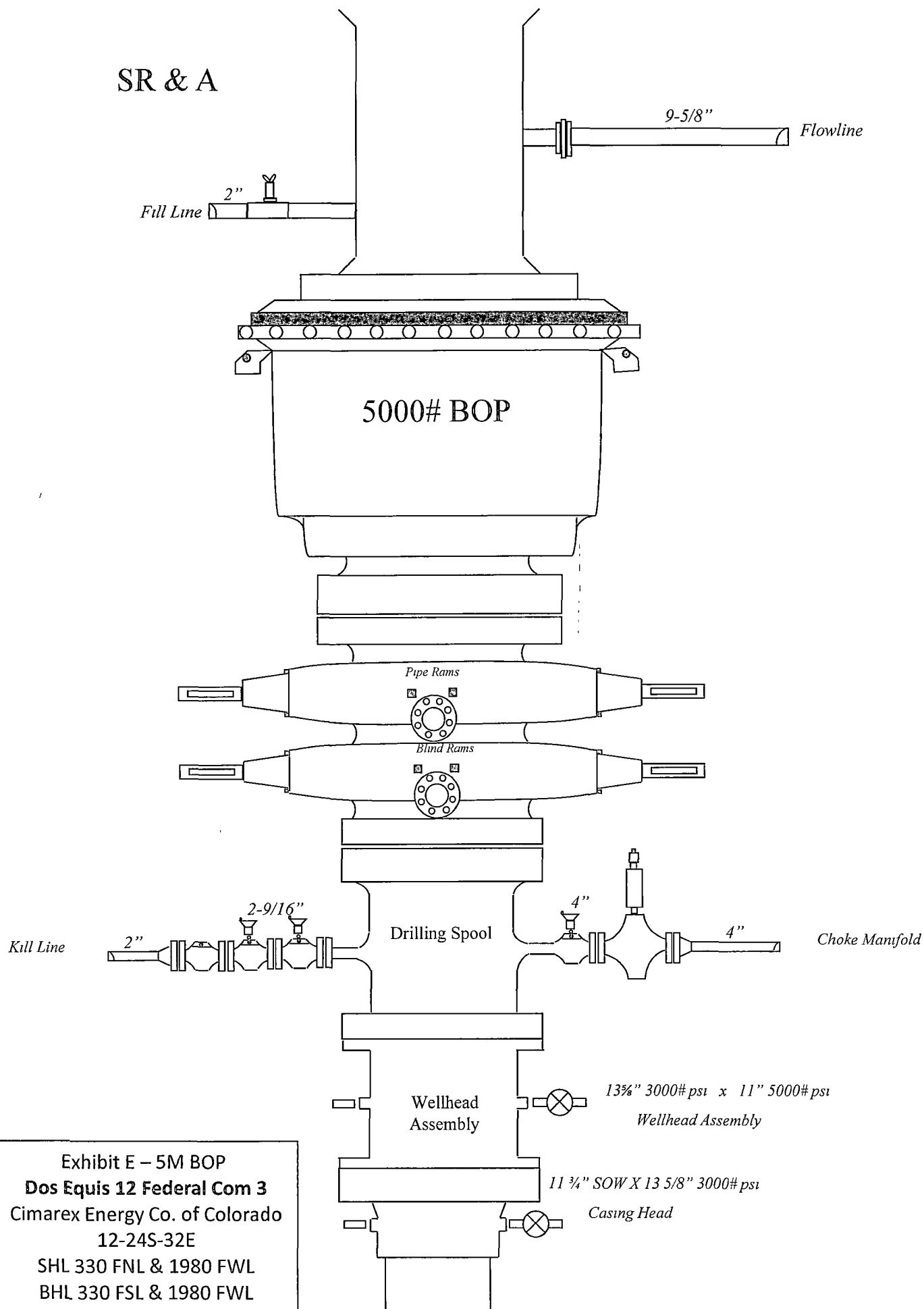


Exhibit E – 5M BOP

Dos Equis 12 Federal Com 3

Cimarex Energy Co. of Colorado

12-24S-32E

SHL 330 FNL & 1980 FWL

BHL 330 FSL & 1980 FWL

Lea County, NM

Drilling Operations Choke Manifold 5M Service

Exhibit E-1 – Choke Manifold Diagram

Dos Equis 12 Federal Com 3

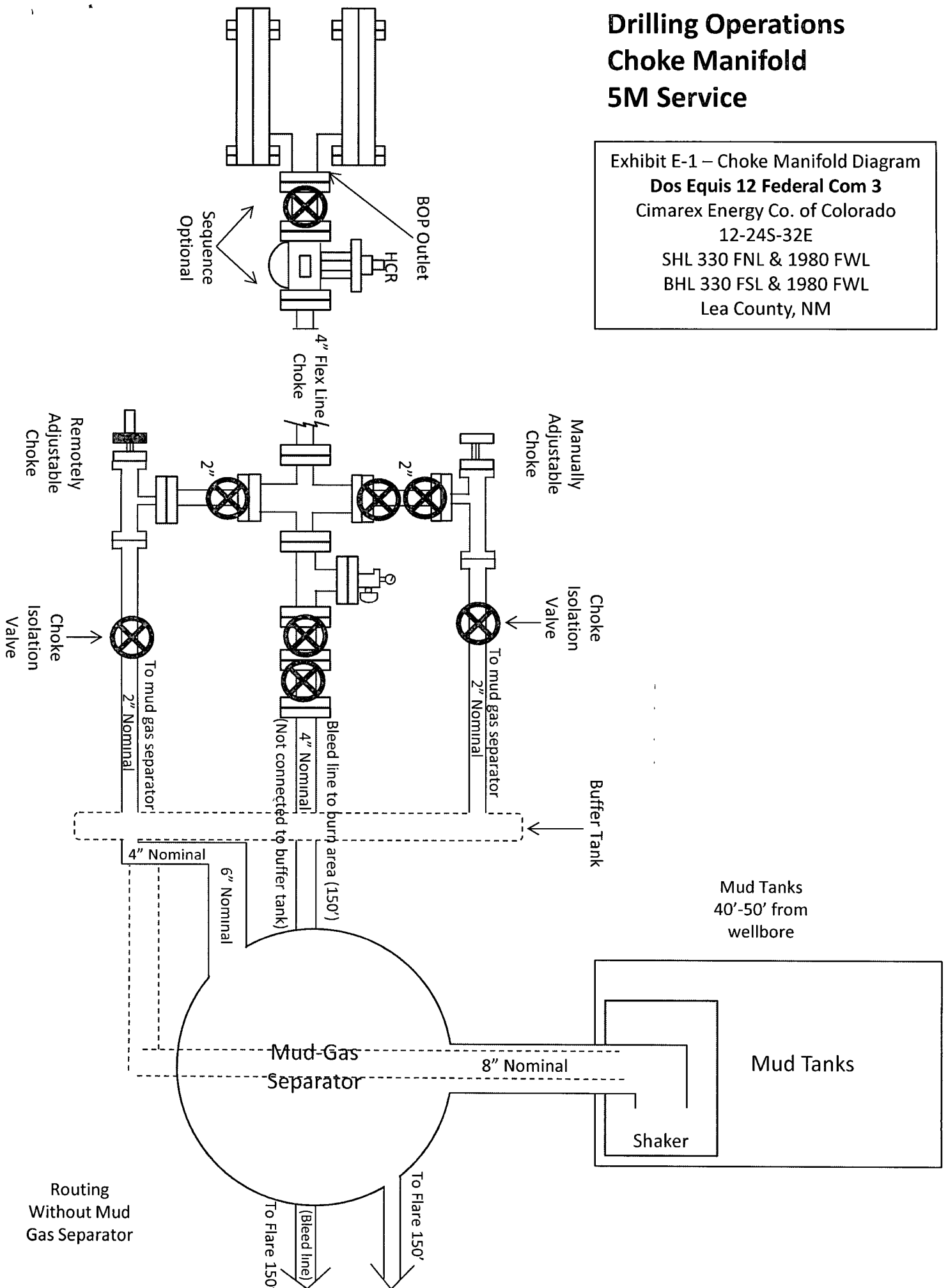
Cimarex Energy Co. of Colorado

12-24S-32E

SHL 330 FNL & 1980 FWL

BHL 330 FSL & 1980 FWL

Lea County, NM



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.

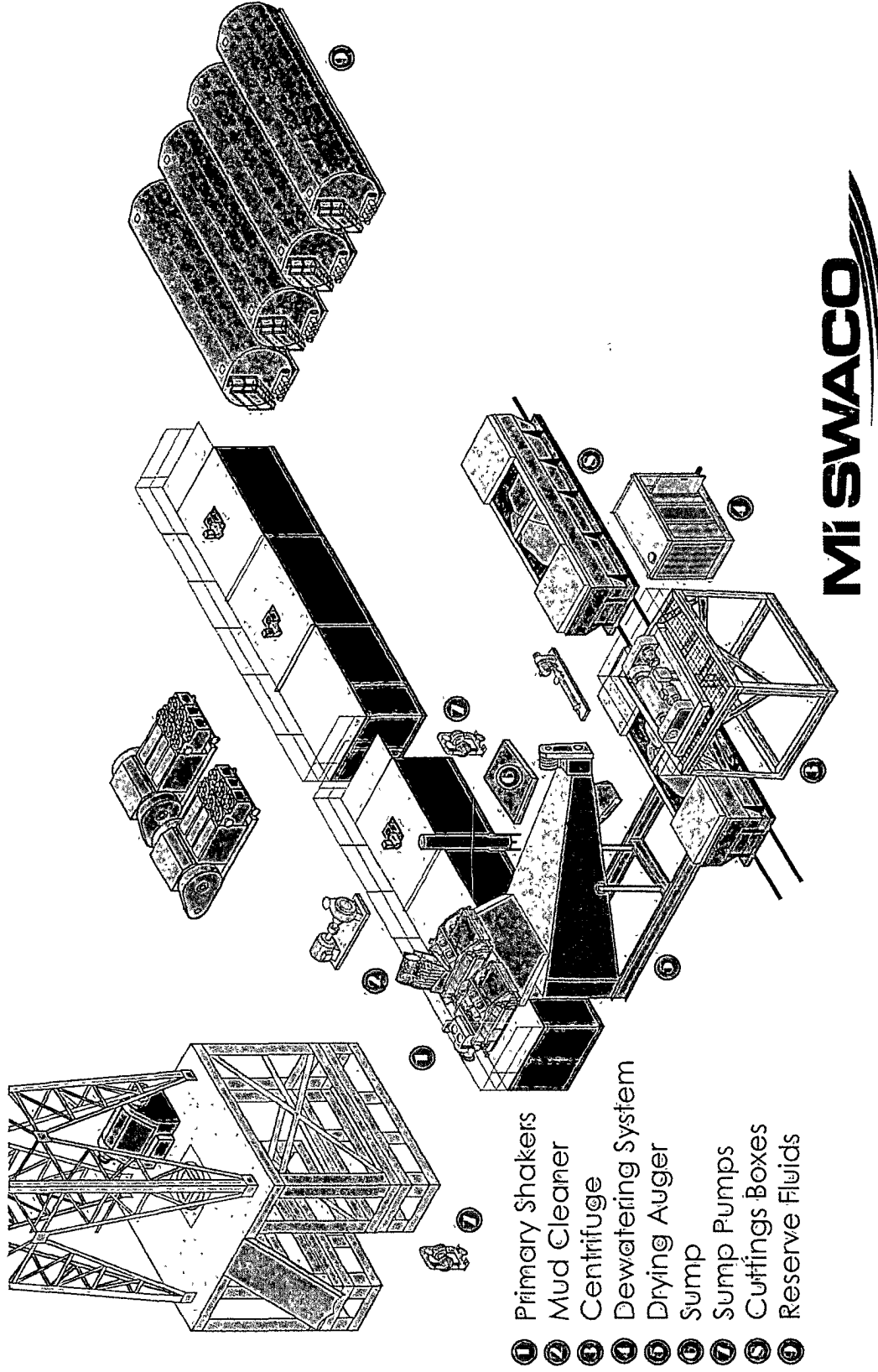
Spill prevention is accomplished by maintaining pump packing, hoses, and pipe fittings to insure no leaks are occurring. During an upset condition the source of the spill is isolated and repaired as soon as it is discovered. Free liquid is removed by a diaphragm pump and returned to the mud system. Loose 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.

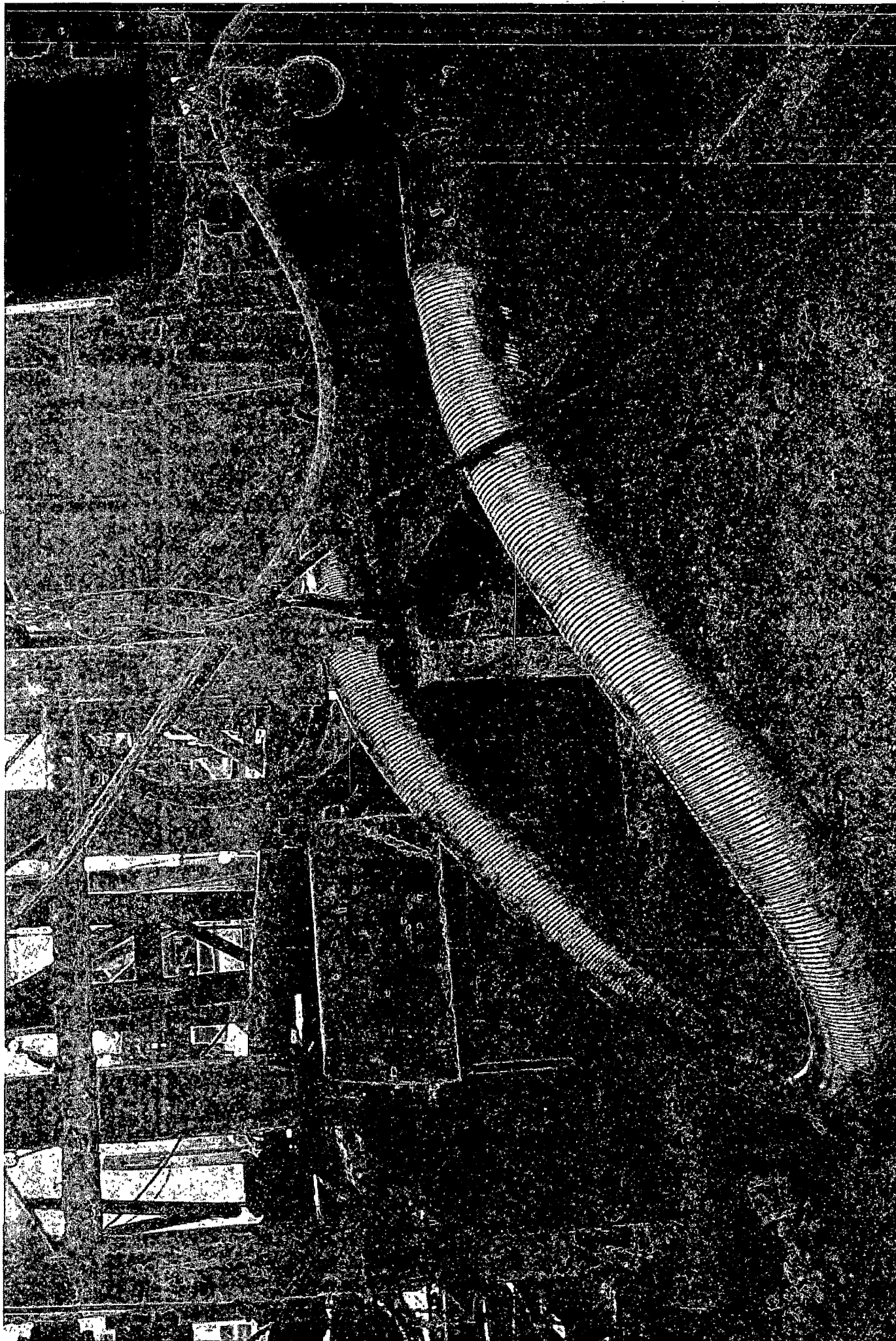
Closure Plan

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





Cactus Rig 115
Serial # 63270

MIDWEST
HOSE AND SPECIALTY INC.

INTERNAL HYDROSTATIC TEST REPORT			
Customer: CACTUS DRILLING		P.O. Number: RIG#147	
HOSE SPECIFICATIONS			
Type: CHOKER & KILL		Length: 35'	
I.D. 4" INCHES		O.D. 8"	
WORKING PRESSURE		TEST PRESSURE	
10,000 PSI		15,000	
COUPLINGS			
Stem Part No. E4.0X64WB		Ferrule No. FERRULE-128	
Type of Coupling: 4-1/16 10K FLANGE(BX-155)		Die Size:	
PROCEDURE			
<i>Hose assembly pressure tested with water at ambient temperature.</i>			
TIME HELD AT TEST PRESSURE		ACTUAL BURST PRESSURE:	
15 MIN.		0 PSI	
COMMENTS: SERIAL#63270			
Date: 7/14/2010		Tested By: BOBBY FINK	
Approved: BRENT BURNETT			

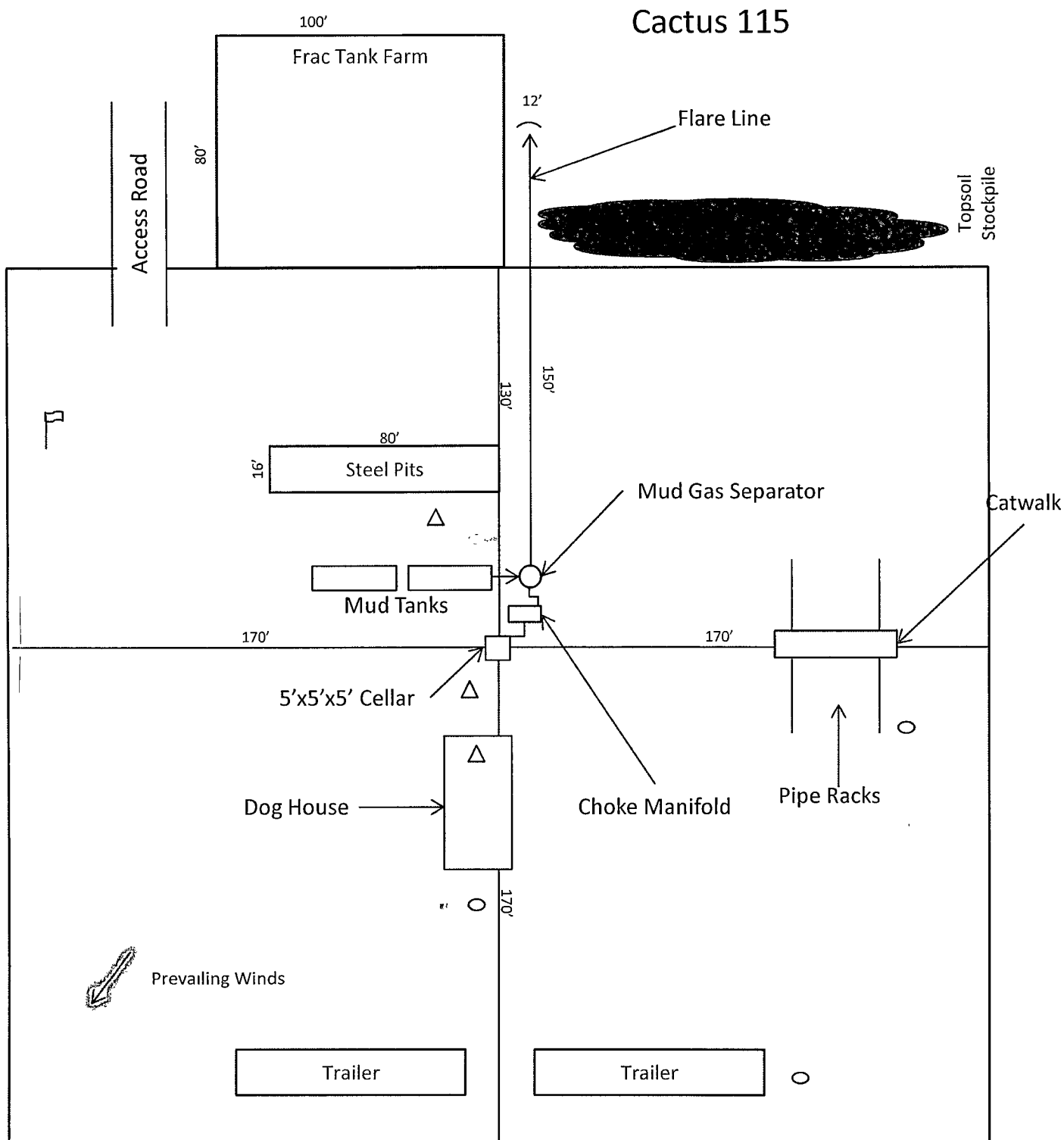


Midwest Hose
& Specialty, Inc.

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)



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

Exhibit D – Rig Diagram
Dos Equis 12 Federal Com 3
 Cimarex Energy Co. of Colorado
 12-24S-32E
 SHL 330 FNL & 1980 FWL
 BHL 330 FSL & 1980 FWL
 Lea County, NM

