AT3-12-699

OCD-HOBBS R-111-POTASH

HOBBS OCD

OCT 01 2012

RECEIVED

Form 3160-3
(April 2004)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5 Lease Serial No NM9824
BH NM27573 State Minerals SH
6. If Indian, Allotee or Tribe Name

1a Type of Work ☒ DRILL ☐ REENTER

7 If Unit or CA Agreement, Name and No
NM-70984-X Maduro Unit

1b Type of Well ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone

8. Lease Name and Well No (300523)
Laguna Deep Unit No. 21

2 Name of Operator
Cimarex Energy Co. of Colorado (162683)

9 API Well No.
30-025- 40812

3a. Address
600 N. Marienfeld St., Ste. 600; Midland, TX 79701

3b. Phone No. (include area code)
432-571-7800

10 Field and Pool, or Exploratory
~~Apache Ridge~~, Bone Spring (58960) Teas

4 Location of Well (Report location clearly and in accordance with any State requirements.*)

At Surface 36-19S-33E 660' FNL & 2310' FWL

At proposed prod Zone 35-19S-33E 660' FNL & 330' FWL *Horizontal Bone Spring test*

11. Sec , T R M or Blk and Survey or Area
35 & 36, 19S-33E

14 Distance in miles and direction from nearest town or post office*

12. County or Parish
Lea

13 State
NM

15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig unit line if any)	16 No of acres in lease	17 Spacing Unit dedicated to this well
330'	NM-127573 120 NM-9824 200	N/2 NW/4 36-19S-32E - 80 acres N/2 N/2 35-19S-32E - 160 acres
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft	19. Proposed Depth Pilot Hole 9700'	20 BLM/BIA Bond No on File
1361' NE #20	MD 16439' TVD 9300'	NM-2575
21. Elevations (Show whether DF, KDB, RT, GL, etc)	22 Approximate date work will start*	23 Estimated duration
3611' GR	09.01.12	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
2 A Drilling Plan
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)
4 Bond to cover the operations unless covered by an existing bond on file (see Item 20 above)
5. Operator Certification
6. Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature	Name (Printed/Typed)	Date
Celeste G. Dale	Celeste G. Dale	05.18.12
Title: Regulatory Analyst		

Approved By (Signature)	Name (Printed/Typed)	Date
/s/ Adam L. Seidlitz		SEP 24 2012
Title: STATE DIRECTOR	Office: NM STATE 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)

Capitan Controlled Water Basin

KA 10/05/12

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

OCT 09 2012

Drilling Plan
Laguna Deep Unit No. 21H
Cimarex Energy Co. of Colorado
Unit C, Section 36
T19S-R33E, 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 36-19S-33E 660' FNL & 2310' FWL
BHL 35-19S-33E 660' FNL & 330' FWL

2 **Elevation above sea level:** 3611' GR

3 **Geologic name of surface formation:** Quaternery 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 16439' TVD 9300'

6 **Estimated tops of geological markers:**

Rustler	1340'	Delaware	5580'
T. Salt	1570'	Basal Brushy Canyon	7770'
Base Salt	2992'	Bone Spring	8145'
Tansill	3132'	Avalon Shale	8570'
Yates	3236'	1st BSS	9250'
Top Capitan	4100'	2nd BS Carb.	9600'

7 **Possible mineral bearing formation:**
Bone Spring Oil

8 **Proposed Mud Circulating System:** See COA

Depth	Mud Wt	Visc	Fluid Loss	Type Mud
0' to 1390'	8.3 - 8.6	27-29	NC	FW
1390' to 3180'	10.0	27-29	NC	Brine water
3180' to 5500'	10.0	30-32	NC	FW
5500' to 16439'	8.5	27-29	NC	FW, 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.

8a. **Proposed drilling Plan**
After setting surface and intermediate casing, drill 7-7/8"" hole to KOP @ 9014' and kick off drilling through the curve to lateral TD @ 16439' MD, 9300' TVD. Run and cement casing string. Use 5-1/2" 17# P-110 LTC from 16439'-Surface. Cement as shown on following page.

Drilling Plan
Laguna Deep Unit No. 21H
Cimarex Energy Co. of Colorado
Unit C, Section 36
T19S-R33E, Lea County, NM

9 **Casing & Cementing Program:** See COA

accepted by Terry S - operator

String	Hole Size	Depth			Casing OD		Weight	Collar	Grade
Surface	20"	0'	to	~~1390'~~	New	16"	84#	STC	~~H-40~~ J-55
Intermediate	14 3/4"	0'	to	3180'	New	11 3/4"	54#	~~LTC~~	J-55 STC
Production	10 5/8"	0'	to	~~5500'~~	New	8 5/8"	32# *	LTC	J-55
Production 2	7 7/8"	0'	to	16439'	New	5 1/2"	17#	LTC	P-110

*8 5/8" casing will not be more than 50% evacuated during running of casing. → See COA

10 **Cementing:**

Surface 16"
Lead: 880SKS Halcem C + 4% Bentomite + 2% CaCl 13.5ppg 1.75 yield
Tail: 350SKS Halcem C + 2% CaCl 14.2ppg 1.34 yield TOC: Surface 100% Excess
Centralizers per Onshore Order 2.III.B.1f

Intermediate 11 3/4"
Lead: 880SKS Econocem + 5% Salt + 5# Gilsonite + 2% CaCl 12.9ppg 1.88yield
Tail: 330SKS Halcem C + 2% CaCl 14.8ppg 1.34 yield TOC: Surface, 100% Excess

Production 8 5/8"
Lead: 660SKS Econocem C + 5% Salt + 5# Gilsonite 12.9ppg 1.88yield
Tail: 275SKS Halcem + 1% CaCl 14.8ppg 1.34 yield 75% Excess TOC: Surface. Casing to be filled w/mud to avoid collapse.

Production 2 5 1/2"
Lead: 550SKS Econocem H + 0.5% CFR-3+0.1% HR-601 11.9ppg 2.44yield
Tail: 1600SKS Versacem H + 0.5% Halad-344 + 0.4% CFR-3 + 1# Salt + 0.1% HR-601 14.5ppg 1.32 yield
25% Excess TOC: 2900'
Centralizers every 3rd joint through the curve or legal location hardline to provide adequate cement coverage every 100' unless hole conditions require greater spacing between centralizers.

See COA

According to the State Engineer, average depth to groundwater is 250. Fresh water zones will be protected by setting 16" casing at ~~1390'~~ and cementing to surface. Hydrocarbon zones will be protected by settng 8⅝" casing at ~~5500'~~ and cementing to surface, and by setting 5½" casing at 16439' and cementing to 2900'. See COA

Collapse Factor	*Burst Factor*	*Tension Factor*
1.125	1.125	1.6

11 **Pressure control Equipment:** * See COA

Exhibit "E". A 13⅝" 5000 PSI working pressure B.O.P. tested to 3000 PSI consisting of one set of blind rams and one set of pipe rams and a 5000# annular type preventer. A choke manifold and 120 gallon accumulator with floor and remote operating stations and auxiliary power system. Rotating head below 5500.' 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 installed before drilling out of the surface casing.

* See COA - Base of 16" surface csg

BOP unit will be hydraulically operated. BOP will be nippled up and operated at least once a day while drilling and the blind rams will be operated when out of hole during trips. No abnormal pressure or temperature is expected while drilling. From the base of the surface pipe through the running of production casing, the well will be equipped with a 5000 psi BOP system tested to 3000 psi.

BOPS will be tested by an independent service company to 250 psi low and 3000 psi high. Hydril will be tested to 250 psi low and 1500 psi high.

* See COA

Cimarex Energy Co. of Colorado (operator) requests a variance if Scandrill Eagle (rig name) is used to drill this well to use a co-flex line between the BOP and choke manifold.
Manufacturer: Gates E&S North America
Serial Number: L31853011112
Length: 35' Size: 3-1/16" Ends: flanges/clamps
WP rating: 10,000 psi Anchors required by manufacturer – Yes/No

Drilling Plan
Laguna Deep Unit No. 21H
Cimarex Energy Co. of Colorado
Unit C, Section 36
T19S-R33E, Lea County, NM

12 Testing, Logging and Coring Program: * See COA

A. Mud logging program: 2 man unit from 5200 to TD
B. Electric logging program: CNL / LDT / CAL / GR, DLL / CAL / GR - 8910' to T.D.
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 H_2S from the surface to the Bone Spring formations to meet the BLM's minimum requirements for the submission of an "H_2S Drilling Operation Plan" or "Public Protection Plan" for the drilling and completion of this well. Since we have an H_2S Safety package on all wells, attached is an "H_2S 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 **4185 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 potentialed as **an oil well.**

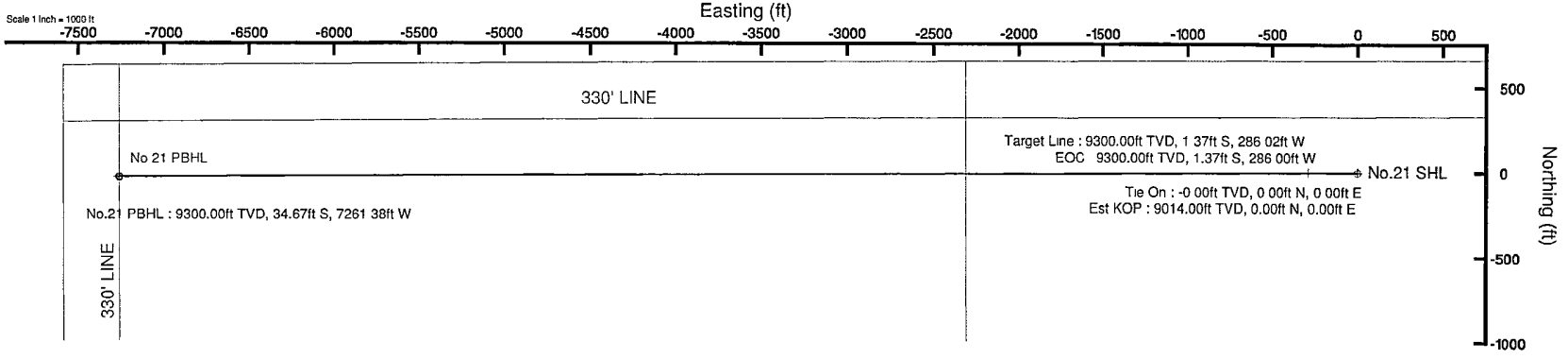
Cimarex Energy Co. of Colorado

Location: Lea County, NM
Field: (Laguna) Sec36, T19S, R33E
Facility: Laguna Deep Unit No.21

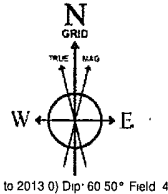
Slot: No.21 SHL
Well: No.21
Wellbore: No.21 PWB

Well Profile Data

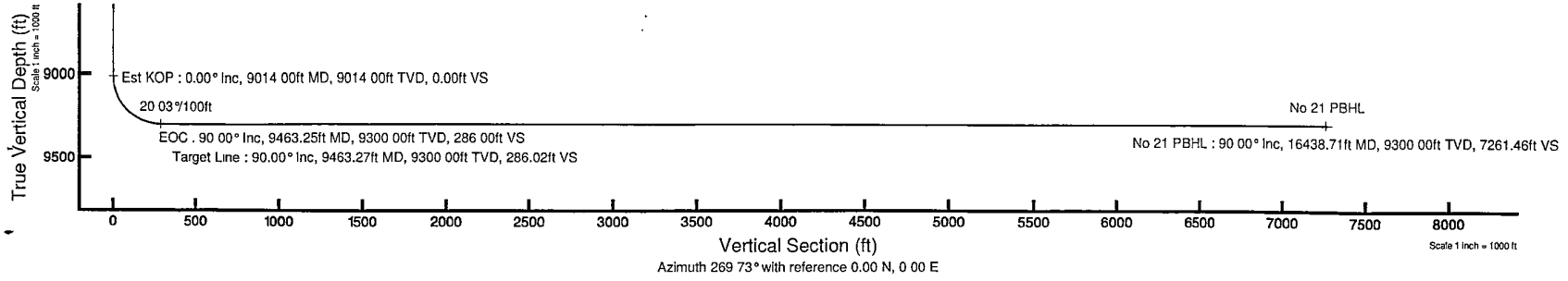
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	0.00	0.000	269.726	0.00	0.00	0.00	0.00	0.00
Est KOP	9014.00	0.000	269.726	9014.00	0.00	0.00	0.00	0.00
EOC	9463.25	90.000	269.726	9300.00	-1.37	-286.00	20.03	286.00
Target Line	9463.27	90.000	269.726	9300.00	-1.37	-286.02	2.00	286.02
No.21 PBHL	16438.71	90.000	269.726	9300.00	-34.67	-7261.38	0.00	7261.46



Plot reference wellpath is Rev-A 0	
True vertical depths are referenced to Rig on No 21 SHL (RT)	Grid System: NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet
Measured depths are referenced to Rig on No 21 SHL (RT)	North Reference Grid north
Rig on No 21 SHL (RT) to Mean Sea Level 3611 feet	Scale True distance
Mean Sea Level to Mud line (At Slot No 21 SHL) -3611 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: gentbry on 3/13/2012



BGGM (1945 0 to 2013 0) Dip: 60 50° Field 48783 9 nT
Magnetic North is 7 63 degrees East of True North (at 3/12/2012)
Grid North is 0 39 degrees East of True North
To correct azimuth from True to Grid subtract 0 39 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



Azimuth 269 73° with reference 0.00 N, 0 00 E

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co. of Colorado	Slot	No.21 SHL
Area	Lea County, NM	Well	No.21
Field	(Laguna) Sec36, T19S, R33E	Wellbore	No.21 PWB
Facility	Laguna Deep Unit No.21		

WELLPATH DATA (178 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	269.726	0 00	0.00	0.00	0.00	761634.80	590792.80	32°37'19.564"N	103°37'04.094"W	0 00	Tie On
100 00†	0 000	269.726	100.00	0.00	0.00	0.00	761634.80	590792.80	32°37'19.564"N	103°37'04 094"W	0 00	
200.00†	0 000	269.726	200.00	0.00	0.00	0.00	761634.80	590792.80	32°37'19.564"N	103°37'04 094"W	0 00	
300 00†	0 000	269.726	300 00	0.00	0.00	0.00	761634 80	590792.80	32°37'19.564"N	103°37'04.094"W	0 00	
400 00†	0 000	269.726	400.00	0.00	0.00	0.00	761634.80	590792.80	32°37'19.564"N	103°37'04.094"W	0.00	
500.00†	0 000	269.726	500.00	0.00	0.00	0.00	761634.80	590792.80	32°37'19.564"N	103°37'04.094"W	0 00	
600 00†	0 000	269.726	600.00	0.00	0.00	0.00	761634.80	590792.80	32°37'19.564"N	103°37'04.094"W	0.00	
700.00†	0.000	269.726	700.00	0.00	0.00	0.00	761634 80	590792.80	32°37'19.564"N	103°37'04.094"W	0 00	
800 00†	0.000	269.726	800.00	0.00	0.00	0.00	761634.80	590792.80	32°37'19 564"N	103°37'04.094"W	0 00	
900.00†	0 000	269.726	900 00	0.00	0.00	0.00	761634.80	590792.80	32°37'19.564"N	103°37'04.094"W	0 00	
1000 00†	0 000	269.726	1000 00	0.00	0.00	0.00	761634.80	590792.80	32°37'19 564"N	103°37'04.094"W	0 00	
1100 00†	0 000	269.726	1100 00	0.00	0.00	0.00	761634.80	590792 80	32°37'19.564"N	103°37'04.094"W	0.00	
1200.00†	0 000	269.726	1200 00	0.00	0.00	0.00	761634.80	590792.80	32°37'19.564"N	103°37'04 094"W	0 00	
1300 00†	0 000	269.726	1300.00	0.00	0.00	0.00	761634.80	590792 80	32°37'19.564"N	103°37'04.094"W	0.00	
1340.00†	0 000	269.726	1340 00	0.00	0.00	0.00	761634.80	590792.80	32°37'19.564"N	103°37'04.094"W	0.00	Rustler
1400 00†	0.000	269 726	1400.00	0.00	0.00	0.00	761634 80	590792.80	32°37'19.564"N	103°37'04.094"W	0.00	
1500 00†	0 000	269.726	1500.00	0.00	0.00	0.00	761634 80	590792.80	32°37'19.564"N	103°37'04.094"W	0 00	
1570 00†	0 000	269.726	1570 00	0.00	0.00	0.00	761634.80	590792.80	32°37'19.564"N	103°37'04.094"W	0 00	Salt
1600 00†	0 000	269.726	1600 00	0.00	0.00	0.00	761634.80	590792 80	32°37'19.564"N	103°37'04.094"W	0 00	
1700 00†	0 000	269.726	1700 00	0.00	0.00	0.00	761634 80	590792.80	32°37'19.564"N	103°37'04.094"W	0 00	
1800 00†	0 000	269.726	1800 00	0.00	0.00	0.00	761634.80	590792.80	32°37'19.564"N	103°37'04 094"W	0 00	
1900.00†	0 000	269.726	1900 00	0.00	0.00	0.00	761634 80	590792.80	32°37'19.564"N	103°37'04.094"W	0 00	
2000.00†	0.000	269 726	2000 00	0.00	0.00	0.00	761634 80	590792.80	32°37'19.564"N	103°37'04.094"W	0 00	
2100 00†	0.000	269 726	2100 00	0.00	0.00	0.00	761634.80	590792 80	32°37'19.564"N	103°37'04.094"W	0 00	
2200.00†	0.000	269.726	2200.00	0.00	0.00	0.00	761634.80	590792.80	32°37'19.564"N	103°37'04.094"W	0.00	
2300.00†	0.000	269.726	2300 00	0.00	0.00	0.00	761634 80	590792.80	32°37'19.564"N	103°37'04.094"W	0 00	
2400.00†	0.000	269.726	2400 00	0.00	0.00	0.00	761634 80	590792.80	32°37'19.564"N	103°37'04.094"W	0 00	
2500.00†	0.000	269.726	2500.00	0.00	0.00	0.00	761634.80	590792.80	32°37'19.564"N	103°37'04.094"W	0 00	
2600.00†	0.000	269.726	2600.00	0.00	0.00	0.00	761634.80	590792.80	32°37'19.564"N	103°37'04.094"W	0 00	
2700 00†	0.000	269.726	2700 00	0.00	0.00	0.00	761634.80	590792.80	32°37'19.564"N	103°37'04.094"W	0.00	
2800.00†	0.000	269.726	2800.00	0.00	0.00	0.00	761634.80	590792.80	32°37'19.564"N	103°37'04.094"W	0 00	
2900.00†	0.000	269.726	2900.00	0.00	0.00	0.00	761634 80	590792 80	32°37'19.564"N	103°37'04.094"W	0 00	
3000.00†	0.000	269.726	3000 00	0.00	0.00	0.00	761634 80	590792 80	32°37'19.564"N	103°37'04.094"W	0 00	
3100.00†	0.000	269.726	3100 00	0.00	0.00	0.00	761634 80	590792.80	32°37'19.564"N	103°37'04.094"W	0 00	
3130 00†	0.000	269 726	3130 00	0.00	0.00	0.00	761634 80	590792 80	32°37'19 564"N	103°37'04 094"W	0 00	Tansill
3200.00†	0.000	269.726	3200 00	0.00	0.00	0.00	761634 80	590792.80	32°37'19.564"N	103°37'04.094"W	0 00	
3240.00†	0.000	269 726	3240 00	0.00	0.00	0.00	761634 80	590792.80	32°37'19.564"N	103°37'04.094"W	0 00	Yates
3300.00†	0.000	269.726	3300 00	0.00	0.00	0.00	761634 80	590792 80	32°37'19.564"N	103°37'04.094"W	0 00	
3400.00†	0.000	269 726	3400 00	0.00	0.00	0.00	761634.80	590792 80	32°37'19.564"N	103°37'04.094"W	0 00	
3500 00†	0.000	269.726	3500 00	0.00	0.00	0.00	761634 80	590792 80	32°37'19.564"N	103°37'04.094"W	0.00	
3600.00†	0.000	269.726	3600 00	0 00	0.00	0.00	761634 80	590792 80	32°37'19.564"N	103°37'04.094"W	0 00	
3700 00†	0.000	269.726	3700 00	0.00	0 00	0.00	761634 80	590792 80	32°37'19.564"N	103°37'04.094"W	0.00	
3800.00†	0.000	269 726	3800.00	0.00	0.00	0.00	761634 80	590792 80	32°37'19.564"N	103°37'04.094"W	0 00	
3900 00†	0.000	269 726	3900.00	0.00	0.00	0.00	761634 80	590792.80	32°37'19.564"N	103°37'04.094"W	0.00	
4000 00†	0.000	269.726	4000 00	0 00	0.00	0.00	761634.80	590792.80	32°37'19.564"N	103°37'04 094"W	0 00	

Planned Wellpath Report

Rev-A.0

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co. of Colorado	Slot	No.21 SHL
Area	Lea County, NM	Well	No.21
Field	(Laguna) Sec36, T19S, R33E	Wellbore	No.21 PWB
Facility	Laguna Deep Unit No.21		

WELLPATH DATA (178 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
8300 00†	0.000	269.726	8300.00	0 00	0.00	0.00	761634.80	590792 80	32°37'19.564"N	103°37'04.094"W	0.00	
8400.00†	0.000	269.726	8400.00	0 00	0.00	0.00	761634.80	590792 80	32°37'19.564"N	103°37'04.094"W	0.00	
8500 00†	0.000	269 726	8500.00	0 00	0.00	0.00	761634 80	590792 80	32°37'19.564"N	103°37'04.094"W	0.00	
8570.00†	0.000	269.726	8570.00	0.00	0.00	0.00	761634.80	590792.80	32°37'19 564"N	103°37'04.094"W	0.00	Avalon Shale
8600.00†	0 000	269.726	8600 00	0 00	0 00	0.00	761634 80	590792 80	32°37 19 564"N	103°37'04.094"W	0 00	
8700.00†	0 000	269.726	8700 00	0.00	0.00	0.00	761634 80	590792.80	32°37'19 564"N	103°37'04.094"W	0 00	
8800.00†	0 000	269.726	8800 00	0.00	0 00	0.00	761634.80	590792.80	32°37'19 564"N	103°37'04.094"W	0.00	
8900.00†	0 000	269 726	8900 00	0.00	0.00	0.00	761634.80	590792.80	32°37'19.564"N	103°37'04.094"W	0.00	
9000.00†	0 000	269.726	9000 00	0.00	0 00	0 00	761634 80	590792.80	32°37'19 564"N	103°37'04.094"W	0.00	
9014 00†	0.000	269.726	9014.00	0.00	0.00	0.00	761634.80	590792 80	32°37 19 564"N	103°37'04.094"W	0.00	Est KOP
9100.00†	17 229	269.726	9098 71	12 83	-0 06	-12.83	761621 97	590792.74	32°37'19.564"N	103°37'04.244"W	20 03	
9200.00†	37 262	269.726	9187.16	58 38	-0.28	-58.38	761576 42	590792.52	32°37'19.565"N	103°37'04.777"W	20 03	
9291.57†	55 606	269.726	9250.00	124.45	-0.60	-124.44	761510.36	590792.20	32°37'19.567"N	103°37'05 549"W	20 03	1st BSS
9300.00†	57 296	269.726	9254 66	131.47	-0.63	-131.47	761503.33	590792 17	32°37'19.567"N	103°37'05.632"W	20 03	
9400 00†	77.329	269.726	9293.03	223.27	-1 07	-223.26	76141.1.54	590791 73	32°37 19 568"N	103°37'06.705"W	20.03	
9463.25	90 000	269.726	9300 00	286.00	-1.37	-286.00	761348 81	590791.43	32°37'19.570"N	103°37'07.438"W	20.03	EOC
9463.27	90 000	269.726	9300 00	286.02	-1 37	-286.02	761348 79	590791.43	32°37'19.570"N	103°37'07.439"W	2 00	Target Line
9500.00†	90.000	269.726	9300.00	322.75	-1.54	-322.75	761312 06	590791.26	32°37'19.570"N	103°37'07.868"W	0.00	
9600 00†	90 000	269.726	9300 00	422.75	-2 02	-422.75	761212.07	590790.78	32°37'19.572"N	103°37'09.037"W	0.00	
9700.00†	90.000	269.726	9300.00	522 75	-2 50	-522.75	761112.07	590790.30	32°37 19 574"N	103°37'10.206"W	0.00	
9800 00†	90.000	269 726	9300.00	622.75	-2.98	-622 75	761012.08	590789.82	32°37'19.576"N	103°37'11.376"W	0 00	
9900 00†	90.000	269 726	9300.00	722 75	-3.45	-722.74	760912.08	590789.35	32°37'19 578"N	103°37'12.545"W	0 00	
10000.00†	90.000	269 726	9300.00	822.75	-3.93	-822 74	760812.09	590788.87	32°37'19 580"N	103°37'13.714"W	0 00	
10100.00†	90.000	269 726	9300.00	922.75	-4.41	-922.74	760712.09	590788.39	32°37'19 582"N	103°37'14.883"W	0 00	
10200 00†	90.000	269.726	9300 00	1022 75	-4 88	-1022.74	760612 10	590787 92	32°37 19 584"N	103°37'16.052"W	0.00	
10300 00†	90.000	269.726	9300.00	1122.75	-5.36	-1122.74	760512.10	590787.44	32°37'19.586"N	103°37'17.221"W	0.00	
10400 00†	90 000	269.726	9300 00	1222.75	-5.84	-1222.74	760412.11	590786.96	32°37'19 588"N	103°37'18.391"W	0 00	
10500 00†	90 000	269 726	9300 00	1322 75	-6.32	-1322.74	760312.11	590786.48	32°37'19 589"N	103°37'19.560"W	0.00	
10600 00†	90.000	269 726	9300 00	1422 75	-6.79	-1422.74	760212.12	590786.01	32°37'19 591"N	103°37'20.729"W	0.00	
10700 00†	90.000	269.726	9300.00	1522 75	-7.27	-1522.73	760112.12	590785 53	32°37 19 593"N	103°37'21.898"W	0.00	
10800.00†	90 000	269 726	9300 00	1622 75	-7.75	-1622.73	760012.13	590785.05	32°37'19 595"N	103°37'23.067"W	0 00	
10900.00†	90.000	269.726	9300.00	1722.75	-8.23	-1722.73	759912.13	590784.57	32°37'19.597"N	103°37'24.237"W	0 00	
11000 00†	90 000	269.726	9300.00	1822.75	-8.70	-1822.73	759812.14	590784.10	32°37'19 599"N	103°37'25.406"W	0.00	
11100.00†	90 000	269 726	9300 00	1922 75	-9.18	-1922.73	759712.14	590783.62	32°37'19 601"N	103°37'26.575"W	0 00	
11200 00†	90.000	269.726	9300.00	2022 75	-9 66	-2022.73	759612 15	590783 14	32°37 19 603"N	103°37'27.744"W	0.00	
11300 00†	90 000	269.726	9300 00	2122.75	-10.14	-2122.73	759512.15	590782.66	32°37'19 605"N	103°37'28.913"W	0 00	
11400 00†	90 000	269.726	9300 00	2222 75	-10 61	-2222.73	759412.16	590782.19	32°37'19 606"N	103°37'30.083"W	0 00	
11500.00†	90 000	269.726	9300 00	2322 75	-11 09	-2322.73	759312 16	590781.71	32°37'19 608"N	103°37'31.252"W	0.00	
11600.00†	90.000	269.726	9300 00	2422 75	-11 57	-2422.72	759212.17	590781.23	32°37'19.610"N	103°37'32.421"W	0 00	
11700.00†	90.000	269.726	9300.00	2522.75	-12.04	-2522.72	759112.17	590780 76	32°37 19.612"N	103°37'33 590"W	0.00	
11800.00†	90.000	269.726	9300.00	2622.75	-12.52	-2622 72	759012 18	590780 28	32°37'19.614"N	103°37'34.759"W	0 00	
11900.00†	90.000	269.726	9300.00	2722 75	-13.00	-2722 72	758912 18	590779.80	32°37'19.616"N	103°37'35.929"W	0 00	
12000.00†	90.000	269.726	9300.00	2822 75	-13.48	-2822 72	758812 19	590779.32	32°37'19.618"N	103°37'37.098"W	0 00	
12100.00†	90.000	269.726	9300.00	2922.75	-13.95	-2922.72	758712.19	590778.85	32°37'19 619"N	103°37'38.267"W	0 00	
12200 00†	90.000	269.726	9300.00	3022 75	-14 43	-3022 72	758612 20	590778 37	32°37 19 621"N	103°37'39 436"W	0 00	

ìâ□

1) No.21 PBHL	16438.71	9300.00	-34.67	-7261.38	**754373.69**	**590758.14**	32°37'19.697"N	103°38'28.995"W	point

SURVEY PROGRAM - Ref Wellbore: No.21 PWB Ref Wellpath: Rev-A.0

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	16438.71	NaviTrak (Standard)		No.21 PWB

Đç□

SR & A

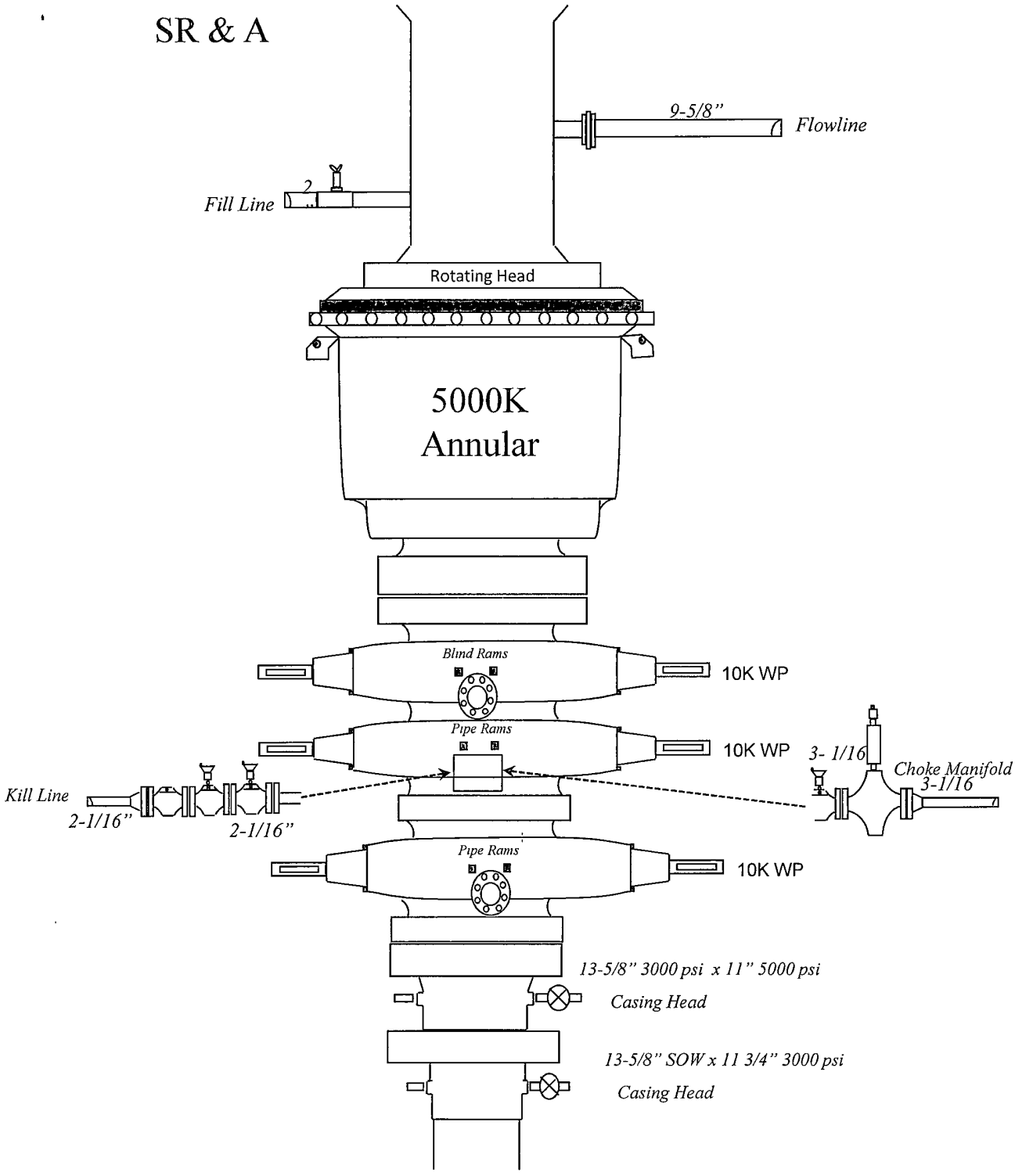
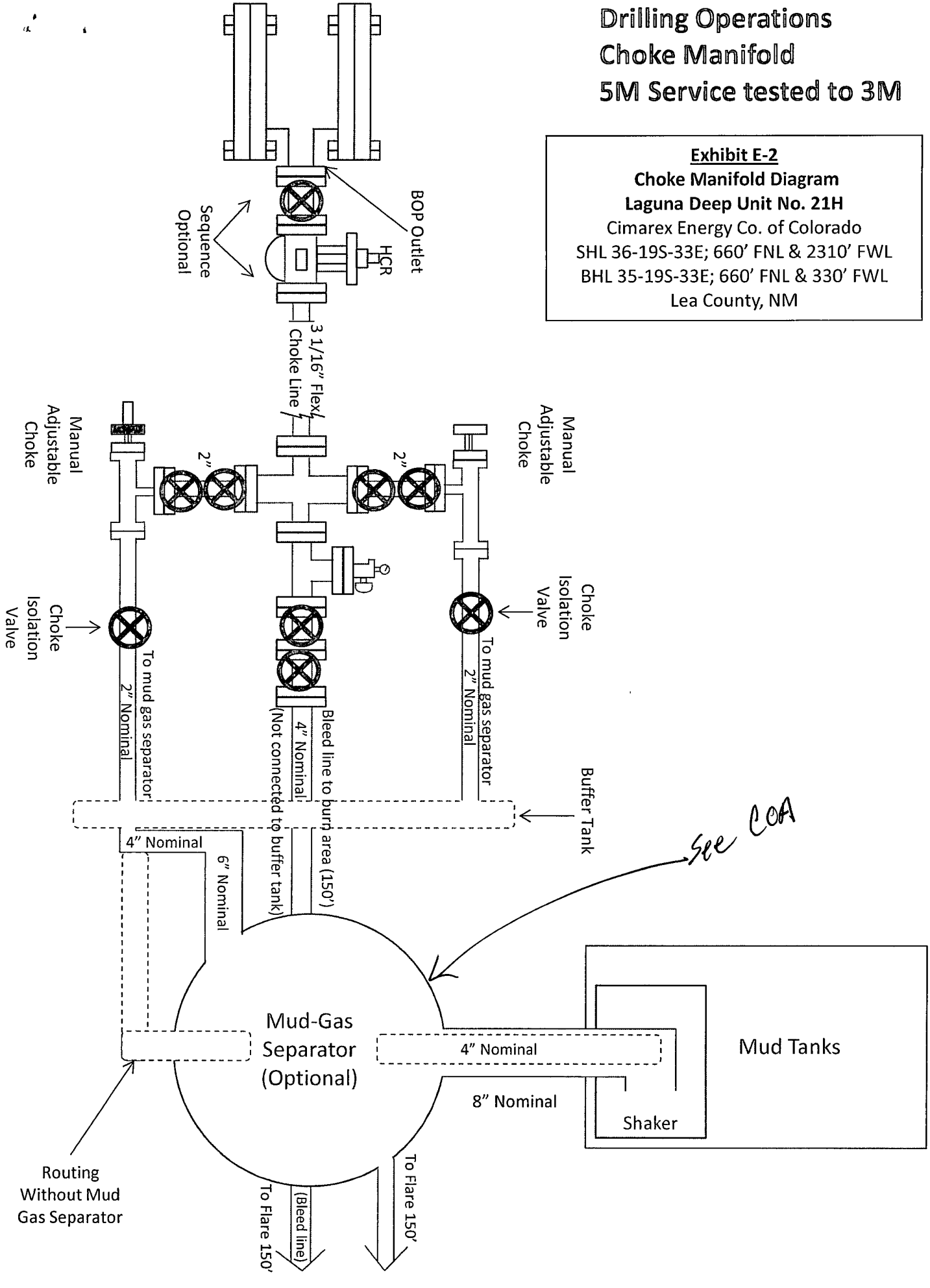
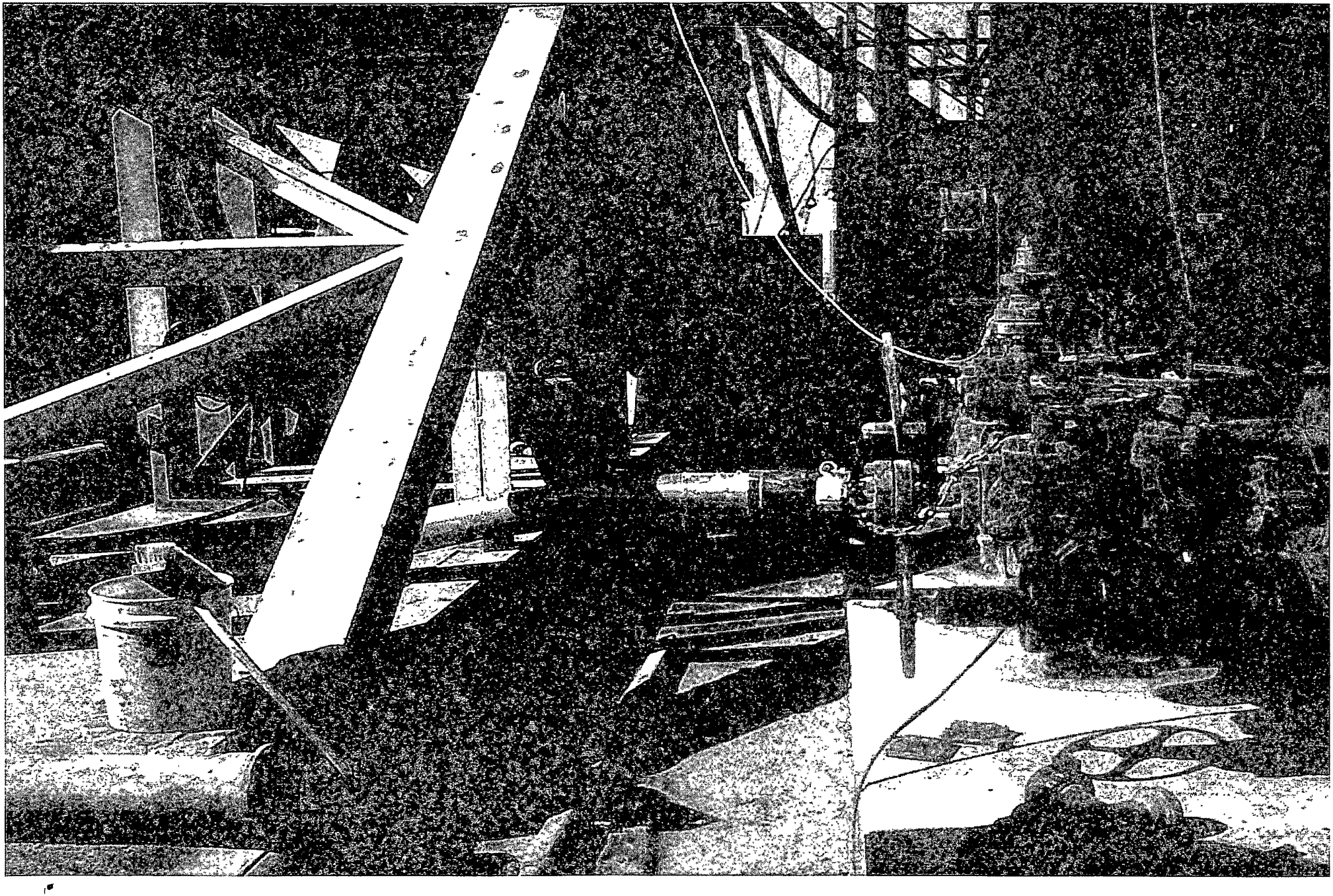


Exhibit E
5000# BOP tested to 3000#
Laguna Deep Unit No. 21
Cimarex Energy Co. of Colorado
SHL 36-19S-33E; 660' FNL & 2310' FWL
BHL 35-19S-33E; 660' FNL & 330' FWL
Lea County, NM

Drilling Operations
Choke Manifold
5M Service tested to 3M

Exhibit E-2
Choke Manifold Diagram
Laguna Deep Unit No. 21H
Cimarex Energy Co. of Colorado
SHL 36-19S-33E; 660' FNL & 2310' FWL
BHL 35-19S-33E; 660' FNL & 330' FWL
Lea County, NM





Scandrill Eagle
Serial # L31853011112D

GATES E & S NORTH AMERICA, INC
DU-TEX
134 44TH STREET
CORPUS CHRISIT, TEXAS 78405

PHONE: 361-887-9807
FAX: 361-887-0812
EMAIL: crpe&s@gates.com
WEB: www.gates.com

GRADE E PRESSURE TEST CERTIFICATE

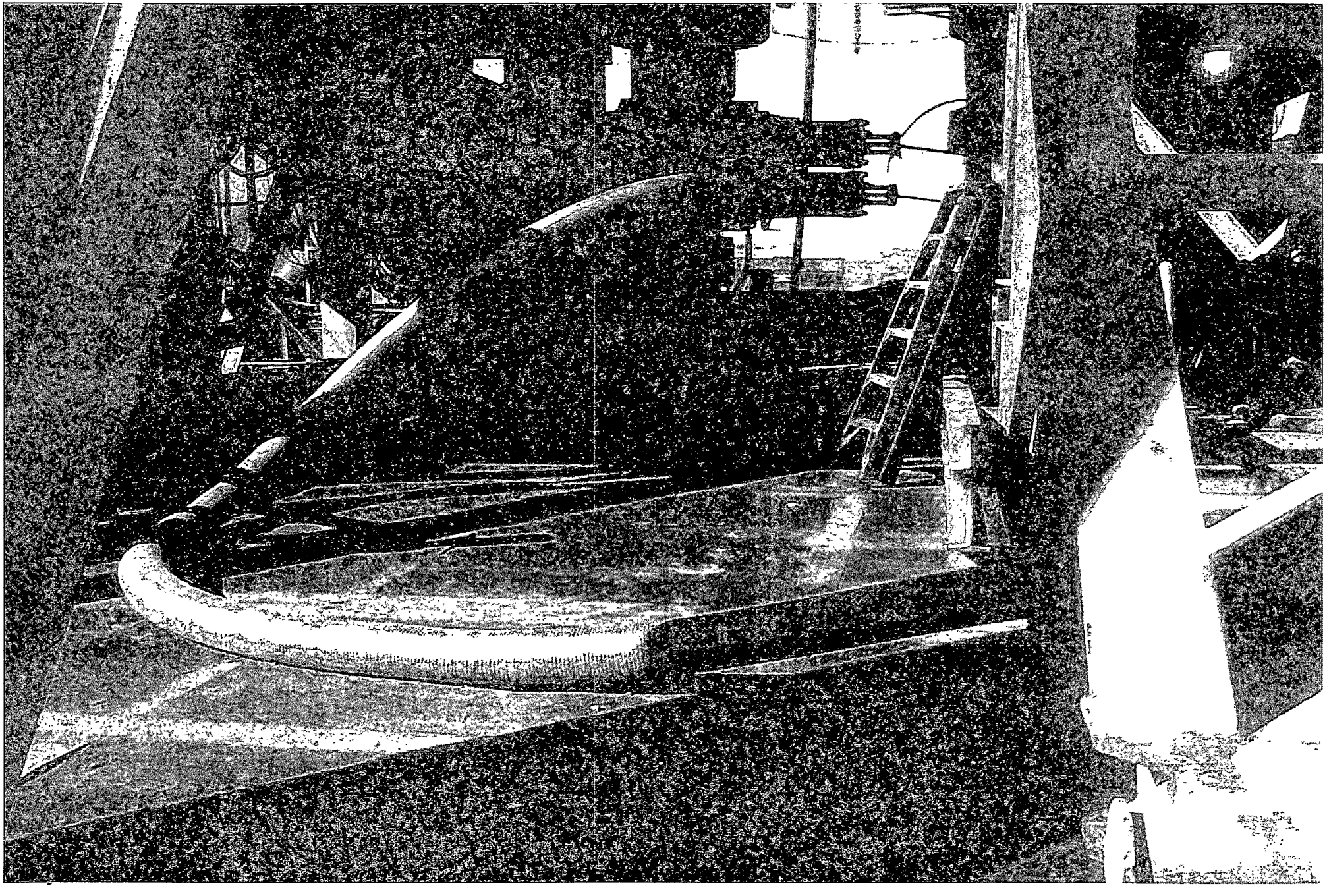
Customer :	SPECIALTY SALES	Test Date :	3/13/2012
Customer Ref. :	44479-S	Certificate No. :	D-031312-2
Invoice No. :	184955	Created By :	RORY BOYD

Product Description:	10K3.542.0CK41/1610K FLANGES

End Fitting 1 :	4 1/16 10K FLANGE	End Fitting 2 :	4 1/16 10K FLANGE
Gates Part No. :	4773-6291	Hose Serial No. :	L31853011112D-031312-2
Assembly Code :	L31853011112	Test Pressure :	15,000 PSI
Working Pressure :	10,000 PSI		

Gates E & S North America, Inc. certifies that the following hose assembly has been tested to API 7K requirements and passed the hydrostatic test per API Spec 7K, Fifth Edition, June 2010, Test pressure 9.6.7 and per Table 9 to 15,000 psi in accordance with this product number. Hose burst pressure 9.6.7.2 exceeds the minimum of 2.5 times the working pressure per Table 9.

Technician :	JOE R.	Technical Supervisor :	RAM V.
Date :	3/13/2012	Date :	3/13/2012
Signature :		Signature :	
Quality Manager :	RORY B.	Testing Operator :	MARK M.
Date :	3/13/2012	Date :	3/13/2012
Signature :		Signature :	



Scandrill Eagle
Serial # L31853011112D

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.

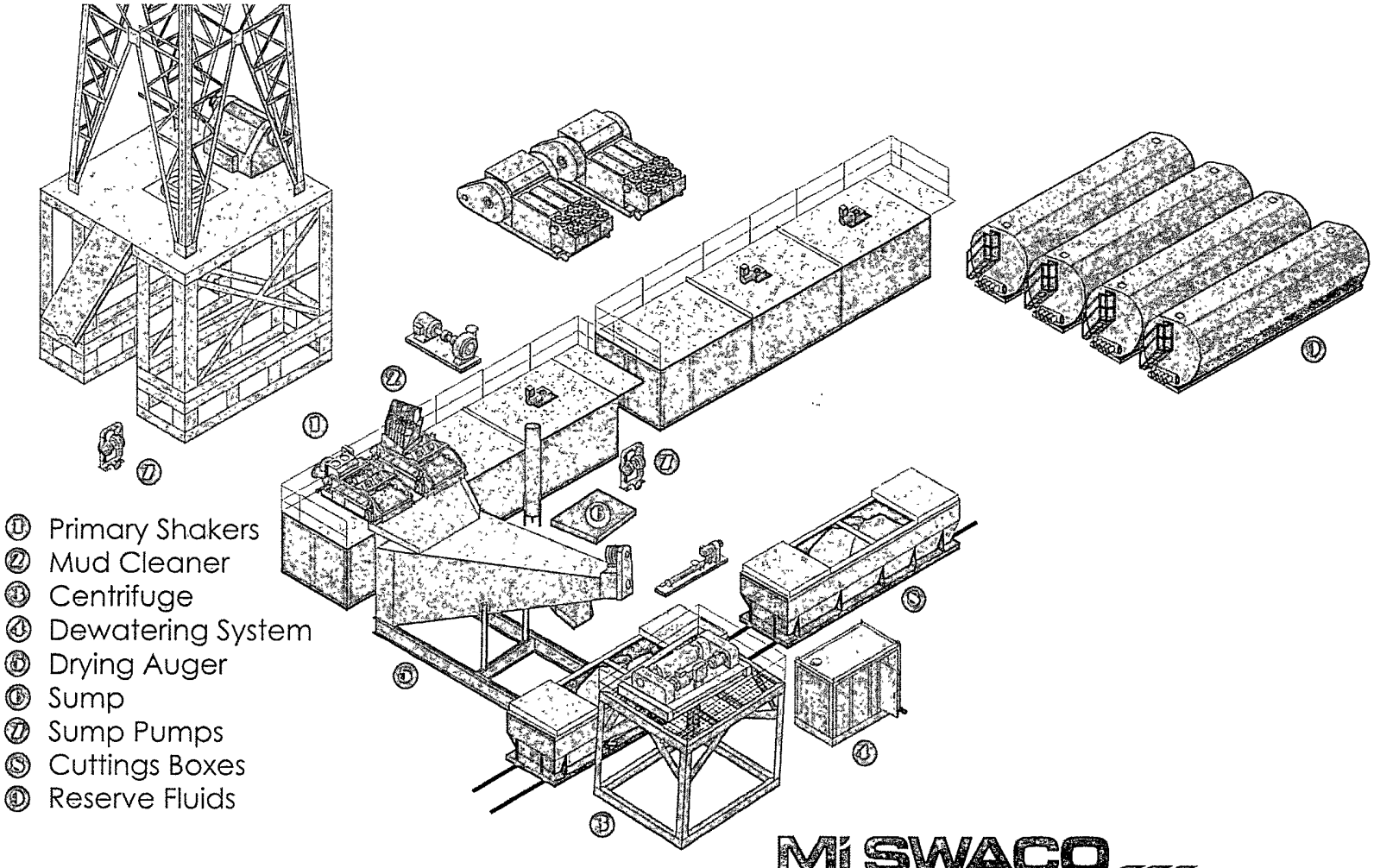
These closed loop operations can be monitored by our service technicians. Daily logs are maintained to ensure optimal equipment operation and maintenance. Screen and chemical use is logged to maintain inventory control. Fluid properties are monitored and recorded and drilling mud volumes are accounted 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



① Primary Shakers
② Mud Cleaner
③ Centrifuge
④ Dewatering System
⑤ Drying Auger
⑥ Sump
⑦ Sump Pumps
⑧ Cuttings Boxes
⑨ Reserve Fluids

MI SWACO

Scandrill Eagle

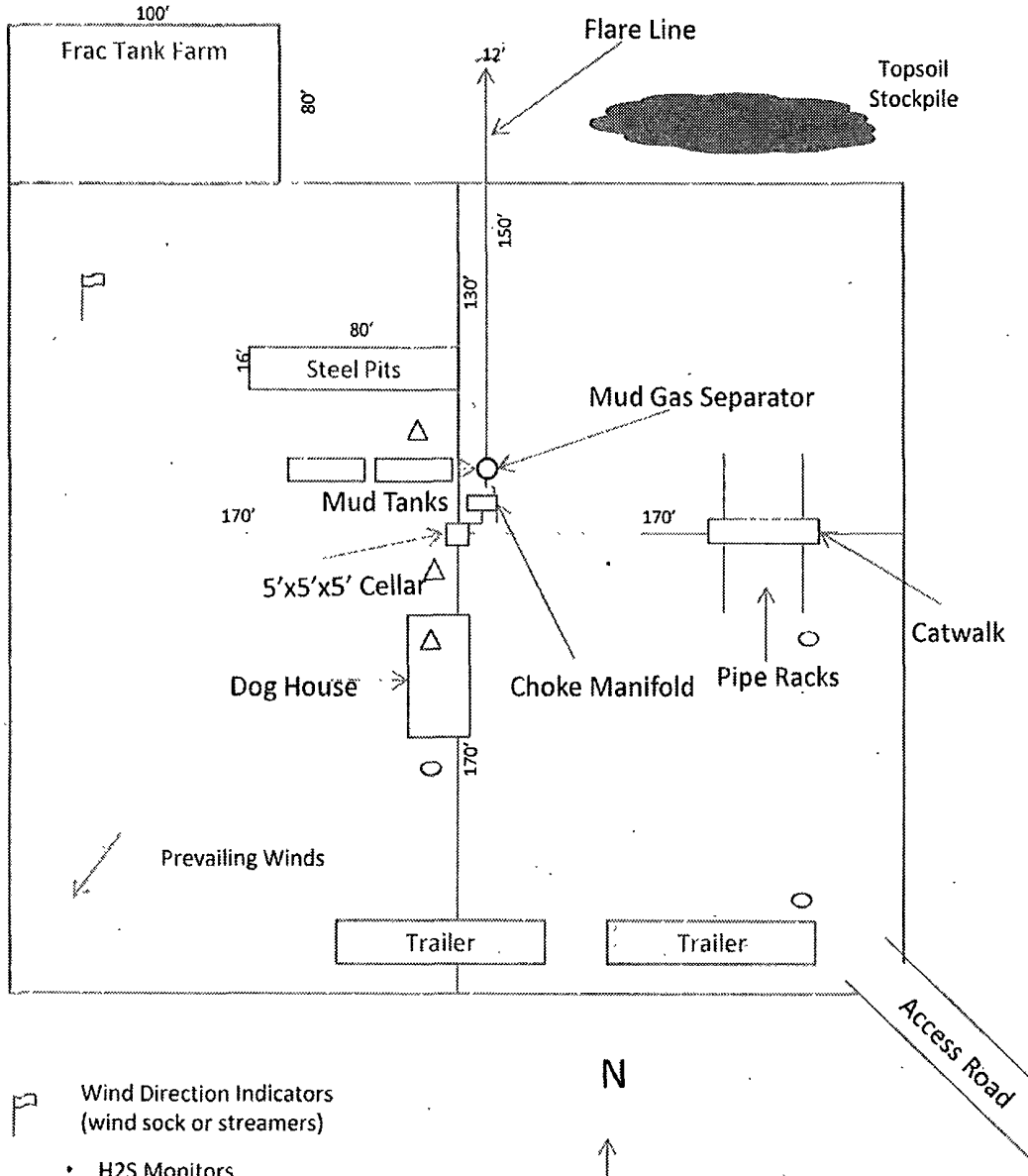


Exhibit D
Rig Diagram
Laguna Deep Unit No. 21H
Cimarex Energy Co. of Colorado
SHL 36-19S-33E; 660 FNL & 2310 FWL
BHL 35-19S-33E; 660 FNL & 330 FWL
Lea County, NM