

OCD Hobbs

14-650

Form 3160-3
(March 2012)UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

HOBBS OCD

DEC 09 2014

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

APPLICATION FOR PERMIT TO DRILL OR REENTER

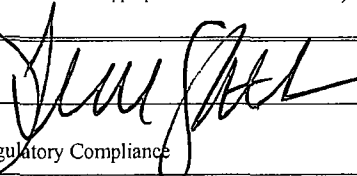
RECEIVED

1a. Type of Work ☒ DRILL ☐ REENTER		5. Lease Serial No. SHL: Private; BHL: NM0160973; Other: NM016040A	
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>OF COLORADO (162683)</i>		7. If Unit or CA Agreement, Name and No. Red Hills Unit - NM071019X	
3a. Address 600 N. Marienfield St. Ste. 600 Midland Tx 79071		8. Lease Name and Well No. <i>(300543)</i> Red Hills Unit 23H	
3b. Phone No. (include area code) 432-571-7800		9. API Well No. 30025 <i>42333</i>	
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At Surface 160 FNL & 1330 FWL At proposed prod. Zone 330 FSL & 1330 FWL <i>Bone Spring</i>		10. Field and Pool, or Exploratory <i>(97794)</i> Bone Spring Wildcat	
14. Distance in miles and direction from nearest town or post office* Jal, NM is approx 31 miles to the southeast of location.		11. Sec., T. R. M. or Blk. and Survey and Area 5, 26S, 33E	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line if any) 160'		12. County or Parish LEA	
16. No of acres in lease Private=0.00 acres NM016040A=240.00 acres NM0160973=1238.72 acres		13. State NM	
17. Spacing Unit dedicated to this well 320.00			
18. Distance from proposed* location to nearest well, drilling, completed, applied for, on this lease, ft. 20' from #24		19. Proposed Depth Pilot Hole TD: N/A 14,456 MD 9,875 TVD	
20. BLM/BIA Bond No. on File NM2575; NMB000835			
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3379 GR		22. Approximate date work will start* 7/15/14	
23. Estimated duration 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 	Name (Printed/Typed) Terri Stathem	Date 3/21/14
Title Regulatory Compliance		
Approved By (Signature) 	Name (Printed/Typed) IS/STEPHEN J. CAFFEY	Date 11-21-14
Title FIELD MANAGER		

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 43 U.S.C. 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.

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS AND
SPECIAL STIPULATIONS
ATTACHED

CARLSBAD CONTROLLED WATER BASIN

WITNESS SURFACE CASING

SEE ATTACHED FOR
CONDITIONS OF APPROVAL
DEC 10 2014

I & E Hobbs

Form 3160-3
(March 2012)UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Split Estate

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

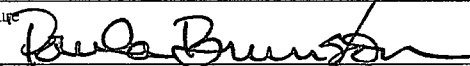
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work ☒ DRILL ☐ REENTER		5. Lease Serial No. SHL: Private; BHL: NM0160973; Other: NM0106040A	
1b. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		6. If Indian, Allottee or Tribe Name	
2. Name of Operator Cimarex Energy Co.		7. If Unit or CA Agreement, Name and No. NM071019X Red Hills Unit	
3a. Address 600 N. Marienfield St. Ste. 600 Midland Tx 79071		8. Lease Name and Well No. Red Hills Unit 23H	
3b. Phone No. (include area code) 432-571-7800		9. API Well No. 30025	
4. Location of Well (Report location clearly and in accordance with any State requirements.)* At Surface 160 FNL & 1330 FWL At proposed prod. Zone 330 FSL & 1330 FWL Bone Spring		10. Field and Pool, or Exploratory Bone Spring Wildcat	
14. Distance in miles and direction from nearest town or post office* Jal, NM is approx 31 miles to the southeast of location.		11. Sec., T. R. M. or Blk. and Survey and Area 5, 26S, 33E	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line if any) 160'		12. County or Parish LEA	
16. No of acres in lease Private=0.00 acres NM0106040A=240.00 acres NM0160973=1238.72 acres		13. State NM	
17. Spacing Unit dedicated to this well 160.00			
18. Distance from proposed* location to nearest well, drilling, completed, applied for, on this lease, ft. 20' from #24		19. Proposed Depth Pilot Hole TD: N/A 14,456 MD 9,875 TVD	
20. BLM/BIA Bond No. on File NM2575; NMB000835			
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3379 GR		22. Approximate date work will start* 7/15/14	
23. Estimated duration 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 	Name (Printed/Typed) Paula Brunson	Date 3/21/14
--	---------------------------------------	-----------------

Title
Regulatory Compliance

Approved By (Signature)	Name (Printed/Typed)	Date
Title	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.

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.

(Continued on page 2)

*(Instructions on page 2)

Application to Drill
Red Hills Unit 23H
 Cimarex Energy Co.
 UL: C, Sec. 5, 26S, 33E
 LEA Co., NM

HOBBS OGD

DEC 09 2014

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

- 1. Location:** SHL 160 FNL & 1330 FWL
 BHL 330 FSL & 1330 FWL
- 2. Elevation Above Sea Level:** 3,379' 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:** 14,456 MD 9,875 TVD Pilot Hole TD: N/A
- 6. Estimated Tops of Geological Markers:**

Formation	Est Top	Bearing
Rustler		995 N/A
Salt		1140 N/A
Castille		3380 N/A
Lamar		4900 N/A
Bell Canyon		4945 N/A
Cherry Canyon		6190 N/A
Brushy Canyon		7485 N/A
Bone Spring		9045 Hydrocarbons
U. Avalon (Leonard)		9080 Hydrocarbons
L. Avalon		9680 Hydrocarbons

7. Possible Mineral Bearing Formation: Shown above

7A. OSE Ground Water Estimated Depth: 180'

8. Casing Program:

Name	Casing Depth From (ft)	Casing Setting Depth (ft) MD	Casing Setting Depth (ft) TVD	Open Hole Size (inches)	Casing Size (inches)	Casing Weight (lb/ft)	Casing Grade	Thread	Condition	BHP (psig)	Anticipated Mud Weight (ppg)	Collapse SF at Full Evacuation (1.125)	Collapse SF at 1/3 Evacuation (1.125)	Burst SF (1.125)	Cumulative Air Weight	Cumulative Bouyed Weight (lbs)	Bouyant Tension SF (1.8)
Surface	0	1045	1045	17 1/2	13-3/8"	48.00	H-40	ST&C	New	478	8.8	1.55		3.62	50,160	43,421	7.42
Intermediate	0	4920	4920	12 1/4	9-5/8"	36.00	J-55	LT&C	New	2583	10.1		1.17	1.36	177,120	149,808	3.02
Production	0	9398	9398	8 3/4	5-1/2"	17.00	L-80	LT&C	New	4496	9.2	1.40		1.72	167,875	144,295	2.34
Production	9398	14456	9875	8 3/4	5-1/2"	17.00	L-80	BT&C	New	4724	9.2	1.33		1.64	8,109	6,970	56.96

Note: Operator may drill a 8-1/2" OH from end of curve to TD of the well. This is to reduce the need to ream the conventionally drilled curve to run a RSS assembly into the lateral.

Application to Drill
Red Hills Unit 23H
 Cimarex Energy Co.
 UL: C, Sec. 5, 26S, 33E
 LEA Co., NM

8A. Casing Design and Casing Loading Assumptions:

Surface	Tension	A 1.8 design factor with effects of buoyancy: 8.80 ppg.
	Collapse	A 1.125 design factor with full internal evacuation and a collapse force equal to a 8.80 ppg mud gradient.
	Burst	A 1.125 design with a surface pressure equal to the fracture gradient at setting depth less gas gradient to surface.
Intermediate	Tension	A 1.8 design factor with effects of buoyancy: 10.10 ppg.
	Collapse	A 1.125 design factor evacuated 1/3 TVD of next casing string with a collapse force equal to a 10.10 ppg mud gradient.
	Burst	A 1.125 design with a surface pressure equal to the fracture gradient at setting depth less gas gradient to surface.
Production and/or Production Completion System	Tension	A 1.8 design factor with effects of buoyancy: 9.20 ppg.
	Collapse	A 1.125 design factor with full internal evacuation of next casing string with a collapse force equal to a 9.20 ppg mud gradient.
	Burst	A 1.125 design with a surface pressure equal to the fracture gradient at setting depth less gas gradient to surface.

9. Cementing Program:

Casing Type	Type	Sacks	Yield	Weight	Cubic Feet	Cement Blend
Surface	Lead	498	1.75	13.50		871 Class C + Bentonite + Calcium Chloride + LCM, 8.829 gps water
	Tail	136	1.34	14.80		181 Class C + LCM, 6.32 gps water
	TOC: 0		45% Excess			Centralizers per Onshore Order 2.III.B.1f
Intermediate	Lead	897	1.88	12.90		1686 35:65 (poz/C) + Salt + Bentonite + LCM + retarder, 9.65 gps water
	Tail	288	1.34	14.80		385 Class C + retarder + LCM, 6.32 gps water
	TOC: 0		44% Excess			
Production	Lead	545	2.40	11.90		1307 35:65 (poz/H) + salt + Sodium Metasilicate + Bentonite + Fluid Loss + Dispersant + LCM + Retarder, 13.80 gps water
	Tail	1246	1.24	14.50		1545 50:50 (poz/H) + Bentonite + Salt + Fluid Loss + Dispersant + LCM + Retarder, 5.55 gps water
	TOC: 4720		16% Excess			No centralizers planned in the lateral section. 1 every jt from EOC to KOP. 1 every 4th joint from KOP to 500' inside previous casing.

Cement volumes will be adjusted depending on hole size

9a. Proposed Drilling Plan:

Pilot Hole TD: No Pilot KOP: 9,398' EOC: 10,148'

Set Surface and Intermediate casing strings. Drill production hole to KOP. Continue drilling lateral through the curve to TD. Run prod casing & cement.

10. Pressure Control Equipment:

Exhibit "E-1". A BOP consisting of two rams with blind rams and pipe rams, and one annular preventer. Below the surface casing, a 2M system will be used. Below the intermediate casing, a 3M system will be used. See attachments for BOP and choke manifold diagrams. An accumulator that meets the requirements in Onshore Order #2 for the pressure rating of the BOP stack. A Rotating head may be installed as needed. A kelly cock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor.

BOP and associated equipment will be installed, used, maintained, and tested in a manner necessary to assure well control and shall be in place and operational prior to drilling the surface casing shoe. The Annular Preventer shall be functioned at least weekly. The pipe and blind rams will be operated each trip. No abnormal pressure or temperature is expected while drilling.

BOPS will be tested by an independent service company. The ram preventers, choke manifold, and safety valves will be tested as follows: On the surface casing, pressure tests will be made to 250 psi low and 2000 psi high. On the intermediate casing, pressure tests will be made to 250 psi low and 3000 psi high.

The Annular Preventer will be tested to 250 psi low and 1000 psi high on the surface casing, and 250 low and 1500 high on the intermediate casing.

Cimarex Energy Co. of Colorado requests a variance to drill this well using a co-flex line between the BOP and choke manifold. Certification for proposed co-flex hose is attached (please see Exhibit F, F-1, F-2, F-3). The hose is not required by the manufacturer to be anchored. In the event the specific hose is not available, one of equal or higher rating will be used.

Application to Drill
Red Hills Unit 23H
Cimarex Energy Co.
UL: C, Sec. 5, 26S, 33E
LEA Co., NM

11. Proposed Mud Circulating System:

Depth	Mud Weight	Visc	Fluid Loss	Type Mud
0' to 1045' ⁹⁵⁰	8.30 - 8.80	28	NC	FW Spud Mud
1045' to 4920' ⁴⁸⁵⁰	9.60 - 10.10	30-32	NC	Brine Water
4920' to 14456'	8.70 - 9.20	30-32	NC	FW/Cut 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.

The Mud Monitoring System is an electronic Pason System satisfying requirements of Onshore Order 1.

12. Testing, Logging and Coring Program:

- A. Mud logging program: 2 man unit from 4920 to TD
- B. Electric logging program: CNL / LDT / CAL / GR, DLL / GR -- Inter. Csg to TD
CNL / GR -- Surf to Inter. Csg
- C. No DSTs or cores are planned at this time
- D. CBL w/ CCL from as far as gravity will let it fall to TOC

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: 4444 psi

Estimated BHT: 159°

14. Construction and Drilling:

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

Drilling expected to take: 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:

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

L. Avalon pay will be perforated and stimulated.

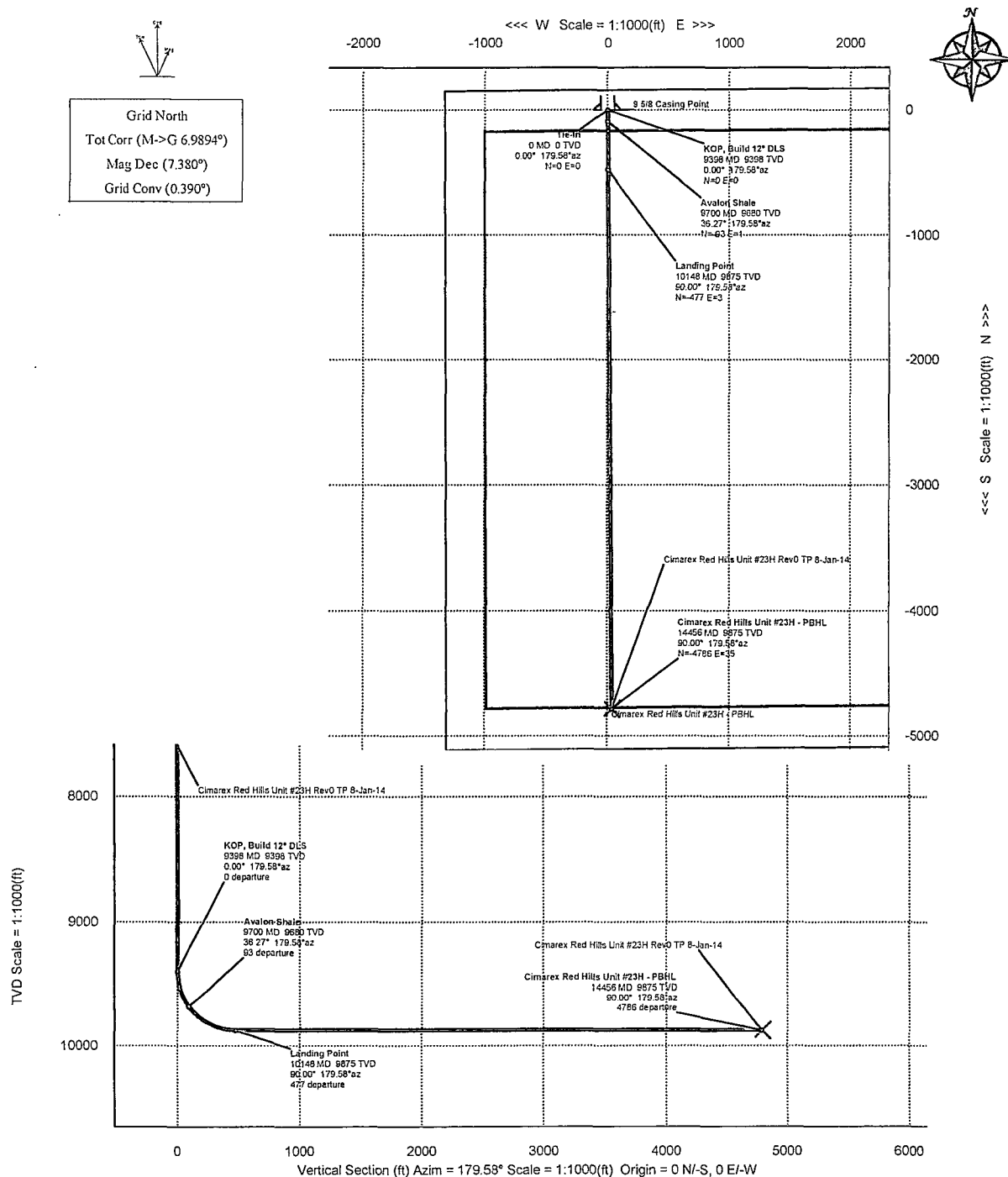
The proposed well will be tested and potentialized as **Oil**



Cimarex

PATHFINDER
A Schlumberger Company

WELL	Red Hills Unit #23H	FIELD	NM Lea County (NAD 83)	STRUCTURE	Cimarex Red Hills Unit #23H
Magnetic Parameters	Mod: BGSIM 2013	Dip	59.90°	Date	January 08, 2014
		Mag Dec	7.350°	FB	48252.2m
Surface Location	NAD83 New Mexico State Plane, Eastern Zone, UTM Feet	Lat	N 32 4 45 623	Northing	353383.10 NUS
		Long	W 103 38 54 828	Eastng	762913.80 NUS
				Grid Conv	0.350°
				Scale Fact	0.9295841
Measurements	Doc	Red Hills Unit #23H	TVD Ref	Ground Level (3370ft above MSL)	
	Plan	Cimarex Red Hills Unit #23H Rev0 8-Jan-14			



Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+) / S(-)	E(+) / W(-)	DLS
Tie-In	0.00	0.00	179.58	0.00	0.00	0.00	0.00	
9 5/8 Casing Point	4850.00	0.00	179.58	4850.00	0.00	0.00	0.00	0.00
KOP, Build 12° DLS	9397.54	0.00	179.58	9397.54	0.00	0.00	0.00	0.00
Avalon Shale	9699.79	36.27	179.58	9680.00	92.52	-92.51	0.68	12.00
Landing Point	10147.54	90.00	179.58	9875.00	477.46	-477.45	3.49	12.00
Cimarex Red Hills Unit #23H - PBHL	14455.86	90.00	179.58	9875.00	4785.79	-4785.66	35.00	0.00

Cimarex Red Hills Unit #23H Rev0 TP 8-Jan-14 Proposal Report

(Non-Def Plan)

Report Date: January 08, 2014 - 02:09 PM
Client: Cimarex
Field: NM Lea County (NAD 83)
Structure / Slot: Cimarex Red Hills Unit #23H / Red Hills Unit #23H
Well: Red Hills Unit #23H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Red Hills Unit #23H Rev0 TP 8-Jan-14
Survey Date: January 08, 2014
Tort / AHD / DDI / ERD Ratio: 90.000 ° / 4785.789 ft / 5.800 / 0.485
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 4' 45.69339", W 103° 35' 54.82766"
Location Grid N/E Y/X: N 393383.100 ftUS, E 768913.800 ftUS
CRS Grid Convergence Angle: 0.3902 °
Grid Scale Factor: 0.99996841

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 179.581 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: Ground Level
TVD Reference Elevation: 3379.000 ft above MSL
Seabed / Ground Elevation: 3379.000 ft above MSL
Magnetic Declination: 7.380 °
Total Field Strength: 48252.185 nT
Magnetic Dip Angle: 59.969 °
Declination Date: January 08, 2014
Magnetic Declination Model: BGGM 2013
North Reference: Grid North
Grid Convergence Used: 0.3902 °
Total Corr Mag North->Grid North: 6.9894 °
Local Coord Referenced To: Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)
Tie-In	0.00	0.00	179.58	0.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	N/A
	100.00	0.00	179.58	100.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	200.00	0.00	179.58	200.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	300.00	0.00	179.58	300.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	400.00	0.00	179.58	400.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	500.00	0.00	179.58	500.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	600.00	0.00	179.58	600.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	700.00	0.00	179.58	700.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	800.00	0.00	179.58	800.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	900.00	0.00	179.58	900.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	1000.00	0.00	179.58	1000.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	1100.00	0.00	179.58	1100.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	1200.00	0.00	179.58	1200.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	1300.00	0.00	179.58	1300.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	1400.00	0.00	179.58	1400.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	1500.00	0.00	179.58	1500.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	1600.00	0.00	179.58	1600.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	1700.00	0.00	179.58	1700.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	1800.00	0.00	179.58	1800.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	1900.00	0.00	179.58	1900.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	2000.00	0.00	179.58	2000.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	2100.00	0.00	179.58	2100.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	2200.00	0.00	179.58	2200.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	2300.00	0.00	179.58	2300.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	2400.00	0.00	179.58	2400.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	2500.00	0.00	179.58	2500.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	2600.00	0.00	179.58	2600.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	2700.00	0.00	179.58	2700.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	2800.00	0.00	179.58	2800.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	2900.00	0.00	179.58	2900.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	3000.00	0.00	179.58	3000.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	3100.00	0.00	179.58	3100.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	3200.00	0.00	179.58	3200.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Northing (RUS)	Easting (RUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")	Closure (ft)	Closure Azimuth (°)	DLS (*/100ft)
9 5/8 Casing Point	3300.00	0.00	179.58	3300.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	3400.00	0.00	179.58	3400.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	3500.00	0.00	179.58	3500.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	3600.00	0.00	179.58	3600.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	3700.00	0.00	179.58	3700.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	3800.00	0.00	179.58	3800.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	3900.00	0.00	179.58	3900.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	4000.00	0.00	179.58	4000.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	4100.00	0.00	179.58	4100.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	4200.00	0.00	179.58	4200.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	4300.00	0.00	179.58	4300.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	4400.00	0.00	179.58	4400.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	4500.00	0.00	179.58	4500.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	4600.00	0.00	179.58	4600.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	4700.00	0.00	179.58	4700.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	4800.00	0.00	179.58	4800.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	4850.00	0.00	179.58	4850.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	4900.00	0.00	179.58	4900.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	5000.00	0.00	179.58	5000.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	5100.00	0.00	179.58	5100.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	5200.00	0.00	179.58	5200.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	5300.00	0.00	179.58	5300.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	5400.00	0.00	179.58	5400.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	5500.00	0.00	179.58	5500.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	5600.00	0.00	179.58	5600.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	5700.00	0.00	179.58	5700.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	5800.00	0.00	179.58	5800.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	5900.00	0.00	179.58	5900.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	6000.00	0.00	179.58	6000.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	6100.00	0.00	179.58	6100.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	6200.00	0.00	179.58	6200.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	6300.00	0.00	179.58	6300.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	6400.00	0.00	179.58	6400.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	6500.00	0.00	179.58	6500.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	6600.00	0.00	179.58	6600.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	6700.00	0.00	179.58	6700.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	6800.00	0.00	179.58	6800.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	6900.00	0.00	179.58	6900.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	7000.00	0.00	179.58	7000.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	7100.00	0.00	179.58	7100.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	7200.00	0.00	179.58	7200.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	7300.00	0.00	179.58	7300.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	7400.00	0.00	179.58	7400.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	7500.00	0.00	179.58	7500.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	7600.00	0.00	179.58	7600.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	7700.00	0.00	179.58	7700.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	7800.00	0.00	179.58	7800.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	7900.00	0.00	179.58	7900.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	8000.00	0.00	179.58	8000.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	8100.00	0.00	179.58	8100.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
8200.00	0.00	179.58	8200.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00	
8300.00	0.00	179.58	8300.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00	
8400.00	0.00	179.58	8400.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00	
8500.00	0.00	179.58	8500.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00	
8600.00	0.00	179.58	8600.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00	

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)
	8700.00	0.00	179.58	8700.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	8800.00	0.00	179.58	8800.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	8900.00	0.00	179.58	8900.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	9000.00	0.00	179.58	9000.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	9100.00	0.00	179.58	9100.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	9200.00	0.00	179.58	9200.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	9300.00	0.00	179.58	9300.00	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
KOP, Build 12" DLS	9397.54	0.00	179.58	9397.54	0.00	0.00	0.00	393383.10	768913.80	N 32 4 45.69	W 103 35 54.83	0.00	0.00	0.00
	9400.00	0.30	179.58	9400.00	0.01	-0.01	0.00	393383.09	768913.80	N 32 4 45.69	W 103 35 54.83	0.01	179.58	12.00
	9500.00	12.30	179.58	9499.22	10.95	-10.95	0.08	393372.15	768913.88	N 32 4 45.59	W 103 35 54.83	10.95	179.58	12.00
Avalon Shale	9600.00	24.30	179.58	9593.99	42.29	-42.29	0.31	393340.82	768914.11	N 32 4 45.27	W 103 35 54.83	42.29	179.58	12.00
	9699.79	36.27	179.58	9680.00	92.52	-92.51	0.68	393290.59	768914.48	N 32 4 44.78	W 103 35 54.83	92.52	179.58	12.00
	9700.00	36.30	179.58	9680.17	92.64	-92.64	0.68	393290.46	768914.48	N 32 4 44.78	W 103 35 54.83	92.64	179.58	12.00
	9800.00	48.30	179.58	9754.01	159.81	-159.81	1.17	393223.30	768914.97	N 32 4 44.11	W 103 35 54.83	159.81	179.58	12.00
	9900.00	60.30	179.58	9812.26	240.87	-240.86	1.76	393142.24	768915.56	N 32 4 43.31	W 103 35 54.83	240.87	179.58	12.00
	10000.00	72.30	179.58	9852.39	332.27	-332.26	2.43	393050.85	768916.23	N 32 4 42.41	W 103 35 54.83	332.27	179.58	12.00
	10100.00	84.30	179.58	9872.64	430.01	-430.00	3.14	392953.12	768916.94	N 32 4 41.44	W 103 35 54.83	430.01	179.58	12.00
Landing Point	10147.54	90.00	179.58	9875.00	477.46	-477.45	3.49	392905.66	768917.29	N 32 4 40.97	W 103 35 54.82	477.46	179.58	12.00
	10200.00	90.00	179.58	9875.00	529.93	-529.92	3.88	392853.20	768917.68	N 32 4 40.45	W 103 35 54.82	529.93	179.58	0.00
	10300.00	90.00	179.58	9875.00	629.93	-629.91	4.61	392753.21	768918.41	N 32 4 39.46	W 103 35 54.82	629.93	179.58	0.00
	10400.00	90.00	179.58	9875.00	729.93	-729.91	5.34	392653.21	768919.14	N 32 4 38.47	W 103 35 54.82	729.93	179.58	0.00
	10500.00	90.00	179.58	9875.00	829.93	-829.91	6.07	392553.22	768919.87	N 32 4 37.48	W 103 35 54.82	829.93	179.58	0.00
	10600.00	90.00	179.58	9875.00	929.93	-929.90	6.80	392453.23	768920.60	N 32 4 36.49	W 103 35 54.82	929.93	179.58	0.00
	10700.00	90.00	179.58	9875.00	1029.93	-1029.90	7.53	392353.23	768921.33	N 32 4 35.50	W 103 35 54.82	1029.93	179.58	0.00
	10800.00	90.00	179.58	9875.00	1129.93	-1129.90	8.26	392253.24	768922.06	N 32 4 34.51	W 103 35 54.82	1129.93	179.58	0.00
	10900.00	90.00	179.58	9875.00	1229.93	-1229.90	9.00	392153.24	768922.79	N 32 4 33.52	W 103 35 54.82	1229.93	179.58	0.00
	11000.00	90.00	179.58	9875.00	1329.93	-1329.89	9.73	392053.25	768923.53	N 32 4 32.53	W 103 35 54.82	1329.93	179.58	0.00
	11100.00	90.00	179.58	9875.00	1429.93	-1429.89	10.46	391953.26	768924.26	N 32 4 31.54	W 103 35 54.82	1429.93	179.58	0.00
	11200.00	90.00	179.58	9875.00	1529.93	-1529.89	11.19	391853.26	768924.99	N 32 4 30.55	W 103 35 54.82	1529.93	179.58	0.00
	11300.00	90.00	179.58	9875.00	1629.93	-1629.89	11.92	391753.27	768925.72	N 32 4 29.56	W 103 35 54.82	1629.93	179.58	0.00
	11400.00	90.00	179.58	9875.00	1729.93	-1729.88	12.65	391653.27	768926.45	N 32 4 28.58	W 103 35 54.82	1729.93	179.58	0.00
	11500.00	90.00	179.58	9875.00	1829.93	-1829.88	13.38	391553.28	768927.18	N 32 4 27.59	W 103 35 54.82	1829.93	179.58	0.00
	11600.00	90.00	179.58	9875.00	1929.93	-1929.88	14.11	391453.29	768927.91	N 32 4 26.60	W 103 35 54.82	1929.93	179.58	0.00
	11700.00	90.00	179.58	9875.00	2029.93	-2029.88	14.85	391353.29	768928.65	N 32 4 25.61	W 103 35 54.82	2029.93	179.58	0.00
	11800.00	90.00	179.58	9875.00	2129.93	-2129.87	15.58	391253.30	768929.38	N 32 4 24.62	W 103 35 54.82	2129.93	179.58	0.00
	11900.00	90.00	179.58	9875.00	2229.93	-2229.87	16.31	391153.30	768930.11	N 32 4 23.63	W 103 35 54.81	2229.93	179.58	0.00
	12000.00	90.00	179.58	9875.00	2329.93	-2329.87	17.04	391053.31	768930.84	N 32 4 22.64	W 103 35 54.81	2329.93	179.58	0.00
	12100.00	90.00	179.58	9875.00	2429.93	-2429.86	17.77	390953.32	768931.57	N 32 4 21.65	W 103 35 54.81	2429.93	179.58	0.00
	12200.00	90.00	179.58	9875.00	2529.93	-2529.86	18.50	390853.32	768932.30	N 32 4 20.66	W 103 35 54.81	2529.93	179.58	0.00
	12300.00	90.00	179.58	9875.00	2629.93	-2629.86	19.23	390753.33	768933.03	N 32 4 19.67	W 103 35 54.81	2629.93	179.58	0.00
	12400.00	90.00	179.58	9875.00	2729.93	-2729.86	19.97	390653.34	768933.76	N 32 4 18.68	W 103 35 54.81	2729.93	179.58	0.00
	12500.00	90.00	179.58	9875.00	2829.93	-2829.85	20.70	390553.34	768934.50	N 32 4 17.69	W 103 35 54.81	2829.93	179.58	0.00
	12600.00	90.00	179.58	9875.00	2929.93	-2929.85	21.43	390453.35	768935.23	N 32 4 16.70	W 103 35 54.81	2929.93	179.58	0.00
	12700.00	90.00	179.58	9875.00	3029.93	-3029.85	22.16	390353.35	768935.96	N 32 4 15.71	W 103 35 54.81	3029.93	179.58	0.00
	12800.00	90.00	179.58	9875.00	3129.93	-3129.85	22.89	390253.36	768936.69	N 32 4 14.72	W 103 35 54.81	3129.93	179.58	0.00
	12900.00	90.00	179.58	9875.00	3229.93	-3229.84	23.62	390153.37	768937.42	N 32 4 13.73	W 103 35 54.81	3229.93	179.58	0.00
	13000.00	90.00	179.58	9875.00	3329.93	-3329.84	24.35	390053.37	768938.15	N 32 4 12.74	W 103 35 54.81	3329.93	179.58	0.00
	13100.00	90.00	179.58	9875.00	3429.93	-3429.84	25.09	389953.38	768938.88	N 32 4 11.75	W 103 35 54.81	3429.93	179.58	0.00
	13200.00	90.00	179.58	9875.00	3529.93	-3529.84	25.82	389853.38	768939.62	N 32 4 10.76	W 103 35 54.81	3529.93	179.58	0.00
	13300.00	90.00	179.58	9875.00	3629.93	-3629.83	26.55	389753.39	768940.35	N 32 4 9.77	W 103 35 54.81	3629.93	179.58	0.00
	13400.00	90.00	179.58	9875.00	3729.93	-3729.83	27.28	389653.40	768941.08	N 32 4 8.78	W 103 35 54.81	3729.93	179.58	0.00
	13500.00	90.00	179.58	9875.00	3829.93	-3829.83	28.01	389553.40	768941.81	N 32 4 7.79	W 103 35 54.81	3829.93	179.58	0.00
	13600.00	90.00	179.58	9875.00	3929.93	-3929.82	28.74	389453.41	768942.54	N 32 4 6.81	W 103 35 54.80	3929.93	179.58	0.00
	13700.00	90.00	179.58	9875.00	4029.93	-4029.82	29.47	389353.41	768943.27	N 32 4 5.82	W 103 35 54.80	4029.93	179.58	0.00

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)
	13800.00	90.00	179.58	9875.00	4129.93	-4129.82	30.20	389253.42	768944.00	N 32 4 4.83	W 103 35 54.80	4129.93	179.58	0.00
	13900.00	90.00	179.58	9875.00	4229.93	-4229.82	30.94	389153.43	768944.73	N 32 4 3.84	W 103 35 54.80	4229.93	179.58	0.00
	14000.00	90.00	179.58	9875.00	4329.93	-4329.81	31.67	389053.43	768945.47	N 32 4 2.85	W 103 35 54.80	4329.93	179.58	0.00
	14100.00	90.00	179.58	9875.00	4429.93	-4429.81	32.40	388953.44	768946.20	N 32 4 1.86	W 103 35 54.80	4429.93	179.58	0.00
	14200.00	90.00	179.58	9875.00	4529.93	-4529.81	33.13	388853.44	768946.93	N 32 4 0.87	W 103 35 54.80	4529.93	179.58	0.00
	14300.00	90.00	179.58	9875.00	4629.93	-4629.81	33.86	388753.45	768947.66	N 32 3 59.88	W 103 35 54.80	4629.93	179.58	0.00
	14400.00	90.00	179.58	9875.00	4729.93	-4729.80	34.59	388653.46	768948.39	N 32 3 58.89	W 103 35 54.80	4729.93	179.58	0.00
Cimarex Red Hills Unit #23H - PBHL	14455.86	90.00	179.58	9875.00	4785.79	-4785.66	35.00	388597.60	768948.80	N 32 3 58.34	W 103 35 54.80	4785.79	179.58	0.00

Survey Type: Non-Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma
Survey Program:

Description	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	0.000	14455.859	1/100.000	30.000	30.000	SLB_MWD-POOR	Original Borehole / Cimarex Red Hills Unit #23H Rev0 TP 8-Jan-14

Drilling 12-1/4" hole
below 13 3/8" Casing

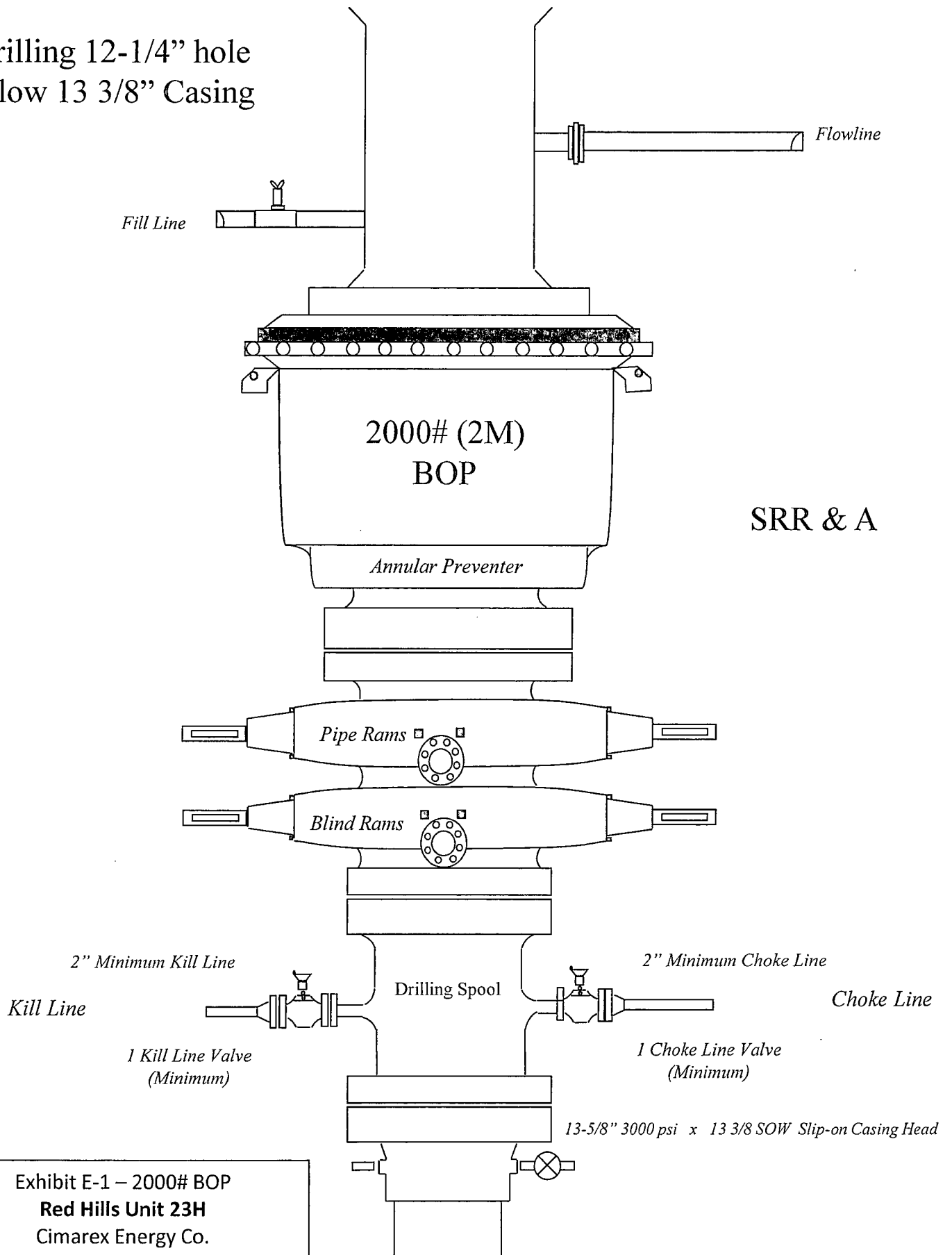
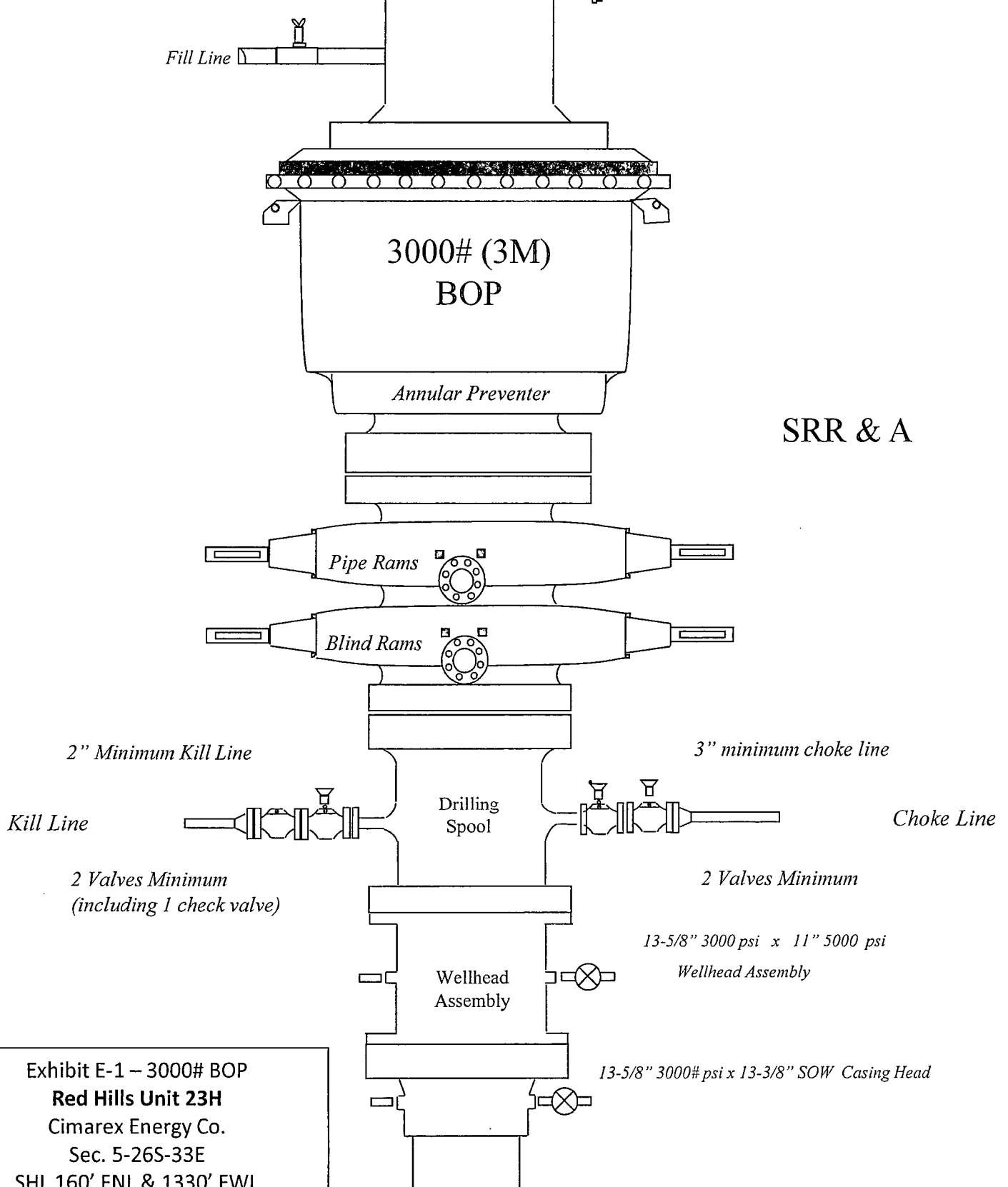


Exhibit E-1 – 2000# BOP
Red Hills Unit 23H
Cimarex Energy Co.
Sec. 5-26S-33E
SHL 160' FNL & 1330' FWL
BHL 330' FSL & 1330' FWL
Lea County, NM

Drilling 8-3/4" hole
below 9 5/8" Casing



SRR & A

Exhibit E-1 – 3000# BOP

Red Hills Unit 23H

Cimarex Energy Co.

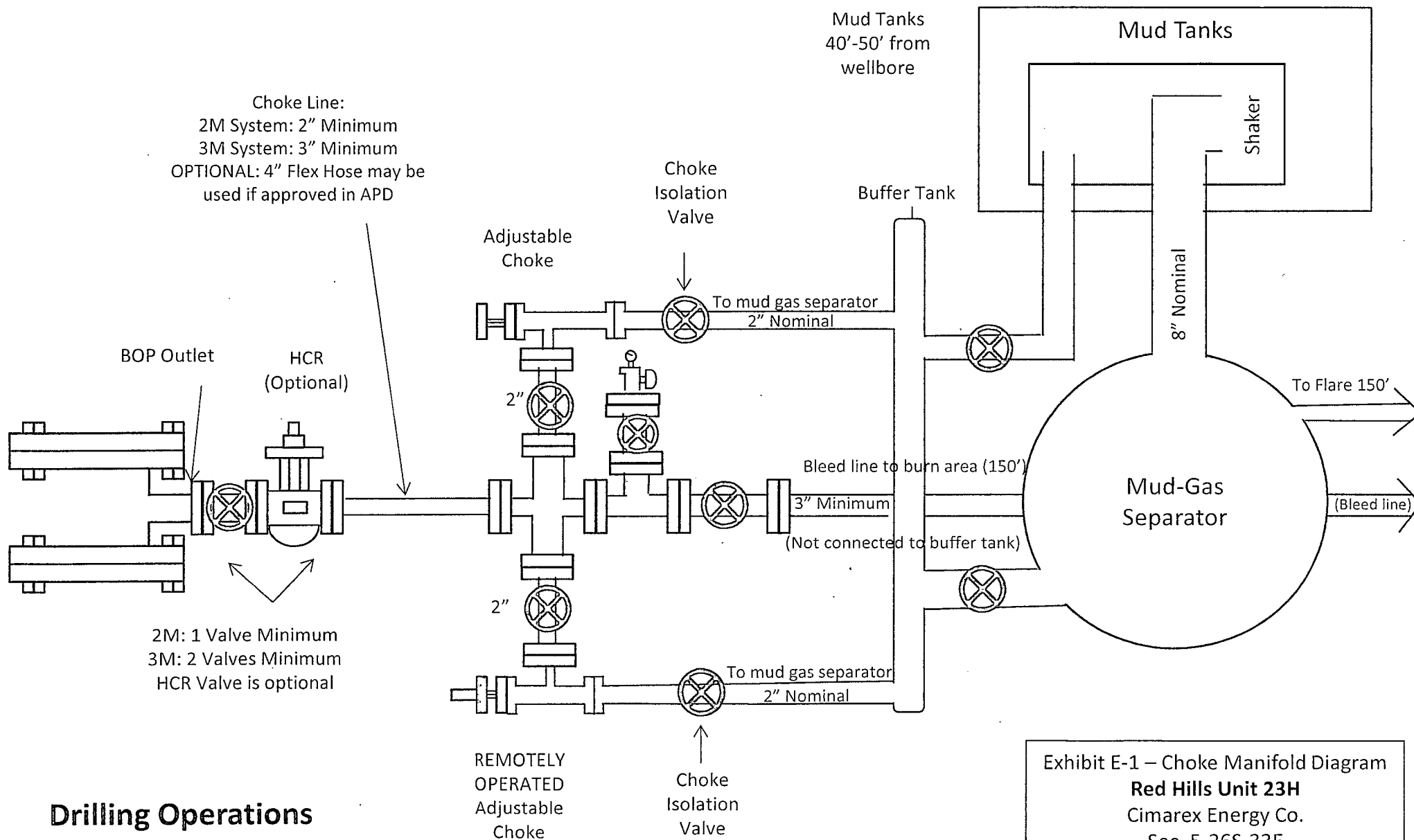
Sec. 5-26S-33E

SHL 160' FNL & 1330' FWL

BHL 330' FSL & 1330' FWL

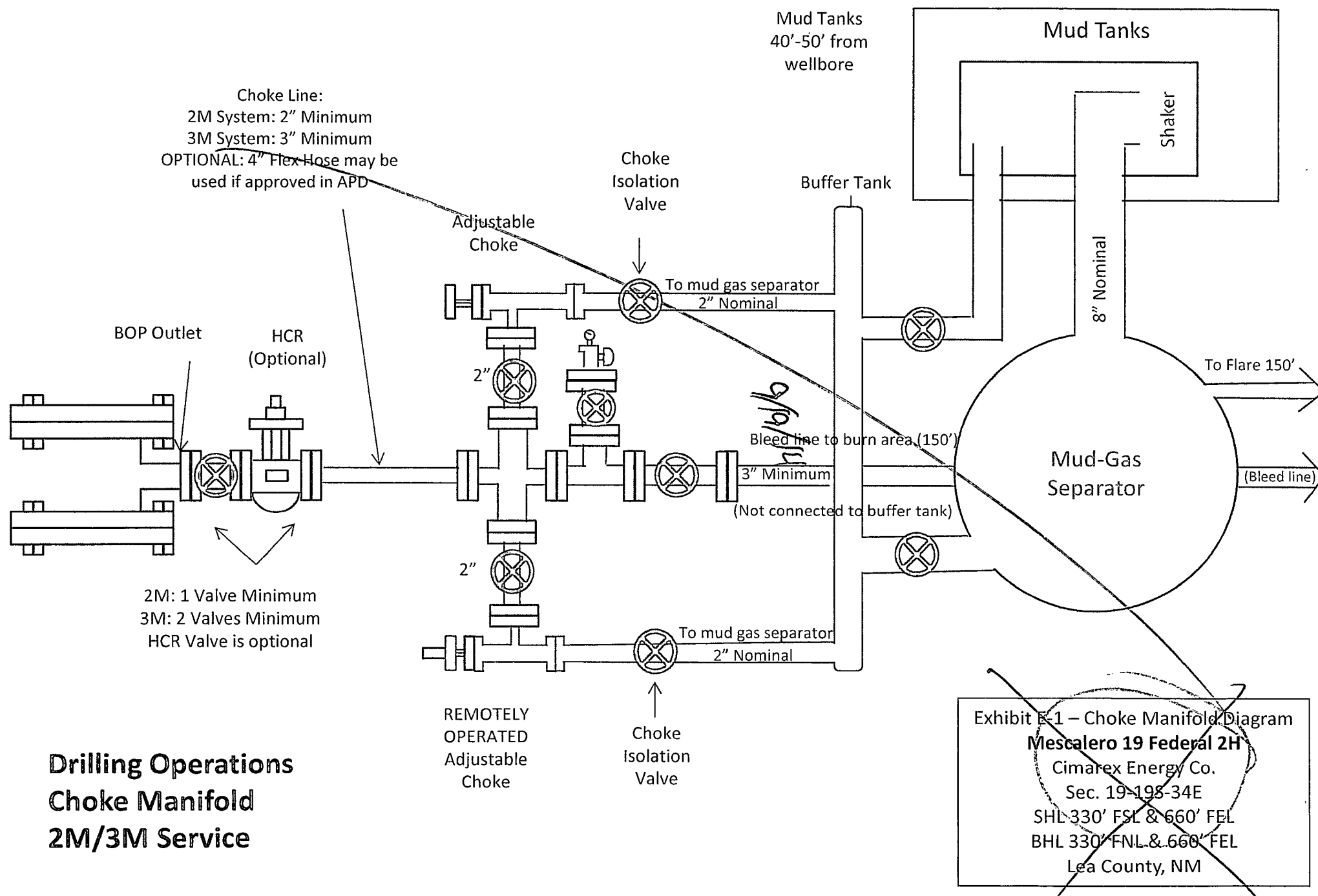
Lea County, NM

Choke Line:
 2M System: 2" Minimum
 3M System: 3" Minimum
 OPTIONAL: 4" Flex Hose may be
 used if approved in APD



Drilling Operations Choke Manifold 2M/3M Service

Exhibit E-1 – Choke Manifold Diagram
Red Hills Unit 23H
 Cimarex Energy Co.
 Sec. 5-26S-33E
 SHL 160' FNL & 1330' FWL
 BHL 330' FSL & 1330' FWL
 Lea County, NM



Drilling Operations
Choke Manifold
2M/3M Service

Exhibit F-1 – Co-Flex Hose Hydrostatic Test

Red Hills Unit 23H
Cimarex Energy Co.
Sec. 5-26S-33E
SHL 160' FNL & 1330' FWL
BHL 330' FSL & 1330' FWL
Lea County, NM



Midwest Hose
& Specialty, Inc.

INTERNAL HYDROSTATIC TEST REPORT			
Customer:		P.O. Number:	
Oderco Inc		odyd-271	
HOSE SPECIFICATIONS			
Type: Stainless Steel Armor Choke & Kill Hose		Hose Length: 45'ft.	
I.D. 4 INCHES		O.D. 9 INCHES	
WORKING PRESSURE	TEST PRESSURE	BURST PRESSURE	
10,000 PSI	15,000 PSI	0 PSI	
COUPLINGS			
Stem Part No.		Ferrule No.	
OKC OKC		OKC OKC	
Type of Coupling:			
Swage-It			
PROCEDURE			
<i>Hose assembly pressure tested with water at ambient temperature.</i>			
TIME HELD AT TEST PRESSURE		ACTUAL BURST PRESSURE:	
15 MIN.		0 PSI	
Hose Assembly Serial Number:		Hose Serial Number:	
79793		OKC	
Comments:			
Date:		Tested:	Approved:
3/8/2011		<i>A. James</i>	<i>Kevin</i>



Midwest Hose
& Specialty, Inc.

Internal Hydrostatic Test Graph

Customer: Houston

Pick Ticket #: 94260

Hose Specifications

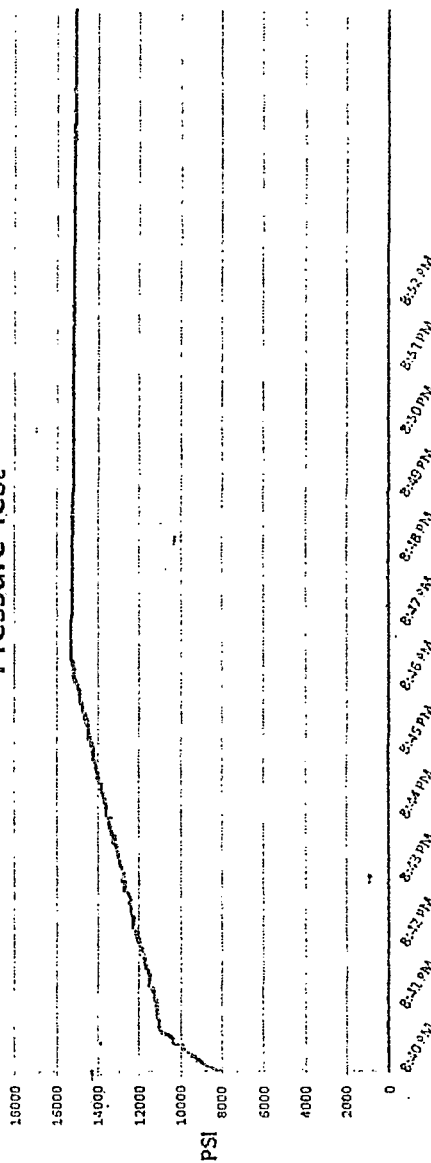
Hose Type
C&K
I.D.
4"
Working Pressure
10000 PSI

Length
45'
O.D.
6.05"

Verification

Type of Fitting
41/1610K
Die Size
6.38"
Hose Serial #
5564
Coupling Method
Swage
Final O.D.
6.75"
Hose Assembly Serial #
79793

Pressure Test



Test Pressure
15000 PSI

Time Held at Test Pressure
11 Minutes

Actual Burst Pressure

Peak Pressure
15483 PSI

Comments: Hose assembly pressure tested with water at ambient temperature.

Tested By: Zac McConnell

Approved By: Kim Thomas

[Signature]

[Signature]

March 3, 2011

Exhibit F-1 – Co-Flex Hose Hydrostatic Test
Red Hills Unit 23H
Cimarex Energy Co.
Sec. 5-26S-33E
SHL 160' FNL & 1330' FWL
BHL 330' FSL & 1330' FWL
Lea County, NM

Exhibit F-2 – Co-Flex Hose
Red Hills Unit 23H
Cimarex Energy Co.
Sec. 5-26S-33E
SHL 160' FNL & 1330' FWL
BHL 330' FSL & 1330' FWL
Lea County, NM



Midwest Hose & Specialty, Inc.

Certificate of Conformity

Customer:		PO	
DEM		ODYD-271	
SPECIFICATIONS			
Sales Order		Dated:	
79793		3/8/2011	
We hereby certify that the material supplied for the referenced purchase order to be true according to the requirements of the purchase order and current industry standards Supplier: Midwest Hose & Specialty, Inc. 10640 Tanner Road Houston, Texas 77041			
Comments:			
Approved:		Date:	
<i>David Garcia</i>		3/8/2011	



Midwest Hose
& Specialty, Inc.

Exhibit F -3- Co-Flex Hose
Red Hills Unit 23H
Cimarex Energy Co.
Sec. 5-26S-33E
SHL 160' FNL & 1330' FWL
BHL 330' FSL & 1330' FWL
Lea County, NM

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)

Exhibit F – Co-Flex Hose

Red Hills Unit 23H

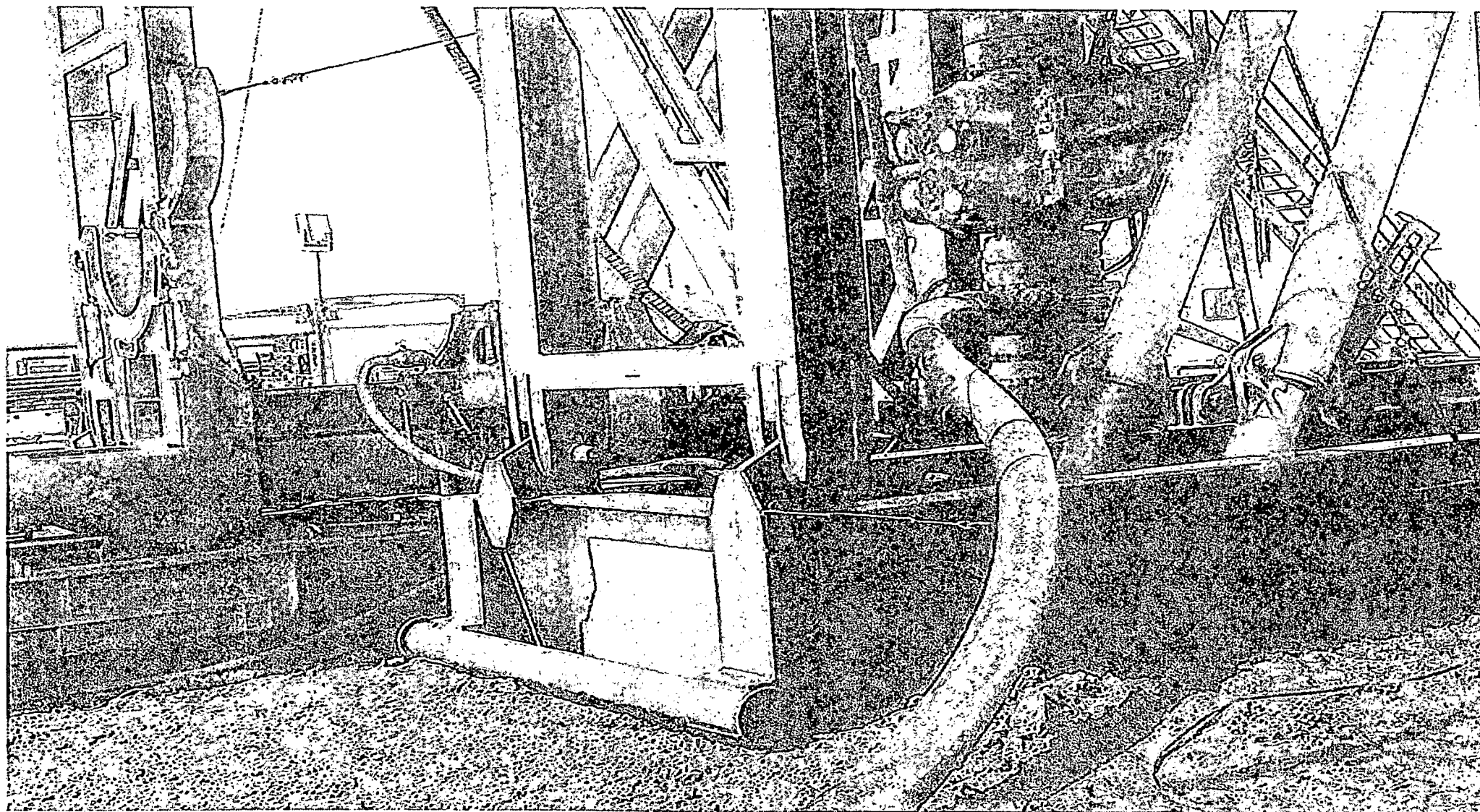
Cimarex Energy Co.

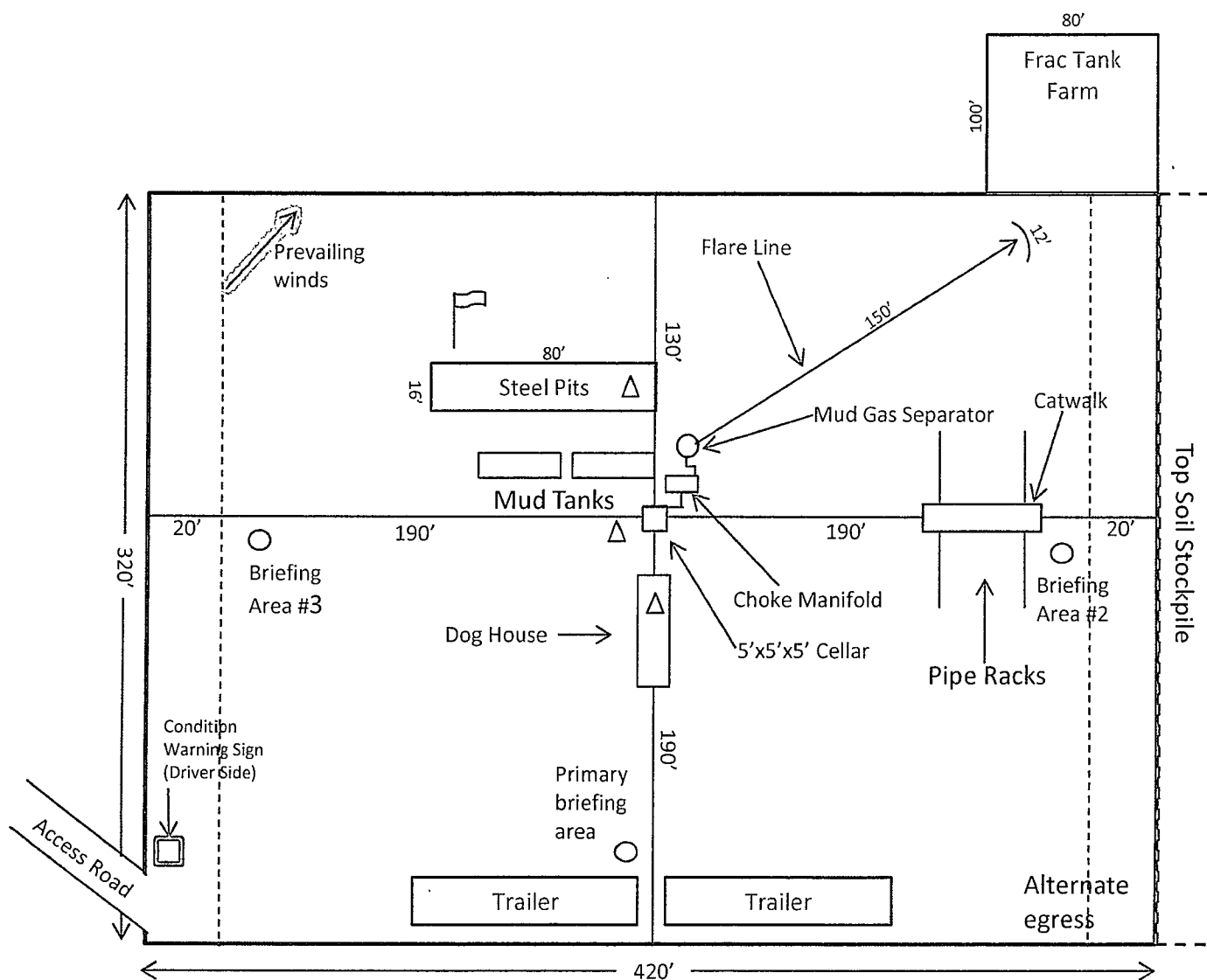
Sec. 5-26S-33E

SHL 160' FNL & 1330' FWL

BHL 330' FSL & 1330' FWL

Lea County, NM





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



Exhibit D – Rig Layout Diagram
Red Hills Unit 23H
 Cimarex Energy Co.
 Sec. 5-26S-33E
 SHL 160' FNL & 1330' FWL
 BHL 330' FSL & 1330' FWL
 Lea County, NM

Operator - Land Owner Agreement

HOBBS OCD

DEC 09 2014

RECEIVED

Company: Cimarex Energy Co.

Proposed Well: Red Hills Unit 23H

Federal Lease Number: NM0106040A & NM0160973

Please be advised that Cimarex Energy Co. has an agreement with the surface owner, listed below, concerning entry and surface restoration after completion of drilling operations at the above described well.

Richard J (Jeff) Robbins
301 Orla
Jal, NM 88252
575-390-0660

After abandonment of the well, all pits will be filled and levelled and all equipment and trash will be removed from the well site. No other requirements were made concerning restoration of the well site.

9/11/14

Date

Aricka Easterling

Signature

Aricka Easterling

Operator Certification Statement

Red Hills Unit 23H

Cimarex Energy Co.

UL: C, Sec. 5, 26S, 33E

LEA Co., NM

HOBBS OCD

DEC 09 2014

RECEIVED

Operator's Representative

Cimarex Energy Co. of Colorado

600 N. Marienfeld St., Ste. 600

Midland, TX 79701

Office Phone: (432) 571-7800

CERTIFICATION: I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

Executed this 21 day of March, 2014

NAME: Paula Brunson

Paula Brunson

TITLE: Regulatory Compliance

ADDRESS: 600 N. Marienfeld St. Ste. 600 Midland Tx 79071

TELEPHONE: 432-571-7800

EMAIL: pbrunson@cimarex.com

Field Representative: Same as above