

HOBBS OCD

MAY 16 2013

OCD Hobbs

Form 3160-3  
(March 2012)

RECEIVED

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		7. If Unit or CA Agreement, Name and No. NM127960
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		8. Lease Name and Well No. Lynch 23 Federal Com 5H <b>&lt;3 98827</b>
2. Name of Operator Cimarex Energy Co.		9. API Well No. 30-025- <b>41185</b>
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 Lea; Bone Spring, S <b>&lt;375807</b>
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At Surface 330' FNL & 2225' FEL At proposed prod. Zone 330' FSL & 1930' FEL Horizontal Bone Spring test		11. Sec., T. R. M. or Blk. and Survey or Area 23-20S-34E
14. Distance in miles and direction from nearest town or post office* Approximately 24 miles SSW of Hobbs, NM		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) 330'	16. No of acres in lease SH (NM12352) 160; BH (NM12466) 80	17. Spacing Unit dedicated to this well 160
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 498' from the #1	19. Proposed Depth 14,915' MD 10,560' TVD	20. BLM/BIA Bond No. on File NM2575; NMB000835
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3655' GR	22. Approximate date work will start* 06.15.13	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
- 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) Terri Stathem	Date 2.20.13
Title Regulatory		
Approved By (Signature) <b>J/ Jesse J. Juen</b>	Name (Printed/Typed)	Date <b>APR 30 2013</b>
Title <b>STATE DIRECTOR</b>	Office <b>NM STATE OFFICE</b>	

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.

(Continued on page 2)

\*(Instructions on page 2)

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

Approval Subject to General Requirements  
& Special Stipulations Attached

Capitan Controlled Water Basin

MAY 20 2013

Application to Drill  
**Lynch 23 Federal Com 5H**  
 Cimarex Energy Co.  
 UL: B, Sec. 23-20S-34E  
 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 & 2225' FEL  
 BHL 330' FSL & 1930' FEL
- 2 Elevation above sea level: 3655' 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: 14,915' MD 10,560' TVD
- 6 Estimated tops of geological markers:

Formation	Est. Top	Bearing
Rustler	1625	NA
Salt	1850	NA
Base Salt	3440	NA
Seven Rivers	4010	NA
Capitan	4040	NA
Delaware Sands	5530	NA
Basal Brushy Canyon	8082	NA
Bone Spring	8320	NA
Avalon Shale	9200	NA
1st BSS	9530	Hydrocarbons
2nd BSS	10070	NA
3rd BS Carbonate	10580	NA

7 Possible mineral bearing formation:

Shown above

7A OSE Ground Water estimated depth: 125'

8 Casing Program:

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	Conditon	SI-Surface Pressure & BHP (psig)	Mud Weight (ppg)	Collapse SF (1.125)	Burst SF (1.125)	Cumulative Air Weight (lbs)	Tension SF (1.6)
Surface														
0'	1675'	1675'	17 1/2	13 3/8	54.5	J-55	ST&C	New	754	8.4	1.54	3.6	91288	5.6
Intermediate														
0'	5160'	5510'	12 1/4	9 5/8	40	HCK-55	LT&C	New	2480	10	1.48	1.6	220400	3.1
Production														
0'	10013'	10013'	8 3/4	5 1/2	17	P-110	LT&C	New	2429	8.4	1.71	4.4	179520	2.5
10013'	14915'	10560'	8 3/4	5 1/2	17	P-110	BT&C	New	4752	8.4	1.62	2.2	9299	58.7

**Casing Design Criteria and Casing Loading Assumptions:**

**Surface, Intermediate and Production Casing:**

Tension: A 1.6 design factor without effects of buoyancy.

Collapse: A 1.125 design factor with full internal evacuation.

Burst: A 1.125 design with a surface pressure equal to the fracture gradient at setting depth less gas gradient to surface.

**Drilling Plan**  
**Lynch 23 Federal Com 5H**  
 Cimarex Energy Co.  
 UL: B, Sec. 23-20S-34E  
 Lea County, NM

**9 Cementing Program:**

Surface	Sacks	Yield (cuft/sx)	Weight (ppg)	Cubic Feet	Cement Blend
Lead	1060	1.75	13.5	1862	Class C + Bentonite + Calcium Chloride + LCM
Tail	220	1.34	14.8	291	Class C + LCM
<b>TOC:</b>	<b>0'</b>	<b>85% Excess</b>	<b>Centralizers per Onshore Order 2.III.B.1f</b>		

Intermediate	Sacks	Yield (cuft/sx)	Weight (ppg)	Cubic Feet	Cement Blend
Lead	1230	1.88	12.9	2294	35:65 (poz/C) + Salt + Bentonite + LCM + retarder
Tail	300	1.34	14.8	395	Class C + retarder + LCM
<b>TOC:</b>	<b>0'</b>	<b>80% Excess</b>			

Production	Sacks	Yield (cuft/sx)	Weight (ppg)	Cubic Feet	Cement Blend
Lead	578	2.4	11.9	1386	35:65 (poz/H) + salt + Sodium Metasilcate + Bentonite + Fluid Loss + Dispersant + LCM + Retarder
Tail	1379	1.24	14.5	1710	50:50 (poz/H) + Bentonite + Salt + Fluid Loss + Dispersant + LCM + Retarder

**Cement volumes will be adjusted depending on hole size.**

**TOC: 5010' 25% 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.

*See COA*

**10 Pressure Control Equipment:**

Exhibit "E-1". A 13½" 5000 PSI working pressure BOP, tested to 3000 psi on the surface casing and 5000 psi on the intermediate, 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 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 unit will be hydraulically operated. BOP will be installed 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.

BOPS will be tested by an independent service company to 250 psi low and 3000 psi high on the surface casing and 250 psi low and 5000 psi high on the intermediate. Hydril will be tested to 250 psi low and 2500 psi high on the surface and intermediate casings.

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.

*See COA*

See COA

11 Proposed Mud Circulating System:

Depth		Mud Wt	Visc	Fluid Loss	Type Mud
0'	to 1675'	8.4	28	NC	FW Spud Mud
1675'	to 5510'	10	30-32	NC	Brine water
5510'	to 14915'	8.4	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 Proposed Drilling Plan

Pilot Hole TD: No Pilot Hole KOP: 10,013' EOC: 10755'  
 Set Surface and Intermediate casing strings. Drill production hole to KOP. Continue drilling lateral through the curve to TD. Run prod casing & cement.

13 Testing, Logging and Coring Program:

- A. Mud logging program: 2 man unit from 5510 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

14 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<sub>2</sub>S from the surface to the Bone Spring formations to meet the BLM's minimum requirements for the submission of an "H<sub>2</sub>S Drilling Operation Plan" or "Public Protection Plan" for the drilling and completion of this well. Since we have an H<sub>2</sub>S Safety package on all wells, attached is an "H<sub>2</sub>S 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 **4752 psi** Estimated BHT **138°**

15 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.

16 Other Facets of Operations:

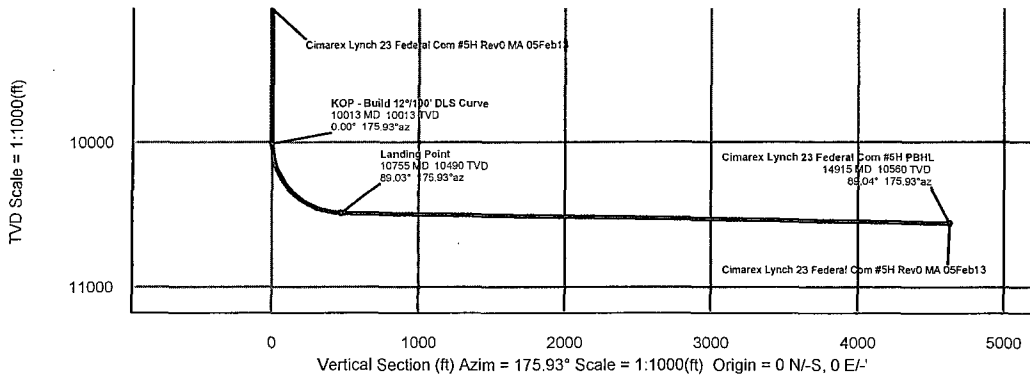
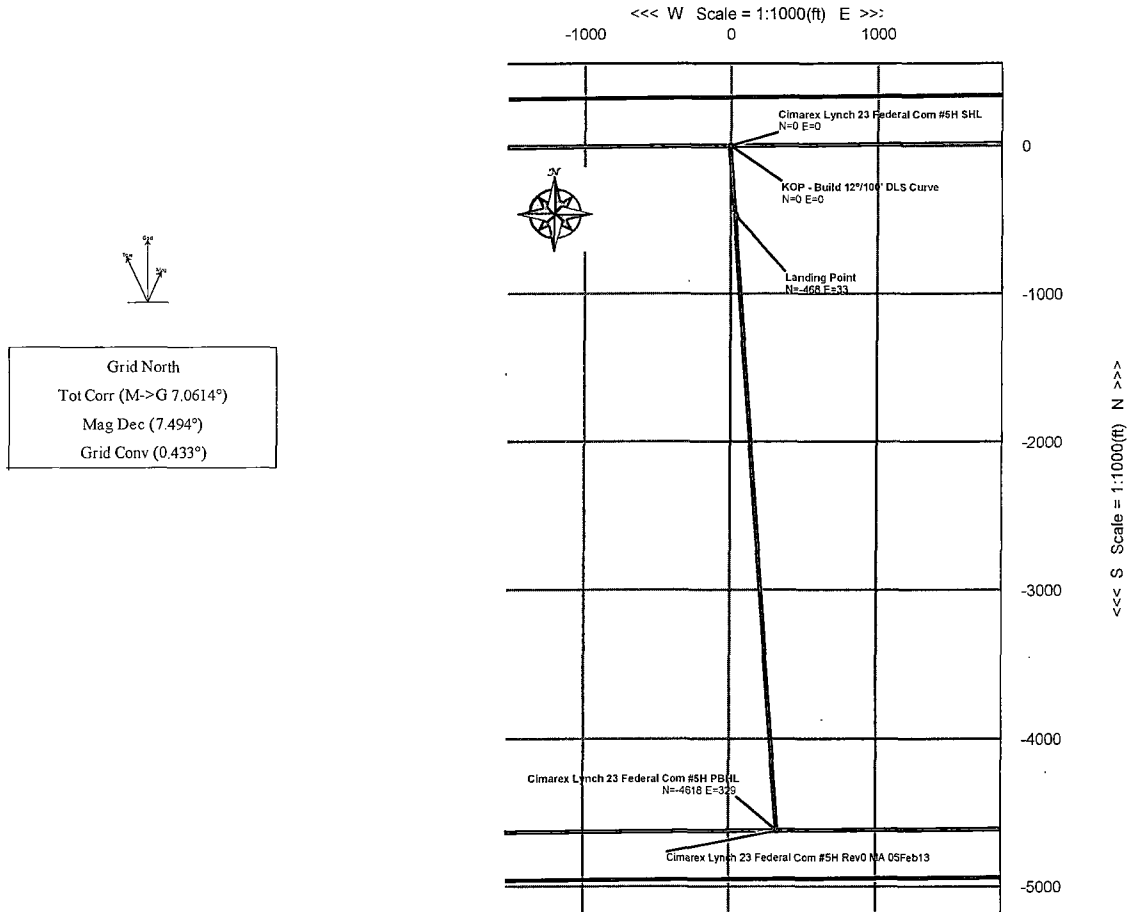
After running casing, cased hole gamma ray neutron collar logs will be run from TD over possible pay intervals.  
Bone Spring pay will be perforated and stimulated.  
 The proposed well will be tested and potentialied as **Oil**



Cimarex

**PATHFINDER**  
A Schlumberger Company

WELL	Lynch 23 Federal Com #5H	FIELD	NM Lea County	STRUCTURE	Lynch 23 Federal Com #5H
Maguire Parameters	Dir: 81.433° Mag Dec: 7.494°	Date: February 05, 2013 FS: 48643.Svt	Surface Location Lat: N 33 33.03.883 Lon: W 103 31 48.350	NADES New Mexico State Plane, Eastern Zone, US Feet NAD83 107020.89-10.5 Grid Curve: 2.437 Easting: 728698.80 EUS Scale Factor: 0.99997832	Miscellaneous Sht: Lynch 23 Federal Com #5H Plan: Rev0 MA 05Feb13 TVD Ref: Ground Level (8551' above MSL) Sht Date: February 05, 2013



Critical Point	MD	INCL	AZIM	TVD	YSEC	N(+)/S(-)	E(+)/W(-)	DLS
Cimarex Lynch 23 Federal Com #5H SHL	0.00	0.00	175.93	0.00	0.00	0.00	0.00	
KOP - Build 12°/100' DLS Curve	10012.50	0.00	175.93	10012.50	0.00	0.00	0.00	0.00
Landing Point	10754.62	89.04	175.93	10490.00	469.52	-468.34	33.32	12.00
Cimarex Lynch 23 Federal Com #5H PBHL	14915.47	89.04	175.93	10560.00	4629.79	-4618.10	328.71	0.00



# Cimarex Lynch 23 Federal Com #5H Rev0 MA 05Feb13 Proposal Report

(Non-Def Plan)

<b>Report Date:</b>	February 05, 2013 - 01:43 PM	<b>Survey / DLS Computation:</b>	Minimum Curvature / Lubinski
<b>Client:</b>	Cimarex	<b>Vertical Section Azimuth:</b>	175.929 ° (Grid North)
<b>Field:</b>	NM Lea County (NAD 83)	<b>Vertical Section Origin:</b>	0.000 ft, 0.000 ft
<b>Structure / Slot:</b>	Cimarex Lynch 23 Federal Com #5H / Cimarex Lynch 23 Federal Com #5H	<b>TVD Reference Datum:</b>	Ground Level
<b>Well:</b>	Cimarex Lynch 23 Federal Com #5H	<b>TVD Reference Elevation:</b>	3655.000 ft above MSL
<b>Borehole:</b>	Original Borehole	<b>Seabed / Ground Elevation:</b>	3655.000 ft above MSL
<b>UWI / API#:</b>	Unknown / Unknown	<b>Magnetic Declination:</b>	7.494 °
<b>Survey Name:</b>	Cimarex Lynch 23 Federal Com #5H Rev0 MA 05Feb13	<b>Total Gravity Field Strength:</b>	998.4916mgn (9.80665 Based)
<b>Survey Date:</b>	February 05, 2013	<b>Total Magnetic Field Strength:</b>	48643.279 nT
<b>Tort / AHD / DDI / ERD Ratio:</b>	89.039 ° / 4629.788 ft / 5.765 / 0.438	<b>Magnetic Dip Angle:</b>	60.433 °
<b>Coordinate Reference System:</b>	NAD83 New Mexico State Plane, Eastern Zone, US Feet	<b>Declination Date:</b>	February 05, 2013
<b>Location Lat / Long:</b>	N 32° 33' 53.88269", W 103° 31' 46.35031"	<b>Magnetic Declination Model:</b>	BGGM 2012
<b>Location Grid N/E Y/X:</b>	N 570200.800 ftUS, E 788966.800 ftUS	<b>North Reference:</b>	Grid North
<b>CRS Grid Convergence Angle:</b>	0.4327 °	<b>Grid Convergence Used:</b>	0.4327 °
<b>Grid Scale Factor:</b>	0.99997932	<b>Total Corr Mag North-&gt;Grid North:</b>	7.0614 °
		<b>Local Coord Referenced To:</b>	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)
Cimarex Lynch 23 Federal Com #5H SHL	0.00	0.00	175.93	0.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	N/A
	100.00	0.00	175.93	100.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	200.00	0.00	175.93	200.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	300.00	0.00	175.93	300.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	400.00	0.00	175.93	400.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	500.00	0.00	175.93	500.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	600.00	0.00	175.93	600.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	700.00	0.00	175.93	700.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	800.00	0.00	175.93	800.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	900.00	0.00	175.93	900.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	1000.00	0.00	175.93	1000.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	1100.00	0.00	175.93	1100.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	1200.00	0.00	175.93	1200.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	1300.00	0.00	175.93	1300.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	1400.00	0.00	175.93	1400.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	1500.00	0.00	175.93	1500.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	1600.00	0.00	175.93	1600.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	1700.00	0.00	175.93	1700.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	1800.00	0.00	175.93	1800.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	1900.00	0.00	175.93	1900.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	2000.00	0.00	175.93	2000.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	2100.00	0.00	175.93	2100.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	2200.00	0.00	175.93	2200.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	2300.00	0.00	175.93	2300.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	2400.00	0.00	175.93	2400.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	2500.00	0.00	175.93	2500.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	2600.00	0.00	175.93	2600.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	2700.00	0.00	175.93	2700.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	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)
	8300.00	0.00	175.93	8300.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	8400.00	0.00	175.93	8400.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	8500.00	0.00	175.93	8500.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	8600.00	0.00	175.93	8600.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	8700.00	0.00	175.93	8700.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	8800.00	0.00	175.93	8800.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	8900.00	0.00	175.93	8900.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	9000.00	0.00	175.93	9000.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	9100.00	0.00	175.93	9100.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	9200.00	0.00	175.93	9200.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	9300.00	0.00	175.93	9300.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	9400.00	0.00	175.93	9400.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	9500.00	0.00	175.93	9500.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	9600.00	0.00	175.93	9600.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	9700.00	0.00	175.93	9700.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	9800.00	0.00	175.93	9800.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	9900.00	0.00	175.93	9900.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
KOP - Build 12'*/100'	10000.00	0.00	175.93	10000.00	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
DLS Curve	10012.50	0.00	175.93	10012.50	0.00	0.00	0.00	570200.80	788966.80	N 32 33 53.88	W 103 31 46.35	0.00	0.00	0.00
	10100.00	10.50	175.93	10099.51	7.99	-7.97	0.57	570192.83	788967.37	N 32 33 53.80	W 103 31 46.34	7.99	175.93	12.00
	10200.00	22.50	175.93	10195.22	36.34	-36.25	2.58	570164.56	788969.38	N 32 33 53.52	W 103 31 46.32	36.34	175.93	12.00
	10300.00	34.49	175.93	10282.95	83.96	-83.74	5.96	570117.06	788972.76	N 32 33 53.05	W 103 31 46.29	83.96	175.93	12.00
	10400.00	46.49	175.93	10358.86	148.77	-148.40	10.56	570052.41	788977.36	N 32 33 52.41	W 103 31 46.24	148.77	175.93	12.00
	10500.00	58.49	175.93	10419.64	227.95	-227.37	16.18	569973.43	788982.98	N 32 33 51.63	W 103 31 46.18	227.95	175.93	12.00
	10600.00	70.48	175.93	10462.63	318.03	-317.23	22.57	569883.58	788989.37	N 32 33 50.74	W 103 31 46.11	318.03	175.93	12.00
	10700.00	82.48	175.93	10485.96	415.09	-414.04	29.46	569786.77	788996.26	N 32 33 49.78	W 103 31 46.04	415.09	175.93	12.00
Landing Point	10754.62	89.04	175.93	10490.00	469.52	-468.34	33.32	569732.47	789000.12	N 32 33 49.25	W 103 31 46.00	469.52	175.93	12.00
	10800.00	89.04	175.93	10490.76	514.90	-513.60	36.55	569687.21	789003.34	N 32 33 48.80	W 103 31 45.97	514.90	175.93	0.00
	10900.00	89.04	175.93	10492.45	614.89	-613.34	43.64	569587.48	789010.44	N 32 33 47.81	W 103 31 45.89	614.89	175.93	0.00
	11000.00	89.04	175.93	10494.13	714.87	-713.07	50.74	569487.75	789017.54	N 32 33 46.82	W 103 31 45.82	714.87	175.93	0.00
	11100.00	89.04	175.93	10495.82	814.86	-812.80	57.84	569388.02	789024.63	N 32 33 45.84	W 103 31 45.75	814.86	175.93	0.00
	11200.00	89.04	175.93	10497.50	914.84	-912.54	64.93	569288.28	789031.73	N 32 33 44.85	W 103 31 45.67	914.84	175.93	0.00
	11300.00	89.04	175.93	10499.18	1014.83	-1012.27	72.03	569188.55	789038.83	N 32 33 43.86	W 103 31 45.60	1014.83	175.93	0.00
	11400.00	89.04	175.93	10500.87	1114.81	-1112.00	79.13	569088.82	789045.92	N 32 33 42.87	W 103 31 45.52	1114.81	175.93	0.00
	11500.00	89.04	175.93	10502.55	1214.80	-1211.74	86.22	568989.09	789053.02	N 32 33 41.89	W 103 31 45.45	1214.80	175.93	0.00
	11600.00	89.04	175.93	10504.23	1314.79	-1311.47	93.32	568889.36	789060.12	N 32 33 40.90	W 103 31 45.38	1314.79	175.93	0.00
	11700.00	89.04	175.93	10505.92	1414.77	-1411.20	100.42	568789.63	789067.22	N 32 33 39.91	W 103 31 45.30	1414.77	175.93	0.00
	11800.00	89.04	175.93	10507.60	1514.76	-1510.94	107.52	568689.90	789074.31	N 32 33 38.92	W 103 31 45.23	1514.76	175.93	0.00
	11900.00	89.04	175.93	10509.28	1614.74	-1610.67	114.61	568590.17	789081.41	N 32 33 37.94	W 103 31 45.15	1614.74	175.93	0.00
	12000.00	89.04	175.93	10510.97	1714.73	-1710.40	121.71	568490.43	789088.51	N 32 33 36.95	W 103 31 45.08	1714.73	175.93	0.00
	12100.00	89.04	175.93	10512.65	1814.72	-1810.14	128.81	568390.70	789095.61	N 32 33 35.96	W 103 31 45.01	1814.72	175.93	0.00
	12200.00	89.04	175.93	10514.33	1914.70	-1909.87	135.91	568290.97	789102.71	N 32 33 34.98	W 103 31 44.93	1914.70	175.93	0.00
	12300.00	89.04	175.93	10516.02	2014.69	-2009.61	143.01	568191.24	789109.80	N 32 33 33.99	W 103 31 44.86	2014.69	175.93	0.00
	12400.00	89.04	175.93	10517.70	2114.67	-2109.34	150.11	568091.51	789116.90	N 32 33 33.00	W 103 31 44.78	2114.67	175.93	0.00
	12500.00	89.04	175.93	10519.38	2214.66	-2209.07	157.20	567991.78	789124.00	N 32 33 32.01	W 103 31 44.71	2214.66	175.93	0.00
	12600.00	89.04	175.93	10521.06	2314.64	-2308.81	164.30	567892.05	789131.10	N 32 33 31.03	W 103 31 44.63	2314.64	175.93	0.00
	12700.00	89.04	175.93	10522.75	2414.63	-2408.54	171.40	567792.31	789138.20	N 32 33 30.04	W 103 31 44.56	2414.63	175.93	0.00
	12800.00	89.04	175.93	10524.43	2514.62	-2508.27	178.50	567692.58	789145.30	N 32 33 29.05	W 103 31 44.49	2514.62	175.93	0.00
	12900.00	89.04	175.93	10526.11	2614.60	-2608.01	185.60	567592.85	789152.40	N 32 33 28.06	W 103 31 44.41	2614.60	175.93	0.00
	13000.00	89.04	175.93	10527.79	2714.59	-2707.74	192.70	567493.12	789159.50	N 32 33 27.07	W 103 31 44.34	2714.59	175.93	0.00
	13100.00	89.04	175.93	10529.48	2814.57	-2807.47	199.80	567393.39	789166.59	N 32 33 26.09	W 103 31 44.26	2814.57	175.93	0.00
	13200.00	89.04	175.93	10531.16	2914.56	-2907.21	206.90	567293.66	789173.69	N 32 33 25.10	W 103 31 44.19	2914.56	175.93	0.00
	13300.00	89.04	175.93	10532.84	3014.55	-3006.94	214.00	567193.93	789180.79	N 32 33 24.12	W 103 31 44.12	3014.55	175.93	0.00
	13400.00	89.04	175.93	10534.52	3114.53	-3106.67	221.10	567094.20	789187.89	N 32 33 23.13	W 103 31 44.04	3114.53	175.93	0.00



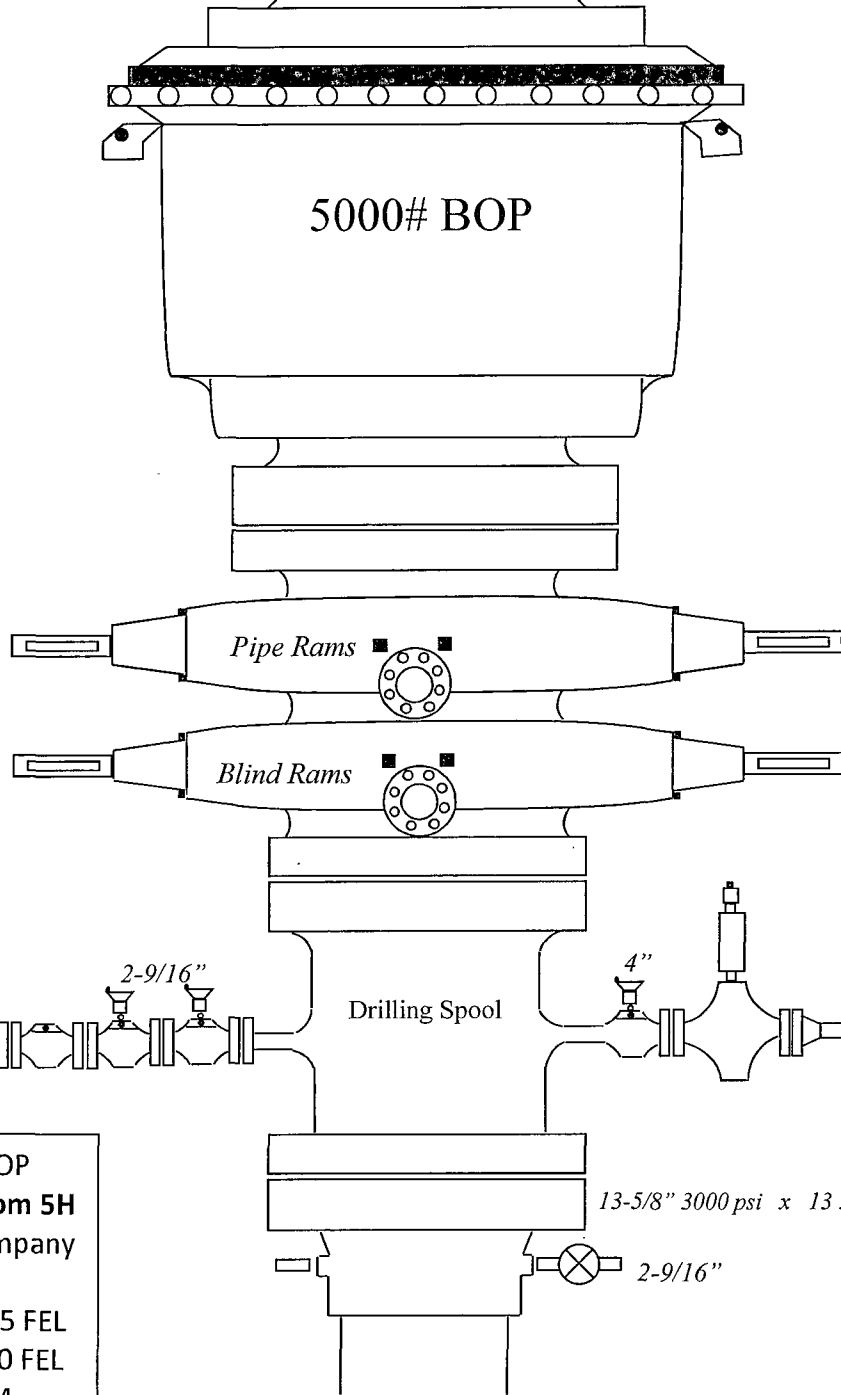
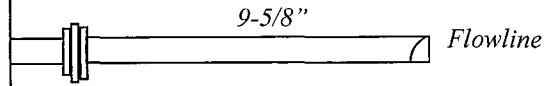
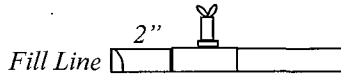
Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)
	13500.00	89.04	175.93	10536.20	3214.52	-3206.41	228.20	566994.47	789194.99	N 32 33 22.14	W 103 31 43.97	3214.52	175.93	0.00
	13600.00	89.04	175.93	10537.89	3314.50	-3306.14	235.30	566894.73	789202.09	N 32 33 21.15	W 103 31 43.89	3314.50	175.93	0.00
	13700.00	89.04	175.93	10539.57	3414.49	-3405.87	242.40	566795.00	789209.19	N 32 33 20.17	W 103 31 43.82	3414.49	175.93	0.00
	13800.00	89.04	175.93	10541.25	3514.48	-3505.61	249.50	566695.27	789216.29	N 32 33 19.18	W 103 31 43.74	3514.48	175.93	0.00
	13900.00	89.04	175.93	10542.93	3614.46	-3605.34	256.60	566595.54	789223.39	N 32 33 18.19	W 103 31 43.67	3614.46	175.93	0.00
	14000.00	89.04	175.93	10544.61	3714.45	-3705.07	263.70	566495.81	789230.49	N 32 33 17.20	W 103 31 43.60	3714.45	175.93	0.00
	14100.00	89.04	175.93	10546.29	3814.43	-3804.81	270.80	566396.08	789237.59	N 32 33 16.22	W 103 31 43.52	3814.43	175.93	0.00
	14200.00	89.04	175.93	10547.97	3914.42	-3904.54	277.90	566296.35	789244.69	N 32 33 15.23	W 103 31 43.45	3914.42	175.93	0.00
	14300.00	89.04	175.93	10549.66	4014.40	-4004.28	285.00	566196.62	789251.79	N 32 33 14.24	W 103 31 43.37	4014.40	175.93	0.00
	14400.00	89.04	175.93	10551.34	4114.39	-4104.01	292.10	566096.88	789258.90	N 32 33 13.25	W 103 31 43.30	4114.39	175.93	0.00
	14500.00	89.04	175.93	10553.02	4214.38	-4203.74	299.20	565997.15	789266.00	N 32 33 12.27	W 103 31 43.23	4214.38	175.93	0.00
	14600.00	89.04	175.93	10554.70	4314.36	-4303.48	306.30	565897.42	789273.10	N 32 33 11.28	W 103 31 43.15	4314.36	175.93	0.00
	14700.00	89.04	175.93	10556.38	4414.35	-4403.21	313.41	565797.69	789280.20	N 32 33 10.29	W 103 31 43.08	4414.35	175.93	0.00
	14800.00	89.04	175.93	10558.06	4514.33	-4502.94	320.51	565697.96	789287.30	N 32 33 9.31	W 103 31 43.00	4514.33	175.93	0.00
	14900.00	89.04	175.93	10559.74	4614.32	-4602.68	327.61	565598.23	789294.40	N 32 33 8.32	W 103 31 42.93	4614.32	175.93	0.00
Cimarex Lynch 23 Federal Com #5H PBHL	14915.47	89.04	175.93	10560.00	4629.79	-4618.10	328.71	565582.80	789295.50	N 32 33 8.17	W 103 31 42.92	4629.79	175.93	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	14915.471	1/100.000	30.000	30.000	SLB_MWD-STD	Original Borehole / Cimarex Lynch 23 Federal Com #5H Rev0 MA

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



SRR & A

Exhibit E – 5M BOP  
Lynch 23 Federal Com 5H  
Cimarex Energy Company  
23-20S-33E  
SHL 330 FNL & 2225 FEL  
BHL 330 FSL & 1930 FEL  
Lea County, NM

13-5/8" 3000 psi x 13 3/8" SOW Slip-on Casing Head

2-9/16"

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

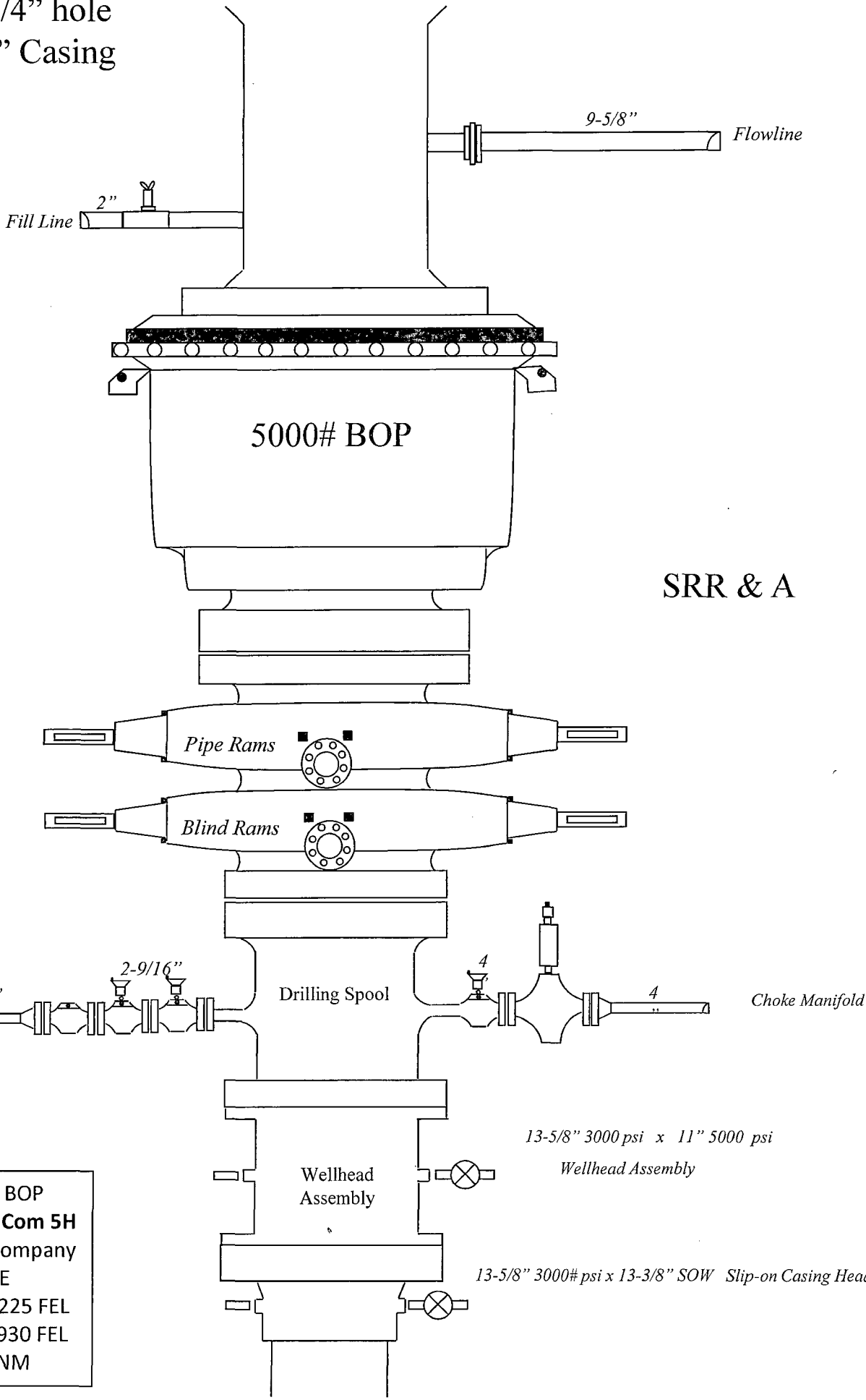


Exhibit E – 5M BOP  
**Lynch 23 Federal Com 5H**  
 Cimarex Energy Company  
 23-20S-33E  
 SHL 330 FNL & 2225 FEL  
 BHL 330 FSL & 1930 FEL  
 Lea County, NM

# Drilling Operations Choke Manifold 5M Service

Exhibit E-1 – Choke Manifold Diagram  
**Lynch 23 Federal Com 5H**  
 Cimarex Energy Company  
 23-20S-33E  
 SHL 330 FNL & 2225 FEL  
 BHL 330 FSL & 1930 FEL  
 Lea County, NM

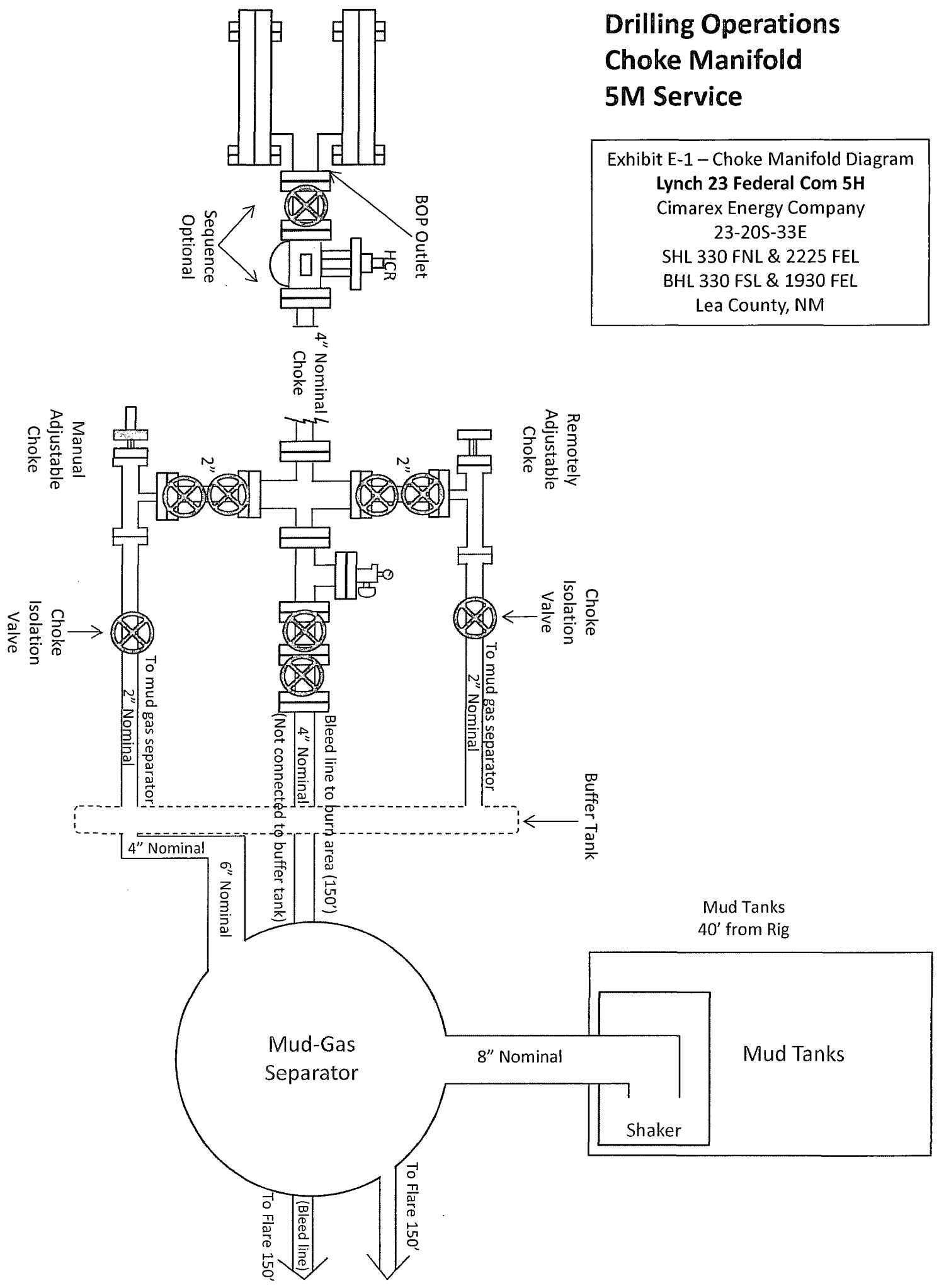
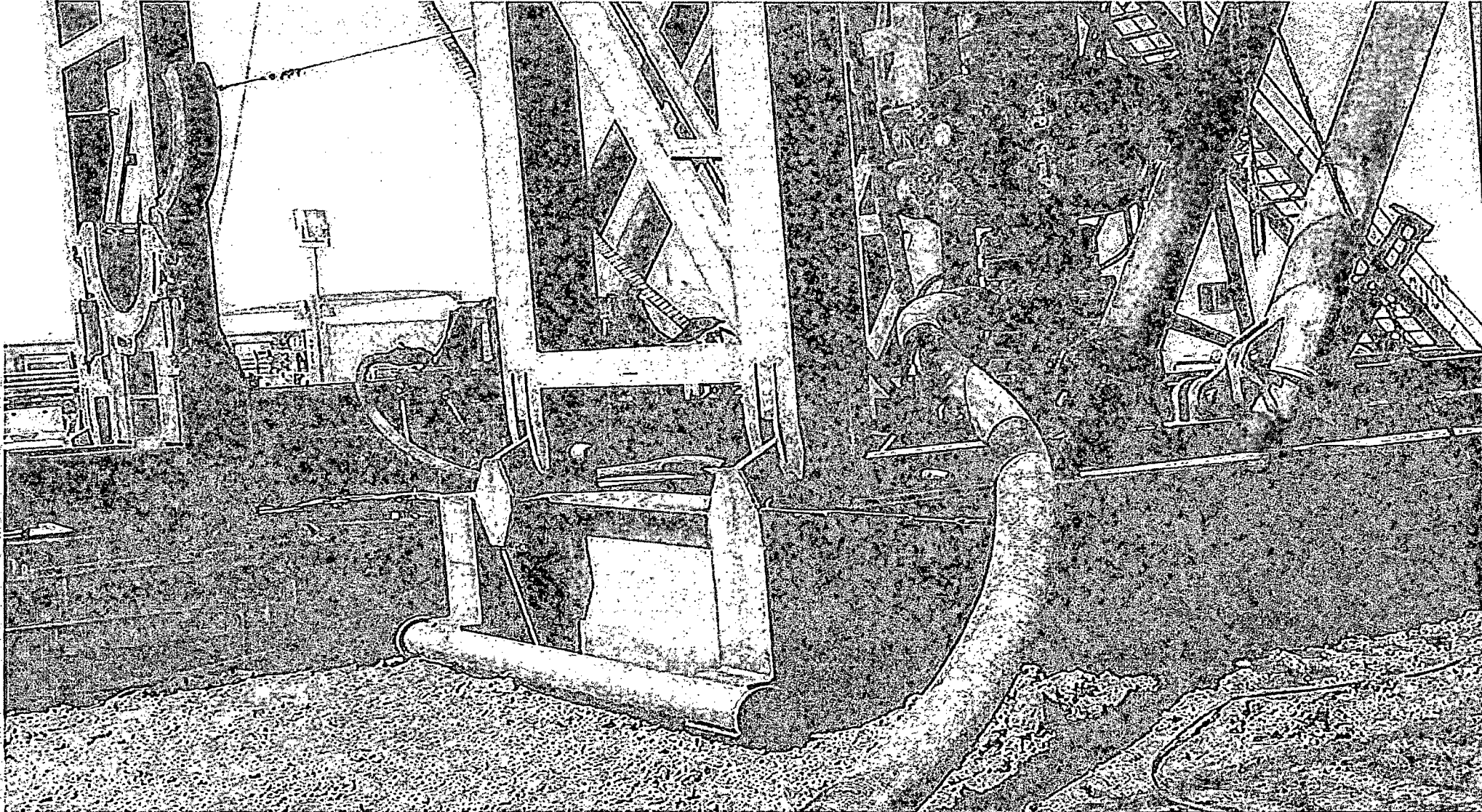


Exhibit F – Co-Flex Hose  
Lynch 23 Federal Com 5H  
Cimarex Energy Company  
23-20S-33E  
SHL 330 FNL & 2225 FEL  
BHL 330 FSL & 1930 FEL  
Lea County, NM





Midwest Hose  
& Specialty, Inc.

Exhibit F -3- Co-Flex Hose  
Lynch 23 Federal Com 5H  
Cimarex Energy Company  
23-20S-33E  
SHL 330 FNL & 2225 FEL  
BHL 330 FSL & 1930 FEL  
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.

<b>Working Pressure:</b>	5,000 or 10,000 psi working pressure
<b>Test Pressure:</b>	10,000 or 15,000 psi test pressure
<b>Reinforcement:</b>	Multiple steel cables
<b>Cover:</b>	Stainless Steel Armor
<b>Inner Tube:</b>	Petroleum resistant, Abrasion resistant
<b>End Fitting:</b>	API flanges, API male threads, threaded or butt weld hammer unions, unbolt and other special connections
<b>Maximum Length:</b>	110 Feet
<b>ID:</b>	2-1/2", 3", 3-1/2", 4"
<b>Operating Temperature:</b>	-22 deg F to +180 deg F (-30 deg C to +82 deg C)

Exhibit F-1 – Co-Flex Hose Hydrostatic Test  
**Lynch 23 Federal Com 5H**  
 Cimarex Energy Company  
 23-20S-33E  
 SHL 330 FNL & 2225 FEL  
 BHL 330 FSL & 1930 FEL  
 Lea County, NM



Midwest Hose  
& Specialty, Inc.

### Internal Hydrostatic Test Graph

March 3, 2011

Customer: Houston

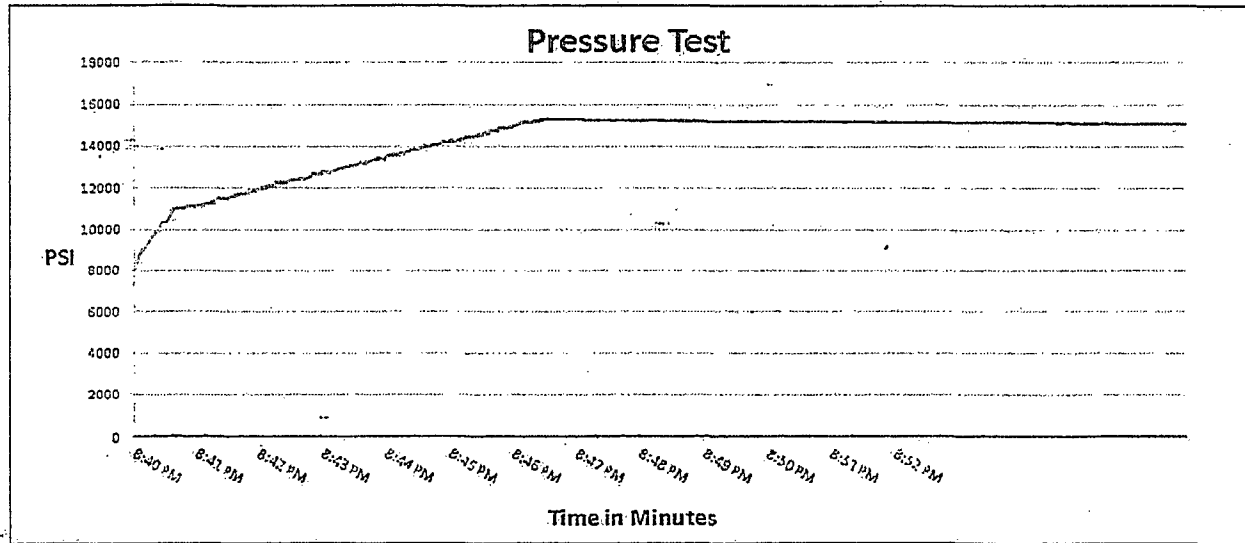
Pick Ticket #: 94260

Hose Specifications

<u>Hose Type</u> C & K	<u>Length</u> 45'
<u>I.D.</u> 4"	<u>O.D.</u> 6.09"
<u>Working Pressure</u> 10000 PSI	<u>Burst Pressure</u> Standard Safety Multiplier Applies

Verification

<u>Type of Fitting</u> 4 1/16 10K	<u>Coupling Method</u> Swage
<u>Die Size</u> 6.38"	<u>Final O.D.</u> 6.25"
<u>Hose Serial #</u> 5544	<u>Hose Assembly Serial #</u> 79793



<u>Test Pressure</u> 15000 PSI	<u>Time Held at Test Pressure</u> 11 Minutes	<u>Actual Burst Pressure</u>	<u>Peak Pressure</u> 15483 PSI
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Comments: Hose assembly pressure tested with water at ambient temperature.

Tested By: *Zac McConnell*

Approved By: *Kim Thomas*

Exhibit F-2 – Co-Flex Hose  
Lynch 23 Federal Com 5H  
Cimarex Energy Company  
23-20S-33E  
SHL 330 FNL & 2225 FEL  
BHL 330 FSL & 1930 FEL  
Lea County, NM



## Midwest Hose & Specialty, Inc.

### Certificate of Conformity

Customer:

DEM

PO

ODYD-271

### SPECIFICATIONS

Sales Order

79793

Dated:

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:

*David Garcia*

Date:

3/8/2011



Exhibit F-1 – Co-Flex Hose Hydrostatic Test

Lynch 23 Federal Com 5H

Cimarex Energy Company

23-20S-33E

SHL 330 FNL & 2225 FEL

BHL 330 FSL & 1930 FEL

Lea County, NM



# Midwest Hose & Specialty, Inc.

## INTERNAL HYDROSTATIC TEST REPORT

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

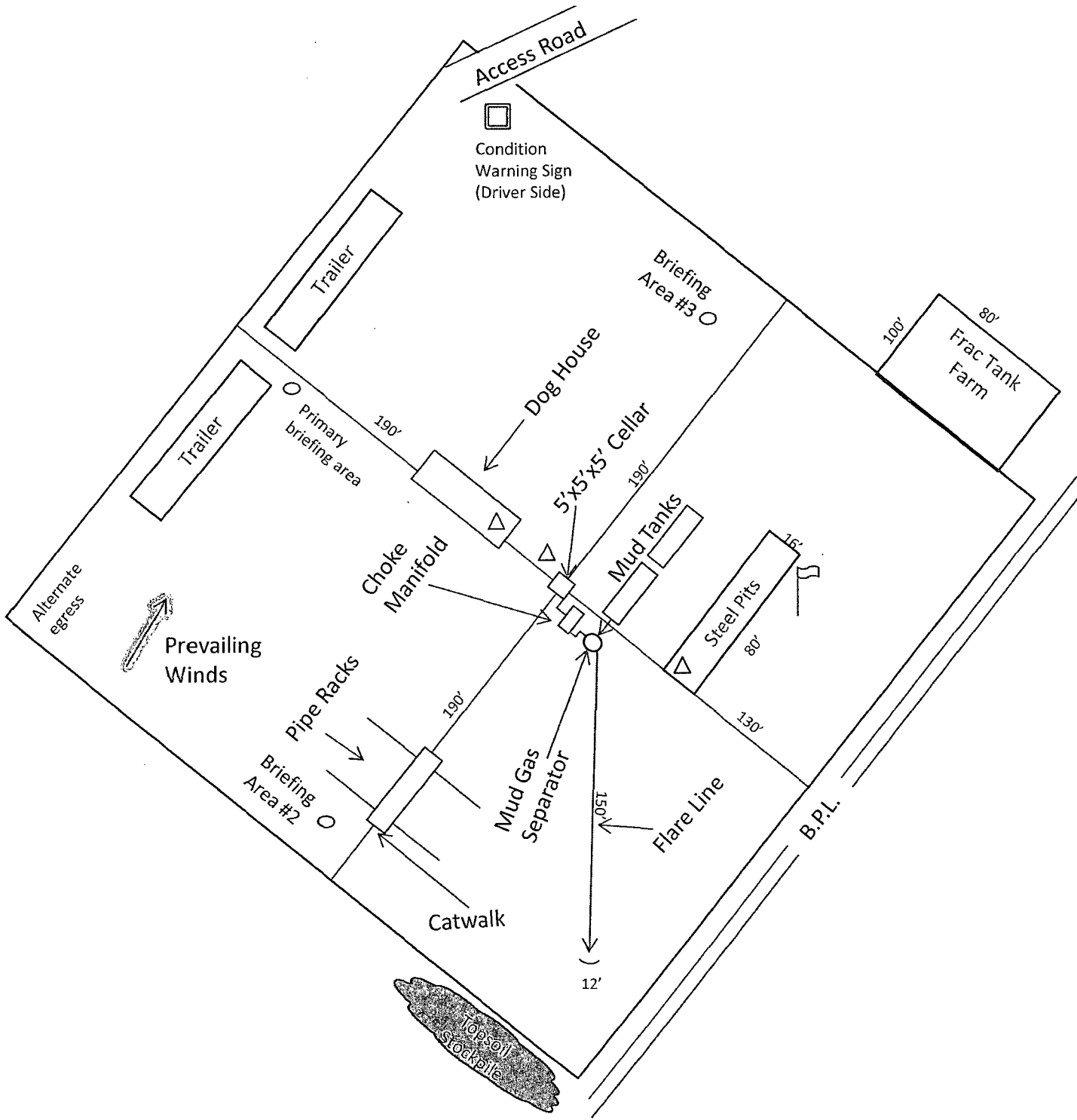





Exhibit D – Rig Diagram  
**Lynch 23 Federal Com 5H**  
 Cimarex Energy Company  
 23-20S-33E  
 SHL 330 FNL & 2225 FEL  
 BHL 330 FSL & 1930 FEL  
 Lea County, NM



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