14-30

OCD Hobbs

Form 3160-3
(March 2012)

Split Estate

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

HOBBS OCD

DEC 03 2014

RECEIVED

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
SHL\BHL: NMNM17440

6. If Indian, Allotee or Tribe Name

1a. Type of Work: [X] DRILL [ ] REENTER

7. If Unit or CA Agreement, Name and No.

1b. Type of Well: [X] Oil Well [ ] Gas Well [ ] Other [X] Single Zone [ ] Multiple Zone

8. Lease Name and Well No. (313931)
West Grama Ridge 7 Federal 4H

2. Name of Operator
Cimarex Energy Co. (215099)

9. API Well No.
30-025-42306

3a. Address
202 S. Cheyenne Ave., Ste 1000, Tulsa, OK 74103

3b. Phone No. (*include area code*)
918-585-1100

10. Field and Pool, or Exploratory (28432)
GRAMA RIDGE; BS, WEST

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

At Surface: 330 FSL & 660 FWL

At proposed prod. Zone: 330 FNL & 660 FWL *Bone Spring*

11. Sec,. T. R. M. or Blk. and Survey and Area
7, 22s, 34e

14. Distance in miles and direction from nearest town or post office*
Approx 15 miles N of Carlsbad 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)	16. No of acres in lease	17. Spacing Unit dedicated to this well
330'	NMNM17440=1794.49 acres	154.36

18. Distance from proposed* location to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. on File
1320 to the West Grama 7 Federal 3	Pilot Hole TD: N/A 15,370 MD 10,950 TVD	NM2575 & NMB000835

21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
3506 GR	1/1/14	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*)	Date
	Terri Stathem	10/17/13

Title: Regulatory Compliance

Approved By (*Signature*)	Name (Printed/Typed)	Date
Steve Caffey		NOV 24 2014
Title: FIELD MANAGER	Office: CARLSBAD FIELD OFFICE	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

Title 18 U.S.S. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious, or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

*(Instructions on page 2)

Capitan Controlled Water Basin

KA 12/3/14

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR CONDITIONS OF APPROVAL

DEC 04 2014

Operator Certification Statement
West Grama Ridge 7 Federal 4H
Cimarex Energy Co.
UL: 4, Sec. 7, 22s, 34e
Lea Co., NM

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 17 day of October, 2013

NAME: Hope Knauls
TITLE: Regulatory Compliance
ADDRESS: 202 S. Cheyenne Ave., Ste 1000, Tulsa, OK 74103
TELEPHONE: 918-585-1100
EMAIL: hknauls@cimarex.com
Field Representative: Same as above

Application to Drill
West Grama Ridge 7 Federal 4H
Cimarex Energy Co.
UL: 4, Sec. 7, 22s, 34e
Lea Co., NM

HOBBS OCD

DEC 03 2014

RECEIVED

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 FSL & 660 FWL
BHL 330 FNL & 660 FWL

2. Elevation Above Sea Level: 3,506' 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: 15,370 MD 10,950 TVD Pilot Hole TD: N/A

6. Estimated Tops of Geological Markers:

Formation	Est Top	Bearing
Rustler	1720	N/A
Salt	1875	N/A
Tansill	3638	N/A
Capitan	4200	N/A
Bell Canyon	5350	Hydrocarbons
Cherry Canyon	5950	N/A
Brushy Canyon	7300	N/A
Basal Brushy Canyon	8600	N/A
Bone Spring	8850	Hydrocarbons
Avalon Shale	9340	Hydrocarbons
1st BSS	10000	Hydrocarbons

7. Possible Mineral Bearing Formation: Shown above

7A. OSE Ground Water Estimated Depth: 200'

8. Casing Program:

See COA

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	Conditon	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	~~1750~~ 1675 sorry	~~1750~~ 1675	17 1/2	13-3/8"	54.50	J-55	ST&C	New	755	8.3	1.50		3.63	95,375	83,289	6.17
Intermediate	0	~~5300~~ 5300	~~5300~~ 5300	12 1/4	9-5/8"	40.00	J-55	LT&C	New	2756	10.0		1.35	1.43	212,000	179,634	2.89
Production	0	10472	10472	8 3/4	5-1/2"	17.00	P-110	LT&C	New	4900	9.0	1.53		2.17	186,150	160,572	2.77
Production	10472	15370	10950	8 3/4	5-1/2"	17.00	P-110	BT&C	New	5124	9.0	1.46		2.08	8,126	7,009	77.89

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
West Grama Ridge 7 Federal 4H
Cimarex Energy Co.
UL: 4, Sec. 7, 22s, 34e
Lea Co., NM

8A. Casing Design and Casing Loading Assumptions:

Surface	Tension	A 1.8 design factor with effects of buoyancy: 8.30 ppg.
	Collapse	A 1.125 design factor with full internal evacuation and a collapse force equal to a 8.30 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: 10.00 ppg.
	Collapse	A 1.125 design factor evacuated 1/3 TVD of next casing string with a collapse force equal to a 10.00 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	Tension	A 1.8 design factor with effects of buoyancy: 9.00 ppg.
	Collapse	A 1.125 design factor with full internal evacuation of next casing string with a collapse force equal to a 9.00 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	1112	1.75	13.50	1945	Class C + Bentonite + Calcium Chloride + LCM, 8.829 gps water
	Tail	227	1.34	14.80	303	Class C + LCM, 6.32 gps water
	TOC: 0		**85% Excess**			**Centralizers per Onshore Order 2.III.B.1f**
Intermediate	Lead	1142	1.88	12.90	2146	35:65 (poz/C) + Salt + Bentonite + LCM + retarder, 9.65 gps water
	Tail	292	1.34	14.80	391	Class C + retarder + LCM, 6.32 gps water
	TOC: 0		**79% Excess**			
Production	Lead	636	2.40	11.90	1526	35:65 (poz/H) + salt + Sodium Metasilcate + Bentonite + Fluid Loss + Dispersant + LCM + Retarder, 13.80 gps water
See COA	Tail	1375	1.24	14.50	1705	50:50 (poz/H) + Bentonite + Salt + Fluid Loss + Dispersant + LCM + Retarder, 5.55 gps water
	TOC: ~~5100~~ 50' above Capitan Reef		**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.**

Cement volumes will be adjusted depending on hole size

9a. Proposed Drilling Plan:

Pilot Hole TD: No Pilot KOP: 10,472' EOC: 11,222'

Set Surface and Intermediate casing strings. Drill production hole to KOP. Continue drillling 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.

See COA

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
West Grama Ridge 7 Federal 4H
Cimarex Energy Co.
UL: 4, Sec. 7, 22s, 34e
Lea Co., NM

11. Proposed Mud Circulating System:

Depth	Mud Weight	Visc	Fluid Loss	Type Mud
0' to 1750'	8.30	28	NC	FW Spud Mud
1750' to 5300'	10.00	30-32	NC	Brine Water
5300' to 15600'	9.00	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 5300 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 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: 4928 psi Estimated BHT: 168°

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.
Bone Spring pay will be perforated and stimulated.
The proposed well will be tested and potentialed as **Oil**

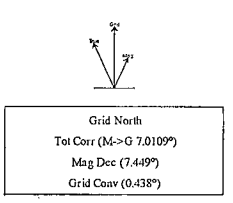
CIMAREX

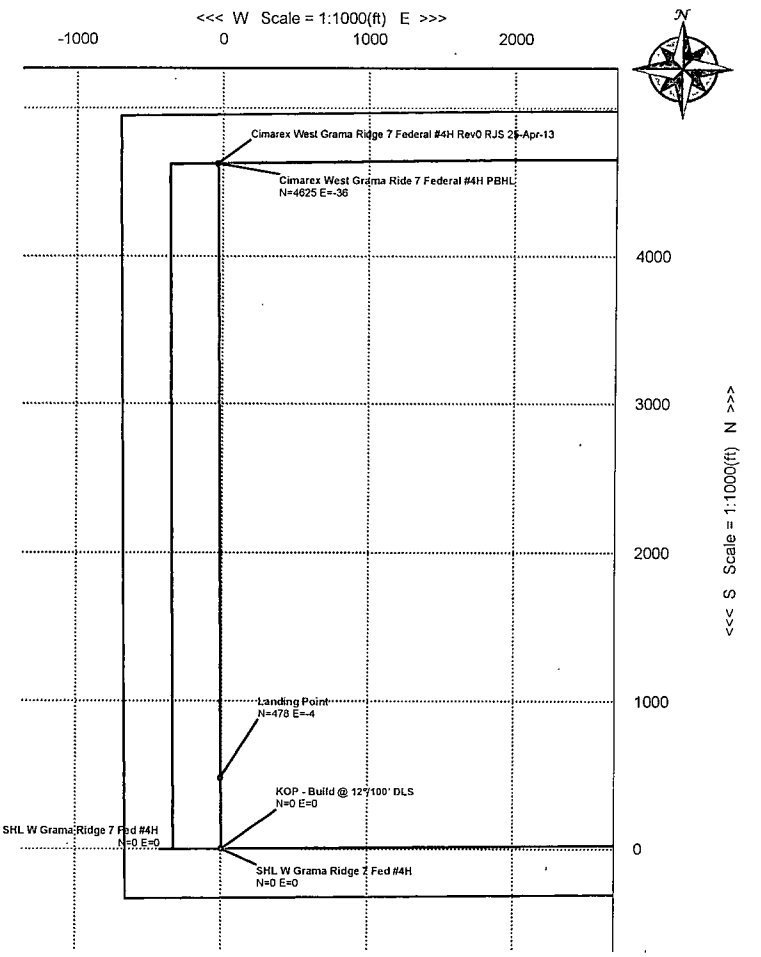
Cimarex

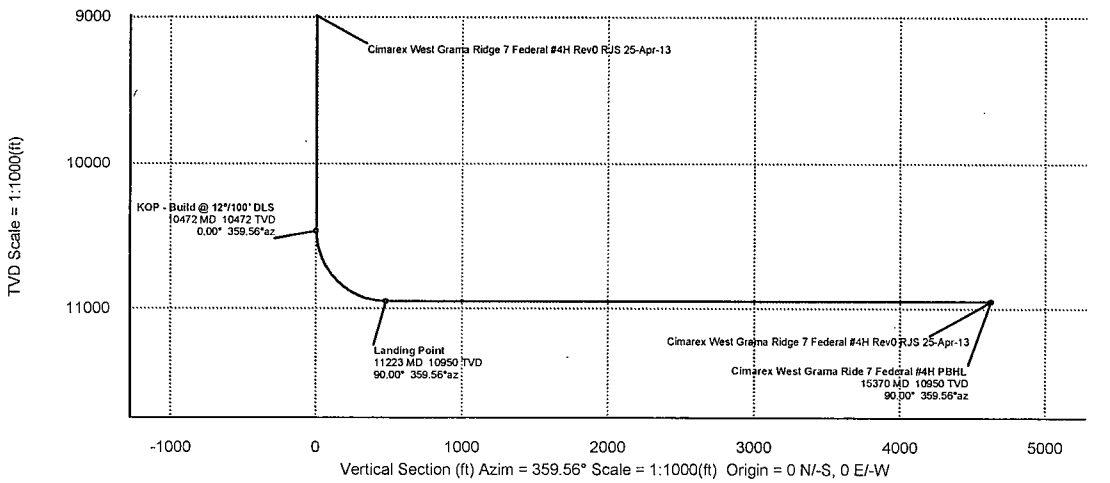
PATHFINDER
A Schlumberger Company

WELL	FIELD	STRUCTURE
W Grama Ridge 7 Fed #4H	NM Lea County	TBD

Magnetic Parameters				Surface Location				Miscellaneous	
Model BGGM 2012	Dip: 60.273°	Date: April 25, 2013		Lat: N 32 23 59.562	Northing: 510172.57 ftUS	Grid Conv: 0.438°		Slot:	West Grama Ridge 7 Federal FWB Ref: Ground Level(3506ft above MSL)
	Mag Dec: 7.449°	FS: 48518.4nT		Lon: W 103 30 55.510	Easting: 793778.16 ftUS	Scale Fact: 0.99996207		Plan:	Rev0 RJS 25-Apr-13 Srvy Date: April 25, 2013







Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+) / S(-)	E(+) / W(-)	DLS
Marker MudLine	0.00	0.00	359.56	0.00	0.00	0.00	0.00	0.00
SHL W Grama Ridge 7 Fed #4H	0.00	0.00	359.56	0.00	0.00	0.00	0.00	
KOP - Build @ 12°/100' DLS	10472.00	0.00	359.56	10472.00	0.00	0.00	0.00	0.00
Landing Point	11222.84	90.00	359.56	10950.00	478.00	477.99	-3.67	11.99
Cimarex West Grama Ride 7 Federal #4H PBHL	15370.41	90.00	359.56	10950.00	4625.57	4625.43	-35.53	0.00

Cimarex West Grama Ridge 7 Federal #4H Rev0 RJS 25-Apr-13 Proposal Report

(Non-Def Plan)

PATHFINDER
A Schlumberger Company

Report Date:	April 25, 2013 - 06:33 PM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	Cimarex	**Vertical Section Azimuth:**	359.560 ° (Grid North)
Field:	NM Lea County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	TBD / Cimarex West Grama Ridge 7 Federal #4H	**TVD Reference Datum:**	Ground Level
Well:	Cimarex West Grama Ridge 7 Federal #4H	**TVD Reference Elevation:**	3506.000 ft above MSL
Borehole:	Original Borehole	**Seabed / Ground Elevation:**	3506.000 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	7.449 °
Survey Name:	Cimarex West Grama Ridge 7 Federal #4H Rev0 RJS 25-Apr-13	**Total Gravity Field Strength:**	998.4921mgn (9.80665 Based)
Survey Date:	April 25, 2013	**Total Magnetic Field Strength:**	48518.356 nT
Tort / AHD / DDI / ERD Ratio:	90.000 ° / 4625.569 ft / 5.767 / 0.422	**Magnetic Dip Angle:**	60.273 °
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Declination Date:**	April 25, 2013
Location Lat / Long:	N 32° 23' 59.56163", W 103° 30' 55.51003"	**Magnetic Declination Model:**	BGGM 2012
Location Grid N/E Y/X:	N 510172.570 ftUS, E 793778.160 ftUS	**North Reference:**	Grid North
CRS Grid Convergence Angle:	0.4383 °	**Grid Convergence Used:**	0.4383 °
Grid Scale Factor:	0.99998207	**Total Corr Mag North->Grid North:**	7.0109 °
		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)
SHL W Grama Ridge 7 Fed #4H	0.00	0.00	359.56	0.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	N/A
	100.00	0.00	359.56	100.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	200.00	0.00	359.56	200.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	300.00	0.00	359.56	300.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	400.00	0.00	359.56	400.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	500.00	0.00	359.56	500.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	600.00	0.00	359.56	600.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	700.00	0.00	359.56	700.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	800.00	0.00	359.56	800.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	900.00	0.00	359.56	900.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	1000.00	0.00	359.56	1000.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	1100.00	0.00	359.56	1100.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	1200.00	0.00	359.56	1200.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	1300.00	0.00	359.56	1300.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	1400.00	0.00	359.56	1400.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	1500.00	0.00	359.56	1500.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	1600.00	0.00	359.56	1600.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	1700.00	0.00	359.56	1700.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	1800.00	0.00	359.56	1800.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	1900.00	0.00	359.56	1900.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	2000.00	0.00	359.56	2000.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	2100.00	0.00	359.56	2100.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	2200.00	0.00	359.56	2200.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	2300.00	0.00	359.56	2300.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	2400.00	0.00	359.56	2400.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	2500.00	0.00	359.56	2500.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	2600.00	0.00	359.56	2600.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	2700.00	0.00	359.56	2700.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	2800.00	0.00	359.56	2800.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	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)
	2900.00	0.00	359.56	2900.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	3000.00	0.00	359.56	3000.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	3100.00	0.00	359.56	3100.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	3200.00	0.00	359.56	3200.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	3300.00	0.00	359.56	3300.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	3400.00	0.00	359.56	3400.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	3500.00	0.00	359.56	3500.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	3600.00	0.00	359.56	3600.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	3700.00	0.00	359.56	3700.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	3800.00	0.00	359.56	3800.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	3900.00	0.00	359.56	3900.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	4000.00	0.00	359.56	4000.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	4100.00	0.00	359.56	4100.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	4200.00	0.00	359.56	4200.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	4300.00	0.00	359.56	4300.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	4400.00	0.00	359.56	4400.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	4500.00	0.00	359.56	4500.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	4600.00	0.00	359.56	4600.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	4700.00	0.00	359.56	4700.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	4800.00	0.00	359.56	4800.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	4900.00	0.00	359.56	4900.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	5000.00	0.00	359.56	5000.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	5100.00	0.00	359.56	5100.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	5200.00	0.00	359.56	5200.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	5300.00	0.00	359.56	5300.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	5400.00	0.00	359.56	5400.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	5500.00	0.00	359.56	5500.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	5600.00	0.00	359.56	5600.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	5700.00	0.00	359.56	5700.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	5800.00	0.00	359.56	5800.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	5900.00	0.00	359.56	5900.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	6000.00	0.00	359.56	6000.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	6100.00	0.00	359.56	6100.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	6200.00	0.00	359.56	6200.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	6300.00	0.00	359.56	6300.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	6400.00	0.00	359.56	6400.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	6500.00	0.00	359.56	6500.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	6600.00	0.00	359.56	6600.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	6700.00	0.00	359.56	6700.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	6800.00	0.00	359.56	6800.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	6900.00	0.00	359.56	6900.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	7000.00	0.00	359.56	7000.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	7100.00	0.00	359.56	7100.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	7200.00	0.00	359.56	7200.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	7300.00	0.00	359.56	7300.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	7400.00	0.00	359.56	7400.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	7500.00	0.00	359.56	7500.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	7600.00	0.00	359.56	7600.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	7700.00	0.00	359.56	7700.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	7800.00	0.00	359.56	7800.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	7900.00	0.00	359.56	7900.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	8000.00	0.00	359.56	8000.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	8100.00	0.00	359.56	8100.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	8200.00	0.00	359.56	8200.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	8300.00	0.00	359.56	8300.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	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)
	8400.00	0.00	359.56	8400.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	8500.00	0.00	359.56	8500.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	8600.00	0.00	359.56	8600.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	8700.00	0.00	359.56	8700.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	8800.00	0.00	359.56	8800.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	8900.00	0.00	359.56	8900.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	9000.00	0.00	359.56	9000.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	9100.00	0.00	359.56	9100.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	9200.00	0.00	359.56	9200.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	9300.00	0.00	359.56	9300.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	9400.00	0.00	359.56	9400.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	9500.00	0.00	359.56	9500.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	9600.00	0.00	359.56	9600.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	9700.00	0.00	359.56	9700.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	9800.00	0.00	359.56	9800.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	9900.00	0.00	359.56	9900.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	10000.00	0.00	359.56	10000.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	10100.00	0.00	359.56	10100.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	10200.00	0.00	359.56	10200.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	10300.00	0.00	359.56	10300.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	10400.00	0.00	359.56	10400.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
KOP - Build @ 12°/100' DLS	10472.00	0.00	359.56	10472.00	0.00	0.00	0.00	510172.57	793778.16	N 32 23 59.56	W 103 30 55.51	0.00	0.00	0.00
	10500.00	3.36	359.56	10499.98	0.82	0.82	-0.01	510173.39	793778.15	N 32 23 59.57	W 103 30 55.51	0.82	359.56	11.99
	10600.00	15.34	359.56	10598.48	17.04	17.04	-0.13	510189.61	793778.03	N 32 23 59.73	W 103 30 55.51	17.04	359.56	11.99
	10700.00	27.33	359.56	10691.45	53.35	53.35	-0.41	510225.92	793777.75	N 32 24 0.09	W 103 30 55.51	53.35	359.56	11.99
	10800.00	39.32	359.56	10774.86	108.19	108.19	-0.83	510280.75	793777.33	N 32 24 0.63	W 103 30 55.51	108.19	359.56	11.99
	10900.00	51.30	359.56	10845.06	179.15	179.14	-1.38	510351.71	793776.78	N 32 24 1.33	W 103 30 55.51	179.15	359.56	11.99
	11000.00	63.29	359.56	10898.99	263.14	263.14	-2.02	510435.70	793776.14	N 32 24 2.17	W 103 30 55.51	263.14	359.56	11.99
	11100.00	75.28	359.56	10934.30	356.51	356.50	-2.74	510529.06	793775.42	N 32 24 3.09	W 103 30 55.51	356.51	359.56	11.99
	11200.00	87.26	359.56	10949.45	455.17	455.15	-3.50	510627.72	793774.66	N 32 24 4.07	W 103 30 55.51	455.17	359.56	11.99
Landing Point	11222.84	90.00	359.56	10950.00	478.00	477.99	-3.67	510650.55	793774.49	N 32 24 4.29	W 103 30 55.51	478.00	359.56	11.99
	11300.00	90.00	359.56	10950.00	555.16	555.14	-4.26	510727.70	793773.90	N 32 24 5.05	W 103 30 55.51	555.16	359.56	0.00
	11400.00	90.00	359.56	10950.00	655.16	655.14	-5.03	510827.70	793773.13	N 32 24 6.04	W 103 30 55.51	655.16	359.56	0.00
	11500.00	90.00	359.56	10950.00	755.16	755.14	-5.80	510927.69	793772.36	N 32 24 7.03	W 103 30 55.51	755.16	359.56	0.00
	11600.00	90.00	359.56	10950.00	855.16	855.13	-6.57	511027.69	793771.59	N 32 24 8.02	W 103 30 55.51	855.16	359.56	0.00
	11700.00	90.00	359.56	10950.00	955.16	955.13	-7.34	511127.68	793770.82	N 32 24 9.01	W 103 30 55.51	955.16	359.56	0.00
	11800.00	90.00	359.56	10950.00	1055.16	1055.13	-8.10	511227.68	793770.06	N 32 24 10.00	W 103 30 55.51	1055.16	359.56	0.00
	11900.00	90.00	359.56	10950.00	1155.16	1155.13	-8.87	511327.67	793769.29	N 32 24 10.99	W 103 30 55.51	1155.16	359.56	0.00
	12000.00	90.00	359.56	10950.00	1255.16	1255.12	-9.64	511427.67	793768.52	N 32 24 11.98	W 103 30 55.51	1255.16	359.56	0.00
	12100.00	90.00	359.56	10950.00	1355.16	1355.12	-10.41	511527.66	793767.75	N 32 24 12.97	W 103 30 55.51	1355.16	359.56	0.00
	12200.00	90.00	359.56	10950.00	1455.16	1455.12	-11.18	511627.66	793766.98	N 32 24 13.96	W 103 30 55.51	1455.16	359.56	0.00
	12300.00	90.00	359.56	10950.00	1555.16	1555.11	-11.95	511727.65	793766.22	N 32 24 14.95	W 103 30 55.51	1555.16	359.56	0.00
	12400.00	90.00	359.56	10950.00	1655.16	1655.11	-12.71	511827.65	793765.45	N 32 24 15.94	W 103 30 55.51	1655.16	359.56	0.00
	12500.00	90.00	359.56	10950.00	1755.16	1755.11	-13.48	511927.64	793764.68	N 32 24 16.93	W 103 30 55.51	1755.16	359.56	0.00
	12600.00	90.00	359.56	10950.00	1855.16	1855.10	-14.25	512027.64	793763.91	N 32 24 17.92	W 103 30 55.51	1855.16	359.56	0.00
	12700.00	90.00	359.56	10950.00	1955.16	1955.10	-15.02	512127.63	793763.14	N 32 24 18.91	W 103 30 55.51	1955.16	359.56	0.00
	12800.00	90.00	359.56	10950.00	2055.16	2055.10	-15.79	512227.63	793762.37	N 32 24 19.90	W 103 30 55.51	2055.16	359.56	0.00
	12900.00	90.00	359.56	10950.00	2155.16	2155.10	-16.55	512327.62	793761.61	N 32 24 20.89	W 103 30 55.51	2155.16	359.56	0.00
	13000.00	90.00	359.56	10950.00	2255.16	2255.09	-17.32	512427.62	793760.84	N 32 24 21.88	W 103 30 55.51	2255.16	359.56	0.00
	13100.00	90.00	359.56	10950.00	2355.16	2355.09	-18.09	512527.61	793760.07	N 32 24 22.87	W 103 30 55.51	2355.16	359.56	0.00
	13200.00	90.00	359.56	10950.00	2455.16	2455.09	-18.86	512627.61	793759.30	N 32 24 23.86	W 103 30 55.51	2455.16	359.56	0.00
	13300.00	90.00	359.56	10950.00	2555.16	2555.08	-19.63	512727.60	793758.53	N 32 24 24.84	W 103 30 55.51	2555.16	359.56	0.00
	13400.00	90.00	359.56	10950.00	2655.16	2655.08	-20.39	512827.60	793757.77	N 32 24 25.83	W 103 30 55.51	2655.16	359.56	0.00
	13500.00	90.00	359.56	10950.00	2755.16	2755.08	-21.16	512927.59	793757.00	N 32 24 26.82	W 103 30 55.51	2755.16	359.56	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)
	13600.00	90.00	359.56	10950.00	2855.16	2855.08	-21.93	513027.59	793756.23	N 32 24 27.81	W 103 30 55.51	2855.16	359.56	0.00
	13700.00	90.00	359.56	10950.00	2955.16	2955.07	-22.70	513127.58	793755.46	N 32 24 28.80	W 103 30 55.51	2955.16	359.56	0.00
	13800.00	90.00	359.56	10950.00	3055.16	3055.07	-23.47	513227.58	793754.69	N 32 24 29.79	W 103 30 55.51	3055.16	359.56	0.00
	13900.00	90.00	359.56	10950.00	3155.16	3155.07	-24.24	513327.57	793753.92	N 32 24 30.78	W 103 30 55.51	3155.16	359.56	0.00
	14000.00	90.00	359.56	10950.00	3255.16	3255.06	-25.00	513427.57	793753.16	N 32 24 31.77	W 103 30 55.51	3255.16	359.56	0.00
	14100.00	90.00	359.56	10950.00	3355.16	3355.06	-25.77	513527.56	793752.39	N 32 24 32.76	W 103 30 55.51	3355.16	359.56	0.00
	14200.00	90.00	359.56	10950.00	3455.16	3455.06	-26.54	513627.56	793751.62	N 32 24 33.75	W 103 30 55.51	3455.16	359.56	0.00
	14300.00	90.00	359.56	10950.00	3555.16	3555.05	-27.31	513727.55	793750.85	N 32 24 34.74	W 103 30 55.51	3555.16	359.56	0.00
	14400.00	90.00	359.56	10950.00	3655.16	3655.05	-28.08	513827.55	793750.08	N 32 24 35.73	W 103 30 55.51	3655.16	359.56	0.00
	14500.00	90.00	359.56	10950.00	3755.16	3755.05	-28.84	513927.54	793749.32	N 32 24 36.72	W 103 30 55.51	3755.16	359.56	0.00
	14600.00	90.00	359.56	10950.00	3855.16	3855.05	-29.61	514027.54	793748.55	N 32 24 37.71	W 103 30 55.51	3855.16	359.56	0.00
	14700.00	90.00	359.56	10950.00	3955.16	3955.04	-30.38	514127.53	793747.78	N 32 24 38.70	W 103 30 55.51	3955.16	359.56	0.00
	14800.00	90.00	359.56	10950.00	4055.16	4055.04	-31.15	514227.53	793747.01	N 32 24 39.69	W 103 30 55.51	4055.16	359.56	0.00
	14900.00	90.00	359.56	10950.00	4155.16	4155.04	-31.92	514327.52	793746.24	N 32 24 40.68	W 103 30 55.51	4155.16	359.56	0.00
	15000.00	90.00	359.56	10950.00	4255.16	4255.03	-32.69	514427.52	793745.48	N 32 24 41.67	W 103 30 55.51	4255.16	359.56	0.00
	15100.00	90.00	359.56	10950.00	4355.16	4355.03	-33.45	514527.51	793744.71	N 32 24 42.66	W 103 30 55.51	4355.16	359.56	0.00
	15200.00	90.00	359.56	10950.00	4455.16	4455.03	-34.22	514627.51	793743.94	N 32 24 43.64	W 103 30 55.51	4455.16	359.56	0.00
	15300.00	90.00	359.56	10950.00	4555.16	4555.02	-34.99	514727.50	793743.17	N 32 24 44.63	W 103 30 55.51	4555.16	359.56	0.00
Cimarex West Grama Ride 7 Federal #4H PBHL	15370.41	90.00	359.56	10950.00	4625.57	4625.43	-35.53	514797.91	793742.63	N 32 24 45.33	W 103 30 55.51	4625.57	359.56	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	15370.409	1/100.000	30.000	30.000	SLB_UNKNOWN	Original Borehole / Cimarex West Grama Ridge 7 Federal #4H Rev0

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

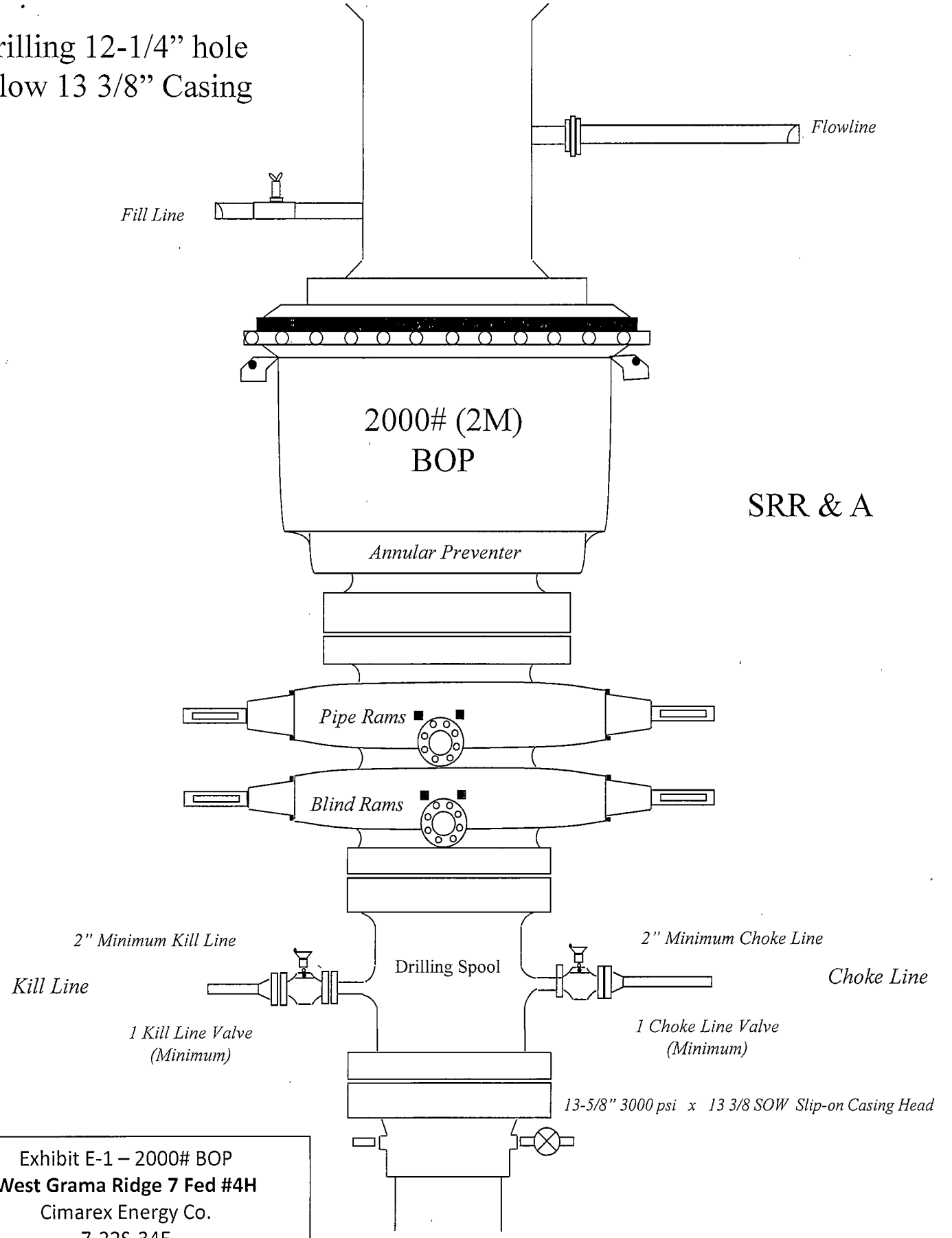
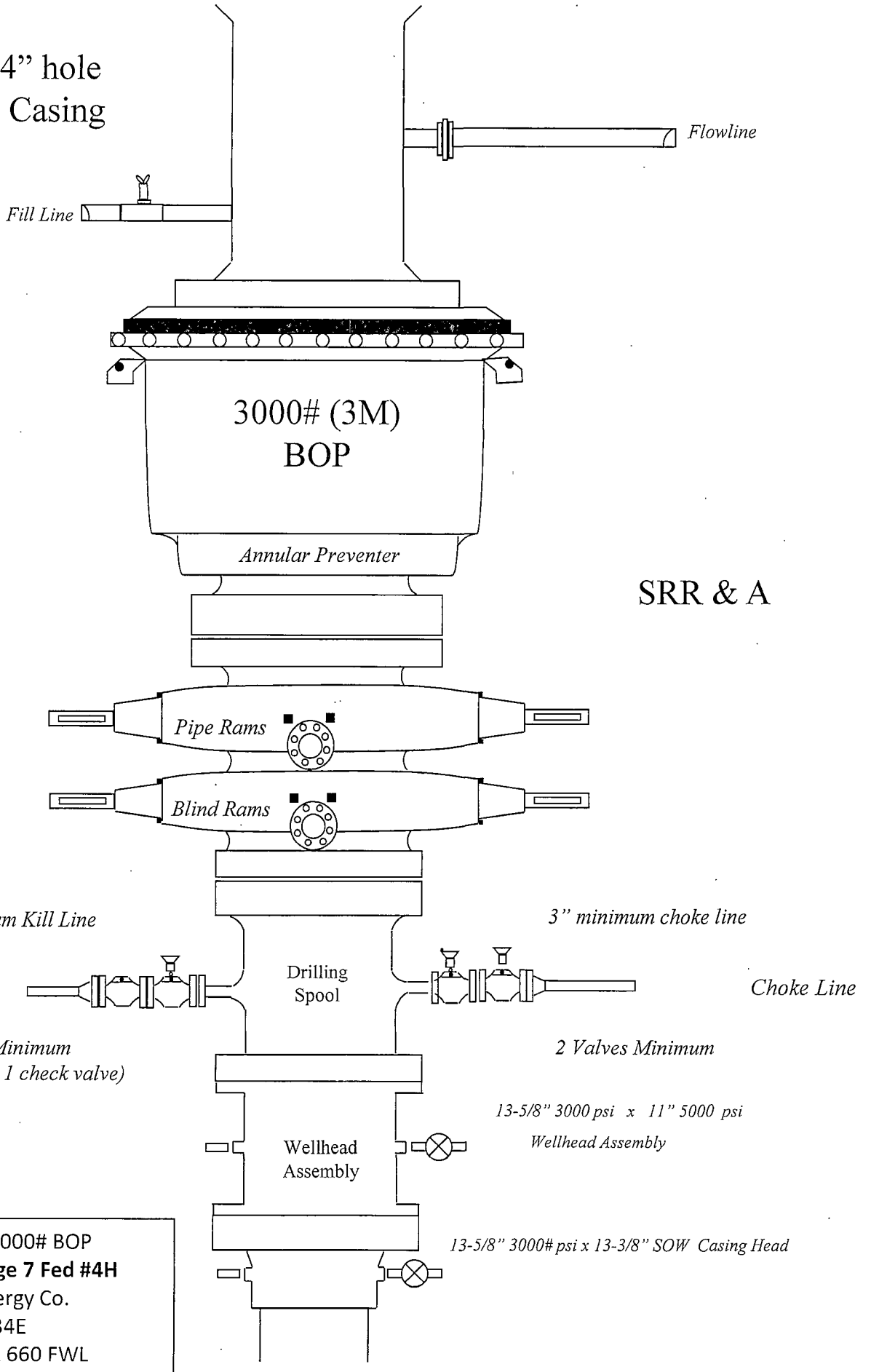


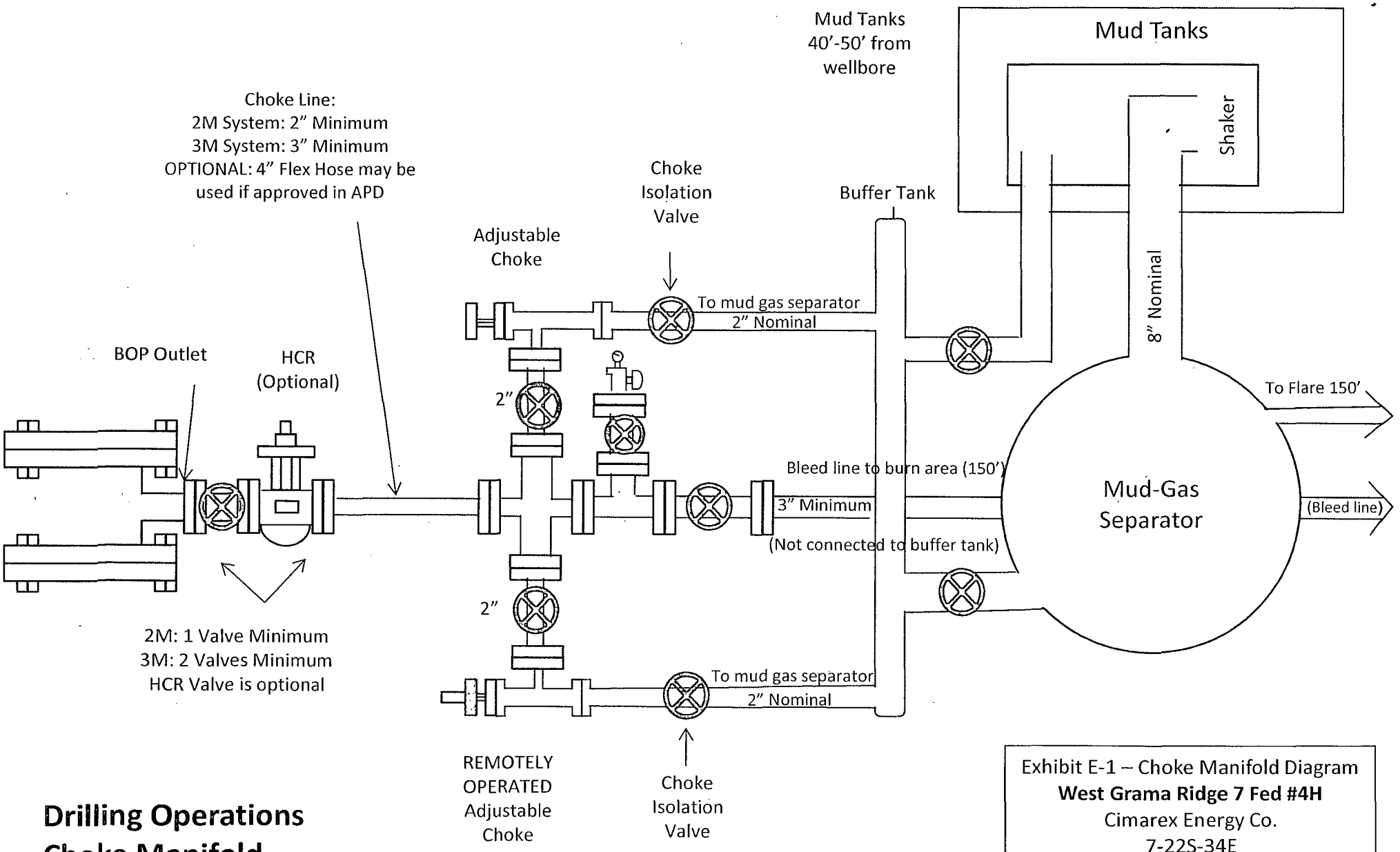
Exhibit E-1 – 2000# BOP
West Grama Ridge 7 Fed #4H
Cimarex Energy Co.
7-22S-34E
SHL 330 FSL & 660 FWL
BHL 330 FNL & 660 FWL
Lea County, NM

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



SRR & A

Exhibit E-1 – 3000# BOP
West Grama Ridge 7 Fed #4H
Cimarex Energy Co.
7-22S-34E
SHL 330 FSL & 660 FWL
BHL 330 FNL & 660 FWL
Lea County, NM



Drilling Operations
Choke Manifold
2M/3M Service

Exhibit E-1 – Choke Manifold Diagram
West Grama Ridge 7 Fed #4H
Cimarex Energy Co.
7-22S-34E
SHL 330 FSL & 660 FWL
BHL 330 FNL & 660 FWL
Lea County, NM

Exhibit F – Co-Flex Hose

West Grama Ridge 7 Fed #4H

Cimarex Energy Co.

7-22S-34E

SHL 330 FSL & 660 FWL

BHL 330 FNL & 660 FWL

Lea County, NM

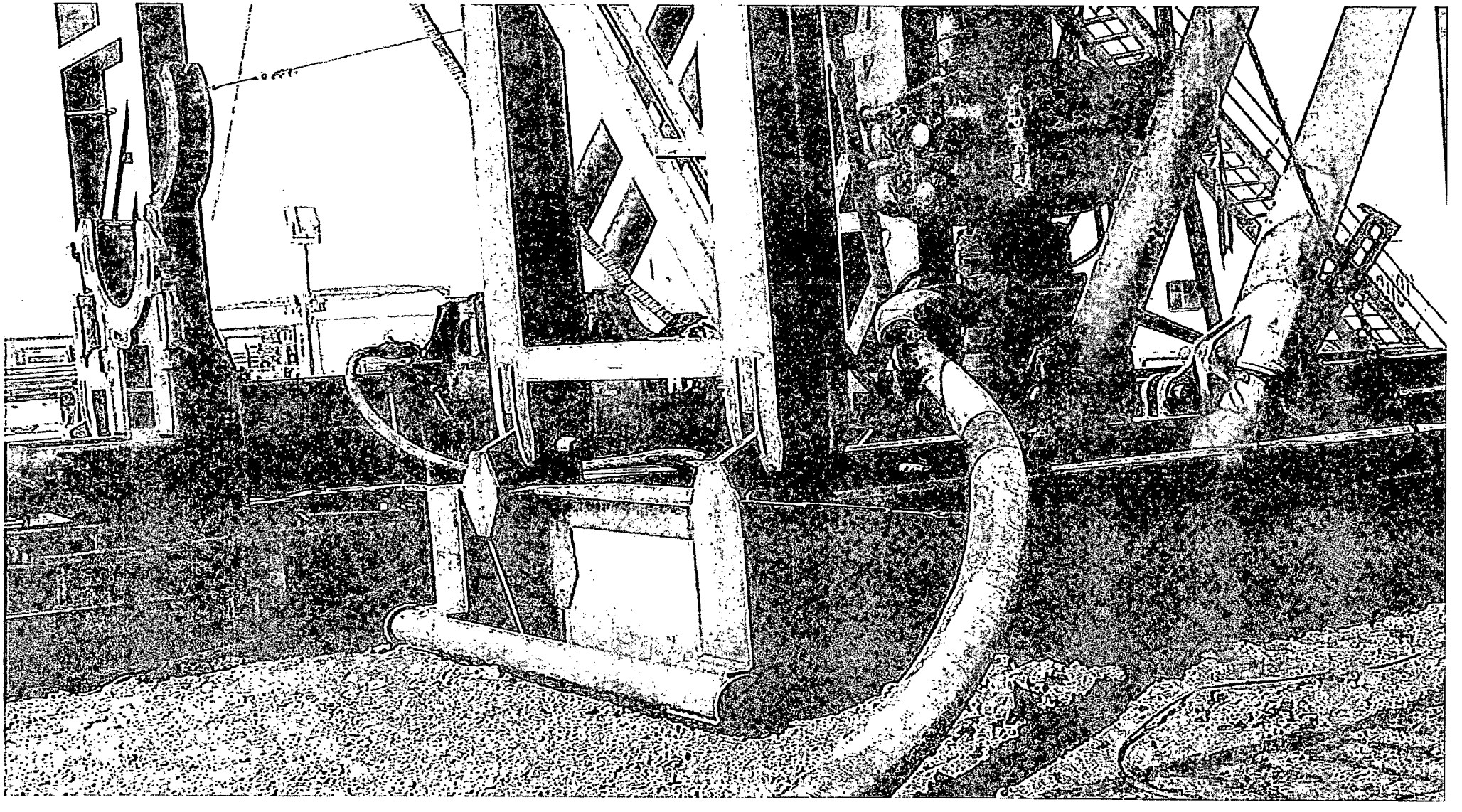


Exhibit F-1 – Co-Flex Hose Hydrostatic Test
West Grama Ridge 7 Fed #4H
Cimarex Energy Co.
7-22S-34E
SHL 330 FSL & 660 FWL
BHL 330 FNL & 660 FWL
Lea County, NM

Midwest Hose & Specialty, Inc.

INTERNAL HYDROSTATIC TEST REPORT

Customer:	P.O. Number:
Oderco Inc	odyd-271

HOSE SPECIFICATIONS

Type:	Hose Length:
Stainless Steel Armor Choke & Kill Hose	45'ft.

I.D.	O.D.
4 INCHES	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

Hose assembly pressure tested with water at ambient temperature.

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	A. Jaime Juarez	

Midwest Hose & Specialty, Inc.

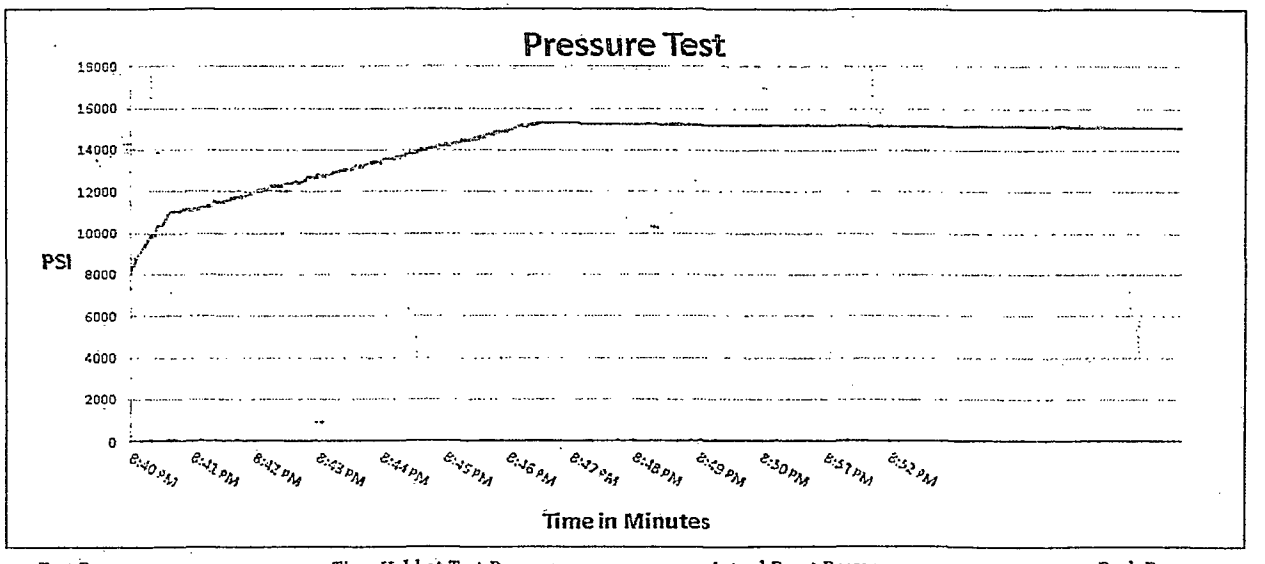
Internal Hydrostatic Test Graph

March 3, 2011

Customer: Houston

Pick Ticket #: 94260

Hose Specifications		Verification	
Hose Type	Length	Type of Fitting	Coupling Method
C & K	45'	41/16 10K	Swage
I.D.	O.D.	Die Size	Final O.D.
4"	6.09"	6.38"	6.25"
Working Pressure	Burst Pressure	Hose Serial #	Hose Assembly Serial #
10000 PSI	Standard Safety Multiplier Applies	5544	79793



Test Pressure	Time Held at Test Pressure	Actual Burst Pressure	Peak Pressure
15000 PSI	11 Minutes		15483 PSI

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

Tested By: *Zac Mcconnell*

Approved By: *Kim Thomas*

Exhibit F-1 – Co-Flex Hose Hydrostatic Test

West Grama Ridge 7 Fed #4H

Cimarex Energy Co.

7-22S-34E

SHL 330 FSL & 660 FWL

BHL 330 FNL & 660 FWL

Lea County, NM

Exhibit F-2 – Co-Flex Hose
West Grama Ridge 7 Fed #4H
Cimarex Energy Co.
7-22S-34E
SHL 330 FSL & 660 FWL
BHL 330 FNL & 660 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 cerify 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:
Samuel Garcia	3/8/2011

Midwest Hose & Specialty, Inc.

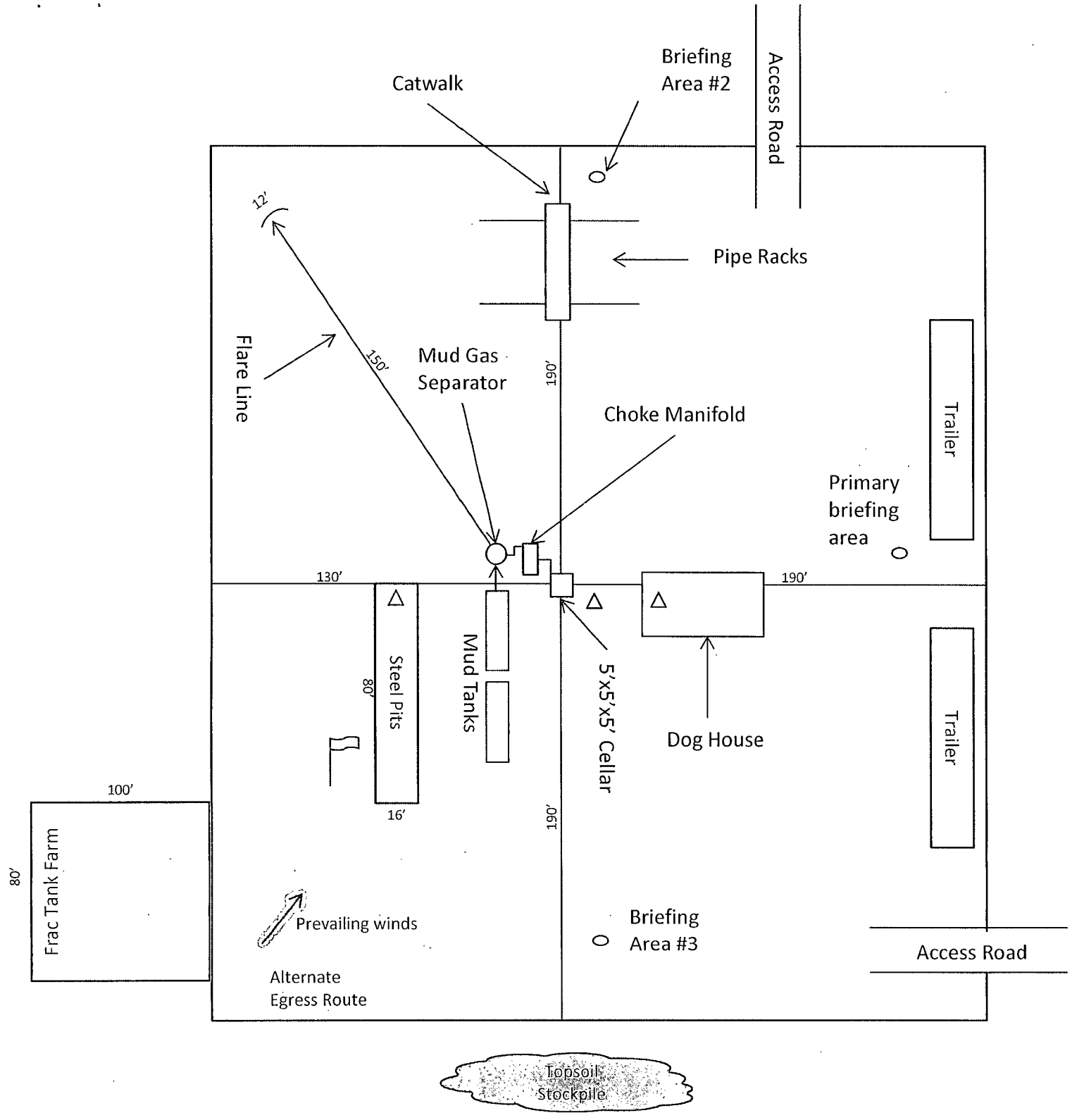
Exhibit F -3– Co-Flex Hose
West Grama Ridge 7 Fed #4H
Cimarex Energy Co.
7-22S-34E
SHL 330 FSL & 660 FWL
BHL 330 FNL & 660 FWL
Lea County, NM

Specification Sheet
Choke & Kill Hose

The Midwest Hose & Specialty Choke & Kill hose is manufactured with only premium componets.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 vermculite 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, unibolt 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)

P.O. Box 96558 – 1421 S.E. 29th St. Oklahoma City, OK 73143 * (405) 670-6718 * Fax: (405) 670-6816



Wind Direction Indicators (wind sock or streamers)

• H2S Monitors (alarms at bell nipple and shale shaker)

Briefing Areas

N

Exhibit D – Rig Diagram
West Grama Ridge 7 Fed #4H
Cimarex Energy Co.
7-22S-34E
SHL 330 FSL & 660 FWL
BHL 330 FNL & 660 FWL
Lea County, NM

Hydrogen Sulfide Drilling Operations Plan
West Grama Ridge 7 Federal #4H
Cimarex Energy Co.
UL: 4, Sec. 7-22S-34E
Lea Co., NM

1 All Company and Contract personnel admitted on location must be trained by a qualified H2S safety instructor to the following:
   A. Characteristics of H_2S
   B. Physical effects and hazards
   C. Principal and operation of H2S detectors, warning system and briefing areas.
   D. Evacuation procedure, routes and first aid.
   E. Proper use of safety equipment & life support systems
   F. Essential personnel meeting Medical Evaluation criteria will receive additional training on the proper use of 30 minute pressure demand air packs.

2 H_2S Detection and Alarm Systems:
   A. H2S sensors/detectors to be located on the drilling rig floor, in the base of the sub structure/cellar area, on the mud pits in the shale shaker area. Additional H2S detectors may play placed as deemed necessary.
   B. An audio alarm system will be installed on the derrick floor and in the top doghouse.

3 Windsock and/or wind streamers:
   A. Windsock at mudpit area should be high enough to be visible.
   B. Windsock on the rig floor and / or top doghouse should be high enough to be visible.

4 Condition Flags and Signs
   A. Warning sign on access road to location.
   B. Flags to be displayed on sign at entrance to location. Green flag indicates normal safe condition. Yellow flag indicates potential pressure and danger. Red flag indicates danger (H_2S present in dangerous concentration). Only H2S trained and certified personnel admitted to location.

5 Well control equipment:
   A. See exhibit "E-1"

6 Communication:
   A. While working under masks chalkboards will be used for communication.
   B. Hand signals will be used where chalk board is inappropriate.
   C. Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at most drilling foreman's trailer or living quarters.

7 Drillstem Testing:
No DSTs r cores are planned at this time.

8 Drilling contractor supervisor will be required to be familiar with the effects H_2S has on tubular goods and other mechanical equipment.

9 If H_2S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas seperator will be brought into service along with H_2S scavengers if necessary.