

14-671

HOBBS OCD

Form 3160-3
(March 2012)

OCD Hobbs

NOV 10 2014

UNITED STATES
DEPARTMENT OF THE INTERIOR
RECEIVED BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

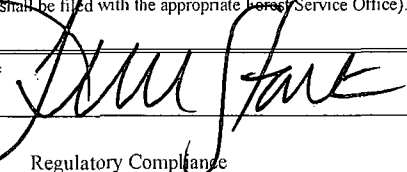
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work ☒ DRILL ☐ REENTER		7. If Unit or CA Agreement, Name and No.	
1b. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		8. Lease Name and Well No. <39203> Cuervo Federal 25H	
2. Name of Operator Cimarex Energy Co. of 606		9. API Well No. 30-025-42254	
3a. Address 202 S. Cheyenne Ave., Ste 1000, Tulsa, OK 74103	3b. Phone No. (include area code) 918-585-1100 <162683>	10. Field and Pool, or Exploratory Diamondtail <17644> Bone Spring/ Wildcat	
4. Location of Well (Report location clearly and in accordance with any State requirements.)* At Surface 370 FNL & 865 FEL At proposed prod. Zone 330 FSL & 1310 FEL Bone Spring		11. Sec. T. R. M. or Blk. and Survey and Area 14, 23S, 32E	
14. Distance in miles and direction from nearest town or post office* Malaga, NM is 26 miles southwesterly		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) 370	16. No of acres in lease NMNM 084729=640.00 acres	17. Spacing Unit dedicated to this well 280.00 320	
18. Distance from proposed* location to nearest well, drilling, completed, applied for, on this lease, ft. 30' to the # 26H	19. Proposed Depth Pilot Hole TD: N/A 14,101 MD 9,700 TVD	20. BLM/BIA Bond No. on File NM2575; NMB000835	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3740 GR	22. Approximate date work will start* 6/23/14	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 SUPS 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 3/26/14
Title Regulatory Compliance		
Approved By (Signature) Steve Caffey	Name (Printed/Typed) CARLSBAD FIELD OFFICE	Date NOV 3 2014
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.

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)

Carlsbad Controlled Water Basin

Approval Subject to General Requirements
& Special Stipulations AttachedSEE ATTACHED FOR
CONDITIONS OF APPROVAL

NOV 1 2014

Application to Drill
Cuervo Federal 25H
 Cimarex Energy Co.
 UL: A, Sec. 14, 23S, 32E
 Lea Co., 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 370 FNL & 865 FEL
 BHL 330 FSL & 1325 FEL
2. **Elevation Above Sea Level:** 3,740' 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:** 14,101 MD 9,700 TVD Pilot Hole TD: N/A
6. **Estimated Tops of Geological Markers:**

Formation	Est Top	Bearing
Rustler	1200	N/A
Salt	2450	N/A
Castille	3600	N/A
Base Last Salt	4675	N/A
Lamar	4955	N/A
Bell Canyon	5020	N/A
Cherry Canyon	5865	N/A
Brushy Canyon	7150	N/A
Bone Spring	8800	Hydrocarbons
Avalon Shale	9330	Hydrocarbons

7. **Possible Mineral Bearing Formation:** Shown above

7A. **OSE Ground Water Estimated Depth:** 550'

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	1250	1250	17 1/2	13-3/8"	48.00	H-40	ST&C	New	572	8.8	1.29		3.02	60,000	51,939	6.20
Intermediate	0	4980	4980	12 1/4	9-5/8"	36.00	J-55	LT&C	New	2615	10.1		1.19	1.35	179,280	151,635	2.99
Production	0	9223	9223	8 3/4	5-1/2"	17.00	L-80	LT&C	New	4412	9.2	1.43		1.75	164,900	141,738	2.38
Production	9223	14101	9700	8 3/4	5-1/2"	17.00	L-80	BT&C	New	4640	9.2	1.36		1.67	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.

See
COA

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 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	596	1.75	13.50	1042	Class C + Bentonite + Calcium Chloride + LCM, 8.829 gps water
	Tail	162	1.34	14.80	217	Class C + LCM, 6.32 gps water
	TOC: 0	45% Excess				Centralizers per Onshore Order 2.III.B.1f
Intermediate <i>See COA</i>	Lead	892	1.88	12.90	1676	35:65 (poz/C) + Salt + Bentonite + LCM + retarder, 9.65 gps water
	Tail	291	1.34	14.80	389	Class C + retarder + LCM, 6.32 gps water
	TOC: 0	44% Excess				
Production <i>See COA</i>	Lead	514	2.40	11.90	1233	35:65 (poz/H) + salt + Sodium Metasilicate + Bentonite + Fluid Loss + Dispersant + LCM + Retarder, 13.80 gps water
	Tail	1206	1.24	14.50	1495	50:50 (poz/H) + Bentonite + Salt + Fluid Loss + Dispersant + LCM + Retarder, 5.55 gps water
	TOC: 4780	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: 9,223' EOC: 9,973'

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.

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Lea Co., NM

11. Proposed Mud Circulating System:

Depth	Mud Weight	Visc	Fluid Loss	Type Mud
0' to 1250'	8.30 - 8.80	28	NC	FW Spud Mud
1250' to 4980'	9.60 - 10.10	30-32	NC	Brine Water
4980' to 14101'	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 4980 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: 4365 psi

Estimated BHT: 158°

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:

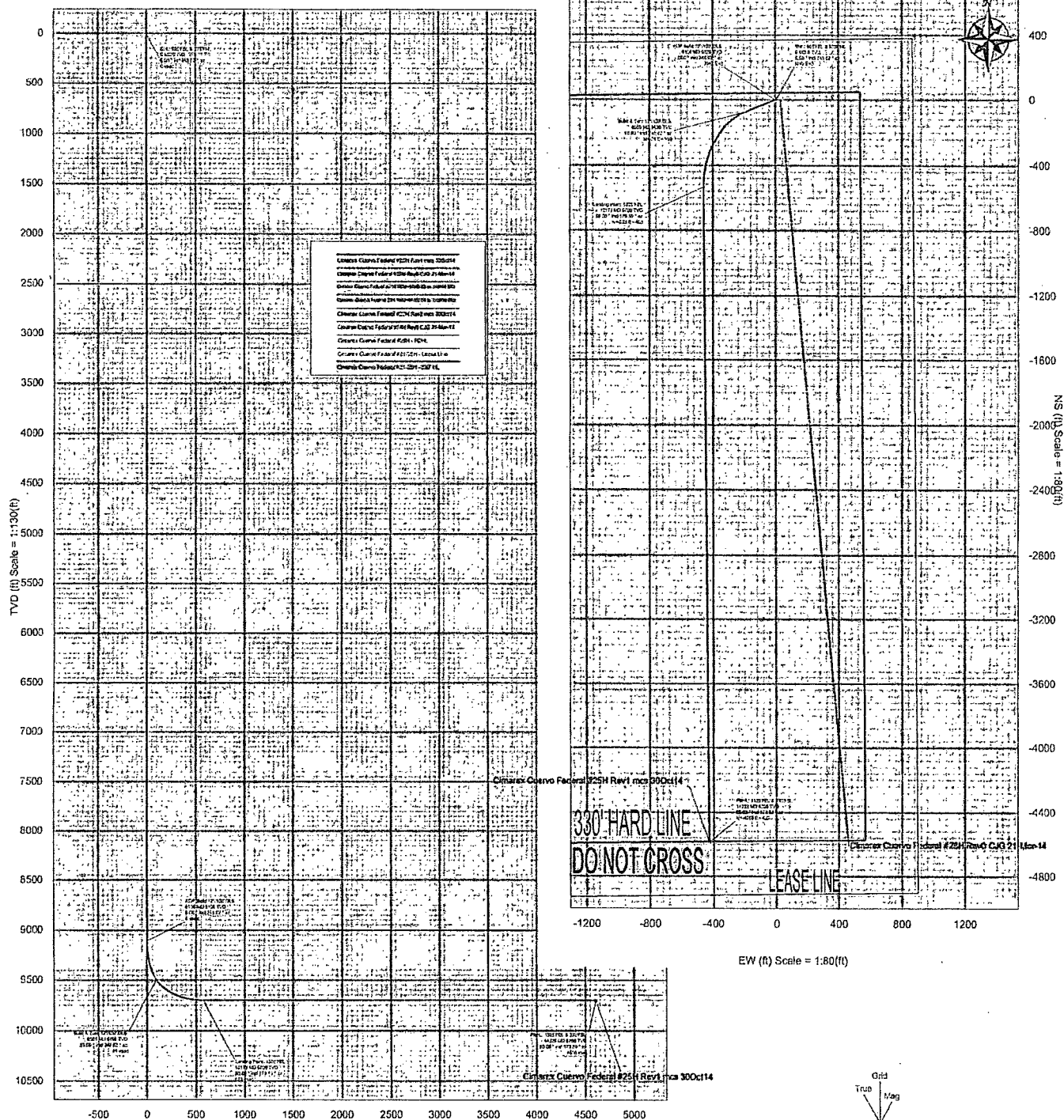
If production casing is run an additional 30 days will be required to complete and construct surface facilities.

Bone Spring pay will be perforated and stimulated.

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

Borehole:		Well:	Field:	Structure:
Original Borehole		Cuervo Federal 25H	Lea County, NM	Rig TBD
Drill & Magnetic Parameters Surface Location Measurements				
Model: HDSM 2014 MagDec: 7.171° PS: 48456.181mT Date: 30-Oct-2014 Gravity FG: 968.497mgals (8.02668 Beavol)	Lat: N 32 18 39.49 Lon: W 103 38 22.04 Northing: 4775556.020US Easting: 766627.680US Grid Cont: 0.7258° Scale Fact: 0.00036168	MAGDEC: 7.171° PS: 48456.181mT Date: 30-Oct-2014 Gravity FG: 968.497mgals (8.02668 Beavol)	MAGDEC: 7.171° PS: 48456.181mT Date: 30-Oct-2014 Gravity FG: 968.497mgals (8.02668 Beavol)	MAGDEC: 7.171° PS: 48456.181mT Date: 30-Oct-2014 Gravity FG: 968.497mgals (8.02668 Beavol)

Comments	Critical Points												DLS	Tool Face
	Survey MD	Inch	Azim	IOD	SS MD	VS	NS	EW	Longitude	Latitude	Easting	Northing		
SHL: 865FEL & 373FNL	0.00	0.00	248.62	0.00	-3740.00	0.00	0.00	0.00	W 103 38 22.942	N 32 18 39.485	755627.08	477555.92		248.62
KOP Build 12"/100' DLS	9106.41	0.00	248.62	9106.41	5366.41	0.00	0.00	0.00	W 103 38 22.942	N 32 18 39.485	755627.08	477555.92	0.00	248.62
Build & Turn 12"/100' DLS	9564.74	55.00	248.62	9497.53	5757.53	91.49	-74.21	-189.59	W 103 38 25.156	N 32 18 38.763	755437.49	477481.71	12.00	-77.60
Landing Point: 1325FEL	10172.69	90.00	179.59	9700.00	5960.00	572.67	-532.61	-456.36	W 103 38 28.299	N 32 18 34.244	755170.74	477023.33	12.00	0.00
JBHL: 1325FEL & 330FS	14226.22	90.00	179.59	9700.00	5960.00	4605.93	-4586.04	-422.54	W 103 38 28.288	N 32 17 54.134	755199.56	477297.06	0.00	0.00



Vertical Section (ft) Azim = 185.326° Scale = 1:130(ft) Origin = 0N/-S, 0E/-W



Cimarex Cuervo Federal #25H Rev1 mcs 30Oct14 Proposal Geodetic Report



(Non-Def Plan)

Report Date: October 30, 2014 - 01:26 PM
 Client: Cimarex
 Field: NM Lea County (NAD 83)
 Structure / Slot: Cimarex Cuervo Federal #25H / Cimarex Cuervo Federal #25H
 Well: Cuervo Federal #25H
 Borehole: Original Borehole
 UWI / API#: Unknown / Unknown
 Survey Name: Cimarex Cuervo Federal #25H Rev1 mcs 30Oct14
 Survey Date: March 21, 2014
 Tort / AHD / DDI / ERD Ratio: 127.953 ° / 4819.671 ft / 5.956 / 0.497
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 18' 39.48518", W 103° 38' 22.94180"
 Location Grid N/E Y/X: N 477555.920 NUS, E 755627.080 RUS
 CRS Grid Convergence Angle: 0.3708 °
 Grid Scale Factor: 0.99996168
 Version / Patch: 2.7.1043.0

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 185.326 ° (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: Unknown
 TVD Reference Elevation: 3740.000 ft above MSL
 Seabed / Ground Elevation: 3740.000 ft above MSL
 Magnetic Declination: 7.171 °
 Total Gravity Field Strength: 998.6923mgm (9.80665 Based)
 Gravity Model: DOX
 Total Magnetic Field Strength: 48456.161 nT
 Magnetic Dip Angle: 60.171 °
 Declination Date: October 30, 2014
 Magnetic Declination Model: HDGM 2014
 North Reference: Grid North
 Grid Convergence Used: 0.3708 °
 Total Corr Mag North->Grid North: 6.8000 °
 Local Coord Referenced To: Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Closure Azimuth (°)	Closure (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL: 865FEL & 373FNL	0.00	0.00	248.62	0.00	-3740.00	0.00	0.00	0.00	N/A	0.00	0.00	477555.92	755627.08	N 32 18 39.49	W 103 38 22.94
	100.00	0.00	248.62	100.00	-3640.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49	W 103 38 22.94
	200.00	0.00	248.62	200.00	-3540.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49	W 103 38 22.94
	300.00	0.00	248.62	300.00	-3440.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49	W 103 38 22.94
	400.00	0.00	248.62	400.00	-3340.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49	W 103 38 22.94
	500.00	0.00	248.62	500.00	-3240.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49	W 103 38 22.94
	600.00	0.00	248.62	600.00	-3140.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49	W 103 38 22.94
	700.00	0.00	248.62	700.00	-3040.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49	W 103 38 22.94
	800.00	0.00	248.62	800.00	-2940.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49	W 103 38 22.94
	900.00	0.00	248.62	900.00	-2840.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49	W 103 38 22.94
	1000.00	0.00	248.62	1000.00	-2740.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49	W 103 38 22.94
	1100.00	0.00	248.62	1100.00	-2640.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49	W 103 38 22.94
	1200.00	0.00	248.62	1200.00	-2540.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49	W 103 38 22.94
	1300.00	0.00	248.62	1300.00	-2440.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49	W 103 38 22.94
	1400.00	0.00	248.62	1400.00	-2340.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49	W 103 38 22.94
	1500.00	0.00	248.62	1500.00	-2240.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49	W 103 38 22.94
	1600.00	0.00	248.62	1600.00	-2140.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49	W 103 38 22.94
	1700.00	0.00	248.62	1700.00	-2040.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49	W 103 38 22.94
	1800.00	0.00	248.62	1800.00	-1940.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49	W 103 38 22.94
	1900.00	0.00	248.62	1900.00	-1840.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49	W 103 38 22.94
	2000.00	0.00	248.62	2000.00	-1740.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49	W 103 38 22.94
	2100.00	0.00	248.62	2100.00	-1640.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49	W 103 38 22.94
	2200.00	0.00	248.62	2200.00	-1540.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49	W 103 38 22.94
	2300.00	0.00	248.62	2300.00	-1440.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49	W 103 38 22.94
	2400.00	0.00	248.62	2400.00	-1340.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49	W 103 38 22.94
	2500.00	0.00	248.62	2500.00	-1240.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49	W 103 38 22.94
	2600.00	0.00	248.62	2600.00	-1140.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49	W 103 38 22.94
	2700.00	0.00	248.62	2700.00	-1040.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49	W 103 38 22.94
	2800.00	0.00	248.62	2800.00	-940.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49	W 103 38 22.94
	2900.00	0.00	248.62	2900.00	-840.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49	W 103 38 22.94
	3000.00	0.00	248.62	3000.00	-740.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49	W 103 38 22.94
	3100.00	0.00	248.62	3100.00	-640.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49	W 103 38 22.94
	3200.00	0.00	248.62	3200.00	-540.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49	W 103 38 22.94

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVSS (ft)	VSEC (m)	NS (ft)	EW (ft)	DLS (ft/mph)	Closure (")	Closure (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S+...)	Longitude (E/W+...)	
	3300.00	0.00	248.62	3300.00	-440.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	3400.00	0.00	248.62	3400.00	-340.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	3500.00	0.00	248.62	3500.00	-240.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	3600.00	0.00	248.62	3600.00	-140.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	3700.00	0.00	248.62	3700.00	-40.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	3800.00	0.00	248.62	3800.00	60.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	3900.00	0.00	248.62	3900.00	160.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	4000.00	0.00	248.62	4000.00	260.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	4100.00	0.00	248.62	4100.00	360.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	4200.00	0.00	248.62	4200.00	460.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	4300.00	0.00	248.62	4300.00	560.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	4400.00	0.00	248.62	4400.00	660.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	4500.00	0.00	248.62	4500.00	760.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	4600.00	0.00	248.62	4600.00	860.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	4700.00	0.00	248.62	4700.00	960.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	4800.00	0.00	248.62	4800.00	1060.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	4900.00	0.00	248.62	4900.00	1160.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	5000.00	0.00	248.62	5000.00	1260.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	5100.00	0.00	248.62	5100.00	1360.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	5200.00	0.00	248.62	5200.00	1460.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	5300.00	0.00	248.62	5300.00	1560.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	5400.00	0.00	248.62	5400.00	1660.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	5500.00	0.00	248.62	5500.00	1760.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	5600.00	0.00	248.62	5600.00	1860.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	5700.00	0.00	248.62	5700.00	1960.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	5800.00	0.00	248.62	5800.00	2060.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	5900.00	0.00	248.62	5900.00	2160.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	6000.00	0.00	248.62	6000.00	2260.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	6100.00	0.00	248.62	6100.00	2360.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	6200.00	0.00	248.62	6200.00	2460.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	6300.00	0.00	248.62	6300.00	2560.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	6400.00	0.00	248.62	6400.00	2660.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	6500.00	0.00	248.62	6500.00	2760.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	6600.00	0.00	248.62	6600.00	2860.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	6700.00	0.00	248.62	6700.00	2960.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	6800.00	0.00	248.62	6800.00	3060.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	6900.00	0.00	248.62	6900.00	3160.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	7000.00	0.00	248.62	7000.00	3260.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	7100.00	0.00	248.62	7100.00	3360.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	7200.00	0.00	248.62	7200.00	3460.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	7300.00	0.00	248.62	7300.00	3560.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	7400.00	0.00	248.62	7400.00	3660.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	7500.00	0.00	248.62	7500.00	3760.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	7600.00	0.00	248.62	7600.00	3860.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	7700.00	0.00	248.62	7700.00	3960.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	7800.00	0.00	248.62	7800.00	4060.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	7900.00	0.00	248.62	7900.00	4160.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	8000.00	0.00	248.62	8000.00	4260.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	8100.00	0.00	248.62	8100.00	4360.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	8200.00	0.00	248.62	8200.00	4460.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	8300.00	0.00	248.62	8300.00	4560.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	8400.00	0.00	248.62	8400.00	4660.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	8500.00	0.00	248.62	8500.00	4760.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	8600.00	0.00	248.62	8600.00	4860.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	8700.00	0.00	248.62	8700.00	4960.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	8800.00	0.00	248.62	8800.00	5060.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	8900.00	0.00	248.62	8900.00	5160.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		
	9000.00	0.00	248.62	9000.00	5260.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49 W 103 38 22.94		

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (*100ft)	Closure Azimuth (°)	Closure (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')
	9100.00	0.00	248.62	9100.00	5360.00	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755527.08	N 32 18 39.49	W 103 38 22.94
KOP Build	9106.41	0.00	248.62	9106.41	5366.41	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755527.08	N 32 18 39.49	W 103 38 22.94
12"/100' DLS	9200.00	11.23	248.62	9199.40	5459.40	4.11	-3.33	-8.51	12.00	248.62	9.14	477552.59	755618.57	N 32 18 39.45	W 103 38 23.04
	9300.00	23.23	248.62	9294.74	5554.74	17.40	-14.11	-36.05	12.00	248.62	38.71	477541.81	755591.03	N 32 18 39.35	W 103 38 23.36
	9400.00	35.23	248.62	9381.85	5641.85	39.30	-31.88	-81.44	12.00	248.62	87.45	477524.04	755545.65	N 32 18 39.17	W 103 38 23.89
Build & Turn	9500.00	47.23	248.62	9456.91	5716.91	68.86	-55.86	-142.70	12.00	248.62	153.24	477500.06	755494.38	N 32 18 38.94	W 103 38 24.81
12"/100' DLS	9564.74	55.00	248.62	9497.53	5757.53	91.49	-74.21	-189.59	12.00	248.62	203.60	477481.71	755437.49	N 32 18 38.76	W 103 38 25.16
	9600.00	56.01	243.64	9517.50	5777.50	105.67	-85.97	-216.15	12.00	248.31	232.62	477469.95	755410.94	N 32 18 38.65	W 103 38 25.47
	9700.00	59.90	230.23	9570.73	5830.73	158.27	-132.22	-286.80	12.00	245.25	315.61	477423.70	755340.29	N 32 18 38.20	W 103 38 26.29
	9800.00	65.03	217.98	9617.08	5877.08	227.33	-195.85	-348.17	12.00	240.64	399.47	477360.07	755278.93	N 32 18 37.57	W 103 38 27.01
	9900.00	71.08	206.80	9654.54	5914.54	309.80	-274.08	-397.57	12.00	235.42	482.89	477281.85	755229.53	N 32 18 36.80	W 103 38 27.59
	10000.00	77.74	196.43	9681.47	5941.47	402.10	-363.49	-432.84	12.00	229.98	565.23	477192.44	755194.25	N 32 18 35.62	W 103 38 28.01
	10100.00	84.78	186.59	9696.69	5956.69	500.18	-460.17	-452.45	12.00	224.52	645.35	477095.76	755174.65	N 32 18 34.96	W 103 38 28.25
Landing Point: 1325/FEL	10172.69	90.00	179.59	9700.00	5960.00	572.67	-532.61	-456.36	12.00	220.59	701.38	477023.33	755170.74	N 32 18 34.24	W 103 38 28.30
	10200.00	90.00	179.59	9700.00	5960.00	599.85	-559.92	-456.16	0.00	219.17	722.22	476996.02	755170.94	N 32 18 33.97	W 103 38 28.30
	10300.00	90.00	179.59	9700.00	5960.00	699.35	-659.92	-455.45	0.00	214.61	801.83	476896.03	755171.65	N 32 18 32.98	W 103 38 28.30
	10400.00	90.00	179.59	9700.00	5960.00	798.85	-759.92	-454.74	0.00	210.90	885.59	476796.03	755172.36	N 32 18 32.00	W 103 38 28.30
	10500.00	90.00	179.59	9700.00	5960.00	898.35	-859.91	-454.03	0.00	207.83	972.42	476696.04	755173.07	N 32 18 31.01	W 103 38 28.30
	10600.00	90.00	179.59	9700.00	5960.00	997.85	-959.91	-453.32	0.00	205.28	1061.57	476596.05	755173.78	N 32 18 30.02	W 103 38 28.30
	10700.00	90.00	179.59	9700.00	5960.00	1097.35	-1059.91	-452.61	0.00	203.12	1152.50	476496.05	755174.49	N 32 18 29.03	W 103 38 28.30
	10800.00	90.00	179.59	9700.00	5960.00	1196.85	-1159.91	-451.90	0.00	201.29	1244.83	476396.06	755175.20	N 32 18 28.04	W 103 38 28.29
	10900.00	90.00	179.59	9700.00	5960.00	1296.35	-1259.90	-451.18	0.00	199.70	1338.26	476296.07	755175.91	N 32 18 27.05	W 103 38 28.29
	11000.00	90.00	179.59	9700.00	5960.00	1395.85	-1359.90	-450.47	0.00	198.33	1432.57	476196.07	755176.62	N 32 18 26.06	W 103 38 28.29
	11100.00	90.00	179.59	9700.00	5960.00	1495.34	-1459.90	-449.76	0.00	197.12	1527.61	476096.08	755177.34	N 32 18 25.07	W 103 38 28.29
	11200.00	90.00	179.59	9700.00	5960.00	1594.84	-1559.90	-449.05	0.00	196.06	1623.25	475996.09	755178.05	N 32 18 24.08	W 103 38 28.29
	11300.00	90.00	179.59	9700.00	5960.00	1694.34	-1659.89	-448.34	0.00	195.12	1719.38	475896.09	755178.76	N 32 18 23.09	W 103 38 28.29
	11400.00	90.00	179.59	9700.00	5960.00	1793.84	-1759.88	-447.63	0.00	194.27	1815.93	475796.10	755179.47	N 32 18 22.10	W 103 38 28.29
	11500.00	90.00	179.59	9700.00	5960.00	1893.34	-1859.89	-446.92	0.00	193.51	1912.83	475696.11	755180.18	N 32 18 21.11	W 103 38 28.29
	11600.00	90.00	179.59	9700.00	5960.00	1992.84	-1959.89	-446.21	0.00	192.83	2010.04	475596.11	755180.89	N 32 18 20.12	W 103 38 28.29
	11700.00	90.00	179.59	9700.00	5960.00	2092.34	-2059.88	-445.50	0.00	192.20	2107.51	475496.12	755181.60	N 32 18 19.13	W 103 38 28.29
	11800.00	90.00	179.59	9700.00	5960.00	2191.84	-2159.88	-444.79	0.00	191.64	2205.20	475396.13	755182.31	N 32 18 18.14	W 103 38 28.29
	11900.00	90.00	179.59	9700.00	5960.00	2291.34	-2259.88	-444.08	0.00	191.12	2303.10	475296.13	755183.02	N 32 18 17.15	W 103 38 28.29
	12000.00	90.00	179.59	9700.00	5960.00	2390.84	-2359.88	-443.36	0.00	190.64	2401.16	475196.14	755183.73	N 32 18 16.16	W 103 38 28.29
	12100.00	90.00	179.59	9700.00	5960.00	2490.34	-2459.87	-442.65	0.00	190.20	2499.38	475096.15	755184.44	N 32 18 15.17	W 103 38 28.28
	12200.00	90.00	179.59	9700.00	5960.00	2589.84	-2559.87	-441.94	0.00	189.80	2597.74	474996.15	755185.16	N 32 18 14.18	W 103 38 28.28
	12300.00	90.00	179.59	9700.00	5960.00	2689.34	-2659.87	-441.23	0.00	189.42	2696.22	474896.16	755185.87	N 32 18 13.19	W 103 38 28.28
	12400.00	90.00	179.59	9700.00	5960.00	2788.84	-2759.87	-440.52	0.00	189.07	2794.80	474796.16	755186.58	N 32 18 12.20	W 103 38 28.28
	12500.00	90.00	179.59	9700.00	5960.00	2888.34	-2859.86	-439.81	0.00	188.74	2893.48	474696.17	755187.29	N 32 18 11.22	W 103 38 28.28
	12600.00	90.00	179.59	9700.00	5960.00	2987.84	-2959.86	-439.10	0.00	188.44	2992.25	474596.18	755188.00	N 32 18 10.23	W 103 38 28.28
	12700.00	90.00	179.59	9700.00	5960.00	3087.34	-3059.86	-438.39	0.00	188.15	3091.10	474496.18	755188.71	N 32 18 9.24	W 103 38 28.28
	12800.00	90.00	179.59	9700.00	5960.00	3186.84	-3159.86	-437.68	0.00	187.89	3190.02	474396.19	755189.42	N 32 18 8.25	W 103 38 28.28
	12900.00	90.00	179.59	9700.00	5960.00	3286.34	-3259.85	-436.97	0.00	187.63	3289.01	474296.20	755190.13	N 32 18 7.26	W 103 38 28.28
	13000.00	90.00	179.59	9700.00	5960.00	3385.84	-3359.85	-436.25	0.00	187.40	3388.06	474196.20	755190.84	N 32 18 6.27	W 103 38 28.28
	13100.00	90.00	179.59	9700.00	5960.00	3485.34	-3459.85	-435.54	0.00	187.17	3487.16	474096.21	755191.55	N 32 18 5.28	W 103 38 28.28
	13200.00	90.00	179.59	9700.00	5960.00	3584.84	-3559.85	-434.83	0.00	186.96	3586.31	473996.22	755192.26	N 32 18 4.29	W 103 38 28.28
	13300.00	90.00	179.59	9700.00	5960.00	3684.34	-3659.84	-434.12	0.00	186.76	3685.50	473896.22	755192.98	N 32 18 3.30	W 103 38 28.28
	13400.00	90.00	179.59	9700.00	5960.00	3783.84	-3759.84	-433.41	0.00	186.58	3784.74	473796.23	755193.69	N 32 18 2.31	W 103 38 28.27
	13500.00	90.00	179.59	9700.00	5960.00	3883.34	-3859.84	-432.70	0.00	186.40	3884.02	473696.24	755194.40	N 32 18 1.32	W 103 38 28.27
	13600.00	90.00	179.59	9700.00	5960.00	3982.84	-3959.84	-431.99	0.00	186.23	3983.33	473596.24	755195.11	N 32 18 0.33	W 103 38 28.27
	13700.00	90.00	179.59	9700.00	5960.00	4082.34	-4059.83	-431.28	0.00	186.06	4082.68	473496.25	755195.82	N 32 17 59.34	W 103 38 28.27
	13800.00	90.00	179.59	9700.00	5960.00	4181.84	-4159.83	-430.57	0.00	185.91	4182.05	473396.26	755196.53	N 32 17 58.35	W 103 38 28.27
	13900.00	90.00	179.59	9700.00	5960.00	4281.34	-4259.83	-429.86	0.00	185.76	4281.46	473296.26	755197.24	N 32 17 57.36	W 103 38 28.27
	14000.00	90.00	179.59	9700.00	5960.00	4380.84	-4359.83	-429.15	0.00	185.62	4380.90	473196.27	755197.95	N 32 17 56.37	W 103 38 28.27
	14100.00	90.00	179.59	9700.00	5960.00	4480.34	-4459.82	-428.43	0.00	185.49	4480.36	473096.28	755198.66	N 32 17 55.38	W 103 38 28.27
	14200.00	90.00	179.59	9700.00	5960.00	4579.84	-4559.82	-427.72	0.00	185.36	4579.84	472996.28	755199.37	N 32 17 54.39	W 103 38 28.27

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Closure Azimuth (°)	Closure (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
PBHL: 1325FEL & 330FSL	14226.22	90.00	179.59	9700.00	5980.00	4605.93	-4586.04	-427.54	0.00	185.33	4605.93	472970.06	755199.56	N 32 17 54.13	W 103 38 28.27

Survey Type: Non-Def Plan

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

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	1	0.000	9106.410	1/100.000	30.000	30.000	SLB_MWD-POOR	Original Borehole / Cimarex Cuervo Federal #25H Rev1 mcs
	1	9106.410	14226.225	1/100.000	30.000	30.000	SLB_MWD-STD	Original Borehole / Cimarex Cuervo Federal #25H Rev1 mcs



Cimarex Cuervo Federal #25H Rev1 mcs 30Oct14 Proposal Geodetic Report



(Non-Def Plan)

Report Date: October 30, 2014 - 01:26 PM
Client: Cimarex
Field: NM Lea County (NAD 83)
Structure / Slot: Cimarex Cuervo Federal #25H / Cimarex Cuervo Federal #25H
Well: Cuervo Federal #25H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Cuervo Federal #25H Rev1 mcs 30Oct14
Survey Date: March 21, 2014
Tort / AHD / DDI / ERD Ratio: 127.953 * / 4819.671 ft / 5.956 / 0.497
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 18' 39.48518", W 103° 38' 22.94180"
Location Grid N/E Y/X: N 477555.920 ftUS, E 755627.080 ftUS
CRS Grid Convergence Angle: 0.3708 *
Grid Scale Factor: 0.99996168
Version / Patch: 2.7.1043.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 185.326 * (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: Unknown
TVD Reference Elevation: 3740.000 ft above MSL
Seabed / Ground Elevation: 3740.000 ft above MSL
Magnetic Declination: 7.171 *
Total Gravity Field Strength: 998.6923mgn (9.80665 Based)
Gravity Model: DOX
Total Magnetic Field Strength: 48456.161 nT
Magnetic Dip Angle: 60.171 *
Declination Date: October 30, 2014
Magnetic Declination Model: HDGM 2014
North Reference: Grid North
Grid Convergence Used: 0.3708 *
Total Corr Mag North->Grid North: 6.8000 *

Local Coord Referenced To: Structure Reference Point

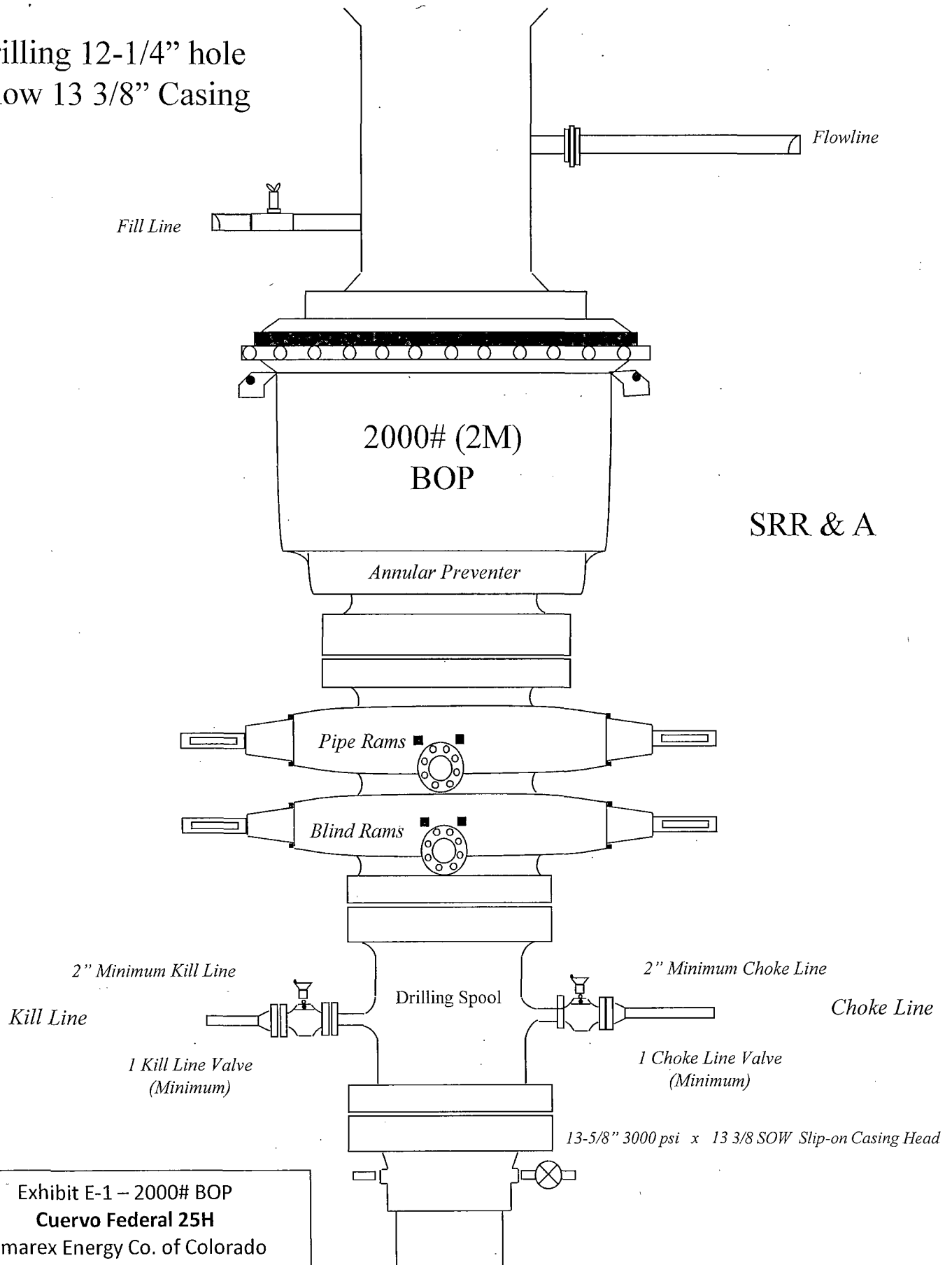
Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (*/100ft)	Closure Azimuth (°)	Closure (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S * * *)	Longitude (E/W * * *)
SHL: 865'FEL & 373'FNL	0.00	0.00	248.62	0.00	-3740.00	0.00	0.00	0.00	N/A	0.00	0.00	477555.92	755627.08	N 32 18 39.49	W 103 38 22.94
KOP Build 12"/100' DLS	9106.41	0.00	248.62	9106.41	5366.41	0.00	0.00	0.00	0.00	0.00	0.00	477555.92	755627.08	N 32 18 39.49	W 103 38 22.94
Build & Turn 12"/100' DLS	9564.74	55.00	248.62	9497.53	5757.53	91.49	-74.21	-189.59	12.00	248.62	203.60	477481.71	755437.49	N 32 18 38.76	W 103 38 25.16
Landing Point: 1325'FEL	10172.69	90.00	179.59	9700.00	5960.00	572.67	-532.61	-456.36	12.00	220.59	701.38	477023.33	755170.74	N 32 18 34.24	W 103 38 28.30
PBHL: 1325'FEL & 330'FSL	14226.22	90.00	179.59	9700.00	5960.00	4605.93	-4586.04	-427.54	0.00	185.33	4605.93	472970.06	755199.56	N 32 17 54.13	W 103 38 28.27

Survey Type: Non-Def Plan

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

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	1	0.000	9106.410	1/100.000	30.000	30.000	SLB_MWD-POOR	Original Borehole / Cimarex Cuervo Federal #25H Rev1 mcs
	1	9106.410	14226.225	1/100.000	30.000	30.000	SLB_MWD-STD	Original Borehole / Cimarex Cuervo Federal #25H Rev1 mcs

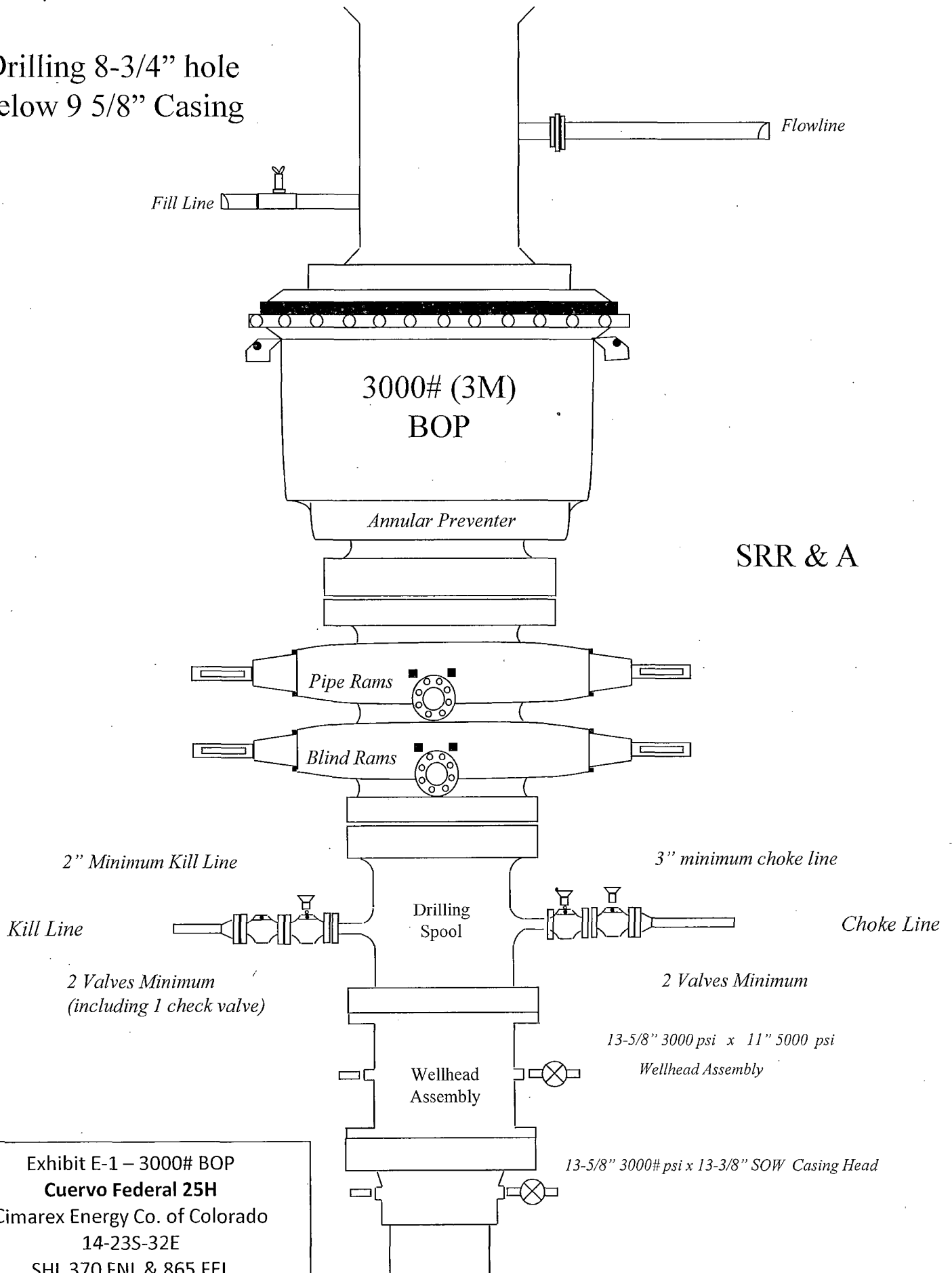
Drilling 12-1/4" hole
below 13 3/8" Casing



SRR & A

Exhibit E-1 – 2000# BOP
Cuervo Federal 25H
Cimarex Energy Co. of Colorado
14-23S-32E
SHL 370 FNL & 865 FEL
BHL 330 FSL & 1325 FEL
Lea County, NM

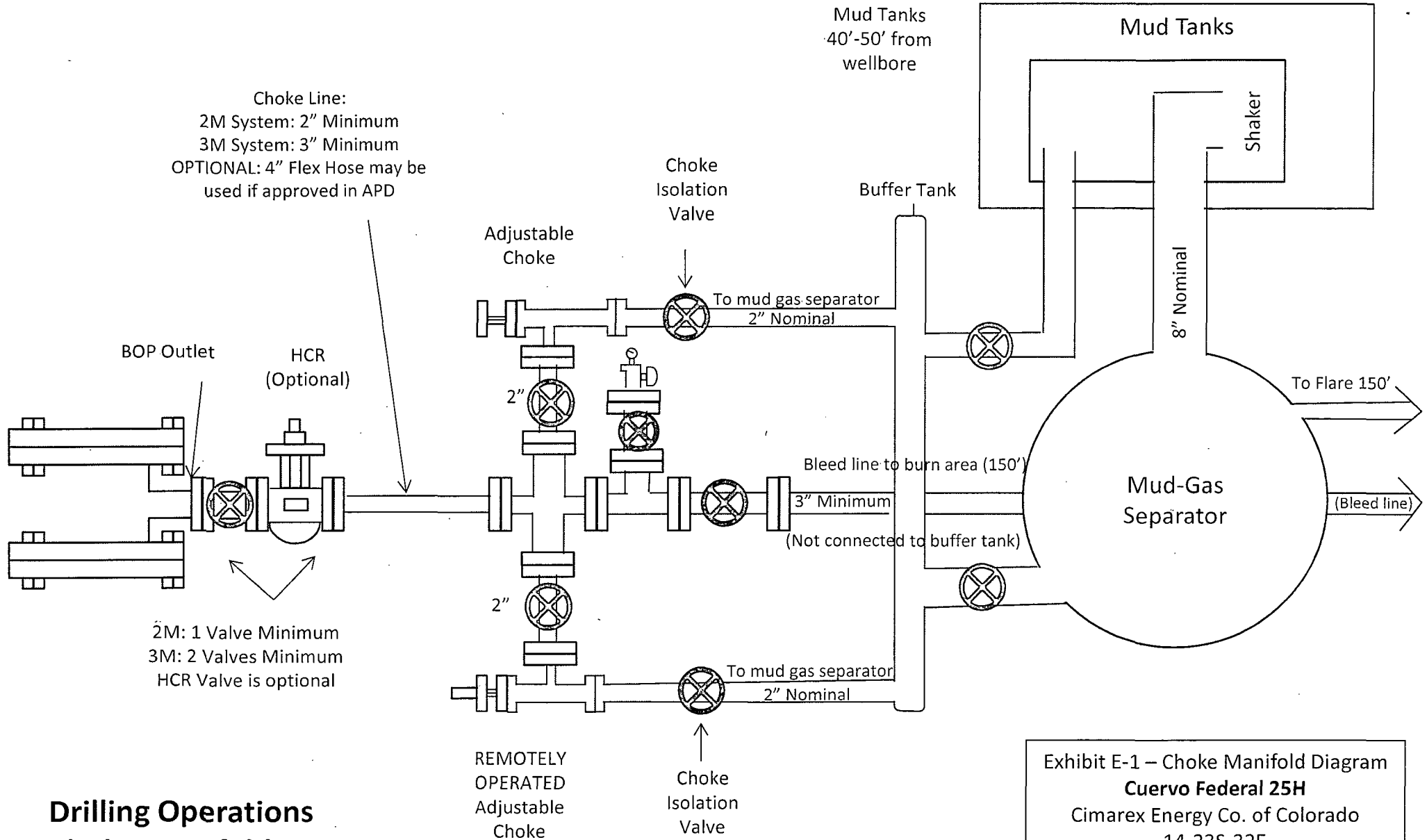
Drilling 8-3/4" hole
below 9 5/8" Casing



SRR & A

Exhibit E-1 – 3000# BOP
Cuervo Federal 25H
Cimarex Energy Co. of Colorado
14-23S-32E
SHL 370 FNL & 865 FEL
BHL 330 FSL & 1325 FEL
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
Cuervo Federal 25H
 Cimarex Energy Co. of Colorado
 14-23S-32E
 SHL 370 FNL & 865 FEL
 BHL 330 FSL & 1325 FEL
 Lea County, NM

Exhibit F-1 – Co-Flex Hose Hydrostatic Test

Cuervo Federal 25H
 Cimarex Energy Co. of Colorado
 14-23S-32E
 SHL 370 FNL & 865 FEL
 BHL 330 FSL & 1325 FEL
 Lea County, NM



Midwest Hose & Specialty, Inc.

INTERNAL HYDROSTATIC TEST REPORT

Customer: Oderco Inc		P.O. Number: 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 10,000 PSI	TEST PRESSURE 15,000 PSI		BURST PRESSURE 0 PSI
COUPLINGS			
Stem Part No. OKC OKC		Ferrule No. OKC OKC	
Type of Coupling: Swage-It			
PROCEDURE			
<u>Hose assembly pressure tested with water at ambient temperature.</u>			
TIME HELD AT TEST PRESSURE 15 MIN.		ACTUAL BURST PRESSURE: 0 PSI	
Hose Assembly Serial Number: 79793		Hose Serial Number: OKC	
Comments:			
Date: 3/8/2011	Tested: <i>A. James Jones</i>		Approved: <i>Kevin [Signature]</i>



Midwest Hose
& Specialty, Inc.

Internal Hydrostatic Test Graph

Customer: Houston

Pick Ticket #: 94260

Hose Specifications:

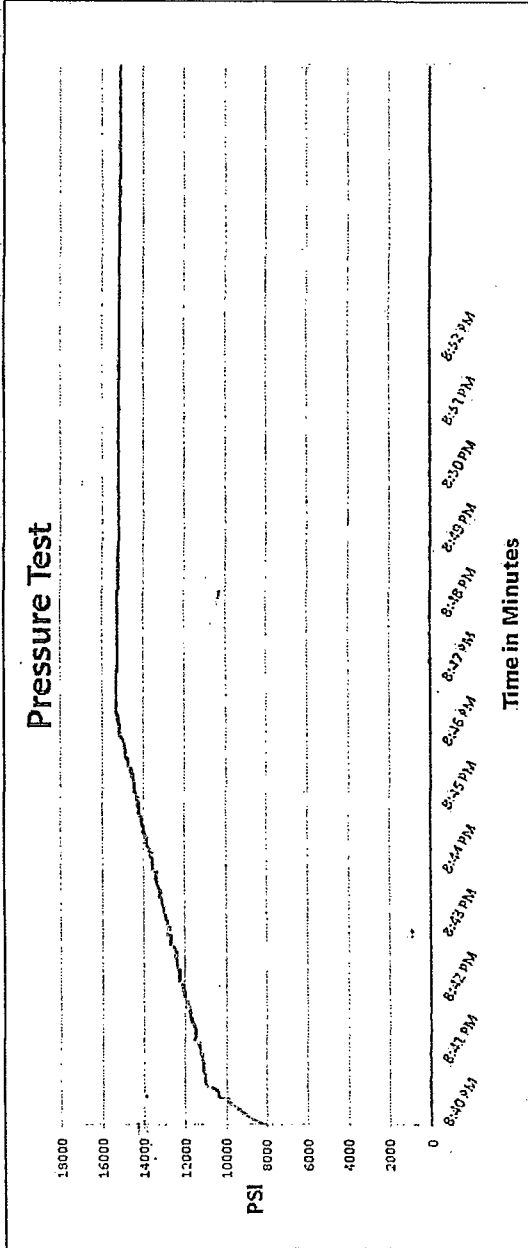
Hose Type
C.S.K.
I.D.
4"
Working Pressure
10000 PSI

Length
45'
O.D.
6.09"
Burst Pressure
Standard Safety Multiplier Applies

Verification

Type of Fittings
41/4610K
Die Size
6.38"
Hose Serial #
5544
Coupling Method
Swage
Final O.D.
6.25"
Hose Assembly Serial #
79793

Exhibit F-1 – Co-Flex Hose Hydrostatic Test
Cuervo Federal 25H
Cimarex Energy Co. of Colorado
14-23S-32E
SHL 370 FNL & 865 FEL
BHL 330 FSL & 1325 FEL
Lea County, NM



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]

Exhibit F-2 – Co-Flex Hose
Cuervo Federal 25H
Cimarex Energy Co. of Colorado
14-23S-32E
SHL 370 FNL & 865 FEL
BHL 330 FSL & 1325 FEL
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:
<i>James H. Hester</i>		3/8/2011



Midwest Hose
& Specialty, Inc.

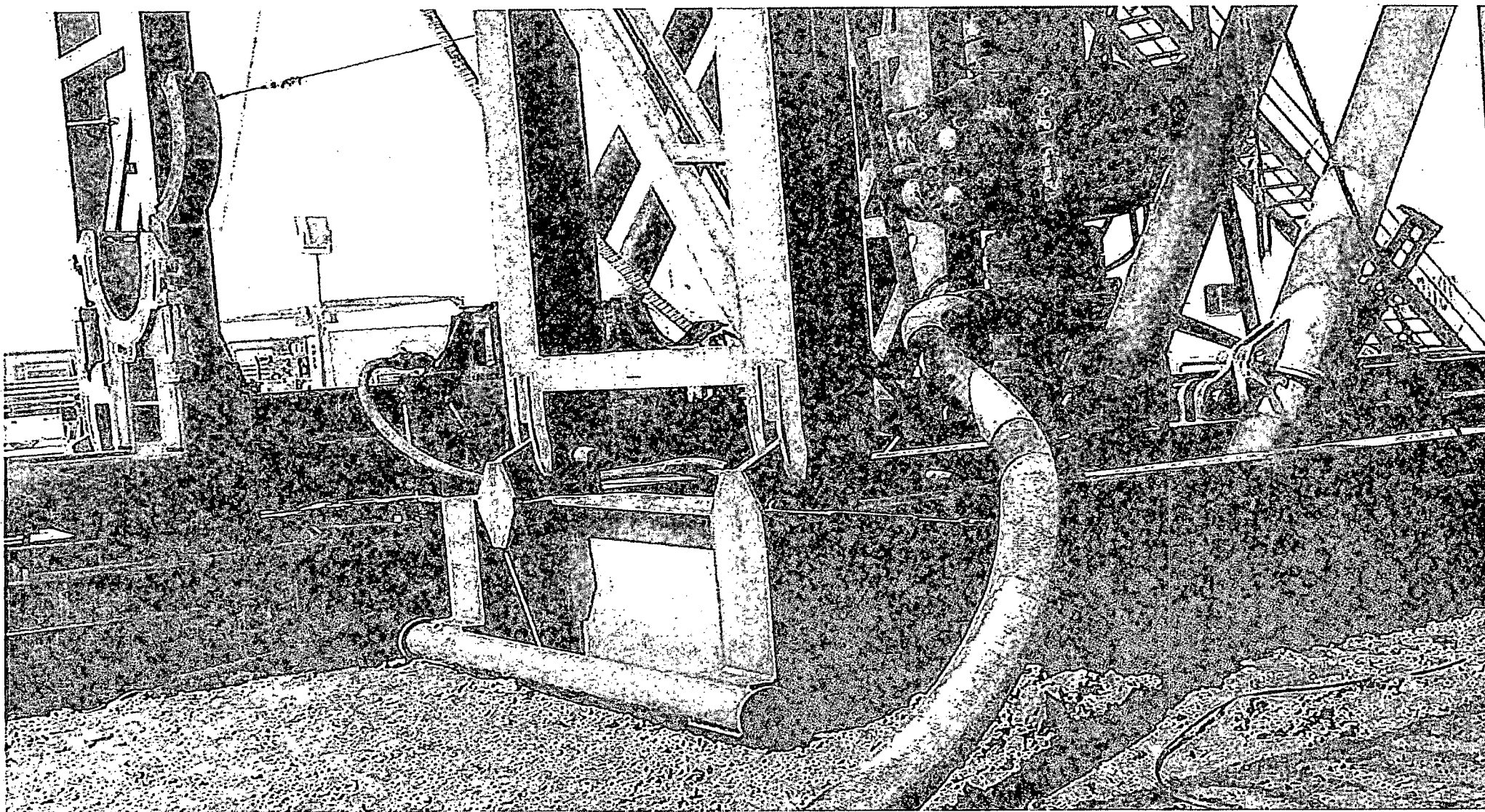
Exhibit F -3- Co-Flex Hose
Cuervo Federal 25H
Cimarex Energy Co. of Colorado
14-23S-32E
SHL 370 FNL & 865 FEL
BHL 330 FSL & 1325 FEL
Lea County, NM

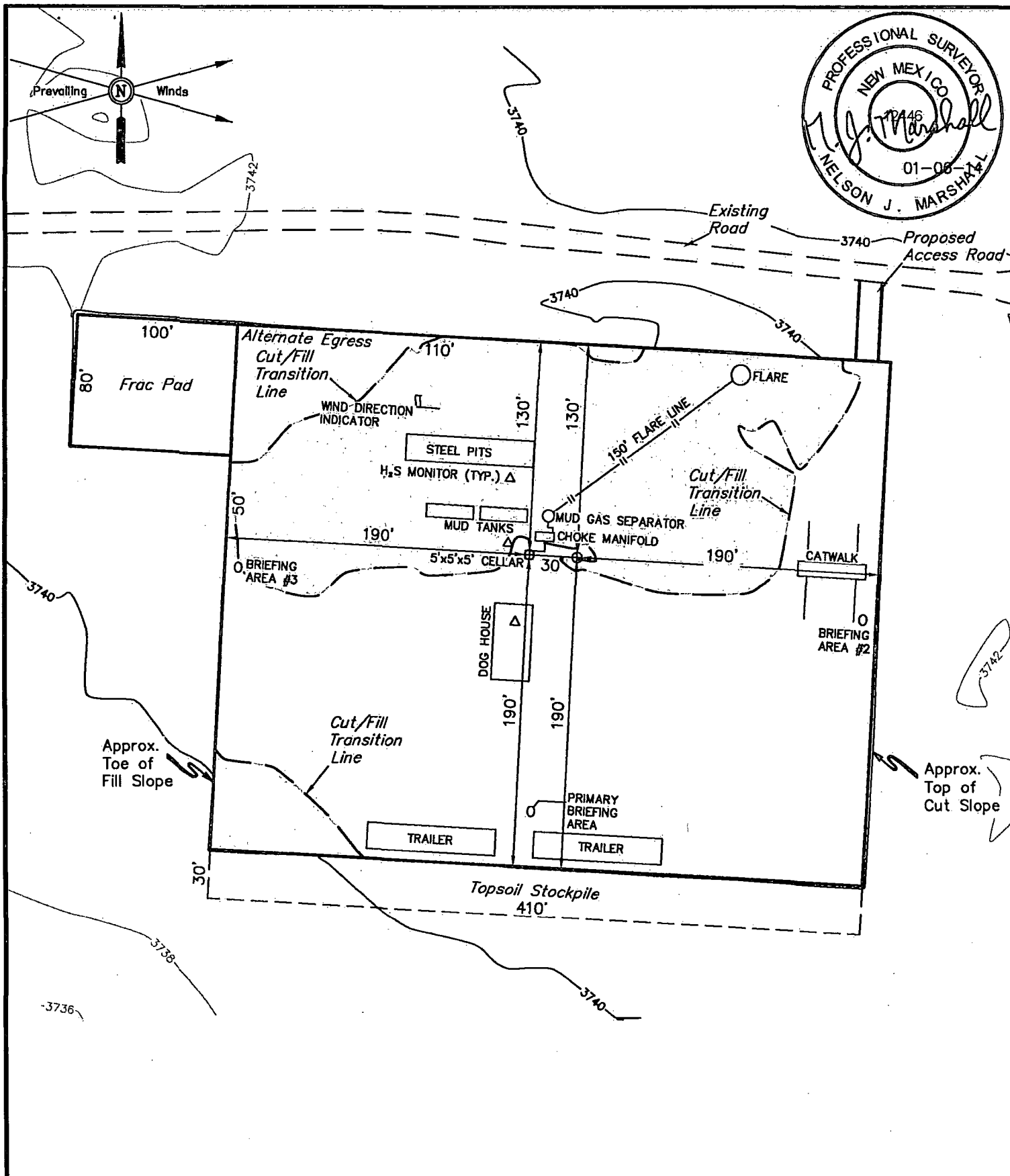
Specification Sheet Choke & Kill Hose

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.

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
Cuervo Federal 25H
Cimarex Energy Co. of Colorado
14-23S-32E
SHL 370 FNL & 865 FEL
BHL 330 FSL & 1325 FEL
Lea County, NM





NOTES:
 • Flare pit is to be located a min. of 160' from the well head.



CIMAREX ENERGY CO.

CUERVO FEDERAL #25H
 SECTION 14, T23S, R32E, N.M.P.M.
 NE 1/4 NE 1/4

DRAWN BY: B.D.H.

SCALE: 1" = 80'

DATE: 12-26-13

REVISED:

TYPICAL RIG LAYOUT

EXHIBIT D



Corporate Office * 85 South 200 East
 Vernal, UT 84078 * (435) 789-1017