

HOBBS OCD

NOV 10 2014

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Form 3160-3
(March 2012)

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 ☒ 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. <313460> Urraca Federal Com 24H	
2. Name of Operator Cimarex Energy Co.		9. API Well No. 30-025-42255	
3a. Address 202 S. Cheyenne Ave., Ste 1000, Tulsa, OK 74103	3b. Phone No. (include area code) <215099> 918-585-1100	10. Field and Pool or Exploratory Bone Spring <17644>	
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At Surface 330' FNL 1750' FEL At proposed prod. Zone 330' FSL 1325' FEL Bone Spring		11. Sec. T. R. M. or Blk. and Survey and Area 11, 23S, 32E	
14. Distance in miles and direction from nearest town or post office* Malaga, NBM is +/- 26.1 miles northwesterly		12. County or Parish Lea	13. State NM
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drng. unit line if any) 330	16. No of acres in lease NMNM 077062=280.00 acres NMNM 084728=800.00 acres	17. Spacing Unit dedicated to this well 160.00 320	
18. Distance from proposed* location to nearest well, drilling, completed, applied for, on this lease, ft. 30' to the # 23H	19. Proposed Depth Pilot Hole TD: N/A 14,138 MD 9,700 TVD	20. BLM/BIA Bond No. on File NM2575; NMB000835	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3724 GR	22. Approximate date work will start* 4/29/14	23. Estimated duration 35 days	

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall be attached to this form:

- | | |
|---|--|
| 1. Well plat certified by a registered surveyor | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan | 5. Operator Certification |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be required by the authorized officer. |

25. Signature <i>Aricka Easterling</i>	Name (Printed/Typed) Aricka Easterling	Date 2/26/14
Title Regulatory Compliance		

Approved By (Signature) James A. Amos	Name (Printed/Typed)	Date OCT 31 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)

Carlsbad Controlled Water Basin

Approval Subject to General Requirements
& Special Stipulations Attached

SEE ATTACHED FOR
CONDITIONS OF APPROVAL
NOV 2014

Application to Drill
Urraca Federal Com 24H
 Cimarex Energy Co.
 UL: B, Sec. 11, 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 330' FNL 1750' FEL
 BHL 330' FSL 1325' FEL

2. Elevation Above Sea Level: 3,724' 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: 14,138 MD 9,700 TVD Pilot Hole TD: N/A

6. Estimated Tops of Geological Markers:

Formation	Est Top	Bearing
Rustler	1180	N/A
Salt	1410	N/A
Castille	3550	N/A
Base Last Salt	4635	N/A
Lamar	4900	N/A
Bell Canyon	4955	N/A
Cherry Canyon	5865	N/A
Brushy Canyon	7150	Hydrocarbons
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	1230	1230	17 1/2	13-3/8"	48.00	H-40	ST&C	New	530	8.3	1.39		3.26	59,040	51,559	6.25
Intermediate	0	4920	4920	12 1/4	9-5/8"	40.00	J-55	LT&C	New	2558	10.0		1.53	1.54	196,800	166,754	3.12
Production	0	9223	9223	8 3/4	5-1/2"	17.00	L-80	LT&C	New	4316	9.0	1.46		1.79	164,900	142,242	2.38
Production	9223	14138	9700	8 3/4	5-1/2"	17.00	L-80	BT&C	New	4539	9.0	1.39		1.71	8,109	6,995	56.76

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.

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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 and/or Production Completion System	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	586	1.75	13.50	1025	Class C + Bentonite + Calcium Chloride + LCM, 8.829 gps water
	Tail	159	1.34	14.80	213	Class C + LCM, 6.32 gps water
	TOC: 0		45% Excess			Centralizers per Onshore Order 2.III.B.1f
Intermediate	Lead	882	1.88	12.90	1657	35:65 (poz/C) + Salt + Bentonite + LCM + retarder, 9.65 gps water
	Tail	288	1.34	14.80	385	Class C + retarder + LCM, 6.32 gps water
	TOC: 0		44% Excess			
Production	Lead	522	2.40	11.90	1252	35:65 (poz/H) + salt + Sodium Metasilicate + Bentonite + Fluid Loss + Dispersant + LCM + Retarder, 13.80 gps water
	Tail	1214	1.24	14.50	1505	50:50 (poz/H) + Bentonite + Salt + Fluid Loss + Dispersant + LCM + Retarder, 5.55 gps water
	TOC: 4720		16% Excess			No centralizers planned in the lateral section. 1 every jt from EOC to KOP. 1 every 4th joint from KOP to 500' inside previous casing.

Cement volumes will be adjusted depending on hole size

9a. Proposed Drilling Plan:

Pilot Hole TD: No Pilot KOP: 9,223' 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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11. Proposed Mud Circulating System:

Depth	Mud Weight	Visc	Fluid Loss	Type Mud
0' to 1230'	7.80 - 8.30	28	NC	FW Spud Mud
1230' to 4920'	9.50 - 10.00	30-32	NC	Brine Water
4920' to 14138'	8.50 - 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 4920 to TD
- B. Electric logging program: CNL / LDT / CAL / GR, DLL /GR -- Inter. Csg to TD
CNL /GR -- Surf to Inter. Csg
- C. No DSTs or cores are planned at this time
- D. CBL w/ CCL from as far as gravity will let it fall to TOC

13. Potential Hazards:

No abnormal pressures or temperatures are expected. In accordance with Onshore Order 6, Cimarex does not anticipate that there will be enough H₂S from the surface to the Bone Spring formations to meet the BLM's minimum requirements for the submission of an "H₂S Drilling Operation Plan" or "Public Protection Plan" for the drilling and completion of this well. Since we have an H₂S Safety package on all wells, attached is an "H₂S Drilling Operations Plan." Adequate flare lines will be installed off the mud / gas separator where gas may be flared safely. All personnel will be familiar with all aspects of safe operation of equipment being used.

Estimated BHP: 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 potential as **Oil**



Cimarex

Rev2

PATHFINDER
A Schlumberger Company

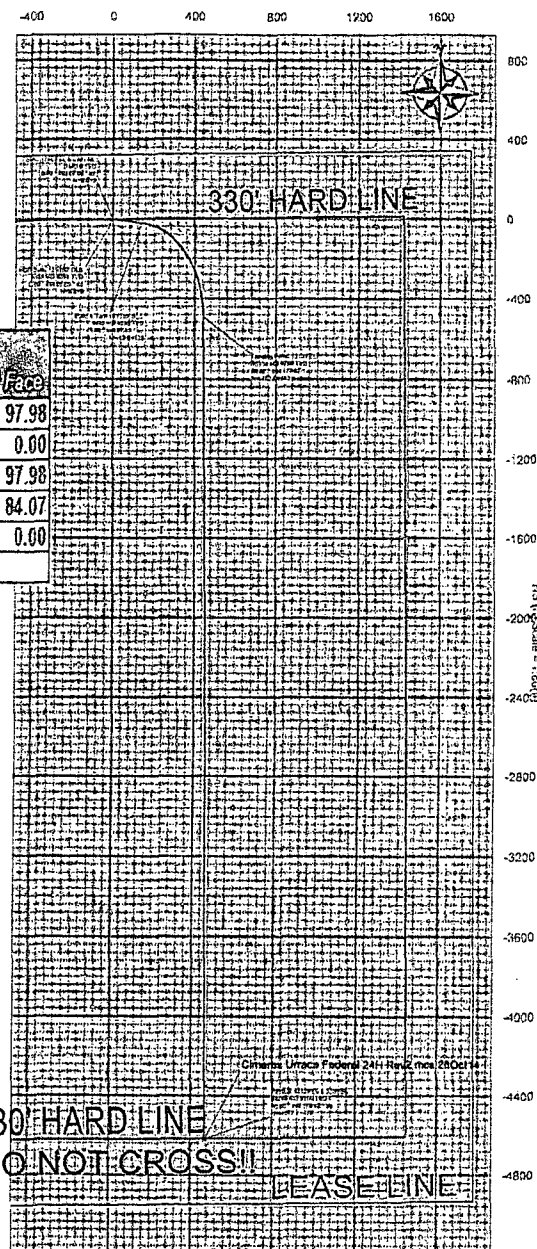
Borehole:	Well:	Field:	Structure:
Original Borehole	Urraca Federal 24H	Lea County, NM	Rig TBD
Gravity & Magnetic Parameters			
Model: HDGM 2914	Dip: 60.184°	Date: 28-Oct-2014	Surface Location: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Mag Dec: 7.178°	PS: 45483.834mT	Gravity PS: 989.824m/s ² (8.82655 m/s ²)	Lat: 32 19 32.13 N
			Long: W 103 38 33.265
			Mag Dec: 7.178°
			Grid North
			Tot Corr (M+G 5.809")
			Mag Dec (7.178")
			Grid Conv (0.360")

Cimarex Urraca Federal 24H Rnd 28 Oct 2014
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Cimarex Urraca Federal 24H - PBNL
Cimarex Urraca Federal 24H - PBNL
Cimarex Urraca Federal 24H - PBNL

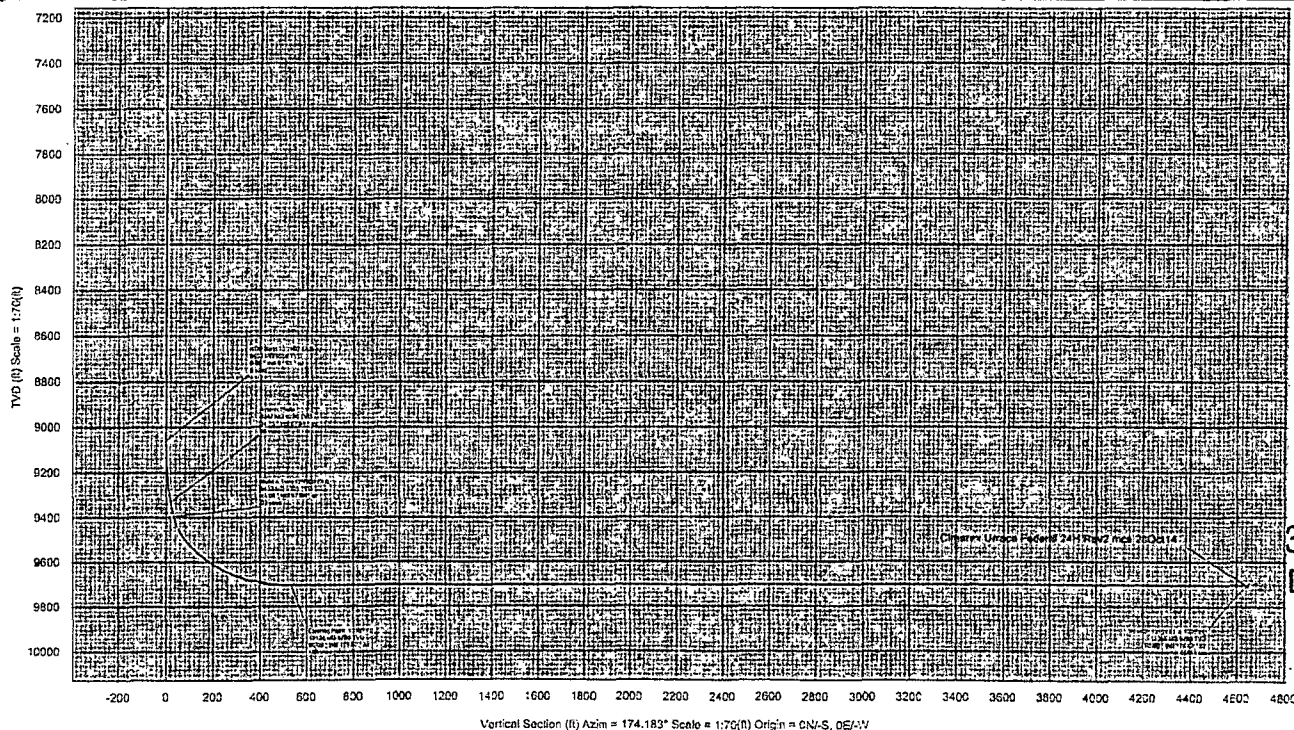
Grid
True
Mag

Grid North
Tot Corr (M+G 5.809")
Mag Dec (7.178")
Grid Conv (0.360")

EW (ft) Scale = 1:60 (ft)



Critical Points													
Comments	Survey MD	Inc	Azim	TVD	SSVD	VS	NS	EW	Longitude	Latitude	Easting	Northing	DLS Tool Face
SHL: 1750FEL & 330FNL	0.00	0.00	97.98	0.00	-3725.00	0.00	0.00	0.00	W 103 38 33.265	N 32 19 32.130	754706.85	482870.26	97.98
KOP Build 12°/100' DLS	9057.84	0.00	97.98	9057.84	5332.84	0.00	0.00	0.00	W 103 38 33.265	N 32 19 32.130	754706.85	482870.26	0.00
Avalon Shale	9347.43	34.75	97.98	9330.00	5605.00	20.30	-11.82	84.34	W 103 38 32.283	N 32 19 32.008	754791.18	482858.45	12.00
Build & Turn 12°/100' DLS	9432.84	45.00	97.98	9395.46	5670.46	33.34	-19.40	138.49	W 103 38 31.653	N 32 19 31.930	754845.34	482850.86	84.07
Landing Point: 1310FEL	10133.69	90.00	179.62	9700.00	5975.00	534.68	-492.33	442.95	W 103 38 28.140	N 32 19 27.231	755149.78	482377.95	12.00
PBNL2: 1310FEL & 330FSL	14258.16	90.00	179.62	9700.00	5975.00	4640.61	-4616.71	470.36	W 103 38 28.131	N 32 18 46.419	755177.19	478253.74	0.00



Vertical Section (ft) Azim = 174.183° Scale = 1:70 (ft) Origin = CN-S, DE-V



Cimarex Urraca Federal 24H Rev2 mcs 28Oct14 Proposal Geodetic Report

(Non-Def Plan)

Report Date: October 28, 2014 - 03:18 PM
Client: Cimarex
Field: NM Lea County (NAD 83)
Structure / Slot: Cimarex Urraca Federal 24H / Urraca Federal 24H
Well: Urraca Federal 24H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Urraca Federal 24H Rev2 mcs 28Oct14
Survey Date: February 21, 2014
Tort / AHD / DDI / ERD Ratio: 129.102 * / 4873.289 ft / 5.966 / 0.502
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 19' 32.13041", W 103° 38' 33.26518"
Location Grid N/E Y/X: N 482870.260 ftUS, E 754706.850 ftUS
CRS Grid Convergence Angle: 0.3694 *
Grid Scale Factor: 0.99996123
Version / Patch: 2.7.1043.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 174.184 * (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: Unknown
TVD Reference Elevation: 3725.000 ft above MSL
Seabed / Ground Elevation: 3725.000 ft above MSL
Magnetic Declination: 7.178 *
Total Gravity Field Strength: 998.6940mgn (9.80665 Based)
Gravity Model: DOX
Total Magnetic Field Strength: 48469.694 nT
Magnetic Dip Angle: 60.194 *
Declination Date: October 28, 2014
Magnetic Declination Model: HDGM 2014
North Reference: Grid North
Grid Convergence Used: 0.3694 *
Total Corr Mag North->Grid North: 6.8083 *

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: 1750'FEL & 330'FNL	0.00	0.00	97.98	0.00	-3725.00	0.00	0.00	0.00	N/A	0.00	0.00	482870.26	754706.85	N 32 19 32.13	W 103 38 33.27
	100.00	0.00	97.98	100.00	-3825.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13	W 103 38 33.27
	200.00	0.00	97.98	200.00	-3825.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13	W 103 38 33.27
	300.00	0.00	97.98	300.00	-3425.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13	W 103 38 33.27
	400.00	0.00	97.98	400.00	-3325.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13	W 103 38 33.27
	500.00	0.00	97.98	500.00	-3225.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13	W 103 38 33.27
	600.00	0.00	97.98	600.00	-3125.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13	W 103 38 33.27
	700.00	0.00	97.98	700.00	-3025.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13	W 103 38 33.27
	800.00	0.00	97.98	800.00	-2925.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13	W 103 38 33.27
	900.00	0.00	97.98	900.00	-2825.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13	W 103 38 33.27
	1000.00	0.00	97.98	1000.00	-2725.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13	W 103 38 33.27
	1100.00	0.00	97.98	1100.00	-2625.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13	W 103 38 33.27
	1200.00	0.00	97.98	1200.00	-2525.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13	W 103 38 33.27
	1300.00	0.00	97.98	1300.00	-2425.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13	W 103 38 33.27
	1400.00	0.00	97.98	1400.00	-2325.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13	W 103 38 33.27
	1500.00	0.00	97.98	1500.00	-2225.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13	W 103 38 33.27
	1600.00	0.00	97.98	1600.00	-2125.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13	W 103 38 33.27
	1700.00	0.00	97.98	1700.00	-2025.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13	W 103 38 33.27
	1800.00	0.00	97.98	1800.00	-1925.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13	W 103 38 33.27
	1900.00	0.00	97.98	1900.00	-1825.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13	W 103 38 33.27
	2000.00	0.00	97.98	2000.00	-1725.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13	W 103 38 33.27
	2100.00	0.00	97.98	2100.00	-1625.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13	W 103 38 33.27
	2200.00	0.00	97.98	2200.00	-1525.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13	W 103 38 33.27
	2300.00	0.00	97.98	2300.00	-1425.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13	W 103 38 33.27
	2400.00	0.00	97.98	2400.00	-1325.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13	W 103 38 33.27
	2500.00	0.00	97.98	2500.00	-1225.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13	W 103 38 33.27
	2600.00	0.00	97.98	2600.00	-1125.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13	W 103 38 33.27
	2700.00	0.00	97.98	2700.00	-1025.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13	W 103 38 33.27
	2800.00	0.00	97.98	2800.00	-925.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13	W 103 38 33.27
	2900.00	0.00	97.98	2900.00	-825.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13	W 103 38 33.27
	3000.00	0.00	97.98	3000.00	-725.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13	W 103 38 33.27
	3100.00	0.00	97.98	3100.00	-625.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13	W 103 38 33.27
	3200.00	0.00	97.98	3200.00	-525.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13	W 103 38 33.27

Comments	MD	Incl	Azim Grid	TVD	TVOSS	VSEC	NS	EW	DLS	Closure	Closure	Northing	Easting	Latitude	Longitude
	(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft/100ft)	Azimuth	(ft)	(ftUS)	(ftUS)	(N/S °'")	(E/W °'")
	3300.00	0.00	97.98	3300.00	-425.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	3400.00	0.00	97.98	3400.00	-325.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	3500.00	0.00	97.98	3500.00	-225.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	3600.00	0.00	97.98	3600.00	-125.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	3700.00	0.00	97.98	3700.00	-25.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	3800.00	0.00	97.98	3800.00	75.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	3900.00	0.00	97.98	3900.00	175.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	4000.00	0.00	97.98	4000.00	275.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	4100.00	0.00	97.98	4100.00	375.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	4200.00	0.00	97.98	4200.00	475.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	4300.00	0.00	97.98	4300.00	575.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	4400.00	0.00	97.98	4400.00	675.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	4500.00	0.00	97.98	4500.00	775.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	4600.00	0.00	97.98	4600.00	875.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	4700.00	0.00	97.98	4700.00	975.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	4800.00	0.00	97.98	4800.00	1075.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	4900.00	0.00	97.98	4900.00	1175.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	5000.00	0.00	97.98	5000.00	1275.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	5100.00	0.00	97.98	5100.00	1375.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	5200.00	0.00	97.98	5200.00	1475.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	5300.00	0.00	97.98	5300.00	1575.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	5400.00	0.00	97.98	5400.00	1675.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	5500.00	0.00	97.98	5500.00	1775.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	5600.00	0.00	97.98	5600.00	1875.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	5700.00	0.00	97.98	5700.00	1975.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	5800.00	0.00	97.98	5800.00	2075.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	5900.00	0.00	97.98	5900.00	2175.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	6000.00	0.00	97.98	6000.00	2275.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	6100.00	0.00	97.98	6100.00	2375.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	6200.00	0.00	97.98	6200.00	2475.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	6300.00	0.00	97.98	6300.00	2575.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	6400.00	0.00	97.98	6400.00	2675.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	6500.00	0.00	97.98	6500.00	2775.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	6600.00	0.00	97.98	6600.00	2875.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	6700.00	0.00	97.98	6700.00	2975.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	6800.00	0.00	97.98	6800.00	3075.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	6900.00	0.00	97.98	6900.00	3175.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	7000.00	0.00	97.98	7000.00	3275.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	7100.00	0.00	97.98	7100.00	3375.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	7200.00	0.00	97.98	7200.00	3475.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	7300.00	0.00	97.98	7300.00	3575.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	7400.00	0.00	97.98	7400.00	3675.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	7500.00	0.00	97.98	7500.00	3775.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	7600.00	0.00	97.98	7600.00	3875.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	7700.00	0.00	97.98	7700.00	3975.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	7800.00	0.00	97.98	7800.00	4075.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	7900.00	0.00	97.98	7900.00	4175.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	8000.00	0.00	97.98	8000.00	4275.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	8100.00	0.00	97.98	8100.00	4375.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	8200.00	0.00	97.98	8200.00	4475.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	8300.00	0.00	97.98	8300.00	4575.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	8400.00	0.00	97.98	8400.00	4675.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	8500.00	0.00	97.98	8500.00	4775.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	8600.00	0.00	97.98	8600.00	4875.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	8700.00	0.00	97.98	8700.00	4975.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	8800.00	0.00	97.98	8800.00	5075.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	8900.00	0.00	97.98	8900.00	5175.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	
	9000.00	0.00	97.98	9000.00	5275.00	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13 W 103 38 53.27	

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 ° ' '')
KOP Build 12"/100' DLS	9057.84	0.00	97.98	9057.84	5332.84	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13	W 103 38 33.27
	9100.00	5.06	97.98	9099.95	5374.95	0.44	-0.26	1.84	12.00	97.98	1.86	482870.00	754708.69	N 32 19 32.13	W 103 38 33.24
	9200.00	17.06	97.98	9197.91	5472.91	5.01	-2.91	20.80	12.00	97.98	21.01	482867.35	754727.65	N 32 19 32.10	W 103 38 33.02
	9300.00	29.06	97.98	9289.75	5564.75	14.33	-8.34	59.52	12.00	97.98	60.10	482861.92	754766.37	N 32 19 32.04	W 103 38 32.57
Avalon Shale	9347.43	34.75	97.98	9330.00	5605.00	20.30	-11.82	84.34	12.00	97.98	85.16	482859.45	754791.18	N 32 19 32.01	W 103 38 32.28
	9400.00	41.06	97.98	9371.46	5646.46	28.00	-16.29	116.31	12.00	97.98	117.44	482853.97	754823.15	N 32 19 31.96	W 103 38 31.91
Build & Turn 12"/100' DLS	9432.84	45.00	97.98	9395.46	5670.46	33.34	-19.40	138.49	12.00	97.98	139.85	482850.86	754845.34	N 32 19 31.93	W 103 38 31.65
	9500.00	46.38	109.08	9442.45	5717.45	49.26	-30.66	185.06	12.00	99.41	187.58	482839.60	754891.90	N 32 19 31.82	W 103 38 31.11
	9600.00	50.27	124.31	9509.14	5784.14	89.43	-64.29	251.27	12.00	104.35	259.37	482805.97	754958.11	N 32 19 31.48	W 103 38 30.34
	9700.00	55.91	137.58	9569.35	5844.35	147.66	-116.73	311.19	12.00	110.56	332.36	482753.54	755018.02	N 32 19 30.96	W 103 38 29.65
	9800.00	62.78	149.03	9620.43	5895.43	221.42	-185.67	362.18	12.00	117.14	407.00	482684.59	755069.02	N 32 19 30.27	W 103 38 29.06
	9900.00	70.48	159.08	9660.15	5935.15	307.48	-268.12	402.03	12.00	123.70	483.24	482602.15	755108.87	N 32 19 29.45	W 103 38 28.60
	10000.00	78.67	168.19	9686.78	5961.78	402.09	-360.47	428.99	12.00	130.04	560.33	482509.81	755135.83	N 32 19 28.54	W 103 38 28.29
	10100.00	87.13	176.77	9699.15	5974.15	501.09	-458.67	441.89	12.00	136.07	636.90	482411.61	755148.72	N 32 19 27.56	W 103 38 28.15
Landing Point: 1310'FEL	10133.69	90.00	179.62	9700.00	5975.00	534.68	-492.33	442.95	12.00	138.02	662.26	482377.95	755149.78	N 32 19 27.23	W 103 38 28.14
	10200.00	90.00	179.62	9700.00	5975.00	600.69	-558.63	443.39	0.00	141.56	713.21	482311.65	755150.22	N 32 19 26.57	W 103 38 28.14
	10300.00	90.00	179.62	9700.00	5975.00	700.24	-658.83	444.05	0.00	146.01	794.34	482211.65	755150.89	N 32 19 25.59	W 103 38 28.14
	10400.00	90.00	179.62	9700.00	5975.00	799.79	-758.63	444.72	0.00	149.62	879.37	482111.66	755151.55	N 32 19 24.60	W 103 38 28.14
	10500.00	90.00	179.62	9700.00	5975.00	899.34	-858.63	445.38	0.00	152.58	967.27	482011.67	755152.21	N 32 19 23.61	W 103 38 28.14
	10600.00	90.00	179.62	9700.00	5975.00	998.89	-958.63	446.05	0.00	155.05	1057.32	481911.67	755152.88	N 32 19 22.62	W 103 38 28.14
	10700.00	90.00	179.62	9700.00	5975.00	1098.44	-1058.62	446.71	0.00	157.12	1149.02	481811.68	755153.54	N 32 19 21.63	W 103 38 28.14
	10800.00	90.00	179.62	9700.00	5975.00	1197.99	-1158.62	447.38	0.00	158.89	1241.99	481711.69	755154.21	N 32 19 20.64	W 103 38 28.14
	10900.00	90.00	179.62	9700.00	5975.00	1297.54	-1258.62	448.04	0.00	160.41	1335.99	481611.69	755154.87	N 32 19 19.65	W 103 38 28.14
	11000.00	90.00	179.62	9700.00	5975.00	1397.09	-1358.62	448.71	0.00	161.72	1430.80	481511.70	755155.54	N 32 19 18.66	W 103 38 28.14
	11100.00	90.00	179.62	9700.00	5975.00	1496.65	-1458.61	449.37	0.00	162.88	1526.27	481411.70	755156.20	N 32 19 17.67	W 103 38 28.14
	11200.00	90.00	179.62	9700.00	5975.00	1596.20	-1558.61	450.04	0.00	163.89	1622.28	481311.71	755156.87	N 32 19 16.68	W 103 38 28.14
	11300.00	90.00	179.62	9700.00	5975.00	1695.75	-1658.61	450.70	0.00	164.80	1718.76	481211.72	755157.53	N 32 19 15.69	W 103 38 28.14
	11400.00	90.00	179.62	9700.00	5975.00	1795.30	-1758.61	451.36	0.00	165.61	1815.61	481111.72	755158.20	N 32 19 14.70	W 103 38 28.14
	11500.00	90.00	179.62	9700.00	5975.00	1894.85	-1858.61	452.03	0.00	166.33	1912.79	481011.73	755158.86	N 32 19 13.71	W 103 38 28.14
	11600.00	90.00	179.62	9700.00	5975.00	1994.40	-1958.60	452.69	0.00	166.99	2010.24	480911.74	755159.53	N 32 19 12.72	W 103 38 28.14
	11700.00	90.00	179.62	9700.00	5975.00	2093.95	-2058.60	453.36	0.00	167.58	2107.93	480811.74	755160.19	N 32 19 11.73	W 103 38 28.14
	11800.00	90.00	179.62	9700.00	5975.00	2193.50	-2158.60	454.02	0.00	168.12	2205.83	480711.75	755160.85	N 32 19 10.74	W 103 38 28.14
	11900.00	90.00	179.62	9700.00	5975.00	2293.05	-2258.60	454.69	0.00	168.62	2303.91	480611.75	755161.52	N 32 19 9.75	W 103 38 28.14
	12000.00	90.00	179.62	9700.00	5975.00	2392.60	-2358.59	455.35	0.00	169.07	2402.15	480511.76	755162.18	N 32 19 8.76	W 103 38 28.14
	12100.00	90.00	179.62	9700.00	5975.00	2492.15	-2458.59	456.02	0.00	169.49	2500.53	480411.77	755162.85	N 32 19 7.77	W 103 38 28.14
	12200.00	90.00	179.62	9700.00	5975.00	2591.70	-2558.59	456.68	0.00	169.88	2599.03	480311.77	755163.51	N 32 19 6.78	W 103 38 28.14
	12300.00	90.00	179.62	9700.00	5975.00	2691.25	-2658.59	457.35	0.00	170.24	2697.64	480211.78	755164.18	N 32 19 5.80	W 103 38 28.14
	12400.00	90.00	179.62	9700.00	5975.00	2790.80	-2758.59	458.01	0.00	170.57	2796.35	480111.79	755164.84	N 32 19 4.81	W 103 38 28.14
	12500.00	90.00	179.62	9700.00	5975.00	2890.35	-2858.58	458.67	0.00	170.88	2895.15	480011.79	755165.51	N 32 19 3.82	W 103 38 28.14
	12600.00	90.00	179.62	9700.00	5975.00	2989.90	-2958.58	459.34	0.00	171.17	2994.03	479911.80	755166.17	N 32 19 2.83	W 103 38 28.14
	12700.00	90.00	179.62	9700.00	5975.00	3089.45	-3058.58	460.00	0.00	171.45	3092.98	479811.81	755166.84	N 32 19 1.84	W 103 38 28.13
	12800.00	90.00	179.62	9700.00	5975.00	3189.00	-3158.58	460.67	0.00	171.70	3191.99	479711.81	755167.50	N 32 19 0.85	W 103 38 28.13
	12900.00	90.00	179.62	9700.00	5975.00	3288.55	-3258.58	461.33	0.00	171.94	3291.07	479611.82	755168.16	N 32 18 59.86	W 103 38 28.13
	13000.00	90.00	179.62	9700.00	5975.00	3388.10	-3358.57	462.00	0.00	172.17	3390.20	479511.82	755168.83	N 32 18 58.87	W 103 38 28.13
	13100.00	90.00	179.62	9700.00	5975.00	3487.65	-3458.57	462.66	0.00	172.38	3489.38	479411.83	755169.49	N 32 18 57.88	W 103 38 28.13
	13200.00	90.00	179.62	9700.00	5975.00	3587.20	-3558.57	463.33	0.00	172.58	3588.60	479311.84	755170.16	N 32 18 56.89	W 103 38 28.13
	13300.00	90.00	179.62	9700.00	5975.00	3686.75	-3658.57	463.99	0.00	172.77	3687.87	479211.85	755170.82	N 32 18 55.90	W 103 38 28.13
	13400.00	90.00	179.62	9700.00	5975.00	3786.30	-3758.56	464.66	0.00	172.95	3787.18	479111.85	755171.49	N 32 18 54.91	W 103 38 28.13
	13500.00	90.00	179.62	9700.00	5975.00	3885.85	-3858.56	465.32	0.00	173.12	3886.52	479011.86	755172.15	N 32 18 53.92	W 103 38 28.13
	13600.00	90.00	179.62	9700.00	5975.00	3985.40	-3958.56	465.99	0.00	173.29	3985.89	478911.86	755172.82	N 32 18 52.93	W 103 38 28.13
	13700.00	90.00	179.62	9700.00	5975.00	4084.95	-4058.56	466.65	0.00	173.44	4085.30	478811.87	755173.48	N 32 18 51.94	W 103 38 28.13
	13800.00	90.00	179.62	9700.00	5975.00	4184.50	-4158.56	467.31	0.00	173.59	4184.73	478711.87	755174.15	N 32 18 50.95	W 103 38 28.13
	13900.00	90.00	179.62	9700.00	5975.00	4284.05	-4258.55	467.98	0.00	173.73	4284.19	478611.88	755174.81	N 32 18 49.96	W 103 38 28.13
	14000.00	90.00	179.62	9700.00	5975.00	4383.60	-4358.55	468.64	0.00	173.86	4383.67	478511.89	755175.47	N 32 18 48.97	W 103 38 28.13
	14100.00	90.00	179.62	9700.00	5975.00	4483.16	-4458.55	469.31	0.00	173.99	4483.18	478411.89	755176.14	N 32 18 47.98	W 103 38 28.13
	14200.00	90.00	179.62	9700.00	5975.00	4582.71	-4558.55	469.97	0.00	174.11	4582.71	478311.90	755176.80	N 32 18 46.99	W 103 38 28.13

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Closure Azimuth (°)	Closure (ft)	Northing (RUS)	Easting (RUS)	Latitude (N/S ° ° '")	Longitude (E/W ° ° '")
PBHL2 1310'FEL & 330'FSL	14258.16	90.00	179.62	9700.00	5975.00	4640.61	-4616.71	470.36	0.00	174.18	4640.61	478253.74	755177.19	N 32 18 46.42	W 103 38 28.13

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	9057.840	1/100.000	30.000	30.000	SLB_MWD-POOR	Original Borehole / Cimarex Urraca Federal 24H Rev2 mcs
	1	9057.840	14258.163	1/100.000	30.000	30.000	SLB_MWD-STD	Original Borehole / Cimarex Urraca Federal 24H Rev2 mcs



Cimarex Urraca Federal 24H Rev2 mcs 28Oct14 Proposal Geodetic Report

(Non-Def Plan)

Report Date: October 28, 2014 - 03:18 PM
Client: Cimarex
Field: NM Lea County (NAD 83)
Structure / Slot: Cimarex Urraca Federal 24H / Urraca Federal 24H
Well: Urraca Federal 24H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Urraca Federal 24H Rev2 mcs 28Oct14
Survey Date: February 21, 2014
Tort / AHD / DDI / ERD Ratio: 129.102' / 4873.289 ft / 5.966 / 0.502
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 19' 32.13041", W 103° 38' 33.26518"
Location Grid N/E Y/X: N 482870.260 RUS, E 754706.850 RUS
CRS Grid Convergence Angle: 0.3694 °
Grid Scale Factor: 0.99996123
Version / Patch: 2.7.1043.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 174.184 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: Unknown
TVD Reference Elevation: 3725.000 ft above MSL
Seabed / Ground Elevation: 3725.000 ft above MSL
Magnetic Declination: 7.178 °
Total Gravity Field Strength: 998.6940mgn (9.80665 Based)
Gravity Model: DOX
Total Magnetic Field Strength: 48469.694 nT
Magnetic Dip Angle: 60.194 °
Declination Date: October 28, 2014
Magnetic Declination Model: HDGM 2014
North Reference: Grid North
Grid Convergence Used: 0.3694 °
Total Corr Mag North->Grid: 6.8083 °
North:
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: 1750'FEL & 330'FNL	0.00	0.00	97.98	0.00	-3725.00	0.00	0.00	0.00	N/A	0.00	0.00	482870.26	754706.85	N 32 19 32.13	W 103 38 33.27
KOP Build 12°/100' DLS	9057.84	0.00	97.98	9057.84	5332.84	0.00	0.00	0.00	0.00	0.00	0.00	482870.26	754706.85	N 32 19 32.13	W 103 38 33.27
Avalon Shale	9347.43	34.75	97.98	9330.00	5605.00	20.30	-11.82	84.34	12.00	97.98	85.16	482858.45	754791.18	N 32 19 32.01	W 103 38 32.28
Build & Turn 12°/100' DLS	9432.84	45.00	97.98	9395.46	5670.46	33.34	-19.40	138.49	12.00	97.98	139.85	482850.86	754845.34	N 32 19 31.93	W 103 38 31.65
Landing Point: 1310'FEL	10133.69	90.00	179.62	9700.00	5975.00	534.68	-492.33	442.95	12.00	138.02	662.26	482377.95	755149.78	N 32 19 27.23	W 103 38 28.14
PBHL2: 1310'FEL & 330'FSL	14258.16	90.00	179.62	9700.00	5975.00	4640.61	-4616.71	470.36	0.00	174.18	4640.61	478253.74	755177.19	N 32 18 46.42	W 103 38 28.13

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	9057.840	1/100.000	30.000	30.000	SLB_MWD-POOR	Original Borehole / Cimarex Urraca Federal 24H Rev2 mcs
	1	9057.840	14258.163	1/100.000	30.000	30.000	SLB_MWD-STD	Original Borehole / Cimarex Urraca Federal 24H Rev2 mcs

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

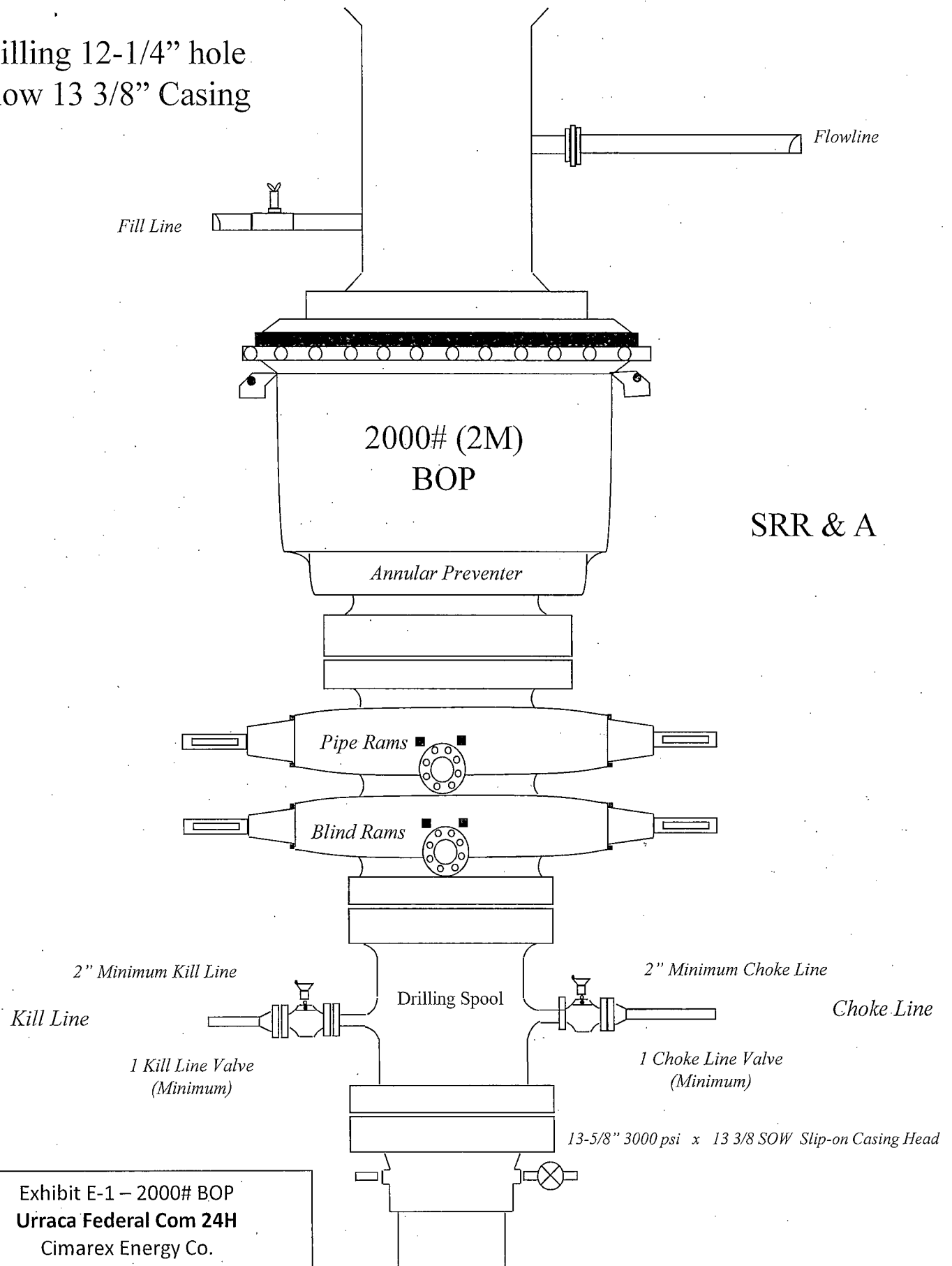
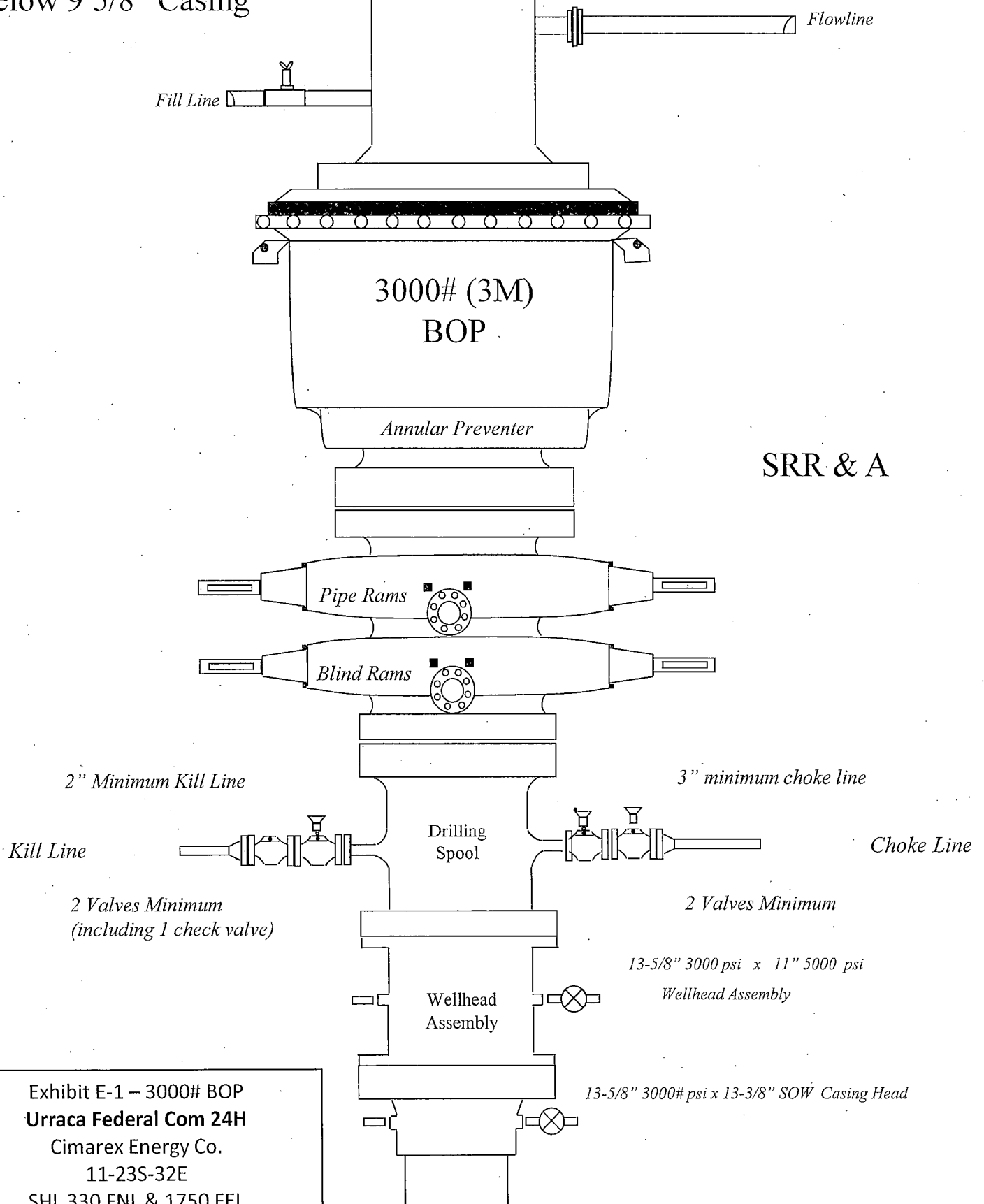


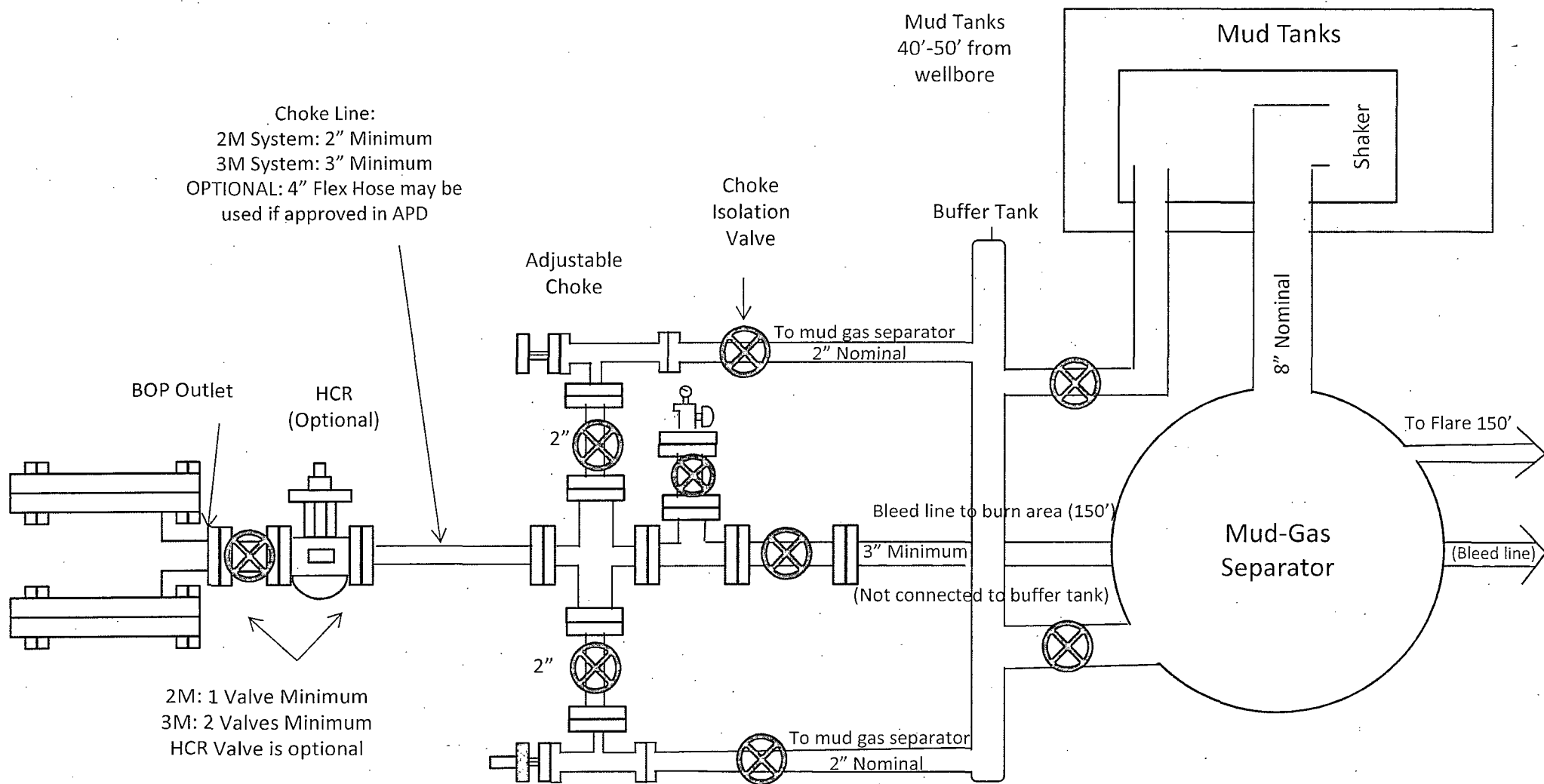
Exhibit E-1 – 2000# BOP
Urraca Federal Com 24H
Cimarex Energy Co.
11-23S-32E
SHL 330 FNL & 1750 FEL
BHL 330 FSL & 1325 FEL
Lea County, NM

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



SRR & A

Exhibit E-1 – 3000# BOP
Urraca Federal Com 24H
Cimarex Energy Co.
11-23S-32E
SHL 330 FNL & 1750 FEL
BHL 330 FSL & 1325 FEL
Lea County, NM



Drilling Operations Choke Manifold 2M/3M Service

Exhibit E-1 – Choke Manifold Diagram
Urraca Federal Com 24H
 Cimarex Energy Co.
 11-23S-32E
 SHL 330 FNL & 1750 FEL
 BHL 330 FSL & 1325 FEL
 Lea County, NM

Exhibit F-1 – Co-Flex Hose Hydrostatic Test

Urraca Federal Com 24H

Cimarex Energy Co.

11-23S-32E

SHL 330 FNL & 1750 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. Jaime Sosa</i>		Approved: <i>Kevin [Signature]</i>



Midwest Hose
& Specialty, Inc.

Internal Hydrostatic Test Graph

March 3, 2011

Customer: Houston

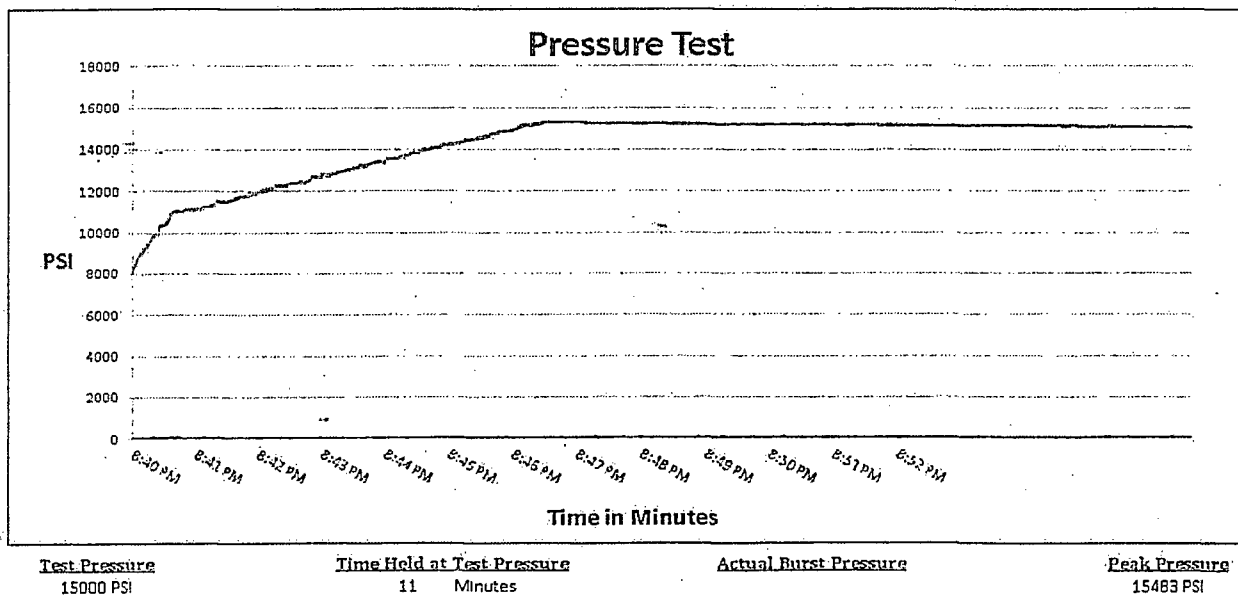
Pick Ticket #: 94260

Hose Specifications

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

Verification

<u>Type of Fitting</u>	<u>Coupling Method</u>
41/16 10K	Swage
<u>Die Size</u>	<u>Final O.D.</u>
6.38"	6.25"
<u>Hose Serial #</u>	<u>Hose Assembly Serial #</u>
5544	79793



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

Tested By: Zac McConnell

Approved By: Kim Thomas

[Signature]

[Signature]

Exhibit F-1 - Co-Flex Hose Hydrostatic Test

Urraca Federal Com 24H

Cimarex Energy Co.

11-23S-32E

SHL 330 FNL & 1750 FEL

BHL 330 FSL & 1325 FEL

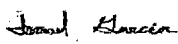
Lea County, NM

Exhibit F-2 - Co-Flex Hose
Urraca Federal Com 24H
Cimarex Energy Co.
11-235-32E
SHL 330 FNL & 1750 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 certify that the material supplied for the referenced purchase order to be true according to the requirements of the purchase order and current industry standards Supplier: Midwest Hose & Specialty, Inc. 10640 Tanner Road Houston, Texas 77041		
Comments:		
Approved:		Date:
		3/8/2011



Midwest Hose
& Specialty, Inc.

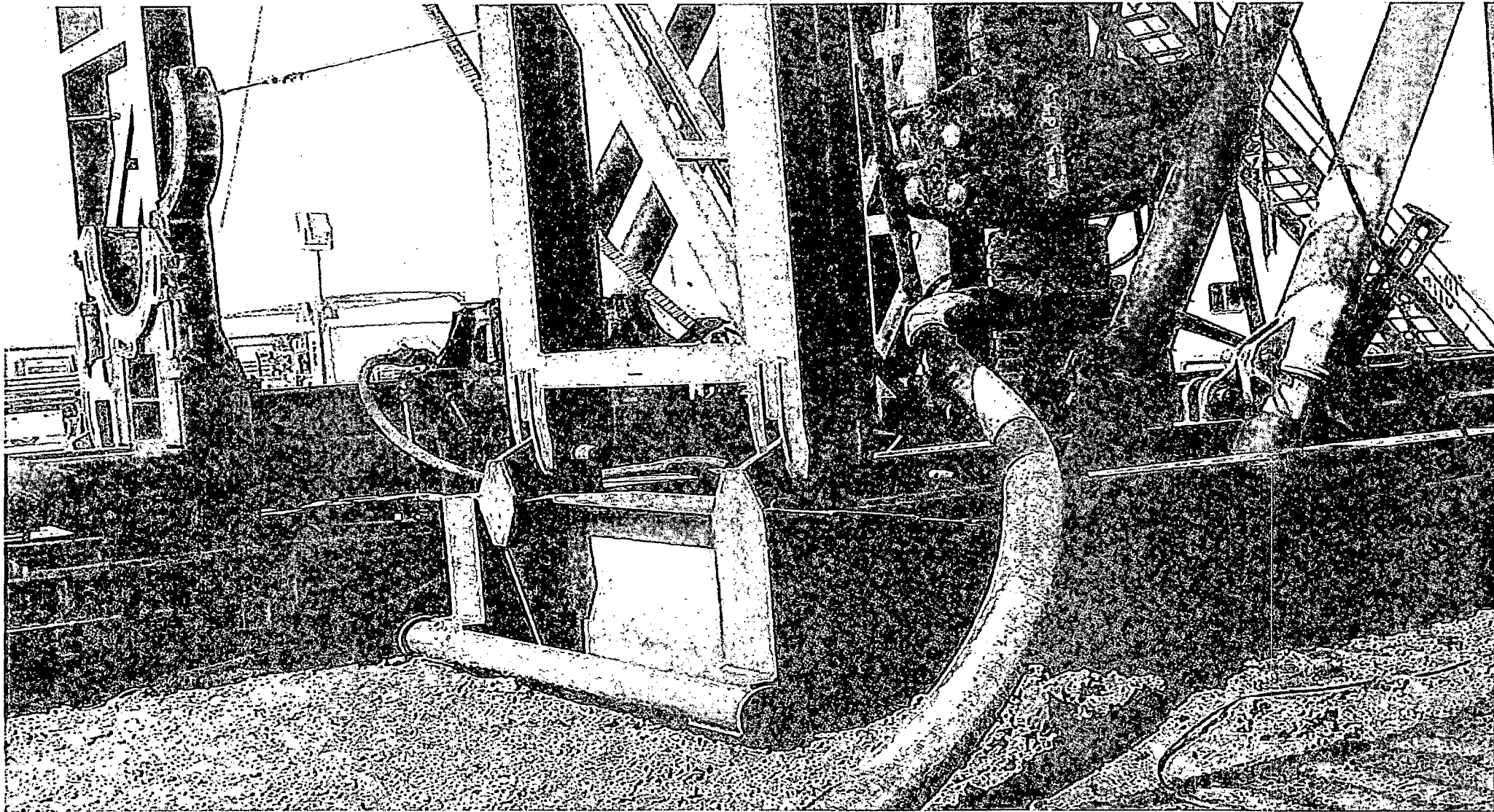
Exhibit F -3- Co-Flex Hose
Urraca Federal Com 24H
Cimarex Energy Co.
11-23S-32E
SHL 330 FNL & 1750 FEL
BHL 330 FSL & 1325 FEL
Lea County, NM

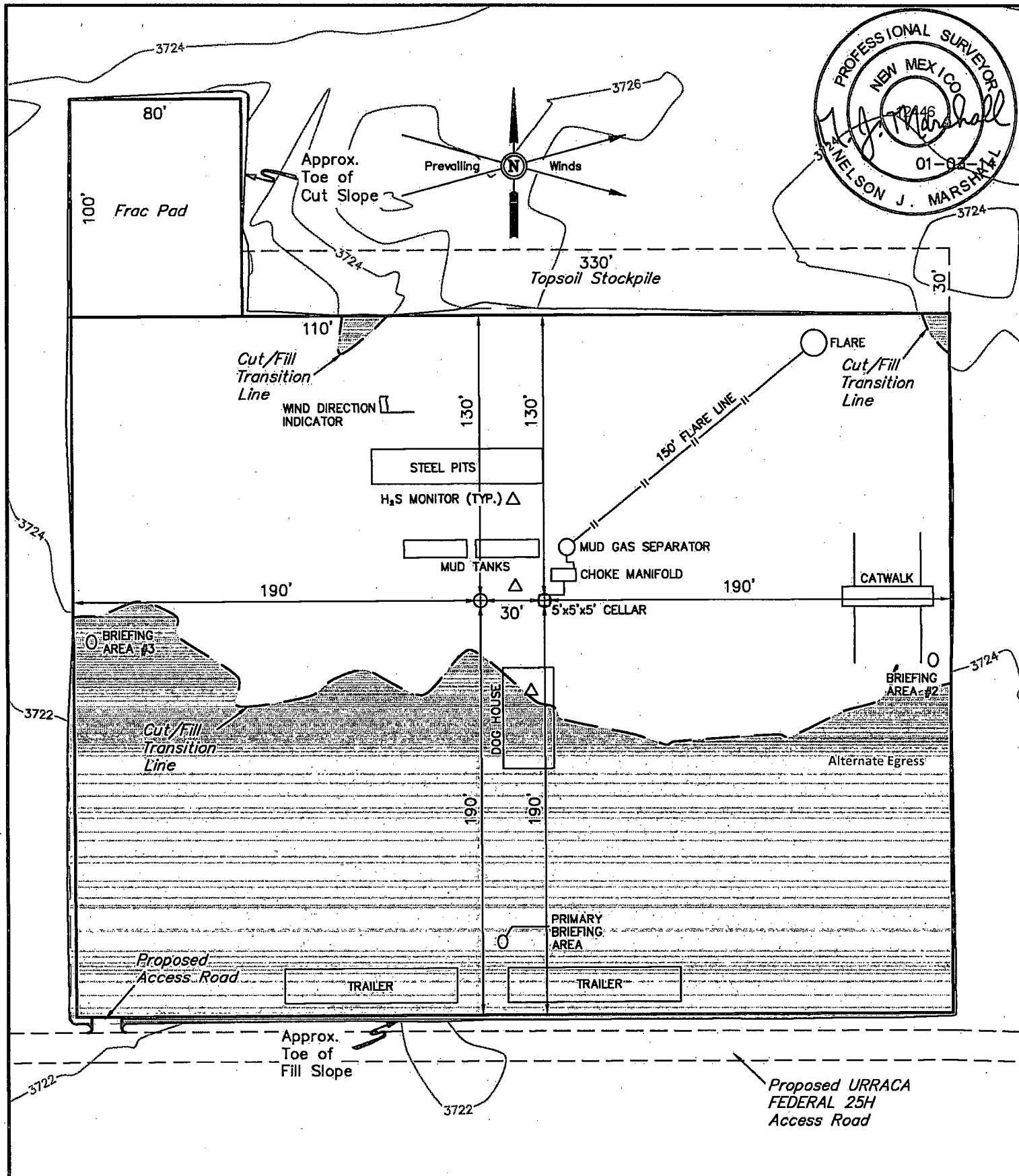
Specification Sheet Choke & Kill Hose

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
Urraca Federal Com 24H
Cimarex Energy Co.
11-23S-32E
SHL 330 FNL & 1750 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.

URRACA FEDERAL COM #24H
SECTION 11, T23S, R32E, N.M.P.M.
NW 1/4 NE 1/4

DRAWN BY: B.D.H.

SCALE: 1" = 60'

DATE: 12-23-13

REVISED:

TYPICAL RIG LAYOUT

EXHIBIT D



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