

OCD Hobbs

Form 3160-3
(March 2012)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

HOBBS OCD

DEC 03 2014

RECEIVED

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

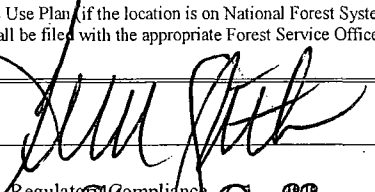
1a. Type of Work ☒ DRILL ☐ REENTER		5. Lease Serial No. SHLABHL: NMNM017440
1b. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator Cimarex Energy Co. (215099)		7. If Unit or CA Agreement, Name and No.
3a. Address 202 S. Cheyenne Ave., Ste 1000, Tulsa, OK 74103		8. Lease Name and Well No. (313931) West Grama Ridge 7 Federal 3H
3b. Phone No. (include area code) 918-585-1100		9. API Well No. 70-025-42305
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At Surface 330 FSL & 1980 FWL At proposed prod. Zone 330 FNL & 1980 FWL Bone Spring		10. Field and Pool, or Exploratory (28432) GRAMA RIDGE; PH, WEST
14. Distance in miles and direction from nearest town or post office* Approx 15 miles N of Carlsbad NM		11. Sec., T. R. M. or Blk. and Survey and Area 7, 22s, 34e
		12. County or Parish Lea
		13. State NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line if any) 330'	16. No of acres in lease NMNM04744=1794.49 acres 17440	17. Spacing Unit dedicated to this well 160.00'
18. Distance from proposed* location to nearest well, drilling, completed, applied for, on this lease, ft. 1320' to the West Grama 7 Federal #4	19. Proposed Depth Pilot Hole TD: N/A 16,050 MD 10,950 TVD	20. BLM/BIA Bond No. on File NM2575 & NMB000835
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3507 GR	22. Approximate date work will start* 12/2/13	23. Estimated duration 35 days

24. Attachments

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

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

25. Signature 	Name (Printed/Typed) Terri Stathem	Date 10/17/13
Title Regulatory Compliance Steve Caffey		
Approved By (Signature) Steve Caffey	Name (Printed/Typed) FIELD MANAGER	Date 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)

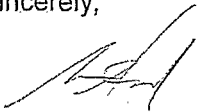
Capitan Controlled Water Basin

Approval Subject to General Requirements
& Special Stipulations Attached

SEE ATTACHED FOR
CONDITIONS OF APPROVAL
DEC 04 2014

West Grama Ridge 7 Federal 3H
Township 22 South, Range 34 East, N.M.P.M.
Section 7: ALL
Lea County, New Mexico
Federal Oil and Gas Lease No. NM 17440

Sincerely,



Cimarex Energy Co.

Matt Hood
Landman

HOBBS OCD

DEC 03 2014

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Application to Drill
West Grama Ridge 7 Federal 3H
 Cimarex Energy Co.
 UL: N, Sec. 7, 22s, 34e
 Lea Co., NM

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DEC 08 2014

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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 & 1980 FWL
 BHL 330 FNL & 1980 FWL
2. **Elevation Above Sea Level:** 3,507' 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:** 16,050 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:**

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	1750	1750	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	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	16050	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 3H
 Cimarex Energy Co.
 UL: N, 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 Metasilicate + Bentonite + Fluid Loss + Dispersant + LCM + Retarder, 13.80 gps water
	Tail	1549	1.24	14.50		1920 50:50 (poz/H) + Bentonite + Salt + Fluid Loss + Dispersant + LCM + Retarder, 5.55 gps water
	TOC: 5100		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 drilling lateral through the curve to TD. Run prod casing & cement.

10. Pressure Control Equipment:

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

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

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

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

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

Application to Drill
West Grama Ridge 7 Federal 3H
Cimarex Energy Co.
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Lea Co., NM

11. Proposed Mud Circulating System:

Depth	Mud Weight	Visc	Fluid Loss	Type Mud
0' to 1700'	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 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: 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.

Bell Canyon pay will be perforated and stimulated.

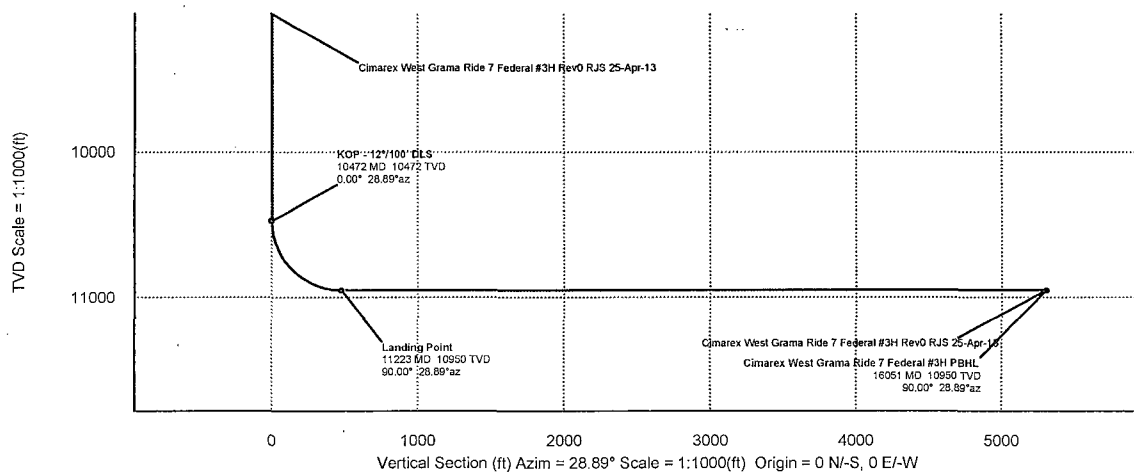
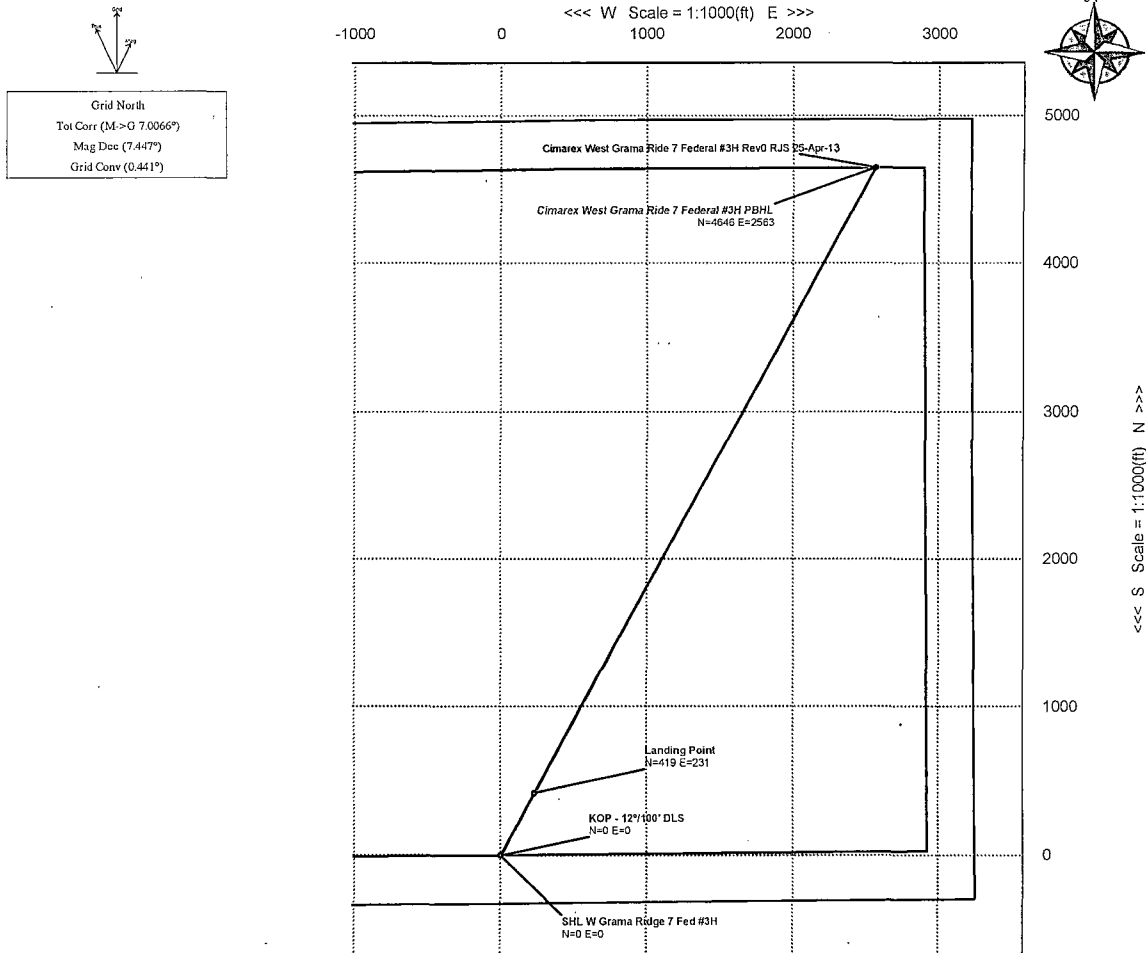
The proposed well will be tested and potential as **Oil**



Cimarex

PATHFINDER
A Schlumberger Company

WELL	W Grama Ride 7 Fed #3H				FIELD	NM Lea County				STRUCTURE	TBD			
Magnetic Parameters					Surface Location					Miscellaneous				
Model: BGGM 2012					Lat: N 32 23 58.574					NA83 New Mexico State Plane, Eastern Zone, US Feet				
Dip: 60.274°					Date: April 25, 2013					Grid Zone: Q 441°				
Mag Dec: 7.447°					FS: 48518 BxT					Scale Fact: 0.9999264				
					Northgr: 510183.92 RJLS					Plan: Grama Ridge 7 Federal #3H TVD Ref.				
					Long: W 103 30 40 117					Ground Level (3506ft above MSL)				
										Rev'd RJLS 25-Apr-13				
										Srvy Date: April 25, 2013				



Critical Point		Critical Points						
	MD	INCL	AZIM	TVD	VSEC	N(+) / S(-)	E(+) / W(-)	DLS
SHL W Grama Ridge 7 Fed #3H	0.00	0.00	28.89	0.00	0.00	0.00	0.00	
KOP - 12°/100' DLS	10472.00	0.00	28.89	10472.00	0.00	0.00	0.00	0.00
Landing Point	11222.84	90.00	28.89	10950.00	478.00	418.51	230.94	11.99
Cimarex West Grama Ride 7 Federal #3H PBHL	16050.72	90.00	28.89	10950.00	5305.88	4645.65	2563.27	0.00



Cimarex West Grama Ride 7 Federal #3H Proposal Report

(Non-Def Plan)



Report Date: April 25, 2013 - 06:25 PM
 Client: Cimarex
 Field: NM Lea County (NAD 83)
 Structure / Slot: TBD / Cimarex West Grama Ridge 7 Federal #3H
 Well: Cimarex West Grama Ride 7 Federal #3H
 Borehole: Original Borehole
 UWI / API#: Unknown / Unknown
 Survey Name: Cimarex West Grama Ride 7 Federal #3H Rev0 RJS 25-Apr-13
 Survey Date: April 25, 2013
 Tort / AHD / DDI / ERD Ratio: 90.004 * / 5305.884 ft / 5.845 / 0.485
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 23' 59.57378", W 103° 30' 40.11657"
 Location Grid N/E Y/X: N 510183.920 ftUS, E 795097.920 ftUS
 CRS Grid Convergence Angle: 0.4406 °
 Grid Scale Factor: 0.9998284

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 28.888 ° (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: Ground Level
 TVD Reference Elevation: 3506.000 ft above MSL
 Seabed / Ground Elevation: 3506.000 ft above MSL
 Magnetic Declination: 7.447 °
 Total Gravity Field Strength: 998,4921mgn (9.80665 Based)
 Total Magnetic Field Strength: 48518.869 nT
 Magnetic Dip Angle: 60.274 °
 Declination Date: April 25, 2013
 Magnetic Declination Model: BGGM 2012
 North Reference: Grid North
 Grid Convergence Used: 0.4406 °
 Total Corr Mag North->Grid North: 7.0066 °
 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 #3H	0.00	0.00	28.89	0.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	N/A
	100.00	0.00	28.89	100.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	200.00	0.00	28.89	200.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	300.00	0.00	28.89	300.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	400.00	0.00	28.89	400.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	500.00	0.00	28.89	500.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	600.00	0.00	28.89	600.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	700.00	0.00	28.89	700.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	800.00	0.00	28.89	800.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	900.00	0.00	28.89	900.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	1000.00	0.00	28.89	1000.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	1100.00	0.00	28.89	1100.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	1200.00	0.00	28.89	1200.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	1300.00	0.00	28.89	1300.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	1400.00	0.00	28.89	1400.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	1500.00	0.00	28.89	1500.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	1600.00	0.00	28.89	1600.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	1700.00	0.00	28.89	1700.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	1800.00	0.00	28.89	1800.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	1900.00	0.00	28.89	1900.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	2000.00	0.00	28.89	2000.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	2100.00	0.00	28.89	2100.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	2200.00	0.00	28.89	2200.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	2300.00	0.00	28.89	2300.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	2400.00	0.00	28.89	2400.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	2500.00	0.00	28.89	2500.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	2600.00	0.00	28.89	2600.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	2700.00	0.00	28.89	2700.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	2800.00	0.00	28.89	2800.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	2900.00	0.00	28.89	2900.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00

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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)
	8500.00	0.00	28.89	8500.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	8600.00	0.00	28.89	8600.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	8700.00	0.00	28.89	8700.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	8800.00	0.00	28.89	8800.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	8900.00	0.00	28.89	8900.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	9000.00	0.00	28.89	9000.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	9100.00	0.00	28.89	9100.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	9200.00	0.00	28.89	9200.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	9300.00	0.00	28.89	9300.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	9400.00	0.00	28.89	9400.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	9500.00	0.00	28.89	9500.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	9600.00	0.00	28.89	9600.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	9700.00	0.00	28.89	9700.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	9800.00	0.00	28.89	9800.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	9900.00	0.00	28.89	9900.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	10000.00	0.00	28.89	10000.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	10100.00	0.00	28.89	10100.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	10200.00	0.00	28.89	10200.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	10300.00	0.00	28.89	10300.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	10400.00	0.00	28.89	10400.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
KOP - 12"/100' DLS	10472.00	0.00	28.89	10472.00	0.00	0.00	0.00	510183.92	795097.92	N 32 23 59.57	W 103 30 40.12	0.00	0.00	0.00
	10500.00	3.36	28.89	10499.98	0.82	0.72	0.40	510184.64	795098.32	N 32 23 59.58	W 103 30 40.11	0.82	28.89	11.99
	10600.00	15.34	28.89	10598.48	17.04	14.92	8.23	510198.84	795106.15	N 32 23 59.72	W 103 30 40.02	17.04	28.89	11.99
	10700.00	27.33	28.89	10691.45	53.35	46.71	25.78	510230.63	795123.70	N 32 24 0.03	W 103 30 39.81	53.35	28.89	11.99
	10800.00	39.32	28.89	10774.86	108.19	94.72	52.27	510278.64	795150.19	N 32 24 0.51	W 103 30 39.50	108.19	28.89	11.99
	10900.00	51.30	28.89	10845.06	179.15	156.85	86.55	510340.77	795184.47	N 32 24 1.12	W 103 30 39.09	179.15	28.89	11.99
	11000.00	63.29	28.89	10898.99	263.14	230.40	127.13	510414.31	795225.05	N 32 24 1.84	W 103 30 38.61	263.14	28.89	11.99
	11100.00	75.28	28.89	10934.30	356.51	312.14	172.24	510496.05	795270.16	N 32 24 2.65	W 103 30 38.08	356.51	28.89	11.99
	11200.00	87.26	28.89	10949.45	455.17	398.52	219.91	510582.43	795317.82	N 32 24 3.50	W 103 30 37.52	455.17	28.89	11.99
Landing Point	11222.84	90.00	28.89	10950.00	478.00	418.51	230.94	510602.42	795328.85	N 32 24 3.70	W 103 30 37.39	478.00	28.89	11.99
	11300.00	90.00	28.89	10950.00	555.16	486.07	268.21	510669.98	795366.13	N 32 24 4.36	W 103 30 36.94	555.16	28.89	0.00
	11400.00	90.00	28.89	10950.00	655.16	573.62	316.53	510757.53	795414.44	N 32 24 5.23	W 103 30 36.37	655.16	28.89	0.00
	11500.00	90.00	28.89	10950.00	755.16	661.18	364.84	510845.09	795462.75	N 32 24 6.09	W 103 30 35.80	755.16	28.89	0.00
	11600.00	90.00	28.89	10950.00	855.16	748.73	413.15	510932.64	795511.06	N 32 24 6.95	W 103 30 35.23	855.16	28.89	0.00
	11700.00	90.00	28.89	10950.00	955.16	836.29	461.46	511020.19	795559.38	N 32 24 7.81	W 103 30 34.66	955.16	28.89	0.00
	11800.00	90.00	28.89	10950.00	1055.16	923.84	509.78	511107.75	795607.69	N 32 24 8.68	W 103 30 34.09	1055.16	28.89	0.00
	11900.00	90.00	28.89	10950.00	1155.16	1011.40	558.09	511195.30	795656.00	N 32 24 9.54	W 103 30 33.52	1155.16	28.89	0.00
	12000.00	90.00	28.89	10950.00	1255.16	1098.96	606.40	511282.85	795704.31	N 32 24 10.40	W 103 30 32.95	1255.16	28.89	0.00
	12100.00	90.00	28.89	10950.00	1355.16	1186.51	654.71	511370.41	795752.62	N 32 24 11.26	W 103 30 32.37	1355.16	28.89	0.00
	12200.00	90.00	28.89	10950.00	1455.16	1274.07	703.02	511457.96	795800.93	N 32 24 12.13	W 103 30 31.80	1455.16	28.89	0.00
	12300.00	90.00	28.89	10950.00	1555.16	1361.62	751.34	511545.52	795849.24	N 32 24 12.99	W 103 30 31.23	1555.16	28.89	0.00
	12400.00	90.00	28.89	10950.00	1655.16	1449.18	799.65	511633.07	795897.55	N 32 24 13.85	W 103 30 30.66	1655.16	28.89	0.00
	12500.00	90.00	28.89	10950.00	1755.16	1536.73	847.96	511720.62	795945.86	N 32 24 14.71	W 103 30 30.09	1755.16	28.89	0.00
	12600.00	90.00	28.89	10950.00	1855.16	1624.29	896.27	511808.18	795994.17	N 32 24 15.58	W 103 30 29.52	1855.16	28.89	0.00
	12700.00	90.00	28.89	10950.00	1955.16	1711.85	944.58	511895.73	796042.48	N 32 24 16.44	W 103 30 28.95	1955.16	28.89	0.00
	12800.00	90.00	28.89	10950.00	2055.16	1799.40	992.89	511983.29	796090.79	N 32 24 17.30	W 103 30 28.37	2055.16	28.89	0.00
	12900.00	90.00	28.89	10950.00	2155.16	1886.96	1041.20	512070.84	796139.10	N 32 24 18.17	W 103 30 27.80	2155.16	28.89	0.00
	13000.00	90.00	28.89	10950.00	2255.16	1974.51	1089.51	512158.40	796187.41	N 32 24 19.03	W 103 30 27.23	2255.16	28.89	0.00
	13100.00	90.00	28.89	10950.00	2355.16	2062.07	1137.82	512245.95	796235.72	N 32 24 19.89	W 103 30 26.66	2355.16	28.89	0.00
	13200.00	90.00	28.89	10950.00	2455.16	2149.63	1186.13	512333.51	796284.03	N 32 24 20.75	W 103 30 26.09	2455.16	28.89	0.00
	13300.00	90.00	28.89	10950.00	2555.16	2237.18	1234.44	512421.06	796332.34	N 32 24 21.62	W 103 30 25.52	2555.16	28.89	0.00
	13400.00	90.00	28.89	10950.00	2655.16	2324.74	1282.75	512508.62	796380.65	N 32 24 22.48	W 103 30 24.95	2655.16	28.89	0.00
	13500.00	90.00	28.89	10950.00	2755.16	2412.30	1331.06	512596.17	796428.96	N 32 24 23.34	W 103 30 24.38	2755.16	28.89	0.00
	13600.00	90.00	28.89	10950.00	2855.16	2499.85	1379.37	512683.73	796477.27	N 32 24 24.20	W 103 30 23.80	2855.16	28.89	0.00
	13700.00	90.00	28.89	10950.00	2955.16	2587.41	1427.68	512771.28	796525.58	N 32 24 25.07	W 103 30 23.23	2955.16	28.89	0.00

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")	Closure (ft)	Closure Azimuth (°)	DLS (%/100ft)
	13800.00	90.00	28.89	10950.00	3055.16	2674.97	1475.99	512858.84	796573.88	N 32 24 25.93	W 103 30 22.66	3055.16	28.89	0.00
	13900.00	90.00	28.89	10950.00	3155.16	2762.52	1524.30	512946.39	796622.19	N 32 24 26.79	W 103 30 22.09	3155.16	28.89	0.00
	14000.00	90.00	28.89	10950.00	3255.16	2850.08	1572.61	513033.95	796670.50	N 32 24 27.65	W 103 30 21.52	3255.16	28.89	0.00
	14100.00	90.00	28.89	10950.00	3355.16	2937.64	1620.92	513121.50	796718.81	N 32 24 28.52	W 103 30 20.95	3355.16	28.89	0.00
	14200.00	90.00	28.89	10950.00	3455.16	3025.19	1669.23	513209.06	796767.12	N 32 24 29.38	W 103 30 20.38	3455.16	28.89	0.00
	14300.00	90.00	28.89	10950.00	3555.16	3112.75	1717.54	513296.61	796815.42	N 32 24 30.24	W 103 30 19.80	3555.16	28.89	0.00
	14400.00	90.00	28.89	10950.00	3655.16	3200.31	1765.85	513384.17	796863.73	N 32 24 31.10	W 103 30 19.23	3655.16	28.89	0.00
	14500.00	90.00	28.89	10950.00	3755.16	3287.87	1814.15	513471.72	796912.04	N 32 24 31.97	W 103 30 18.66	3755.16	28.89	0.00
	14600.00	90.00	28.89	10950.00	3855.16	3375.42	1862.46	513559.28	796960.35	N 32 24 32.83	W 103 30 18.09	3855.16	28.89	0.00
	14700.00	90.00	28.89	10950.00	3955.16	3462.98	1910.77	513646.83	797008.65	N 32 24 33.69	W 103 30 17.52	3955.16	28.89	0.00
	14800.00	90.00	28.89	10950.00	4055.16	3550.54	1959.08	513734.39	797056.96	N 32 24 34.56	W 103 30 16.95	4055.16	28.89	0.00
	14900.00	90.00	28.89	10950.00	4155.16	3638.10	2007.39	513821.95	797105.27	N 32 24 35.42	W 103 30 16.38	4155.16	28.89	0.00
	15000.00	90.00	28.89	10950.00	4255.16	3725.65	2055.70	513909.50	797153.58	N 32 24 36.28	W 103 30 15.80	4255.16	28.89	0.00
	15100.00	90.00	28.89	10950.00	4355.16	3813.21	2104.00	513997.06	797201.88	N 32 24 37.14	W 103 30 15.23	4355.16	28.89	0.00
	15200.00	90.00	28.89	10950.00	4455.16	3900.77	2152.31	514084.61	797250.19	N 32 24 38.01	W 103 30 14.66	4455.16	28.89	0.00
	15300.00	90.00	28.89	10950.00	4555.16	3988.33	2200.62	514172.17	797298.50	N 32 24 38.87	W 103 30 14.09	4555.16	28.89	0.00
	15400.00	90.00	28.89	10950.00	4655.16	4075.89	2248.93	514259.73	797346.80	N 32 24 39.73	W 103 30 13.52	4655.16	28.89	0.00
	15500.00	90.00	28.89	10950.00	4755.16	4163.44	2297.23	514347.28	797395.11	N 32 24 40.59	W 103 30 12.95	4755.16	28.89	0.00
	15600.00	90.00	28.89	10950.00	4855.16	4251.00	2345.54	514434.84	797443.41	N 32 24 41.46	W 103 30 12.38	4855.16	28.89	0.00
	15700.00	90.00	28.89	10950.00	4955.16	4338.56	2393.85	514522.40	797491.72	N 32 24 42.32	W 103 30 11.80	4955.16	28.89	0.00
	15800.00	90.00	28.89	10950.00	5055.16	4426.12	2442.15	514609.95	797540.03	N 32 24 43.18	W 103 30 11.23	5055.16	28.89	0.00
	15900.00	90.00	28.89	10950.00	5155.16	4513.68	2490.46	514697.51	797588.33	N 32 24 44.04	W 103 30 10.66	5155.16	28.89	0.00
	16000.00	90.00	28.89	10950.00	5255.16	4601.24	2538.77	514785.07	797636.64	N 32 24 44.91	W 103 30 10.09	5255.16	28.89	0.00
Cimarex West Grama Ride 7 Federal #3H PBHL	16050.72	90.00	28.89	10950.00	5305.88	4645.65	2563.27	514829.48	797661.14	N 32 24 45.34	W 103 30 9.80	5305.88	28.89	0.00

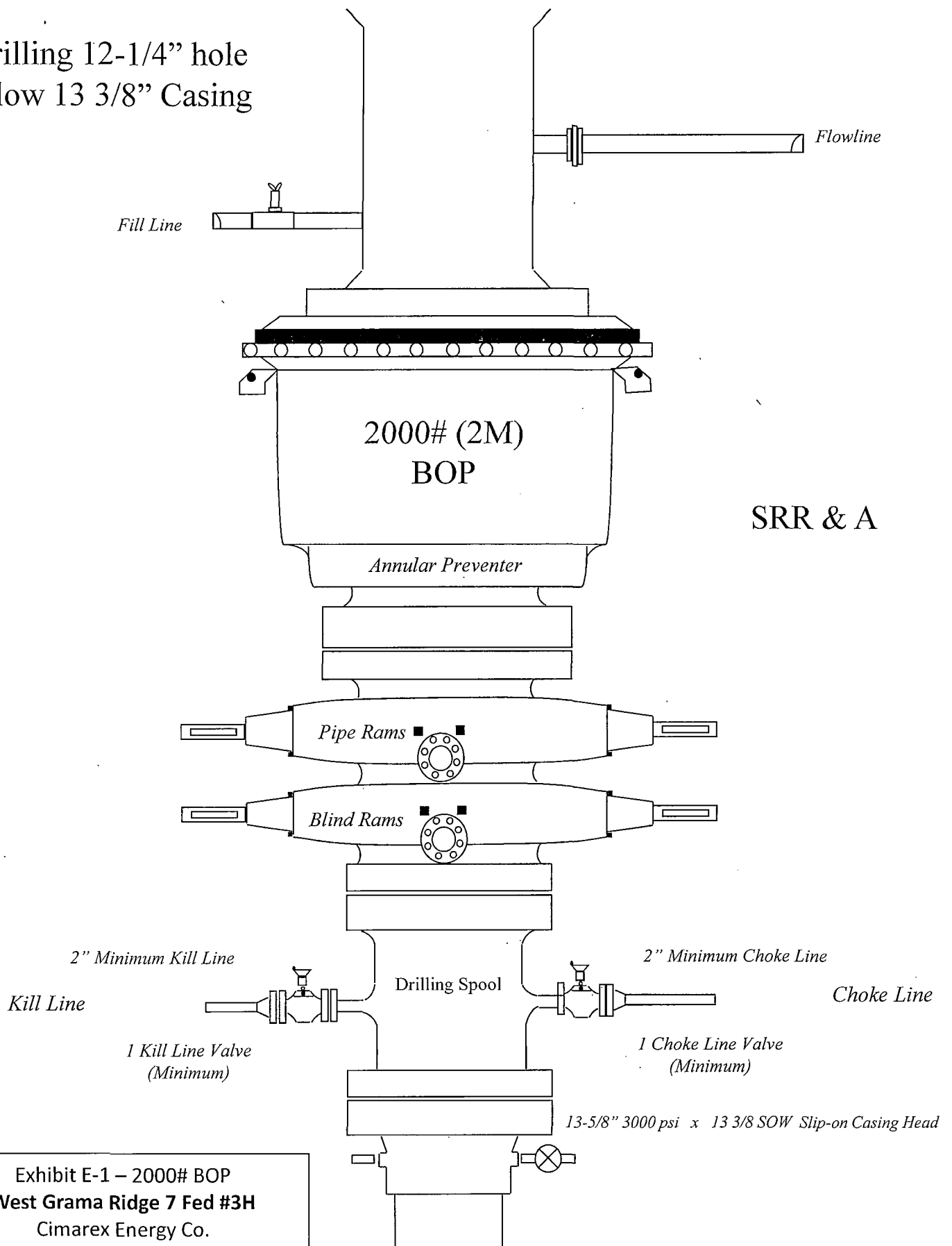
Survey Type: Non-Def Plan

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	16050.724	1/100.000	30.000	30.000	SLB_MWD-STD	Original Borehole / Cimarex West Grama Ride 7 Federal #3H

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



SRR & A

Exhibit E-1 – 2000# BOP
West Grama Ridge 7 Fed #3H
Cimarex Energy Co.
7-22S-34E
SHL 330 FSL & 1980 FWL
BHL 330 FNL & 1980 FWL
Lea County, NM

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

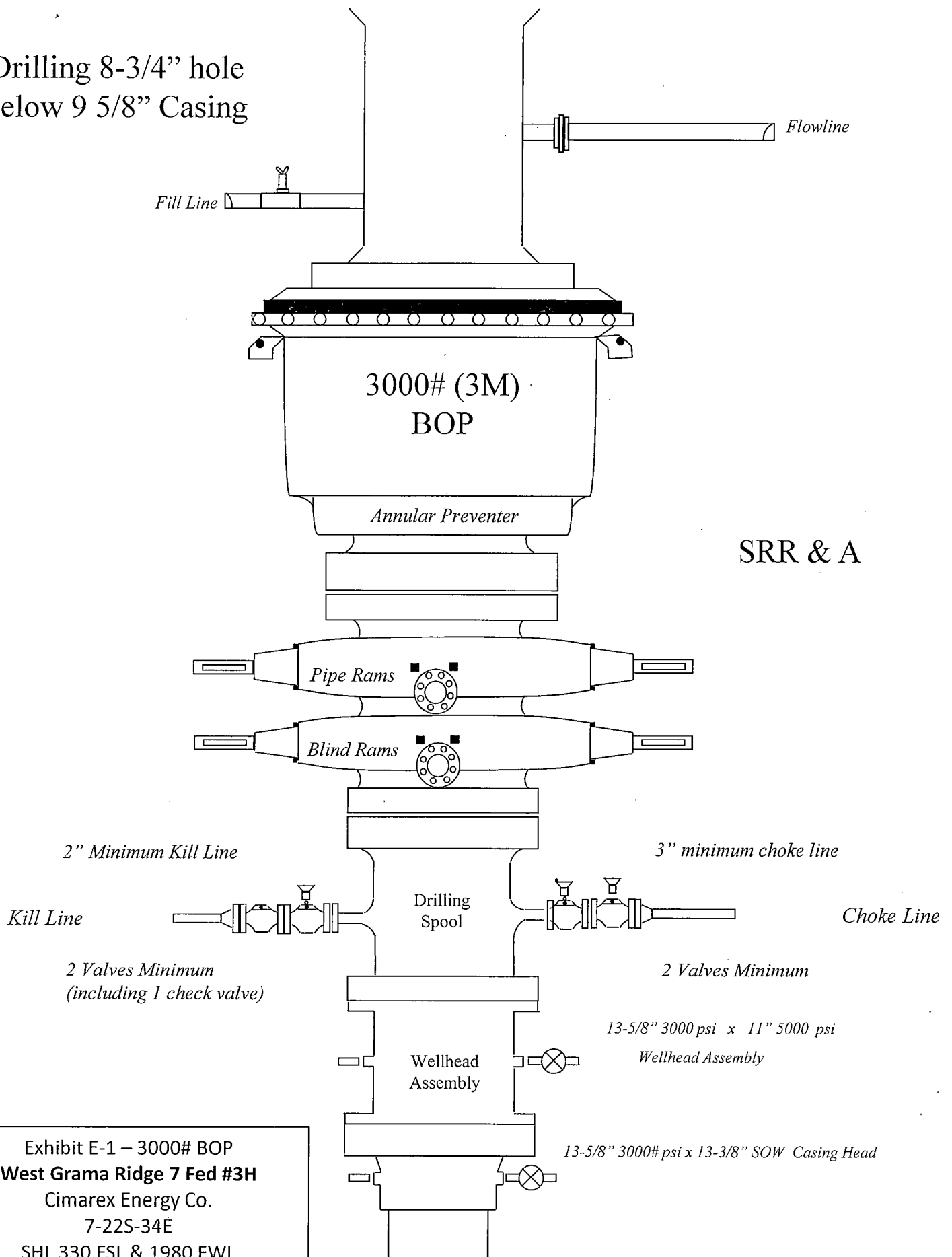
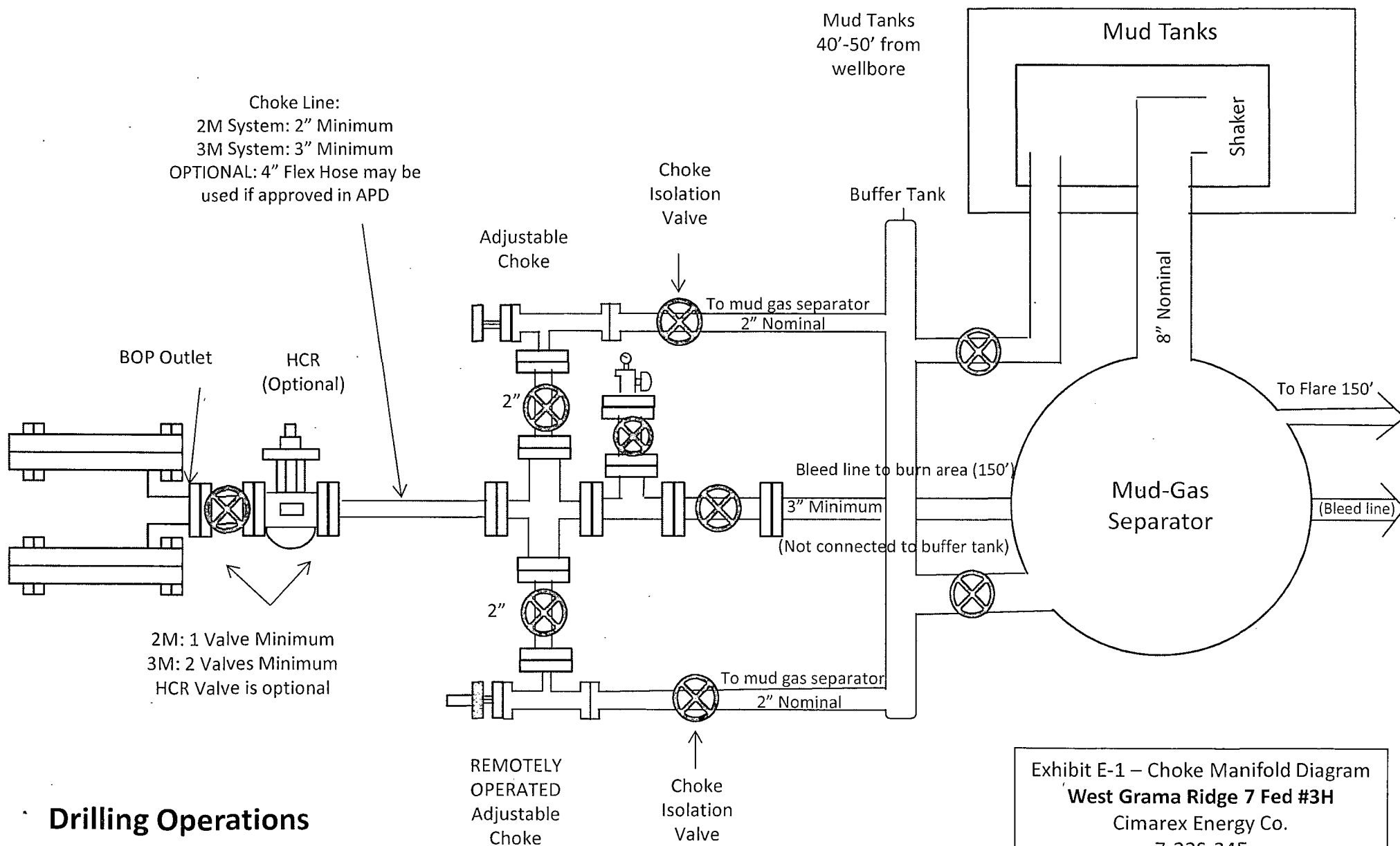


Exhibit E-1 – 3000# BOP
West Grama Ridge 7 Fed #3H
Cimarex Energy Co.
7-22S-34E
SHL 330 FSL & 1980 FWL
BHL 330 FNL & 1980 FWL
Lea County, NM



Drilling Operations Choke Manifold 2M/3M Service

Exhibit E-1 – Choke Manifold Diagram
West Grama Ridge 7 Fed #3H
 Cimarex Energy Co.
 7-22S-34E
 SHL 330 FSL & 1980 FWL
 BHL 330 FNL & 1980 FWL
 Lea County, NM

Exhibit F – Co-Flex Hose
West Grama Ridge 7 Fed #3H

Cimarex Energy Co.

7-22S-34E

SHL 330 FSL & 1980 FWL

BHL 330 FNL & 1980 FWL

Lea County, NM

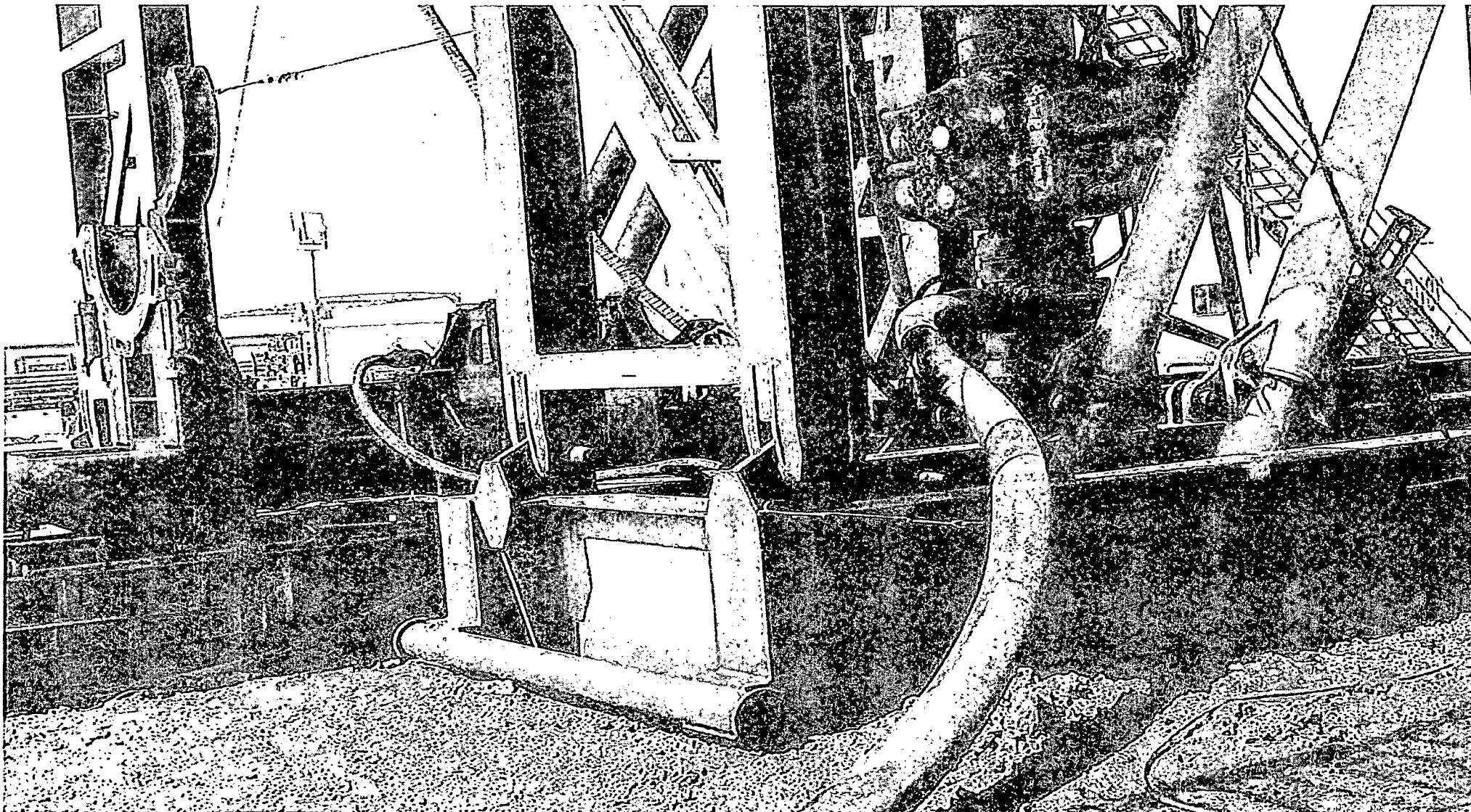


Exhibit F-1 – Co-Flex Hose Hydrostatic Test

West Grama Ridge 7 Fed #3H

Cimarex Energy Co.

7-22S-34E

SHL 330 FSL & 1980 FWL

BHL 330 FNL & 1980 FWL

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>[Signature]</i>

Exhibit F-1 – Co-Flex Hose Hydrostatic Test

West Grama Ridge 7 Fed #3H

Cimarex Energy Co.

7-22S-34E

SHL 330 FSL & 1980 FWL

BHL 330 FNL & 1980 FWL

Lea County, NM



Midwest Hose
& Specialty, Inc.

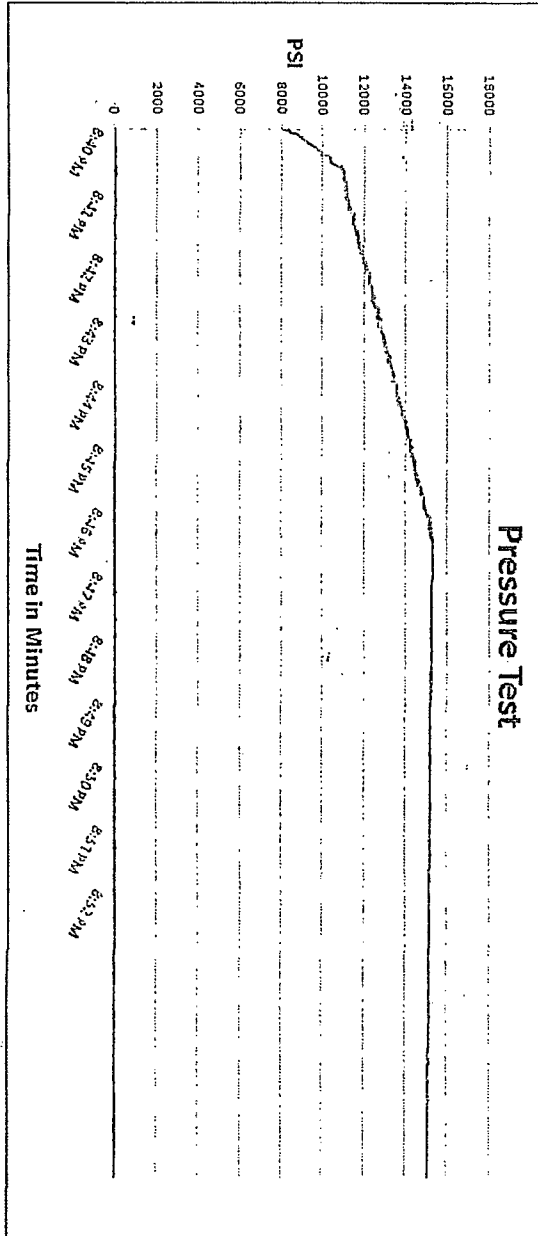
Internal Hydrostatic Test Graph

Customer: Houston

Pick Ticket #: 94260

March 3, 2011

Hose Specifications		Verification	
Hose Type	Length	Type of Fittings	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



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

Tested By: Zac McConnell

Approved By: Kim Thomas

[Signature]

[Signature]

Certificate of Conformity

Customer:	DEM	PO	ODYD-271
SPECIFICATIONS			
Sales Order	79793	Dated:	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>David Garcia</i>			3/8/2011



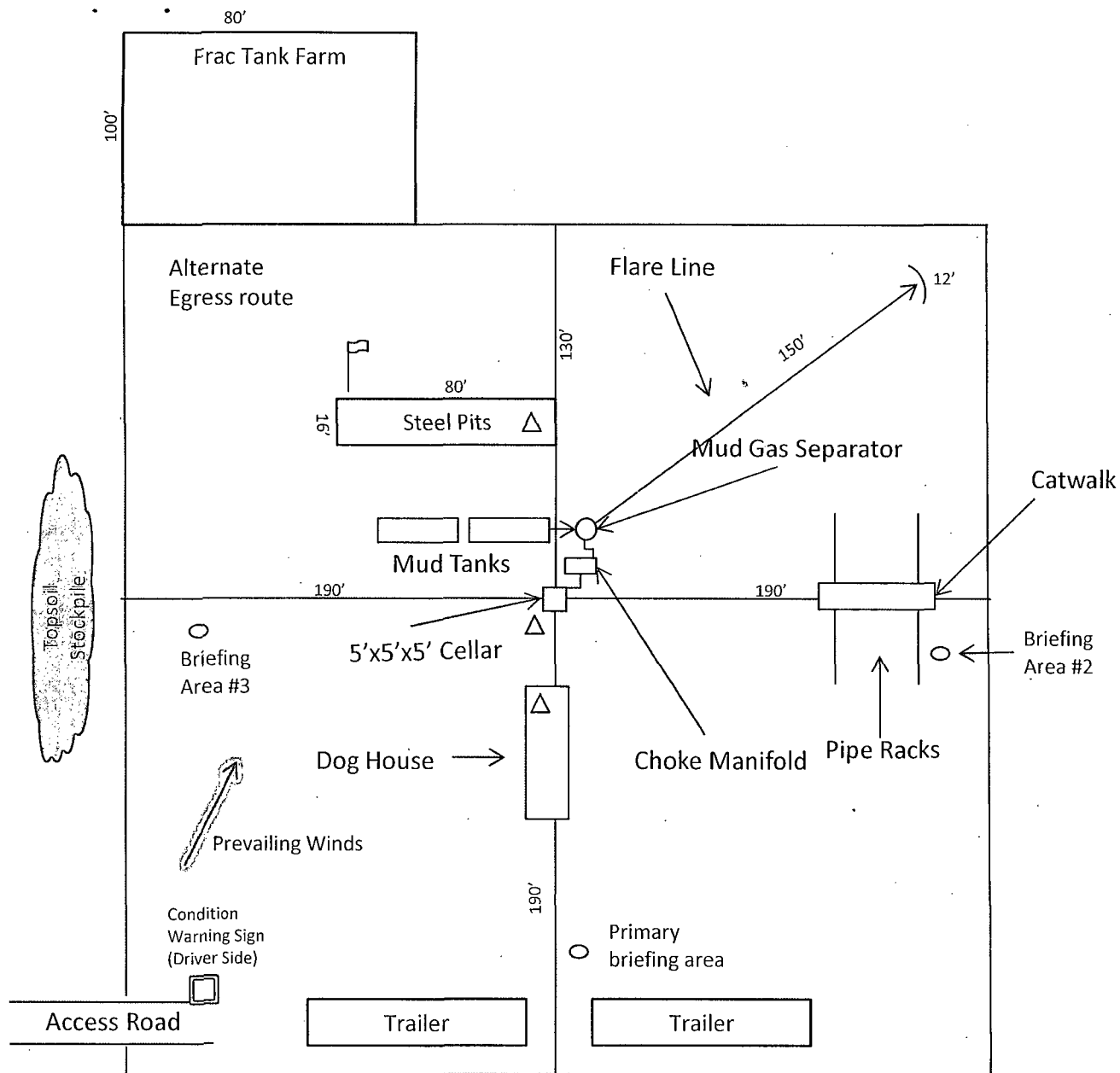
Midwest Hose
& Specialty, Inc.

Exhibit F -3- Co-Flex Hose
West Grama Ridge 7 Fed #3H
Cimarex Energy Co.
7-22S-34E
SHL 330 FSL & 1980 FWL
BHL 330 FNL & 1980 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 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)



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



Exhibit D – Rig Diagram
West Grama Ridge 7 Fed #2H
 Cimarex Energy Co.
 7-22S-34E
 SHL 330 FSL & 1980 FEL
 BHL 330 FNL & 1980 FEL
 Lea County, NM