

14-395

OCD Hobbs

HOBBS OCD

DEC 03 2014

RECEIVED

Form 3160-3
(March 2012)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

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

5. Lease Serial No.
SHL: NMNM0004452; BHL: NMNM057285

6. If Indian, Allottee or Tribe Name

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

8. Lease Name and Well No. **<313142>**
Mallon 27 Federal Com #2H

9. API Well No.
30025 **42315**

10. Field and Pool, or Exploratory
Lea
Wildcat Bone Spring **<37570>**

11. Sec., T. R. M. or Blk. and Survey and Area
27, 19S, 34E

12. County or Parish
Lea

13. State
NM

1a. Type of Work ☒ DRILL ☐ REENTER

1b. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone

2. Name of Operator

Cimarex Energy Co.

3a. Address

600 N. Marienfield St. Ste. 600 Midland Tx 79071

3b. Phone No. (include area code)

432-571-7800

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

At Surface 330 FSL & 1980 FEL, Sec. 27 **Unit J**

At proposed prod. Zone 2310 FS, 1900 FE, Sec. 22 **Unit J Bone Spring**

14. Distance in miles and direction from nearest town or post office*

Hobbs-NM is 23 miles to the East of the location.

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
NMNM0004452=440.00 acres
NMNM057285=1280.00 acres

17. Spacing Unit dedicated to this well
~~160.00~~
240

18. Distance from proposed* location to nearest well, drilling, completed, applied for, on this lease, ft.
1320' to 1H

19. Proposed Depth
Pilot Hole TD: 11,100
17,943 MD 10,840 TVD

20. BLM/BIA Bond No. on File
NM2575; NMB000835

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3714 GR

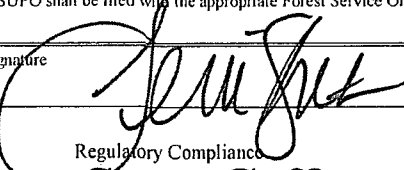
22. Approximate date work will start*
3/17/14

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 

Name (Printed/Typed)
Terri Stathem

Date
1/17/14

Title
Regulatory Compliance
Steve Caffey
FIELD MANAGER

Name (Printed/Typed)
Office **CARLSBAD FIELD OFFICE**

Date **NOV 21 2014**

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

APPROVAL FOR TWO YEARS

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

(Continued on page 2)

*(Instructions on page 2)

Capitan Controlled Water Basin

KZ
10/08/14

Approval Subject to General Requirements
& Special Stipulations Attached

SEE ATTACHED DEC 09 2014
CONDITIONS OF APPROVAL

Operator Certification Statement

Mallon 27 Federal Com #2H

Cimarex Energy Co.

UL: O, Sec. 27, 19S, 34E

Lea Co., NM

Operator's Representative

Cimarex Energy Co. of Colorado

600 N. Marienfeld St., Ste. 600

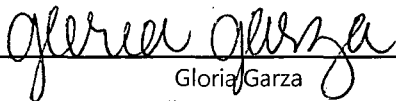
Midland, TX 79701

Office Phone: (432) 571-7800

CERTIFICATION: I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

Executed this 17 day of January, 2014

NAME:



Gloria Garza

TITLE: Regulatory Compliance

ADDRESS: 600 N. Marienfeld St. Ste. 600 Midland Tx 79071

TELEPHONE: 432-571-7800

EMAIL: ggarza@cimarex.com

Field Representative: Same as above

Application to Drill
Mallon 27 Federal Com #2H
 Cimarex Energy Co.
 UL: O, Sec. 27, 19S, 34E
 Lea Co., NM

HOBBS OGD

DEC 03 2014

In response to questions asked under Section II B of Bulletin NTL-6, the following information is provided for your consideration: **RECEIVED**

1. **Location:** SHL 330 FSL & 1980 FEL, Sec. 27
 BHL 2310 FS, 1900 FE, Sec. 22
2. **Elevation Above Sea Level:** 3,714' 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:** 17,943 MD 10,840 TVD Pilot Hole TD: 11,100
6. **Estimated Tops of Geological Markers:**

Formation	Est Top	Bearing
Rustler	1750	N/A
Salt	2120	N/A
Yates	3575	N/A
Queen	4575	N/A
Capitan Reef	5070	N/A
Cherry Canyon	5620	Hydrocarbons
Bone Spring	8250	Hydrocarbons
Upper Bone Spring Shale	8700	Hydrocarbons
1st BSS	9550	Hydrocarbons
2nd BSS	10020	Hydrocarbons
3rd BSS	10650	Hydrocarbons
Wolfcamp	10980	Hydrocarbons

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

7A. **OSE Ground Water Estimated Depth:** 150'

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 Buoyed Weight (lbs)	Buoyant Tension SF (1.8)
Surface	0	1800	1800	17 1/2	13-3/8"	54.50	J-55	ST&C	New	776	8.3	1.45		3.53	98,100	85,669	6.00
Intermediate	0	5600	5600	12 1/4	9-5/8"	40.00	J-55	LT&C	New	2912	10.0		1.34	1.36	224,000	189,801	2.74
Production	0	10403	10403	8 3/4	5-1/2"	17.00	L-80	LT&C	New	4868	9.0	1.29		1.59	184,280	158,959	2.13
Production	10403	17943	10840	8 3/4	5-1/2"	17.00	L-80	BT&C	New	5073	9.0	1.24		1.53	7,429	6,408	61.95

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
Mallon 27 Federal Com #2H
 Cimarex Energy Co.
 UL: O, Sec. 27, 19S, 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. During the running of the casing, the operator will stop and fill the casing as need to ensure it does not collapse.
	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	858	1.75	13.50		1500 Class C + Bentonite + Calcium Chloride + LCM, 8.829 gps water
	Tail	233	1.34	14.80		312 Class C + LCM, 6.320 gps water
	TOC: 0		45% Excess			Centralizers per Onshore Order 2.III.B.1f
Intermediate	Lead	1000	1.88	12.90		1880 35:65 (Poz:C) + Salt + Bentonite + LCM + Retarder, 9.650 gps water
	Tail	292	1.34	14.80		391 Class C + Retarder + LCM, 6.320 gps water
	TOC: 0		44% Excess			
Production	Lead	588	2.40	11.90		1410 35:65 (poz/H) + Salt + Sodium Metasilicate + Bentonite + Fluid Loss + Dispersant + LCM + Retarder, 13.800 gps water
	Tail	1802	1.24	14.50		2234 50:50(Poz:H) + Bentonite + Salt + Fluid Loss + Dispersant + LCM + Retarder, 5.550 gps water
	TOC: 5400		15% 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: 11,100'

KOP: 10,403'

EOC: 11,155'

Set OH mechanical whipstock w/ 647 ft of 2.875 tubing and pump 30 bbls of Mudpush @ 12 ppg, followed by 310 sks Type H cement, dispersant 0.080 gals/sk, retarder 0.045 gals/sk @ 17.50 ppg, 0.94 cuft/sk, & 0% excess from pilot hole TD to KOP. KO lateral and drill through the curve to TD. Run production csg to TD and cement.

Application to Drill
Mallon 27 Federal Com #2H
Cimarex Energy Co.
UL: O, Sec. 27, 19S, 34E
Lea Co., NM

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.

11. Proposed Mud Circulating System:

Depth	Mud Weight	Visc	Fluid Loss	Type Mud
0' to 1800'	7.80 - 8.30	28	NC	FW Spud Mud
1800' to 5600'	9.50 - 10.00	30-32	NC	Brine Water
5600' to 17943'	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 5600 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: 4995 psi

Estimated BHT: 167°

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.

3rd BSS pay will be perforated and stimulated.

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

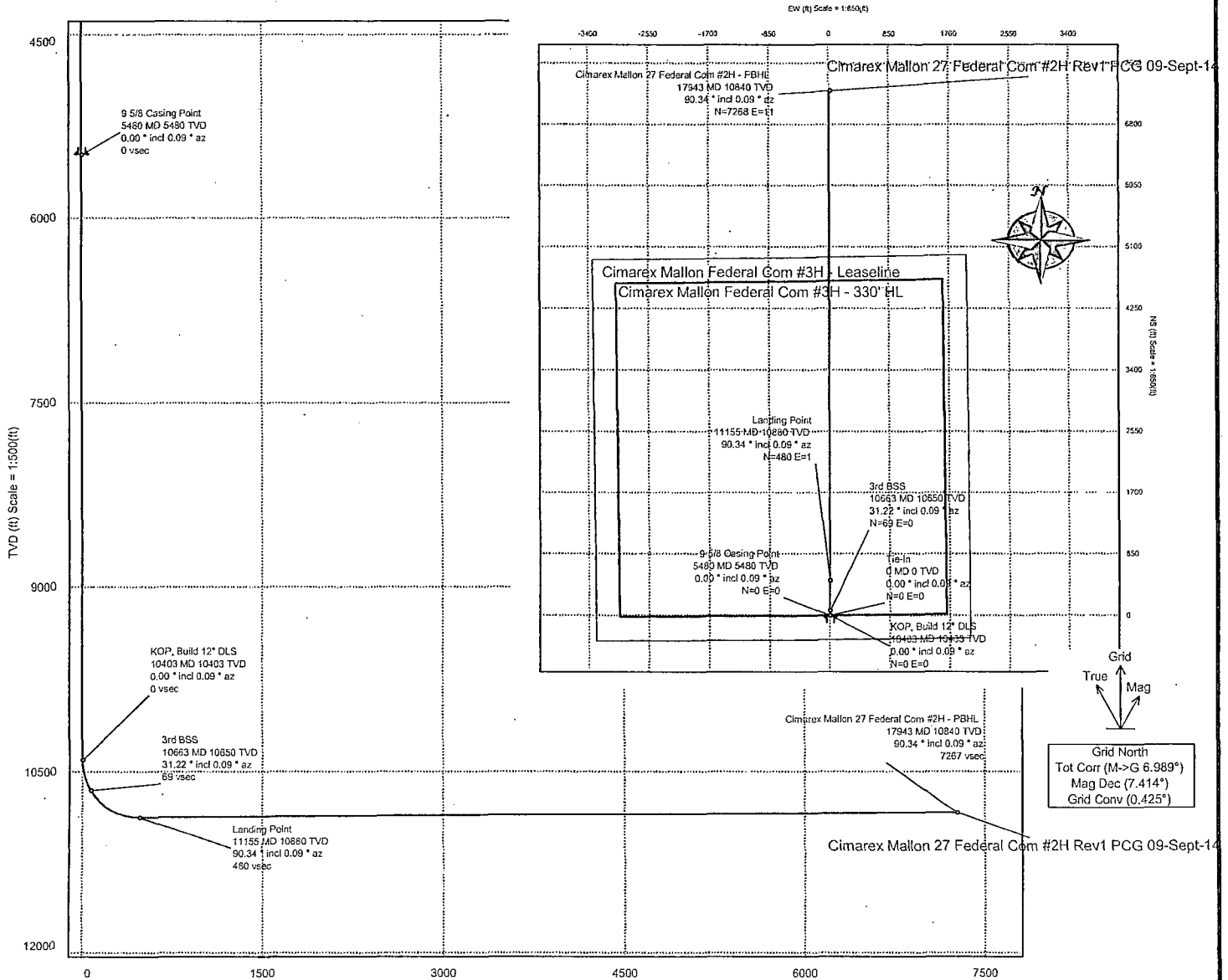


Cimarex

PATFINDER
A Schlumberger Company

Borehole:	Well:	Field:	Structure:
Original Borehole	Mallon 27 Federal Com # 2H	NM Lea County	TBD

Gravity & Magnetic Parameters	Surface Location	Miscellaneous
Model: BGGM 2012 Dip: 60.459° Date: 20-Nov-2013	NAD83 New Mexico State Plane, Eastern Zone, US Feet	Mallon 27
MagDec: 7.414° FS: 48575.45nT Gravity FS: 998.719mgN (9.80665 Based)	Lat: N 32 37 29.68 Northing: 591971.3RUS Grid Conv: 0.4245°	Slot: Federal Com # TVD Ref: Ground Level (3714ft above MSL)
	Lon: W 103 32 45.28 Easting: 783762.5RUS Scale Fact: 0.9997639	Plan: Rev1 PCG 09-Sept-14



Vertical Section (ft) Azim = 359.518° Scale = 1:500(ft) Origin = 0N/-S, 0E/-W

Critical Points								
Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
Tie-In	0.00	0.00	0.09	0.00	0.00	0.00	0.00	
9 5/8 Casing Point	5480.00	0.00	0.09	5480.00	0.00	0.00	0.00	0.00
KOP, Build 12° DLS	10402.50	0.00	0.09	10402.50	0.09	0.00	0.00	0.00
3rd BSS	10662.68	31.22	0.09	10650.00	69.14	69.15	0.11	12.00
Landing Point	11155.40	90.34	0.09	10880.00	480.32	480.34	0.75	12.00
Cimarex Mallon 27 Federal Com #2H - PBHL	17942.97	90.34	0.09	10840.00	7267.43	7267.79	11.30	0.00

CONTROLLED	
Plan ref	Rev1 PCG 09-Sept-14
Drawing ref	
Copy number	1 of 1
Date	09-Sep-2014
1	Originator
2	DE Sign Off Authority
3	D&M Line Manager
4	Client
Copy number for	



Cimarex Mallon 27 Federal Com #2H Rev1 PCG 09-Sept-14 Proposal Geodetic Report (Def Plan)



Report Date: September 09, 2014 - 01:26 PM
Client: Cimarex
Field: NM Lea County (NAD 83)
Structure / Slot: Cimarex Mallon 27 Federal Com #2H / Mallon 27 Federal Com #2H
Well: Mallon 27 Federal Com #2H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Mallon 27 Federal Com #2H Rev1 PCG 09-Sept-14
Survey Date: November 20, 2013
Tort / AHD / DDI / ERD Ratio: 90.345 ° / 7267.795 ft / 6.035 / 0.668
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 37' 29.67665", W 103° 32' 45.27632"
Location Grid N/E Y/X: N 591971.300 ftUS, E 783762.500 ftUS
CRS Grid Convergence Angle: 0.4245 °
Grid Scale Factor: 0.99997639
Version / Patch: 2.7.1043.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 359.518 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: Ground Level
TVD Reference Elevation: 3714.000 ft above MSL
Seabed / Ground Elevation: 3714.000 ft above MSL
Magnetic Declination: 7.414 °
Total Gravity Field Strength: 998.7194mgn (9.80665 Based)
Gravity Model: DOX
Total Magnetic Field Strength: 48575.454 nT
Magnetic Dip Angle: 60.459 °
Declination Date: November 20, 2013
Magnetic Declination Model: BGGM 2012
North Reference: Grid North
Grid Convergence Used: 0.4245 °
Total Corr Mag North->Grid North: 6.9899 °
Local Coord Referenced To: Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
Tie-In	0.00	0.00	0.09	0.00	0.00	0.00	0.00	N/A	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
9 5/8 Casing Point	5480.00	0.00	0.09	5480.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
KOP, Build 12°	10402.50	0.00	0.09	10402.50	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
DLS	10662.68	31.22	0.09	10650.00	69.14	69.15	0.11	12.00	592040.45	783762.61	N 32 37 30.36	W 103 32 45.27
3rd BSS	11155.40	90.34	0.09	10880.00	480.32	480.34	0.75	12.00	592451.63	783763.25	N 32 37 34.43	W 103 32 45.23
Landing Point												
Cimarex Mallon 27 Federal Com #2H - PBHL	17942.97	90.34	0.09	10840.00	7267.43	7267.79	11.30	0.00	599238.90	783773.80	N 32 38 41.58	W 103 32 44.51

Survey Type: 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	17942.973	1/100.000	30.000	30.000	SLB_MWD-STD	Original Borehole / Cimarex Mallon 27 Federal Com #2H Rev1



Cimarex Mallon 27 Federal Com #2H Rev1 PCG 09-Sept-14 Proposal
Geodetic Report 100ft Interpolated
(Def Plan)



Report Date: September 09, 2014 - 01:27 PM
Client: Cimarex
Field: NM Lea County (NAD 83)
Structure / Slot: Cimarex Mallon 27 Federal Com #2H / Mallon 27 Federal Com #2H
Well: Mallon 27 Federal Com #2H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Mallon 27 Federal Com #2H Rev1 PCG 09-Sept-14
Survey Date: November 20, 2013
Tort / AHD / DDI / ERD Ratio: 90.345 ° / 7267.795 ft / 6.035 / 0.668
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 37' 29.67665", W 103° 32' 45.27632"
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Total Corr Mag North->Grid North: 6.9899 °
Local Coord Referenced To: Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')
Tie-In	0.00	0.00	0.09	0.00	0.00	0.00	0.00	N/A	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	100.00	0.00	0.09	100.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	200.00	0.00	0.09	200.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	300.00	0.00	0.09	300.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	400.00	0.00	0.09	400.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	500.00	0.00	0.09	500.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	600.00	0.00	0.09	600.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	700.00	0.00	0.09	700.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	800.00	0.00	0.09	800.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	900.00	0.00	0.09	900.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	1000.00	0.00	0.09	1000.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	1100.00	0.00	0.09	1100.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	1200.00	0.00	0.09	1200.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	1300.00	0.00	0.09	1300.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	1400.00	0.00	0.09	1400.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	1500.00	0.00	0.09	1500.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	1600.00	0.00	0.09	1600.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	1700.00	0.00	0.09	1700.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	1800.00	0.00	0.09	1800.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	1900.00	0.00	0.09	1900.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	2000.00	0.00	0.09	2000.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	2100.00	0.00	0.09	2100.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')
	2200.00	0.00	0.09	2200.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	2300.00	0.00	0.09	2300.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	2400.00	0.00	0.09	2400.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	2500.00	0.00	0.09	2500.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	2600.00	0.00	0.09	2600.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	2700.00	0.00	0.09	2700.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	2800.00	0.00	0.09	2800.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	2900.00	0.00	0.09	2900.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	3000.00	0.00	0.09	3000.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	3100.00	0.00	0.09	3100.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	3200.00	0.00	0.09	3200.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	3300.00	0.00	0.09	3300.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	3400.00	0.00	0.09	3400.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	3500.00	0.00	0.09	3500.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	3600.00	0.00	0.09	3600.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	3700.00	0.00	0.09	3700.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	3800.00	0.00	0.09	3800.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	3900.00	0.00	0.09	3900.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	4000.00	0.00	0.09	4000.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	4100.00	0.00	0.09	4100.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	4200.00	0.00	0.09	4200.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	4300.00	0.00	0.09	4300.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	4400.00	0.00	0.09	4400.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	4500.00	0.00	0.09	4500.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	4600.00	0.00	0.09	4600.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	4700.00	0.00	0.09	4700.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	4800.00	0.00	0.09	4800.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	4900.00	0.00	0.09	4900.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	5000.00	0.00	0.09	5000.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	5100.00	0.00	0.09	5100.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	5200.00	0.00	0.09	5200.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	5300.00	0.00	0.09	5300.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	5400.00	0.00	0.09	5400.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
9 5/8 Casing Point	5480.00	0.00	0.09	5480.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	5500.00	0.00	0.09	5500.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	5600.00	0.00	0.09	5600.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	5700.00	0.00	0.09	5700.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	5800.00	0.00	0.09	5800.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	5900.00	0.00	0.09	5900.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	6000.00	0.00	0.09	6000.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	6100.00	0.00	0.09	6100.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	6200.00	0.00	0.09	6200.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	6300.00	0.00	0.09	6300.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	6400.00	0.00	0.09	6400.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	6500.00	0.00	0.09	6500.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	6600.00	0.00	0.09	6600.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28
	6700.00	0.00	0.09	6700.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N 32 37 29.68	W 103 32 45.28

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)		Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	6800.00	0.00	0.09	6800.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	6900.00	0.00	0.09	6900.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	7000.00	0.00	0.09	7000.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	7100.00	0.00	0.09	7100.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	7200.00	0.00	0.09	7200.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	7300.00	0.00	0.09	7300.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	7400.00	0.00	0.09	7400.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	7500.00	0.00	0.09	7500.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	7600.00	0.00	0.09	7600.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	7700.00	0.00	0.09	7700.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	7800.00	0.00	0.09	7800.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	7900.00	0.00	0.09	7900.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	8000.00	0.00	0.09	8000.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	8100.00	0.00	0.09	8100.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	8200.00	0.00	0.09	8200.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	8300.00	0.00	0.09	8300.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	8400.00	0.00	0.09	8400.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	8500.00	0.00	0.09	8500.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	8600.00	0.00	0.09	8600.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	8700.00	0.00	0.09	8700.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	8800.00	0.00	0.09	8800.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	8900.00	0.00	0.09	8900.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	9000.00	0.00	0.09	9000.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	9100.00	0.00	0.09	9100.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	9200.00	0.00	0.09	9200.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	9300.00	0.00	0.09	9300.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	9400.00	0.00	0.09	9400.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	9500.00	0.00	0.09	9500.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	9600.00	0.00	0.09	9600.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	9700.00	0.00	0.09	9700.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	9800.00	0.00	0.09	9800.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	9900.00	0.00	0.09	9900.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	10000.00	0.00	0.09	10000.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	10100.00	0.00	0.09	10100.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	10200.00	0.00	0.09	10200.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	10300.00	0.00	0.09	10300.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	10400.00	0.00	0.09	10400.00	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
KOP, Build 12° DLS	10402.50	0.00	0.09	10402.50	0.00	0.00	0.00	0.00	591971.30	783762.50	N	32 37 29.68	W 103 32 45.28
	10500.00	11.70	0.09	10499.32	9.92	9.92	0.02	12.00	591981.22	783762.52	N	32 37 29.77	W 103 32 45.28
	10600.00	23.70	0.09	10594.42	40.26	40.26	0.06	12.00	592011.56	783762.56	N	32 37 30.08	W 103 32 45.27
3rd BSS	10662.68	31.22	0.09	10650.00	69.14	69.15	0.11	12.00	592040.45	783762.61	N	32 37 30.36	W 103 32 45.27
	10700.00	35.70	0.09	10681.12	89.71	89.72	0.14	12.00	592061.01	783762.64	N	32 37 30.56	W 103 32 45.27
	10800.00	47.70	0.09	10755.66	156.10	156.11	0.25	12.00	592127.41	783762.75	N	32 37 31.22	W 103 32 45.26
	10900.00	59.69	0.09	10814.76	236.54	236.55	0.37	12.00	592207.85	783762.87	N	32 37 32.02	W 103 32 45.25
	11000.00	71.69	0.09	10855.84	327.51	327.52	0.51	12.00	592298.81	783763.01	N	32 37 32.92	W 103 32 45.24
	11100.00	83.69	0.09	10877.12	425.02	425.05	0.67	12.00	592396.33	783763.17	N	32 37 33.88	W 103 32 45.23

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
Landing Point	11155.40	90.34	0.09	10880.00	480.32	480.34	0.75	12.00	592451.63	783763.25	N 32 37 34.43	W 103 32 45.23
	11200.00	90.34	0.09	10879.74	524.91	524.94	0.82	0.00	592496.23	783763.32	N 32 37 34.87	W 103 32 45.22
	11300.00	90.34	0.09	10879.14	624.91	624.94	0.98	0.00	592596.22	783763.48	N 32 37 35.86	W 103 32 45.21
	11400.00	90.34	0.09	10878.55	724.90	724.93	1.14	0.00	592696.22	783763.64	N 32 37 36.85	W 103 32 45.20
	11500.00	90.34	0.09	10877.96	824.89	824.93	1.30	0.00	592796.21	783763.80	N 32 37 37.84	W 103 32 45.19
	11600.00	90.34	0.09	10877.36	924.89	924.93	1.45	0.00	592896.21	783763.95	N 32 37 38.83	W 103 32 45.18
	11700.00	90.34	0.09	10876.77	1024.88	1024.93	1.61	0.00	592996.20	783764.11	N 32 37 39.82	W 103 32 45.17
	11800.00	90.34	0.09	10876.18	1124.87	1124.93	1.77	0.00	593096.20	783764.27	N 32 37 40.81	W 103 32 45.16
	11900.00	90.34	0.09	10875.58	1224.87	1224.93	1.92	0.00	593196.19	783764.42	N 32 37 41.80	W 103 32 45.15
	12000.00	90.34	0.09	10874.99	1324.86	1324.92	2.08	0.00	593296.19	783764.58	N 32 37 42.79	W 103 32 45.14
	12100.00	90.34	0.09	10874.40	1424.85	1424.92	2.24	0.00	593396.19	783764.74	N 32 37 43.78	W 103 32 45.13
	12200.00	90.34	0.09	10873.81	1524.85	1524.92	2.39	0.00	593496.18	783764.89	N 32 37 44.76	W 103 32 45.12
	12300.00	90.34	0.09	10873.22	1624.84	1624.92	2.55	0.00	593596.18	783765.05	N 32 37 45.75	W 103 32 45.11
	12400.00	90.34	0.09	10872.62	1724.83	1724.92	2.71	0.00	593696.17	783765.21	N 32 37 46.74	W 103 32 45.10
	12500.00	90.34	0.09	10872.03	1824.83	1824.91	2.86	0.00	593796.17	783765.36	N 32 37 47.73	W 103 32 45.08
	12600.00	90.34	0.09	10871.44	1924.82	1924.91	3.02	0.00	593896.16	783765.52	N 32 37 48.72	W 103 32 45.07
	12700.00	90.34	0.09	10870.85	2024.81	2024.91	3.17	0.00	593996.16	783765.67	N 32 37 49.71	W 103 32 45.06
	12800.00	90.34	0.09	10870.26	2124.81	2124.91	3.33	0.00	594096.15	783765.83	N 32 37 50.70	W 103 32 45.05
	12900.00	90.34	0.09	10869.67	2224.80	2224.91	3.49	0.00	594196.15	783765.99	N 32 37 51.69	W 103 32 45.04
	13000.00	90.34	0.09	10869.07	2324.79	2324.90	3.64	0.00	594296.15	783766.14	N 32 37 52.68	W 103 32 45.03
	13100.00	90.34	0.09	10868.48	2424.79	2424.90	3.80	0.00	594396.14	783766.30	N 32 37 53.67	W 103 32 45.02
	13200.00	90.34	0.09	10867.89	2524.78	2524.90	3.96	0.00	594496.14	783766.46	N 32 37 54.66	W 103 32 45.01
	13300.00	90.34	0.09	10867.30	2624.77	2624.90	4.11	0.00	594596.13	783766.61	N 32 37 55.65	W 103 32 45.00
	13400.00	90.34	0.09	10866.71	2724.77	2724.90	4.27	0.00	594696.13	783766.77	N 32 37 56.64	W 103 32 44.99
	13500.00	90.34	0.09	10866.12	2824.76	2824.90	4.42	0.00	594796.12	783766.92	N 32 37 57.63	W 103 32 44.98
	13600.00	90.34	0.09	10865.53	2924.75	2924.89	4.58	0.00	594896.12	783767.08	N 32 37 58.62	W 103 32 44.97
	13700.00	90.34	0.09	10864.94	3024.74	3024.89	4.74	0.00	594996.11	783767.24	N 32 37 59.61	W 103 32 44.96
	13800.00	90.34	0.09	10864.35	3124.74	3124.89	4.89	0.00	595096.11	783767.39	N 32 38 0.59	W 103 32 44.95
	13900.00	90.34	0.09	10863.76	3224.73	3224.89	5.05	0.00	595196.11	783767.55	N 32 38 1.58	W 103 32 44.94
	14000.00	90.34	0.09	10863.17	3324.72	3324.89	5.20	0.00	595296.10	783767.70	N 32 38 2.57	W 103 32 44.93
	14100.00	90.34	0.09	10862.58	3424.72	3424.88	5.36	0.00	595396.10	783767.86	N 32 38 3.56	W 103 32 44.92
	14200.00	90.34	0.09	10861.99	3524.71	3524.88	5.51	0.00	595496.09	783768.01	N 32 38 4.55	W 103 32 44.91
	14300.00	90.34	0.09	10861.40	3624.70	3624.88	5.67	0.00	595596.09	783768.17	N 32 38 5.54	W 103 32 44.90
	14400.00	90.34	0.09	10860.81	3724.70	3724.88	5.82	0.00	595696.08	783768.32	N 32 38 6.53	W 103 32 44.89
	14500.00	90.34	0.09	10860.22	3824.69	3824.88	5.98	0.00	595796.08	783768.48	N 32 38 7.52	W 103 32 44.87
	14600.00	90.34	0.09	10859.63	3924.68	3924.87	6.14	0.00	595896.07	783768.64	N 32 38 8.51	W 103 32 44.86
	14700.00	90.34	0.09	10859.04	4024.68	4024.87	6.29	0.00	595996.07	783768.79	N 32 38 9.50	W 103 32 44.85
	14800.00	90.34	0.09	10858.45	4124.67	4124.87	6.45	0.00	596096.07	783768.95	N 32 38 10.49	W 103 32 44.84
	14900.00	90.34	0.09	10857.86	4224.66	4224.87	6.60	0.00	596196.06	783769.10	N 32 38 11.48	W 103 32 44.83
	15000.00	90.34	0.09	10857.28	4324.66	4324.87	6.76	0.00	596296.06	783769.26	N 32 38 12.47	W 103 32 44.82
	15100.00	90.34	0.09	10856.69	4424.65	4424.87	6.91	0.00	596396.05	783769.41	N 32 38 13.46	W 103 32 44.81
	15200.00	90.34	0.09	10856.10	4524.64	4524.86	7.07	0.00	596496.05	783769.57	N 32 38 14.45	W 103 32 44.80
	15300.00	90.34	0.09	10855.51	4624.64	4624.86	7.22	0.00	596596.04	783769.72	N 32 38 15.44	W 103 32 44.79
	15400.00	90.34	0.09	10854.92	4724.63	4724.86	7.38	0.00	596696.04	783769.88	N 32 38 16.42	W 103 32 44.78
	15500.00	90.34	0.09	10854.33	4824.62	4824.86	7.53	0.00	596796.03	783770.03	N 32 38 17.41	W 103 32 44.77
	15600.00	90.34	0.09	10853.74	4924.62	4924.86	7.69	0.00	596896.03	783770.19	N 32 38 18.40	W 103 32 44.76
	15700.00	90.34	0.09	10853.16	5024.61	5024.85	7.84	0.00	596996.03	783770.34	N 32 38 19.39	W 103 32 44.75
	15800.00	90.34	0.09	10852.57	5124.60	5124.85	8.00	0.00	597096.02	783770.50	N 32 38 20.38	W 103 32 44.74

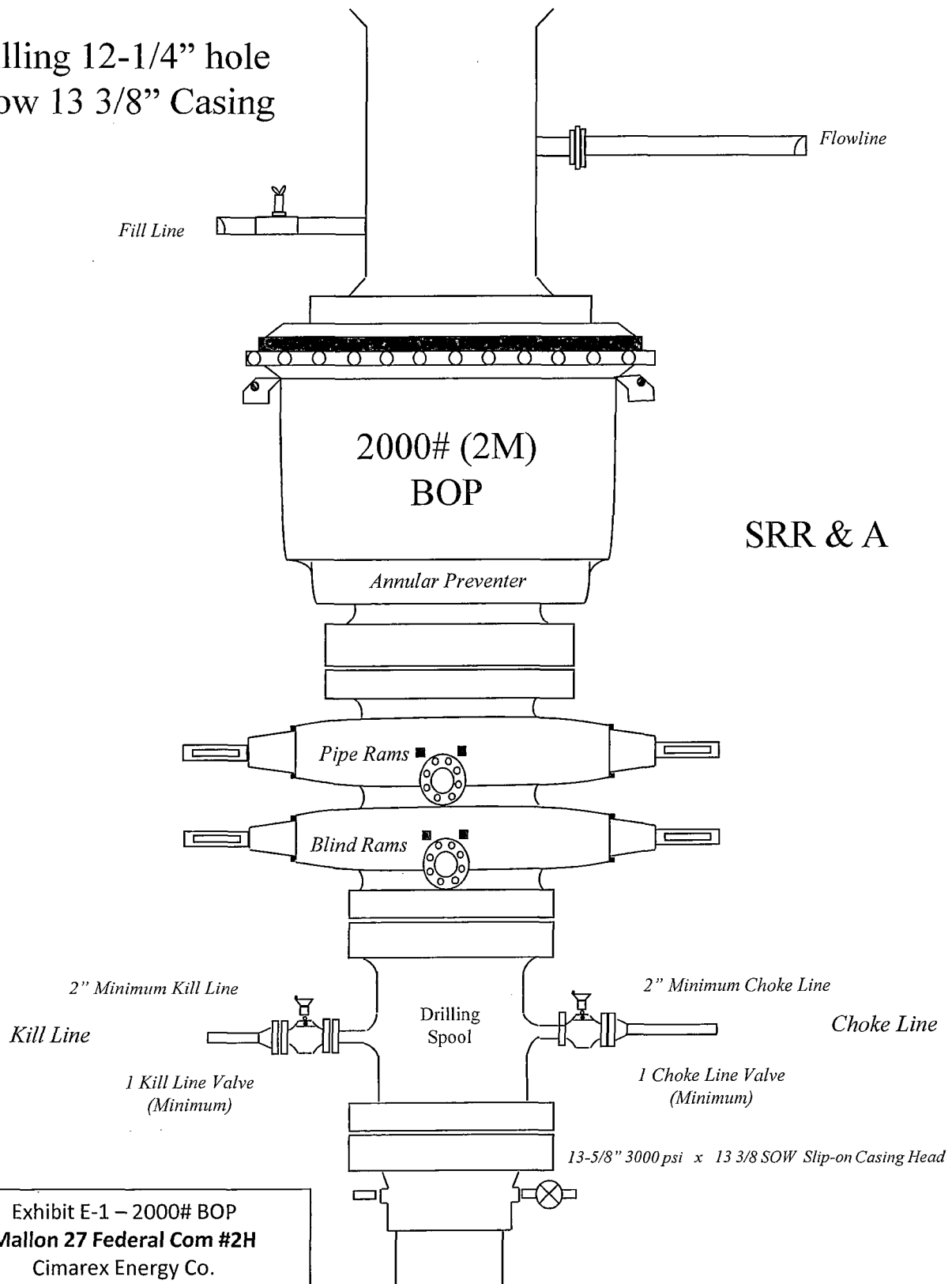
Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	15900.00	90.34	0.09	10851.98	5224.60	5224.85	8.15	0.00	597196.02	783770.65	N 32 38 21.37	W 103 32 44.73
	16000.00	90.34	0.09	10851.39	5324.59	5324.85	8.31	0.00	597296.01	783770.80	N 32 38 22.36	W 103 32 44.72
	16100.00	90.34	0.09	10850.81	5424.58	5424.85	8.46	0.00	597396.01	783770.96	N 32 38 23.35	W 103 32 44.71
	16200.00	90.34	0.09	10850.22	5524.58	5524.85	8.61	0.00	597496.00	783771.11	N 32 38 24.34	W 103 32 44.70
	16300.00	90.34	0.09	10849.63	5624.57	5624.84	8.77	0.00	597596.00	783771.27	N 32 38 25.33	W 103 32 44.69
	16400.00	90.34	0.09	10849.04	5724.56	5724.84	8.92	0.00	597696.00	783771.42	N 32 38 26.32	W 103 32 44.68
	16500.00	90.34	0.09	10848.46	5824.56	5824.84	9.08	0.00	597795.99	783771.58	N 32 38 27.31	W 103 32 44.67
	16600.00	90.34	0.09	10847.87	5924.55	5924.84	9.23	0.00	597895.99	783771.73	N 32 38 28.30	W 103 32 44.65
	16700.00	90.34	0.09	10847.28	6024.54	6024.84	9.39	0.00	597995.98	783771.89	N 32 38 29.29	W 103 32 44.64
	16800.00	90.34	0.09	10846.70	6124.54	6124.83	9.54	0.00	598095.98	783772.04	N 32 38 30.28	W 103 32 44.63
	16900.00	90.34	0.09	10846.11	6224.53	6224.83	9.69	0.00	598195.97	783772.19	N 32 38 31.27	W 103 32 44.62
	17000.00	90.34	0.09	10845.52	6324.52	6324.83	9.85	0.00	598295.97	783772.35	N 32 38 32.26	W 103 32 44.61
	17100.00	90.34	0.09	10844.94	6424.52	6424.83	10.00	0.00	598395.96	783772.50	N 32 38 33.24	W 103 32 44.60
	17200.00	90.34	0.09	10844.35	6524.51	6524.83	10.16	0.00	598495.96	783772.66	N 32 38 34.23	W 103 32 44.59
	17300.00	90.34	0.09	10843.77	6624.50	6624.83	10.31	0.00	598595.96	783772.81	N 32 38 35.22	W 103 32 44.58
	17400.00	90.34	0.09	10843.18	6724.50	6724.82	10.47	0.00	598695.95	783772.96	N 32 38 36.21	W 103 32 44.57
	17500.00	90.34	0.09	10842.59	6824.49	6824.82	10.62	0.00	598795.95	783773.12	N 32 38 37.20	W 103 32 44.56
	17600.00	90.34	0.09	10842.01	6924.48	6924.82	10.77	0.00	598895.94	783773.27	N 32 38 38.19	W 103 32 44.55
	17700.00	90.34	0.09	10841.42	7024.48	7024.82	10.93	0.00	598995.94	783773.43	N 32 38 39.18	W 103 32 44.54
	17800.00	90.34	0.09	10840.84	7124.47	7124.82	11.08	0.00	599095.93	783773.58	N 32 38 40.17	W 103 32 44.53
	17900.00	90.34	0.09	10840.25	7224.46	7224.81	11.23	0.00	599195.93	783773.73	N 32 38 41.16	W 103 32 44.52
Cimarex Mallon 27 Federal Com #2H - PBHL	17942.97	90.34	0.09	10840.00	7267.43	7267.79	11.30	0.00	599238.90	783773.80	N 32 38 41.58	W 103 32 44.51

Survey Type: 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	17942.973	1/100.000	30.000	30.000	SLB_MWD-STD	Original Borehole / Cimarex Mallon 27 Federal Com #2H Rev1

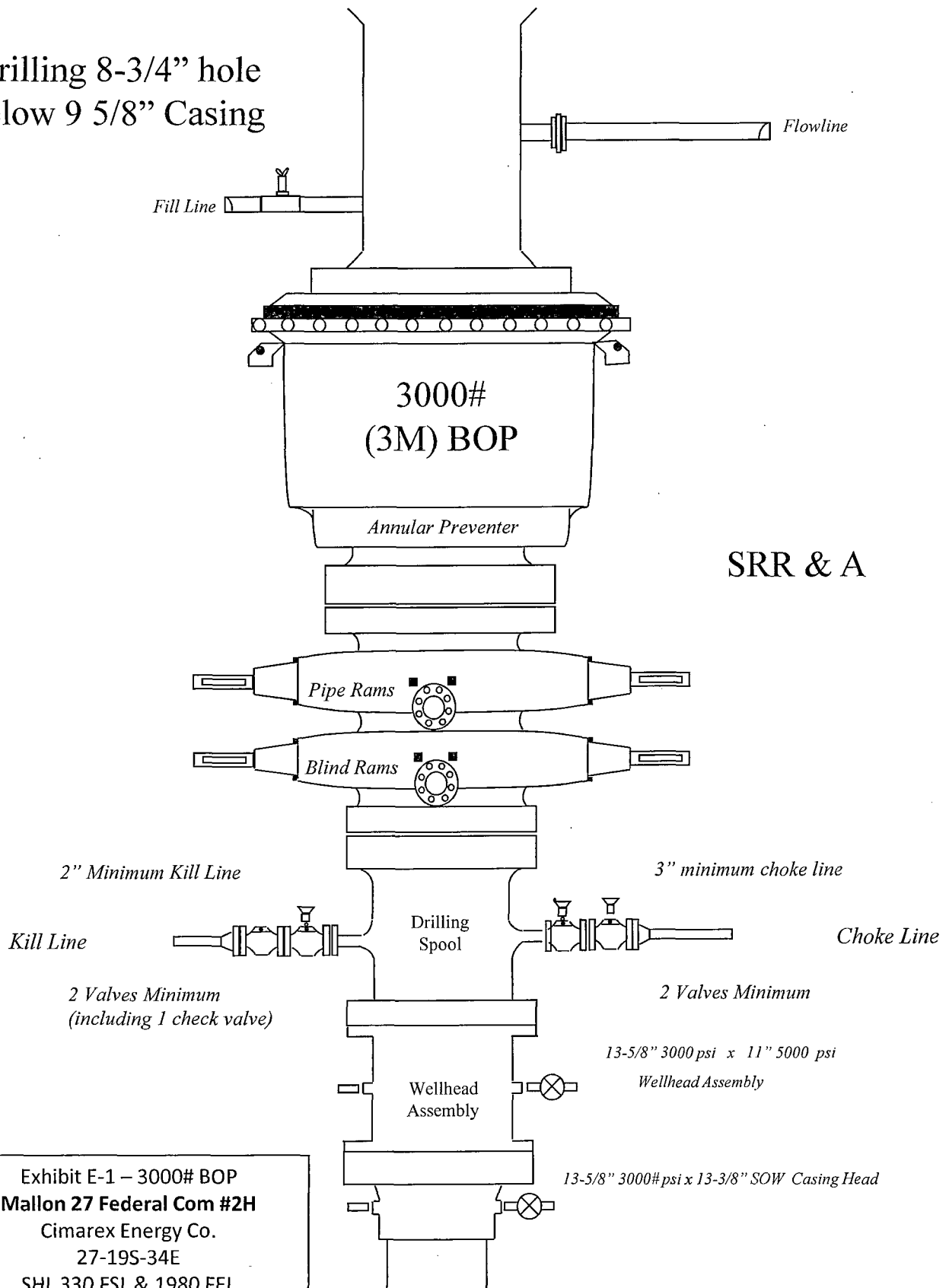
Drilling 12-1/4" hole
below 13 3/8" Casing



SRR & A

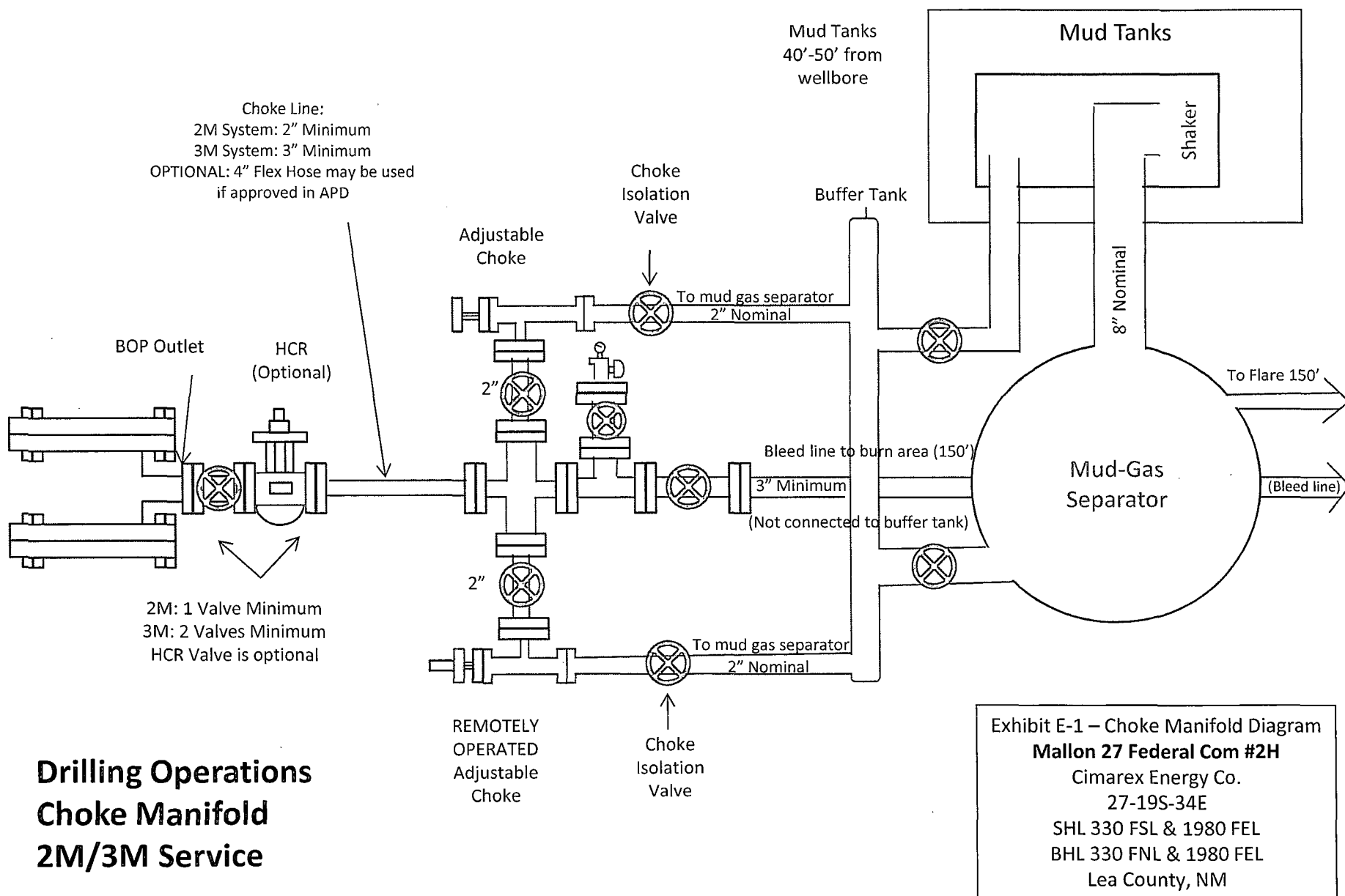
Exhibit E-1 – 2000# BOP
Mallon 27 Federal Com #2H
Cimarex Energy Co.
27-19S-34E
SHL 330 FSL & 1980 FEL
BHL 330 FNL & 1980 FEL
Lea County, NM

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



SRR & A

Exhibit E-1 – 3000# BOP
Mallon 27 Federal Com #2H
Cimarex Energy Co.
27-19S-34E
SHL 330 FSL & 1980 FEL
BHL 330 FNL & 1980 FEL
Lea County, NM



Drilling Operations Choke Manifold 2M/3M Service

Exhibit F-1 - Co-Flex Hose Hydrostatic Test

Mallon 27 Federal Com #2H

Cimarex Energy Co.

27-19S-34E

SHL 330 FSL & 1980 FEL

BHL 330 FNL & 1980 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>[Signature]</i>	



Midwest Hose
& Specialty, Inc.

Internal Hydrostatic Test Graph

Customer: Houston

Pick Ticket #: 94260

March 3, 2011

Hose Specifications

Hose Type

C&K

LD

4"

Working Pressure

10000 PSI

Length

45'

O.D.

6.09"

Burst Pressure

Standard Safety Multiplier/Applic

Verification

Type of Fittings

41/16 10K

Die Size

6.38"

Hose Serial #

5544

Caulking Method

Swage

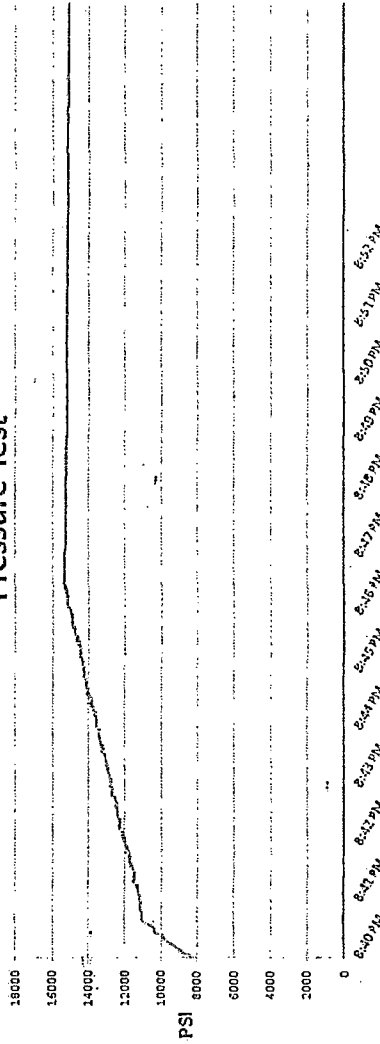
Final O.D.

6.25"

Hose Assembly Serial #

79793

Pressure Test



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]



Midwest Hose
& Specialty, Inc.

Exhibit F -3- Co-Flex Hose
Mallon 27 Federal Com #2H
Cimarex Energy Co.
27-19S-34E
SHL 330 FSL & 1980 FEL
BHL 330 FNL & 1980 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-2 - Co-Flex Hose
Mallon 27 Federal Com #2H
Cimarex Energy Co.
27-19S-34E
SHL 330 FSL & 1980 FEL
BHL 330 FNL & 1980 FEL
Lea County, NM



Midwest Hose & Specialty, Inc.

Certificate of Conformity

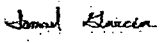
Customer:		PO
DEM		ODYD-271
SPECIFICATIONS		
Sales Order	Dated:	
79793	3/8/2011	
We hereby certify that the material supplied for the referenced purchase order to be true according to the requirements of the purchase order and current industry standards Supplier: Midwest Hose & Specialty, Inc. 10640 Tanner Road Houston, Texas 77041		
Comments:		
Approved:		Date:
		3/8/2011

Exhibit F – Co-Flex Hose
Mallon 27 Federal Com #2H

Cimarex Energy Co.

27-19S-34E

SHL 330 FSL & 1980 FEL

BHL 330 FNL & 1980 FEL

Lea County, NM

