

OCD Hobbs

15-178
FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
APPLICATION FOR PERMIT TO DRILL OR REENTER

HOBBS OCD

AUG 31 2015

RECEIVED

UNORTHODOX
LOCATION

1a. Type of Work: ☒ DRILL ☐ REENTER		5. Lease Serial No. SHL: NMNM118726, BHL: NMNM019859
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator COG Operating LLC. (229137)		7. If Unit or CA Agreement, Name and No.
3a. Address 2208 West Main Street Artesia, NM 88210	3b. Phone No. (include area code) 575-748-6940	8. Lease Name and Well No. Monet Federal Com #4H (315180)
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface (Dy) 190' FNL & 500' FWL Lot 4 (NWNW) SHL Sec 4-T25S-R33E At proposed prod. Zone (M) 330' FSL & 660' FWL Unit Letter M (SWSW) BHL Sec 4-T25S-R33E		9. API Well No. 30-025-42764
14. Distance in miles and direction from nearest town or post office* Approximately 22 miles from Jal		10. Field and Pool, or Exploratory Draper Mill; Bone Spring (96392)
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. Unit line, if any) 190'	16. No. of acres in lease SHL: 1319.75 BHL: 1639.11	11. Sec., T.R.M. or Blk and Survey or Area Sec. 4 - T25S - R33E
18. Distance from location* to nearest well, drilling, completed, applied for, on this lease, ft. SHL: 90' (Proposed Monet #10H) BHL: 3977'	19. Proposed Depth TVD: 11,060' MD: 15,607	12. County or Parish Lea County
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3464.1' GL	22. Approximate date work will start* 2/1/2015	13. State NM
17. Spacing Unit dedicated to this well 159.91		
20. BLM/BIA Bond No. on file NMB000740 & NMB000215		
23. Estimated duration 30 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) Mayte Reyes	Date 11-24-14
-------------------	-------------------------------------	------------------

Regulatory Analyst	
Approved by (Signature) 	Name (Printed/Typed) Steve Caffey
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.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

*(Instructions on page 2)

Carlsbad Controlled Water Basin

Ka
08/31/15
pr.

Approval Subject to General Requirements
& Special Stipulations Attached

SEE ATTACHED FOR
CONDITIONS OF APPROVAL
AUG 31 2015

AUG 31 2016

1. Geologic Formations

RECEIVED

TVD of target	11060	Pilot hole depth	12400
MD at TD:	15607	Deepest expected fresh water:	185

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards
Quaternary Fill	Surface	Water	
Rustler	1150	Water	
Top of Salt	1447	Salt	
Lamar	5067	Barren	
Delaware Group	5109	Oil/Gas	
Bone Spring	9126	Oil/Gas	
2 nd Bone Spring	10652	Target Zone	
Wolfcamp	12200	Oil/ Gas	
Cisco			
Canyon			
Strawn			
Atoka			
Morrow			
Barnett Shale			
Woodford Shale			
Devonian			
Fusselman			
Ellenburger			
Granite Wash			

*H₂S, water flows, loss of circulation, abnormal pressures, etc.

2. Casing Program

See COA

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
	From	To							
17.5"	0	1175/1200	13.375"	54.5	J55	STC	2.1	1.05	8.2
12.25"	0	4500	9.625"	40	J55	LTC	1.1	1.03	2.89
12.25"	4500	5000	9.625"	40	L80	LTC	1.19	1.5	2.6
8.75"	0	11300	5.5"	17	P110	LTC	1.30	1.85	2.06
7.875"	11300	15607	5.5"	17	P110	LTC	1.30	1.85	2.06
BLM Minimum Safety Factor							1.125	1	1.6 Dry 1.8 Wet

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Must have table for contingency casing

COG Operating, LLC, Monet Federal Com 4H

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3 rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2 nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

3. Cementing Program

Casing	# Sks	Wt. lb/gal	Yld. ft ³ /sack	H ₂ O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surf.	500	13.5	1.75	9.2	10	Lead: Class C + 2% CC + 4% Gel
	250	14.8	1.34	6.4	6	Tail: Class C + 2% CC
Inter.	950	12.7	2.22	11.5	15	Lead: 35:65:6 H Blend
	250	14.8	1.32	6.4	11	Tail: Class C
Prod.	750	10.4	3.32	19.1	24	Lead: Tuned Light Blend (FR, Retarder, FL adds as necessary)
	1000	14.4	1.25	5.7	22	Tail: 50:50:2 H blend (FR, Retarder, FL adds as necessary)

Casing String	TOC	% Excess
Surface	0'	50%
Intermediate	0'	50%
Production	4500'	35%

COG Operating, LLC, Monet Federal Com 4H

Pilot hole depth No pilot hole
KOP 10572'

Plug top	Plug Bottom	% Excess	No. Sacks	Wt. lb/gal	Yld ft3/sack	Water gal/sk	Slurry Description and Cement Type
10400	11400	10	450	13.5	0.98	5	Class H
11400	12400	10	450	14.8	0.98	5	Class H

4. Pressure Control Equipment

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
12-1/4"	13-5/8"	2M	Annular	x	50% of working pressure
			Blind Ram		2M
			Pipe Ram		
			Double Ram		
			Other*		
8-3/4"	13-5/8"	5M	Annular	x	50% testing pressure
			Blind Ram		5M
			Pipe Ram		
			Double Ram	x	
			Other*		

See COA

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

Y	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.	
Y	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.	
N	Are anchors required by manufacturer? No.	

See COA

COG Operating, LLC, Monet Federal Com 4H

N	A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. See attached schematic.
---	--

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	Surf. shoe	FW Gel	8.6 – 9.0	28-34	N/C
Surf csg	Int shoe	Saturated Brine	10.0 - 10.2	28-34	N/C
Int shoe	TMD	Cut Brine	8.6 - 9.2	28-34	N/C

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

What will be used to monitor the loss or gain of fluid?	Pason PVT
---	-----------

6. Logging and Testing Procedures

Logging, Coring and Testing	
X	Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	No Logs are planned based on well control or offset log information.
	Drill stem test? If yes, explain
	Coring? If yes, explain

Additional logs planned	Interval
X Triple Combo	Pilot Hole

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	5200 psi
Abnormal Temperature	No

Mitigation measure for abnormal conditions.

- Lost circulation material/sweeps/mud scavengers.
- Maintain stock of LCM and weighting materials onsite.

Hydrogen Sulfide (H ₂ S) monitors will be installed prior to drilling out the surface shoe. If H ₂ S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions

COG Operating, LLC, Monet Federal Com 4H

of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.

N	H2S is present
Y	H2S Plan attached

8. Other facets of operation

Is this a walking operation? No.

Will be pre-setting casing? No.

Attachments

- Directional Plan
- BOP & Choke Schematics
- C102 and supporting maps
- Rig plat
- H2S schematic
- H2S contingency plan
- Interim reclamation plat
- Variance for Flex Hose



COG Operating LLC

Lea County, NM

Monet Federal COM

#4H

OH

Plan: Plan #1

Standard Planning Report

04 November, 2014





TDS
Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well #4H
Company:	COG Operating LLC	TVD Reference:	KB @ 3486.1usft
Project:	Lea County, NM	MD Reference:	KB @ 3486.1usft
Site:	Monet Federal	North Reference:	Grid
Well:	#4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project:	Lea County, NM		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site:	Monet Federal		
Site Position:	Northing:	425,009.10 usft	Latitude: 32° 9' 58.383 N
From: Map	Easting:	733,449.90 usft	Longitude: 103° 34' 44.046 W
Position Uncertainty:	0.0 usft	Slot Radius: 13-3/16 "	Grid Convergence: 0.40 °

Well:	#4H		
Well Position	+N-S	-8.7 usft	Northing: 425,000.40 usft
	+E-W	-1,479.7 usft	Easting: 731,970.20 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft
		Ground Level:	3,464.1 usft

Wellbore:	OH		
Magnetics:	Model Name	Sample Date	Declination (°)
	IGRF2010	11/4/2014	7.17
			Dip Angle (°)
			60.05
			Field Strength (nT)
			48,241

Design:	Plan #1		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD)	+N-S	+E-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction (°)
			177.62

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
10,572.5	0.00	0.00	10,572.5	0.0	0.0	0.00	0.00	0.00	0.00	
11,321.4	89.87	177.62	11,050.0	-475.9	19.8	12.00	12.00	23.72	177.62	
15,607.2	89.87	177.62	11,060.0	-4,758.0	198.0	0.00	0.00	0.00	0.00	PBHL (MF #4H/OH)



TDS
Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well #4H
Company:	COG Operating LLC	TVD Reference:	KB @ 3486.1usft
Project:	Lea County, NM	MD Reference:	KB @ 3486.1usft
Site:	Monet Federal	North Reference:	Grid
Well:	#4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00



TDS
Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well #4H
Company:	COG Operating LLC	TVD Reference:	KB @ 3486.1usft
Project:	Lea County, NM	MD Reference:	KB @ 3486.1usft
Site:	Monet Federal	North Reference:	Grid
Well:	#4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,700.0	0.00	0.00	5,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,800.0	0.00	0.00	5,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,900.0	0.00	0.00	5,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,000.0	0.00	0.00	6,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,100.0	0.00	0.00	6,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,200.0	0.00	0.00	6,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,300.0	0.00	0.00	6,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,400.0	0.00	0.00	6,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,500.0	0.00	0.00	6,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,600.0	0.00	0.00	6,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,700.0	0.00	0.00	6,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,800.0	0.00	0.00	6,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,900.0	0.00	0.00	6,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,000.0	0.00	0.00	7,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,100.0	0.00	0.00	7,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,200.0	0.00	0.00	7,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,300.0	0.00	0.00	7,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,400.0	0.00	0.00	7,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,500.0	0.00	0.00	7,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,600.0	0.00	0.00	7,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,700.0	0.00	0.00	7,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,800.0	0.00	0.00	7,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,900.0	0.00	0.00	7,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,000.0	0.00	0.00	8,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,100.0	0.00	0.00	8,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,200.0	0.00	0.00	8,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,300.0	0.00	0.00	8,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,400.0	0.00	0.00	8,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,500.0	0.00	0.00	8,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,600.0	0.00	0.00	8,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,700.0	0.00	0.00	8,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,800.0	0.00	0.00	8,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,900.0	0.00	0.00	8,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,000.0	0.00	0.00	9,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,100.0	0.00	0.00	9,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,200.0	0.00	0.00	9,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,300.0	0.00	0.00	9,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,400.0	0.00	0.00	9,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,500.0	0.00	0.00	9,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,600.0	0.00	0.00	9,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,700.0	0.00	0.00	9,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,800.0	0.00	0.00	9,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,900.0	0.00	0.00	9,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
10,000.0	0.00	0.00	10,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
10,100.0	0.00	0.00	10,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
10,200.0	0.00	0.00	10,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
10,300.0	0.00	0.00	10,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
10,400.0	0.00	0.00	10,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
10,500.0	0.00	0.00	10,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
10,572.5	0.00	0.00	10,572.5	0.0	0.0	0.0	0.00	0.00	0.00	



TDS
Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well #4H
Company:	COG Operating LLC	TVD Reference:	KB @ 3486.1usft
Project:	Lea County, NM	MD Reference:	KB @ 3486.1usft
Site:	Monet Federal	North Reference:	Grid
Well:	#4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
KOP - Start DLS 12.00 TFO 177.62										
10,575.0	0.30	177.62	10,575.0	0.0	0.0	0.0	12.00	12.00	0.00	
10,600.0	3.30	177.62	10,600.0	-0.8	0.0	0.8	12.00	12.00	0.00	
10,625.0	6.30	177.62	10,624.9	-2.9	0.1	2.9	12.00	12.00	0.00	
10,650.0	9.30	177.62	10,649.7	-6.3	0.3	6.3	12.00	12.00	0.00	
10,675.0	12.30	177.62	10,674.2	-11.0	0.5	11.0	12.00	12.00	0.00	
10,700.0	15.30	177.62	10,698.5	-16.9	0.7	16.9	12.00	12.00	0.00	
10,725.0	18.30	177.62	10,722.4	-24.1	1.0	24.1	12.00	12.00	0.00	
10,750.0	21.30	177.62	10,745.9	-32.6	1.4	32.6	12.00	12.00	0.00	
10,775.0	24.30	177.62	10,769.0	-42.3	1.8	42.3	12.00	12.00	0.00	
10,800.0	27.30	177.62	10,791.5	-53.1	2.2	53.2	12.00	12.00	0.00	
10,825.0	30.30	177.62	10,813.4	-65.2	2.7	65.2	12.00	12.00	0.00	
10,850.0	33.30	177.62	10,834.6	-78.3	3.3	78.4	12.00	12.00	0.00	
10,875.0	36.30	177.62	10,855.2	-92.6	3.9	92.7	12.00	12.00	0.00	
10,900.0	39.30	177.62	10,874.9	-107.9	4.5	108.0	12.00	12.00	0.00	
10,925.0	42.30	177.62	10,893.8	-124.2	5.2	124.3	12.00	12.00	0.00	
10,950.0	45.30	177.62	10,911.9	-141.5	5.9	141.6	12.00	12.00	0.00	
10,975.0	48.30	177.62	10,929.0	-159.7	6.6	159.8	12.00	12.00	0.00	
11,000.0	51.30	177.62	10,945.1	-178.8	7.4	178.9	12.00	12.00	0.00	
11,025.0	54.30	177.62	10,960.2	-198.7	8.3	198.8	12.00	12.00	0.00	
11,050.0	57.30	177.62	10,974.3	-219.3	9.1	219.5	12.00	12.00	0.00	
11,075.0	60.30	177.62	10,987.2	-240.7	10.0	240.9	12.00	12.00	0.00	
11,100.0	63.30	177.62	10,999.1	-262.7	10.9	262.9	12.00	12.00	0.00	
11,125.0	66.30	177.62	11,009.7	-285.3	11.9	285.5	12.00	12.00	0.00	
11,150.0	69.30	177.62	11,019.1	-308.4	12.8	308.7	12.00	12.00	0.00	
11,175.0	72.30	177.62	11,027.4	-332.0	13.8	332.3	12.00	12.00	0.00	
11,200.0	75.30	177.62	11,034.3	-356.0	14.8	356.3	12.00	12.00	0.00	
11,225.0	78.30	177.62	11,040.0	-380.3	15.8	380.6	12.00	12.00	0.00	
11,250.0	81.30	177.62	11,044.5	-404.9	16.8	405.2	12.00	12.00	0.00	
11,275.0	84.30	177.62	11,047.6	-429.7	17.9	430.0	12.00	12.00	0.00	
11,300.0	87.30	177.62	11,049.4	-454.6	18.9	455.0	12.00	12.00	0.00	
11,321.4	89.87	177.62	11,050.0	-475.9	19.8	476.3	12.00	12.00	0.00	
EOC - Start 4285.8 hold at 11321.4 MD										
11,400.0	89.87	177.62	11,050.1	-554.5	23.1	555.0	0.00	0.00	0.00	
11,500.0	89.87	177.62	11,050.4	-654.4	27.2	655.0	0.00	0.00	0.00	
11,600.0	89.87	177.62	11,050.6	-754.3	31.4	755.0	0.00	0.00	0.00	
11,700.0	89.87	177.62	11,050.9	-854.2	35.5	855.0	0.00	0.00	0.00	
11,800.0	89.87	177.62	11,051.1	-954.1	39.7	955.0	0.00	0.00	0.00	
11,900.0	89.87	177.62	11,051.3	-1,054.1	43.9	1,055.0	0.00	0.00	0.00	
12,000.0	89.87	177.62	11,051.6	-1,154.0	48.0	1,155.0	0.00	0.00	0.00	
12,100.0	89.87	177.62	11,051.8	-1,253.9	52.2	1,255.0	0.00	0.00	0.00	
12,200.0	89.87	177.62	11,052.0	-1,353.8	56.3	1,355.0	0.00	0.00	0.00	
12,300.0	89.87	177.62	11,052.3	-1,453.7	60.5	1,455.0	0.00	0.00	0.00	
12,400.0	89.87	177.62	11,052.5	-1,553.6	64.7	1,555.0	0.00	0.00	0.00	
12,500.0	89.87	177.62	11,052.7	-1,653.5	68.8	1,655.0	0.00	0.00	0.00	
12,600.0	89.87	177.62	11,053.0	-1,753.4	73.0	1,755.0	0.00	0.00	0.00	
12,700.0	89.87	177.62	11,053.2	-1,853.4	77.1	1,855.0	0.00	0.00	0.00	
12,800.0	89.87	177.62	11,053.4	-1,953.3	81.3	1,955.0	0.00	0.00	0.00	
12,900.0	89.87	177.62	11,053.7	-2,053.2	85.4	2,055.0	0.00	0.00	0.00	
13,000.0	89.87	177.62	11,053.9	-2,153.1	89.6	2,155.0	0.00	0.00	0.00	
13,100.0	89.87	177.62	11,054.1	-2,253.0	93.8	2,255.0	0.00	0.00	0.00	
13,200.0	89.87	177.62	11,054.4	-2,352.9	97.9	2,355.0	0.00	0.00	0.00	
13,300.0	89.87	177.62	11,054.6	-2,452.8	102.1	2,455.0	0.00	0.00	0.00	
13,400.0	89.87	177.62	11,054.8	-2,552.7	106.2	2,555.0	0.00	0.00	0.00	



TDS
Planning Report

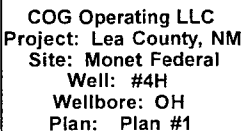


Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well #4H
Company:	COG Operating LLC	TVD Reference:	KB @ 3486.1usft
Project:	Lea County, NM	MD Reference:	KB @ 3486.1usft
Site:	Monet Federal	North Reference:	Grid
Well:	#4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
13,500.0	89.87	177.62	11,055.1	-2,652.7	110.4	2,655.0	0.00	0.00	0.00	
13,600.0	89.87	177.62	11,055.3	-2,752.6	114.5	2,755.0	0.00	0.00	0.00	
13,700.0	89.87	177.62	11,055.5	-2,852.5	118.7	2,855.0	0.00	0.00	0.00	
13,800.0	89.87	177.62	11,055.8	-2,952.4	122.9	2,955.0	0.00	0.00	0.00	
13,900.0	89.87	177.62	11,056.0	-3,052.3	127.0	3,055.0	0.00	0.00	0.00	
14,000.0	89.87	177.62	11,056.2	-3,152.2	131.2	3,155.0	0.00	0.00	0.00	
14,100.0	89.87	177.62	11,056.5	-3,252.1	135.3	3,255.0	0.00	0.00	0.00	
14,200.0	89.87	177.62	11,056.7	-3,352.1	139.5	3,355.0	0.00	0.00	0.00	
14,300.0	89.87	177.62	11,056.9	-3,452.0	143.7	3,455.0	0.00	0.00	0.00	
14,400.0	89.87	177.62	11,057.2	-3,551.9	147.8	3,555.0	0.00	0.00	0.00	
14,500.0	89.87	177.62	11,057.4	-3,651.8	152.0	3,655.0	0.00	0.00	0.00	
14,600.0	89.87	177.62	11,057.6	-3,751.7	156.1	3,755.0	0.00	0.00	0.00	
14,700.0	89.87	177.62	11,057.9	-3,851.6	160.3	3,855.0	0.00	0.00	0.00	
14,800.0	89.87	177.62	11,058.1	-3,951.5	164.4	3,955.0	0.00	0.00	0.00	
14,900.0	89.87	177.62	11,058.3	-4,051.4	168.6	4,055.0	0.00	0.00	0.00	
15,000.0	89.87	177.62	11,058.6	-4,151.4	172.8	4,155.0	0.00	0.00	0.00	
15,100.0	89.87	177.62	11,058.8	-4,251.3	176.9	4,255.0	0.00	0.00	0.00	
15,200.0	89.87	177.62	11,059.0	-4,351.2	181.1	4,355.0	0.00	0.00	0.00	
15,300.0	89.87	177.62	11,059.3	-4,451.1	185.2	4,455.0	0.00	0.00	0.00	
15,400.0	89.87	177.62	11,059.5	-4,551.0	189.4	4,555.0	0.00	0.00	0.00	
15,500.0	89.87	177.62	11,059.7	-4,650.9	193.5	4,655.0	0.00	0.00	0.00	
15,607.2	89.87	177.62	11,060.0	-4,758.0	198.0	4,762.1	0.00	0.00	0.00	
TD at 15607.2										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
hit/miss target										
- Shape										
EOC (#4H OH Plan #1)	0.00	0.00	11,050.0	-476.0	19.8	424,524.45	731,990.00	32° 9' 53.688 N	103° 35' 1.068 W	
- plan hits target center										
- Point										
PBHL (MF #4H/OH)	0.00	0.00	11,060.0	-4,758.0	198.0	420,242.40	732,168.20	32° 9' 11.302 N	103° 34' 59.342 W	
- plan hits target center										
- Point										

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
10,572.5	10,572.5	0.0	0.0	KOP - Start DLS 12.00 TFO 177.62	
11,321.4	11,050.0	-475.9	19.8	EOC - Start 4285.8 hold at 11321.4 MD	
15,607.2	11,060.0	-4,758.0	198.0	TD at 15607.2	



#4H

Ground Elevation:: 3464.1
RKB Elevation: KB @ 3486.1usft
Rig Name:

Northing	Easting	Latitude	Longitude
425000.40	731970.20	32° 9' 58.399 N	103° 35' 1.260 W



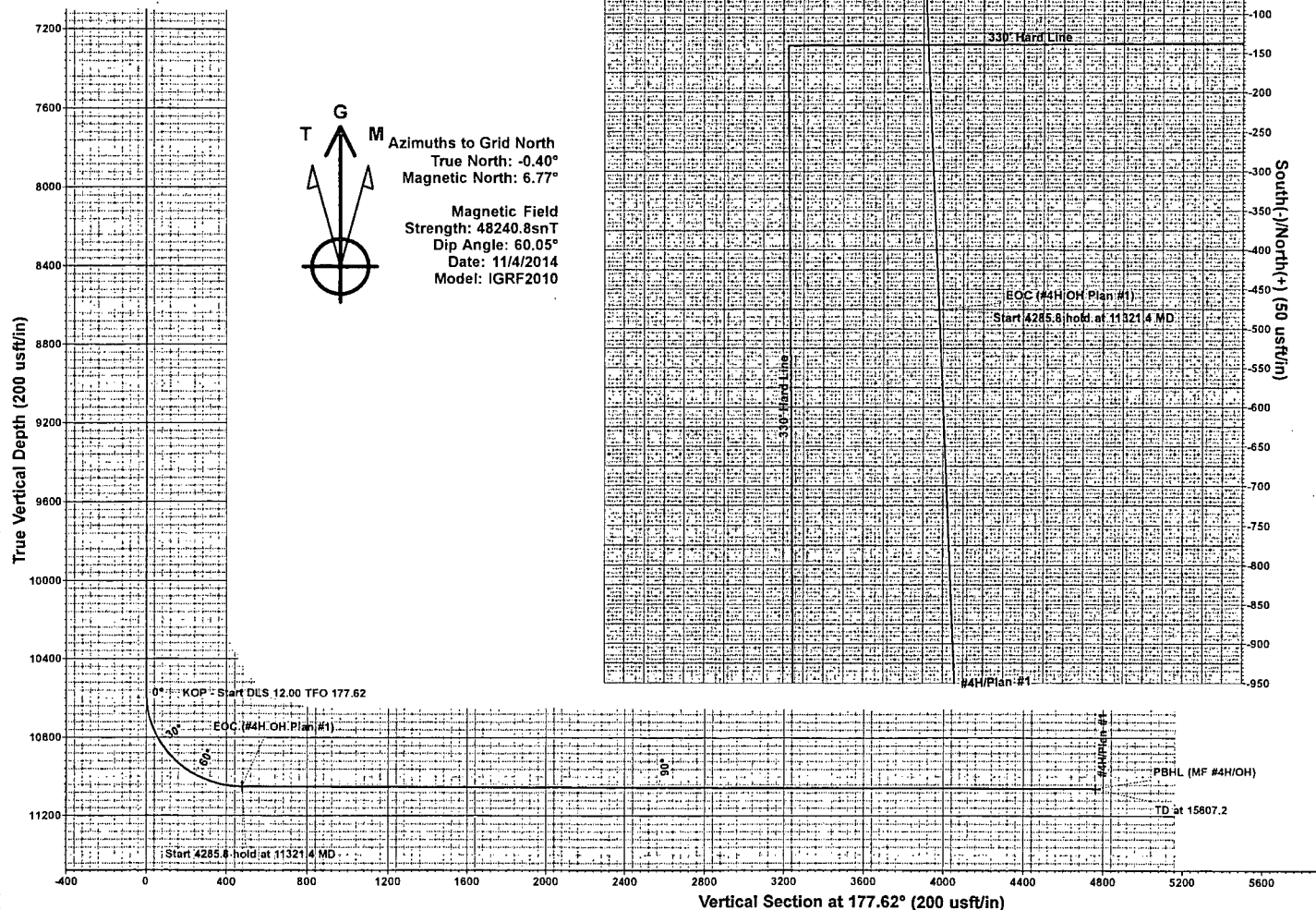
Azimuths to Grid North
True North: -0.40°
Magnetic North: 6.77°

Magnetic Field
Strength: 48240.8snT
Dip Angle: 60.05°
Date: 11/4/2014
Model: IGRF2010

Section Details

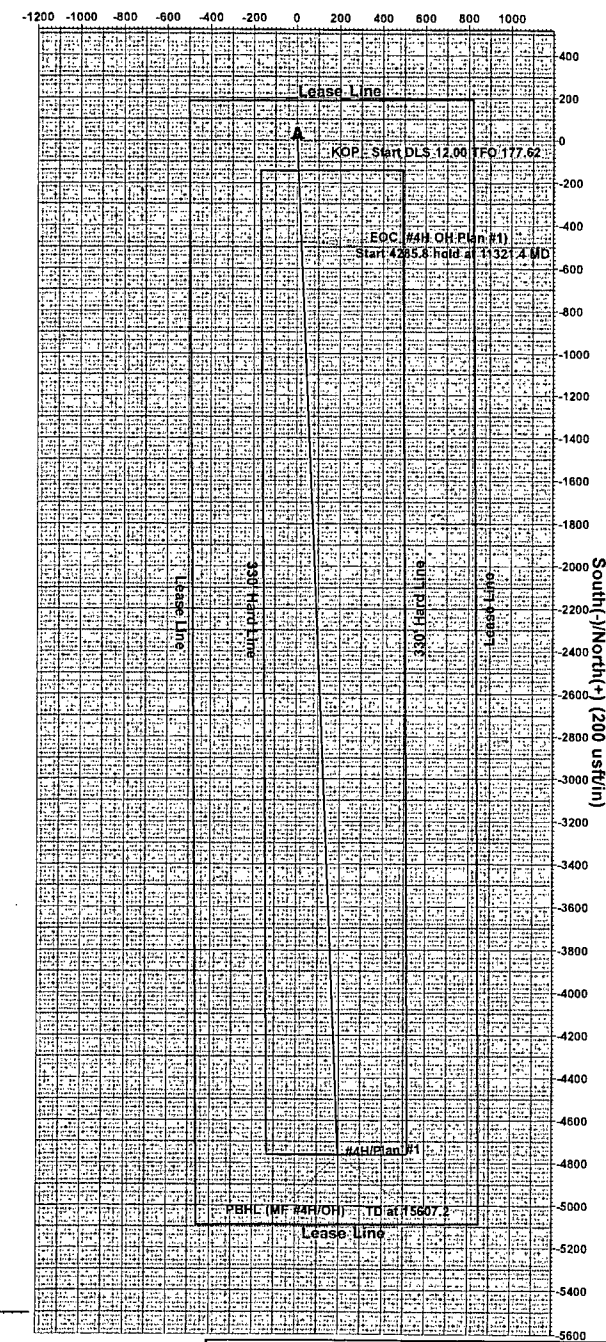
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	10572.5	0.00	0.00	10572.5	0.0	0.0	0.00	0.00	0.0	
3	11321.4	89.87	177.62	11050.0	-475.9	19.8	12.00	177.62	476.3	
4	15607.2	89.87	177.62	11060.0	-4758.0	198.0	0.00	0.00	4762.1	PBHL (MF #4H/OH)

West(-)/East(+) (50 usft/in)



Vertical Section at 177.62° (200 usft/in)

West(-)/East(+) (200 usft/in)



Terra Directional Services LLC
322 Spring Hill Drive, Suite A300. Spring, Tx 77386
Phone: 432-425-7532

PROJECT DETAILS: Lea County, NM
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level
Local North: Grid

Flex Hose Variance Request

Flex Hose Variance Statement

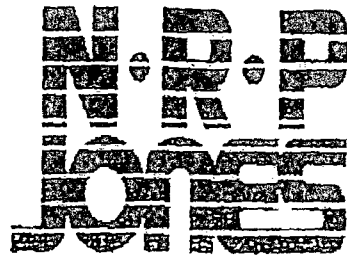
LOG (operator) requests a variance if Basic 46 (rig name) is used to drill this well to use a co-flex line between the BOP and choke manifold.

Manufacturer: N. R. P. Jones

Serial Number: MA31113 RePAIR

Length: 23 Size: 3 1/2 Ends - flanges/clamps

WP rating: 5000 psi Anchors required by manufacturer - Yes/No



Certificate of Conformance

DATE 3/11/13

SERIAL NO. MA31113REPAIR PART NO. _____

SIZE 3 1/2 LENGTH 23

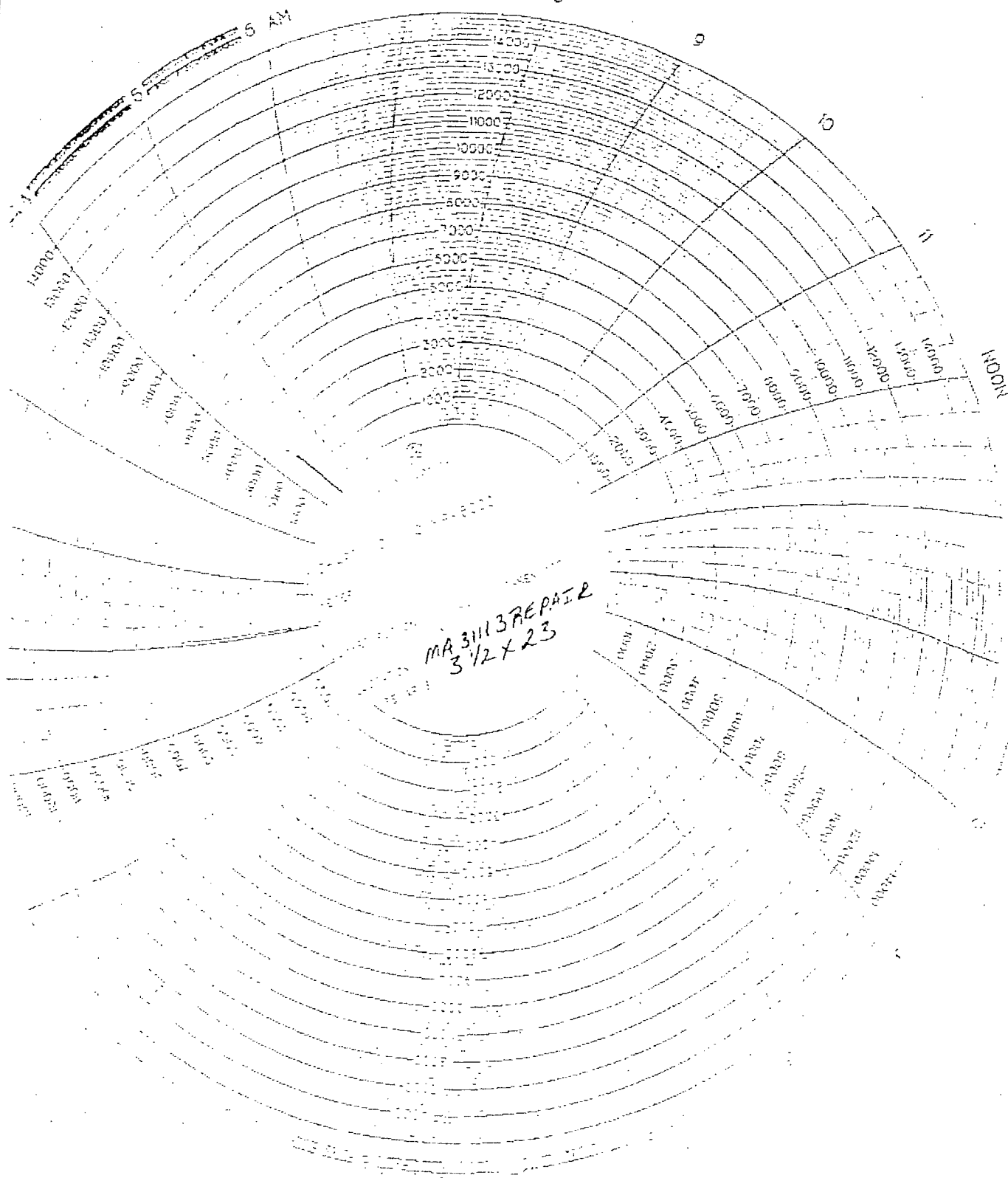
HYDROSTATICALLY TESTED AT 5000

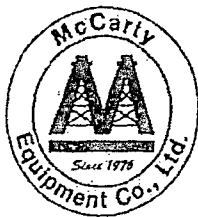
BY Chance Perkins Q.A. Allen Casey

NEPHI RUBBER PRODUCTS CORP.

Corporate Office: P.O. Box 310 • LaPorte, Indiana 46352 • (800)348-8868 • (219)352-9908 • Fax Number (219)324-0815

Manufacturing: 255 West 11th North • Nephi, Utah 84648 • (800)453-1480 • (435)623-1740 • Fax Number (435)623-2638





Product Specification 3 1/2" CHOKE AND KILL LINE

Catalog Item? Yes

Design Factor 2:1

Scope	Hydraulic control line between BOP control system and Manifold Equipment.
Tube	High grade abrasion resistant synthetic HNBR for H ₂ S service
Cover	High grade Neoprene with high ozone, abrasion and heat resistance
Fluids	Oil based drilling fluids, glycols and polyglycols, and hydraulic oil
Reinforcement	Multiple plies of Nylon Cord, with 2 high tensile spiraled wound cables
Pressure	5000 PSI Working Pressure 10,000 PSI Burst Test Pressure
Thermal Barrier	Layer of thermal insulation material rated from -250° F to +1500° F 1/16" Chemical Resistant, Non-Flammable Industrial grade braided yarn
Outer Armor	Interlocking stainless steel armor heat resistant +1500° F
Fittings	Hose fitting is an Integral Swage Coupling with 4 1/6" RX-39 Flanges Coupling combines locking features of the insulation and armor.
Lengths	Lengths vary by request.
Testing	Hydrostatically tested at 2 times working pressure for 5 minutes.
Conformity	Manufactured to meet or exceed API 16C Specifications. A prototype of each control line manufactured is then fire tested per API 16C. Each control line is hydrostatically tested per API 16C Specifications. Each control line is issued a serial number which is etched on the completed assembly and documented with a Certificate of Proof Test.

<u>ID</u>	<u>OD</u>	<u>WEIGHT FT/LBS</u>	<u>BEND RADIUS</u>	<u>W.P PSI</u>	<u>BURST PSI</u>
3 1/2"	5.75"	18.6	54"	5,000 PSI	10,000PSI

Construction

Tube: Black, oil and abrasion resistant HNBR for H₂S service.

Reinforcement: Multiple plies of bias laid textile cord for extra strength and flexibility. Spirally wound, high tensile, multiple strand cables to provide unsurpassed ruggedness and reliability to withstand sudden high pressure.

Cover: Special flame resistant red Neoprene (CR) with optional stainless steel armor.

Fittings: Integral connection flanged or hubbed.

Temperature: -40 to 212°F (-40 to 100°C)

Branding: NRP Choke & Kill Hose. MADE IN USA.

Choke & Kill Specifications

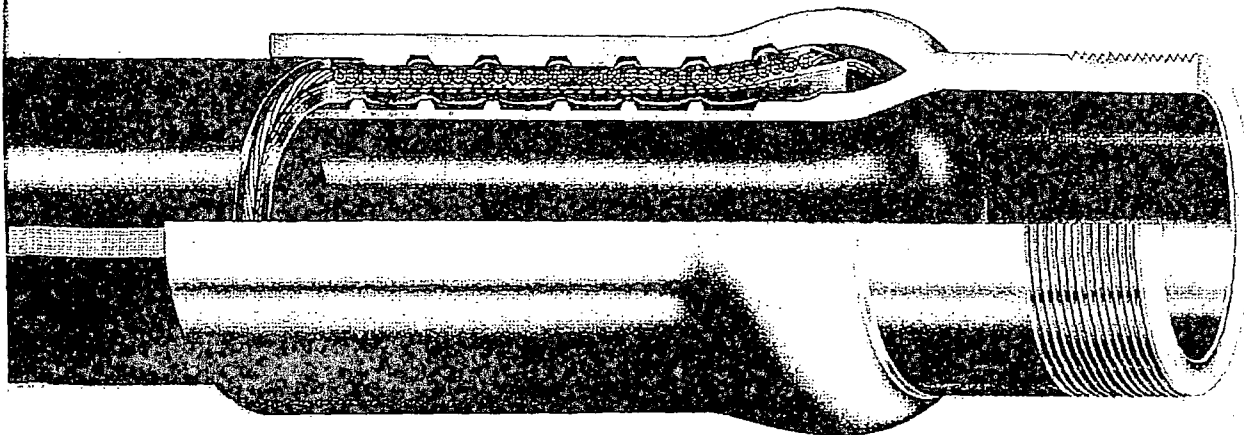
NRP Part Number	Hose ID (in)	Hose OD (in)	Rated WP (psi)	Test Pressure (psi)	Minimum Bend Radius	Weight per Foot (lbs)
5035-32	2.00	4.45	5,000	10,000	44	12.9
5035-40	2.50	4.60	5,000	10,000	48	13.9
5035-48	3.00	5.10	5,000	10,000	52	16.1
5040-32	2.00	4.68	10,000	15,000	48	22.4
5040-40	2.50	5.34	10,000	15,000	52	27.4
5040-48	3.00	5.84	10,000	15,000	56	28.8

Super Choke & Kill Specifications

5085-40	2.50	5.84	15,000	22,500	60	28.2
5085-48	3.00	6.34	15,000	22,500	60	34.1

Specifications

NRP Rotary Number	NRP Vibrator Number	Hose ID (in)	Hose OD (in)	Grade	Rated WP (psi)	Test Pressure (psi)	Minimum Bend Radius	Weight per Foot (lbs)	Weight of 2 Cplgs (lbs)	Cplg Thread API (in)
5501-40	5502-40	2.50	4.45	C	4,000	8,000	36	12.9	54	3
5501-48	5502-48	3.00	4.95	C	4,000	8,000	48	14.9	74	4
5501-56	5502-56	3.50	5.45	C	4,000	8,000	54	16.6	94	4
5603-40	5604-40	2.50	4.60	D	5,000	10,000	36	13.6	54	3
5603-48	5604-48	3.00	5.10	D	5,000	10,000	48	15.5	74	4
5603-56	5604-56	3.50	5.75	D	5,000	10,000	54	18.6	94	4
5603-64	5604-64	4.00	6.25	D	5,000	10,000	54	19.8	105	5



LLD ACREAGE REPORT

Admin State: NM

Geo State: NM

MTR: 23 0250S 0330E

Section: 004

<u>Sur Type</u>	<u>Sur No</u>	<u>Lld Suff</u>	<u>NE</u> <u>NW</u> <u>SW</u> <u>SE</u> <u>NNSS</u> <u>NNSS</u> <u>NNSS</u> <u>NNSS</u> <u>EWWE</u> <u>EWWE</u> <u>EWWE</u> <u>EWWE</u>	<u>Sur Note</u>	<u>Dup</u> <u>Flg</u>	<u>Sub</u> <u>Surf</u>	<u>Acreage</u>
A			--XX --XX XXXX XXXX				480.000
L	1		X---				39.850
L	2		-X--				39.870
L	3		--- X---				39.890
L	4		--- -X--				39.910

Section 004 Total: 639.520

MTR Total Excluding Survey Notes C/D/R
and Sub Surf = Y 639.520Grand Total Excluding Survey Notes C/D/R
and Sub Surf = Y: 639.520



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

No records found.

PLSS Search:

Section(s): 4

Township: 25S

Range: 33E

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

11/20/14 9:14 AM

Page 1 of 1

WATER COLUMN/ AVERAGE
DEPTH TO WATER



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(A CLW##### in the
POD suffix indicates the
POD has been replaced
& no longer serves a
water right file.)

(R=POD has
been replaced,
O=orphaned,
C=the file is
closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
C 02312		LE		1	2	1	05	25S	33E	632241	3559687*	150	90	60
C 02313		LE		2	3	3	26	25S	33E	636971	3552098*	150	110	40
C 02373 CLW317846	O	LE		2	1	1	13	25S	33E	638518	3556544*	625	185	440
C 02373 S		LE		1	2	1	13	25S	33E	638721	3556549*	625	185	440

Average Depth to Water: **142 feet**

Minimum Depth: **90 feet**

Maximum Depth: **185 feet**

Record Count: 4

PLSS Search:

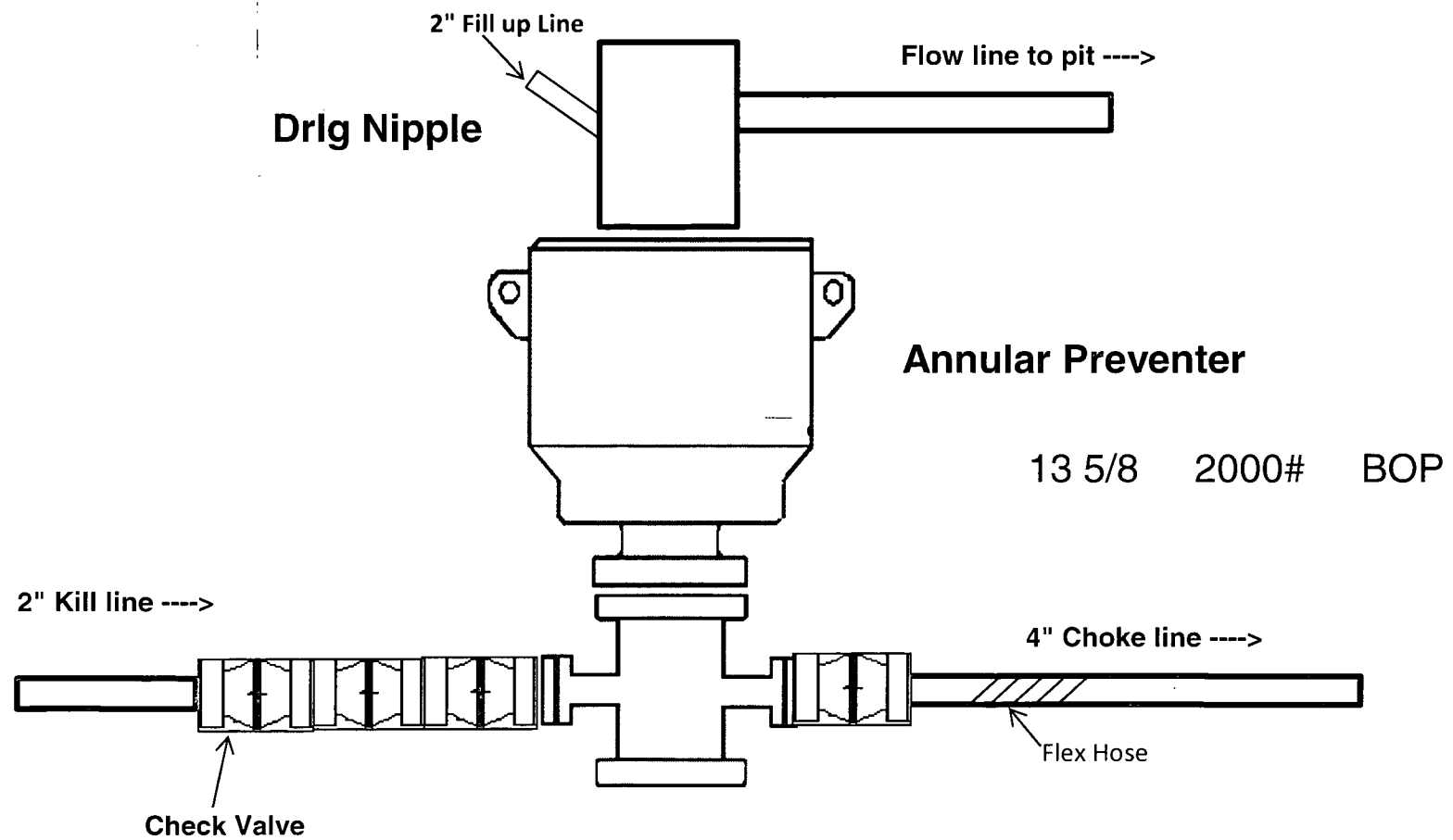
Township: 25S

Range: 33E

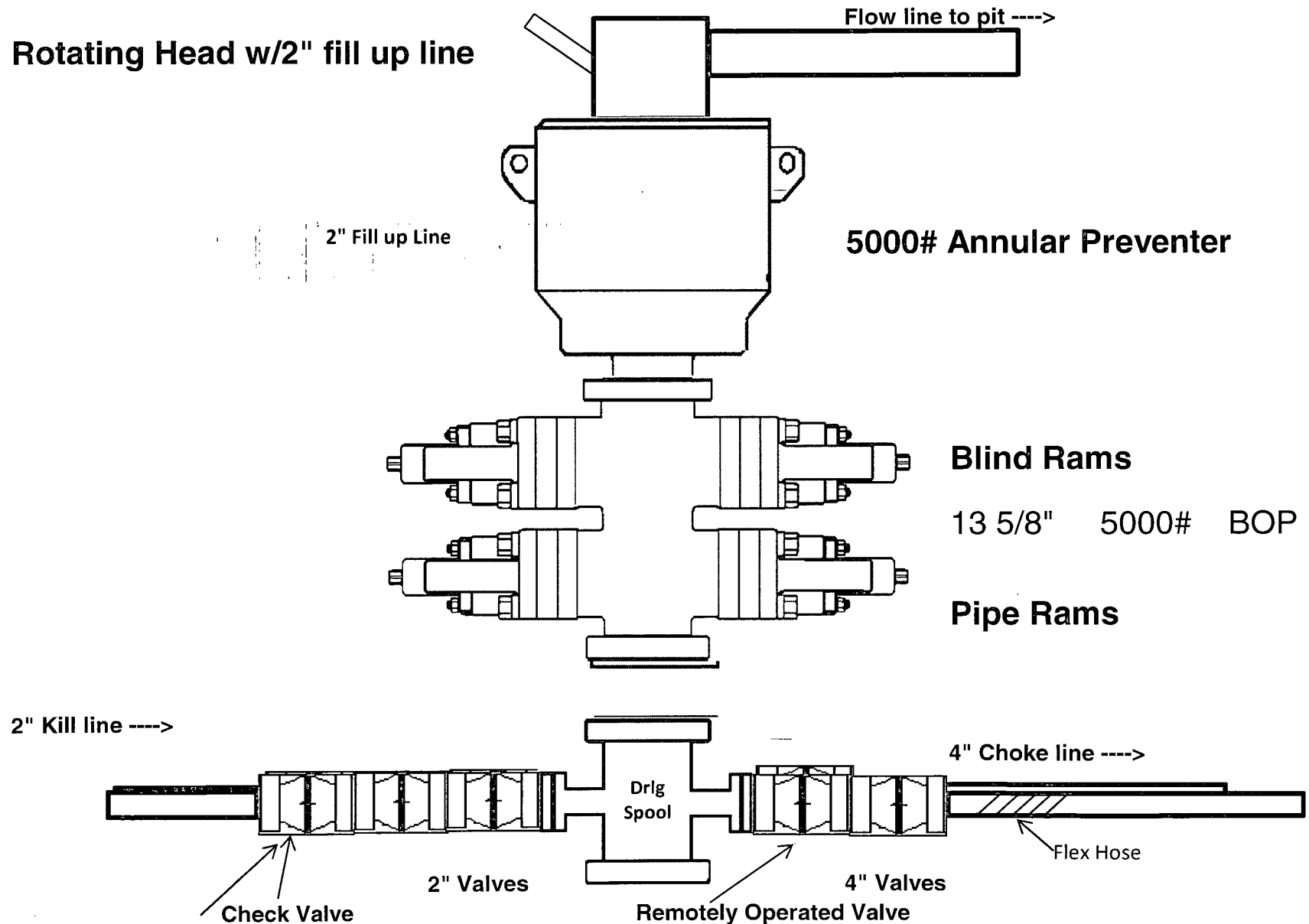
*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

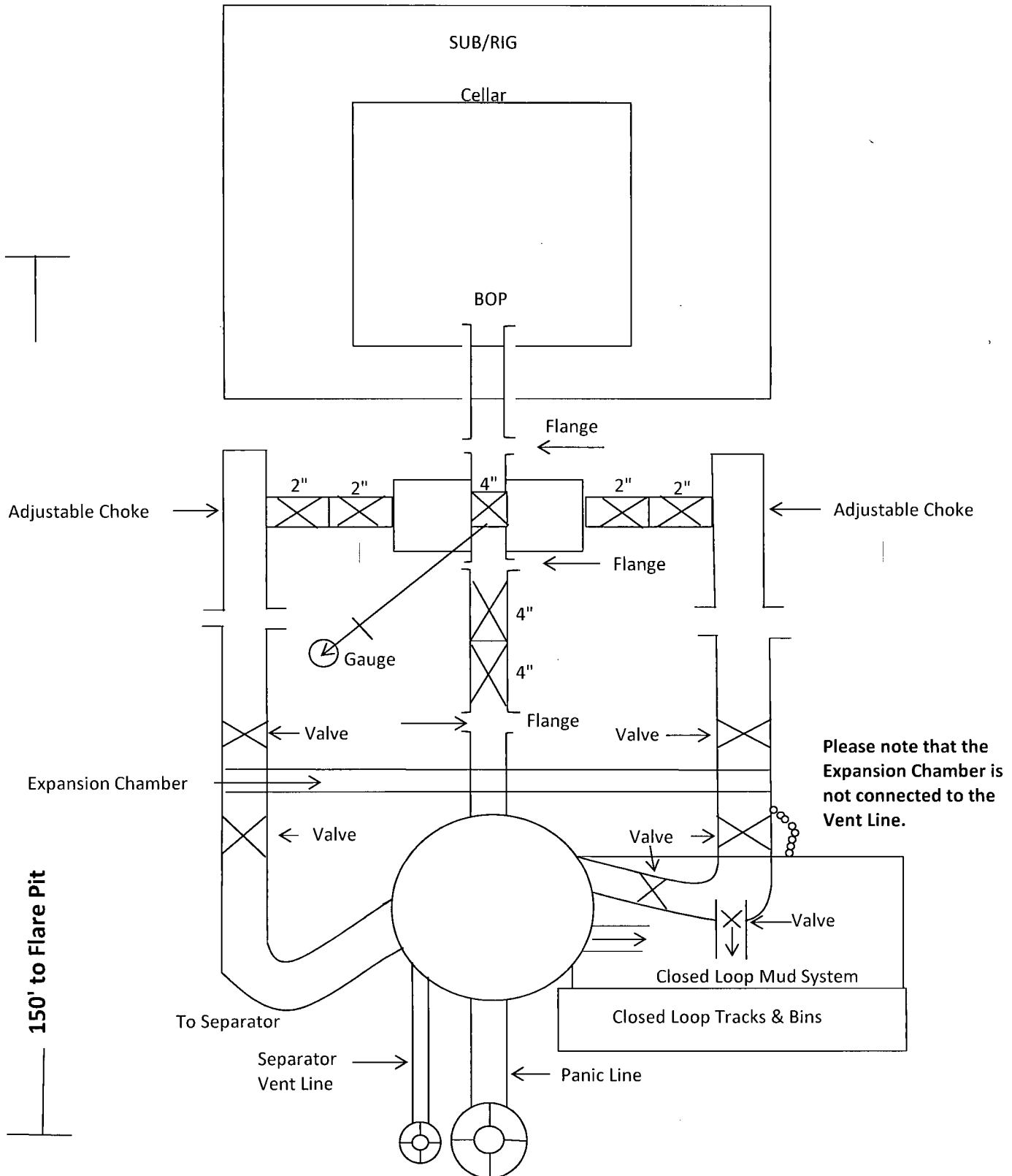
2,000 psi BOP Schematic



5,000 psi BOP Schematic



2M Choke Manifold Equipment



5M Choke Manifold Equipment

