

OCD Hobbs

15-247

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

UNORTHODOX
LOCATION

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NMNM019859 H	
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		7. If Unit or CA Agreement, Name and No.	
2. Name of Operator COG Operating LLC. <229137> HOBBS OCD		8. Lease Name and Well No. <315179> Monet Federal #8H	
3a. Address 2208 West Main Street Artesia, NM 88210		9. API Well No. 30-025-42765	
3b. Phone No. (include area code) 575-748-6940		10. Field and Pool, or Exploratory <97900> Red Hill, Upper Bone Spring Shale	
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface 190' FNL & 2130' FWL Lot 3 (NENW) SHL Sec 4-T25S-R33E (C3) RECEIVED At proposed prod. Zone 330' FSL & 2260' FWL Unit Letter N (SESW) BHL Sec 4-T25S-R33E N		11. Sec., T.R.M. or Blk and Survey or Area Sec. 4 - T25S - R33E	
14. Distance in miles and direction from nearest town or post office* Approximately 22 miles from Jal		12. County or Parish Lea County	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. Unit line, if any) 190'		13. State NM	
16. No. of acres in lease 1639.11		17. Spacing Unit dedicated to this well 159.89	
18. Distance from location* to nearest well, drilling, completed, applied for, on this lease, ft. SHL: 150' (Proposed Monet #3H) BHL: 3152'		19. Proposed Depth TVD: 9,315' MD: 13,831	
20. BLM/BIA Bond No. on file NMB000740 & NMB000215		21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3461.6' GL	
22. Approximate date work will start* 2/1/2015		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 Mayte Reyes	Name (Printed/Typed) Mayte Reyes	Date 11-24-14
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Regulatory Analyst	
Approved by (Signature) /s/ STEPHEN J. CAFFEY FIELD MANAGER	Name (Printed/Typed) CARLSBAD FIELD OFFICE
Title	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)

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED

Carlsbad Controlled Water Basin

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

AUG 31 2015

AUG 31 2015

1. Geologic Formations

RECEIVED

TVD of target	9315	Pilot hole depth	N/A
MD at TD:	13831	Deepest expected fresh water:	185

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Quaternary Fill	Surface	Water	
Rustler	1129	Water	
Top of Salt	1462	Salt	
Lamar	5082	Barren	
Delaware Group	5125	Oil/Gas	
Bone Spring	9142	Oil/Gas	
Upper Avalon	9186	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	1150 1190'	13.375"	54.5	J55	STC	2.1	1.17	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	9500	5.5"	17	P110	LTC	1.94	2.77	2.32
7.875"	9500	13831	5.5"	17	P110	LTC	1.94	2.77	2.32
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 8H

	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 ft3/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.	500	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 8H

Pilot hole depth No pilot hole
KOP 8792'

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"	3M	Annular	x	50% testing pressure
			Blind Ram		3M
			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.

N	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.
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.

see COA

COG Operating, LLC, Monet Federal 8H

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
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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
None	

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	4400 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 (H₂S) monitors will be installed prior to drilling out the surface shoe. If H₂S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.

N	H ₂ S is present
Y	H ₂ S 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

#8H

OH

Plan: Plan #1

Standard Planning Report

30 October, 2014





TDS
Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well #8H
Company:	COG Operating LLC	TVD Reference:	KB @ 3483.6usft
Project:	Lea County, NM	MD Reference:	KB @ 3483.6usft
Site:	Monet Federal	North Reference:	Grid
Well:	#8H	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		#8H				
Well Position	+N/-S	1.0 usft	Northing:	425,010.10 usft	Latitude:	32° 9' 58.383 N
	+E/-W	149.9 usft	Easting:	733,599.80 usft	Longitude:	103° 34' 42.302 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	3,461.6 usft

Wellbore		OH			
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/30/2014	7.17	60.05	48,243

Design		Plan #1		
Audit Notes:				
Version:		Phase:	PLAN	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	177.98

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	
8,792.6	0.00	0.00	8,792.6	0.0	0.0	0.00	0.00	0.00	0.00	
9,537.6	89.40	177.98	9,270.0	-472.2	16.7	12.00	12.00	23.89	177.98	
13,831.8	89.40	177.98	9,315.0	-4,763.5	168.4	0.00	0.00	0.00	0.00	PBHL (MF #8H/OH PI)



TDS
Planning Report



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Project:	Lea County, NM	MD Reference:	KB @ 3483.6usft
Site:	Monet Federal	North Reference:	Grid
Well:	#8H	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 #8H
Company:	COG Operating LLC	TVD Reference:	KB @ 3483.6usft
Project:	Lea County, NM	MD Reference:	KB @ 3483.6usft
Site:	Monet Federal	North Reference:	Grid
Well:	#8H	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	
8,792.6	0.00	0.00	8,792.6	0.0	0.0	0.0	0.00	0.00	0.00	
KOP - Start DLS 12.00 TFO 177.98										
8,800.0	0.89	177.98	8,800.0	-0.1	0.0	0.1	12.00	12.00	0.00	
8,825.0	3.89	177.98	8,825.0	-1.1	0.0	1.1	12.00	12.00	0.00	
8,850.0	6.89	177.98	8,849.9	-3.4	0.1	3.4	12.00	12.00	0.00	
8,875.0	9.89	177.98	8,874.6	-7.1	0.3	7.1	12.00	12.00	0.00	
8,900.0	12.89	177.98	8,899.1	-12.0	0.4	12.0	12.00	12.00	0.00	
8,925.0	15.89	177.98	8,923.3	-18.2	0.6	18.2	12.00	12.00	0.00	
8,950.0	18.89	177.98	8,947.2	-25.7	0.9	25.7	12.00	12.00	0.00	
8,975.0	21.89	177.98	8,970.6	-34.4	1.2	34.4	12.00	12.00	0.00	
9,000.0	24.89	177.98	8,993.5	-44.3	1.6	44.3	12.00	12.00	0.00	
9,025.0	27.89	177.98	9,015.9	-55.4	2.0	55.5	12.00	12.00	0.00	
9,050.0	30.89	177.98	9,037.7	-67.7	2.4	67.7	12.00	12.00	0.00	
9,075.0	33.89	177.98	9,058.8	-81.1	2.9	81.1	12.00	12.00	0.00	
9,100.0	36.89	177.98	9,079.2	-95.5	3.4	95.6	12.00	12.00	0.00	
9,125.0	39.89	177.98	9,098.8	-111.0	3.9	111.1	12.00	12.00	0.00	
9,150.0	42.89	177.98	9,117.5	-127.6	4.5	127.6	12.00	12.00	0.00	
9,175.0	45.89	177.98	9,135.4	-145.0	5.1	145.1	12.00	12.00	0.00	
9,200.0	48.89	177.98	9,152.3	-163.4	5.8	163.5	12.00	12.00	0.00	



TDS
Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well #8H
Company:	COG Operating LLC	TVD Reference:	KB @ 3483.6usft
Project:	Lea County, NM	MD Reference:	KB @ 3483.6usft
Site:	Monet Federal	North Reference:	Grid
Well:	#8H	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)
9,225.0	51.89	177.98	9,168.3	-182.7	6.5	182.8	12.00	12.00	0.00
9,250.0	54.89	177.98	9,183.2	-202.7	7.2	202.8	12.00	12.00	0.00
9,275.0	57.89	177.98	9,197.0	-223.5	7.9	223.7	12.00	12.00	0.00
9,300.0	60.89	177.98	9,209.7	-245.0	8.7	245.2	12.00	12.00	0.00
9,325.0	63.89	177.98	9,221.3	-267.2	9.4	267.3	12.00	12.00	0.00
9,350.0	66.89	177.98	9,231.7	-289.9	10.2	290.0	12.00	12.00	0.00
9,375.0	69.89	177.98	9,240.9	-313.1	11.1	313.3	12.00	12.00	0.00
9,400.0	72.89	177.98	9,248.9	-336.8	11.9	337.0	12.00	12.00	0.00
9,425.0	75.89	177.98	9,255.7	-360.8	12.8	361.1	12.00	12.00	0.00
9,450.0	78.89	177.98	9,261.1	-385.2	13.6	385.4	12.00	12.00	0.00
9,475.0	81.89	177.98	9,265.3	-409.8	14.5	410.1	12.00	12.00	0.00
9,500.0	84.89	177.98	9,268.2	-434.6	15.4	434.9	12.00	12.00	0.00
9,525.0	87.89	177.98	9,269.7	-459.6	16.2	459.9	12.00	12.00	0.00
9,537.6	89.40	177.98	9,270.0	-472.2	16.7	472.5	12.00	12.00	0.00
EOC - Start 4294.2 hold at 9537.6 MD									
9,600.0	89.40	177.98	9,270.7	-534.5	18.9	534.9	0.00	0.00	0.00
9,700.0	89.40	177.98	9,271.7	-634.5	22.4	634.9	0.00	0.00	0.00
9,800.0	89.40	177.98	9,272.8	-734.4	26.0	734.9	0.00	0.00	0.00
9,900.0	89.40	177.98	9,273.8	-834.3	29.5	834.8	0.00	0.00	0.00
10,000.0	89.40	177.98	9,274.9	-934.3	33.0	934.8	0.00	0.00	0.00
10,100.0	89.40	177.98	9,275.9	-1,034.2	36.6	1,034.8	0.00	0.00	0.00
10,200.0	89.40	177.98	9,277.0	-1,134.1	40.1	1,134.8	0.00	0.00	0.00
10,300.0	89.40	177.98	9,278.0	-1,234.1	43.6	1,234.8	0.00	0.00	0.00
10,400.0	89.40	177.98	9,279.1	-1,334.0	47.2	1,334.8	0.00	0.00	0.00
10,500.0	89.40	177.98	9,280.1	-1,433.9	50.7	1,434.8	0.00	0.00	0.00
10,600.0	89.40	177.98	9,281.2	-1,533.8	54.2	1,534.8	0.00	0.00	0.00
10,700.0	89.40	177.98	9,282.2	-1,633.8	57.8	1,634.8	0.00	0.00	0.00
10,800.0	89.40	177.98	9,283.3	-1,733.7	61.3	1,734.8	0.00	0.00	0.00
10,900.0	89.40	177.98	9,284.3	-1,833.6	64.8	1,834.8	0.00	0.00	0.00
11,000.0	89.40	177.98	9,285.4	-1,933.6	68.4	1,934.8	0.00	0.00	0.00
11,100.0	89.40	177.98	9,286.4	-2,033.5	71.9	2,034.8	0.00	0.00	0.00
11,200.0	89.40	177.98	9,287.4	-2,133.4	75.4	2,134.8	0.00	0.00	0.00
11,300.0	89.40	177.98	9,288.5	-2,233.4	79.0	2,234.8	0.00	0.00	0.00
11,400.0	89.40	177.98	9,289.5	-2,333.3	82.5	2,334.8	0.00	0.00	0.00
11,500.0	89.40	177.98	9,290.6	-2,433.2	86.0	2,434.8	0.00	0.00	0.00
11,600.0	89.40	177.98	9,291.6	-2,533.2	89.6	2,534.8	0.00	0.00	0.00
11,700.0	89.40	177.98	9,292.7	-2,633.1	93.1	2,634.7	0.00	0.00	0.00
11,800.0	89.40	177.98	9,293.7	-2,733.0	96.6	2,734.7	0.00	0.00	0.00
11,900.0	89.40	177.98	9,294.8	-2,833.0	100.2	2,834.7	0.00	0.00	0.00
12,000.0	89.40	177.98	9,295.8	-2,932.9	103.7	2,934.7	0.00	0.00	0.00
12,100.0	89.40	177.98	9,296.9	-3,032.8	107.2	3,034.7	0.00	0.00	0.00
12,200.0	89.40	177.98	9,297.9	-3,132.8	110.7	3,134.7	0.00	0.00	0.00
12,300.0	89.40	177.98	9,299.0	-3,232.7	114.3	3,234.7	0.00	0.00	0.00
12,400.0	89.40	177.98	9,300.0	-3,332.6	117.8	3,334.7	0.00	0.00	0.00
12,500.0	89.40	177.98	9,301.1	-3,432.6	121.3	3,434.7	0.00	0.00	0.00
12,600.0	89.40	177.98	9,302.1	-3,532.5	124.9	3,534.7	0.00	0.00	0.00
12,700.0	89.40	177.98	9,303.1	-3,632.4	128.4	3,634.7	0.00	0.00	0.00
12,800.0	89.40	177.98	9,304.2	-3,732.4	131.9	3,734.7	0.00	0.00	0.00
12,900.0	89.40	177.98	9,305.2	-3,832.3	135.5	3,834.7	0.00	0.00	0.00
13,000.0	89.40	177.98	9,306.3	-3,932.2	139.0	3,934.7	0.00	0.00	0.00
13,100.0	89.40	177.98	9,307.3	-4,032.2	142.5	4,034.7	0.00	0.00	0.00
13,200.0	89.40	177.98	9,308.4	-4,132.1	146.1	4,134.7	0.00	0.00	0.00
13,300.0	89.40	177.98	9,309.4	-4,232.0	149.6	4,234.7	0.00	0.00	0.00
13,400.0	89.40	177.98	9,310.5	-4,331.9	153.1	4,334.7	0.00	0.00	0.00



TDS
Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well #8H
Company:	COG Operating LLC	TVD Reference:	KB @ 3483.6usft
Project:	Lea County, NM	MD Reference:	KB @ 3483.6usft
Site:	Monet Federal	North Reference:	Grid
Well:	#8H	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	89.40	177.98	9,311.5	-4,431.9	156.7	4,434.6	0.00	0.00	0.00	
13,600.0	89.40	177.98	9,312.6	-4,531.8	160.2	4,534.6	0.00	0.00	0.00	
13,700.0	89.40	177.98	9,313.6	-4,631.7	163.7	4,634.6	0.00	0.00	0.00	
13,800.0	89.40	177.98	9,314.7	-4,731.7	167.3	4,734.6	0.00	0.00	0.00	
13,831.8	89.40	177.98	9,315.0	-4,763.5	168.4	4,766.5	0.00	0.00	0.00	
TD at 13831.8										

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 (MF #8H/OH Plan : - plan hits target center - Point	0.00	0.00	9,270.0	-472.2	16.7	424,537.93	733,616.49	32° 9' 53.709 N	103° 34' 42.146 W	
PBHL (MF #8H/OH Plan : - plan hits target center - Point	0.00	0.00	9,315.0	-4,763.5	168.4	420,246.60	733,768.20	32° 9' 11.233 N	103° 34' 40.732 W	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
8,792.6	8,792.6	0.0	0.0	KOP - Start DLS 12.00 TFO 177.98	
9,537.6	9,270.0	-472.2	16.7	EOC - Start 4294.2 hold at 9537.6 MD	
13,831.8	9,315.0	-4,763.5	168.4	TD at 13831.8	



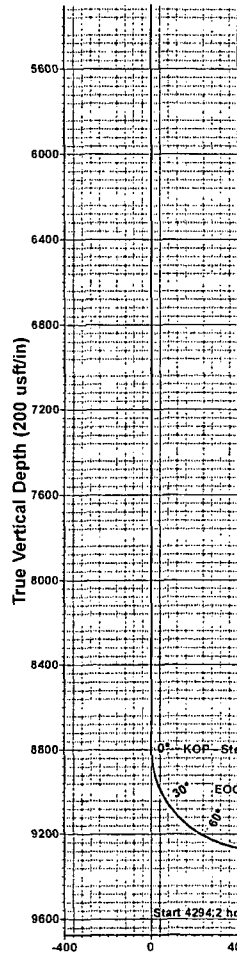
COG Operating LLC
Project: Lea County, NM
Site: Monet Federal
Well: #8H
Wellbore: OH
Plan: Plan #1

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	8792.6	0.00	0.00	8792.6	0.0	0.0	0.00	0.00	0.0	
3	9537.6	89.40	177.98	9270.0	-472.2	16.7	12.00	177.98	472.5	
4	13831.8	89.40	177.98	9315.0	-4763.5	168.4	0.00	0.00	4766.5	PBHL (MF #8H/OH Plan #1)

#8H

Ground Elevation:: 3461.6
RKB Elevation: KB @ 3483.6usft
Rig Name:

Northing 425010.10 Easting 733599.80 Latitude 32° 9' 58.383 N Longitude 103° 34' 42.302 W

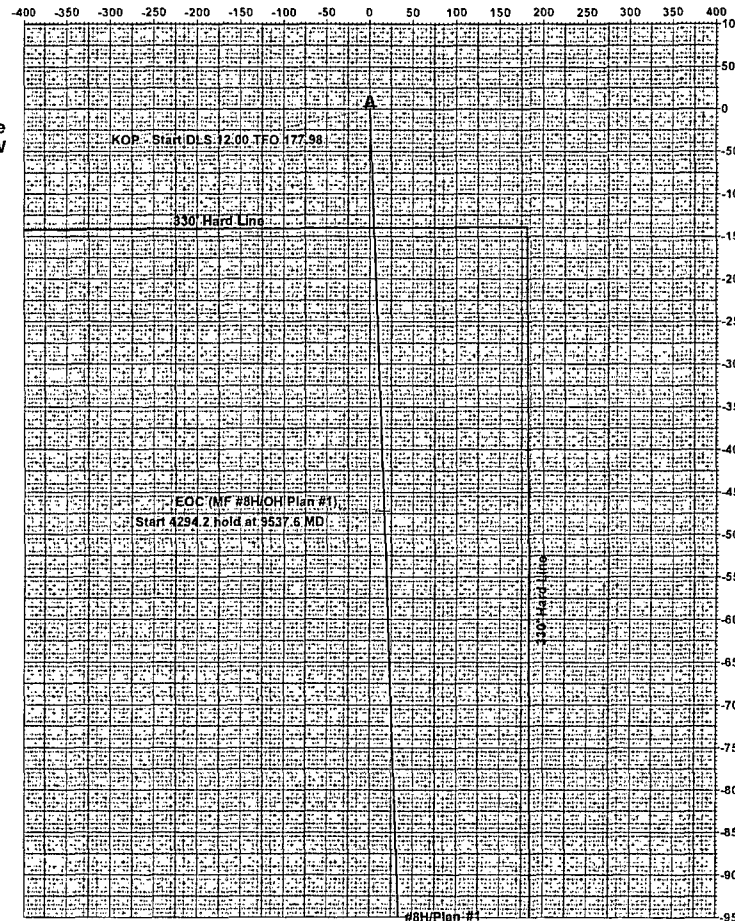


Azimuths to Grid North
True North: -0.40°
Magnetic North: 6.77°

Magnetic Field
Strength: 48242.8snT
Dip Angle: 60.05°
Date: 10/30/2014
Model: IGRF2010

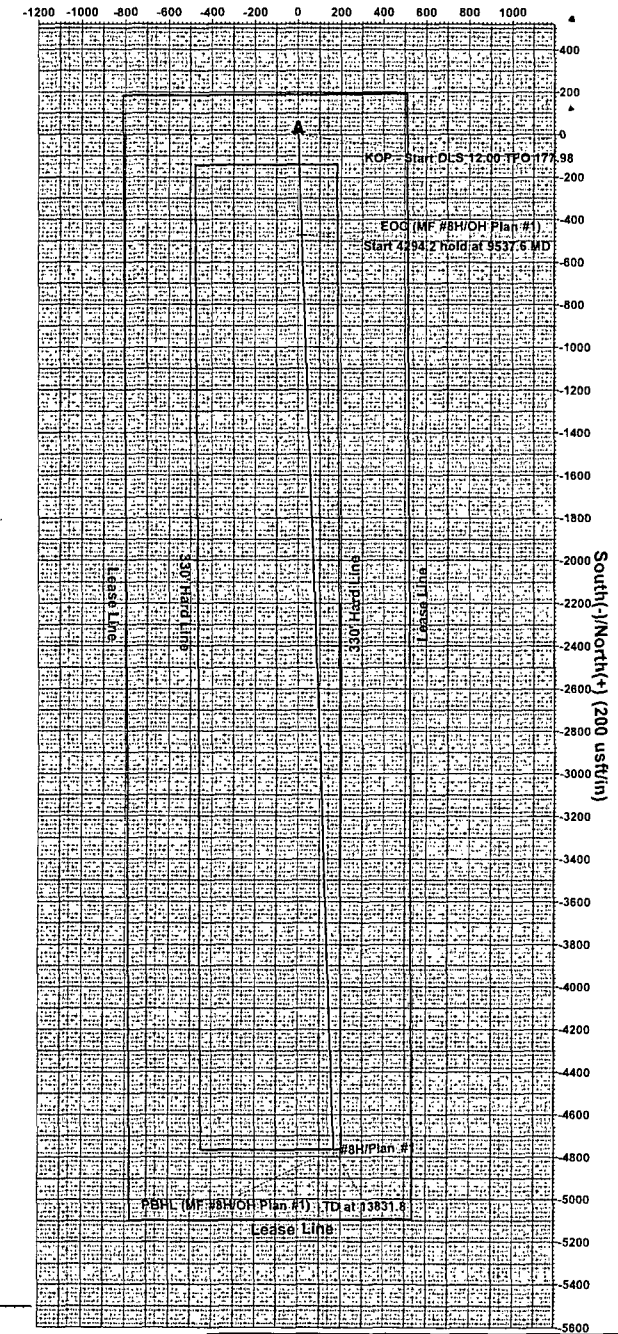
Section Details

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



Vertical Section at 177.98° (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

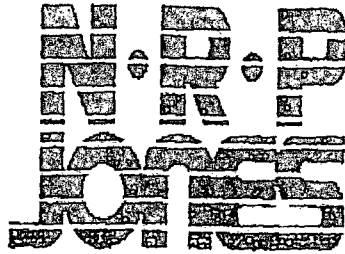
COG (operator) requests a variance if Basic 46 (rig name) is used to drill this well to use a co-flex line between the BOP and choke manifold.

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 ~~2/13~~ 3/11/13

SERIAL NO. MA31113REPAIR PART NO. _____

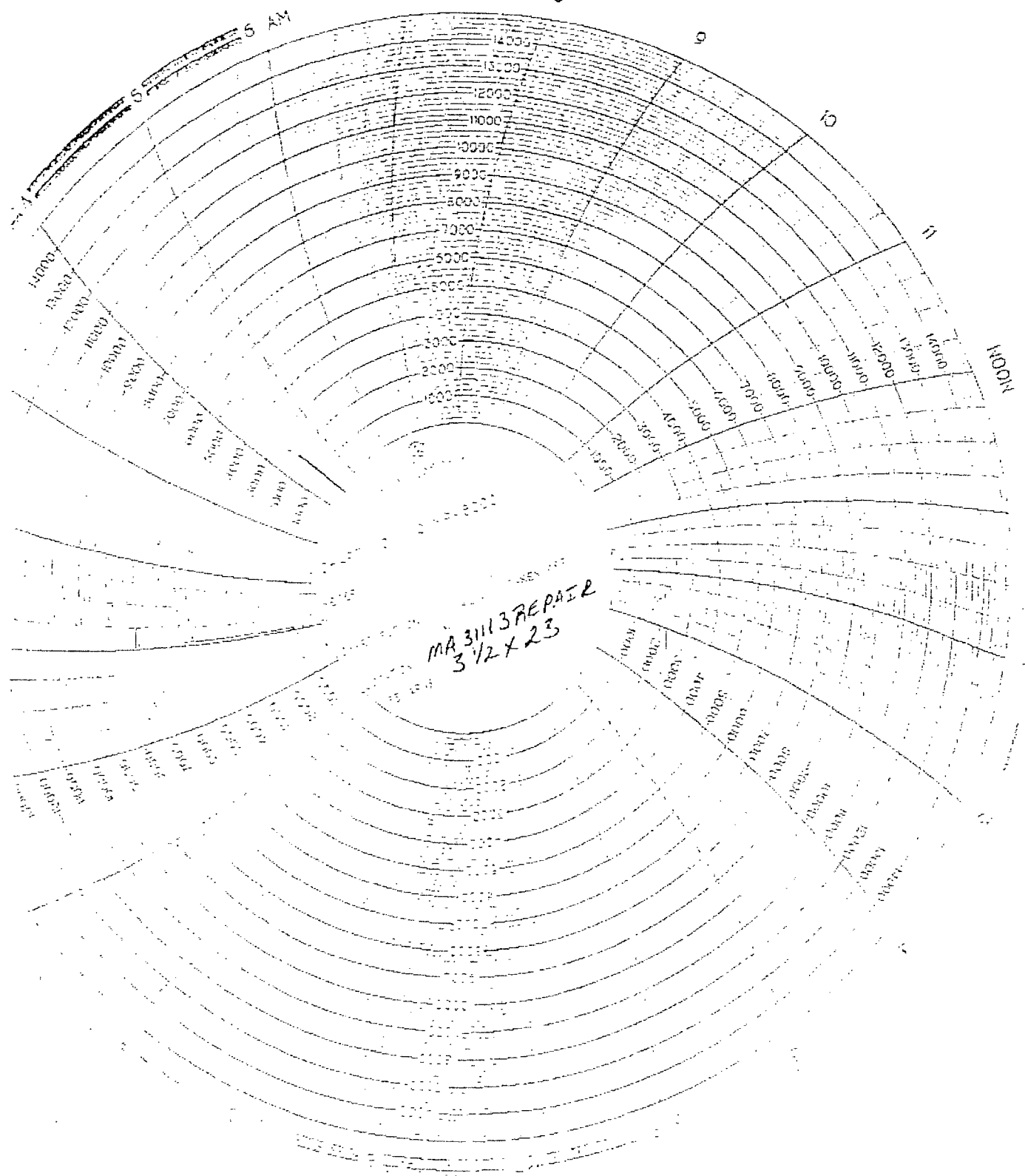
SIZE 3 1/2 LENGTH 23

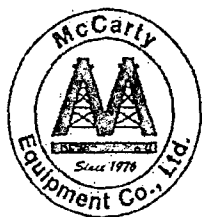
HYDROSTATICALLY TESTED AT 5000

BY Chance Perkins Q.A. Allen Casey

NEPHI RUBBER PRODUCTS CORP.

Corporate Office: P.O. Box 310 • LaPorte, Indiana 46352 • (800)348-8868 • (219)362-9908 • 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 H₂S 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

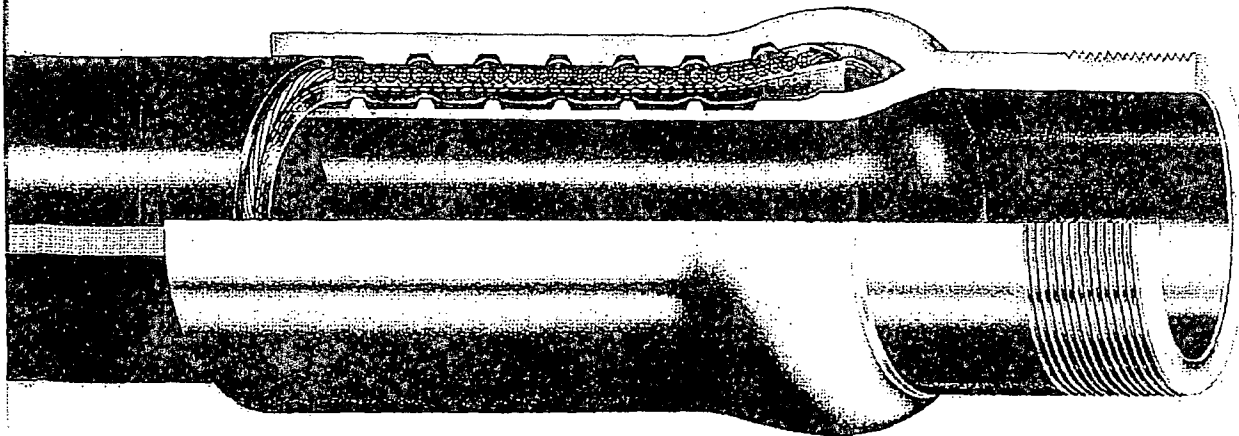
NRP Part Number	Hose ID (in)	Hose OD (in)	Rated WP (psi)	Test Pressure (psi)	Minimum Bend Radius	Weight per Foot (lbs)
5035-32	2.00	4.45	5,000	10,000	44	12.9
5035-40	2.50	4.60	5,000	10,000	48	13.9
5035-48	3.00	5.10	5,000	10,000	52	16.1
5040-32	2.00	4.68	10,000	15,000	48	22.4
5040-40	2.50	5.34	10,000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

Super Choke & Kill Specifications

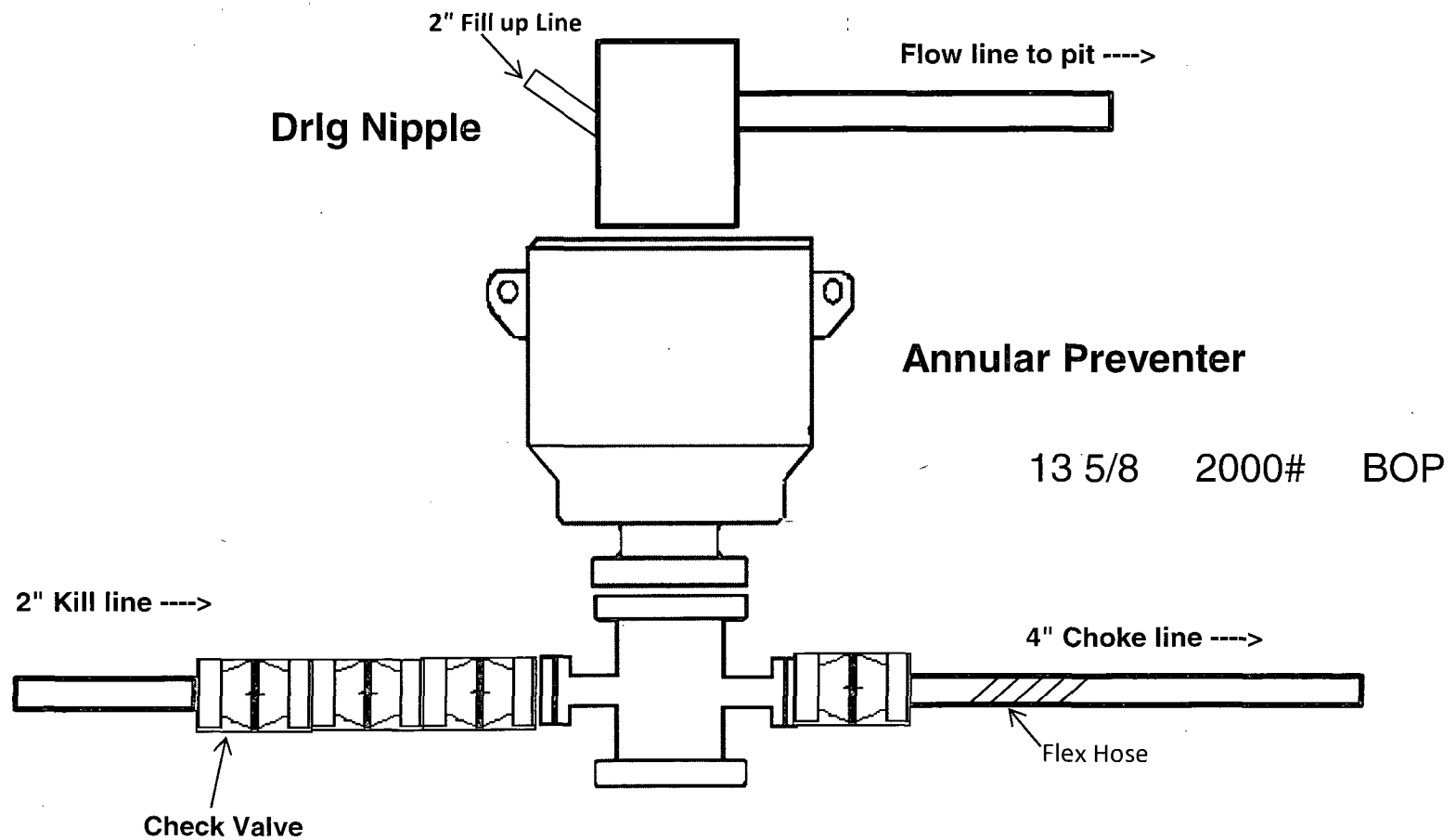
5085-40	2.50	5.84	15,000	22,500	60	28.2
5085-48	3.00	6.34	15,000	22,500	60	34.1

Specifications

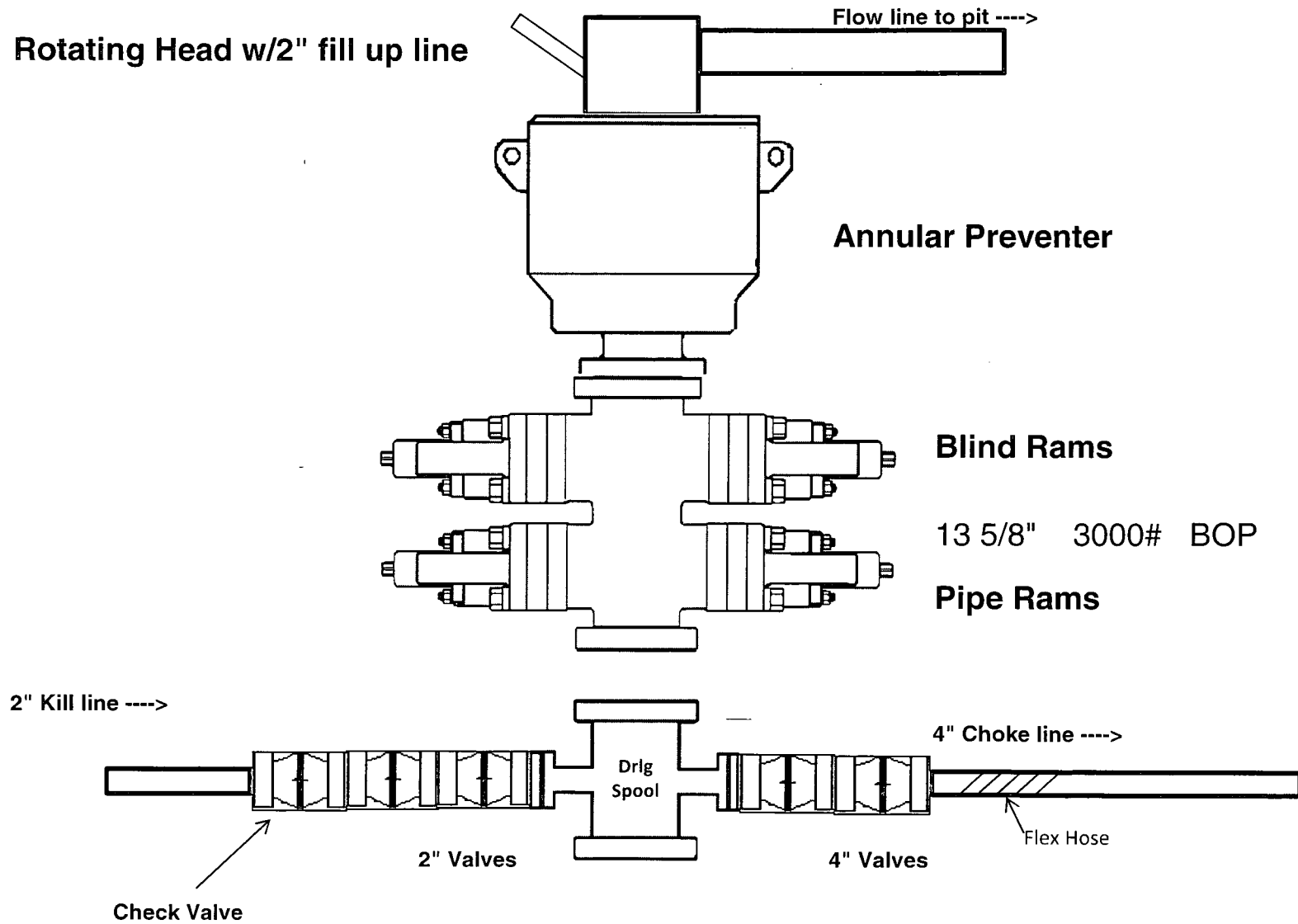
NRP Rotary Number	NRP Vibrator Number	Hose ID (in)	Hose OD (in)	Grade	Rated WP (psi)	Test Pressure (psi)	Minimum Bend Radius	Weight per Foot (lbs)	Weight of 2 Cplgs (lbs)	Cplg Thread API (in)
5501-40	5502-40	2.50	4.45	C	4,000	8,000	36	12.9	54	3
5501-48	5502-48	3.00	4.95	C	4,000	8,000	48	14.9	74	4
5501-56	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



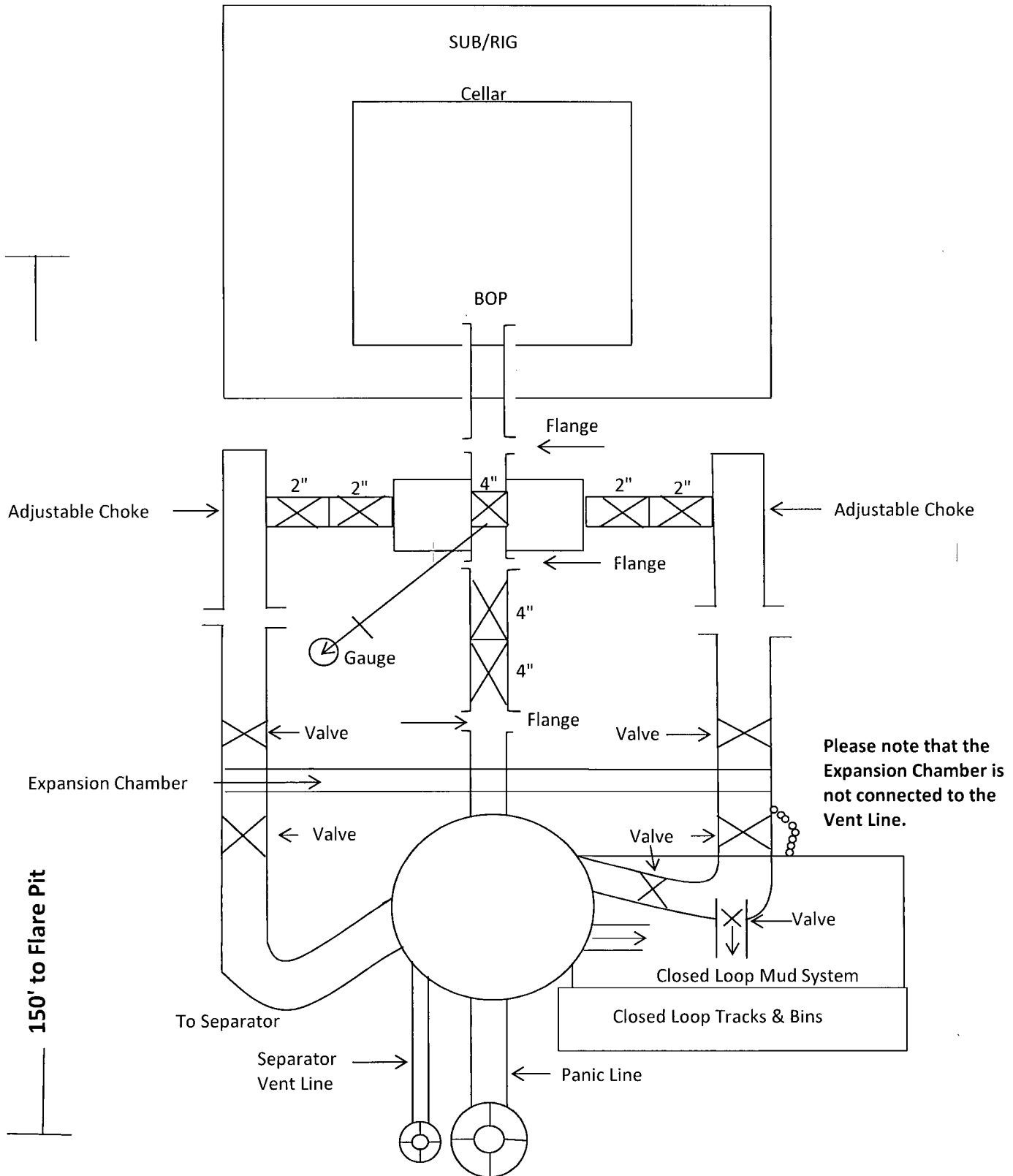
2,000 psi BOP Schematic



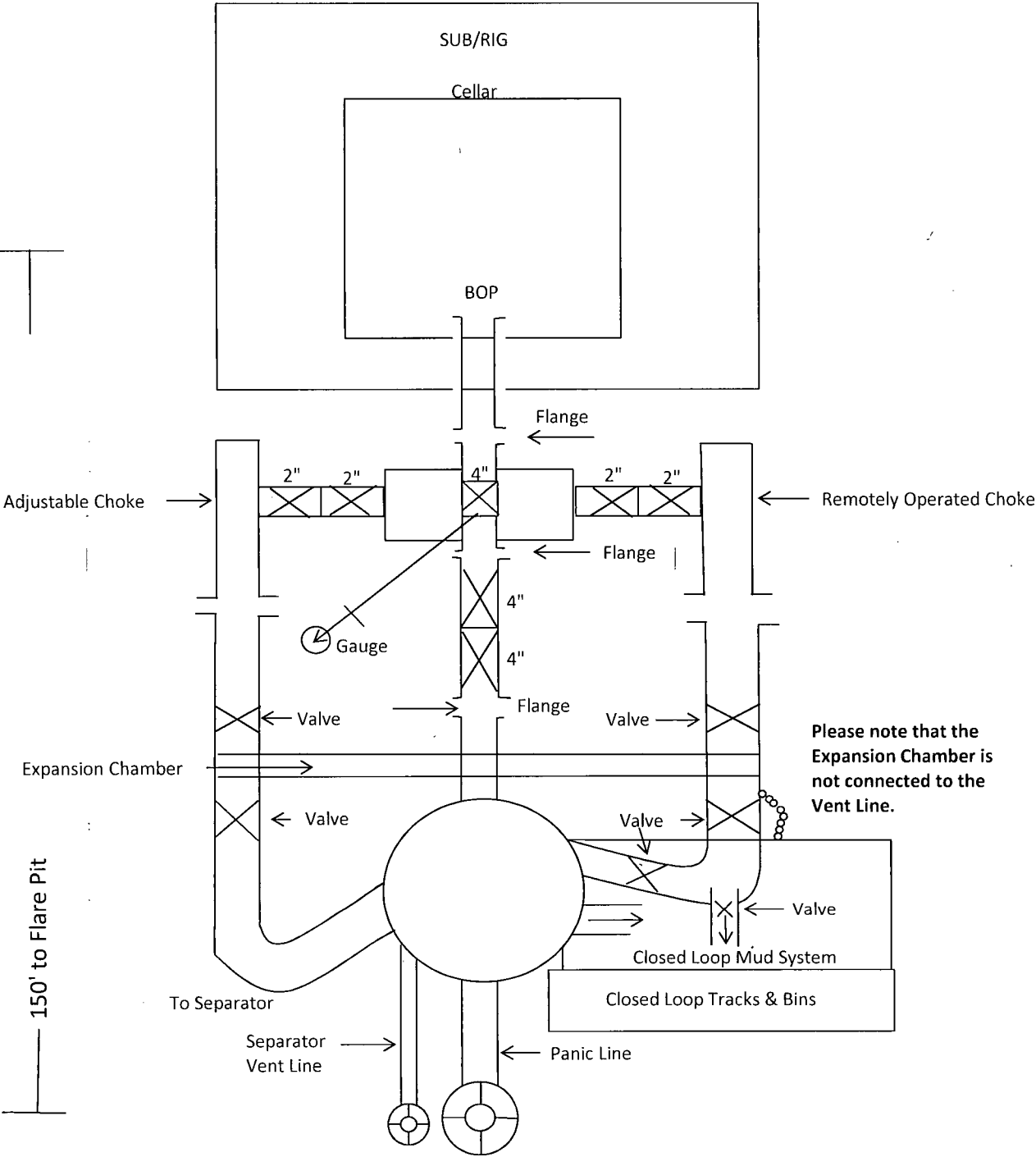
3,000 psi BOP Schematic



2M Choke Manifold Equipment



3M Choke Manifold Equipment



COG Operating LLC

Rig Plat & Closed Loop Equipment Diagram

Well pad will be 340' X 340'
with cellar in center of pad

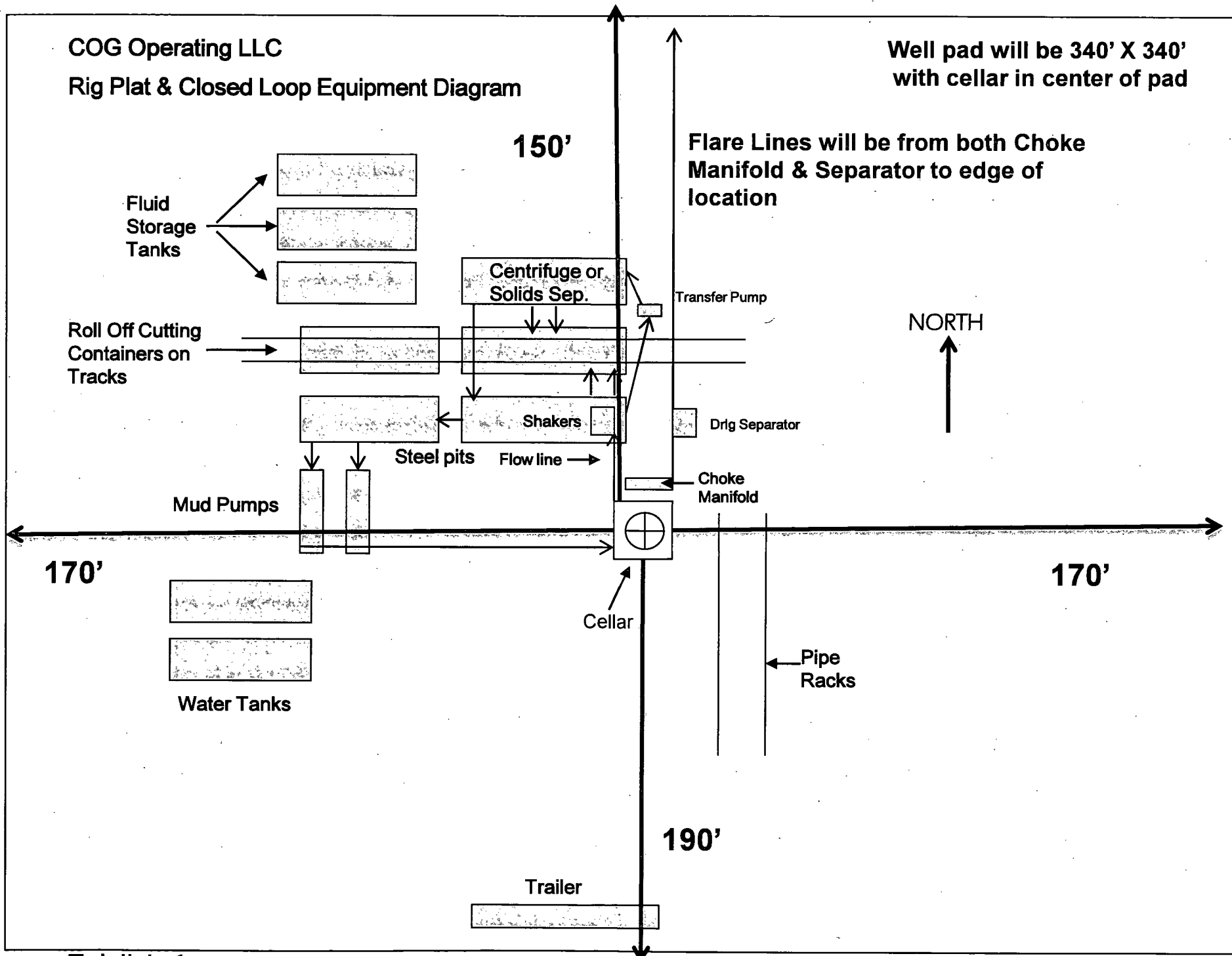


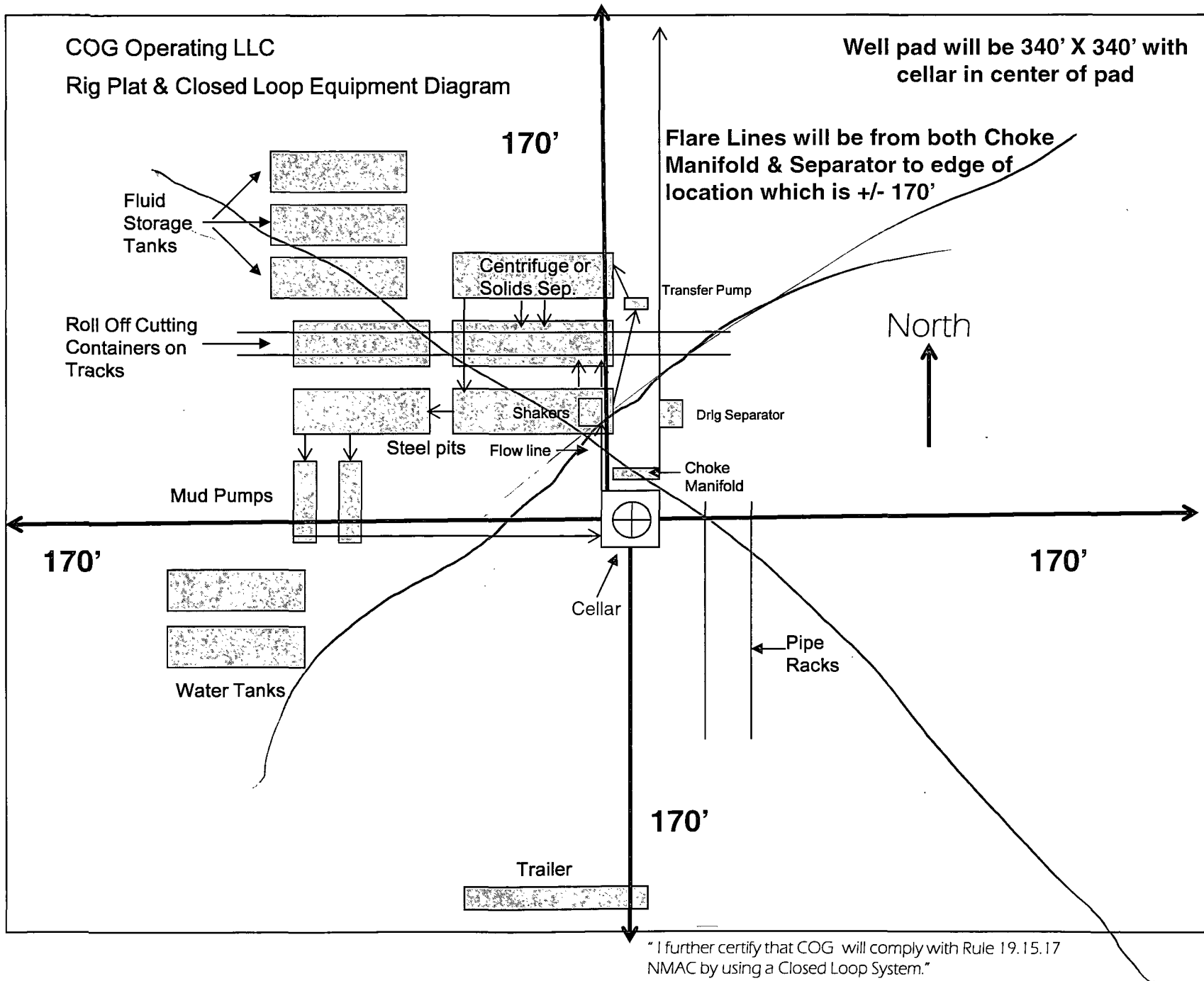
Exhibit 1

"I further certify that COG will comply with Rule 19.15.17.
NMAC by using a Closed Loop System."

COG Operating LLC

Rig Plat & Closed Loop Equipment Diagram

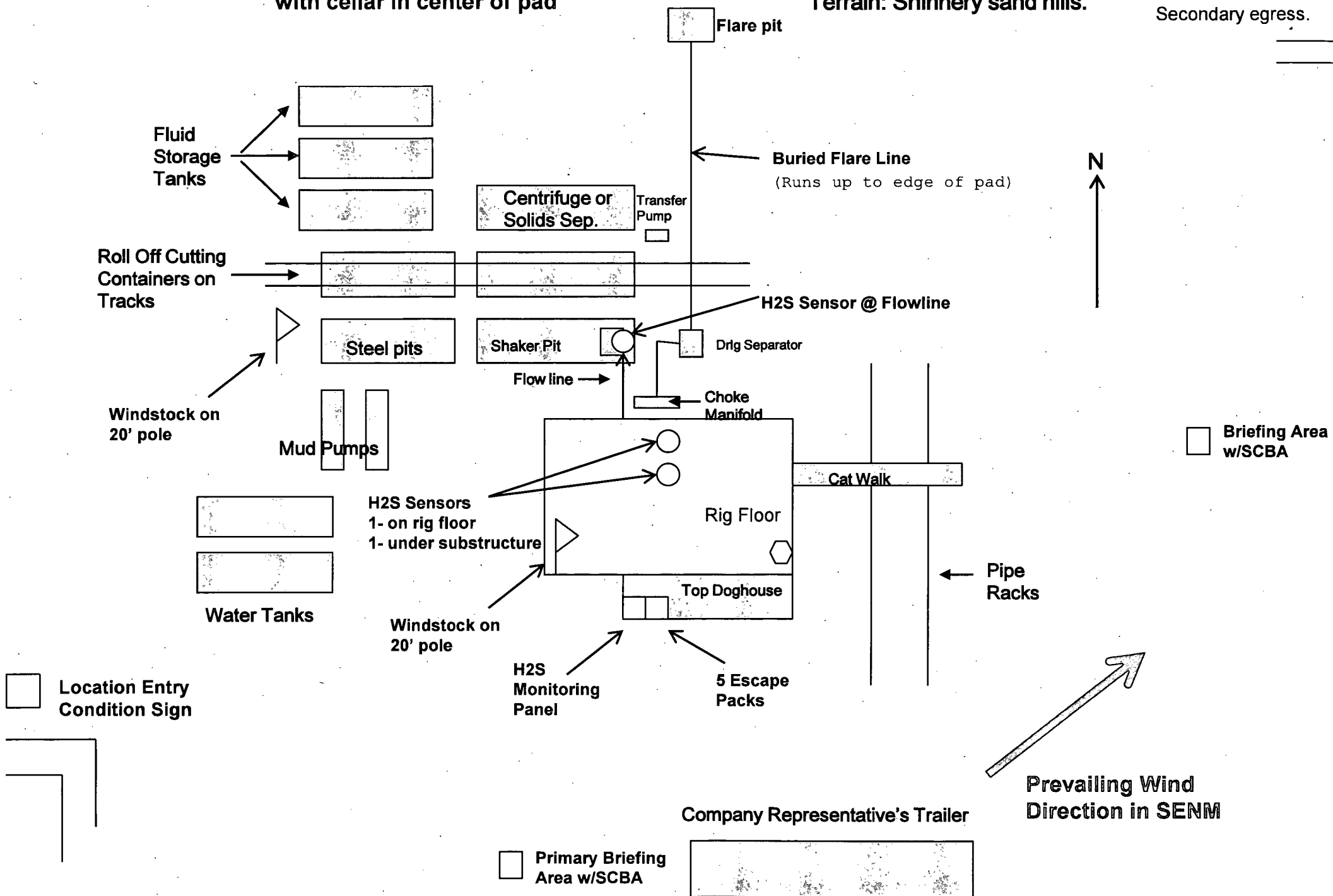
Well pad will be 340' X 340' with
cellar in center of pad



Monet Federal # 8H
Well pad will be 340' X 340'
with cellar in center of pad

COG Operating LLC
H₂S Equipment Schematic
Terrain: Shinnery sand hills.

Secondary egress.



Well pad will be 340' X 340'
with cellar in center of pad

COG Operating LLC
H₂S Equipment Schematic
Terrain: Shinnery sand hills.

