16-296

OCD Hobbs

HOBBS OCD
APR 17 2017
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Form 3160-3
(March 2012)

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

5. Lease Serial No.
BHL: NMNM120907
SHL: NMLC0061936

6. If Indian, Allotee or Tribe Name

1a. Type of Work: ☑ DRILL ☐ REENTER

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

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

8. Lease Name and Well No. (38538)
Dos XX 27 Federal Com #3H

2. Name of Operator
COG Production LLC. (217955)

9. API Well No.
30-025-43744

3a. Address
2208 West Main Street
Artesia, NM 88210

3b. Phone No. (include area code)
575-748-6940

10. Field and Pool, or Exploratory
WC-025 G-06 S253201M;
Upper Bone Spring (97784)

4. Location of Well (Report location clearly and in accordance with any State requirements.*)
At surface 250' FSL & 350' FEL Unit Letter P (SESE) Sec 27-T24S-R32E
At proposed prod. Zone 200' FNL & 380' FEL Unit Letter A (NENE) Sec 27-T24S-R32E

11. Sec., T.R.M. or Blk and Survey or Area
Sec. 27 - T24S - R32E

14. Distance in miles and direction from nearest town or post office*
Approximately 23 miles from Malaga

12. County or Parish
Lea

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. Unit line, if any) 200'

16. No. of acres in lease
BHL: 1840
SHL: 1879.24

17. Spacing Unit dedicated to this well
160

18. Distance from location* to nearest well, drilling, completed, applied for, on this lease, ft. 3041'

19. Proposed Depth
TVD: 10,985' MD: 15,599'

20. BLM/BIA Bond No. on file
NMB000860 &NMB000845

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3545.7' GL

22. Approximate date work will start*
7/1/2017

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.
2. A Drilling Plan
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).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
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: 4/14/2016

Title: Regulatory Analyst

Approved by (Signature): /s/Cody Layton
Name (Printed/Typed):
Date: APR 13 2017

Title: FIELD MANAGER
Office: CARLSBAD FIELD OFFICE

Application approval does not warrant or certify that the applicant holds legan or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations theron.
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

KZ 04/19/17

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Approval Subject to General Requirements
& Special Stipulations Attached

COG Production LLC – Dos XX 27 Fed Com 3H

1. Geologic Formations

TVD of target	10,985'	Pilot hole depth	NA
MD at TD:	15,599'	Deepest expected fresh water:	541

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Quaternary Fill	Surface	Water	
Rustler	999	Water	
Top of Salt	1319	Salt	
Base of Salt	4597	Salt	
Delaware - Lamar	4828	Salt Water	
Bell Canyon	4872	Salt Water	
Cherry Canyon	5744	Oil/Gas	
Brushy Canyon	7115	Oil/Gas	
Bone Spring Lime	8740	Oil/Gas	
U. Avalon Shale	8891	Oil/Gas	
L. Avalon Shale	9381	Oil/Gas	
1st Bone Spring Sand	9982	Oil/Gas	
2nd Bone Spring Sand	10,524	Oil/Gas Target Zone	
3rd Bone Spring Sand	11,833	Oil/Gas	

2. Casing Program — SEE COA

Hole Size	Casing Interval From	Casing Interval To	Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17.5"	0	~~1025~~ 1125	13.375"	54.5	J55	STC	1.3	1.2	8.3
12.25"	0	3500	9.625"	36	J55	LTC	1.09	1.215	3.6
12.25"	3500	4830	9.625"	40	J55	LTC	1.003	1.363	9.7
8.75"	0	15,599'	5.5"	17	P110	LTC	1.435	2.047	2.383
				BLM Minimum Safety Factor			1.125	1	1.6 Dry 1.8 Wet

Intermediate casing will be kept at least ½ full while running casing.to mitigate collapse.
Intermediate burst based on 0.7 frac gradient at the shoe with Gas Gradient 0.1 psi/ft to surface.
All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

	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 3rd 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 2nd 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_20 gal/sk	500# Comp. Strength (hours)	Slurry Description
Surf.	485	13.5	1.75	9	12	Lead: Class C + 4% Gel + 2% CaCl2
	250	14.8	1.34	6.34	8	Tail: Class C + 2% CaCl2
Inter.	1070	12.7	1.98	10.6	16	Lead: Econocem HLC 65:35:6 + 5% Salt
	250	14.8	1.34	6.34	8	Tail: Class C + 2% CaCl
5.5 Prod	650	10.3	3.5	21	72	Lead: Halliburton Tune Lite Blend
	1200	14.4	1.24	5.7	19	Tail: Versacem 50:50:2 Class H + 1% Salt

Volumes Subject to Observed Hole Conditions and/or Fluid Caliper Results
Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

Casing String	TOC	% Excess
Surface	0'	50%
1st Intermediate	0'	75%
Production	3830'	17% OH in Lateral (KOP to EOL) – 40% OH in Vertical - KOP then Tie In 1000' Inside 9-5/8" Casing Shoe @ 4830'

4. Pressure Control Equipment SEE COA

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
12-1/4"	13-5/8"	2M	Annular	x	2000 psi
			Blind Ram		2M
			Pipe Ram		
			Double Ram		
			Other*		
8-3/4"	13-5/8"	5M	Annular	x	50% testing pressure
			Blind Ram	x	5M
			Pipe Ram	x	
			Double Ram		
			Other*		

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.

SEE COA

X	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.	
N	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?
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.	

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	Surf. Shoe (1125')	FW Gel	8.6-8.8	28-34	N/C
Surf csg (1125')	9-5/8" Int shoe (4830')	Saturated Brine	10.0-10.2	28-34	N/C
9-5/8" Int shoe	15,599' (Lateral TD)	Cut Brine	8.6 – 9.4	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?	PVT/Pason/Visual Monitoring

6. Logging and Testing Procedures -SEE COA

Logging, Coring and Testing.	
Y	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.
N	No Logs are planned based on well control or offset log information.
N	Drill stem test? If yes, explain
N	Coring? If yes, explain

Additional logs planned		Interval
N	Resistivity	
N	Density	
Y	CBL	Production casing (If cement not circulated to surface)
Y	Mud log	Intermediate shoe to TD
N	PEX	

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	5198 psi at 10,985' TVD (EOC - Lateral)
Abnormal Temperature	NO

No abnormal pressure or temperature conditions are anticipated. Sufficient mud materials to maintain mud properties and weight increase requirements will be kept on location at all times.

Sufficient supplies of Paper/LCM for periodic sweeps to control seepage and losses will be maintained on location.

Offset Wellbore Proximity – Anticollision Considerations: The Dos XX Fed Com 1H is located 440' FEL X 440' FNL of the section and was drilled from North to South at a TVD of around 9600'. There was no pilot hole drilled on the Dos XX Fed Com 1H. Our Dos XX 27 Fed Com

3H will be drilled from South to North at a TVD of 10,985' TVD and hence the lateral will be well below the lateral, curve and vertical of the Dos XX 27 Fed Com 1H. However, the terminus of the Dos XX 27 Fed Com 1H comes approximately 100' from the proposed Dos XX Fed Com 3H vertical wellbore. Therefore, included in the Directional Drilling Plan is an anticollision assessment relative to these two wellbores. While drilling the vertical section of the proposed Dos XX 27 Fed Com 3H, azimuth and inclination will be monitored and directional straight hole control will be utilized if needed.

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	H2S is present
Y	H2S Plan attached

8. Other facets of operation

Is this a walking operation? NO If yes, describe.
Will be pre-setting casing? NO If yes, describe.

- Directional Plan
- Anticollossion Report
- VES Gyro Survey Data Dos XX 27 Federal Com #1H
  Stryker Directional Survey Report Dos XX 27 Federal Com #1H
- BOP & Choke Schematics
- C102 and supporting maps
- Rig plat
- H2S schematic
- H2S contingency plan
- Interim reclamation plat

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

No records found.

PLSS Search:

Section(s): 27 **Township:** 24S **Range:** 32E

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-basin Code	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
C 01932	C	ED	3	1	12	24S	32E		628633	3567188*	492		
C 02350		ED	4	3	10	24S	32E		625826	3566333*	60		
C 03527 POD1	C	LE	1	2	3	03	24S	32E	625770	3568487	500		
C 03528 POD1	C	LE	1	1	2	15	24S	32E	626040	3566129	541		
C 03530 POD1	C	LE	3	4	3	07	24S	32E	620886	3566156	550		
C 03555 POD1	C	LE	2	2	1	05	24S	32E	622709	3569231	600	380	220

Average Depth to Water: **380 feet**

Minimum Depth: **380 feet**

Maximum Depth: **380 feet**

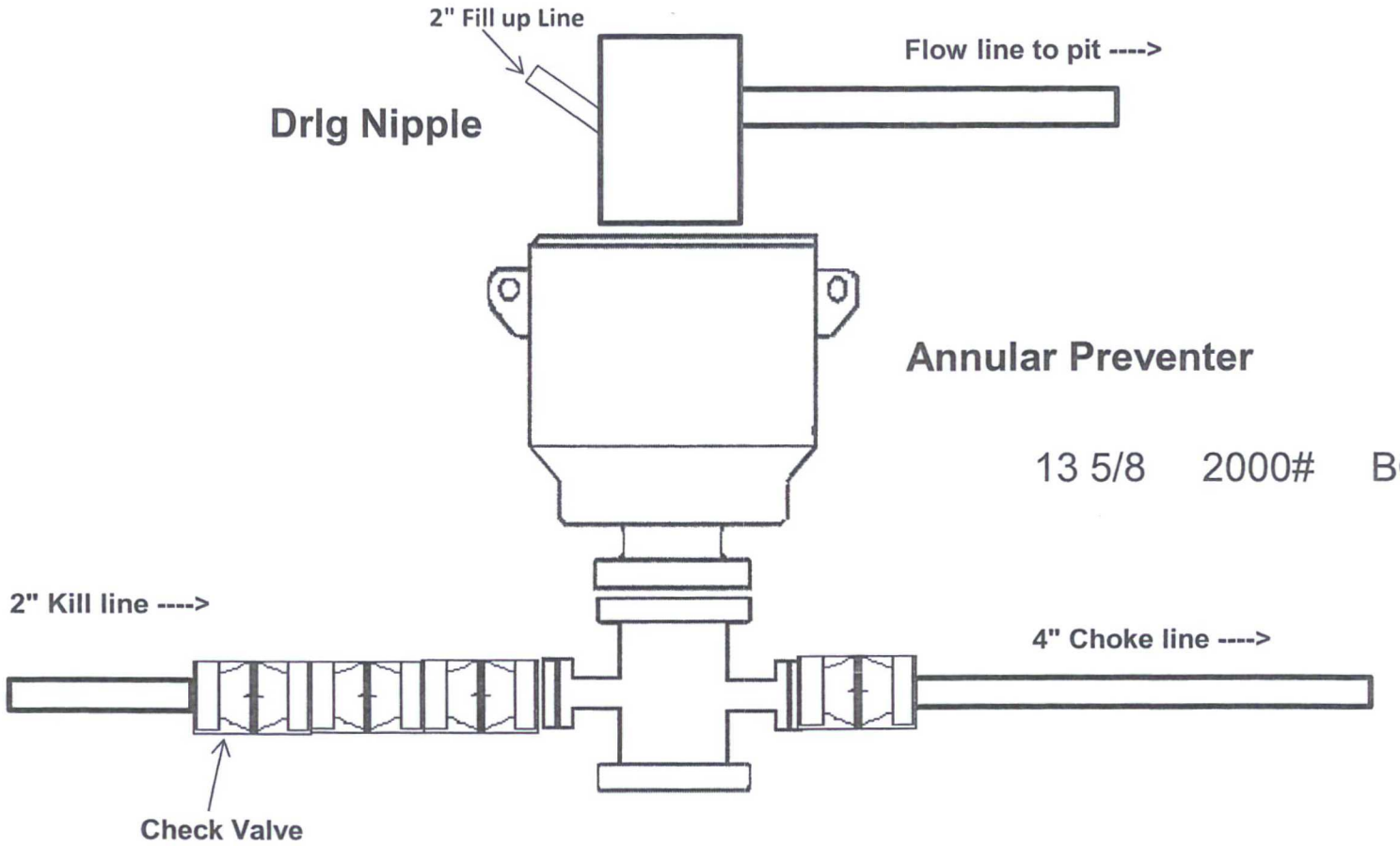
Record Count: 6

PLSS Search:

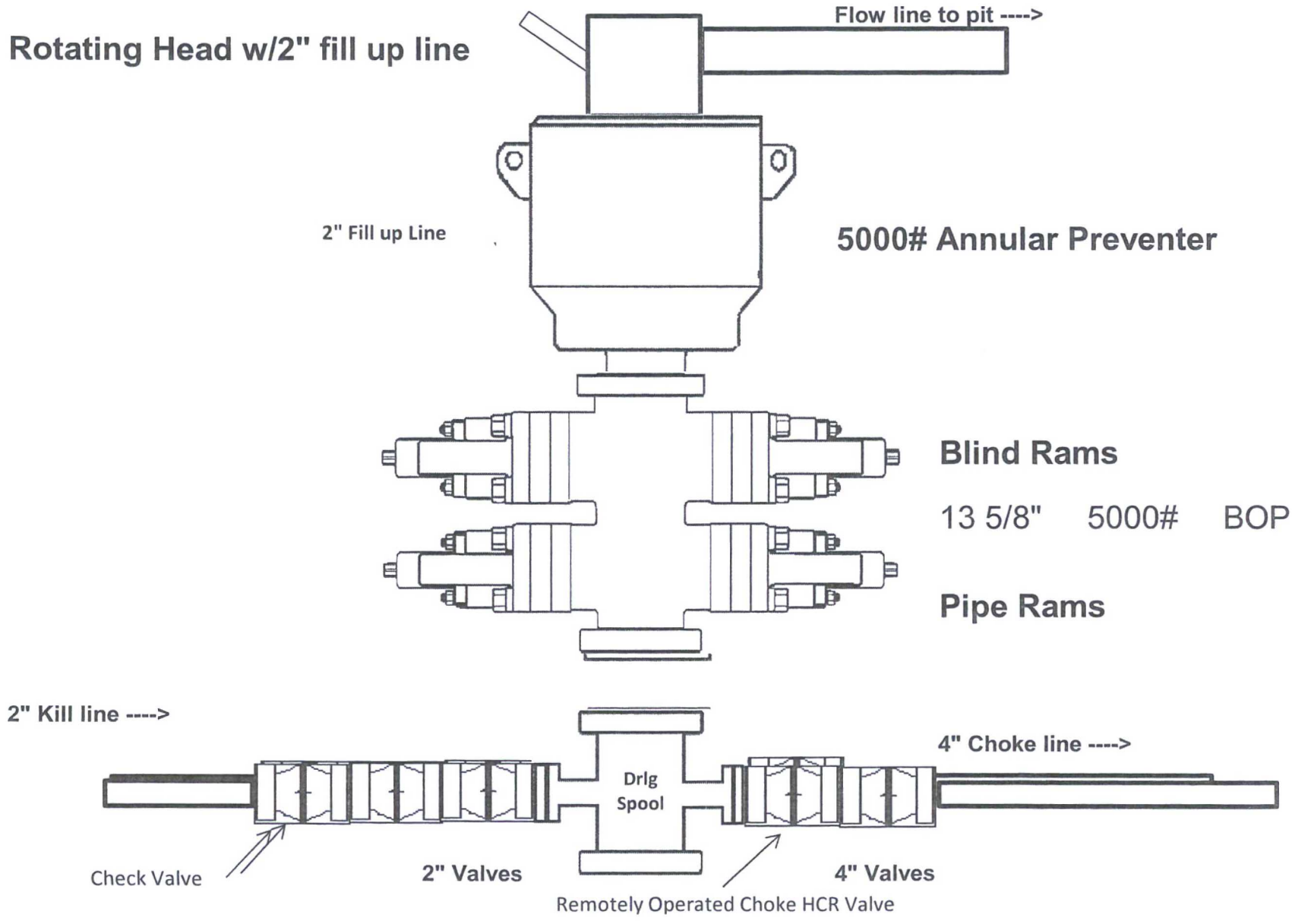
Township: 24S **Range:** 32E

***UTM location was derived from PLSS - see Help**

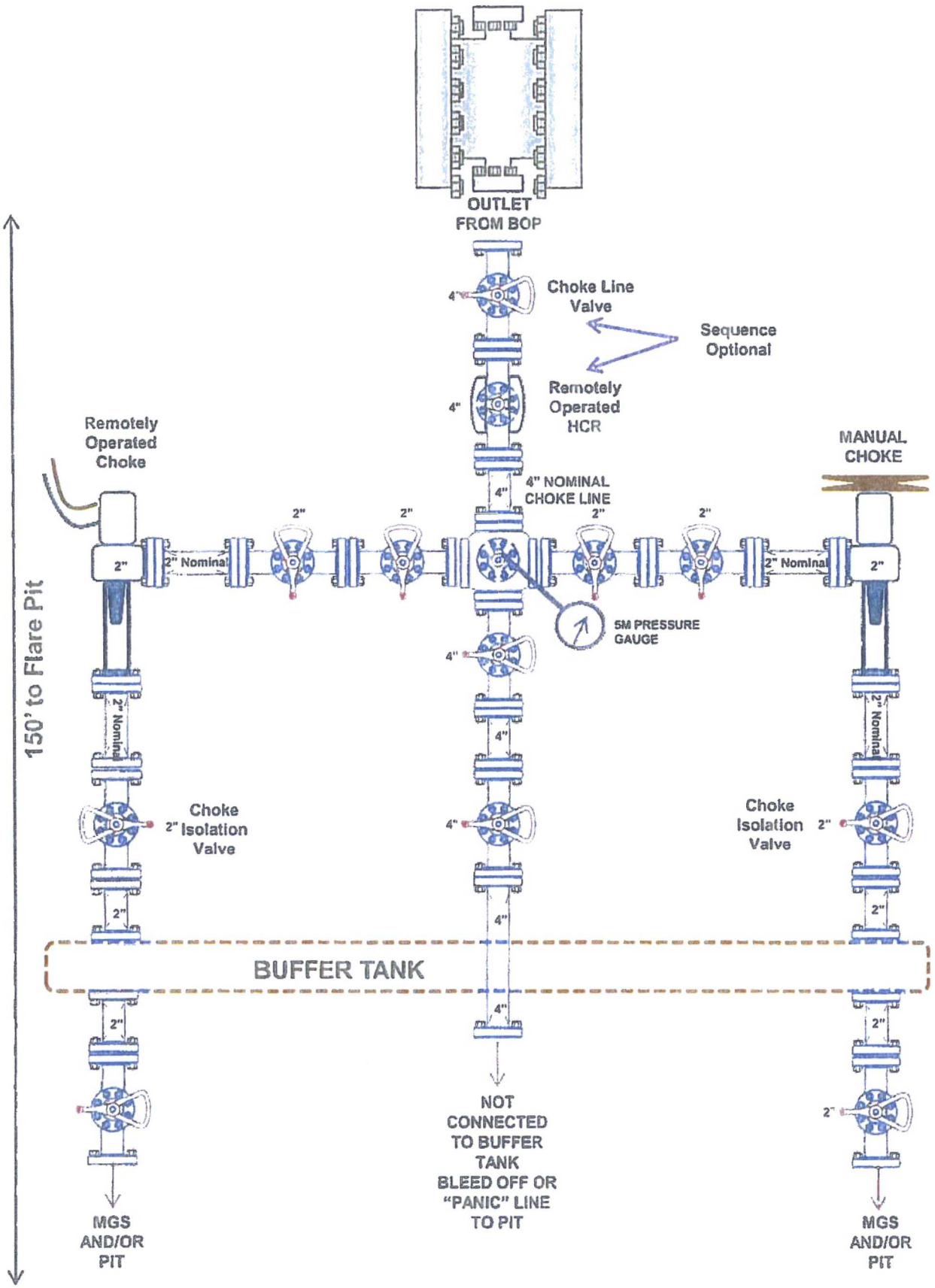
2,000 psi BOP Schematic



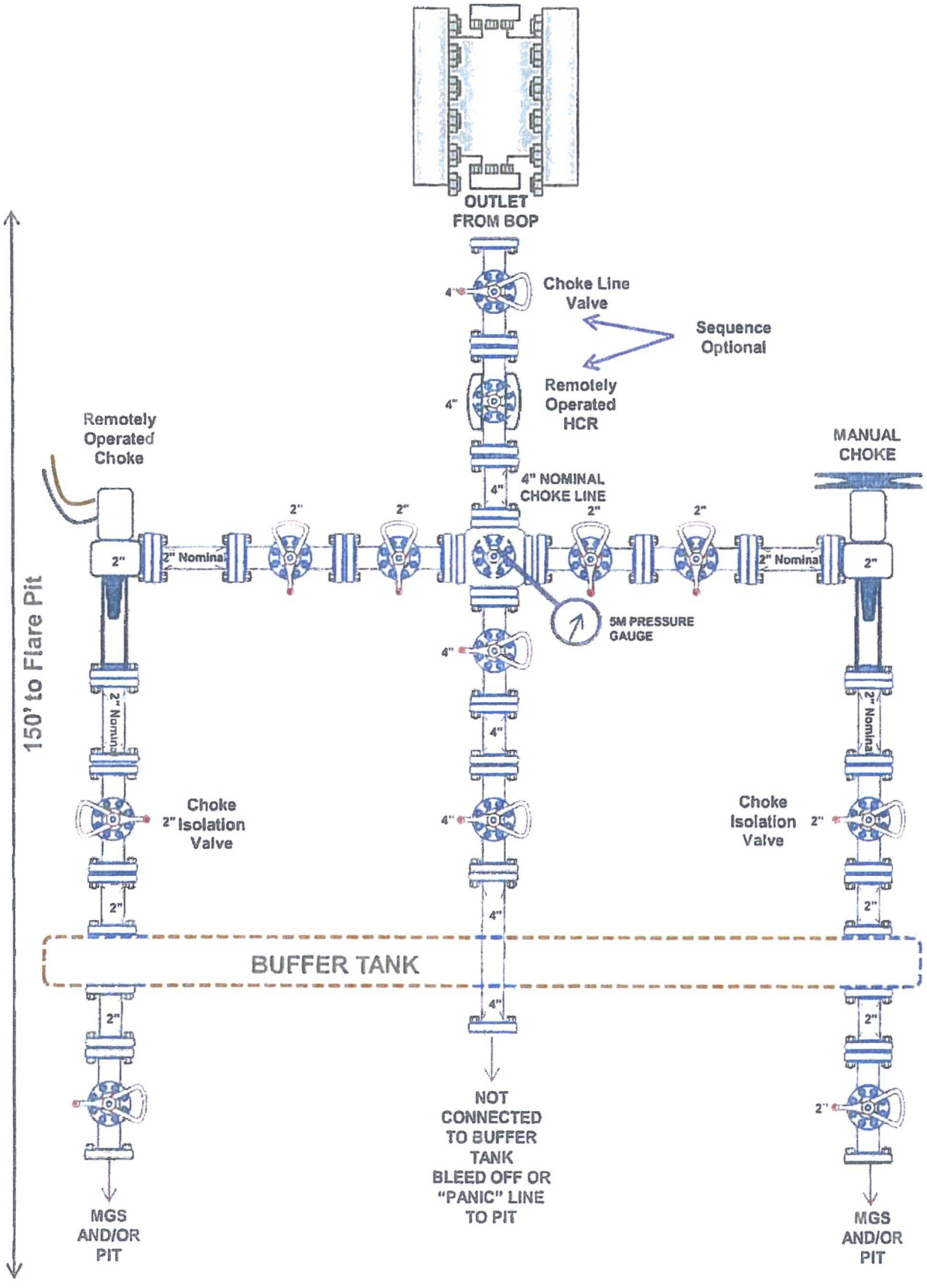
5,000 psi BOP Schematic

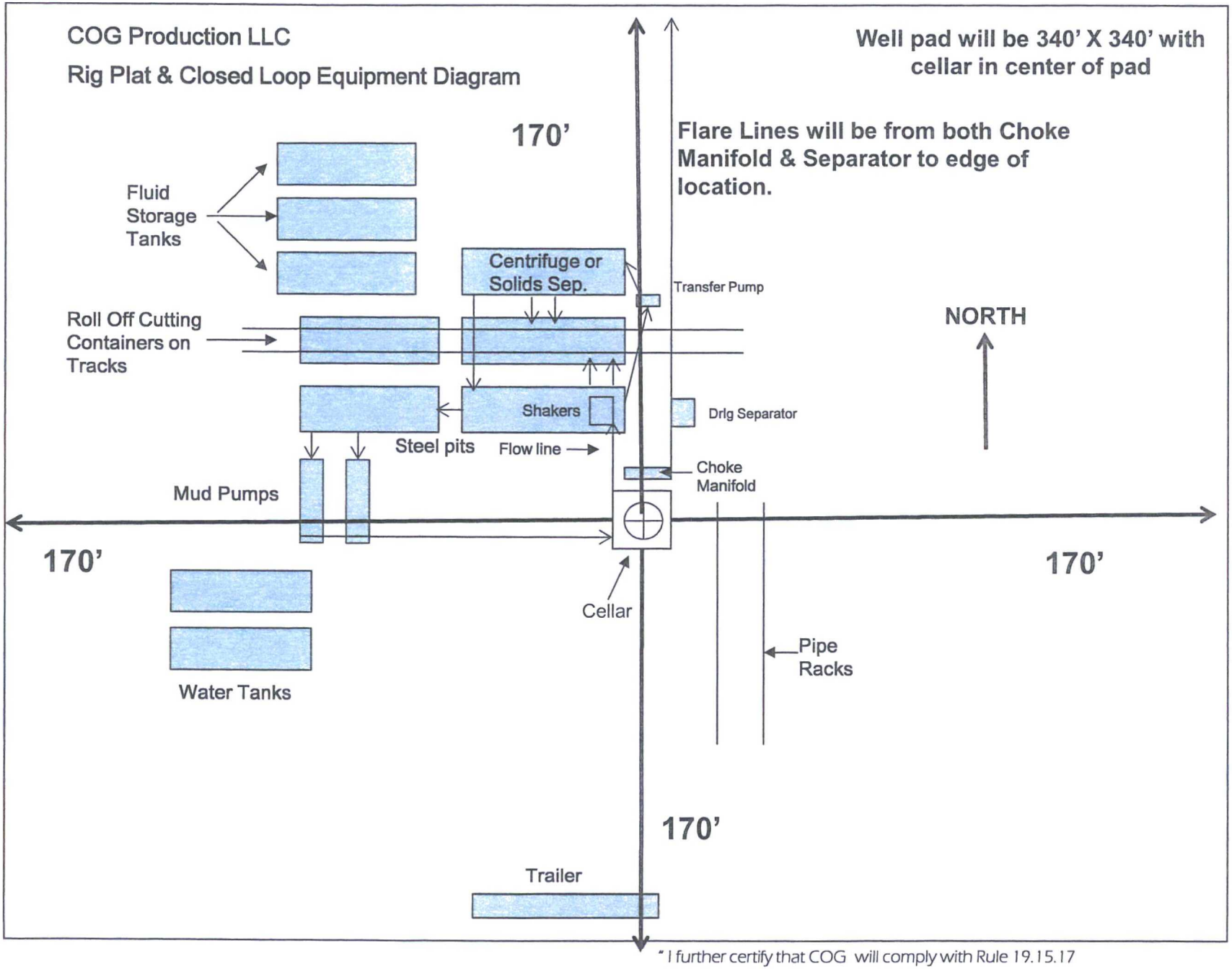


2M Choke Manifold Equipment



5M Choke Manifold Equipment





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

COG Production LLC
H_2S Equipment Schematic
Terrain: Shinnery sand hills.

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