

HOBBS OCD

NOV 05 2013

RECEIVED

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SECRETARY'S POTASH

OCD Hobbs

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

5. Lease Serial No.

SHL: NMNM85937, BHL: NMNM64606

6. If Indian, Allottee or Tribe Name

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

8. Lease Name and Well No. **(38946)**

Airbonita 12 Federal Com #1H

9. API Well No.

30-025-41491

10. Field and Pool, or Exploratory

(51683)
Red Tank; Bone Spring

11. Sec., T.R.M. or Blk and Survey or Area

Sec. 12 - T22S - R32E

12. County or Parish

Lea County

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

COG Operating LLC.

3a. Address

2208 West Main Street
Artesia, NM 88210

3b. Phone No. (include area code)

575-748-6940

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

At surface

190' FSL & 330' FEL Unit Letter P (SESE) SHL Sec 12-T22S-R32E

At proposed prod. Zone

330' FNL & 380' FEL Unit Letter A (NENE) BHL Sec 12-T22S-R32E

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

Approximately 26 miles from Loving

15. Distance from proposed*

location to nearest
property or lease line, ft.

(Also to nearest drig. Unit line, if any)

190'

18. Distance from location*

to nearest well, drilling, completed,
applied for, on this lease, ft.

SHL: 1670' BHL: 1759'

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

3624' GL

16. No. of acres in lease

SHL: 800

BHL: 160

17. Spacing Unit dedicated to this well

160

19. Proposed Depth

TVD: 11935' MD: 16489'

20. BLM/BIA Bond No. on file

NMB000740 & NMB00215

22. Approximate date work will start*

6/1/2012

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

Name (Printed/Typed)

Date

Title

Mayte Reyes

3/8/2013

Regulatory Analyst

Approved by (Signature)

/s/Aden L. Seidlitz

Name (Printed/Typed)

Date

OCT 29 2013

Title

STATE DIRECTOR

Office

NM STATE 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 thereon.

APPROVAL FOR TWO YEARS

Conditions of approval, if any, are attached.

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)

Carlsbad Controlled Water Basin
(Instructions on page 2)Approval Subject to General Requirements
& Special Stipulations AttachedSEE ATTACHED FOR
CONDITIONS OF APPROVAL

NOV 07 2013

COG Operating LLC
DRILLING AND OPERATIONS PROGRAM
Airbonita 12 Federal Com #1H
SHL: 190' FSL & 330' FEL
BHL: 330' FNL & 380' FEL
Section 12, T22S R32E
Lea County, New Mexico

In conjunction with Form 3160-3, Application for Permit to Drill subject well, COG Operating LLC submits the following eleven items of pertinent information in accordance with BLM requirements.

1. Geological surface formation: Permian
2. The estimated tops of geologic markers & estimated depths at which anticipated water, oil or gas formations are expected to be encountered are as follows:

Fresh Water	350'	
Rustler	882'	
Top of Salt	952'	
Base of Salt	4,368'	
Delaware	4770'	Oil
Bone Spring	8,631'	Oil
1 st BS Sand	9,802'	Oil
2 nd BS Sand	10,343'	Oil
3 rd BS Sand	11,598'	Oil
Wolfcamp	11,960'	Oil
TD MD	16,489'	Will not penetrate
TVD max	11,935'	

No other formations are expected to give up oil, gas or fresh water in measurable quantities. The surface fresh water sands will be protected by setting 13-3/8" casing at 910' 925' and circulating cement back to surface. All intervals will be isolated by setting 5 1/2" casing to total depth and circulating cement to surface on both stages utilizing a DV tool placed at ~ 7000'.

3. Proposed Casing Program: All casing is new and API approved

See COA

Hole Size	Depths	Section	OD Casing	New/Used	Wt	Collar	Grade	Collapse Design Factor	Burst Design Factor	Tension Design Factor
17 1/2"	0' - 925' 910'	Surface	13 3/8"	New	54.5#	STC	J-55	1.125	1.125	1.6
12 1/4"	0' - 4,800' 4750'	Intrmd	9 5/8"	New	40#	LTC	N-80	1.125	1.125	1.6
7 7/8"	0' - 16,489'	Production Curve & Lateral	5 1/2"	New	17#	LTC	P-110	1.125	1.125	1.6

- While running all casing strings, the pipe will be kept a minimum of 1/3 full at all times to avoid approaching the collapse pressure of casing.
- Will run one centralizer per joint in lateral section of well.

4. Proposed Cement Program

- a. 13-3/8" Surface
Lead: 430 sx Class C + 4% Gel + 2% CaCl₂
(13.5 ppg / 1.75 cuft/sk)
Tail: 240 sx Class C + 2% CaCl₂
(14.8 ppg / 1.34 cuft/sk)
**Calculated w/65% excess on OH volumes
- b. 9 5/8" Intermediate:
Lead: 1350 sx Class C + 4% Gel + 2% CaCl₂
(13.5 ppg / 1.73 cuft/sk)
Tail: 200 sx Class C + 2% CaCl₂
(14.8 ppg / 1.34 cuft/sk)
**Calculated w/85% excess on OH volumes
- d. 5 1/2" Production
Stage 1
Lead: 560 sx 50:50:10 H w/ salt, gilsonite, CFR-3, P-E-F,
& HR601 (11.8 ppg / 2.43 cuft/sk)
Tail: 1250 sx 50:50:2 H w/ salt, GasStop, HR601, &
CFR-3 (14.4 ppg / 1.25 cuft/sk)
**Calculated w/75% excess on OH volumes
- See
COA
Stage 2 (DV Tool @ ~ 7000')
Lead: 780 sx 50:50:10 H w/ salt, gilsonite, CFR-3, P-E-F,
& HR601 (11.8 ppg / 2.43 cuft/sk)
Tail: 100 sx H neat (15.6 ppg / 1.18 cuft/sk)
**Calculated w/90% excess on OH volumes

- The above cement volumes could be revised pending caliper measurements.
- All strings are designed to circulate cement to surface.

5. Minimum Specifications for Pressure Control:

see COA { Nipple up on 13 3/8" with minimum 2M annular and double ram preventers. Annular will be tested to 50% of WP and remainder of system tested to 2000 psi by independent tester.

Nipple up on 9 5/8" with minimum 5M annular and double ram preventers. Annular will be tested to 50% of WP and remainder of system tested to 5000 psi by independent tester.

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. A 2" kill line and a minimum 3" choke line will be included in the drilling spool located below the ram-type BOP. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold with 5000 psi WP rating.

6. Estimated BHP:

Max Lateral/Well TVD = 11935', BHP = 5213 psi

7. Mud Program: The applicable depths and properties of this system are as follows:

See COA

Depth	Type System	Mud Weight	Viscosity (sec)	Waterloss (cc)
0' - 925'	Fresh Water	8.4	29	N.C.
925' - 4,800' 4750'	Brine	10	29	N.C.
4,800' - 16,489' (Lateral)	Cut Brine	8.6 - 9.3	29	N.C.

- The necessary mud products for weight addition and fluid loss control will be on location at all times.
- A visual and electronic mud monitoring system will be rigged up prior to spud to detect changes in the volume of mud system. The electronic system consists of a pit volume totalizer, stroke counter and flow sensor at flow line.
- If weight and/or viscosity are introduced to the mud system a daily mud check will be performed by mud contractor, along with tourly check by rig personnel.
- After setting intermediate casing, a third party gas unit detection system will be installed at the flow line.

8. Auxiliary Well Control and Monitoring Equipment:

- See COA
- A Kelly cock will be in the drill string at all times.
 - A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times.
 - Hydrogen Sulfide detection equipment will be in operation after drilling out the 13 3/8" casing shoe until the 5 1/2" casing is cemented. Breathing equipment will be on location upon drilling the 13 3/8" shoe until total depth is reached.

9. Testing, Logging and Coring Program:

- Drill stem tests will be based on geological sample shows.
- If open hole electrical logging is performed, the program will be:
 - Total Depth to Intermediate Casing: Dual Laterolog-Micro Laterolog and Gamma Ray. Compensated Neutron - Z Density log with Gamma Ray and Caliper.
 - Total Depth to Surface: Compensated Neutron with Gamma Ray
 - No coring program is planned
 - Additional testing will be initiated subsequent to setting the 5 1/2" production casing. Specific intervals will be targeted based on log evaluation, geological sample shows and drill stem tests.

10. Potential Hazards:

- See COA
- No abnormal pressures or temperatures are expected. There is no known presence of H2S in this area. If H2S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. No H2S is anticipated to be encountered.

11. Anticipated starting date and Duration of Operations:

a. Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon as possible after BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 30 days.



OG Airbonita 12 Federal #1H Rev0 MDT 30-NOV-12 Proposal Geodetic Report
(Non-Def Plan)



Report Date: November 30, 2012 - 01:19 PM
Client: COG
Field: NM Lea County (NAD 27)
Structure / Slot: COG Airbonita 12 Federal #1H / COG Airbonita 12 Federal #1H
Well: COG Airbonita 12 Federal #1H
Borehole: COG Airbonita 12 Federal #1H
UWI / API#: Unknown / Unknown
Survey Name: COG Airbonita 12 Federal #1H Rev0 MDT 30-NOV-12
Survey Date: November 30, 2012
Tort / AHD / DDI / ERD Ratio: 90.134 * / 4759.611 ft / 5.773 / 0.399
Coordinate Reference System: NAD27 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 23' 58.26037", W 103° 37' 13.43010"
Location Grid N/E Y/X: N 509792.300 RUS, E 720045.200 RUS
CRS Grid Convergence Angle: 0.3820 *
Grid Scale Factor: 0.99996454

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 0.000 * (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3641.000 ft above
Seabed / Ground Elevation: 3624.000 ft above
Magnetic Declination: 7.545 *
Total Gravity Field Strength: 999.1578 mgn (9.8 based)
Total Magnetic Field Strength: 48555.632 nT
Magnetic Dip Angle: 60.268 *
Declination Date: November 30, 2012
Magnetic Declination Model: BGM 2012
North Reference: Grid North
Grid Convergence Used: 0.3820 *
Total Corr Mag North->Grid North: 7.1633 *
Local Coord Referenced To: Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (RUS)	Easting (RUS)	Latitude (N/S * ° ' '')	Longitude (E/W * ° ' '')
Tie-in	0.00	0.00	358.99	0.00	-3641.00	0.00	0.00	0.00	N/A	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
KOP Build @ 12"/100ft	11457.54	0.00	358.99	11457.54	7816.54	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
Landing Point	12208.66	90.13	358.99	11935.00	8294.00	478.51	478.51	-8.40	12.00	510270.79	720036.80	N 32 24 3.00	W 103 37 13.49
COG Airbonita 12 Federal #1H PBHL	16489.70	90.13	358.99	11925.00	8284.00	4758.88	4758.88	-83.50	0.00	514551.00	719961.70	N 32 24 45.35	W 103 37 14.03

Survey Type: Non-Def Plan

Survey Error Model: ISOWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma
Survey Program:

Description	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	0.000	17.000	1/100.000	30.000	30.000	SLB_UNKNOWN-Depth Only	COG Airbonita 12 Federal #1H / COG Airbonita 12 Federal #1H
	17.000	16489.698	1/100.000	30.000	30.000	SLB_UNKNOWN	COG Airbonita 12 Federal #1H / COG Airbonita 12 Federal #1H



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Report
(Non-Def Plan)



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Survey Date: November 30, 2012
Tort / AHD / DDI / ERD Ratio: 90.134 * / 4759.611 ft / 5.773 / 0.399
Coordinate Reference System: NAD27 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 23' 58.26037", W 103° 37' 13.43010"
Location Grid N/E Y/X: N 509792.300 RUS, E 720045.200 RUS
CRS Grid Convergence Angle: 0.3820 *
Grid Scale Factor: 0.99996454

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 0.000 * (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3641.000 ft above
Seabed / Ground Elevation: 3624.000 ft above
Magnetic Declination: 7.545 *
Total Gravity Field Strength: 999.1578 mgn (9.8 based)
Total Magnetic Field Strength: 48555.632 nT
Magnetic Dip Angle: 60.268 *
Declination Date: November 30, 2012
Magnetic Declination Model: BGM 2012
North Reference: Grid North
Grid Convergence Used: 0.3820 *
Total Corr Mag North->Grid North: 7.1633 *
Local Coord Reference To: Structure Reference Point

	MD	Incl	Azim Grid	TVD	TVDSS	VSEC	NS	EW	DLS	Northing	Easting	Latitude	Longitude
Comments	(ft)	(°)	(°)	(ft)	(ft)	(ft)		(ft)	(°/100ft)	(NUS)	(EUS)	(N/S ° ' ")	(E/W ° ' ")
Tie-In	0.00	0.00	358.99	0.00	-3641.00	0.00	0.00	0.00	N/A	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	100.00	0.00	358.99	100.00	-3541.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	200.00	0.00	358.99	200.00	-3441.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	300.00	0.00	358.99	300.00	-3341.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	400.00	0.00	358.99	400.00	-3241.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	500.00	0.00	358.99	500.00	-3141.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	600.00	0.00	358.99	600.00	-3041.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	700.00	0.00	358.99	700.00	-2941.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	800.00	0.00	358.99	800.00	-2841.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	900.00	0.00	358.99	900.00	-2741.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
1000.00	0.00	358.99	1000.00	-2641.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
1100.00	0.00	358.99	1100.00	-2541.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
1200.00	0.00	358.99	1200.00	-2441.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
1300.00	0.00	358.99	1300.00	-2341.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
1400.00	0.00	358.99	1400.00	-2241.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
1500.00	0.00	358.99	1500.00	-2141.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
1600.00	0.00	358.99	1600.00	-2041.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
1700.00	0.00	358.99	1700.00	-1941.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
1800.00	0.00	358.99	1800.00	-1841.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
1900.00	0.00	358.99	1900.00	-1741.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
2000.00	0.00	358.99	2000.00	-1641.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
2100.00	0.00	358.99	2100.00	-1541.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
2200.00	0.00	358.99	2200.00	-1441.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
2300.00	0.00	358.99	2300.00	-1341.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
2400.00	0.00	358.99	2400.00	-1241.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
2500.00	0.00	358.99	2500.00	-1141.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
2600.00	0.00	358.99	2600.00	-1041.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
2700.00	0.00	358.99	2700.00	-941.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
2800.00	0.00	358.99	2800.00	-841.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
2900.00	0.00	358.99	2900.00	-741.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
3000.00	0.00	358.99	3000.00	-641.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
3100.00	0.00	358.99	3100.00	-541.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
3200.00	0.00	358.99	3200.00	-441.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
3300.00	0.00	358.99	3300.00	-341.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
3400.00	0.00	358.99	3400.00	-241.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
3500.00	0.00	358.99	3500.00	-141.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
3600.00	0.00	358.99	3600.00	-41.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
3700.00	0.00	358.99	3700.00	59.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
3800.00	0.00	358.99	3800.00	159.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
3900.00	0.00	358.99	3900.00	259.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
4000.00	0.00	358.99	4000.00	359.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
4100.00	0.00	358.99	4100.00	459.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
4200.00	0.00	358.99	4200.00	559.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
4300.00	0.00	358.99	4300.00	659.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
4400.00	0.00	358.99	4400.00	759.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
4500.00	0.00	358.99	4500.00	859.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
4600.00	0.00	358.99	4600.00	959.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
4700.00	0.00	358.99	4700.00	1059.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
4800.00	0.00	358.99	4800.00	1159.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
4900.00	0.00	358.99	4900.00	1259.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
5000.00	0.00	358.99	5000.00	1359.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
5100.00	0.00	358.99	5100.00	1459.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
5200.00	0.00	358.99	5200.00	1559.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
5300.00	0.00	358.99	5300.00	1659.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
5400.00	0.00	358.99	5400.00	1759.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
5500.00	0.00	358.99	5500.00	1859.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
5600.00	0.00	358.99	5600.00	1959.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
5700.00	0.00	358.99	5700.00	2059.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
5800.00	0.00	358.99	5800.00	2159.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
5900.00	0.00	358.99	5900.00	2259.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
6000.00	0.00	358.99	6000.00	2359.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
6100.00	0.00	358.99	6100.00	2459.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
6200.00	0.00	358.99	6200.00	2559.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
6300.00	0.00	358.99	6300.00	2659.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
6400.00	0.00	358.99	6400.00	2759.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
6500.00	0.00	358.99	6500.00	2859.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
6600.00	0.00	358.99	6600.00	2959.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43	
6700.00	0.00	358.99	6700.00	3059.00	0.00	0.00	0.00	0.00					

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	7300.00	0.00	358.99	7300.00	3659.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	7400.00	0.00	358.99	7400.00	3759.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	7500.00	0.00	358.99	7500.00	3859.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	7600.00	0.00	358.99	7600.00	3959.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	7700.00	0.00	358.99	7700.00	4059.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	7800.00	0.00	358.99	7800.00	4159.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	7900.00	0.00	358.99	7900.00	4259.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	8000.00	0.00	358.99	8000.00	4359.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	8100.00	0.00	358.99	8100.00	4459.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	8200.00	0.00	358.99	8200.00	4559.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	8300.00	0.00	358.99	8300.00	4659.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	8400.00	0.00	358.99	8400.00	4759.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	8500.00	0.00	358.99	8500.00	4859.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	8600.00	0.00	358.99	8600.00	4959.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	8700.00	0.00	358.99	8700.00	5059.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	8800.00	0.00	358.99	8800.00	5159.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	8900.00	0.00	358.99	8900.00	5259.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	9000.00	0.00	358.99	9000.00	5359.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	9100.00	0.00	358.99	9100.00	5459.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	9200.00	0.00	358.99	9200.00	5559.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	9300.00	0.00	358.99	9300.00	5659.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	9400.00	0.00	358.99	9400.00	5759.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	9500.00	0.00	358.99	9500.00	5859.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	9600.00	0.00	358.99	9600.00	5959.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	9700.00	0.00	358.99	9700.00	6059.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	9800.00	0.00	358.99	9800.00	6159.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	9900.00	0.00	358.99	9900.00	6259.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	10000.00	0.00	358.99	10000.00	6359.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	10100.00	0.00	358.99	10100.00	6459.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	10200.00	0.00	358.99	10200.00	6559.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	10300.00	0.00	358.99	10300.00	6659.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	10400.00	0.00	358.99	10400.00	6759.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	10500.00	0.00	358.99	10500.00	6859.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	10600.00	0.00	358.99	10600.00	6959.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	10700.00	0.00	358.99	10700.00	7059.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	10800.00	0.00	358.99	10800.00	7159.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	10900.00	0.00	358.99	10900.00	7259.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	11000.00	0.00	358.99	11000.00	7359.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	11100.00	0.00	358.99	11100.00	7459.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	11200.00	0.00	358.99	11200.00	7559.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	11300.00	0.00	358.99	11300.00	7659.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
KOP Build @ 12"/100ft	11400.00	0.00	358.99	11400.00	7759.00	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	11457.54	0.00	358.99	11457.54	7816.54	0.00	0.00	0.00	0.00	509792.30	720045.20	N 32 23 58.26	W 103 37 13.43
	11500.00	5.10	358.99	11499.94	7858.94	1.89	1.89	-0.03	12.00	509794.19	720045.17	N 32 23 58.28	W 103 37 13.43
	11600.00	17.10	358.99	11597.90	7956.90	21.09	21.09	-0.37	12.00	509813.39	720044.83	N 32 23 58.47	W 103 37 13.43
	11700.00	29.10	358.99	11689.71	8048.71	60.24	60.24	-1.06	12.00	509852.54	720044.14	N 32 23 58.86	W 103 37 13.44
	11800.00	41.10	358.99	11771.38	8130.38	117.62	117.62	-2.06	12.00	509909.92	720043.14	N 32 23 59.42	W 103 37 13.45
	11800.00	53.10	358.99	11839.34	8198.34	190.72	190.72	-3.35	12.00	509983.02	720041.85	N 32 24 0.15	W 103 37 13.45
	12000.00	65.10	358.99	11890.60	8249.60	276.36	276.36	-4.85	12.00	510068.65	720040.35	N 32 24 1.00	W 103 37 13.47
	12100.00	77.10	358.99	11922.95	8281.95	370.77	370.77	-6.51	12.00	510163.06	720038.69	N 32 24 1.93	W 103 37 13.48
	12200.00	89.10	358.99	11934.95	8293.95	469.85	469.85	-8.24	12.00	510262.14	720036.96	N 32 24 2.91	W 103 37 13.49
Landing Point	12208.66	90.13	358.99	11935.00	8294.00	478.51	478.51	-8.40	12.00	510270.79	720036.80	N 32 24 3.00	W 103 37 13.49
	12300.00	90.13	358.99	11934.79	8293.79	569.84	569.84	-10.00	0.00	510362.12	720035.20	N 32 24 3.90	W 103 37 13.50
	12400.00	90.13	358.99	11934.56	8293.56	669.82	669.82	-11.75	0.00	510462.10	720033.45	N 32 24 4.89	W 103 37 13.52
	12500.00	90.13	358.99	11934.32	8293.32	769.81	769.81	-13.51	0.00	510562.08	720031.69	N 32 24 5.88	W 103 37 13.53
	12600.00	90.13	358.99	11934.09	8293.09	869.79	869.79	-15.26	0.00	510662.06	720029.94	N 32 24 6.87	W 103 37 13.54
	12700.00	90.13	358.99	11933.86	8292.86	969.77	969.77	-17.02	0.00	510762.04	720028.18	N 32 24 7.86	W 103 37 13.55
	12800.00	90.13	358.99	11933.62	8292.62	1069.76	1069.76	-18.77	0.00	510862.02	720026.43	N 32 24 8.85	W 103 37 13.57
	12900.00	90.13	358.99	11933.39	8292.39	1169.74	1169.74	-20.53	0.00	510962.00	720024.68	N 32 24 9.84	W 103 37 13.58
	13000.00	90.13	358.99	11933.15	8292.15	1269.73	1269.73	-22.28	0.00	511061.98	720022.92	N 32 24 10.83	W 103 37 13.59
	13100.00	90.13	358.99	11932.92	8291.92	1369.71	1369.71	-24.03	0.00	511161.96	720021.17	N 32 24 11.82	W 103 37 13.60
	13200.00	90.13	358.99	11932.69	8291.69	1469.70	1469.70	-25.79	0.00	511261.94	720019.41	N 32 24 12.80	W 103 37 13.62
	13300.00	90.13	358.99	11932.45	8291.45	1569.68	1569.68	-27.54	0.00	511361.92	720017.66	N 32 24 13.79	W 103 37 13.63
	13400.00	90.13	358.99	11932.22	8291.22	1669.66	1669.66	-29.30	0.00	511461.90	720015.90	N 32 24 14.78	W 103 37 13.64
	13500.00	90.13	358.99	11931.99	8290.99	1769.65	1769.65	-31.05	0.00	511561.88	720014.15	N 32 24 15.77	W 103 37 13.65
	13600.00	90.13	358.99	11931.75	8290.75	1869.63	1869.63	-32.81	0.00	511661.86	720012.40	N 32 24 16.76	W 103 37 13.67
	13700.00	90.13	358.99	11931.52	8290.52	1969.62	1969.62	-34.56	0.00	511761.84	720010.64	N 32 24 17.75	W 103 37 13.68
	13800.00	90.13	358.99	11931.29	8290.29	2069.60	2069.60	-36.31	0.00	511861.82	720008.89	N 32 24 18.74	W 103 37 13.69
	13900.00	90.13	358.99	11931.05	8290.05	2169.59	2169.59	-38.07	0.00	511961.80	720007.13	N 32 24 19.73	W 103 37 13.71
	14000.00	90.13	358.99	11930.82	8289.82	2269.57	2269.57	-39.82	0.00	512061.79	720005.38	N 32 24 20.72	W 103 37 13.72
	14100.00	90.13	358.99	11930.58	8289.58	2369.55	2369.55	-41.58	0.00	512161.77	720003.62	N 32 24 21.71	W 103 37 13.73
	14200.00	90.13	358.99	11930.35	8289.35	2469.54	2469.54	-43.33	0.00	512261.75	720001.87	N 32 24 2	

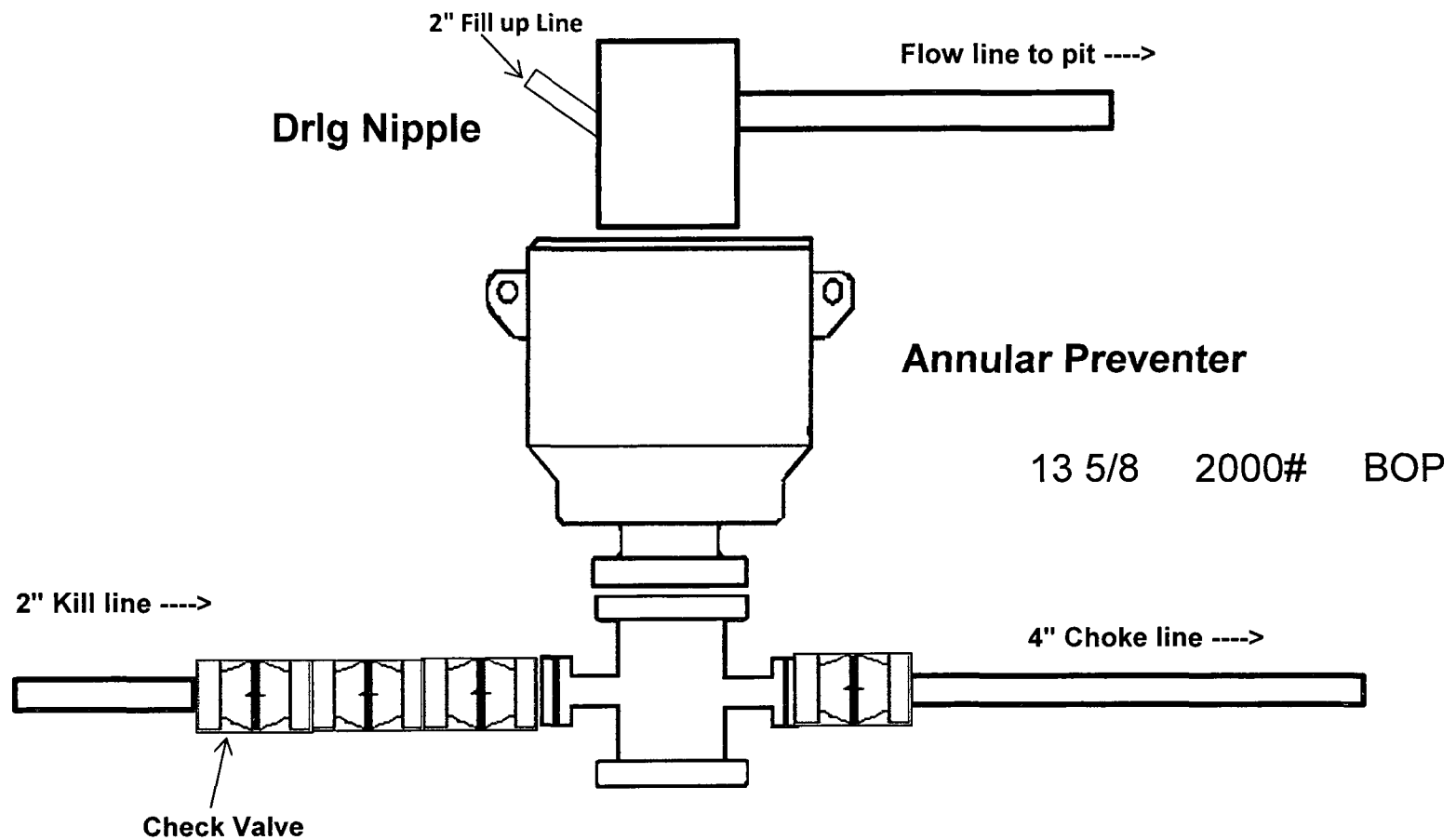
Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (*/100ft)	Northing (RUS)	Easting (RUS)	Latitude (N/S * ' '")	Longitude (E/W * ' '")
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Survey Type: Non-Def Plan

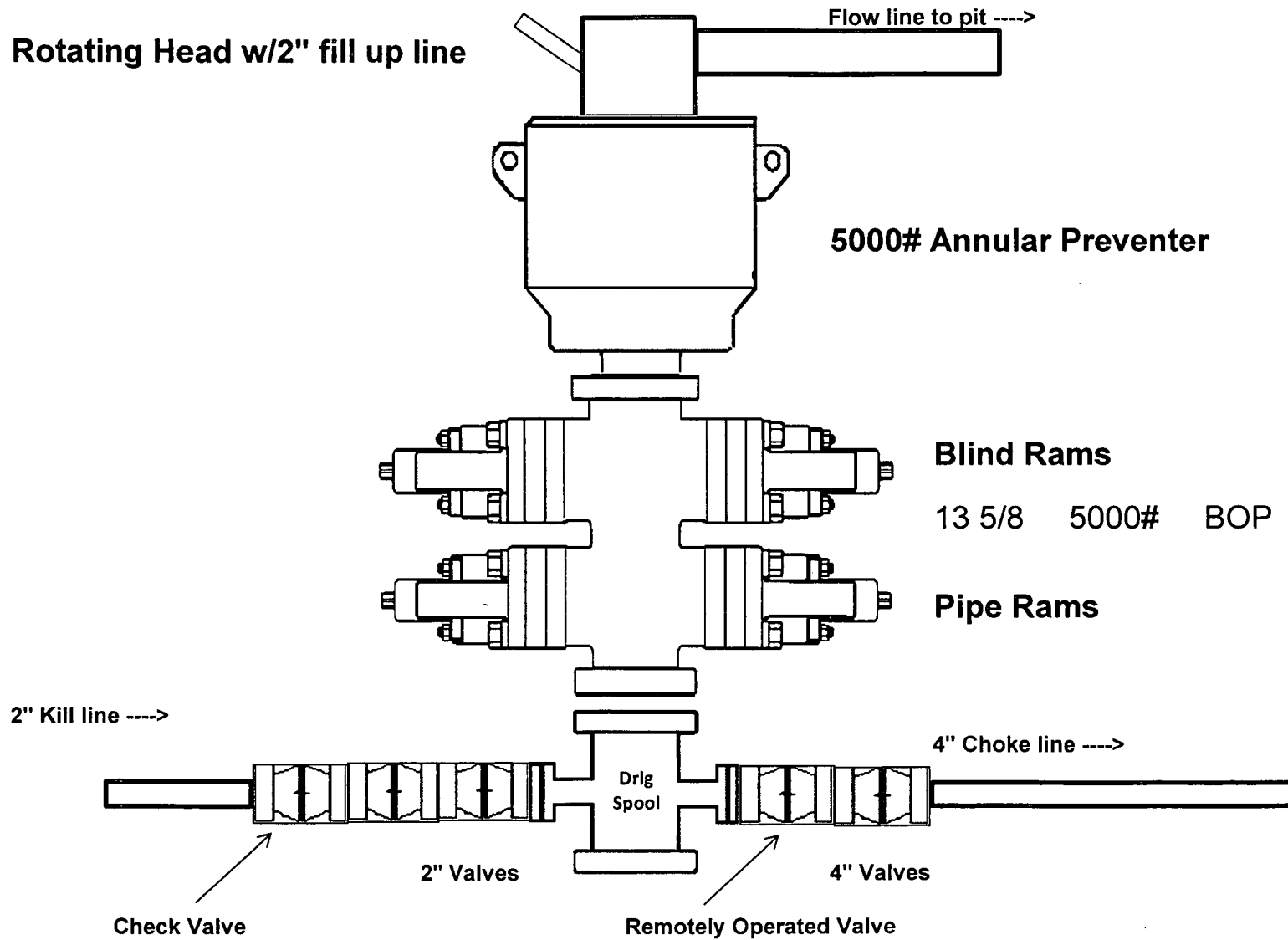
Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma
 Survey Program:

Description	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	0.000	17.000	1/100.000	30.000	30.000	SLB_UNKNOWN-Depth Only	COG Airbonita 12 Federal #1H / COG Airbonita 12 Federal #1H
	17.000	16489.698	1/100.000	30.000	30.000	SLB_UNKNOWN	COG Airbonita 12 Federal #1H / COG Airbonita 12 Federal #1H

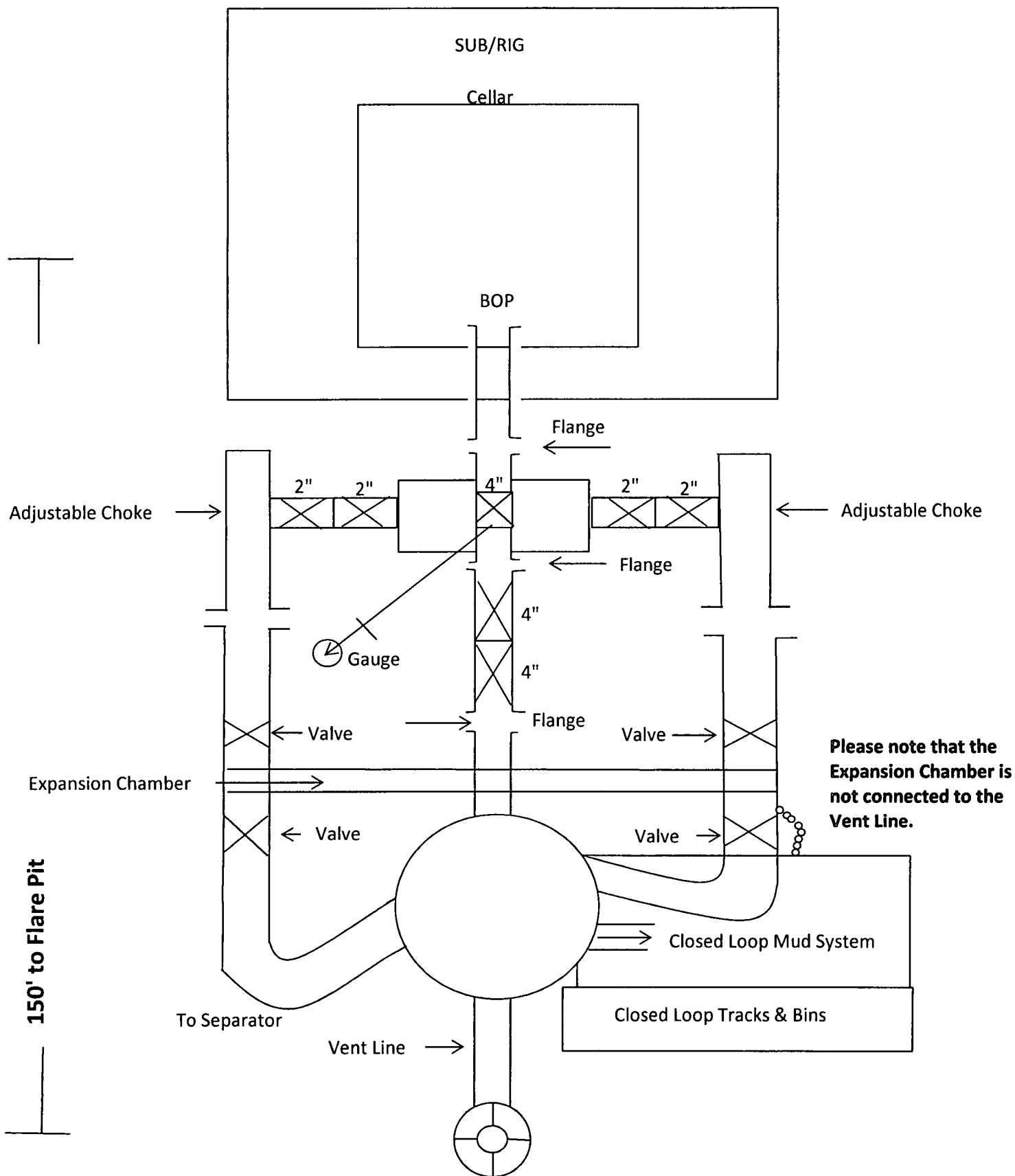
2,000 psi BOP Schematic



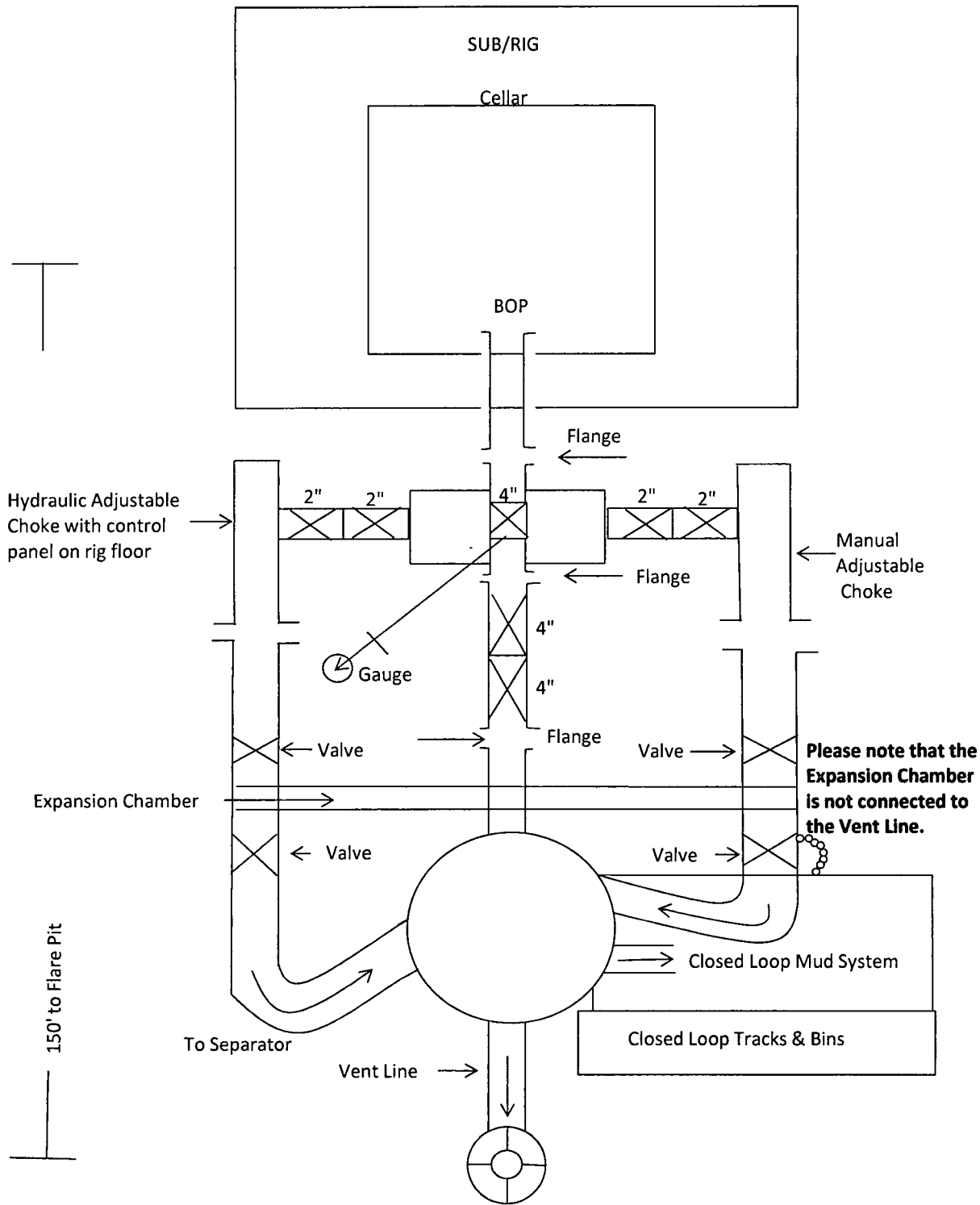
5,000 psi BOP Schematic



2M Choke Manifold Equipment



5M 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

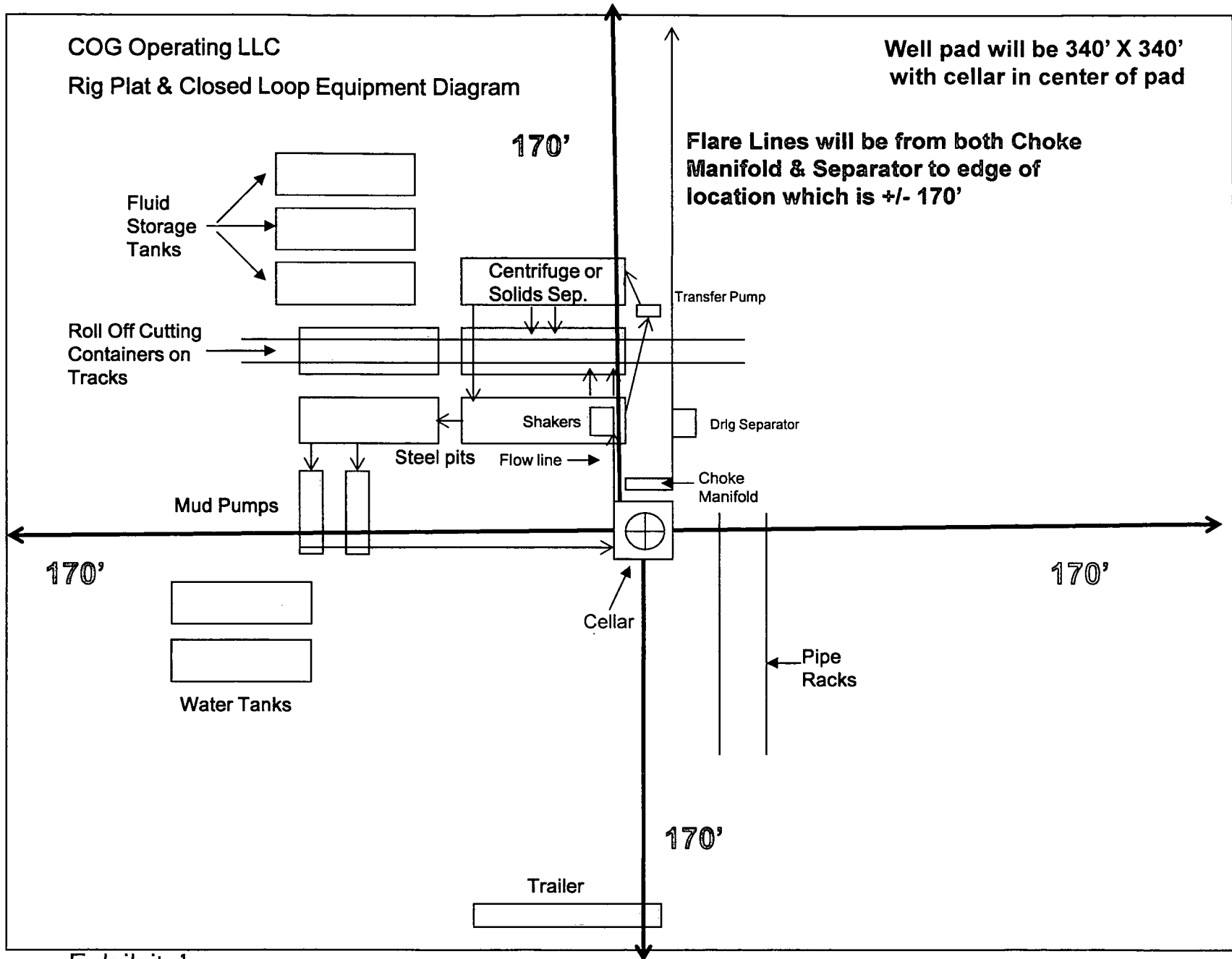


Exhibit 1