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ATS-13-941

Form 3160-3
(March 2012)

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.: NMNM120907

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 SWD [✓] Single Zone [ ] Multiple Zone

8. Lease Name and Well No.: 4029
Gold Coast 26 Federal SWD #1

2. Name of Operator
COG Operating LLC. 229137

9. API Well No.
30-025-41570

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

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

10. Field and Pool, or Exploratory 96802
SWD; ~~Delaware~~ Bell Canyon-Cherry Canyon

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface 2310' FSL & 2310' FWL Unit Letter K (NESW) Sec 26-T242S-R32E
At proposed prod. Zone

11. Sec., T.R.M. or Blk and Survey or Area
Sec. 26 - T24S - R32E

14. Distance in miles and direction from nearest town or post office*
Approximately 24 miles from Loving

12. County or Parish: Lea County

13. State: NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. Unit line, if any)	16. No. of acres in lease	17. Spacing Unit dedicated to this well
2310'	1840	N/A
18. Distance from location* to nearest well, drilling, completed, applied for, on this lease, ft.	**19. Proposed Depth**	**20. BLM/BIA Bond No. on file**
1043'	TVD: 7,200' MD: 7,200'	NMB000740 &NMB000215
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	**22. Approximate date work will start***	**23. Estimated duration**
3566' GL	6/1/2013	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
Mayte Reyes	Mayte Reyes	7/1/2013

Title: Regulatory Analyst

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
/S/ STEPHEN J. CAFFEY		DEC 13 2013

Title	Office
FIELD MANAGER	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)

SWD-1391

*(Instructions on page 2)

Carlsbad Controlled Water Basin

K
12/19/13

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Approval Subject to General Requirements
& Special Stipulations Attached

DEC 30

COG Operating LLC
DRILLING AND OPERATIONS PROGRAM
Gold Coast 26 Fed SWD 1
SHL: 2310' FSL & 2310' FWL
Section 26 T24S 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	205'	
Rustler	1,010'	
Top of Salt	1,342'	
Base of Salt	4,680'	
Delaware	4,882'	
Bell Canyon	**4,925'**	
Cherry Canyon	**5,833'**	
Brushy Canyon	**7,203'**	
Bone Spring	8,823'	Oil
TD TVD	7,200'	
TD MD	7,200'	

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 1,135' and circulating cement back to surface. The Delaware will be left as open hole for salt water disposal purposes.

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

Hole Size	Depths	Section	OD Casing	New/ Used	Wt	Collar	Grade	Collapse Design Factor	Burst Design Factor	Tension Design Factor
17 ½"	0' – 1,135'	Surface	13 3/8"	New	54.5#	STC	J-55	1.125	1.125	1.6
12 ¼"	0' – 3,500'	Intrmd	9 5/8"	New	36#	BTC	J-55	1.125	1.125	1.6
12 ¼"	3500' – 4900'	Intrmd	9 5/8"	New	40#	BTC	J-55	1.125	1.125	1.6
8 ¾"	4900'-7200'	Disposal	Open hole							
8 ¾"	**0'- 7200'**	**Contingency**	**7"**	**New**	**26#**	**LTC**	**J-55**	**1.125**	**1.125**	**1.6**

- If good Delaware Sand shows are encountered while drilling, 7" J-55 26# LTC casing will be run from surface to TD' as a contingency plan. If the 7" is run, the cement will be designed to tie back at least 500' into the 9-5/8" casing.
- 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.

See COA

4. Proposed Cement Program

a. 13-3/8" Surface — Lead: 500 sx Class C + 4% Gel + 2% $CaCl_2$ (13.5 ppg /1.75 cuft/sx)
Tail: 250 sx Class C + 2% $CaCl_2$ (14.8 ppg / 1.34 cuft/sx)
**Calculated w/50% excess on OH volumes

b. 9 5/8" Intermediate: — Lead: 975 sx Class C + 4% Gel + 2% $CaCl_2$ (13.5 ppg /1.75 cuft/sx)
Tail: 100 sx Class C + 2% $CaCl_2$ (14.8 ppg / 1.34 cuft/sx)
**Calculated w/35% excess on OH volumes

c. 7" Contingency: — **Lead: 250 sx 50:50:10 H Blend (11.9 ppg / 2.51 cuft/sk)**
Tail: 300 sx Super H Blend (13.0 ppg / 1.69 cuft/sk)
***** Calculated w/ 35% excess on OH volumes**

- The above cement volumes could be revised pending the caliper measurement.
- The 9-5/8" intermediate string is designed to circulate to cement surface.
- The 8-3/4" hole is designed to be left open for disposal purposes.
- The 8-3/4" hole has a contingency plan to run 7" and tie back cement 500' into the 9-5/8" casing if the Delaware Sand has shows.

5. Pressure Control:

See COA

See COA

Nipple up on 13 3/8 with annular preventer tested to 50% of rated working pressure by independent tester and the rest of the 2M system tested to 2000 psi. Nipple up on 9 5/8 with 3M system tested to 3000 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 3000 psi WP rating. A remotely operated choke will be installed before drilling out intermediate shoe.

A retrievable bridge plug will be left in the 9-5/8" casing for well control purposes after we finish drilling the Delaware Sand open hole water disposal interval. There will be brine water on top of the plug and a capping flange on top of the wellhead too. This will make the well secure when the drilling rig moves off. The plug and capping flange will be removed when we start completion operations.

6. Estimated BHP & BHT:

TD = 3295 psi
TD= 130°F

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

Depth	Type System	Mud Weight	Viscosity (sec)	Waterloss (cc)
0' – 1135'	Fresh Water	8.4	29	N.C.
1,135' – 4,900'	Brine	10	29	N.C.
4,900' – 7,200'	Cut Brine	8.8 – 9.2	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 total, 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 hourly 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:

a. A Kelly cock will be in the drill string at all times.

b. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times.

c. Hydrogen Sulfide detection equipment will be in operation after drilling out the 13 3/8" casing shoe until the retrievable bridge plug is set into the 9-5/8" casing. Breathing equipment will be on location upon drilling the 13 3/8" shoe until total depth is reached.

See COA

9. Testing, Logging and Coring Program:

a. Drill stem tests will be based on geological sample shows.

b. **The below open hole electrical logging will be performed to prove there is no production in the Delaware Sands:**

i. **Total Depth to Intermediate Casing: DLLT/MGRD/ Density.**

ii. **Total Depth to Surface: Compensated Neutron with Gamma Ray**

iii. **Mud logs will be run through the Delaware Sand.**

iv. No coring program is planned

v. No additional testing is planned in the drilling phase.

vi. The Delaware Sand disposal interval will be swab tested after the completion to ensure that there are no commercial hydrocarbon shows within the injection interval. There are no plans to fracture treat the injection interval.

c. **The recently drilled Gold Coast 26 Federal 1H had <u>no</u> shows on the mud log from the top of the Delaware to 7160'. There is no Delaware production in Section 26. We plan to mud log and open hole log the Delaware section when we drill this well to ensure we don't inject into potentially productive Delaware Sand intervals. If we encounter prospective shows, we will case off the Delaware injection interval with 7" casing and selectively perforate to stay out of potentially productive intervals.**

10. Potential Hazards:

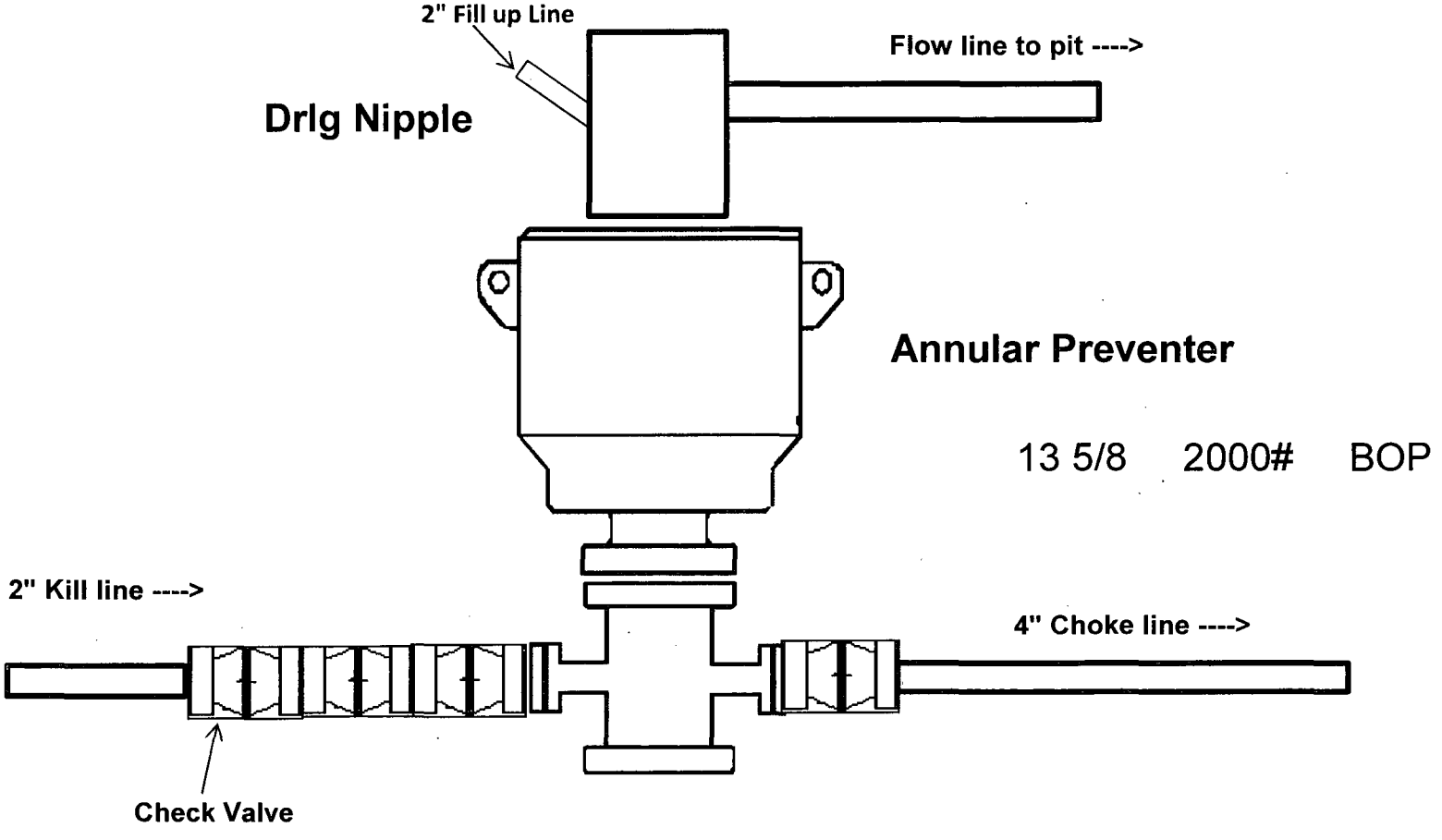
a. No abnormal pressures or temperatures are expected. There is no known presence of H2S in this area. If H2S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. All personnel will be familiar with all aspects of safe operation of equipment being used to drill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

See COA

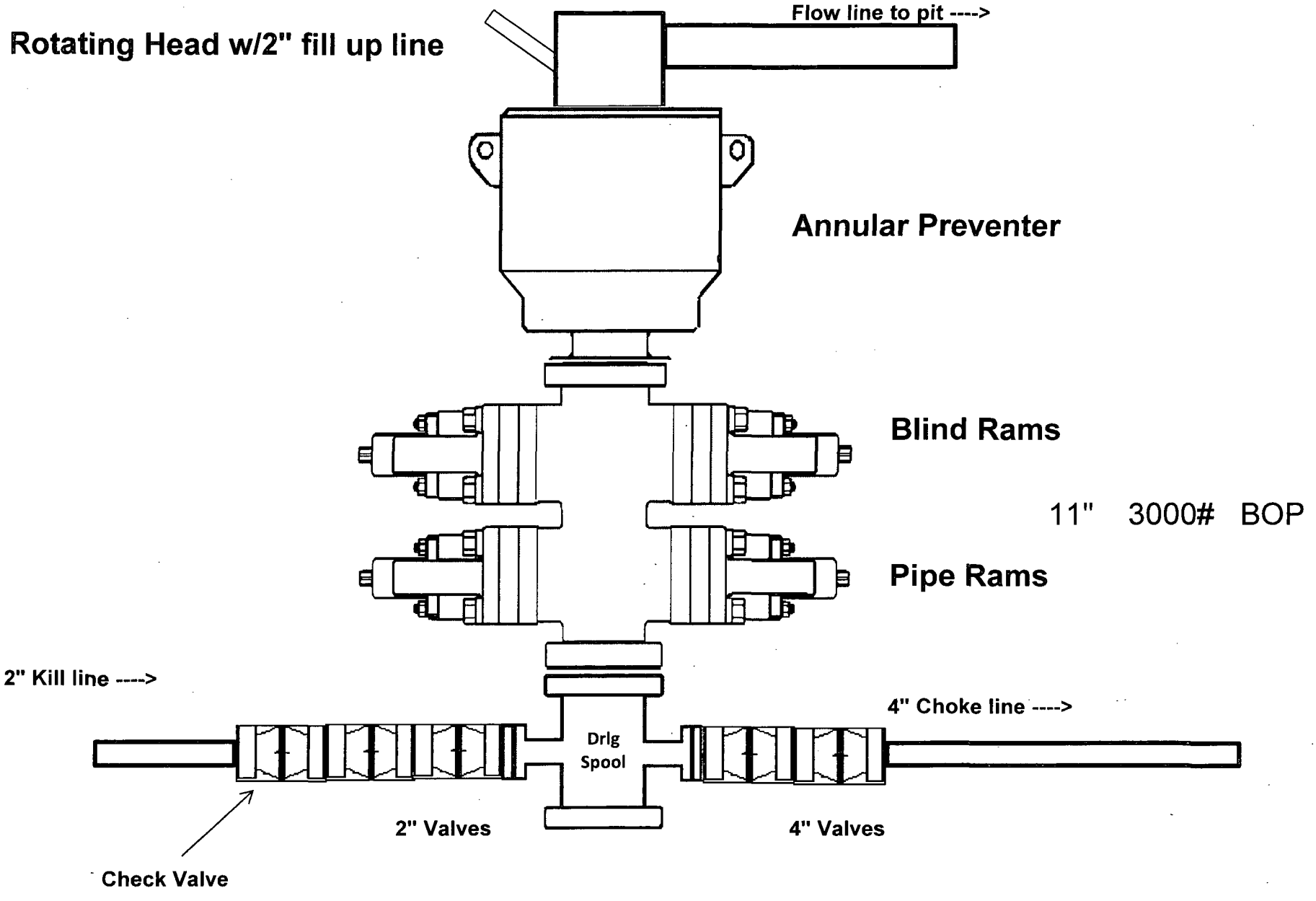
11. Anticipated starting date and Duration of Operations:

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.

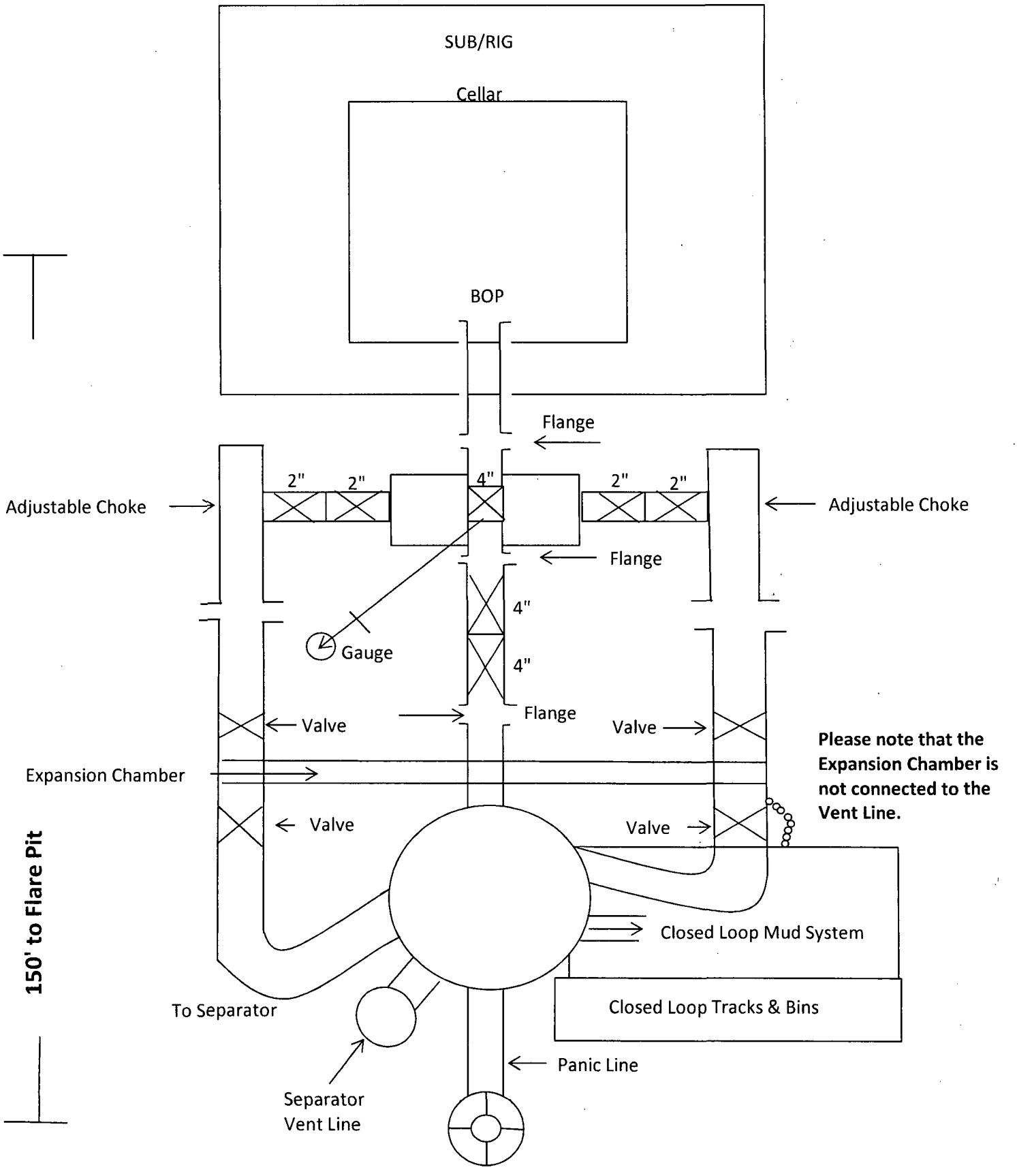
2,000 psi BOP Schematic



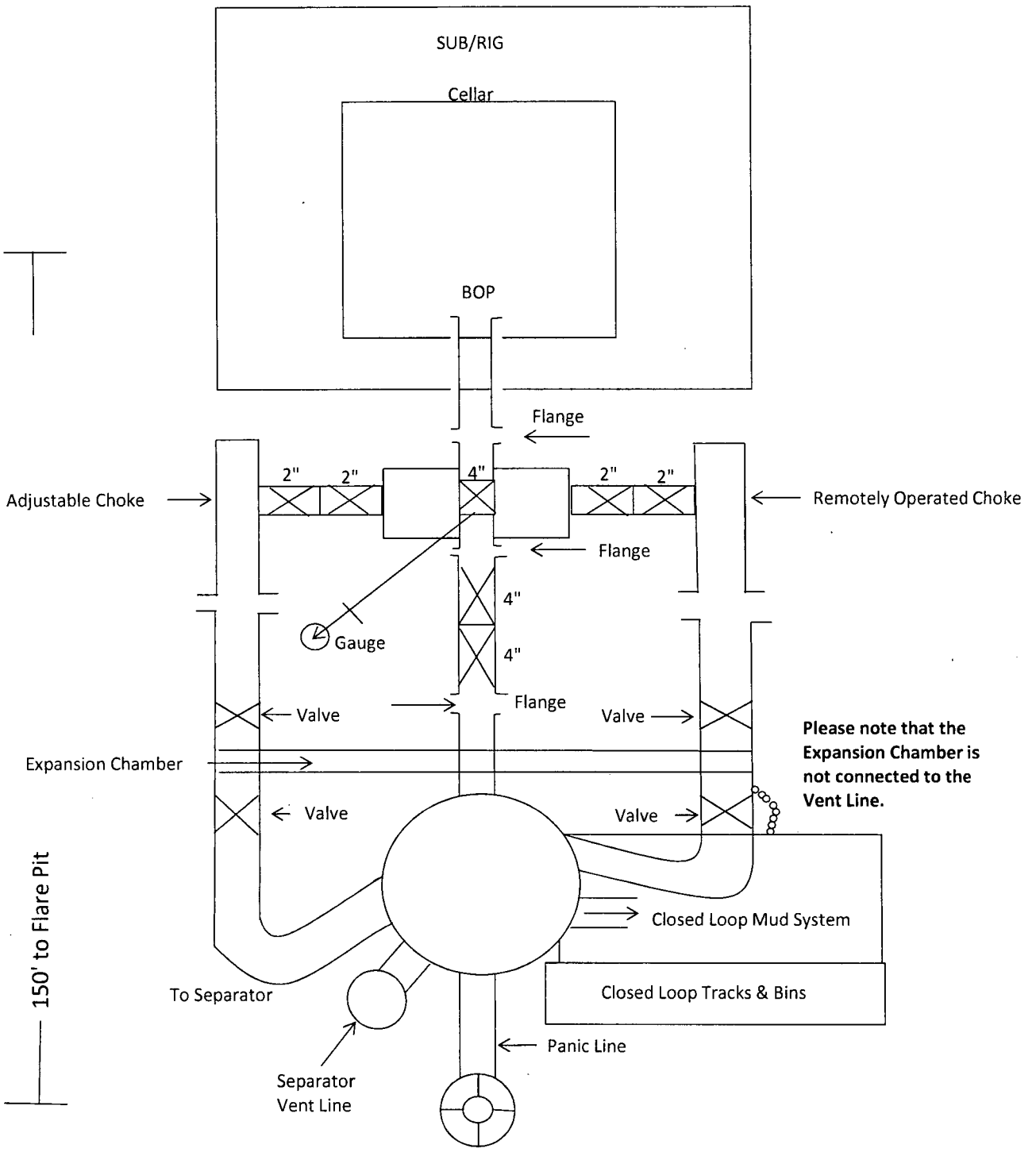
3,000 psi BOP Schematic



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

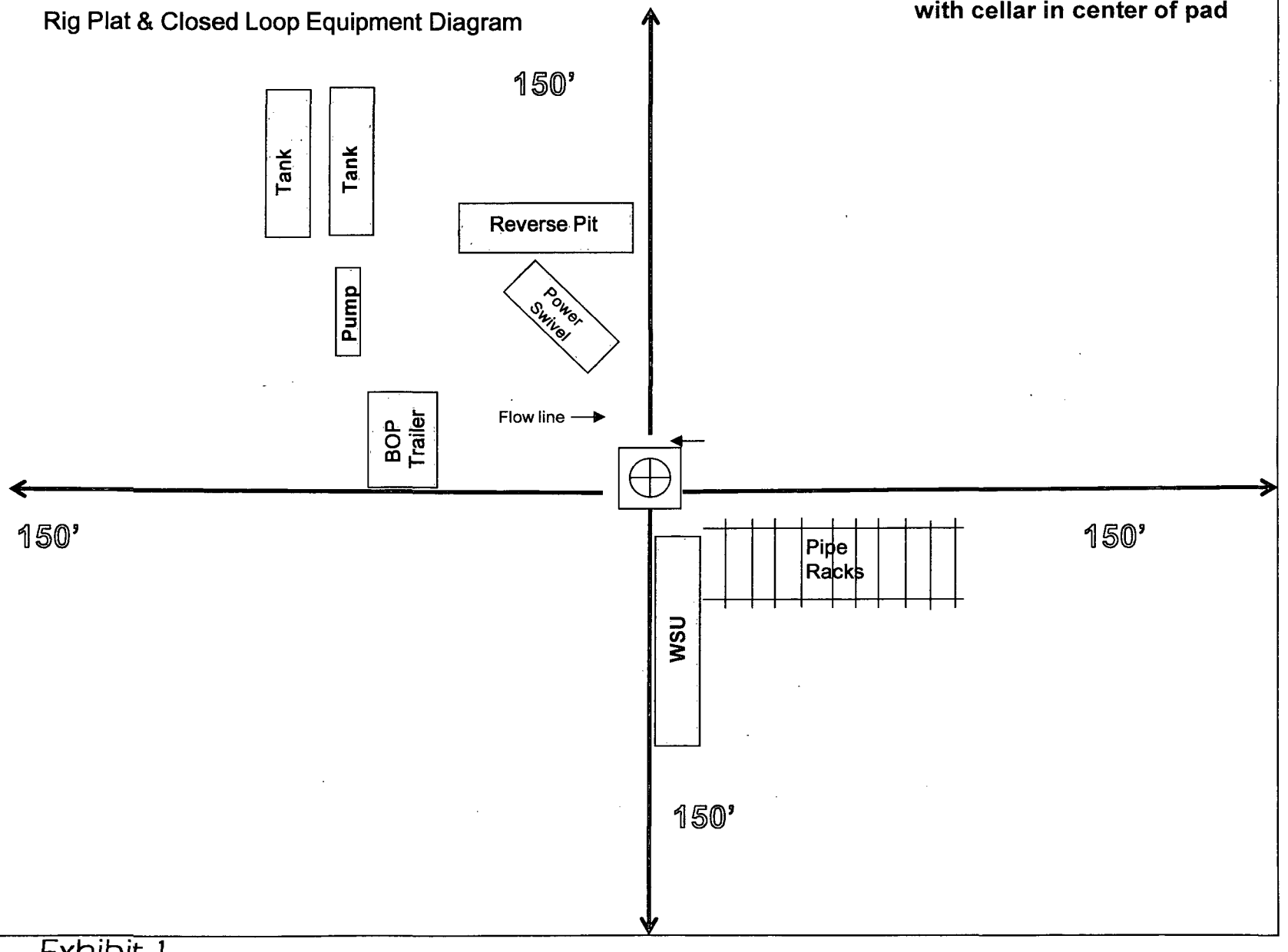


Exhibit 1

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

No records found.

PLSS Search:

Section(s): 26 **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 Code	Subbasin	County	Q 64	Q 16	Q 4	Sec	Twn	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	560		

Average Depth to Water: --

Minimum Depth: --

Maximum Depth: --

Record Count: 6

PLSS Search:

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

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