**ATTACHMENT TO FORM 3160-3**
**COG Operating, LLC**
**PUCKETT 13 FEDERAL COM #6H**
**SHL: 36' FNL & 1627' FEL, Unit B**
**BHL: 330' FSL & 1650' FEL, Unit O**
**Sec 13, T17S, R31E**
**Eddy County, NM**

1. Proration Unit Spacing: 160 Acres

2. Ground Elevation: 3963'

3. Proposed Depths: Horizontal TVD = 6600', MD =11309'

Estimated tops of geological markers:

| | |
|---|---|
| Quaternary | Surface |
| Rustler | 682' |
| Top of Salt | 900' |
| Base of Salt | 1923' |
| Yates | 2028' |
| Seven Rivers | 2356' |
| Queen | 2980' |
| Grayburg | 3415' |
| San Andres | 3739' |
| Glorieta | 5247' |
| Paddock | 5317' |
| Blinebry | 5745' |
| Tubb | 6700' |

5. Possible mineral bearing formations:

| | | |
|---|---|---|
| Water Sand | 150' | Fresh Water |
| Grayburg | 3415' | Oil/Gas |
| San Andres | 3739' | Oil/Gas |
| Glorieta | 5247' | Oil/Gas |
| Paddock | 5317' | Oil/Gas |
| Blinebry | 5745' | Oil/Gas |
| Tubb | 6700' | Oil/Gas |

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 13 3/8" casing to 750' and circulating cement back to the surface will protect the surface fresh water sand. The Salt Section will be protected by setting 9 5/8" casing to 2000' and circulating cement, in a single or multi-stage job and/or with an ECP, back to the surface. Any shallower zones above TD, which contain commercial quantities of oil and/or gas, will have cement circulated across them. This will be achieved by cementing, with a single or multi-stage job, the 7" x 5 1/2" production casing back 200' into the intermediate casing (although cement volume is actually calculated to surface), to be run at TD. If wellbore conditions arise that require immediate action and/or a change to this program, COG Operating LLC personnel will always react to protect the wellbore and/or environment.

See COA

See COA

6. Casing Program - **Proposed**

| Hole size | Interval | OD of Casing | Weight | Cond. | Collar | Grade |
|---|---|---|---|---|---|---|
| 17-1/2" | 0' - +/-750' | 13-3/8" | 48# | New | STC | H-40 or Hybrid J-55 |
| Collapse sf – 2.32, Burst sf – 5.22, Tension sf – 8.94 | | | | | | |
| 12-1/4" | 0' - +/-2000' | 9-5/8" | 36# | New | STC | J/K-55 |
| Collapse sf – 2.13, Burst sf – 3.72, Tension sf – 6.29 | | | | | | |
| 8-3/4" x 7 7/8" | 0' – 11309' | 7" x 5-1/2" | 26#/17# | New | LTC | L-80 |
| 7" Csg - Collapse sf – 1.87, Burst sf – 1.65, Tension sf – 3.26<br>5 ½" Csg - Collapse sf – 2.01, Burst sf – 1.67, Tension sf – 3.10 | | | | | | |

**Production string will be a tapered string with 7" 26# L-80 LTC ran from surface to kick off point and then crossed over to 5 ½" 17# L-80 LTC.**

7. Cement Program * See COA

**13 3/8" Surface Csg:** Set at +/- 750'MD, Lead Slurry: 450 sx Class "C" w/ 4% Gel, 2% CaCl, .25 lb/sx CelloFlake, yield 1.75 $ft^3$/sx, wt. 13.5 ppg. Tail Slurry: 200sx Class "C" w/ 2% CaCl2 & 0.25 lb/sx CelloFlake, yield 1.32 $ft^3$/sx, wt.14.8 ppg. 102% excess, calculated to surface.

**9 5/8" Intrmd. Csg:** Set at +/- 2000'MD.

Option #1: **Single Stage (TD to Surface):** Lead Slurry: 500 sx 50:50:10:C:Poz:Gel w/ 5% salt, 5 pps LCM-1, 0.25 pps CF,yield 2.45 cu.ft./sk.,11.8 ppg. Tail Slurry: 200 sx Class "C" w/ 2% CaCl2, yield 1.32 cu.ft./sk., wt. 14.8 ppg. 208% excess, calculated to surface.

Option #2: **Multi Stage: Stage 1 (TD to DV Tool @ 800'):** 500 sx Class "C" w/ 2% CaCl2, yield 1.32 cu.ft./sk., wt. 14.8 ppg. 17% excess. **Stage 2 (DV Tool to surface):** 250 sx 50:50:10:C:Poz:Gel w/ 5% salt, 5 pps LCM-1, 0.25 pps CF, yield 2.45 cu.ft./sk., wt. 14.8 ppg calculated to surface, 225% excess; assumption for tool is lost circulation. Multi stage tool to be set at approximately, depending on hole conditions, 800' (50' below the surface casing). Cement volumes will be adjusted proportionately for depth changes of multi stage tool.

See COA

**7" x 5 1/2" Production Csg:** Set at +/- 11309'MD.

Option#1: **Single Stage (KOP to surface):** Lead Slurry: 500 sx 35:65:6:C:Poz:Gel w/ 5% salt, 5 pps LCM, 0.2% SMS, 0.3% FL-52A, 0.125 pps CF, yield 2.01 cu.ft./sk., wt. 12.5 ppg. Tail Slurry: 400 sx 50:50:2:C:Poz:Gel w/ 5% salt, 3 pps LCM, 0.6% SMS, 1% FL-25, 1% BA-58, 0.125 pps CF, 0.3% FL-52A; yield 1.37 cu.ft./sk., wt. 14.0 ppg. DV Tool and ECP to be set at kick off point with 7" cemented to surface and 5 ½" run with +/- 18 isolation packers and sliding sleeves in uncemented lateral. 97% excess in open hole, from kick off point, calculated to surface. **This is a minimum volume and will be adjusted up after caliper is run.**

Option #2: **Multi Stage (DV Tool & ECP (external csg. packer)@ KOP and DV Tool at 3000'): Stage 1:** (KOP To DV Tool at 3000'): 700 sx 50:50:2:C:Poz:Gel w/ 5% salt, 3 pps LCM, 0.6% SMS, 1% FL-25, 1% BA-58, .125 pps CF, 0.3% FL-52A; yield 1.37 cu.ft./sk., wt.14.00 ppg. 104% excess. **This is a minimum volume and will be adjusted up after caliper is run. Stage 2 (DV Tool to surface)** Lead Slurry: 300 sx 50:50:2:C:Poz:Gel w/ 5% salt, 3 pps LCM, 0.6% SMS, 1% FL-25, 1% BA-58, 0.125 pps CF, 0.3% FL-52A; yield 1.37 cu.ft./sk., wt. 14.0 ppg. Tail Slurry: 300 sx Class C w/ 0.3% R-3 + 1.5% CD-32, yield 1.02 cu.ft./sk., wt. 16.8 ppg. 155% excess calculated back to surface (no need for excess in casing overlap). **This is a minimum volume and will be adjusted up after caliper is run.**

See COA

You will note that in option #2 the Multi stage tool (DV Tool) will be set at approximately 3000', depending on hole conditions. Cement volumes will be adjusted proportionately for depth changes of multi stage tool; assumption for use of tool is water flow.

8. Pressure Control Equipment: See COA

The blowout preventer equipment (BOP) shown in Exhibit #9 will consist of a double ram-type (2000 psi WP) preventer, and in some cases possibly a 2000 psi Hydril type annular preventer as provided for in Onshore Order #2. This unit will be hydraulically operated and the ram type preventer will be equipped with blind rams on top of 4 1/2" drill pipe rams on the bottom. A 13-5/8" BOP will be used during the drilling of the well. A 13 5/8" permanent casing head will be installed on the 13 3/8" casing. The BOP will be nipped up on the 13 5/8" permanent casing head and tested to 2000 psi. After setting 9-5/8", permanent "B section" well head will be installed and the BOP will then be nipped up on the permanent B section well head and tested by a third party to 2000 psi and used continuously until total depth is reached. 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 (Exhibit #10) will include a Kelly cock and floor safety valve, choke lines and a choke manifold (Exhibit #11) with a 2000 psi WP rating.

9. Proposed Mud Circulating System

| Interval | Mud Wt. | Visc. | FL | Type Mud System |
|---|---|---|---|---|
| 0' - 750' | 8.5 | 28 | NC | Fresh water native mud w/ paper for seepage and sweeps. Lime for PH. |
| 750'- 2000' | 10 | 30 | NC | Brine mud, lime for PH and paper for seepage and sweeps. |
| 2000'- 11309' | 9.1 | 29 | NC | Drill section with fresh water/cut brine circulating the reserve utilizing periodic sweeps of paper as needed for seepage control and solids removal. |

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

10. Production Hole Drilling Summary: run

***Drill 8 ¾" hole and kick off at +/- 6123', building curve over +/- 750' to horizontal at 6600' TVD. Drill 7 7/8" lateral section in a southerly direction for +/-4914' lateral to TD at +/-11309' MD, 6600' TVD. Run 7" x 5-1/2" production casing. 7" to be ran from surface to kickoff point and changed over to 5 ½" with DV Tool and ECP at kickoff point. 5 ½" casing will be ran from kickoff point to td and isolation packers set throughout lateral. 7" to be cemented from kickoff point to surface.***

run

11. Auxiliary Well Control and Monitoring Equipment

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

B. A full opening drill pipe-stabbing valve with proper drill pipe connections will be on the rig floor at all times.

12. Logging, Testing and Coring Program:

    A. No electric logs to be run. * See COA

    B. The mud logging program will consist of lagged 10' samples from intermediate casing point to T.D. in vertical pilot hole and from Kick off point to TD in Horizontal hole.

    C. Drill Stem test is not anticipated.

    D. No conventional coring is anticipated.

    E. Further testing procedures will be determined after the 7" x 5 ½" production casing has been cemented at TD based on drill shows and log evaluation.

13. Abnormal Conditions, Pressures, Temperatures and Potential Hazards:

    No abnormal pressures or temperatures are anticipated. The estimated bottom hole temperature at TD of pilot hole is 105 degrees and estimated maximum bottom hole pressure is 2970 psig. Measurable gas volumes or Hydrogen Sulfide levels have not been encountered during drilling operations in this area, however an H2S plan is attached to the Drilling Program. No major loss of circulation zones has been reported in offsetting wells.

14. Anticipated Starting Date

    Drilling operations will commence approximately on ***June 30, 2012*** with drilling and completion operations lasting approximately ***90*** days.

received
6/25/12