

**CONOCOPHILLIPS COMPANY**  
Permian Basin Area  
September 16, 2005  
**GRAYBURG DEEP 30 FEDERAL #1**  
**RECOMPLETE TO ATOKA**

8505/19805  
30-17-30

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30-015-31958

To: L. E. Deen  
From: J. T. Lowder

**A. IMPORTANCE OF SAFETY**

Safe operations are of utmost importance at all ConocoPhillips properties and facilities. To further this goal, the ConocoPhillips Supervisor at the location shall request tailgate safety meetings prior to initiation of work and also prior to any critical operations. All Company, contract, and service personnel then present shall attend these tailgate safety meetings at the location. All parties shall review the proposed upcoming steps, procedures, and potentially hazardous situations. Occurrence of these meetings shall be recorded in the Daily Report.

**B. History / Justification**

The purpose of the proposed project is to recomplete the Grayburg Deep 30 Federal #1 to the Atoka. An interval from 10,596-10,740' that included the proposed Atoka completion interval from 10,692-10,703' was drill stem tested in October 2001. This drill stem test recovered 556' of condensate with gas at a rate of 3,594 mcf/d in 195 minutes. However, some pressure depletion occurred during the test, which indicates a limited reservoir. The currently open middle Morrow and lower Morrow intervals are now depleted. A flow test during the week of September 16, 2005 indicated a gas rate from the Morrow of 1.4 mcf/d at 25 psig. The proposed project is expected to result in a production rate of 250 mcf/d. ConocoPhillips is the operator of the subject well with a 50.00% working interest and a 43.75% net revenue interest.

The Grayburg Deep 30 Federal #1 was drilled and initially completed as a Sand Tank Morrow gas producer in November 2001 with lower Morrow perforations at 11,250-61' and middle Morrow perforations at 11,073-90' and 11,102-10'. The lower Morrow was only flow tested 50 hours before being isolated to test the middle Morrow. A packer with a tubing plug in the packer assembly was used to isolate the lower and middle Morrow intervals. During December 2001, the middle Morrow was fracture treated with a 70Q binary gas system consisting of 410 barrels of 4% KCl water, 72 barrels of methanol, 135 tons of CO<sub>2</sub>, 597 mscf N<sub>2</sub>, and 40,040 pounds of 20-40 mesh interprop. During February 2002, an attempt to reenter the lower Morrow was unsuccessful due to frac sand falling on the packer. During May 2003, the tubing was lowered 448' to facilitate gas flow from the middle Morrow. During November 2003, a rental wellhead compressor was installed. A water block removal treatment consisting of 35 mscf N<sub>2</sub>, 3000 gal 7.5% Gaswell HCl (60% HCl/40% methanol), and 100 mscf N<sub>2</sub> was performed in April 2004. The rental wellhead compressor was removed in June 2004. During November 2004 operations to reenter the lower Morrow, it was discovered that the middle Morrow and the lower Morrow had been in communication, and the lower Morrow had already been open for production. The Grayburg Deep 30 Federal #1 has a cumulative Morrow production of 261.3 mmcf/g and 2.2 mbo through June 2005.

Economics for the proposed project were performed using a gross initial production rate of 250 mcf/d, gross unrisked reserves of 128.0 mmcf/g, a workover cost of \$82,000, and an operating expense of \$13,200 per year.

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C. Morrow Formation Properties:

Gas Gravity = 0.7  
Estimated BHP = 700 psi  
BHT = 163°F

H<sub>2</sub>S Concentration = 0 ppm  
H<sub>2</sub>S ROE @ 100 ppm = 0'  
H<sub>2</sub>S ROE @ 500 ppm = 0'

D. Well Category:

Well Category One since this well is incapable of flowing gas at rates greater than 500 mcfd. Class 2, 3000 psi Hydraulic BOP is required. A choke manifold is to be used.

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J. T. Lowder

E. Recommended Procedure

1. Set frac tank. Hook up dual choke flowback manifold and flowline from manifold to frac tank.
2. MIRU well service unit. Bleed off tubing and casing pressure. Load casing w/ 10+/- barrels 7% KCl water. ND wellhead and NU shop tested, Class 2 BOP and environmental tray. NOTE: Wellhead is 10M. Will need a 10M by 3M adapter to nipple up BOP.
3. If needed, install stripping rubber. TOOH w/ 2 3/8", 4.7#, N-80 production tubing. Scan tubing while TOOH.
4. MIRU wireline using a 5000 psig lubricator. Pressure test lubricator to 2000 psig. RIH w/ 4.75" gauge ring to 11,050'+/-. POOH w/ gauge ring.
5. TIH w/ 5 1/2" CIBP on wireline. Set CIBP at 11,050' +/- . Dump bail 30' of cement on top of CIBP.
6. TIH w/ 5 1/2" PLS packer, on-off tool, 3 3/8" TCP guns (6 spf) and 3 3/8" bauxite carriers on 2.375", 4.7#, N-80 production tubing. Test tubing to 9000 psi w/ 7% KCl water while GIH. Place junk catcher under tubing tester. Run packer to 10,650'+/-. NOTE: Dope pin ends only on this trip to avoid pumping formation-damaging pipe dope into formation when guns fire.
7. MIRU wireline. Run GR/CCL Log to place gun on depth as per Schlumberger Platform Express Three Detector LithoDensity Compensated Neutron / GR Log dated 10/20/2001 (log section attached). Check for fluid level in tubing. POOH w/ wireline.
8. ND BOP.
9. Space out and set 5 1/2" PLS packer with 20,000 lbs compression. NU WH.
10. Run GR/CCL Log to confirm perforation depths. POOH and RDMO wireline.
11. RU tree. Dump 7% KCl water down tubing as necessary to achieve a 300' fluid level above the firing head.
12. RU 15M wellhead isolation tool, appropriate checks and valves to flow well back immediately.
13. Pressure test lines to 10,500 psi with N<sub>2</sub>. Pressure annulus to 500 psi with treated 7% KCl water. Monitor and maintain. Use a pop-off valve on the annulus set for 2500 psi. Have the backside pump raise the annulus pressure to 2000 psi as the tubing pressure is rising.

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14. Establish N2 rate at 5000+/- scf/min to pressure the tubing and fire the perforating guns to perforate Atoka 10,692-10,703' w/ 6 spf (66 holes), 60 degree phasing, using 3 3/8" gun. Do not slow the N2 rate unless the maximum allowable surface treating pressure of 10,500 psi is reached. Continue pumping N2 at 5000+/- scf/min for 2 minutes after the guns fire. Shut down N2 injection. Note: Atoka BHP during DST was 4000+/- psi.
15. Bleed annulus pressure down to 500 psi, and immediately flow back load water to frac tank through choke manifold. Allow well to clean up. Turn well to sales line and obtain flow rate.
16. Flow well until load is recovered. SI well to obtain static wellhead SITP. RDMO well service unit and clean location.
17. Unhook flowline to frac tank. MO dual choke flowback manifold and frac tank. Produce well to sales.
18. Report results on morning report. Run four point test as needed at a later date.

Jack T. Lowder  
9/16/05