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September 6, 1995

MR. ARLEN DICKSON

Re: RE-ENTRY PROCEDURE AND COST ESTIMATE  
Martin No. 1  
Eddy County, New Mexico

Gentlemen:

The following procedure and attached cost estimate have been prepared after discussions with you, Jim Brusenhan, Bill Baker, et al. The basic premise is to re-enter the subject well, drill plugs and clean out to a depth sufficient to test the Strawn formation at approximately 10,700' KB. However, the original Strawn perforations 10,354-10,374' KB will be tested if found to be open after drilling the plug from 10,035' to 10,350' KB. Strawn interval(s) will be production tested. I have assumed a tie back string of 7.625" casing will not be required. A flowing dry gas completion is assumed.

The following general procedure outlines the basic steps to accomplish the above objectives. A cost estimate is attached.

### Procedure

1. Prepare road and location for re-entry.
2. Cut off surface plate and drill surface plug with a "starting hole" rig (if possible; if not, use a jack hammer to start hole).
3. Weld extension to 10.75" casing and install 3000 psig head.
4. Move-in and rig-up pulling unit with reverse equipment; unload, rack & tally appx. 11000' of 2.875" tubing.

Note: Pipe dope and cleaning materials are to be supplied by contractor; all excess dope, buckets, brushes, paint, paint cans, motor oil, trash, drums, etc. generated or brought to the location by the contractor(s) is to be removed from the location by the contractor(s) upon completion of their work.

All other trash, etc. is to be contained within trash bin (or other types of closed containers) and sent to a permitted disposal facility upon completion of the work.

No operations, including rigging up, are to begin until all necessary safety equipment is on location and safety meeting has been held. Daily Safety meeting are to be held by the

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pulling unit crew and other personnel as directed by their safety personnel. MSDS sheets will be supplied by all parties bringing chemicals on location. All personnel are to be instructed in the use of well control equipment, safety rules and the intended operation of all equipment.

Obtain insurance certificates from each supplier, service company, etc. for both ARLEN DICKSON AND O'BRIANT and ASSOCIATES, INC. before allowing them on the location.

5. Nipple-up BOP; fill steel working pit with fresh water.
6. Close blind rams and test casing, etc. with 1000 psig.
7. Go in hole to first plug @ 288' KB with a 9.50" bit, 6.00" drill collars and 2.875" tubing.
8. Close pipe rams and test casing, etc. with 1000 psig.
9. Drill plug and circulate hole clean.
10. Continue to go in the hole to second plug @ 1,228' KB; drill plug and clean-out to top of 7.625" casing stub (app. 1,300' KB).
11. Close pipe rams and test casing, etc. with 1000 psig.  
*Note: If 10.75" casing will not test, run 7.625" tie back string.*
12. Dress-off top of 7.625" casing. Run down hole camera if required.
13. POH; lay down 9.50" bit.
14. GIH with a 6.50" bit, drill collars and pipe; drill out cement from top of 7.625" casing; continue in hole for 200' after drilling plug.
15. Close pipe rams and test casing, top of stub, etc. with 1000 psig.  
*Note: If 7.625" casing stub does not test, squeeze cement as required using a combination of Micro matrix and regular cement with additives.*
16. Continue in hole to next plug @ appx. 1,856' KB; close pipe rams and pressure test casing to 1000 psig.
17. Repeat procedure for plugs at appx. 4,446' KB and 6,466' KB.
18. Drill plug at appx. 8,657' KB down to top of liner; dress off top of liner and circulate hole clean.
19. Pressure test top of 5.50" liner to 1000 psig.  
*Note: If 5.50" liner top does not test, squeeze cement as required using a combination of Micro matrix and regular cement with additives.*
20. POH; lay down 6.50" bit and drill collars.
21. GIH with 4.50" bit, 3.5" drill collars, and 2.875" tubing; drill cement from top of 5.50" casing and wash down to 9000' KB (out of plug);
22. Pressure test to 1000 psig.

23. Continue in hole to next plug @ appx. 10,035' KB; drill plug and wash down to appx. 11,000' KB.

Note: Gas may be trapped under this plug; exercise extreme caution.

24. Pressure test to 1000 psig.  
25. Set a clean tank and load with 400± bbls. 2% KCl water; set a 500 bbl. test tank for waste fluids and from swab/flow tests.  
26. POH; then GIH with bit and scrapper to appx. 11,000' KB; displace hole with 2% KCl water.

**Pump into existing perforations; if not possible,  
continue with ALTERNATE PROCEDURE steps  
starting in step No. 28.**

27. POH, lay down drilling equipment; keep hole full.  
28. GIH 3 joints of tubing, Baker Lokset packer and "EL" receptacle with a 2.25" profile, two joints of tubing, four foot sub and tubing to place bottom of tail pipe at 10,374' KB; test tubing while going in hole.

**ALTERNATE: GIH 3 joints of tubing, Baker Lokset packer and "EL" receptacle with a 2.25" profile to place bottom of tail pipe at 10,714' KB.**

29. Circulate 250 gallons of xylene followed by 250 gallons of 15% HCl to bottom of tubing; reverse acid and xylene to waste tank to clean tubing.  
30. Circulate 250 gallons of 15% NeFe, DI acid with 1 gallon of PENN 88 to spot. PUH to place bottom of tail pipe at appx. 10,250' KB; reverse circulate with 6 bbls. 2% KCl water.

**ALTERNATE: 10,650' KB**

31. Space out, set packer; remove BOP & nipple-up 5000 psig well head (2 MV, 1 WV & Choke); extend steel flow line to test tank.

**ALTERNATE: Rig up electric line company.**

- A. Run PDC log strip from PBD through four foot sub above packer.  
B. Rig up wire line BOP.  
C. GIH with perforating gun to appx. 1,000' KB.  
D. Close Wire line BOP and test to 1500 psig.

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**E. Perforate with a through tubing Pivot Jet - 3 shots  
per foot 120<sup>g</sup> phase - from 10,706' KB to 10,714' KB  
(27 shots).** 716

32. Displace acid.
33. Swab and/flow to test.
34. Reacidize if required.
35. Flow/swab to test.
36. Install surface equipment.
37. Run potential and BHP test(s) as directed.
38. Initiate production.

The cost estimates shown above are estimates based on recent quotes from the various service companies involved and may be reduced/increased due to industry discounts in place at the time work is bid, or undertaken.

O'Briant & Associates, Inc. is not a safety (OSHA) or EPA engineering firm. Please advise if a safety program and/or inspection prepared by a third party will be required by you prior to initiating this work.

After you have reviewed this procedure, and if it meets with your plans and engineering, producing and/or testing requirements, please sign below and return a copy to me. We will secure the necessary services from your approved vendor list and start field operations upon your instruction.

Yours very truly,

James F. O'Briant  
Consultant

Accepted this \_\_\_\_\_ day of \_\_\_\_\_, 1995.

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Arlen Dickson

attachment  
Well Data Sheet  
Well Bore Schematic (2 pages)

cc:  
JEB  
Bill Baker  
O'B & A, I Well File