Recommended Procedure

Howell "29" Com. No. 2 ----------Cemetary-Morrow
Eddy County, N.M.

1. Drilling contractor to set 20" conductor if necessary. MIRU rotary tools.

2. Drill 17-1/2" hole to 400' with spud mud. Set and cement 13-3/8" casing with 400 sx Class "C" cement with 2% $CaCl_2$ (s.w. 14.8 ppg, yield 1.32 ft^3/sx). WOC 18 hrs. NU 13-5/8" 3000# annuluar preventor.

3. Drill 12-1/4" hole to 3000' with fresh water. Control seepage with paper. Dry drill if complete loss of returns is experienced.

4. Set and cement 9-5/8" casing at 3000' with estimated 1000 sx Class "C" with 4% gel and 2% $CaCl_2$, (s.w. 13.50 ppg, yield 1.74 ft^3/sx) plus 200 sx Class "C" with 2% $CaCl_2$ (s.w. 14.8 ppg, yield 1.34 ft^3/sx). Note: If lost circulation has occurred prior to running casing, add 200 sx Thixset cement for the lead slurry. Thixset cement blend: 200 sx Class "H" with 10% A-10B, 1% $CaCl_2$, 10#/sx Gilsonite, and ¼#/sx Cello Flake (s.w. 14.6 ppg, yield 1.52 ft^3/sx).

5. Install 11" x 5000 psi intermediate spool. NU 11" 5000 psi B.O.P.'s, hydril and choke manifold. WOC 18 hours. Set up DST test line complete with test tank. RU mud gas separator with flare ignitor. Install H_2S monitor equipment, escape packs and briefing stations.

6. Pressure test BOP stack to 1500 psi with rig pump.

7. Upon first bit trip or before 6500', hydrostatically test 200' of 9-5/8" casing to 2800 psig, casing spool, BOP's, and choke manifold to 3000 psig, and hydril to 1500 psig. Install PVT equipment

8. Drill 8-3/4" hole to total depth of 9850' using fresh water to 5000', 3% KCl water to 8700'. Mud up at 8700' with 3% KCl polymer starch mud system and maintain 34-36 sec. viscosity, 9.0 ppg and 10 cc water loss to total depth. Increase viscosity with Flowzan if necessary for hole cleaning.

9. DST all shows.

10. Log well with DLL-MSFL and CNL-LDT using Schlumberger Platform Express.

11. Set and cement 4-1/2" production casing (resin coated and centralized through pay zones) with 10 bfw + 500 gallons Mud Clean II + 10 bfw and 1100 sx Super C Modified (15#/sx Poz A and 11 #/sx CSE), 1% salt, 1.1% FL-25 (s.w. 14.2 ppg, yield 1.35 cuft/sx). Calculate cement volume for TOC at 6000'. Displace bottom plug with 5% KCl water containing 15 gallons packer fluid.

12. Set slips, nipple down BOP's and run temperature survey to locate cement top.

13. Install 11"-5000 psi x 7-1/16"-5000 psi tubinghead and flow tree.

14. Rig down and move out rotary tools.

15. Level location, set mast anchors, move in and rig up completion unit.

16. RIW with packer, T.O.S.S.D. with "F" profile nipple and 2-3/8" tubing. Set packer, install flow tree, swab down tubing and perforate pay interval.