

REMEDIAL CEMENT PROCEDURE
NEIL /A/ 6

*Revision
Procedures
8/19/91*

1. MIRUSU.
2. Install BOP.
3. Blow down bradenhead, intermediate annulus, and kill well.
4. TOH with 2 3/8" tubing.
5. Determine free point of 4 1/2" casing.
6. TIH with RBP. Set 100' below free point.
7. TIH with string shot and back off of 4 1/2" casing at the nearest joint above 4500' or the free point, whichever is shallower.
8. TOH with 4 1/2" casing. Inspect and replace any bad joints. Note any worthy findings of pipe condition.
9. Clean out hole to 4 1/2" casing top. Use casing scraper for 7", 23 lb/ft casing.
10. TIH with RBP and set at 3100' if possible. Cap with 5 sacks of sand.
11. TIH with a 4 1/2" casing gun and perforate the following intervals with 4 JSPF and 90 degree phasing: 2950' - 52', 2420' - 22'.
12. TIH with cement retainer and set at 2430'. Establish circulation between perforations. If no circulation is established, remove retainer and proceed with step 14, otherwise continue.
13. Conduct a block squeeze by pumping 300 sacks of cement through bottom set of perfs. Because this squeeze is being conducted across the PC & Fruitland, the cement slurry should contain adequate fluid loss additives and should be preceded by a special preflush used in high fluid loss applications.

NOTE: Squeeze volume is based on 300% of calculated annular volume.

14. Sting out of retainer, hold pressure on squeeze, and WOC.
15. TIH with tubing and packer. Set packer at 2050'.
16. Establish circulation through existing perfs at 2100' to surface; use a dye and count strokes to determine annular volume. Circulate until returns are clean.
17. If circulation does not occur, determine TOC with a GR/CBL, perforate above that point, and establish circulation to surface until returns are clean.
18. Conduct a cement squeeze to surface by pumping 700 sacks of cement. Check volumes with step 15 or 16. Do not displace until cement returns are seen at the surface. WOC.
19. Drill out cement to RBP and pressure test. Run a GR/CBL. Resqueeze if communication still exists to the surface or if bond log does not show cement up to the surface casing.
20. TOH with RBP at 3100'.
21. Clean out hole to 4 1/2" casing top.
22. TIH with 4 1/2" casing, and a screw in joint. Screw into 4 1/2" casing top.
23. TOH with RBP.
24. Clean out hole to PBTD.
25. TIH with original open ended tubing string and return well to production.