

BRADENHEAD PROCEDURE  
MUDGE LS 6A

1. Record tubing, casing, and bradenhead pressures.
2. MIRUSU.
3. Install BOP.
4. TOH with 2 3/8" tubing without killing well, if possible.
5. TIH with RBP and set at 4000'.
6. Run a GR/CBL from ~~4150'~~<sup>4000'</sup> to surface and determine top of cement for 4 1/2" liner and the 7" casing.
7. Pressure test casing and liner top to 1000 psig. Locate leaks if necessary.
  - a) If a leak exists through the liner top, pump 200% of the annular volume from the liner top to the TOC.
  - b) For leaks below the TOC of the 7" casing, conduct block squeezes on these until they will pressure test to 500 psi.
  - c) For leaks above the TOC of the 7" casing, contact Paul Edwards in the Denver office. Options at this point will vary.

The remainder of the procedure assumes there are no leaks above the TOC of the 7" casing

8. Set a RBP 50' below TOC in 7" casing, cap with 5 sacks of sand.
9. Perf two holes within 50' of the TOC.
10. Set a retrievable cement retainer 300' above the perfs.
11. Establish circulation to surface, calculate annular volume with a dye.
13. Pump 300% of annular volume of cement through squeeze perfs.
14. Reverse out and WOC at least 24 hours.
15. TOH with retainer and drill out cement to uppermost RBP.
16. Pressure test squeeze perf to 500 psi; run CBL if pressure holds and if cement was not circulated to surface.
17. Resqueeze until pressure test holds, and cement is to surface.
18. Retrieve both RBPs.
19. If several holes were shot in the 7" casing, contact office for the possibility of running 4 1/2" or 5 1/2" casing to the liner top, or even backing off of the 4 1/2" liner hanger and then tying 4 1/2" casing back to the surface.
20. RU lubricator. TIH with 3 1/8" casing gun and perforate, underbalanced, the following MV intervals with 2 JSPF, 90 deg phasing, and 15 g charges. Depths are correlated from Schlumberger's Compensated Formation Density log dated 77/11/29.

PERFORATE

4336' - 78'	4397' - 4410'	4415' - 20'	4441' - 45'
4848' - 66'	4894' - 4904'	4912' - 30'	

20. TIH with open ended 2 3/8" tubing with a seating nipple one joint off bottom. Clean out well to top fish at 4975'.
21. Land tubing at 4935'.
22. Swab back any load such that the well will kick off.
23. Return well to production.