



## Workover Procedure

### FLORANCE 18 A

December 9, 1993

1. Record TP, SICP, and SIBHP.
2. MIRUSU.
3. Tag for fill. If necessary clean out to PBTD (5266') with nitrogen .
4. TOH with 2 3/8" tubing. (see attached tubing tally)
5. TIH with 4.5" RBP and set at 3200'.
6. Pressure test casing and liner top to 500 psig. Locate leaks if necessary.
  - a) If leaks exist inside 4 1/2" liner, conduct cement squeeze(s) until hole(s) will test to 500 psig.
  - b) If leaks exist inside 7" casing, contact Michelle Monteaux in the Denver office before proceeding.
7. TOH with RBP.
8. Using lubricator, TIH with 3 1/8" casing gun and perforate the following intervals with 2 JSPF and 120 degree phasing. Depths are correlated from GO International Compensated Formation Density Log dated 8/5/76. Attempt to perforate underbalanced by perforating while well is flowing. If successful, consider isolating the Cliffhouse by setting a RBP at 4825' and attempting the same. (Perforate while well is flowing)

#### MV Point Lookout

5000' - 48' (49)  
5065' - 68' (4)  
5083' - 90' (8)  
5109' - 12 (4)

#### MV Cliffhouse

4504' -06' (3)  
4511' - 48' , 57' (39)  
4561' - 63' (3)  
4566' , 67' , 73' , 75' (4)  
4579' - 82' , 89' (5)  
4592' - 4606' (15)  
4615' , 17' , 18' (3)  
4705' , 4729' - 50' (23)  
4771' , 4775' - 85' (12)  
4794' - 97' (4)

9. TIH with RBP, packer and tubing. Set RBP at 5075' and packer at 4985'.
10. Pump the following acid job at no greater than 2 bbl/min: (50 bbl/ ft of perms)

Pre-flush : 2650 gal 15% HCl  
Treatment : 2650 gal 35% ASOL, 65% (3% HF / 12% HCl) solution  
After-flush : 2650 gal 15% HCl  
Displacement : 870 gal 0.2% clay fix II / water

11. Reset RBP to 4620' and packer to 4490'.
12. Pump the following acid job at no greater than 2 bbl/min:

Pre-flush : 3600gal 15% HCl  
Treatment : 3600 gal 35% ASOL, 65% (3% HF / 12% HCl) solution  
After-flush : 3600 gal 15% HCl  
Displacement : 815 gal 0.2% clay fix II / water

13. TIH with open ended 1.5" coiled tubing with a seating nipple close to bottom (~10' or less). Land tubing at 5030'.
14. Swab back load ASAP.
15. Tie well back into surface equipment and return to production.

**Note:** All water which will contact the MV during this procedure should contain clay fix. Use clay fix throughout the entire procedure and avoid KCl water altogether.

KCl water, when in contact with HF acid, will form unwanted precipitates. The pre-flush will ensure that any downhole KCl is displaced prior to the pumping of HF acid.

All acid must contain 50 lb. of citric acid per 1000 gal. of solution to serve as an iron sequestering agent.

The time between pumping acid and swabbing back the load should be kept to a minimum.