IX. Workover Procedure

A) Set anchors. Move in double drum pulling unit. Install BOP. Text BOP to 200#. Test casing to 1000#.

B) Drill out cement stage tool and plug at 5980' (tool length 1.84') using 8 - 3-1/2" drill collars, 4-3/4" tri-cone bit, 5-1/2" casing scraper and 2-7/8" work string.

C) After drilling out stage tool, pressure test 5-1/2" casing to 1000#.

D) Run 2-7/8" tubing with 4-3/4" bit and bottom hole assembly to top of float collar located at 10,328'. Drill out float collar, shoe joint and formation packer shoe set at 10,370' (total length 42.00').

E) Clean out open hole from 10,370'-10,393'. Continue to drill until bit wears out or a total depth of 10,420' is reached or until circulation is lost.

F) Pull tubing and bit out of hole. RU logging unit. Run Gamma Ray-Compensated Neutron log from TD to 8450'. Set on depth to SDL-DSN log dated 7-12-88. PCH. GIH with cement bond log. Check cement bond from bottom of casing at 10,370' to top of cement for 1st stage. POH to DV tool at 5980' and find top and bottom of second stage cement. Finish POH.

G) RIH w/2-7/8" tubing and RTTS packer. Set packer at 10,350'. Spot 100 gallons 20% NeFe acid to within 100' of bottom of tubing. Shut bypass. Pressure annulus to 1500#. Displace acid into Devonian zone at 3-5 BPM at anticipatd WHTP of 3000#.

H) After acidizing obtain step-rate injection test using formation water form Well No. 1.

I) Release the RTTS packer and POH. RIH w/a 45A4 Baker model lok-set retrievable casing packer 5-1/2" - 17# internally plastic coated with a Baker model "FMH" side pocket mandrel and Baker model "RL" on-off connector w/1" plug installed in profile nipple on 2-7/8" work string. Set packer at 10,350'. POH.

J) Mix 1800# KCl, 1 gallon Lo Surf and 1 gallon clay stabilizer w/225 barrels fresh water to make 2% KCl water.

K) Pick up RTTS packer and bridge plug. RIH. Set retrievable bridge plug at 9700'. POH. Spot, using 2% KCl water, 100 gallons 7-1/2% Morrow flow acid across interval 9669' to 9557'. Pull packer up to 9500'.

L) Swab well down to 5800'. This will leave the well 1000# under balanced.

M) Set packer at 9500'. Fill 2-7/8" x 5-1/2" casing annulus w/2% KCl water. Run perf gun with collar locator. Set gun on depth. Place 1000# on casing annulus and monitor. Close wire line lubricator. Perf Morrow zone with 1-11/16" tubing gun from 9669-9654' at 4 JSPF.

N) Allow pressure to stabilize. Pull perf gun out of hole. Flow test well. Allow well to clean up. Obtain 4 point potential test.

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