WORKOVER PROCEDURE

WELL: Paddock Unit #24 DATE: 5/03/90

BACKGROUND: Well has been TA'd since 1986.

OBJECTIVE: Test shut-in well for casing leaks, add pay in Paddock and Glorieta, acidize and return well to pump.

FORMATION PSI (Padd):	< 400 psi	PROD CASING:	5.5"/17#
FORMATION PSI (Glor):	≈1,600 psi	MIN DRIFT ID:	4.767"
WO FLUID:	9 ppg BW	MIN BURST:	4836 psi(w/1.1 SF)
MAX ANTICIPATED SITP:	<1000 psi	H_2S :	400 ppm
BOP CLASS:	III	BOP SERVICE:	Sour
BOP VARIANCES:	YES	HI-RISK EQUIP?:	NO

PROCEDURE:

1. Before MIRU well service unit, check the pressures on the tubing and all casing annuli. Report annular pressures found to the Exxon supervisor and discuss appropriate and safe blow down procedures. Attempt to bleed annulus pressures to zero. For annular pressures that will not bleed to zero, first review with the field superintendent, then inform subsurface engineer. Document all annular pressure activity on morning report.

   If problem annular pressure is discovered, contact Subsurface Engineer for repair procedure and possible AFE supplement before proceeding with following workover:

   Note: this workover will entail an acid job to be applied with B.J. Titan's pressure fluctuation tool (PFT). Notify B.J. Titan at least one week before rigging up to insure availability of equipment.

2. Test rig anchors per Ops Bulletin #52 and send charts to T. R. Quintero in Midland. Replace as necessary.

3. MIRU WSU and after ensuring well is dead, POH with rods and pump, inspecting and replacing as needed. Install Class III BOP and test per company guidelines.

4. Tag PBTD at 5,252' to check for fill, then POH with tubing and BHA. Visually inspect tubing and replace as needed.

   NOTE: Burst rating of 2-3/8"/4.7#/J55 tubing is 7000 psi (S.F.=1.1) with 0 psi on the backside.

5. RIH w/ a 5-1/2" treating packer on 2-3/8" tubing & set packer @ 5,050' ± Test backside to 1,000 psi for 15 minutes.

6. If casing tests, POH with packer and go directly to step 7. If any leaks are discovered, isolate and establish an injection rate and pressure down backside, monitoring pressures on all casing annuli while pumping. Contact Subsurface engineer for repair procedure. POH with packer.

7. Make a round trip with a bit to PBTD @ 5,252'. Clean out if necessary (PFT tool has tight clearances). Fill may require bailing due to low bottom-hole pressure.

8. MIRU wireline and class II lubricator and test per company guidelines.

9. Run GR/CNL/CCL from TD to 4,900'. Panafax a copy of log to geologist Bob Asreen (Fax # 915-688-6723) for correlation and exact intervals to be perforated.

10. Perforate 111 shots from approximately 5,135 - 5,245' and 67 shots from approximately 5,025' - 5,091' as instructed by geologist based on new cased-hole GR/CNL log.

    a. Correlate new GR/CNL/CCL.
    b. Use a 4" hollow steel carrier casing gun.
    c. Use premium charges.
    d. Shoot at 120° phasing (1 spf).
    e. Rig down perforators.

11. Nipple up annular BOP and test per company guidelines.

12. Rig up B.J. Titan and RIH with PFT to just above top perf. Note that the top 10 joints must have turned down collars so they can be stripped through the BOP's. Test tool. B.J. should have a geophone attached to the production casing at the surface to monitor down-hole pressure fluctuations.

13. Lower tool through perfs while circulating. Tool must be in circulation mode (annulus valve open). Circulate 120 bbl of produced water at 1-2 bpm. Circulate only when tool is opposite perfs (from 5,025' to 5,245'). Pressure fluctuations should be from 1500 psi above and 1500 psi below hydrostatic.

    Note: Do not leave the tool in hole overnight before treating. Its acoustic filters will lose their nitrogen charge.

14. Acidize the perfs as follows:

    Acid: 125 bbl 15% HCl with 2 GPT corrosion inhibitor, 2 GPT NEA, and 5 GPT citric acid.

    a) With PFT opposite bottom perf (5,245'), spot 5 bbl ± acid across the perfs. Allow the acid to soak at least 30 minutes.

    b) With PFT in injection mode (annulus valve closed), trip the tool up through the perforated interval. Pump the acid at 1-2 bpm while reciprocating tool in full-stand strokes. The pressure fluctuations should be from 1500 psi above to 1500 psi below hydrostatic.

    c) Monitor annulus pressure throughout job for communication. The annulus must remain closed while pumping. Reduce pump rate if treating/ annular pressure climbs to above 1,500 psi.

    d) Pump a 5 bbl brine spacer before breaking any connections.

    e) After each stand-length of interval has been treated, pull up one stand and repeat steps b) thru d) until entire perforated interval has been treated.

    f) After acidizing the uppermost perf, pull up 500' to 700', and flush to perfs with approximately 30 bbls clean brine.