



Southland Royalty Company

August 15, 1985

well file
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**OIL CON. DIV.
DIST. 3**

Mr. Paul Payne
Producing Royalties, Inc.
P. O. Box 1071
Lubbock, Texas 79408

RE: SRC-Federal PRI #1
 ○ Section 11, T29N, R12W
 San Juan County, New Mexico

Dear Mr. Payne:

It is recommended that the Federal PRI #1 be plugged and abandoned and redrilled. The Federal PRI #1 was drilled and completed in 1967 as a Basin Dakota producer. Cumulative production is 1,763 MMCF/10,937 BO.

The subject well was producing at a normal decline rate (see attached decline curve) prior to 1974. An apparent casing leak affected production in June, 1974 and the production began dropping rapidly. By late 1976, production had essentially dropped to zero, at which time a drillable retainer was set above the Dakota perforations to isolate them from the casing leak. The well was returned to production, but the stabilized production level was significantly below the pre-casing leak producing rate. Remedial work to repair the casing leak was not performed, and in 1982 production ceased when a tubing leak developed and water invaded the producing zone. The well has been shut-in since that time.

In March, 1985 an attempt was made once again to isolate the producing interval from the casing leak in an effort to determine whether the Dakota required a recompletion attempt or abandonment. A hole in the tubing was found, and it was also determined that the seals in the retainer were not functioning properly. The retainer was drilled out, and the Dakota was swab tested through a packer to determine its productive potential. The well was swabbed for nine days, resulting in the recovery of 1130 barrels of water with slight gas vapors. The casing pressure remained at 60 psi throughout the swabbing operations, and the fluid level was maintained at 2000'.

Southland Royalty and other operators in the San Juan Basin have had little success in regaining Dakota production when the formation has been invaded by foreign waters over long periods of time. It is felt that an attempt to recomplete the Dakota would be costly and would have little chance of success.

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It is therefore recommended that the Federal PRI #1 be redrilled. It is estimated that reserves in excess of 900 MMCF remain to be recovered from the SE/4 of Section 11 (see attached calculations). The average EUR per 1/4 section for offsetting Dakota production is 2.6 BCF, which coincides with the estimated ultimate recovery of 2.7 BCF in the SE/4 of Section 11. Redrilling of the Federal PRI #1 will also allow a higher gas price to be obtained than would be realized if the well was successfully recompleted.

If you agree with our recommendations, please let us know, and we will submit the necessary AFEs. If you should have any questions, do not hesitate to call us.

Sincerely,

SOUTHLAND ROYALTY COMPANY



David M. Blandford
Petroleum Engineer

DMB/eg

Attachments

XC: Lizz Taylor-SRC-Denver, CO
✓ Frank Chavez-NMOCD-Aztec, NM

RESERVES CALCULATIONS

Decline Curve

- Average producing rate at beginning of 1974 = 14,500 MCFM
- Decline rate = 11.5% (annual)
- Economic Limit = 250 MCFM
- Production from 1974 through 1982 = 452,954 MCF
- Estimated Reserves =
$$\frac{(14,500 - 250)12}{-\ln(1 - .115)} - 452,954$$
$$= \underline{946,762 \text{ MCF}}$$

P/z vs. BHP

- Assume data after 1975 was affected by casing leak.
- Abandonment pressure = 200 psi
- Ultimate Recovery = 2.7 BCF
- Estimated Reserves = Ultimate Recovery - Cumulative Production
- $$= 2,700,000 \text{ MCF} - 1763043 \text{ MCF}$$
$$= \underline{936,957 \text{ MCF}}$$