champlin

12 November, 1975

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O. C. C.
ARTESIA, OFFICE

New Mexico Oil Conservation Commission
P. O. Drawer DD
Artesia, New Mexico 88210

Attention: Leon Bergstrom

Re: Packer Leakage Report
State 36 #1-L
Sec. 36, T21S, R27E
Eddy County, New Mexico

Dear Sir:

As discussed in our telephone conversation of 11-10-75, Champlin Petroleum would like an exception to OCC Rule 112-A-6-C requiring shutting in dual zone wells for packer leakage tests. We believe that shutting in the subject Morrow Sand zone would cause invasion of water into partially depleted gas sands. This invasion of water could cause a reduction in the reserves and deliverability of the Morrow Sand completion.

We feel that a satisfactory packer leakage test can be obtained by shutting in the Wolfcamp or casing annulus side of the dual well and observing the two zones during shut-in and flowing conditions. Since the Morrow zone does not produce any condensate, any communication would result in the higher pressure Wolfcamp zone migrating into the tubing string and result in condensate production in the Morrow zone.

The subject well was shut-in for 284½ hours on July 14-26, 1975 for reservoir pressure evaluation and annual shut-in period. At this time, the Morrow zone was producing about one barrel of water per day. When returned to production the zone made 3 BWPD declining to 1 BWPD in four days. In late September, 1975 water production increased suddenly to 20 BPD and is currently making about 25 BPD. The gas rate has declined from 1.7 MMCF/D in August, 1975 to 1.5 MMCF/D in November.

The attached plot of pressure vs dimensionless time indicates that the well was experiencing different rates of buildup. This indicates either crossflow between different zones or changing influx rates from each zone or a combination of these. The slow rate of buildup showing areas of level pressure appear to be more of a crossflow situation. This could result in the water zone migrating into a lower pressure or partially depleted gas zone. This could also result in the water killing the gas zone and require a swab unit to return the well to a flowing condition.

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