SHELL OIL COMPANY

PETROLEUM BUILDING

P. O. BOX 1509

MIDLAND, TEXAS

'65 FEB 3

January 28, 1965

Subject: Commingling Gas and Liquid Production from Devonian and Pennsylvanian Wells - Antelope Ridge Unit, Lea County, New Mexico.

New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Gentlemen:

We refer to your letter of December 8, 1964 wherein you advised us that administrative approval could not be granted for commingling production from different zones in the Antelope Ridge field unit.

Since receipt of your letter, our representative, Mr. Vassar, has met with your Mr. Nutter and developed a separation and metering plan which we understand will meet all requirements of the NMOCC and permit approval as originally requested in our letter of November 13, 1964. A drawing is attached which shows the gas flow into the Antelope Ridge Plant, the proposed separation and metering facilities for all gas and liquids prior to commingling of production from different zones, and some of the downstream treating and processing installations. Drawings of the Antelope Ridge unit and information relative to gravity of the liquids, price, etc. have already been submitted in our letter of November 13.

Our Antelope Ridge commingling facilities will follow closely the requirements set out in the NMOCC manual for the Installation and Operation of Commingling Facilities. The manual, however, is primarily concerned with the handling of crude oil through LACT units, and is not entirely applicable in some instances to the handling of gas condensate well production through a liquid stabilization and gas sweeting and processing plant.

The measuring facilities we propose for the transfer of liquid hydrocarbons from the wells to the stabilizer will equal manual gauging accuracy. We shall use A. O. Smith WPM-3 meters temperature compensated having an accurate metering range of 1 to 20 GPM. Gas measurement will be with standard AGA code meter runs and orifice meters.

We shall use strainers to protect the fluid meters and air eliminators to prevent free gas from entering the meters. The condensate from the wells is a clear colorless liquid. Any free water will be removed in the two stages of separation ahead of the meters. Each well will be tested periodically through the test separator and the liquid sampled and checked for BS&W, gravity,

etc. We do not believe sampler and sample probes would serve any purpose and we cannot justify their use.

Each meter will have proving connections and each will be checked as required by the manual. We shall use a pilot type level controller with proportional band adjustment and single seated diaphragm control valve located downstream of the meters. Since there is liquid stabilization, gas treating and processing downstream of the liquid level control valve, it will be impractical to use a snap-acting (open or closed) valve. (The pulsating flow would upset column operation.)

To prevent over-ranging the meters on the high volume end, the dump valve will be sized to pass a maximum of 17-1/2 GPM at operating pressures. Low flow protection for the meters is inherent in the methods of producing the wells. It is impractical to flow a well at a rate so low that liquid production would be under one G.P.M.

The installation we propose will accurately measure and record the gas and liquid production from the two producing zones in the Antelope Ridge Field Unit. We believe it meets the requirements in all essential respects for administrative approval as outlined in the NMOCC manual for installation and operation of commingling facilities. We respectfully ask approval of the commission to commingle the production from the Pennsylvanian and Devonian zones in the unit.

As discussed in our original November 13 letter on this same subject, commingling the liquids ahead of the stabilizer is essential to efficient and economic operation of the Antelope Ridge unit. We are most anxious to complete our facilities. By June 1, 1965, we expect the gas take from the unit to be at contract maximum, then we shall need all proposed equipment installed and operating.

If you require any additional information or if a round table discussion might help expedite this application, please let us hear from you.

Yours very truly,

W. R. Fairchild

W. R. Fairchild
Chief - Gas Engineering

WHF:BAK

LARGE FORMAT EXHIBIT HAS BEEN REMOVED AND IS LOCATED IN THE NEXT FILE