

TEXACO
INC.

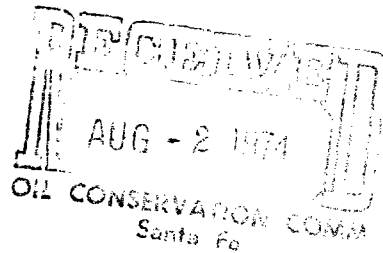
PETROLEUM PRODUCTS



DRAWER 728

HOBBS, NEW MEXICO 88240

July 31, 1974



New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico

Re: Vacuum Grayburg San Andres Unit
Ultimate Cement Strength in
Injection Wells

Attention: Mr. R. L. Stamets

Gentlemen:

During the hearing of Case 5286, "Application of Texaco Inc. for a Special Allowable, Lea County, New Mexico", on July 24, 1974, Mr. Stamets asked whether or not our maximum anticipated injection pressure of 1500-1600 psi in the Vacuum GB-SA Unit would exceed the compressive strength of the cement used to cement the casing in these wells. Halliburton Oil Well Cementing Company furnished the cement used in the injection wells in this project and their lab tests indicate a 28 day compressive strength of 4800 psi for the slurry used in these wells. This 28 day strength is considered the ultimate strength of the cement for design purposes. With injection wellhead pressures of 1600 psi the bottom hole pressure exerted on the cement would be

$1600 \text{ psi (wellhead pressure)} + 2100 \text{ psi (hydrostatic pressure)} = 3700 \text{ psi}$

Pressure losses due to friction in the tubing and fluid entering perforations have not been considered so this 3700 psi would be the maximum pressure exerted on the cement. This 3700 psi is well within the compressive strength of 4800 psi so cement failure will not occur at the proposed 1600 psi wellhead injection pressure. Wellhead pressures of up to 2700 psi could be attained before cement failure would occur.

Yours Very Truly,

K. W. Harbin ECH

K. W. Harbin
District Engineer

ECH/ar

OCC-Hobbs District Office

RLS