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GENERAL INFORMATION APPLICABLE TO HARDSHIP GAS WELL CLASSIFICATION

1) Definition of Underground Waste.

"Underground Waste as those words are generally understood in the oil and gas business, and in any event to embrace the inefficient, excessive, or improper use or dissipation of the reservoir energy, including gas energy and water drive, of any pool, and the locating, spacing, drilling, equipping, operating, or producing, of any well or wells in a manner to reduce or tend to reduce the total quantity of crude petroleum oil or natural gas ultimately recovered from any pool, and the use of inefficient underground storage of natural gas."

- 2) The only acceptable basis for obtaining a "hardship" classification is prevention of waste with the burden of proof solely on the applicant. The applicant must not only prove waste will occur without the "hardship" classification, but also that he has acted in a responsible and prudent manner to minimize or eliminate the problem prior to requesting this special consideration. If the subject well is classified as a "hardship" well, it will be permitted to produce at a specified minimum sustainable rate without being subject to shut-in by the purchaser due to low demand. The Division can rescind approval at any time without notice and require the operator to show cause why the classification should not be permanently rescinded if abuse of this special classification becomes apparent.
- 3) The minimum rate will be the minimum sustainable rate at which the well will flow. If data from historical production is insufficient to support this rate (in the opinion of the Director), or if an offset operator or purchaser objects to the requested rate, a minimum flow ("log off") test may be required. The operator may, if he desires, conduct the minimum flow test, and submit this information with his application.
- 4) If a minimum flow test is to be run, either at the operator's option or at the request of the Division, the offset operators, any protesting party, the purchaser and OCD will be notified of the date of the test and given the opportunity to witness, if they so desire.
- 5) Any interested party may review the data submitted at either the Santa Fe office or the appropriate OCD District Office.
- 6) The Director can approve uncontested applications administratively if, in his opinion, sufficient justification is furnished. Notice shall be given of intent to approve by attaching such notice to the regular examiner's hearing docket. Within 20 days following the date of such hearing, the affected parties will be permitted to file an objection. If no objection has been filed, the application may be approved.
- 7) Should a protest be filed in writing, the applicant will be permitted to either withdraw the application, or request it to be set for hearing.
- 8) An emergency approval, on a temporary bases for a period not to exceed 90 days, may be granted by the District Supervisor, pending filing of formal application and final action of the OCD Director. This temporary approval may be granted only if the District Supervisor is convinced waste will occur without immediate relief. If granted, the District Supervisor will notify the purchaser.
- 9) After a well receives a "hardship" classification, it will be retained for a period of one year unless rescinded sooner by the Division. The applicant will be required to certify annually that conditions have not changed substantially in order to continue to retain this classification.
- 10) Nothing here withstanding, the Division may, on its own motion, require any and all operators to show cause why approval(s) should not be rescinded if abuse is suspected or market conditions substantially change in the State of New Mexico.
- 11) A well classified as a "hardship well" will continue to accumulate over and under production (prorated pools). Should allowables exceed the hardship allowable assigned, the well will be permitted to produce at the higher rate, if capable of doing so, and would be treated as any other non-hardship well. Any cumulative overproduction accrued either before or after being classified "hardship" must, however, be balanced before the well can be allowed to produce at the higher rate.



LTR



Job separation sheet

APPLICATION FOR CLASSIFICATION AS
HARDSHIP GAS WELL

Doyle Hartman-
South Empire State Com No. 1
S/2 Section 24
T-17-S, R-28-E
Eddy County, New Mexico
Empire Morrow, South Gas Pool

MAY 22 1984

O. C. D.
ARTESIA, OFFICE

1. Applicant expects that restriction of the gas production rate for the South Empire State Com No. 1 below a minimum of 420 mcfpd will result in "underground waste" (as defined by 1) General Information Applicable to Hardship Gas Well Classification). Such expectation is predicated upon the observation that this well produces water and liquid hydrocarbons at rates of from 6 to 9 bbls per day and, when the gas flow rate is restricted below about 480 mcfpd, liquid-gas ratios begin to anomalously increase and the observed wellhead flowing pressure anomalously decreases (rather than increasing as the rate is decreased, as expected); continuation of these trends will lead to the accumulation of sufficient liquids within the wellbore, so that this well will cease to flow (i.e., the well will "die"), ultimately requiring "swabbing" or "jetting" to restore flowing. Since the produced water was originally vaporized in the gas, it is "fresh" (i.e., low in dissolved solids). The Morrow formation has proven to be sensitive to the alteration of the rock fabric in some cases from prolonged exposure to this fresh produced water; in addition, allowing significant volumes of liquid to accumulate within the wellbore and immediately adjacent to the wellbore in the formation can result in loss of relative permeability to gas that may result in permanent loss of productivity of liquids and gas.
2.
 - A) The problem of liquid accumulation within the wellbore cannot be solved by mechanical means because of the depth (completion interval is 10,481'-10,507' in the Upper Morrow "B-4" sand) and the fact that the well would have to be "killed" in order to install any equipment intended to facilitate removal of accumulated liquid from the well. "Killing" the well would probably result in formation damage that the "hardship well" application is intended to alleviate.
 - B) This well has 5½" casing set at 10,750' and cemented with 2190 sacks of cement. The tubing is 2-7/8" O.D. set at a depth of 10,465' without a packer. Gas and liquid are flowed out of the tubing, and flow velocity is critical in preventing fluid from falling back into the well (because of insufficient turbulence to entrain it, so that it can flow out of the well with the produced gas).