Memo

From
FRANK T. CHAVEZ
District Supervisor

To Dick

Recommend deny or docket for hearing.

1. Smaller tubing has not been installed
2. Water production has never been reported on C-115's
3. Declining pressure while S. I. may indicate casing failure and could account for fast production drop off.

Oil Conservation Aztec, New Mexico

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
P. O. Box 2088
Santa Fe, New Mexico 87501

Marginal 2765

Adopted 3-2-84
Side 1

APPLICATION FOR CLASSIFICATION AS HARDSHIP GAS WELL

Operator Northwest Pipeline Corporation Contact Party Mark McCallister

Address P.O. Box 90 - Farmington, NM 87499 Phone No. 505/327-5351

Lease San Juan 29-5 Unit Well No. 89 UT K Sec. 34 TWP 29N RGE 5W

Pool Name Basin Dakota Minimum Rate Requested 120 MCF/D

Transporter Name Northwest Pipeline Corp. Purchaser (if different) _____

Are you seeking emergency "hardship" classification for this well? X yes _____ no

Applicant must provide the following information to support his contention that the subject well qualifies as a hardship gas well.

1) Provide a statement of the problem that leads the applicant to believe that "underground waste" will occur if the subject well is shut-in or is curtailed below its ability to produce. (The definition of underground waste is shown on the reverse side of this form)

2) Document that you as applicant have done all you reasonably and economically can do to eliminate or prevent the problem(s) leading to this application.

   a) Well history. Explain fully all attempts made to rectify the problem. If no attempts have been made, explain reasons for failure to do so.

   b) Mechanical condition of the well(provide wellbore sketch). Explain fully mechanical attempts to rectify the problem, including but not limited to:

      i) the use of "smallbore" tubing; ii) other de-watering devices, such as plunger lift, rod pumping units, etc.

3) Present historical data which demonstrates conditions that can lead to waste. Such data should include:

   a) Permanent loss of productivity after shut-in periods (i.e., formation damage).

   b) Frequency of swabbing required after the well is shut-in or curtailed.

   c) Length of time swabbing is required to return well to production after being shut-in.

   d) Actual cost figures showing inability to continue operations without special relief

4) If failure to obtain a hardship gas well classification would result in premature abandonment, calculate the quantity of gas reserves which would be lost

5) Show the minimum sustainable producing rate of the subject well. This rate can be determined by:

   a) Minimum flow or "log off" test; and/or

   b) Documentation of well production history (producing rates and pressures, as well as gas/water ratio, both before and after shut-in periods due to the well dying, and other appropriate production data).

6) Attach a plat and/or map showing the proration unit dedicated to the well and the ownership of all offsetting acreage.

7) Submit any other appropriate data which will support the need for a hardship classification.

8) If the well is in a prorated pool, please show its current under- or over-produced status.

9) Attach a signed statement certifying that all information submitted with this application is true and correct to the best of your knowledge; that one copy of the application has been submitted to the appropriate Division district office (give the name) and that notice of the application has been given to the transporter/purchaser and all offset operators.

RECEIVED
MAR 12 1985
OIL CON. DIV.
DIST. 3

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 basis 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.

NORTHWEST PIPELINE CORPORATION

PRODUCTION & DRILLING
P.O. BOX 90
FARMINGTON, NEW MEXICO 87499

February 26, 1985

Frank Chavez
New Mexico Oil Conservation Div.
1000 Rio Brazos Rd.
Aztec, New Mexico 87410

Re: San Juan 29-5 Unit #89 Dakota

Dear Frank:

The San Juan 29-5 Unit #89 was completed in the Dakota Formation in November of 1978. This well will log off and require swabbing if it is shut in for more than five days.

A stopcock was installed to maintain bottom hole pressure and ensure enough gas volume is available to lift fluid from the wellbore. Even with the use of a stopcock the well had to be blown to atmosphere periodically.

Each time the well has been shut in for no demand or equipment malfunctions the well has logged off. This well takes approximately 4 days to return to production when swabbing. At a cost of $1200 per day, the average cost to return the well to production is $4800. Using the well's current rate of production one swabbing operation takes 17 days to pay out. To date, approximately $24,000 has been spent on swabbing operations.

As the well's producing rate declines, it will log off with greater frequency. If the well starts logging off every three months, the cost to keep the well unloaded by swabbing will be $19,200 per year. This will result in premature abandonment with approximately 32.8 mmcf recoverable reserves left in place. This amounts to approximately $110,680 in lost revenue.

If this well is given a hardship classification, small bore tubing will be installed. The small bore tubing will allow fluid to be lifted from the wellbore at a decreased volume as long as the well is flowing. When the well is shut in and logged off the small bore tubing will not make a difference in the volume required to lift fluid. Once the well logs off the hydrostatic pressure is greater than the formation pressure and the well will require swabbing. Small bore tubing actually requires less water than 2 3/8" tubing to create a hydrostatic pressure greater than formation pressure. If the well is not shut in, fluids would be lifted from the wellbore continually.

An initial liquid production test run in November of 1980 indicated the well was producing 19 BWPD. With the use of a stopcock, set for 6 hours on and 2 hours off, the well will produce approximately 4 to 5 BWPD.

The attached production curve indicates that underground waste is already occurring. The production rate following the last swabbing operation is approximately 36% of the production rate before the well logged. This is an indication that the relative permeability to gas is decreasing causing underground waste. At this time the well is logged off. The SICP when the well logged off was 1294 psig. Currently the well has a SICP of 838 psig. Due to wheather, road conditions and lack of demand the well has not been swabbed.

The minimum producing rate required to lift fluid from the wellbore is 580 mcf d in 2 3/8" tubing and 400 mcf/d in 1 1/2" tubing. This well cannot maintain a producing rate of 400 mcf/d without the use of a stopcock. The well's producing history indicated a stopcock time setting of 6 hours off and 2 hours on will maintain enough gas volume to lift fluid from the wellbore when the well is in a flow period. Based on a minimum flow rate of 400 mcf/d, this well will require an average minimum flow rate of 120 mcf/d to lift fluid from the wellbore.

Sincerely,

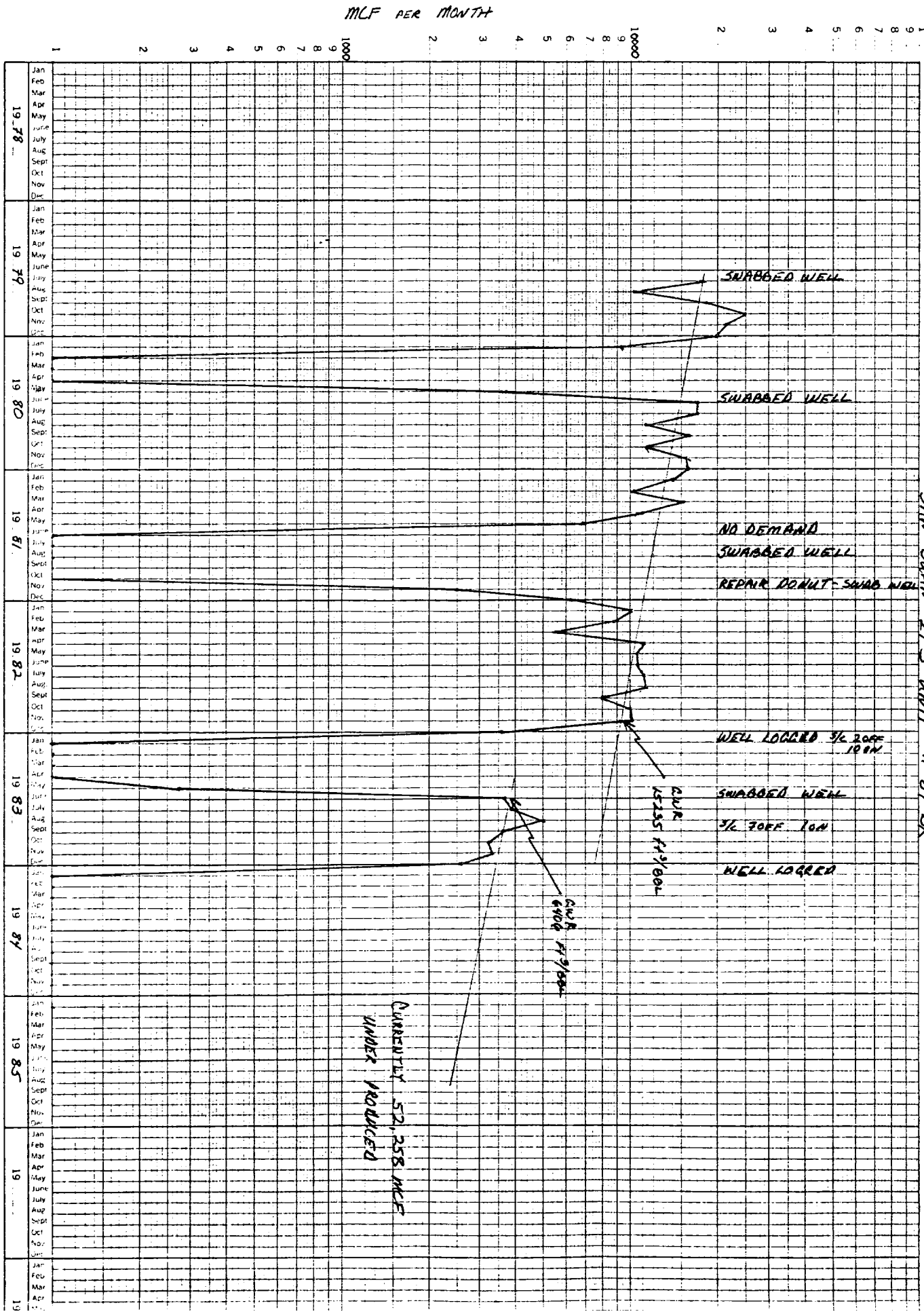
Mark McCallister
Prod. & Drlg. Engineer

cc: File
MAM ch

PPODUCTION HISTORY
San Juan 29-5 Unit #89 DK

The San Juan 29-5 Unit #89 Dakota was first delivered on June 28, 1979. Repeated attempts to first deliver the well failed due to logging. The well was swabbed in and first delivered. After approximately 2 months production the well logged again. The well was unloaded manually by equalizing the casing and tubing for 1 month and then blowing the well to atmosphere. The well produced for approximately 4 months and was shut in due to a full production pit. The tubing was treated with soap sticks and the well shut in after being equalized. The well would not unload to atmosphere and was swabbed in May of 1980. An Initial Liquid Production Test was run in November of 1980 and the well was producing 19 BWPD. A stopcock was installed in an effort to reduce the amount of produced water. The stopcock was set at 6 hours off and 2 hours on (25% production). The well logged after producing 3 months with the stopcock. The well was swabbed and could not maintain production. A leak at the donut was discovered. The leak was fixed and the well was swabbed in on November 12, 1981. The well produced with a stopcock until December 1982 when it logged while producing. Due to bad weather, the well could not be swabbed until May of 1983. An intermitter was installed after the well was swabbed on May 6, 1983. The well was cleaned up using the intermitter and the stopcock was put back in service on May 25, 1983, set for 11-1/2 hours off and 1/2 hour on. On June 1, 1983, the stopcock time was changed from 11-1/2 hours off and 1/2 hour on to 5-1 2 hour off and 1/2 hour on. The casing pressure dropped steadily and the time was changed to 7-1/2 off and 1/2 on. The well was producing good at this time setting. The stopcock time was changed to 7 off 1 on and the well logged in 2-1/2 months. Well is still logged. The SICP is down to 838# and dropping.

MAM cnh


MCF PER MONTH
1 2 3 4 5 6 7 8 9 1000 2 3 4 5 6 7 8 9 10000 2 3
1978
1979
1980
1981
1982
1983
1984
1985
Jan Feb Mar Apr May June July Aug Sept Oct Nov Dec
SWABBED WELL
SWABBED WELL
NO DEMAND
SWABBED WELL
REPAIR DONUT SWAB WELL
WELL LOCKED 3/C 20FF 19ON
SWABBED WELL
3/C 70FF 1ON
WELL LOCKED
CUR 1735 FT3/BBL
CUR 690Q FT3/BBL
CURRENTLY 52,258 MCF UNDER PRODUCED
SAN JUAN 29-5 UNIT # 89 OK

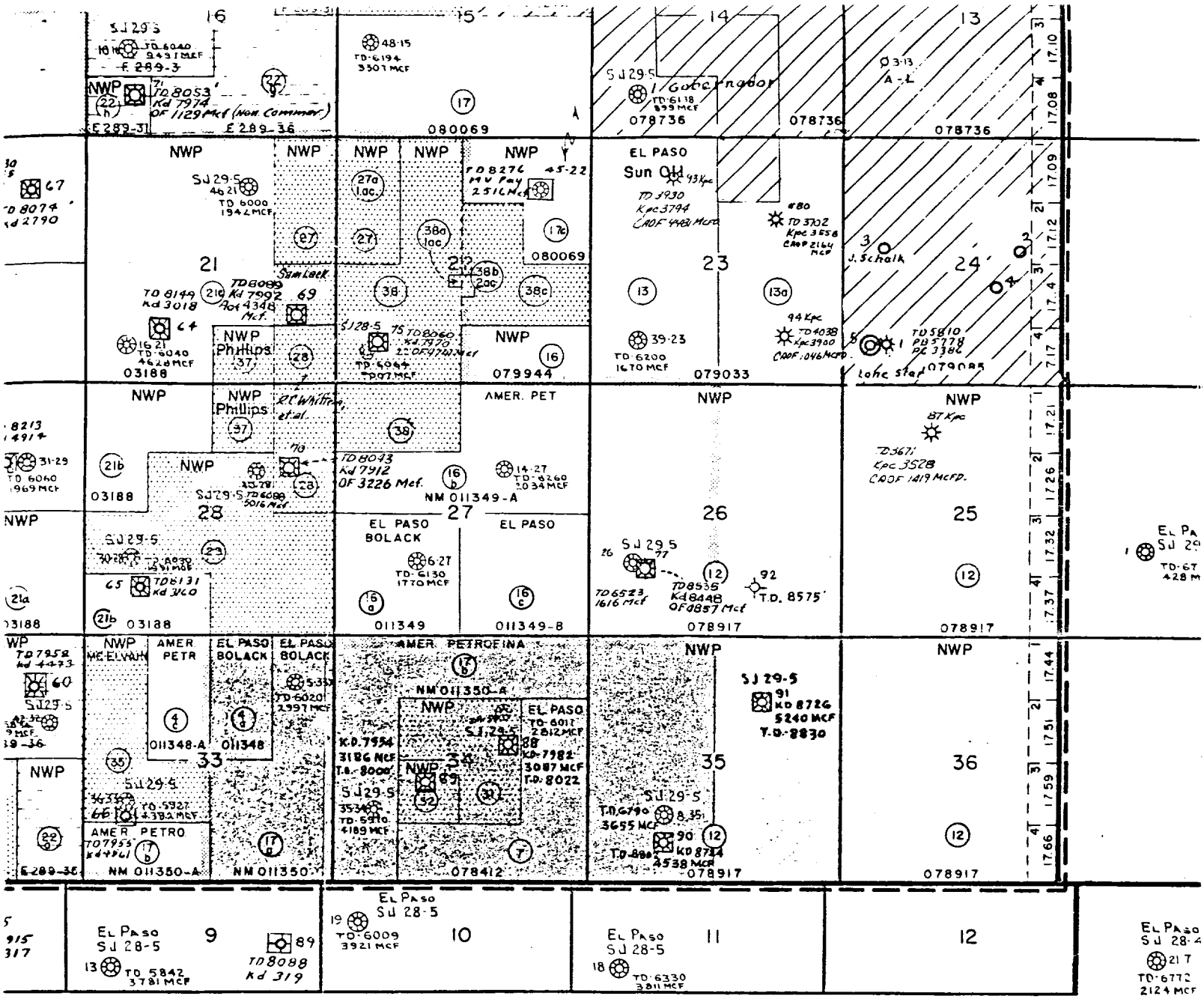


EXHIBIT "A"

SAN JUAN 29-5 UNIT

RIO ARRIBA COUNTY NEW MEXICO

APPROVED 21 NOVEMBER 1952

UNIT AGREEMENT NUMBER: 14-08-001-437

FIRST SALE OF UNITIZED SUBSTANCE 10-27-54

SCALE 1"=3000

AUTOMATIC ELIMINATION 10-27-54

DAKOTA PARTICIPATING

12th Expansion 8-1-78

13th Expansion 9-1-78

SAN JUAN 29-5 UNIT # 89