

Case 8337

APPLICATION FOR CLASSIFICATION AS HARDSHIP GAS WELL

Operator SCHALK DEVELOPMENT CO. Contact Party Claudia Short
Address P.O. Box 25825, Albuquerque, NM 87125 Phone No. (505) 247-2294
Lease Schalk 62 Well No. 1 UT SE/ Sec. 33 TWP 32N RGE 5W
Pool Name Basin Dakota Minimum Rate Requested 25 Mcfd
Transporter Name Northwest Pipeline Corp. Purchaser (if different) _____

Are you seeking emergency "hardship" classification for this well? ☒ 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.

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.

APPLICATION FOR CLASSIFICATION AS HARDSHIP GAS WELL

WELL: Schalk 62#1

1. It is our feeling that prolonged shut in periods for this well will cause damage to the producing intervals due to exposure of non water production zones to water producing zones. These waters may also be treatment water used during the completion of producing zones. It is possible that said exposure may result in swelling of clays or fine particles in said zones. It is also possible that if this well is shut in for an extended period that some of the available reservoir energy may be dissipated, thus reducing the wells ability to unload produced water and/or treatment water.

2.

(a) Our problems with this well began in May of 1982 when Northwest Pipeline shut in the well in to repair their dehydrator. We checked the casing pressure the next week and found 736 psig. After being shut in for a week or more we normally would have had 1080 psig or more pressure on the casing.

We thought that the lower casing pressure was due to the buildup of water in the well, causing the well to log off. After Northwest repaired the dehydrator, we tried to bring the well on. At that time there was 335 psig on the tubing and 736 psig on the casing.

We could not get the well to unload on the tubing. We then equalized the tubing and casing and left it to pressure up overnight. We tried to unload the well again on the tubing. This was not possible, so we started producing the well on the casing.

The well produced on the casing during June, July and August of 1982. The volume of gas continued to decline and on August 11, 1982 we used nitrogen to unload the well. The well was first brought around on the casing and then the flow was reversed up the tubing. The well came around and flowed on the tubing for 3 hours then logged off.

We felt that after unloading the well with nitrogen the well would go ahead and produce through the tubing. We were not successful and had to again start producing the well on the casing.

It appears that with the amount of fluid in the well, along with reduced casing pressure, the well is incapable of lifting fluid up the tubing. We let the well produce on the casing until September 1983 when we hired a workover unit to enter the well to find out what problems existed. The following information shows the work performed on the well and the dates the work was performed.

9/13/83

Found tubing and casing equalized with 760 psig. Opened the tubing to atmosphere and casing pressure dropped to 595 psig, but the well would not unload. Thirty minutes later the casing pressure had built up to 605 psig. We gave the well 1 hour to unload but it would not. The well did not have enough casing pressure to unload the amount of water in the tubing. We then let the well pressure up for 2 hours and started swabbing.

1st swabb run - fluid level at 5306'
2nd swabb run - fluid level at 4206'
3rd swabb run - fluid level at 5306' - well came around on tubing, we flowed the well on the tubing for 4 hours and shut well in.

9/14/83

Found 0 psig on the tubing and 820 psig on the casing. Went in the hole with a sinker bar to the seating nipple to see if there was an obstruction in the tubing. We did not find any problems and started swabbing again.

1st run - fluid level @ 4100'

2nd run - fluid level @ 4100'

3rd run - fluid level @ 3900'

4th run - fluid level @ 4600' - well started to flow on the tubing. We let the well flow for 1.5 hours and shut it in for 1.5 hours. We tried to bring the well on at this time, but it logged off. Made another swabb run and the well started flowing again, but logged off after blowing for 30 minutes.

9/15/84

Found 300 psig on the tubing and 820 psig on the casing. Opened the tubing to blow, but the well would not unload.

1st run - fluid level @ 3300'

2nd run - fluid level @ 4800' - well came around, we let the well flow for 1 hour and started swabbing off the seating nipple. We made 6 more swabb runs off the seating nipple. After each swabb run the well was flowing only small amounts of gas, with a decrease in the amount of water that we felt the well should have been bringing up.

We decided at this time to go in the hole with a packer and acidize well to see if the formation was restricted by a calcium carbonated scale. We lost the 63#1 Dakota because of this a few years before.

9/16/84

Ran packer and make 3 swabb runs, the well looked similar to the day before. Pumped 6 barrels 8% Hydrochloric acid followed by 31 barrels 2% KCl water. Let the acid set on bottom for 1 hour and started swabbing. Swabbed well for 4 hours and shut well in overnight.

9/17/84

Found 860 psig on tubing. Opened well to blow and well came around in 5 minutes. We let the well blow to pit for 2 hours. We then shut the well in to watch the pressure buildup on the tubing. 30 minutes - 208 psig

60 minutes - 300 psig

Opened the well to atmosphere after being shut in for 1 hour and well started to unload again.

9/18/84

Found 1115 psig on tubing, turned the well to pipeline at this time and started selling gas.

2.

(b) After the well was completed on 5-15-83, it made a tremendous amount of water. It was decided to try a plunger lift. This device did not work as well as expected, as the well still unloaded during the month of May, 1981. The plunger came apart in the tubing and we hired a completion unit in June, 1981 to pull the tubing and remove the pieces of the plunger. We placed the tubing back in the well and brought it around with nitrogen. We didn't notice any difference in the production of the well without the plunger lift. We still had to blow the well every other day to get any production. In the month of July, 1981 we installed a system on the well to equalize the tubing and the casing at different times of the day. This system would then shut the casing valve and allow us to produce the tubing. This system worked well until May, 1982 when we noticed the decrease in casing pressure. The reason smaller bore tubing was not tried in the well is that we were concerned about formation damage in the well at the time we ran the packer and acidized the well and at a cost of \$2.01 per foot for 1.900 inch tubing, we felt the cost to be prohibitive, as we weren't sure we could even get the well to come back. It is also our thought that with the amount of water in the tubing, the smaller tubing wouldn't work.

3.

(a) At this time we feel that the well has formation damage due to a calcium carbonated scale buildup in the wellbore. We performed a small acid job on the well on 9/16/83 and swabbed the well in. The well did not respond well after the treatment.

(b) With the information we now have, it would appear that we can produce the well for 20 days before the well logs off.

(c) The last time the well was swabbed it took 5 swabb runs before the well would start unloading and we were charged 13.5 hours rig time due to the distance of the well from Farmington.

(d) The following information shows the amount of dollars spent on swabbing and the dollar amount of gas produced following swabbing and prior to logging off again.

November 16, 1983 - well swabbed

November, 1983	685 MCF	=	\$1470.00
December, 1983	486 MCF	=	\$1048.10
			<u>\$2518.10</u>
	Cost of swabbing		<u>\$1226.01</u>
			\$1292.09

4. If this well were to be prematurely abandoned because of production problems caused by an inability to have this well granted a classification as a hardship gas well, we estimate the loss of reserves to be 249,005 MCF.

5.

(a) The most gas we could possibly see this well producing is 34 MCFD due to the fact that the well made 7611 MCF in 1983 and was on 219 days.

(b) We have checked the amount of water the well produces several times with a counter on the water dump line and found that it makes 4 barrels a day. This has been consistent over the years, up until May, 1982 when we started to have problems with the well. As far as the well production history, enclosed is a graph showing a 10 year production history of the well. You will note that in the year 1982 the well produced 17140 MCF of gas and was on for 248 days which would average out to 69 MCFD. In the year 1983 the well produced 7611 MCF of gas and was on for 219 days which would average out to 34 MCFD. You will also note by the graph that the average line pressure in 1983 was lower than in 1982. We feel that if we didn't have a problem with the well it would be capable of producing over 15000 MCF in 1983.

When the well is swabbed again, we would like to shut the well in for approximately eighteen hours and produce the well for about six hours daily. The actual amount of time the well would be on would be determined by the buildup of pressure in the tubing and by the line pressure existent at the time. We are hoping that by holding back pressure and using soap in the well, we would be able to deliver 25 to 30 MCF per day to Northwest Pipeline.

6. At the present time there are no offset producing Dakota wells.

7.

8. This well is presently classified as a marginal unit.

9. Enclosed