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JUN 24 1998

June 24, 1998

**Hand Delivered**

Michael E. Stogner  
Oil Conservation Division  
2040 South Pacheco Street  
Santa Fe, New Mexico 87505

Re: Case 11982; Application of Pogo Producing Company for a  
pressure maintenance project, etc., Lea County, New  
Mexico

Dear Mr. Stogner:

Enclosed is a proposed order in the above case, together with a  
disk containing the order. Please call me if you need anything  
further in this matter.

Very truly yours,

James Bruce

Attorney for Pogo  
Producing Company

STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING  
CALLED BY THE OIL CONSERVATION  
DIVISION FOR THE PURPOSE OF  
CONSIDERING:

Case No. 11982  
Order No. R-\_\_\_\_\_

APPLICATION OF POGO PRODUCING  
COMPANY FOR A PRESSURE MAINTENANCE  
PROJECT AND TO QUALIFY SAID PROJECT  
FOR THE RECOVERED OIL TAX RATE  
PURSUANT TO THE ENHANCED OIL RECOVERY  
ACT, LEA COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on June 11, 1998, at Santa Fe, New Mexico before Examiner Michael E. Stogner.

Now, on this \_\_\_\_\_ day of June, 1998, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS THAT:

(1) Due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) The applicant, Pogo Producing Company, seeks authority to institute a pilot pressure maintenance project on its Red Tank "26" Federal Lease (NM 86149), covering the W½ of Section 26, and its Prize Federal Lease (NM 81272), covering the E½ of Section 22 and the E½ of Section 27, all in Township 22 South, Range 32 East, NMPM, Lea County, New Mexico, by the injection of produced water into the Cherry Canyon and Brushy Canyon Members of the Delaware Mountain Group through the perforated interval from approximately 6832 feet to 8388 feet in its existing Prize Federal Well No. 4, located 1880 feet from the North line and 760 feet from the East line of Section 27.

(3) The applicant proposes that the initial project area comprise the W½NW¼ and NW¼SW¼ of Section 26, and the NE¼ and N½SE¼ of Section 27, encompassing 360 acres of land.

(4) Within the proposed project area, the applicant currently operates the Red Tank "26" Federal Well Nos. 2, 3, and 4, located in Units D, E, and L, respectively, of Section 26, and the Prize Federal Well Nos. 3, 5, 6, 7, and 8, located in Units I, A, B, G, and J, respectively, of Section 27, all of which are currently producing from the West Red Tank-Delaware Pool.

(5) The applicant presented geological evidence which showed that:

- (a) The Delaware reservoir in this area trends northeast-southwest, with the lower Delaware being a deep water sand environment;
- (b) The main producing zone, the Lower Brushy Canyon BC-4 interval, is continuous across the project area, and all of the wells in the project area are currently producing from this zone; and
- (c) There are numerous productive or potentially productive intervals in the Delaware in this area.

(6) The applicant presented engineering evidence which showed that:

- (a) The producing rates of the wells in the project area vary, but overall are not in the "stripper" category;
- (b) Although the injection well has perforations in the Cherry Canyon and the Brushy Canyon intervals, the vast bulk of the injected water will be injected into the lower Brushy Canyon BC-4 interval, because that zone has been fracture treated, while the other zones have only been acidized;
- (c) Because of the fracture treatments of the Brushy Canyon BC-4 zone in each producing well, and because the wells are on pump, the bottom hole pressure will be less than the reservoir pressure, and cross-flow between different Delaware zones will not occur;
- (d) The injection of water into the Delaware formation should retard the dissipation of reservoir energy;
- (e) All Delaware zones will benefit from injection; and

(f) With the pressure maintenance project, the wells in the project area will recover approximately 255,000 barrels of additional incremental oil production from the BC-4 zone by spending an estimated \$160,000 to convert the Prize Federal Well No. 4 to injection, add additional injection and production facilities, and remove bridge plugs in certain producing wells.

(7) The applicant owns 100% of the operating rights of the two subject leases, and thus will bear the full cost of the project.

(8) The proposed pressure maintenance project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste, exhibits sound engineering practices, is in the best interests of conservation, and will not impair correlative rights.

(9) The applicant submitted data on the proposed injection well and all other wells which penetrate the zone of interest within the one-half mile "area of review" of the proposed injection well. The data shows that wells in the area are cased and cemented so as to protect fresh water and prevent fluid migration from the injection zone, and includes testimony indicating no evidence of open faults or any other hydrologic connection between the injection zone and any fresh water resources in the area.

(10) The operator should take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape into other formations or onto the surface from injection, production, or plugged and abandoned wells.

(11) Injection into the proposed injection well should be accomplished through 2-7/8 inch plastic lined tubing installed in a packer set no higher than 100 feet above the uppermost perforation; the casing-tubing annulus should be filled with an inert fluid; and a pressure gauge or approved leak detection device should be attached to the annulus in order to determine leaks in the casing, tubing, or packer.

(12) The injection well should be initially equipped with a pressure control device or acceptable substitute which will limit the surface injection pressure at the wellhead to no more than 0.2 psi per foot of depth to the topmost perforation.

(13) The Division Director should have the authority to administratively authorize a pressure limitation in excess of the limitation described above upon a showing by the operator that such higher pressure will not result in the fracturing of the injection

formation or confining strata.

(14) Prior to commencing injection operations, the casing in the injection well should be pressure tested throughout the interval from the surface down to the proposed packer setting depth, to assure the integrity of such casing.

(15) The operator should give advance notice to the supervisor of the Hobbs District Office of the Division of the date and time of the installation of injection equipment and of the mechanical integrity pressure test in order that they may be witnessed.

(16) The subject application should be approved and the pressure maintenance project should be governed by the provisions of Rules 701 through 708 of the Division's Rules and Regulations.

(17) The project allowable should be equal to top unit allowable for the West Red Tank-Delaware Pool (230 barrels of oil per day) times the number of developed (production or injection) proration units within the project area. Unless the project area is subsequently expanded, the allowable should be established at 2,070 barrels of oil per day.

(18) The transfer of allowable between wells within the project area should be permitted.

(19) The applicant further requests that the subject pressure maintenance project be approved by the Division as a qualified "Enhanced Oil Recovery (EOR) Project" pursuant to the "Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5).

(20) The evidence presented indicates that the subject pressure maintenance project meets all the criteria for approval.

(21) The approved project area should be designated the "Southeast Red Tank Pilot Pressure Maintenance Project" and shall comprise the 360 acres described above in Finding Paragraph No. (3).

(22) To be eligible for the EOR tax rate, prior to commencing operations the operator must request from the Division a Certificate of Qualification, which certificate will specify the proposed project area as described above.

(23) At such time as a positive production response occurs, and within five years from the date of the Certificate of Qualification, the applicant must apply to the Division for certification of a positive production response, which application shall identify the area actually benefitting from enhanced recovery

operations and the specific wells which the operator believes are eligible for the tax rate. The Division may review the application administratively, or set it for hearing. Based upon evidence presented, the Division will certify to the Taxation and Revenue Department those lands and wells which are eligible for the EOR tax rate.

(24) The injection authority granted herein for the proposed injection well should terminate one year after the effective date of this order if the operator has not commenced injection operations into the subject well; provided, however, the Division, upon written request of the operator, may grant an extension thereof for good cause shown.

**IT IS THEREFORE ORDERED THAT:**

(1) The applicant, Pogo Producing Company, is hereby authorized to institute a pilot pressure maintenance project on its Red Tank "26" Federal Lease (NM 86149), covering the W½ of Section 26, and its Prize Federal Lease (NM 81272), covering the E½ of Section 22 and the E½ of Section 27, all in Township 22 South, Range 32 East, NMPM, Lea County, New Mexico, by the injection of produced water into the Cherry Canyon and Brushy Canyon Members of the Delaware Mountain Group, through the perforated interval from approximately 6832 feet to 8388 feet in its existing Prize Federal Well No. 4, located 1880 feet from the North line and 760 feet from the East line (Unit H) of Section 27.

(2) The W½NW¼ and NW¼SW¼ of Section 26, and the NE¼ and N½SE¼ of Section 27, encompassing 360 acres of land, shall comprise the initial project area. The project area may be expanded administratively.

(3) The operator shall take all steps necessary to ensure that the injected water enters only the proposed injection interval, and is not permitted to escape into other formations or onto the surface from injection, production, or plugged and abandoned wells.

(4) Injection shall be accomplished through 2-7/8 inch plastic lined tubing installed in a packer set within 100 feet of the uppermost injection perforation; the casing-tubing annulus shall be filled with an inert fluid and equipped with a pressure gauge or attention-attracting leak detection device.

(5) The injection well shall be equipped with a pressure control device or acceptable substitute which will limit the surface injection pressure at the wellhead to no more than 1,366 psi.

(6) The Division Director shall have the authority to administratively authorize an increase in the injection pressure limitation upon a showing by the operator that such higher pressure will not result in the migration of injected water from the injection interval or fracturing of the injection formation or confining strata.

(7) Prior to commencing injection operations, the casing in the injection well shall be pressure tested throughout the interval from the surface down to the proposed packer setting depth, to assure the integrity of such casing.

(8) The operator shall give advance notice to the supervisor of the Hobbs District Office of the Division of the date and time of the installation of injection equipment and of the mechanical integrity pressure test in order that they may be witnessed.

(9) The operator shall immediately notify the supervisor of the Hobbs District Office of the Division of the failure of the tubing, casing, or packer in the injection well, the leakage of water, oil, or gas from around any producing well, or the leakage of oil, water, or gas from any plugged and abandoned well within the project area, and shall take such steps as may be timely and necessary to correct such failure or leakage.

(10) Should it be necessary, the supervisor of the Hobbs District Office of the Division, or the Director, may at any time order a decrease in the injection pressure on the injection well.

(11) The project is hereby designated the "Southeast Red Tank Pilot Pressure Maintenance Project," and the operator shall conduct injection operations in accordance with all applicable Division rules and regulations, including Rules 701 through 708, and shall submit monthly progress reports in accordance with Rules 706 and 1115.

(12) The project allowable shall be equal to top unit allowable for the West Red Tank-Delaware Pool (230 barrels of oil per day) times the number of developed (production or injection) proration units within the project area. Unless the project area is subsequently expanded, the allowable should be established at 2,070 barrels of oil per day.

(13) The transfer of allowable between wells within the project area is permitted.

IT IS FURTHER ORDERED THAT:

(14) The subject pressure maintenance project is hereby approved as a qualified "Enhanced Oil Recovery Project" pursuant to the "Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5).

(15) The approved project area shall initially be limited to the 360 acre area described above in Decretory Paragraph No. (2).

(16) To be eligible for the EOR tax rate, prior to commencing operations the operator must request from the Division a Certificate of Qualification, which certificate will specify the proposed project area described above.

(17) At such time as a positive production response occurs and within five years from the date of the Certificate of Qualification, the applicant must apply to the Division for certification of a positive production response, which application shall identify the area actually benefitting from enhanced recovery operations and the specific wells which the operator believes are eligible for the tax rate. The Division may review the application administratively, or set it for hearing. Based upon evidence presented, the Division will certify to the Taxation and Revenue Department those lands and wells which are eligible for the EOR tax rate.

(18) The injection authority granted herein for the proposed injection well shall terminate one year after the effective date of this order if the operator has not commenced injection operations into the subject well; provided, however, the Division, upon written request of the operator, may grant an extension thereof for good cause shown.

(19) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico on the day and year hereinabove designated.

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

LORI WRÖTENBERY  
Director