

**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. 11403  
Order No. R-10525**

**APPLICATION OF POGO PRODUCING  
COMPANY FOR A PILOT PRESSURE  
MAINTENANCE PROJECT, EDDY  
COUNTY, NEW MEXICO.**

**ORDER OF THE DIVISION**

**BY THE DIVISION:**

This cause came on for hearing at 8:15 a.m. on November 16, 1995, at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this 14 th day of December, 1995, 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 pressure maintenance project on a portion of its Neff Federal Lease which comprises all of Section 25, Township 22 South, Range 31 East, NMPM, Eddy County, New Mexico, by the injection of water into the Brushy Canyon member of the Delaware formation, Livingston Ridge-Delaware Pool, through the perforated interval from approximately 7,050 feet to 7,068 feet in its Neff Federal Well No. 3 located 430 feet from the North line and 760 feet from the West line (Unit D) of said Section 25.

(3) The Livingston Ridge-Delaware Pool was created by Division Order No. R-8847 on January 10, 1989. The pool was discovered by the Pogo Producing Company Neff "13" Well No. 1 located in Unit J of Section 13, Township 22 South, Range 31 East, NMPM. The pool currently comprises portions of Sections 11 through 14, 23 through 26, and 35.

(4) According to the Oil Conservation Division's Southeast Oil Proration Schedule (July-December, 1995) there are forty-six producing wells in the Livingston Ridge-Delaware Pool operated by five different operators. Of the forty-six producing wells, twenty-three are operated by the applicant.

(5) IMC Global Operations, Inc. (IMC), a potash operator in this area, appeared at the hearing and expressed concerns about permitting injection wells in close proximity to potash mining operations. Specifically, IMC is concerned that injected fluid will escape or otherwise migrate from the proposed injection interval into potash bearing formations.

(6) Testimony presented in this case indicates that potash mining operations occur at depths of approximately 1,300 feet to 2,000 feet.

(7) Evidence and testimony presented by the applicant indicate that the proposed pilot pressure maintenance project is located:

- a) within the Known Potash Leasing Area as described within Division Order No. R-111-P;
- b) directly adjacent to a potash lease which encompasses portions of Sections 3 through 5, 8 through 11, 13 through 14, 23 through 24, and 26, Township 22 South, Range 31 East, NMPM. The ownership of this potash lease is undetermined at this time due to ongoing litigation between IMC Global Operations, Inc. and Yates Petroleum Corporation;
- c) approximately eight miles from IMC's existing potash mine workings; and,
- d) one mile from the outer boundary of the Waste Isolation Pilot Project (WIPP).

(8) The applicant notified the Department of Energy (DOE) of its application in this case, however, no representative of that agency appeared at the hearing.

(9) Applicant's testimony indicates that the Neff Federal Well No. 3, originally drilled as a producing well in the Livingston Ridge-Delaware Pool, has declined to a producing rate of approximately 2 barrels of oil per day.

(10) Applicant seeks authority to utilize the Neff Federal Well No. 3 for injection in order to provide pressure support to wells in this portion of the field.

(11) According to applicant's testimony, its Neff Federal Well Nos. 1 and 2, located respectively in Units C and E of Section 25, and its Federal "26" Well No. 1, located in Unit A of Section 26, will likely be the only producing wells to benefit from the proposed pilot injection project.

(12) The proposed pilot pressure maintenance project should result in the recovery of otherwise unrecoverable oil from this portion of the field, thereby preventing waste.

(13) The evidence presented indicates that the Neff Federal Well No. 3 is cased and cemented adequately so as to preclude the migration of fluid from the proposed injection zone.

(14) Within the "area of review" of the Neff Federal Well No. 3 there are seven producing wells and one plugged and abandoned well. Division records and evidence presented in this case indicate that each of these producing wells is cased and cemented so as to preclude the migration of fluid from the proposed injection zone. In addition, the evidence indicates that the plugged and abandoned Texas Crude Oil Company Wright "23" Federal Well No. 1 does not penetrate the proposed injection interval and should therefore not serve as a conduit for the migration of injected fluid from the proposed injection zone.

(15) Applicant proposed that injection into the Neff Federal Well No. 3 be accomplished at a surface injection pressure of 1,410 psi.

(16) Injection at an initial surface injection pressure of 1,410 psi. should not result in the fracture of the proposed injection interval or confining strata.

(17) The evidence and testimony presented in this case indicate that injection into the Neff Federal Well No. 3 should not pose a danger to potash reserves in this area.

(18) It remains unknown, given the location of the subject potash lease with respect to IMC's current mine workings, whether or not potash reserves will ultimately be mined in this area.

(19) The subject pilot pressure maintenance project should be approved.

(20) The project area should initially be limited to the N/2 NW/4 and the SW/4 NW/4 of Section 25.

(21) Applicant testified that it may expand the pilot pressure maintenance project at a later time to include other areas of the Livingston Ridge-Delaware Pool. In this regard, applicant requested an administrative procedure whereby the subject pilot pressure maintenance project may be administratively expanded to include additional lands and/or injection wells.

(22) Given the location of the pilot pressure maintenance project with respect to certain "sensitive areas", the expansion of the subject project should be considered by the Division only after notice and hearing.

(23) The injection of water into the proposed injection well should be accomplished through 2 7/8 inch internally plastic-lined tubing installed in a packer set at approximately 7,000 feet; the casing-tubing annulus should be filled with an inert fluid and a gauge or approved leak-detection device should be attached to the annulus in order to determine leakage in the casing, tubing or packer.

(24) Prior to commencing injection operations into the subject well, and at a frequency of every three years thereafter, the casing should be pressure tested throughout the interval from the surface down to the proposed packer setting depth, to assure the integrity of such casing.

(25) In order to verify the external mechanical integrity of the Neff Federal Well No. 3, the applicant should be required, subsequent to commencing injection operations into the subject well and annually thereafter, to conduct a radioactive tracer survey in accordance with a Division approved method.

(26) The injection well or pressurization system should be initially equipped with a pressure control device or acceptable substitute which will limit the surface injection pressure to no more than 1,410 psi.

(27) The Division Director should have the authority to administratively authorize a pressure limitation in excess of the pressure 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.

(28) The operator should give advance notification to the supervisor of the Artesia District Office of the Division of the date and time of the installation of injection equipment, of any mechanical integrity pressure tests, and of the conductance of the aforesaid radioactive tracer survey in order that the same may be witnessed.

(29) The proposed pressure maintenance project should be approved and the project should be governed by the provisions of Rule Nos. 701 through 708 of the Oil Conservation Division Rules and Regulations.

(30) The oil allowable for the subject pilot pressure maintenance project should be established at 561 barrels of oil per day.

(31) The injection authority granted herein for the Neff Federal Well No. 3 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 by 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 a portion of its Neff Federal Lease which comprises all of Section 25, Township 22 South, Range 31 East, NMPM, Eddy County, New Mexico, by the injection of water into the Brushy Canyon member of the Delaware formation, Livingston Ridge-Delaware Pool, through the perforated interval from approximately 7,050 feet to 7,068 feet in its Neff Federal Well No. 3 located 430 feet from the North line and 760 feet from the West line (Unit D) of said Section 25.

(2) The pilot project area shall initially comprise the N/2 NW/4 and the SW/4 NW/4 of Section 25.

(3) Any proposed expansions of the subject pilot pressure maintenance project by the addition of injection wells and/or additional lands shall be considered by the Division only after notice and hearing.

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

(5) Injection into the Neff Federal Well No. 3 shall be accomplished through 2 7/8-inch plastic-lined tubing installed in a packer set at approximately 7,000 feet; the casing-tubing annulus shall be filled with an inert fluid and equipped with an approved pressure gauge or attention-attracting leak detection device.

(6) The injection well or pressurization system shall be equipped with a pressure control device or acceptable substitute which will limit the surface injection pressure to no more than 1,410 psi.

(7) The Division Director shall have the authority to administratively authorize a pressure limitation in excess of the above upon a showing by the operator that such higher pressure will not result in the fracturing of the injection formation or confining strata.

(8) Prior to commencing injection operations into the Neff Federal Well No. 3, and at a frequency of every three years thereafter, the casing shall be pressure tested throughout the interval from the surface down to the proposed packer setting depth, to assure the integrity of such casing.

(9) In order to verify the external mechanical integrity of the Neff Federal Well No. 3, the applicant shall, subsequent to commencing injection operations into the subject well and annually thereafter, conduct a radioactive tracer survey in accordance with a Division approved method.

(10) The operator shall give advance notification to the supervisor of the Artesia District Office of the Division of the date and time of the installation of injection equipment, of any mechanical integrity pressure tests, and of the conductance of the aforesaid radioactive tracer survey in order that the same may be witnessed.

(11) The applicant shall immediately notify the supervisor of the Artesia District Office of the Division of the failure of the tubing, casing or packer in the injection well, the leakage of water or oil from or around any producing well, or the leakage of water or oil 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.

(12) The subject pilot pressure maintenance project is hereby designated the Neff Federal Pilot Pressure Maintenance Project, and the applicant shall conduct injection operations in accordance with Division Rule Nos. 701 through 708 and shall submit monthly progress reports in accordance with Division Rule Nos. 706 and 1115.

(13) The oil allowable for the Neff Federal Pilot Pressure Maintenance Project is hereby established at 561 barrels of oil per day.

(14) The injection authority granted herein for the Neff Federal Well No. 3 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 by the operator, may grant an extension thereof for good cause shown.

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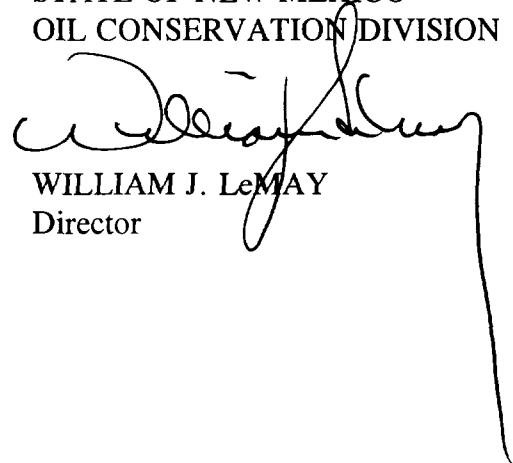
(15) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

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



S E A L

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

  
WILLIAM J. LeMAY  
Director