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:

APPLICATION OF BURK ROYALTY COMPANY FOR APPROVAL OF A WATERFLOOD PROJECT AND QUALIFICATION FOR THE RECOVERED OIL TAX RATE PURSUANT TO THE ENHANCED OIL RECOVERY ACT, LEA COUNTY, NEW MEXICO.

CASE NO. 12262
ORDER NO. R-4283-A

ORDER OF THE DIVISION

BY THE DIVISION:

This case came on for hearing at 8:15 a.m. on October 7, 1999, at Santa Fe, New Mexico before Examiner Michael E. Stogner.

NOW, on this 11th day of October, 2000, the Division Director, having considered the testimony, the record and the recommendations of the Examiner,

FINDS THAT:

(1) Due public notice has been given and the Division has jurisdiction of this case and its subject matter.

(2) By Division Order No. R-4283 issued in Case No. 4679 and dated March 17, 1972, Burk Royalty Company ("Burk") was authorized to dispose of produced salt water into the Lynch Yates-Seven Rivers Pool through its Neal Well No. 3 (**API No. 30-025-02501**) located 330 feet from the North line and 993 feet from the East line (Unit A) of Section 35, Township 20 South, Range 34 East, NMPM, Lea County, New Mexico.

(3) In this case, Burk seeks to expand this disposal operation into a secondary recovery project and to qualify its Neal lease, which covers the NE/4 of Section 35 (160 acres), for the recovered oil tax rate pursuant to the "New Mexico Enhanced Oil Recovery Act," Sections 7-29A-1 through 7-29A-5, NMSA 1978.

(4) The applicant presented evidence that indicates that:

(a) the current disposal interval in the Neal Well No. 3, as approved by Division Order No. R-4283, is 3,703 feet to 3,717 feet;

(b) disposal operations in the Neal Well No. 3 commenced in 1972, and have continued to date;

(c) the maximum rate of injection into the Neal Well No. 3 has been 250 BWPD;

(d) in 1972, Burk anticipated a secondary recovery effect on the following three Neal lease wells that were producing from this corresponding disposal interval:

(i) Neal Well No. 1 (***API No. 30-025-02499***) located at a standard oil well location 467 feet from the North line and 2315 feet from the East line (Unit B) of Section 35;

(ii) Neal Well No. 2 (***API No. 30-025-02500***) located at a standard oil well location 1650 feet from the North line and 2316 feet from the East line (Unit G) of Section 35; and

(iii) Neal Well No. 4 (***API No. 30-025-02502***) located at a standard oil well location 1650 feet from the North line and 900 feet from the East line (Unit H) of Section 35;

(e) for whatever reason, the Neal Well No. 3 was erroneously approved by the Division as a salt water disposal well (Division Order No. R-4283);

(f) lease production increased from approximately 250 BOPM in 1972 to 1,000 BOPM in 1994; since 1994, however, lease production has declined to approximately 600/700 BOPM;

(g) cumulative production from the Neal lease as of September, 1999, is approximately 410,000 barrels of oil;

(h) only the Neal Wells No. 1 and 4 are currently producing (the Neal Well No. 2 has been shut-in since 1987 due to mechanical problems); and

(i) the current rate of production for these two wells is under ten BOPD; therefore, these wells are considered to be in an advanced state of depletion and can properly be classified as "stripper wells" and, pursuant to Division Rule 701.G (1), the proposed project should be classified as a "waterflood" project and governed accordingly.

(5) The applicant proposes to include additional perforations within the upper-Yates formation from approximately 3,590 feet to 3,610 feet within the Neal Well No. 3 and to perforate the Neal Wells No. 1, 2, and 4 within this same correlative interval. Burk further intends to increase the current injection rate and surface pressure in the Neal Well No. 3. The evidence presented in this case also indicates that:

(a) the potential oil bearing upper-Yates formation is continuous across both the existing and proposed perforated intervals in the Neal lease;

(b) the upper-Yates formation is unproductive to the immediate north and east as evidenced by several dry holes;

(c) the Neal Wells No. 1, 2, and 4 are currently perforated in the same correlative interval as the injection interval for the Neal Well No. 3;

(d) the upper-Yates interval to be perforated has not produced from the Neal lease;

(e) the applicant proposes to inject water at a maximum volume of 750 BWPD, which is triple its current rate;

(f) injection pressure above the standard 0.2 psi per foot of depth from the surface to the upper most perforation is also proposed;

(g) this increased injection rate and volume and the completion of a zone not previously subject to secondary recovery will serve to aid in the recovery process, expand the current nearly depleted process, and enhance the overall efficiency of this project;

(h) as a result of implementing actual waterflood operations, the applicant estimates that 50,000 barrels of oil will ultimately be recovered from the project area that would otherwise not be recovered, thereby preventing waste;

(i) the operation and further development, as proposed by Burk, is reasonable and necessary to effectively increase the ultimate recovery of oil and gas from the Neal lease;

(j) the estimated additional cost of the proposed expansion within the Neal lease will not exceed the estimated value of the additional oil and gas plus a reasonable profit; and

(k) this expansion is economically and technically feasible and has not been prematurely filed.

(6) The proposed vertical expansion of this disposal/reinjection/secondary recovery operation and the transformation of the Neal lease into a true secondary recovery project, as proposed, is reasonable, serves to effectively increase the ultimate recovery of oil and gas from the project area, is in the best interest of conservation, exhibits sound

engineering practices, prevents waste, and will not impair correlative rights; therefore, the subject application should be approved and the project should be governed by the provisions of Division Rules 701 through 708.

(7) Produced Yates-Seven Rivers water from Burk's Neal lease and nearby W. H. Milner Federal lease will still be the initial source of injection water for this waterflood project.

(8) The proposed secondary recovery project should be designated the "*Neal Lease Waterflood Project.*"

(9) The operator of the Neal Lease Waterflood Project should take all steps necessary to ensure that the reinjected water enters and remains confined to the injection interval and is not permitted to escape from that interval and migrate into other formations or onto the surface from injection, production, or plugged and abandoned wells.

(10) Reinjection/secondary recovery into the newly recompleted Neal Well No. 3 should be accomplished through 2-3/8 inch plastic-lined tubing installed in a packer set within 100 feet of the upper-most injection perforations; the casing-tubing annulus should be filled with an inert fluid and equipped with an approved gauge or leak detection device.

(11) Before reinjection/secondary recovery operations resume, the Neal Well No. 3 should be pressure tested throughout the interval from the surface down to the proposed upper-most perforation to ensure the mechanical integrity of the wellbore.

(12) At the hearing the applicant requested a maximum surface injection pressure of 1,500 psig, which is in excess of the standard 0.2 pound per foot of depth from the surface to the top-most injection perforation. The applicant submitted a step-rate test taken on the Neal Well No. 3 on September 29, 1999, which indicated a fracture pressure of 1965 psig. This information, however, is inconclusive since the interval tested was the existing perforations (3,703 feet to 3,717 feet) within the Neal Well No. 3 and not the proposed interval (3,590 feet to 3,610 feet); therefore, injection pressure into the Neal Well No. 3 should be limited at the wellhead to no more than 0.2 pound per foot of depth from the surface to the top-most injection perforation (3,590 feet in this case or 718 psig).

(13) However, the Division Director should have the authority to 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.

(14) The operator should give advanced notification to the supervisor of the Division's Hobbs District Office of the date and time of the recompletion operations of the Neal Well No. 3, the re-installation of injection equipment, and the mechanical integrity pressure test so that the same may be witnessed.

(15) The expanded reinjection authority granted herein for the Neal Well No. 3 should terminate one year after the effective date of this order if the operator has not commenced expanded reinjection/secondary recovery operations into the well, provided however the Division, upon written request by the operator, may grant an extension thereof for good cause shown.

(16) According to the New Mexico Enhanced Oil Recovery Act ("Act"), Sections 7-29A-1 through 7-29A-5, NMSA 1978, the Act applies to new projects and expansions of existing projects (Section 7-29A-3). Further, "expansion" means a significant change or modification from an existing use (Section 7-29A-2.D). The proposed increase in injection volume and pressure and the increase in the geological interval being exposed to secondary recovery operations constitute a significant expansion of the existing limited secondary recovery operations.

(17) The Neal Lease Waterflood Project should be qualified as an enhanced oil recovery project pursuant to the Act.

(18) To be eligible for the tax rate pursuant to the Act, the operator should advise the Division when increased water injection will commence and at such time request that the Division certify the subject expansion project to the New Mexico Taxation and Revenue Department.

(19) At such time as a positive production response occurs and within five years from the date of the certificate of qualification, the operator must apply to the Division for certification of a positive production response, which application shall identify the area actually benefiting from enhanced recovery operations and identify the specific wells the operator believes are eligible for the Act's tax rate. The Division may set the application for hearing. Based upon evidence presented, the Division will certify to the Department of Taxation and Revenue those lands and wells that are eligible for the Act's tax rate.

(20) This order should serve to replace the injection authority for the Neal No. 3 granted by Division Order No. R-4283.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Burk Royalty Company ("Burk"), is hereby authorized to expand its current saltwater disposal operation (approved by Division Order No. R-4283, issued in Case No. 4679 and dated March 17, 1972) into the Lynch Yates-Seven Rivers Pool through perforations from 3,703 feet to 3,717 feet in the Neal Well No. 3 (**API No. 30-025-02501**), located 330 feet from the North line and 993 feet from the East line (Unit A) of Section 35, Township 20 South, Range 34 East, NMPM, Lea County, New Mexico, into a secondary recovery project by extending the disposal/injection interval to include perforations from approximately 3,590 feet to 3,610 feet.

(2) In compliance with Division Rule 701.G (3), the "*Neal Lease Waterflood Project,*" for allowable and tax credit purposes, shall comprise the following described 160 acres in Lea County, New Mexico:

TOWNSHIP 20 SOUTH, RANGE 34 EAST, NMPM
Section 35: NE/4.

(3) The applicant shall take all steps necessary to ensure that the injected water enters and remains confined to 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.

(4) Reinjection for secondary recovery purposes into the above-described Neal Well No. 3 shall be accomplished through 2-3/8 inch plastic-lined tubing installed in a packer set within 100 feet of the upper-most injection perforation (3,590 feet).

(5) The casing-tubing annulus shall be filled with an inert fluid and equipped with an approved gauge or leak detection device.

(6) Before secondary recovery/reinjection operations resume, the Neal Well No. 3 shall be pressure tested throughout the interval from the surface down to the proposed upper-most perforation to ensure its mechanical integrity.

(7) The injection well or its pressurization system shall be so equipped as to limit injection pressure at the wellhead to no more than 718 psig.

(8) The Division Director has the authority to 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.

(9) The operator shall give advanced notification to the supervisor of the Division's Hobbs District Office of the date and time of the recompletion operations of the Neal Well No. 3, the re-installation of injection equipment, and the mechanical integrity pressure test in order that the same may be witnessed.

(10) The operator shall immediately notify the supervisor of the Division's Hobbs District Office of the failure of the tubing, casing or packer assembly in the injection well, or the leakage of water or oil from any producing well or 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.

(11) The project allowable shall be equal to the top depth bracket allowable for the Lynch Yates-Seven Rivers Pool, which is 80 barrels of oil per day, times the number of developed (producing or injecting) proration units within the waterflood project area. Further, the transfer of allowable between wells within the project area shall be permitted.

(12) The applicant shall conduct injection operations in accordance with Division Rules No. 701 through 708 and shall submit monthly progress reports in accordance with Division Rules Nos. 706 and 1115.

(13) The expanded reinjection authority granted herein for the Neal Well No. 3 shall terminate one year after the effective date of this order if the operator has not commenced expanded reinjection/secondary recovery operations into the well, provided however the Division, upon written request by the operator, may grant an extension thereof for good cause shown.

FURTHERMORE:

(14) The Neal Lease Waterflood Project, as described in Ordering Paragraph No. (2) above, is hereby approved as an Enhanced Oil Recovery Project ("EOR Project") pursuant to the New Mexico Enhanced Oil Recovery Act ("Act")," Sections 7-29A-1 through 7-29A-5, NMSA 1978.

(15) To be eligible for the Act's tax rate, prior to commencing secondary recovery operations the operator must request from the Division a certificate of qualification, which certificate will specify the proposed project area as described above.

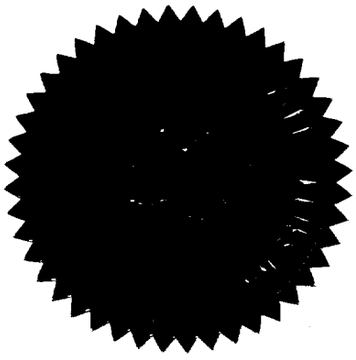
(16) At such time as a positive production response occurs and within five years

from the date of the certificate of qualification, the operator must apply to the Division for certification of a positive production response, which application shall identify the area actually benefiting from enhanced recovery operations and identify the specific wells the operator believes are eligible for the Act's tax rate. The Division may set the application for hearing. Based upon evidence presented, the Division will certify to the Department of Taxation and Revenue those lands and wells that are eligible for the Act's tax rate.

(17) This order shall replace the injection authority for Burk's Neal Well No. 3 granted by Division Order No. R-4283, issued in Case No. 4679 and dated March 17, 1972.

(18) Jurisdiction of this case 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.



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STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

LORI WROTENBERY
Director