

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. 11482*  
*ORDER NO. R-10589*

**APPLICATION OF SDX RESOURCES, INC. FOR A LEASEHOLD PILOT  
WATERFLOOD PROJECT AND QUALIFICATION FOR THE RECOVERED OIL  
TAX CREDIT PURSUANT TO THE "NEW MEXICO OIL RECOVERY ACT",  
EDDY COUNTY, NEW MEXICO.**

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on March 7, 1996 at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this 1st day of May, 1996 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 in this matter, SDX Resources, Inc., seeks authority to institute a pilot waterflood project within its State "7" Lease comprising all of Section 7, Township 19 South, Range 29 East, NMPM, Eddy County, New Mexico, by the injection of water into the designated and Undesignated East Millman-Queen-Grayburg-San Andres Pool through the following four existing wells located in said Section 7:

(a) the Conoco State "7" Well No. 3 (**API No. 30-015-23694**), located 1980 feet from the North line and 542 feet from the West line (Lot 2/Unit E) is currently a producing oil well in the subject pool (perforations from 2142 feet to

2239 feet), this well is to be converted from a producing oil well to a water injection well with no change in the perforated interval;

(b) the Conoco State "7" Well No. 5 (**API No. 30-015-23920**), located 2180 feet from the North line and 1740 feet from the West line (Unit F) is currently a producing oil well in the subject pool (perforations from 2054 feet to 2179 feet), this well is to be converted from a producing oil well to a water injection well with no change in the perforated interval;

(c) the Conoco State "7" Well No. 6 (**API No. 30-015-23921**), located 660 feet from the North line and 1740 feet from the West line (Unit C) is currently a producing oil well in the subject pool (perforations from 2165 feet to 2238 feet), this well is to be converted from a producing oil well to a water injection well with no change in the perforated interval; and,

(d) the Conoco State "7" Well No. 7 (**API No. 30-015-23930**), located 1980 feet from the North and East lines (Unit G) is currently a producing oil well in the subject pool (perforations from 2069 feet to 2187 feet), this well is to be converted from a producing oil well to a water injection well with no change in the perforated interval.

(3) The applicant testified that cumulative primary oil recovery from the 11 active producing wells on the State "7" Lease has been approximately 301,000 barrels and under the current mode of operations only 167,000 barrels remain as primary recoverable reserves.

(4) The current rate of production from these 11 active producing wells is approximately 55 barrels of oil per day; therefore, these wells can be considered to be in an advanced state of depletion and should therefore be properly classified as "stripper wells".

(5) Ultimately all 11 producing wells will be converted to water injection wells and 12 additional infill wells will be drilled and utilized as the project's producers. Total costs for the project is estimated at \$540,000.00. The applicant testified that approximately 410,000 barrels of additional incremental oil production is expected to be

recovered from this project.

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

(7) The applicant submitted data on the proposed injection wells, water wells in the area, and all other wells (including plugged wells) which penetrate the zone of interest within the 1/2-mile "area-of-review" of the four subject injection wells. This data shows that wells in the area are cased and plugged 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 the fresh water resources in the area.

(8) The operator should take all steps 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.

(9) Injection into each of the four wells should be accomplished through 2 3/8-inch internally plastic-lined tubing installed in a packer set no higher than 100 feet above the top of the uppermost perforation; the casing-tubing annulus in each well 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.

(10) The injection wells or pressurization system for each 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 top most perforation.

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

(12) The operator should give advance notice to the supervisor of the Artesia 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 the same may be witnessed.

(13) The subject application should be approved and the project should be governed by the provisions of Rules 701 through 708 of the Division Rules and Regulations.

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

(15) The evidence presented indicates that the subject waterflood project meets all the criteria for approval.

(16) The approved "project area", to be designated the "*State "7" Leasehold Waterflood Project*", should comprise all of Section 7, Township 19 South, Range 29 East, NMPM, designated and Undesignated East Millman-Queen-Grayburg-San Andres Pool, Eddy County, New Mexico.

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

(18) 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 positive production response, which application shall identify the area actually benefitting from enhanced recovery operations, and identifying the specific wells which the operator believes are eligible for the credit. The Division may review the application administratively or set it for hearing. Based upon evidence presented, the Division will certify to The Department of Taxation and Revenue those lands and wells which are eligible for the credit.

(19) The injection authority granted herein for the proposed injection wells should terminate one year after the effective date of this order if the operator has not commenced injection operations into the subject wells, 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, SDX Resources, Inc., is hereby authorized to institute a pilot waterflood project within its State "7" Lease comprising all of Section 7, Township 19 South, Range 29 East, NMPM, Eddy County, New Mexico, by the injection of water into the designated and Undesignated East Millman-Queen-Grayburg-San Andres Pool through the following four existing wells to be converted from producing oil wells to water injectors, all located in said Section 7:

| Well Name and Number<br>(API Number)          | Footage Location<br>(Lot Number/Unit Letter) | Perforated Injection Interval<br>(feet) | Maximum<br>Injection<br>Pressure (psi) |
|---|--|---|--|
| Conoco State "7" Well No. 4<br>(30-015-23694) | 1980' FNL & 542' FWL<br>(2/M)                | 2142 - 2239                             | 430                                    |
| Conoco State "7" Well No. 5<br>(30-015-23920) | 2180' FNL & 1740' FWL<br>(F)                 | 2054 - 2179                             | 410                                    |
| Conoco State "7" Well No. 6<br>(30-015-23921) | 660' FNL & 1740' FWL<br>(C)                  | 2165 - 2238                             | 435                                    |
| Conoco State "7" Well No. 7<br>(30-015-23930) | 1980' FN & EL<br>(G)                         | 2069 - 2187                             | 415                                    |

(2) The waterflood project is hereby designated the "*State "7" Leasehold Waterflood Project*".

(3) The applicant must take all steps necessary to ensure that the injected water only 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) Injection shall be accomplished through 2-3/8 inch internally plastic-lined tubing installed in a packer set approximately within 100 feet of the uppermost injection perforation; the casing-tubing annulus in each well shall be filled with an inert fluid and equipped with an approved pressure gauge or attention-attracting leak detection device.

(5) The Division Director shall have the authority to administratively authorize an increase in the injection pressure limitation placed upon any well upon a proper showing by the operator that such higher pressure will not result in the migration of the injected water from its respective interval or fracture the confining strata.

(6) Prior to commencing injection operations, the casing in each 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.

(7) 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 any of the injection wells, 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.

(8) Should it become necessary, the supervisor of the Artesia District Office of the Division or the Director may at any time order a decrease of the injection pressure on any of the subject injection wells.

(9) The operator of the State "7" Leasehold Waterflood Project shall conduct injection operations in accordance with all applicable Division rules, regulations, and policies, including Division General Rules 701 through 708 and shall submit monthly progress reports in accordance with Division General Rules 706 and 1115.

**IT IS FURTHER ORDERED THAT:**

(10) The subject waterflood project is hereby approved as an "Enhanced Oil Recovery Project" pursuant to the "Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5).

(11) The approved "project area" shall comprise all of Section 7, Township 19 South, Range 29 East, NMPM, designated and Undesignated East Millman-Queen-Grayburg-San Andres Pool, Eddy County, New Mexico.

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

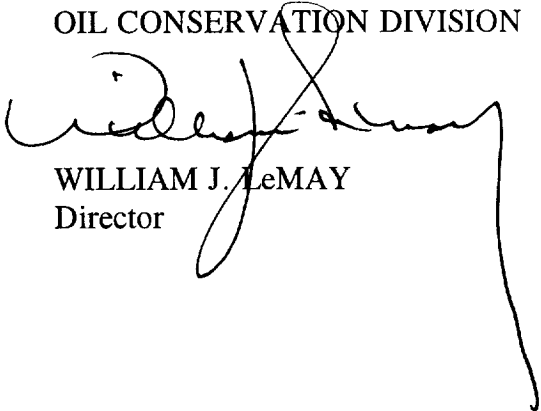
(13) At such time as a positive production response occurs and within five years from the date of the Certificate of Qualification, the applicant must apply to the Division for certification of positive production response, which application shall identify the area actually benefitting from enhanced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

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

(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.

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION



WILLIAM J. LeMAY  
Director

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