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. 20894
ORDER NO. R-21247

APPLICATION OF TEXLAND PETROLEUM L.P. FOR APPROVAL OF A WATERFLOOD UNIT AGREEMENT, AUTHORIZATION TO INJECT INTO THE BUBBA 4 STATE COM WELL NO. 1, AND TO QUALIFY FOR THE RECOVERED OIL TAX RATE, LEA COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This case came on for hearing at 8:15 am on November 14, 2019, at Santa Fe, New Mexico, before Examiners Kathleen Murphy and Phillip R. Goetze.

NOW, on this 7 th day of April 2020, the Division Director, having considered the testimony, the record, and the recommendations of the Examiners,

FINDS THAT:

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

(2) No other party appeared at the hearing or otherwise opposed the application.

(3) The Applicant, Texland Petroleum L.P. (OGRID 186838; "Texland") seeks approval for its Bubba Strawn Unit ("Unit") and establishment of its Bubba Strawn Waterflood Project within the Strawn formation. Applicant also seeks to convert its Bubba Strawn 4 State Com Well No. 1 to injection, and to covert future wells within the Unit area to injection administratively. Applicant further seeks to qualify the project for an incentive tax rate under the Enhanced Oil Recovery Act.

(4) The proposed area for the Bubba Strawn Unit consists of 240 acres (more or less) of state trust land situated in Lea County, New Mexico:

Township 17 South, Range 37 East, NMPM
Section 4: S/2 NW/4 and SW/4

(5) Applicant is proposing to convert one existing producing well to an injection well for use in the waterflood operation within the unit. The well is the Bubba 4 State Com Well No. 1 (API No. 30-025-37420; "proposed well") with a surface location of 731 feet from the south line and 1043 feet from the west line of Section 4 (Unit letter M), Township 17 South, Range 37 East, NMPM, Lea County, New Mexico.

(6) Applicant appeared at the hearing through counsel and presented the following testimony:

(a) The Strawn formation in this area has been defined by development by existing wells and plugged wells with the Unit located entirely in the Shipp:Strawn Pool (Pool code 55695).

(b) Applicant has described the proposed injection zone in the Strawn limestone at a depth of approximately 10'928 to a depth of 11,040 feet. The proposed well is currently perforated at these approximate depths.

(c) The Strawn formation in the south and west of Section 4 consists of a buildup of a phylloid algal mound, a limestone reservoir with a general gross thickness of over 80 feet, as defined by isopach maps and cross sections.

(d) Average porosity of the limestone ranges from 2 to 14 percent, and permeability in the limestone is good. The targeted interval is continuous and persistent throughout the proposed unit.

(e) Enhanced recovery by waterflooding has been successful for three similar units in this area to the north, which are also located in the Strawn formation.

(f) The algal mound is confined laterally from adjacent mounds to the north-east and west by mudstones which are low porosity and impermeable. The fluids will stay in the injected limestone interval due to the difference in permeability between the limestone and mudstones, and thus in the proposed Unit.

(g) The reservoir is confined immediately above and below by low porosity mudstone that will prevent migration of injected fluids out of the injection interval. The lower Strawn Shale will act as the upper barrier and the Atoka Shale will act as the lower barrier.

(h) There are no faults or other geologic structures that would allow migration of the injected fluids out of the injection interval.

(i) The Unitized Formation is defined as the continuous interval beginning 100 feet above the top of the Strawn formation and continuing to 100 feet below the base of the Strawn formation as correlated to the interval from 10,945 feet to 11,132 feet beneath the ground surface as shown on the Halliburton Spectral Density-Dual Spaced Neutron with Spectral Gamma Log dated October 5, 2002, for the Walter 4 Well No. 1 (API No. 30-025-35919) located 2260 feet from the south line and 718 feet from the west line of Section 4, Township 17 South, Range 37 East, NMPM, Lea County, New Mexico.

(j) The proposed well will be properly constructed to prevent migration of the injected fluid upward to any underground source of drinking water or other hydrocarbon-producing formation.

(k) Applicant requests a maximum surface injection pressure of 1,950 pounds per square inch (psi) with an average surface injection pressure of 1,450 psi. The proposed average daily injection rate will be 750 barrels of water per day (BWPD) with a maximum of 2,000 BWPD.

(l) Applicant testified there are approximately 26 wells within one-half mile of the proposed well that penetrate the proposed injection interval. Of these, 16 wells are plugged and abandoned.

(m) Applicant compiled sufficient completion or plugged and abandoned information for all of the penetrating wells. Applicant contends that each of the wells in the AOR is properly plugged and abandoned so that it will not become a conduit to allow migration of injected fluids out of the injection zone.

(n) The source of injection fluids will be from the Abo formation from a well located north of the property. An offset Abo well water has a general quality of approximately 43,495 parts per million total dissolved solids (ppm TDS) which is lower than the concentration of the receiving formation. Therefore, there are no fluid compatibility issues.

(o) Applicant located one water well within a one-mile radius of the proposed well and testified there is no known hydrologic connection between the injection zone and any underground source of drinking water.

(p) Within the proposed Unit, the reservoir is in an advanced state of depletion. Applicant estimates the primary recovery of original oil in place as 25 percent and gas in place as 96 percent. Applicant predicted a waterflood reserve of 589,000 barrels of additional oil recovery over an economic life of 46 years.

(q) Applicant presented testimony that the revenue from the project is expected to exceed the costs plus a reasonable profit. The waterflood is expected to increase production in existing wells, and those wells should qualify for the recovered oil tax rate.

(r) Applicant presented a participation formula accepted by both the working interest owners and the royalty interest owner.

(s) Applicant provided the required notices to affected persons pursuant to Subsection C of Rule 19.15.26.8 NMAC.

(t) The Unit consists of three New Mexico leases of which Applicant has 100 percent commitment of the numerous working interest owners and the royalty owner. No fee or federal leases are located within this Unit.

(u) The Commissioner of Public Lands has given preliminary approval of the Unit and waterflood proposal.

The OCD concludes that:

(7) Applicant has notified the other working interest owners, the royalty owner within the Unit and all parties affected by injection into the proposed well and received no objections.

(8) The proposed project should, in reasonable probability, result in production of substantially more hydrocarbons from the project area than would otherwise be produced therefrom, will prevent waste, and will not impair correlative rights.

(9) Texland presented exhibits containing the information required by OCD rules to qualify this project under the Enhanced Oil Recovery Act.

(10) The evidence establishes that the project meets all the criteria for certification by the OCD as a qualified "Enhanced Oil Recovery (EOR) Project" pursuant to the "Enhanced Oil Recovery Act" (NMSA 1978 Sections 7-29A-1 through 7-29A-5). The certified project area should consist of the entire Unit area.

(11) The EOR project area and/or the producing wells within this area eligible for the recovered oil tax rate may be contracted or expanded depending upon the evidence presented by the applicant in its demonstration of the occurrence of a positive production response.

(12) At this date, Texland Petroleum L.P. (OGRID 186838) is in compliance with Rule 19.15.5.9 NMAC and therefore is eligible for approval of injection permits.

(13) This application and the proposed project should be approved.

IT IS THEREFORE ORDERED THAT:

(1) Texland Petroleum L.P. ("Operator") is hereby authorized to implement secondary recovery operations within the **Bubba Strawn Unit** ("Unit") by injection of water into the Strawn formation, Shipp:Strawn Pool (Pool code 55695).

(2) The **Bubba Strawn Unit Waterflood Project** is hereby approved and shall consist of the entire Bubba Strawn Unit described in Findings Paragraph (4) and shall be contained vertically within the Unitized Formation.

(3) The "Unitized Formation" is defined as the continuous interval beginning 100 feet above the top of the Strawn formation and continuing to 100 feet below the base of the Strawn formation as correlated to the interval from 10,945 feet to 11,132 feet beneath the ground surface as shown on the Halliburton Spectral Density-Dual Spaced Neutron with Spectral Gamma Log dated October 5, 2002, for the Walter 4 Well No. 1 (API No. 30-025-35919) located 2,260 feet from the south line and 718 feet from the west line of Section 4, Township 17 South, Range 37 East, NMPM, Lea County, New Mexico.

(4) The Bubba 4 State Com Well No. 1 (API No. 30-025-37420) with a surface location of 731 feet from the south line and 1043 feet from the west line of Section 4 (Unit letter M), Township 17 South, Range 37 East, NMPM, Lea County, New Mexico is hereby authorized to inject through existing perforations from 10,928 feet to 11,040 feet.

(5) Texland Petroleum L.P. (OGRID 186838) is hereby designated the operator of the Unit.

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

(7) Injection shall be accomplished through plastic-lined, 2⅜-inch tubing installed in a packer set in the casing within 100 feet of the uppermost injection perforations. The casing-tubing annulus shall be filled with an inert fluid, and a gauge or approved leak-detection device shall be attached to the annulus in order to detect leakage in the casing, tubing or packer.

(8) Each injection well shall pass a mechanical integrity test prior to initial commencement of injection and prior to resumption of injection each time the injection packer is unseated. All testing procedures and schedules shall conform to the requirements of Rule 19.15.26.11.A NMAC. The Director retains the right to require at any time wireline verification of completion and packer setting depths.

(9) Each injection well shall be initially equipped with a pressure control device that will limit the surface injection pressure on the well. The maximum surface injection pressure for

the injection well approved in Ordering Paragraph (4) shall be limited to 2186 psi [based on an administratively approved gradient of 0.2 psi per foot of depth to the uppermost perforation].

(10) The Director may administratively authorize an increase in the maximum injection pressure upon a showing by the Operator that such higher pressure will not result in fracturing of the injection formation or confining strata.

(11) The Director may administratively authorize additional injection wells within the Unit as provide in Rule 19.15.26.8.G.5 NMAC without the necessity for further hearings.

(12) For each injection well, the Operator shall give at least 72 hours advance notice to the supervisor of the Division's Hobbs District Office of the date and time (i) injection equipment will be installed, and (ii) the mechanical integrity pressure tests will be conducted, so that these operations may be witnessed.

(13) The Operator shall provide written notice of the date of commencement of injection operations into each well to the Hobbs District Office.

(14) The Bubba Strawn Unit Waterflood Project is hereby certified to the New Mexico Taxation and Revenue Department as an "Enhanced Oil Recovery Project" pursuant to the "Enhanced Oil Recovery Act" (NMSA 1978 Sections 7-29A-1 through 7-29A-5).

(15) The area to be affected by the enhanced oil recovery project shall consist of the area within the Bubba Strawn Unit; however, the area and/or the producing wells eligible for the enhanced oil recovery (EOR) tax rate may be contracted or expanded based upon the evidence presented by the unit Operator in its demonstration of a positive production response.

(16) At such time as a positive production response occurs, and within five years from the date the project was certified to the New Mexico Taxation and Revenue Department, the unit Operator must apply to the OCD for certification of a "positive production response." This application for "positive production response" shall identify the area benefiting from enhanced oil recovery operations and the specific wells eligible for the EOR tax rate.

(17) The OCD may review the application administratively or set it for hearing. Based upon the evidence presented, the OCD will certify to the New Mexico Taxation and Revenue Department those wells that are eligible for the EOR tax rate.

(18) The injection authority granted under this Order is not transferable except upon OCD approval. The OCD may require the operator to demonstrate mechanical integrity of any injection well that will be transferred prior to approving transfer of authority to inject.

(19) The operator shall immediately notify the supervisor of the appropriate OCD's District Office of the failure of the tubing, casing or packer in any of the injection wells, or the leakage of water, oil, gas or other fluid from or around any producing or abandoned well within one-half mile of the injection well, and shall take all steps as may be timely and necessary to

correct such failure or leakage.

(20) The Project shall be governed by applicable provisions of Rules 19.15.26.8 through 26.15 NMAC. Operator shall submit monthly reports of the injection operations on OCD Form C-115, in accordance with Division Rules 19.15.26.13 and 19.15.7.28 NMAC.

(21) The injection authority granted herein shall terminate two years after the effective date of this order if the operator has not commenced injection operations; provided, however, the OCD, upon written request by the Operator filed prior to the expiration of the two-year time period, may grant an extension for good cause.

(22) In accordance with Rule 19.15.26.12.C NMAC, the injection authority granted herein shall terminate, if after injection commences, any continuous period of one year elapses without reported injection into any authorized injection well in the project area occurring; provided, however, the OCD, upon written request by Operator filed prior to the expiration of the one-year period of non-injection, may grant an extension for good cause.

(23) Operator shall provide written notice to the OCD upon permanent cessation of injection into the Project.

(24) This Order does not relieve Operator of responsibility should its operations cause any actual damage or threat of damage to protectable fresh water, human health or the environment; nor does it relieve the operator of responsibility for complying with applicable OCD rules or other state, federal or local laws or regulations.

(25) Upon failure of the operator to conduct operations (1) in such manner as will protect fresh water, or (2) in a manner consistent with the requirements in this order, the OCD may, after notice and hearing, (or without notice and hearing in event of an emergency), terminate the injection authority granted herein.

(26) This Order is subject to final approval of the Bubba Strawn Unit by the New Mexico State Land Office.

(27) Jurisdiction of this case is retained for the entry of such further orders as the OCD may deem necessary.

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

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

ADRIENNE SANDOVAL
Director

AS/KAM

Cc:

Oil Conservation Division, Hobbs District Office
New Mexico State Lands Office