

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. 11704
ORDER NO. R-10863

APPLICATION OF PARKER & PARSLEY DEVELOPMENT, L. P. FOR A
WATERFLOOD PROJECT AND QUALIFICATION FOR THE RECOVERED OIL
TAX CREDIT PURSUANT TO THE "NEW MEXICO 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 February 6, 1997 at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this 28th day of August, 1997 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) At the time of the hearing this case was consolidated with Division Case No. 11703 for the purpose of testimony.

(3) The applicant, Parker & Parsley Development, L. P. ("Parker & Parsley"), seeks authority to institute a secondary recovery project in its proposed Lusk West (Delaware) Unit Area (which was the subject of Division Case No. 11703), comprising all of Section 20, the NW/4 and N/2 SW/4 of Section 21, and all of Section 29, all in Township 19 South, Range 32 East, NMPM, Lea County, New Mexico, by the injection of water into the unitized interval that is within the designated and Undesignated West Lusk-Delaware Pool through the gross perforated interval from approximately 6,400 feet to 6,450 feet in 13 certain wells to either be drilled or converted from producing wells to

water injectors, as further described in Exhibit "A" attached hereto and made a part hereof.

(4) Geological evidence and testimony presented at the time of the hearing indicates the zone of interest within the Delaware formation herein designated by the applicant as the "6400-foot zone" is a deep marine turbidite fan system that runs primarily north/south along a slope break. Within the Lusk West (Delaware) Unit Area the thickness of this sand body varies from zero to 35 feet, but averages 22 feet in thickness. The 6400-foot Delaware sand exhibits both structural and stratigraphic trapping mechanisms and characteristics. This feature trends structurally down dip to the east to an oil/water contact and the up-dip in the western portion is delineated by the thinning of this sand to zero. Within this sand body there appears to be two structural highs that are bounded by the project area, thereby making this area a prime candidate for such secondary recovery operations.

(5) Evidence presented by the applicant indicates that approximately 72 percent of the total oil production from the West Lusk-Delaware Pool can be attributed to this narrow 6400 foot sand interval. Current production from this interval within the subject project area is in an advanced state of depletion and should therefore be properly classified as "stripper wells"; therefore, pursuant to Division General Rule 701.G, the proposed secondary recovery project should properly be classified as a waterflood project and governed accordingly.

(6) The applicant proposes to institute the subject waterflood project at an expected cost of \$3,591,000.00. The estimated reserves recoverable from the project is expected to be approximately 1.3 million barrels of oil.

(7) The area for said project should incorporate the applicant's Lusk West (Delaware) Unit Area as described in Finding Paragraph No. (3), above and should be designated the "*Lusk West (Delaware) Unit Waterflood Project*".

(8) The proposed waterflood project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(9) The operator of the proposed Lusk West (Delaware) Waterflood Unit project should take all steps necessary to ensure that the injected water enters and remains confined to only the unitized interval authorized by the Lusk West (Delaware) Unit Agreement and is not permitted to escape to other formations or onto the surface from injection, production, or plugged and abandoned wells.

(10) Evidence submitted at the time of the hearing and Division records indicate

that there are eight wellbores within the project's one-half mile area of review, 6 that are plugged and abandoned and 2 that are currently active or producing, all of which are inadequately plugged and abandoned or inadequately cemented or plugged back in a manner adequate to confine the injected fluids to the proposed injection interval or 6400 foot sand zone:

- (a) The plugged and abandoned El Paso Products Company Lusk Deep Unit Well No. 3, located 1650 feet from the North line and 660 feet from the West line (Unit E) of said Section 20;
- (b) the plugged and abandoned Parker & Parsley Development, L. P. Lusk Deep Unit "A" Well No. 7 (API No. 30-025-20874), located 1650 feet from the South line and 990 feet from the West line (Unit L) of said Section 20;
- (c) the plugged and abandoned Pan American Petroleum Corporation Plains Unit Well No. 4, located 1930 feet from the South line and 660 feet from the West line (Unit L) of said Section 21;
- (d) the plugged and abandoned El Paso Products Company Southern California Federal Well No. 2, located 990 feet from the North and West lines (Unit D) of said Section 29;
- (e) the plugged and abandoned Texaco Inc. S. A. Bowman Federal Well No. 3, located 1980 feet from the South and West lines (Unit K) of said Section 29;
- (f) the Parker & Parsley Development, L. P. Plains Unit Federal Well No. 4-Y (API No. 30-025-20518), located 710 feet from the South line and 660 feet from the West line (Unit M) of said Section 21, which is currently completed in and producing from the Lusk-Strawn Pool;
- (g) the Shackelford Oil Company Plains Unit Well No. 6 (API No. 30-025-20769), located 1980 feet from the North line and 660 feet from the West line (Unit E) of said Section 21, which is currently completed in and producing

from the East Lusk-Yates Pool;

(h) the plugged and abandoned Damson Oil Corporation Plains Unit Federal Well No. 3-Y, located 1980 feet from the South line and 760 feet from the West line (Unit L) of said Section 28;

(11) Prior to initiating injection within any of the 13 proposed water injection wells, Parker & Parsley should be required to demonstrate to the supervisor of the Division's Hobbs District Office that: (i) the Parker & Parsley Development, L. P. Plains Unit Federal Well No. 4-Y in Unit "M" of said Section 21 and the Shackelford Oil Company Plains Unit Well No. 6 in Unit "E" of said Section 21 have been completed and/or plugged back in such a manner as to ensure that they do not provide an avenue of escape for waters from the proposed injection zones; and, (ii) the six above-described plugged and abandoned wells (the El Paso Products Company Lusk Deep Unit Well No. 3 in Unit "E" of said Section 20, the Parker & Parsley Development, L. P. Lusk Deep Unit "A" Well No. 7 in Unit "L" of said Section 20, the Pan American Petroleum Corporation Plains Unit Well No. 4 in Unit "L" of said Section 21, the El Paso Products Company Southern California Federal Well No. 2 in Unit "D" of said Section 29, the Texaco Inc. S. A. Bowman Federal Well No. 3 in Unit "K" of said Section 29, and the Damson Oil Corporation Plains Unit Federal Well No. 3-Y in Unit "L" of said Section 28) have all been properly plugged and abandoned in a manner which will assure that none of the wellbores serve as a conduit for the migration of injected fluids and to the satisfaction of the supervisor of the Hobbs District Office of the Division.

(12) Once the supervisor of the Hobbs District Office of the Division is satisfied that all eight of the wellbores described in Finding Paragraph No. (10) above are shown: (i) to be completed; (ii) to have undergone remedial work-over requirements; or (iii) to be properly plugged and abandoned; so as to assure confinement of injection fluids, the applicant may then proceed with the proposed waterflood project as follows:

- a) Injection into each well should be accomplished through 2-7/8 inch internally plastic lined tubing installed in a packer set at approximately 100 feet above the uppermost perforated interval; 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.
- b) Prior to commencing injection operations, the casing of the subject well should be pressure-tested throughout the

interval, from the surface down to the proposed packer-setting depth, to assure integrity of such casing.

- c) The injection wells or injection pressurization system for each well should be so equipped as to limit injection pressure at the wellhead to no more than 1280 psi.

(13) The Director of the Division should be authorized to administratively approve an increase in the injection pressure upon a proper showing by the operator that such higher pressure will not result in migration of the injected waters from the subject 6400 foot sand interval of the designated and Undesignated West Lusk-Delaware Pool.

(14) The operator should give advance notification 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 the same may be witnessed.

(15) The subject application should be approved and the project should be governed by the provisions of Rules 702 through 708 of the Division Rules and Regulations.

(16) 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).

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

(18) The approved "project area" should initially comprise that area described in Finding Paragraph No. (3) above.

(19) 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.

(20) 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.

(21) 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, Parker & Parsley Development, L. P. ("Parker & Parsley"), is hereby authorized to institute a waterflood project on its Lusk West (Delaware) Unit by the injection of water into the unitized interval that is within the designated and Undesignated West Lusk-Delaware Pool through the gross perforated interval from approximately 6,400 feet to 6,450 feet in 13 certain wells to either be drilled or converted from producing wells to water injectors, as further described in Exhibit "A" attached hereto and made a part hereof.

(2) The subject waterflood project, herein designated the Lusk West (Delaware) Unit Waterflood Project, shall coincide with the boundary established for the Lusk West (Delaware) Unit Area in Lea County, New Mexico, as further described below, which was the subject of Division Case No. 11703 and was heard in combination with this case:

TOWNSHIP 19 SOUTH, RANGE 32 EAST, NMPM

Section 20:	All
Section 21:	NW/4 and N/2 SW/4
Section 29:	All.

(3) The applicant must take all steps necessary to ensure that the injected water only enters and remains confined only to the unitized interval authorized by the Lusk West (Delaware) Unit Agreement and is not permitted to escape to other formations or onto the surface from injection, production, or plugged and abandoned wells.

(4) Injection of water into said project area shall not commence until:

(a) such time as the (i) Parker & Parsley Development, L. P. Plains Unit Federal Well No. 4-Y (API No. 30-025-20518), located 710 feet from the South line and 660 feet from the West line (Unit M) of said Section 21, which is currently completed in and producing from the Lusk-

Strawn Pool and (ii) the Shackelford Oil Company Plains Unit Well No. 6 (API No. 30-025-20769), located 1980 feet from the North line and 660 feet from the West line (Unit E) of said Section 21, which is currently completed in and producing from the East Lusk-Yates Pool have both been completed and/or plugged back in such a manner as to ensure that they do not provide an avenue of escape for waters from the proposed injection zones; and,

(b) the following six plugged and abandoned wells, all within the project's one-half mile area of review, have all been properly plugged and abandoned in a manner which will assure that none of the wellbores serve as a conduit for the migration of injected fluids to the satisfaction of the supervisor of the Hobbs District Office of the Division:

(i) the El Paso Products Company Lusk Deep Unit Well No. 3, located 1650 feet from the North line and 660 feet from the West line (Unit E) of said Section 20;

(ii) the Parker & Parsley Development, L. P. Lusk Deep Unit "A" Well No. 7 (API No. 30-025-20874), located 1650 feet from the South line and 990 feet from the West line (Unit L) of said Section 20;

(iii) the Pan American Petroleum Corporation Plains Unit Well No. 4, located 1930 feet from the South line and 660 feet from the West line (Unit L) of said Section 21;

(iv) the El Paso Products Company Southern California Federal Well No. 2, located 990 feet from the North and West lines (Unit D) of said Section 29;

(v) the Texaco Inc. S. A. Bowman Federal Well No. 3, located 1980 feet from the South and West lines (Unit K) of said Section 29;

(vi) the Damson Oil Corporation Plains Unit Federal Well No. 3-Y, located 1980 feet from the South line and 760 feet from the West line (Unit L) of said Section 28.

(5) Any and all of the needed testing requirements, completion evaluations, recompletions, remedial workover operations to remediate the above-described 8 wellbores shall be conducted to the satisfaction and/or recommendations of the supervisor of the Hobbs District Office of the Division.

(6) Prior to commencing injection operations, the casing in each of the subject 13 injection wells shall be pressure-tested throughout the interval from the surface down to the proposed packer setting depth, to assure the integrity of such casing in a manner that is satisfactory to the supervisor of the Hobbs District Office of the Division.

(7) Injection into each of the subject 13 injection wells shall be accomplished through 2-7/8 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 a pressure gauge shall be attached to the annulus or the annulus shall be equipped with an approved pressure leak detection device in order to determine leakage in the casing, tubing, or packer in each well.

(8) The 13 injection wells herein authorized and/or the injection pressurization system shall be equipped with a pressure-limiting switch or other acceptable device which will limit the wellhead pressure on the injection wellhead to no more than 1280 psi.

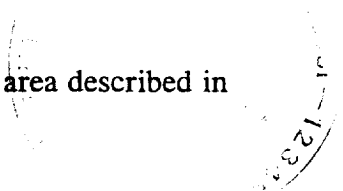
(9) The Division Director shall have the authority to administratively authorize an increase in the injection pressure limitation placed upon any well upon a proper showing by the operator that such higher pressure will not result in the migration of the injected water from its respective interval or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

(10) 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 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.

(11) The operator of the Lusk West (Delaware) Unit 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.

(12) 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).

(13) The approved "project area" shall initially comprise that area described in Decretory Paragraph No. (2) above.



(14) 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.

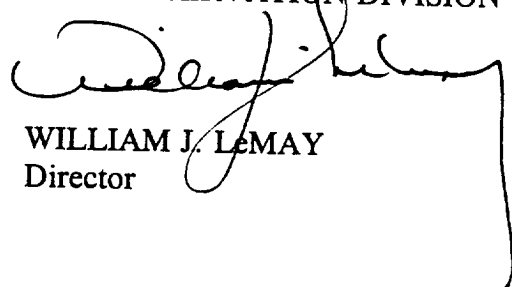
(15) At such time as a positive production response occurs and within five years from the date of the Certificate of Qualification, the applicant must apply to the Division for certification of positive production response, which application shall identify the area actually benefitting from enhanced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

(16) 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.

(17) 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

S E A L

Exhibit "A"
Case No. 11704
Order No. R-10863

Parker & Parsley Development, L. P.
Proposed Water Injection Wells
Lusk West (Delaware) Unit Waterflood Project Area
Township 19 South, Range 32 East, NMPM, West Lusk-Delaware Pool, Lea County, New Mexico.

Well Name and Number	API Number	Footage Location	Unit	Section	Injection Interval	Type of Well
Lusk Deep Unit "A" Well #17	30-025-30518	330' FN & EL	A	20	6476-6484	Conversion
Lusk Deep Unit "A" Well #12	30-025-24869	1660' FNL & 2300' FEL	G	20	6446-6467	Conversion
Lusk Deep Unit "A" Well #14	30-025-30490	330' FSL - 1980' FEL	O	20	6452-6459	Conversion
Lusk Deep Unit "A" Well #20	30-025-30524	2310' FSL & 660' FEL	I	20	6469-6487	Conversion
M. Federal Well #1	30-025-30439	1650' FNL & 330' FWL	E	21	6469-6479	Conversion
Amoco Federal Well #2	30-025-30572	990' FNL & 1650' FWL	C	21	6489-6503	Conversion
Mobil Federal Well #4	30-025-30791	2310' FSL - 1650' FWL	K	21	6468-6476	Conversion
Southern California Federal Well #4	30-025-20877	1650' FSL & 990' FEL	I	29	6430-6450	Recompletion
S. A. Bowman Federal Well #5	30-025-30165	2310' FSL & 2160' FWL	K	29	6431-6446	Conversion
Southern California Federal Well #6	30-025-30094	990' FSL & 660' FWL	M	29	6389-6399	Conversion
Southern California Federal Well #10	N/A	1980' FN & EL	G	29	Approximately 6425-6450	New Drill
Southern California Federal Well #11	N/A	660' FN & EL	A	29	Approximately 6425-6450	New Drill
Southern California Federal Well #12	N/A	660' FSL & 1980' FEL	O	29	Approximately 6425-6450	New Drill

ELF
ABOVE DATE DOES NOT
INDICATE WHEN
CONFIDENTIAL LOGS
WILL BE RELEASED

2/18/88