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. 11168
Order No. R-4680-A

APPLICATION OF OXY USA INC. TO AUTHORIZE THE EXPANSION OF A PORTION OF ITS MYERS LANGLIE-MATTIX UNIT WATERFLOOD PROJECT AND QUALIFY SAID EXPANSION FOR THE RECOVERED OIL TAX RATE 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 December 15, 1994, at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this 31st day of March, 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) By Order No. R-4660, issued in Case No. 5086 and dated November 16, 1973, the Division approved the application of Skelly Oil Company for unitization of the following described 9,923.68 acres, more or less, of State, Federal, and Fee lands in Lea County, New Mexico, also known as the Myers Langlie-Mattix Unit Area:

TOWNSHIP 23 SOUTH, RANGE 36 EAST, NMPM

Section 25: N/2 NE/4, SE/4 NE/4, NE/4 SW/4, S/2 SW/4, and SE/4
Section 36: N/2, E/2 SW/4, and SE/4

TOWNSHIP 23 SOUTH, RANGE 37 EAST, NMPM

Section 28: SW/4 NW/4 and SW/4
Sections 29 through 33: All
Section 34: W/2

TOWNSHIP 24 SOUTH, RANGE 36 EAST, NMPM

Section 1: Lot 1 (NE/4 NE/4 equivalent)
Section 12: S/2 N/2, N/2 SW/4, N/2 SE/4, and SE/4 SE/4

TOWNSHIP 23 SOUTH, RANGE 37 EAST, NMPM

Section 2: Lots 2, 3, and 4, SW/4 NE/4, S/2 NW/4, and SW/4
Section 3: Lots 1 and 2, S/2 NE/4, W/2 SW/4, and E/2 SE/4
Sections 4 and 5: All
Section 6: Lots 1, 2, 3, and 4, S/2 NE/4, SE/4 NW/4, E/2 SW/4, and SE/4
Section 7: All
Section 8: N/2, N/2 S/2, and SW/4 SW/4
Section 9: N/2 and N/2 SW/4
Section 10: W/2 NE/4, SE/4 NE/4, NW/4, E/2 SW/4, and W/2 SE/4
Section 11: SW/4 NW/4.

(3) By Order No. R-4680, issued in Case No. 5087 and dated November 20, 1973, the Division authorized Skelly Oil Company to institute a waterflood project (therein designated the Skelly Myers Langlie Mattix Unit Waterflood Project) by the injection of water into the Lower Seven Rivers and Queen formations of the Langlie-Mattix (Seven Rivers-Queen-Grayburg) Pool within the above-described Unit, Lea County, New Mexico.

(4) OXY USA, Inc. is the current operator of both the Myers Langlie-Mattix Unit ("Unit") and the (Skelly) Myers Langlie Mattix Unit Waterflood Project ("Waterflood Project").

(5) The applicant, OXY USA, Inc. ("OXY"), pursuant to the New Mexico "Enhanced Oil Recovery Act" and to Division General Rule 701(G), seeks approval of an expansion of its (Skelly) Myers Langlie-Mattix Unit Waterflood Project by means of a significant change in process used for the displacement of crude oil with water including the approval of the conversion of 16 producers to injection wells, to reactivate a plugged injector and an Order, pursuant to the "Rules and Procedures for Qualification of Enhanced Oil Recovery ("EOR") Projects and Certification for the Recovered Oil Tax Rate", as promulgated by Division Order R-9708, qualifying a portion of its Myers Langlie-Mattix Unit Waterflood Project, located in portions of Section 36, Township 23 South, Range 36 East, NMPM, and in Sections 31 and 32, Township 23 South, Range 37 East, NMPM, and in Sections 5 and 6, Township 24 South, Range 37 East, NMPM, Langlie-Mattix Pool, Lea County, New Mexico, for the recovered oil tax rate under the "Enhanced Oil Recovery Act" (Law 1992, Chapter 38, Sections 1 through 5).

(6) Waterflood operations were initiated by Skelly Oil Company during the 1970's on an 80-acre five-spot injection pattern. Ultimate primary oil recovery from the Unit has been 9,000,000 barrels of oil. As of October 31, 1994, total oil production from the Unit was 15,200,000 barrels.

(7) The Unit currently has 93 active producers and 62 injectors and is producing at a rate of approximately 613 barrels of oil per day and 7,032 barrels of water per day. Evidence indicates the remaining recoverable reserves in the Unit under the current 80-acre five-spot pattern is approximately 688,000 barrels of oil.

(8) The applicant now seeks to qualify the following described 760 acres, more or less, hereinafter referred to as the "EOR Expansion Area", being a portion of the (Skelly) Myers Langlie-Mattix Unit Waterflood Project in Lea County, New Mexico, for the recovered oil tax rate:

Township 23 South, Range 36 East, NMPM

Section 36: *SE/4 SE/4 NE/4*
NE/4 NE/4 SE/4

Township 23 South, Range 37 East, NMPM

Section 31: *SW/4 SW/4 NE/4*
S/2 S/2 NW/4
E/2 SW/4
E/2 W/2 SW/4 (equivalent)
NW/4 NW/4 SW/4 (equivalent)
NW/4 NW/4 SE/4
S/2 N/2 SE/4
S/2 SE/4

Section 32: *SW/4 NE/4 SW/4*
S/2 NW/4 SW/4
SW/4 SW/4
W/2 SE/4 SW/4

Township 23 South, Range 37 East, NMPM

Section 5: *W/2 E/2 NW/4 (equivalent)*
W/2 NW/4 (equivalent)
W/2 NE/4 SW/4
NW/4 SW/4
N/2 SW/4 SW/4
NW/4 SE/4 SW/4

Section 6: *N/2 N/2 NE/4 (equivalent)*
SE/4 NE/4 NE/4 (equivalent)
E/2 SE/4 NE/4
N/2 NE/4 NW/4 (equivalent)
NE/4 NW/4 NW/4 (equivalent)
E/2 NE/4 SE/4
NE/4 SE/4 SE/4.

(9) Within the subject 760-acre, more or less, EOR Expansion Area, the applicant is proposing a significant change in the process used for the displacement of crude oil by expanding its current waterflood pattern by further instituting a 20-acre infill drilling program and to initiate a 40-acre five-spot water injection pattern. Such action will require the applicant to drill and equip nineteen new infill producing wells (as further described in **Exhibit "A"**, attached hereto and made a part hereof), convert sixteen current producing wells to injectors (as further described in **Exhibit "B"**, attached hereto and made a part hereof), reactivate a previously plugged and abandoned injection well (see also **Exhibit "B"**), and utilize fifteen existing injection wells (as further described in **Exhibit "C"**, attached hereto and made a part of this order as reference only), plus an extensive upgrade of the tank battery and surface injection facilities.

(10) While the nineteen new producers (**Exhibit "A"**) have been drilled in the EOR Expansion Area as infill wells, none of those producers will be recovering enough primary oil to pay for their costs. Instead, these producers are an integral part of the EOR expansion being necessary in order to close the 40-acre five-spot injection pattern and improve sweep efficiency within the EOR Expansion Area.

(11) Costs for the proposed change in operations within the EOR Expansion Area is estimated to be $3,660,000.00 for the drilling and associated equipment for the nineteen infill producers, $690,000.00 to convert and reactivate the seventeen proposed new injection wells, and $750,000.00 to upgrade battery and injection facilities. Total expansion costs are estimated to be $5,100,000.

(12) The estimated amount of recoverable oil attributable to a "Positive Production Response from the Expanded Use" of enhanced oil recovery technology for a portion of this existing Waterflood Project is 1,600,000 barrels of additional oil.

(13) This EOR expansion project is similar to the one earlier requested by OXY for its Skelly Penrose "B" Unit Waterflood Project, which was approved by Division Order No. R-9955, as amended.

(14) For ease and simplicity the EOR Expansion Area should also be defined in terms of the nineteen unit wells which would actually qualify for the recovered oil tax rate, as described in **Exhibit "A"**.

(15) The evidence and testimony presented in this case indicates that:

(a) the reduction in the waterflood injection well pattern in the EOR Expansion Area should result in a substantial increase in the amount of crude oil ultimately recovered therefrom;

(b) the EOR Expansion Area has been so depleted that it is prudent to implement a waterflood injection well pattern reduction to maximize the ultimate recovery of crude oil from said area; and,

(c) the proposed expansion is economically and technically feasible and has not been prematurely filed.

(16) The EOR Expansion Area within the (Skelly) Myers Langlie-Mattix Unit Waterflood Project, as defined in Finding Paragraph No. (8) above, and those nineteen corresponding wells within said Area (see **Exhibit "A"**) should be qualified as an "Enhanced Oil Recovery Project" pursuant to the "Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5).

(17) To be eligible for the EOR credit, the operator should advise the Division when water injection into each additional injection well commences and at such time request the Division certify the subject expansion project to the New Mexico Taxation and Revenue Department.

(18) The application should be approved and the EOR expansion should be governed by the provisions of the "Rules and Procedures for Qualifications of Enhanced Oil Recovery Projects" and "Certification for Recovered Oil Tax Rate" as promulgated by Division Order No. R-9708.

(19) 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.

(20) The injection of water into the proposed seventeen new injection wells should be accomplished through 2 3/8 inch internally fiberglass-lined tubing installed in a packer set within 100 feet of the uppermost injection perforation or casing shoe; 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.

(21) Prior to commencing injection operations into the seventeen wells shown on **Exhibit "B"**, attached hereto and made a part hereof, the casing in each well should be pressure tested throughout the interval from the surface down to the proposed packer setting depth, to assure the integrity of such casing.

(22) The seventeen injection wells 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 1800 psi.

(23) 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.

(24) 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 tests in order that the same may be witnessed.

(25) The proposed waterflood expansion should be approved and governed by the provisions of Rule Nos. 701 through 708 of the Oil Conservation Division Rules and Regulations.

(26) The injection authority granted herein for the proposed seventeen new 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, OXY USA, Inc. ("OXY") is hereby authorized to expand its (Skelly) Myers Langlie-Mattix Unit Waterflood Project, Myers Langlie-Mattix Unit ("Unit"), Langlie-Mattix (Seven Rivers-Queen-Grayburg) Pool, Lea County, New Mexico, pursuant to Division General Rule 701.G., by converting 16 existing wells to injectors and by reactivating a plugged injector, as further described in **Exhibit "B"**, attached hereto and made a part hereof.

(2) 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.

(3) The injection of water into the seventeen wells shown on **Exhibit "B"** shall be accomplished through 2 3/8 inch internally fiberglass-lined tubing installed in a packer set within 100 feet of the uppermost injection perforation or casing shoe; 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 determine leakage in the casing, tubing or packer.

(4) Prior to commencing injection operations into the wells shown on **Exhibit "B"**, the casing in each 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.

(5) The seventeen injection wells or pressurization system shall be initially equipped with a pressure control device or acceptable substitute which will limit the surface injection pressure to no more than 1800 psi.

(6) The Division Director shall have the authority to administratively authorize a pressure limitation in excess of the 1800 psi herein authorized upon a showing by the operator that such higher pressure will not result in the fracturing of the injection formation or confining strata.

(7) The operator shall 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 tests in order that the same may be witnessed.

(8) 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 wells shown on **Exhibit "B"** and shall take such steps as may be timely and necessary to correct such failure or leakage.

(9) The subject wells shall be governed by all provisions of Division Order No. R-4680 and Rule Nos. 702-706 of the Oil Conservation Division Rules and Regulations.

(10) The injection authority granted herein 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.

IT IS FURTHER ORDERED THAT:

(11) The application of OXY to qualify the following described 760 acres, more or less, hereinafter referred to as the "EOR Expansion Area", being a portion of its (Skelly) Myers Langlie-Mattix Unit Waterflood Project, for the recovered oil tax rate under the "Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5), is hereby approved:

Township 23 South, Range 36 East, NMPM

Section 36: *SE/4 SE/4 NE/4*
NE/4 NE/4 SE/4

Township 23 South, Range 37 East, NMPM

Section 31: *SW/4 SW/4 NE/4*
S/2 S/2 NW/4
E/2 SW/4
E/2 W/2 SW/4 (equivalent)
NW/4 NW/4 SW/4 (equivalent)
NW/4 NW/4 SE/4
S/2 N/2 SE/4
S/2 SE/4

Section 32: *SW/4 NE/4 SW/4*
S/2 NW/4 SW/4
SW/4 SW/4
W/2 SE/4 SW/4

Township 23 South, Range 37 East, NMPM

Section 5: *W/2 E/2 NW/4 (equivalent)*
W/2 NW/4 (equivalent)
W/2 NE/4 SW/4
NW/4 SW/4
N/2 SW/4 SW/4
NW/4 SE/4 SW/4

Section 6: *N/2 N/2 NE/4 (equivalent)*
SE/4 NE/4 NE/4 (equivalent)
E/2 SE/4 NE/4
N/2 NE/4 NW/4 (equivalent)
NE/4 NW/4 NW/4 (equivalent)
E/2 NE/4 SE/4
NE/4 SE/4 SE/4.

(12) The EOR Expansion Area shall also be defined in terms of the nineteen unit wells that are producing which would actually qualify for the recovered oil tax rate, as described in **Exhibit "A"**, attached hereto and made a part hereof.

(13) The operator shall advise the Division when water injection actually commences into any of the seventeen "new" injection wells.

(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 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) Said EOR Expansion Area shall be governed by the provisions of the "Rules and Procedures for Qualifications of Enhanced Oil Recovery Projects" and "Certification for Recovered Oil Tax Rate" as promulgated by Division Order No. R-9708.

(17) Jurisdiction is hereby 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. 11168
ORDER NO. R-4680-A

OXY USA, INC. MYERS LANGLIE-MATTIX UNIT
WATERFLOOD PROJECT

"PRODUCING WELLS WITHIN THE EOR PROJECT AREA ELIGIBLE FOR THE EOR TAX CREDIT"

Well No.	API No.	Footage Location	Lot/Unit	S-T-R
256	30-025-29589	105' FNL - 1310' FWL	4/D	6-24S-37E
258	30-025-32588	2560' FSL - 120' FWL	3/L	31-23S-37E
259	30-025-32534	2620' FNL - 1340' FWL	F	31-23S-37E
260	30-025-32589	2535' FSL - 2563' FWL	K	31-23S-37E
261	30-035-32559	1340' FSL - 1300 FWL	3/L	31-23S-37E
262	30-025-32590	1350' FSL - 2380' FWL	K	31-23S-37E
263	30-025-32555	1398' FSL - 1564' FEL	J	31-23S-37E
264	30-025-32535	1400' FSL - 160' FWL	L	32-23S-37E
265	30-025-32536	1460' FSL - 1340' FWL	K	32-23S-37E
266	30-025-32537	100' FNL - 2556' FWL	3/C	6-24S-37E
267	30-025-32591	190' FNL - 1460' FEL	2/B	6-24S-37E
268	30-025-32592	139' FNL - 372' FEL	1/A	6-24S-37E
269	30-025-32556	238' FNL - 1274' FWL	4/D	5-24S-37E

EXHIBIT "A"
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Well No.	API No.	Footage Location	Lot/Unit	S-T-R
270	30-025-32593	1410' FNL - 90' FEL	H	6-24S-37E
271	30-025-32565	1340' FNL - 1030' FWL	E	5-24S-37E
272	30-025-32566	2620' FNL - 90' FEL	H	6-24S-37E
273	30-025-32594	2533' FNL - 1350' FWL	F	5-24S-37E
274	30-035-32567	1300' FSL - 120' FWL	M	5-24S-37E
275	30-025-32557	1340' FS & WL	K	5-24S-37E

EXHIBIT "B"

CASE NO. 11168
ORDER NO. R-4680-A

OXY USA, INC. MYERS LANGLIE-MATTIX UNIT WATERFLOOD PROJECT

APPROVED WATERFLOOD EXPANSION INJECTION WELLS

WELLS TO BE CONVERTED FROM PRODUCERS TO INJECTORS:

WELL NO.	API NO.	FOOTAGE LOCATION	LOT/UNIT	S-T-R	INJECTION INTERVAL
70	30-025-09475	1980' FNL - 660' FEL	H	36-23S-36E	3465' - 3609' (OPENHOLE)
72	30-025-10902	1980' FN & WL	F	31-23S-37E	3570' -3670'
94	30-025-26908	1980' FSL - 760' FWL	L	32-23S-37E	3440' - 3677'
96	30-025-10907	1979' FSL - 1980' FEL	J	31-23S-37E	3447' - 3618' (OPENHOLE)
98	30-025-10906	1980' FSL - 660' FEL	3/L	31-23S-37E	3450' - 3608' (OPENHOLE)
106	30-025-10911	660' FSL - 1980' FWL	N	31-23S-37E	3546' - 3627'
133	30-025-11008	660' FN & WL	4/D	5-24S-37E	3503' - 3623'
135	30-025-25989	760' FNL - 2080' FEL	2/B	6-24S-37E	3502' - 3686'
137	30-025-11036	660' FNL - 626' FWL	4/D	6-24S-37E	3454' - 3588' (OPENHOLE)
141	30-025-11027	1962' FNL - 660' FEL	H	6-24S-37E	3517' - 3640'
143	30-025-11011	1960' FNL - 1905' FWL	F	5-24S-37E	3437' - 3680'

EXHIBIT "B"
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PAGE 2

WELL NO.	API NO.	FOOTAGE LOCATION	LOT/UNIT	S-T-R	INJECTION INTERVAL
170	30-025-11004	1980' FSL - 330' FWL	L	5-24S-37E	3445' - 3793'
176	30-025-11025	660' FS & EL	P	6-24S-37E	3516' -3590'
178	30-025-11007	660' FSL - 1980' FWL	N	5-24S-37E	3442' - 3570'
251	30-025-28246	660' FSL - 2096' FWL	N	32-23S-37E	3354' - 3699'
252	30-025-28808	685' FSL - 660' FEL	P	31-23S-37E	3523' - 3730'

The following well was Plugged and Abandoned by Texaco Exploration and Production Inc. in 1992, Division Order No. R-4680 originally authorized this well to be utilized as a water injection well on the Skelly Myers Langlie-Mattix Unit Waterflood Project:

Myers Langlie-Mattix Unit Well No. 134 (API No. 30-025-11026), located 660' FN & EL (Lot 1/Unit A) of Section 6, Township 24 South, Range 37 East, NMPM, Lea County New Mexico. The proposed injection interval will bethrough perforations from 3546' to 3655'.

EXHIBIT "C"
CASE NO. 11168
ORDER NO. R-4680-A

OXY USA, INC. MYERS LANGLIE-MATTIX UNIT WATERFLOOD PROJECT

EXISTING INJECTION WELLS TO BE UTILIZED FOR THE EOR PROJECT AREA:

WELL NO.	API NO.	FOOTAGE LOCATION	LOT/UNIT	S-T-R	DIVISION ORDER AUTHORIZING INJECTION
71	30-025-10901	1980' FNL - 660' FWL	2/E	31-23S-37E	R-4680
73	30-025-10904	1980' FN & EL	G	31-23S-37E	R-4680
93	30-025-25680	1980' FSL - 1750' FWL	K	32-23S-37E	WFX-460
95	30-025-10912	1980' FSL - 660' FEL	I	31-23S-37E	R-4680
97	30-025-10909	1980' FS & WL	K	31-23S-37E	R-4680
99	30-025-09482	1980' FSL - 660' FEL	I	36-23S-36E	R-4680
105	30-025-10908	660' FS & WL	4/M	31-23S-37E	R-4680
107	30-025-10910	660' FSL - 1980' FEL	O	31-23S-37E	R-4680
109	30-025-03205	660' FS & WL	M	32-23S-37E	R-4680
132	30-025-11010	660' FNL - 1980' FWL	3/C	5-24S-37E	R-4680
136	30-025-11019	660' FNL - 1980' FWL	3/C	6-24S-37E	R-4680
142	30-025-11009	1962' FNL - 660' FWL	E	5-24S-37E	R-4680
169	30-025-11005	1980' FS & WL	K	5-24S-37E	R-4680
171	30-025-11030	1980' FSL - 660' FEL	I	6-24S-37E	R-4680
177	30-025-11006	660' FSL - 990' FWL	M	5-24S-37E	R-4680