

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 7426
Order No. R-6856

APPLICATION OF PHILLIPS PETROLEUM
COMPANY FOR AMENDMENT OF DIVISION ORDER
NO. R-5897 AND APPROVAL OF A QUALIFIED
TERTIARY OIL RECOVERY PROJECT UNDER THE
CRUDE OIL WINDFALL PROFITS TAX ACT OF
1980, LEA COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9:00 a.m. on November 19, 1981, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 16th day of December, 1981, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Phillips Petroleum Company, seeks the Amendment of Division Order No. R-5897, to include the injection of carbon dioxide in its previously authorized pressure maintenance project in the East Vacuum Grayburg-San Andres Unit, for conversion of existing injectors to water/carbon dioxide injection, and for the approval of a portion of the East Vacuum Grayburg-San Andres Unit as a Qualified Tertiary Oil Recovery Project under the Crude Oil Windfall Profits Tax Act of 1980.

(3) That said pressure maintenance project lies within the Vacuum Grayburg-San Andres Pool, Lea County, New Mexico.

(4) That said pool was discovered May 5, 1924, by Socony Vacuum Oil Company, experienced substantial development thereafter with waterflooding being initiated in a project during 1958.

(5) That the Phillips Petroleum Company East Vacuum Unit Pressure Maintenance Project consisting of approximately 7025 acres was approved by said Division Order No. R-5897 on January 16, 1979, and water injection was commenced within said project during December, 1979.

(6) That the applicant now seeks approval for the injection of carbon dioxide and water into 45 project wells and the designation of a qualifying tertiary recovery project area within said pressure maintenance project.

(7) That the proposed Qualifying Tertiary Project Area (QTP Area) lies wholly within said East Vacuum Unit Pressure Maintenance Project and consists of the following described acreage:

TOWNSHIP 17 SOUTH, RANGE 35 EAST, NMPM

Section 26: W/2; NE/4; W/2 SE/4; and NE/4 SE/4
Section 27: All
Section 28: All
Section 29: All
Section 31: N/2 SE/4 and SE/4 SE/4
Section 32: All
Section 33: All
Section 34: N/2; SW/4; and NW/4 SE/4
Section 35: N/2 NW/4

TOWNSHIP 18 SOUTH, RANGE 35 EAST, NMPM

Section 4: N/2 NW/4 and NW/4 NE/4
Section 5: N/2 and NW/4 SW/4

containing 4997 acres more or less.

(8) That the QTP Area is adequately delineated and that the entire area will be affected.

(9) That the New Mexico Oil Conservation Division has been designated by the Governor of the State of New Mexico as the appropriate agency to approve Qualified Tertiary Recovery Projects in New Mexico for purposes of the Crude Oil Windfall Profits Tax Act of 1980.

(10) That the tertiary oil recovery method used in the Phillips QTP Area is a carbon dioxide miscible displacement method which is a recognized tertiary oil recovery method described in Section 212.78(c) of the Department of Energy Regulations in effect in June, 1979.

(11) That the Tertiary Recovery method includes overinjection of voidage with water at maximum rates to achieve a miscibility pressure in the formation.

(12) That slim-tube tests have determined such miscibility pressure to be approximately 1369 psia.

(13) That overinjection began on February 1, 1981, and carbon dioxide injection will begin after miscibility pressure has been achieved.

(14) That under the tertiary recovery method to be used, it is anticipated that the volume of injected carbon dioxide measured at reservoir temperature and pressure will be more than 10 percent of the reservoir pore volume being served by the injection wells.

(15) That because of the geological and reservoir characteristics of the effected reservoir, the QTP Area is well suited for miscible fluid displacement by carbon dioxide as an enhanced recovery process.

(16) That the estimated primary production from the East Vacuum Unit Pressure Maintenance Project Area is 72 million barrels and that water flooding secondary recovery operations will recover an additional 38 million barrels.

(17) That an estimated 26 million barrels of additional oil (which is 10 percent of the original oil in place within the project area) will be recovered as a result of the tertiary recovery operations, which is more than an insignificant increase in the amount of crude oil which will ultimately be recovered.

(18) That the QTP Area tertiary recovery operations beginning date is after May, 1979.

(19) That the QTP Area tertiary recovery operations beginning date (i.e., the date on which the injection of liquids, gases or other matter begins) was February 1, 1981.

(20) That the proposed tertiary recovery operations within said QTP Area meet all requirements of Section 4993 of the Internal Revenue Code.

(21) That the Phillips QTP Area project is designated in accordance with sound engineering principles.

(22) That the approval of this application will prevent waste, protect correlative rights and promote conservation.

IT IS THEREFORE ORDERED:

(1) That effective December 1, 1981, the Qualifying Tertiary Recovery Project Area, described in Finding No. (7) of this Order, of the Phillips Petroleum Company East Vacuum Unit Pressure Maintenance Project, Vacuum Grayburg-San Andres Pool, Lea County, New Mexico, is hereby approved as a Qualified Tertiary Recovery Project under the Crude Oil Windfall Profits Tax Act of 1980.

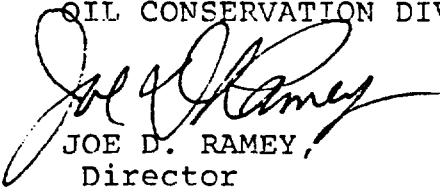
(2) That the applicant, Phillips Petroleum Company, is hereby authorized to inject water and carbon dioxide into the 45 wells listed on Exhibit "A" attached to this Order.

(3) That Order No. R-5897 is hereby amended to authorize injection of carbon dioxide up to an average maximum bottom hole pressure of 3150 psi.

(4) That 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


JOE D. RAMEY,
Director

S E A L

EXHIBIT A

Approved Water-Alternate-
Carbon Dioxide Injectors

Tract 2622 - Well 004 Well 006	Tract 3202 - Well 008 Well 009 Well 010 Well 013
Tract 2717 - Well 003 Well 005 Well 007	Tract 3229 - Well 006 Well 008
Tract 2720 - Well 006	Tract 3236 - Well 006
Tract 2721 - Well 001 Well 002	Tract 3315 - Well 006 Well 008
Tract 2738 - Well 007 Well 008 Well 009	Tract 3328 - Well 003
Tract 2801 - Well 005 Well 006 Well 007 Well 012 Well 015	Tract 3332 - Well 001
Tract 2865 - Well 001	Tract 3333 - Well 005 Well 006
Tract 2913 - Well 007 Well 008 Well 009	Tract 3373 - Well 001
Tract 2941 - Well 001	Tract 3374 - Well 002
Tract 2947 - Well 001	Tract 3456 - Well 006 Well 007 Well 009
Tract 2963 - Well 004	Tract 0524 - Well 001 Well 006
Tract 2980 - Well 003	
Tract 3127 - Well 004	