



OIL CONSERVATION DIVISION
RECEIVED

Midland Division
Exploration Production

'95 MAY 3 AM 8 52

Conoco Inc.
10 Desta Drive, Suite 100W
Midland, TX 79705-4500
(915) 686-5400

May 3, 1995

*See up-coming Core
11285*

Mr. Michael E. Stogner
Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505

Re: Application of Conoco Inc. for approval of twelve unorthodox producing well locations for the purpose of developing a pilot infill drilling program for the Warren Blinebry-Tubb Waterflood Project and evaluating the feasibility of reducing the current 80-acre injection pattern to a 40-acre pattern.

Dear Mr. Stogner:

Attached is Conoco's application for approval of twelve (12) infill drilling locations for its Warren Blinebry-Tubb Waterflood Project. The success of this pilot infill drilling program will lead to the filing of future applications for (a) well conversions required to reduce the flood pattern size for this project and (b) for certification of the affected areas for the "recovered oil tax rate" based on this proposed significant change and modification in the technology and process used for the displacement of crude oil. However, this application deals only with the first step in this program which is the approval to drill these twelve infill producing wells.

The Oil Conservation Division has worked very closely and cooperatively with Conoco during the last ten years in an attempt to maximize hydrocarbon recovery from the Warren Unit. The potential producing horizons in this unit are very complex and it has only been through the supporting OCD orders that Conoco has been able to successfully complete the initial primary development and the initiation of waterflooding throughout most of the unit.

As we have continued to analyze the reservoir and its production history, it is now becoming apparent that primary development on 40-acre spacing and waterflooding with 80-acre Five-spot patterns will not efficiently drain and sweep this reservoir. It is now time to take the next step and begin a Pilot infill drilling program in the most mature portion of the reservoir and waterflood. Therefore, Conoco again requests the Division's assistance in our continuing effort to maximize oil recovery from this unit.

Very truly yours,

Jerry W. Hoover
Sr. Conservation Coordinator

**STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION**

Administrative Application of Conoco Inc. for approval of twelve unorthodox producing well locations for the purpose of developing a pilot infill drilling program for the Warren Blinebry-Tubb Waterflood Project and evaluating the feasibility of reducing the current 80-acre injection pattern to a 40-acre pattern.

ADMINISTRATIVE APPLICATION

Conoco Inc. requests approval for twelve (12) unorthodox producing well locations in the original Pilot Waterflood Stage of its Warren Blinebry-Tubb Waterflood Project. A current evaluation of waterflood response, sweep patterns, and unrecovered reserves have resulted in the conclusions that (a) current waterflooding in 80-acre five-spot patterns has resulted only in a successful pressure maintenance program, (b) it is unlikely that this reservoir can be efficiently swept by waterflooding in these 80-acre injection patterns, and (c) there should be significant additional reserves that can only be recovered by infill drilling to a 20-acre well spacing which would make it possible to reduce the injection patterns to 40-acre five-spots.

Reservoir modeling and volumetric calculations indicate that an additional 1,500,000 barrels of oil can be recovered by these infill wells and a reduction to a 40-acre flood pattern. This application is only for approval of the unorthodox locations; conversion to the reduced flood pattern will be applied for following the completion of the Pilot infill drilling program.

PROPOSED INFILL DRILLING AND PATTERN CONVERSION PROGRAM

EXHIBIT 1 is a list of the proposed locations for these twelve infill locations. The preferred locations for these wells, in order to provide effective spacing for the future 40-acre injection patterns, would have been at the intersections of the quarter-quarter lines midway between existing wells. In deference to OCD spacing rules these wells were staked at 10-foot setbacks from the quarter-quarter lines, except where limited by surface obstructions, near the corners of the quarter sections.

EXHIBIT 2 is a map showing (a) the Warren Unit boundary, (b) the three stages of development in the Warren Blinebry-Tubb Waterflood Project which covers most of the unit area, and (c) the off-set operators to Conoco operations. The subject of this application concerns only the "Pilot" stage of the project and none of the twelve proposed unorthodox locations are adjacent to the exterior boundary of the Conoco operated Warren Unit. All twelve locations are unorthodox only to interior quarter-quarter lines.

EXHIBIT 3 is a map of the Warren Blinebry-Tubb Waterflood Project showing (a) the three development stages of the project (Pilot, 1st Expansion, and 2nd Expansion), (b) the current wells and injection pattern outlined by the blue lines, and (c) the proposed future expansion patterns in red and green. This project plan was approved in stages by three prior OCD orders. Order No. R-6906 established the Pilot stage, Order No. R-6906-B the First Expansion stage, and Order R-10068 the Second Expansion stage.

EXHIBIT 4 is an enlarged map of the Pilot stage of the project showing (a) the current producers as black spots, (b) the current injectors and patterns of the Pilot area in blue, (c) future injection conversions in the already approved Second Expansion phase with red triangles and pattern lines, and (d) the twelve proposed infill producing wells as red spots with their well numbers also in red.

EXHIBIT 5 is the same map area as EXHIBIT 4 but showing the proposed future conversion of injection to the smaller 40-acre Five-spot injection patterns. This would be accomplished by converting all of the current producing wells to injectors and producing through the new infill wellbores. After the feasibility of such a program has been confirmed by the results of the Pilot infill drilling program and prior to conversion to the smaller injection pattern, Conoco will return to the OCD to request certification for the "recovered oil tax rate" for this "expansion" of its existing enhanced oil recovery project by means of a significant change and modification in the technology and process used for the displacement of crude oil.

EXHIBIT 6 is a map projecting (a) future expansion of this infill drilling program to all three stages of the project and (b) the entire project converted to 40-acre injection patterns.

PROPOSED JUSTIFICATION FOR INFILL DRILLING

EXHIBIT 7 is a production plot showing (a) the daily oil rate and (b) the daily GOR for all producing wells in the Pilot area. The oil curve (green line) shows that before the beginning of injection in June of 1983, these wells were on a steady decline. From 1983 through 1986 the results of well workovers during the installation of the waterflood alleviated this decline. As the reservoir filled up and repressured, the producing rate increased at the end of 1986 to a level that has remained flat over the last eight years.

EXHIBIT 7 also contains a GOR plot which shows that soon after the beginning of injection the GOR for these wells began to decline. This indicates that the reservoir was being repressured by the injection. However, the relatively low recovery level following response late in 1986 has remained flat for eight years. This low but constant response and the decrease in GOR are clear indicators that this project is responding to a pressure maintenance mechanism instead of an efficient waterflood sweep.

EXHIBIT 8 shows the injection rate and pressure history for the project. Injection rate has been limited by the maximum allowed injection pressure.

EXHIBIT 9 is a "Flood Front Tracking Model" illustrating sweep patterns for the injectors in the Pilot area. The concentric rings (except for the outermost green dashed one) represent the position of the flood fronts at the end of each year since injection began in June of 1983. The innermost ring (magenta color) represents the last six months of 1983. The next to last ring (red color) is projected to the end of 1995.

The outermost ring (green dashed) is a projection of the sweep patterns for an additional ten years (through 2005) of injection at the current rates. This model demonstrates that a large portion of the reservoir will not be contacted by the flood front and that all but one of the producing wells will not have experienced water breakthrough even after 23 years of projected injection.

EXHIBIT 10 is a table of the basic input data for the model in EXHIBIT 9.

It is estimated from the results of this model and from volumetric calculations that an average of 125,000 additional barrels of primary and secondary oil can be recovered by each infill producer. Therefore, it is estimated that about 1,500,000 barrels of additional primary and secondary oil would be recovered in the Pilot area from these twelve infill wells.

EXHIBIT 11 is a plot illustrating the potential increase in recovery from the Pilot area. The green-filled area represents the current estimated ultimate recovery of 1,841,000 barrels of oil from the Pilot area. The red-filled area shows the additional 1,500,000 barrels of oil that should be recovered by these twelve new infill producing wells. These 1,500,000 barrels of oil include both additional primary production from drilling producing wells at infill locations and additional secondary production from a significant increase in the efficiency of waterflood sweep as a result of the smaller 40-acre injection patterns.

It should be pointed out that these projected incremental reserves are only associated with the first three zones in the Blinebry formation, since most of the wells in the Pilot area were not drilled any deeper than this. Development by wells in the first and second expansion areas were drilled through all five of the producing zones present in the Blinebry plus the Tubb formation. Therefore, future expansion of this infill program into these two expansion areas should provide even larger recoveries per infill producing well.

Since all twelve of these unorthodox locations are interior to the waterflood project, all offsetting locations are operated by Conoco. Therefore, there are no offset operators for which notification would be required for approval of this application.

Approval of this application will not impair the correlative rights of any offset or participating owners and will promote the prevention of waste by providing for the recovery of significant additional primary and secondary oil reserves that would otherwise be abandoned.

WARREN BLINEBRY-TUBB WATERFLOOD PROJECT

**PROPOSED UNORTHODOX LOCATIONS FOR
INFILL PRODUCING WELLS**

ALL WELLS IN TOWNSHIP 20 SOUTH, RANGE 38 EAST

SECTION 33

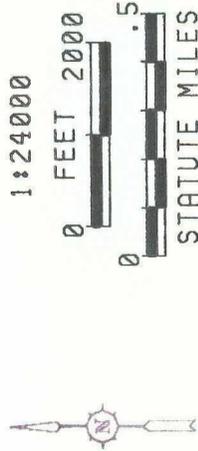
Warren Unit No. 202	1330' FSL & 1310' FEL
Warren Unit No. 209	2630' FNL & 1360' FEL
Warren Unit No. 212	1310' FNL & 1510' FEL

SECTION 34

Warren Unit No. 205	1330' FSL & 2630' FEL
Warren Unit No. 204	1330' FSL & 1330' FWL
Warren Unit No. 203	1330' FSL & 10' FWL
Warren Unit No. 208	2630' FNL & 10' FWL
Warren Unit No. 207	2630' FNL & 1330' FWL
Warren Unit No. 206	2630' FNL & 2630' FEL
Warren Unit No. 215	1310' FNL & 2630' FEL
Warren Unit No. 214	1310' FNL & 1330' FWL
Warren Unit No. 213	1310' FNL & 10' FWL

LEGEND

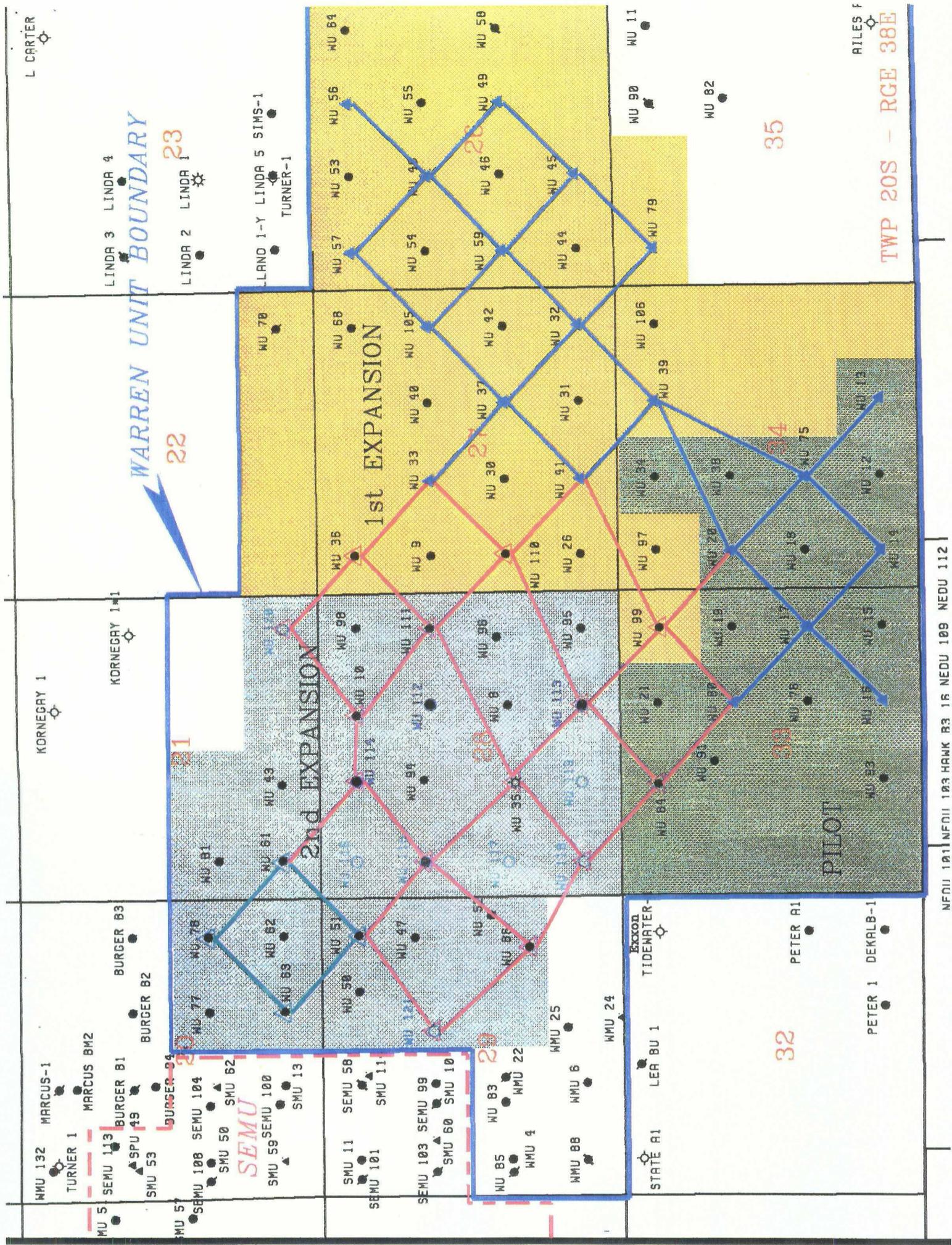
- ▲ Current Waterflood
- 1994 Drilling Program
- △ 1995 Well Conversions
- 1995 Drilling Program
- △ 1999 Well Conversions
- Pilot Waterflood
- 1st Waterflood Expansion
- 2nd Waterflood Expansion



CONOCO - MIDLAND DIVISION
WARREN BLINEBERRY-TUBB
WATERFLOOD EXPANSION
BY STAGES
LEA COUNTY, NEW MEXICO

1:24000
HOMES DU TEXAS
19-1007-03
[CAP. POSSESSION] [AKA] [REVISION] [DATE]

EXHIBIT 3



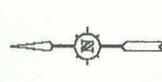
TWP 20S - RGE 38E

NFDU 101 NFDU 103 HAWK B3 16 NEDU 109 NEDU 112

ARLES F

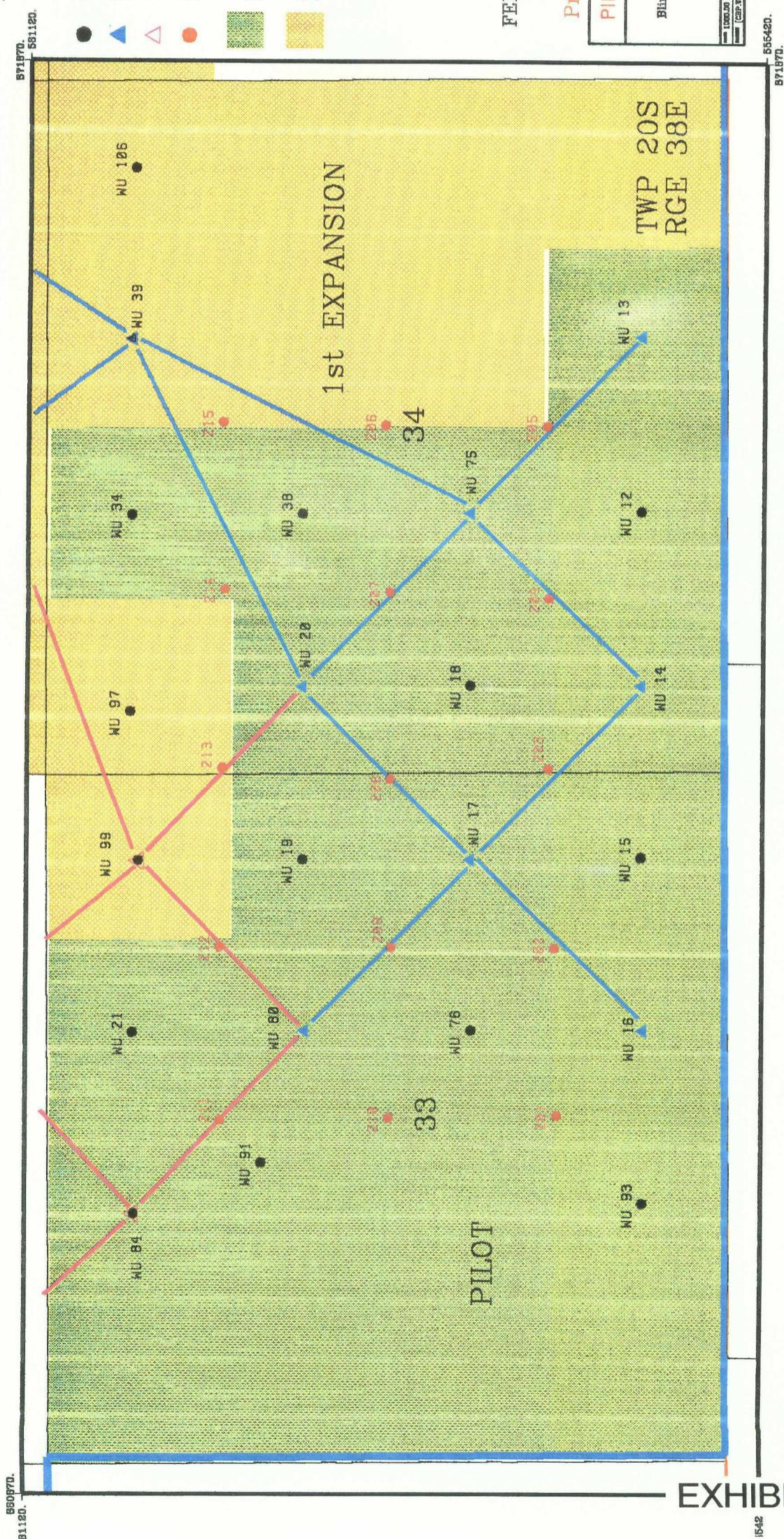
LEGEND

- Current Producers
- ▲ Current Waterflood
- △ 1999 Well Conversions
- Infill D & E
- Pilot Waterflood
- 1st Waterflood Expansion



Proposed Infill Drilling

PILOT WATERFLOOD AREA	
WARREN UNIT Blaineby-Tubb Reservoir Development Infill Drilling Analysis Conoco Inc. LEA COUNTY, NEW MEXICO	
10000 P/W	Revised/Revised
08-APR-98	08-APR-98
08-APR-98	08-APR-98



880970
81120

855420
871870

[COMPASS] 9-1-98 "TU BLAINEBY CONTROLS"
"PILOT AREA POLYCON"
"1ST EXPANSION AREA POLYCON"
"1999 WELL CONVERSION"
"PILOT WATERFLOOD AREA POLYCON"
"PILOT AREA POLYCON"
"1ST EXPANSION AREA POLYCON"
"1999 WELL CONVERSION"
"PILOT WATERFLOOD AREA POLYCON"

LEGEND

- Current Producers
- △ Current Injectors
- △ Future Water Injection Wells
- Proposed Future Infill Producers
- Proposed New Wells at Standard Locations
- Pilot Waterflood
- 1st Waterflood Expansion



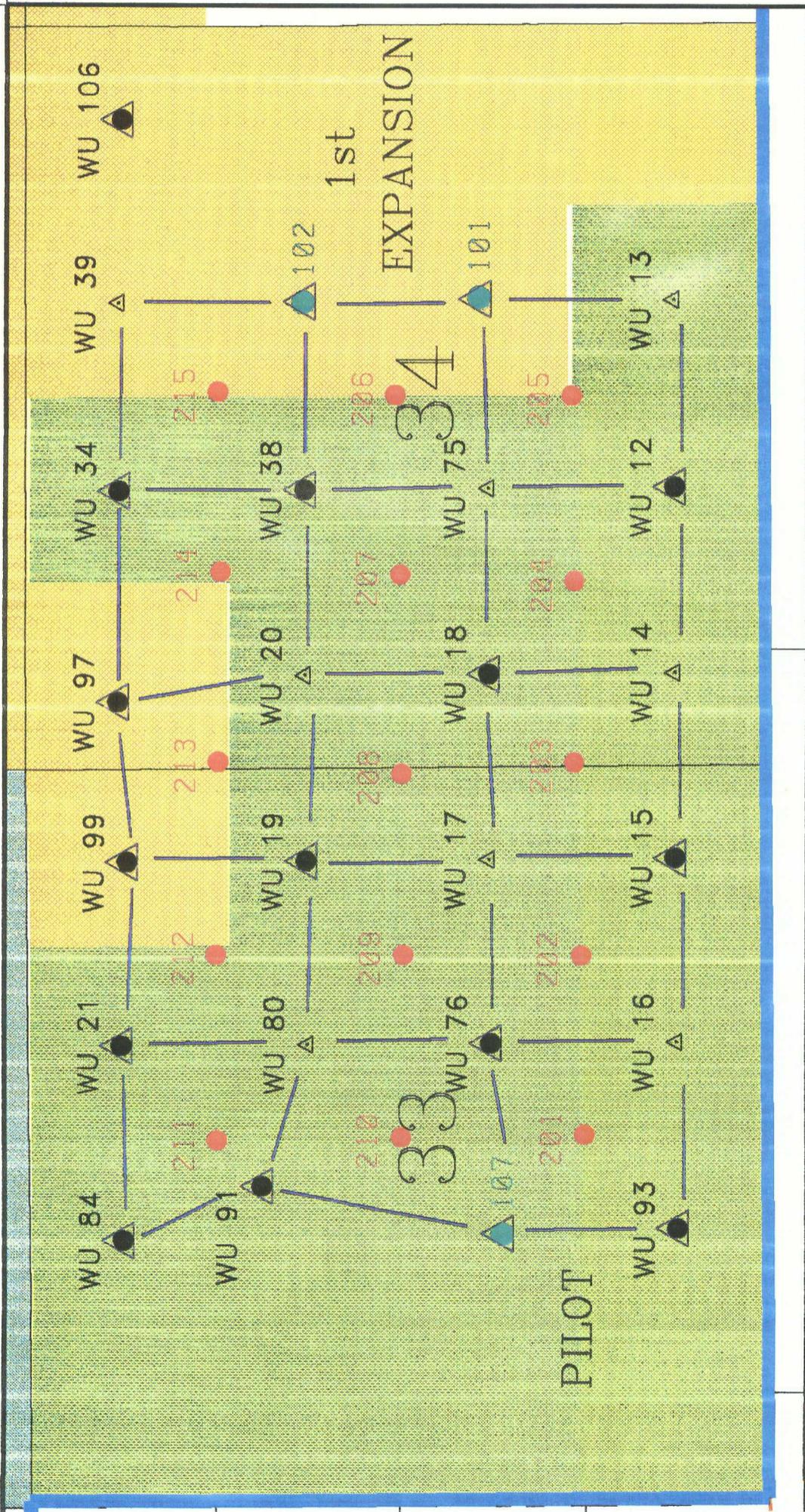
FEET 0 1000 FEET

Proposed Infill Drilling and 40 Acre Injection Pattern

PILOT WATERFLOOD AREA

WARREN UNIT
 Blinberry-Tubb Reservoir Development
 Infill Drilling Analysis
 Conoco Inc.
 LEA COUNTY, NEW MEXICO

DATE: 1000.00 7/7/01
 DRAWN: J. H. HARRIS
 CHECKED: G. L. ZIGF
 SCALE: 1/8" = 100' (PROPOSED) / 1/4" = 100' (PILOT)



860876.
 1120.

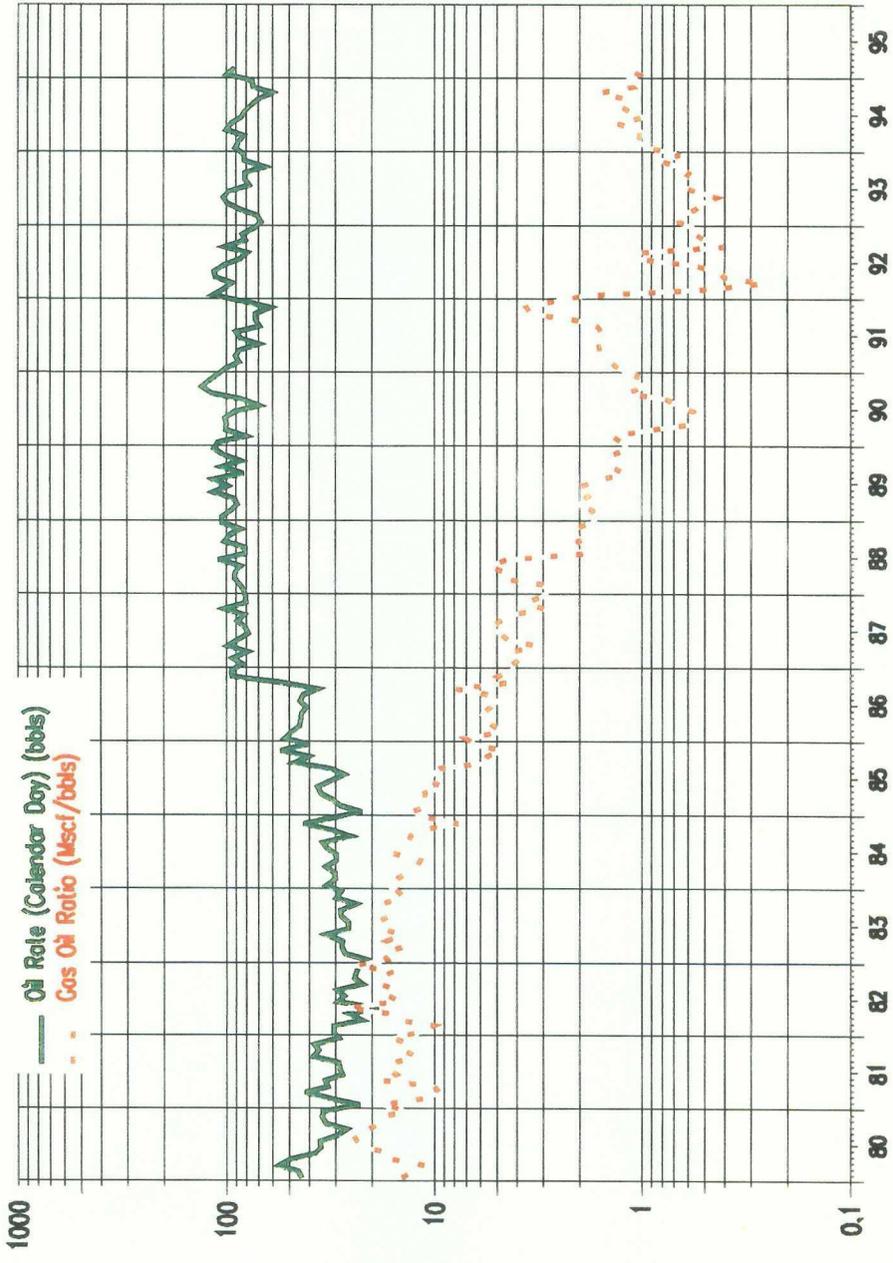
EXHIBIT 5

5420.
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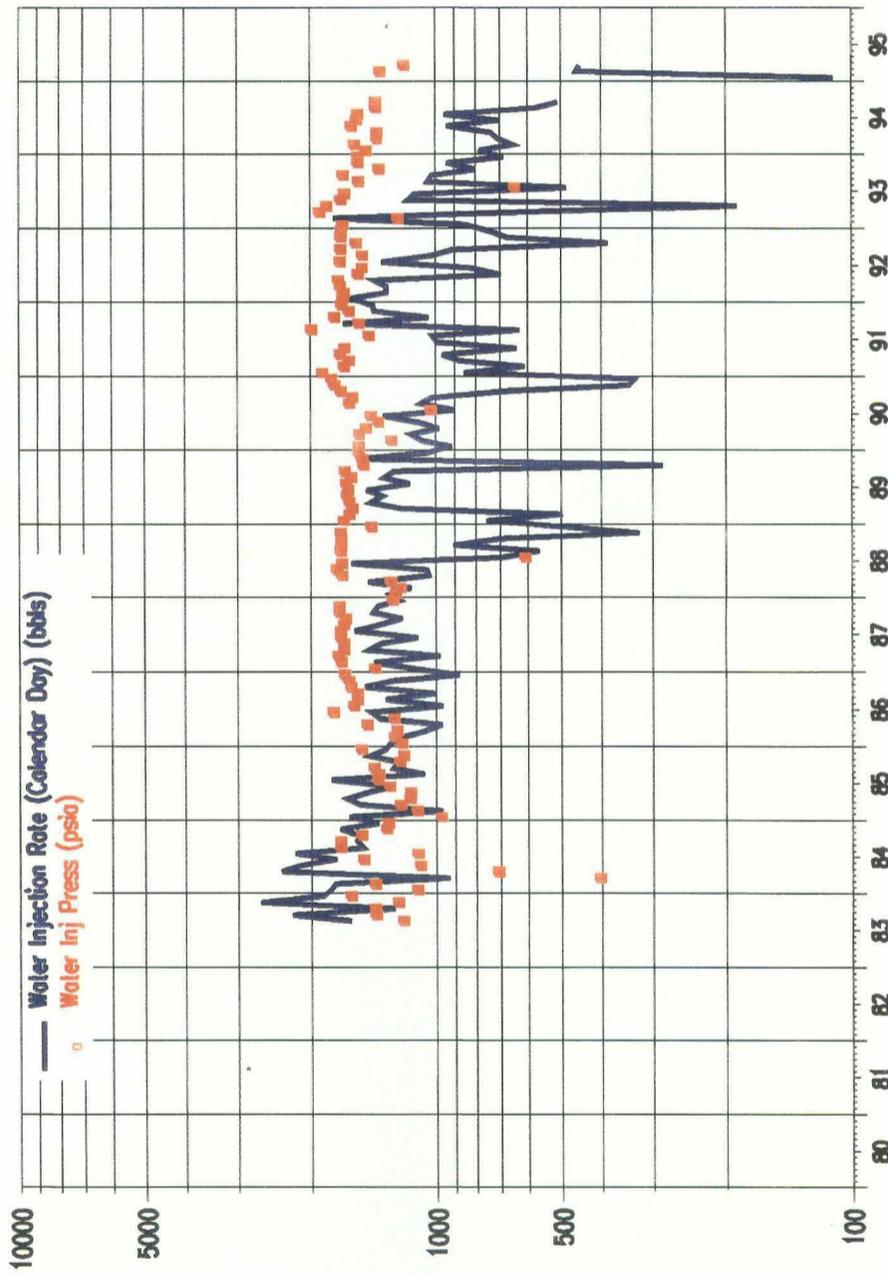
555420.
 871878.

SCALE: [PILOT AREA] 1/4" = 100' TO SUBMIT CONTROL
 "PROPOSED NEW WELLS"
 "PILOT AREA"
 "FUTURE INF"

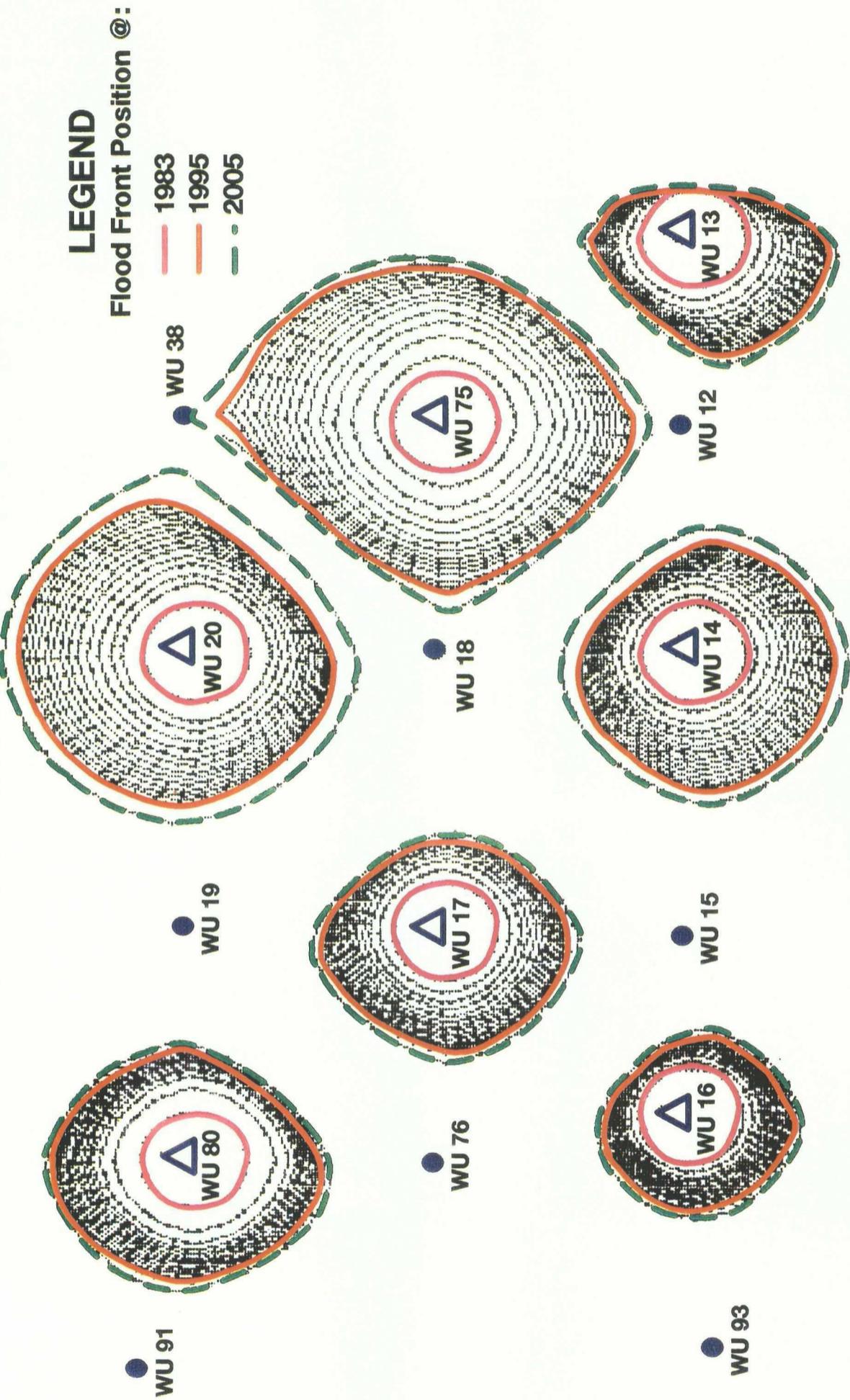
Warren Unit Pilot Area Producers



WARREN UNIT PILOT AREA INJECTION WELLS



WARREN UNIT PILOT AREA FLOOD FRONT MODEL



WARREN BLINEBRY-TUBB WATERFLOOD PROJECT

PILOT AREA

FLOOD FRONT TRACKING MODEL

INPUT DATA

Production Data: 1955 to 1995 (41 years)

Injection Data: 1983 to 1995 (12 years)

Projected Injection Data: 1995 to 2005 (10 years)

26 by 26 grid

Water Saturation: 33 %

Gas Saturation: 15 %

Average Porosity: 8.7 %

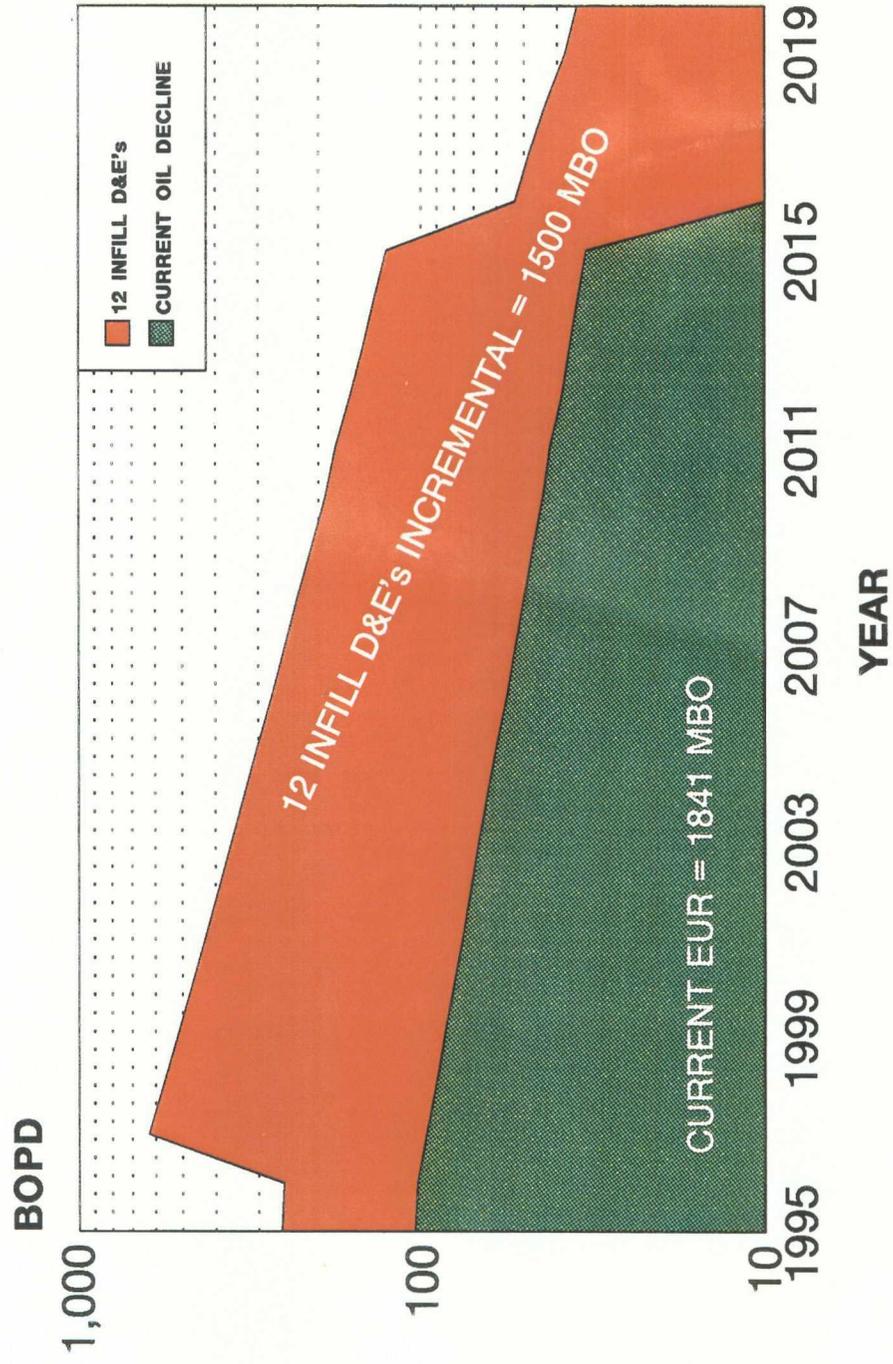
Average Permeability: 1 millidarcy

Initial Pressure: 2113 psi

Net pay based on 6% porosity cut-off from logs

Net pay grid based on each well with a data point every 250 feet

WARREN BLINEBRY-TUBB WATERFLOOD PILOT AREA OIL PRODUCTION



WU12D&E.CH3

WARREN UNIT AREA

No. I-Sec. No. 601

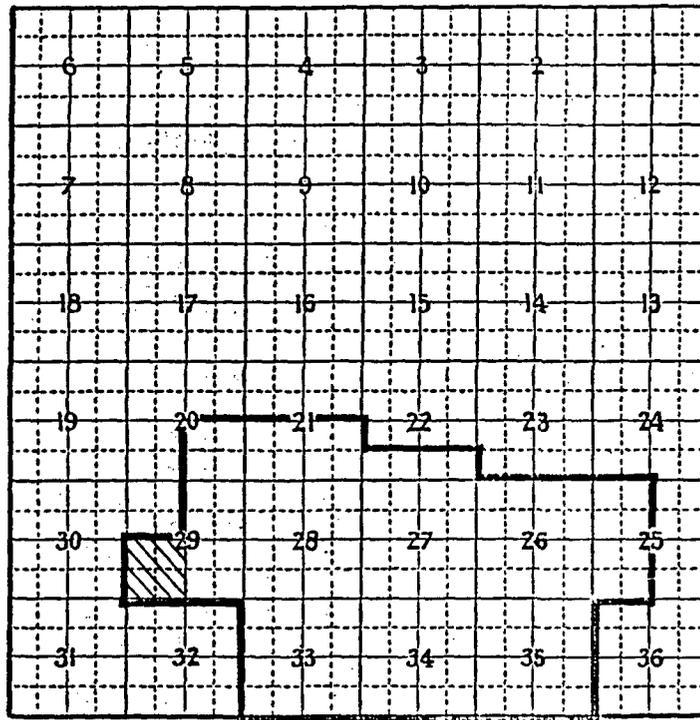
APPROVED: August 11, 1948

EFFECTIVE: August 11, 1948

EXPLORATORY

Lea County, New Mexico

 **gulram, inc.**
petroleum engineering and government regulation consultants



T
20
S

R 38 E

Federal Lands 5,120.00 acres

 -Unit Area Enlarged, effective January 11, 1950
Enlarged Area - Federal 5,280.00 acres

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. 7466
Order No. R-6906

APPLICATION OF CONOCO INC. FOR A
WATERFLOOD PROJECT, LEA COUNTY,
NEW MEXICO.

ARVO SEE
R-6906-A
R-6906-B

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on January 20, 1982, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 15th day of February, 1982, 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, Conoco Inc., seeks authority for it and Southland Royalty Company to each institute a cooperative waterflood project in the Blinebry Oil and Gas Pool by the injection of water into the Blinebry formation through nine injection wells located on Conoco's Warren Unit and Hawk B-3 Leases and Southland's State Lease in Sections 33 and 34 of, Township 21 South, Range 38 East, and Sections 2 and 3 of Township 21 South, Range 37 East, NMPM, Lea County, New Mexico.
- (3) That the wells in the project area are in an advanced state of depletion and should properly be classified as "stripper" wells.
- (4) That the proposed cooperative waterflood project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(5) That the operators should 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 from injection, production, or plugged and abandoned wells.

(6) That the injection wells or injection pressurization system should be so equipped as to limit injection pressure at the wellhead to no more than 2000 psi, provided that the supervisor of the Division's district office at Hobbs should be notified of any injection pressure above 1000 psi in any well and should have the opportunity to require a step-rate test to be conducted on such well.

(7) That the subject application should be approved and the cooperative project should be governed by the provisions of Rules 701, 702, and 703 of the Division Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the applicants, Conoco Inc. and Southland Royalty Company are hereby authorized to each institute a cooperative waterflood project in the Blinebry Oil and Gas Pool by the injection of water into the Blinebry formation through nine injection wells located on Conoco's Warren Unit and Hawk B-3 Leases and Southland's State Lease in Sections 33 and 34 of Township 20 South, Range 38 East, and Sections 2 and 3 of Township 21 South, Range 37 East, NMPM, Lea County, New Mexico, as follows:

CONOCO INC.

- Warren Unit Well No. 13, Unit O, Section 34
- Warren Unit Well No. 14, Unit M, Section 34
- Warren Unit Well No. 17, Unit I, Section 33
- Warren Unit Well No. 20, Unit E, Section 34
- Warren Unit Well No. 66, Unit O, Section 33
- Warren Unit Well No. 75, Unit L, Section 34
- Warren Unit Well No. 80, Unit G, Section 33
- Hawk B-3 Well No. 15, Unit B, Section 3

16 K *numeric reference R. 6906-A*

SOUTHLAND ROYALTY COMPANY

State Well No. 6, Unit D, Section 2

(2) That injection into each of said wells shall be through internally coated tubing, set in a packer which shall be located as near as practicable to the uppermost perforation; that the casing-tubing annulus of each injection well shall be

loaded with an inert fluid and equipped with an approved pressure gauge or attention-attracting leak detection device.

(3) That the operator shall immediately notify the supervisor of the Division's Hobbs district office of the failure of the tubing or packer in any of said injection wells, the leakage of water or oil from 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 timely steps as may be necessary or required to correct such failure or leakage.

(4) That the injection wells herein authorized and/or the injection pressurization system shall be so equipped as to limit injection pressure at the wellhead to no more than 2000 psi, provided that the supervisor of the Division's district office at Hobbs shall be notified of any injection pressure above 1000 psi in any well and may require a step-rate test to be conducted on such well.

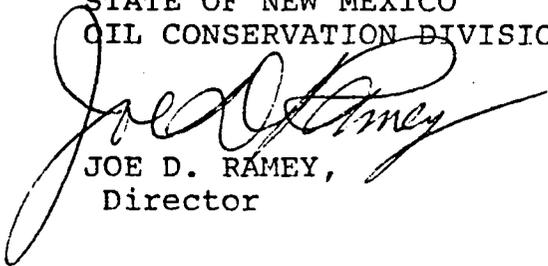
(5) That the subject cooperative waterflood project is hereby designated the Conoco-Southland Blinberry Cooperative Waterflood Project and shall be governed by the provisions of Rules 701, 702, 703, 704, 705, and 706 of the Division Rules and Regulations.

(6) That monthly progress reports of the cooperative waterflood project herein authorized shall be submitted to the Division in accordance with Rules 706 and 1115 of the Division Rules and Regulations.

(7) 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

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

CASE NO. 7466
Order No. R-6906-A

APPLICATION OF CONOCO INC. FOR A
WATERFLOOD PROJECT, LEA COUNTY,
NEW MEXICO.

See Also Order Nos.

R-6906

R-6906-B

NUNC PRO TUNC ORDER

BY THE DIVISION:

It appearing to the Division that Order No. R-6906, dated February 15, 1982, does not correctly state the intended order of the Division,

IT IS THEREFORE ORDERED:

(1) That the list of Conoco's injection wells as found in Order (1) on page 2 of Order No. R-6906 is hereby corrected to read in its entirety as follows:

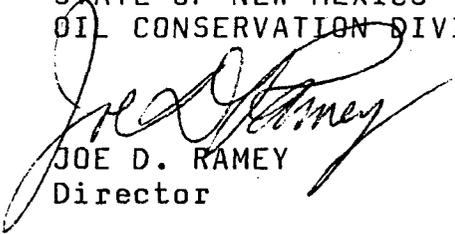
"CONOCO INC.

Warren Unit Well No. 13, Unit O, Section 34
Warren Unit Well No. 14, Unit M, Section 34
Warren Unit Well No. 17, Unit I, Section 33
Warren Unit Well No. 20, Unit E, Section 34
Warren Unit Well No. 16, Unit O, Section 33
Warren Unit Well No. 75, Unit K, Section 34
Warren Unit Well No. 80, Unit G, Section 33
Hawk B-3 Well No. 15, Unit B, Section 3"

(2) That this order shall be effective nunc pro tunc as of February 15, 1982.

DONE at Santa Fe, New Mexico, on this 24th day of March, 1982.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION


JOE D. RAMEY
Director

S E A L
fd/

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. 10220
Order No. R-6906-B

APPLICATION OF CONOCO INC. FOR
EXPANSION AND REDESIGNATION OF A
WATERFLOOD PROJECT, LEA COUNTY,
NEW MEXICO.

See Also Order No.

R-6906

R-6906-A

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on January 24, 1991, at Santa Fe, New Mexico, before Examiner Jim Morrow.

NOW, on this 15th day of March, 1991, 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, Conoco Inc., seeks to amend Division Order No. R-6906 by expanding, contracting and redesignating its Conoco-Southland Blinbry Cooperative Waterflood Project, extend the vertical limits and to include additional injection wells into said project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks to amend Division Order No. R-6906, which authorized the Conoco-Southland Blinbry Cooperative Waterflood Project by the injection of water into the Blinbry Oil and Gas Pool through nine wells located in Sections 33 and 34, Township 20 South, Range 38 East and in Sections 3 and 4, Township 21 South, Range 38 East, NMPM, Lea County, New Mexico. Applicant proposes to redesignate said project and reestablish its area to include the S/2 S/2 of Section 22, all of Sections 26, 27, 33, and 34, and the N/2 N/2 of Section 35, Township 20 South, Range 38 East. Applicant also seeks to extend the vertical limits of said project to include both the Blinbry and Tubb formations. Further, the addition of 20 injection wells into said project area will be considered.

(3) Two injection wells in Sections 2 and 3, Township 21 South, Range 37 East, NMPM, Lea County, New Mexico, were approved by Order No. R-6906 as a part of the Conoco-Southland Blinebry Cooperative Waterflood Project. These two sections and the two injection wells are now a part of Shell's Northeast Drinkard Unit and should be excluded from Conoco's redesignated waterflood project. After expansion, as set out in Finding (2) above, Conoco proposes to redesignate the project as the "Warren Blinebry-Tubb Waterflood Project."

(4) Conoco began water injection into the cooperative project on January 24, 1983. Through August, 1990, 3,374,000 barrels of water had been injected. Production increased as a result of water injection in approximately one year. By 1985, the six producing wells within the 400-acre area affected by the flood were producing a total of 100 barrels of oil per day - an increase in production of 70 barrels of oil per day. The 400-acre area had produced 938,000 barrels of oil prior to the start of injection, and has produced 207,000 additional barrels since injection began.

(5) The Conoco project is bordered on the South by Shell's Northeast Drinkard Unit Waterflood Project. Shell is flooding the Blinebry, Tubb, and Drinkard simultaneously. Approval to water flood in this manner was obtained by OCD orders R-8541, R-8541-A and R-8541-B.

(6) Conoco's witnesses presented structure maps and cross-sections to show the relationship of the Blinebry and Tubb formations across the Conoco Warren Unit and the Shell Northeast Drinkard Unit.

(7) Wells in the Conoco project produce at relatively high gas-oil ratios. Since the flood started, overall gas-oil ratio has been approximately 6,000 cubic feet per barrel with some wells producing at up to 10,000 cubic feet per barrel, according to Conoco testimony. Conoco requested that no limit be placed on the gas-oil ratio allowed for the project.

(8) Applicant's witness testified that the reservoir qualities of the Blinebry and Tubb (which is immediately below the Blinebry) formations are very similar in this area. Both are composed of dolomite interbedded with anhydride. Porosity for both formations is approximately 8% and permeability is about 4.5 millidarcys. Based on Shell's successful project to the South, applicant believes the formations can be successfully flooded simultaneously.

(9) Conoco expects to recover a total of 4,305,000 barrels of oil from the expansion area. This includes 3,490,000 barrels of secondary oil. The project expansion would begin in 1991. Total life of the project would extend to the year 2017.

(10) The expanded project would utilize a 5-spot pattern with two injection wells and two producing wells per quarter section.

(11) At the hearing, applicant requested approval for 21 additional wells to be used for injection bringing the total in the project to 28. Seven will be newly drilled wells and 14 will be converted producing wells. Average injection rate would be approximately 500 barrels per well per day at an average pressure of 1700 psi. Maximum injection rate would be 700 barrels at maximum pressure of 2000 psi.

(12) Source water for injection will be sewage effluent from the City of Hobbs.

(13) Applicant submitted data on the proposed injection wells, water wells in the area, and all wells (including plugged wells) within 1/2 mile of the proposed injection which penetrate the zone of interest. 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 a statement indicating no evidence of open faults or any other hydrologic connection between the injection zone and the fresh water resources in the area.

(14) The proposed injection interval would be from the top of the Blinebry (75 feet above the Blinebry marker) down to the base of the Tubb formation (top of the Drinkard). These vertical limits are identified in the Conoco-Warren Unit Well No. 37, located in Unit J, Section 27, Township 20 South, Range 38 East, with the Blinebry top at 5,865 feet and the Tubb base at 6,741 feet. This is an overall interval of 876 feet.

(15) Testimony and exhibits submitted by applicant's witness indicates that plastic coated tubing set in packers will be used in all injection wells with packers set within 100 feet of the top perforations. Injection profiles will be run and the annular space will be monitored in each injection well.

(16) The injection wells or injection pressurization system should be so equipped as to limit injection pressure at the wellhead to no more than 0.2 psi per foot of depth from the surface to the top injection perforation in any injection well, but the Division Director should have authority to increase the pressure limitation upon a proper showing that a pressure increase would not result in the fracturing of the injection formation or confining strata.

(17) Prior to initiating injection into any of the injection wells, the applicant should be required to pressure test the casing in each of the proposed injection wells from the surface to the proposed packer-setting depth to assure the integrity of said casing.

(18) 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.

(19) Applicant has applied to the OCD in Case No. 10245 for the creation and designation of the Warren Blinebry-Tubb Oil and Gas Pool. The pool would include the Blinebry and Tubb formations as described in Finding No. (14) above. The horizontal boundaries of the new pool would exactly coincide with the Conoco Warren Unit North Blinebry Waterflood Project (as set out in Findings (2) and (3) above) for which Conoco seeks approval by this order. The order in this case (No. 10220) should be approved concurrently with the order to be issued in Case No. 10245.

(20) No interested party appeared and objected to Conoco's application.

(21) This application should be approved to allow Conoco to recover an additional 4,305,000 barrels of oil; the project should be governed by the provisions of Rules 701 through 708 of the Oil Conservation Division Rules and Regulations.

IT IS THEREFORE ORDERED THAT:

(1) The Conoco-Southland Blinebry Cooperative Waterflood Project is hereby redesignated the Conoco Warren Blinebry-Tubb Waterflood Project.

(2) The project shall be governed by the provisions of Rules 701 through 708 of the Division Rules and Regulations.

(3) The project area shall consist of the S/2 S/2 of Section 22, all of Sections 26, 27, 33 and 34 and the N/2 N/2 of Section 35, Township 20 South, Range 38 East, NMPM, Lea County, New Mexico.

(4) The applicant is hereby authorized to expand the waterflood within the project area by drilling seven new injection wells and converting 14 producing wells to injection wells. These 21 injection wells and the seven currently approved injection wells are listed in Exhibit A which is attached to this order. Authorized injection interval for all 28 injection wells shall be from the top of the Blinebry (75 feet above the Blinebry marker) down to the base of the Tubb formation (top of the Drinkard). These vertical limits are identified in the Conoco Warren Unit Well No. 37, located in Unit J, Section 27, Township 20 South, Range 38 East, with the Blinebry top at 5,865 feet and the Tubb base at 6,741 feet.

(5) The injection wells herein authorized and/or the injection pressurization system shall be so equipped as to limit injection pressure at the wellhead to no more than 0.2 psi per foot of depth from the surface to the top of the injection perforation, provided however, the Division Director may authorize a higher surface injection pressure upon satisfactory showing that such higher pressure will not result in fracturing of the injection formation or confining strata.

(6) Injection into each of said wells shall be through plastic or cement-lined tubing set in a packer which shall be located as near as practicable to the uppermost perforations, or, in the case of open hole completions, as near as practicable to the casing-shoe; the casing-tubing annulus shall be loaded with an inert fluid and equipped with an approved pressure gauge or attention-attracting leak-detection device.

(7) Prior to initiating injection into any of the injection wells herein authorized, the applicant shall pressure-test the casing in each of the proposed injection wells from the surface to the proposed packer setting depth to assure the integrity of said casing.

(8) The applicant shall notify the supervisor of the Hobbs district office of the Division prior to conducting any casing pressure-test on any injection well shown on Exhibit "A".

(9) The applicant shall immediately notify the Supervisor of the Hobbs district office of the Division of the failure of the tubing 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 timely steps as may be necessary or required to correct such failure or leakage.

(10) Monthly progress reports of the waterflood project herein authorized shall be submitted to the Division in accordance with Rules 704 and 1120 of the Division Rules and Regulations.

(11) This order is being approved concurrently with Order No. R-9467 in Case No. 10245 which creates and designates the Warren Blinebry-Tubb Oil and Gas Pool.

(12) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

(13) This order shall become effective on March 1, 1991.

DONE at Santa Fe, New Mexico, on the day and year hereinabove
desig⁷

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

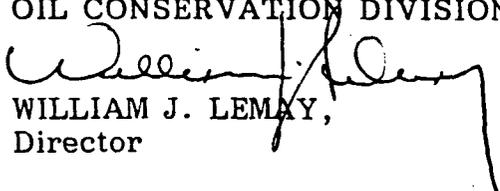

WILLIAM J. LEMAY,
Director

EXHIBIT "A"
CASE NO. 10220 - ORDER NO. R-6906-B
Warren Blinebry-Tubb Waterflood Project
Conoco Inc.-Warren Unit Injection Wells,
Township 20 South, Range 38 East, NMPM, Lea County, New Mexico

<u>WELL NO.</u>	<u>LOCATION</u>	<u>SECTION</u>
70	660' FSL and 660' FEL, Unit P	22
56	660' FNL and 1980' FEL, Unit B	26
57	660' FNL and 660' FWL, Unit D	26
48	2030' FNL and 1980' FWL, Unit F	26
103	1980' FNL and 660' FEL, Unit H	26
49	1980' FSL and 1980' FEL, Unit J	26
59	1980' FSL and 660' FWL, Unit L	26
45	660' FSL and 1980' FWL, Unit N	26
104	660' FNL and 1980' FEL, Unit B	27
33	1980' FNL and 1980' FWL, Unit F	27
105	1980' FNL and 660' FEL, Unit H	27
37	1980' FSL and 1980' FEL, Unit J	27
41	660' FSL and 1980' FWL, Unit N	27
32	660' FSL and 660' FEL, Unit P	27
108	Footage Location Unavailable, Unit A	33
84	660' FNL and 1920' FWL, Unit C	33
80	1980' FNL and 1980' FEL, Unit G	33
17	1980' FSL and 660' FEL, Unit I	33
107	1980' FSL and 1980' FWL, Unit K	33
16	660' FSL and 1980' FEL, Unit O	33
39	660' FNL and 1980' FEL, Unit B	34
20	1980' FNL and 660' FWL, Unit E	34
102	1980' FNL and 1980' FEL, Unit G	34
109	1980' FSL and 660' FEL, Unit I	34
75	1980' FSL and 1980' FWL, Unit K	34
14	660' FSL and 660' FWL, Unit M	34
13	660' FSL and 1980' FEL, Unit O	34
79	660' FNL and 660' FWL, Unit D	35

**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:**

**NOMENCLATURE
CASE NO. 10897
Order No. R-10068**

**APPLICATION OF CONOCO INC. FOR APPROVAL
OF THE EXPANSION OF A WATERFLOOD PROJECT,
TO QUALIFY SAID PROJECT FOR THE RECOVERED
OIL TAX RATE PURSUANT TO THE ENHANCED OIL
RECOVERY ACT, AND FOR THE EXPANSION AND
CONTRACTION OF CERTAIN POOLS, LEA COUNTY,
NEW MEXICO.**

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on January 20, 1994, at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this 8th day of March, 1994, 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-6906-B dated March 15, 1991, the Division, upon application of Conoco Inc., effectively created the Conoco Warren Blinebry-Tubb Waterflood Project. This project was created for the purpose of conducting secondary recovery waterflood operations within the Blinebry and Tubb formations within a portion of the applicant's Warren Unit. This project currently comprises the S/2 S/2 of Section 22, all of Sections 26, 27, 33 and 34, and the N/2 N/2 of Section 35, Township 20 South, Range 38 East, NMPM, Lea County, New Mexico.

(3) By Order No. R-9467 dated March 15, 1991, the Division, upon application of Conoco Inc., created the Warren-Blinebry Tubb Oil and Gas Pool, contracted the Blinebry Oil and Gas Pool and the Warren-Tubb Gas Pool, and created the East Warren-Tubb Gas Pool. The creation of the Warren-Blinebry Tubb Oil and Gas Pool was for the purpose of allowing Conoco to conduct simultaneous waterflood operations within the Blinebry and Tubb formations within its Conoco Warren Blinebry-Tubb Waterflood Project (as described above). The current horizontal limits of the Warren-Blinebry Tubb Oil and Gas Pool coincide, with the exception of the N/2 NE/4 of Section 35, with the area contained within the Conoco Warren Blinebry-Tubb Waterflood Project.

(4) The applicant, Conoco Inc., seeks to expand its Conoco Warren Blinebry-Tubb Waterflood Project and the boundaries of the Warren-Blinebry Tubb Oil and Gas Pool to include the following described area:

TOWNSHIP 20 SOUTH, RANGE 38 EAST, NMPM

Section 20: SE/4

Section 21: SW/4, S/2 SE/4

Section 28: All

Section 29: NE/4, N/2 SE/4

(5) The applicant further seeks authority to inject into the Blinebry and Tubb formations through the gross interval from approximately 5698 feet to 6746 feet in seventeen injection wells located within the "expansion area" and further described in Exhibit "A" attached hereto.

(6) The applicant further seeks to qualify the "expansion area" for the recovered oil tax rate pursuant to the "New Mexico Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5).

(7) The evidence presented indicates that the wells within the "expansion area" are in an advanced state of depletion and should properly be classified as "stripper wells".

(8) The applicant presented both geologic and engineering evidence which demonstrates that the results of secondary recovery operations conducted thus far within the Conoco Warren Blinebry- Tubb Waterflood Project support the establishment of a comprehensive plan for secondary oil recovery for the remainder of the Blinebry and Tubb hydrocarbon reserves within the Warren Unit.

(9) Secondary recovery operations within the "expansion area" will be conducted on an 80-acre five spot injection pattern, and will be implemented in four phases.

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(10) The implementation of secondary recovery operations within the "expansion area" should result in the recovery of an additional 2.723 million barrels of oil from the Blinebry and Tubb formations. The capital cost for the project should be approximately \$5.6 million dollars.

(11) The proposed "expansion area", which is located within the applicant's Warren Unit, has been approved by the United States Bureau of Land Management (BLM). Adjustments in the Blinebry, Tubb and Blinebry-Tubb Participating Areas of the Warren Unit, required by the proposed waterflood and pool expansion, have also been approved by the BLM.

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

(13) The simultaneous waterflooding of both the Blinebry and Tubb formations within a single project represents the most economic and efficient method of recovering secondary oil reserves within the "expansion area".

(14) The proposed waterflood expansion should be approved.

(15) The boundaries of the Warren-Blinebry Tubb Oil and Gas Pool should be extended to include the following described acreage:

TOWNSHIP 20 SOUTH, RANGE 38 EAST, NMPM

Section 20: SE/4

Section 21: SW/4, S/2 SE/4

Section 28: All

Section 29: NE/4, N/2 SE/4

(16) The boundaries of the Blinebry Oil and Gas Pool should be extended to include the following described acreage:

TOWNSHIP 20 SOUTH, RANGE 38 EAST, NMPM

Section 21: S/2 N/2

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(17) The boundaries of the Blinebry Oil and Gas Pool should be contracted by the deletion therefrom of the following described acreage:

TOWNSHIP 20 SOUTH, RANGE 38 EAST, NMPM

Section 20: SE/4
Section 21: SW/4, S/2 SE/4
Section 28: All
Section 29: NE/4, N/2 SE/4

(18) The boundaries of the Warren-Tubb Gas Pool should be contracted by the deletion therefrom of the following described acreage:

TOWNSHIP 20 SOUTH, RANGE 38 EAST, NMPM

Section 20: SE/4
Section 21: S/2
Section 28: All
Section 29: E/2

(19) The Warren-Blinebry Tubb Oil and Gas Pool "Expansion Area" approved herein should be subject to the Special Rules and Regulations for said pool as contained within Division Order No. R-9467.

(20) The applicant should 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 from injection, production, or plugged and abandoned wells.

(21) The injection of water into each of the wells shown on Exhibit "A" should be accomplished through internally plastic-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.

(22) Prior to commencing injection operations into the wells shown on Exhibit "A", 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.

(23) The 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 1140 psi.

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(24) The Division Director should have the authority to administratively authorize a pressure limitation in excess of the pressure limitation described in Finding No. (23) above upon a showing by the operator that such higher pressure will not result in the fracturing of the injection formation or confining strata.

(25) There are five wells within the "Area of Review", as described on Exhibit "B" attached hereto, which are not adequately cemented so as to confine the injected fluid to the proposed injection interval.

(26) Prior to commencing injection operations into any of the injection wells located within one-half mile of the wells shown on Exhibit "B", the applicant shall perform remedial cement operations on those wells shown on Exhibit "B" in order to assure that these wellbores will not serve as a conduit for migration of injected fluid from the injection zone.

(27) Prior to commencing injection operations into the Warren Unit Well Nos. 63, 78 and 121, the applicant should be required to submit to the Santa Fe Office of the Division an executed copy of an Injection Lease-Line Agreement with the Southeast Monument Unit.

(28) 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, the conductance of any remedial cement operations, and of the mechanical integrity pressure tests in order that the same may be witnessed.

(29) The subject waterflood should be governed by the provisions of Division Order No. R-6906-B and Rule Nos. 701 through 708 of the Oil Conservation Division Rules and Regulations.

(30) At the time of the hearing, the applicant requested that the subject waterflood "expansion area" be certified 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).

(31) The evidence presented indicates that the subject waterflood "expansion area" meets all the criteria for certification.

(32) Implementation of secondary recovery operations within the Conoco Warren Blinbrey-Tubb Waterflood Project "Expansion Area" will occur in four phases.

(33) The certified "project area" should initially comprise the area within the Conoco Warren Blinebry-Tubb Waterflood Project "Expansion Area", described in Finding No. (4) above, provided however, the "project area" and/or the producing wells eligible for the recovered oil tax rate may be contracted and reduced dependent upon the evidence presented by the applicant in its demonstration of the occurrence of a positive production response.

(34) To be eligible for the EOR credit, the operator should advise the Division when water injection commences within Phase I, II, III and IV and at such time, request the Division certify such phases or areas to the New Mexico Taxation and Revenue Department.

(35) 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.

(36) The applicant should be required to meter or otherwise separately measure the production from the "expansion area" in order to be able to properly account for the volume of oil to which any enhanced oil tax credit might apply.

IT IS THEREFORE ORDERED THAT:

(1) The application of Conoco Inc. to expand its Conoco Warren Blinebry-Tubb Waterflood Project to include the following described "expansion area" is hereby approved:

TOWNSHIP 20 SOUTH, RANGE 38 EAST, NMPM

Section 20: SE/4
Section 21: SW/4, S/2 SE/4
Section 28: All
Section 29: NE/4, N/2 SE/4

(2) The applicant is further authorized to inject water into the Blinebry and Tubb formations through the gross interval from approximately 5698 feet to 6746 feet in seventeen injection wells located within the "expansion area" and further described in Exhibit "A" attached hereto.

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(3) 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 from injection, production, or plugged and abandoned wells.

(4) Injection into the wells shown on Exhibit "A" shall be accomplished through plastic-lined tubing installed in a packer set approximately 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.

(5) The injection wells or pressurization system shall be equipped with a pressure control device or acceptable substitute which will limit the surface injection pressure to no more than 1140 psi.

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

(7) Prior to commencing injection operations into the wells shown on Exhibit "A", 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.

(8) Prior to initiating injection operations within one-half mile of any of the wells shown on Exhibit "B", the applicant shall perform remedial cement operations on the wells shown on Exhibit "B" in order to assure that these wellbores do not serve as a conduit for migration of injected fluid from the injection interval, and in a manner acceptable to the Division.

(9) Prior to commencing injection operations into the Warren Unit Well Nos. 63, 78 and 121, the applicant shall submit to the Santa Fe Office of the Division an executed copy of an Injection Lease-Line Agreement with the Southeast Monument Unit.

(10) 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, the conductance of remedial cement operations, and of the mechanical integrity pressure tests, in order that the same may be witnessed.

(11) The applicant 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.

(12) The subject waterflood shall be governed by the provisions of Division Order No. R-6906-B and Rule Nos. 701 through 708 of the Oil Conservation Division Rules and Regulations.

(13) The Warren-Blinebry Tubb Oil and Gas Pool "Expansion Area" approved herein shall be subject to the Special Rules and Regulations for said pool as contained within Division Order No. R-9467.

(14) Monthly progress reports of the waterflood project herein authorized shall be submitted to the Division in accordance with Rule Nos. 706 and 1115 of the Division Rules and Regulations.

(15) The Conoco Warren Blinebry-Tubb Waterflood Project "Expansion Area" is hereby certified as a qualified "Enhanced Oil Recovery Project" pursuant to the "Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5).

(16) The certified "project area" shall initially coincide with the Conoco Warren Blinebry-Tubb Waterflood Project "Expansion Area", described in Finding No. (4) above, provided however, the "project area" and/or the producing wells eligible for the recovered oil tax rate may be contracted and reduced dependent upon the evidence presented by the applicant in its demonstration of the occurrence of a positive production response.

(17) To be eligible for the EOR credit, the operator shall advise the Division when water injection commences within Phase I, II, III, and IV and at such time, request the Division certify such phases or areas to the New Mexico Taxation and Revenue Department.

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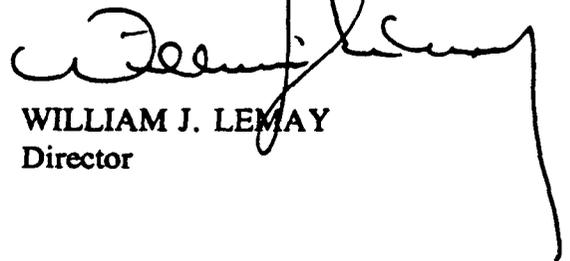
(18) At such time as a positive production response occurs and within five years from the date of the Certificate of Qualification, the applicant must apply to the Division for certification of positive production response, which application shall identify the area actually benefitting from enhanced 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 applicant shall meter or otherwise separately measure the production from the "expansion area" in order to be able to properly account for the volume of oil to which any enhanced oil tax credit might apply.

(20) Jurisdiction of this cause 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. 10897
ORDER NO. R-10068
Conoco Warren Blineby Tubb Waterflood Project
Approved Injection Wells - Expansion Area

Well Name	Well No.	Location	Unit	S-T-R	Injection Perforations	Packer Depth	Tubing Size	Injection Pressure (PSIG)
Warren Unit	10	660' FNL & 2310' FEL	B	28-20S-38E	5905' - 6628'	5705'	2 3/8"	1140
Warren Unit	35	1980' FSL & 1980' FWL	K	28-20S-38E	5745' - 6604'	5645'	2 3/8"	1140
Warren Unit	36	660' FNL & 660' FWL	D	27-20S-38E	5956' - 6727'	5856'	2 3/8"	1140
Warren Unit	51	660' FNL & 660' FEL	A	29-20S-38E	5815' - 6695'	5715'	2 3/8"	1140
Warren Unit	61	660' FSL & 660' FWL	M	21-20S-38E	5854' - 6729'	5754'	2 3/8"	1140
Warren Unit	63	660' FSL & 1980' FEL	O	20-20S-38E	5789' - 6667'	5689'	2 3/8"	1140
Warren Unit	78	1980' FSL & 660' FEL	I	20-20S-38E	5828' - 6713'	5728'	2 3/8"	1140
Warren Unit	86	1650' FSL & 890' FEL	I	29-20S-38E	5838' - 6743'	5738'	2 3/8"	1140
Warren Unit	99	710' FNL & 660' FEL	A	33-20S-38E	5698' - 6593'	5598'	2 3/8"	1140
Warren Unit	110	2060' FSL & 660' FWL	L	27-20S-38E	5753' - 6608'	5653'	2 3/8"	1140
Warren Unit	111	2180' FNL & 660' FEL	H	28-20S-38E	5787' - 6627'	5687'	2 3/8"	1140
Warren Unit	113	660' FSL & 1980' FEL	O	28-20S-38E	5745' - 6620'	5645'	2 3/8"	1140
Warren Unit	114	660' FNL - 1980' FWL	C	28-20S-38E	5775' - 6635'	5675'	2 3/8"	1140
Warren Unit	115	1980' FNL & 660' FWL	E	28-20S-38E	5772' - 6637'	5672'	2 3/8"	1140
Warren Unit	118	660' FSL & 660' FWL	M	28-20S-38E	5801' - 6676'	5701'	2 3/8"	1140
Warren Unit	120	1980' FNL & 1650' FEL	G	29-20S-38E	5813' - 6718'	5713'	2 3/8"	1140
Warren Unit	121	660' FSL & 660' FEL	P	21-20S-38E	5926' - 6746'	5826'	2 3/8"	1140

NOMENCLATURE
CASE NO. 10897
ORDER NO. R-10068

EXHIBIT "B"
DIVISION ORDER NO. R-10068
CASE NUMBER-10897
CONOCO WARREN BLINEBRY-TUBB
WATERFLOOD PROJECT EXPANSION AREA
"AREA OF REVIEW" PROBLEM WELLS

OPERATOR & WELL

WELL LOCATION

Conoco Inc. Warren McKee No. 28	Unit J, 20-20S-38E
Conoco Inc. SEMU Mckee No. 62	Unit K, 20-20S-38E
Conoco Inc. SEMU McKee No. 59	Unit M, 20-20S-38E
Conoco Inc. Warren McKee No. 7	Unit B, 29-20S-38E
Conoco Inc. SEMU McKee No. 60	Unit E, 29-20S-38E

**STATE OF NEW MEXICO
ENERGY, MINERALS, AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION**

**NOMENCLATURE
CASE NO. 10897
Order No. R-10068-A**

**APPLICATION OF CONOCO INC. FOR APPROVAL
OF THE EXPANSION OF A WATERFLOOD PROJECT,
TO QUALIFY SAID PROJECT FOR THE RECOVERED
OIL TAX RATE PURSUANT TO THE ENHANCED OIL
RECOVERY ACT, AND FOR THE EXPANSION AND
CONTRACTION OF CERTAIN POOLS, LEA COUNTY,
NEW MEXICO.**

NUNC PRO TUNC ORDER

BY THE DIVISION:

It appearing to the Division that Order No. R-10068 dated March 8, 1994, does not correctly state the intended order of the Division,

IT IS THEREFORE ORDERED THAT:

(1) A new Decretory Paragraph (20) on page 9 of said Order No. R-10068 shall hereby read as follows:

"The boundaries of the Warren-Blinebry Tubb Oil and Gas Pool are hereby extended to include the following described acreage:

TOWNSHIP 20 SOUTH, RANGE 38 EAST, NMPM

Section 20: SE/4

Section 21: SW/4, S/2 SE/4

Section 28: All

Section 29: NE/4, N/2 SE/4"

(2) A new Decretory Paragraph (21) on page 9 of said Order No. R-10068 shall hereby read as follows:

"The boundaries of the Blinebry Oil and Gas Pool are hereby extended to include the following described acreage:

TOWNSHIP 20 SOUTH, RANGE 38 EAST, NMPM

Section 21: S/2 N/2"

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CASE NO. 10897
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(3) A new Decretory Paragraph (22) on page 10 of said Order No. R-10068 shall hereby read as follows:

"The boundaries of the Blinebry Oil and Gas Pool are hereby contracted by the deletion therefrom of the following described acreage:

TOWNSHIP 20 SOUTH, RANGE 38 EAST, NMPM

Section 20: SE/4
Section 21: SW/4, S/2 SE/4
Section 28: All
Section 29: NE/4, N/2 SE/4"

(4) A new Decretory Paragraph (23) on page 10 of said Order No. R-10068 shall hereby read as follows:

"The boundaries of the Warren-Tubb Gas Pool are hereby contracted by the deletion therefrom of the following described acreage:

TOWNSHIP 20 SOUTH, RANGE 38 EAST, NMPM

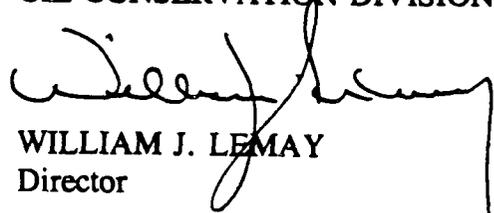
Section 20: SE/4
Section 21: S/2
Section 28: All
Section 29: E/2"

(5) Decretory Paragraph (20) on page 9 of said Order No. R-10068 is hereby renumbered No. (24).

(6) The corrections set forth in this order be entered nunc pro tunc as of March 8, 1994.

DONE at Santa Fe, New Mexico, on this 4th day of April, 1994.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION


WILLIAM J. LEMAY
Director

S E A L



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

May 3, 1995

Conoco Inc.
10 Desta Drive - Suite 100W
Midland, Texas 79705-4500

Attention: Jerry W. Hoover

RE: Application for twelve unorthodox oil well locations in the Warren Blinebry-Tubb Waterflood Project, Sections 33 and 34, Township 20 South, Range 38 East, NMPM, Warren Blinebry-Tubb Oil and Gas Pool Lea County, New Mexico.

Dear Mr. Hoover:

If Conoco has prepared APD's and C-102's on the subject wells please submit copies. Thank you.

Should you have any questions or comments concerning this matter, please contact me at (505) 827-8185.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael E. Stogner".

Michael E. Stogner
Chief Hearing Officer/Engineer

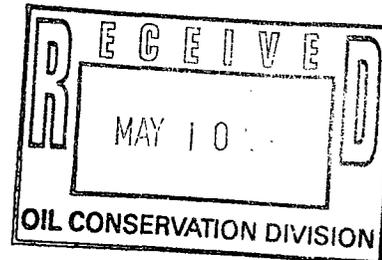
cc: Oil Conservation Division - Hobbs
W. Thomas Kellahin - Santa Fe



Midland Division
Exploration Production

Conoco Inc.
10 Desta Drive, Suite 100W
Midland, TX 79705-4500
(915) 686-5400

May 9, 1995



Mr. Michael E. Stogner
Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87504

Re: Application of Conoco Inc. for approval of twelve unorthodox producing well locations for the purpose of developing a pilot infill drilling program for the Warren Blinebry-Tubb Waterflood Project and evaluating the feasibility of reducing the current 80-acre injection pattern to a 40-acre pattern.

Dear Mr. Stogner:

Thank you for your prompt consideration of Conoco's application to expand the enhanced recovery process for its Warren Unit through infill drilling and a reduction in the waterflooding pattern size. As is Conoco's general practice, we have approached the Oil Conservation Division for the required approvals to begin this process very early in the development of this project expansion. APD's for the first few infill wells in the pilot area are currently being prepared but have not yet been filed. Copies will be forwarded to you as soon as their preparation is completed and they are filed with the Bureau of Land Management.

However, we do now have C-102's available for all twelve of the requested unorthodox locations in the pilot area and have enclosed copies of them for your consideration of this application. They were not yet available from the surveyor when our application was initially filed.

We hope to be ready to begin spudding the first of these infill locations by July 1, 1995. If I can be of any further assistance please contact me at (915) 686-6548.

Very truly yours,

Jerry W. Hoover
Sr. Conservation Coordinator

District I
 PO Box 1980, Hobbs, NM 88241-1980
 District II
 PO Drawer DD, Artesia, NM 88211-0719
 District III
 1000 Rio Brazos Rd., Artec, NM 87410
 District IV
 PO Box 2088, Santa Fe, NM 87504-2088

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 PO Box 2088
 Santa Fe, NM 87504-2088

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-025-		*Pool Code 62965	*Pool Name Warren Blinebry-Tubb
*Property Code 3127	*Property Name WARREN UNIT		*Well Number 203
*OGRD No.	*Operator Name CONOCO, INC.		*Elevation 3505'

¹⁰ Surface Location

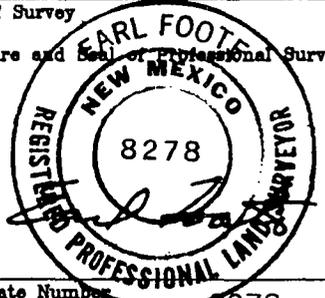
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	34	20-S	38-E		1330	SOUTH	10	WEST	LEA

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

*Dedicated Acres 40	*Joint or Infill	*Consolidation Code	*Order No.
------------------------	------------------	---------------------	------------

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

16					17 OPERATOR CERTIFICATION
					<p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.</p> <p><i>Jerry Hoover</i> Signature JERRY W. HOOVER Printed Name SR. CONSERVATION COORDINATOR Title 5/9/95 Date</p>
10'					18 SURVEYOR CERTIFICATION
					<p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to best of my belief.</p> <p>APRIL 12, 1995 Date of Survey Signature and Seal of Professional Surveyor:  Certificate Number 8278</p>
1330'					

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AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-025-		*Pool Code 62965	*Pool Name Warren Blinebry-Tubb
*Property Code 3127	*Property Name WARREN UNIT		*Well Number 204
*OGRID No.	*Operator Name CONOCO, INC.		*Elevation 3511'

¹⁰Surface Location

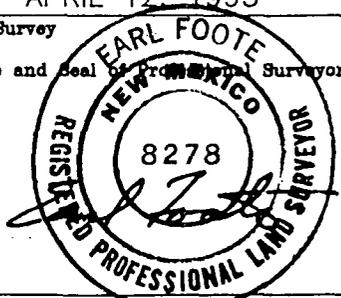
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
K	34	20-S	38-E		1330	SOUTH	1330	WEST	LEA

¹¹Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

¹² Dedicated Acres 40	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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	1330'	1330'		

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WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-025-		*Pool Code 62965	*Pool Name Warren Blinebry-Tubb
*Property Code 3127	*Property Name WARREN UNIT		*Well Number 205
*GRID No.	*Operator Name CONOCO, INC.		*Elevation 3519'

¹⁰ Surface Location

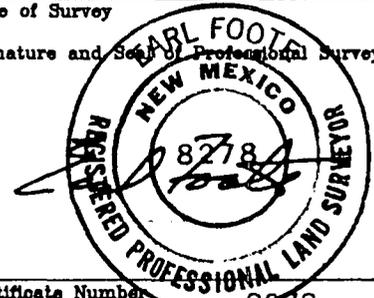
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	34	20-S	38-E		1330	SOUTH	2630	EAST	LEA

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

"Dedicated Acres 40	"Joint or Infill	"Consolidation Code	"Order No.
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		1330'	2630'	

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WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-025-		*Pool Code 62965	*Pool Name Warren Blinebry-Tubb
*Property Code 3127	*Property Name WARREN UNIT		*Well Number 206
*OGRID No.	*Operator Name CONOCO, INC.		*Elevation 3523'

¹⁰Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
G	34	20-S	38-E		2630	NORTH	2630	EAST	LEA

¹¹Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

"Dedicated Acres 40	"Joint or Infill	"Consolidation Code	"Order No.
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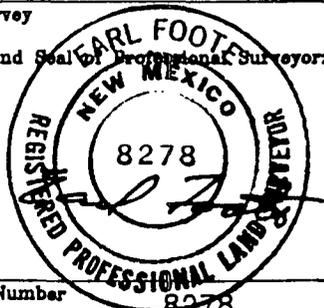
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16									
			2630'						
					2630'				

¹⁷ OPERATOR CERTIFICATION
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Jerry W. Hoover
Signature
JERRY W. HOOVER
Printed Name
SR. CONSERVATION COORDINATOR
Title
5/9/95
Date

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APRIL 12, 1995
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Signature and Seal of Professional Surveyor:

Certificate Number
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AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

'API Number 30-025-		'Pool Code 62965		'Pool Name Warren Blinebry-Tubb	
'Property Code 3127		'Property Name WARREN UNIT			'Well Number 207
'GRID No.		'Operator Name CONOCO, INC.			'Elevation 3518'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	34	20-S	38-E		2630	NORTH	1330	WEST	LEA

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

'Dedicated Acres 40	'Joint or Infill	'Consolidation Code	'Order No.
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WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-025-		*Pool Code 62965	*Pool Name Warren Blinebry-Tubb
*Property Code 3127	*Property Name WARREN UNIT		*Well Number 208
*OGRID No.	*Operator Name CONOCO, INC.		*Elevation 3516'

¹⁰ Surface Location

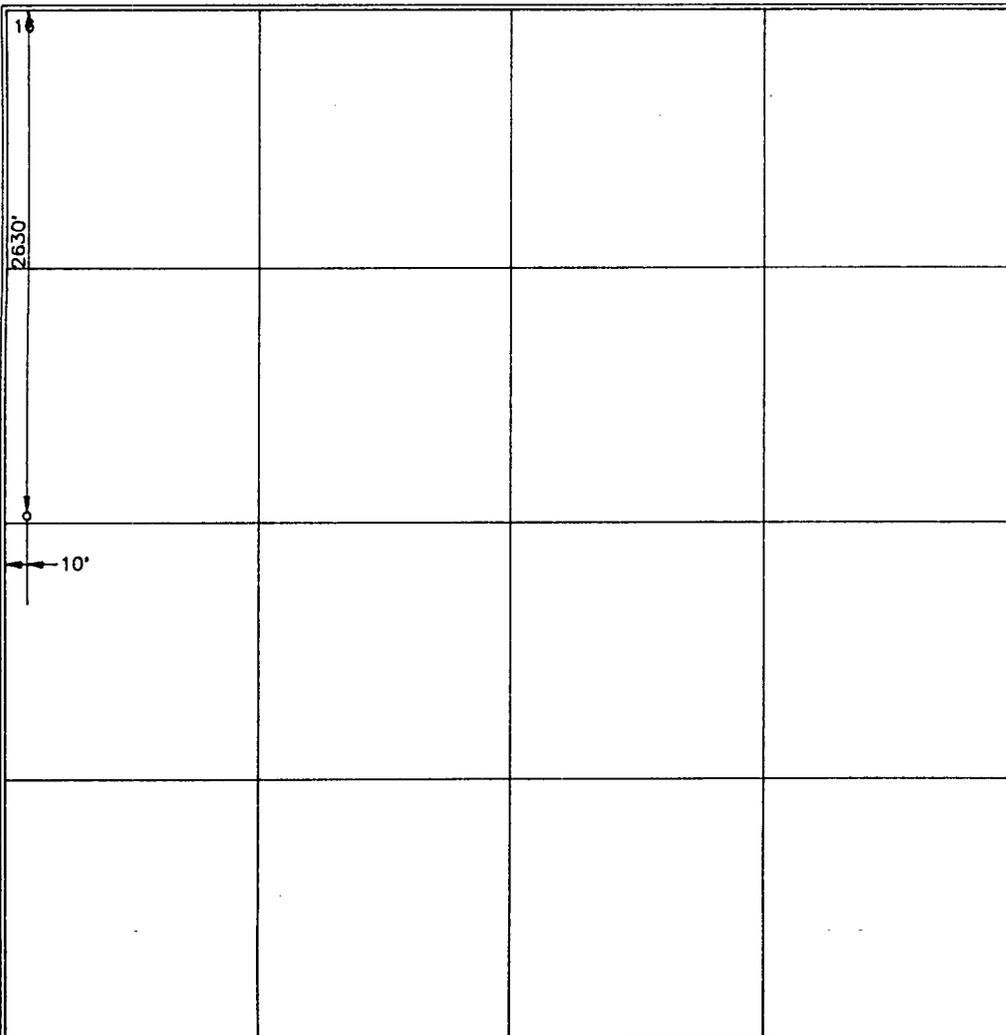
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	34	20-S	38-E		2630	NORTH	10	WEST	LEA

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

¹² Dedicated Acres 40	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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¹⁷ OPERATOR CERTIFICATION

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Jerry W. Hoover
 Signature

JERRY W. HOOVER

Printed Name

SR. CONSERVATION COORDINATOR

Title

5/9/95

Date

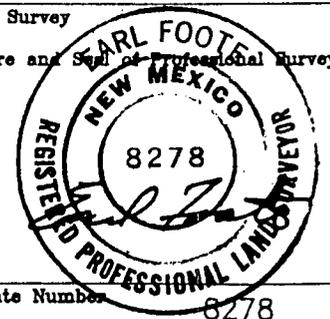
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APRIL 12, 1995

Date of Survey

Signature and Seal of Professional Surveyor:



Certificate Number 8278

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AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-025-		*Pool Code 62965	*Pool Name Warren Blinebry-Tubb
*Property Code 3127	*Property Name WARREN UNIT		*Well Number 209
*GRID No.	*Operator Name CONOCO, INC.		*Elevation 3509'

¹⁰ Surface Location

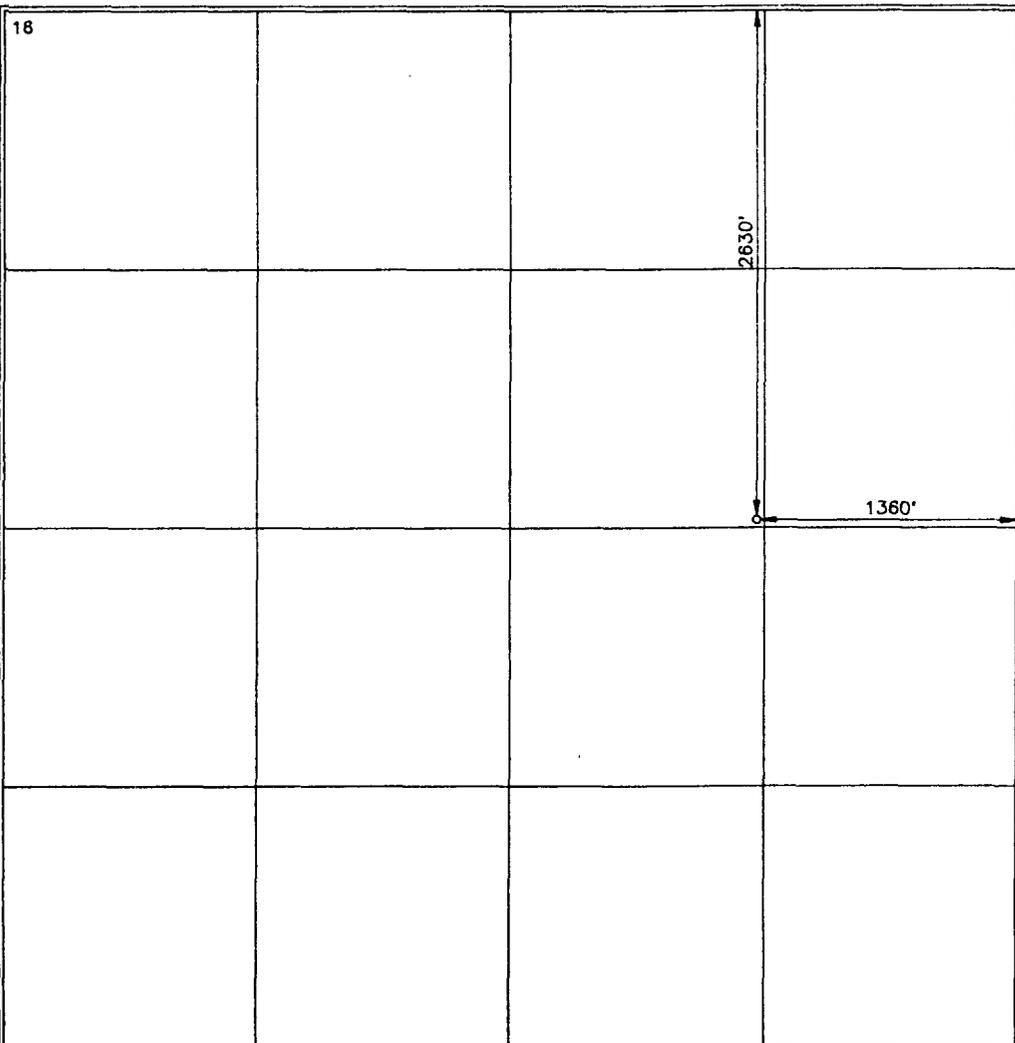
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
G	33	20-S	38-E		2630	NORTH	1360	EAST	LEA

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

¹² Dedicated Acres 40	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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Jerry W. Hoover
 Signature
 JERRY W. HOOVER
 Printed Name
 SR. CONSERVATION COORDINATOR
 Title
 5/9/95
 Date

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AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-		² Pool Code 62965	³ Pool Name Warren Blinebry-Tubb
⁴ Property Code 3127	⁵ Property Name WARREN UNIT		⁶ Well Number 212
⁷ GRID No.	⁸ Operator Name CONOCO, INC.		⁹ Elevation 3515'

¹⁰Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	33	20-S	38-E		1310	NORTH	1510	EAST	LEA

¹¹Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

¹² Dedicated Acres 40	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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 District II
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AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

'API Number 30-025-		'Pool Code 62965		'Pool Name Warren Blinebry-Tubb	
'Property Code 3127		'Property Name WARREN UNIT			'Well Number 213
'OGRID No.		'Operator Name CONOCO, INC.			'Elevation 3518'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	34	20-S	38-E		1310	NORTH	10	WEST	LEA

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

'Dedicated Acres 40	'Joint or Infill	'Consolidation Code	'Order No.
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AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-		² Pool Code 62965		³ Pool Name Warren Blinebry-Tubb	
⁴ Property Code 3127		⁵ Property Name WARREN UNIT			⁶ Well Number 214
⁷ OGRD No.		⁸ Operator Name CONOCO, INC.			⁹ Elevation 3520'

¹⁰Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	34	20-S	38-E		1310	NORTH	1330	WEST	LEA

¹¹Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

¹² Dedicated Acres 40	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

<p>¹⁶</p>	<p>¹⁷ OPERATOR CERTIFICATION</p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.</p> <p><i>Jerry W. Hoover</i> Signature JERRY W. HOOVER Printed Name SR. CONSERVATION COORDINATOR Title 5/9/95 Date</p>	
	<p>¹⁸ SURVEYOR CERTIFICATION</p> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to best of my belief.</p> <p>APRIL 12, 1995 Date of Survey</p> <p>Signature and Seal of Professional Surveyor: Certificate Number 8278</p>	

District I
 PO Box 1980, Hobbs, NM 88241-1980
 District II
 PO Drawer DD, Artesia, NM 88211-0719
 District III
 1000 Rio Brazos Rd., Aztec, NM 87410
 District IV
 PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
 Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
 PO Box 2088
 Santa Fe, NM 87504-2088

Form C-10;
 Revised February 21, 199.
 Instructions on back
 Submit to Appropriate District Office.
 State Lease - 4 Copies
 Fee Lease - 3 Copies

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-025-		*Pool Code 62965	*Pool Name Warren Blinebry-Tubb
*Property Code 3127	*Property Name WARREN UNIT		*Well Number 215
*OGRID No.	*Operator Name CONOCO, INC.		*Elevation 3525'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	34	20-S	38-E		1310	NORTH	2630	EAST	LEA

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

¹² Dedicated Acres 40	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

16	1310'	2630'	¹⁷ OPERATOR CERTIFICATION
			<p><i>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.</i></p> <p><i>Jerry W. Hoover</i> Signature JERRY W. HOOVER Printed Name SR. CONSERVATION COORDINATOR Title 5/9/95 Date</p>
			¹⁸ SURVEYOR CERTIFICATION
			<p><i>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to best of my belief.</i></p> <p>APRIL 12 1995 Date of Survey Signature and Seal of Professional Surveyor:  Certificate Number 8278</p>



Midland Division
Exploration Production

OIL CONSERVATION DIVISION
Conoco Inc.
10 Dosta Drive, Suite 100W
Midland, TX 79705-4500
(817) 686-5400
MAY 22 1995 8 52

May 19, 1995

Mr. Michael E. Stogner
Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87504

**Re: Administrative Order NSL-3528
12 Warren Unit Unorthodox Infill Locations**

Dear Mr. Stogner:

Your assistance in expediting this exciting new infill drilling program in Conoco's Warren Unit is greatly appreciated. This property continues to surprise us in its potential and longevity.

May I point out on page 2 of Order NSL-3528 that the footage location for well No. 212 is missing the direction for the 1510 foot distance. The location for well No. 212 is 1510 feet from the EAST line of Section 33. Of course the NW/4 NE/4 dedication shown by the order technically verifies that the 1510 feet can only be associated with the EAST section line, so this may not be a problem. If you feel it is sufficiently defined by the quarter-quarter designation, that is fine with us and we will simply add the FEL notation to our copies of the order.

Thanks again for your prompt handling of this project.

Very truly yours,

Jerry W. Hoover
Sr. Conservation Coordinator