



GREENHILL PETROLEUM CORPORATION

OIL CONSERVATION DIVISION
RECEIVED

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HOUSTON, TEXAS 77070
TELEPHONE (713) 955-1146
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Incorporated in Delaware, U.S.A.

'90 AUG 20 AM 9 25

August 14, 1990

Oil Conservation Division
State of New Mexico
Energy, Minerals and Natural Resources Dept.
P. O. Box 2088
Santa Fe, New Mexico 87504-2088

Attn: Mike Stogner

Re: Unorthodox Location and Drilling Permit
Proposed Well No. 74
West Lovington Unit
Lea County, New Mexico

Greenhill Petroleum Corporation respectfully requests the State of New Mexico Oil Conservation Division grant approval of the proposed unorthodox location and the attached permit to drill Well Number 74 in the West Lovington Unit, located in Lea County, New Mexico.

The West Lovington Unit is presently developed and being water-flooded utilizing a 40-acre well density. It is believed that infill development using a 20-acre well density will improve water-flood sweep efficiency and will increase secondary oil recovery. The proposed location for Well Number 74 is located in the interior of the unit and is not competitive with offset wells outside the unit. Information gathered as a result of drilling this infill well will be utilized in evaluating additional infill development potential in the unit and ultimately may be used to evaluate the feasibility of tertiary recovery.

GREENHILL PETROLEUM CORPORATION

Greenhill Petroleum Corporation wishes to commence drilling operations on the proposed well as soon as possible and would appreciate a response to this request at your earliest convenience.

Respectfully yours,

GREENHILL PETROLEUM CORPORATION

A handwritten signature in cursive script, appearing to read "Michael J. Newport".

Michael J. Newport
Landman

MJN:ntd
Enclosures
WLU040

TOWNSEND-WOLFCAMP POOL
(Pilot Waterflood)
Lea County, New Mexico

Order No. R-2053, Authorizing Shell Oil Company to Institute a Pilot Waterflood Project in the Townsend-Wolfcamp Pool, Lea County, New Mexico, September 7, 1961.

Application of Shell Oil Company for a Pilot Waterflood Project in the Townsend-Wolfcamp Pool, Lea County, New Mexico.

CASE NO. 2359
Order No. R-2053

ORDER OF THE COMMISSION

BY THE COMMISSION: This cause came on for hearing at 9 o'clock a.m., on August 30, 1961, at Santa Fe, New Mexico, before Elvis A. Utz, Examiner duly appointed by the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," in accordance with Rule 1214 of the Commission Rules and Regulations.

NOW, on this 7th day of September, 1961, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Elvis A. Utz, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, Shell Oil Company, seeks permission to institute a pilot waterflood project in the Townsend-Wolfcamp Pool in an area comprising Section 10, Township 16 South, Range 35 East, NMPM, Lea County, New Mexico, by the injection of water into the Wolfcamp formation in the interval from 10,552 feet to 10,592 feet in Texas Pacific Coal & Oil Company's State "J" Well No. 2, located in the NE/4 SW/4 of said Section 10.

(3) That all of the wells in the pilot waterflood area have reached an advanced state of depletion and may properly be classified as "stripper" wells for this depth.

(4) That the proposed waterflood project should be authorized and should be governed by the provisions of Rule 701 of the Commission Rules and Regulations, including those provisions regarding allocation of allowables and expansion of the project area.

IT IS THEREFORE ORDERED:

(1) That the applicant, Shell Oil Company, is hereby authorized to institute a pilot waterflood project in the Townsend-Wolfcamp Pool in an area comprising Section 10, Township 16 South, Range 35 East, NMPM, Lea County, New Mexico, by the injection of water into Texas Pacific Coal & Oil Company's State "J" Well No. 2, located in the NE/4 SW/4 of said Section 10.

(2) That the operation of the waterflood project shall be governed by the provisions of Rule 701 of the Commission Rules and Regulations, including those provisions regarding allocation of allowables and expansion of the project area.

(3) That monthly progress reports on the waterflood project shall be submitted to the Commission in accordance with Rule 701 and Rule 1119 of the Commission Rules and Regulations.

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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

WEST LOVINGTON POOL
(San Andres Waterflood)
Lea County, New Mexico

Order No. R-2071, Approving the West Lovington Unit Agreement and Authorizing Texaco, Inc., to Institute a Waterflood Project in the San Andres Formation in the West Lovington Pool, Lea County, New Mexico, October 9, 1961.

Application of Texaco Inc. for approval of the West Lovington Unit Agreement and for an order authorizing a Waterflood Project in the West Lovington Pool, Lea County, New Mexico.

CASE NO. 2385
Order No. R-2071

ORDER OF THE COMMISSION

BY THE COMMISSION: This cause came on for hearing at 9 o'clock a.m. on September 20, 1961, at Santa Fe, New Mexico, before Daniel S. Nutter, Examiner duly appointed by the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," in accordance with Rule 1214 of the Commission Rules and Regulations.

NOW, on this 9th day of October, 1961, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Daniel S. Nutter, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, Texaco Inc., seeks approval of its proposed West Lovington Unit Agreement with the unit area comprising 2,472 acres, more or less, in Townships 16 and 17 South, Range 36 East, NMPM, Lea County, New Mexico.

(3) That the applicant proposes to institute a waterflood project in the West Lovington Pool on said West Lovington Unit by the injection of water into the San Andres formation through the following-described wells:

Humble State "P" Well No. 2, NW/4 NE/4 of Section 9;
Humble State "P" Well No. 3, NW/4 NW/4 of Section 9;
Humble State "Q" Well No. 2, NW/4 NE/4 of Section 8;
Humble State "T" Well No. 1, NW/4 SW/4 of Section 8;
Humble State "W" Well No. 1, NW/4 SE/4 of Section 7;
Pan American State "E"-20 Well No. 13, NW/4 SE/4 of Section 4;

Phillips Mexico Well No. 2, NW/4 NE/4 of Section 5;
Rodman-Noel State "B" Well No. 2, NW/4 SW/4 of Section 4;

Rodman-Noel State "B" Well No. 5, NW/4 SW/4 of Section 3;

Mobil State "R" Well No. 6, NW/4 NE/4 of Section 4;
Mobil State "R" Well No. 9, NW/4 SE/4 of Section 5;
Texaco State "AH" Well No. 3, NW/4 NW/4 of Section 8;
Texaco State "AH" Well No. 6, NW/4 NE/4 of Section 7;
Texaco State "AH" Well No. 12, NW/4 SE/4 of Section 6;
Texaco State "AJ" Well No. 4, NW/4 NW/4 of Section 7;
Texaco State N.M. "CL" Well No. 1, NW/4 SE/4 of Section 8;

Tidewater State "O" Well No. 2, NW/4 SW/4 of Section 5; and

Turner State "C" Well No. 5, NW/4 NW/4 of Section 4; all in Township 17 South, Range 36 East, NMPM, Lea County, New Mexico.

(4) That approval of the proposed West Lovington Unit Agreement will in principle tend to promote the conservation of oil and gas and the prevention of waste.

(WEST LOVINGTON (SAN ANDRES WATERFLOOD)
POOL—Cont'd.)

(5) That all of the producing wells in the unit have reached an advanced state of depletion and are properly classified as "stripper" wells.

(6) That the proposed waterflood project should be authorized and the operation thereof should be governed by the provisions of Rule 701 of the Commission Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the West Lovington Unit Agreement is hereby approved.

(2) That the Plan under which the unit area shall be operated shall be embraced in the form of a unit agreement for the development and operation of the West Lovington Unit Area and such plan shall be known as the West Lovington Unit Agreement Plan.

(3) That the West Lovington Unit Agreement Plan is hereby approved in principle as a proper conservation measure; provided, however, that notwithstanding any of the provisions contained in said unit agreement, this approval shall not be considered as waiving or relinquishing, in any manner, any right, duty or obligation which is now, or may hereafter be, vested in the Oil Conservation Commission of New Mexico relative to the supervision and control of operations for the exploration and development of any lands committed to the said West Lovington Unit, or relative to the production of oil and gas therefrom.

(4) (a) That the unit area shall be:

NEW MEXICO PRINCIPAL MERIDIAN
TOWNSHIP 16 SOUTH, RANGE 36 EAST
Section 33: SW/4 SW/4

TOWNSHIP 17 SOUTH, RANGE 36 EAST

Section 3: W/2 SW/4
Section 4: Lots 2, 3 and 4, S/2 N/2 and S/2
Section 5: Lots 1 and 2, S/2 N/2, and S/2
Section 6: SE/4 NE/4, SE/4 SW/4, and SE/4
Section 7: Lots 1 and 2, E/2 NW/4, NE/4 and N/2 SE/4
Section 8: N/2, N/2 SW/4 and NW/4 SE/4
Section 9: N/2 NW/4, NW/4 NE/4
comprising 2,472 acres, more or less.

(b) That the unit may be enlarged or contracted as provided in said Plan; provided, however, that administrative approval for expansion or contraction of the unit area must also be obtained from the Secretary-Director of the Oil Conservation Commission.

(5) That the unit operator shall file with the Commission an executed original or executed counterpart of the West Lov-

ington Unit Agreement within 30 days after the effective date thereof. In the event of subsequent joinder by any party or expansion of the unit area, the unit operator shall file with the Commission within 30 days of such action counterparts of the unit agreement reflecting the subscription of those interests having joined or ratified.

(6) That the portion of this order relating to the approval of the West Lovington Unit Agreement shall become effective upon the approval of said unit agreement by the Commissioner of Public Lands for the State of New Mexico and the Director of the United States Geological Survey and shall terminate ipso facto upon the termination of said unit agreement. The last unit operator shall notify the Commission immediately in writing of such termination.

(7) That the applicant is hereby authorized to institute the West Lovington Waterflood Project in the West Lovington Pool, Lea County, New Mexico, by the injection of water into the San Andres formation through the following-described wells:

Humble State "P" Well No. 2, NW/4 NE/4 of Section 9;
Humble State "P" Well No. 3, NW/4 NW/4 of Section 9;
Humble State "Q" Well No. 2, NW/4 NE/4 of Section 8;
Humble State "T" Well No. 1, NW/4 SW/4 of Section 8;
Humble State "W" Well No. 1, NW/4 SE/4 of Section 7;
Pan American State "E"-20 Well No. 13, NW/4 SE/4 of Section 4;
Phillips Mexico Well No. 2, NW/4 NE/4 of Section 5;
Rodman-Noel State "B" Well No. 2, NW/4 SW/4 of Section 4;
Rodman-Noel State "B" Well No. 5, NW/4 SW/4 of Section 3;
Mobil State "R" Well No. 6, NW/4 NE/4 of Section 4;
Mobil State "R" Well No. 9, NW/4 SE/4 of Section 5;
Texaco State "AH" Well No. 3, NW/4 NW/4 of Section 8;
Texaco State "AH" Well No. 6, NW/4 NE/4 of Section 7;
Texaco State "AH" Well No. 12, NW/4 SE/4 of Section 6;
Texaco State "AJ" Well No. 4, NW/4 NW/4 of Section 7;
Texaco State N.M. "CL" Well No. 1, NW/4 SE/4 of Section 8;
Tidewater State "O" Well No. 2, NW/4 SW/4 of Section 5; and

Turner State "C" Well No. 5, NW/4 NW/4 of Section 4; all in Township 17 South, Range 36 East, NMPM, Lea County, New Mexico.

(8) That the operation of the West Lovington Waterflood Project shall be governed by the provisions of Rule 701 of the Commission Rules and Regulations.

(9) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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

Submit to Appropriate District Office
 State Lease - 6 copies
 Fee Lease - 5 copies

State of New Mexico
 Energy, Minerals and Natural Resources Department

Form C-101
 Revised 1-1-89

OIL CONSERVATION DIVISION
 P.O. Box 2088
 Santa Fe, New Mexico 87504-2088

DISTRICT I
 P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
 P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
 1000 Rio Brazos Rd., Aztec, NM 87410

API NO. (assigned by OCD on New Wells)

5. Indicate Type of Lease
 STATE FEE

6. State Oil & Gas Lease No.

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK					
1a. Type of Work: DRILL <input checked="" type="checkbox"/> RE-ENTER <input type="checkbox"/> DEEPEN <input type="checkbox"/> PLUG BACK <input type="checkbox"/>				7. Lease Name or Unit Agreement Name West Lovington Unit	
b. Type of Well: OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/>				8. Well No. 74	
2. Name of Operator GREENHILL PETROLEUM CORPORATION				9. Pool name or Wildcat Lovington San Andres West	
3. Address of Operator 16010 Barker's Point Lane, Suite 325, Houston, TX					
4. Well Location Unit Letter <u>0</u> : <u>180</u> Feet From The <u>South</u> Line and <u>2625</u> Feet From The <u>East</u> Line Section <u>4</u> Township <u>17S</u> Range <u>36E</u> NMPM <u>Lea</u> County					
		10. Proposed Depth 5230		11. Formation San Andres	12. Rotary or C.T. Rotary
13. Elevations (Show whether DF, RT, GR, etc.) 3873 GR		14. Kind & Status Plug. Bond Blanket on file	15. Drilling Contractor TBD		16. Approx. Date Work will start 8/30/90
17. PROPOSED CASING AND CEMENT PROGRAM					
SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
12 1/4	8 5/8	24#	350'	250	Surface
7 7/8	5 1/2	15.5#	5212'	1400	Surface

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: IF PROPOSAL IS TO DEEPEN OR PLUG BACK, GIVE DATA ON PRESENT PRODUCTIVE ZONE AND PROPOSED NEW PRODUCTIVE ZONE. GIVE BLOWOUT PREVENTER PROGRAM, IF ANY.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Michael J. Newport TITLE Landman DATE 8/2/90
 TYPE OR PRINT NAME TELEPHONE NO.

(This space for State Use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

Submit to Appropriations
District Office
State Leases - 4 copies
Fee Leases - 3 copies

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-182
Revised 1-1-89

OIL CONSERVATION DIVISION

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

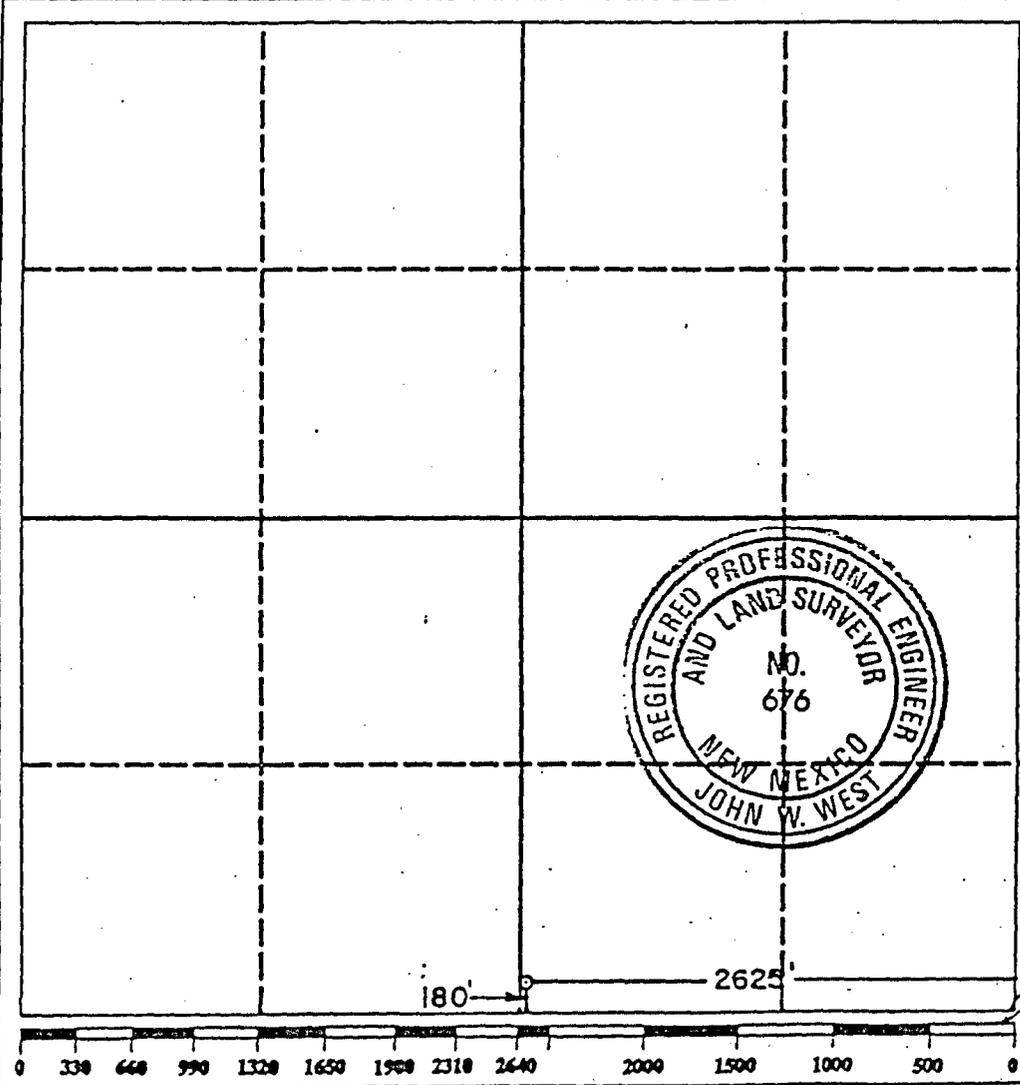
WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator GREENHILL PETROLEUM CORPORATION		Lease West Lovington Unit		Well No. 74
Unit Letter 0	Section 4	Township 17 South	Range 36 East	County Lea

Actual Footage Location of Well:
180 feet from the **South** line and **2625** feet from the **East** line
 Ground level Elev. **3873.0** Producing Formation _____ Pool _____ Dedicated Acreage: _____ Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.
 2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
 3. If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?
 Yes No If answer is "yes" type of consolidation _____
 If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary).
 No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.



OPERATOR CERTIFICATION
 I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Signature: *Michael J. Newport*
 Printed Name: **Michael J. Newport**
 Position: _____
 Company: _____
 Date: _____

SURVEYOR CERTIFICATION
 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 the best of my knowledge and belief.

Date Surveyed: **July 19, 1990**

Signature & Seal of Professional Surveyor: *John W. West*

Certificate No. **JOHN W. WEST, 676**
RONALD J. EIDSON, 3239

128830

Submit to Appropriate
District Office
State License - 4 copies
Fee License - 3 copies

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

DISTRICT I
P.O. Box 1983, Hobbs, NM 88240

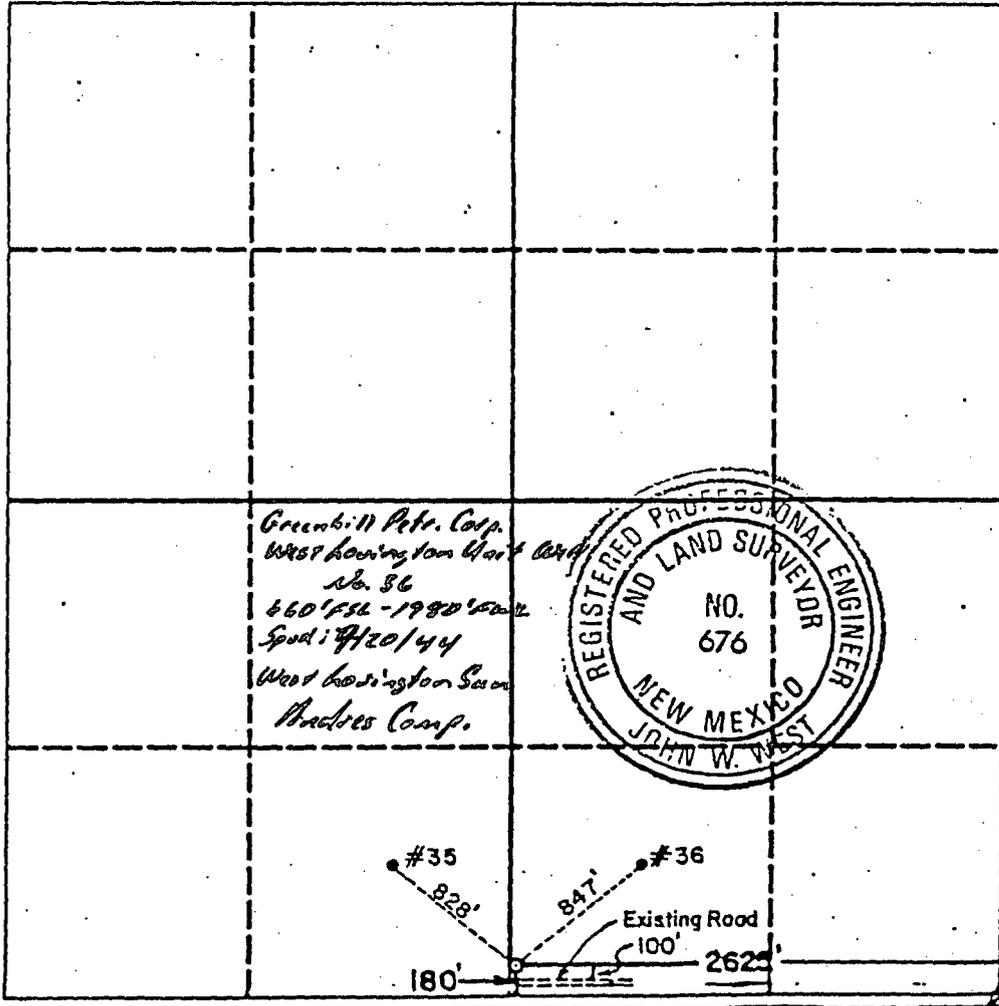
DISTRICT II
P.O. Denver DC, Artesia, NM 88210

DISTRICT III
1000 Rio Bonito Rd., Aztec, NM 87410

WELL LOCATION AND ACREAGE DEDICATION PLAT
All Distances must be from the outer boundaries of the section

Operator GREENHILL PETROLEUM CORPORATION			Lease West Lovington Unit		Well No. 74
Unit Letter 0	Section 4	Township 17 South	Range 36 East	County Lea	
Actual Footings Location of Well: 180 feet from the South line and 2625 feet from the East line					
Ground level Elev. 3873.0	Producing Formation			Pool	Dedicated Acreage Acres

- Outline the acreage dedicated to the subject well by colored pencil or inkness marks on the plat below.
- If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
- If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?
 Yes No If answer is "yes" type of consolidation _____
 If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.)
 No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.

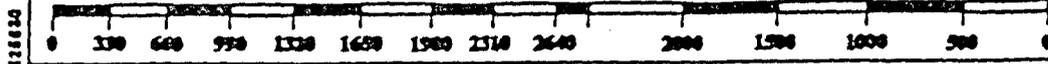


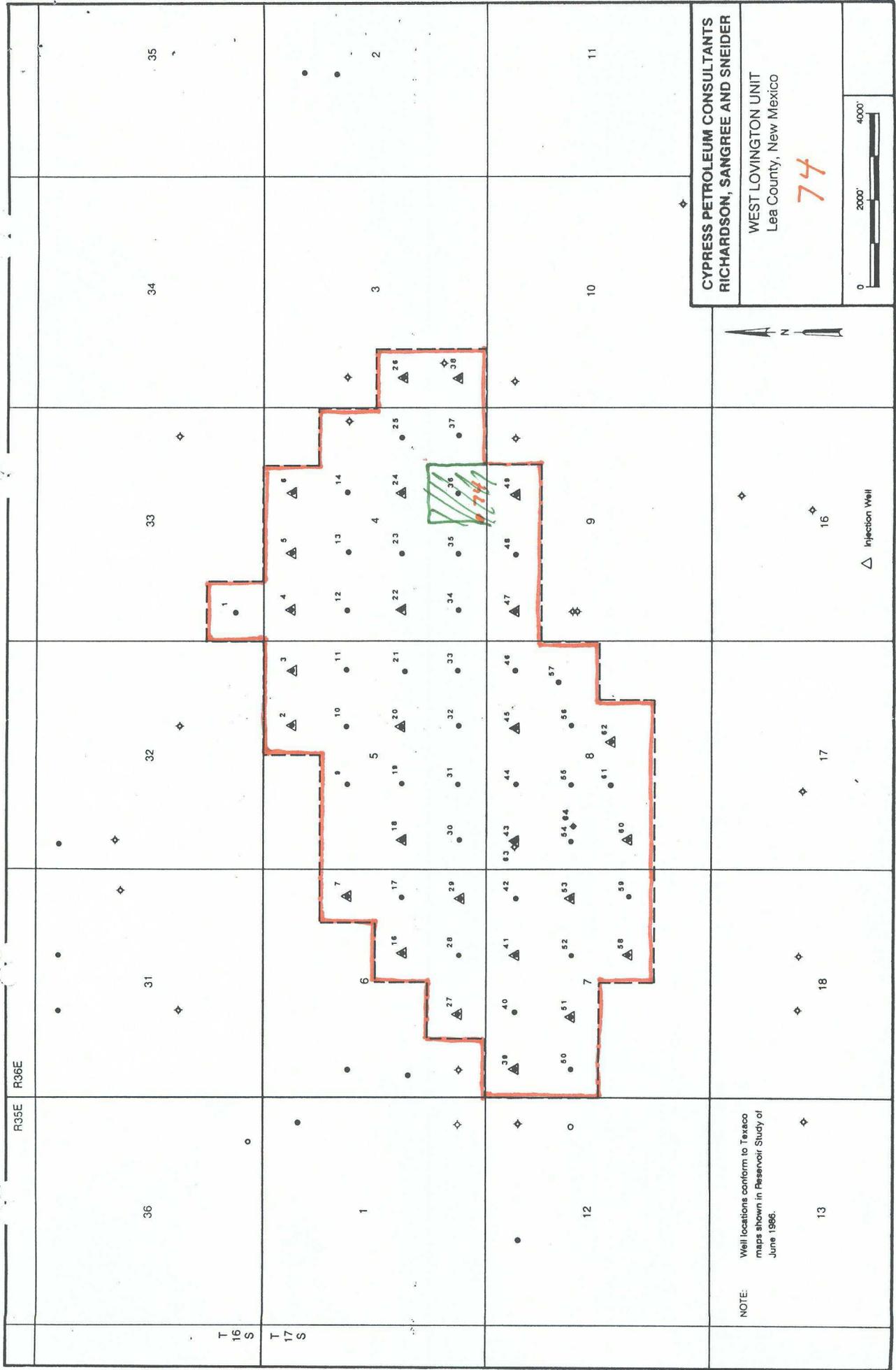
OPERATOR CERTIFICATION
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Signature: *Michael J. Newport*
 Printed Name: **Michael J. Newport**
 Position: _____
 Company: _____
 Date: _____

SURVEYOR CERTIFICATION
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 the best of my knowledge and belief.

Date Surveyed: **July 19, 1990**
 Signature & Seal of Professional Surveyor: *John W. West*
 License No. **JOHN W. WEST, 676**
RONALD J. EIDSON, 3239

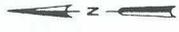




CYPRESS PETROLEUM CONSULTANTS
 RICHARDSON, SANGREE AND SNEIDER

WEST LOVINGTON UNIT
 Lee County, New Mexico

74



◆ Injection Well

NOTE: Well locations conform to Texaco maps shown in Reservoir Study of June 1966.

GREENHILL PETROLEUM CORPORATION
 B O P PROGRAM FOR
 WEST LOVINGTON UNIT #74

<u>Casing Program</u>		<u>Wt</u>	<u>Grade</u>	<u>B O P Program</u>	<u>Test Program</u>
<u>Size</u>	<u>Depth</u>			<u>Configuration</u>	
8 5/8"	350'	24#	J55,STC	RR or RA	250/1500 psi
5 1/2"	5230'	15.5#	J55,STC	N/A	

*RR - Ram Ram
 RA - Ram Annular