

QUALITY PRODUCTION CORP.

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Hobbs, New Mexico 88241

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4 February 1994

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

Case 10931

Re: The Wiser Oil Company
Application for Qualification of EOR Project
Caprock Maljamar Unit
Maljamar Grayburg/San Andres Pool
Lea County, New Mexico

FEB - 8 1994

Gentlemen:

The Wiser Oil Company hereby applies for qualification of the proposed consolidation and expansion of existing enhanced oil recovery projects for the oil tax rate pursuant to the New Mexico "Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5) as implemented by Order No. R-9708. The proposed project is the Caprock Maljamar Unit in the Maljamar Grayburg San Andres Pool, Lea County.

The following information pertinent to the Application is hereby submitted as outlined in Paragraph D.4. of Exhibit "A" to Order No. R-9708:

- a.) The Unit Operator is to be The Wiser Oil Company, at 8115 Preston Rd - Suite 400, Dallas, TX 75225 (214-265-0080) with Quality Production Corp. at P O Box 250, Hobbs, NM 88241 (505-397-2727) being their local agent.
- b.) 1. A plat outlining the Unit Area is enclosed as Exhibit "A". A map, Exhibit A-1, and a tabulation showing the proposed well numbering system for the Unit is also enclosed.
2. The proposed Unit Area includes:

Township 17 South - Range 32 East

Section 13: SE/4
Section 24: All

Township 17 South - Range 33 East

Section 17: All
Section 18: E/2 & SW/4
Section 19: All
Section 20: All
Section 21: W/2 W/2, SE/4 NW/4 & SE/4 SW/4
Section 27: NW/4 SW/4
Section 28: W/2, SE/4 & SW/4 NE/4
Section 29: NE/4 NE/4
Section 33: N/2 NE/4 & SE/4 NE/4.

3. The proposed Unit Area consists of 4160 acres.
4. The project is in the Maljamar Grayburg/San Andres Pool.
- c.) 2. The application for approval of the proposed Caprock Maljamar Unit and Waterflood Project is being filed with the Oil Conservation Division simultaneously with this Application for Qualification for the oil tax rate.
- d.) 1. The Plan of Operations proposes to inject all of the Unit's produced water and fresh Ogallala water as required for make-up of reservoir withdrawal volumes.
2. The proposed Caprock Maljamar Unit is a consolidation and expansion of existing enhanced oil recovery projects on nine individual leases and the Mal Gra Unit, authorized under Oil Conservation Division Order Nos. R-2156, R-2157, R-2769, R-3011, R-3129 and WFX Nos. 132, 139, 149, 160, 171, 173, 185, 200, 211 and 295.
- e.) 1. The current producing wells are the Caprock Maljamar Unit Well Nos.:

2	22	63	98
3	27	65	100
4	29	68	103
5	31	69	148
6	38	71	150
7	40	73	152
9	42	82	166
11	44	83	173
14	52	89	177
16	54	90	179
18	56	94	201
20	58	96	202

The development of the Waterflood Project as outlined in the Plan of Operation will result in most of the existing standard 40-acre location wells being converted to water injection and infill 20-acre wells drilled being the producers.

2. The current active injection wells are the Caprock Maljamar Unit Well Nos.:
- | | | | |
|----|----|----|-----|
| 17 | 32 | 55 | 91 |
| 19 | 39 | 59 | 95 |
| 21 | 41 | 62 | 97 |
| 26 | 43 | 74 | 99 |
| 30 | 53 | 86 | 102 |

Development of the Waterflood Project as outlined in the Plan of Operation will result in the conversion of most of the existing standard 40-acre location wells to injection.

3. The estimated Capital Expenditures for the proposed Waterflood Project are tabulated by Phase as follows:

	<u>Phase I</u>	<u>Phase II</u>	<u>Phase III</u>	<u>TOTAL</u>
Infill Drilling	\$2 670	\$7 350	\$5 530	\$15 550
WIW Drilling		1 000	1 200	2 200
WIW Conversions	645	860	505	2 010
Facilities	720	1 080	580	2 380
Prod Workovers		100	50	150
WIW Workovers	<u>200</u>	<u>325</u>	<u>270</u>	<u>795</u>
TOTAL	\$4 235	\$10 715	\$8 135	\$23 085

-all figures in thousands.

4. The Total Project Cost is \$65.634 million, considering the estimated operating costs of \$42.549 million.
5. The estimated total value of the additional production to be recovered as a result of the proposed project is \$204.2 million.
6. It is proposed to begin the expansion of the injection program immediately upon receipt of the necessary approvals of the State and Federal agencies.
7. Injection fluid will consist of all produced water and fresh water as required to make-up reservoir withdrawal volumes. The project will attempt to attain an estimated injectivity of 250 BWPD per injection well.
8. The previous waterflood operations on the leases to be included into the proposed Caprock Maljamar Unit were curtailed during the 1970's from an 80-acre five-spot waterflood operation to a water disposal operation only injecting the produced water volumes into an erratic pattern of active injection wells. The Engineering Report by T Scott Hickman & Associates, Inc., dated 31 Dec 92, a copy of which is enclosed, indicates that significant oil reserves remain to be recovered in the Unit Area. Recovery of these estimated additional reserves will require infill drilling to a well spacing of 20 acres per well (from 40 acres) and reinstitution of the waterflood operations on 40-acre five-spot patterns rather than the previous 80-acre patterns. This is, in reality, an entirely new waterflood project, only related to the previous projects by the similar areas and the continued water disposal under the existing waterflood orders.

f.) Production data and other supporting data to show the production history and forecast of oil, gas and water to be produced from the project area are provided in detail in the enclosed Engineering Report.

CERTIFICATION:

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



R M Williams, Agent for
The Wiser Oil Company

4 Feb 94

Date

RODEY, DICKASON, SLOAN, AKIN & ROBB, P.A.

COUNSELORS AND ATTORNEYS AT LAW

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PAUL A. COOTER
COUNSEL

DIRECT NUMBER
(505) 989-9515

February 17, 1994

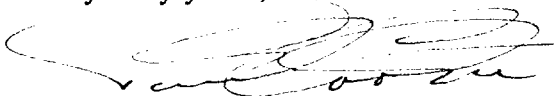
To All Leasehold Operators Within
One-Half (1/2) Mile of Each
Proposed Injection Well, and the
Owners of the Surface on Which
Each Proposed Injection Well Will
Be Located in the Caprock
Maljamar Unit Area, Lea County,
New Mexico

PLEASE TAKE NOTE that The Wiser Oil Company has filed an Application with the New Mexico Oil Conservation Division seeking authority to institute a waterflood project by injection of water into the Grayburg/San Andres formation in The Wiser Oil Company's proposed Caprock Maljamar Unit in the Maljamar/Grayburg/San Andres Pool of Lea County, New Mexico. Attached for your information is a copy of the Application filed by The Wiser Oil Company on OCD Form C-108 and a map of the area. Copies of the other attachments will be furnished on request.

The Application has been set for hearing before an Examiner of the Oil Conservation Division on March 3, 1994. As an interest owner who may be affected by this application, you may appear at that hearing and present testimony. Failure to appear at that time or otherwise become a party of record may preclude you from challenging the Application at a later date.

Should you have any questions relating thereto, please call R. M. Williams with Quality Production Corp., agent for The Wiser Oil Company at (505) 397-2727.

Very truly yours,



Paul A. Cooter
PAC/noj

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose: ☒ Secondary Recovery ☐ Pressure Maintenance ☐ Disposal ☐ Storage
Application qualifies for administrative approval? ☐ yes ☐ no
- II. Operator: THE WISER OIL COMPANY
Address: P.O. Box 250 Hobbs, NM 88241
Contact party: R M Williams Phone: 505-397-2727
- III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? ☒ yes ☐ no
If yes, give the Division order number authorizing the project See Attachment.
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- * VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
 2. Whether the system is open or closed;
 3. Proposed average and maximum injection pressure;
 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
 5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- *VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such source known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- * X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)
- * XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification
- I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
- Name: R M Williams Title Agent
Signature: *R M Williams* Date: 18 Feb 94
- * If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal.

ATTACHMENT to OCD FORM C-108

THE WISER OIL COMPANY
CAPROCK MALJAMAR UNIT
WATERFLOOD PROJECT

- I. Purpose - Application is made for authorization to inject water into the Grayburg/San Andres formation underlying a portion of the Caprock Maljamar Unit in Sections 17, 19 & 20 of Township 17 South - Range 33 East, Lea County, New Mexico, as shown on the enclosed Exhibit "A". The proposed project is an enhanced recovery program designed to economically recover additional oil reserves to the benefit of all parties holding an interest in the Unit Area.
- II. Operator - The Wiser Oil Company
- III. Injection Well Data - Phase I of the waterflood program proposes injection into the following Caprock Maljamar Unit Well Nos.:
- | | | | | |
|----|----|----|----|----|
| 19 | 31 | 42 | 54 | 68 |
| 20 | 32 | 43 | 55 | |
| 21 | 39 | 44 | 56 | |
| 29 | 40 | 52 | 57 | |
| 30 | 41 | 53 | 67 | |
- The required well data and schematic diagrams are enclosed as Exhibit "B".
- IV. The proposed Caprock Maljamar Unit waterflood project is a consolidation and expansion of existing waterflood projects on nine individual leases and the Mal Gra Unit, authorized under Oil Conservation Division Order Nos. R-2156, R-2157, R-3011, R-3129, and WFX Nos. 132, 139, 149, 160, 171, 173, 185, 200, 211, and 295.
- V. Map - The enclosed Exhibit "A" identifies the proposed injection wells, the Area of Review within one-half mile of a proposed injection well, and all wells and leases within two miles of a proposed injection well.
- VI. Well Data - The well data for the wells within the Area of Review are enclosed as Exhibit "C" and the well data and schematic diagrams for all plugged and abandoned well bores within the Area of Review are enclosed as Exhibit "D".

VII. Proposed Operations:

1. Proposed average daily injection rate - 250 BWPD/well
Proposed maximum daily injection rate - 500 BWPD/well
2. A closed injection system will be maintained.
3. An average injection pressure of approximately 1000 psi is anticipated. The maximum injection pressure will be subject to the injection pressures authorized by the Oil Conservation Division.
4. The proposed injection fluid will consist of all of the Unit's produced water and fresh Ogallala water as required to make-up reservoir withdrawal volumes. The Ogallala water will be obtained from current water supply wells located on the caprock to the east of the Unit. Water compatibility studies have not been obtained nor considered pertinent in view of the actual injection experience in the Unit Area of injecting Grayburg/San Andres produced water and Ogallala fresh water in a wide range of proportions into the proposed injection interval since the 1960's without any evidence of compatibility problems.

VIII. Geological Data - The proposed injection interval is in the Grayburg/San Andres formations at a depth of 3900 to 5500 feet. The Grayburg formation primarily consists of quartz sands with dolomitic cementation; while, the San Andres formation primarily consists of dolomite with intermingled stringers of quartz sand with dolomitic cementation. The surface formation is Cretaceous and has no known sources of drinking water. The Ogallala aquifer and the caprock overlies the northeastern portion of the Unit Area; while there are no known sources of drinking water underlying the injection interval.

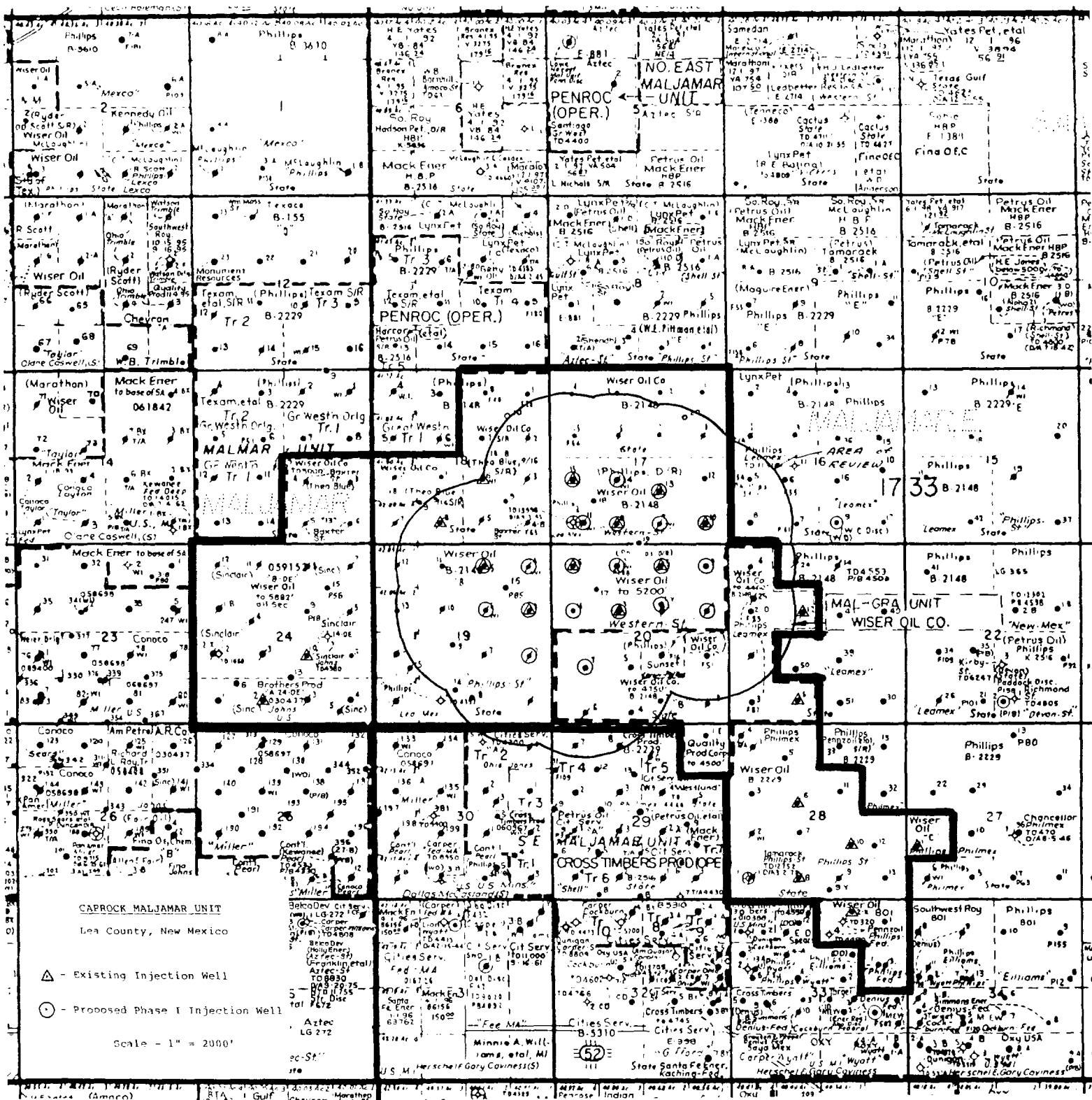
IX. Stimulation - Small acid treatments of about 2000 gallons per well have been sufficient to open the perforations for injection.

X. Logging Data - The available logs are those on file with the Oil Conservation Division from the original operators of the wells.

XI. Fresh Water Wells - The enclosed Exhibit "E" shows the fresh water wells located in the area, as recorded in the office of the State Engineer. None of these wells are still active or productive.

XII. Not applicable.

XIII. Proof of Notice - Copies of this C-108 Application will be furnished to the surface owners and to each leasehold operator within one-half mile of the proposed injection wells. An Affidavit of such notice with the return receipts will be presented at the time of the hearing on this matter.



CAPROCK MALJAMAR UNIT

OFFSET OPERATORS

CONOCO, Inc.

10 Desta Dr - Ste 100 W
Midland, TX 79705-4500

CROSS TIMBERS Operating Company

P O Box 50847
Midland, TX 79710

LYNX Petroleum Consultants, Inc.

P O Box 1979
Hobbs, NM 88241

MACK Energy Corp.

P O Box 1359
Artesia, NM 88211

PENROC Oil Corp.

P O Box 5970
Hobbs, NM 88241

PHILLIPS Petroleum Company

4001 Penbrook
Odessa, TX 79762

SOUTHWEST ROYALTIES, Inc.

Drawer 11390
Midland, TX 79702