

NEW MEXICO OIL AND GAS COMMISSION
WATERFLOOD APPLICATION DATA

FIELD PEARSALL COUNTY LEA
OPERATOR AMBASSADOR OIL CORPORATION DATE 2-11-64
LEASE PEARSALL QUEEN SAND UNIT
RESERVOIR QUEEN DISCOVERY DATE JANUARY, 1940

I. RESERVOIR AND FLUID CHARACTERISTICS

A. INFORMATION ON ENTIRE RESERVOIR

1. NAME OF FORMATION QUEEN SAND
2. ESTIMATED PRODUCTIVE AREA OF ENTIRE RESERVOIR 1,500 ACRES
3. COMPOSITION (SAND, LIMESTONE, DOLOMITE, ETC.) SAND
4. TYPE OF STRUCTURE STRATIGRAPHIC
(INCLUDE CROSS-SECTION AND STRUCTURE MAPS)
5. TYPE DRIVE DURING PRIMARY PRODUCTION SOLUTION GAS
6. ORIGINAL RESERVOIR PRESSURE ESTIMATED 850 PSI
7. WAS GAS CAP PRESENT ORIGINAL? No AT PRESENT No

B. INFORMATION ON PROPOSED PROJECT AREA

(INCLUDE PLAT OF LEASE (S) TO BE FLOODED, SHOWING PRODUCING WELLS, PROPOSED INJECTION WELLS, AND OFFSET WELLS).

1. NUMBER OF PRODUCTIVE ACRES IN LEASE (S) TO BE FLOODED 960
2. AVERAGE DEPTH TO TOP OF PAY (FEET) 3,650
3. AVERAGE EFFECTIVE PAY THICKNESS (FEET) 15
4. AVERAGE POROSITY (%) 11
5. AVERAGE HORIZONTAL PERMEABILITY (MDS.) 15 RANGE 10-60
6. CONNATE WATER CONTENT (% OF PORE SPACE) 32
7. GRAVITY OF OIL (API) 36 VISCOSITY UNKNOWN

II. PRIMARY PRODUCTION HISTORY

1. DATE FIRST WELL COMPLETED ON LEASE (S) JANUARY 1940
2. OIL, GAS, WATER PRODUCTION BY MONTHS SINCE DISCOVERY. (GRAPHICALLY AS WELL AS IN TABULAR FORM.)
3. STAGE OF DEPLETION OF PROJECT AREA STRIPPER
4. NUMBER OF PRODUCING WELLS ON EACH LEASE IN PROJECT AREA 14
5. AVERAGE DAILY OIL PRODUCTION PER WELL AT PRESENT TIME 7
6. CUMULATIVE OIL PRODUCTION TO DATE FROM LEASE (S) 901,136

III. RESULTS - EXPECTED

1. ESTIMATED ORIGINAL OIL IN PLACE (BBLs.) 6,500,000
2. ESTIMATED OIL SATURATION AT PRESENT TIME (% OF PORE SPACE) 49
3. ESTIMATED RESIDUAL OIL SATURATION AT ABANDONMENT 33
4. ESTIMATED ULTIMATE ADDITIONAL OIL THAT WILL BE RECOVERED AS A DIRECT RESULT OF INJECTION (BBLs.) 990,000

BEFORE EXAMINER NUTTER

OIL CONSERVATION COMMISSION

EXHIBIT NO. 8

3004, 3005

IV. INJECTION

1. SOURCE OF INJECTED WATER (FORMATION, DEPTHS) COMMERCIAL WATER COMPANY
2. FRESH OR SALT WATER FRESH
3. FLOOD PATTERN AND SPACING 5 SPOT = 80 ACRES
4. INITIAL INJECTION PRESSURE TO BE USED (PSI) 700
5. ESTIMATED INITIAL PER WELL RATE OF INJECTION (BBLs.) 500
6. LIST COMPLETE INJECTION WELL DATA ON REVERSE SIDE OF THIS SHEET.

INJECTION WELL DATA

	WELL No.	1-2	3-1	4-2	4A-1	9-1
SUR. CSG.	SIZE	8 5/8"	8 5/8"	8 5/8"	8 5/8"	8 5/8"
	LENGTH	1,051	1,119	1,015	1,116	73
	SXS. CEMENT	50	75	100	75	100
PROD. CSG.	SIZE	7"	7"	7"	7"	5 1/2"
	LENGTH	3,650	3,500	3,470	3,500	3,789
	SXS. CEMENT	100	100	200	100	250
TUBING	LENGTH	3,650	3,470	3,450	3,470	3,730
	PACKER DEPTH	3,630	3,470	3,450	3,470	3,730
INJ.	DEPTH	3,700	3,650	3,670	3,750	3,760
	THRU CSG. OR TUBING?	TUBING	TUBING	TUBING	TUBING	TUBING

BEFORE THE OIL CONSERVATION COMMISSION 3 22

STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION OF
AMBASSADOR OIL CORPORATION FOR THE
APPROVAL OF THE PEARSALL QUEEN SAND
UNIT AND WATERFLOOD PROJECT, LEA
COUNTY, NEW MEXICO

NO. 3005-

APPLICATION FOR APPROVAL OF
PEARSALL QUEEN SAND UNIT AND WATERFLOOD PROJECT

Comes now the applicant, Ambassador Oil Corporation, whose address is Box 9338, Fort Worth, Texas, and files herewith three copies of the proposed Unit Agreement for the development and operation of the Unit Area of the Pearsall Queen Sand Unit and hereby makes application for approval of said Unit as provided by law and for further approval of a Waterflood Project pursuant to Rule 701 of the Rules and Regulations of the Commission and in support thereof states:

1. That the Unit Area covers the following described land in Lea County, New Mexico, to-wit:

Township 17 South, Range 32 East, N.M.P.M.

Section 32: SE $\frac{1}{4}$, E $\frac{1}{2}$ SW $\frac{1}{4}$

Township 18 South, Range 32 East, N.M.P.M.

Section 4: S $\frac{1}{2}$ NE $\frac{1}{4}$, NW $\frac{1}{2}$ NE $\frac{1}{4}$, NW $\frac{1}{2}$

Section 5: NE $\frac{1}{4}$, E $\frac{1}{2}$ NW $\frac{1}{4}$, E $\frac{1}{2}$ SW $\frac{1}{4}$, W $\frac{1}{2}$ SE $\frac{1}{4}$,
NE $\frac{1}{4}$ SE $\frac{1}{4}$

containing 960 acres, more or less.

2. That all of the lands embraced in the Unit Area are

17 South, Range 32 East, containing 240 acres, which is state land.

3. That the applicant, Ambassador Oil Corporation, is designated as Unit Operator in the Unit Agreement and, as such, is given the authority under the terms thereof to carry on the operations for the discovery, development and production of the unitized substances.

4. That the Unit Agreement is in substantially the same form as Unit Agreements heretofore approved by the Commissioner of Public Lands of the State of New Mexico, the New Mexico Oil Conservation Commission and the United States Geological Survey. It is believed that the secondary recovery operations can be more economically and efficiently carried on under the terms of said Agreement to the end that the maximum recovery will be obtained and that the Unit Agreement is in the interest of conservation of oil and gas and the prevention of waste as contemplated by the statutes of the State of New Mexico.

5. That application is being made to the Commissioner of Public Lands and the United States Geological Survey for the approval of the Unit Agreement.

6. That in excess of 80% of the working interest owners have heretofore executed the Unit Agreement and the Agreement provides that any party owning rights in the unitized substance who does not commit such rights to the Unit Agreement before the effective date thereof may thereafter become a party by subscrib-

7. That the proposed Unit will lead to a more efficient and orderly development and operation of the Waterflood Project proposed by the applicant in the Unit Area and is necessary to allow the applicant to completely develop and operate the Waterflood Project.

8. That within 30 days after the effective date of the Pearsall Queen Sand Unit Agreement, the applicant will file with the Commission an executed or original counterpart of the Agreement, and in the event of a subsequent joinder of any party or expansion or contraction of the Unit Agreement, as provided by the terms thereof, the Unit Operator will file with the Commission within 30 days thereafter counterparts of the Unit Agreement reflecting the subscription of those interests having joined or ratified.

9. Applicant desires to initiate a Waterflood Project to inject fresh water into existing wells on the following described tract within the Unit Area:

<u>WELL NUMBER</u>	<u>LOCATION</u>
9-1	NE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 5, T-18-S, R-32-E
4A-1	SW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 4, T-18-S, R-32-E
4-2	NE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 4, T-18-S, R-32-E
1-2	SW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 5, T-18-S, R-32-E
3-1	NE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 5, T-18-S, R-32-E

10. That all of the wells in the Unit Area have reached an advanced stage of depletion and are stripper wells.

12. That in support of said Application and in accordance with the provisions of Rule 701, applicant submits herewith the following exhibits:

Exhibit A - a plat showing the location of the proposed injection wells and the location of all other wells and leases within a two mile radius

Exhibit B - a plat showing proposed injection wells, Unit Area, proposed Pilot Area, injection well locations and development program

Exhibit C - Injection Well Casing Program

13. Applicant proposes to inject fresh water into the Queen Sand at an approximate depth of 3650 feet and to inject approximately 500 barrels per well per day of water to be developed at the location or purchased from a public utility, which water will be commingled with produced water.

WHEREFORE, applicant requests the Commission set this down for hearing before an examiner at an early date, publish the notice required by law and, after hearing, issue its Order:

1. Approving the Pearsall Queen Sand Unit Agreement.
2. Authorizing the Waterflood Project covering the lands embraced in the Unit Agreement.
3. Establishing rules for the operation of the flood within the area and for administrative expansion and of conversion of additional wells to water injection wells.

Respectfully submitted,

AMBASSADOR OIL CORPORATION

