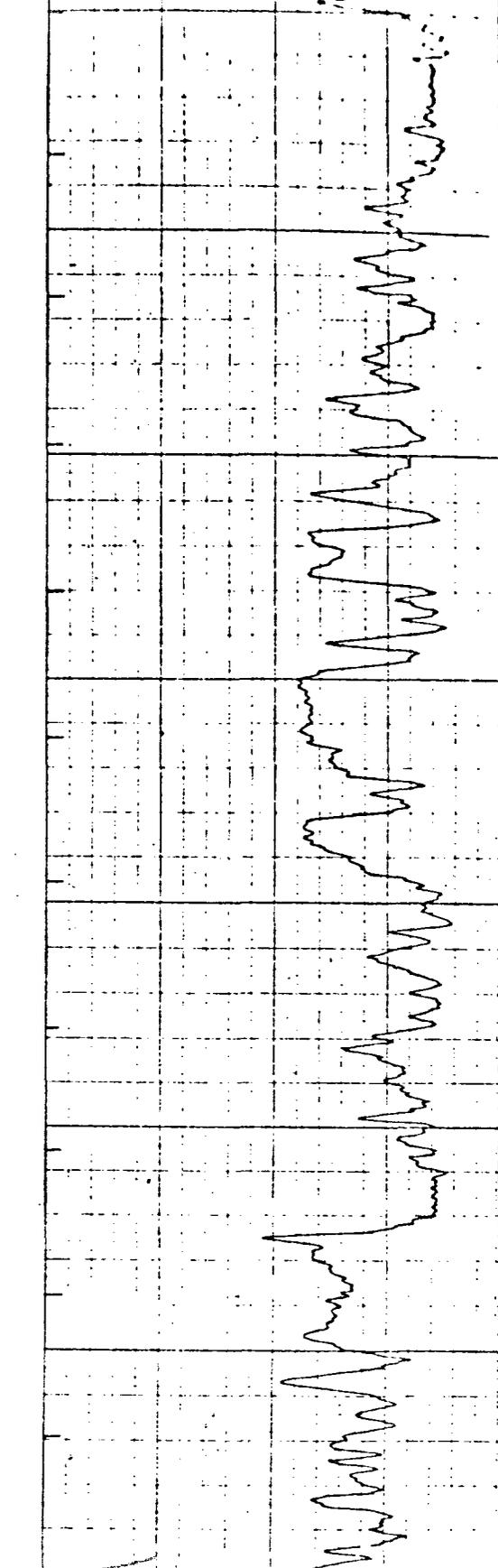


R. D. 3385
T. D. 3398

V. S. WELCH ACCOUNT NO 2
SHUGART NO 1-B
SHUGART

LOGGING SENSITIVITY
SENSITIVITY READING... A 30
MULTIPLIER... X
ZERO SUPPRESSION... 0

© 1958 CALIBRATION
SERIAL 1110
MADE IN U.S.A.
WELCH ELECTRIC CO.

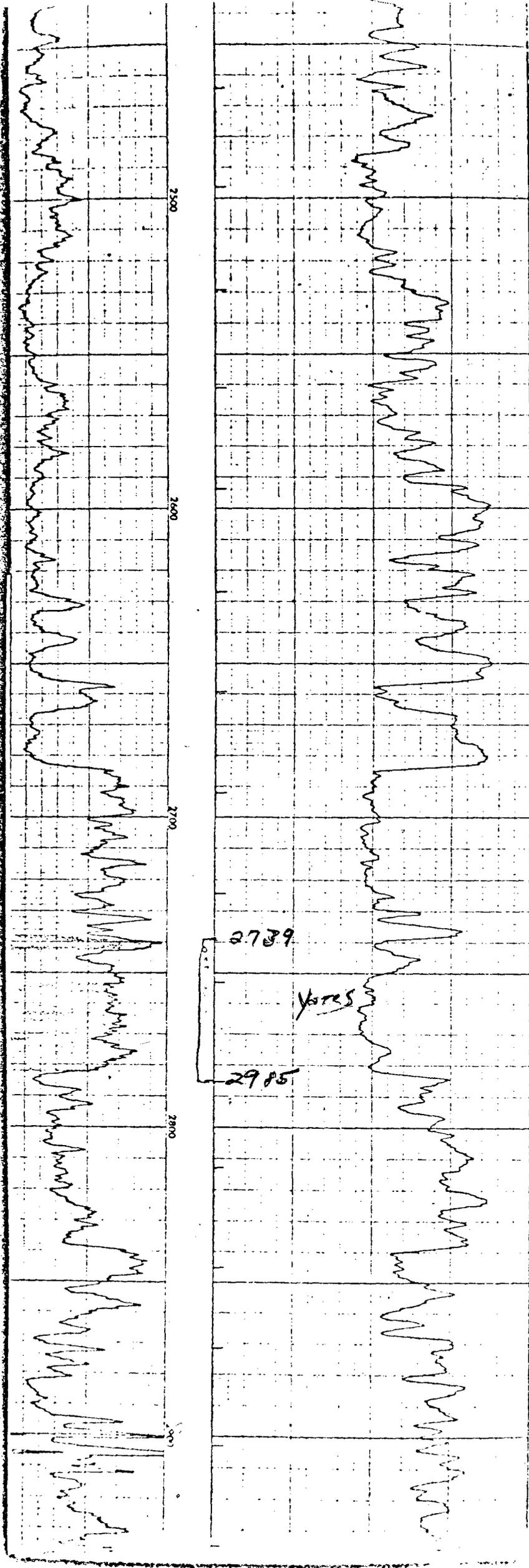


3356-66
Queens

R. D. 3397
T. D. 3398

B-1

LOGGING SENSITIVITY
SENSITIVITY READING... 62
MULTIPLIER... X
ZERO SUPPRESSION... 0



BEFORE EXAMINER UTZ
OIL CONSERVATION
EXHIBIT NO.
CASE NO.

THE NO. _____ COMPANY V. S. WELCH ACCOUNT NO. 2
 WELL SHUGART NO. 1-B
 FIELD SHUGART
 COUNTY EDDY STATE NEW MEXICO
 LOCATION SW OF SW Other Services _____
S10 33 TWP 13N RGE 11E

Permanent Datum UNKNOWN LEVEL Elevation _____
 Log Measured from CABLE TOOL LOG 1 ft Above Permanent Datum _____
 Drilling Measured from CABLE TOOL LOG _____

Date	Start	Stop	
Run No.			
Type Log	<u>WELL LOG</u>	<u>WELL LOG</u>	
Depth Dwyer	<u>31.0</u>	<u>31.0</u>	
Depth Log	<u>31.0</u>	<u>31.0</u>	
Bottom Logged Interval	<u>31.0</u>	<u>31.0</u>	
Top Logged Interval	<u>31.0</u>	<u>31.0</u>	
Type Fluid in Hole	<u>WATER</u>	<u>WATER</u>	
Sp. Gr. Sp. Gr.	<u>1.0</u>	<u>1.0</u>	
Density 15 Gal			
Level			
Base Rec Temp Deg F			
Opp. Eq. Time	<u>3 1/2 HOURS</u>		
Recorded By	<u>ALLO</u>		
Witnessed By	<u>M. S. WELCH</u>	<u>V. S. WELCH</u>	

Run No.	From	To	Size	Wgt	From	To
1	10'	31.0	2 1/2"	8"	31.0	31.0
1	0"	31.0	5 1/2"	31.0	31.0	31.0

Reproduced By
West Texas Electrical Log Service

Dallas 2, Texas

REFERENCE 436750

COMPLETION RECORD

SPUD DATE _____

COMP DATE _____

DST RECORD _____

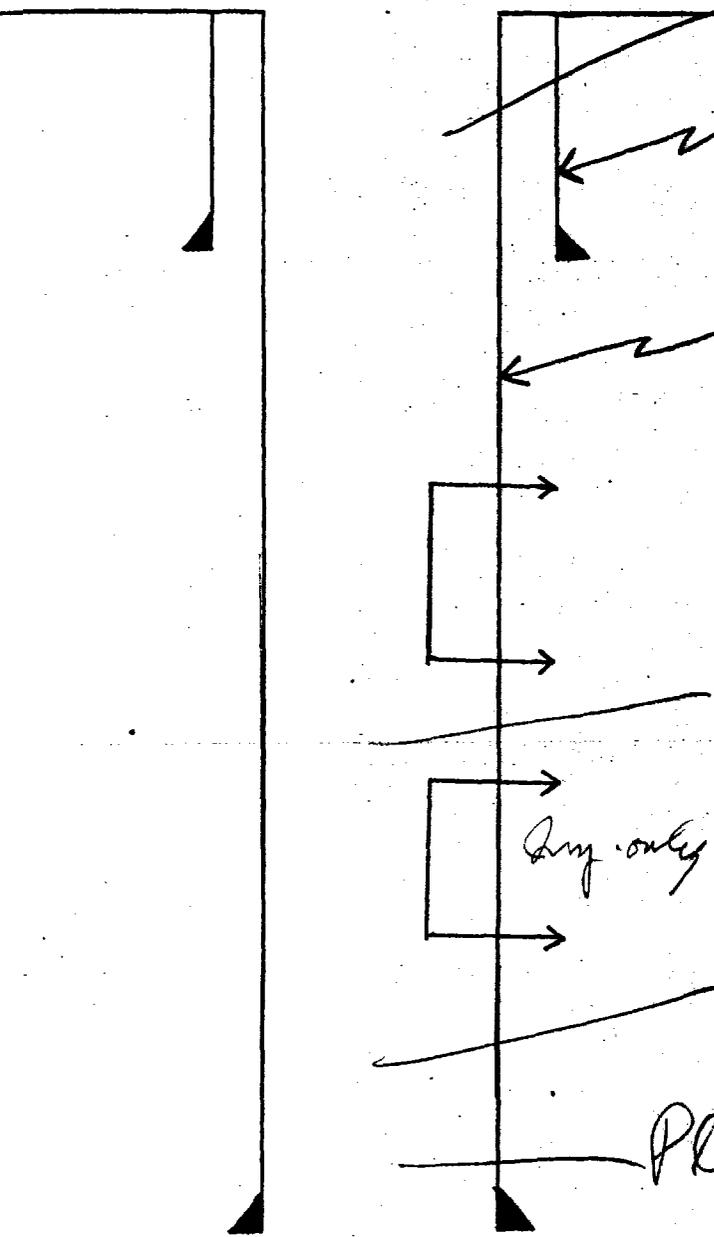
CASING RECORD _____

BEFORE EXAMINER USE
 CONSERVATION
 OFF. _____ EXHIBIT NO. 5
 CASE NO. 436750

Off.

SHUGART B-1
 UNIT I 330' FSL & 2310' FEL
 SECTION 33-18S-31E
 EDDY COUNTY, NEW MEXICO

Present Third Gauge



8½" O.D. casing set at 875' in 10" hole and cemented to 403' with 60 sacks (Fill up per sack = 7.87 feet)

5½" O.D. casing set at 3420' in 7" hole and cemented to 733' with 250 sacks. (Fill up per sack = 10.75 feet)
1959 est.

2739' Top Perf.

	<u>Present Perforations</u>	
Yates 2739'	-	2785'

2785' Bottom Perf.

3356' Top Perf.

any only this

	<u>Present Perforations</u>	
Queens 3356'	-	3366'

3366' Bottom Perf.

Plastic coated tubing under packer
3420' Total Depth

Note:

Perforation log will be run to check present perforations. Internally plastic coated tubing will be run with tension, type packer set at approximately 3340'.

BEFORE EXAMINER UTZ
 OIL CONSERVATION
off EXHIBIT NO. 4
 CASE NO. 4380

COOPERATIVE AGREEMENT FOR WATERFLOODING

SHUGART FIELD

EDDY COUNTY, NEW MEXICO

STATE OF NEW MEXICO)
) ss
COUNTY OF EDDY)

THIS AGREEMENT, made and entered into by and between the parties named as operators and owners of the 3 leases described below:

WITNESSETH:

WHEREAS, KERSEY & COMPANY (KERSEY) is the owner and operator of the "Nickson "A" Lease covering the NW/4 NW/4 of Section 4, Township 19 South, Range 31 East, Eddy County, New Mexico; and

WHEREAS, Kersey is the operator and an owner of the "Welch "A" Lease covering the E/2 NW/4, W/2 NE/4 and NE/4 NE/4 of Section 4, Township 19 South, Range 31 East, Eddy County, New Mexico; and

WHEREAS, Shenandoah Oil Corporation is the owner and operator of Shugart "B" Lease covering the S/2 and NW/4 of Section 33, T18S, R-31-E; Eddy County, New Mexico; and

WHEREAS, the parties hereto agree that a cooperative waterflood program having as its purpose the creation or attempted creation of an artificial water drive by the injection of water through the injection wells hereinafter provided for into the Queen Sand Formation is a reasonable producing and engineering practice; and

WHEREAS, the parties desire to institute and operate such a program with the view of increasing the ultimate recovery of oil, gas, and associated minerals from the Queen Sand formation and protecting the respective correlative rights of such parties;

NOW, THEREFORE, in consideration of the premises and mutual covenants and agreements herein contained, the parties hereto agree as follows:

1.

Shenandoah shall convert to a water injection well its "Shugart "B" No. 1 located in SW/4 SE/4, Section 33, Township 17 South, Range 31 East, Eddy County, New Mexico.

EXHIBIT "1"

BEFORE EXAMINER
OIL CONSERVATION
<i>App</i> EXHIBIT NO. _____
CASE NO. <i>1375</i>

Kersey shall convert to water injection wells its "Welch "A" No. 2 well, located in SW/4 NE/4 Section 4; and the Welch "A" No. 4 well, located in NE/4 NW/4 Section 4 all in Township 19 South, Range 31 East, Eddy County, New Mexico.

Said leases and the wells located thereon to be converted to water injection are shown on the plat attached hereto as Exhibit A and made a part hereof.

After this agreement is executed by all parties, each party shall proceed with all reasonable dispatch to convert its well or wells to water injection and such conversion shall be completed with due diligence, but in no event later than three (3) months after execution of this agreement has been completed. The entire cost and expense incurred in converting and equipping each such well into an injection well and the cost of operating same as an injection well shall be borne entirely by the parties owning such well.

2.

Pressured water shall be furnished to Shenandoah, by Kersey, at a cost to Shenandoah of \$0.0215 per barrel of water delivered (a barrel being defined as 42 U. S. gallons) or at the exact cost that Shenandoah is currently purchasing water from the Double Eagle Corporation of New Mexico currently servicing Shenandoah's Shugart Flood now in operation. If this rate should be changed by Double Eagle due to Federal and State regulations then the above rate \$0.0215 per barrel will be changed accordingly; but no more per barrel than Shenandoah pays to Double Eagle.

This pressured water shall be treated in such a manner as to prevent corrosion to the injection system and well equipment. A 2" internally plastic coated line, or the equivalent shall be installed to Shenandoah's lease line, at a point nearest to the Shugart B-1 well and it will be at the expense of Shenandoah to continue this line to its well location.

In the event that later in the flood life Kersey desires to furnish Shenandoah with commingled produced and fresh water, it shall be agreed that this water shall be of reasonable quality and to the satisfaction of Shenandoah.

3.

Each of the parties hereto agrees with all reasonable dispatch to commence the injection of water through the aforesaid well or wells on its leases and to continue the injection program until the entire productive interval of the Queen Sand formation is being waterflooded at such rate as may be necessary to result in and maintain, insofar as is reasonable practicable, equal advancement of the flood front around each injection well, and thereafter to continue injection at such rates. To such end, the parties hereto shall endeavor to attain a water injection rate in each injection well of 300 barrels of water per day, or if this rate is unobtainable, whatever amount can be injected at 2,000 psi maximum surface pressure. The injection wells shall be kept in proper repair. Each party agrees to provide the other party, monthly, with a record of the wellhead pressure of each injection well and of the daily volumes of water injected into each well covered by this agreement measured by a suitable water meter. Upon reasonable request, each party agrees to make its records pertaining to water injection operations available to the other parties and to permit the other parties to observe operations or tests of its injection wells.

4.

It shall be the responsibility of each party hereto to inject water into the injection wells to be operated by each party hereunder and all costs and expenses incurred in connection with injection water into said wells shall be borne by the party operating said well. It shall be the responsibility of Shenandoah to install and maintain a water meter at its well and to keep this meter in proper working order at all times.

5.

The duties, liabilities, and obligations of the parties hereto are several and not joint or collective and nothing contained herein shall ever be construed as imposing a partnership obligation or liability with regard to any of the parties hereto. Each party shall be individually responsible for producing oil from its own wells and shall be entitled to all production from its wells and leases, and each party hereto shall be individually responsible for only its obligations as set out herein and shall be liable only for its costs and expenses as herein stipulated.

6.

In the event any party to this agreement is rendered unable, in whole or part, by force majeure to carry out its respective obligations under this agreement, then such obligations, so far as they are affected by such force majeure, shall be suspended during the continuance of any inability so caused; however, reasonable efforts shall be made to remedy such cause with all reasonable dispatch. The term "force majeure", as employed herein, shall mean acts of God, strikes, lockouts, riots, epidemics, lightning, earthquakes, arrests, explosion, priority regulations of any government having sovereignty, accident to machinery or pipe, altercations, failure of water supply, injunctions, and any other causes, whether or not of the character above enumerated, not within the control of the party claiming suspension and which, by the exercise of due diligence, such party is unable to overcome. It is understood that the settlement of strikes or lockouts shall be entirely within the discretion of the party having the difficulty and the requirement that reasonable efforts shall be made to remedy the cause promptly shall not require the settlement of strikes or lockouts by acceding to the demands of the opposing person or organization when such course is inadvisable in the discretion of the party having the difficulty. Any party hereto that is unable, in whole or in part, to carry out its respective obligations because of such force majeure, shall, within ten (10) days after the occurrence of the interference giving rise to such force majeure, give written notice to the other party hereto stating reasonable particulars of such interference.

7.

This agreement shall remain in force and effect for a period of one year from and after the first day of the month immediately following the first injection of water into any of the aforementioned injection wells and shall continue in effect thereafter unless and until terminated in whole or in part as provided below.

At the end of the above-mentioned period of one year or at any time thereafter, any party who is named above as a lease operator may abandon water injection into any or all of its wells by giving the other lease operators at least thirty (30) days after receipt of such notice to take over the said injection well or wells, together with the casing therein by paying the abandoning party \$1000 per well plus the agreed on salvage value for whatever additional equipment the acquiring party desires to purchase and the acquiring party or parties shall assume full responsibility, cost, expense, and liability for the proper plugging of said well or wells on ultimate abandonment. In the event said option is exercised by any non-abandonment party, to the extent that it has the right do do so, abandoning party shall assign to acquiring party or parties its right to continue operation of said injection well or wells, it being understood that should any acquiring party desire to continue operations under the provisions of this paragraph, such acquiring party or parties will obtain any necessary consent of the surface owners or mineral owners for continued water injection.

8.

This agreement shall be subject to all valid and applicable state and federal laws, rules, regulations, and orders, and the operations conducted hereunder shall be performed in accordance with all such laws, rules, regulations, and orders.

Each of the nonoperating parties hereto agrees that all notices, reports, and communications permitted or required hereunder may be given to the operator of its lease. Such notices, reports, and communications shall be deemed to have been properly given or delivered when sent by United States mail or Western Union telegram, postage or charges prepaid, and addressed to the party to whom such notice is given as follows:

Kersey & Company
P. O. Box 316
Artesia, New Mexico 88210

Shenandoah Oil Corporation
1500 Commerce Bldg.
Fort Worth, Texas 76102

Notice shall be given when deposited in the United States post office or with Western Union Telegraph Company, postage or charges prepaid. Each party hereto shall have the right to change its address for all purposes of this agreement by notifying the other party in writing.

10.

The terms, covenants, and conditions hereof shall inure to the benefit of and be binding upon the parties hereto, their successors and assigns.

IN WITNESS WHEREOF, this agreement is entered into as of the

9th day of April, 1970.

ATTEST:

Assistant Secretary

SHENANDOAH OIL CORPORATION

By P. B. ...
Vice President - Secondary Recovery

ATTEST:

Leigal Grimbau
Assistant Secretary

KERSEY & COMPANY

By Harold ...

ATTEST:

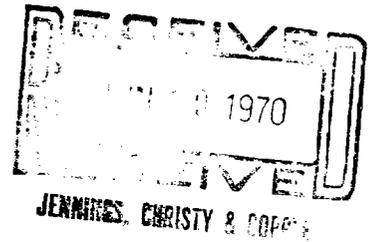
Leigal Grimbau
Assistant Secretary

By Leland A. ...



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. Drawer U
Artesia, New Mexico 88210



June 18, 1970

Jennings, Christy & Copple
Post Office Box 1180
Roswell, New Mexico 88201

Attention: Mr. James T. Jennings

Dear Sir:

Your letter of June 16, 1970 requests approval for Shenandoah Oil Corporation to operate a waterflood in the Shugart Pool by the injection of water into the Yates, Seven Rivers, Queen, and Grayburg formations on oil and gas lease New Mexico 025778 involving the NW $\frac{1}{4}$ and S $\frac{1}{2}$ sec. 33, T. 18 S., R. 31 E., N.M.P.M., Eddy County, New Mexico. You propose to convert to water injection the well No. 1 Shugart "B" located in the SW $\frac{1}{4}$ SE $\frac{1}{4}$ of this section 33.

The plan for operating this waterflood project as proposed in the application, is satisfactory to this office, and hereby approved subject to approval by the New Mexico Oil Conservation Commission and the following:

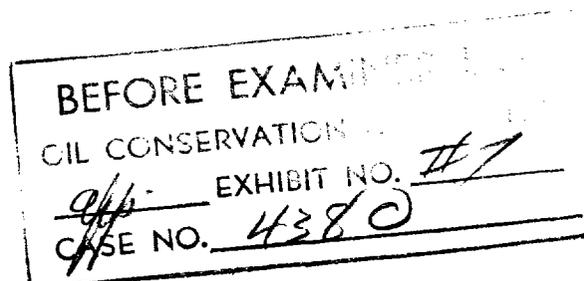
1. A monthly progress report (N.M.O.C.C. form C-120 acceptable) is to be submitted in duplicate to this office showing the volume of water injected and average pressure for the injection wells in the project area.
2. This approval does not preclude the necessity for further approval when the project is expanded to include other wells and leases or the necessity to submit the usual notices and reports on wells involved.

Sincerely yours,

Robert L. Beekman
Acting District Engineer

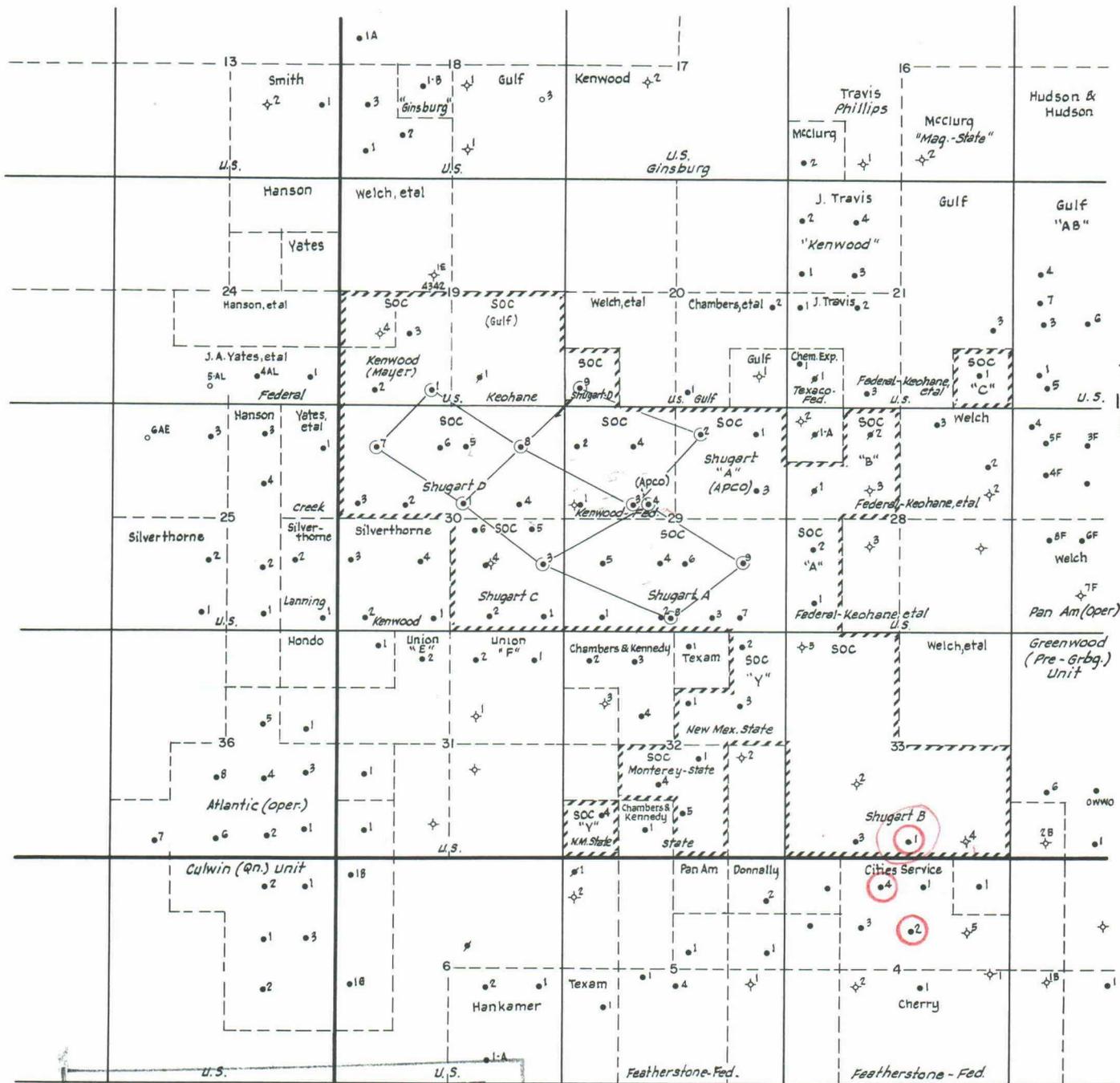
cc:
N.M.O.C.C., Santa Fe
Roswell
File
Accounts

RLB:ih 6/18/70



R 30 E

R 31 E



BEFORE EXAMINER UTZ
 OIL CONSERVATION COMMISSION
 app. EXHIBIT NO. 2
 CASE NO. 4380
 -LEGEND-

- Lease Boundaries
 - ⊙ Injection Well
 - ⊙—⊙ Injection Pattern
- Exhibit "A"

SOC
 SHENANDOAH OIL CORPORATION

FLOOD NO. 4
 SHUGART
 EDDY COUNTY, NEW MEXICO

