

CASE 3855: Application of SUNRAY
DX OIL COMPANY FOR A WATERFLOOD
PROJECT, LEA COUNTY, N. MEX.

Case Number

3855

Application

Transcripts.

Small Exhibits

ETC.

GOVERNOR
DAVID F. CARGO
CHAIRMAN

State of New Mexico
Oil Conservation Commission



LAND COMMISSIONER
GUYTON S. HAYS
MEMBER

STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

P. O. BOX 2000
SANTA FE

September 17, 1968

Mr. Charles White
White, Gilbert, Koch & Kelly
Attorneys at Law
Post Office Box 787
Santa Fe, New Mexico

Re: Case No. 3855
Order No. R-3502
Applicant:
Sunray DX Oil Company

Dear Sir:

Enclosed herewith are two copies of the above-referenced Commission order recently entered in the subject case.

Very truly yours,

A. L. Porter, Jr.
A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Carbon copy of order also sent to:

Hobbs OCC x

Artesia OCC

Astec OCC

Other State Engineer Office

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 3855
Order No. R-3502

APPLICATION OF SUNRAY DX OIL COMPANY
FOR A WATERFLOOD PROJECT, LEA COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on September 4, 1968, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 17th day of September, 1968, the Commission, a quorum being present, 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 Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Sunray DX Oil Company, is the owner and operator of the H. D. Greer Well No. 1, located in Unit C of Section 21, Township 22 South, Range 36 East, NMPM, South Eunice Pool, Lea County, New Mexico.

(3) That the applicant seeks authority to institute a waterflood project in the South Eunice Pool by the injection of water into the Seven Rivers formation in the interval from approximately 3693 feet to 3733 feet in its H. D. Greer Well No. 1.

(4) That the subject well should be classified as a salt water disposal well.

(5) That the injection should be accomplished through 2 7/8-inch cement-lined tubing installed in a packer set at

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CASE No. 3855
Order No. R-3502

approximately 3650 feet; that the casing-tubing annulus should be filled with an inert fluid; and that a pressure gauge should be attached to the annulus or the annulus left open at the surface in order to determine leakage in the tubing, casing, or packer.

(6) That approval of the subject well for salt water disposal will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

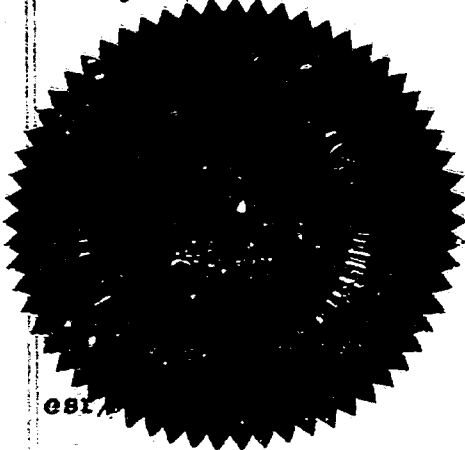
(1) That the applicant, Sunray DX Oil Company, is hereby authorized to utilize its H. D. Greer Well No. 1, located in Unit C of Section 21, Township 22 South, Range 36 East, NMPM, South Eunice Pool, Lea County, New Mexico, to dispose of produced salt water into the Seven Rivers formation, injection to be accomplished through 2 7/8-inch tubing installed in a packer set at approximately 3650 feet, with injection into the open-hole interval from approximately 3693 feet to 3733 feet;

PROVIDED HOWEVER, that the tubing shall be cement-lined; that the casing-tubing annulus shall be filled with an inert fluid; and that a pressure gauge shall be attached to the annulus or the annulus left open at the surface in order to determine leakage in the tubing, casing, or packer.

(2) That the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

(3) 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.



STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

David F. Cargo
DAVID F. CARGO, Chairman

Guyton B. Hays
GUYTON B. HAYS, Member

A. L. Porter, Jr.
A. L. PORTER, Jr., Member & Secretary

Case 3855
Hear'd 9-4-65
Rec. 9-9-65

This application was for a pilot water flood. Questioning of the witnesses revealed that they that they needed to do this in order to be allowed to inject SW into the producing formation. Witness admitted there was at present only a SWD well and he had no flood data available.

I recommend that be call this well a SWD well. -

H. D. Luer #1 660 N - 198 W - 21-22S-36E.
Packer to be set at approx. 3650,
injection thru plastic coated tubing,
& into the S.R. open hole ~~at approx~~
from 3693-3733. Annulus to be
filled with inert fluid with
pressure gauge in annulus at
surface or open.

Pool is S. Sando. - S.R.

Thos. D. R.

Range 34 East, Lea County, New Mexico, in such a manner as to produce oil from the Abo, Middle Pennsylvanian and Morrow formations, Vacuum Field, through parallel strings of tubing.

CASE 3651: (Reopened)

In the matter of Case No. 3651 being reopened pursuant to the provisions of Order No. R-3315, which order created the North Morton Permo-Pennsylvanian Pool, Lea County, New Mexico, and established 80-acre spacing units for said pool for a period of one year. All interested parties may appear and show cause why said pool should not be developed on 40-acre spacing units.

CASE 3853: Application of Tenneco Oil Company for a waterflood expansion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the expansion of its Mesa Queen Waterflood Project, Mesa-Queen Pool, by the conversion to water injection of two additional wells located in the SW/4 NW/4 of Section 20 and the NW/4 SE/4 of Section 16, both in Township 16 South, Range 32 East, Lea County, New Mexico. Applicant further seeks an administrative procedure whereby said project could be expanded to include additional lands and injection wells as may be necessary to complete an efficient injection pattern.

CASE 3854: Application of Sinclair Oil & Gas Company for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Yates formation in the perforated interval from 3636 feet to 3700 feet in its Ballard DE Federal Well No. 6 located in Unit L of Section 22, Township 20 South, Range 34 East, Lynch Field, Lea County, New Mexico.

CASE 3431: (Reopened):

In the matter of Case No. 3431 being reopened pursuant to the provisions of Order No. R-3100-A to permit Sinclair Oil & Gas Company to show cause why its W. H. Turner Well No. 1 located in Unit L of Section 29, Township 21 South, Range 37 East, Lea County, New Mexico, a dual completion in the Drinkard and Blinebry Oil Pools, should not be completed in accordance with the provisions of Rule 112-A of the Commission Rules and Regulations.

CASE 3855: Application of Sunray DX Oil Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Seven Rivers formation in the interval from approximately 3693 feet to 3733 feet in its H. D. Greer Well No. 1 located in Unit C of Section 21, Township 22 South, Range 36 East, South Eunice Pool, Lea County, New Mexico.

Sunray DX Oil Company

August 6, 1968



District Office
P. O. Box 1416
Roswell, New Mexico

Case 3855

New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico

RE: Application for Water Injection
South Eunice Field
Lea County, New Mexico

Gentlemen:

Sunray DX Oil Company hereby notifies the Oil Conservation Commission of Sunray's desire to inject water in its New Mexico H. D. Greer No. 1 well in the South Eunice Field, Lea County, New Mexico.

We propose to re-inject produced salt water from Sunray's Boren-Greer Gas Unit, the Boren Lease, and the Greer Lease. This water will be injected into the 7-Rivers Queen Zone.

This application is being made in accordance with Rule 701. All required information is attached. Sunray DX respectfully requests that this matter be scheduled for hearing before the Commission as soon as possible.

Copies of this letter, with attachments, have been sent to the Conservation Commission Office in Hobbs.

Yours truly,

SUNRAY DX OIL COMPANY

Franklin D. Lebo

Franklin D. Lebo
Roswell District Engineer

FDL/LDB/nsh

Attachments

cc: NMOCC - Hobbs

60 AUG 7 AM 8 29

DOCKET MAILED

Date 8/22/68

11120 SIMMAS BLDG. • P. O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO

EXAMINER HEARING

Application of Sunray DX Oil Company
for a waterflood project, Lea County,
New Mexico.

Case 3855

TRANSCRIPT OF HEARING

MR. UTZ: Case 3855.

MR. HATCH: Case 3855, application of Sunray DX Oil Company for a waterflood project, Lea County, New Mexico.

MR. WHITE: If the Examiner, please, Charles White of Santa Fe, New Mexico, appearing on behalf of the Applicant. We have one witness to be sworn at this time.

(Witness sworn.)

MR. UTZ: Are there other appearances? You may proceed.

(Whereupon, Applicant's Exhibits 1, 2 and 3 were marked for identification.)

RALPH MANESS

called as a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. WHITE:

Q Mr. Maness, would you state your name, please?

A Ralph Maness. I'm a petroleum engineer with Sunray DX Oil Company in Roswell, New Mexico.

Q Have your professional qualifications previously been accepted by the Commission as a matter of record?

A Yes, they have.

Q Will you briefly state what Sunray seeks by the subject application?

A We seek approval to convert our H. D. Greer Number 1 Well to water injection for the purpose of injecting produced water from our Boring and Greer leases. These leases are located in Sections 20 and 21 as shown on our Exhibit Number 1.

Q And it shows the injection well?

A Yes. The injection well is shown by the red triangle. This is our H. D. Greer Number 1 Well.

Q Is this now in an advanced state of depletion?

A Yes, sir, it is. The wells producing from the South Eunice Seven Rivers Field on our lease produced from two to five barrels of oil and one to five barrels of water per day.

Q What is the present status of the proposed injection well?

A It is a temporarily abandoned well.

Q Do you have any other information as to Exhibit Number 1?

A Yes. The brown circled wells on the map indicate the South Eunice Seven Rivers producing wells and the green circled wells indicate the Jalmat-Yates gas wells of which we have one on our lease which is our Boring and Greer gas unit. This well also makes considerable water and the water from this well is to be injected in our proposed injection well.

Q And in what formation did you say you intend to inject the water?

A We intend to inject the water into the Seven Rivers Formation.

Q Now, will you explain Exhibit 2?

A Yes, sir. Exhibit 2 indicates our existing casing design in our proposed injection well, the H. D. Greer Number 1 and our proposed tubing and packer arrangement for this injection well.

Q Does it show the quantity of the cement in the tops?

A Yes, sir. We have seven-inch twenty-four pound casing set at 3693 with cement at 325 sacks. Estimated top of cement was 1429 and we have nine and five-eighths thirty-six pound intermediate casing set at 1543. Cemented with 450 sacks.

On our sketch, we inadvertently left off the estimated top of cement on this string. It is 270 feet. And we have surface casing, seventeen two-inch forty pound set at 203 feet, cemented with 225 sacks which was circulated to surface.

Q Where is the location of your packer?

A Our packer will be set at approximately 3650, which is approximately 50 foot above where the seven inch casing is set. This will be a tension-type packer and we propose to run two and seven-eighths inch tubing in the well and it will be cement lined tubing.

Q Do you intend to use a pressure gauge or leave the annulus open?

A We most likely will use a pressure gauge; however, there's a possibility that we may leave the annulus open. We will, however, load the annulus with an inhibited fluid.

Q In your opinion, will any fresh water be affected by the installation?

A No, sir, I do not believe it will.

Q And will it effectively segregate the injected water from other zones?

A Yes, sir.

Q How much volume of water do you intend to inject?

A Approximately 150 barrels of water per day.

Q And under what pressure?

A Remedial work on this well before it was temporarily abandoned indicates that the well will take the water on a vacuum by gravity.

Q Will you explain Exhibit 3, your log?

A Yes, sir. Exhibit 3 is a radioactive log on the proposed injection well and all it is intended to show is the proposed injection zone. It shows casing set at 3693 and our plug-back total depth at 3733. This open hole will be our injection zone.

Q Does that complete your testimony?

A Yes, sir, it does.

Q Were these exhibits prepared by you or under your direction?

A Yes, sir.

MR. WHITE: We offer Exhibits 1 through 3 and that concludes our direct.

MR. UTZ: Without objection, Exhibits 1 through 3 will be entered into this record.

(Whereupon, Applicant's Exhibits 1, 2 and 3 were admitted into evidence.)

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Maness, what is the source of the water here?

A Produced water from our Seven-Rivers Wells, South Eunice Field, on our Boring and Greer Leases and produced water from our Boring and Greer gas unit well which is completed in the Jalmat-Yates. We have been approached by at least one other operator in the field in regards to our injecting their produced water also; however, their produced water will be from the same zones.

Q In other words, at the present time, your producer, it will at least produce water from the 320 acres that you've shown on your Exhibit 1?

A That's correct, sir.

Q Now, how much water do you think you'll be injecting?

A Approximately 150 barrels, sir.

Q 150 barrels a day?

A Yes, sir.

Q That will go into the open hole at 3693 to 3733?

A Yes, sir, that is correct.

Q How long do you anticipate that it will take at this rate to cause a fill-up to the Seven Rivers Zone in this area?

A I am not, at this time, able to answer that question, sir. We have not studied this field for the possibility of waterflood. This proposal was to continue primarily for disposing of salt water with any possible results from this injection to be monitored closely for possible further expansion in waterflood.

Q Well, what advantage is it to call it waterflooded instead of an SWD well?

A Well, sir, if you inject -- if my understanding is correct -- if you inject waters into a producing zone, it is termed as a waterflood. Is that not correct, sir?

Q No. We've had two cases just before yours that want to do the very thing you want to do. It just depends on whether you're going to damage the formation or not or whether you're actually going to help it.

A Well, sir, as I said, we have not studied the formation and whether we will possibly receive any benefit; however, we plan to monitor the project and to see whether we do, and if

we do, we'll be looking at possible further expansion in terms of a waterflood project.

Q You wouldn't expect to do any damage to the formation by this injection, would you?

A No, sir. I wouldn't think there would be no --

Q Contrary, you would expect it to help, if anything?

A Yes, sir, that's correct.

Q And this entire zone is productive in this area, either in the Jalmat Gas Pool or in the South Eunice Oil Pool, is that correct?

A Yes, sir.

Q Do you know whether or not your company will have any objection to calling this what it is: salt water?

A We would have no objection to it, no, sir. We still --

Q If you still don't get any response for this, well, you could come in later on and call it a waterflood --

A This is correct.

Q -- and there would be no problem, would there not?

A We could still monitor it the same. The only particular difference would be in the forms which would be required.

Q And did you show what kind of water you have here anywhere?

A No. We do not have a water analysis. However, we have had not experienced any corrosion problems or scale problems with

this water.

Q It's pretty salty, though?

A Yes, sir, it's salty water.

MR. UTZ: Are there any other questions of the witness? You may be excused. Any statements in this case? The case will be taken under advisement.

I N D E X

<u>WITNESS</u>	<u>PAGE</u>
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E X H I B I T S

<u>Number</u>	<u>Marked for Identification</u>	<u>Received in Evidence</u>
Applicant's Exhibit Numbers 1, 2, 3	2	6

STATE OF NEW MEXICO)
)
 COUNTY OF BERNALILLO) ss.

I, CHARLOTTE MACIAS, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me; and that the same is a true and correct record of the said proceedings to the best of my knowledge, skill and ability.

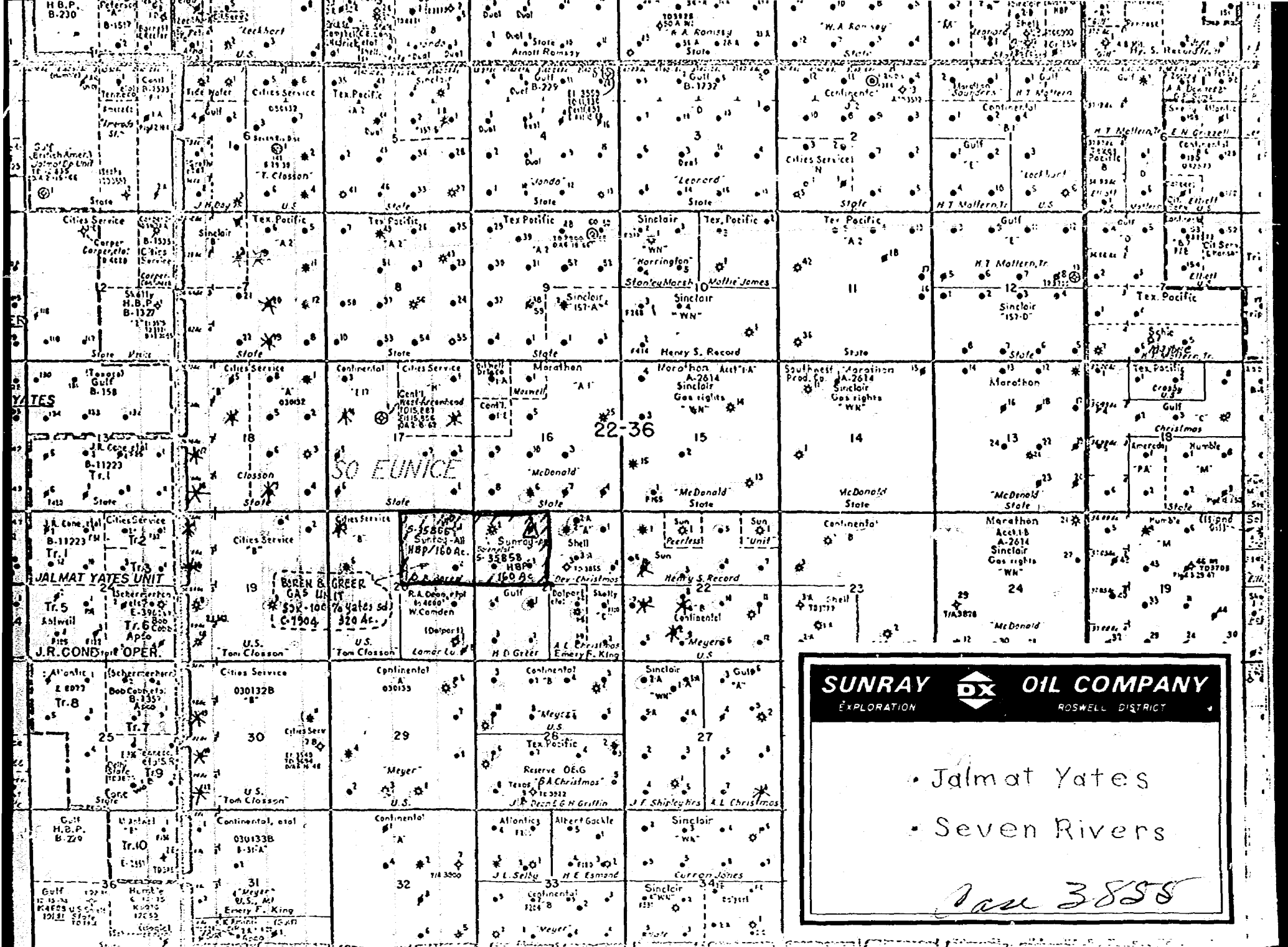
Witness my Hand and Seal this 7th day of October, 1968.

Charlotte Macias
 Notary Public

My Commission Expires:

February 10, 1971.

I do hereby certify that the foregoing is a true and correct record of the proceedings in the hearing of Case No. 3855, heard by me on Sept. 4, 1968.
[Signature]
 Notary
 New Mexico Oil Conservation Commission



Case 3855

SUPPLEMENTAL DATA
FOR CONVERTING NEW MEXICO GREER #1
TO WATER INJECTION SERVICE

LEASE - Greer

FIELD - South Eunice

WELL - No. 1

LOCATION - 660' from the North line & 660' from the East line of
Section 21, Township 22-S, Range 36-E, Lea County, New
Mexico.

DATE COMPLETED - January 22, 1937

PRESENT STATUS - Temporarily Abandoned

PRODUCING FORMATION - 7-Rivers

PROPOSED STATUS - Water Injection

TYPE FLUID INJECTED - Salt Water

FORMATION IN WHICH WATER IS TO BE INJECTED - 7-Rivers

TOP OF FORMATION - 3693

PROPOSED INJECTION INTERVAL - 3693 - 3733

SOURCE OF INJECTION WATER - The Boren Lease, the Greer Lease, and
the Boren-Greer Gas Unit

ANTICIPATED VOLUME - 160 BPD

ANTICIPATED INJECTION PRESSURE - Vacuum

H. D. GREER #1
660 FNL & 1980 FWL
SECTION 21, T-22-S, R-36-E

