

CASE 3843: Appli. of CONTINENTAL
for a pressure maintenance project
Lea County, New Mexico.

Case Number

3843

Application

Transcripts.

Small Exhibits

ETC.

State of New Mexico
Oil Conservation Commission



P. O. BOX 2088
SANTA FE

September 9, 1952

Re: Case No. 3843
Order No. R-3482, 3483, 3484,
Applicant: 3485, 3487, 3488,
3489, 3490, 3491
Continental & Eugene Nearburg

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 R-3483 & R-3489

Aztec OCC

Other _____

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. 3843
Order No. R-3488

APPLICATION OF CONTINENTAL OIL COMPANY
FOR A PRESSURE MAINTENANCE PROJECT, LEA
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on August 21, 1968,
at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 9th 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, Continental Oil Company, is the
owner and operator of the Sholes "B-25" Well No. 5, located in
Unit G of Section 25, Township 25 South, Range 36 East, NMPM,
Jalmat Pool, Lea County, New Mexico.

(3) That the applicant seeks authority to institute a pres-
sure maintenance project in the Jalmat Pool by the injection of
water into the Seven Rivers formation in the perforated interval
from approximately 3012 feet to 3110 feet in its Sholes "B-25"
Well No. 5. In the alternative, the applicant seeks to have said
well authorized for salt water disposal.

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

(5) That the injection should be accomplished through
3 1/2-inch plastic-lined tubing installed in a packer set at
approximately 3010 feet; that the casing-tubing annulus should
be filled with an inert fluid; and that a pressure gauge should

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CASE No. 3843

Order No. R-3488

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 application 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, Continental Oil Company, is hereby authorized to utilize its Sholes "B-25" Well No. 5, located in Unit G of Section 25, Township 25 South, Range 36 East, NMPM, Jalmat Pool, Lea County, New Mexico, to dispose of produced salt water into the Seven Rivers formation, injection to be accomplished through 3 1/2-inch tubing installed in a packer set at approximately 3010 feet, with injection into the perforated interval from approximately 3012 feet to 3110 feet;

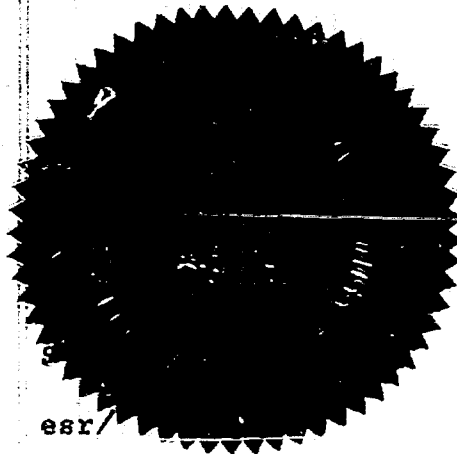
PROVIDED HOWEVER, that the tubing shall be plastic-lined; that the casing-tubing annulus shall be filled with an inert fluid; and that a pressure gauge shall be attached to the annulus or the annulus left open at the surface in order to determine leakage in the tubing, casing, or packer;

PROVIDED FURTHER, that all existing perforations in said disposal well above 3110 shall be squeeze-cemented prior to injection of water into said well.

(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 E. Cargo
DAVID E. CARGO, Chairman

Guyton B. Hays
GUYTON B. HAYS, Member

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

(Case 2839 continued)

authority to institute a waterflood project by the injection of water into the Delaware formation in the perforated interval from 5073 feet to 5145 feet in its Fields Well No. 2 located in Unit M of Section 25, Township 23 South, Range 32 East, Cruz-Delaware Pool, Lea County, New Mexico. In the alternative, applicant seeks to have said well authorized for salt water disposal

CASE 3840: Application of Continental 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 perforated interval from 3450 feet to 3600 feet in its Lynn "A-27" Well No. 1 located in Unit D of Section 27, Township 23 South, Range 36 East, Jalmat Pool, Lea County, New Mexico. In the alternative, applicant seeks to have said well authorized for salt water disposal.

CASE 3841: Application of Continental 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 Delaware formation in the perforated intervals from 4497 feet to 4507 feet in its Wilder Well No. 24 and from 4529 feet to 4535 feet in its Wilder Well No. 27 located in Units L and F, respectively, Section 26, Township 26 South, Range 32 East, El Mar-Delaware Pool, Lea County, New Mexico. In the alternative, applicant seeks to have said wells authorized for salt water disposal.

CASE 3842: Application of Continental Oil Company for a pressure maintenance project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a pressure maintenance project by the injection of water into the Seven Rivers formation in the perforated interval from 3208 feet to 3255 feet in its Eaves "A" Well No. 10 located in Unit P of Section 19, Township 26 South, Range 37 East, Scarborough Yates-Seven Rivers Pool, Lea County, New Mexico, and promulgation of special rules for said project. In the alternative, applicant seeks to have said well authorized for salt water disposal.

CASE 3843: Application of Continental Oil Company for a pressure maintenance project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a pressure maintenance project by the injection of water into the Seven Rivers formation in the perforated interval from 3012 feet to 3110 feet in its Sholes "B-25" Well No. 5 located in Unit G of Section 25, Township 25 South, Range 36 East, Jalmat Pool, Lea County, New Mexico, and promulgation of special rules for said project. In the alternative, applicant seeks to have said well authorized for salt water disposal.

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SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS

1120 SIMAS BLDG. • P. O. BOX 1092 • PHONE 243-6491 • ALBUQUERQUE, NEW MEXICO

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
August 21, 1968

IN THE MATTER OF:

Application of Continental Oil
Company for a pressure maintenance
project, Lea County, New Mexico.

Case No. 3843

BEFORE: D. S. NUTTER,
Examiner

TRANSCRIPT OF HEARING

MR. NUTTER: Call Case 3843.

MR. HATCH: Application of Continental Oil Company
for a pressure maintenance project, Lea County, New Mexico.

MR. KELLAHIN: May the record show the same appearance
and that the witness, Roger Porter, has been sworn and qualified.

(Applicant's Exhibits 1 through
5 marked for identification.)

* * * * *

J. ROGER PORTER, called as a witness, having been
previously duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Will you state your name, please?

A J. Roger Porter.

Q Are you the same Mr. Porter who has testified
in the preceeding cases?

A Yes.

Q Are you familiar with the application of Continental
Oil Company in Case 3843?

A Yes, I am.

Q Briefly, what is proposed by Continental Oil in Case
3843?

A Case No. 3843 is the application of Continental
Oil Company for authority to inject water into its Sholes

"B-25" No. 5 well located in the Jalmat Pool.

Q Referring to what has been marked as Exhibit No. 1, will you identify that exhibit?

A Exhibit No. 1 is a copy of the plat showing the proposed injection well circled in red at a location 1650 feet from the north line and 1650 feet from the east line of Section 25, Township 25 South, Range 36 East, Lea County, New Mexico. The Sholes "B-25" Lease is shown outlined in red and is described as the northeast quarter, the northeast quarter of the southeast quarter of Section 25, Township 25 South, Range 36 East, Lea County, New Mexico. The plat shows the location and ownership of all leases and wells within a radius of two miles from the injection well.

Q Referring to what has been marked as Exhibit No. 2, would you identify that exhibit?

A Exhibit No. 2 is a copy of the Form C-108 for Sholes "B-25" No. 5. As shown on the form, we propose to inject produced water into the Seven Rivers formation in the interval 3012 to 3110 feet, through three and one-half-inch O. D. plastic-lined tubing below a packer to be set at approximately 3010 feet. The well is now shut in after unsuccessful remedial work in 1966.

Q Referring to what has been marked as Exhibit No. 3,

would you identify that exhibit?

A Exhibit 3 is a schematic diagram of the well showing the eight and five-eighths-inch casing set at 360 feet, five and one-half-inch casing set at 3110 feet, three and one-half-inch O. D. Plastic-lined tubing set on a packer at 3010 feet and the injection interval, 3012 to 3110 feet.

Q Will you fill the casing tubing annulus with an inert fluid?

A Yes, sir.

Q And you can leave it open or put a pressure gauge on it, is that correct?

A Yes, sir.

Q According to the diagrammatic sketch there is an interval from 360 feet to 950 feet and there's no cement behind the pipe, is that correct?

A That is correct.

Q Is there any fresh waters in this area, or do you know?

A There are fresh waters in this area.

Q Would the installation, as you propose it, adequately protect those fresh waters, in your opinion?

A In my opinion, yes, sir, as long as we have the inert fluid in our annulus.

Q You would know immediately if leakage did occur, would you not, within a reasonable time?

A Within a reasonable period of time, yes, sir.

Q Now, referring to what has been marked as Exhibit No. 4, would you identify that exhibit, please?

A Exhibit No. 4 is a copy of the radioactivity log on the Sholes "B-25" No. 5. The top of the Seven Rivers formation is indicated at approximately 3012 feet. The perforated interval into which water is proposed to be injected is shown at 3012 to 3110 feet.

Q Referring to what has been marked as Exhibit No. 5, would you describe that exhibit?

A Exhibit No. 5 is an analysis of water produced on this lease.

Q Is that a potable water?

A It is not considered potable for humans, but is considered suitable for livestock.

Q Has it been used for livestock in this area, or do you know?

A I do not know for sure, but I have been told that it has.

Q What is the source of the water that you are going to dispose of?

A The injection water will initially be produced water from the Sholes A and Sholes "B-25" leases. In addition to these leases, we have also been contacted by nearby operators who desire to dispose of water into our Sholes "B-25" No. 5. This possibility is now being considered by our company.

Q What volumes of water will you be injecting?

A The initial injection rate is anticipated to be 1200 to 1500 barrels of water per day and it may increase to 6,000 barrels of water per day, depending on the offset operators that we might take and include into this system.

Q Will the well take that volume of water, in your opinion?

A In our opinion, it will.

Q You are going to inject into the Seven Rivers formation?

A That is correct.

Q Is the Jalmat Pool considered to be a waterflood prospect?

A There is a strong water drive in the Seven Rivers and Basal Yates on the west flank of the Jalmat Pool. These intervals are not considered to be waterflood prospects since there is a natural water drive, or waterflood, already in existence.

Q What will be the effect of injecting water into

the Seven Rivers in this area?

A The injection of produced water back into the Seven Rivers formation will have the effect of maintaining pressure in that formation.

Q Do you expect this to have any effect on the recovery of oil in this area?

A In view of the very strong water drive in the Seven Rivers formation, we do not expect any effect on oil recovery as a result of the injection. We do not expect recovery to be either increased or decreased.

Q Will the granting of this application result in waste?

A No, the result of this application will be that produced water which is presently produced into pits on the lease will be injected underground. Currently, there is an engineering evaluation being made to install high volume lift equipment in the producing wells on the Sholes "A" and Sholes "B-25" Leases once subsurface disposal is initiated.

Q Will the granting of the application result in any impairment of correlative rights?

A In my opinion there will be no impairment of correlative rights.

Q Were Exhibits 1 through 5 prepared by you or under your supervision?

A Yes, they were.

MR. KELLAHIN: At this time, I offer in evidence Applicant's Exhibits 1 through 5, inclusive.

MR. NUTTER: Applicant's Exhibits 1 through 5 will be admitted.

(Whereupon, Applicant's Exhibits 1 through 5 offered and admitted in evidence.)

MR. KELLAHIN: That's all I have on direct examination.

CROSS EXAMINATION

BY MR. NUTTER:

Q I am having a little trouble following all these perforations on Exhibit 3. Apparently, originally the perforations starting at 28.7 down to 2991; I don't see that all of those have been squeezed, however, have they?

A No, sir, they have not.

Q You do have perforations up above here that are open, is that correct?

A Yes, sir, above our disposal interval and we do plan to squeeze these.

Q So you will have all perforations squeezed?

A Yes, sir.

Q I was wondering how the inert fluid was going to stay in the annulus if they weren't squeezed. However, every perforation will be squeezed here, except the interval from 3012 to 3110?

A Every interval above the packer will be squeezed, sir.

Q The status of the well is shut in after this unsuccessful remedial work in '66?

A Yes, and there are perforations that are remaining open right now.

Q When you mentioned that the injection may go up to 6,000 barrels a day, that's after you install the high capacity lift equipment on the lease?

A That is correct, that way, or possibly in disposing of water from the offset leases.

Q You are open to receiving water from other operators?

A Yes, sir, our management is considering that.

MR. NUTTER: Are there any other questions of the witness? He may be excused.

(Witness excused.)

MR. NUTTER: Do you have anything further in this case, Mr. Kellahin?

MR. KELLAHIN: That's all.

MR. NUTTER: Does anyone have anything further to offer in Case 3843? We will take the case under advisement.

I N D E X

<u>WITNESS</u>	<u>PAGE</u>
<u>J. ROGER PORTER</u>	
Direct Examination by Mr. Kellahin	2
Cross Examination by Mr. Nutter	8

EXHIBITSMARKEDOFFERED AND
ADMITTED

Applicant's 1 through 5	2	8
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STATE OF NEW MEXICO -)
) SS
 COUNTY OF BERNALILLO)

I, ADA DEARNLEY, Court Reporter in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Proceedings before the New Mexico Oil Conservation Commission was reported by me, and that the same is a true and correct record to the best of my knowledge, skill and ability.

WITNESS my hand and seal this 5th day of September, 1968.

Ada Dearnley
 ADA DEARNLEY

I do hereby certify that the foregoing is a complete record of the proceedings in the Zimmler hearing of Case No. 3843 heard by me on 8/21 1968.
[Signature]
 New Mexico Oil Conservation Commission

BEFORE EXAMINER NUTTER

OIL CONSERVATION COMMISSION

EXHIBIT NO. 2CASE NO. 3843Form C-108
Revised 1-1-65

NEW MEXICO OIL CONSERVATION COMMISSION

APPLICATION TO DISPOSE OF SALT WATER BY INJECTION INTO A POROUS FORMATION

OPERATOR Continental Oil Company		ADDRESS Box 460, Hobbs, New Mexico	
LEASE NAME Sholes B-25	WELL NO. 5	FIELD Jalmat	COUNTY Lea
LOCATION UNIT LETTER G ; WELL IS LOCATED 1650' FEET FROM THE N LINE AND 1650 FEET FROM THE E LINE, SECTION 25 TOWNSHIP 25S RANGE 36E NMPM.			
CASING AND TUBING DATA			
NAME OF STRING SURFACE CASING	SIZE 8 5/8"	SETTING DEPTH 360'	SACKS CEMENT 350
TOP OF CEMENT surface		TOP DETERMINED BY circ.	
NAME OF STRING INTERMEDIATE	SIZE	SETTING DEPTH	SACKS CEMENT
NAME OF STRING LONG STRING	SIZE 5 1/2"	SETTING DEPTH 3110'	SACKS CEMENT 582
TOP OF CEMENT 950		TOP DETERMINED BY temp. survey	
TUBING	SIZE 3 1/2"	SETTING DEPTH 3010'	NAME, MODEL AND DEPTH OF TUBING PACKER Baker Tension Model AD or equivalent @ 3010'
NAME OF PROPOSED INJECTION FORMATION Seven Rivers		TOP OF FORMATION 3012'	BOTTOM OF FORMATION est. 3550'
IS INJECTION THROUGH TUBING, CASING, OR ANNULUS? Tubing		PERFORATIONS OR OPEN HOLE? Perforations	PROPOSED INTERVAL(S) OF INJECTION 3012'-3110'
IS THIS A NEW WELL DRILLED FOR DISPOSAL? No	IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED? Producing Oil Well		HAS WELL EVER BEEN PERFORATED IN ANY ZONE OTHER THAN THE PROPOSED INJECTION ZONE? yes
LIST ALL SUCH PERFORATED INTERVALS AND SACKS OF CEMENT USED TO SEAL OFF OR SQUEEZE EACH 3062-70' (70 sks); 3023-40' (100 sks); 3001'-10' (100 sks); 2913-2991' (150 sks); 2855' (75 sks)			
DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA 500' (est.)		DEPTH OF TOP OF NEXT LOWER OIL OR GAS ZONE IN THIS AREA 3450 est.	
ANTICIPATED DAILY INJECTION VOLUME (BBLs.) 1000	MINIMUM 6000	MAXIMUM closed	IS INJECTION TO BE BY GRAVITY OR PRESSURE? gravity
ANSWER YES OR NO WHETHER THE FOLLOWING WATERS ARE MINERALIZED TO SUCH A DEGREE AS TO BE UNFIT FOR DOMESTIC, STOCK, IRRIGATION, OR OTHER GENERAL USE No		NATURAL WATER IN DISPOSAL ZONE No	
NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND) Fred B. Cooper Box S, Jal, N.M.		ARE WATER ANALYSES ATTACHED? No	
LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (1/2) MILE OF THIS INJECTION WELL Ralph Lowe, Box 832, Midland, Texas Standard Production Co., Jal, New Mexico Morris R. Antweil, Box 2010, Hobbs, New Mexico			
HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING? No	SURFACE OWNER No	EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL No	THE NEW MEXICO STATE ENGINEER No
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-B) Yes	PLAT OF AREA No	ELECTRICAL LOG No	DIAGRAMMATIC SKETCH OF WELL No

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



(Signature)

 Assistant Division Manager
(Title)

7-19-68

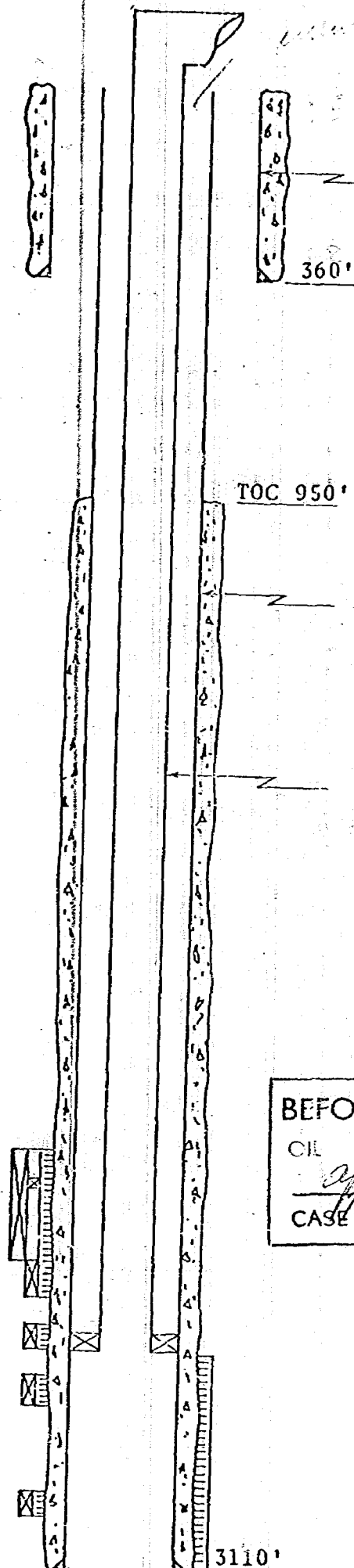
(Date)

NOTE: Should waivers from the State Engineer, the surface owner, and all operators within one-half mile of the proposed injection well, not accompany this application, the New Mexico Oil Conservation Commission will hold the application for a period of 15 days from the date of receipt by the Commission's Santa Fe office. If at the end of the 15-day waiting period no protest has been received by the Santa Fe office, the application will be processed. If a protest is received, the application will be set for hearing, if the applicant so requests. SEE RULE 701.

EXHIBIT NO. 2

Sholes B-25 No. 5
1650' FNL & 1650' FEL, Sec. 25, T-25S, R-36E
Lea County, New Mexico

Perfs: 2827, 2855, 2876,
2831, 2889, 2913, 2924,
2947, 2953 & 2991' w/1
JSPF.
Sq. perfs 2913-2991'
w/150 sx.
Sq. perfs 2855' w/75
sx.
Sq. perfs 2827-2889'
w/100 sx.
Perf. 3001-3010' w/4 SPF.
Sq. w/100 sx.
Perf 3023-3040' w/4 SPF.
Sq. w/100 sx.
Perfs 3062-70' w/4 SPF.
Sq. w/70 sx.



8 5/8" OD, 24#/ft. J-55
csg. set at 360'. Cmt.
w/350 sx to surface

5 1/2" OD, 14#/ft. J-55
csg. set at 3110'. Cmt.
w/582 sx. TOC - 950'.

3 1/2" OD, J-55 tbg.
set at 3010'. Tbg. is
to be plastic lined.

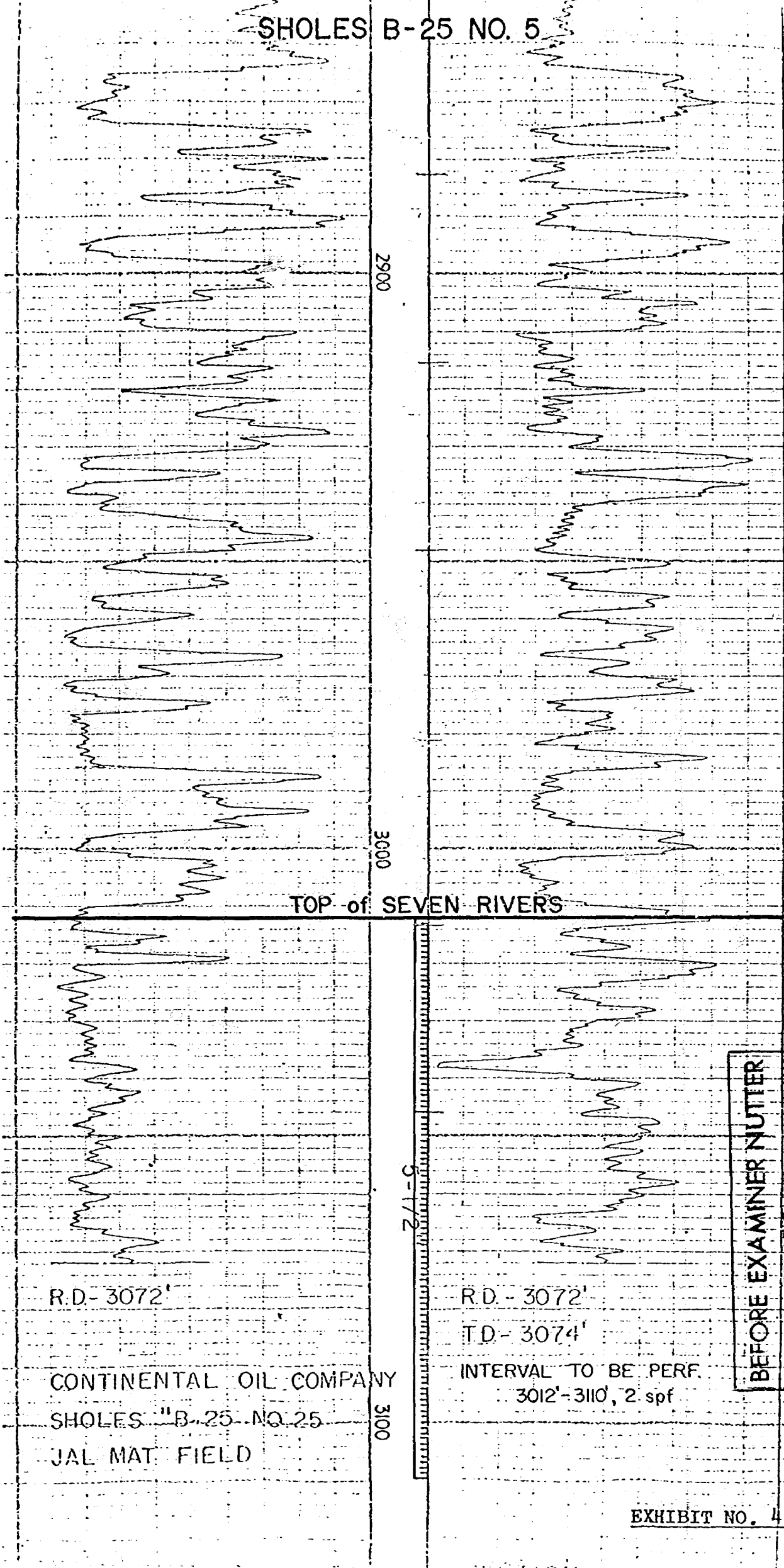
BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 3
CASE NO. 3843

Tension packer - 3010'.

Seven Rivers Disposal
Interval - 3012-3110'

TD 3110'

EXHIBIT NO. 3



R.D. - 3072'

CONTINENTAL OIL COMPANY
SHOLES "B-25" NO. 25
JAL MAT FIELD

2900

3000

TOP of SEVEN RIVERS

5-1/2

R.D. - 3072'

T.D. - 3074'

INTERVAL TO BE PERF.
3012'-3110', 2. spf

3100

BEFORE EXAMINER NUTTER

EXHIBIT NO. 4
CASE NO. 3843

EXHIBIT NO. 4

TELEPHONE: HOBBS 393-6215



UNITED CHEMICAL CORPORATION

OF NEW MEXICO

601 NORTH LEECH

P. O. BOX 1499

HOBBS, NEW MEXICO 88240

Company Continental Oil Company

Field Jalmat Queen - NMFU

Lease Sholes A

Sampling Date 6/24/68

Type of Sample _____

WATER ANALYSIS

IONIC FORM	me/l *	mg/l *
Calcium (Ca++)	37.52	752
Magnesium (Mg++)	26.56	323
Sodium (Na+) (cal.)	130.84	3008
Iron		0.80
Bicarbonate (HCO ₃ -)	6.40	390
Carbonate (CO ₃ -)	NOT	FOUND
Hydroxide (OH-)	NOT	FOUND
Sulphate (SO ₄ -)	48.93	2350
Chloride (Cl-)	132.59	4950
7.2 pH @ 68° F		
Dissolved Solids on Evap. at 103° - 105° C		
Hardness as Ca CO ₃	64.08	3204
Carbonate Hardness, as CaCO ₃ (temporary)	6.40	320
Non-Carbonate Hardness as CaCO ₃ (permanent)	57.68	2884
Alkalinity as CaCO ₃	6.40	320
Specific Gravity @ 68° F	1.005	

- * mg/l = milligrams per Liter
- * me/l = milliequivalents per Liter

BEFORE EXAMINER NUTTER

EXHIBIT NO. 3
CASE NO. 3843

EXHIBIT NO. 5

Makes Water Work