

2617

Exhibit

GOVERNOR  
EDWIN L. MECHEM  
CHAIRMAN

State of New Mexico  
Oil Conservation Commission

LAND COMMISSIONER  
E. S. JOHNNY WALKER  
MEMBER



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

P. O. BOX 871  
SANTA FE

September 13, 1962

Mr. Robert Fox  
Kellahin & Fox  
Attorneys at Law  
Box 1713  
Santa Fe, New Mexico

Re: Case No. 2617  
Order No. R-2312  
Applicant:  
Continental 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

ir/

Carbon copy of order also sent to:

Hobbs OCC x

Artesia OCC       

Aztec OCC x

OTHER Mr. William Griffith

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. 2617  
Order No. R-2312

APPLICATION OF CONTINENTAL OIL  
COMPANY FOR A DUAL COMPLETION,  
SAN JUAN COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on August 29, 1962, at Santa Fe, New Mexico, before Daniel S. Nutter, Examiner duly appointed by the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," in accordance with Rule 1214 of the Commission Rules and Regulations.

NOW, on this 13th day of September, 1962, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Daniel S. Nutter, 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, seeks permission to dually complete its Rattlesnake Well No. 140, located in Unit H of Section 11, Township 29 North, Range 19 West, NMPM, San Juan County, New Mexico, to produce oil and gas from the Pennsylvanian-Paradox formation from a depth of approximately 6658 to 6710 feet through 2 7/8-inch tubing and to dispose of salt water into the Organ Rock formation at a depth of approximately 4175 to 4315 feet through a parallel string of 2 7/8-inch tubing.

(3) That the applicant proposes to set a retrievable production packer at approximately 4000 feet and to set a permanent retainer production packer at approximately 6400 feet.

(4) That the evidence establishes that the proposed salt water disposal will not impair fresh waters or productive formations in the area.

(5) That the mechanics of the proposed dual completion are feasible and in accord with sound conservation practices.

-2-

CASE No. 2617  
Order No. R-2312

IT IS THEREFORE ORDERED:

(1) That the applicant, Continental Oil Company, is hereby authorized to complete its Rattlesnake Well No. 140, located in Unit H of Section 11, Township 29 North, Range 19 West, NMPM, San Juan County, New Mexico, as a dual completion (conventional) to produce oil and gas from the Pennsylvanian-Paradox formation from a depth of approximately 6658 to 6710 feet through 2 7/8-inch tubing and to dispose of salt water into the Organ Rock formation at a depth of approximately 4175 to 4315 feet through a parallel string of 2 7/8-inch tubing.

PROVIDED HOWEVER, That the applicant shall complete, operate, and produce said well in accordance with the provisions of Rule 112-A of the Commission Rules and Regulations.

PROVIDED FURTHER, That a retrievable production packer shall be set at approximately 4000 feet and that a permanent retainer production packer shall be set at approximately 6400 feet.

PROVIDED FURTHER, That the operator shall, upon completion and annually thereafter during the Gas-Oil Ratio Test Period for the Rattlesnake-Pennsylvanian Pool, and at such times as the Commission may prescribe, take such tests as will adequately prove that no communication exists between the Organ Rock Disposal Zone and the Pennsylvanian Producing Zone, either inside or outside the casing.

(2) 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



EDWIN L. MECHEM, Chairman

E. S. WALKER, Member

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

esr/

OIL CONSERVATION COMMISSION  
SANTA FE, NEW MEXICO

Date 9/4/62

CASE 2617

Hearing Date 9am 8/29/62  
DSN @ SF

My recommendations for an order in the above numbered cases are as follows:

although with some misgivings about the ultimate success of this proposal, I recommend that Con't be permitted to make the dual completion (conventional) for salt water disposal into the Organ Rock formation from 4175' to 4315 and production from the Pennsylvanian formation from 6658 to 6710 in their Rattlesnake Well No 140, SE 1/4 NE 1/4 Sec 11 T29N R19W San Juan Co, N. Mex.

Sam Rutter  
Staff Member

- CASE 2621: Application of Shell Oil Company for approval of a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks permission to complete its Middleton Federal "A" Well No. 1, located in Unit H of Section 18, Township 19 South, Range 32 East, Lea County, New Mexico, as a dual completion (tubingless) in such a manner as to produce oil from the Lusk-Strawn Pool and gas from the Morrow formation through parallel strings of 2 7/8-inch casing, cemented in a common well bore. Applicant proposes to run a third string of 2 7/8-inch casing to total depth as a spare casing string.
- CASE 2622: Application of Cactus Drilling Company for a non-standard gas unit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the establishment of a 120-acre non-standard gas unit comprising the E/2 NE/4 and NW/4 NE/4 of Section 11, Township 18 South, Range 36 East, Arkansas Junction-Queen Gas Pool, Lea County, New Mexico.
- CASE 2623: Application of W. K. Byrom for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order force pooling all mineral interests in a 160-acre unit comprising the NE/4 of Section 23, Township 18 South, Range 36 East, Arkansas Junction-Queen Gas Pool, Lea County, New Mexico, or, in the alternative, to establish an 80-acre non-standard gas unit comprising the N/2 NE/4 of said Section 23.
- CASE 2624: Application of El Paso Natural Gas Products Company for a non-standard proration unit and unorthodox location, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks the establishment of an 82.07-acre non-standard proration unit comprising the following portions of Section 17, Township 29 North, Range 14 West, Cha Cha-Gallup Oil Pool, San Juan County, New Mexico: that part of the NE/4 SW/4 lying North of the centerline of the San Juan River; the SE/4 NW/4; and that part of the NE/4 NW/4 lying South of the centerline of U. S. Highway 550. Said unit is to be dedicated to a well to be drilled at an unorthodox location 2180 feet from the South line and 1980 feet from the West line of said Section 17.
- CASE 2625: Application of Sinclair Oil & Gas Company for an order establishing special rules and regulations for the Medicine Rock-Devonian Pool, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order establishing special rules and regulations for the Medicine Rock-Devonian Pool Lea County, New Mexico, to include provisions for 80-acre oil proration units therein.

lqg/

DOCKET: EXAMINER HEARING - WEDNESDAY, AUGUST 29, 1962

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM,  
STATE LAND OFFICE BUILDING - SANTA FE, NEW MEXICO

The following cases will be heard before Daniel S. Nutter, Examiner or A. L. Porter, Jr., as Alternate Examiner:

CASE 2355: (Continued)  
In the matter of the application of H. L. Brown, Jr. and Clem E. George for establishment of special rules and regulations for the Bluit-Wolfcamp Gas Pool, Roosevelt County, New Mexico. Case 2355 will be reopened pursuant to Order No. R-2051 to permit the applicant and other interested parties to appear and show cause why the Bluit-Wolfcamp Gas Pool should not be developed on 160-acre proration units.

CASE 2345: (Continued)  
In the matter of the application of Continental Oil Company for the establishment of special rules and regulations for the Rattlesnake-Pennsylvanian Pool, San Juan County, New Mexico. Case 2345 will be reopened pursuant to Order No. R-2049 to permit the applicant and other interested parties to appear and show cause why the subject pool should not be developed on 40-acre proration units.

CASE 2617: (Continued)  
Application of Continental Oil Company for a dual completion, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks permission to complete its Rattlesnake Well No. 140, located in Unit H of Section 11, Township 29 North, Range 19 West, San Juan County, New Mexico, as a dual completion (conventional) in the Organ Rock and Pennsylvanian-Paradox formations in the Rattlesnake-Pennsylvanian Field, with the production of oil and gas from the Pennsylvanian-Paradox formation to be through 2 7/8 inch tubing at a depth of 6658 to 6710 feet; applicant proposes to dispose of salt water into the Organ Rock formation at a depth of 4175 to 4320 feet through a parallel string of 2 7/8 inch tubing.

CASE 2620: Application of Shell Oil Company for a dual completion, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks permission to complete its Henshaw Deep Unit Well No. 5, located 660 feet from the North and East lines of Section 23; Township 16 South, Range 30 East, Eddy County, New Mexico, as a dual completion (conventional) in the Wolfcamp and Devonian formations.

Is the water to be disposed of mineralized to such a degree as to be unfit for domestic, stock, irrigation, and/or other general use? Yes

Is any water occurring naturally within the proposed disposal formation mineralized to such a degree as to be unfit for domestic, stock, irrigation, and/or other general use? Yes

List all offset operators to the lease on which this well is located and their mailing address

Humble Oil and Refining Company, Box 3082, Durango, Colorado

Kern County Land Company, Box 1784, Albuquerque, New Mexico

Name and address of surface owner Navajo Tribe, Window Rock, Arizona

Have copies of this application been sent by registered mail or given to all offset operators, surface owners, and to the New Mexico State Engineer? Yes

Is a complete electrical log of this well attached? Yes

Operator: Continental Oil Company

By: H. D. Haley

Title: District Superintendent

STATE OF Colorado )

) ss.

County of La Plata )

BEFORE ME, The undersigned authority, on this day personally appeared H. D. Haley known to me to be the person whose name is subscribed to the above instrument, who being by me duly sworn on oath states that he is duly authorized to make the above report and that he has knowledge of the facts stated therein and that said report is true and correct.

SUBSCRIBED AND SWORN TO before me this the 13th day of July, 19 62.

Wm. C. Butcher  
Notary Public in and for the County of La Plata

March 5, 1963

My Commission Expires

NOTE:

Should waivers from all offset operators, the surface owner, and the State Engineer not accompany an application, the New Mexico Oil Conservation Commission will hold the application for a period of fifteen (15) days from date of receipt by the Commission's Santa Fe office. If at the end of said fifteen-day period, no protest nor request for hearing is received by the Santa Fe office, the application will then be processed.

ir/



Case 2617

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

APPLICATION  
TO DISPOSE OF SALT WATER BY INJECTION INTO A POROUS FORMATION  
NOT PRODUCTIVE OF OIL OR GAS

Operator Continental Oil Company Address Box 3312, Durango, Colorado  
Lease Rattlesnake Well No. 140 County San Juan  
Unit H Section 11 Township 29N Range 19W

This is an application to dispose of salt water produced from the following pool(s):

Rattlesnake Pennsylvanian

Name of Injection Formation(s): Organ Rock

Top of injection zone: 4170' Bottom of injection zone: 4320'

Give operator, lease, well no., and location of any other well in this area using this same  
zone for disposal purposes: None

(See attached diagrammatic sketch).

CASING PROGRAM

	Diameter	Setting Depth	Sacks Cement	(Calculated) Top of Cement
Surface	13 3/8"	306	300	Surface
Intermediate	9 5/8"	4512	130 - Stage Collar 375 - Casing shoe	2600' <sup>13</sup> & 500'
Long String	7" liner 4 1/2" liner	4338' - 6532' 7444' - 6728'	380 40	

Will injection be through tubing, casing, or annulus? Tubing

Size tubing 2 7/8" Setting depth: Approximately 4050' Upper: 4000'  
Packer set at: Lower: 6400'

Name and Model No. of packer: Upper: Baker, Model "K", Retrievable Dual Production type.  
Lower: Baker, Model "D" Drillable Retainer type.

Will injection be through perforations or open hole? Perforations

Proposed interval(s) of injection: 4175'-5185'; 4205'-4215'; 4272'-4282'; 4305'-4315'

Well was originally drilled for what purpose? Pennsylvanian Oil Production

Has well ever been perforated in any zone other than the proposed injection zone? Yes

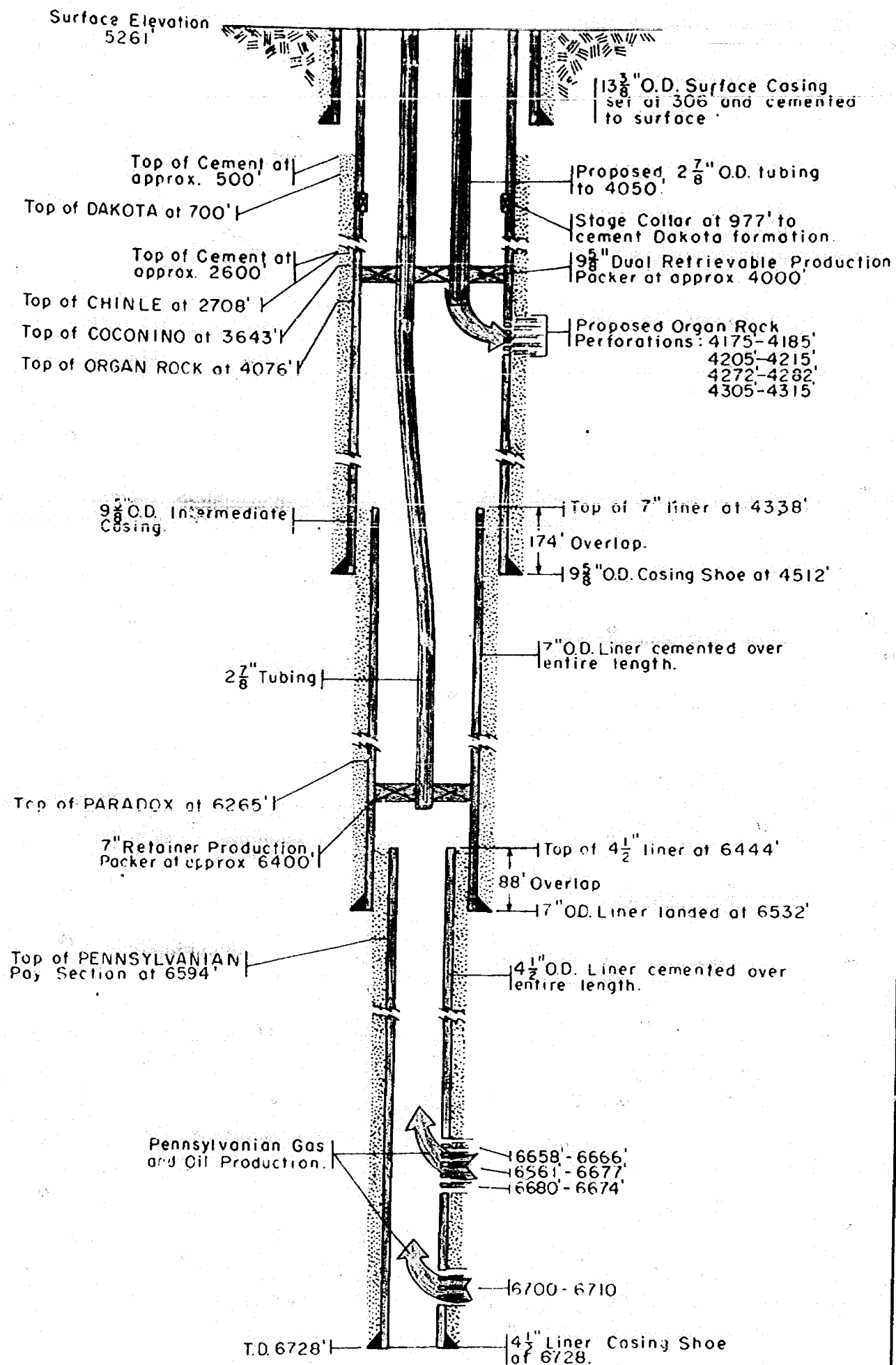
List all such perforated intervals and sacks of cement used to seal off or squeeze each:  
(These perforations are in the Pennsylvanian reservoir  
and will be isolated below 7" packer at 6400')  
6658'-6680' & 6700'-6710'

Give depth of bottom of next higher zone which produces oil or gas: 922'

Give depth of top of next lower zone which produces oil or gas: 6265'

Give depth of bottom of deepest fresh water zone in area: Morrison - 1970'

Expected volume of salt water to be injected daily (barrels): 1000



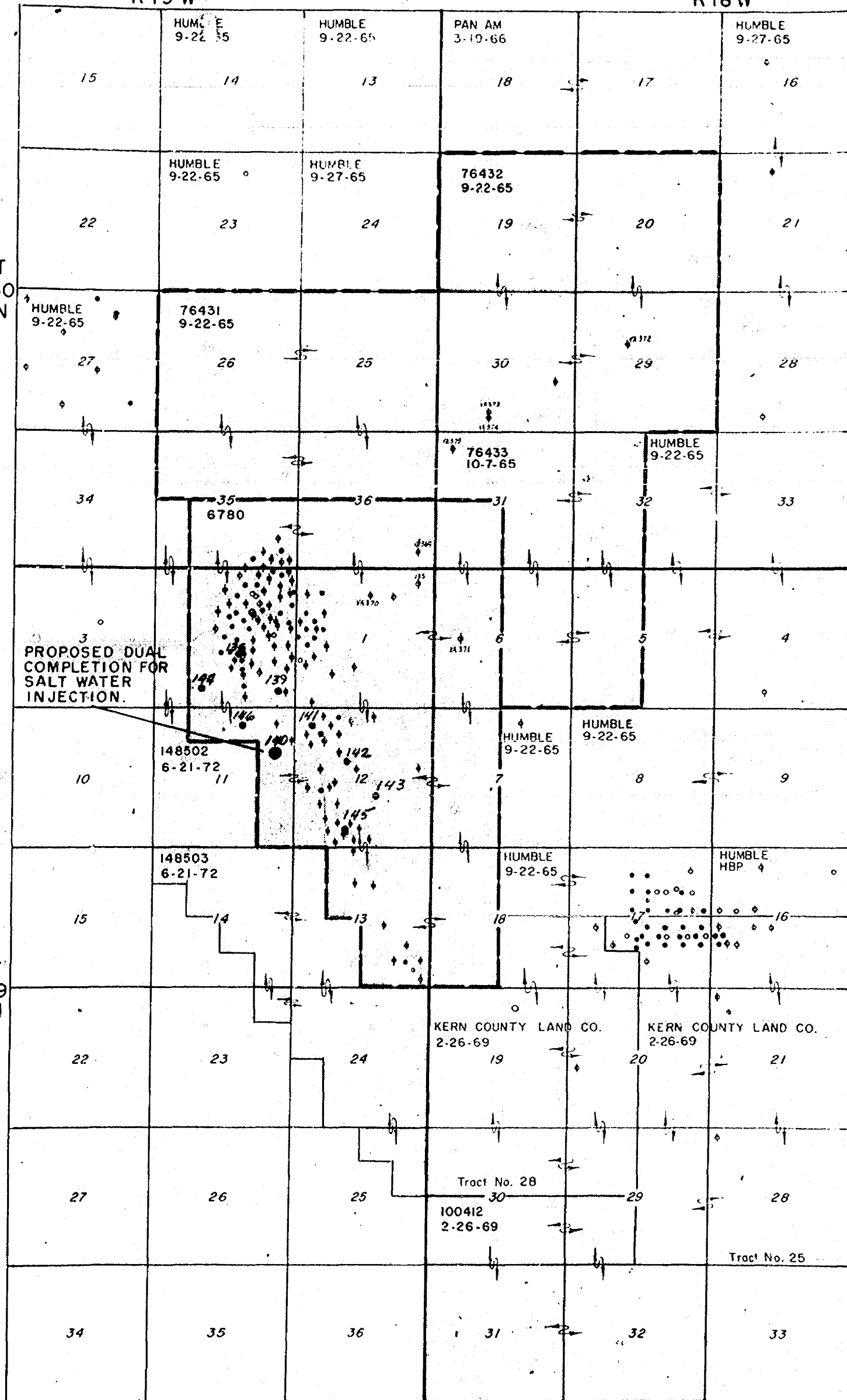
CONTINENTAL OIL CO.  
Proposed Dual Completion  
Of  
RATTLESNAKE WELL # 140  
SE-NE, Sec. II-T29N-R19W  
San Juan Co., New Mexico  
(For Oil Production from the Pennsylvanian and  
Salt Water Injection into the Organ Rock Fm.)

Not drawn to scale

1225'

R 19 W

R 18 W

T  
30  
NT  
29  
N

RATTLESNAKE FIELD &amp; NORTH RATTLESNAKE BLOCK

SAN JUAN COUNTY, NEW MEX

RECEIVED JUL 1 1962  
COMOCO  
Set for  
mailing  
Case  
2617

# CONTINENTAL OIL COMPANY

P. O. Box 3312  
Durango, Colorado  
July 13, 1962

Mr. A. L. Porter, Secretary-Director  
New Mexico Oil Conservation Commission  
P. O. Box 871  
Santa Fe, New Mexico

Dear Mr. Porter:

Enclosed is an application for administrative approval of a dual completion of an existing well at the Rattlesnake field in San Juan County, New Mexico. The associated application for utilizing the dual completion well as a salt water disposal well is also included. A diagrammatic sketch of the proposed installation for salt water disposal is attached to both applications. Offset operators to the Rattlesnake lease have been furnished copies of each application as evidenced by the attached copies of the accompanying letters.

Yours very truly,

*H. D. Haley*

H. D. Haley  
District Superintendent  
Durango District  
Production Department

GAB/cb

## Attachments

cc: Mr. R. E. White, Continental Oil Company, Denver, Colorado (3)  
New Mexico State Engineer

*Doyle's  
mailed  
7/25/62*  
*[Signature]*  
*Doyle's  
mailed*

PIONEERING IN PETROLEUM PROGRESS SINCE 1875

# CONTINENTAL OIL COMPANY

P. O. Box 3312  
Durango, Colorado  
July 16, 1962

New Mexico State Engineer  
State Engineer's Office  
P. O. Box 1079  
Santa Fe, New Mexico

*Case*  
*2617*

Gentlemen:

Attached is a copy of an application to the New Mexico Oil Conservation Commission requesting administrative approval for a salt water disposal well in San Juan County, New Mexico. With a copy of this letter, we are furnishing evidence to the New Mexico Oil Conservation Commission that a copy of said application has been sent to the State Engineer's office.

Yours very truly,

*H. D. Haley by WAB*

H. D. Haley  
District Superintendent  
Durango District  
Production Department

GAB/cb

Attachment

cc: Mr. R. E. White, Continental Oil Company, Denver, Colorado (3)  
NMOCC-Santa Fe, New Mexico

# CONTINENTAL OIL COMPANY

P. O. Box 3312  
Durango, Colorado  
July 16, 1962

Bureau of Indian Affairs  
Realty Office  
Window Rock, Arizona

Attn: Mr. R. G. Clark

Dear Sir:

Attached is a copy of an application to the New Mexico Oil Conservation Commission requesting administrative approval to dispose of salt water produced at the Rattlesnake field by injection into a porous formation. Accompanying the application is a diagrammatic sketch showing the method proposed for disposal of the salt water, and a plat showing the location of the proposed disposal well.

With a copy of this letter, we are furnishing evidence to the New Mexico Oil Conservation Commission that a copy of said application has been sent to the surface landowner of the Rattlesnake field, San Juan County, New Mexico.

Yours very truly,

*H. D. Haley*

H. D. Haley  
District Superintendent  
Durango District  
Production Department

GAB/cb

Attachments

cc: Mr. R. E. White, Continental Oil Company, Denver, Colorado (3)  
BROCC-Santa Fe, New Mexico

P. O. Box 3312  
Durango, Colorado  
July 13, 1962

*Case 2617*

Kern County Land Company  
P. O. Box 1784  
Albuquerque, New Mexico

Gentlemen:

In accordance with New Mexico Oil Conservation Commission Rules 112-A (IV) and 701-G, a copy of the applications for Continental Oil Company to dually complete an existing well in the Rattlesnake field for use as a salt water disposal well is hereby submitted to all offset operators to the Rattlesnake lease. A diagrammatic sketch of the proposed dual completion, and a plat showing the location of all wells on the lease is also attached.

Yours very truly,

*H. D. Haley*

H. D. Haley  
District Superintendent  
Durango District  
Production Department

GAB/cb

Attachments

P. O. Box 3312  
Durango, Colorado  
July 13, 1962

Humble Oil and Refining Company  
P. O. Box 3052  
Durango, Colorado

Gentlemen:

In accordance with New Mexico Oil Conservation Commission Rules 112-A (17) and 701-C, a copy of the applications for Continental Oil Company to dually complete an existing well in the Rattlesnake field for use as a salt water disposal well is hereby submitted to all offset operators to the Rattlesnake lease. A diagrammatic sketch of the proposed dual completion, and a plat showing the location of all wells on the lease is also attached.

Yours very truly,

*H. D. Haley*  
H. D. Haley  
District Superintendent  
Durango District  
Production Department

GAB/cb

Attachments



August 3, 1962

Oil & Gas Conservation Commission  
State Land Office Building  
Santa Fe, New Mexico

Attention: Mr. Daniel S. Nutter

Dear Mr. Nutter:

Re: Case Nos. 2345 and 2617

This is to confirm our telephone conversation that Continental Oil Company desires to postpone the hearing on the subject cases, which were originally set for August 8, 1962, until some time later in August.

I would appreciate your informing me of the exact date of the second hearing to be scheduled in August.

Very truly yours,

*William M. Griffith*

William M. Griffith

WMG:bv

cc: Mr. Jason Kellahin  
Attorney at Law  
54 1/2 East San Francisco Street  
P. O. Box 1713  
Santa Fe, New Mexico

*Doyle  
mailed  
8/17/62  
gr*



Chad 2617

STATE OF NEW MEXICO

STATE ENGINEER OFFICE

SANTA FE

S. E. REYNOLDS  
STATE ENGINEER

July 20, 1962

ADDRESS CORRESPONDENCE TO:  
STATE CAPITOL  
SANTA FE, N. M.

Mr. A. L. Porter, Jr.  
Secretary-Director  
Oil Conservation Commission  
Santa Fe, New Mexico

Dear Mr. Porter:

Reference is made to the application of Continental Oil Company which seeks to dispose of salt water by injection into a porous formation not productive of oil or gas. A copy of this application was received in this office on July 18, 1962. The subject well is located in Unit H, Section 11, Township 29 North, Range 19 West, San Juan County, New Mexico.

After studying the application and the diagrammatic illustration of the injection plan, I have reached the conclusion that there will probably be no threat of contamination to the fresh waters which exist in the area. Therefore, this office offers no objection to the granting of this application.

Yours truly,

S. E. Reynolds  
State Engineer

FEI/ma  
cc-Continental Oil Co.

By: *Frank E. Irby*  
Frank E. Irby  
Chief  
Water Rights Division

OIL CONSERVATION COMMISSION  
Aztec DISTRICT

1962 JUL 13 AM 8:23

Case  
2617

OIL CONSERVATION COMMISSION  
BOX 871  
SANTA FE, NEW MEXICO

DATE July 18, 1962

Re: Proposed NSP \_\_\_\_\_

Proposed NWU \_\_\_\_\_

Proposed NSL \_\_\_\_\_

Proposed NFO \_\_\_\_\_

Proposed DC XXXX

Gentlemen:

I have examined the application dated July 13, 1962  
for the Continental Oil Co. Rattlesnake #140 H-11-29N-19W  
Operator Lease and Well No. S-T-R

and my recommendations are as follows:

Approve - this is a voluntary move to dispose produced water.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Yours very truly,

A. R. Kendrick  
A. R. Kendrick

## NEW MEXICO OIL CONSERVATION COMMISSION

SANTA FE, NEW MEXICO

7-3-58

APPLICATION FOR DUAL COMPLETION *Case 2617*

Field Name <b>Rattlesnake Pennsylvanian</b>		County <b>San Juan</b>	Date <b>7-13-62</b>
Operator <b>Continental Oil Company</b>		Lease <b>Rattlesnake</b>	Well No. <b>140</b>
Location of Well	Unit <b>H</b>	Section <b>11</b>	Township <b>29N</b>
			Range <b>19W</b>

1. Has the New Mexico Oil Conservation Commission heretofore authorized the dual completion of a well in these same pools or in the same zones within one mile of the subject well? YES ☐ NO ☒
2. If answer is yes, identify one such instance: Order No. \_\_\_\_\_; Operator, Lease, and Well No.: \_\_\_\_\_

3. The following facts are submitted:	Upper Zone (Proposed)	Lower Zone
a. Name of reservoir	<b>Organ Rock Formation</b>	<b>Pennsylvanian-Paradox</b>
b. Top and Bottom of Pay Section (Perforations)	<b>4175' - 4320'</b>	<b>6658'-6680'; 6700'-6710' (Present Perforations)</b>
c. Type of production (Oil or Gas)	<b>* See note below</b>	<b>Oil and Gas</b>
d. Method of Production (Flowing or Artificial Lift)	<b>* See note below</b>	<b>Flowing</b>

4. The following are attached. (Please mark YES or NO)

- Yes a. Diagrammatic Sketch of the Dual Completion, showing all casing strings, including size and setting, top of cement, perforated intervals, tubing strings, including diameters and setting depth, location and type of packers and side door chokes, and such other information as may be pertinent.
- Yes b. Plat showing the location of all wells on applicant's lease, all offset wells on offset leases, and the names and addresses of operators of all leases offsetting applicant's lease.
- Yes c. Waivers consenting to such dual completion from each offset operator, or in lieu thereof, evidence that said offset operators have been furnished copies of the application.\*
- Yes d. Electrical log of the well or other acceptable log with tops and bottoms of producing zones and intervals of perforation indicated thereon. (If such log is not available at the time application is filed, it shall be submitted as provided by Rule 112-A.)

5. List all offset operators to the lease on which this well is located together with their correct mailing address.

Humble Oil and Refining Company, Box 3082, Durango, Colorado

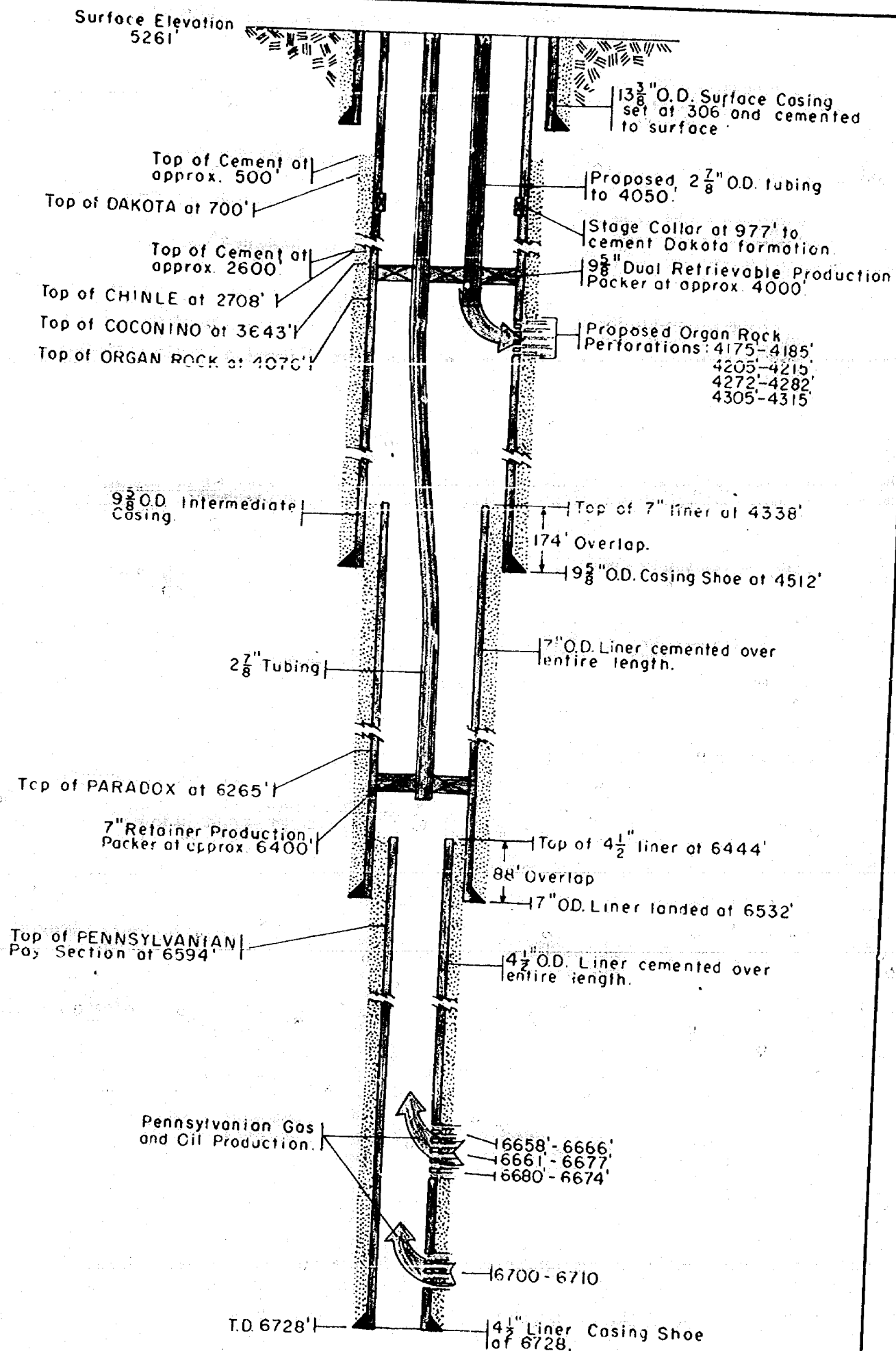
Kern County Land Company, Box 1784, Albuquerque, New Mexico

6. Were all operators listed in Item 5 above notified and furnished a copy of this application? YES ☒ NO ☐ . If answer is yes, give date of such notification 7-13-62

**CERTIFICATE:** I, the undersigned, state that I am the District Superintendent of the Continental Oil Co. (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

\* The Organ Rock formation is water productive and is proposed for use as a formation for salt water disposal as applied for under rule 701-C.

- \* Should waivers from all offset operators not accompany an application for administrative approval, the New Mexico Oil Conservation Commission will hold the application for a period of twenty (20) days from date of receipt by the Commission's Santa Fe office. If, after said twenty-day period, no protest nor request for hearing is received by the Santa Fe office, the application will then be processed.
- NOTE:** If the proposed dual completion will result in an unorthodox well location and/or a non-standard proration unit in either or both of the producing zones, then separate application for approval of the same should be filed simultaneously with this application.

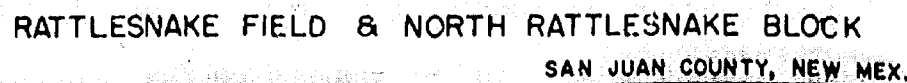


CONTINENTAL OIL CO.  
Proposed Dual Completion  
Of  
RATTLESNAKE WELL # 140  
SE-NE, Sec. II-T29N-R19W  
San Juan Co., New Mexico  
(For Oil Production from the Pennsylvanian and  
Salt Water Injection into the Organ Rock Fm.)

Not drawn to scale

12/25

R 18 W



BEFORE THE  
OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
August 8, 1962

EXAMINER HEARING

IN THE MATTER OF:

Application of Continental Oil Company for a dual completion, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks permission to complete its Rattlesnake Well No. 140, located in Unit H of Section 11, Township 29 North, Range 19 West, San Juan County, New Mexico, as a dual completion (conventional) in the Organ Rock and Pennsylvanian-Paradox formations in the Rattlesnake-Pennsylvanian Field, with the production of oil and gas from the Pennsylvanian-Paradox formation to be through 2 7/8-inch tubing at a depth of 6658 to 6710 feet. Applicant proposes to dispose of salt water into the Organ Rock formation at a depth of 4175 to 4320 feet through a parallel string of 2 7/8 inch tubing.

CASE  
NO.  
2617

BEFORE: Daniel S. Nutter, Examiner

TRANSCRIPT OF PROCEEDINGS

MR. NUTTER: We will call next case, 2617.

MR. FLINT: Application of Continental Oil Company for a dual completion, San Juan County, New Mexico.

Mr. Examiner, the applicant has requested that this case be continued until the August 29th examiner hearing.

MR. NUTTER: Case number 2617 will be continued to the same place on August the 29th.

DEARNLEY-MEIER REPORTING SERVICE, Inc.

FARMINGTON, N. M.  
PHONE 325-1162

ALBUQUERQUE, N. M.  
PHONE 243-6691



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

I, ADA DEARNLEY, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached transcript of hearing was reported by me in stenotype and that the same was reduced to typewritten transcript under my personal supervision and contains a true and correct record of said proceedings, to the best of my knowledge, skill and ability.

*Ada Dearnley*  
 NOTARY PUBLIC

My Commission Expires:

*June 19, 1962*

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. *2617* heard by me on *Aug 8*, 19*62*.  
*[Signature]*, Examiner  
 New Mexico Oil Conservation Commission

DEARNLEY-MEIER REPORTING SERVICE, Inc.

FARMINGTON, N. M.  
 PHONE 325-1182

ALBUQUERQUE, N. M.  
 PHONE 243-6691





BEFORE THE OIL CONSERVATION COMMISSION

OF

THE STATE OF NEW MEXICO

APPLICATION OF CONTINENTAL OIL  
COMPANY FOR THE ESTABLISHMENT  
OF SPECIAL RULES AND REGULATIONS  
FOR THE BATTLESNAKE-PENNSYLVANIAN  
POOL, SAN JUAN COUNTY, NEW MEXICO.

Case No. 2345

APPLICATION OF CONTINENTAL OIL  
COMPANY FOR A DUAL COMPLETION,  
SAN JUAN COUNTY, NEW MEXICO.

Case No. 2617

ENTRY OF APPEARANCE

Come now Kellahin & Fox, P. O. Box 1713, Santa Fe, New  
Mexico, and enter their appearance in the above-captioned cases  
on behalf of Continental Oil Company in association with Mr.  
William M. Griffith, a member of the Colorado Bar.

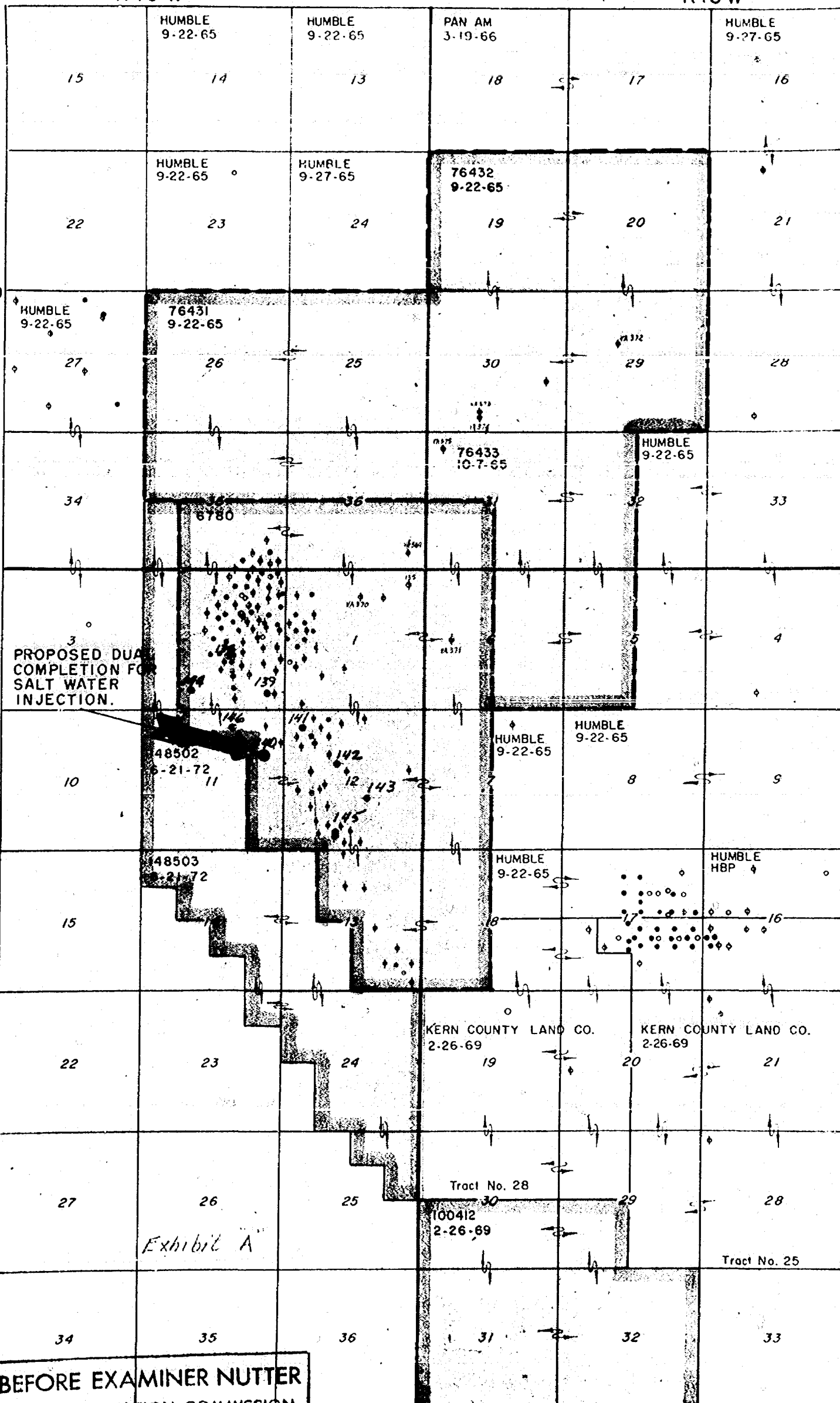
Jason W. Kellahin  
JASON W. KELLAHIN

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BEFORE EXAMINER NUTTER

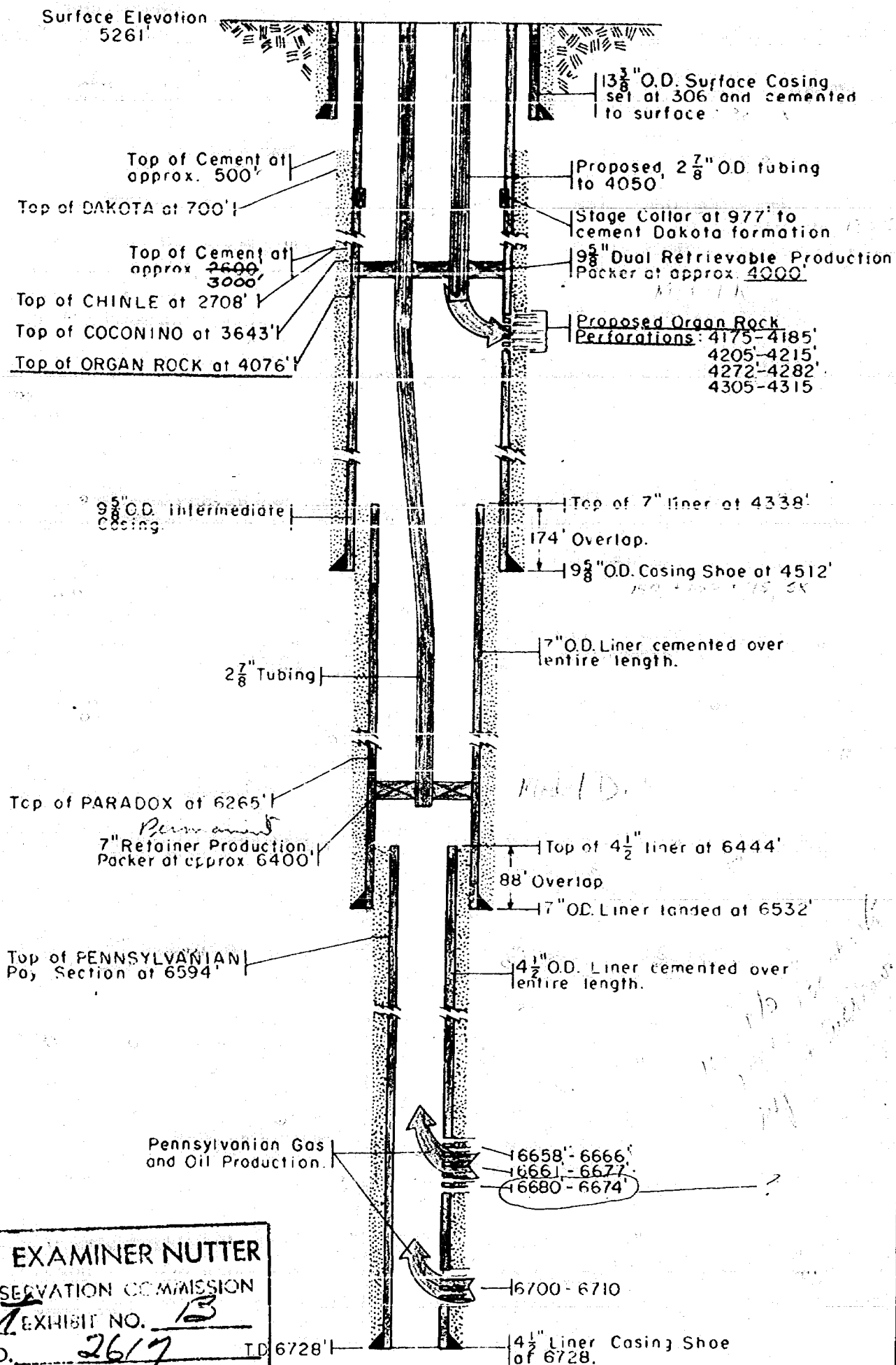
OIL CONSERVATION COMMISSION

Exhibit No. A

CASE NO. 2617

RATTLESNAKE FIELD & NORTH RATTLESNAKE BLOCK

SAN JUAN COUNTY, NEW MEX



BEFORE EXAMINER NUTTER  
OIL CONSERVATION COMMISSION  
*Cont.* EXHIBIT NO. B  
CASE NO. 2617 TD 6728'

Exhibit - B

CONTINENTAL OIL CO.  
Proposed Dual Completion  
Of  
RATTLESNAKE WELL # 140  
SE-NE, Sec. II-T29N-R19W  
San Juan Co., New Mexico  
(For Oil Production from the Pennsylvanian and  
Salt Water Injection into the Organ Rock Fm.)

Not drawn to scale

12/25



IN REPLY REFER TO:

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

P. O. Box 959  
Farmington, New Mexico

July 25, 1962

Continental Oil Co.  
P. O. Box 3312  
Durango, Colorado

Re: Rattlesnake field

Gentlemen:

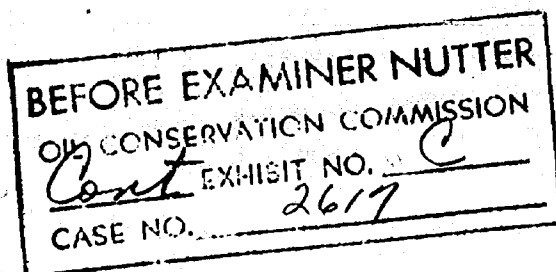
Reference is made to your letter of July 13 and the attachments therewith outlining your proposed plan of disposing of salt water produced in the Rattlesnake field.

Insofar as this office is concerned, your proposed plan of salt water disposal is satisfactory.

Very truly yours,

P. T. McGrath  
District Engineer

PTMcGrath:st



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STAFF ASST.	<input checked="" type="checkbox"/>
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July 20, 1962

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*[Handwritten signature]*

C  
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Mr. A. L. Porter, Jr.  
Secretary-Director  
Oil Conservation Commission  
Santa Fe, New Mexico

Dear Mr. Porter:

Reference is made to the application of Continental Oil Company which seeks to dispose of salt water by injection into a porous formation not productive of oil or gas. A copy of this application was received in this office on July 18, 1962. The subject well is located in Unit H, Section 11, Township 29 North, Range 19 West, San Juan County, New Mexico.

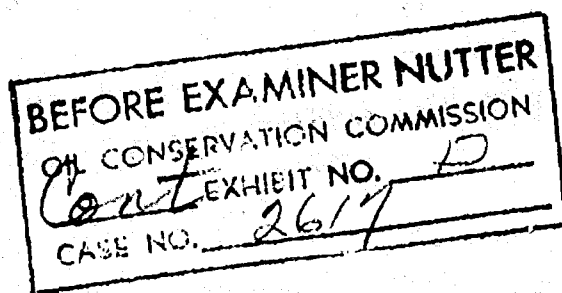
After studying the application and the diagrammatic illustration of the injection plan, I have reached the conclusion that there will probably be no threat of contamination to the fresh waters which exist in the area. Therefore, this office offers no objection to the granting of this application.

Yours truly,

S. E. Reynolds  
State Engineer

FEI/ma  
cc-Continental Oil Co.

By:  
Frank E. Irby  
Chief  
Water Rights Division



BEFORE THE  
OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
August 29, 1962

EXAMINER HEARING

IN THE MATTER OF:

Application of Continental Oil Company for a dual completion, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks permission to complete its Rattlesnake Well No. 140, located in Unit H of Section 11, Township 29 North, Range 19 West, San Juan County, New Mexico, as a dual completion (conventional) in the Organ Rock and Pennsylvanian-Paradox formations in the Rattlesnake-Pennsylvanian Field, with the production of oil and gas from the Pennsylvanian-Paradox formation to be through 2 7/8 inch tubing at a depth of 6658 to 6710 feet; applicant proposes to dispose of salt water into the Organ Rock formation at a depth of 4175 to 4320 feet through a parallel string of 2 7/8 inch tubing.

CASE 2617  
(Continued)

BEFORE: Daniel S. Nutter, Examiner

TRANSCRIPT OF HEARING

MR. NUTTER: We call Case 2617.

MR. DURRETT: Case 2617: Application of Continental Oil Company for a dual completion, San Juan County, New Mexico.

MR. GRIFFITH: I am Bill Griffith, again representing Continental Oil Company in this case. We have one witness, George Brown, who should be sworn to testify.

(Witness sworn.)

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GEORGE BROWN

called as a witness, having been first duly sworn on oath, testified as follows:

## DIRECT EXAMINATION

BY MR. GRIFFITH:

Q Would you please state your name and occupation?

A My name is George A. Brown. I'm a petroleum engineer with Continental Oil Company in the Durango District Office in Durango, Colorado.

Q Have you ever testified before the New Mexico Oil Conservation Commission before?

A No, sir, I have not.

Q Would you briefly state your educational background and practical experience as a petroleum engineer?

A I graduated from the University of Arizona in 1958 with a Bachelor of Science Degree in Geological Engineering. I was employed by Continental Oil Company in 1959 as a production engineer. For the past two years I have been assigned to the Durango District Office in Colorado. Most of this time has been spent in development and well completion work in the Rattlesnake Field in San Juan County, New Mexico.

MR. GRIFFITH: Would the Commission accept Mr. Brown's qualifications as an expert witness as a petroleum engineer?

MR. NUTTER: We would. Please proceed.

Q (By Mr. Griffith) Generally, what is the nature of

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Continental's application in this case?

A The general nature is to obtain permission to complete existing Rattlesnake Well No. 140 located in the Rattlesnake-Pennsylvanian Pool in San Juan County as a conventional dual completion in the Organ Rock formation and in the Pennsylvanian-Paradox formation, with oil and gas production from the lower zone of the Pennsylvanian and proposed water injection into the upper zone of the Organ Rock formation.

Q Do you have an exhibit showing the location of this well?

A Yes, I do.

MR. GRIFFITH: Would you mark this Exhibit A for identification?

(Whereupon, Applicant's Exhibit A marked for identification.)

Q (By Mr. Griffith) Was Exhibit A prepared by you or under your supervision?

A Yes, sir.

Q Would you explain what Exhibit A purports to show?

A Exhibit A shows all of Continental's leases in the Rattlesnake area outlined in yellow. The various leases are broken into separate blocks there; they are also outlined in yellow. All the wells on the lease, the leases, are shown on the map, and proposed dual completion is outlined with red arrows.

Q There are quite a few wells shown on here. What's the difference between the large dots and the small dots on the map for the different wells?





A The large dots are the Pennsylvanian wells that have recently been completed, they are numbered. The smaller dots mostly are shallower Dakota wells in the area, which most of them have been plugged and abandoned.

Q I believe you have already given the location of the proposed dual completion well?

A It is in the Southeast of the Northeast, Section 11, Township 29 North, Range 19 West.

Q In the last hearing we had considerable testimony on the 140 Well, but would you please give a brief history of this well to the Commission?

A This well was completed in February, 1962 as a Lower Paradox formation; as stated previously, the well is now shut in, was shut in March 31, 1962, for the purpose of conducting pressure interference tests. The well is presently temporarily shut in to continue tests. The well was produced for a short time. Cumulative production on the well is 1,790 barrels of oil, 660 barrels of water, and 23,374 MCF of gas.

Q What is the completion program of this well to date?

A For this I would like to refer to the diagrammatic sketch I have of the existing status of the well and the proposed dual completion.

MR. GRIFFITH: Would you mark this Exhibit B for identification?

(Whereupon, Applicant's Exhibit B marked for identification.)

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Q (By Mr. Griffith) Was Exhibit B prepared by you or under your supervision?

A Yes, it was.

Q Now, referring to Exhibit B, what is the completion program of this well to date?

A Before I start, I would like to note a correction in the top of the cement in the 9-5/8 inch casing. On the application it was 2600 feet, allowing for hole washout, that has been changed to approximately 3,000 feet. This is a calculated cement top.

The well is completed originally, as it is now, we have set surface pipe 13-3/8 OD surface casing at 306 feet and circulated this to the surface with 300 sacks of regular cement. 9-5/8 was run from surface to 4512 feet, and a stage collar was installed at 977 feet to cement the Dakota formation. Casing was cemented through the shoe with 160 sacks of strata concrete cement, with 150 sacks of regular, and then followed with 75 sacks of regular cement. The calculated top of the cement is 3,000 feet.

The Dakota formation was cemented through the stage collar with 130 sacks of regular cement and calculated top of the cement at 500 feet. We then ran a 7-inch liner from 4338 feet to 6532 feet. We had 174 feet of overlap of the 7-inch in the 9-5/8 inch casing. This liner was cemented over the entire length of the liner with 140 sacks of strata concrete, with 140 sacks of regular and followed with 100 sacks of regular.

We then attempted to drill to the bottom of the



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Rattlesnake zone, as noted in the last hearing in the last case, and due to the high GOR we attempted to deepen the well and we ran another liner, attempting to shut off some of the gas, and this liner was run from 6444 feet to 6728 feet, which is the total depth of the well now. This liner was also cemented over the entire length with 40 sacks of regular cement.

Q Was there also an overlap on this last?

A Yes, showing 88 feet of overlap with 4-1/2 feet of the 7-inch. The well was then perforated at 6700-6710 feet, which is a porosity zone a little bit below the producing zone, in an attempt to get production with less gas. This we didn't get, so we perforated above in the Rattlesnake zone at 6680 feet to 6674 feet, and at 6661 to 6667 feet; at 6658 to 6660 feet. Those are the present perforations. All perforations are open at this time.

Q What is the size of the tubing in the hole now?

A We have 2-7/8 inch tubing now run to the Paradox.

Q Would you please explain to the Commission what the proposed completion will entail?

A The proposed completion, as stated, we have the Paradox formation open. We plan to set a Model D Retainer Production Packer at approximately 6400 feet in the 7-inch casing. We will go in and perforate the Organ Rock, propose perforating at 4175 to 85, 4205 to 15, and 4272 to 4282, 4305 to 4315. These are all separate sand benches in the Organ Rock formation. We then propose to separate, to run the Model K Snap Set Dual Retrievable Production



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Packer at approximately 4,000 feet on the long string of tubing. The long string will go through the lower packer to produce the Paradox formation.

A parallel string of 2-7/8 inch tubing will then be run and set in the Model K Dual Packer, and the packer will be set at approximately 4,000 feet. This string of tubing will be proposed to utilize this string to dispose of salt water into the Organ Rock formation. I would like to mention now that the cementing program as mentioned before completely covers the Organ Rock formation, and the calculated top of the cement above the Organ Rock is 1,076 feet above the Organ Rock, which is indicated at 4,076 feet.

Q Will this proposed manner of completion, will it be accomplished in such a manner to allow packer leakage tests, measurement of the oil from the Rattlesnake-Pennsylvanian Pool, the gas-oil ratio, and bottom hole pressure?

A Yes, it will.

Q All these tests can be accomplished?

A All these tests can be run.

Q Do you have logs showing the perforations, and perforations to be perforated?

A Yes, I submitted the logs with the application for administrative approval. I have further copies here, if they would like to have these copies.

MR. GRIFFITH: Would the Commission desire to examine the



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logs, other than the one submitted with the application?

MR. NUTTER: No, sir, we have these logs.

Q (By Mr. Griffith) What is the source of the salt water to be injected?

A The source of the salt water is produced water from the Paradox formation, produced along with the oil from all the wells completed in the field now.

Q How does this get into Well No. 140?

A Well, all the production from the producing wells is treated at a central facility and the produced salt water is to be separated at the central facility and will be gathered into a surge or storage tank where it will there be disposed or into Rattlesnake 140 down a short string of 2-7/8 inch tubing.

Q Do you have an estimate of the amount of salt water that will be disposed in this well?

A Presently it is approximately 1,000 barrels per day, and anticipated that there will be some increase.

Q Some increase?

A Yes.

Q How is the salt water that is being produced in the field now being disposed of?

A Just by pit evaporation.

Q Has the U.S.G.S. approved our proposed salt water injection program?

A They have approved the application by a letter dated



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July 25, 1962, from the U.S.G.S.

MR. GRIFFITH: Would you mark this as Exhibit C for identification?

(Whereupon, Applicant's Exhibit C marked for identification.)

MR. GRIFFITH: Exhibit C is a letter indicating the approval of the U.S.G.S. to Continental's proposed salt water injection program.

Q (By Mr. Griffith) Do you feel that there is any danger or threat of contamination of fresh water supplies by this salt water injection program?

A No, I don't believe there will be. The cement covers all the fresh water zones, separating them from it.

Q Has the State Engineer of the State of New Mexico been informed of our proposed program?

A Yes, the proposed application was approved by the State Engineer's office by a letter directed to A. L. Porter, Secretary-Director of the New Mexico Oil Conservation Commission, dated June 20, 1962.

MR. GRIFFITH: Would you mark this as Exhibit D?

(Whereupon, Applicant's Exhibit D marked for identification.)

MR. GRIFFITH: Exhibit D for identification is a carbon copy of a letter addressed to the Oil and Gas Conservation Commission indicating that the State Engineer had no objection to our proposed salt water injection program.



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Q (By Mr. Griffith) Do you plan to commence immediate production from this well?

A From the lower zone?

Q From the lower zone.

A No, at the present time our plans are to continue using this well as an observation well to obtain pressure data, pressure interference data and pressure decline in the reservoir.

Q Do you feel that the granting of this application would be in the best interest of conservation for the State of New Mexico?

A I do.

MR. GRIFFITH: I have no further questions of this witness.

MR. NUTTER: Anyone have any questions of Mr. Brown?

CROSS EXAMINATION

BY MR. NUTTER:

Q How would you conduct a packer leakage test survey to determine -- what is this, a Model D Packer down below?

A Model D Production Retainer.

Q How would you conduct a test to determine if that packer was leaking or not?

A We would shut the well in in the long string of production from the Paradox formation and continue injection with water into the upper zone. Of course, the pressures will vary, pump pressure, and it will be quite different from the pressure of the Rattlesnake zone below the Model D Packer. If there was a leakage



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in this zone, possibly the pump pressure would increase above the pressure in the Paradox formation; also the hydrostatic head of the salt water would indicate an increase in pressure in the lower string, in the lower formation.

Q Where is this long string of 2-7/8 inch tubing set; at what depth?

A The present depth?

Q Yes, sir.

A I don't have the exact figure. It is run approximately to the top of the 4-1/2 inch liner, approximately 6400 feet.

Q Then where will it be set when this well is dually completed, as you've proposed here?

A It will be set in the 7-inch liner at approximately 6400 feet, as noted on the left side of the diagram there, above the 4-1/2 inch liner, and in the 7-inch liner.

Q In other words, it would be set through the packer and that's just about all?

A Yes, it will be just set through the packer with the seal, and the Model D will have a pressure valve.

Q You have approximately 2300 feet from the lowermost disposal perforation to the uppermost producing perforation, I guess, is that correct?

A Would you state that again?

Q Approximately 2300 feet from the lowermost disposal perforation to the uppermost producing perforation?





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A Yes.

MR. NUTTER: Any further questions?

MR. DURRETT: Yes.

BY MR. DURRETT:

Q I have one question, Mr. Brown. I believe you stated on direct examination that you expected approximately 1,000 barrels per day of salt water?

A Yes, sir.

Q Plus some increase?

A Yes.

Q Could you give us some estimation as to what you expect this increase to amount to?

A Well, this is a pretty hard figure to come at. We do anticipate further water withdrawals from conning bottom water or wherever this water is coming from, and we do expect an increase in water cut of the produced oil from all these wells. This has been evident throughout the history of the existing wells; some of the wells came in water-free, and as they were produced, water cut increased, and we expect a further increase in water production.

MR. DURRETT: I believe that's all I have.

MR. NUTTER: Any further questions? Mr. Brown may be excused.

(Witness excused.)

MR. GRIFFITH: Continental would like to move the admission of Exhibits A, B, C, and D.



MR. NUTTER: Continental's A through D will be entered in evidence.

(Whereupon, Continental's Exhibits A, B, C & D entered in evidence.)

MR. NUTTER: Do you have anything further, Mr. Griffith?

MR. GRIFFITH: No, sir.

MR. NUTTER: Does anyone have anything they wish to offer in Case 2617? We will take the case under advisement.

\* \* \* \*

STATE OF NEW MEXICO )  
COUNTY OF BERNALILLO ) ss

I, ADA DEARNLEY, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached transcript of proceedings was reported by me in stenotype and that the same was reduced to typewritten transcript under my personal supervision and contains a true and correct record of said proceedings, to the best of my knowledge, skill and ability.

WITNESS my Hand and Seal this 8th day of October, 1962, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

*Ada Dearnley*  
NOTARY PUBLIC

My Commission Expires June 19, 1963.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 2617 heard by me on Aug 29, 1962.

*[Signature]* Examiner  
New Mexico Oil Conservation Commission



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