

DOCKET: EXAMINER HEARING - WEDNESDAY - AUGUST 21, 1968

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 Elvis A. Utz, Alternate Examiner:

CASE 3825: Application of Pan American Petroleum Corporation for a unit agreement, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks approval of the East Buffalo Valley Unit Area comprising 15,350 acres, more or less, of Federal, State and Fee lands in Township 14 South, Ranges 28 and 29 East, Chaves County, New Mexico.

CASE 3826: Application of Eugene E. Nearburg for salt water disposal, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Devonian formation in the open-hole interval from approximately 7965 feet to 8015 feet in his Magnolia Burt Federal Well No. 1 located in Unit P, Section 5, Township 8 South, Range 30 East, Cato Field, Chaves, County, New Mexico.

CASE 3837: Application of Continental Oil Company for the consolidation of three non-standard gas proration units, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the establishment of a 640-acre standard gas proration unit comprising all of Section 26, Township 23 South, Range 36 East, Jalmat Gas Pool, Lea County, New Mexico, to be simultaneously dedicated to its Lynn B-1 Wells Nos. 1, 3, and 4 located in Units J, C, and M, respectively, of said Section 26, and authority to produce the allowable assigned to the unit from the subject wells in any proportion. Said Well No. 1 is presently dedicated to a 320-acre unit comprising the E/2 of said Section 26, said Well No. 3 is presently dedicated to a 160-acre unit comprising the NW/4 of said Section 26, and said Well No. 4 is presently dedicated to a 160-acre unit comprising the SW/4 of said Section 26.

In the alternative, applicant seeks the consolidation of the non-standard units comprising the E/2 and the SW/4 of said Section 26 into one 480-acre non-standard unit to be dedicated to said Well No. 1.

CASE 3838: Application of Continental Oil Company for an amendment to Order No. R-872 and an unorthodox gas well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-872 to permit the dedication of the non-standard proration unit authorized therein to its Lockhart "B" Well No. 4 located in Unit H of Section 14 and its Lockhart "B" Well No. 7 located at an unorthodox location 330 feet from the North line and 330 feet from the West line of Section 13, both in Township 21 South, Range 36 East, Eumont Gas Pool, Lea County, New Mexico. Applicant further seeks authority to produce the allowable assigned to said unit from either of the aforesaid wells in any proportion.

CASE 3839: Application of Continental Oil Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks

(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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- CASE 3844: Application of Rice Engineering & Operating, Inc., for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Queen, San Andres and Glorieta formations in the perforated intervals at approximately 3808-3834, 3962-3992, 5248-5261, and 5980-6054 feet in its Hobbs East San Andres SWD Well No. F-30 (formerly the Humble Oil & Refining Company S. E. Cain Well No. 1) located in Unit F of Section 30, Township 18 South, Range 39 East, Hobbs East San Andres Pool, Lea County, New Mexico.
- CASE 3845: Application of Rice Engineering & Operating, Inc., for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Grayburg, San Andres, and Glorieta formations in the open-hole interval from 3540 feet to 5616 feet in its Justis SWD Well No. H-2 (formerly the Resler & Sheldon-Bette Sue Well No. 2) located in Unit H of Section 2, Township 26 South, Range 37 East, Langlie-Mattix Pool, Lea County, New Mexico.
- CASE 3846: Application of Bco, Inc., and Harry L. Bigbee for downhole commingling, San Juan County, New Mexico. Applicants, in the above-styled cause, seek authority to commingle production from the Gallup, Greenhorn, Graneros, and Dakota formations in the wellbores of the Harry L. Bigbee Nancy Wells Nos. 3 and 4 located, respectively, in Units N and F of Section 12, Township 24 North, Range 8 West, Escrito-Gallup Oil Pool, San Juan County, New Mexico. Applicants further seek an administrative procedure whereby said commingling may be authorized for additional wells to be drilled in the area comprising all of Sections 12, 13, and the E/2 of Section 14; said township and range.
- CASE 3847: Application of K. K. Amini for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Bough "C" zone of the Pennsylvanian formation underlying the NE/4 of Section 5, Township 10 South, Range 34 East, Lea County, New Mexico. Said acreage to be dedicated to a well to be drilled in the SW/4 NE/4 of said Section 5, adjacent to the Vada-Pennsylvanian Pool.
- CASE 3848: Application of Continental Oil Company for a non-standard gas proration unit and an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the approval of a 296-acre non-standard gas proration unit comprising all of Lots 3, 4, 5, 6, 11, 12, 13, and 14, Section 2, Township 21 South, Range 25 East, Springs-Upper Pennsylvanian Gas Pool, Eddy County, New Mexico, said unit to be dedicated to its Levers Federal Well No. 1 located at an unorthodox location 1594 feet from the North line and 660 feet from the West line of said Section 2.



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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 waterflood project,)
Lea County, New Mexico.)

Case No. 3839

BEFORE: D. S. NUTTER,
Examiner

TRANSCRIPT OF HEARING

MR. NUTTER: Call Case 3839.

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

MR. KELLAHIN: I would like to call as a witness Mr. Roger Porter.

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

* * * * *

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Would you state your name, please?

A J. Roger Porter.

Q By whom are you employed and in what position, Mr. Porter?

A I'm employed by Continental Oil Company as a Production Engineer.

Q Where are you located?

A In Hobbs, New Mexico.

Q Mr. Porter, have you ever testified before the Oil Conservation Commission?

A No, I haven't.

Q For the benefit of the Examiner, would you briefly

outline your education and experience as an engineer?

A I graduated from Marietta College in 1966 with a Bachelor of Science in Petroleum Engineering and ever since that time, have been employed with Continental Oil Company in their Hobbs Division, in the Production Engineering section.

Q In connection with your work as an engineer at Hobbs, have you had anything to do with the problems of salt water disposal?

A My specific assignment for the last few months has been to look into the Continental operated leases within the Hobbs Division and arrive at the disposal method.

Q In connection with that, did you prepare projects for salt water disposal which are covered by this application and the following application affecting salt water disposal?

A Yes, I did.

MR. KELLAHIN: Are the witness's qualifications acceptable?

MR. NUTTER: Yes, they are.

Q (By Mr. Kellahin) Mr. Porter, briefly what is proposed by Continental Oil Company in Case 3839?

A Case 3839 is the application of Continental Oil Company for authority to inject water into its Fields No. 2 well in the Triste Draw Delaware.

MR. NUTTER: Before we get too far in this case, I believe that this subject well is a direct offset to the Triste Draw Delaware Pool and it's almost a mile away from the nearest boundaries of the Cruz Delaware. I think we ought to be referring to this as the Triste Draw rather than Cruz Delaware.

Q (By Mr. Kellahin) You refer to this as the Triste Draw Delaware well, do you not?

A That is correct. It is classified in the Cruz Delaware Pool, but from looking at the map it does look like it should be classified in the Triste Draw Delaware.

MR. NUTTER: Do you want to amend the application?

MR. KELLAHIN: At this time, I move to amend the application to show the designation of this well as being a Triste Draw Delaware well rather than a Cruz Delaware well as has been designated by the Commission.

MR. NUTTER: The application is so amended. The location of the well is given in the legal notice and it is correctly defined as far as the specific location is concerned, so we will consider that proper notice has been given.

Q (By Mr. Kellahin) Referring to what has been marked as Exhibit No. 1, will you discuss that exhibit?

A Exhibit No. 1 is a copy of the plat showing the proposed injection well circled in red at a location 990 feet from the south line and 330 feet from the west line of Section

25, Township 23 South, Range 32 East, Lea County, New Mexico. The Fields Lease is shown outlined in red and is described as the east half of Section 24, the east half of the south half of the southwest quarter, the southeast quarter of the northwest quarter in Section 25, Township 23 South, Range 32 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 Now, 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 Fields No. 2. As shown on the form, we propose to inject produced water into the Delaware formation in the interval 5,073 to 6,076 feet, from 5,090 to 5,145 feet, through two and three-eighths-inch O. K. Plastic-lined tubing below a packer to be set at approximately 5,050 feet. The top and bottom of the formation shown on the form reflect the top and bottom of the Bell Canyon member of the Delaware series. The specific interval into which we are proposing to inject is locally called the Ramsey Sand, which is the upper sand body in the Delaware series.

Q Now, referring to what has been marked as Exhibit 3, would you identify that exhibit?

A Exhibit No. 3 is a schematic diagram of the well showing the seven and five-eighths-inch casing set at 395 feet, four and one-half-inch casing set at 5206 feet, two and three-eighths-inch plastic-lined tubing set on a packer at 5050 feet and the injection intervals, 5,073 to 5,076 feet, 5,090 to 5,145 feet.

Q Referring to what has been marked as Exhibit 4, would you identify that exhibit?

A Exhibit No. 4 is a copy of the sonic log on the Fields No. 2. The top of the Ramsey Sand is indicated at approximately 5,066 feet. The perforated interval into which water is proposed to be injected is shown at 5,073 to 5,076 feet and 5,090 to 5,195 feet.

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

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

Q Is that a potable water?

A No, it is not.

Q Is the water comparable to the water found in the injection formation?

A It should be identical since it was produced from the same formation.

Q In other words, you are disposing of water produced

from the Triste Draw Delaware Pool?

A It is from the Triste Draw Pool and the Cruz Delaware Pool.

Q Is the Triste Draw Delaware Pool considered to be a waterflood project?

A We have not studied the reservoir for waterflooding, but there appears to be no reason to consider it less prospective for waterflooding than any other Delaware sand reservoir. It is handicapped by its small areal extent and few producing wells.

Q You are proposing to inject the water into the Delaware formation, is that correct?

A That is correct.

Q What will be the effect of injecting water into the Delaware?

A The injection of produced water back into the Delaware formation will have the effect of restoring pressure in that formation, and probably of sweeping some oil to the producing wells.

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

A In view of the large injection interval and an injection volume of 200 to 300 barrels of water per day, we do

not expect any effect of major consequence on oil recovery as a result of this injection.

Q What is the status of the Fields No. 2 well at the present time?

A It is presently producing at a rate of 185 barrels of oil and 83 mcf of gas per month according to the June 1968 production, in 30 days.

Q Now, that is a producing well at the present time, will the approval of this application result in waste, in your opinion?

A It will result in the loss of the Fields No. 2 current production although some additional oil may be recovered from the offset wells by repressuring the reservoir. The result of this application will also be that produced water which is presently produced into pits on the lease will be injected underground.

Q That would be in compliance with the orders of this Commission, effective January 1st?

A That is correct.

Q That is the one reason for this application, is it not?

A That is correct.

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

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

Q You say the water is coming from the Triste Draw Delaware and the Cruz Delaware pools, is this correct?

A Yes.

Q Approximately what volumes?

A Approximately 200 to 300 barrels of water a day is now being produced from the two wells on the Fields lease and the three producing wells on our Marshall lease.

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

A Yes, they were.

MR. KELLAHIN: At this time, I move the introduction of Exhibits 1 through 5.

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

(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 Mr. Porter, now, as I understand it, up here in Section 19, on your Marshall Lease, you have three producing wells on the Cruz Delaware?

A That is correct.

Q In Section 24 you have two producing wells on your Fields lease?

A We have one producing well and Hugh Johnson has the other producing well.

Q On the Fields lease?

A That is correct.

Q So there are five producing wells up there in the Cruz Delaware?

A Yes, sir.

Q And the water that is being injected or proposed to be injected into the Fields No. 2 down in the southwest southwest of Section 25 is produced up here from these five wells?

A From the four wells.

Q You are not taking Johnson's water then?

A He has not contacted us as yet, and I believe his well is not producing any water.

Q So the water will be coming from the four Continental wells in Section 19, 24?

A That is correct.

Q You mentioned that this injection of water here might stimulate production. You don't have any wells down in the Triste Draw to have stimulated, however, do you?

A No, sir.

Q So you might be doing someone else a favor, but not yourself?

A The west offset, I would like to add right now, the south offset to this Fields No. 2 is currently shut in, the southwest offset, and the west offset is currently a very marginal well, so it might stimulate either one of those wells. The production I have from the well in Unit P according to the April production report, was 30 barrels of oil and 180 barrels of water during the month.

Q Which one was that?

A The one in Unit P, Section 26.

Q That was 30 barrels of oil?

A That was during the month of April, according to their report.

Q How much was it?

A 180 barrels of water, 45 mcf gas.

Q What did your No. 2 make in June, 185 barrels of oil, and how much water?

A I don't have the exact water production. It is making approximately on test, 60 barrels of water a day.

Q And roughly six barrels of oil?

A That is correct.

Q Now this will be a waterflood project in which there

won't be any project area, I presume you will have one injection well and no offsetting producing wells?

A The primary purpose of this project is to dispose of the produced water.

MR. KELLAHIN: If the Examiner please, under the present rules, Rule 701, there's really no provision in there as to utilizing the producing formation for salt water disposal. I know that numerous cases have been filed seeking salt water disposal in a producing formation but the question will be whether it's a waterflood or a water disposal and these were filed as waterflood applications although primarily, these and the following cases are for water disposal.

MR. NUTTER: This one is unique in itself, however, because it doesn't have any offsetting producing wells and I think the other cases will.

MR. KELLAHIN: That's right.

MR. NUTTER: I guess you will have some wells that might be stimulated.

MR. KELLAHIN: And if they are, we would get an increase allowable.

Q (By Mr. Nutter) Mr. Porter, referring to your Exhibit No. 3, diagrammatic sketch, what provision will be made here in the annulus? You have a plastic-lined tubing and a packer, what do you propose

as far as the annulus is concerned?

A There will be a treated brine water.

Q You will have a corrosion inhibited fluid in there?

A That is correct.

Q And the annulus can be left open or equipped with a gauge?

A That is correct.

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

(Witness excused.)

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

MR. KELLAHIN: That's all in Case 3839.

MR. NUTTER: Anyone have anything to offer in this case? If not, we will take the case under advisement.

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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 hearing held on Case No. 3837, held by me on 8/21, 1968.
[Signature], Executive Secretary
New Mexico Oil Conservation Commission