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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

February 5, 1969

EXAMINER HEARING

IN THE MATTER OF:

Application of John H.
Trigg for a waterflood
project, Eddy County,
New Mexico.

Case No. 4010

BEFORE: Daniel S. Nutter,
Examiner

TRANSCRIPT OF HEARING

1969 FEB 13 AM 8 21

MR. NUTTER: We will call Case No. 4010.

MR. HATCH: Case 4010, continued, from December 27, 1968, and January 8, 1969, Examiner Hearings. Application of John H. Trigg for a waterflood project, Eddy County, New Mexico.

MR. EATON: Paul W. Eaton from the firm of Hinkle, Bondurant and Christy, Roswell, representing the applicant. We have one witness.

(Whereupon, Applicant's Exhibits Numbers 1 through 5, inclusive, were marked for identification.)

KENNETH E. ASTON

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

DIRECT EXAMINATION

BY MR. EATON:

Q Please state your name, residence, employer, and occupation.

A Kenneth E. Aston, Lovington, New Mexico, assistant production superintendent, employed by John H. Trigg.

Q Are you familiar with the property and the wells involved in this case?

A Yes, sir.

Q Is Mr. Trigg the owner and operator of the property?

A He is.

Q Have you previously testified before the Oil Conservation Commission?

A No, sir.

Q Will you please state your background and experience in the oil business.

A I was first employed after graduating from Lovington High School by an oil field supply firm. I worked as a production sales representative, and began work for Mr. Trigg in May of 1959. My initial duties were production clerk. I had charge of all reports, state and federal, all production accounting, plus well records and well files. From this, Mr. Trigg later employed a petroleum engineer, and I went to assisting him in reservoir engineering, furnishing him information for reservoir engineering, calculations. At the time we were designing a waterflood, I helped him to bring out his designs and work out his calculations, and did the field work for the installation of a plant known as our Caprock Queen Waterflood.

From there, after our engineer left, I was made, you might call it a foreman in the field in charge of pulling units and well workovers. From there, for the past year, I have been responsible for the maintenance and operation of our Federal Trigg Waterflood Project, and if this proposal is accepted, I

will be responsible for its installation and operation.

Q What does Mr. Trigg seek by this application?

A He seeks to institute a secondary recovery project in the mentioned field.

Q I hand you what has been marked as Applicant's Exhibit Number 1, and ask you to state what it represents?

A It is a plat of the two-mile area surrounding the proposed project known as our Federal "J" Empire Lease, located in Section 1 of Township 18 South, Range 26 East. Indicated on the plat are all producing wells within a two-mile radius of our proposed project. Indicated also in blue on the map or on the plat is a Tokus San Andres Waterflood Project operated by Kawanee. In this project, they have two injection wells at present, and the Order R-3469 has approved the marked injection wells as listed in the blue area.

In the purple area offsetting our project, proposed project to the southeast, is the Atlantic-Richfield West Red Lake Project approved by R-3476. The pilot project is indicated in green. This injection is in progress at the present time.

This plat also indicates circled in red our proposed initial injection well known as our Federal "J" Empire No. 1.

Q The exhibit shows three wells in the project area. Are those three wells producing at this time?

A At the present time, all three wells are producing.

Q What formation are they producing from and at what depth?

A They are producing from what we know of the Slaughter A, B, and C zones. It is a producing interval, productive in this area in the upper portion of the San Andres Formation.

Q At approximately what depth are the wells?

A They are producing from 1,661 to 1,734, selected intervals.

Q Would you give the production history of these wells?

A These three wells have accumulated 91,300 barrels of oil to January 1, 1969. The current daily production is between 11 and 12 barrels of oil per day for the three wells.

Well No. 1 makes approximately one and a half to two barrels; No. 2 makes approximately eight barrels, and No. 3 makes the remainder.

Q Do you consider these wells to be stripper wells?

A They are definitely stripper wells. On a lease basis, they are stripper wells.

Q How do you propose to initiate and operate this proposed waterflood?

A We propose to convert Well No. 1, located in the southeast southeast of Section 1, by running plastic-lined tubing

with a packer set at approximately 1,100 feet, which is some 200 feet below the calculated cement top, and inject water into the perforation from 1,661 to 1,734, to promote secondary recovery of the No. 2 and No. 3 wells.

Q Have you advised the offset operators of the proposed waterflood?

A Yes, sir.

Q Have they indicated any objections?

A None whatsoever.

Q I hand you what has been marked as Exhibit Number 2, and ask you to identify that exhibit.

A This exhibit is a small-scale gamma ray neutron log of the proposed injection well, known as our Federal "J" Empire No. 1.

Q Have you brought this application to the attention of the United States Geological Survey?

A Yes, sir, written application for their approval subject to Commission approval was made December 23rd to Mr. James Knauf in Artesia.

Q I hand you what has been marked as Exhibit Number 3, and ask you to state what that represents.

A I could state what it represents by reading it. It is a letter of tentative approval from the United States Department

of Interior. It reads:

"John H. Trigg Company, Post Office Box 520, Roswell, New Mexico.

"Gentlemen: Your letter of December 23, 1968 requests approval to operate a waterflood of the San Andres Formation on oil and gas lease, Las Cruces 066445, described as follows:

"Township 18 South, Range 26 East, in Eddy County, New Mexico; Section 1, the southeast of the northeast, and the east half of the southeast.

"You propose to convert to water injection your Well No. 1 Empire Federal "J" located in the southeast southeast of above section to continue the flood pattern of the adjoining flood to the southeast. The plan for operating the above-described waterflood project as proposed in the application is satisfactory to this office, and hereby approved subject to like approval by the New Mexico Oil Conservation Commission and the following:

"1. This project will be operated in compliance with the New Mexico Oil Conservation Commission regulations governing waterflood operations.

"2. Duplicate copies of a monthly progress report, NMOCC form C-120 acceptable, are to be submitted to this office showing the volume of water injected and average pressures for

the injection wells and production for the producing wells in the project area.

"3. This approval does not preclude the necessity for further approval when the project is expanded to include other wells and leases, or the necessity to submit the usual notices and reports on wells involved.

"Sincerely yours, James A. Knauf, District Engineer."

Q Mr. Aston, I hand you what has been marked Exhibit Number 4, and ask you to state what that represents.

A This is a schematic drawing of the proposed conversion and its program. The schematic sets forth the following facts pertaining to completion of our Federal "J" Empire No. 1: eight and five-eighths surface casing was set at 873 with 450 sacks circulated to surface. Five and a half production casing was set at 1,782 with 150 sacks of cement. The total depth of the well was 1,782. The plugged back total depth is 1,769. The casing was perforated with 44 holes, 1,661 to 1,672; 72 holes, 1,680 to 1,698; 20 holes, 1,703 to 1,780; 76 holes, 1,715 to 1,734.

The schematic also shows that we propose to set a string of two and three-eighths ~~inch~~ plastic-lined tubing, with a tension-type packer set at approximately 1,100 feet. The calculated cement top in this well is at 977 feet.

Q Do you propose to fill the casing tubing annulus with some inert fluid?

A Yes, sir.

Q Will a pressure gauge be attached to the annulus at the surface?

A Yes, sir, as a matter of course.

Q What is the water which you propose to inject?

A We propose to inject produced San Andres water that has been produced from the same formation.

Q How many barrels of water do you propose to inject?

A Initially now we propose to inject 50 barrels per day.

Q Will that water be injected under pressure?

A Tests at the well head with fresh water on this particular well prior to this application, indicates that the initial water can be injected under gravity. However, if a pump is necessary to inject the required volume, then the pump will be set and the pressure maintained to maintain the volume.

Q If an injection rate greater than 50 barrels a day is required, can you obtain the additional water?

A Yes, sir. We have made inquiries of Atlantic-Richfield to acquire pressured water at the well head to maintain the necessary injection rate.

Q How soon after you begin the waterflood will you expect

a response?

A At an estimated rate of 50 barrels a day, we have no figures to indicate a time concerning expected recovery. However, because of the circumstances and the waterflood offsetting this project, we propose to cooperate fully with both Petroleum Corporation of Texas and Atlantic-Richfield, and when they expand their project because of response to secondary recovery, then we propose to increase our injection rate to approximately 300 barrels per day. Calculations tell us that we can expect a return at this rate, or when we begin this rate of from three to four months.

Q Do you have an analysis of the water which you propose to inject at this time?

A Yes, sir, we took a well head sample of the produced water that we propose to inject to United Chemical Corporation in Hobbs. They are an independent laboratory, and we have a chemical analysis run on the produced water, setting forth all the minerals included in the produced water.

Q Is your Exhibit Number 5 the analysis?

A Yes, sir, it is.

Q Do you have an opinion as to the amount of oil you expect to recover from this waterflood?

A Based on general experience in the field of secondary

we feel that that project ought to return us at least one to one.

Q In your opinion, will the proposed waterflood be in the interest of conservation and prevention of waste?

A It will allow us to recover all the oil that can not be recovered under primary operations.

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

A Yes, sir.

MR. EATON: Mr. Examiner, I move the admission of Exhibits 1 through 5.

MR. NUTTER: John H. Trigg's Exhibits 1 through 5 will be admitted in evidence.

(Whereupon, Applicant's Exhibits Numbers 1 through 5, inclusive, were admitted in evidence.)

MR. EATON: I have no further questions.

CROSS EXAMINATION

BY MR. NUTTER:

Q I missed that primary production figure that you gave earlier.

A 91,300 barrels of primary oil to January 1st.

Q You would anticipate a one-to-one recovery?

A Yes, sir, economics anticipate a one-to-one.

Q What is the current rate of injection on the Atlantic project?

A I have no figures, because they have just begun injection operations. I understand from conversations with Atlantic that they intend to maintain between 200 and 300 barrels per day initially.

Q So what you are proposing to do is merely inject produced water for the time being in rather a holding action until they get a response? Then you would increase your rate of injection to 300 barrels a day?

A Right.

Q What about this acreage east of your acreage?

A That has been unitized, and is now a cooperative unit, operated by Petroleum Corporation of Texas, and has been recently approved as an operating waterflood by Commission order.

Q Is that Well No. 1 or 2, either one approved for water injection, do you know?

A The No. 2 well located in the -- it would be the southeast of the southwest, has been approved as a water injection well.

Q But the No. 1 or 2 directly offsetting the Trigg's property there, neither one was approved?

A No, sir, not approved. But the understanding that I have with Petroleum Corporation is that their project pattern will comply with the spacing of Atlantic, and then they will require the No. 1 well located in the northwest of the southwest to be converted to water injection.

MR. NUTTER: Any other questions of Mr. Aston? You may be excused. Do you have anything further, Mr. Eaton?

MR. EATON: No, sir.

MR. NUTTER: Does anyone have anything they wish to offer in Case 4010? We will take the case under advisement.

I N D E X

<u>WITNESS</u>	<u>PAGE</u>
KENNETH E. ASTON	
Direct Examination by Mr. Eaton	2
Cross Examination by Mr. Nutter	11

<u>EXHIBITS</u>	<u>MARKED</u>	<u>OFFERED AND ADMITTED</u>
Applicant's Exhibits Numbers 1 through 5	2	11

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

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

Samuel Mortelette
 COURT REPORTER

I do hereby certify that the foregoing is
 a correct record of the hearing held at
 the Bernalillo Hearing Room on 4010
 held by me on 2/5 69.

Samuel Mortelette
 New Mexico Oil Conservation Commission