

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. 2354
Order No. R-2061

APPLICATION OF SOCONY MOBIL OIL
COMPANY, INC. FOR PERMISSION TO
DISPOSE OF PRODUCED FORMATION
WATER, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on August 9, 1961, 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 19th day of September, 1961, 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 by Administrative Order No. SWD-19, Socony Mobil Oil Company, Inc. was authorized to dispose of produced formation water into the Pennsylvanian Bough "B" and "D" formations through its Santa Fe "B" Well No. 1, located in the NE/4 SE/4 of Section 28, Township 9 South, Range 36 East, NMPM, Lea County, New Mexico.

(3) That in the present case the applicant, Socony Mobil Oil Company, Inc., in addition to the authorization granted by Administrative Order No. SWD-19, seeks permission to dispose of produced formation water into the Pennsylvanian Bough "C" formation through said Santa Fe "B" Well No. 1 and also through its Santa Fe "E" Well No. 1, located in the NW/4 NE/4 of Section 29, Township 9 South, Range 36 East, NMPM, Lea County, New Mexico.

(4) That the gross injection interval in the Santa Fe "B" Well No. 1 will be from 9697 feet to 9870 feet; the gross injection interval in the Santa Fe "E" Well No. 1 will be from 9588 feet to 9598 feet.

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CASE No. 2354
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(5) That approval of the subject application will neither cause waste nor impair correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Socony Mobil Oil Company, Inc., is hereby authorized to dispose of produced formation water into the Pennsylvanian Bough "C" formation through its Santa Fe "B" Well No. 1, located in the NE/4 SE/4 of Section 28, and through its Santa Fe "E" Well No. 1, located in the NW/4 NE/4 of Section 29, all in Township 9 South, Range 36 East, NMPM, Lea County, New Mexico.

(2) That the authorization granted by Administrative Order No. SWD-19 shall remain in effect.

(3) That the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1119 of the Commission Rules and Regulations.

(4) 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



BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
AUGUST 9, 1961

EXAMINER HEARING

IN THE MATTER OF:
CASE 2354

TRANSCRIPT OF HEARING

DEARNLEY-MEIERS REPORTING SERVICE, Inc.

PHONE CH 3-6691

ALBUQUERQUE, NEW MEXICO



oath, was examined and testified further as follows:

DIRECT EXAMINATION

BY MR. ERREBO:

Q Mr. Gordon, you are familiar with the Application in this case.

A Yes, sir; I am.

Q And does the injection into these two wells have any connection or relation to the Bough Salt Water Disposal System which is presently being operated in the Crossroads Pool?

A At the present time, Socony Mobil is the operator of the Crossroads Field Salt Water Disposal System, and we are injecting produced water into the Santa Fe B No. 1 Salt Water Disposal Well. This well was given administrative approval for salt water injection in approved zones by means of Administrative Order SWD-19. That order covered the injection of produced water into the Bough B and the Bough D formations.

Q Do you have an Exhibit showing the Crossroads Pool and adjacent pool to the west?

A The Exhibit No. 1 --

Q What does Exhibit No. 1 show?

A Exhibit No. 1 is basically a structure map of the Crossroads Area and the West Crossroads Area as contoured on top of the Bough C formation.

Q Where is the Santa Fe B No. 1 located?

A The Santa Fe B No. 1 Salt Water Disposal Well is presently



located in Section 28 of Range 36 East, Township 9 South, and it is shown on Exhibit 1 as being blocked off with a small red square entitled, "SWD."

Q That is the well you have previously testified was previously and is presently authorized as the Salt Water Disposal Well in the Bough B and D; is that right?

A Yes, sir.

Q And you propose what with respect to this well?

A We propose here to operate an additional section in the Bough C formation. The necessity for the Hearing arises out of the present production of the Bough C formation in one well in the Crossroads-Pennsylvanian Pool. The one well is the goal of No. 1 H. L. Vincent located in Section 22 in Unit A of the Northeast of the Northeast Quarter of Section 22, Township 9 South, Range 36 East.

Q Are there any other wells in the Bough C which are producing in either of these two fields?

A At the present time, none.

Q With regard to the Santa Fe E No. 1, which is the other well, which is the subject of this Application, what is its status at the present time?

A At the present time, Santa Fe E No. 1, located in Section 29, Township 9 South, Range 36 East, and shown on Exhibit 1 as blocked off with a red square, and entitled, "Proposed SWD" is temporarily abandoned. This is a former Pennsylvanian producer



from the Bough C formation.

Q Do you propose to inject into the Bough C; is that correct?

A Yes.

Q Will you refer to your Exhibit No. 2, and state what it shows?

A Exhibit No. 2 is a well sketch showing our casing, cementing, our original perforations, our present perforations, and our proposed new injection perforations.

Q Is this the down-hole casing equipment and tubing equipment which was previously authorized by order of the Commission?

A Yes. As shown, our present injection perforations and our present tubing are as approved by SWD-19.

Q Do you plan to add additional perforations to increase the injection capacity of the well?

A Yes. We are experiencing difficulty at the present time. Here, specifically, we propose to re-open the Bough C formation from 9750 to 55, and open also the zones 9736 to 42, and 9770 to 73, as being additional Bough C stringers, which we think will be able to take water injection.

Q Do you have a Schlumberger log of this well?

A We would like to offer, also submit a log which has been marked as to the tops of the Bough A, Bough B, Bough C, and Bough D formations, and as also marked in regard to the original production perforations our present injection perforations and our



proposed additional injection perforations.

Q Since this is the only copy of this that you have, would you show this to the Examiner?

A (Indicating). This is the lower section in the Santa Fe B-1, showing the Bough A to occur at a log depth here of 9647. The top of the Bough B occurs 2683, the top of the Bough C at 9703, the top of the Bough D at 9790. We have squeezed off our former production zone, the Pennsylvanian, in the Bough C at 9750 to 55. We are now injecting into the zones, I believe it shows here better, 96, 96, and 9604, and the two small zones down here, the 974 to 48, and the interval 9852 to 70. We propose to leave those injection zones open and then add perforation intervals back in the Bough C well within the limits of the Bough C zone, as we have previously testified as to those added intervals.

Q Will you refer to your Exhibit No. 3, and identify, and explain what is shown there?

A Exhibit No. 3 covers the well information. It is a well sketch of the Santa Fe E No. 1 which, at the present time, is temporarily abandoned. Here, we propose to follow the procedure essentially of running tubing, and previously drilling out, and recompleting in our old Bough C completion intervals of 9540 to 46, and 9588 to 98.

Q This well actually has been planned for abandonment, had it not, from the plugs which had been set there?

A Yes. The difficulties we are now experiencing in the



Santa Fe B-1, even though we do operate additional injection zone, we believe we will possibly need another well in the year 1962, and this we contemplate as being our additional well for disposal.

Q Do you have a Schlumberger log of that well?

A Schlumberger log of the Santa Fe E-1.

Q It has been marked Exhibit 3, has it?

A 3-A.

Q Will you explain that?

A It has been marked as to the tops of the Bough A at 9498, the top of the Bough B at 9536, and the top of the Bough C at 9574. Now here, we propose to re-perforate our squeezed off completion intervals at 9540 to 46, and at 9588 to 98. Bough C covers only one set of these perforations.

Q Do you have anything further to add in connection with this case, Mr. Gordon?

A No, sir.

MR. ERREBO: That is all that we have Mr. Examiner.

MR. NUTTER: Are there any questions of Mr. Gordon?

MR. MORRIS: No.

Q (By Mr. Nutter) Mr. Gordon, what about all these other Bough C wells that are shown on the plats?

A Here, our plat, Exhibit No. 1, shows old production and present production. While we have Pennsylvanian wells shown, the Gulf Vincent Well is the only producing well in the Pennsylvanian with the exception, there are two other wells on further north



which are now in the Allison-Pennsylvanian Field.

Q That is in Sections 5 and 14?

A Sections 5 and 14; yes, sir. They are designated as Pennsylvanian. They are presently producing the Bough C. They are in the Allison-Pennsylvanian Field. However, they are, I believe, more than two miles away, so our concern is, here, with our Gulf Well. So that is the reason we have stated that as the only well in the Area within this two-mile radius.

Q In other words, all of these violet colored wells in Sections 19, 20, 29, and 30, are abandoned?

A Yes, sir. That is the remains of the old Crossroad-Pennsylvanian Field.

Q I see. And this is going to be Devonian water that is disposed into these wells?

A Yes, sir. I believe at the present time we are also contemplating, as unit operator, picking up additional Pennsylvanian water from this south end of the Allison-Pennsylvanian, but there is nothing settled as to that, yet.

Q Well, that would be from the three wells that you mentioned are producing with the Pennsylvanian?

A Well, the Gulf Vincent Well does furnish a small amount of Pennsylvanian Vincent water.

Q I notice that there are a couple of San Andres wells over in Sections 20 and 29. Are they producing yet?

A No, sir.



Q So what depth will you run tubing in the E No. 1?

A On the E No. 1, I believe, sir, we possibly would go deeper than our 5446. We have made no solid plans as yet as to what depth we would run the tubing. We do plan on plastic coating injection tubing as we have on the Santa Fe B 1, and either setting a temporary-type hookwall packer with that tubing for the purpose of protecting the annular space, or providing an oil seal.

Q Will you state definitely, or can you state definitely that the tubing will be set below the liner?

A Yes, sir.

Q The upper part of the liner?

A Yes, sir.

Q To your knowledge, have the reserves in this Bough C formation in this Area been depleted?

A I cannot say, sir. The only well producing now is a Gulf Well. I do not know what they give reserves on it, or how much reserves they give it.

Q I was thinking in particular of the Area over here in Sections 19, 20, 29, and 30 where you would be injecting in the immediate vicinity of Bough C production. I was just wondering if there is any production remaining or foreseen. ^{Ans:} We have plugged and abandoned all of our wells in that Area with the exception of the Santa Fe E-1. The Gulf Vincent Well, at the present time, has a 16 barrel allowable.

MR. PORTER: How far is that Gulf Vincent Well property



from the
 A proposed injection well?

A Well, sir, our first well, the Santa Fe B-1, it is just a little bit less than two miles from our Santa Fe E-1, our second proposed well. It is approximately two and one half miles.

Q (By Mr. Nutter) Now, Mr. Gordon, you said that you would leave the B and the D zones open in the B No. 1 and add the ^C increase, correct?

A Yes, sir.

Q And in the E No. 1, you will be injected^{ing} into the B and the C?

A Yes, sir. We are basing the desirability of injecting into those formations from our field experience while producing these wells. The Santa Fe E-1 was noted as being subject to lost circulation while drilling, and then also extremely easy to kill and receptive to fluid while we have been working on it when it was a Bough completion.

MR. NUTTER: Are there any other questions of Mr. Gordon? You may be excused.

MR. ERREBO: If it please the Examiner, I would like to offer Exhibits 1 through 3-A in evidence.

MR. NUTTER: Socony Mobil's Exhibits 1 through 3-A will be entered in evidence.

(Whereupon Socony Mobil's Exhibits 1 through 3-A received in evidence.)

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



