

BEFORE THE  
OIL CONSERVATION COMMISSION  
SANTA FE, NEW MEXICO  
JUNE 28, 1961

EXAMINER HEARING

IN THE MATTER OF:

CASE 2316

Application of Pan American Petroleum  
Corporation for permission to dispose  
of salt water into the Wolfcamp forma-  
tion, Lea County, New Mexico.

TRANSCRIPT OF HEARING

BEFORE THE  
OIL CONSERVATION COMMISSION  
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EXAMINER HEARING

PHONE CH 3-6691

DEARNLEY-MEIER REPORTING SERVICE, Inc.

ALBUQUERQUE, NEW MEXICO

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IN THE MATTER OF

CASE 2316: Application of Pan American Petroleum Cor- :  
poration for permission to dispose of salt :  
water into the Wolfcamp formation, Lea :  
County, New Mexico. Applicant, in the :  
above-styled cause, seeks permission to dis- :  
pose of produced salt water into the Wolf- :  
camp formation through its Lois Wingerd Well: :  
No. 8 located 660 feet from the South and :  
East lines of Section 24, Township 12 South,: :  
Range 37 East, Gladiola-Wolfcamp Pool, Lea :  
County, New Mexico. :  
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BEFORE:

Mr. Elvis A. Utz, Examiner.

T R A N S C R I P T     O F     P R O C E E D I N G S

MR. UTZ: Case 2316.

MR. MORRIS: Application of Pan American Petroleum Cor-  
poration for permission to dispose of salt water into the Wolfcamp  
formation, Lea County, New Mexico.

MR. BUELL: For Pan American Petroleum Corporation, Guy  
Buell.

(Witness sworn)

MR. UTZ: Are there other appearances in this case?



Proceed.

W. J. SANDIDGE, JR.,

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

DIRECT EXAMINATION

BY MR. BUELL:

Q Mr. Sandidge, would you state your full name, by whom you are employed, and in what capacity, and at what location, please?

A I'm William James Sandidge, Jr. I'm employed by Pan American Petroleum Corporation as a petroleum engineer, senior grade, in their Lubbock District office.

Q You have testified at prior Commission hearings, have you not?

A I have.

Q Your qualifications as a petroleum engineer are a matter of public record?

A They are.

MR. BUELL: Any questions, Mr. Examiner?

MR. UTZ: No, sir.

(Whereupon, Pan American's Exhibits 1 through 4 were marked for identification).

Q (By Mr. Buell) Would you look, now, at what has been marked as Exhibit 1, and state, for the record, what that Exhibit reflects?

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A This is a plat showing the Gladiola-Wolfcamp Pool, and a portion of the Gladiola-Devonian Field. Shown thereon is a circle two miles in radius. We marked in red all the Wolfcamp completions within two miles of the well, which Pan American proposes to utilize for the disposal purposes. The well marked in green in Unit P of Section 24, Township 12 South, Range 37 East, is the Pan American's Lois Wingerd No. 8, a shut-in Gladiola-Wolfcamp Well, which we propose to utilize for disposal purposes.

Q What is the significance, Mr. Sandidge, of the area within the red outline?

A The red outline embraces those leases which will be served by Pan American's proposed disposal system.

Q I notice when you mentioned the Wolfcamp wells, the ones colored in red, you said "Completions." Were you distinguishing that from producing Wolfcamp wells?

A I was, Mr. Buell. As indicated on the map, the majority of the wells in the major portion of the field are either shut-in, carried as temporarily abandoned, or dead. In the area in which we propose to dispose of water, there are presently only four Wolfcamp wells which are producing at marginal rate, varying from one barrel of oil per day to twelve barrels of oil per day.

Q Since there are only four, let's take time to name the wells, locate them, for the record, and state the current production of those wells, according to your information.

A The first well is the Sinclair Green No. 1, located in



Unit N of Section 13, Township 12 South, Range 37 East. That well produced in April three barrels of oil per day, plus ten barrels of water per day. And

Another well is the Pan American's Houston "A" No. 2, and that well is located in Unit L of Section 19, Township 12 South, Range 38 East.

Q Is that all of them?

A No. I was waiting on one of the examiners. That well produced six barrels of oil per day, and two barrels of water in April. The next well is Sinclair Field No. 1. It's located immediately south of the proposed disposal well in Unit A of Section 25. Our records show that it produced at the rate of one barrel of oil per day, and six barrels of water per day in April. The fourth well in that vicinity is the Ohio State No. 1. It's located immediately adjacent to the previous well, to the east, in Unit D of Section 30, and in April it produced twelve barrels of oil per day, and two barrels of water.

Q Mr. Sandidge, looking over at the western portion of your Exhibit, I notice some wells colored in red there that while they're certainly not world beaters, they are producing more than those in the area of the Wingerd No. 8. Are those wells classified as being in the Gladiola-Wolfcamp Pool?

A They are classified as Gladiola-Wolfcamp wells. We have some evidence there is separation between that portion of the reservoir and the portion where we propose to inject water.

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Q What evidence do you have?

A There's structural evidence, and also there's two dry holes separating the two portions of the Field. The wells I refer to are the Pan American Wingerd No. 1. At that time it was drilled as a Stanolind Wingerd No. 1.

Q Let me interrupt. You have the official Exhibit copy there. Would you circle in brown these two dry holes?

A All right. I just happen to have a brown pencil.

Q Let me ask you this, Mr. Sandidge. I realize you are going to discuss this further in connection with another Exhibit, but at the outset, let's just get your thought in the record. Do you feel that if there is any effect on this Wolfcamp reservoir from disposing of salt water in our Wingerd No. 8 Well, if there is any effect, do you feel it will be beneficial to the reservoir or detrimental?

A I feel it will not be detrimental, and perhaps it will be beneficial.

Q So, regardless of whether or not the wells to the west are separate or not, or connected or not, if our disposing of salt water affects them in any way, it will be beneficial?

A In my opinion, it will be.

Q Do you have any other comments on this Exhibit?

A I think we have covered it, Mr. Buell.

Q Look, now, at what has been marked as our Exhibit No. 2. Then state, for the record, what is reflected by that Exhibit,



please.

A Exhibit No. 2 is a cross-section which runs in a north-south direction from the Sinclair Schultz No.3, which is located a mile and a quarter due north of the Pan American Wingerd No. 8. The cross-section, as I previously stated, proceeds southerly from the Schultz No. 3 through the other Wingerd completions, to the south through the other Wolfcamp completions -- I am sorry -- to the south, and then switches east, and passes through the Ohio State No. 1.

Q Do you have a surface trace of this cross-section on your Exhibit No. 1, Mr. Sandidge?

A This Exhibit 2 is shown as trace AA Prime on Exhibit 1.

Q How have you distinguished on this Exhibit the completion interval with regard to the Wolfcamp formation in these wells?

A The Wolfcamp completion interval is marked in red on each one of the logs. The Wolfcamp interval in which we propose to inject water is marked in green on the log of Wingerd No. 8.

Q Mr. Sandidge, from the standpoint of the subject matter of this hearing, our request to use Wingerd No. 8 for salt water disposal, what, to you, is the most significant thing on Exhibit 2?

A The most significant thing that this Exhibit shows is the structural relationship and the completion intervals of the Sinclair Field No. 1 and the Ohio State No.1. With regard to our



Wingerd No. 8, both of these wells, as shown by the cross-section, are structurally low to the Wingerd No. 8 on the top of the Wolfcamp. They are both completed higher in the Wolfcamp Section than the Wingerd No. 8 perforations, where we propose to dispose of water.

Q Now, these two wells you are speaking of, the Sinclair Well and the Ohio Well, are the nearest wells to our Wingerd No. 8 that are producing any hydrocarbons from the Wolfcamp?

A That is correct. They are the two producers to the south and the southeast of Wingerd No. 8.

Q Could you make this general observation, Mr. Sandidge, looking at this Exhibit, it would appear to me that most of the Wolfcamp completion intervals in the other wells on this Section are above our proposed disposal interval; is that correct?

A Generally, that is true.

Q Getting back to the Sinclair Well and the Ohio Well again for a moment, do you know whether or not any tests were performed by either of those operators in the interval we are proposing for disposal?

A Yes. The Sinclair Fields No. 1 was drill stem tested while it was being drilled over the interval 9619 to 9654. This interval is below the depth shown on the log. It is approximately equivalent to that one in which we proposed to dispose of water. On a three-hour drill stem test of that interval, the Sinclair Fields No. 1 recovered 180 feet of heavy oil and gas cut mud, 3000 feet of oil, cut sulphur, 1,000 feet of sulphur water.





The operator did not elect to attempt completion in that interval.

Q When you analyze the result of the test, do you feel that the operator made a wise decision in going up the hole to complete?

A I do.

Q In addition to the log that is shown on Exhibit No. 2, you have also examined logs on other Wolfcamp penetrations in this area, have you not?

A I have.

Q Have you also examined and studied all core data which is available?

A Yes.

Q Based upon your study and evaluation of these studies, that leads you to the opinion that if there is any effect on the Wolfcamp reservoir from disposing of salt water, it will be a beneficial effect?

A I feel that any effect will be beneficial.

Q Will you look at what has been marked as Pan American's Exhibit No. 3? State, for the record, what is reflected by that Exhibit, please.

A Exhibit No. 3 is a schematic drawing showing the manner in which we propose to complete Wingerd No. 8 for disposal purposes, if this application is granted. As shown on the Exhibit, this Well has 7-inch casing set at 9,818 feet with an estimated top of the cement at 7,650 feet. The existing perforations where

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we propose to dispose of salt water are from 9610 to 9636. We plan to set a packer at approximately 9575, run 2 7/8-inch internally coated tubing, which will be bottomed through the packer at approximately 9580. The annulus between the 7-inch casing and the 2 7/8-inch tubing will be loaded with inhibited fresh water to minimize corrosion effects.

Q Mr. Sandidge, do you feel confident that the casing and completion program outlined on Exhibit 3 will adequately assure us that this salt water is going into the interval that we want it to go in?

A I do. That's a generally accepted completion practice for disposal.

Q Look, now, at what has been marked as our Exhibit No. 4, and state, for the record, what is reflected by that Exhibit.

A This is a tabulation showing the names of the seventeen wells which will be served by this disposal system. It shows the latest available production figures for both oil and water. Apparently, the water volume to be disposed of will be approximately 1288 barrels.

Q Would you anticipate that such volume will increase from time to time, Mr. Sandidge?

A I do.

Q In your opinion, will the interval proposed for disposal in our well take the volumes of water which you anticipate will be available?



A An injectivity test has been run on this well. On this test the well took over twice the present disposal volume on a vacuum. It will take -- according to the test, it will take somewhat over five times the present disposal volume at 50 pounds of pressure.

Q That's certainly not very much pressure when you're looking at disposing of salt water, is it, Mr. Sandidge?

A No, sir, that's very small.

Q So, then, you feel that this interval will take all anticipated available volumes?

A Based on what we know now, this interval will take the volume.

Q We've already discussed one feature of preventing waste, Mr. Sandidge, that is, that if there is any reservoir effect, it's going to be beneficial. Does your proposal serve conservation in any other manner, other than that?

A It will comply with the Commission's Order to dispose of water in this field by subsurface means, and will protect fresh water supplies.

Q In other words, by disposing of this water in the Wolfcamp formation, we're going to eliminate the opportunity for surface and subsurface contamination to occur?

A That is correct.

Q Do you feel that the correlative rights of all owners of interest in this area will be protected under your proposal?



A I do.

Q Do you have anything else you would like to add?

A I have nothing.

MR. BUELL: That concludes our direct examination, Mr. Examiner. We have a log -- a sample copy of a log of our disposal well. I didn't know whether you wanted it or not, since it is on the section. If you would like it, it is available.

MR. UTZ: No, we won't need it.

MR. BUELL: May I formally offer Pan American's Exhibits 1 through 4 inclusive?

MR. BUELL: Exhibits 1 through 4 will be entered into the record, without objection.

(Whereupon, Pan American's Exhibits 1 through 4 were received in evidence).

#### CROSS-EXAMINATION

BY MR. UTZ:

Q How much water did you say would be available for disposal?

A 1288 barrels of water per day based on latest tests.

Q Were these tests to determine water that the zone will take run through the 2 7/8-inch tubing?

A It is my impression at the time of the test, it had 2-inch tubing; it was certainly no larger than 2 7/8.

MR. UTZ: Any other questions? The witness may be excused.



(Witness excused)

MR. UTZ: Any other statements in this case? If not,  
the case will be taken under advisement.

\* \* \* \*

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 in machine shorthand and reduced to typewritten transcript under my personal supervision, 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, the 3rd day of July, 1961, 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. 236, heard by me on June 28, 1961.

*[Signature]* Examiner  
New Mexico Oil Conservation Commission

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