

BEFORE THE
Oil Conservation Commission
SANTA FE, NEW MEXICO

IN THE MATTER OF:

CASE NO. 962

TRANSCRIPT OF PROCEEDINGS

ADA DEARNLEY AND ASSOCIATES
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ALBUQUERQUE, NEW MEXICO

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

October 13, 1955

IN THE MATTER OF:

Case No. 962

Application of Humble Oil and Refining Company
requesting approval of the proposed South Four
Lakes Unit Agreement, consisting of 1,760.46
acres of land in Lea County, New Mexico.

BEFORE: Honorable John F. Simms
Mr. E. S. (Johnny) Walker
Mr. William B. Macey.

TRANSCRIPT OF HEARING

MR. MACEY: The next case on the Docket is Case No. 962.

MR. HINKLE: Clarence E. Hinkle, Roswell, New Mexico, appearing on behalf of Humble Oil and Refining Company.

HUGH JOURDAN,
called as a witness, having been previously duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. HINKLE:

Q State your name, please.

A Hugh Jourdan. H-u-g-h.

Q Where do you live, Mr. Jourdan? A Roswell.

Q By whom are you employed?

A Humble Oil and Refining Company.

Q In what capacity? A District Geologist.

Q Have you ever testified before this Commission before --

A Yes, sir, I have.

Q -- as a specialist?

A Yes, sir.

MR. HINKLE: Are his qualifications accepted?

MR. MACEY: Yes, sir.

Q Are you familiar with the application which has been made by Humble Oil and Refining Company for approval of the proposed South Four Lakes Unit Agreement?

A Yes, sir.

Q Do you know whether or not there is a similar application that has been filed with the Commissioner of Public Lands?

A Yes, sir, there has.

Q What does this Unit consist of, how many acres, and where is it located?

A It will be 1,760.46 acres in Townships 11-12S, R34E, Lea County, New Mexico.

Q Will you refer to Humble's Exhibit No. 1, and tell the Commission what that shows, what it is and what it shows?

A This report contains a plat of the Unit showing the location of the lease holders and size, and an index map showing the relation of the Units, the proposed Unit to nearby towns and nearby productive areas. It has a geophysical interpretation of the structure under the Unit, and a two-page discussion of the geology in the Unit area.

Q State briefly to the Commission what the geological report shows as far as geology is concerned.

A It shows the structure with at least 200 feet of closure as mapped by our reflex seismograph on top of the Devonian Formation.

Q Is that all it shows?

A Well, it gives the expected tops of various formations, the

depth to which the well will be drilled, and is a discussion of the subsurface geology of the area.

Q What formations are expected to be encountered in this probable producing formation?

A San Andres, Abo, Wolfcamp, Mississippian and Devonian.

Q Is this geological report the result of subsurface or geophysical work, or a combination of both?

A A combination of both.

Q Are you familiar with the proposed Unit Agreement, copies of which have been filed with the Commission? A Yes, sir, I am.

Q Do you know whether or not that is the same form, or substantially the same form, as heretofore used where only State Lands are involved? A Yes, sir, it is.

Q Who is designated as the operator in this Unit?

A Humble Oil and Refining Company.

Q Does the Unit Agreement provide for the commencement of test wells? A Yes, sir, it does.

Q When is that well to be commenced?

A On or before November the 9th of this year, 1955.

Q What was the reason for providing for November 9?

A There is a 160 acre State Lease within the Unit which will expire on November 10.

Q How many lease owners are within the Unit?

A There are two.

Q Who are they?

A Phillips and Humble Oil Company.

Q And the overriding royalty owners?

A No, there are none.

Q Both the Humble and Phillips agreed to the formation of this Unit?

A Yes, sir.

Q They are willing to commit their acreage?

A Yes, sir.

Q In your opinion, does the proposed area cover all or substantially all, of the geological feature involved?

A Yes, it does.

Q In the event production -- first, how deep do you propose to drill this test well?

A It will be drilled deep enough to test the Devonian formation, and total depth will probably be around 13,200 feet.

Q In the event production is obtained under the Unit, state whether or not, in your opinion, the Unit Agreement would give effective control of substantially all of the Unit area?

A Yes, it would.

Q In the event the Unit Agreement is approved and production is obtained, state whether or not, in your opinion, the Unit Agreement would be in the interest of conservation and prevention of waste?

A Yes.

Q In the event the Unit Agreement is approved and obtained, would the Unit be in the interest of conservation and reservoir energy and obtaining the greatest ultimate recovery from the reservoir involved?

A Yes, sir.

MR. HINKLE: That is all.

CROSS EXAMINATION

BY MR. NUTTER:

Q Do you believe that the acreage included in this area is unnecessarily large to include the structure?

A No, I do not -- what are you referring to?

Q I believe you have some contours drawn here. What is this minus 9200 supposed to represent here? I haven't had a chance to read your geological report.

A That represents the top of the Devonian and only place where another contour will cross any of the unit outline. Any contour, as we mapped it, that crossed the unit outline, we have put it on the map.

Q Is provision made in the Unit Agreement for expansion and contraction of the Unit Area if it becomes necessary?

A Is it?

MR. HINKLE: No.

Q Would Humble Oil Company, as Unit Operators, be willing to submit a periodic statement of progress?

A Yes, I'm sure it would.

Q On this Unit Agreement, we would like to have a statement about every six months as to how the Unit is getting along, --

A Yes, sir, be happy to.

Q -- detailing the drilling and production history. We would appreciate having that.

A Fine.

MR. NUTTER: That is all.

MR. MACEY: Does anybody else have any questions of the witness? Nothing further, the witness may be excused.

MR. HINKLE: That is all.


MR. MACEY: We will take the case under advisement.

* * *

STATE OF NEW MEXICO)
 : ss
COUNTY OF BERNALILLO)

I, THURMAN J. MOODY, Court Reporter, do hereby certify that the foregoing and attached transcript of proceedings was taken before the New Mexico Oil Conservation Commission at Santa Fe, New Mexico, and is a true and correct record to the best of my knowledge, skill and ability.

WITNESS MY HAND, this, the 7th day of November, 1955.


Court Reporter.

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

IN THE MATTER OF:

Case No. 962

TRANSCRIPT OF HEARING

October 22, 1958

DEARNLEY - MEIER & ASSOCIATES
GENERAL LAW REPORTERS
ALBUQUERQUE NEW MEXICO
Phone CHapel 3-6691

BEFORE THE
OIL CONSERVATION COMMISSION
October 22, 1958

-----:
IN THE MATTER OF: :

Application of Humble Oil and Refining Company :
for the amendment of a unit agreement. Applicant, :
in the above-styled cause, seeks an order amend- :
ing the South Four Lakes Unit Agreement approved :Case 962
by Order R-710 to enlarge the unit area to include:
the N/2 SW/4 of Section 1, Township 12 South, :
Range 34 East, Lea County, New Mexico. :
-----:

Mabry Hall
Santa Fe, New Mexico

BEFORE:

Elvis A. Utz, Examiner.

TRANSCRIPT OF HEARING

MR. UTZ: The next case on the docket will be Case 962.

MR. PAYNE: Case 962, "Application of Humble Oil & Refining
Company for the amendment of a unit agreement."

MR. HINKLE: Clarence E. Hinkle appearing on behalf of
Humble Oil and Refining Company. We have one witness, Mr. Tom
McLaren, and three exhibits.

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

(No response).

MR. UTZ: If not, you may continue, Mr. Hinkle.

(Witness sworn in).

MR. HINKLE: We have had these already identified as

exhibits.

MR. UTZ: All right.

TOM McLAREN

called as a witness, having been first duly sworn, testified as follows;

DIRECT EXAMINATION

BY MR. HINKLE:

Q State your name, please?

A Tom McLaren.

Q Are you a graduated geologist, Mr. McLaren?

A Yes sir, I am.

Q From what schools?

A Colorado School of Mines.

Q What year?

A 1952.

Q Have you practiced your profession since your graduation in 1952?

A Yes, I have.

Q With what companies?

A Immediately on graduating from school, I was a geophysics computer for the Phillips Petroleum Company. I was called into the service, Corp of Engineers, for a period of two years. I was hired as a geologist with Humble in 1954.

Q Have you been with Humble since 1954?

A Yes, I have.

Q What is your present position with Humble?

A I am a geologist in the Division Unitization Section.

Q Where are you located?

A Midland, Texas.

Q Have you been employed by Humble in New Mexico at any time?

A Yes, I worked in New Mexico from October, 1954 until February of 1957.

Q Have you made a study of the South Four Lakes unit area?

A I have.

Q What did that study consist of?

A Examining all available electric logs, drill logs pertaining to the drilling of the wells in the field and production data since that time.

MR. HINKLE: Are his qualifications acceptable?

MR. UTZ: They are.

Q (By Mr. Hinkle) Are you familiar with the seismic structural plat which was filed by Humble at the time it made application for designation of this area to the Commissioner of Public Lands and also introduced in evidence before the Commissioner in the hearing for approval?

A Yes, I am.

Q Referring to Humble Exhibit One, which is the plat you have just mentioned, explain to the Commission what it shows.

A This is a structure map contoured on the top of the

Devonian horizon and reflects seismograph records prior to the drilling of the first well in the field. It shows the configuration of the structure in the South Four Lakes area well within the unit area.

Q Now, the unit area followed pretty well the closing contour of your geophysical structure map, did it not?

A Yes, it did.

Q And on account of the way it was contoured, it excluded the north half of the southwest quarter of Section 1, Township 12 South, Range 34 East?

A Yes, sir.

Q Have you made a new structural map from your study of the area and from the information obtained in the drilling of the wells which have been drilled --

A Yes.

Q In the unit area?

A Yes, the five wells.

Q Refer to Exhibit Number Two and explain to the Commission what that shows.

A This is our current subsurface interpretation based on the information obtained from drilling the five wells in the South Four Lakes unit area.

Q Does the plat, Exhibit Number Two, show the location of the five wells which have been drilled?

A Yes, it does.

Q To what depth were those wells drilled?

A The Number One Well was drilled to 12,222 feet in Mississippian rock where it has now been abandoned due to mechanical failure. The Number Two Well was drilled to 12,924 feet and was completed as a Devonian producer. The Number Three Well was drilled to 12,874 feet in the Devonian formation where it was completed as a Devonian producer. The Number Four Well on the north was drilled to 12,893 feet where it was completed as a Devonian producer. The Number Five Well on the west side was drilled to 13,010 feet where the Devonian was proved barren and the well was plugged back to the Pennsylvanian, where it is currently producing.

Q Now, the contours which are shown on Exhibit Two are contoured on top of the Devonian formation?

A Yes, they are.

Q Now, what does this interpretation show as compared to the original seismic structural map, Exhibit Number One?

A With the information obtained from drilling the five wells, it became apparent that the west side of the structure, which I believe is very deep, extends to a general north-south lineation of the field, as brought out by the seismograph, but with a rather broad rate of depth in the north-south, although apparently there is a small re-entrance in the north south, north half of the southwest quarter of Section 1, also not believed to be present from a current interpretation.

Q Does this structural map, Number Two, Exhibit Number Two, indicate that the north half of the southwest quarter of Section One is reasonably proven now to be productive of oil and gas?

A Yes, the fluid water contact which has been identified in two previous wells apparently is in the neighborhood of minus 8750 feet subsea in the Devonian. Putting that value on the current interpretation, it will show that the 80 acres is reasonably proved to be productive.

Q State whether or not in your opinion it is in the interests of conservation and prevention of waste to include this particular 80 acres within the unit area?

A We feel that it would be in the interests of conservation due to the fact that apparently a water drive method of recovery is present in this field and in this sort of feature, a well that is situated high structurally will more effectively drain the reservoir.

Q And is it in the interests of conservation and the prevention of waste that the wells be located toward the crest of the structure?

A Yes, very definitely.

Q And those wells would likely drain efficiently the entire pool or area?

A Yes, we feel very definitely in that respect.

Q Does this particular pool have any peculiar characteristics

as compared with other pools in the area?

A The Devonian reservoir in this particular field and in several other fields has apparently exhibited a very high gas-oil ratio with a very low shrinkage factor and apparently the reservoir is under a saturated state and the gas is associated very definitely in the reservoir.

Q Because of these characteristics, state whether or not in your opinion it is highly advisable to develop the area under unitization and through proper spacing, well spacing?

A Yes, that is very important in a field or reservoir of this nature to more efficiently drain the reservoir with a minimum amount of needless edge wells.

Q Is the north half of the southwest quarter of Section 1 State land?

A Yes, it is.

Q Did Humble and Phillips own this acreage at the time the unit was formed?

A No, they did not.

Q And this has not been acquired since the formation of the unit?

A Yes, that is right.

Q State whether or not in your opinion it is for the best interests of the State to include this particular 80 acres within the unit?

A With the acreage in the South Four Lakes unit being

all State land, we feel that the additional 80 acres of additional State land will be in the interests of conservation.

Q Do you know whether or not the proposed amendment of the unit area to include the north half of the southwest quarter of 1, 12, 34, has been executed?

A Yes, it has.

Q Has it been executed by both the Humble Oil Refining Company and the Phillips Petroleum Company?

A Yes, it has.

Q This has been identified as Humble Exhibit Three, which is the amendment. Please refer to Exhibit Three of Humble's and state what it is?

A Exhibit Three is a proposed amendment to the original South Four Lakes unit agreement.

Q Does this amendment do anything other than amend the unit to enlarge the unit area to include this eighty acres?

A No, it does not.

Q That's the only purpose of this hearing?

A Yes, sir.

MR. HINKLE: I would like to offer in evidence Humble's Exhibits One, Two and Three.

MR. UTZ: Without objection, they will be received.

MR. HINKLE: That's all that we have, I believe.

MR. UTZ: Are there questions of the witness?

(No response).

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. McLaren, Exhibit Two, which is your 8750 contour, states what you feel to be the oil-water contact at this time?

A Yes sir, the fluid water contact. There is some doubt as to whether it actually is an oil as such.

Q That being true, then all over the north and southeast quarter would not be productive of oil, would it?

A May I refer to that? The north half of the southeast quarter of Section 1?

Q The southwest quarter of the north half, southwest on your 80-acre extension.

A The interpretation of the Number Three Well lengthens the contours on the eastern side. It is felt that with just the fact that that one control is there and then the Penrose Well in Section 12 in which they did not penetrate the Devonian but just estimated that point at the present time, it is a reasonable interpretation that may be developed quite definitely with the addition of another well which we propose to drill.

Q Then future drilling will determine this more closely?

A Yes sir, very definitely.

Q How about the southwest quarter, is that or any part of it productive of oil?

A Apparently under this interpretation, Mr. Examiner, part of that forty acres would be productive with the deep drilling

necessary for the Devonian reservoir in this area and the fact that it would have less than fifty feet or approximately fifty feet above the current contact, we feel it will be uneconomical to drill a well and recover any oil from that lease.

Q Do you think that if drilling would determine that that forty acres would be oil productive, that it would be asked to come into the unit?

A Yes sir, Ohio would be--we would be more than happy to work with Ohio on that.

MR. UTZ: Any other questions of the witness?

MR. HINKLE: I might ask only one question.

REDIRECT EXAMINATION

BY MR. HINKLE:

Q The southwest southwest quarter of Section 1 is owned by Ohio?

A Yes, sir.

Q Have they made any application or request to either Humble or Phillips to join the unit?

A Not to my knowledge, they have never approached us.

MR. HINKLE: That's all.

MR. UTZ: Any other questions of the witness?

(No response).

MR. UTZ: It not, the witness may be excused.

(Witness excused).

MR. UTZ: Any other statements to be made in this case?

(No response).

MR. UTZ: If there are none, the case will be taken under advisement.

MR. HINKLE: I would like to request that if the Commission is going to approve this, that they do so quite quick because under the terms of this amendment, the agreement will become effective the first day of the month following approval, which would be November the 1st, and of course, it's in the interests of the State Land Office and I talked to the Commissioner about it, and he would like, if it is going to be approved, to have it effective as of November the 1st.

MR. UTZ: Even if we don't get it out by then, we can make it effective then.

MR. HINKLE: Thank you.

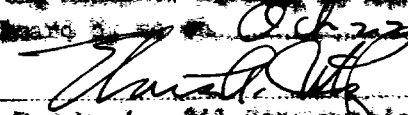
STATE OF NEW MEXICO)
 : ss
 COUNTY OF BERNALILLO)

I, JERRY MARTINEZ, Notary Public 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 in Stenotype and reduced to typewritten transcript 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 23rd day of October, 1958, in the City of Albuquerque, County of Bernalillo, State of New Mexico.


 Notary Public

My Commission Expires:
 January 24, 1962

I do hereby certify that the foregoing is a complete record of the proceedings in the Executive Session of Case No. 962, heard on the 22nd day of October, 1958.

 Notary Public
 New Mexico Oil Conservation Commission