

MR. NUTTER: Call Case Number 3154--application of Atlantic Refining Company for a unit agreement, Eddy County, New Mexico.

MR. HINKLE: Clarence Hinkle, appearing on behalf of Atlantic Refining Company, of Hinkle, Bondurant & Christy, Roswell, New Mexico. We have two cases today, Number 3154 and Number 3155. We have one witness, and the testimony of this witness will overlap. For that reason we would like to have the two cases consolidated for the purpose of taking testimony.

MR. NUTTER: We will also at this time call Case Number 3155, being the application of Atlantic Refining Company for a waterflood project, Eddy County, New Mexico. Is there an objection to consolidation of the two cases for the purpose of taking testimony? ... The two cases will be consolidated.

MR. HINKLE: I'd like to have Mr. Trimble sworn.

R I C H A R D L. T R I M B L E thereupon was sworn, took the stand, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. HINKLE:

Q State your name, please.

A Richard L. Trimble.

Q By whom are you employed?

A Atlantic Refining Company.

Q What is your position at Atlantic Refining Company?

A I am a special projects engineer working out of Roswell.

Q Have you ever testified before the New Mexico Oil Conservation Commission?

A No, I have not.

Q Are you a graduate petroleum engineer?

A Yes, I am.

Q Of what university?

A University of Pittsburgh in 1943.

Q With what degree?

A A BS degree in petroleum.

Q How long have you been employed by Atlantic Refining Company?

A Since 1951.

Q Have you held different positions with Atlantic Refining Company?

A Yes, I have been the district engineer at Houston; following that I was a senior production engineer in Dallas. More recently I have been working out of Roswell.

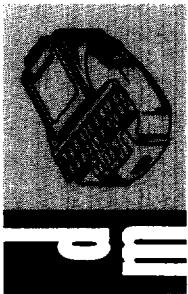
Q Are you familiar generally with oil development in southeastern New Mexico?

A Yes.

Q Are you familiar with the application of Atlantic in these cases which are under consideration?

A Yes, sir.

Q --Which cases are Number 3154 and Number 3155?



A Yes, sir.

Q Are you familiar with the development of the Culwin Queen area?

A Yes, I am.

Q Is that known as the Shugart Pool?

A Right.

Q Have you made a study of this particular pool?

A Yes, sir, I have.

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

MR. NUTTER: Yes, sir, they are. Please proceed.

Q (MR. HINKLE) Mr. Trimble, would you refer to Atlantic's Exhibit 1 and explain to the Commission what this is--what it shows.

A Exhibit 1 is a plat showing outline of the proposed unit area for the Queen zone. It shows the ownership of leases both within the unit and outside the unit. It shows the locations of wells both within the proposed unit area and outside of the unit area, and the zones of completion of all wells within an area of about two miles.

Q Does it also show the proposed injection wells?

A Yes, sir, it shows in triangles within the proposed unit area the proposed injection wells.

Q Have you prepared a structural map of this particular

area?

A Yes, sir.

Q I refer to Atlantic's Exhibit Number 2, which purports to be a structural map, and will you explain that to the Commission.

A This is a structural map of the pool with contours drawn on top of the Queen zone. At the right-hand side of this map is an insert showing a typical well log with the top of the Queen zone marked and the base of the Queen zone marked. Also in red outline is shown the outline of the proposed Culwin Queen unit in red. In red triangles are shown the proposed injection wells. The injection well in the center of the unit is dashed in. It is a possibility for a later injection well, and we do not intend to inject into it initially.

Q Are there five proposed injection wells at the present time, and one in the future?

A Right.

Q In your opinion, are all of the wells within the proposed unit area producing from the same reservoir or pool?

A Yes, sir, they are. This has been demonstrated through performance of the individual wells, and also from cross-sectional studies we have made.

Q What are some of the characteristics of the Queen sand formation of the Shugart Pool?

A The Queen formation is described as sandstone. It is very fine grain, slightly chromatic, slightly shaly sandstone. It has an average porosity of 14%; it has a permeability from less than one up to about ten millidarcies.

Q Has this same formation been successfully flooded in other areas?

A Yes, sir.

Q Why are the boundaries of the proposed unit area shown on Exhibit 2 been designated? Why did you select the boundary as you did.

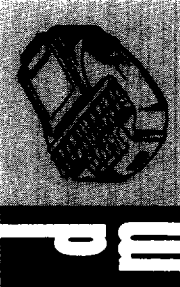
A We chose this boundary because we feel that it pretty well follows the production limits of the Queen zone here, and also it is an area that is somewhat isolated from other Queen zone producers, and we thought it seemed to be the logical area.

Q Have all of the wells within the proposed unit area reached an advanced stage of completion at the present time?

A Yes, sir, they have.

Q Do you have any information as to the original potential of the wells within the proposed unit area upon completion, and their capacity to produce at the present time?

A Yes, sir. This is shown in Exhibit 3, which is well data on all 18 wells within the proposed Culwin unit. It shows the date of completion, the 24-hour initial production of oil and water, and shows the daily production as of September, 1964,



of oil, gas and water. The entire pool in September 1964 was producing about 51 barrels of oil, 32 NCF of gas and 28 barrels a day of water. The oil production is less than three barrels per well per day.

Q Are you familiar with the proposed unit agreement that has been filed with the application in this case?

A Yes, sir.

Q Who is designated in that unit agreement as the unit operator?

A Hondo Oil and Gas Company.

Q Is Hondo a wholly owned subsidiary of the Atlantic Refining Company?

A Yes.

Q Under the terms of the proposed unit agreement, what formations do you propose to unitize?

A We propose to unitize only the Queen zone as established by the Oil Conservation Commission as the Queen formation part of the Shugart Pool. This is also defined in the unit agreement as the Queen zone, found between depths of 3,060 to 3,120 in the Hondo Oil and Gas Company State RD 2, which well is located 1,860 feet from the east line and 540 feet from the south line of Section 36, Township 1, 18 South, Range 30 East.

Q Do you have a copy of that log?

A Yes, sir.

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Q That is Exhibit 4?

A Yes.

Q Would you refer to Exhibit 4 and explain to the Commission the zone which you have testified to.

A Exhibit 4 is a gamma ray neutron log of Hondo Oil and Gas Company State RD 2, and it shows the top of the Queen sand at 3,060 feet and the bottom at 3,120 feet.

Q This well is specifically identified in the unit agreement?

A Yes, sir.

Q --For the purpose of making it certain as to the zone which is being unitized?

A Yes, sir.

Q In connection with the application for approval of the waterflood project, you attached to the application diagrammatic sketches of the proposed injection wells, showing the casing and where the tops were cemented and so forth?

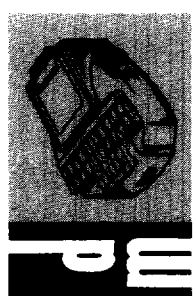
A Yes, sir.

Q Do you have copies of these exhibits?

A Yes, sir, these are Exhibits 5A, B, C, D, E and F.

Q Are these the same exhibits which were attached to the application?

A These are the same, with the exception of Exhibits 5E and F, on which we have added the cement tops.



Q You did not have those available at the time the application was prepared?

A No, sir, we did not.

Q But they do now show that?

A Right.

Q Do you know whether or not the State Engineer has indicated that he has any objection to the use of the proposed injection wells?

A I understand that the State Engineer wrote a letter dated November 10, 1964 to the Oil and Gas Commission in which no objection was offered providing the packers were set on tubing and that packers were set below the top of known cement.

Q Is there any reason why this requirement of the State Engineer cannot be complied with?

A No, sir.

Q Do you propose to do that, in using these wells as injection wells?

A Yes, sir.

Q Have you prepared or caused to be prepared, a plat showing performance of wells which have been completed in the Queen sand in the proposed unit area?

A Yes, sir.

Q Referring to what I believe is Exhibit 6, will you explain what it shows.

A Exhibit 6 is a performance plat for all 18 wells within the Culwin Queen sand proposed unit, and shows the monthly oil production, cumulative oil production versus time, the number of completions, the gas ratio and the percent of water. The pool reached its full development in 1960. It reached the production peak of about 9,750 barrels of oil per month in 1960, and then immediately thereafter declined, and very rapid decline has taken place, and during September 1964 production was down to 1,674 barrels per month, which is about three barrels per day. All the wells are pumping. The cumulative production to 10-1-64 has been about 303,000 barrels of oil.

MR. NUTTER: What was the date?

A 10-1-64.

MR. HINKLE: Have you attempted to make an estimate as to probable recovery which might be expected by reason of the waterflood project?

A Yes, sir.

Q Would you give us those figures.

A We estimate 390,000 barrels of waterflood recovery.

Q Has this proposed unit area been approved by the USGS?

A Yes, sir, we have had some informal discussions with the Roswell office, and they offer no objection to the unit area.

Q In other words, they have informally approved the unit area, but the director of the USGS in Washington has not approved?

A Yes.

Q But you don't anticipate any difficulty in that regard?

A No.

Q Is the proposed form of unit agreement in substantially the same form as the forms heretofore approved by the director of the USGS and Commander of Public Lands where both federal and state lands have been involved?

A Yes, sir.

Q Have all lease-owners within the proposed unit been contacted with respect to joining in the unit agreement?

A Yes, sir.

Q What has been their attitude?

A They have all agreed to come into the unit.

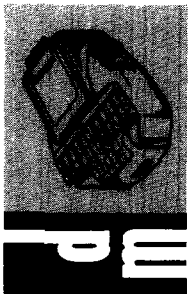
Q Do you expect to have 100% commitment of the leases held within the area?

A Yes.

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

A Yes.

Q In your opinion, will the agreement as to waterflood



project protect correlative rights and promote the greatest recovery?

A Yes, sir.

MR. HINKLE: I'd like to offer into evidence Atlantic's Exhibits 1 through 6, inclusive.

MR. NUTTER: Atlantic's Exhibits 1 through 6, inclusive, in cases Number 3154 and 3155 will be admitted into evidence.

MR. HINKLE: That's all of our testimony.

MR. NUTTER: Are there any questions of Mr. Trimble? ...Mr. Trimble, you mentioned that you did have tentative approval from the USGS as to approval of the unit agreement?

A Yes, sir.

Q And I presume this would be inclusive of approval of the waterflood operation too?

A Yes, sir.

Q How about the State Land Office?

A As I understand, we have had informal discussion but nothing official from them as yet.

Q As to the waterflood or the unit?

A Either one.

Q You mentioned a letter of November 10th from the State Engineer. I have looked through the files of both these cases and I find a letter dated October 30th, in which he objected to a couple of these wells' casing or cementing program.

A correction was made of the situation to which he was objecting and another letter was written subsequent to that?

A Yes--here is a copy.

MR. NUTTER: I would appreciate a copy in the event we don't have one. Would you like to have that identified as an exhibit?

MR. HINKLE: We would like to offer in evidence Exhibit 7, being a letter from the State Engineer to Al Porter, Jr., under the date November 10, 1964.

MR. NUTTER: In this letter Mr. Frank Irby states, "This office offers no objection to granting of the application provided packers on the tubing strings are set well below known tops of cement surrounding production casing in each well." Is this your intent?

A Yes, sir.

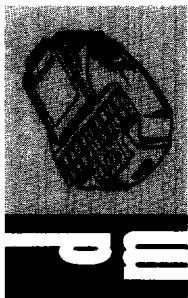
Q On your Exhibit 5 you have the tops of cement indicated on seven of the wells, until we get to Number F. F is given as an estimated top--the others are strictly "top." Are the others temperature surveys?

A The others are temperature surveys. This was calculated top of cement.

Q How much cement was used on that string of casing?

A 2,125 sacks.

Q What would be the source of the water for the water-



flood project?

A We intend to buy the water from Caprock, and as the flood progresses, to use produced water.

Q The water will be re-cycled?

A Yes, sir.

Q Do you have any estimate as to projection rates and pressures?

A We are designing a plant to handle 2,000 barrels a day at 2,000 pounds.

Q Initially you will start with the five wells around the field?

A Right, and depending upon performance, we may convert the center well to injection.

Q If you are going to be injecting 2,000 barrels a day it would be an average of 400 barrels per well per day?

A Right.

Q What is the formula for participation of the various tracts?

A It is based on ultimate primary recovery.

Q Is that the only parameter that is considered?

A Yes, sir.

MR. NUTTER: Are there any further questions of Mr. Trimble? ... He may be excused. Do you have anything further to offer, Mr. Hinkle?

MR. HINKLE: No, sir, that's all.

MR. NUTTER: Does anyone have anything they want to offer in Cases Number 3154 and 3155? We will take the cases under advisement.

* * *

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, ELIZABETH K. HALE, Court Reporter and Notary Public, do certify that the foregoing transcript in Cases Number 3154 and 3155 is a true and accurate record of proceedings to the best of my knowledge, skill and ability.

Witness my hand and seal this 17th day of December, 1964.

Elizabeth K. Hale
Notary Public and Court Reporter

My commission expires:

May 23, 1968.

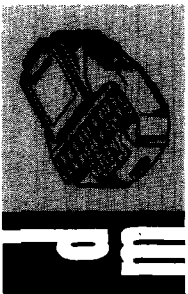
I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 3154-3155 heard by me on 12/15, 1964.

[Signature] Examiner
New Mexico Oil Conservation Commission

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court reporters
and
stenographers

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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
December 15, 1964

EXAMINER HEARING

IN THE MATTER OF:

APPLICATION OF ATLANTIC REFINING COMPANY FOR
A UNIT AGREEMENT, EDDY COUNTY, NEW MEXICO

Case No. 3154

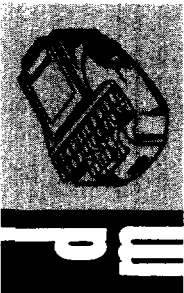
APPLICATION OF ATLANTIC REFINING COMPANY FOR
A WATERFLOOD PROJECT, EDDY COUNTY, NEW
MEXICO

Case No. 3155

BEFORE:

DANIEL S. NUTTER

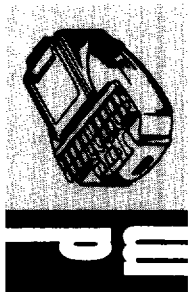
TRANSCRIPT OF HEARING



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MR. NUTTER: The hearing will come to order. We will take the next case, Case Number 3154.

MR. DURRETT: Application of Atlantic Refining Company for a unit agreement, Eddy County, New Mexico.

MR. NUTTER: We will also call Case Number 3155.

MR. DURRETT: Application of Atlantic Refining Company for a waterflood project, Eddy County, New Mexico. If the Examiner please, I'd like to state for the record that we have received a letter from Mr. Clarence Hinkle, representing the applicant in this case, stating that there has been a delay in having the proposed unit area designated as an area logically subject to unitization. They accordingly request a delay or a continuance for this reason, to the last Examiner's hearing in December, which I believe will be the only hearing held in December.

MR. NUTTER: Cases Number 3154 and 3155 will be continued to the Examiner hearing at nine A. M. at this same place, before the same Examiner, on December 15, 1964.

* * *

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, ELIZABETH K. HALE, Notary Public and Court Reporter, do certify that the proceedings in the foregoing cases, Numbers 3154 and 3155, were taken and transcribed by me and that the same

are true and correct to the best of my knowledge, skill and ability.

In witness whereof, my hand and seal of office this 28th day of December, 1964.

Elyse R. Gale

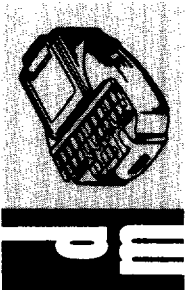
Notary Public and Court Reporter

My commission expires:
May 23, 1968.

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I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 3154-3155 heard by me on 11/24, 1964.

[Signature] Examiner
New Mexico Oil Conservation Commission