

Note - return usefiles
to file room separately
from case file.

CASE 21331 Application of NHEP
WINDFALL & BROWN for the creation
of a new oil pool & special rules.

Case 110.

2333

Application, Transcript,
and Exhibits, Etc.

GOVERNOR
EDWIN L. MECHEM
CHAIRMAN

State of New Mexico
Oil Conservation Commission

LAND COMMISSIONER
E. S. JOHNNY WALKER
MEMBER



STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

P. O. BOX 871
SANTA FE

Please Note

MEMORANDUM

TO: Governor Mechem and Commissioner Walker
FROM: A. L. Porter, Jr., Secretary-Director
SUBJECT: Case No. 2333

The attached order, No. R-2044, denies the request of the applicants, Nash, Windfohr and Brown, for a 10,000 to one gas-oil ratio limitation for their new pool in the Abo formation of Eddy County, in exception to the statewide rule of 2000 to one.

There are two wells in this pool, both owned by the applicants. Their first well produces with a relatively low GOR, 1600 to one. The second well was brought in with a high GOR some 6900 to one, but has decreased to about 5500 to one. One odd feature about this second well is that it is completed lower in the formation than the first and should have a lower ratio. However the witness in this case testified that it is possible that a bad cement job may be letting gas into the perforations from up above.

It is my recommendation that this order be entered in Case 2333. If further development substantiates the necessity of raising the GOR limit, this can be done later. Under the present circumstances however there is no real justification for an exception to the statewide rules for this pool.

ir/

July 28, 1961

**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. 2333
Order No. R-2044**

**APPLICATION OF NASH, WINDFOHR
& BROWN FOR THE CREATION OF A
NEW OIL POOL AND FOR SPECIAL
RULES THEREIN, EDDY COUNTY,
NEW MEXICO.**

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on July 6, 1961, at Santa Fe, New Mexico, before Daniel S. Matter, 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 28th day of July, 1961, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Daniel S. Matter, 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 the applicant, Nash, Windfohr & Brown, seeks the establishment of a new oil pool for Abo production, to be designated the Jackson-Abo Pool. The discovery well for said pool is applicant's Jackson "B" Well No. 22, located 1980 feet from the South line and 1980 feet from the West line of Section 24, Township 17 South, Range 30 East, N24E, Eddy County, New Mexico. Said well was completed March 17, 1961. The top of the perforations is at 6,955 feet.
- (3) That the applicant proposes that the limiting gas-oil ratio in the subject pool should be 10,000 to 1.
- (4) That the evidence presented at the hearing of this case failed to prove that the statewide gas-oil ratio limit of 2,000 to 1 should not be applied.
- (5) That, accordingly, the portion of the application proposing a limiting gas-oil ratio in the subject pool of 10,000 to 1 should be denied.

-2-

CASE No. 2333
Order No. R-2044

(6) That the horizontal limits of the subject pool should be the S/2 of said Section 24, such being the only acreage proven to be productive by producing wells in this pool.

IT IS THEREFORE ORDERED:

(1) That a new oil pool for Abo production is hereby created and designated the Jackson-Abo Pool, consisting of the S/2 of Section 24, Township 17 South, Range 30 East, NMPM, Eddy County, New Mexico. The vertical limits of said pool shall be the Abo formation.

(2) That the portion of the application proposing a limiting gas-oil ratio in the subject pool of 10,000 to 1 is hereby denied.

(3) That the statewide gas-oil ratio limit of 2,000 to 1 shall be applicable in the subject pool.

(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



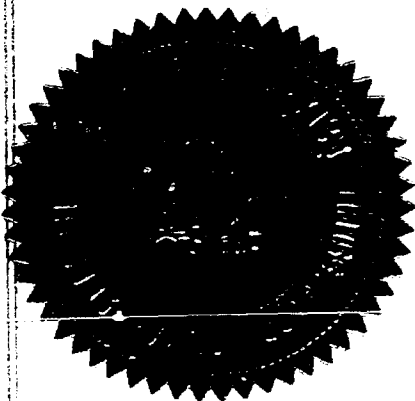
EDWIN L. NECHEM, Chairman



E. S. WALKER, Member



A. L. PORTER, Jr., Member & Secretary



esx/

GOVERNOR
EDWIN L. MECHEM
CHAIRMAN

State of New Mexico
Oil Conservation Commission

LAND COMMISSIONER
E. S. JOHNNY WALKER
MEMBER



STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

P. O. BOX 871
SANTA FE

July 28, 1961

Mr. Neil B. Watson
Watson & Watson
Carper Building
P. O. Drawer E
Artesia, New Mexico

Re: Case No. 2331
Order No. R-2044
Applicant:
Nash, Windfohr & Brown

Dear Sir:

Enclosed herewith are two copies of the above-referenced
Commission order recently entered in the subject case.

Very truly yours,

A. L. Porter, Jr.

A. L. PORTER, Jr.
Secretary-Director

ir/

Carbon copy of order also sent to:

Hobbs OCC X

Artesia OCC X

Aztec OCC

OTHER

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Date 7/26/61

CASE 2333

Hearing Date 9 am 7/6/61
DSN @ SF

My recommendations for an order in the above numbered cases are as follows:

Enter an order creating the Jackson-Abo Pool comprising the S $\frac{1}{2}$ Sec 24, T17S, R30E, NM PM, Eddy Co.; vertical limits the Abo formation. This pool was discovered by Nash Windfah and Brown Jackson "B" Well No 22, located 1980' FSL and 1980' FWL of Sec 24, T17S, R30E. This well was completed 3-17-61. The top of the perms. is at 6955 feet.

^{sustain the burden of proof that the statewide gas-oil ratio limit of 1000 to 1 should not apply and}
applicant failed to ~~show~~ that the gas-oil ratio limit in the pool should be 10,000 to 1, therefore this portion of the application should be denied.

Further applicant's proposed pool limits contain acreage which has not been proven productive and beyond reasonable doubt; therefore the horizontal limits should be as set forth above and not as proposed by applicant.

James H. Hume
Commissioner

No. 19-61

DOCKET: EXAMINER HEARING - THURSDAY, JULY 6, 1961

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM
STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

The following cases will be heard before Daniel S. Nutter, Examiner, or
Elvis A. Utz, as alternate Examiner:

- CASE 2328: Application of Texas Pacific Coal & Oil Company for two non-standard gas proration units, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the establishment of a 240-acre non-standard gas proration unit in the Jalmat Gas Pool consisting of the S/2 NE/4 and the SE/4 of Section 14, Township 24 South, Range 36 East, Lea County, New Mexico, to be dedicated to the Cooper Well No. 5 located 1980 feet from the North line and 660 feet from the East line of said Section 14. Applicant further seeks the establishment of a 320-acre non-standard gas proration unit in said pool consisting of the SW/4 of Section 4 and the NW/4 of Section 9, all in Township 23 South, Range 36 East, Lea County, New Mexico, to be dedicated to the State A Account No. 1 Well No. 18 located 660 feet from the South and West lines of said Section 4.
- CASE 2329: Application of Texaco Inc. for an unorthodox gas well location, for a non-standard gas proration unit and for a gas-gas dual completion, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks permission to locate its L. M. Barton Well No. 1 at an unorthodox location in the Blanco-Mesaverde Gas Pool, 1850 feet from the North line and 1650 feet from the West line of Section 12, Township 30 North, Range 12 West, San Juan County, New Mexico, and to complete said well as a dual completion (tubingless) with gas production from the Blanco-Mesaverde Gas Pool and the Basin-Dakota Gas Pool through 2 7/8-inch and 4 1/2-inch casing, respectively, cemented in a common well bore. Applicant further seeks the establishment of a 160-acre non-standard gas proration unit in said pools consisting of the W/2 NW/4, the SE/4 NW/4 and the NE/4 SW/4 of said Section 12, to be dedicated to said well.
- CASE 2330: Application of Southwest Production Company for an unorthodox oil well location, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval of an unorthodox oil well location in the Cha Cha-Gallup Oil Pool at a point

CASE 2330: (Cont.)

1912 feet from the South line and 2310 feet from the East line of Section 16, Township 29 North, Range 14 West, San Juan County, New Mexico.

CASE 2331:

Application of Southwest Production Company for an unorthodox oil well location, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval of an unorthodox oil well location in the Cha Cha-Gallup Oil Pool at a point 990 feet from the North line and 330 feet from the West line of Section 16, Township 29 North, Range 14 West, San Juan County, New Mexico.

CASE 2332:

Application of Wolfson Oil Company for a non-standard oil proration unit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the establishment of a 160-acre non-standard gas proration unit adjacent to the North Skaggs-Drinkard Gas Pool consisting of the S/2 SW/4 of Section 5 and the N/2 NW/4 of Section 8, all in Township 20 South, Range 38 East, Lea County, New Mexico.

CASE 2333:

Application of Nash, Windfohr & Brown for the creation of a new oil pool and for special rules therein, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the establishment of a new oil pool for Abo production to be designated the Jackson-Abo Pool consisting of the E/2 of Section 23 and all of Section 24, Township 17 South, Range 30 East, Eddy County, New Mexico. Applicant further seeks the establishment of special rules governing said pool including a provision for a limiting gas-oil ratio of 10,000 : 1.

CASE 2334:

Application of General American Oil Company of Texas for an amendment of Order No. R-1970. Applicant, in the above-styled cause, seeks an amendment of Order No. R-1970 to add the following-described acreage in Eddy County, New Mexico, to the buffer zone established in paragraph (2) of said order:

SECTION 31, TOWNSHIP 17 SOUTH, RANGE 30 EAST
N/2 SW/4 SW/4
N/2 SW/4
W/2 SW/4 NE/4
NE/4 SW/4 NE/4
NW/4 SE/4 NE/4

CASE 2335:

Application of Ambassador Oil Corporation for an amendment of Order No. R-1971. Applicant, in the above-styled cause, seeks an amendment of Order No. R-1971 to add the following-described acreage in Eddy County, New Mexico, to the buffer zone established in paragraph (2) of said order:

SECTION 31, TOWNSHIP 17 SOUTH, RANGE 30 EAST

NW/4 NW/4 SE/4

S/2 NW/4

CASE 2336:

Application of Fair Oil Company for an amendment of Order No. R-1972. Applicant, in the above-styled cause, seeks an amendment of Order No. R-1972 to add the following-described acreage in Eddy County, New Mexico, to the buffer zone established in paragraph (2) of said order:

SECTION 36, TOWNSHIP 17 SOUTH, RANGE 29 EAST

N/2 N/2 SE/4

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
July 6, 1961

EXAMINER HEARING

Case 2333

TRANSCRIPT OF HEARING

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
July 6, 1961

EXAMINER HEARING

IN THE MATTER OF:)
)

Application of Nash, Windfohr & Brown for)
the creation of a new oil pool and for)
special rules therein, Eddy County, New)
Mexico. Applicant, in the above-styled)
cause, seeks the establishment of a new)
oil pool for Abo production to be desig-)
nated the Jackson-Abo Pool consisting of)
the E/2 of Section 23 and all of Section)
24, Township 17 South, Range 30 East,)
Eddy County, New Mexico. Applicant)
further seeks the establishment of)
special rules governing said pool includ-)
ing a provision for a limiting gas-oil)
ratio of 10,000 : 1.)

Case 2333

BEFORE:

Daniel S. Nutter, Examiner.

TRANSCRIPT OF HEARING

MR. NUTTER: The Hearing will come to order, please.
The next case is 2333.

MR. MORRIS: Application of Nash, Windfohr & Brown for
the creation of a new oil pool and for special rules therein,
Eddy County, New Mexico.

MR. WATSON: Watson and Watson, Artesia, Neil B. Wat-
son, attorney. I have Mr. V. P. Sheldon as a witness.

(Witness sworn.)

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MR. WATSON: Will you have some Exhibits we can present the Commission:

THE WITNESS: I'll have two Exhibits.

MR. WATSON: Exhibit 1 is a map of the area, a photo-static copy of the map of the area; and Exhibit Number 2 is a cross-section.

(Exhibits Nos. 1 and 2 marked for identification.)

V. P. S H E L D O N, called as a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. WATSON:

Q Will you please state your name and your occupation.

A V. P. Sheldon, Geologist.

Q Have you testified previously before the Oil Conservation Commission?

A I have.

Q And your qualifications have been accepted here?

A I believe so, sir.

Q You are familiar with the present application of Nash, Windfohr and Brown with reference to a new pool in Eddy County, New Mexico?

A I am familiar with it.

Q Have you been engaged for Nash, Windfohr and Brown as a geologist in connection with these two wells?

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A I have.

Q Are you familiar with the application of Nash, Windfohr and Brown in this case?

A Yes, sir, I am.

Q Mr. Sheldon, are you familiar with the development of the Abo Reef Pools in Eddy County, New Mexico?

A I have followed them, yes.

Q Have you followed them rather closely?

A Yes, sir.

Q You do have a producing well of your own in one of the fields?

A Yes.

Q You have done work as a geologist in other areas?

A Yes, I have.

MR. WATSON: At this time, I would like to amend the application of Nash, Windfohr and Brown to exclude the south half of the southeast quarter, 23 Range 30 as a part of the area we are requesting to be included. The reason for excluding the south half of the southeast quarter of Section 23 is that acreage is owned by Nash, Windfohr and Brown and it was included inadvertently in the application.

MR. NUTTER: That is all of Section 24, the northeast section of 23 and the north half of the southeast, Section 23?

MR. WATSON: That is correct.

MR. NUTTER: Your application will be so amended.



Q (By Mr. Watson) Mr. Sheldon, based on your experience in the area and the work you have done on this for Nash, Windfohr and Brown development on the Jackson 22 B well and 23 B well in Section 24, will you please state your opinion as to whether or not the discovery constitutes a new discovery?

A It is my opinion now after the drilling that it does.

Q Can you give your reason for that, please, sir?

A Yes, sir. Do you wish me to?

Q Refer to your Exhibit, yes, sir.

A Exhibit 1 which is a photostat map merely shows the lines of cross-section from east to west across the lower part of the tier of sections having three oil pools: The Local Hills Abo, the Cedar Lake Abo, and our proposed Jackson Abo. You will note that the cross-section is relatively a straight line. Of course, I have to dip both north and south perhaps a quarter of a mile to get all the wells on, but I tried conscientiously not to contort the thing. It's as near a true situation as I can present.

Then we get into the cross-section which I have labeled a schematic cross-section designed to illustrate separate stratigraphic traps near the crest of the reef porosity. Near the upper portion of the cross-section you will notice a dashed line marking the original crest of the Abo reef structure.

Originally, it did appear that probably these three pools were one. We had no evidence of it, but it could have been.



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First, there was the Cedar Lake which Sinclair opened up and they tabbed the oil-water contact at a minus 3450, plus or minus a few feet, and that has been proven by six wells. That contact does hold up. They have had a rather expensive gas cap, nearly 150 feet of gas cap on top of the oil. In fact, most of their porosity above water happened to be gas.

I am not testifying for Sinclair. That is from the record. Then the local Hill Field opened with a rather nice oil column of something over 150 feet, perhaps, with a definite oil-water contact and minus 3212, plus or minus a few feet. We received the idea of drilling a well on the Nash, Windfohr and Brown lease conscientiously trying to keep at the very crest of the structure and the Jackson B 22 was drilled. It was slightly back reef in the sense that we were some 200 feet below the top of the Abo before porosity was encountered. We had typical dream shale and so on, but to shorten up the story, we do consider it slightly backward.

We appeared before this Commission for an unorthodox location because we wanted to get slightly south of the first well. We made an oil well, but it is our feeling now we couldn't possibly move south of that and complete an oil well. It would be water. For in the process of completing and testing the two wells an oil-water contact minus 3320 has been established, again, plus or minus a very few feet, so we have three oil-water contacts for the three oil pools. Notice on the cross-section the



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various expanse of that yellow which is representative schematically of the Abo reef porosity which is full of water. If you will recall, in the Empire Abo which is a fine field, many wells have penetrated the entire six to seven hundred foot of Abo reef without ever having found water. Not so in Cedar Lake or Local Hill or our proposed Jackson Abo. There, we seem to have a hundred, two hundred feet of reef porosity full of hydrocarbons. And then great sections, maybe five or six hundred feet of porosity, full of water. I would assume that the reef porosity is continuous from field to field. I would assume that all three fields are under full water draft because the various portions of the reef has water in it, and then, if the water is not moving, I haven't figured this out from a fine mathematical standpoint, but I presume the expansion potential of the water in the reservoir is very nearly enough to flood the small reef crest because that is what I construe them to be. They are nothing but the very top of the little individual reef peaks which have hydrocarbons forced up into them.

There is no permeability bearing area on the reef itself. It is merely the fact that hydrocarbons have been pushed up into the top of these peaks and held there, but we have three oil-water contacts.

In addition, in the case of the situation between Local Hills and the Jackson Abo, they now have seven dry holes. Chambers and Kennedy, McIntire 10 and the Woolley B Number 1 which is



the southeast southeast section 22, and I understand by word of mouth that T. P. which is now drilling in the southwest of the southwest quarter of 21 looks very dismal as of this point as being a dry hole. That could change.

So, we have rather good proof -- rather, good evidence not proof. We have rather good evidence at the moment certainly that Local Hills and the Jackson are separate. There are no dry holes so far as in between Cedar Lake and Jackson Abo, but we have the distinct oil-water contact and if one believes in surface topography, I might add there is a very large ditch in there which I am afraid to drill the well in. That's poor geology.

So, we contend that we have a new discovery probably of small magnitude. Should I go into it?

Q Mr. Sheldon, you're familiar with the fact, I believe, that the acreage involved here which is the northeast quarter and the north half of the southeast quarter, Section 23 and also of Section 24 that is all included in the Jackson Federal oil-gas lease on 55264, is that correct?

A No. The acreage in Section 24 is the Jackson B and the acreage in 23 is the Gissler. It is a Federal lease and it is owned by Nash, Windfohr and Brown.

Q Both areas are owned by Nash, Windfohr, Brown?

A Yes.

Q Both are Federal leases?



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A Both are Federal leases.

Q At the present time, there are no Abo wells within one mile from the other boundaries of either of those leases, is that right?

A That is right, yes.

Q Now, in connection with this application, Mr. Sheldon, the application to establish field rules to consist of rules established by the Oil Conservation Commission except for the determination of G. O. R. in accordance with the provisions of Rule 506. What is the situation with reference to the G. O. R. in the these Jackson Abo wells, 23 B and 22 B?

A The 23 B, referring again to the cross-section, shows two drill stem tests having been taken, uppermost of which was some four and a half million to gas together with seventeen barrels oil per hour with a ratio of twelve thousand.

The second drill stem test was at a lower level testing approximate bottom, twenty feet of the oil column just above the water flowed twenty barrels oil per hour. We did not take the ratio, but from playing it by ear, it was a fairly low ratio. It was not particularly high, probably in the order of a thousand, fifteen hundred.

Then, perforations were made from about minus 3290 to minus 3305 and a ratio on the first test was 6900 cubic feet which has gradually worked down until on June 27th it was 5500 cubic feet flowing at the rate sixty-five barrels oil per day.



MR. NUTTER: What was the perforation interval?

THE WITNESS: Minus 3390 to 3305.

MR. NUTTER: Thank you.

A Bottom of perforations are left in ten feet from the known oil-water contact. If we perforate higher, we would run into that four and a half million feet of gas we encountered in the first drill stem test which would make us a higher ration. On the Jackson B 22, we had -- there again, the first drill stem test was from approximately minus 3210 to minus 3240. It was strongly of gas.

The next test was from minus 3240 to 3290 and it was thirty barrels oil per hour with a very high ratio. It was about ten thousand. Just what it was, I don't exactly know, because you see, it blew our mercury out of our gauge.

Then the third drill stem test which was designated on the cross-section was all sulfur water.

MR. NUTTER: No oil recovery?

THE WITNESS: No oil recovery.

Q (By Mr. Watson) Mr. Sheldon, what is being done with the gas produced from these wells?

A It's being sold to Phillips.

Q In the field rules we are asking for, we have requested ten thousand.

A Perhaps seven thousand would be all right. Ten thousand was somewhat arbitrary. Our contention is, however, that

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since the evidence seems to prove that this is a separate reservoir which is quite gappy, that is the operator was penalized by the enforcement of a Statewide rule of two thousand cubic feet, the wells would be uneconomical. It is possibly, primarily a gas reservoir. It is our contention that the granting of the high ratio could have no adverse effect on this property or any offset owners' property because I see no way that the withdrawal of gas could expand the gas cap over anyone else's property. It's this small reservoir and by the withdrawal of the gas, I don't believe we could possibly adversely affect any offset operator.

Q Do you know the approximate cost of these wells, this Jackson Abo?

A Mr. Windfohr advised that with a directional survey and everything else, about \$100,000.

Q In the event this Jackson 23 B would be permitted, will that produce its allowable oil?

A Yes, it will.

Q In the event it was allowed to produce only the proportion of the allowable represented by the G. O. R. of 2000 to 1, do you think the well would pay out?

A It would take a long time. I rather doubt if it would be economical.

Q Mr. Sheldon, do you know of any way that the allowance or exception to the G. O. R. to provide 10,000 to 1 ratio in this particular area could have any adverse effect on any opera-



tors in that area?

A I cannot think of any way that it would have an adverse effect.

Q Do you have anything else you wish to add to your testimony at this time, Mr. Sheldon?

A I believe not.

Q These Exhibits 1 and 2, were they prepared under your supervision?

A They were.

Q You prepared the Exhibits yourself?

A I prepared Exhibit 2.

MR. WATSON: We'll offer Exhibits 1 and 2 in evidence.

MR. NUTTER: Exhibits 1 and 2 will be entered in evidence.

Is there anything further, any questions of Mr. Sheldon?

MR. MORRIS: Yes, sir.

CROSS EXAMINATION

BY MR. MORRIS:

Q How did you reach the depth of minus 3520, approximately as you projected the southwest corner of 19, Exhibit 2?

A From the contour map on top of the Abo, and assuming that the well -- let me start over. I have contoured the area on top of the Abo as best I can. On these two projection points I have used the top of the Abo from the map. Then the top of the porosity I simply moved down there about twenty or thirty



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feet because all the low wells encountered porosity very near the top of the Abo itself. It is an arbitrary figure, but I do not believe you could have a point any higher. If anything, they will be lower.

Q You would have no control between the Jackson Pool and your Cedar Lake over here. This is all by projection?

A That is admitted, yes, sir.

Q Do you feel that you have a completely unique situation here in the Jackson, in your proposed pool that would call for this 10,000, 7,000 to 1, whatever it is excepting as to the G. O. R.? Do you think you might come up here? Do you think it's completely unique or do you feel that this might be something that we'd run into again in the Abo formation?

A I suspect it's something we'll run into again.

Q Are there other instances of it in the Abo up to date?

A Well, I don't know hardly what to say concerning Sinclair, but it is known from the completion records that most of the Turner-Cedar Lake reservoir is gas, by volume, I mean, because the cross-section shows less than a fifty foot of oil column in the Jackson, in the case of the Jackson. In the case of the Nash, Windfohr, Brown Jackson, we seem to have less than forty foot of true oil column, and it's been very difficult to get a satisfactorily low ratio. Now, there is probably a five or + foot interval under the Jackson lease where one could secure a thousand cubic feet ratio, but with the water moving, which it



surely will, since oh, 99% of this reef is full of water. Let me say 99% is merely a wild guess. Expanse is going to definitely move water in and --

MR. PORTER: 100% is all, you know.

THE WITNESS: 100% is all.

A And the Cedar Lake is going to water rapidly, and we anticipate the same thing -- I think we'll have to continue flood back squeeze and move back up the section, and I think the payout in the field will be gas.

MR. MORRIS: Thank you, sir.

CROSS EXAMINATION

BY MR. PORTER:

Q What is the gravity, Mr. Sheldon? Is it about the same contact as in the Empire Abo?

A Yes, Mr. Porter. I think I heard them say 43. It is a yellow oil very similar to the Empire Abo.

Q Does that carry throughout in the Cedar Lake, too, Cedar Hills?

A I don't know. I have never --

Q You have never seen it?

A I didn't look up the record on it and I have never seen it.

Q On 23 B, where you had a G. O. R. of 6100 to 1 and then a few weeks or months later another ratio taken was 5500?

A It has fallen to 5500 in a matter of some three weeks.

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On June 4 it was 7,018 and on June 27th, Phillips gas cleaning plant at 5505. That fluctuation might be merely testing technique.

Q You anticipate also that your water problem is going to increase?

A I certainly do.

Q Well, don't you think it may be aggravated by higher withdrawal rates?

A It will be hastened by higher withdrawal rate, but the operator will be selling his product.

Q You say you're selling the gas at the present time?

A Yes.

MR. PORTER: That's all I have.

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Sheldon, as I understand it, on the cross-section you have two wells over on the left-hand structure being the Local Hills Abo. Then we have three dry holes being the Sinclair McIntyre, the Chambers Kennedy, Sinclair Number 1 and T. P. Woolley B Number 1.

A Yes, sir.

Q And then we get back on the proposed Jackson Abo with two wells there and then we have no wells until we get over on the Cedar Lake area where we have one well depicted on the Exhibit?

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A That's right.

Q Is the oil column as well as the gas column depicted by this one Sinclair well in the Cedar Lake area typical of the entire pool?

A Yes. That is a composite situation, really. The cross-section shows Number 65, but I have personally checked all the wells in the field and the oil-water contact and the gas-oil contact bears out.

Q And there are six or eight wells in that pool?

A Eight, I believe.

Q What method is the operator in Cedar Lake using? Are they perforating low and getting low ratios on their wells?

A They are perforating low and getting -- according to the records filed with the Commission and also according to the gasoline plant measurements -- they're getting ratios in the order of fifteen hundred.

Q Is that atypical of the ratios in Cedar Lake?

A According to my check of the records, yes, sir, but they're also going to water, you know. They have one top allowable oil well at the moment. The rest of them are water.

Q They're not making top allowable oil?

A No.

Q Are they having to pump these wells in Cedar Lake?

A I don't know.

Q Now, which well is it that is producing approximately



fifty-five
~~Twenty five~~ hundred?

A No. 23.

Q How about 22? What kind of ratio do you have on it?

A About sixteen hundred. That is a quirk which I cannot explain.

Q What are these little circles?

A Completion perforation intervals.

Q That well is completed higher than Number 23, but it has a lower ratio, is that correct?

A That's right. Still, we seem to have evidence of very satisfactory cement jobs. At least, we have no contrary evidence.

Q The Number 23 on the lower drill stem test making any water at all?

A Yes, it made twenty barrels oil an hour and recovered some one hundred twenty-five foot of water below the reverse circulation when we pulled it. It made no water to the surface.

Q And on the third drill stem test on 22 well, it made all sulfur water?

A Gas and no show of oil.

Q So it would appear that you have the oil-water contact fairly well defined?

A Quite well.

Q How reliable do you think this picture of the gas-oil contact or is that the line between the red and green, gas-oil contact?



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A Yes, it is, yes.

Q Do you it's pinned down with a fair degree of accuracy?

A Yes, within say, ten feet.

Q How do you account for the fact that 22 crossing the gas-oil contact being perforated in the gas produces only sixteen hundred to one ratio and the other well perforated well below the gas-oil contact, has an extremely high ratio?

A Well, of course, there is a possibility that we have a bad cement job, but the operator did use -- first we used -- much to the geologist's consternation -- used an oil base mud, centralizers were used, the job went off fine, the perforations were made and had to be acidized a second time before we got anything to get through them. Certainly there was no drop in pressure. Mechanically, the situation seemed to be all right, but I say there is a possibility that may be it isn't.

Q Are both single completions?

A Yes.

Q Are Nash, Windfohr and Brown contemplating drilling any additional wells in this area?

A That is a difficult question. We have a State well to the west.

Q I notice a little circle on the Exhibit directly west of 22.

A That is State on the ground, it has never been filled on paper, but State on the ground. That would be the location



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that Windfohr will drill, I think, if he drills.

Q You don't know yet?

A He hasn't made the final decision. I think it would matter to quite an extent on this particular Hearing, if we are penalized, or he is penalized, and if the operator is penalized. That might have quite a bearing on his decision.

Q Mr. Sheldon, are you aware of more or less the general policy of the Commission to be rather conservative in dedicating acreage, defining pools to include land that hasn't been proven productive yet?

A Yes, I am, and Nash, Windfohr and Brown -- I mean as far as we are concerned, we could tighten this up considerably.

Q The south half would be more in keeping with what has been approved productive to date?

A It would be. In fact, we don't think the north half of 24 is productive.

Q You probably wouldn't drill up there anyway?

A Not at the moment.

MR. NUTTER: Are there any further questions?

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Sheldon, I gather that you feel that this water drive, this pool has quite an active water drive?

A Yes, I do feel that it will have a very active water drive.



Q That will assist in the recovery of the oil in the pool as well as the gas cap?

A Properly handled, it should flush the oil out.

Q Do you feel that the water drive would be just as effective in the gas cap as it does in the oil zone?

A I should think so.

Q But, at the same time, the well will be rather rate sensitive because of the active water drive?

A Yes.

MR. UTZ: That's all.

MR. NUTTER: Are there any further questions of Mr. Sheldon.

He may be excused.

(Witness excused.)

MR. NUTTER: If there are no other questions in this case, the case will be taken under advisement.

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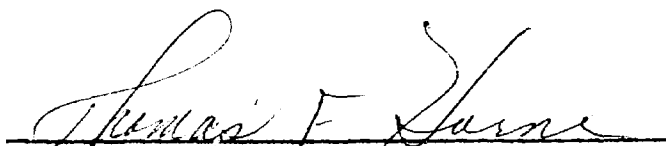


C E R T I F I C A T E

STATE OF NEW MEXICO)
) ss
 COUNTY OF BERNALILLO)

I, THOMAS F. HORNE, Notary Public 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 Stenotype 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.

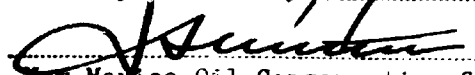
WITNESS my Hand and Seal, this, the 8th day of July, 1961, in the City of Albuquerque, County of Bernalillo, State of New Mexico.


 NOTARY PUBLIC

My commission expires:

May 4, 1965

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 2533, heard by me on 7/6/, 1961.

, Examiner
 New Mexico Oil Conservation Commission

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ALBUQUERQUE, NEW MEXICO



BEFORE THE NEW MEXICO OIL CONSERVATION COMMISSION

SANTA FE, NEW MEXICO

RE. APPLICATION AND PETITION OF NASH,
WINDFOHR & BROWN FOR DESIGNATION OF NEW
POOL, AND FIELD RULES, AND DETERMINATION
OF GAS - OIL RATIO LIMIT.

CASE NO. 2333

PETITION AND APPLICATION

COMES NOW Nash, Windfohr & Brown, a partnership, by its attorneys, Watson and Watson, Artesia, New Mexico, and makes application to the New Mexico Oil Conservation Commission for designation of a new pool and field rules, and petitions the Commission to determine a specific gas - oil ratio for the Jackson 22-B Well and the Jackson 23-B Well, and states:

1. That the applicant, Nash, Windfohr & Brown, has completed two producing wells in Section 24, Township 17 South, Range 30 East, N.M.P.M., said wells being described as the Jackson 22-B Well in the NE $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 24, and the Jackson 23-B Well in the NW $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 24, Township 17 South, Range 30 East, N.M.P.M. That said wells are producing from an Abo Formation, and are new discoveries in the area.

2. That said wells are more than one (1) mile from the outer boundary of any defined pool which has produced oil or gas from the Abo Formation, and said wells are, so applicant believes, in a separate pool. That said wells are located on the Jackson Federal Oil and Gas Lease, Las Cruces 055264, and applicant requests that a new pool be declared, consisting of the E $\frac{1}{2}$ of Section 23 and All of Section 24, Township 17 South, Range 30 East, N.M.P.M., to be known as the "Jackson Abo Field".

3. Applicant, Nash, Windfohr & Brown, further requests that field rules be established, to consist of the rules established by the Oil Conservation Commission of New Mexico, except for a determination of a gas - oil ratio in accordance with provisions of Rule 506.

4. That the applicant hereby petitions the Commission to determine a specific gas - oil ratio for the said Jackson 22-B and Jackson 23-B Wells above described, of 10,000 cubic feet of gas for each barrel of oil produced and, in support of this petition, the applicant represents that there is a different oil and water contact in the area of these wells, and the said wells are, at this time, producing the allowable but with a gas - oil ratio of approximately 6,700 cubic feet per barrel. That applicant has a market for all gas produced, and the gas is presently being purchased by Phillips Petroleum Company; and that a determination of a gas - oil ratio of 10,000 to 1 would not be detrimental in any respect.

WHEREFORE, applicant prays for the designation of a new pool and field, to be known as the "Jackson Abo Field", to consist of the E $\frac{1}{2}$ of Section 23 and All of Section 24, Township 17 South, Range 30 East, N.M.P.M., and that the Nash, Windfohr & Brown - Jackson 22-B and Jackson 23-B Wells above described, and the said Jackson Abo Field have a specific oil - gas ratio limit of 10,000 cubic feet of gas for each barrel of oil produced; and that all necessary and proper Orders and Notices be made and issued in the premises.

NASH, WINDFOHR & BROWN, A PARTNERSHIP

by WATSON AND WATSON

by Neil B. Watson

Neil B. Watson,
Attorneys for Applicant,
P. O. Drawer E,
Artesia, New Mexico.

NEIL B. WATSON
FRED A. WATSON

LAW OFFICES
WATSON & WATSON
CARPER BUILDING - P.O. DRAWER E
ARTESIA, NEW MEXICO

TELEPHONE
SHERWOOD 6-4151

June 14, 1961

Cher 2333

Mr. Dick Morris, Attorney,
Oil Conservation Commission,
Box 871,
Santa Fe, New Mexico.

Dear Mr. Morris:

Re: Nash, Windfohr & Brown - Jackson Federal Lease

Confirming my telephone conversation with you of yesterday, I now enclose, in triplicate, a Petition and Application on behalf of Nash, Windfohr and Brown, a partnership, for the designation of a new pool with a suggested name of the "Jackson Abo Field", and, further, for a determination of a gas - oil ratio limit of 10,000 cubic feet of gas for each barrel of oil produced.

I would appreciate it if you would examine this Petition and Application and, if there is any other information that you need prior to the hearing, please let me know.

As I understand from our telephone conversation, this can be set up for July 6, 1961 in Santa Fe, and I am making my arrangements accordingly, and I have asked Mr. Sheldon, our engineer, to make his arrangements accordingly.

Thanks very much for your cooperation.

Yours very truly,

Neil B. Watson
Neil B. Watson.

NEW:lve
enc.

cc :Nash, Windfohr & Brown

*Hochstetler
Marked
6-21-61
JH*