

Case. Number.

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Application,
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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
December 16, 1970

EXAMINER HEARING

IN THE MATTER OF:

Application of Amini Oil Corporation
for an unorthodox oil well location,
Lea County, New Mexico.

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)
)
) Case No. 4474
)
)

BEFORE: Elvis A. Utz, Examiner.

TRANSCRIPT OF HEARING

MR. UTZ: Case 4474.

MR. HATCH: Application of Amini Oil Corporation for an unorthodox oil well location, Lea County, New Mexico.

MR. MORRIS: Mr. Examiner, I am Richard Morris of Montgomery, Federici, Andrews, Hannahs and Morris, Santa Fe, appearing for the Applicant. We will have one witness, Mr. M. D. Frazier, and ask that he stand and be sworn, please.

(Witness sworn.)

(Whereupon, Amini's Exhibits 1 through 3 were marked for identification.)

MR. UTZ: Are there other appearances?

MR. SPERLING: Yes. J. E. Sperling, appearing on behalf of Mobil Oil Corporation.

MR. UTZ: Do you have any witnesses?

MR. SPERLING: Yes, sir.

MR. UTZ: Will your witness stand and be sworn?

MR. SPERLING: Two.

(Witnesses sworn.)

M. D. FRAZIER,

having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. MORRIS:

Q Mr. Frazier, please state your name, where you reside, by whom you are employed and in what capacity.

A My name is M. D. Frazier and I live in Midland and am employed by Amini Oil Corporation there as a petroleum engineer.

MR. UTZ: Would you spell your last name?

THE WITNESS: F-r-a-z-i-e-r; also carry the title of vice-president.

Q (By Mr. Morris) Mr. Frazier, would you briefly state for the record, for the Examiner, your education and experience in the petroleum industry?

A I was graduated from Texas A & M College, College Station, Texas, in the spring of 1949 as a petroleum engineer and was employed by Humble Oil and Refining Company in 1949, and while I was with Humble for seven years, I did various engineering jobs and assumed certain responsibilities.

Also attended Humble's reservoir engineering school in Houston. In 1956 I resigned from Humble and went to work for an independent in Dallas by the name of Texkan Oil Company and worked with this company for

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seven years in the capacity of manager, there was no title but this is in effect what it was, of drilling and exploration and production and one of my primary jobs there was approving drilling prospects and requesting farm-outs. This company went broke in 1963, and there was litigations and everything which I was involved with and in 1965 I moved from Dallas to Midland and was employed by Southland Royalty Company as a drilling production engineer.

I stayed with Southland Royalty six months and was employed by BTA Oil Producers in charge of drilling and completions and workovers. For a short period of time after that, I worked for Major, Geeble and Forrester for six months as their drilling and production manager and since then, I have been with Amini Oil -- well, I went to work for K. K. Amini two and one half years ago and it was incorporated last year.

Q Are you familiar with the application of Amini Oil Corporation in this case?

A I am.

MR. MORRIS: Are the witness' qualifications acceptable?

MR. UTZ: Yes, sir, they are.

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Q (By Mr. Morris) Mr. Frazier, what is sought by the application in this case?

A Amini Oil Corporation seeks an exception to the rules governing the North Vacuum Abo Pool to permit the completion of a well at an off-pattern, unorthodox location, 2120 feet from the north line and 520 feet from the west line of Section 12, Township 17 South, Range 34 East, Lea County, New Mexico.

Q Now, the special rules and regulations that are in effect for the North Vacuum Abo Pool specify fixed well locations with wells to be located within 200 feet of the center of either the northwest quarter or the southeast quarter of the quarter section, is that correct?

A That's right.

Q If these rules provide for flexible locations rather than fixed locations but had the same footage requirements, would your proposed well location be at a standard orthodox location?

A It would be.

Q So you are unorthodox only in the sense you are off-pattern?

A That's right.

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Q All right. Would you refer now to what has been marked Exhibit 1 in this case, your structure map, and first, state is the acreage operated by Amini Oil Corporation designated on this plat?

A The acreage operated by Amini Oil Corporation consists of the northwest quarter of Section 12 and is outlined in red.

Q Is your proposed location shown on this plat?

A And the location is shown on the plat, right.

Q Are the other Abo Wells in the north part of this field all shown on this plat?

A The acreage involved and shown on this plat, all Abo completions are circled in red.

Q Now, there are other Abo completions further on down in the south part of this pool that are not shown on this plat.

A That's correct.

Q All right. Are there any other Abo Wells shown on this plat that are off-pattern?

A There is one off-pattern well which is located in Section 11 and is the Pennzoil Bridges State No. 1.

Q That would be your northwest offset?

A Right.

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Q Are there any other wells that are unorthodox?

A There is another well that is unorthodox and involves footage and that is in Section 13, Texaco No. 3, WNCT-1. That well is 330 from the lease line.

Q I see. It's not an off-pattern well; it's just close to the lease line?

A That's right.

Q Would you briefly describe the nature of the Abo Formation in this area and then go into the structure as you have it depicted on this plat?

A This plat represents the contour of a marker in the Abo which, in this particular area, is productive at approximate depth of 8500 feet and is also lime and dolomitic type formation with the permeability and porosity being developed in the dolomite section and as you can see we do -- the map does represent a nosing effect towards the north with dip to the north and the west and to the east.

Q You have drawn your structure map here on an Abo marker and what are your contour intervals?

A The contour intervals are 20 foot. Wait, let me check that. That's correct, 20 feet.

Q Now, would you examine this plat and look at the areas

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that would be -- that would represent locations in accordance with the fixed pattern established by the pool rules and compare the structure at those locations with the structure at your proposed location and state approximately what structural advantage you are seeking to gain by this proposed location?

A One on pattern location would be in the southeast of the northwest and if it was on pattern it would fall on the contour of approximately 4580 and with this location as presented at 4520, we would be getting approximately 60 feet of structure with that location.

The other orthodox location would be out of the northwest of the northwest and I think approximately the same conditions would exist there that we would be approximately 60 feet higher to that one with this location.

Q Do you have anything further you wish to point out on this exhibit before we go on?

A Well, there is -- I would like to make a statement so far as the water is concerned.

Q Yes. Go ahead.

A I don't think that water production is really a factor in this producing section of the Abo, but there have

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been instances that make you worry about it a little bit where water tests have been obtained and one of those being in Section 23, Mobil Bridges State No. 117 in the unit letter P.

That well was perforated from 8445 feet to 8498 feet and swabbed 12 barrels of fluid of formation water in 3 hours.

MR. NUTTER: You don't mean Section 17; what section?

THE WITNESS: Twenty-three.

MR. NUTTER: Twenty-three? Thank you.

THE WITNESS: And Well No. 117. Now, subsequently, these perforations were squeezed, cemented and the well was reperforated from 8445 to 8484 with no water. The thing I would like to point out is that this section that was perforated first is not the producing zone in these but that might tend to establish the water level in your mind as such and then to point also out that after this well was perforated it left off perforations from 8491 feet to 98 feet in the original set.

I did get off my testimony here a little bit. I had the wrong well in mind. This was perforated in the same producing zone, the original. I have another well here that

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wasn't and I got them mixed, but this water was swabbed from the producing interval in these wells and when these lower sets of perforations were left off after the squeeze job, it produced no water.

With the top perforation that was left off was 8491 feet which would give you a subsea depth of 4455 feet. Now, the other, which I got mixed up for a minute, is the Mobil Bridges State No. 120. That's in Section 13, unit letter N.

This well was perforated in a lower Abo section from 8637 to 8859 and 10 barrels of fluid was swabbed in 3 hours which was 95 percent formation water. Now, these perforations were squeezed and the well was completed higher and the current producing interval from 8514 to 8539 with no water.

Now, I would like to repeat that I don't think that we are going to be bothered with water in this producing interval, but it gives us some concern in getting lower on structure.

Q This is one of the reasons that you wish to move to a higher structural position?

A Right.

MR. UTZ: Mr. Frazier, would you give me the

perforations on the 117 again, the ones that had the water and the ones that didn't?

THE WITNESS: The original, 8445 to 8498; those perforations produced water and were squeezed. Then, it was reperforated from 8445 to 8484 feet and produced no water.

MR. UTZ: Thank you.

Q (By Mr. Morris) Would you refer now to the log section that's been marked as Exhibit 2? Does this log section show the -- first, what well is that a log section of?

A This is of Mobil Bridges State No. 134, which is located in Section 12 and would represent an offset to our acreage in there.

Q You have shown on this section the marker that you used as the point of your contouring?

A The marker that I used for the contouring is indicated here in pencil at a depth of 8537 feet and is evident of the wells, all the other wells in the area.

Q Now, does this exhibit also show the perforations of this well and the net pay interval that you have determined exists in this well?

A That's correct. The perforations are indicated by the depths -- at depths by red marks at the center of the

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log and in this particular case, there was two shots per foot at those points.

Q What have you used as your porosity cut-off for purpose of determining the net pay?

A There is a red vertical line and that line represents a 3 percent cut-off, porosity cut-off line, and the zones that are colored red indicate porosity in excess of 3 percent.

Q Now, have you examined the log sections of the other Abo Wells shown in this area?

A I have examined each of the logs shown in this area and have made similar analysis as shown on this No. 123 log.

Q All right. Have you prepared -- using that information, have you prepared an isopach map which has been marked as Exhibit 3?

A Right.

Q Please refer to that exhibit and point out what it shows.

A This is a map representing the net pay determined on the basis of the way I showed on the log on No. 134 for each of the wells in there and is contoured based on that net pay section.

Q What does this show, particularly in the area of the proposed location and in answering the question, please

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compare what the net pay shows from this exhibit to be at the proposed location compared to what it would be at orthodox on pattern locations?

A Okay. In the area of Amini Oil Corporation, acreage up there, it shows a decreasing net pay towards the northeast. At the proposed location, from this map, we might expect a net pay section in the neighborhood of 26 feet. At a standard location in the southeast of the northwest, we might expect maybe 12 feet.

In the northwest of the northwest at a standard location we might get up to 14 or 15 feet there.

Q So, you are improving what you expect to be your net pay thickness by anywhere from 12 to 14 feet --

A Right.

Q -- approximately? All right. On the basis of your structure plat and your isopach plat, do you come to any conclusions concerning the productivity of the northwest quarter of Section 12 and particularly the south half of the northwest quarter which you propose to dedicate to the well at this off-pattern location?

A I feel that concerning the south half of that quarter section that it would be probably 100 percent productive anywhere you would drill a well there. In the north,

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as far as the quarter section is concerned, I feel that we might lose some productive acreage in the northeast corner.

Q Am I correct that you are proposing to dedicate the south half of the northwest quarter of Section 12 to this well?

A That's right.

Q Now, in addition to the water problem that you have mentioned, what other reasons do you have for making this application to the Commission?

A Well, the main one, that I feel that we are making it for, is to protect our correlative rights. I don't feel that we can adequately protect those rights at an orthodox location on this well.

Q Do you feel that you would have the opportunity to recover your fair share of the oil and gas in this reservoir if you are required to drill at an orthodox location?

A I don't think so. There is one other thing I would like to point out, too. I don't know whether this case would be involved with it or not, but I think it might -- I mean this reservoir because we haven't drilled any wells in here, but normally whenever you have thin producing zones your completion techniques are more

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difficult and it's a lot easier to make a well with a lot of net pay available compared with the others.

Q Do you think your chances of making a good well would be better at the proposed location than at --

A Oh, I think based on this information, I think it would be much easier and we should get a much better well.

Q Mr. Frazier, you are, of course, gaining structural advantage and a net pay advantage at your proposed location. Would you reasonably expect to suffer some penalty that would be imposed upon you by the Commission at this proposed location?

A We do expect to suffer an allowable assigned to this location and feel like that's only right in view of the previously established field rules.

Q In your opinion, Mr. Frazier, would approval of this application cause waste?

A No, this would not cause waste.

Q Mr. Frazier, is there any urgency with respect to the approval of this application as far as your company is concerned?

A There is urgency. Like most operators, I guess you have a lot of year-end tax money to spend and if we -- I mean, it's going to take about 25 days to drill this

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well and we are not going to be able to get our tax money like we had wanted to, but even in view of that we felt it better to wait and try to drill this location rather than going ahead and drilling one of those others to get our tax write-off.

Q You thought it was more important for the protection of your rights in this area to bring this application rather than to proceed by drilling at an orthodox location?

A Right.

Q In the event this application is approved, how soon would you intend to commence the well?

A I would like to point out this thing. Also, at this time of the year, the rig availability is pretty difficult and we do have a rig scheduled for around the 18th, which is next Friday, and we do have a good chance of losing the rig if it's delayed very long.

Q Were Exhibits 1, two and three prepared by you?

A Yes.

MR. MORRIS: At this time we offer Exhibits 1, 2 and 3 into evidence.

MR. UTZ: Without objection, Exhibits 1, 2 and 3 will be entered into the record of this case.

Are there questions?

MR. SPERLING: Yes, sir.

MR. UTZ: Mr. Sperling.

CROSS EXAMINATION

BY MR. SPERLING:

Q Mr. Frazier, I take it from your testimony that you have not commenced the drilling of this well even though an application for permission to drill has been filed, is that correct?

A That's correct.

Q Now, please refer to your Exhibit 1. You show the contour lines which appear to be contoured on top of what you referred to as an Abo marker to be quite close together indicating substantial dip in the vicinity of your proposed location.

A That's right.

Q What well control do you have to reach that conclusion?

A Well, up in the north part in Section 2 and 3, there is a Mobil Bridges State which is an Abo Well but it's classified in the northeast Abo Vacuum Field; the Pennzoil Marathon State No. 1, there is an established slope to that line right there. Then, on in Section No. 11, the Pennzoil Bridges State No. 1 and in Section

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12, the Mobil Bridges State No. 134 establishes a slope right in this area and also say a distance between the lines which you are talking about and down in Section 13, No. 147 of Mobil's and Texaco Well No. 3 establish a proximity of the lines.

Q Aren't you doing a good deal of projecting to establish contour lines based upon the wells in Sections 2 and 3 through Section 12?

A Right. I am doing a lot of projecting, which I cut my lines off up there but we, as the ones that are going to be responsible and spend the money to drill this well, I felt we need to estimate what it was going to be in that area to have an idea of what we needed to do and it just followed the contour.

Q Does your company own this acreage at this time?

A We have a farm-out approved.

Q You have a right to earn it?

A Right.

Q But you have no investment in the acreage at this time?

A We have staked the location.

Q Now, you stated that you felt that a well in an orthodox location might result in the net pay thickness of maybe 12 feet. Now, that's --

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A Which quarter section, of the southeast?

Q Yes, in the southeast.

A One of them has a little bit better advantage than the other; the way this is drawn, not very much.

Q You don't really have any concrete evidence of the net pay due; that's simply conjecture on your part?

A That's based on information available in this area at this time.

Q What would you consider to be necessary by way of net pay thickness in order to complete a commercial well?

A I don't know. Now, I feel and will not deny that I think that we could make a producing well at either of the orthodox locations, but I do not think that it will protect our correlative rights as to recovery of the oil under that quarter section.

Q How long has Well No. 134, immediately to the south of your proposed location, been producing?

A Several months. The information I have shows that well was completed in April, 1970, and the first production was reported in May, 1970.

Q Do you know what its present production is, daily production?

A I know what it produced in September, 1970, and that's

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the last.

Q What's the average daily production, or month, however way you have it there?

A At that time -- I have only got five months' production. Let me just read them off to you. In May, it shows it produced 4979 barrels; June, 4447; July, 6261; August, 4127, and September, 5478.

Q And do you have the initial potential on that well?

A Yes, I have. The scouting reports indicate that the initial potential, it flowed 240 barrels of oil per day through a 20/64th inch choke; gas-oil ratio was 991 to 1 and gravity, 38 and a tubing pressure of 150 pounds.

Q Do you earn the entire 160 acres by drilling one well?

A We have a development.

Q Sir?

A There is a development clause in there.

Q In other words, you would have to drill another well in order to earn the entire quarter section?

A That's right.

Q And you propose to dedicate the south half of the north-west quarter to the well at the proposed location?

A Yes; that's right.

Q And what would be your proposed location for the north

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half of the northwest quarter?

A Well, we are not sure at this time that we will drill that location.

Q In other words, you don't have a firm obligation to drill it, is that right?

A We have -- we don't have any obligation confirmed to drill any of them. We have an agreement that we will.

Q Well, in the event the well at the proposed location is productive, what would your plans be so far as the north half?

A It would depend on the information that we obtain from this well, that we would base any future drilling on the information we obtain when we drill this well or any other well that would give us better control up there, but information additional to what we have now.

Q So you might propose to drill the location in the northwest of the northwest, is that right?

A That's possible, yes.

Q When was the Pennzoil Well drilled in Section 11?

A Do you want to know when it was drilled or when it was completed as an Abo producer?

Q When it was completed as an Abo producer.

A The information I have shows that the Pennzoil Bridges

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State No. 1 was completed March 26, 1970, with first production being reported in May, 1970.

Q Do you have the production figures from the Abo?

A By months. In May, 1970, it made 1938 barrels; in June, it made 1708 barrels; July, 1796 barrels; August, 1808 barrels, and September, 1677.

Q Do you feel that a well in the Abo in this area would adequately drain an 80-acre spacing pattern?

A Yes, I feel like a well will drain 80 acres.

Q In other words, do you think a well located in an orthodox location would drain the south half of the northwest quarter?

A I don't feel that it would.

Q Why not?

A Because of net pay that we would expect; there would be some pay that possibly be effective in the unorthodox location that wouldn't be effective in the orthodox location.

Q Have you given any thought to secondary recovery or improved recovery methods in this area?

A I have given thought, let's say, to best recovery methods of primary that we could have and that's the reason for the unorthodox location.

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Q What about secondary?

A I haven't.

Q You have not?

A I have been advised that there's the possibility of that and that's as far as my thoughts have gone.

Q But you did state that you felt the entire south half of the northwest quarter was productive?

A Yes, I think so.

Q Now, you mentioned, Mr. Frazier, that you would expect an allowable penalty as result of drilling the well. Actually, what would the effect of an allowable penalty be in view of the present producing capacities of the wells in the area?

A Well, on the basis of -- I am not for sure. I do have in mind a figure, what the top allowable would bring in there and depending on completion techniques and possibilities in there, your production being limited by the type equipment you have, considering all these and the current production in there that might be representative of limited capacity due to your equipment or maybe not enough stimulation work, that a reduced allowable won't hurt us very much compared with the other wells.

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Q So, actually, you are not offering any penalty situation at all, are you?

A Well, I feel that the production from some of these other wells in that area could be improved depending on the equipment being used to pump them with. I think production is limited to the equipment.

Q Well, the normal unit allowable would be in excess of 140 barrels a day, wouldn't it?

A Right.

Q There are very few wells in the area that are capable of that at the present time, is there not?

A I don't know. With the equipment in there, they are not producing more than that, right.

Q Have you made a study of the equipment that's on these wells?

A I haven't. I understand they are on rod pump. I don't know what size bottom hole pump or anything.

Q There are some flowing wells, too, aren't there?

A Right. The flowing wells, some of them do much better than the equipment on these rod pumps do.

Q If this area were to lend itself to secondary recovery and assuming the establishment of on pattern or orthodox pattern secondary recovery program, wouldn't

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drilling of a well at your proposed location result in the drilling of an unnecessary well?

A I don't think so. I am not aware of any pattern that might be set up for injection or secondary pumps and I don't see right now where that would affect anything.

Q You haven't really given much consideration to that, have you?

A That's true.

Q Well, isn't it generally accepted, Mr. Frazier, that the development on pattern, primary production, does result in the event of secondary operations in a more efficient and uniform pattern for secondary purposes?

A I would say in part of the field, yes. I would -- at the edges of the boundary I would say, I don't know for sure. I doubt that that would be true.

Q Well, really, you don't know what the extent of the field is to the northeast, do you?

A No, I don't. The only thing, any time you drill a well, you use the best information you have at the time and it has no control to the northeast. Mobil hasn't drilled any except the 134 on their 12, but they drilled numerous wells down in here and I feel like they know more about the area than we do.

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MR. SPERLING: Thank you. That's all.

MR. UTZ: Are there any other questions of the witness?

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Frazier, this Pennzoil Well in the northeast north-east of 11 is off-pattern, is that correct?

A Of 11? Yes, sir, that's true.

Q How did they obtain permission to drill that well off-pattern?

A That was drilled deeper, to a deeper horizon and plugged back later on.

Q Do you know if any party in the pool objected to Pennzoil locating that well?

A Under those conditions existing in this field, I didn't think that they had to go through a hearing for it.

Q They applied for approval of the well?

A Right, they had to do that.

Q As far as you know there weren't any objections and it did not go to hearing?

A That's right.

Q Even though it's off-pattern even for secondary recovery purpose also?

A Right.

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Frazier, do you know what acreage is dedicated to the Mobil Bridges State 134?

A No, sir, I don't know whether it's east-west or north-south.

Q Likewise, do you know what acreage is dedicated to the Pennzoil 1?

A Now, I have -- I don't know which is dedicated to it. Until the possibility of drilling another well down there came up, why, I assume it was north to south, the way it is shown on the map. Now, it may not be right. I haven't double checked that out, which would be easy.

Q Mr. Frazier, assuming that a well in this pool drains on a radial basis 80 acres, do you think standard location for the south half of the northwest quarter of Section 12 would drain more of Mobil's acreage than where you want to drill?

A Now, that's a standard location on the south half of the northwest.

Q Yes, would be the southeast of the northwest.

A I don't feel that it could drain a radial 80 acres in

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there because the information that I have presented and which I feel is that the limits of the field are close by there.

Q So, in effect, what you are saying is that the location of where you want to drill is farther in field and, therefore, would drain more offset acreage than the standard location?

A What I am saying, there's two things involved here. One is the position on the structure and the other involves net pay section and I feel that we will have more net pay open for this orthodox location than we would under one of the others and if we had less net pay, there might be some zones we couldn't deplete because it wasn't open to the well, but it still would be under our acreage.

Q But, because of these various things that you have just mentioned here, you would be in the position to drain more offsetting acreage?

A That's true.

Q Now, on your log Exhibit No. 2, you used the 3 percent porosity cut-off. What type of log is this?

A This is a sidewall neutron and gamma ray.

Q Is the gamma on the right-hand side that you use for --

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A The gamma ray is on the left-hand side.

Q The neutron is on the right-hand side?

A True.

Q What is the scale on this log? In other words, what I am really asking, what is the scale for which you have assumed your 3 percent cut-off?

A It's marked on the logs and I use what is marked on the logs. I am using -- for the porosity cut-off of 3 percent, I am using the dolomite scale and it would be easier to draw these on there because they don't match up with these lines on the log.

MR. MORRIS: Madam reporter, would you mark this as Applicant's Exhibit 4, please?

(Whereupon, Applicant's Exhibit 4 was marked for identification.)

MR. MORRIS: Mr. Examiner, we offer as Applicant's Exhibit No. 4 a complete copy of the sidewall neutron porosity log on Mobil Oil Corporation Bridges State Well No. 134.

MR. UTZ: It will be accepted into the record. Are there other questions of the witness? The witness may be excused.

(Witness excused.)

MR. UTZ: Do you have anything further, Mr. Morris?

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MR. MORRIS: Not at this time; not on our direct case, Mr. Examiner.

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

VICTOR INMAN,

having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. SPERLING:

Q Would you state your name, please?

A Victor Inman.

Q By whom are you employed and in what capacity?

A I am a senior production geologist with Mobil Oil Corporation in Midland.

Q Have you on any previous occasion testified before the Commission so that your qualifications are a matter of record?

A No, sir.

Q Would you briefly review for the Commission and the record your educational and experience background in geology?

A I received a geological engineering degree from the Colorado School of Mines in 1951. From 1953 through

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1964 I was employed by Standard Oil Company of Texas as an exploration geologist in Southern Oklahoma, South Texas and West Texas and from 1964 to '66, I was employed by Mobil as an exploration geologist in the Texas Pan Handle and then from 1966 to the present for Mobil as a production geologist in Southeastern New Mexico.

Q Are you familiar with the North Vacuum Abo Pool in Lea County, New Mexico?

A Yes, sir. Most of the last three years I have spent developing Mobil's leases in the Vacuum Field.

Q Now, would you please refer to what's been marked as Mobil's Exhibit No. 1 in this case and explain what it is?

A The Exhibit 1 is an Abo structure map showing the -- covering the north half of the Vacuum anticline. The structure map is contoured on a correlative point immediately above the Abo pay.

Only the wells that produce from the Abo and also wells that penetrated the Abo when they were drilled to a deeper objective are shown on this map. The yellow acreage is Mobil operated leases. The green outlined acreage is Mobil acreage that was farmed out and Mobil

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still has an interest and then the red outlined acreage merely consists of a 40-acre Mobil tract and 40-acre Phillips tract that was communitized into an 80-acre unit to drill a well.

The orange line on the map shows the line of a cross section which I will show later. The red arrow points to the proposed Amini location. And then the legend at the bottom of the map identifies some of the symbols used on the map.

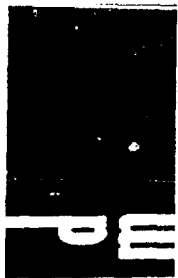
The circled wells show the current Abo producers and adjacent to those producers is shown the completion date of the well, the initial potential, whether pumping or flowing and the cumulative production to November 1, 1970.

Now, outside operated wells are wells that are operated by other companies. The cumulative production figure is to October 1, 1970. And the wells -- well, say notably up in the northwestern corner of the map that have no circles around them are wells that penetrated the Abo when drilling toward a deeper objective, but they are used as control points in making the structure map. And there are five wells on Mobil leases that have -- that are represented by open circles with a

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square around them and those are Mobil locations that have been approved and permitted.

The No. 146 in the north half of Section 14 is currently drilling. The Abo structure map shows the Vacuum anticline dipping northward through Section 1 and into Section 36 with a nose going off to the northwest into Section 3.

Now, this map is supported by considerable well control to the south of the proposed Amini location and to the northwest, but there is an absence of well control to the north and east. The indications that the Vacuum structure does continue northward through Section 1 and into Section 36 is indicated by the minus 4450 contour in the southwest quarter of Section 12.

The two wells adjacent to that contour, the 134 and the 140 immediately to the southwest, are flat, structurally flat, there's 1 foot difference, which indicates that the strike of the minus 4450 contour is northeast-southwest and also a seismic map which covers just the northern portion of the Vacuum structure indicates that the structure -- the Vacuum structure continues northward through Section 1 and into Section 36.

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Q Now, is the seismic map, that you are referring to, the exhibit marked 2?

A Yes, sir.

Q All right. Would you discuss that map and the conclusions that you reach from it with reference to the testimony that you have just given concerning the strike of that contour line that you just referred to as 4450?

A This is a portion of the Vacuum anticline seismic structure map contoured on the base of the Permian which is about 2400 feet below the Abo structure map. I will identify some -- all of these circles or numbered points are seismic control points and the grade of the seismic data is indicated -- like a fully enclosed circle is good and then an open circle is no data so it is generally fair to good data.

MR. UTZ: Would you interpret these points here in this quarter section in question here as points 89 and 90 as being 25 percent good data?

THE WITNESS: That would be poor data with just a quarter of it.

MR. UTZ: Okay.

THE WITNESS: Let's see. Now, this -- as I said, this seismic map on the north end shows that the Vacuum

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structure -- north end of the Vacuum structure does continue northward through Section 1 and into Section 36, and that there is indication of nosing to the northwest in Section 3, as I have shown on the Abo structure map.

Now, this seismic data was shot between 1955 and up through 1961, and the structure map -- this interpretation of structure on the Basin Permian was made before the first deep well was drilled on the Vacuum structure by Mobil and since then there have been -- well, all of the Abo Wells and the deeper wells within the seismic covered area on the Vacuum structure has indicated that the structural configuration as outlined by the structural data is essentially the same as shown by the subsequent wells that were drilled, and the number of wells that have been drilled cover about 75 to 80 percent of the structure so far so I have confidence that the seismic data indicating the structure going on northward is valid, and the --

Q (By Mr. Sperling) In other words, you are saying that the seismic picture as indicated by the seismic work, '57 through '62, has been confirmed by subsequent drilling of approximately 75 to 80 percent of the Abo structure?

A That's right.

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Q All right. Continue.

A Now, you can see that this structure -- seismic structure map that the anticline trends generally through the quarter section of the Amini lease and that the northward continuation of this Vacuum anticline to me is very significant, as I will show on the next exhibit, that the porosity development is best on the structural axis of the anticline. And, therefore, I feel that the Amini lease overall will -- well, say that the net pay thickness is best to this structural axis adjacent to the Amini lease.

Q You mean as to the entire lease, not just in the immediate vicinity of the proposed location?

A Yes, sir.

Q All right. Now, would you refer to what's been marked as Exhibit 3?

A Exhibit 3 is an Abo net pay map that covers the northern portion of the Vacuum structure and in making this net pay map, I have used only open hole logs or wells in which open hole logs were run because I feel that casing hole logs are primarily for correlation and indications of porous zones, but calculating net pay to me leaves quite a bit of error when using casing-hole porosity

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logs, so I have used only open hole logs.

MR. UTZ: Because of the interference of the casing on the log data?

THE WITNESS: Yes, sir, and also the -- if you have poor contact, say the cement is not in good contact with the casing or the formation or if you have channels in the cement filled with drilling fluid and also there is the size of the bore hole corrections that have to be taken into consideration and say in my general experience, I have found that open hole logs are of more better quality in determining net pay and also porosity than casing hole logs, so, therefore, I have used open hole logs in constructing this net pay map and I used a cut-off porosity of 5 percent.

Now, the thickest net pay centers approximately at the intersection -- around the intersection of the section in 11, 12, 13 and 14. It has approximately 25 feet in the 134 and to the south in the 147 Bridges State and 25 feet in the Mobil Bridges State in the southeast quarter of 11.

Now, as you can see on the net pay map going -- that this particular net pay is on the structural axis of the Vacuum anticline and that the net pay gradually thins off structure to the west from well control and off structure to the northwest. We have no well control to the north or

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east, but I feel that the net pay will thin to the north and off structure to the north and off structure to the east and that there is some conformity between the amount of net pay and the structural position.

Therefore, I feel that because the Amini lease in the northwest quarter of 12 is on the structural axis and from well control in the vicinity, say, to the northwest in unit A of 11 and the 134 Bridges State immediately to the south, that the southeast quarter or, say, a standard location in the southeast quarter of the Amini lease which would be unit F would have approximately the same net pay as at the proposed Amini location and that a well in the northwest quarter of unit D of the Amini lease would have approximately the same net pay as in the Pennzoil Well which approaches the maximum amount of net pay found on the north end of the Vacuum structure in the other wells.

Q (By Mr. Morris) Well, then, you feel that a standard location in the southwest of the north -- I mean the southeast of the northwest quarter would have as great a pay thickness as the proposed location, is that what you said?

A Yes, sir.

Q And that the standard location in the northwest of the

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northwest would have essentially the same pay thickness?

A Yes, sir, essentially the same pay thickness as in the west offsetting Pennzoil Bridges State No. 1.

Q I take it from what you said that you have some question about the conclusions which apparently have been drawn by Mr. Frazier on Exhibit 1 which was presented as a part of their direct case, is that correct?

A Yes, sir.

Q You do not agree with that interpretation?

A No, sir, I don't.

Q All right. In what respects?

A Well, I feel that the structure map indicates that the Vacuum structure turns and goes to the northwest and that it does not continue northward -- the Vacuum anticline does not continue northward in through Section 1 and into Section 36, and I believe that the indication that the structure turns northwest is reflected on the Vacuum structure by only a nose that points to the northwest and that the structure actually continues to the north as far into Section 36, which I believe will have an affect on the amount of net pay that can be expected, say, in Section 12.

Q Well, then, you feel that the structure actually

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broadens to the northeast --

A Yes, sir.

Q -- into Sections 1 and 36 rather than turning to the northwest as shown on Exhibit 1 that was identified by Mr. Frazier?

A Yes, sir.

Q Okay. Would you now refer to Mobil's Exhibit No. 3 -- I mean 4, we just finished 3.

A This is a cross section. As I mentioned before, it was shown by an orange line on the Abo structure map and the Abo net pay map and it extends, going from left to right, from the Mobil Bridges State No. 122 toward the southeast through the Pennzoil Bridges State No. 1 and to the Mobil Bridges State No. 134.

The red colored area, that correlates between the wells, is the pay section in the Abo and the blue indicates the tight zones above and below the Abo pay zones. On the right-hand side of each well log I have colored in red the pay that is greater than 5 percent porosity and on each log I have a line that is projected up, that is the 5 percent porosity cut-off line.

In the center of the log in the depth tract in red, are the perforations that were made in the well,

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the intervals that were perforated. Now, below the bottom dents or tight zone, which is shaded to anhydritic and tight, porous zones encountered below there have been water throughout the field from electric log calculations.

In other words, they have been in the vicinity of 60 percent or greater water saturation. But the pay, in the pay zone, we have not encountered an oil-water contact in the field. There have been some wells that when initially completed that have produced a small amount of water and whether it is load water, in some cases, it's difficult -- I really don't know, but it seems that the water clears up or there is -- the well produces water free with a little bit of production history.

So, so far, we have found no oil-water contact in the field and there are numerous completions structurally lower than the proposed Amini Well that are producing free oil. Now, the 122 Bridges State Well on the left was drilled to the lower Wolfcamp, that was the objective of the well, and when the lower Wolfcamp was dry it was re-completed in the Abo.

At that time, it was about 3 miles northwest of the closest Abo control or Abo production and this was assumed to be a new field discovery so it is in the

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northwest Vacuum Abo Pool.

Q Well, as of the present time, it is classified as a separate pool, is that correct?

A Yes, sir. And the center well, the Pennzoil Bridges State No. 1, was drilled in 1966 as a wildcat, as a definite wildcat and was completed as a Morrow Sand and Gas discovery in 1966, and at that time there was not -- there were not any Abo completions in the field in this Abo zone.

It was shortly thereafter in 1966 that Mobil made their first completion in this Abo zone, the south end of the field. Then, when the Morrow was depleted, the well was plugged back to the lower Wolfcamp and produced a few months from the lower Wolfcamp and then re-completed in the Abo zone in March of this year.

You will note on the depth tract I have some arrows below and above the pay. Before Pennzoil perforated the Abo pay, they perforated at these arrow points and squeezed with cement, I assume, to get cement behind the Abo pay -- behind the pipe and then they perforated the Abo pay and as noted at the bottom or below the log, the well was acidized with 150 gallons of sebic acid and potential pumping 75 barrels

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of oil per day plus 11 barrels of water.

Most of the wells in Vacuum -- in fact, say the two other wells shown on this cross section were acidized -- were treated with 5000 to 5500 gallons of 15 percent H. C. L. when they were completed whereas the Pennzoil Well was treated only with 150 gallons of sebic acid. I forgot to mention that to the -- directly to the right of the porous zones on the logs is the amount of pay that I have attributed to that porous zone and the figure at the bottom, say in the left-hand log, is 11 feet which is a total amount of porosity I have attributed to the Abo in that well which corresponds with the net pay on the Abo net pay map.

Q Using the 5 percent cut-off still?

A Yes, sir.

Q Do you have anything further to add with reference to any of the exhibits or generally?

A No, sir, I don't.

MR. SPERLING: That's all I have with this witness at this time.

MR. UTZ: We will recess the hearing until approximately 1:30.)

(Whereupon, a recess was taken until 1:30.)

(Whereupon, at 1:30 o'clock P.M., December 16, 1970, the direct examination of Mr. Victor Inman was reconvened:

MR. UTZ: The hearing will come to order. We'll continue with Case 4474. Mr. Sperling, you may proceed.

DIRECT EXAMINATION
(Continued)

BY MR. SPERLING:

Q Mr. Inman, you were on the stand just prior to the luncheon recess; is that correct?

A Yes, sir.

Q You understand that you're still under oath?

A Yes, sir.

Q Were Exhibits 1 through 4 prepared by you or under your supervision, that is, Mobile's Exhibits 1 through 4?

A Yes, sir.

Q All right. We offer Mobile Exhibits 1 through 4 at this time.

MR. UTZ: Without objection --

MR. MORRIS: Mr. Examiner, may I ask a question before the exhibits are admitted into evidence concerning, I believe it was Exhibit No. 21, the seismic map. Do I understand that the witness is testifying that that was prepared by him?

THE WITNESS: No, sir, it wasn't.

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MR. MORRIS: You said it was not?

THE WITNESS: No, sir, it wasn't.

MR. MORRIS: I would ask the Examiner to withhold allowing this exhibit into evidence until I have had a chance to cross examine the witness.

MR. SPERLING: I can pursue the exhibit a little further if the Examiner pleases.

MR. UTZ: Well, you might do that.

MR. SPERLING: All right.

Q (By Mr. Sperling) Mr. Inman, Exhibit No. 2 is a portion of a seismic map which is the property of Mobile Oil Corporation; is that right?

A Yes, sir.

Q And in your capacity as senior production geologist, that information which is a part of the business records of Mobile Oil Corporation is available to you?

A Yes, sir.

Q All right. We renew the offer.

MR. MORRIS: I renew the objection until I have had a --

MR. UTZ: The Examiner will withdraw Exhibit No. 2 until later. I will pass on Exhibit No. 2. We'll accept in the record Exhibits 1, 3 and 4. Are there questions of the witness?

MR. MORRIS: Yes, sir.

CROSS EXAMINATION

BY MR. MORRIS:

Q Mr. Inman, am I pronouncing your name correctly? E-n-d --

A No. It's I-n-m-a-n.

Q I-n-m-a-n? Fine. Mr. Inman, first would you refer to your structure map in your Exhibit No. 1. And I don't quite understand on what basis you have shown the nosing toward the northeast over and above the Amini acreage. Would you tell me what has led you to show that nosing on this plat?

A As I stated before, the first indication of the nosing is indicated by the minus 4450 contour heading into the southwest quarter of 12. And that contour is controlled -- the strike of the contour is controlled by the 134 Bridges state in the southwest quarter of 12 and the 140 Bridges state immediately to the southwest. These two wells are structurally flat, which to me indicates that there is a strike heading in that direction, for the northeast southwest strike. And it indicates that on the basis of well control that the structure does point towards Section 1 and into Section 36 and then the other thing that indicates to me that the vacuum structure in the north end of the vacuum structure goes northward in through Section 1 into

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36 is the seismic map, mapped on the base of the permian, and that the structural configuration of the vacuum structure is as indicated by the seismic map that the subsequent well control after this seismic map was made outline the configuration of the vacuum structure, which was supported by later wells that were drilled on this structure. And if the seismic map shows the structure continuing northward into Section 1, through Section 1 and into Section 36.

Q All right. Mr. Inman, coming back to your structure map, itself, now, you have drawn a structure map on fifty foot contour intervals?

A Yes, sir.

Q Before coming up with this exhibit for use at this hearing, did you give any thought to contouring, or did you prepare any map showing contour intervals on anything less than fifty foot intervals?

A No, sir. All the structure -- no. The structure maps I have made on the ABO correlation were on fifty foot intervals.

Q Fifty foot intervals? Now, I'm concerned about this interval here between 4450 and 4500 shown on that map.

A Yes, sir.

Q And you've got over a mile of separation between those

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two contours in the critical area of this exhibit. Now, if you were to just take a look at this exhibit with me and imagine that we were going to draw some contours on, say, ten, twenty, or twenty foot intervals in here between this 4450 and 4500 foot contour, would you agree with me that the configuration of those contours within the 4450 and 4500 contours might vary considerably from the general line of the contours as you have shown them on this plat?

A No, I don't believe so, because the -- say the 120 -- well, say the 126 has a subsea datum of minus 4467 and the number 11 -- pardon me. The Pennzoil Bridges state No. 1 has a subsea of 4478. And you would have to get a 70 contour, say, in between those wells, and by taking the interval, proportional interval, between the subsea datums of those wells, you're still going to end up with a strike of northeast southwest --

Q Well now, assume with me, Mr. Inman --

A -- in the same direction as the strike of the minus 4450 contour in the area of the exhibit there.

Q You've said that the strike is fairly flat, or is flat between wells 123 and 140?

A Yes, sir.

Q That's because there's only one foot difference there shown?

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A Right.

Q Now, if you drew a contour line on 4460, how would you give effect to your Well No. 126, which is 4467?

A Well, they're --

MR. UTZ: Pardon me just a minute, Mr. Morris.

MR. MORRIS: Yes, sir.

MR. UTZ: Maybe I can help you out here. Mr. Inman, could you take this map and sketch in, say, a 4475? Would that be satisfactory with you?

MR. MORRIS: Well, I'd like to have a 4460 and a 4475.

MR. UTZ: Could you do that? Do you have information enough to sketch in a 4460 contour on this map?

MR. SPERLING: Do you want to use that one, Elvis, the one you --

MR. UTZ: I think it would probably be better to use this one.

MR. SPERLING: Do you want to look at this one in the interim?

MR. UTZ: No. I'll wait til he gets through with it there.

Q (By Mr. Morris) May I ask you what you have done, Mr. Inman?

A I have taken in, say -- here would be a 4460, and then the

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seventy, and then say -- now, the interval between here and here, eighty, ninety and a hundred.

Q All right. Could I ask you to approach the Examiner here so I could ask you a question with reference to this exhibit so that he could see the intervals? Now, Mr. Inman, which is your 4460 line?

A It would -- well, it would be right here.

MR. HATCH: Excuse me. Can you identify that some way a little better for the reporter to be able to get it in the transcript.

MR. MORRIS: He's drawn it through Wells 134 and 140.

MR. UTZ: And which is this 4460, the contour that's drawn through the 140 and the --

THE WITNESS: Yes, sir. One --

MR. SPERLING: Why don't we label them by numbers?

MR. UTZ: Let's mark it 4460.

Q (By Mr. Morris) All right. Now, Mr. Inman, how do you give consideration to the 4467 point here on your Well No. 126? By drawing this line straight across from Wells 134 to 140, what I'm suggesting is, wouldn't it be proper mapping procedure for that line to swing around your Well No. 140 up toward your Well 126 and back down again towards your Well 134, so that the Well No. 126 wouldn't be so far away from that 4460 line?

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- A Not necessarily, because you have a steeping of the contour coming through here, which is fairly uniform.
- Q It's uniform the way you have drawn them, but I'm suggesting wouldn't it be permissible with the information that you have to work from here, and perhaps even preferable, to have the lines after it swings through the Well No. 140 to swing up toward the Well No. 126?
- A Not necessarily.
- Q All right. Now, the way you have drawn these contours, you have kept your contour lines relatively even between 4500, 4490, 4480, 4470, and then between 4470 and 4460 you've got much greater distance through there, don't you?
- A Yes. There's a greater distance in there --
- Q Yes.
- A -- if you -- and objectively, the only way you could contour it would be by machine calculations, without getting interpretations on it --
- Q All right. So would you agree with me --
- A -- which is close.
- Q Yes. Would you agree with me that a proper interpretation of this would be to bring the contour up through 140, and then in order to space that contour more evenly between 4450 and 4470, contour would swing up towards Well No.

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126 and then back toward Well 134?

A Not necessarily, because in --

Q All right. Not because you --

A -- reality -- well, I just don't, because you're going to find some flat places between wells, and nature is not absolutely uniform.

Q All right. But if your objective was to achieve uniformity, some uniformity of distance between your contour lines in here, you would have to swing that contour, your 4460 contour line, up towards your Well 126, would you not?

A I have those contours uniform.

Q Well now, I don't want to belabor the point, Mr. Inman, but let me go through it once more. The interval between your 4460 and your 4470 is two or three times the interval that you have between 4470 and 4480 and 4480 and 4490 and 4490 and 4500?

A Yes.

Q All right. Would you take violent issue with an interpretation that would swing up through 140 and then nose up towards Well 126 and back down to 134?

A No. I would not take the violent issue.

Q All right. Now, if you did nose that up, isn't it true that the other contours would also nose up to the north-

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west?

A Somebody would have to demonstrate.

Q Well, assume with me now. You've said that you wouldn't take violent issue with a nosing effect between Well 134 and 140 up toward Well 126. Now, if that were done, isn't it true that your other contours clear on up through the 4500 contour would also show a nose in the northwesterly direction?

A Yes. It could indicate the nose.

Q All right, sir. Would you take your seat, then? What point did you use for your contour intervals that you have shown on the structure map?

A I don't understand what point.

Q Okay. What pick did you use, what correlative point did you use upon which to make these contours?

A It was a correlative point immediately above the ABO pay.

Q Above the ABO pay? How far above the ABO pay was it?

A It shows on the cross section.

Q I think you have that exhibit right under your arm.

MR. UTZ: That's the line marked ABO structure data?

THE WITNESS: ABO structure data, yes, sir. It's the first line.

Q (By Mr. Morris) How much above the pay zone is that marker?

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A On this cross section the Well 122 Bridges state, it's thirty-four feet above the first pore streak above five percent porosity.

Q All right. Now, do you observe on your cross section the correlative markers that Mr. Frazier used in making his contour?

A On my cross section?

Q Yes. Do you recognize the point?

A Yes, sir. It looks like essentially the same point.

Q You say it is the same point?

A I say it looks like it's essentially the same correlative point.

Q Would you accept a correction if I indicated to you that he used a marker down in the pay zone, itself?

A We have -- the correlative points are essentially the same.

MR. MORRIS: Where is our original Exhibit No. 2?

Q (By Mr. Morris) May I show you our Amini Exhibit No. 2 and point out the marker that Mr. Frazier testified to.

A Oh, I'm sorry. I misunderstood, because I assumed that the line was drawn across the log with the inhole depth and the subsea depth to be correlation that he mapped on.

Q Now, I would point out that Mr. Frazier testified that he mapped on the point shown on this exhibit at 8537 or minus

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4500.

A Oh. I didn't understand that. I didn't catch that.

Q All right. Well, that being Mr. Frazier's testimony, would you agree that this point lies down in the pay zone?

A Yes, sir.

Q All right. And your point lies how far above the pay zone?

MR. UTZ: Which well are we going to answer this question on, your state 134?

THE WITNESS: Yes, sir. The 134 Bridges state.

MR. UTZ: Okay. And the question is your ABO structure datum, how far is it above the topmost pay zone?

MR. MORRIS: Well, my question is what point did he map on to show the structure as shown on his Exhibit No. 1, the structure map.

MR. UTZ: Well, didn't you also ask what relation it has to the top pay zone?

MR. MORRIS: Yes, sir. Yes, sir.

THE WITNESS: It's approximately twenty-seven feet above the first porosity interval.

MR. UTZ: That puts my count better.

Q (By Mr. Morris) All right. So the structure as shown on your Exhibit 1 is actually a structure of a point some twenty-seven feet above, twenty or thirty feet above the

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pay zone, whereas Mr. Frazier's exhibit would be a point lying within the pay zone, itself; is that correct?

A Yes. I understand correctly.

Q All right. Could this explain some of the differences that may occur between the way you have mapped your structure and the way Mr. Frazier has mapped his structure?

A I don't know, because I haven't mapped on the same point Mr. Frazier has, and I don't -- I couldn't say.

Q Is the point upon which you have mapped a consistent distance in every case above the pay zone?

A No, sir. It isn't, but it's a correlable point throughout the field.

Q All right. Now, on the seismic exhibit, your Exhibit No. 2, did you participate in the drawing of the contour lines that are shown upon that exhibit?

A No, sir, I didn't.

Q Have you reviewed the basic data upon which those contour lines are drawn?

A No, sir, I haven't.

Q Well, you were just testifying with respect to work that someone else has done on that?

A YES, sir.

Q You did state, I believe, that it's your information that the data shown on that Exhibit No. 2 in Section 12 is

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not -- I forget your language -- not good data, or not as reliable as other information shown on this exhibit.

A In Section 12 there are -- well, say along the north boundary there are two points that are open circles, and then there's one to the -- well, the west edge of Section 12 that's an open circle.

Q Is it possible, Mr. Inman, that the data on this exhibit could be interpreted to show a separate structure lying to the east of the Amini property, and that it's very difficult to figure out exactly what the situation is on the basis of this seismic data, what the situation is between the area to the east of the Amini acreage and the area to the west of it?

A What this particular seismic information means to me is that it shows the same structural configuration of the vacuum and anticline base of the permian as the structure shows at the ABO horizon as a result of subsequent development to the time this seismic map was made, and that it -- that this is the north end of the vacuum structure heading northward. I didn't and don't mean to infer that the structure at the ABO will exactly parallel the structural lines at the base of the permian, but that the structure configuration of the vacuum and anticline are the same at the ABO horizon and at the base of the

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permian.

Q Could we agree on this, Mr. Inman, that the information shown on this Exhibit No. 2, in and of itself, is inconclusive as to the structure that exists in Section 12 due to, among other things, the incomplete or poor data that you have in that area?

A No, sir. Only because there are sufficient data points that have good information that form a continuous square or pattern that gives you the structural outline of the structure from the structural point, seismic structural point.

Q All right. Let's leave that one and go on to your Isopach map, which is, I think, your Exhibit No. 3.

A Three, yes.

Q Now, why is it that up here to the north and east side of your map that your contour intervals just suddenly stop?

A Because I was getting into an area where we had no subsurface control north and east of the Pennzoil Bridges state well and the Bridges state No. 134 well.

Q Now, actually, the control which you have for your five, ten, fifteen and twenty foot contour intervals at the north part of your exhibit, to the north and through the Amini acreage is based upon your Pennzoil well in Section

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11 and the Pennzoil well in Section 2 and the Mobile well in Section 3; is that correct?

A It is based on those wells and additional well control in the southeast quarter of Section 35. Well, in the wells in Section 35, in 34 and in Section 2, the Pennzoil wells in Section 2, also.

Q All right. Now, I'm particularly concerned here with your contour line, contour interval on the ten feet of net pay. Now, you show here that your Mobile well and your well in Section 3, that's your Well No. 122, had eleven feet of pay. You also show that the Pennzoil Well that's a direct offset totals had eleven feet in net pay, correct?

A Yes, sir.

Q All right. Now, the way you have drawn your ten foot contour line, you have drawn that ten foot contour line a lot closer, or let's say a lot further away from the Pennzoil well than you have from your Well No. 122, haven't you?

A You mean the Pennzoil well directly east of the 122?

Q Yes, sir. I'm talking about two wells here that are direct offsets to each other, your Well 122 and the Pennzoil well directly to the east of it, both of which have eleven feet of net pay shown on this map.

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A Yes, sir. The ten foot contour is closer to the 123.

Q All right. Now, if you had drawn the ten foot contour line exactly the same distance from the Pennzoil well as you had from your Well No. 122, it would have swung that ten foot contour line considerably to the south as it went across Sections 2 and Section 1, would it not?

A With the control that we have, I don't believe you could do that, because the Pennzoil Angle state well to the north has nine feet of pay, whereas the Pennzoil well immediately south has eleven feet of pay, so the ten foot would be midway between. And the Pennzoil well in the southwest quarter of Section 3 has eight feet of pay, so a third of the distance from the No. 122 would be ten feet of pay.

Q Now, you have attributed nine feet to that Pennzoil Angle state well there in the northwest northwest of Section 2?

A Yes, sir.

Q Is that well a producing well?

A No, sir. It was drilled as a lower Wolfcant objective, and it's not producing from the ABO.

MR. UTZ: Is the ABO productive at all?

THE WITNESS: You mean at this time?

MR. UTZ: Yes.

THE WITNESS: Is it producing at this time?

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MR. UTZ: No. Would it be productive if they were to complete a --

THE WITNESS: Yes, sir. I think so.

Q (By Mr. Morris) Mr. Inman, would you agree with me that if that ten foot contour line could have swung further south, based upon the influence of the Pennzoil well which is the direct east offset of your 122, that that also would have swung further to the south your contour lines on fifteen feet of net pay and the contour line on twenty feet of net pay and had an influence also on your twenty-five foot net pay line, it would have swung that whole series of contour lines further south?

A Would you repeat that again, please.

Q Yes. In other words, I think we were agreed that this ten foot contour line here, there's a great deal of interpretation in whether that line came out flat or whether it dipped to the south; isn't that correct?

A The only unbiased interpretation, I believe, that you could make there, is that you'd have to mechanically split the difference.

Q Now, if you split the difference as to where the line goes, how do you know whether to bring it out flat or whether to bring it out further to the south? Isn't it all dependant on whether you split the difference or whether you bring

it back in closer to that Pennzoil well that's shown with the eleven feet of net pay?

A The structural configuration of the vacuum structure -- the effect of the northwest nose going into Section 3 and the north end of the vacuum structure going northward through Section 1 in Section 36 gives a broadening effect to the structure at the north end. In other words, it flattens or broadens the structure on the north end and that you have the contours flattened. Say the ten foot contour, for instance, flattens going east west across the structure in the same relationship.

Q Well, insofar as structure has influenced your drawing of these contours, we're back to the point we argued before, are we not, that you have a more pronounced northwest nosing than you have indicated on your structure map than that northwest nosing would have if you had recognized it on your structure map you would have also recognized it to some extent on your Isopach? Is that a fair statement?

A Would you repeat that again, please.

Q Yes. As I understand your testimony, you're saying that your Isopach is influenced to some extent by what you believe to be the basic structure.

A Yes.

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Q And I'm saying to you that if there's a more pronounced northwest nosing of the structure than you have shown on your Exhibit No. 1 that that would influence also your Isopach to the extent that you would have more northwest nosing here which would have the effect of bringing your five, ten and fifteen foot contour lines further to the south as they lie, than they lie, and shown here on your Exhibit No. 3. In other words, I'm asking you to --

A Yes. It could have, but I don't believe that exists, because the structure --

Q All right. I understand what you're saying. You're saying that it's this way based upon, to some extent based upon your belief as to what the basic structure is.

A Yes, sir.

Q All right. But it could change? This would change and could change if the structure were otherwise than as you have depicted?

A Yes. As any structure would.

MR. MORRIS: I have no further questions.

REDIRECT EXAMINATION

BY MR. SPERLING:

Q Mr. Inman, in Mr. Morris' attempt to have you wrap the fifteen foot net pay contour line around the Amini acreage by an abrupt swing to the south, isn't he asking you to

ignor the twenty-one foot net pay in the Pennzoil well within the northeast quarter of the northeast quarter of Section 11 and the twenty-four feet of net pay in the 134 well?

A Yes, sir. To maintain uniformity with that amount of pay.

Q All right. Well then, does it seem reasonable to say that the fifteen foot contour line that he wants to bend to the south there is more reasonable projected to the east, based upon the twenty-one feet of net pay and the twenty-four feet of net pay that I have just referred to? Doesn't that kind of straighten it out to the east?

A Yes, sir. Along with the structure along there.

Q And that's confirmed by your interpretation of the structure?

A Yes, sir.

MR. MORRIS: That's all.

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Inman, would you say the twenty foot contour on this map is really, as far as this case is concerned, possibly the twenty-five foot contour is the important contour, as far as this case is concerned?

A Yes, sir. In the -- yes, sir, because the axis of the structure, I believe, goes northward into Section 1 and

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the main part of it or the thickest net pay is on the axis on this structure in the intersection or around the intersection of eleven, twelve, thirteen and fourteen, in that the Pennzoil well with twenty-one feet of pay and the 134 with twenty-four feet of pay are important.

Q So on the twenty foot contour your control is basically, then, the Pennzoil No. 1 with twenty-one feet of pay --

A Yes, sir.

Q -- at that point? Now, further to the southwest your control on the twenty foot contour, then, would be the Bridges state No. 135 and the Bridges state No. 126?

A Yes, sir.

Q In Section 11, same section, difference between those two wells is, oh, what, eight feet, seventeen feet and twenty-five feet?

A Yes, sir.

Q In your opinion, is that twenty foot contour properly spaced between those two known pay zones? That would be five-eighths of the way from the No. 126 well, would it not?

A Yes, sir. It would be approximately.

Q Now, further south on that same contour, what control do you have?

A The 130 Bridges state in Section 15 and the 133 Bridges

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state in Section 14.

Q Yes. Okay. Now, the difference between those two wells is seven feet?

A Yes, sir.

Q In your opinion, is that contour proposal spaced between those two wells using those two for control?

A Yes, sir.

Q All right. Now, let's talk about twenty-five foot contour. Your control on that is the No. 134 in Section 12?

A Yes, sir.

Q And the No. 126 again in Section 11?

A Yes, sir.

Q And the No. 147 in Section 13?

A Yes, sir.

Q Is that the entire control, then, for the twenty-five foot contour?

A And the 133 Bridges state in Section 14.

Q Yes. In your opinion, is that contour proposal spaced in regard to the net pays in those wells?

A Yes, sir. I believe fairly close.

Q Now, we had a little discussion a minute ago about your contouring point and Mr. Frazier's contour point. Are you familiar enough with the point Mr. Frazier had or used in order to say whether you think that is a

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correlative point throughout the field?

A No, sir, I'm not.

Q I see.

A I didn't -- in the logs I didn't specifically correlate that point throughout the field as I did the point up above.

Q But you did agree that -- well, I don't know whether you did or not. I'll withdraw that statement. Let me ask you a question this way: Your ABO structure datum which you contoured on, is it different distances as among the wells in the pool from the top of the pay?

A In some cases, but I wouldn't say it's not significantly, because --

Q In the order of what?

A I really couldn't say. Say the well -- I could give you an example, what would be better.

Q All right.

A Say in the 134 Bridges state at times the -- say the to porosity streak may be tied in other wells, but I would say within the interval and in some cases the whole top red band will be tight in some of the wells throughout the field, and what I recall, more on the flanks of the structure where the pay thins. But it is on the cross section that the pay zones are correlable throughout the

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field. In the dense zones you can't correlate as shown on the cross sections.

Q Well, on this cross section in Exhibit No. 4 would you say the top of the pay varies there in the order of maybe four or five feet?

A Oh, yes, sir. Yes, sir, it would.

Q So that would be approximately the difference between your correlative zone and Mr. Frazier's correlative zone, as far as contouring is concerned?

A Right. Variation between the two correlative points, yes, sir.

Q In the pay zone? Now, you mentioned in your testimony that in your opinion, the maximum porosity was along the strike of the structure, did you not?

A Yes, sir. Along the structural axis of this seems to be where the best porosity is located.

Q Would you take Exhibit No. 1 here and just sketch what you think the strike of the structure is on that and see which way it runs, the axis of the structure, if that's what you prefer to call it.

A (Witness complies)

Q In your opinion, it does run through the quarter section in question here?

A Yes, sir.

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Q I just wanted to be sure of that. Now, we've got an Exhibit No. 2 here that's somewhat of an orphan at this point. I would like to question you a little on it. This exhibit was run for Mobile by some seismograph company?

A Yes, sir.

Q And your familiar with the interpretation of the points on this and how they were interpreted?

A No, sir. As far as picking the records, the geophysicist picked the records and correlated the points and mapped the structure. I'm not familiar with that.

Q Then you're accepting their geophysicist's interpretation?

A Yes, sir.

Q As well as the interpretations of whether the data was good data or not?

A Yes, sir.

Q Now, the good data points are solid points; is that correct?

A Yes, sir.

Q Now, along the bottom of this exhibit there is a number of solid points or dots, particularly along Section -- the bottom of Section 12, and that is the bottom of Section 12, is it not?

A Yes, sir.

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- Q Now, all those points along the bottom of Section 12, as you understand this exhibit are good points?
- A Yes, sir.
- Q And going north on the Section 12 there is in the far southeast corner -- there are good points and there are some bad points?
- A Yes, sir.
- Q Up until the north northeast corner of Section 12, then cutting across Section 1, is it?
- A Yes.
- Q Section 1, then there's one bad point and several good points to the north --
- A Yes, sir.
- Q -- on the area in question; is that correct?
- A Yes, sir.
- Q But in the immediate area there are some pretty poor data, actually, would you say, in the immediate area of the northwest quarter of Section 12?
- A Yes, sir. There's --
- Q Points number eighty-eight --
- A -- consecrated, yes, sir.
- Q -- eighty-nine and ninety?
- A They are poor.
- Q Now, did you use any of this data to make the contour on

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your Exhibit No. 1?

A I used the configuration -- not specifically. What I did was use the configuration of the structure as outlined by this map. In other words, the structure continued on south, the seismic structure.

Q Yes.

A And the configuration of the seismic structure was essentially the same as that the ABO horizon is indicated by subsequent wells that were drilled and so the configuration of the structure showed the vacuum anticline to continue northward, and so that did have an influence on my reasons for believing that the structure did go on to the north on that uncontrolled part of the structure, ABO structure map to the north and east of the immediate location.

Q Would you say that the good data points on your size map here conform generally with your contours on your Exhibit No. 1?

A Yes, sir. They did conform.

Q I see. Okay. Are there other questions of the witness?

MR. MORRIS: I have just a couple of questions I'd like to ask that were raised by questions that you asked.

MR. UTZ: I was afraid they might.

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RE CROSS EXAMINATION

BY MR. MORRIS:

Q Mr. Inman, referring to your Isopach map and your contour interval on the twenty-five feet of net pay --

A Yes, sir.

Q -- would it have been possible for you to have connected that twenty-five, that contour line between Wells 134 and 147 instead of just showing them open?

A Yes, sir. But that would place the thick net pay on the west side of the structural axis. I mean it would eliminate any -- it would show the immediate thinning of the net pay as soon as you got on the east side of the structural axis.

Q Well now, you've shown right at the top of that twenty-five foot interval there -- you've shown a little curve that goes up to the north and then off to the east.

Q Now, you actually had no control whatsoever to show that, did you?

A No, sir. That is based on the interpretations --

Q Yes.

A -- that the net pay gradually thins off of the east side of the structure as it does off of the west side of the structure.

Q All right. Now, would it be just as plausible for the

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structure contour line of your Well 134 to have come off to the southeast rather than coming off to directly to the east or even going north at that point?

A Excuse me. I --

Q Yes.

A It would go off to the southeast and --

Q Yes.. To go off to the southeast rather than the way you have shown it on here. One would be as plausible as the other, wouldn't it?

A Oh, yes. Right. And in which case, the southeast quarter of the Amini lease would have approximately twenty feet of pay.

Q All right. In other words, it would bring that twenty feet of net pay line shown through the Amini lease -- it would bring that down somewhat, wouldn't it?

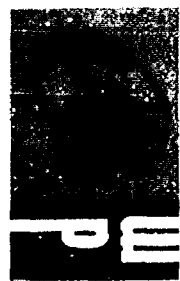
A Yes.

Q There's one other question here on your seismic map, and that is if you drew a line, let's say between your point 123 -- no. That's not quite right. Let's say you drew a line between your point ninety-four and your point no. 90 down near the proposed well location. Would that axis, would that be shown there by drawing that line? Would that indicate a low running down through that area and through the location of the Amini well?

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A On this specific base of the permian map, seismic map, it is contoured such that it indicates a low down through there, but --

Q All right.

A -- this is at the base of the permian horizon.

Q Fine. Okay. Thank you.

MR. MORRIS: That's all. Thank you.

MR. UTZ: Are there other questions?

MR. SPERLING: That's all.

MR. UTZ: The witness may be excused. We'll have other witnesses. Mr. Sperling?

MR. SPERLING: Yes, sir. I sure do.

PAT KELLY

called as a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. SPERLING:

Q You were sworn this morning, Mr. Kelly?

A Yes, sir.

Q State your name and your employer and your position.

A My name is Pat Kelly. I work for Mobile Oil Corporation, and I perform petroleum engineering work for Mobile.

Q Have you on any previous occasion testified before the Commission?

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A Yes, sir.

Q Your qualifications are a matter of record?

A Yes, sir.

MR. SPERLING: Are Mr. Kelly's qualifications acceptable?

MR. UTZ: Yes, sir.

Q (By Mr. Morris) Mr. Kelly, we have as yet unidentified Exhibit No. 5, Mobile's Exhibit No. 5. Would you refer to that please and tell me what it is?

A The Exhibit No. 5 is a plat of the north vacuum ABO field and surrounding area. It has shown on it a pattern, dash lines drawn between wells describing what I conceive as the most probably injection pattern that Mobile is going to utilize in carrying on improved recovery operations in the ABO reservoir.

Q Is the exhibit essentially the same, except for the indication on it of the injection well pattern as you conceive it to be as the other exhibits which have been referred to as a part of Mobile's presentation in this case?

A Yes, sir. It's the same basic map.

Q All right.

A The only difference, I believe, is that I have shown on this map the locations of the wells that we expect to

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place on injection in carrying on more improved recovery operations on the Bridges state and State J leases.

Q Well now, does this represent some sort of far distant future possibility type thing, or what is its stage, insofar as becoming an actuality is concerned?

A I might give you some background on what is taking place and what has taken place in the north vacuum ABO field in that connection. Early in 1970 Mobile operated a total of nineteen ABO wells on the Bridges state and State G leases. Those wells included eighteen producers that were classified or prorated in the north vacuum ABO field and one, the Bridges state No. 122 that was prorated in the northwest vacuum ABO field.

Bridges state No. 122 was completed in June of 1967, as I recall, at a time when the nearest then producing well to the south in the ABO horizon was about three miles distant. The No. 122 was set up as the discovery well, and a new reservoir, and it's still prorated in the northwest vacuum ABO field.

Although development that has taken place in 1970 has demonstrated to me that No. 122 is producing from the same reservoir as a balance of the wells in the north vacuum field that are shown on this map. All of the wells that Mobile had in the ABO early this year were confined

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either to the east side of the lease or the southeast side of the lease. It became my task to evaluate the feasibility of carrying on any further development in this ABO horizon.

I examined the production history of the wells and came to the conclusion that at full development, that is a well to eighty acres, the economics of developing the reservoir for primary reserves was a skinny proposition. I would describe it as -- the economics as marginal. I went on a bit further, though, and determined to my satisfaction that the ABO horizon represented a good secondary recovery or improved recovery prospect, and when taken into account in addition to the primary reserves that are in this field, I determined that the economics of developing for primary and secondary or primary and pressure maintenance reserves were very attractive.

Pursuant to that determination, funds were allocated to the development of the field, and so far this year, we have completed fourteen additional wells, and are in the process of completing the fifteenth well at the present, Bridges No. 146 in the north part of Section 14.

There are AFE's approved and contracts let for the drilling of four additional wells, utilizing 1970 funds,

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which are shown on my map with squares. They are Bridges state No. 148, in Section 11, No. 149 in Section 27, State J. No. 5 in Section 22, and Bridges No. 150 in Section 12. The rig should be moving to No. 148 at the present time, as it's moving from No. 146.

There has also been examined and righted for approval within Mobile's management an AFE for the drilling of an additional well, using 1970 funds, and that will be Bridges state No. 152, which is in B location of Section 13.

Now, that well will be drilled along with the remaining four that are shown as approved locations on this map. There are also eleven ABO wells budgeted in our 1971 budget. Those funds are set aside for that development. At the time that those eleven wells are drilled, which I expect to be completed around mid year, there will remain only two wells left to drill on the Bridges state lease to fill out the injection pattern that I have shown on this map.

It is our plan, and Mobile has committed within its own management to initiate some form of improved recovery in the ABO horizon late next year. That is, in late 1971 or early 1972. It is my best opinion and it is our current plan to use the well locations that I have

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described on this map as injectors. That will represent an inverted nine spot pattern. We're not certain at this point whether we'll inject water or gas or a combination of the two.

We do intend and have intended right along to contact all of the -- at a propitious time contact all of the owners of acreage that we consider to be reasonably productive in the ABO horizon for the purpose of considering whether a unit, a pressure maintenance unit, might be put together. I will cover in, hopefully, the entire reservoir.

We have indicated in a letter that has been directed to Mr. Amini, I believe, dated November 25th, a copy of which has been furnished the Commission, that we expect that meeting of operators' representatives to be called in January or February of 1971.

I have every hope that the operators of productive acreage that is indicated by our work to be productive in the reservoir will be of a mind to either join in a unit or cooperate in such a way that the primary and fluid injection reserves can be recovered in a good efficient manner from the reservoir.

In any case, our plans are very firm at this time for carrying on some form of secondary recovery or pressure

maintenance operation within our own acreage toward the end of 1971 or early in 1972. If we're unsuccessful in getting a unit put together in time to do this, we'll try to cooperate.

Q Based upon the work that you have done, Mr. Kelly, do you consider the Amini acreage in the northwest quarter of Section 12 to be productive in its entirety?

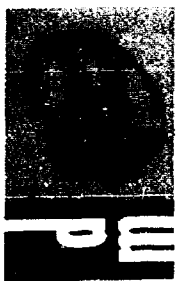
A Yes. I think Amini acreage is good acreage. In fact, I recommended it and obtained permission to make an offer to Marathon for the acreage, which is my understanding -- which we did before they formed it into Amini. It's my understanding that Mr. Amini paid a better price than we were able to afford. I assume he thought it was better than we did, or else had a better tax picture than we did.

Q Now, based upon your reservoir engineering and water flooding or secondary recovery or pressure maintenance projects, what is your opinion as to the effect of the drilling of an off pattern well in a field which has been developed essentially on pattern?

A As a general thing, pattern floods or pattern injection programs are more efficient from the standpoint of areal and volumetric sweep if the wells are drilled according to some pattern, to the extent that the wells are off pattern, I think inefficiencies come in.

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In this case there are, I believe, just two wells all ready, that are completed, in the reservoir that are off pattern. One is our Bridges No. 122, which has its object deeper horizon, and the ABO was a secondary prospect, and, of course, it was drilled as a step out well and a new discovery. The Pennzoil well, which, I believe, was completed in the ABO in the northeast corner of Section 11 in the ABO in March of 1970, was a plug back from a deeper horizon, and I consider a routine exception to the spacing requirement. If it should develop that Mr. Amini's acreage would come into any unit that would be formed, I would hope next year, and the proposed unorthodox location were drilled as requested that it would be necessary to drill another well in the southeast quarter of the quarter section to efficiently recover the reserves from that pattern.

I fully expect that the reservoir will prove to be productive north of Mr. Amini's acreage, and I would hope that if his acreage were contained in the unit or operated in a cooperative fashion, in either case, that there would ultimately be an injection well north of Mr. Amini's acreage.

There would also be an injection well one location west of the proposed unorthodox location, which would

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complete the nine spot, as you can see coming up to the northeast from No. 148 and to the northwest from Bridges No. 150. If Mr. Amini's acreage does not come into a unit, if he doesn't -- if it just can't be worked out and he has a producing well at that location, I have serious reservations based on my experience with the Commission of whether or not we would be permitted, or anyone would be permitted to inject in a location approximately 1200 feet from his producing well.

And I think that would contribute materially to inefficiency on the north end of the reservoir and probably contribute to a lot of waste, both economically and from the standpoint of oil recovery.

Q Do you have an opinion as to whether the drilling of a well at an orthodox location, either of them within the northwest quarter of Section 12, would result in the recovery of the reserves, both primary and -- the more efficient recovery reserves, both primary and secondary, from that acreage?

A Yes, sir. I think that -- well, I think the most critical location is in the southeast quarter of the quarter section, that a producing well in that location is almost essential to both the primary and the secondary reserves or pressure maintenance reserves being recovered from

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that pattern. To a lesser extent the regular location of the northwest quarter. Of course, the Pennzoil well is already there. But I judge it probably would be necessary eventually to drill up there also.

By our interpretation, both locations are very good, and I don't think the relatively low productivity of the Pennzoil No. 1 Bridges state is any indication of the reservoir having poor quality in that vicinity, because I interpret that the Pennzoil well was hardly stimulated at all, having pumped into the perforation only 150 gallons of acidic acid.

It has been our experience in completing a good many wells in this ABO reservoir that the productivity of the wells improves quite a lot after they're acidized, and it's our standard procedure now to acidize with some ten thousand gallons of ten percent HCL. By comparison, I'd say that the ABO reservoir rock, itself, has not been stimulated in the vicinity of the Pennzoil well, and I judge that that must be awfully good pay up there to support sixty to seventy barrels a day of production at the present time.

Q Well now, you mentioned earlier that you had made a study of the production history of the ABO wells in this field. Based upon that study, what would be your opinion as to

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the effect of a reduction in the normal unit allowable ordinarily assigned on an eighty acre spacing basis to an unorthodox location?

A As I understand it, a reduction to one-half the normal allowable for an eighty acre ABO well would reduce that allowable to 170 barrels a day. That's one-half the top allowable. It is a rare well in this ABO reservoir that will produce more than 170 barrels a day thirty days from the time of its completion.

I would not think that would represent any penalty at all.

Q Do you have anything further?

A Now, we're digging these wells for a lot less than that.

Q Do you have anything further?

A Not that I think of, sir.

MR. UTZ: Questions of the witness?

MR. MORRIS: Yes, sir.

MR. UTZ: I was afraid you might.

MR. MORRIS: A few.

CROSS EXAMINATION

BY MR. MORRIS:

Q Mr. Kelly, has your company staked any locations for the drilling of ABO wells anywhere in the west half of Section 12?

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A I can't say that I know for certain that the locations have been staked. I know that a contract has been let for the drilling of Bridges state No. 150, which is in the west half of Section 12.

I don't know whether the location has been staked or not.

Q What about the east half of that section?

A No, sir. Those wells in the east half are part of our 1970 development program and are not included in the twenty wells that were completed under 1970 funds.

Q So the pattern that you have shown here for injection in the west half -- excuse me -- in the east half of Section 12 and going over into Section 7 is conjectural at that point, is it not?

A I wouldn't say that it's conjectural. I'd say that -- and I will say that this pattern conforms to our best interpretation of the geology in here, as it has from the start, and we believe that we will have reason to dig those wells over there next year.

Q Well --

A Naturally, I do expect that we will develop them in sequence, and one of the wells that we have drilled this year, you see, is in the east half of Section 13 and Location B.

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Q All right. Now, if you won't say that this is conjectural, will you at least agree that the injection pattern is entirely dependant upon there being wells drilled, producing wells drilled, that would fill out your nine spot within that pattern in Sections 12, 7 and 13?

A Yes, sir.

Q All right.

A If there is no production out there I don't want to inject into it.

Q And you're not going to drill those wells all at once, are you? You're going to drill them one at a time?

A We haven't set up the drilling sequence of our '71 wells yet. We'll be doing that in the next week or ten days, I should suppose, because I want us to get on it first thing and get them drilled, hopefully, the first half of the year.

Q Actually, to complete your pattern and build it up, you would have to drill a couple of more wells in Section 13 before you moved up into Section 12, wouldn't you?

A No, sir. I have one well, as I said earlier, that's in the process of being AFE right now in Unit B of Section 13. The in field location back in Unit D of Section 13 is really -- can be drilled any time, and the injection well in, I believe it's Unit H of Section 13, of course, remains

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to be drilled and will have to be drilled before we start injection.

Q You have no definite plans at this time for the drilling of a well that would be northeast of your Well 150?

A Yes, sir. I have definite plans to dig that well next year, as soon as our '71 funds are available to start drilling.

Q You'd like to see Mr. Amini move over and drill a standard location to give you some indication of your risk on that well, wouldn't you?

A Well, our Bridges 150, you see, will be going down shortly, which will afford some added control there. Frankly, it is my opinion that that well east of 134 in, I believe it's Unit J of Section 12 will be drilled whether or not Mr. Amini proves up his acreage. I mean, you know, whether he drills it or not. Of course, if Mr. Amini drills a dry hole in there, we'll take another look at it.

Q If Mr. Amini has to drill at a standard location and drills a dry hole there, you'd take another look at it, wouldn't you?

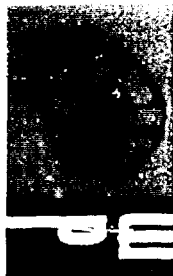
A Yes, sir. I'd say we've had pretty good luck with this so far. We've staked out two or three wells at a time and found a pay, and I'm real pleased with our development.

Q Now, you're talking about the problems that you were going

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to have in putting an injection well up in the southeast of the northeast of 11. In other words, that would be a direct --

A West off set.

Q -- off set to our proposed location?

A Yes, sir.

Q Now, that would also be a direct south offset to the Pennzoil well, correct?

A Yes, sir, it would.

Q So the problem of locating an injection well at that location is already present due to the proximity to the Pennzoil off pattern well?

A To that extent I have every hope that Pennzoil will be interested in getting into the fluid injection program some way. And it's not something that we haven't talked about.

Q All right. Are you familiar with the producing equipment, pumping equipment, that is presently located on the Mobile wells in this area?

A In a general way, yes, sir.

Q Is your No. 134 a pumping well?

A I can't tell you whether 134 is on the pump right now or not. I know 134 was the first well we drilled in this package of what will finally be twenty wells. In 1970

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we started drilling in March and completed it in April of this year, and it came in flowing, either on the next well that we drilled, or I believe we had two rigs going in there, sometimes three. At some point in there we decided to go ahead and set pumping units on the wells as we completed them, because it was developing to be our experience that the wells had to go on pump in a matter of thirty to sixty days anyway, and so it's our practice now to set a pumping unit on a well and start it pumping.

The units that we're buying at the present time are 320,000 inch pound units, which I'm not sure what the displacement on those pumps is. I have reason to believe that most of the wells will potential a little bit more than the pump capacity indicates, and they're trying to flow, but in a matter of thirty to sixty days, they're delivering less than the pump will lift.

Q What is top allowable in this pool for a well located on eighty acres at this time?

A I would -- I can't say for certain of my own knowledge. I'd have to refer to a schedule. I believe the proportional factor is 4.77, but I'm not sure.

Q Is your Well No. 134 capable of making top allowable?

A Oh, no, sir. As evidenced by the production reported, that Mr. Frazier reported earlier, it's making between

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160 and 180 barrels a day average, and it's one of the best wells we have.

Q Have you given any thought to using a code pump or gas lift equipment in connection with your wells in this area?

A I can't say that I have given any thought to it. I don't design our artificial lift equipment. Some other folks have charge of that, and I would just have to rely on their good judgment to design the best equipment for the problem.

Q Could you get increased production from your 134 if you installed better lifting equipment on it?

A I don't know that 134 has lift equipment on it. It may or may not have.

Q Would you agree that the meaningfulness of a penalty on a well's allowable should be measured by its producing ability and not just the mechanical equipment that happens to be installed on that particular well?

A I don't intend to pass judgment on the propriety of the meaningfulness of -- nor the propriety of setting a penalty. I can say, I think, with hardly any reservations, that a penalty to 170 barrels per day in this ABO reservoir will affect only a rare well. There have been a lot of wells completed in here, and a good deal of

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production history has been established on them, and it's my judgment that very few of them will ever produce a sustained rate greater than 150 to 170 barrels per day.

Q All right.

A Most of the wells will be -- the wells that have good initial potentials on them will be down to about fifty or sixty percent of their IP's within a month. That's been our experience.

MR. MORRIS: That's all I have, Mr. Examiner.

MR. UTZ: Other questions?

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Kelly, do you have charge of recommending locations to be drilled by Mobile?

A I don't know that I'd say I have charge of it. I --

Q Do you make those recommendations?

A I would say that I initiate those recommendations in conjunction with our geologists in this case.

Q If you owned the northwest quarter of Section 12 would you recommend the well be drilled in the standard location there?

A The northwest quarter of Section 12?

Q Yes.

A Yes, sir. I would be willing to recommend that we get two

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rigs in there at once.

MR. UTZ: Other questions? You may be excused. Do you have further testimony?

MR. SPERLING: That's it. I'd like to offer Exhibits 2 and 5.

MR. MORRIS: Mr. Examiner, I renew my objection to Exhibit No. 2, the objection based upon the fact that the witness admitted that he did not prepare the exhibit and was not familiar with the manner in which it was prepared, and further, that he's attempting to express an opinion based upon the opinion of others. We object to the testimony, and we object to the exhibit.

MR. SPERLING: Well, Mr. Examiner, I think he certainly candidly stated that he did not prepare the exhibit and that it was a map prepared by geophysicists based upon -- which is a science in itself. He did testify that the well control that they have has confirmed within the field, itself, seventy-five to eighty percent of the accuracy of the exhibit, insofar as indicating generally the configuration of the structure, which is the only purpose for which it is offered.

MR. UTZ: In other words, the only reason it's offered is to support Exhibit No. 1?

MR. SPERLING: Yes.

MR. UTZ: Exhibit NO. 2 will not be admitted.

Exhibit No. 5 will be admitted to the record. Statements?

MR. MORRIS: Mr. Examiner, at this time -- it's not a statement, but I would move the Examiner to strike all of the testimony of Mr. Inman that was based upon the Exhibit No. 2, which was the seismic plat. And this would include Exhibit No. 1, which was the structure plat, because he testified that his opinion as stated by the contours drawn on Exhibit No. 1 were based in part upon the information shown on Exhibit No. 2, and he further stated that the information shown on his Isopach map on Exhibit 3 was, in turn, influenced by the structure map, which was Exhibit No. 1. So for this reason, we would request the Examiner to strike Mr. Inman's entire testimony concerning those exhibits.

MR. SPERLING: Well, I think Mr. Morris is going a little bit too far now, insofar as attempting to eliminate all of Mr. Inman's testimony based upon the one exhibit. Certainly, there is a great deal of testimony offered by Mr. Inman which was his own opinion based upon his own work.

Now, everybody knows that seismic information is a tool. It is employed in the oil industry reliably, and that's what people spend their money for, and they're

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entitled to rely on it as well as confirming information that may be collected from other sources.

If we're going to get to the point that the evidence is limited to the personal knowledge of the witness, then, certainly all of Mr. Frazier's testimony is suspect, because that certainly isn't his information. It's somebody else's.

MR. HATCH: I think the other exhibit should be admitted. I think there is other information that Mr. Inman used in preparing the other exhibits not based entirely upon his information he gained from a study of the seismographic graph.

MR. UTZ: What about his reference to this map?

MR. HATCH: Well, probably his testimony concerning that exhibit, keeping that out, should be kept out, but his testimony concerning the other exhibit should be admitted.

MR. UTZ: (To court reporter) Will you locate testimony referring to Exhibit No. 2 and strike that testimony from the record?

THE COURT REPORTER: Just leave out everything he said about that or what?

MR. UTZ: Well, I don't know. It sounds to me like an insurmountable job.

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MR. MORRIS: Mr. Examiner, I'm not suggesting that the reporter should not make a record of what was said, but I'm asking that the Examiner disregard that testimony.

MR. UTZ: I don't listen to it?

MR. SPERLING: Well, I'm certainly not going to concede that the reporter can edit the testimony. I'm not going to say that.

MR. UTZ: The objection is overruled, Mr. Morris. The testimony will be entered into the record as given. Examiner will take note that Exhibit No. 2 was not admitted as a part of this record. Other statements?

MR. MORRIS: Mr. Examiner, just very briefly, I would like to state again what Mr. Frazier said, which is that we have a rig standing by to drill this well, and it's a well which we're fully prepared to go ahead with as early as Friday of this week. And we would ask the Commissioner for early consideration of this matter.

MR. UTZ: Other statements?

MR. SPERLING: I'm afraid I wouldn't get out of here alive.

MR. UTZ: The case will be taken under advisement.

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COUNTY OF BERNALILLO) ss

We, GLENDA BURKS and LINDA MALONE, Court Reporters, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by us; and that the same is a true and correct record of the said proceedings, to the best of our knowledge, skill and ability.

Glenda Burks
COURT REPORTER

Linda Malone
COURT REPORTER

I do hereby certify that the foregoing is a complete record of the proceedings in the hearing of Case No. 4424 heard by me on March 16, 1970.

W. C. [Signature], Examiner
New Mexico Oil Conservation Commission

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OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

P. O. BOX 2088 - SANTA FE

87501

GOVERNOR
DAVID F. CARGO
CHAIRMAN

LAND COMMISSIONER
ALEX J. ARMijo
MEMBER

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

December 18, 1970

Mr. Richard S. Morris
Montgomery, Federici, Andrews,
Hannahs & Morris
Attorneys at Law
Santa Fe, New Mexico

Re: Case No. 4474
Order No. R-4082
Applicant:
Amini Oil Corporation

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.
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC x

Artesia OCC

Aztec OCC

Other Mr. James Sperling

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. 4474
Order No. R-4082

APPLICATION OF AMINI OIL CORPORATION
FOR AN UNORTHODOX OIL WELL LOCATION,
LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9:30 a.m. on December 16, 1970, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 18th day of December, 1970, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, 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, Amini Oil Corporation, seeks authority to drill a well at an unorthodox oil well location 2120 feet from the North line and 520 feet from the West line of Section 12, Township 17 South, Range 34 East, NMPM, North Vacuum-Abo Pool, Lea County, New Mexico, with the S/2 NW/4 of said Section 12 to be dedicated to the well.

(3) That the Special Rules and Regulations governing the North Vacuum-Abo Pool provide that the first well drilled on any standard or non-standard unit in said pool shall be located within 200 feet of the center of either the NW/4 or the S/4 of a governmental quarter section.

(4) That the proposed location, in the SW/4 NW/4 of said Section 12, is an off-pattern quarter-quarter section location for the first well on the proposed proration unit.

-2-

CASE No. 4474
Order No. R-4082

(5) That the subject well would be the first well to be drilled on the proposed proration unit.

(6) That the evidence indicates that the entire NW/4 of said Section 12 would be productive of oil in paying quantities from the North Vacuum-Abo Pool.

(7) That the evidence indicates that a well drilled at any standard location in the NW/4 of said Section 12 would encounter sufficient net pay to enable said well to be completed as a well capable of producing oil in paying quantities.

(8) That the applicant has failed to establish the necessity to drill the subject well at an unorthodox location.

(9) That the drilling of the subject well as proposed by the applicant is not necessary to prevent waste and may impair the correlative rights of offset operators.

(10) That the subject application should be denied.


IT IS THEREFORE ORDERED:

(1) That the subject application is hereby denied.

(2) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

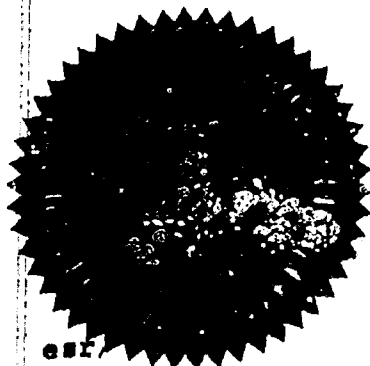
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION


DAVID F. CARGO, Chairman


ALEX J. ARMIJO, Member


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



Case 4474
Heard 12-16-70
Rec. 12-17-70

H. H. Ominis witness failed to show in my opinion that an NSL is necessary for structural reasons. Mobil's testimony & exhibits ~~are~~ were far more convincing. I have analyzed their exhibits & tried to ~~discredit~~ discredit Mobil's structure & so pack in particular & it held up. This shows Ominis should have from 17 to 22 ft of net pay in the NW/4 of sec. 16-17 S 34E. This being the case I see no reason for crowding the Mobil #134.

I recommend the application be denied.

Thos. Ominis

Urgent Order for Ominis.
EP

Docket No. 27-70

DOCKET: REGULAR HEARING - WEDNESDAY - DECEMBER 16, 1970

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

- ALLOWABLE: (1) Consideration of the oil allowable for January and February, 1971;
- (2) Consideration of the allowable production of gas for January, 1971, from fifteen prorated pools in Lea, Eddy, Roosevelt and Chaves Counties, New Mexico. Consideration of the allowable production of gas from nine prorated pools in San Juan, Rio Arriba and Sandoval Counties, New Mexico, for January, 1971. Consideration of purchaser's nominations for the six-month period beginning February 1, 1971 for that area.

THE FOLLOWING CASES WILL BE HEARD BEFORE ELVIS A. UTZ,
EXAMINER, OR DANIEL S. NITTER, ALTERNATE EXAMINER, IN
THE OIL CONSERVATION COMMISSION CONFERENCE ROOM ON THE
SECOND FLOOR OF SAID BUILDING AT 9:30 A.M.

* * * * *

CASE 4457: (Readvertised from the November 18, 1970, Examiner Hearing)

Application of Tenneco Oil Company for the creation of a new pool, assignment of discovery allowable, and promulgation of special pool rules, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new pool for the production of oil from the "D" zone of the Dakota formation for its Don Ne Pah Well No. 1 located in Unit D of Section 18, Township 17 North, Range 8 West, McKinley County, New Mexico, and for the assignment of an oil discovery allowable to said well. Applicant further seeks the promulgation of special rules for said pool, including provisions for 80-acre spacing units with wells to be drilled in either the northwest or southeast quarter-quarter sections.

CASE 4473: Application of Mobil Oil Corporation for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water in the Devonian formation in the open-hole interval from 12,226 feet to 12,541 feet in its Cosden-Oil Development Well No. 1 located in Unit C of Section 25, Township 9 South, Range 36 East, Crossroads Siluro-Devonian Pool, Lea County, New Mexico.

CASE 4474: Application of Amini Oil Corporation for an unorthodox oil well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to the rules governing the North Vacuum-Abo Pool to permit the completion of a well at an off-pattern unorthodox location 2120 feet from the North line and 520 feet from the West line of Section 12, Township 17 South, Range 34 East, Lea County, New Mexico. The S/2 NW/4 of said Section 12 to be dedicated to the well.

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SANTA FE, NEW MEXICO

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CASE 4475: Application of Texas American Oil Corporation for an exception to Order No. R-3221, as amended, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Order No. R-3221, as amended, which order prohibits the disposal of water produced in conjunction with the production of oil on the surface of the ground in Lea, Eddy, Chaves and Roosevelt Counties, New Mexico. Applicant seeks an exception to the provisions of said order for wells completed in the Sand Dunes-Atoka Gas Pool and the Sand Dunes-Cherry Canyon Pool, Eddy County, New Mexico, to permit the disposal of water produced by said wells in unlined surface pits.

CASE 4476: Application of Hanagan Petroleum Corporation for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Catclaw Draw Unit Area comprising 6,720 acres, more or less, of Federal, State, and Fee lands in Sections 13, 14, 15, 22, 23, 24, 25, 26, 27, 34, 35, and 36, Township 21 South, Range 25 East, Eddy County, New Mexico.

CASE 4472: Southeastern New Mexico nomenclature case calling for an order for the creation of certain new pools and the assignment of oil discovery allowable and the contraction and extension of certain other pools in Lea, Eddy, Chaves and Roosevelt Counties, New Mexico;

(a) Create a new pool in Roosevelt County, New Mexico, classified as an oil pool for Wolfcamp production and designated as the Todd-Wolfcamp Pool comprising the following:

TOWNSHIP 7 SOUTH, RANGE 35 EAST, NMPM
SECTION 22: NE/4 SE/4

Further, for the assignment of approximately 38,025 barrels of oil discovery allowable to the discovery well Texaco Inc.'s L.Harris Federal Well No. 1 located in Unit I of said Section 22.

(b) Create a new pool in Eddy County, New Mexico, classified as a gas pool for Bone Spring production and designated as the Black River-Bone Spring Gas Pool. The discovery well is the Pennzoil United, Inc. O'Neill Federal No. 1 located in Unit L of Section 11, Township 24 South, Range 26 East, NMPM. Said pool would comprise:

TOWNSHIP 24 SOUTH, RANGE 26 EAST, NMPM
SECTION 11: SW/4

- (c) Create a new pool in Eddy County, New Mexico, classified as an oil pool for Yeso production and designated as the Indian Basin-Yeso Pool. The discovery well is Marathon Oil Company's Indian Basin E No. 2 located in Unit K of Section 27, Township 21 South, Range 23 East, NMPM. Said pool would comprise:

TOWNSHIP 21 SOUTH, RANGE 23 EAST, NMPM
SECTION 27: NE/4 SW/4

- (d) Create a new pool in Lea County, New Mexico, classified as an oil pool for Permo Pennsylvanian production and designated as the East Morton Permo Pennsylvanian Pool. The discovery well is Samedan Oil Corporation's Gulf State No. 1 located in Unit A of Section 4, Township 15 South, Range 35 East, NMPM. Said pool would comprise:

TOWNSHIP 15 SOUTH, RANGE 35 EAST, NMPM
SECTION 4: NE/4

- (e) Contract the Square Lake Pool in Eddy County, New Mexico, by the deletion of the following described area:

TOWNSHIP 17 SOUTH, RANGE 29 EAST, NMPM
SECTION 12: SE/4 SE/4
SECTION 13: N/2

- (f) Extend the Grayburg Jackson Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 29 EAST, NMPM
SECTION 12: SE/4 SE/4
SECTION 13: N/2

- (g) Extend the Atoka-Pennsylvanian Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 26 EAST, NMPM
SECTION 19: W/2

- (h) Extend the Buffalo Valley-Pennsylvanian Gas Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 15 SOUTH, RANGE 28 EAST, NMPM
SECTION 6: W/2

- (i) Extend the South Carlsbad-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 23 SOUTH, RANGE 26 EAST, NMPM
SECTION 11: All

- (j) Extend the Chaveroo-San Andres Pool in Roosevelt County, New Mexico, to include therein:

TOWNSHIP 7 SOUTH, RANGE 32 EAST, NMPM
SECTION 23: SW/4

(k) Extend the Double L-Queen Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 14 SOUTH, RANGE 29 EAST, NMPM
SECTION 25: SW/4 SE/4

(l) Extend the South McCormack-Silurian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM
SECTION 21: NE/4

(m) Extend the South Prairie-Cisco Pool in Roosevelt County, New Mexico, to include therein:

TOWNSHIP 8 SOUTH, RANGE 36 EAST, NMPM
SECTION 20: S/2 SW/4

(n) Extend the Northwest Vacuum-Wolfcamp Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM
SECTION 8: NW/4

Mobil Oil Corporation

REGISTERED MAIL

P.O. BOX 633
MIDLAND, TEXAS 79701

November 25, 1970

Mr. K. K. Amini
400 Wall Towers West
Midland, Texas 79701

YOUR PROPOSED UNORTHODOX LOCATION
IN THE NW/4 OF SECTION 12, T-17-S
R-34-E, N. VACUUM ABO FIELD
LEA COUNTY, NEW MEXICO

Dear Mr. Amini:

It has been indicated to us in conversations that have taken place between you and our Mr. L. A. Carr on November 24 and between you and our Mr. P. W. Kelly on November 25 that you intend to drill an Abo well at an unorthodox location approximately 520' FWL and 2120' FNL of Section 12, T-17-S, R-34-E. We have further learned today from a representative of the Santa Fe office of the NMOCC that a drilling permit has been issued for such a well which will allow you to proceed drilling at your own risk pending the outcome of a hearing which has been scheduled for December 16, 1970.

Be advised that Mobil is opposed to your drilling an Abo well at the unorthodox location described. Instead, Mobil would much prefer that any Abo wells you drill on your 160 acre Bridges Lease, which comprises the NW/4 of Section 12, T-17-S, R-34-E, be located at standard locations either in the NW/4 or the SE/4 of the quarter section. Mobil favors this course for several reasons.

First, it should be pointed out that field rules have been written by the NMOCC establishing regular locations in either the NW/4 or the SE/4 of a quarter section. Mobil has drilled some 33 wells to the Abo horizon on its offsetting Bridges State Lease which conform to these field rules. An additional five Abo locations have been contracted for drilling to the Abo formation on the Bridges State Lease at regular locations during the remainder of this year.

Second, it should be stated that Mobil has found no evidence to indicate there are untoward conditions of terrain or degeneration of reservoir properties in the vicinity of your 160 acre Bridges Lease which would necessitate moving a well from a regular location. The Bridges State Well No. 34, offsetting your lease to the south, and the Pennzoil Gulf Angle State #1, offsetting your lease to the west, have approximately the same thickness of Abo pay which is indicated on the logs to be of about the same quality. The Abo completion in the Pennzoil well is the result of recompletion after a deeper horizon had been depleted and as a result this well is at a non-standard location which would be a direct west offset to one of the standard locations on your lease. The standard location remaining on the Gulf Angle State Lease offsetting your lease to the west would be in the SE/4 of the quarter section and as a result would be a direct west offset to your proposed non-standard location. The drilling of a standard well at the described

Date 12-4-70

November 25, 1970

location on the Gulf Angle State Lease in addition to the non-standard location proposed by you will result in three Abo wells being drilled within about 900' of the center of the dividing line between sections 11 and 12. This will surely result in unequal drainage patterns in the area, perhaps diminishing ultimate primary recovery from the properties.

Thirdly, it is Mobil's plan to initiate some form of fluid injection operations in the Abo horizon in the near future. It will be necessary for wells to be drilled at standard locations in order to achieve a high recovery efficiency in the fluid injection operation. At this point Mobil intends to invite representatives of each operator owning acreage within the productive limits of the North Vacuum Abo Field to a meeting in January or February, 1971 for the purpose of determining the feasibility of forming a pressure maintenance unit covering substantially the entire field. The unorthodox location that you propose would be an offset well to one that will be proposed for injection in the future and as a result will not be favorably located to recover either the primary or the fluid injection reserves.

Please consider these factors in deciding whether to proceed with the drilling of your well under the permit that has been issued. Be assured that Mobil intends to oppose the unorthodox location application scheduled for hearing December 16, along the lines as set out in this letter.

Yours very truly,



Ira B. Stitt

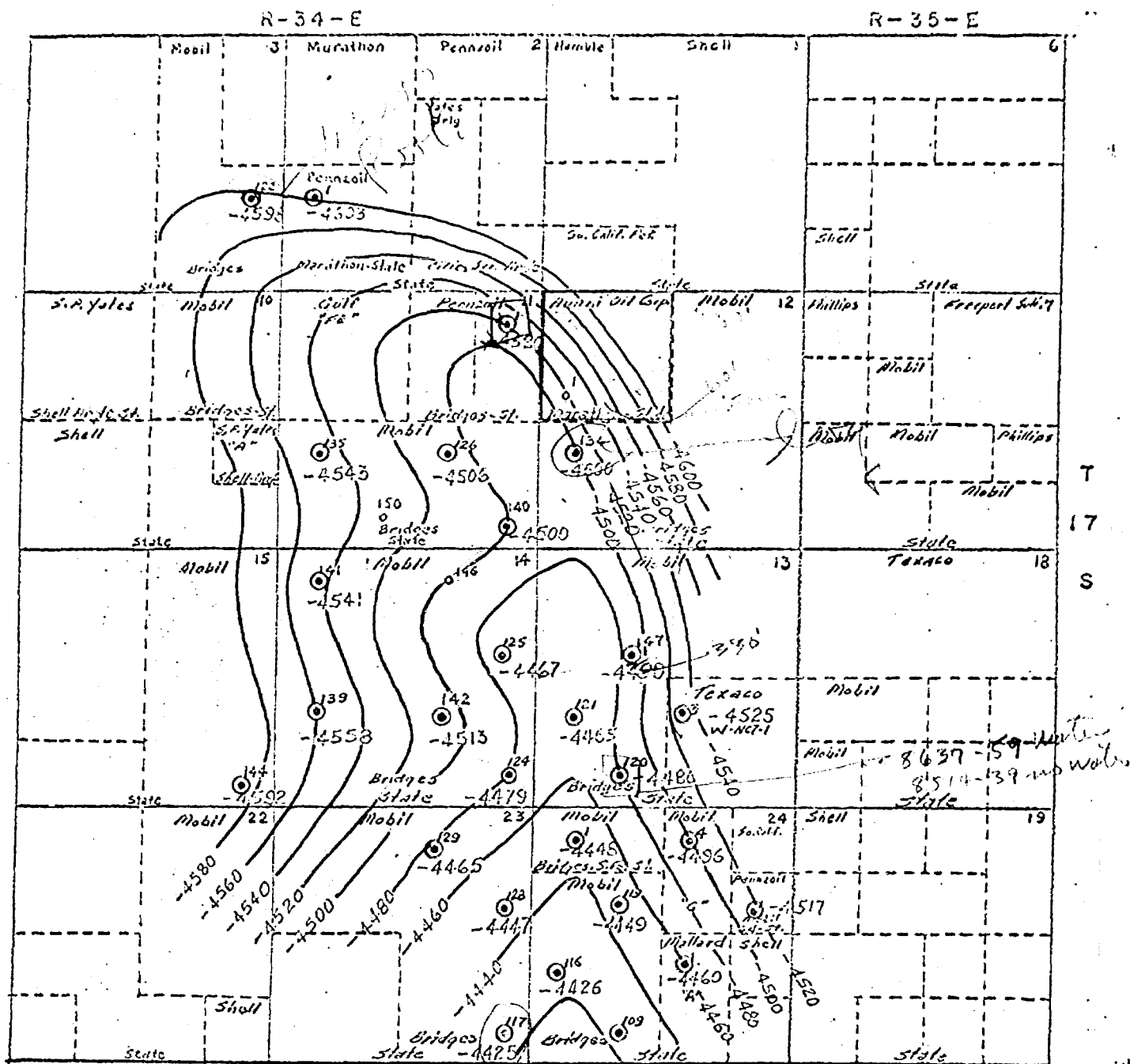
Division Operations Engineer

PWKelly/mw

cc:

Mr. Pete Porter
NMOCC - Santa Fe

Mr. James Sperling, Atty.
Box 466, Albuquerque, New Mexico



AMINI OIL CORPORATION

Contoured on Top of Abo Marker
Contour Interval - 20'

⊙ - Abo Oil Well

• - Location

BEFORE EXAMINER, UTZ

OIL CONSERVATION COMMISSION

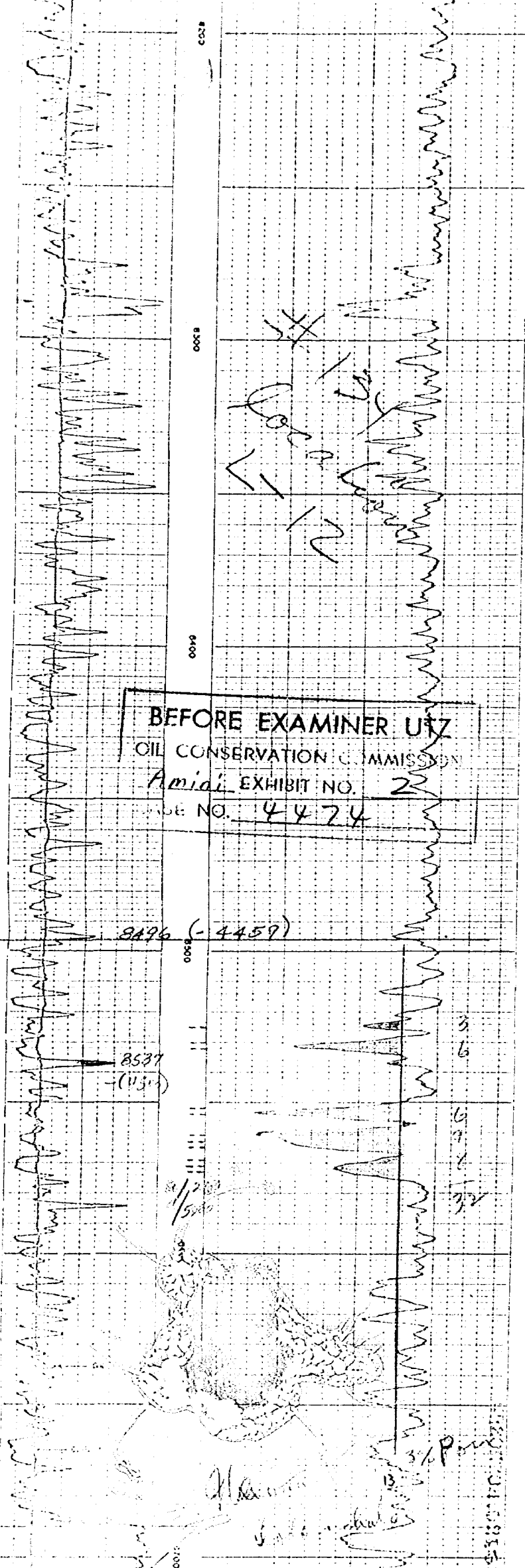
AMINI EXHIBIT NO. 1

CASE NO. 4474

NORTH VACUUM ABO FIELD

LEA COUNTY, NEW MEXICO

Scale 1" = 3000'



BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
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NO. 4474

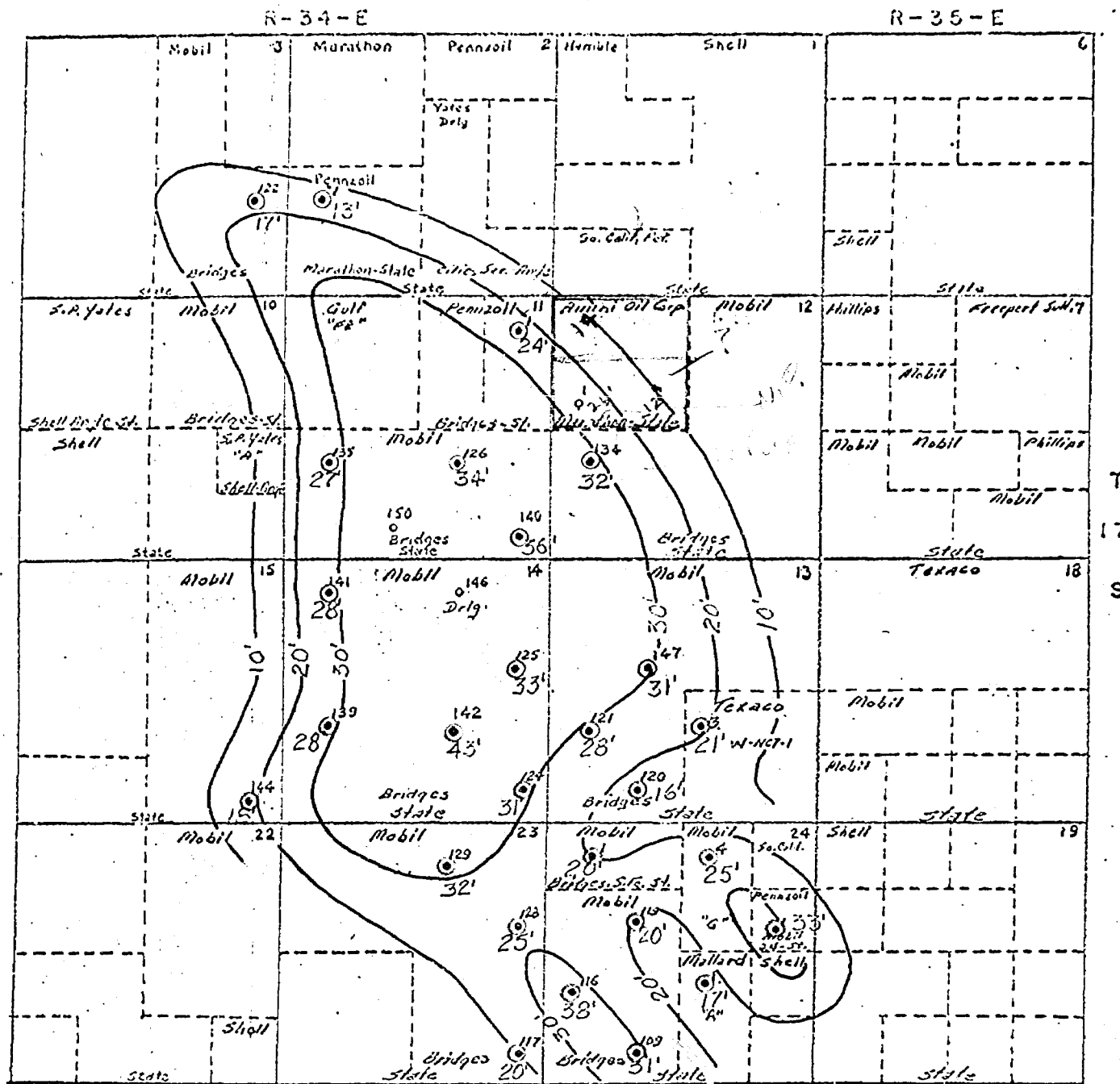
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AMINI OIL CORPORATION

Isopach Abo Net Pay
Contour Interval - 10'

BEFORE EXAMINER UTZ

© Abo Oil Well
OIL CONSERVATION COM.

Location EXHIBIT NO. 3

FILE NO. 4474

NORTH VACUUM ABO FIELD

LEA COUNTY, NEW MEXICO

Scale 1" = 3000'

MONTGOMERY, FEDERICI, ANDREWS, HANNAHS & MORRIS

J. O. SETH (1883-1963)

ATTORNEYS AND COUNSELORS AT LAW

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SUMNER G. BUELL
SETH D. MONTGOMERY

350 EAST PALACE AVENUE
SANTA FE, NEW MEXICO 87501

November 20, 1970

POST OFFICE BOX 2307
AREA CODE 505
TELEPHONE 982-3876

FRANK ANDREWS III
OWEN M. LOPEZ

Case 4474

New Mexico Oil Conservation Commission
State Land Office Building
Santa Fe, New Mexico 87501

Gentlemen:

Enclosed for filing is original and two copies of
Application of Amini Oil Corporation for an unorthodox
oil well location in the North Vacuum Abo Pool, Lea
County, New Mexico. We would appreciate your setting
this Application for hearing before an examiner on
December 16, 1970.

Very truly yours,

Richard S. Morris

RSM:lg
Enclosures

cc: Mr. M. D. Fraser (w/enclosure)
Amini Oil Corporation
400 Wall Towers West
Midland, Texas 79701

DOCKETED
Date 12-4-70

BEFORE THE NEW MEXICO OIL CONSERVATION COMMISSION

APPLICATION OF AMINI OIL CORPORATION FOR AN UNORTHODOX OIL WELL LOCATION, NORTH VACUUM ABO POOL, LEA COUNTY, NEW MEXICO.

No. 4474

A P P L I C A T I O N

Comes now Amini Oil Corporation and applies to the New Mexico Oil Conservation Commission for an order authorizing an unorthodox oil well location in the North/^{Vacuum}Abo Pool, Lea County, New Mexico, and in support of its application states:

1. Applicant is the owner and operator of the NW-1/4 of Section 12, Township 17 South, Range 34 East, Lea County, New Mexico.
2. The special rules and regulations for the North Vacuum Abo Pool, as promulgated by Orders Nos. R-2421 and R-2421-A in case No. 2739, specify 80-acre oil proration units with wells to be located within 200 feet of the center of either the NW-1/4 or the SE-1/4 of the quarter section.
3. As an exception to the location requirements of the said special rules and regulations, applicant proposes to drill its Marathon State well No. 1 at an off-pattern location 2120 feet from the north line and 520 feet from the west line in the SW-1/4 of the NW-1/4 of said Section 12, to which well the S-1/2 NW-1/4 of said Section 12 would be dedicated.
4. Applicant seeks the aforesaid exception in order to produce its just and equitable share of the oil underlying the said 80-acre proration unit and thereby protect the correlative rights of the applicant.

5. Approval of this application will not cause waste, and approval is necessary in order to protect the correlative rights of the applicant.

WHEREFORE, applicant requests that this application be set for hearing before the Commission or one of its examiners on December 16, 1970, and that the Commission enter its order approving this application.

MONTGOMERY, FEDERICI, ANDREWS,
HANNAHS & MORRIS

By: 

Post Office Box 2307
Santa Fe, New Mexico 87501
Attorneys for Amini Oil
Corporation

DRAFT

GMH/esr

December 17, 1970

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. 4474

Order No. R-4082

APPLICATION OF AMINI OIL CORPORATION
FOR AN UNORTHODOX OIL WELL LOCATION,
LEA COUNTY, NEW MEXICO.

[Handwritten signature]
12-18-70

ORDER OF THE COMMISSION

BY THE COMMISSION:

9:30

This cause came on for hearing at 9 a.m. on December 16, 1970,
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this _____ day of December, 1970, the Commission, a
quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, 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, Amini Oil Corporation, seeks
authority to drill a well at an unorthodox oil well location
2120 feet from the North line and 520 feet from the West line
of Section 12, Township 17 South, Range 34 East, NMPM, North
Vacuum-Abo Pool, Lea County, New Mexico, with the S/2 ^{NW/4} of said
Section 12 to be dedicated to the well.

(3) That the Special Rules and Regulations governing the
North Vacuum-Abo Pool provide that the first well drilled on
every standard or non-standard unit in said pool shall be
located within 200 feet of the center of either the NW/4 or the
SE/4 of a governmental quarter section.

(4) That the proposed location, in the SW/4 NW/4 of said Section 12, is an off-pattern quarter-quarter section location for the first well on the proposed proration unit.

(5) That the subject well would be the first well to be drilled on the proposed proration unit.

(6) That the evidence indicates that the entire NW/4 of said Section 12 ~~may reasonably be presumed to~~ ^{should would} be productive of oil in paying quantities from the North Vacuum-Abo Pool.

(7) That the evidence indicates that a well drilled at any standard location in the NW/4 of said Section 12 ~~would~~ ^{would should} encounter sufficient net pay to enable ~~the applicant to~~ ^{said well to be completed} ~~complete a~~ ^{as a} well capable of producing oil in paying quantities.

(8) That the applicant has failed to establish the necessity to drill the subject well at an unorthodox location.

(9) That the drilling of the subject well as proposed by the applicant is not necessary to prevent waste and may impair the correlative rights of offset operators.

(10) That the subject application should be denied.

IT IS THEREFORE ORDERED:

(1) That the subject application is hereby denied.

(2) 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.