BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
CONFERENCE ROOM, STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO
October 3, 1973

EXAMINER HEARING

IN THE MATTER OF:

Application of Amoco Production Company for a unit agreement, Eddy County, New Mexico.

Case No. 5070

BEFORE: RICHARD L. STAMETS,
Examiner.

TRANSCRIPT OF HEARING

MR. STAMETS: Call next case 5070.

MR. DERRYBERRY: Case 5070, Application of Amoco Production Company for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Bubbling Spring Unit Area comprising 3078 acres, more or less, of Federal and Fee lands in Township 20 South, Range 26 East, Eddy County, New Mexico.

MR. STAMETS: Call for appearances in this case.

MR. BUELL: For Amoco Production Company, Guy Buell; and we have two witnesses, Mr. Examiner.

MR. STAMETS: Are there any other appearances in this case? If the witnesses will stand and be sworn.

MR. BUELL: Mr. Examiner, some of our geological exhibits are quite large, and I think it would be better to put them on the wall so you and your counselor can both see them. Our first witness is Mr. Anderson.

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JACK ANDERSON,

was called as a witness, and after being duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. BUELL:

Q Mr. Anderson, would you state your complete name, by whom you are employed and in what capacity and in what location, please, sir?

A My name is Jack D. Anderson, employed by Amoco Production Company in Houston, Texas, as a Land Man.

Q All right, sir. And in your capacity with Amoco, have you participated in the negotiations that have resulted in the formation of the Bubbling Spring Unit?

A Yes, sir.

Q All right, sir. In connection with your testimony, would you direct your attention first to what has been identified as Amoco's Exhibit 1 and please explain that Exhibit for the record?

A This is an Exhibit which is attached to the Unit Agreement which outlines the acreage to be placed within the Bubbling Spring Unit. On our Exhibit, you will notice that a portion of the acreage is covered in green which represents the fee acreage located within the unit boundary. The balance of the acreage is Federal acreage.

Q No State acreage in this particular unit?

A That's correct.

Q How many acres are in this unit?

A 3,078.12 acres.

Q Would you describe the area of the unit for the record, please?

A All of the acreage is located in Township 20 South, Range 26 East. It's the south half of Section 23, all of Section 22, the east half of Section 21, the east half of Section 28, the north half of Section 27, and also the north half of the south half of Section 27, the east half of Section 26, the northwest quarter of Section 26, the north half of the southwest quarter of Section 26, the southeast quarter of the

southwest quarter of Section 26. In Section 35, it's the east half and the east half of the west half.

Q All right. Now, Mr. Anderson, this appears to be a rather irregular shaped unit. Will the reason for that be covered in our geological testimony?

A Yes. I might briefly just state that this particular area was in a unit prior to this. It was the Adams Bend Unit which Amoco Production formed. We drilled a well in the north half of Section 23, and it was dry. Then Gulf Oil formed a unit which they called a Springs Unit encompassing the same acreage.

The reason for the irregular description is that the south part of the section or the south part of this area is in the Spring Unit participating area. The balance of the acreage has been eliminated from the Spring Unit. That's why it's so irregular.

Q So the odd shape in the northeast corner is due to a dry hole drilled in that acreage?

A Yes.

Q And the odd shape on the southwest portion is due to a parking area that you explained?

A Yes.

Q Who are the working interest owners in this area?

A Amoco, Phillips, Gulf, Cities Service, and Tosorro.

Q What is the status of Sign-up or Commitment to the unit with regard to the working interest owners?

A We have received Tosorro's commitment, actually an executed

instrument. The other working interest owners have been contacted several times and have all agreed to the formation of this unit. The papers are in their offices now being executed. We have had no turn-downs on it.

Q So you would anticipate that in very short order we will have all the working interest owners committed?

A Yes, sir.

Q Is there any particular time contingency we are concerned with in this particular unit, Mr. Anderson?

A Yes. When the acreage was eliminated or the Springs Unit, I should say, was contracted, this acreage was eliminated and has an expiration date of January 1, 1974. That's the majority of the acreage in our outline.

The acreage in the unit has been extended beyond the primary term as a result of having been in a producing unit. So our understanding is that these Federal leases are now completion-type leases and that we will have to have production established prior to January 1, 1974. For this reason, we feel we must start work by November 1 of this year.

Q In other words, just commencing operations will not keep the operation together? We have got to drill and complete a well capable of production by January 1, 1974?

A Yes, sir.

Q Let's talk about the royalty owners for a minute. Of course, we have the Federal Government as a royalty owner. What is the

status of the Federal Government with regard to this unit?

A We have requested preliminary approval. It's been processed through the USGS office in Roswell to their Denver office. We were in contact with them this morning by phone and advised that they have designated this as a logical area and put the correspondence in the mail October 1. We have not received it, but it's in the mail.

Q Is that what you Land Men sometimes refer to as preliminary approval?

A Yes, sir.

Q All right, sir. What about the royalty owners under the fee tract? What is their status with regard to sign-up?

A We have had, let's see, there were four royalty owners under the fee tracts. We have received a ratification from one of those parties. The other three, we have not heard from.

Q But none of them have refused to execute the Unit Agreement?

A That's correct.

Q All right, sir. Are there any overriding royalty owners under any of this acreage?

A Yes. There are 20 overriding royalty owners.

Q State for the record what the status of that interest commitment is.

A We have received ratifications from ten of them. It would be 50 percent, and we have received no rejections.

Q Would you also anticipate based on your past experience with

exploratory units in this area that you stand a good chance of getting commitments from the remainder of the overriding royalty interest owners?

A Yes. Looking back on the other unit that we formed, I believe that all of them executed. If not, it was a very, very small percent that did not.

Q All right, sir. Have you indicated on your Exhibit 1 the approximate location of the initial test well for this unit?

A Yes, sir.

Q How have you located that, with that red arrow?

A Yes.

Q Would you give the feetage location of that?

A 1980 feet from the north and west lines of Section 26, Township 20 South, Range 26 East.

Q All right, sir. Would you turn your attention now, Mr. Anderson, to what has been identified as Amoco's Exhibit 2? What is that exhibit?

A This is the Unit Agreement prepared in accordance with the 1968 reprint. It's a form suggested by the Federal Government to be used in the forming of exploratory units.

Q So I guess you could refer to that almost as a standard Federal form?

A Yes, sir.

Q Have there been any changes in this agreement since we mailed the Oil Commission a copy some several weeks ago?

A No, sir. I don't believe there has been any changes.

Q All right, sir. Do you have anything else you'd care to add in connection with your phase of this hearing, Mr. Anderson?

A No, sir.

MR. BUELL: That is all we have by way of direct examination of Mr. Anderson at this time, Mr. Examiner.

CROSS-EXAMINATION

BY MR. STAMETS:

Q Mr. Anderson, these questions may not be properly directed to you, and if not, I'd be happy to ask your next witness. Do you know what acreage will be dedicated to the proposed well?

A I believe with the location that's spotted, I don't think that we have made the decision; but I would think it would be the north half of Section 26.

Q Are you aware that there could be acreage dedication problems if you would attempt to dedicate less than 320 acres to a well to be drilled to the Pennsylvanian? For instance, in the southwest quarter of Section 26 and the southwest half of 27.

A Yes, sir. We do.

Q This might take a communitization with non-unit acreage?

A Yes, sir. That acreage, of course, is in the Springs Unit. That's what we are referring to.

MR. STAMETS: All right, fine. That's all the questions I have of this witness.

MR. BUELL: All right, sir. We'd like to call next Mr. Gaizutis, G-a-i-z-u-t-i-s. Did I get it right?

THE WITNESS: Yes, sir.

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K. J. GAIZUTIS,

was called as a witness, and after being duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. BUELL:

Q Would you state your complete name for the record, please, by whom you are employed and in what capacity and in what location?

A My name is K. J. Gaizutis. I'm a geologist with Amoco Production Company in Houston, Texas; and I've been with them for five and a half years.

Q Mr. Gaizutis, your qualifications as a geologist are a matter of public record in that you have testified before this Commission before?

A Yes.

Q But you might briefly just state the depth of your experience in this particular area of Southeast New Mexico.

A I've been involved in this particular area for approximately two years and was involved in the sandstone place in the Gulf zone prior to that.

Q All right, sir. Now, with regard to your testimony let me direct

your attention first to what has been identified as Amoco's Exhibit 3. What is that exhibit, Mr. Gaizutis?

A That is a structure map on top of the middle Morrow or the upper clastic sand. It is also an isopachous map constructed and colored in orange that has overlaid the structure map. The isopach refers to the middle Morrow horizon which we will refer to in the Sections.

Our designation is based on delineating the Morrow into three sections, the upper section being primarily a carbonate and the two lower zones being primarily clastic. This is what would be considered the uppermost clastic section in the Morrow.

Q So we can orient the Examiner, are there any producing pools shown on the area that you have included in your Exhibit 3?

A Yes. Let me just briefly state that this is approximately northwest of the City of Carlsbad for reference. To the south, we have Catclaw Draw and Golden Eagle, I believe. I don't know if they have been shown. Since the two fields have merged, I don't know for sure what the designation of the over-all pool is now.

I refer to it as Catclaw Draw. To the north and west of our proposed unit, we have McMillan Morrow; and immediately to the south of our unit is the Springs Unit wells out of the Cisco Canyon.

Q All right, sir. Have you designated our proposed unit area on Exhibit 3?

A The outline of the area is placed with flourescent tape, the orange

flourescent tape.

Q All right, sir. Mr. Anderson previously touched on this in his testimony, but I wish you would emphasize again the reason for the shape of this unit.

A Well, to the immediate east of our proposed unit we have two dry holes that penetrated the Morrow section, the Skelly well in Section 25 of 20, 26, and the Richfield McMillan well in Section 36.

Q All right, sir. Why do we have the little notch on the northeast corner?

A We have the Pan American Adams Bend dry hole.

Q All right, sir. Can we see on this Exhibit the outline of the older unit that Mr. Anderson referred to?

A Yes, sir. The older unit is, well, I guess it's a stamped outline.

Q In blue?

A In blue, yes.

Q Of course, where your original tape overlays that, that portion also was in the original old unit?

A Right, and cannot be seen because it's under the tape.

Q All right, sir. Do you have any other remarks you'd like to make about Exhibit 3 before we move on to your cross-section?

A Well, let me just briefly touch on the geologic importance of this. For one, the structural map, the contour lines are 100-foot intervals in blue and indicate a structural nose coming approximately through our area of interest and extending down into the Catclaw

Draw field to the south.

I have isopached the middle Morrow clastic section and have shown it as a type example of what we are expecting in the area. We show an isopach central contour line going from 70 to 40 feet. However, I want to make note that the Skelly well in Section 25 had 130 feet of Morrow sand.

Immediately to the north, the Pan American well, the Adams Bend, had 35 feet. This is to highlight the stratigraphic variation in the area, and this is what we will be referring to as the pinch-out that we hope to catch production along here. I think we can refer to the Section AB which I believe is Exhibit--

Q I believe that's Exhibit 4.

A 4. The AB cross-section is a stratigraphic section which is hung on the top of the Morrow sand, the same horizon that is used for mapping, for structural configuration of the area.

In it, we can see that the Middle Morrow Section which is delineated by lettering, as well as the orange coloration, changes dramatically from a very thick massive sand. Sample logs describe it as a conglomeratic very coarse sand zone to a very thin-type sand at the Adams Bend.

We are going a distance of about a mile. We have approximately three little zones of ten feet, ten feet and five feet in this middle section. So there is an abrupt change between the Skelly No. D and the Pan American Adams Bend. At the same time, let me point out the structural values that are indicated

immediately under the line connecting the top of the Middle Morrow.

The Adams Bend is at minus 6736, and the Skelly well is at 6903, since we have around 200 feet of structural advantage in the updip pinch-out position we were interpreting as a pinch-out. The other objective in the Morrow which we have not highlighted on our Exhibit map that showed the structure and the isopachous is also depicted in this cross-section.

The Skelly well did not penetrate the basin sand or what we call our lower Morrow sand, but it was penetrated in the Kelly Lake McMillan well. In it, we had a good 80 feet of section, also, apparently quite coarse-grained from sample descriptions.

It was not encountered in the Skelly well, but in our well, the Adams Bend well, it was also very thin and about 10 feet of sand. Both of the, or I should say, that zone and a small zone above it were wire-line tested in 1958 and recovered a slight amount of gas and a slight amount of water. We feel now that the water that it recovered was not formation water and that the Skelly well that was drilled in 1970 has in fact pointed out the stratigraphic implications in the area.

Our feeling is that this should therefore be a productive area and possibly continue the McMillan and Morrow projection which is also out of the middle sand which is delineated on the first Exhibit with the orange coloration, should connect that on production in Catclaw Draw that occurs in the middle Morrow sand.

In addition, we have the basin sand or lower Morrow sand conjective also present. I have not isopached it because of its random character in this area. The middle Morrow tends to have some continuity and some implicit trendology to it. This is a net clean sand that we are referring to.

Q Let me ask you this, Mr. Gaizutis. I'm referring now to the Skelly well on the middle log on the cross-section. Why in your opinion was this well not productive when it does have such a massive sand interval?

A Well, it encountered quite a bit of water on DST's. On the upper DST that tested 10,225 to 300, it recovered 240 feet of gas-cut mud plus on the lower, I'm sorry, on the lower one it recovered 2,000 feet of salt water.

So we feel that even though the lower one recovered salt water, the producing pressures are quite high. 3967 pounds, that is quite a good reservoir. We are looking at shows of gas wet in this well as well as in the McMillan well where it recovered 1700 feet of heavily oil-cut mud and 3500 feet of salt water.

We are looking at downdip wells that are wet with a show of gas and an updip well that is tight and obviously does not have the porosity that was required to make a producer. Our location is a projection along this section at a position where we feel we will catch a productive porous interval.

Q In other words, you think you will have porosity and also be high enough to be above the water that the Skelly well we have been

discussing encountered?

A Yes.

Q All right, sir. Do you have any other comments on Exhibit 4 before we pass on to Exhibit 5?

A No, sir.

Q All right, sir. Would you briefly describe what has been identified as Amoco's Exhibit 5?

A Exhibit 5 is a cross-section A-A' which is spotted on the Exhibit 3 Structure Map, and has been identified as A-A' and shown by red lines. The purpose of this cross-section is to show again our Adams Bend well that was tight which is on this cross-section to the extreme left-hand side and to show the production in McMillan field.

The production in McMillan field as you can see is out of a thicker sequence of sand as we have seen in the Skelly well and completed in the Cities Service CJ #1 for five million and completed in the Sohio 1-19 for 33.2 million.

Again, let me point out on this cross-section the structural values that are indicated on top of the middle Morrow sand section, here again implying to us that we have around 200 feet of structural advantage as we go from the Cities Service well to the east to the Adams Bend well to the west that is just north of our unit.

So that wells to the south and to the east, we are dropping off structurally some 200 feet. In this case, we are dropping off

to production. To the south, we are dropping off to water, so that we feel part of the answers here, of course, are stratigraphic variability; but it may also be lack of adequate testing in the Skelly well; but we feel that in any event we are going updip to production to the north and east and updip to a wet test to the southeast.

Q All right, sir. Do you have any other comments on Exhibit 5?

A No, that's about it.

Q All right, sir. Let's put Exhibit 6 up on the wall and I'll ask you to very briefly comment on it since it more or less is a cumulative of the work you have shown.

A Exhibit 6 is a cross-section C-C' and it's included for completeness in the area showing the southern boundaries, showing the Morrow control to the south of our proposed interest. As you can see, none of the wells in the Springs Unit drill deep enough to encounter the Morrow section. So our control lies, I'm sorry, one well did drill deep enough.

Most of the control is outside of the Springs Unit on the south. The reason to show this is that our control to the west of the Unit is the Humble Willow Draw well that tested a small zone and recovered 470 mcf of gas and was not tested further. Apparently from our log calculations, it was tight.

This has so served as a reference to the west why we have excluded the acreage in this direction from our unit and to show the reasoning for the isopach variability, too, in that direction.

Q In your opinion, are the prospects good for middle Morrow or lower Morrow production within our proposed Bubbling Springs Unit?

A Yes, I believe they are excellent.

Q Do you have anything else you would care to add at this time?

A No. I think that we are looking at an area between two fields that in the past have developed, enlarged the Catclaw Draw field in the south and in the last two years extended to where it's connected to individual producing wells; and I think we will see the same thing happen to the north.

I think it's imperative that we do have a well drilled in there to test this hypothesis and to adequately provide reserves in the area.

MR. BUELL: May it please the Examiner, that concludes our direct presentation. I would like to formally offer Amoco's Exhibits 1 through 6.

MR. STAMETS: Without objection, these exhibits will be admitted into evidence. Are there questions of the witness?

CROSS-EXAMINATION

BY MR. STAMETS:

Q Mr. Gaizutis, looking at your Exhibit 3 here, it would appear that the unit is designed to take into account both the structure and stratigraphy to try and take into the unit everything that would be reasonably productive of gas from the middle Morrow here?

A Yes.

MR. STAMETS: Are there any other questions of this witness? He may be excused. Is there anything further?

MR. BUELL: No, sir, Mr. Examiner.

MR. STAMETS: Are there any other appearances in this case? The case will be taken under advisement. We will take about ten minutes for coffee or fifteen maybe.

(Whereupon, the hearing was recessed for fifteen minutes.)

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CERTIFICATE

I, JANET RUSSELL, a Court Reporter, in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me; and that the same is a true and correct record of the said proceedings to the best of my knowledge, skill and ability.

Janet Russell
COURT REPORTER

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I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 5276 heard by me on October 3, 1973.

Richard L. Stamets, Examiner
New Mexico Oil Conservation Commission