

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
November 14, 1957

TRANSCRIPT OF HEARING
CASE NO. 1325

DEARNLEY - MEIER & ASSOCIATES
INCORPORATED
GENERAL LAW REPORTERS
ALBUQUERQUE, NEW MEXICO
3-6691 5-9546

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
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IN THE MATTER OF:)

Application of Amerada Petroleum)
Corporation for an order amending)
Order R-991 insofar as said order)
pertains to the Bagley-Upper)
Pennsylvanian Gas Pool in Lea)
County, New Mexico, to extend the)
horizontal limits of said pool,)
and to provide for standard)
drilling units of 320 acres.)

CASE NO.
1325

BEFORE:

Honorable Edwin L. Mechem
Mr. Murray Morgan
Mr. A. L. Porter

TRANSCRIPT OF HEARING

MR. PORTER: The next case on the docket will be
Case 1325.

MR. COOLEY: Case 1325. Application of Amerada
Petroleum Corporation for an order amending Order R-991 insofar as
said pool pertains to the Bagley-Upper Pennsylvanian Gas Pool in
Lea County, New Mexico, to extend the horizontal limits of said
pool, and to provide for standard drilling units of 320 acres.

MR. BUSHNELL: H. D. Bushnell, if the Commission please,
attorney with Amerada, also appearing J. C. Kellahin in Santa Fe.

This is a continued case and I would like to call back to the stand the Amerada witness who has been previously sworn in, Mr. McBryde.

O. C. McBRyDE

having been previously duly sworn, recalled as a witness, testified further as follows:

DIRECT EXAMINATION
(Continued)

BY MR. BUSHNELL:

Q You will recall that during the course of this hearing last month Mr. Utz had asked that we present testimony of the proposed acreage or the acreage that we propose to allocate to the wells now completed or that are being drilled in this pool. I have a plat here I would like to ask that it be marked as Amerada's Exhibit No. 5.

(Marked Amerada's Exhibit No. 5 for identification.)

Q And ask Mr. McBryde to state what this exhibit purports to show and also what the red lines on this exhibit represent?

A Exhibit No. 5 is a map of the Bagley field. The red lines on there outline the acreage that we would propose to dedicate to the three gas wells that we now have in the pool or drilling to this gas zone.

Q Would you describe that acreage with reference to each well for the benefit of the record?

A The acreage in Section 34 which we propose to dedicate to our State B.T.O. No. 1, that well incidentally is now drilling, we would propose to dedicate the entire south half of Section 34 to that well. The acreage in Section 3, Township 12 South, Range 33 East, that we propose to dedicate to Caudle No. 7 would be the entire north half of Section 3. The acreage that we would propose to dedicate to our Mathers No. 2 would be the southeast quarter of Section 3, Township 12 South, and the northeast quarter of Section 10, Township 12 South.

Q Now, the acreage in the 160 acres in the northeast quarter of Section 10 is not now within the defined limits of the pool as supported by exhibits in this cause, is that correct?

A That is right.

Q What recommendations do you make with reference to the Mathers B1 well located in the northwest quarter of Section 33?

A We would prefer to select the acreage on the Mathers B1 at such time as it becomes a gas well.

Q That well is now currently producing as a oil well, is that correct?

A That is right.

MR. BUSHNELL: That's all the questions I have of this witness at this time. I would like to offer this as Amerada's Exhibit No. 5.

MR. PORTER: Without objection it will be admitted.

MR. COOLEY: May we go off the record a moment?

MR. PORTER: Off the record.

MR. COOLEY: Back on the record.

MR. COOLEY: I have a question.

BY MR. COOLEY:

Q Mr. McBryde, why is it that the Mathers 2 well in the south half of Section 3, Township 12 South, Range 33 East has a unit dedicated to it crossing the section line rather than comprising the south half of Section 10?

A We have more information on the 160 acres there in Section 10 indicating that it would be productive of gas than we do on the southwest quarter of Section 3.

Q You feel there might be a possibility of dedicating unproductive acreage if the southwest quarter of Section 3 were dedicated to the well?

A At the present time we don't have any information indicating that, all of that is productive in Section 3.

MR. COOLEY: That's all the questions I have.

MR. PORTER: Anyone else have a question of Mr.

McBryde? Mr. Nutter?

BY MR. NUTTER:

Q Mr. McBryde, what evidence do you have the northeast quarter of Section 10 is productive of gas from the Upper Pennsylvanian formation?

A We have a drill stem test on the Caudle No. 3 which showed that the acreage under that well was very definitely productive. We had a real successful drill stem test there. And Caudle No. 1 has some fifteen feet of pay as indicated by a log so we are assuming that it would also be productive.

Q Was the drill stem test taken in the No. 1?

A No, sir.

MR. NUTTER: That's all.

MR. PORTER: Any further questions of the witness?

MR. BUSHNELL: I would like to redirect one question if I may?

BY MR. BUSHNELL:

Q The 160 acres in the southwest quarter of Section 3, Mr. McBryde, is under lain by the structure, is that correct?

A That is right.

MR. BUSHNELL: That's all I have.

MR. PORTER: If no further questions, the witness may be excused.

(Witness excused.)

MR. BUSHNELL: I have one other witness who must be sworn in.

MR. COOLEY: Will there be any more witnesses in this case?

MR. CAMPBELL: Mr. Yuronka.

(Witnesses sworn)

R. S. CHRISTIE

having been first duly sworn, testifies as follows:

DIRECT EXAMINATION

BY MR. BUSHNELL:

Q Would you state your name and the company for which you are employed?

A R. S. Christie, Amerada Petroleum Corporation.

Q In what capacity?

A Petroleum engineer.

Q You have testified before this Commission in prior hearings, is that correct?

A Yes, I have.

Q Mr. Christie, at the prior hearing the Commission asked that this cause be continued for the purpose of Amerada presenting testimony as the basis for classifying wells in the Bagley-Upper Pennsylvanian Gas Pool. Have you made a study of that problem?

A Yes, we have.

Q What recommendation do you make?

A After considerable thought on the matter we have come to the conclusion that it would be better to decide what oil well should be classified as a gas well, at that time when it does actually becomes one. Any value that we would place on gravities or gas-oil ratios would be certainly at this time arbitrary. We,

as an operator, wouldn't expect to come before the Commission and ask that an oil well be classified as a gas well, and I'm sure that the Commission wouldn't want to reclassify it without proper evidence. We think that the time for the proper evidence is when that condition actually occurs. We would prefer to not try to define a gas well or oil well in this reservoir until such time as we have better evidence.

Q Mr. Christie, in the event any recommendation had to be made what figure would you use?

A Well, if the Commission feels it's necessary to have some kind of a definition and this, of course, would be arbitrary, we would recommend that any well completed in the Upper Pennsylvanian Gas Pool and this would be limited strictly of course to this reservoir or this field which produces liquid hydro-carbons having a gravity of less than 55 degrees API corrected to 60 degrees should be classified as an oil well. While this is somewhat arbitrary we have some, actually some basis for it. As we have testified previously the gravity on our Mathers No. 2 when first completed was approximately 46 degrees and it is now as we have testified to become approximately 67 degrees and is for all practical purposes a water white liquid. So this is more or less an arbitrary figure in between where we thought that the transition might take place somewhere between 46 and 67. That doesn't mean that our Mathers B1 is going to react like our Mathers 2 but if

the Commission feels they have to have something why that is what we would offer.

MR. BUSHNELL: I have no further question of the witness at this time.

MR. PORTER: Is this Mathers B2, Mr. Christie, completed in the Upper Bagley Pennsylvanian Oil zone as presently defined?

A Mathers B1.

MR. PORTER: I mean the Mathers B2, I am sorry.

A The Mathers B2, yes, it is.

BY MR. NUTTER:

Q Your sole criteria to classify a well, Mr. Christie, would be the gravity of the liquid product?

A In this case, yes, sir.

Q There would be no thought given to the gas-oil ratio?

A No, sir. The gas-oil ratio on our Mathers 2 apparently never did get much above 22,000 but that's no indication that the gas-oil ratio having been one might not go considerably higher or might change to a distillate well at a lower figure.

Q The gas-oil ratio went to 22,000 but the gravity went to 67?

A Yes.

Q So you feel it is a gas well?

A Yes, sir.

MR. NUTTER: Thank you.

MR. PORTER: Anyone else have a question? The witness may be excused.

(Witness excused.)

MR. BUSHNELL: That completes the presentation of our testimony in this case.

MR. PORTER: Thank you, Mr. Bushnell. Mr. Campbell?

MR. CAMPBELL: I would like to call Mr. Yuronka as a witness for Texas Pacific Coal & Oil.

JOHN YURONKA

having been first duly sworn, testifies as follows:

DIRECT EXAMINATION

BY MR. CAMPBELL:

Q Would you state your name, please?

A John Yuronka.

Q Where do you live, Mr. Yuronka?

A Midland, Texas.

Q By whom are you employed?

A Texas Pacific Coal and Oil Company.

Q What capacity?

A Petroleum engineer.

Q Have you testified previously before this Commission in your professional capacity?

A I have.

Q Mr. Yuronka, you testified, did you not, in case, I

believe it's 1220, the original hearing and application before this Commission relative to this particular pool?

A Yes, I did.

MR. CAMPBELL: I would like to ask, if the Commission please, that Mr. Yuronka's testimony and the exhibits offered by him in Case 1220 be made a part of the record in this case in view of the fact he is going to bring them down to date with some additional data for the Commission in this hearing. If there is no objection I would like to ask that that be done?

MR. PORTER: Is there objection to the introduction of this information as a part of this record?

MR. BUSHNELL: We have no objection.

MR. PORTER: It will be so ordered.

Q Mr. Yuronka, since you testified in the previous case have you had occasion to again examine the situation in the pool under consideration here?

A Yes, I have.

MR. CAMPBELL: Would you mark this as Exhibit 1?

(Marked Texas-Pacific Exhibit 1 for identification.)

Q I have handed you what has been identified as Texas Pacific Coal & Oil Company Exhibit 1, will you state what that is, please?

A Exhibit 1 is a structure map on top of the top of 9600 foot zone.

Q What additional information did you have available for the preparation of this that you did not have at the time that you prepared the previous contour?

A Well, since that time Mathers B 1 has been completed, in addition in Section 32, Township 11 South, Range 33 East, Moss State well was drilled a few years ago and it was a dry hole and the zone, this 8600 foot zone, in the Bagley-Pennsylvanian was penetrated by this well and an attempt was made to include this in the contour map. I would like to point out that there was some dashed lines on these contours and it is more or less an extension and it is a rough estimate, merely a rough estimate as to what the structure is for the 8600 pool including that Moss State Well No. 1.

Q Is the reason for that that you did not have enough data available to make a more complete and accurate contour?

A That is correct.

Q Is this contour that you have prepared different in any substantial respect by that offered by the applicant, Amerada, in this case?

A There is a slight difference in interpretation, but it isn't in a major way whatsoever.

MR. CAMPBELL: Will you mark that as Exhibit 2, please?

(Marked as Texas-Pacific's Exhibit 2 for identification.)

Q Mr. Yuronka, I have handed you what has been identified as Exhibit 2, will you state what that is, please?

A Exhibit 2 is an isopach of the net porosity in the 8600 foot zone. It includes, as will be noted in this isopach there are also dashed lines in it to include a small State Well and it also includes the Mathers B 1 that was completed earlier this year.

Q What do those dash lines indicate, that you were speculating on that or you didn't have sufficient information to do it, to do it with more certainty?

A Well, the Moss State well, all they ran on the well was an electric log. From what we gather from the electric log there was approximately three foot of porosity. In addition a drill stem test was run in that zone with the following result: The drill stem test from 8640 to 8758 was open one and one half hours, it recovered 748 feet of slight salty mud with a slight show of gas.

Q Mr. Yuronka, based upon the information that you had available at the prior hearing and upon the additional information that you have available now, do you feel there is sufficient information available from this reservoir to justify a departure from the statewide spacing at this time?

A No, I do not.

Q Do you have any opinion with regard to whether or not an attempt should be made at this time to define a gas well?

A The information from this reservoir is very meager.

We have had Mathers No. 2 producing for six years and Caudle No. 7 was dually completed in the latter part of last year, and we have just in the last month had a dual completion on our well plus the Mathers B 1 that was completed by Amerada early this year. Those four wells, I don't believe, have enough data in them to indicate what type of a reservoir you have. In order to determine the type of reservoir I believe it is absolutely essential to obtain some sort of a sample of the fluid, a bottom hole sample previously from a well recently completed whereby you have a fairly stabilized condition in the reservoir. If bottom hole sample is taken and analyzed and various tests made of it I think you can determine the type of reservoir you have with the data that is available. It would seem to me that any statement in regard to gas-oil ratio or gravity or what type of reservoir is purely theory and nothing else but.

Q Do you have anything further you wish to state to the Commission in connection with this application?

A No, I do not.

MR. CAMPBELL: I believe that's all.

MR. PORTER: Anyone have a question of Mr. Yuronka?

MR. CHRISTIE: I would like to ask one or two questions,
R. S. Christie with Amerada.

BY MR. CHRISTIE:

Q What was your zero net porosity based on in your Shell

State A No. 1 well?

A Well, we, of course, had the electric log and we were able to pick out the zone that has been designated as the gas interval, however, in going to microlog and any additional logs that were run on the well, we could in no way find any porosity on Shell State No. 1, in addition during the drilling of the well there was no drill stem test taken on the zone which would indicate that whoever was sitting on the well didn't think it had enough porosity or anything to take a D.S.D.

Q Wasn't there actually a drill stem test taken just below this interval?

A I believe there was further on down, yes, sir.

Q Just how far down?

A Well, I don't have, wait a moment. There was a D.S.D. taken from 8971 to 9126 and the test is as follows: Open three hours, gas in twenty minutes 288MCF per day and recovered 1365 feet of gas cut mud.

Q That would be below the 8600 foot zone?

A Yes, it would.

Q I would like to ask you if different experts on micrologs might interpret them slightly different in a lot of occasions?

A This interpretation was done for me by a Schlumberger man.

Q I might point out that our experts picked out about

fourteen feet in that Shell well and I might ask you do you think it might be more logical to have fourteen feet offsetting eighteen feet than to have zero?

A Well, Mr. Christie, from my isopach you have a very erratic net porosity situation in the pool. Actually what it amounts to every well is more or less a wildcat in regard to picking up the zone because it's determined primarily by porosity. For instance, your Mathers No. 3 which is the northwest offset for No. 2 ran a drill stem test in that zone and I think the information that you submitted last month showed that there was no shows on at a four hour test.

Q That's correct. On Exhibit No. 2 what was your net porosity on Amerada's Mathers B. No. 1?

A Ten feet.

Q Where is that located with reference to the Shell State

A No. 1 Well?

A Well, the Mathers B1 is in the gas zone or in this 8600 foot zone that has been designated as the Upper Pennsylvanian Pool and the Shell well did not have any porosity in that zone. The porosity picked in all these wells, Mr. Christie, are in the zone that has been designated the gas zone by the Commission.

Q What is the porosity referring to the same exhibit on the Amerada State B. T. A. No. 1 located in the southeast quarter of the southwest quarter of Section 34, Township 11 South, Range

33 East?

A Section 34?

Q Yes, sir.

A My map has it in Section 34, has the B. T. D. in the southeast of the southwest.

Q That is my error, it is D. I had a contour running through there. What is the net porosity?

A Fourteen feet.

Q What is the porosity on Amerada State B. T. M. No. 1?

A Eleven feet.

Q Eleven feet. State B. T. M. No. 1 is quite a little north and somewhat east, of course, of Shell State Well is it not?

A Yes, it is.

Q As is the W. E. Mathers B. No. 1 well, it is also north?

A Yes, sir.

Q In other words, it is possible that this particular Shell well might have a local condition right around that particular well bore that could extend a few feet or several hundred feet perhaps?

A Well, I just don't quite understand that statement, Mr. Christie.

Q Would you eliminate the 160 acres in the southeast quarter, southeast quarter of Section 33 from all productivity based on that one well?

A Sir, I don't believe any acreage should be included in the pool unless it is proven productive some way or another, and I don't believe from the information we have available from D. S. D. and logs that well is not productive in the State Shell Well. It could be that you could go in and get something but I wouldn't do it if I were you.

Q You don't know if it is productive or not?

A No, sir. There is no porosity on the microlog or anything.

Q There is a difference of opinion, we found fourteen feet.

A Well --

MR. CHRISTIE: That is all the questions I have.

MR. PORTER: Anyone else have a question of Mr. Yuronka? The witness may be excused.

(Witness excused)

MR. CAMPBELL: That is all. I would like to offer Texas Pacific Exhibits No. 1 and 2 in evidence.

MR. PORTER: Without objection they will be admitted. Anyone else have anything further in this case.

MR. BUSHNELL: If the Commission please, may we have a moment?

MR. COOLEY: Yes, sir.

MR. BUSHNELL: If the Commission please, I would like

to recall Mr. Christie.

R. S. CHRISTIE

recalled as a witness, having been previously duly sworn, testified further as follows:

RE-DIRECT EXAMINATION

BY MR. BUSHNELL:

MR. BUSHNELL: Would you mark that as Exhibit No. 6?

(Marked as Amerada's Exhibit No. 6 for identification.)

Q Mr. Christie, I hand you what is marked Exhibit No. 6, would you identify this exhibit, please, and state what it purports to show?

A Well, Exhibit 6 wasn't meant to be an Exhibit 6. It happened to be a reference map that I had in my files in which we have listed the porosity, net porosity on the different wells and the open flow potentials or drill stem tests and so forth. It is a reference map used for determining the extent of the Bagley-Upper Pennsylvanian Gas Field.

Q What does this exhibit purport to show with reference to the red lettering and numbers under the well designations?

A Generally show the tests on the wells and the potentials and the, well the red that is what the red is the potentials and the drill stem tests.

Q What do the figures in green represent?

A The figures in green represent what we have determined

to be the net effective porosity.

Q What do you find that this exhibit shows with reference to the green or the net porosity in the Amerada Caudle No. 5 Well located in the northeast 40 acres of the northeast quarter of Section 32 South?

A This exhibit indicates that we had four feet of net porosity in Caudle No. 5.

Q Is this based on selections from micro-log or interpretation of micro-log?

A It is an interpretation of micro-log where we had them. If we didn't have the micro-log it was based on some other type of electric log.

Q What does it show the net porosity is for the Mathers Bl Well located in the northwest quarter of Section 33?

A Ten feet.

Q What does it show with reference to the Shell 1-A Well located in the southeast quarter of the southeast quarter of Section 33?

A Fourteen feet.

MR. BUSHNELL: I have no further questions.

MR. PORTER: Anyone else have a question of Mr. Christie?

MR. CAMPBELL: Did you make those picks?

A No, I did not. They were made in our department by our log experts.

MR. CAMPBELL: That's all.

MR. PORTER: I don't believe you offered your exhibit.

MR. BUSHNELL: No, I didn't and I would like to do so subject to the reservation that I will be entitled to take it back for duplication and that I will send another copy to the Commission and also to Mr. Campbell.

MR. PORTER: Any objections to the admission of the exhibit under those conditions? It will be admitted. The witness may be excused. Anyone have anything further in this case? We'll take the case under advisement.

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