STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

CASE 10,700

EXAMINER HEARING

IN THE MATTER OF:

Application of Meridian Oil, Inc., for downhole commingling, San Juan County, New Mexico

TRANSCRIPT OF PROCEEDINGS

BEFORE: DAVID R. CATANACH, EXAMINER

STATE LAND OFFICE BUILDING

SANTA FE, NEW MEXICO

April 8, 1993

A P P E A R A N C E S

FOR THE DIVISION:

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E X H I B I T S

APPLICANT'S EXHIBITS:

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WHEREUPON, the following proceedings were had at 1:19 p.m.:

EXAMINER CATANACH: Okay, at this time we will call Case 10,700.

MR. STOVALL: Application of Meridian Oil, Inc., for downhole commingling, San Juan County, New Mexico.

EXAMINER CATANACH: Are there appearances in this case?

MR. KELLAHIN: Mr. Examiner, I'm Tom Kellahin of the Santa Fe law firm of Kellahin and Kellahin, appearing on behalf of the Applicant, and I have three witnesses in this case, all of which have been previously sworn.

EXAMINER CATANACH: Okay.

MR. KELLAHIN: Call at this time Mr. Kent

Beers.

Mr. Examiner, this is slightly different than the last case insofar as the well has been drilled. The ownership is not common between the two pools.

KENT BEERS,

the witness herein, having been previously duly sworn upon his oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Beers, would you identify for us the information behind Exhibit Tab Number 1?

A. Exhibit Number 1 simply includes a copy of our Application and proposed advertisement.

Q. Is this information which was compiled by you directly or under your direction or supervision concerning notice and ownership of interest in the spacing unit?

A. Yes.

MR. KELLAHIN: We again tender Mr. Beers as an expert petroleum landman.

EXAMINER CATANACH: Mr. Beers is so qualified.

Q. (By Mr. Kellahin) Let's go specifically, if you will, Mr. Beers, and help me find a display that shows the configuration of the spacing units in the

section, and I think we can start by looking at Exhibit Tab Number 2, turning to the first display, and looking at the shaded area in the west half of the section. What does that represent?

A. Exhibit 2 displays the offset ownership to the 320-acre Fruitland Coal drill block in the west half of Section 8.

Q. Okay. And then behind that display is the tabulation of those owners?

A. That's correct.

Q. If we move beyond that, then, there is a shaded area display for the southwest quarter of Section 8. What does that represent?

A. That's correct, that is the offset ownership to the southwest quarter, which is the standard unit for the PC.

Q. All right. And then behind the illustration is a tabulation of those owners?

A. Of those parties, that's correct.

Q. Those parties that offset that spacing unit?

A. That's correct.

Q. All right. Have you received, to your knowledge, any objection by those parties to the downhole commingling of production from these two pools?

A. We have not.

Q. Let's turn now to Exhibit Tab Number 3 and look at the first display behind that tab. Identify that for us, please.

A. Exhibit 3, or the first item in Exhibit 3, is a nine-section plat which shades in the proposed Fruitland Coal spacing unit in one color, and another color for the southwest quarter of Section 8, PC spacing.

It also indicates our proposed commingle well in the southwest quarter of Section 8.

Q. When we look at the section 8, there is identified on the display a number of lots which appear to have more or less than 40 acres per tract?

A. That's correct.

Q. When you calculate the acreage for the west half spacing unit for the coal, what is the number of acres to be dedicated to that spacing unit?

A. 325.

Q. And that is within the tolerance under the pool rules for a standard spacing unit?

A. That's correct.

Q. We look at the southwest quarter, and what's the acreage calculated for that spacing for the Fulcher-Kutz Pictured Cliffs Pool?

A. 164 acres.

Q. And again, is that within the tolerance for a standard pool?

A. Yes, it is.

Q. Behind that tab, now, is some more information to which I direct your attention.

There's a tabulation of interest owners. What does that represent?

A. Yes, this is an Exhibit A out of a joint operating agreement covering the west half of Section 8, and will indicate why we don't have common ownership in both the 320 and the 160.

The -- Under Roman numeral 3, the ownership of the west half or the coal spacing unit is shown, and in the second column it indicates ownership under just the southwest quarter.

The reason the interests are different is because Meridian owns a 100-percent interest in the southwest southwest quarter of Section 8, also known as Lot 10.

Q. If the Examiner looks back at the illustration, just ahead of this tabulation, you can see that that 40-acre tract is in fact a different lease than the balance of the west half of the section?

A. That's correct.

Q. And that fact, then, results in a change not of parties but of percentages?

A. That's correct. All of the same parties are involved in both leases, but -- Excuse me, all the same parties are involved in both spacing units, but their interests in each vary slightly because of Meridian's full interest in the one lot 10.

Q. Are you aware of any objection being received by Meridian for the commingling of production in these two pools in this wellbore?

A. All of these parties have joined in the project, and we had no objections to our applications.

MR. KELLAHIN: That concludes my examination of Mr. Beers.

We move the introduction of Exhibits 1 through 3.

EXAMINER CATANACH: Exhibits 1 through 3 will be admitted as evidence.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Beers, are both these separate leases federal leases?

A. Yes, they are.

Q. Okay. Have you contacted BLM to request approval for commingling?

A. I don't know that I can answer that. We will file sundry notices for that, but I don't have -- That wasn't something I was responsible for, so I can't tell you today that that's been done.

Q. Okay.

A. I presume it has, but perhaps one of the other people here today will have more specific information.

Q. When you say that all parties have joined in the well, these are all working interest owners who are putting in a proportion of the costs to participate in the well; is that correct?

A. That's correct.

Q. Okay. And the only royalty interest is the federal government?

A. That's correct.

Q. Okay, no different -- or no kind of overrides or anything underlying these two tracts?

A. No, the same parties own overrides under both tracts.

Q. Okay. And was it your testimony that all offset operators have been notified of this proposed commingling?

A. Yes, they have.

Q. No objections that you know of?

A. None.

EXAMINER CATANACH: Okay, I have nothing further of the witness.

MR. KELLAHIN: Mr. Examiner, I'd like to recall Mr. Head, who has previously qualified as an expert petroleum geologist, and I would like that qualifications continued in this case.

EXAMINER CATANACH: It shall be done.

CHARLES HEAD,

the witness herein, having been previously duly sworn upon his oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Head, let me turn, sir, so that we have an illustration exhibit.

If you'll look at the Exhibit Tab 4 and the first display behind 4, tell us what you see as a geologist as the opportunity for your company with regards to the approval of this Application to commingle these two reservoirs in one wellbore.

A. Okay, we have the advantage of having wireline logs over this -- in this wellbore, and we encountered 38 feet of Fruitland Coal, of which a 25-foot basal seam gave us good evidence of permeability, and we feel that the majority of the Fruitland Coal gas

should be produced from that.

That substantiates our estimate of 35 feet of coal on the isopach map which you're looking at.

Q. When you turn to the next display after the isopach, what's shown on the structure map? I'm still within the same exhibit tab, and the next display is the structure map.

A. Right. That's a Fruitland Formation base of coal structure map, a 1-to-4000 scale with a contour interval of 20 feet.

Q. Why was this well drilled in the southwest quarter of Section 8, as opposed to locating it in one of the remaining three quarter-sections?

A. We felt that, based on prior mapping, that this was a good location for both Fruitland Coal development and Pictured Cliffs development.

The Pictured Cliffs potential is actually in between the Fulcher-Kutz and West Kutz Pictured Cliffs fields, and we feel that this is a very good fairway for development of the Pictured Cliffs and that it could lead to quite a few additional opportunities.

Q. The well's been drilled now?

A. The well -- This well has been drilled.

Q. And what is its status at this point? Has it been completed?

A. I believe that we are shutting it in for a seven-day pressure test of the Pictured Cliffs formation. And after that seven-day test, then we will perforate and fracture stimulate the Fruitland formation.

Q. Let's turn now to the Pictured Cliff, if you'll look at Exhibit 5 and the information behind that exhibit tab. What does that represent and what does it show you?

A. Okay, that is a net pay isopach based on resistivity and SP open hole wireline log criteria, contour interval of ten feet of what we feel is commercial quality Pictured Cliff sandstone development.

Q. Was this well originally drilled or anticipated as a well to be downhole commingled?

A. Yes, it was.

Q. You drilled it with the intent or the expectation that you could commingle both zones?

A. Yes, sir.

Q. Is this in an area where you geologically would expect each of the zones, or one of those zones, to stand alone on its own?

A. In this particular area, no.

Q. Okay. Let's go to the information behind

Exhibit 6. Would you identify that?

A. Okay, that's a cross-section. It's actually a southwest-northeast cross-section that ties the West Kutz Pictured Cliffs area to the left, and with the subject well, which is the second from the right in the cross-section.

It illustrates the basal member of the Fruitland Coal. It's probably easy to see that the datum is hung on that, the basal coal.

And it shows a couple of Pictured Cliffs marine sandstones right underneath the basal coal, and those were actually the primary targets of this test.

Q. Okay. Geologically, is this an appropriate wellbore candidate to have these two reservoirs commingled in a single wellbore?

A. Yes, sir, it is.

MR. KELLAHIN: That concludes my examination of Mr. Head.

We would move the introduction of Exhibits 4 through 6.

EXAMINER CATANACH: Exhibits 4 through 6 will be admitted as evidence, and I have no questions of the witness.

MR. KELLAHIN: Call now Mr. Scott Daves, Mr. Examiner.

SCOTT B. DAVES,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Daves, for the record would you please state your name and occupation?

A. My name is Scott Daves. I'm a reservoir engineer with Meridian Oil.

Q. And you reside in Farmington, New Mexico?

A. And I reside in Farmington, New Mexico.

Q. On prior occasions have you testified as a reservoir engineer before the Division?

A. Yes.

Q. In fact, I think you testified in one of the downhole commingling cases we had on a prior case?

A. That's correct.

Q. It was a commingling case involving an allocation formula that you had recommended to the Examiner for Fruitland Coal?

A. Correct.

MR. KELLAHIN: We tender Mr. Daves as an expert reservoir engineer.

EXAMINER CATANACH: Mr. Daves is so qualified.

Q. (By Mr. Kellahin) Let me ask you, before we talk about your allocation formula, Mr. Daves, the concept that you see as a reservoir engineer for commingling production in this wellbore, why do you recommend that we do that here?

A. In areas such as this and other areas, typically you'll have one of the two formations that may be economic in and of itself and another formation where there are reserves there that are not necessarily to drill and complete a facility that are commercial, but there are reserves there that are commercial to produce in an alternative method, i.e., commingling.

Q. And does that opportunity exist here?

A. Yes.

Q. Why was the well initially drilled without getting prior approval for commingling? Did you have a plan?

A. The original plan on this well, we were force-pooled on this well by another operator, and when we recognized that we did have controlling interest in both intervals and the opportunity to commingle, we took over operatorship at that point.

Q. The choice on spacing unit and well location was one that was predicated on prior activity by another interest owner in the section, then?

A. That's correct. They staked and were currently pursuing the permitting when they approached us with the force-pooling.

Q. So the choice on well location and spacing unit had already been determined by the other party?

A. Correct.

Q. When you look at the allocation formula -- Do you have a proposed allocation formula included in the exhibit book?

A. Yes, I do. It is the last exhibit, Exhibit 7.

Q. Identify and describe to us what is your recommendation to the Examiner for a formula.

A. Okay, the original part of the equation basically states that the total production is equal to the production from the Fruitland Coal plus the Pictured Cliffs at any point in time.

Re-arranging the equation as I've done here, I'm saying that the Fruitland Coal production is the total production minus the Pictured Cliffs production. The reason I'm doing that is, the Pictured Cliffs is the established formation which you can analyze off of to come up with an allocation method.

And the way that we're determining the Pictured Cliffs production is a decline curve, but

there is something that is slightly different here in that, due to the fact that we did drill the well and we did have log calculation, we went ahead and we assessed what the reserves would be in the Pictured Cliffs, and we came up with a number there.

We're saying that the gas reserves for the Pictured Cliffs is a function of pressure and that through the log calculations and material balance that we found, that .83 million cubic feet per p.s.i., times the reservoir pressure that we see, times the recovery factor will ultimately give us the EUR for the Pictured Cliffs.

Now, with that, if you look at the next exhibit there, we have a method that we have used before and presented before to determine the initial Pictured Cliffs rate that we will ultimately assign a decline to.

So now here, instead of going out and attempting to analogize a decline, we will fix the decline based off of our EUR and our initial rate.

Q. That's your recommendation to the Examiner for the formula for the allocation?

A. That's correct.

Q. And if he would simply take this first display behind the exhibit tab, utilize that as an

exhibit for the Order, that would be enough direction to you as the operator of the well to abide by that allocation formula?

A. Absolutely.

MR. KELLAHIN: That concludes my examination of Mr. Daves.

We move the introduction of Exhibit Number 7.

EXAMINER CATANACH: Exhibit Number 7 will be admitted as evidence.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Daves, does that method that you just proposed give you a more accurate decline rate?

A. It does, and primarily the reason that we chose to go this way was to insure that we accurately could calculate the Pictured Cliffs reserves, based off of the volumetric numbers that we saw, because we do have logs in that quarter section from that specific well, and the mapping that Mr. Head showed -- the combination of all of these things allowed us to calculate these reserves and make them much clearer.

Q. Have you estimated the pressure in these formations?

A. Yes, we have. It is -- In the Pictured Cliffs, it's approximately 350 pounds, and in the

Fruitland Coal it's in the neighborhood of approximately 400 to 450 pounds.

Q. Have you done any estimates on initial producing rates at this time?

A. Approximately 200 MCF a day in the Fruitland Coal and somewhere in the neighborhood between 200 and 300 MCF a day in the Pictured Cliffs.

EXAMINER CATANACH: That's all I have.

MR. KELLAHIN: Mr. Examiner, Exhibit Number 8 is the certificate of mailing and our compliance with the notice obligations.

We are aware of no opposition to the Application.

EXAMINER CATANACH: Okay.

MR. KELLAHIN: We would move the introduction of Exhibit Number 8.

EXAMINER CATANACH: Exhibit Number 8 will be admitted as evidence.

Anything further?

MR. KELLAHIN: No, sir, not in this case.

EXAMINER CATANACH: There being nothing further, Case 10,700 will be taken under advisement.

(Thereupon, these proceedings were concluded at 1:40 p.m.)

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CERTIFICATE OF REPORTER

STATE OF NEW MEXICO)
) ss.
COUNTY OF SANTA FE)

I, Steven T. Brenner, Certified Court Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that I transcribed my notes; and that the foregoing is a true and accurate record of the proceedings.

I FURTHER CERTIFY that I am not a relative or employee of any of the parties or attorneys involved in this matter and that I have no personal interest in the final disposition of this matter.

WITNESS MY HAND AND SEAL April 25th, 1993.

STEVEN T. BRENNER
CCR No. 7

My commission expires: October 14, 1994

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 10700, heard by me on April 8 1993.

David R. Catanach, Examiner
Oil Conservation Division