STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

IN THE MATTER OF:
THE HEARING CALLED BY THE
OIL CONSERVATION DIVISION
TO CONSIDER:

APPLICATION OF COLLINS & WARE, INC.
FOR AN UNORTHODOX GAS WELL LOCATION,
CHAVES COUNTY, NEW MEXICO.

Case No. 10344

REPORTER'S TRANSCRIPT OF PROCEEDINGS

DIVISION HEARING

BEFORE: DAVID R. CATANACH, Examiner

August 8, 1991
11:30 a.m.
Santa Fe, New Mexico

This matter came on for hearing before the Oil Conservation Division on August 8, 1991, at 11:30 a.m. at the conference room, State Land Office Building, 310 Old Santa Fe Trail, Santa Fe, New Mexico, before Susan G. Ptacek, Certified Court Reporter for the State of New Mexico.

FOR: OIL CONSERVATION DIVISION

BY: SUSAN G. PTACEK
Certified Court Reporter
CSR No. 124

I N D E X

August 8, 1991
Commissioner Hearing
Case No. 10344

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A P P E A R A N C E S

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FOR BHP PETROLEUM: HINKLE, COX, EATON, COFFIELD & HENSLEY
Attorneys at Law
BY: JAMES G. BRUCE, ESQ.
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Albuquerque, New Mexico 87102

* * *

MR. CATANACH: Call Case 10344.

MR. STOVALL: Application of Collins & Ware, Inc., for an unorthodox gas well location, Chaves County, New Mexico.

MR. CATANACH: Appearances in this case.

MR. CARR: May it please the Examiner, my name is William F. Carr with the law firm Campbell, Carr, Berge & Sheridan of Santa Fe. I represent Collins & Ware, Inc., and I have three witnesses.

MR. CATANACH: Other appearances.

MR. BRUCE: Mr. Examiner, my name is Jim Bruce from the Hinkle law firm of Albuquerque, representing BHP Petroleum Americas, Inc. I have possibly three witnesses.

MR. CATANACH: Will all the witnesses or possible witnesses please stand and be sworn?

(The witnesses were duly sworn.)

BILL SELTZER,

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

DIRECT EXAMINATION

BY MR. CARR:

Q. Would you state your full name for the record, please?

A. Bill Seltzer.

Q. Mr. Seltzer, where do you reside?

A. I reside in Midland, Texas.

Q. By whom are you employed and in what capacity?

A. I'm employed by Collins & Ware, Inc., as a land consultant.

Q. Have you previously testified before the Oil Conservation Division and had your credentials as a petroleum landman accepted and made a matter of record?

A. Yes, I have.

Q. Are you familiar with the application filed in this case on behalf of Collins & Ware?

A. Yes.

Q. Are you familiar with the area that is the subject of this application?

A. Yes.

MR. CARR: Are the witness's qualifications acceptable?

MR. CATANACH: They are.

Q. (By Mr. Carr) Would you briefly state what Collins & Ware seeks in this case?

A. Collins & Ware seeks an application for an unorthodox gas well location to be located 330 feet from the south line and 990 from the east line of Section 14, Township 8 South, Range 27 East, Chaves County, New Mexico.

Q. What is the primary objective in this well, do you know?

A. To test the Montoya formation.

Q. What are the well location and requirements in effect for Montoya formation in this area?

A. It would be 1980 and 660.

Q. Have you prepared certain exhibits for presentation here today?

A. Yes, we have.

Q. Would you identify what has been marked as Collins & Ware Exhibit No. 1; identify this and review it, please?

A. Exhibit No. 1 is a land plat indicating the ownership of the acreage around the proration unit. The proration unit being the south half of Section 14, along with wells -- proposed wells of Collins & Ware being 330 from the south line, 990 from the east line; a Hadley well in the southwest southwest of Section 13, which is located 660 from the west, 660 from the south line; and the BHP legal located in Section 24, being 660 from the north line and 990 from the west line.

Q. What does the double circle indicate in the northeast quarter of Section 23?

A. That is what we understand that BHP had proposed a well location 660 -- I believe it was 660 out of the north and east line of that section.

Q. Are there any of these wells that have been drilled at a standard location?

A. No, no wells have been drilled at a standard location.

Q. Let's move to Exhibit No. 2. Could you identify that and review it for the examiner?

A. Exhibit No. 2 is a topog map showing a lake on the ranch up here in the southeast corner of the southwest -- southeast corner of the section. The proposed unorthodox location of 330 from the south line, 990 from the east line, and a location that we originally had administrative approval located 660 from the south line, 990 from the east line, that location falls at the edge of this rancher's lake. And I was informed this morning that the rancher feeds his cattle 120 feet south of this lake, and he says he will not allow to us drill a location -- drill a well at that location up there. It would interfere with his feeding.

Q. Could you just generally summarize the reason the well cannot be drilled at either the original proposed or standard location?

A. I think our geologist will show that standard location would not effectively drain the formation.

Q. And the reason that you have moved to the 330 location from that location originally proposed is based on primarily topographical conditions?

A. Yes.

Q. Has notice of today's hearing been provided as provided by the Oil Conservation Division rules?

A. Yes.

Q. Is Exhibit No. 3 a copy of an affidavit with attached notice letters to BHP and Hanrad providing notice as required by the division?

A. They are.

Q. Were Exhibits 1 through 3 either prepared by your or compiled under your direction?

A. Yes.

MR. CARR: At this time, Mr. Catanach, we move the admission of Collins & Ware Exhibits 1 through 3.

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

MR. CARR: That concludes my examination of Mr. Seltzer.

MR. CATANACH: Mr. Bruce.

CROSS-EXAMINATION

BY MR. BRUCE:

Q. Mr. Seltzer, looking at Sections 13, 14, 23 and 24, who owns the minerals under those sections?

A. Which ones?

Q. Sections 13, 14, 23 and 24.

A. It's either the state or the federal government.

Q. So the surface owner, the rancher you talked

about, does not own the mineral rights?

A. No, he does not.

Q. I'm sure you're aware, Mr. Seltzer, that the mineral estate is the dominant estate?

A. Yes, I am, Mr. Bruce.

Q. Looking at your Exhibit No. 2, what do the green lines indicate?

A. The green lines are a fence line of the rancher's.

MR. BRUCE: That's all I have, Mr. Seltzer.

EXAMINATION

BY MR. CATANACH:

Q. Mr. Seltzer, you said that you previously had approval from the division for the 660, 990 location?

A. Yes, we had.

Q. I assume that notice of that location was given to BHP as well?

A. Yes, they waived that -- gave us a waiver at that location. Everybody gave a waiver on this, Mr. Catanach, all around that thing, on that administrative approval; and Mr. Stogner issued that order.

Q. Now, you've testified that the 660, 990, that was at a location where the rancher feeds his cattle?

A. Yes. I would like also to point out -- you notice coming from the south here, there is a road coming

up there? Look on the left-hand side -- on the left-hand side of that road you see a blue line? He has a water line running parallel to that road all the way up there that feeds that lake. The location of 330 and 990 falls in that bar ditch right on top of that water line, and we're prepared to -- with his permission -- to move that water line and move that road.

Q. Any move to the east or west of the proposed location at 660 from the south -- 660 from the south, if you move east or west in either direction, that would -- then geology would come into play?

A. Correct.

Q. Okay. Is there any compromise possible between the 660 and 330 location from the south? Between the 330 in the south and 660 from the south, is there --

A. Geological wise?

Q. Pardon me?

A. You're talking about geology?

Q. Topographic, as far as the rancher.

A. We haven't considered moving in between there.

MR. CATANACH: I believe that's all I have.

MR. CARR: At this time we call Mr. Ware.

HERBERT E. WARE, III

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

DIRECT EXAMINATION

BY MR. CARR:

Q. Would you state your full name for the record, please?

A. Herbert E. Ware, III.

Q. Where do you reside?

A. In Midland, Texas.

Q. Mr. Ware, by whom are you employed and in what capacity?

A. I'm employed by Collins & Ware, Inc. I'm a full time geologist.

Q. Have you previously testified before this division?

A. No, I have not.

Q. Could you summarize your educational background and then review your work experience for Mr. Catanach?

A. I've obtained a bachelor of science degree in geology from the University of Texas in Austin, and after that I went to work for N. Brad Bennett, Incorporated, as a full-time geologist for six years. I'm presently employed at Collins & Ware, Inc., for the last four months.

Q. During your work experience with Bennett and now with Collins & Ware, has geographical area of responsibility included southeastern New Mexico?

A. Yes, it has.

Q. Are you familiar with the application filed in this case on behalf of Collins & Ware?

A. Yes, I am.

Q. Have you made a geological study of the area?

A. Yes, I have.

Q. Are you familiar with the proposed well?

A. Yes, I am.

MR. CARR: We tender Mr. Ware as an expert witness in petroleum geology.

MR. CATANACH: He is so qualified.

Q. (By Mr. Carr) Mr. Ware, have you prepared certain exhibits for presentation here today?

A. Yes, I have.

Q. Would you refer to what has been marked as Collins & Ware Exhibit No. 4, identify this and review it for the examiner?

A. This is a structure map on top of the Montoya formation. Our proposed location is 330 from the south line, 990 from the east in Section 14 of Township 8 South, Range 27 East. In this part of Chaves County we've found that the Montoya formation is productive along north-south faulted anticlinal features, and the BHP Puffer State in Section 24, located in an unorthodox location, 660 from the north line, 990 from the west line, was a successful Montoya test.

By well control in this area we have established a faulted anticlinal bounded on the east by a north-south fault, and on the north by a northwest-southeast trending cross fault. We feel that at our proposed location that we can run structural on strike to the BHP well, and efficiently drain the reserves within our proposed proration unit, which is the south half of Section 14.

Other recent activity in this area, BHP has sent notice of drilling an unorthodox location in the northeast quarter of Section 23, located 660 from the north line, 660 from the east line.

Q. If I look at this map, all the wells in this particular Montoya pool are at unorthodox locations; is that correct?

A. This is correct.

Q. The area that you have shaded in brown on Exhibit No. 4 indicates what?

A. Is what we have established as what we believe is a productive interval within this faulted anticlinal feature.

Q. Is it typical for the Montoya formations to be small formations like this?

A. Yes, sir, it is. That's why wells are drilled in unorthodox locations to obtain the highest structural position available.

Q. In preparing this exhibit what information did you utilize?

A. I used basically well control in the area and some seismic data that was obtained -- that BHP had used to come up with their -- to establish the faults in the area.

Q. Now, if you were to move the proposed well 330 feet to the north, from a geologic point of view what would that do to this prospect?

A. I feel like it would be highly risky. It would be extreme high risk, and as Mr. Seltzer pointed out earlier, it would also -- it would also come across that rancher's tank that he feeds his cattle at.

Q. Where would it actually place the well in regard to the fault that runs northwest-southeast across the south half of 14?

A. Based on this structure map, I feel like it would fall probably right on top of the fault, if not on the downthrown side of it.

Q. Let's go now to Exhibit No. 5, which is your cross section -- there is, incidentally, a trace of this cross section on Exhibit No. 4, is there not?

A. Yes, there is.

Q. Would you review that for Mr. Catanach?

A. Basically what the cross section shows is that -- it is a north-south cross section from Section 13, which

is shown on the downthrown side of the fault to the Puffer State, BHP's well, in Section 24 to the proposed location and on down dip into Sections 23 and 26.

What the cross section basically is showing is we feel like we're going to be running on strike to the BHP Puffer State; and, as you can see, from the south is the -- at the down dip direction you can see the Pennsylvanian formation -- I mean the Mississippian formation trending as you come up on structure.

Q. Now, this proposed well is projected to be at the top of the structure?

A. We feel like it is. We feel like it is the structurally highest position available within our proration unit; therefore we are protecting our correlative rights.

Q. At this structural position do you believe that you will be able to effectively and efficiently drain the reserves that are under your tract?

A. Yes, I do.

Q. And if you moved this location to a, say, standard location in the southwest quarter of Section 14, what would that do to your ability to produce the reserves under your tract?

A. I feel like the southwest quarter of this section is a very highly risky position to drill this well.

Also, according to my interpretation, I feel that it would not obtain the highest structural position available, therefore BHP would be draining into our . . .

Q. If you're at that lower structural position, what do you see ultimately would happen to that well?

A. It would ultimately go to water.

Q. When it goes to water, would there still be reserves left under this section, under the south half of Section 14?

A. Yes, sir, I believe so.

Q. Will Collins & Ware call an engineering witness to discuss penalty considerations in this case?

A. Yes, they will.

Q. Were Exhibits 4 and 5 prepared by you?

A. Yes, they were.

MR. CARR: At this time, Mr. Catanach, we move the admission of Collins & Ware Exhibits 4 and 5.

MR. CATANACH: Exhibits 4 and 5 will be admitted into evidence.

(Collins & Ware Exhibits 4 and 5 were received in evidence.)

MR. CARR: That completes my direct examination of Mr. Ware.

CROSS-EXAMINATION

BY MR. BRUCE:

Q. Mr. Ware, if you drilled at an orthodox location in the southwest quarter, what would be the structural position?

A. I feel like you would be down dip to where you could obtain the highest --

Q. What is your estimate of the structural position for your proposed well?

A. I'm sorry.

Q. What is the depth?

A. 6440 -- you mean our TD; is what you're asking?

Q. The top of the Montoya at your proposed location. I'm looking at your Exhibit No. 4.

A. What do I feel like it would be?

Q. Yes.

A. Minus 2450.

Q. Isn't there a location, looking in the southwest quarter, about, say, somewhere around 1980 from the south and west lines that would also be about minus 2450?

A. It could be but I don't have it on my map.

Q. Why not?

A. I didn't draw it. I didn't see it that way.

Q. You've got 50-foot intervals, don't you?

A. Yes, I do. But according to the slope that I was using, I don't see that it could obtain that height because of the orientation of the fault.

Q. You have a 25 -- minus 2500-foot line?

A. Yes, I do. I have a 2450 line on the other side of that over in Section 24 that runs up into Section 14.

Q. You can use the same spacing between the lines -- you're using equal spacing there -- it would be about a 2450 location, wouldn't there?

A. Not under the interpretation that I drew up there. I guess there could be. I mean I'm not -- this is just my interpretation. I feel like that would be a riskier location anyway, based upon lack of well control in that area.

Q. You mentioned all the wells are unorthodox in this pool. There is really only one well in this pool, isn't there?

A. Yes.

Q. That's the BHP well?

A. Yes, sir.

Q. It was discovered before.

A. It's the only one producing out of Montoya formation, too.

Q. Did you shoot your own -- does Collins & Ware shoot their own seismic?

A. Yes, I did.

Q. Was that done before or after you obtained approval for the prior nonstandard location?

A. It was after.

Q. That didn't change your geological interpretation, did it?

A. No, it did not.

Q. If you could drill a well on the southwest quarter and have about the same structural position as your proposed well, in your opinion would that well drain all the reserves under the south half of Section 14?

A. Well, I'm not a reservoir engineer, but I suppose if you could get a high enough structural position, you could drain a good portion of the reserves under there. It would be -- then you would be getting into a -- well, a bit of a discrepancy between the BHP well and the well you would be drilling up there, as far as who is draining what.

Q. According to your interpretation you could also have a -- drill a well and have a chance of hitting a productive well if you just moved to the west and north somewhat and stayed in the southeast quarter, couldn't you; say 660 feet from the south line and move it further to the west?

A. Yes, but you would be losing structural position.

Q. Mr. Ware, you said that the faults were mainly north-south in this area. The main faults you rely on are really more of east-west faults, aren't they?

A. Well, this -- cross fault basically, the northwest-southeast direction, but that it's off the main fault -- I was referring to the major trends of the faults in this area are north-south, and that's what you find further south in the Diablo field, Race Track and Four Ranch.

Q. Are your fault locations based on your seismic?

A. They were based on basically BHP's prior seismic interpretation that they came up with. They noted these faults, and then it was proven by their well that they drilled in Section 24 that the faults existed.

Q. Your subsequent seismic didn't change that interpretation?

A. I'm sorry.

Q. You said you conducted seismic -- this map was drawn before Collins & Ware did its own seismic?

A. Yes, it was.

Q. So your seismic did not change the interpretation?

A. No, it did not.

Q. That was based on BHP's seismic?

A. This is basically the map we proposed to the commission when we were wanting to drill our 660 location.

Q. Well, if it was -- if you used it for the 660, why change locations?

A. Well, he felt like the 660 location was too risky of a location to drill, and also because of what we found out through the rancher.

MR. BRUCE: I have nothing further, Mr. Examiner.

MR. CATANACH: Mr. Carr.

REDIRECT EXAMINATION

BY MR. CARR:

Q. Mr. Ware, did you shade -- indicated the pool boundary on your Exhibit No. 4, it only underlies three proration units; isn't that correct?

A. Yes, sir.

Q. In your opinion is there any standard location in this pool that could effectively drain the reserves form the pooling?

A. No, sir, there is not.

Q. I'm just trying to understand your testimony. Do you have an opinion as to whether or not you could efficiently drain the south half of 14 with a well at a standard location?

A. Not according to my interpretation.

Q. Why is that?

A. I don't feel like you can obtain the highest structural position in the southwest portion of Section 14, and that is the only possible orthodox location that you could drill here to obtain the highest structural position.

Q. It's not an unorthodox location?

A. Yes, sir.

MR. CARR: That's all I have.

EXAMINATION

BY MR. CATANACH:

Q. Mr. Ware, do you know if there is a gas water content in this?

A. No, sir, I -- from log interpretations we calculated up what we thought might be just because we saw a pretty huge difference between -- at about the subsea level of minus 2550 what we felt like probably -- we would encounter water below that. We feel like that's part of the south boundary.

MR. STOVALL: That's the blue line?

THE WITNESS: Yes, sir.

Q. (By Mr. Catanach) In terms of drilling a well at the structurally lower position, what are the consequences besides that it may water out quicker than a well at a higher structural position? Is that the only --

A. You would be leaving additional reserves within the formation under our proration unit.

Q. What is the BHP well in Section 24; is that a pretty good producing well?

A. I don't believe it's been hooked up on line yet. They just potentialed it for, I believe, 7 million a day.

Q. Is there any Pennsylvanian potential at that location?

A. I haven't done any actual geology with the Pennsylvanian. We were looking at that as a possible secondary objective here, but not something -- based on the production in the area we don't feel like it would be an economical test just to go Pennsylvanian.

MR. CATANACH: I believe that's all I have.

MR. STOVALL: I just have a couple of questions.

EXAMINATION

BY MR. STOVALL:

Q. that sort of brownish tan color, what is the significance of that?

A. That's what we feel like is productive within the Montoya formation.

Q. If I look at your proposed location -- you kind of covered up your 2450 contour line with your red square.

A. Yes, sir.

Q. But if I looked at that, how would that compare to, say, a structural position over towards the left just up to the northwest of where your -- the number 2500 is, you've got your upthrown, downthrown, how does that compare structurally to a location right about, say, at the top of the right leg of the U?

A. Well, that's what Mr. Bruce was asking earlier.

Q. I know. I didn't quite understand your answer to that. I want it more specific.

A. Well, I feel like that you can't get that structural height over there based on the orientation of the fault. It appears so, I guess, by what I have drawn here, but I don't feel -- I feel like it would be a risky situation, and I wouldn't recommend to drill that well.

Q. If I look at the map, a substantial portion of the reservoir in this proration unit is actually under the southwest quarter, isn't it?

A. About half of it I would say, yes, sir.

Q. Would this well at your proposed location get all the gas from there?

A. I believe so, yes, sir.

Q. Do you know anything about the topography of the southwest quarter?

A. It's low also.

Q. I mean talking about the surface?

A. Yes, sir. It's low. Topographic map shows that.

Q. Well --

A. There is a low over to the west.

Q. What does that mean? What is the significance of that as far as --

A. I don't understand.

Q. Is it a drillable location on the surface is what I am asking?

A. I suppose so. We haven't visited with the rancher or anybody about that.

MR. STOVALL: No further questions.

MR. BRUCE: One more.

RECROSS EXAMINATION

BY MR. BRUCE:

Q. If Collins & Ware's well is approved, would it object or consent to a similar offsetting BHP location in Section 23?

A. I do not have the authority to answer that question.

Q. Are there any other witnesses here who have the authority to answer that question?

A. I don't believe so.

REDIRECT EXAMINATION

BY MR. CARR:

Q. Mr. Ware, just to see if I understand your testimony; if you move from the proposed unorthodox location to the west, do you lose structural position?

A. I believe so, according to my map.

MR. CARR: That's all I have.

MR. BRUCE: Can I ask one more?

RECROSS EXAMINATION

BY MR. BRUCE:

Q. How much structural position would you lose according to your map?

A. 50 feet, 30 feet, somewhere in there.

Q. What are you basing that on? You have a 2500-foot line and there are positions that you can drill that are minus 2500 feet?

A. What I am saying -- okay. At our proposed location I feel like we can be as a high as -- from what I see here -- probably minus 2450. The highest spot I feel like we can get over here is anywhere between minus 2500, but not quite at 2450. So it can be anywhere from 50 feet to 10, or even beyond that. I don't know. I don't have the control over in that area to make that.

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

MR. CATANACH: Witness may be excused.

MR. CARR: At this time we call Mr. Knight.

CHARLES KNIGHT, JR.,

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

DIRECT EXAMINATION

BY MR. CARR:

Q. Would you state your name for the record, please?

A. Charles Knight, Jr.

Q. Where do you reside?

A. Midland, Texas.

Q. By whom are you employed and in what capacity?

A. I'm an engineer for Collins & Ware.

Q. You are a full-time employee of Collins & Ware?

A. Yes, I am.

Q. Have you previously testified before this division?

A. No, I have not.

Q. Would you review your educational background and then summarize your work experience for Mr. Catanach?

A. I graduated with an engineering degree from Texas Tech University. I worked seven years with Amoco Production Company in Hobbs and Houston, and three years with Philmont Oil located in Midland, and approximately a year and a half consulting work before this becoming a full-time employee with Collins & Ware.

Q. In all of these various positions have you -- has your area of responsibility included southeastern New Mexico?

A. Yes, sir.

Q. Are you familiar with the application filed in this case on behalf of Collins & Ware?

A. Yes, I am.

Q. Have you made a that study of the area?

A. Yes.

Q. Are you familiar with the proposed well?

A. Yes, I am.

MR. CARR: At this time we tender Mr. Knight as an expert witness in petroleum engineering.

MR. CATANACH: He is so qualified.

Q. (By Mr. Carr) Mr. Knight, what have you been asked to testify to in this proceeding?

A. I've been asked to testify about drainage and if a penalty is asked to be imposed, what that penalty may be.

Q. First, do you believe that a well at this location should have its production restricted?

A. No, I do not.

Q. Why is that?

A. If you refer to Exhibit 4, looking at the reservoir area shaded in brown, you can see that the area under Section 14 is greater than the area under Section 23 and the area under Section 24. Assuming three wells in the reservoir, it's my opinion that a well in Section 14 would not drain any more than the reservoir area under Section 14.

Q. And your assumption is based on the fact that BHP will in fact drill in the northeast in 23?

A. Yes, it is.

Q. Let's go to your Exhibit No. 6. If, in fact, the division decides to impose a penalty on this location, could you review this exhibit and explain how you believe that penalty should be imposed?

A. Exhibit 6 shows a location that was previously approved, 660 from the south, 990 from the east, and also a location that we propose 330 from the south, 990 from the east. I've drawn 320-acre drainage radius circles around each the locations, and stippled in the difference between of the two, as far as what encroachment you have additional into BHP Petroleum's acreage. This amounts to 31 acres out of the 320, giving you a penalty of 9.7 percent.

Q. Now, you use as the basis for the original circle a location 660 from the south line, 990 from the east line?

A. That's correct.

Q. Why did you use that location as the original location?

A. That location had been approved, and the location of the BHP producing well, the Puffer No. 1, is at a similar location, 660 from the south, 990 from the west line.

Q. Why did you use 320-acre drainage circles?

A. That is the proration unit size.

Q. You then placed the second well at the proposed

unorthodox location?

A. That's correct.

Q. What you have done to get your recommended penalty is perimeter the additional drainage area on the offsetting tract?

A. That's correct.

Q. The actual drainage area extends beyond the reservoir boundary, does it not?

A. Yes, it does.

Q. And it extends beyond the boundary to the south and to the west?

A. That's correct.

Q. It also extends beyond the boundary to the north and the east?

A. That's correct.

Q. In your opinion, is this a reasonable way to go about imposing a penalty on the well?

A. I believe it's reasonable.

Q. Will a penalty proposed using this method also account for the additional drainage that is gained to the tract to the south and east in Section 24?

A. That's correct.

Q. As well as the acreage in the south?

A. Not only Section 23 but 24 also.

Q. Now, against what do you recommend this penalty

be applied?

A. Against deliverability.

Q. And how would that be determined?

A. Annual tests.

Q. And would those tests -- would you recommend they be witnessed by the Oil Conservation Division?

A. Yes, I would.

Q. Would you have any objection to BHP also being notified and given an opportunity to witness those tests?

A. No, I would not.

Q. What effect, in your opinion, would there be of penalizing this well beyond the recommended rate?

A. I believe it would impose an economic burden on the well such that we may not be able to drill the well.

Q. What would be a penalty above the recommended penalty due to drainage of reserves from the south half of 14?

A. I'm sorry. I didn't hear the question.

Q. If a penalty in excess of the 9.7 percent shown on Exhibit 4 were imposed on the well, what impact would that have on drainage from the south half of 14? What impact would it have on the correlative rights of Collins & Ware?

A. I believe a penalty in excess of the recommended 9.7 would in fact allow BHP to produce some of the reserves

residing under in the Collins & Ware leasehold in Section 14.

Q. Do you believe that approving the application of Collins& Ware and imposing a penalty of 9.7 or less would protect correlative rights of the interest owners in this pool?

A. Yes, I do.

Q. Would you further -- do you have an opinion whether or not it would prevent the waste of hydrocarbons?

A. I believe it would prevent the waste, if it would allow a well located at this location.

Q. Was Exhibit No. 6 prepared by you?

A. Yes, it was.

MR. CARR: At this time, Mr. Catanach, we move the admission of Collins & Ware Exhibit No. 6.

MR. CATANACH: Exhibit No. 6 will be admitted as evidence.

MR. CARR: That concludes my direct examination of Mr. Knight.

CROSS-EXAMINATION

BY MR. BRUCE:

Q. Mr. Knight, if Collins & Ware drills this well, do you think it will deviate in any particular direction?

A. I don't know of any such deviation.

Q. Now, if the BHP well in Section 23, which is

noted on this exhibit, is not drilled, will Collins & Ware's well drain the acreage in Section 23?

A. It's possible.

Q. Have you made an estimate of -- looking at Mr. Ware's Exhibit No. 4, did you make an estimate of the -- based on his map the number of productive acres under Section 14?

A. Not the exact amount, no.

Q. Do you have a rough estimate?

A. No, I don't even have a rough estimate, just a graphical representation. You can see that there's by far many more acres of reservoir area under Section 14 than in either the 23 or the 24.

Q. Looking at it, there's roughly -- maybe 140 to 160 productive acres?

A. I think the 140 would be closer.

MR. BRUCE: I have nothing further of Mr. Knight.

EXAMINATION

BY MR. CATANACH:

Q. Mr. Knight, have you calculated the gas reserves at all underlying any of the tracts?

A. No, sir.

MR. CATANACH: That's all I have. The witness may be excused.

MR. CARR: Mr. Catanach, that concludes our direct

presentation.

MR. CATANACH: Do you need a couple of minutes?

MR. BRUCE: Could you give me two minutes?

(At 12:10 p.m. a recess was taken.)

MR. CATANACH: Let's go on the record.

MR. BRUCE: I call Mr. Morris to the stand.

WILLIAM J. MORRIS,

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

DIRECT EXAMINATION

BY MR. BRUCE:

Q. Would you state your full name?

A. William J. Morris.

Q. What is your occupation and who are you employed by?

A. I'm a petroleum geologist working for BHP Petroleum.

Q. Have you previously testified before the OCD as a geologist and had your credentials as an expert accepted as a matter of record?

A. Yes.

Q. Are you familiar with the geology of the area at issue in this case?

A. Yes, I am.

MR. BRUCE: Mr. Examiner, I tender Mr. Morris as an

expert geologist.

MR. CATANACH: He is so qualified.

Q. (By Mr. Bruce) Mr. Morris, would you please refer to your Exhibit 1, and describe its contents for the examiner?

A. This is a structure map on the top of the Montoya dolomite. The acreage colored in yellow is that which is controlled BHP. The brown outlined area is the proration unit asked for by Collins & Ware. The proposed location is shown by an arrow in the very southeast part, and we also show on there the closest orthodox location. The well in Section 24 is the BHP No. 1 Puffer State well, which we drilled and completed in February of this year, in the Montoya formation. That well phas otential for approximately 8 million cubic feet of gas per day. Within the last two weeks we've got that well on line, and it has been producing about 2 to 3 million a day.

The other wells colored blue have been productive from the Penn Classic formation.

Q. In your opinion did BHP take quite a risk in drilling this well?

A. BHP took considerable risk in drilling between three wells, one in Section 13, colored blue, one in Section 23, that is also colored blue, and there is a dry hole in Section 24 that is approximately 1980 from the

north and from the west line, that also -- all three of those wells entered the Montoya formation, and were considerably lower than the well that we drilled.

Q. What is indicated by the red area on your map?

A. That is the area that we interpret to be the productive area for the Montoya reservoir in this prospect.

Q. And what is the outline of the red area on the south or southwest; what do you interpret that as? Is that the gas-water content?

A. From the well that we drilled I would say that there is -- I have made a gas-water content determination of minus 2541. It could be a little bit lower than that. You know, it's an approximation.

Q. And would you agree with Mr. Ware that structural position is important to the dolomite?

A. Very much so.

Q. Would you, please, then move on to Exhibit No. 2 and describe its contents for the examiner?

A. That is the outlined area that we believe is the productive area of the reservoir. We show the main controlling faults on there by the large black lines, and I have drawn in the minus 2550 contour, which is the approximate gas/water contact for this reservoir.

Also in the corner of each of those sections of -- showing the number of acres that are colored red. They

are in the shaded red area. In Section 14 there are 20 acres, and Section 23 is 45 acres; and Section 24 we seek 202 acres, and 24 acres of potential reservoir in Section 13.

Q. Would you please go down -- in the lower left-hand corner of that map there are some calculations. Would you describe what those are, describe the basis for those numbers?

A. Okay. These are some of the methods of penalty that the state has used in the past, and the number 1 down there is the distance method; whereby the -- the orthodox location in this particular case is 660 from the south, and 1980 from the east, and the proposed location is 330 feet, too close to the line, and the 990 feet from the west line is -- another 990 feet. If you divide those by the orthodox standards and multiply them together, you'd come up with an allowable factor of 25 percent, which would be -- amount to a 75-percent penalty.

The number two case is just based on the drainage area. I've taken -- I've assumed that if Collins & Ware drills their well, that they will drain all of the acreage in Section 14 and 23, which totals 65 acres. Their acres is 20 -- is 20 acres out of the total 65. If you use just a drainage method of a penalty, you would give them an allowable of 30 percent or 70-percent penalty.

If you combine the two methods -- that's shown in section three, which I feel is a very fair method -- you would multiply the .25 times .3 and come up with a .075 allowable factor, or a 92-and-a-half percent penalty.

If you consider a full reservoir basis -- that example is shown in example number 4 there -- Collins & Ware would have 20 acres out of a total 291 acres. That would be an allowable factor of .07 or 93-percent penalty.

And if you base it on a proration unit method, Collins & Ware has 20 acres of potential reservoir out of a 320-acre proration unit, which would mean that they would be allowed to produce .06 of that or a 94-percent penalty.

Q. In your opinion, Mr. Morris, if a penalty is assessed against Collins & Ware, should it be assessed against the well's ability to produce?

A. Yes, I do.

Q. And how often do you think the well should be tested to assess the penalty?

A. They should be tested monthly or every three our four months.

Q. Now, Collins & Ware's witnesses discussed a proposed BHP well in the northeast quarter of Section 23. Will that well be drilled?

A. That well was -- the location on that well was sought in response to Collins & Ware's unorthodox location

to north of us, and we just wanted to get proceedings going on that in case they got their well drilled, that we could protect ourselves on our acreage.

Q. So if their well was drilled without any penalty, then BHP may well seek approval for an offsetting well; is that correct?

A. That's absolutely correct.

Q. Would BHP prefer not to drill that well?

A. Absolutely. That would be an economic waste actually, because we can produce all that with our well.

Q. Will Collins and Ware's well deviate in your opinion?

A. Yes, I believe the well's drilled on a structure took a deviation in an up-dip direction, so that -- I would believe that their well would deviate toward our well, so they would be even closer to the lease lines.

Q. Even though -- assuming Collins & Ware's well -- current proposed location is slightly down dip from BHP's well, could it produce at rates comparable to those of BHP's well?

A. Yes, I believe it could.

Q. Looking at Collins & Ware's Exhibit No. 4, Mr. Morris, in looking at the southwest quarter of Section 14, based on that, are there some standard locations available that Collins & Ware could drill that would be

approximately structurally the same as its proposed location?

A. Yes, I believe there are. It looks like a location probably 660 or 990 from the west line, and approximately 1650 or so from the south -- I guess that's not quite orthodox, but it would be considerably further from our location and much more acceptable to us. There would be no interference.

There is a location about 1980 from the west and 1650 from the south line that would be a good orthodox location to drill. Based on their interpretation, it should be as high or not any more than 20 or 30 feet lower than the location that they are proposing.

Q. You were here and you heard Mr. Ware testify, did you not?

A. Yes, I did.

Q. Although I wasn't quite certain, I guess he was saying that his outline of productive acreage in the southwest quarter of Section 14 may be speculative.

A. Yes, I think mine is much more realistic in this case.

Q. If Mr. Ware is right and that is speculative, there is substantially a smaller amount of productive acreage in Section 14 than he outlines?

A. Absolutely. He's -- he testified to the amount

of risk that was drilling over there, and Collins & Ware is not prepared evidently to take that risk.

Q. Were Exhibits 1 and 2 prepared by you or under your direction?

A. Yes, they were.

Q. In your opinion is the denial of Collins & Ware's application -- or the granting of the application with the substantial penalty on production the only way to prevent waste and protect the correlative rights?

A. Yes, I do.

MR. BRUCE: Mr. Examiner, I tender BHP Exhibits 1 and 2.

MR. CATANACH: Exhibits 1 and 2 will be admitted as evidence.

MR. BRUCE: Pass the witness.

CROSS-EXAMINATION

BY MR. CARR:

Q. Mr. Morris, let's go to your Exhibit 1. The area that you have shaded red on this exhibit is what you believe, based on your geologic interpretation, to be the productive limits of the reservoir?

A. That is correct. And I'd like to point out that I failed to say on the first part of the -- is that our interpretation is also based on several lines of seismic data through that area that gives us some pretty good

control for the structural attitudes on the north-south and east-west direction.

Q. Did you construct the map using the seismic alone, or did you also integrate well information?

A. We used both of them.

Q. If I look at this exhibit, you have a fault running across the south half of Section 14, sort of parallel to the southern boundary about 330 feet north of it; is that right?

A. That is correct.

Q. What seismic line did you use to pick the orientation of that fault?

A. We have our BHP line 91-9 that goes straight up through -- pretty close to our well in Section 24 and the well in Section 23. You can see an "X" just above the 2900?

Q. Yes.

A. That is a fault cut -- excuse me -- that is the fault cut on the seismic line. I misinformed you. That was the wrong line. But "Y" goes through Section 14 -- "A" is through 14 and down through our well in Section 24. That acts as a fault cut on that line.

And prior -- previously I had that fault angling more to the south. Subsequent to Collins and Ware's first unorthodox location application in here, they shot some

seismic data, and that data went through the well in Section 23 and up through Section 14. They had to permit us, so we knew the direction of that line. So I had to believe, since they wanted to move their well from 660 to 330, that they believed the fault was between there someplace, and that is why I drew that fault in an east-west direction across there.

Q. Let me just hand you what I am going to mark, when I can get the stamp, as Collins & Ware Exhibit No. 7, and ask you if this a -- if you're familiar with this particular structure map?

A. Yes, I am.

Q. In fact, the initials -- the name at the bottom, "B. Morris," that's actually you, is it not?

A. That's correct.

Q. What this shows is -- if we look at the south half of Section 14, there is what you were referencing a minute ago when you said you had previously indicated the fault coming down more towards the southeast?

A. Exactly; I was referring to this map that we previously made.

Q. You haven't seen these -- the seismic line that Collins & Ware shot; right?

A. That's correct.

Q. You're just assuming that because they moved

their location, and that's the only new information that you have that's caused you to move the fault in this fashion?

A. That is correct.

Q. If that fault isn't placed -- I mean, you don't have anything other than the assumption for the placement of the fault as you have?

A. That's right.

Q. In fact, it might be south of there or might be north of there; isn't that right?

A. It would be hard pressed to move it to the north I would say.

Q. Do you have anything -- any control, information, other than just inference you have drawn from the application of Collins & Ware that would tell you whether to place it as you originally did or further north?

A. I just have the knowledge that they shot that seismic data. Based on my experience, you know, I believe my interpretation is a lot more valid.

Q. Without having seen the line?

A. Well, yes, absolutely.

Q. Now, you have indicated on this the closest orthodox location on this exhibit.

A. That is correct.

Q. Is there, in your opinion, based on your work,

never orthodox location in the south half of 14 from which reserves from this pool could be produced?

A. Based on my interpretation, no.

Q. In fact, no orthodox locations have ever been proposed for this pool; isn't that right? Has anyone proposed an orthodox location?

A. I don't believe they have.

Q. Your Puffer is not at an orthodox location, is it?

A. No, it's not.

Q. And the reason you -- were you involved in the selection of that location?

A. Yes, I selected that location.

Q. You were attempting to be structurally high, were you not?

A. Exactly. We had the seismic data, as we see from our first map that we -- and that is why we want to get on the structurally highest point.

Q. Why do you want to be structurally high?

A. Because that's where the gas is going to migrate.

Q. Do you happen to know what the reservoir drive mechanism is in the reservoir?

A. No, I do not.

Q. You believe, though, that you need to be

structurally high to produce the reserves?

A. Absolutely.

Q. I think you testified that a well in a lower structural position drilled by Collins & Ware might be able to produce, even though down dip, a comparable rate. Was that your testimony?

A. Yes, I believe so, if it's at the same reservoir pressure, which I have no reason that it could not be.

Q. Do you have an opinion as to how long that well would produce? Would it have as long a producing life being down rather than higher structurally?

A. I do not know.

Q. Let's go to Exhibit No. 2. If we -- I believe I understood your testimony to be the well that was proposed in the northeast of Section 23 was really a protection well for BHP?

A. Exactly.

Q. If BHP -- do you know whether or not if BHP does not drill a well in 14 at all it would -- I'm sorry. If Collins & Ware didn't drill a well at all in 14, would BHP go forward with further development in Section 23?

A. We would not probably immediately drill that location that we are seeking. We might -- after we've produced our well in Section 24, get a better handle on what we feel the reservoir extent is and everything, we

might drill on an unorthodox location there. It's possible.

Q. The information -- I gather from that statement from what the Puffer No. 1 produces might cause you to amend what you consider to be the extent of the reservoir?

A. That is possible, sure.

Q. Now, if -- you've tested the well, I gather?

A. We've been producing it for something like the last 10 days, something like that.

Q. Do you have an opinion as to whether or not that well would in effect drain the reserves from the northeast quarter of Section 23?

A. I don't know that I'm really qualified. I would presume that it is an up-dip well, and as long as that is connected, yes, it would drain it.

Q. The same would be true with whatever production there is under the southeast of 14, if there is no well?

A. Sure.

Q. Now, we have your penalty recommendations. Are you recommending any one of these?

A. I think any of the bottom three would be very appropriate in this case. They're pretty close together.

Q. The reason you're concerned about this is the drainage that could occur from a Collins & Ware well; isn't that correct?

A. That is correct.

Q. You had no objection to a well at 660 from the south line of 14 and 1990 from the west; isn't that correct?

A. That is correct.

Q. Isn't the reason for that that it was the same distance out of that common corner as your Puffer No. 1?

A. Yes, that is part of the reason.

Q. If we go to the first method that you've set here, the distance method, when you -- the first factor would be 330 over 660. That's because it's 50 percent closer in fact than the rules provide to the south line?

A. Yes, sir.

Q. Then you multiply that by 1990 over 1980, and you're again factoring that in for what reason?

A. That's 50 percent too close to -- it's 50 percent too close to the lease line, and what the state regulations allow.

Q. And yet you are actually 990 off that common boundary; isn't that right? You are 990 from the -- BHP is 990 off the west line of Section 24; correct?

A. Yes, the BHP well is.

Q. And you're concerned about drainage, but you think a well on an east-west axis the same distance off, say, the east line of 14 ought to be further penalized 50

percent?

A. Yes, the state sets the regulations. I do not set them.

Q. So we're just going to look at the state regulations?

A. Yeah, we --

Q. I just want to understand where you're coming from, even though you're 50 percent closer on that axis?

A. We brought that through the state, and they gave us permission.

Q. Let's go now -- with a waiver, I believe, is that correct, from Collins & Ware?

A. I believe that's so. I'm not positive on that.

Q. Now we look at the drainage area. That's your second factor; correct?

A. Correct.

Q. Back on No. 1, you're not concerned that there's going to be additional drainage advantage gained on BHP by a well equidistant from the common boundary between the two tracts, are you?

A. The reason I included it is because there is such a small amount of reservoir on their acres --

Q. I'm talking about number 1. If you're worried about drainage, you're not concerned that they're going to gain a drainage advantage, are you, when they're the same

distance off the common section line that you are?

A. I'm just showing that as an alternate method of penalty.

Q. If we look at the drainage area calculation, which is the second one, that is based on the 20 acres that you show productive in the southeast of 14; correct?

A. Yes.

Q. And if that fault line is at some other location, and, of course, that number would change?

A. Absolutely.

Q. When we get productive information on the Puffer No. 1, or additional information from drilling in the southeast of 14, that line could move?

A. That's right.

Q. Number 3 is one of the ones you think would be satisfactory. That is actually just multiplying the first two, isn't it?

A. Exactly.

Q. So to accept number 3, we also have to accept this interpretation of this fault running across 14?

A. Yes.

Q. And we'd also have to -- to protect -- we'd have to protect BHP from drainage by well 990 off the east line of 14 --

A. That's right.

Q. -- when BHP is 990 off the west line of 24?

A. Yes.

Q. Now we look at the reservoir area. That's your fourth factor.

A. Correct.

Q. That's 20 acres that -- again, that's dependent on the placement of the fault?

A. Yes.

Q. And then dividing that by the 291. What is that?

A. That is the total productive area shaded in red on that map.

Q. So do you believe it would be appropriate to limit the production from this well because of the 24 acres in the southwest of 13?

A. I didn't consider that. I think --

Q. What about --

A. -- whoever operates and owns that that they need to consider that.

Q. What about the 45 acres that you show in the northeast of 23; that's a factor that you considered, correct, in imposing this penalty?

A. Right, absolutely.

Q. If a well is drilled in northeast of 23, would BHP be agreeable to penalizing its production from that

well based on the number of productive acres in that proration unit as compared to the total productive acres in the pool?

A. I think to be fair to Collins & Ware that we would have to accept a comparable penalty, whatever that may be.

Q. There is no such comparable penalty imposed on the well in the northwest of 24?

A. No, that was a wildcat well and BHP took all of the risk in discovering this reservoir.

Q. Nonetheless you're saying that should not -- that wouldn't be appropriate if it's a wildcat well?

A. At the time the state did not see any reason to penalize it, so no.

Q. Are you saying that you don't think this kind of a penalty approach doesn't apply to anything but development wells?

A. That is for the state to decide.

Q. We go to your proration method, and that's 20 acres of 320.

A. Correct.

Q. You're just looking at the south half of 14?

A. Absolutely.

Q. All we're doing here is again accepting because you place the fault running across the south half?

A. Absolutely.

Q. Did you in any of these calculations measure the additional drainage area that could be gained on any of the BHP-operated tracts by virtue of the orthodox location?

A. I'm not clear on what you're asking.

Q. You saw Mr. Knight's proposed penalty, did you not, a few minutes ago?

A. Yes, I did.

Q. You understand that to be based on the additional number of acres that would be drained on BHP tracts by virtue of moving the location? Did you understand that?

A. Yeah, I believe I did. Yes.

Q. Did you make any similar kind of calculation?

A. Because they moved the well to the south and stuff.

Q. Yes. To determine how many additional acres might be drained by virtue of that movement?

A. No. I didn't see where that applies at all.

Q. And didn't you testify that your real concern, however, was the additional drainage that they would gain on you by virtue of the unorthodox location?

A. Yes, they would be a lot closer there, absolutely.

MR. CARR: That's all I have.

MR. BRUCE: I have followup questions, Mr. Examiner.

MR. CARR: I would like to move the admission of Collins & Ware Exhibit No. 7.

MR. CATANACH: Collins & Ware Exhibit 7 will be admitted as evidence.

(Collins & Ware Exhibit 7 was received in evidence.)

REDIRECT EXAMINATION

BY MR. BRUCE:

Q. Looking at that Exhibit No. 7, Mr. Morris, this was the map that was used -- submitted to the OCD to gain administrative approval of the Puffer well in Section 24, was it not?

A. Yes, it was.

Q. Do you consider this map substantially different from BHP's Exhibit No. 1?

A. Not really. It's just the placement of the fault, as Mr. Carr has clearly pointed out.

Q. And this map, Exhibit No. 7, was, of course, drawn before the Puffer well was drilled?

A. That is correct. That was our interpretation prior to drilling of the well.

Q. Looking at the east-west fault or north-northeast, south-southwest fault, do you have some confidence in the orientation of that fault?

A. All we know is that the well in section 13 is downthrown to our well, and we have a fault cut on that Puffer -- on that seismic line that goes northwest-southeast. So we know it goes in an easterly direction, east-west direction.

Q. Looking at Collins & Ware's proposed well, if BHP didn't drill in Section 23, in your opinion would the well in Section 14 drain most of that acreage?

A. Yes, I believe it would drain all of it.

Q. So moving that location could well -- from 660 to 330 from the south line could have a substantial effect on Section 23, could it not?

A. It would have -- it would drain more of that acreage for sure.

Q. Now, looking at Mr. Ware's Exhibit No. 4 again, if Mr. Ware is correct and there is substantial productive acreage in Section 14, southwest quarter of Section 14, would BHP's Puffer State well necessarily drain the southwest corner of Section 14?

A. I believe that substance is so far that it probably would not drain it all. I'm not really qualified to answer that.

MR. BRUCE: I have nothing further, Mr. Examiner.

RECROSS EXAMINATION

BY MR. CARR:

Q. I guess I have one more question concerning the first penalty factor shown on Exhibit No. 2. If I look at that, you've got your first factor being 330 over 660. Each of these factors -- that as a 50-percent penalty based on the fact that it's 50 percent closer than the standard location?

A. Exactly. In a north-south direction.

Q. And then a north-south direction, if in fact it was 165 feet off the line, then I guess there would be a 75-percent penalty?

A. Yes, that is correct. They would be encroaching on us 50 percent more.

Q. If it was drilled right on the line, then there were a hundred percent penalty, I guess?

A. They should not be allowed to drill on the line.

Q. One foot off the line still it would approach 100-percent penalty.

A. Yes, it would approach a hundred percent.

Q. Yet a well at that location would still be draining a substantial portion of the reserves off its own tract, wouldn't it?

A. Yes, and the tract to the south.

MR. CARR: That's all I have.

EXAMINATION

BY MR. CATANACH:

Q. Mr. Morris, is it my understanding that you really don't have any geologic evidence to substantiate the location of your fault going through Section 14?

A. Just the knowledge that Collins & Ware shot a seismic line through their proposed location, and they -- after they shot that seismic line, they moved their location 330 feet south. That's telling me that they felt the 660 location was too risky to drill and wanted to move to the south.

Q. Their seismic line was shot east-west, right along their --

A. They shot, I believe, three seismic lines in this area. One was pretty much a north -- a northeast-southwest line that goes through the well in Section 23, goes up through the proposed location, which I believe would be the 990/660 location. I can't be exact on that. I just know the orientation of the line through 23, and it went right into that direction. Typically these lines are shot in a straight line direction and stuff, so -- I believe they just wanted to get closer to a safer location. Like I said, my original interpretation shows all of Section 14 to be nonprospective.

Q. Your original interpretation being Exhibit No. 7?

A. Exactly.

Q. Shows what now?

A. There to be no reservoir in the Montoya in Section 14. That there was a considerable risk in -- because they shot their line, that's why I moved basically that east-west fault a little to the north, showing some reservoir on their acreage.

MR. CATANACH: I have no further questions.

EXAMINATION

BY MR. STOVALL:

Q. So if your interpretation is right, it doesn't matter where they drill the well, does it?

A. If my original interpretation is right, that's right. There is considerable risk. I guess I believe that if they believe their interpretation that they have that much reservoir under theirs, they should be allowed to drill at an orthodox location, which ought to be good, based on their interpretation. Why should they be crowding us if they believe all of the west part of Section 14 is viable?

Q. Your penalty proposal is basically a geometric progression of multiplying fractions by fractions to get the smallest possible fraction you can come up with, isn't it?

A. Those are some of typical methods that the state uses and stuff. That's basically what I based my methods

on.

Q. So what you're suggesting is you take one method and multiple it times another method so that you can increase the percentage penalty; is that right?

A. No, that's not really what I'm doing there. All I'm saying is the distance --

Q. Isn't that what that number is?

A. Yes, it is, a combination of both of them. I think that is a fair way of doing it because there is such a small percentage of the reservoir on their lease. That the -- the distance method alone does not really --

Q. How would you recommend that they -- that that method be applied if in fact your original interpretation of the fault were wrong? How much reservoir would you give them at that point?

A. Based on my original interpretation, you know, maybe there's one or two acres that might be prospective on theirs.

Q. Why don't you use that -- plug that number in here instead? Would that not work, the penalty would be even greater?

A. Well, sure, sure. These are just suggestions to the state what we feel would be fair to us. We feel like they're really encroaching upon our acreage and our reservoir. He were granted approval for 660/990, which we

were being very generous, we felt.

Q. I guess I do have a serious question which you don't need to answer. As Mr. Carr pointed out, you're asking for a penalty on a well which is the same distance from the common boundary as yours, but I guess that's your interpretation to ask for what you can get.

A. Sure, sure. I'm making the things as positive for us as I can. I think that's . . .

MR. STOVALL: I don't have any further questions.

MR. CATANACH: Witness may be excused.

JERRY LONG,

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

DIRECT EXAMINATION

BY MR. BRUCE:

Q. Would you please state your name for the record?

A. My name is Jerry Long.

Q. Where did you reside?

A. I live 2709 Bristol Lana Drive, Roswell, New Mexico.

Q. What is your occupation?

A. I'm a petroleum consultant.

Q. And who have you been retained by in this case?

A. I've been retained by BHP petroleum.

Q. What type of work do you do for BHP Petroleum?

A. I do applications to drill, right of ways, things like that.

Q. Are you familiar with the topography of the area of the well at issue in this case?

A. Yes, I am.

MR. BRUCE: Mr. Examiner, I don't intend to qualify Mr. Long as an expert, just as practical knowledge of the topography of the area.

MR. STOVALL: He is so qualified.

Q. (By Mr. Bruce) Mr. Long, would you look at BHP Exhibit No. 3 and identify it for the examiner, state what it shows?

A. Is this No. 3?

Q. Yes, sir.

A. This exhibit shows the 990/660 location and the 990/330 location, and it shows the standard location for south half dedication.

Q. That standard location is that square over on the southwest of the southeast quarter of Section 14?

A. Yes.

Q. Looking at the two nonstandard locations, there is a little dashed line drawn just to the north of the 990/660 location. Would you describe what that is?

A. This area is a sand duney plains, sloping slightly to the west, and the dashed line there outlines a

shallow depression which may contain water at times of high precipitation.

Q. Now, I think Mr. Seltzer testified that this was not quite the -- the first proposed location was not quite in that depression. It was kind of on the shoreline, if you will. Disregarding Mr. Seltzer's comments about the rancher's objections, is there anything topographically which forbids the drilling of the well at the 660/990 location?

A. In my opinion there would be no problem with the drilling location at that point. It might require as much as five-foot of fill in one corner.

Q. To build a well pad?

A. Yes.

Q. Have you been out in the southeast quarter of Section 14?

A. Yes, I have.

Q. That road that's indicated as stopping at the lake, what does that road do?

A. That road does not stop there. It's the access road for the temporarily abandoned well in the northeast quarter of Section 23, and that access road crosses that depression.

Q. So really, in your opinion, this low spot itself would not affect the 660/990 location; is that correct?

A. That is correct.

Q. And is Exhibit 3 just a copy of the USGS topographic map?

A. Yes, with five-foot contour intervals.

Q. Were the little circles and squares drawn on it by you?

A. Yes.

MR. BRUCE: Mr. Examiner, I have no further questions of the witness, and move the admission of the BHP Exhibit No. 3.

MR. CATANACH: Exhibit No. 3 will be admitted as evidence.

(BHP Exhibit No. 3 was admitted in evidence.)

MR. CARR: I have no questions.

MR. STOVALL: I have a question.

EXAMINATION

BY MR. STOVALL:

Q. You're talking about the depression -- I assume you're talking this depression we've been referring to, is the one just north of the northmost circle?

A. Yes.

Q. You said that that road services the well in the northeast quarter of section 23?

A. Yes.

Q. It comes up from the south to get there, doesn't it?

A. There is a road coming from the south but the access is actually from the north.

Q. Where does it go?

A. There is a road -- from this depression the road goes northwest towards the railroad track, and then southwest paralleling the railroad track back to the county road. And that is the road that was used by BHP to drill their well, and I'm sure it was the road that was used to drill the other well.

Q. You understand that little depression is not used in the stock tank by the rancher?

A. I noticed it looks like a feeding area. The road crosses the depression.

Q. Do you know if there is a water line coming up from the south on that road to put water in there?

A. There is a water line paralleling the north-south road. I do not know where it goes to, but I know when we laid out the pipeline right of way for BHP that they asked us to protect the water line, so I know there is one there.

MR. STOVALL: No further questions.

MR. CATANACH: I don't have anything else.

MR. BRUCE: That concludes my presentation,

Mr. Examiner.

MR. CATANACH: The witness may be excused. Counsel, want to submit brief closing statements?

MR. BRUCE: Very briefly, Mr. Examiner. I've got a couple of different geological interpretations, but I believe Collins & Ware's Exhibit No. 4 shows that they have standard locations available to them in the southwest quarter of Section 14, and therefore the application should be denied. We believe Collins & Ware is merely applying to get near BHP's well. As Mr. Long just testified, there is really no topographic reason for moving the well to the south, and further, the mineral lessee has a right to use that 660/990 location regardless of the rancher's objections.

Correlative rights means the opportunity of the owner of a lease to produce his equitable share of gas in a pool substantially in proportion to the quantity of recoverable gas under his property as compared to the total recoverable gas in the pool. We believe BHP's geology, these numbers can be obtained from their exhibit and support a substantial penalty in the range of 70 to 95 percent on the Collins & Ware well. This penalty should be based on the well's ability to produce as tested three to four times a year.

If a penalty is -- a substantial penalty is not

produced -- is not assessed against the well, unfair drainage will occur as against BHP's property; and if the well is approved without a penalty, BHP will be compelled to seek approval of a similar offsetting well in the northeast quarter of Section 23, and as Mr. Morris testified, this would cause economic waste and BHP does not want to be put in that position.

In short, because of Collins & Ware's own geology this application should be denied.

MR. CATANACH: Mr. Carr.

MR. CARR: May it please the Examiner, Collins & Ware is before you seeking authority to develop the south half of Section 14 in the Montoya formation. Mr. Bruce and I agree this is a correlative rights case, and we're asking you to give us an opportunity to produce without waste our fair share of the reserves in the pool.

One thing both sides agree, apparently, is that there is some producible reserve under 14. Collins & Ware presented a structure interpretation which shows that there is a substantial area we believe contains producible reserves. BHP I guess agrees that there is something there. They seem to think -- take the position we must know something they don't know, so they're going to move their fault to show there are some reserves. Well, I will tell you, we think we do know something they don't. We've

got reserves there, and we're asking you to let us produce them.

Both of the geologists before you admit that maximum structural position is essential if you're going to efficiently and effectively produce the reserves. For that reason Collins & Ware stands before you trying to place the well at the best possible structural position, so there wouldn't be reserves left in the reservoir that will then be drained and produced by BHP.

This is a two-dimensional reservoir. When you look at the case, you have to keep that in mind. When you evaluate the location of the well, we submit you must also consider that.

We have come before you and recommended that based on our interpretation we believe no penalty in fact is appropriate. Now Collins & Ware is coming forward with a development plan. BHP is coming forward with a reaction, a possible well in Section 23. Our position is that well simply is -- if we drill our well and establish what we believe we will establish, that we have substantial recoverable reserves. Then they must take advantage of the opportunity to protect their own correlative rights and go forward and drill a well in 23 or let those reserves actually be drained.

We've come forward and we have proposed a

penalty factor based on drainage from offsetting properties, additional drainage that is gained by virtue of the unorthodox location, and we had the only penalty that addresses that before you. The penalty would be about 9.7 percent. We believe anything in excess of that penalty would, in fact, impair correlative rights, for it would authorize the drainage from our tract to the properties operated by BHP.

It's interesting when you look at BHP's case. First of all, based on the data which is essentially the same data they had before them when they drilled their Puffer No. 1, they concluded that there was no reservoir under the south half of 14. Now they've changed it. They virtually admit that it's just because they think we know something they don't they've arbitrarily run a fault about parallel to the south line of Section 14 and parallel thereto.

Then they come in and they say, "Yes, we are proposing penalties to you, Mr. Catanach, to protect ourselves from drainage. That's our concern." Look at the penalties they've proposed. The first one to protect them from drainage suggests you impose a penalty -- 50 percent of the penalty being based on the fact that we're the same distance from the common boundary that they are. I submit to you that that is absolutely absurd if the concern is

what they say it is, to protect them from drainage.

If we look at 2 through 5, the remaining recommendations, all of those are based on the placement of a fault which is arbitrary, based on a guess because they think we know something they don't because we have seismic data in our possession that they do not. Using any one of those formulas is likewise absurd, and no matter how you multiply it, or stack them one on top of the other, what they're doing in effect with penalty saying, "Well, you may know that you have reserves, but if you drill that well, we're going to ask the OCD to impose a penalty which makes it impossible for you to produce them because we have a well in the reservoir, the Puffer No. 1, that will drain the whole blasted thing." They stand before you and they say they're concerned about drainage. Well, if the concern here is drainage, the only penalty formula proposed to you is the one that is based on additional acreage that will be drained by virtue of the proposed unorthodox location. That's the penalty proposed by Mr. Knight, and that is 9.7 percent.

If you enter an order approving the location and imposing that penalty, you will protect correlative rights, prevent waste, and you will let us go forward with an opportunity to produce our fair share of the reserves in this pool.

MR. STOVALL: Before you take it under advisement, I would like to take this opportunity to -- primarily for informational purposes -- to advise the parties to this case of -- regarding a rather sensitive issue, and that is the discussion of the dominant mineral right versus the subservient surface right with respect to the rancher's pond. Assuming for the moment, and not accepting the argument, but rather assuming there is a stock pond and feeding area there, I think you all as operators are well aware that if the BLM doesn't want you at a location for whatever reason, they pretty well can keep you out.

We have a strong interest that has been exhibited in this state with respect the protection of fee owners' surface rights as well, and I will just tell you that I recommend to the division in all these cases such as this that to the extent that the topographical considerations of the surface owner, such as agricultural considerations, are a factor to be considered in a surface location, even though there is no specific law stating that as such -- there may be some day -- the industry needs to be aware of that, and it's for your information that is a valid consideration, assuming the factual evidence as submitted that -- private ownership surface considerations, including agricultural, livestock, feeding, watering, et cetera, are valid and a consideration, not necessarily

controlling, but a thought process in the determination of an unorthodox location.

That's not a controlling statement in this case; it's informational only. This is primarily a geologic case. But I think it's important that both the industry and the rest of the world know that the OCD does recognize this as a valid concern, and I have nothing further.

MR. CATANACH: There being nothing further in this case, Case 10344 will be taken under advisement.

(Whereupon, the hearing was concluded at the approximate hour of 1:10 p.m.)

* * *

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

REPORTER'S CERTIFICATE

I, Susan G. Ptacek, a Certified Court Reporter and Notary Public, do HEREBY CERTIFY that I stenographically reported the proceedings before the Oil Conservation Division, and that the foregoing is a true, complete and accurate transcript of the proceedings of said hearing as appears from my stenographic notes so taken and transcribed under my personal supervision.

I FURTHER CERTIFY that I am not related to nor employed by any of the parties hereto, and have no interest in the outcome thereof.

DATED at Santa Fe, New Mexico, this 18th day of October, 1991.

Susan G. Ptacek

SUSAN G. PTACEK
Certified Court Reporter
Notary Public

My Commission Expires:
December 10, 1993

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 10344, heard by me on August 8, 1991.

David R. Catanach, Examiner
Oil Conservation Division