STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:	CASE NO. 11,925
APPLICATION OF KCS MEDALLION RESOURCES, INC., FOR AN UNORTHODOX GAS WELL LOCATION, EDDY COUNTY, NEW MEXICO	ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: MICHAEL E. STOGNER, Hearing Examiner

February 19, 1998

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, MICHAEL E. STOGNER, Hearing Examiner, on Thursday, February 19th, 1998, at the New Mexico Energy, Minerals and Natural Resources Department, Porter Hall, 2040 South Pacheco, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

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I N D E X

February 19th, 1998
Examiner Hearing
CASE NO. 11,925

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A P P E A R A N C E S

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By: PAUL A. COOTER

* * *

WHEREUPON, the following proceedings were had at 8:20 a.m.:

EXAMINER STOGNER: At this time we'll call Case Number 11,925.

MR. CARROLL: Application of KCS Medallion Resources, Inc., for an unorthodox gas well location, Eddy County, New Mexico.

EXAMINER STOGNER: Call for appearances.

MR. BRUCE: Mr. Examiner, Jim Bruce on behalf the Applicant.

I'd really like to move forward with this case, but Mr. Cooter has entered an appearance in opposition to this case, and so I would presume this will go to the end of the day also.

EXAMINER STOGNER: Yeah, I guess that's what we'll do. If you're prepared, I was fixing to say let's go ahead and hear it. But we'll move that one to the end of the docket.

* * *

(Thereupon, the following proceedings were had at 11:11 a.m.)

EXAMINER STOGNER: At this time we will call Case 11,925.

MR. CARROLL: Application of KCS Medallion

Resources, Inc., for an unorthodox gas well location, Eddy County, New Mexico.

EXAMINER STOGNER: Call for appearances.

MR. BRUCE: Mr. Examiner, Jim Bruce of Santa Fe, New Mexico representing the Applicant.

I have one witness to be sworn.

MR. COOTER: Mr. Stogner, Paul Cooter appearing on behalf of Southwest Royalties, Inc., which has protested the unorthodox location.

We have two witnesses, Dave Alderks and Jim Blount.

EXAMINER STOGNER: Any other appearances?

Will the witnesses please stand to be sworn at this time?

(Thereupon, the witnesses were sworn.)

EXAMINER STOGNER: Is there any reason for opening remarks, or shall we just get right on into it?

MR. BRUCE: I would just rather get right on into it.

EXAMINER STOGNER: Mr. Cooter?

MR. COOTER: I have no opening remarks, other than to state for the record that Mr. Bruce and I have exchanged exhibits before the hearing.

EXAMINER STOGNER: Okay. Mr. Bruce, you may proceed.

WILLIAM A. SIRUTA,

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

DIRECT EXAMINATION

BY MR. BRUCE:

Q. Would you please state your name and city of residence for the record?

A. William Siruta, Midland, Texas.

Q. Who do you work for and in what capacity?

A. I'm a senior geologist with KCS Medallion Resources, Inc.

Q. Have you previously testified before the Division?

A. Yes, I have.

Q. And were your credentials as an expert geologist accepted as a matter of record?

A. Yes.

Q. And are you familiar with the geologic matters involved in this Application?

A. Yes.

MR. BRUCE: Mr. Examiner, I'd tender Mr. Siruta as an expert geologist.

EXAMINER STOGNER: Any objections?

MR. COOTER: No, sir.

EXAMINER STOGNER: Mr. Siruta is so qualified.

Q. (By Mr. Bruce) Mr. Siruta, what does KCS seek in this case?

A. We seek approval of an unorthodox location for a well 860 feet from the south line, 660 feet from the west line of Section 16, Township 19 South, Range 29 East. The south half of the section will be dedicated to the well.

Q. What is the primary target zone in this well?

A. The primary zone is the middle Morrow sands.

Q. Would you refer to Exhibit 1 and identify it for the Examiner and discuss its contents, please?

A. It's the production map of the area that we're discussing. All the wells on this map penetrate the Morrow except for the two oil wells in Section 15. All of the circled wells that are shaded in green are all Morrow producers.

Right next to each well is a little box, and in that box is the date the well was first produced. The top number is the cumulative gas, the second number is the cumulative oil, the third number is the daily rate or the date that the well went in active or was P-and-A'd.

Q. What are the key wells in this area?

A. There are really four key wells in here. There's the Southwest Royalties well, which is in the southwest quarter of 17. That well has made 5.2 BCF, 64,000 barrels of oil, and has produced for almost 24 years.

The well in the northeast of 17 is a Burlington Resources well. It's made 2 BCF, 20,000 barrels of oil, making about 369 MCF a day, and it's been producing since 1985.

The well in the northwest of Section 16, a Burlington Resources well, has made 1.5 BCF, 16,000 barrels of oil, and has been inactive since 12 of 1995.

And the well in the southeast of Section 16, another Burlington-operated well, has made 325 million, 3.7 MBO, and has been inactive since 11 of 1986 in the Morrow.

Q. That well in the southeast quarter of Section 16 was noncommercial, was it not?

A. No, it was not.

Q. There's also, to complete the pattern around your proposed well, there's a well in the north half of Section 20 and a well in the north half of Section 21. What can you tell us about those wells?

A. Both of those wells penetrated the Morrow and were not productive in the Morrow interval.

Q. If you're allowed to drill your proposed well, what type of reserves does KCS hope to recover?

A. We're hoping to recover 1.5 BCF. We feel like if we would have drilled this well earlier, that we would have seen substantially more reserves.

But we feel now that we're going to experience

some partial depletion by the surrounding wells, which -- Three wells in here have basically cum'd 10 BCF. The two wells in 17 and the northwest of 16, added together, have made 10 BCF.

Q. Let's move on to your Exhibit 2. What is that?

A. That's a structure map based on the base of the Morrow massive shale.

Q. Is structure important in the middle Morrow?

A. No, not typically in this area.

Q. Okay. This line also shows a cross-section, A-A'?

A. Right, the line marked in red connecting the wells is the cross-section we'll show later.

Q. Why don't you move on to that cross-section, Exhibit 3, and identify the main zone of interest for the Examiner.

A. The main zones of interest here are the middle Morrow sands, which I have labeled as "A", "B" and "C" sands.

Q. Now, are these sands always continuous across this area?

A. No, as you can see from the cross-section, they're very lenticular. I've separated the sandbodies, trying to indicate zones of deposition here by some shale markers, but you can see in between the shales they come

and go pretty erratically.

Q. Okay. Now, this "A", "B" and "C" designation, that's internal to your --

A. That's correct. That's just the way I happened to label them.

Q. A couple more questions on this. Is the lower Morrow potential in this area?

A. No, not typically. Most of the lower Morrow sands that have been completed out here are either not commercial or are wet.

Q. Okay. Now, you're hoping to get all three sands in your proposed location; is that correct?

A. That's correct.

Q. Now, the well immediately to the east of your proposed location, the one in the southeast quarter of Section 16 -- First of all, that well was not commercial; is that correct?

A. That's correct.

Q. And it was not perforated in these "A", "B" and "C" sands, the main sands, was it?

A. That's correct, it was not.

Q. It was only perforated in what? A stray zone?

A. Yeah, a couple of stray zones that develop above the middle Morrow here. The main pay sands were extremely thin.

Q. Well, since the "A", "B" and "C" sands are not present, or at least not present in commercial thicknesses, in that well in the southeast quarter of Section 16, is that a reason for moving to the west, moving to an unorthodox location?

A. Yes.

Q. If KCS has to drill at an orthodox location or fairly close to that noncommercial well in the southeast quarter of Section 16, is there a high probability it could be noncommercial?

A. Yes.

Q. And that would -- Your company could not justify drilling in that circumstance?

A. That's correct.

Q. Mr. Siruta, let's discuss these three main Morrow zones. Maybe let's do it all at once.

Could you just put Exhibits 4, 5 and 6 in front of you and discuss these three main Morrow pay zones for the Examiner?

A. These three maps that I have are net isopachs on the Morrow "A", Morrow "B" and Morrow "C" sands.

The wells that are shaded in -- or colored in green, the circles, are wells that produce from the sand that's mapped. So if you -- Like, for example, the net isopach on the Morrow "A" sand, the two wells in 17, the

well in 16 and the well in 22 produce from that sand. They may produce also from other sands, but they do produce from that sand.

Q. Okay. Now, looking overall at this, in your opinion is it good enough to hit one of these sands, or do you need to stack these sands to have a good chance of getting a commercial well?

A. We feel like to have a commercial well, we at least have to have two of these sands and would like to be able to stack all three of them to assure a commercial well.

Q. The really good well in this area, the Southwest Royalties well, has all three zones, doesn't it?

A. That's correct.

Q. Now, why don't you go through these exhibits briefly and discuss, you know, the trend of the reservoir and the other items that are shown on these maps.

A. Typically, out here what I have right next to the well is a number, and that illustrates the net sand for that well.

As you can see on all three of these sands, the general trend is in a northwest-southeast direction. For example, in the Morrow "A" sand it trends from the north and then it kind of makes a turn and goes of to the east, and there's quite a bit of control out here to the east.

You can also see that the sand cuts, really, the east half of Section 17. Most of the sand is present there.

And the Morrow "B" sand, it's almost a true north-south sand. Again, most of the sand in Section 17 is present in the east side of the section.

The Morrow "C" sand is, again, a north-south-trending sand. It bifurcates and does cut through Section 16, but again in Section 17, the majority of the sand is in the east half of the section.

Q. Now, once again, what about these -- Well, a couple of questions. Looking at the well in the southwest quarter of Section 17, the Southwest Royalties well, there's very little sand development to the west of that well, is there?

A. That's correct.

Q. Based on that, would that well drain much from the west?

A. I think the primary drainage from that well in all three of these sands would have to be from an easterly direction.

Q. Okay. Another thing on these exhibits, regarding the well in the southeast quarter of Section 16, the well you're moving away from, it does have some net thickness in a couple of these sands, doesn't it?

A. That's correct. I've based that on a resistivity log, which is the only log that I had available.

Q. Okay.

A. But there is just traces of the sand.

Q. Okay. So it was not present in quantities that -- Obviously, the operator didn't perforate or produce that?

A. That's correct.

Q. So once again, you'd want to stay away from that well?

A. That's correct.

Q. Now, in the north half of Section 20 there's a well just to the south of the Southwest Royalties well. What can you tell us about that?

A. That well had none of the three pay sands present at all, in terms of a net sand.

Q. So it's apparently -- Once you get almost immediately to the south of the Southwest Royalties well, it's dry?

A. That's right.

Q. What about the north half of Section 21? There's a well there that apparently didn't produce from the Morrow, but it has some pretty good thicknesses.

A. Yeah, that was kind of an interesting well. They did perforate and test these sands, and they're all pretty thick and they look pretty good on the porosity logs. But

they attempted to complete it and never made a well out of it. So the assumption that I've made is that these sands must have real poor permeability.

Q. Because of that, would you also want to stay a reasonable distance away from that well in the north half of Section 21?

A. Yes.

Q. You don't want to hit a low-permeability area, do you?

A. That's correct.

Q. Based on the dryhole in the north half of Section 20 and the low permeability in the north half of Section 21, from a geologic perspective, is the Southwest Royalties well draining from the south?

A. Probably not to a great degree. I think the geology shows that there's probably not that much sand to be drained from that direction.

Q. Okay. Now, if you go to the north of the Southwest Royalties well, there's a decent Burlington well there, isn't there?

A. That's correct. That well has made 2 BCF.

Q. Because of that competition, would you expect the Southwest Royalties well to be draining significantly from the north?

A. No.

Q. Really all that leaves, then, is drainage primarily in the direction of KCS's proposed well?

A. That's correct, from the east side of the section.

Q. In your opinion, is the proposed location necessary to adequately test the Morrow and ensure a reasonable chance of success?

A. Yes.

Q. Based on what you've shown here, will your location adversely affect the Southwest Royalties well?

A. In my opinion, it wouldn't. This well has been producing for almost 25 years. It's made 5.2 BCF and, you know, they've had ample opportunity to drain their reserves. I think 25 years is plenty long.

Q. Is your opinion, is the granting of this Application in the interests of conservation and the prevention of waste?

A. Yes.

Q. Regarding offset operators, the Southwest Royalties well is a south-half well unit, is it not?

A. That's correct.

Q. And the acreage to the south is all within the Parkway West Unit --

A. Yes.

Q. -- operated by UMC Petroleum Corporation?

A. Yes, that's correct.

Q. And those are the only two offsets?

A. That's correct.

Q. Is Exhibit 7 my affidavit regarding notice to those offsets?

A. Yes.

Q. Mr. Siruta, were Exhibits 1 through 6 prepared by you or under your direction?

A. Yes.

Q. And Exhibit 7 was prepared by me?

A. That's correct.

MR. BRUCE: Mr. Examiner, at this time we would move the admission of KCS Medallion's Exhibits 1 through 7.

EXAMINER STOGNER: Exhibits 1 through 7 will be admitted into evidence.

Thank you, Mr. Bruce.

Mr. Cooter, your witness, please.

MR. COOTER: I have no questions.

EXAMINATION

BY EXAMINER STOGNER:

Q. The well in the north half of 17, who's the operator of that?

A. Burlington Resources.

Q. And were they notified?

MR. BRUCE: I did not notify them, Mr. Examiner.

EXAMINER STOGNER: Wouldn't they have been an affected operator?

MR. BRUCE: The way I read the rule, Mr. Examiner, it would be the people to the -- the unit to the -- the immediate unit to the west, and the unit to the southwest.

Q. (By Examiner Stogner) Now, you've broken this middle Morrow out into the "A", "B" and "C" sand, and you attribute it to different sands and production. Is there any way to come up with percentages, which is the more prolific sand, which is --

A. Well, it's -- You know, it's pretty difficult in here if you look at the Southland well. You know, all three sands are fairly porous in that well, and they look fairly good on the log. It really is difficult to do that.

I try to break these sands out into what I think are as small of a depositional interval as you can. That kind of assists you in mapping the trend.

And I have tried to do this, I have tried to do a reserve analysis, trying to base what amount of the production comes from which sands, and I just haven't been able to do it.

Q. Okay. Now, the old well in the south half of 16, who drilled that and what's the history of that?

A. I can't say for certain who drilled that. I

don't recall. But Burlington operates it. That well was drilled into the Morrow. A couple of stray sands were shot. It made a marginal well, and now it's been recompleted into the Atoka.

Q. And so that's an Atoka producer?

A. Right, and it's fairly marginal itself. I think it's making less than 50, 60 MCF.

Q. Okay, now, is that -- The figure that you show to the left, in Exhibit Number 1, of that box, that is the Morrow production?

A. That's correct.

Q. Okay, now which sand did it come from? Because I don't show your Exhibits 4, 5 or 6 indicate it.

A. Okay, it came from a sand above the "A", "B" and "C" sands, kind of a stray.

Q. So that corresponds to your A' cross-section --

A. That's correct.

Q. -- just to the top of the "C" sand, that one straggler?

A. That's correct.

Q. Okay. Now, the closest standard location would be 1650 feet off of that west line; is that correct?

A. That's correct.

Q. Okay. In looking at your Exhibits 4, 5 and 6, where would you end up on those isopachs?

A. In the Morrow "A" sand you would end up just to the east of the 10-foot contour, probably with about eight foot of sand.

Q. And that's not enough, in your opinion, to be commercial?

A. I don't believe so. My experience out here in the Morrow in this area, you've got to have, you know, 10 to 12 feet of sand to really be commercial. And in this area I'm skeptical, if you cut one sand and don't have the other two, whether you'll have a commercial well. I think you've got to at least have a couple of the sands.

In the Morrow "B", that would put you just about on the 10-foot isopach.

In the Morrow "C", again, it would put you at about eight feet.

Q. You discussed with Southwest Royalties what would be an adequate location?

A. Yes, we did before the hearing, and we proposed a 990 location, and the exact words were, they really didn't want us to drill there at all.

EXAMINER STOGNER: Okay, any other questions of this witness?

You may be excused at this time?

Mr. Bruce?

MR. BRUCE: That's all I have in this case, Mr.

Examiner.

EXAMINER STOGNER: Mr. Cooter?

Let's go off the record just for a minute.

(Off the record)

EXAMINER STOGNER: Okay, Mr. Cooter, you may proceed.

DAVID F. ALDERKS,

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

DIRECT EXAMINATION

BY MR. COOTER:

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

A. I'm David F. Alderks.

Q. And by whom are you employed?

A. Southwest Royalties.

Q. In what capacity?

A. I am a geologist.

Q. Have you previously appeared before the New Mexico Oil Conservation Division --

A. Yes, sir.

Q. -- as a witness --

A. Yes, sir.

Q. -- geologist?

A. Yes, sir.

Q. To refresh the Examiner's recollection, would you please give a brief résumé of your education and professional experience?

A. I graduated with a BS degree in geology from Brigham Young University in 1977, master's degree in geology from the University of Wisconsin in Milwaukee.

I've been employed in the oil business as a geologist for 19 years, doing exploration and development-type work. I am a registered geologist in the State of Wyoming and in the State of Illinois.

Q. There are a series of exhibits in front of you. Let me direct your attention, if I may, to Exhibit 1. Would you explain that to the Examiner?

A. This is a structure map which is on the top of my Morrow C, which is essentially the same thing as Mr. Siruta's structure map on his shale, and it shows essentially the same thing.

Some very minor dip in the area. Outlined on this map is the Southwest Royalties lease in green, and then a cross-section which comprises our Exhibit Number 2.

Q. Let's turn to that Exhibit Number 2, if you would, identify the wells first in the cross-section.

A. Starting at A we have the Southwest Royalties Union Texas State, which is our well in Section 17, Unit N.

Then we go up to the Parkway State 17-1 in Unit

Letter G of Section 17.

Come over to the State Com 16-1 in Unit Letter F of 16.

And then down to the State Com 1-16 A in Unit Letter O of Section 16.

What this cross-section also shows is my datum, which is on the top of my lower Morrow, which I call Morrow C, and then also shows my Morrow B section, which is the interval between the oolitic limestone down to the base of the big shale, which is the middle Morrow section.

The Morrow C is the lower Morrow, which is not of an issue here in this case.

Q. When did Southwest Royalties acquire its interest in the Union Texas State Com Number 1 well?

A. It's been about a year, a year and a half or so ago.

Q. From the cross-section what mapping criteria were used for your next exhibit, Exhibit 3?

A. I have made a net sand map of my Morrow B whereby I use an API 50 gamma-ray cutoff and then supplement that with 8-percent density to make my net maps.

Q. Okay, let's turn to Exhibit 3. Identify that.

A. Exhibit 3 is a net Morrow B sand isopach showing porosity greater than 8 percent. This is a composite map utilizing my criteria of the sands in the Morrow B section.

In my past experience, I have split sands out to try to map individual sands. That can be sometimes done, but it's tenuous at best because it's hard to specifically say that one sand is exactly the same as another sand.

By doing so, I've been able to determine that by lumping sands together to find where most of the sand packages are, the thickest parts, that that works just as well as trying to split something out into minute detail.

Q. Exhibit 3, being the isopach, obviously the sands trend from the northwest to the southeast across this --

A. Yes, sir.

Q. -- area that we're talking about?

A. That is correct.

Q. Were Exhibits Numbers 1, 2 and 3 prepared by you or under your direction and supervision?

A. Yes, sir.

MR. COOTER: We offer those three exhibits at this time, Mr. Stogner.

EXAMINER STOGNER: Any objections?

MR. BRUCE: No, sir.

EXAMINER STOGNER: Exhibits 1, 2 and 3 will be admitted into evidence at this time.

MR. COOTER: That concludes our direct examination of this witness.

EXAMINER STOGNER: Thank you, Mr. Cooter.

Mr. Bruce?

CROSS-EXAMINATION

BY MR. BRUCE:

Q. Just a couple of questions, Mr. Alderks.

Just for definition purposes, does your Morrow B designation correlate with Mr. Siruta's?

A. It does not.

Q. Does not?

A. Does not.

Q. Does it include all of Mr. Siruta's "A", "B" and "C"?

A. Yes, it does.

Q. Okay. So what you're calling Morrow B is what Mr. Siruta has broken out into "A", "B" and "C"?

A. Yes, and it will also include what he has not included in there. It will include some of that upper middle Morrow sands.

Q. What he referred to as stray sands?

A. Yes. However, I'm not sure that you can say they're always stray.

Q. Let's look at your cross-section. You give your well, which is the Union Texaco State Com Number 1, substantially less sand than Mr. Siruta -- sand net thickness than Mr. Siruta does, don't you?

A. I have given eight feet in there, and that's

based on my criteria. This well is -- does not meet much of my 50 API sand cutoff on the gamma ray.

Q. Why is this the best well in the pool, then?

A. Because it has some good porosity in there. Some of these sands may be a little bit -- I think this well connects into our -- the main channel that you can see in my Exhibit 3, here on the edge.

Q. If you were drilling a well in the -- or recommending a well in the south half of Section 16 to your management, would you want to drill a well close to the noncommercial well in the southeast quarter of Section 16?

A. I would -- No, I would like to not be right on top of that well, but I would like to be in the channel, if I could be, in a legal location.

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

EXAMINATION

BY EXAMINER STOGNER:

Q. Your well in the south half of Section 17, has that gone through any recompletions or refracturing or restimulation since its inception? Is this a 20-year-old well?

A. Yes, sir, that well was originally drilled by Hondo in October of 1974.

Q. Okay. Do you know if there have been any recompletions or anything?

A. That well was -- I think it was -- this well was originally perforated down in the C sands, below the middle Morrow shale, and they were not particularly productive, and the well was then come up and recompleted into the B sands.

So I think there was, in the past, some attempt at some recompletions, and that's where the well is producing now, out of the B.

Q. Do you know when that recompletion or upper sands were perforated?

A. It was not long after that well was drilled, I believe. I can't give you a specific --

Q. So nothing with the last ten years or --

A. No, sir.

Q. -- recent history?

A. No, sir.

Q. Do you know how that well was stimulated or...

What I'm trying to figure out, why this is a better well than that other one. Was stimulation techniques done?

A. This -- The scout ticket at the base here shows a small frac, 5000 gallons of acid, and then a frac, 20,000 with 30,000 pounds of sand.

Q. How long has that Burlington well to the north, how long has it been producing?

A. That well was completed in 1984, in October of 1984.

Q. Essentially producing from the same intervals?

A. Yes, sir.

EXAMINER STOGNER: No other questions for this witness. You may be excused.

JAMES BLOUNT,

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

DIRECT EXAMINATION

BY MR. COOTER:

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

A. James Blount.

Q. And for whom are -- By whom are you employed?

A. Southwest Royalties.

Q. Have you previously appeared before the New Mexico Oil Conservation Division and made your educational and professional experience a matter of record?

A. Yes, I have.

Q. Just to assist the Examiner in that regard, would you briefly restate it at this time? Don't go into an awful lot of detail, but just cover the high points for me.

A. Yes, I have a petroleum engineering degree from Texas A&M University. I graduated in 1984. I worked for

Mitchell Energy for eight years as a petroleum production engineer, and I worked for Southland -- or for Santa Fe Resources as a contract engineer in both reservoir and production for two years, and I've been employed with Southwest Royalties as an area supervisor for one year.

Q. Certain exhibits are on the table in front of you. Exhibits 4, 5 and 6 appear to be well drainage radius plats, and Exhibit 7 a map -- a tabulation of map circle volumes.

Let's start with Exhibit 4, and explain that, if you would, to the Examiner.

A. Okay, what I've done here is, I've incorporated the isopach map that Mr. Alderks has presented, and I've -- what I've done is drawn radius circles around each of the wells out there.

And then what I've gone and done is, I've calculated volumetrically what the reserves for these wells based on the original bottomhole pressure of these wells, and I've come up with a yield per acre-foot.

And then what I did was figured out how much area was inside of each one of those circles between the isopach lines. And I would multiply that times that gas volume factor to determine how much gas would be produced inside of each of those circles.

And then I've projected that back into the actual

production history of these wells to determine the date which each of these circles would have been reached.

And the Union TX well was the first well produced -- or that was completed in the area. It had a bottomhole pressure of 4400 pounds, and it produced for basically ten years before the Parkway 17 Number 1 was drilled.

When the Parkway 17 Number 1 was drilled it had a bottomhole pressure of 2200 pounds. So that showed obvious drainage into that area, pressure drainage, probably from the Union TX well.

The State 16 Number 1 well that's in the north half of 16 was drilled also in the early -- or mid-1970, and it produced out to that third radius in its lifetime. And it also had an original bottomhole pressure of about 4300 pounds, which was close to virgin pressure out there.

And then I've done is kind of come up with an interference point between the Union TX and the Parkway 17 Number 1, whereas when this -- The third circle on the Union TX was reached in June of 1984, whereas that Parkway 17 Number 1 well was drilled in the -- I believe the later part of 1984, possibly 1985.

And so I kind of from that point on assumed that there should have been some kind of communication -- or interference, to prevent more drainage to the north of that particular well. And that's why there's a line drawn in

between those two wells.

And as you get out to the fifth circle, the fifth circle shows approximately the drainage radius that would be encountered to this day. And using decline curve analysis, it's projected that the reserves of this well could be as high as 7.5 BCF, and that would be reached approximately in the year 2040. And that's basically the seventh circle.

Q. Would you explain -- compare Exhibit 4 with Exhibit 5, Mr. Blount?

A. Okay, Exhibit 5 has the unorthodox location that KCS Medallion is proposing. And what I tried to show with that is that they will be reaching the section line from their proposed location in a matter of two -- of one year, and would be draining reserves from Section 17 shortly thereafter.

As far as the projection of the date was concerned, I had to make some assumptions on that. And what I assume was, their production from that well would be similar to what the Parkway 17 Number 1 would be. And basically, that well came in at a little over a million cubic feet of gas a day and produced at a decline if 13 percent per year.

Now, the reason I used it as my anomaly was due to the fact that I expect the bottomhole pressure of the

KCS Medallion well to be similarly depleted as the Parkway 17 Number 1 was. So using a bottomhole pressure of 2200 for my volumetric calculations to determine the gas per acre-foot, that's how I determined those drainage areas.

And I have the circle cut off when it hits the sixth circle of the Union TX, but actually it would breach that circle before the Union TX would. So it would actually drain well into Section 17 where -- and well into the meat of the reservoir out there.

Q. Compare Exhibit -- what's shown by Exhibit 5 with Exhibit 6.

A. Okay, Exhibit 6 would be a legal location that would be located 1650 from the west line. And that well, similarly, was drawn -- I drew circles around the well and did volumetric calculations again. And once again, I'm assuming production based on the Parkway 17 Number 1.

And using that same production decline and the same production starting point, the section line would not be reached until approximately March of 2003. And at that time they would still be at that section line well before the Union TX would and would still be draining reserves in Section 17, but with it being a legal location, that's just -- That's a part of the oil business.

And we also feel that each of these wells has an almost equally good chance to produce the same amount of

reserves, mainly because of interference in that area with the Union TX coming across, the majority of their drainage will be to the south in the channel. The south part of the channel can be achieved just as easily from the -- an orthodox location as it can from an unorthodox location.

Q. In talking about the information shown on Exhibit 7, perhaps I also should have asked you to look at Exhibit 8. Explain that, if you would.

A. Yes, sir. Exhibit 8 is just a compilation of the actual calculated volumes of the amount of gas in each of those circles.

And basically what it was doing there was, the circle areas that were bounded by a particular isopach line were calculated using a planimeter, and then a factor was used to convert that into acres.

Once the acres were determined, then I took an average thickness between the isopach lines.

For example, between the zero and the 10-foot line I used a five-foot thickness with the number of acres inside of that circle and determined an acre-foot volume. And then I multiplied that times my gas factor that was calculated using volumetrics and determined the gas in place in each of the circles.

Q. Do you have anything else you would like to add about these five exhibits, Exhibits 4, 5, 6, 7 and 8,

before we turn to the next series of exhibits?

A. I don't believe I do.

Q. Let me ask you to turn to what has been marked as Exhibit Number 9 --

A. Okay.

Q. -- and at that time you might also want to have in front of you Exhibit 10.

First Exhibit 9, what is that?

A. Exhibit 9 is a production curve, a production plot versus time on our Union Texas State well, and it shows the decline curve fit for the well that achieved that -- the current five-percent decline rate that this well is declining at.

And from the current decline rate, a projection was made as to the reserves, the potential ultimate reserves remaining, which was calculated using a Power Tools reserve analysis program. And it projected reserves out to 7.3 BCF of reserves. That would be achieved by the year 2047. And this was using a net -- or a gross 100-percent working interest and a 90- -- or an 82-percent net revenue interest, which is the percentage net revenue interest we have.

Our current working interest is only in the 37-percent range, but the value of this would be for all operators combined, or all interested parties combined.

It also calculated the discount present worth, at a 10-percent discount rate, of about $1.1 million that this well would achieve if it was produced to depletion.

Now, something I might note is that the extrapolation of it out to 2047 is an extremely long extrapolation, but the first 12 years that are shown on there account for over a million dollars of the value, because the additional 30 years after that were -- only accounted for another $107,000 of the present value, due to the fact that the gas is so far out in the future.

Q. On your Exhibit 9, which is your rate-time graph, it appears in three colors. Explain that, would you?

A. Well, the top line is your gas production, and it shows that currently we're making about 400 MCF per day, or about -- just a little over 10,000 a month. And then the oil was -- oh, it was 30, 35 barrels a month --

Q. That's in green?

A. -- approximately -- yes, that was in green -- -- approximate barrels a day.

The water was basically insignificant. We produced less than a half a barrel of water a day.

Q. Do you believe that the annual cash flow report, which is Exhibit Number 10 -- First, was that compiled by you?

A. Yes, it was.

Q. And did you, in your opinion, use standard, reasonable engineering criteria for that?

A. Yes, I did.

Q. Anything else you want to add about Exhibits 9 or 10?

A. No, sir.

Q. Then let's go to what has been marked as Exhibits 11 and 12. First explain what those graphs are.

A. Okay, Exhibits 11 and 12 are two wells that are to the south of our Union TX well and also the KCS proposed well. And the purpose of these wells was to show the possible interference that could be caused by a well that was drilled into the heart of the channel out there in an unorthodox location.

These wells are located in Section 20 and 21, to the south of the area of interest. And if you could refer back to Exhibit Number 3 --

Q. Okay, let me find it. That's the isopach?

A. That's correct.

Q. Okay, I've got it.

A. Okay, Exhibit Number 3, the Parkway West Unit Number 5 well would be the well located in the south half of Section 20 with a number "4" next to it.

Q. Okay.

A. The Parkway West Unit Number 6 is located in the

south half of 21 with a "35" located next to it.

And basically what this shows, these two plots were done on the same-year basis. And if you could hold one just below the other, you can see as the Parkway 5 was producing at a fairly flat rate -- probably a rate real similar to our decline, five percent per year, by 1995, you see a tremendous dropoff. They drop from 180 MCF per day down to, oh, 10 to 20 MCF per day.

And at that same period of time, the Parkway West Unit Number 6 went from a rate of 100 MCF a day up to a rate of 750 MCF per day.

I talked to UMC to find out if they had done anything different in this well, because the -- according to *Dwight's* production information, they had the 6 as a Morrow C sand producer, and the Number 5 was a Morrow B sand producer.

And I talked to UMC, and they informed me that they recompleted the Number 6 into the B sand at that time. And as you can see, it had a tremendous effect on the 5.

And my contention is, because the drainage radius of the Number 5 well was probably about into the yellow portion of that isopach out there, and they were just -- they were producing it out of the thick of the channel from a long distance off, from basically a half a mile away, and when the 35 -- or the Number 6 well was recompleted, with

it being in the heart of the channel, being into a higher perm area just due to the fact that you have a lot higher porosity through the main part of the channel, that the gas had an easier channel of flow going to that well and therefore basically cut off the Number 4 well.

And I feel like that is exactly what's going to happen if the KCS Medallion well is drilled 660 feet from the west line of our -- of Section 16, is that it will have -- the gas will have a -- the gas that's -- the majority in Section 17 will have a lot easier flow channel into Section 16, and we'd be foregoing about 2 BCF of reserves when that happened.

Q. Mr. Blount, in your opinion, if Medallion Resources drilled its proposed well in a legal location, in your opinion would it produce substantially the same amount of gas as an unorthodox location that it seeks?

A. I believe it would. It may not have as high an initial production, but I believe it would produce -- it would be an economic well. It looks like from our isopach that they would encounter over 20 foot of sand, approximately 25 foot of sand, and we produce -- You know, with Mr. Alderks' cutoff of 50 percent, he shows us producing out of 8 percent. But even without that 50 percent, we only produce out of 25 foot of pay in that particular well.

So I think that 25 foot is substantial for a producing interval out there. The State 16 Number 1 in the north half of 16 was an economic well, and it produced out of 10 feet.

Q. In your opinion, would the drilling of the well at the unorthodox location drain portions of your lease covering the south half of Section 17?

A. Absolutely.

Q. Maybe it's conclusionary, but would that be, in your opinion, some violation of the correlative rights of Southwest Royalties?

A. Yes, I believe it would.

Q. Would the drilling of the Medallion Resources well at the proposed unorthodox location result in substantial financial loss to Southwest Royalties?

A. Yes, it would. We bought this well just last year, back in January of last year, from Hondo Exploration, and we paid the equivalent of $600,000 for our proportionate share of this well.

And even though this well has produced since 1974 and it may look like it made a lot of reserves, it hasn't made a lot of reserves for Southwest Royalties.

And we bought this well on an assumption that the production was going to continue at the current level.

Q. Were Exhibits Numbers 4 through 12 prepared by

you or under your direction and supervision?

A. Yes, they were.

Q. In your opinion, is the information reflected on those exhibits true and correct?

A. Yes.

MR. COOTER: We offer Exhibits 4 through 12 Mr. Stogner.

EXAMINER STOGNER: Any objections?

MR. BRUCE: No, sir.

EXAMINER STOGNER: Exhibits 4 through 12 will be admitted into evidence.

Thank you, Mr. Cooter.

Mr. Bruce, your witness.

CROSS-EXAMINATION

BY MR. BRUCE:

Q. Mr. Blount, let's start off with -- I think Mr. Cooter was referring to your Exhibits 11 and 12, together with Mr. Alderks' Exhibit 3.

A. Uh-huh.

Q. Now, looking at Exhibit 3, what we're talking about is the well in the south half of Section 20 and the south half of Section 21?

A. That's correct.

Q. Those wells are what? About a mile and a half apart?

A. That's correct.

Q. So you're showing interference effect a mile and a half apart?

A. That's right.

Q. Now, your well in the south half of Section 17 is not even three-quarters of a mile from KCS's acreage, isn't it?

A. That's correct.

Q. Doesn't that mean that you're probably already draining the southwest quarter of Section 16?

A. Pressurewise, that's accurate.

Q. You talked about the shut-in bottomhole pressures. What was the Southwest Royalties pressure?

A. 4400 pounds.

Q. 4400? And then that Union -- or excuse me, that Burlington well in the north half of Section 17, what was that pressure?

A. 2200 pounds.

Q. So it had already declined by half in -- what? Ten years?

A. That's correct.

Q. And that well is about -- The distance between those two wells is about the distance between your well and the section line between Sections 16 and 17, isn't it?

A. That's right.

Q. So it seems to me the south half of Section 16 has already been affected adversely.

A. Very possibly.

Q. Based on that, I mean, you'd prefer not even to see a well drilled in the south half of Section 16?

A. Sure, if that was a choice.

Q. Is KCS Medallion entitled to recover its fair share of reserves under the south half of Section 16?

A. Absolutely. And I think they would from an orthodox location.

Q. But you can't tell that until a well is drilled?

A. No, sir. But you can't tell me you're not going to cross their lease line till the well is drilled either.

Q. Now, you're talking about Southwest Royalties' well producing out until the year 2040?

A. That's from the decline-curve analysis, that's correct.

Q. Can you point me to any Morrow well in southeast New Mexico that's produced for 65 years?

A. As I pointed out earlier, the majority of those reserves were recovered in the next 14 years.

Q. Let's look at your Exhibits 4, 5 and 6, your drainage circle maps.

A. Uh-huh.

Q. Let's take Exhibit 6 first. That's the one with

a proposed KCS Medallion well at an orthodox location; is that correct?

A. That's correct.

Q. By being at an orthodox location, wouldn't KCS's well be more affected by drainage from the 16 Number 1 well in the north half of Section 16?

A. Only marginally.

Q. But it would be affected?

A. Possibly.

Q. Your maps show it, doesn't it?

A. Uh-huh, it's closer to the circle.

Q. Now, looking at -- Well, let's look at Exhibit 4, same basic map. Now, you show Southwest Royalties -- In effect, you're showing radial drainage?

A. That's correct.

Q. Now, there is a dry hole in the Morrow directly south of Southwest Royalties' well about, as far as I can tell, 1320 feet south of the Southwest Royalties well, yet you show that you're draining that area.

A. You see a zero line coming over, pulling towards that well.

Q. Well, if that well is a dry hole would you be draining anything from that very northern part of Section 20?

A. Very possibly. And the reason is that they may

have had two or three feet in that particular well that they shot and elected not to shoot that. Two or three feet may not have been an economic well for them.

Q. Would the --

A. The amount of gas coming from between the zero line and the 10 line is very minute in comparison to the gas coming from the red area on the map.

Q. Okay, so most of your production, then, would come from that red and dark yellow area?

A. Sure.

Q. That's the heart of the acreage?

A. That's correct.

Q. Or I should say the heart of the reservoir?

A. That's correct.

Q. Probably has better permeability?

A. I would say so.

Q. Wouldn't drainage be preferable from the east, as opposed to just radial drainage from all directions?

A. From the east?

Q. Wouldn't you be draining more reserves from the east -- In other words, wouldn't this be more of an oblong drainage, rather than a radial drainage?

A. Possibly. I mean, when you're looking at percentage of gas drained that is possibly the case. I wouldn't say definitely the case.

Q. But it's probably the case?

A. Possibly.

Q. I think I really only have one final question. I think I heard you say that regardless of the location of KCS Medallion's well, the drainage would be more along the trend of the reservoir, wouldn't it?

A. Yes.

Q. So more of northwest-southeast, and therefore that would lessen any effect, if at all, on Southwest Royalties, would it not?

A. Oh, no, they would still cross that lease line a lot sooner than they would from a conventional location.

Q. But that would lessen the effect, wouldn't it?

A. It would lessen -- I don't understand your question. It would lessen the effect on what? On -- The effect on us? I think I've already shown that if a well is drilled into the -- basically the heart of the reservoir, that it would have a tremendous effect on us, on any future reserves. And standard decline curve analysis shows that there's at least 2 BCF of reserves left.

Q. And you've probably also pressure-depleted the southwest quarter of Section 16?

A. That's very possible. I mean, you don't have a uniform circle drainage. I mean, you have an effect of a funnel with a pressure sink in the middle. I mean, you're

going to have pressure communication a lot further out than you have total depletion.

MR. BRUCE: Thank you, Mr. Blount. That's all I have.

EXAMINATION

BY EXAMINER STOGNER:

Q. Mr. Blount, as far as Section 16 goes, there's not a Morrow well there now; is that correct?

A. That is correct. Yes, that's correct. There's no producers in that Section 16.

Q. And this is unorthodox only if you're drilling a laydown proration unit as far as 660 foot off of the west line of the section that's common between you and them. If this was a standup unit --

A. That's right.

Q. -- it would be standard, wouldn't that be right?

A. If they went 660 and 1980 from the south, it would be standard.

Q. How about 1650?

A. Or even 1650, that's correct.

Q. We wouldn't be here today?

A. That's correct.

Q. There's been some advocates, operators and in government to change this to 660-660, would be a standard. I assume that you probably would agree to that?

A. If that was the law, sir, I couldn't do anything about that. If that was the law, I would be proposing my own 660 from the south and west line to protect the rest of my reserves.

Q. Okay, so you wouldn't be in here either to support it or deny it if it came to a rulemaking; would that be --

A. That's correct.

Q. Is that what I'm hearing you say?

A. That's correct.

Q. Then what kind of a penalty would you propose that I put on this well, since it being -- crowding your line for a laydown proration unit? Do you have any --

A. Well, if I knew the exact effect of what it would do to my well, I could come up with an actual dollar value. But I mean, I actually predict that when this well is drilled in an unorthodox location and perforated in the Morrow B, that our well would be dead within a month.

Q. And if it was a standup proration unit, yours would still be dead in a month?

A. It possibly could be, although if it's a standup we would be producing out of the tail end of that red portion a lot quicker -- or before their particular well would be. They would be affecting more the area between all four of the circles, up there by the northeast corner

of our acreage.

Q. Well, if they proposed an unorthodox location for a standup, you wouldn't have been notified, would you?

A. If they would have -- Yes, sir, we would have. We would have been -- Well, no, I don't know that. I don't know that for sure. Is that the rule?

Q. Okay, now your well drainage radiuses -- that's 4, 5 and 6 --

A. Uh-huh.

Q. -- that's not necessarily -- You're not showing the pressure drop, you're showing the effect of the actual production being affected or actual movement of production; is that what the --

A. Yes, sir, I mean, this is --

Q. -- particular exhibit is showing?

A. Yeah, this is an estimation based on volumetric calculations. We could have built the reservoir model and paid some consultant to build us a modeling of it and showing the pressure effects throughout it, but that would have cost us several thousand dollars to do.

And basically what we're trying to show is that volumetrically we still have reserves in our acreage that haven't been produced. And this is assuming an abandonment pressure of 800 pounds.

EXAMINER STOGNER: Anything further of this

witness?

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

EXAMINER STOGNER: You may be excused.

MR. COOTER: I did offer the last exhibits, 4 through 12?

EXAMINER STOGNER: Yes, you did.

MR. COOTER: That concludes our...

EXAMINER STOGNER: Okay, is there anything further, Mr. Bruce, from your side?

MR. BRUCE: I have nothing further to present.

EXAMINER STOGNER: Okay, is there any need for closing arguments?

MR. BRUCE: I'll waive it if Mr. Cooter will.

MR. COOTER: (Nods)

EXAMINER STOGNER: Can I get rough draft orders from the both of you?

Since there's nothing further in Case Number 11,925, this matter will be taken under advisement.

And let's take a lunch recess until -- We'll reconvene at 1:15. 1:15.

(Thereupon, these proceedings were concluded at 12:20 p.m.)

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 11925 heard by me on 24 February 1998.

, Examiner
Oil Conservation Division

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 February 22nd, 1998.

STEVEN T. BRENNER
CCR No. 7

My commission expires: October 14, 1998