STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION COMMISSION
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO

8 June 1988

EXAMINER HEARING

IN THE MATTER OF:

Application of Wagner and Brown to amend Division Order No. R-4326, Lea County, New Mexico. CASE 9400

BEFORE: David R. Catanach, Examiner

A P P E A R A N C E S

For the Division: Robert G. Stovall
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I N D E X

E X H I B I T S

MR. CATANACH: Call next Case 9400.

MR. STOVALL: Application of Wagner and Brown to amend Division Order R-4326, Lea County, New Mexico.

MR. CATANACH: Are there appearances in this case?

MR. KELLAHIN; If the Examiner please, I'm Tom Kellahin of the Santa Fe law firm of Kellahin, Kellahin and Aubrey. I'm appearing on behalf of the applicant, Wagner and Brown, and I have one witness to be sworn.

MR. CATANACH; May it please the Examiner, my name is William F. Carr, with the law firm Campbell & Black, P. A., of Santa Fe. We represent OXY USA Inc.

I have one witness.

MR. CATANACH: Will the witnesses please stand and be sworn in at this time?

(Witnesses sworn.)

MR. KELLAHIN: Mr. Examiner, our first and only witness is Mr. Jerry Hamilton. Mr. Hamilton is a petroleum engineer and will be our witness in this case.

JERRY HAMILTON,

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. KELLAHIN:

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

A Jerry Hamilton. I'm a petroleum engineer working for Wagner and Brown.

Q Mr. Hamilton, have you previously testified as a petroleum engineer before the New Mexico Oil Conservation Division?

A No.

Q Would you summarize for Mr. Catanach when and where you obtained your engineering degree?

A I got a petroleum engineering degree from Louisiana Tech University in 1980.

Q Subsequent to obtaining that degree, Mr. Hamilton, have you been employed as a petroleum engineer?

A Yes.

Q And would you summarize your employment experience.

A First year I went to work for Phillips Petroleum in Odessa and worked southeastern New Mexico.

The year after that I worked for Kenai Oil and Gas, where I worked predominantly in the Permian Basin.

And the last six years I've worked for Wagner and Brown in the Permian Basin and southeastern New Mexico.

And I'm also a Registered Professional Engineer in Texas.

Q Mr. Hamilton, have you made a study of the engineering facts surrounding Wagner and Brown's application to amend New Mexico Oil Conservation Division Order to expand the open hole interval for the disposal well in Lea County, New Mexico, called the Soldier Hill AE State No. 1-C Well?

A Yes.

Q And you in fact either directly or under your direction and supervision prepared the Commission Form C-108 that was filed with the Division?

A Yes.

MR. KELLAHIN: At this time, Mr. Examiner, we tender Mr. Hamilton as an expert petroleum engineer.

MR. CATANACH: He is so qualified.

Q Mr. Hamilton, we've organized your

exhibits in two display packages.

One, I have taken the large display and marked that as Exhibit One.

Then on the Commission Form C-108 that you submitted, I marked that as Exhibit Two and then I numbered each of the pages that were attached to your C-108.

A Yes.

Q Before we get into the exhibits, would you tell the Examiner what the problem is that caused Wagner and Brown to seek this hearing?

A The -- our disposal well, the AE -- the Soldier State AE No. 1 developed a casing leak up the hole and it was unable to pass the casing integrity test.

Q The docket shows that this was approved as a disposal well in Order No. R-4326 entered back on June 14th, 1972?

A Yes.

Q Has Wagner and Brown operated this well as a disposal well during that period of time?

A Yes.

Q And what has been the disposal interval for that well?

A The Devonian.

Q With the casing leak that was discovered

in the disposal well, Mr. Hamilton, what is your proposed solution for that problem?

A We think that we can move in there and set some packers and isolate the open hole interval or the hole interval above the Devonian and we can keep any waters -- we can keep all of our disposal water going down into the Devonian and we think -- or I think that we'll show you that here in just a minute and I'll go through it step by step.

Q Let me have you go to the large display we've put on the wall, which is marked as Wagner and Brown Exhibit Number One.

First of all, Mr. Hamilton, would you take a moment and identify Exhibit One for us?

A Yeah. What we did here, this is just a Xeroxed copy of the log of our disposal well and it shows the tops listed and then what we've done here is taken and just blown up a half mile radius around our disposal well to show you what operators are in the area.

And if you can turn to I believe it's page 24, we have a listing there of what operators that we sent that out to.

Q Let's go to the lefthand portion of the display to the log section and have you identify for the Examiner what is the currently approved disposal interval?

A That's this interval down here in the bottom in the Devonian. That's where we dispose of the brine.

Q And what is the footage interval, Mr. Hamilton?

A Oh, it's about 10,700 -- our packer we want to set about 10,750 and we're disposing roughly around 12,000.

Q Would you now locate the Examiner as to what the open hole interval is that's the subject of the application?

A Okay. This, in the center of this log we've drawn a tubing string. It's kind of hard to see, but this is where we propose to set our lower packer, here at 10,750, and we propose our upper packer, which is folded back under here, but we propose to set it at 6000.

Q Let's use the enlarged half mile radius circle on Exhibit Number One, Mr. Hamilton, and have you first locate for us the disposal well that's the subject of the case.

A Okay.

Q It's in the center of that radius?

A It's in the center.

Q Is it color coded in any fashion?

A Yes, we have a color coded legend down

here where you can tell which well's have produced where and where they're producing right now.

Blue is the Devonian. Red is Pennsylvanian, Atoka. The green is Wolfcamp but it's been plugged out and then yellow are Queen wells, which there's a large Queen unit that sets in here that Murphy Operating operates.

Q Mr. Hamilton, when we look at the disposal well, it has traditionally been disposing of produced water into the Devonian formation?

A Yes.

Q What is the source of the water that's disposed of in the disposal well?

A It's coming out of our Cleveland No. 1, which is -- which is right here. We're taking this water, we produce it out of the Devonian over here and we turn right back around and inject it into the Devonian.

Q Are there any other wells that are hooked into the disposal well?

A No, it's the only -- the only well we're disposing water of in our disposal well come out of our No. 1 Well.

Q Does your future plan of operation include any other wells being tied into this disposal well?

A No. That's the only thing that we use.

Q Does your proposed plan of operation include injecting water into the Devonian under pressure?

A No. Everything that we're going to do and everything that we've done in the past, we're going to put all the water away on vacuum. We have no -- no surface pumps out there right now and we haven't had any surface pumps and we don't have any plans to put any kind pumps at the surface to put any of the water away under pressure.

Q Let's look generally at the wells in the immediate area that have in the past or continue to produce from various formations within the total open hole interval and perhaps if you'll start at the top of the log section and work your way down we can follow your discussion as to what operators produce what oil where.

A Yeah. The yellow wells are all Queen wells and they did not penetrate -- that's all around 3000+ feet, right around 3000, so none of that penetrated the interval that we're looking at.

This well is plugged. It is an old Wolfcamp well. You want to go ahead and go --

Q You're going to have to for the record, Jerry, identify the well by a name so that she can identify what you mean when you say "this" or "there".

A I'll have to go to the schematics to get the names.

This first well here, 25, this is the Northeast Caprock Queen Unit 25, No. 25. It's currently an active injection well in the Queen. It was originally a Wolfcamp well and has been plugged back.

Q We find that on what page of Exhibit Number Two?

A That's No. 16. Do you want to follow through these?

You want me just to go ahead and go through the schematics?

Q Well, while we're on the schematics, as well as looking at where they are in the area, do you see any difficulty with the way this wellbore has been plugged and abandoned?

A No. We've drawn these schematics just to show where the plugs are. As you can see, there should -- the well was TD'ed at 9029. We didn't penetrate the Devonian but we did penetrate part of the disposal interval that we're talking about including, but as you can see, there's a plug across the Wolfcamp, it's a cast iron bridge plug, and we know the cement plug is back up in the 9-5/8ths intermediate and also the 9-5/8ths was circulated so there shouldn't be any problem with that well.

Q Let's go on to the next well, Mr. Hamilton. Hamilton.

A We go on to the next one, Page 17, it's the Northeast Caprock Queen Unit No. 24. That well is just off -- we don't actually have a dot but it's just here on the edge of the circle and as you can see, basically about the same thing. It was a Wolfcamp test. It was dry. They set four plugs coming back up the hole. We set four plugs coming back up the hole and there's one there at the shoe on the 9-5/8ths and there shouldn't be any problem there of any kind of communication from any (unclear).

The next well we have is the Northeast Caprock Queen Unit 36-C. This was a -- that's this green one right here. That was originally a Wolfcamp well and it's been plugged back. That well produced 28,000 barrels of oil out of the Wolfcamp.

We've since plugged that well back and as you can see, there's a cast iron bridge plug and they cut the casing off, set another cement plug, and then there's a cement plug up in the 9-5/8ths shoe, so that should actually protect anything from (inaudible).

The next one, page 19, is the Northeast Caprock Queen Unit No. 33. That's this other green one that we have down here. It was also a Wolfcamp producer and it cumed 29,000 barrels of oil out of the Wolfcamp. It's been plugged back and it's currently listed as a temporarily abandoned injection well.

You can see from looking at it there's ample plugs in it coming up the hole that should keep any fluids from migrating in -- getting up into the surface sands.

Our next well is the Northeast Caprock Queen Unit No. 32. It is the -- it's this yellow well right here.

That was originally drilled as a Wolfcamp well. It was plugged back. As you can see, there's a plug in the bottom of the hole and there's another plug at the intermediate show, which should be ample to keep any fluids from migrating up to the surface sands, and that well is currently listed as a shut-in producer.

Our next well is the (not understood) No. 2. It is in Section 14, which is going to be this dry hole right here. That was originally drilled to the Atoka and it has since been plugged and there's ample -- as you can see on page 21 -- there's ample plugs in that one, five plugs along with a cast iron bridge plug; shouldn't have any -- any problem with that, any kind of fluids migrating up through the wellbore.

Our next well is the Brown and Wheeler No. 1. It's in Section 14. It's going to be this well just above the Rondero (sic) Well we just talked about, and it was originally drilled as Wolfcamp test and it was dry

and we've got one plug on it back up at the intermediate and the intermediate on that one, as you can see, the cement, top of cement is back up at 630 feet on the 9-5/8ths, so we shouldn't have any problems with surface water backing up on (inaudible) there.

Also we've then got the Amerada Speight No. 1, which is 2310 from the east. That last one, that Brown and Wheeler Well, that wasn't this one, that was this well. I said that backwards.

This was the Brown and Wheeler Well. This is the Amerada Speight Well No. 1, just above the Rondero Well. It was originally drilled to 11,310 and it didn't produce anything. As you can see on it, there's ample plugs and that the casing has been cut off and there are plugs up and down the hole.

We shouldn't have any trouble with fluids migrating from -- if we had a leak of any kind migrating over through this wellbore (not clearly audible).

That's all -- that's all the wells. That's all the P&A'd wells.

Q Finish up Exhibit Number One for us, Mr. Hamilton, by showing us which are the active producing wells and from what formations they still produce.

A Okay, the ones colored yellow that are currently producing out of the Queen, which should be --

that should not concern us.

This well is plugged, plugged, plugged, and first come down here to this Texas American Well, which is now Devon Energy bought them and it's currently producing out of the Atoka, which is down there.

This is another Queen well. Then we have the Cities Service Well and it's currently producing out of the Penn back up here.

We also have this Newport well and it's producing out of the Atoka also.

We then have our No. 1 Well. It's producing out of the Devonian.

And we have our No. 2 Well which was producing out of the Atoka but our casing collapsed on us and currently we're going to have to plug that well. Actually, the casing collapsed below our top of cement.

And this is our disposal well here.

And we've got one other well here and this is a well operated by (unclear) Baxter. He bought this from Ron Darrow (sic) and it's producing out of the Devonian down here.

I've already showed what we've done here.

Q If you'll return to your seat we'll -- if you'll turn to Page 24 of Exhibit Number Two, Mr. Hamil-

ton, have you caused all the offset operators listed on Page 24 to be notified of this application by certified mail, return receipts?

A Yes.

Q And from which, if any, of these operators or interest owners have you received any inquiries?

A Three. The first one we received was from Devon and Devon was concerned that the disposal interval was going to be large, since we were talking about from 6000 down to the Devonian, but after talking to them I proposed a solution that they were satisfied with, which was we could run a temperature or a radioactive survey once a year in conjunction with the casing integrity test and if we pumped the RA material, followed it down the tubing, watched it all the way down into the Devonian, then that would insure that all the water, in fact, was going into the Devonian, not -- we didn't have any leak up the hole and putting water out in some other interval.

And that was acceptable to them so they didn't show up.

Q That can be called a tracer survey, can it not?

A Yes.

Q And is that a procedure authorized in the rules of the Division?

A Yeah, in your Rule 704 you allow for alternate testing methods if it's approved, and you all can approve an alternate testing method, and that's what we would like to do with that tracer survey.

Q From what other operators did you receive inquiries?

A Ronadero, Rob Hanagan, which you said that you had the letter, he called and I talked to him, and he was concerned about the same thing that Devon was, about the entire -- putting water through the entire interval, but after talking to them and explaining to them what we were going to do, that we were in fact only going to be putting water into the Devonian, and we could monitor this by tracer survey, and which would, in fact, insure that the water was going into the Devonian, then he was -- that was fine with him and he said he was going to go ahead and write a letter to you to that affect, and it should be in the mail.

Q And what was the final company that contacted you and inquired about the application?

A I also heard from Occidental Petroleum, Cities, and they were concerned about the same thing that Devon and Ronadero was concerned with, about putting water over the entire interval and flooding out any potential producing horizons, but after I talked to them, talked to

Jerry Sillerud and Dick Hocker and a guy named Bob Hunt, after talking to them I went ahead and made a proposal to them that what we would do would be in fact what we'd said to Devon and Ronadero, that we could run a radioactive survey once a year and insure that the water was going, in fact, where we say it's going.

Q Mr. Hamilton, let's turn now to Exhibit Number Two and go to the proposed wellbore schematic. I think it's found on page 10?

A Page 10. Now, what we've got on page 10 is a schematic of what we want the wellbore to look like after we've cleaned out the existing wellbore and put everything back together with our packers.

What we want to do, as you can see, we want to set a packer down in the lower portion of the hole above the Devonian.

We also want to set a compression packer back up the hole at 6000 feet and the reason, of course, of setting the packer back up the hole at 6000 feet is that a casng -- we can then pass the casing integrity test, with a packer set at 6000.

There's an itemized -- if you'll flip over to page 12 then, there's a procedure that we're going to use to clean it out, and what we propose to do first, of course, is go in and clean out the existing wellbore.

The next thing we want to do is come in, we want to perforate the casing at 6100 feet. We want to set an EZSV retainer and we want to pump approximately 150 sacks of cement, which would constitute about 600 feet behind our 5-1/2 inch casing. That way we would have cement above and where we have our upper compression packer set.

We would then continue on in the hole, clean everything out back to our original plugback TD.

We would then set an EZSV retainer at the bottom of the hole at approximately 10,750 feet.

We would then come back and run fiberglass tubing throughout the entire interval and sting into this EZSV retainer down here at the bottom. That would isolate all our wellbore fluids and then be going out the bottom into the Devonian.

The packers, we'll nickel-plate all the packers to keep all the corrosion problems down to a minimum, and that's basically what we're going to do there.

Q Using page 10 as an example of the completion of the wellbore, assume that the Devonian perforations become plugged off, and further assume that you get a leak either in the casing and/or fiberglass tubing so that pollutants have the potential to communicate with formations in this uphole interval.

A Uh-huh.

Q Would that occurrence cause, in your opinion, the opportunity to have disposal fluids migrate into any formation that might be productive of oil or gas?

A No.

Q Why not?

A What we've seen in the area, and this is with other operators that operate disposal wells in this area, and that have disposal wells going on right now, any other interval that you try and put any water into, other than the Devonian, you're going to -- the water is going to have to be injected under pressure.

So if we did develop a leak or, actually, what you would have to have in conjunction with a leak, is the Devonian would actually have to become plugged off. And what we have seen, if the Devonian became plugged off then our surface pressures would increase. It just wouldn't take the -- wouldn't take the water.

All we have at the surface right now is just a little centrifugal pump, to pump the water into the well. It takes everything on a vacuum, and we're putting away approximately 1300 to 1500 barrels of water a day.

If -- if this zone down here did plug up, it would -- we would know immediately, within, you know, a day. We don't have the facilities to hold that

kind of water. We would know immediately that something was wrong if the water wouldn't go into the (unclear) and then we could shut the operation down and find out what was happening.

One other thing, Kelly Baxter has a disposal well in the area and he's currently -- the only other place he could find to put the water away is in the San Andres and he's currently putting that water away from 1000 to 1500 pounds surface pressure.

Q Have you examined alternative procedures or other possible solutions to disposal of the produced water --

A Yes.

Q -- other than what you have proposed today in this application?

A Yes.

Q And what other alternatives have you examined?

A Now, the first alternative that we looked at, the first obvious one to us was to just run a line inside our existing casing, but if we did run a liner inside our existing casing to cover up this bad pipe, our 2-3/8ths tubing that we have, this 2-3/8ths fiberglass tubing, the collars on the tubing would not go inside the largest ID liner that we could find. So our fiberglass

tubing would not work, and we feel like with the corrosiveness of the water, that we would need the fiberglass pipe and the steel pipe just wouldn't last, so that wouldn't work.

The next thing that we looked at was pumping the water into an alternate zone. We looked around to see in the area if other people were putting water away in different intervals, and everything -- and up and down the hole -- and everything that we saw, other than the Devonian, you have to put the water away under pressure, and our well economically will not support the cost of putting that water away under pressure.

The next alternative we looked at was laying a pipeline, a surface line, to an existing salt water disposal system that's operated by Tipperary, but after we talked to them, the nearest point that we could get into their line was seven miles away, so we would have to lay seven miles of 3-inch bass (sic) line and that was going to be -- that was going to cost us $1.15 a foot, and that was going to be extremely expensive, but on top of that we were going to have an eight cent a barrel disposal charge, and by the time you looked at the cost of laying the line, disposing of the water, and buying a pump to push the water over there seven miles, and that was uneconomical also.

And the other alternative that we had would be just to truck everything and there's no way that trucking -- trucking would be the -- that's the most expensive alternative of any of these.

The only other, you know, after looking at the alternatives that we had, none of those four work. Really the only alternative that we see that we can do is to re-enter this -- or just go back in, clean out our existing salt water disposal well, and hook it up with the hook-up that we're proposing with the two packers.

If we can't do that, then the only other alternative that we see is to plug and abandon the well.

Q Mr. Hamilton, have you made any engineering calculations to determine the volume of additional remaining recoverable reserves that can be produced out of the one well that is tied into the disposal well?

A Yes.

Q And what is that volume?

A We see -- we think that we can recover an additional 104,000 barrels.

Q And in the absence of having this application approved, what will happen to those otherwise recoverable 104,000 barrels of oil?

A They will be lost.

Q Have you had the files of the State

Engineer's office searched to determine whether or not there are any shallow fresh water sands in the immediate area?

A Yes.

Q And based upon your review of that information, Mr. Hamilton, do you have an opinion as to whether or not this disposal facility as you propose it will constitute a risk or hazard to fresh water sands?

A Yes.

Q And what is your opinion?

A I don't think there'll be any risk. We've looked in the area at the existing fresh water, depth of the deepest fresh water wells. The deepest one in the area is 132 feet. Most of them are 100 feet and our surface casing on this thing is set at 236 feet, which should more than amply cover up any.

Q is that true of the surface casing on all the other offsetting producing and plugged and abandoned wells?

A Yes.

Q They have surface casing set to several hundred feet below the depth of the deepest fresh water sands?

A That's correct.

Q Does the information prepared in Exhibit

Number Two, as well as Exhibit Number One, represent work prepared under your direction and supervision?

A Yes.

Q And have you personally reviewed all that information?

A Yes.

Q And to the best of your opinion it is true and accurate?

A Yes.

Q Do you have an opinion, Mr. Hamilton, as to whether approval of this application will prevent waste?

A Yes.

Q And what is that opinion?

A It will.

Q And why?

A It will prevent waste.

Q Why, sir?

A We can recover an additional 104,000 barrels of oil.

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

We move the introduction of his Exhibits One and Two.

MR. CARR: I have no objection.

MR. CATANACH: Exhibits One and Two will be admitted as evidence.

Mr. Carr?

CROSS EXAMINATION

BY MR. CARR:

Q Mr. Hamilton, if I understand your testimony, the purpose of today's hearing is to deal with this recently discovered leak in the casing, isn't that correct?

A Right.

Q Is there -- and if I also understand your testimony, there is no practical way to go in and simply repair the leak in the casing. What we're doing is in essence bypassing this problem with the packers and the tubing.

A Right.

Q Would it be possible to go back and address just this leak in the casing?

A Are you -- can we?

Q Yes.

A No, no, it's not.

Q You cannot?

A Okay, if you'll look back on page 10 --

Q Uh-huh.

A We don't have just a leak. We have, as you can see from that inspection log that we ran, there are -- well, matter of fact, what we did, we went down at the bottom of the -- down to the bottom of the hole and started coming back up the hole with our packer, pressuring up on the back side, trying to find where we could, in fact, have a good casing integrity test. The first place we could do that is up there at 6000 feet.

So you're not talking about squeezing off a hole. It's -- it's a 3000-feet interval.

Q All right. What -- what are the -- what is the maximum volume you are currently authorized to dispose of in this well? Is it 2000 barrels of water a day?

A I -- I'd have to look at the -- I'd have to look at the other exhibit.

MR. KELLAHIN: I don't believe there's a limitation on this well.

A I don't know that there is.

Q There is no limitation on the volume?

A I don't know.

Q Is there any limitation on pressure? Are you only authorized to inject by vacuum or is there a pressure limitation on the injection into this well?

A I'd have to just -- I'd have to look. I don't know.

Q You don't know?

A I don't know. We're not going --

Q You don't know?

A No, I don't have a copy of that in front of me. Do you have a copy of that, the order for that disposal, where they gave us a --

We're not going to put the water away in (not clearly understood.)

Q All right.

A The --

Q What you're actually seeking to do is to continue the kind of disposal operation that you were carrying on prior to the time the leak was discovered.

A Right.

Q You only want to put water in the Devonian.

A Right.

Q And as such, you really don't need to expand the authority for injecting into other intervals, you just need approval of the mechanics you are proposing to deal with the casing leak, isn't that right?

A That's correct.

Q You never have an intention of putting any water in the Atoka or Wolfcamp, or any of the other zones that might be available.

A That's right.

Q And so would you have any objection to simply getting the Commission to approve the mechanical way you propose to deal with this problem and leave your authority to dispose just in the Devonian?

A That's fine. I'd come up once before and talked and this was the scenario that we came up with.

MR. CARR: I have no further questions.

CROSS EXAMINATION

BY MR. CATANACH:

Q Mr. Hamilton, your holes are located from -- in what range here?

A Well, if you'll look back at page 10 on the Exhibit One there, and you can see that we're finding no pipe. We ran a McCullough pipe or just a casing inspection log and there are actually portions of the hole there, we actually have, where there is no casing; like from 9824 to 9955, there is no pipe, and then again from 9764 to 9776, you can see there's no pipe; and then we're seeing up above that at 9332 where the casing is actually parted; and there is bad casing from there back up to about 6200 -- 61-6200, about 6200 feet. I'd have to go back to see exactly where it was.

What we were proposing to do with that upper packer was put it up above the uppermost portion of the bad pipe. We don't feel like we're going to corrode any more of the casing because this well has been out there so long; I think that everything that it was going to corrode, it would have already done it; that it's been out there so long. I think that this interval, there is no cement behind the casing and that interval of pipe is corroded.

Now, everything below our top of cement, where our top of cement is listed 9700, you can see it on the bottom lefthand portion on page 10, but once we get down below this 99 -- we haven't been below 9955 as of yet, but we feel like we've got a packer down there set and we feel like that we can go back in there, set another packer in the bottom, and isolate, then, all that interval up above us.

After we do this, set the lower packer, set the upper packer, put the well back on injection, we'll know immediately when we run the tracer survey, if all the water is in fact going into (unclear).

Q Approximately where do you plan to set that lower packer?

A 10,750.

Q I'm curious, can -- can you supply us

with a copy of the casing inspection log that you -- that you ran on the well?

A Sure. Yes.

Q The -- the hole in the casing, also, that you show at 1925 feet, you -- has that been adequately repaired?

A Yes, uh-huh.

Q And have you tested the casing from 6000 feet up to determine if that is in good shape?

A Yes.

Q And it has tested --

A Yes. Now what we did, we just started coming back up the hole with our packer, pressuring up on the back side, trying to find at what depth the back side or the casing annulus was going to hold pressure, and that depth was at about 6100 feet, and then we wanted to set our packer at 6000; that's what we were wanting to do there, and what we were wanting to do is go ahead, you know, and you know the first step we were going to do, since there is no cement back up in that part of the hole, is go ahead, perforate our 5-1/2 inch casing and circulate some cement behind the pipe where we want to set this upper packer.

MR. CATANACH: I have no further questions of the witness. Anything else?

MR. KELLAHIN: No, sir.

MR. CATANACH: He may be excused.

Mr. Carr?

MR. CARR: I have one witness.

MR. CATANACH: Yes, sir.

JERRY SILLERUD,

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. CARR:

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

A My name is Jerry Sillerud.

Q Mr. Sillerud, where do you reside?

A I live in Midland, Texas.

Q By whom are you employed and in what capacity?

A I'm an engineer for OXY USA, Inc.

Q Have you previously testified before this Division and had your credentials as an engineer accepted and made a matter of record?

A Yes, I have.

Q Are you familiar with the application

filed in this case by Wagner and Brown?

A Yes, I am.

Q Are you familiar with the Soldier Hill AE State No. 1-C Well and the surrounding acreage?

A Yes, I am.

MR. CARR: Are the witness' qualifications acceptable?

MR. CATANACH: They are.

Q Would you briefly state OXY's purpose in appearing in this hearing today?

A The proposal that's been made is to grant or get authority to dispose in an interval 6000 feet down to 11,234 feet, a total of over a mile worth of interval and we are objecting on the basis that if that is approved, then authority would be granted to potentially at some time in the future inject or dispose water into potential pay zones up the hole, or within that interval.

Q Would you refer to what has been marked for identification as OXY Exhibit Number One, identify this exhibit and review it for Mr. Catanach?

A This is Exhibit Number One and shows OXY USA interest in the stippled area within Section 14 and Section 23. We have some partial interest and some 100 percent interest.

Q The -- when you have less than 100 per-

cent interest the percent of ownership in OXY is indicated after your name, is it not?

A That is correct, and if there's a depth limitation on it, we've indicated in there, as well.

Q And you have ownership in acreage that virtually surrounds the disposal well.

A That is correct. And the disposal well has been circled in black and we also have a producing well in Section 23. That's been circled in red. That's our State DV No. 1.

Q And from what zone does the State DV No. 1 Well produce?

A This well is perforated 9678 to 9698 and it's in the Caprock Penn East Pool.

Q Would you now refer to OXY Exhibit Number Two and explain this identify this for the Examiner?

A This is a cross section showing our State DV No. 1 Well on the lefthand side and the Soldier Hill State AE No. 1 salt water disposal well on the right, and highlighted in yellow are two Wolfcamp zones that we have identified as potential pay zones in our well, and I --

Q And you can correlate these zones from the disposal well to your producing well?

A Yes, we believe there is connected poro-

sity between these two zones, or wells.

Q Again I think it would be helpful if you would state why OXY is concerned about this application in view of Wagner and Brown's representation that they only intend to continue disposal into the Devonian.

A Well, we believe, too, that Wagner - Brown will continue to dispose into the Devonian but if the entire interval is approved, authority is therefore granted to inject into any zone within that 6000 on down to 11,234 foot depth limit.

Q And are you also concerned that this authority might exercised by someone other than Wagner and Brown at a later date?

A If some other operator should take over the well, they would have the authority to inject in that interval anywhere.

Q Other than your concern about this authority for injection over this wide interval, do you have any particular objection to the mechanical method that Wagner and Brown has proposed for dealing with their casing leak?

A No, we'd -- we'd go along with what's been mentioned here. We believe that the Devonian is going to continue taking water on vacuum and we believe that -- that the authority should be continued to dispose into the

Devonian with a provision made to annually log the well with a radioactive tracer survey to ascertain that the water is actually going into the Devonian.

Q And with that recommendation for the annual testing, would -- would OXY's objection be addressed do you believe?

A Yes.

Q If your recommendation for the proposed completion with the annual testing were incorporated into an order, in your opinion would that deal with the problem and at the same time protect correlative rights of OXY as an offsetting operator?

A I believe so, yes.

Q Do you have anything further to add to your testimony?

A No, I don't.

Q Were Exhibits One and Two prepared by you?

A They were, yes.

MR. CARR: At this time we would offer into evidence OXY Exhibits One and Two.

MR. CATANACH: OXY Exhibits One and Two will be admitted as evidence.

MR. CARR: That concludes my direct examination.

MR. CATANACH: Mr. Kellahin.

CROSS EXAMINATION

BY MR. KELLAHIN:

Q Mr. Sillerud, I'm not sure I'm clear. Are you recommending to the Examiner any different solution than what Mr. Hamilton has proposed?

A Well, Wagner - Brown has proposed to gain authority to inject into the entire interval, 6000 to 11,234.

Q Under certain conditions, however, and those conditions are an annual tracer survey and that injection be on vacuum.

With those two conditions, does that satisfy your concern?

A My concern is that at some date in the future that approval is there to inject into that entire interval and the Wolfcamp zone that we have identified as a potential pay zone could be perforated and injected into.

Q What information have utilized to determine that the Wolfcamp formation is still potentially productive in the immediate area?

A We have some log analysis that was conducted back when the well was drilled.

Q Have you had an opportunity to look at

Mr. Hamilton's Exhibit Number One and look at the close proximity of the two Wolfcamp plugged and abandoned wells to the disposal well?

A Well, yes, I know that there were two Skelly wells that were completed in the Wolfcamp back in 1953.

Q Completed and produced to depletion, were they not?

A I don't have the information of whether or not they were produced to depletion or not. They were successful tests.

Q And Cities Service, or OXY USA, will have an opportunity to come before the very Commission we're before today and file another case or a re-inquiry into this particular case if you see something operationally that's not to your satisfaction with this disposal well. You'd have that right, would you not, sir?

A I believe so.

Q And you would be in a position to know if something was wrong, would you not, Mr. Sillerud?

A With their well, you mean?

Q Sure.

A I'm not sure. We don't have a working interest in it. We don't have a right to the information on it.

Q The only well that produces hydrocarbons and water that goes into the disposal well is a well in which Cities Service has a 25 percent interest.

A Yes, that's the only well that's disposing into this particular well, the disposal well, at this time, yes.

Q And you receive as a working interest owner information about the producing --

A Yes, yes, we do.

Q And if the production falls off or something changing in the producing well, you're really going to know to look at the disposal well.

A Possibly, yes.

Q You'll have a way to check. Other than the potential concern about potential Wolfcamp production, have you found or discovered in this immediate area any other formation in which Cities has an interest in which you have concern?

A The Wolfcamp was the only interval that we had looked at.

Q The Schultz Well down to the southwest of the disposal well, it's Well A on the cross section, I guess it is -- I'm sorry, it's the one that you said was the Caprock Penn East Pool Well?

A Yes, our State DV No. 1.

Q The State DV No. 1? That produces out of what formation in the Penn Pool? Is that an Atoka well?

A No, the Atoka was tested noncommercial and at one point in our records I saw this particular zone, what we now call the Penn zone, referred to as the Cisco.

Q And is the Penn still producing in this well?

A Yes, it's currently making 12 barrels of oil, 1 water, and 3 MCF per day.

Q Other than those two wells we've just discussed, does OXY have any other producing wells in the half mile radius?

A No, we do not.

Q Thank you. Nothing further.

MR. CATANACH: I have no questions of the witness.

Anything else, Mr. Carr?

MR. CARR: Nothing further.

MR. CATANACH: The witness may be excused.

Gentlemen, anything else in this case?

MR. CARR: Very brief statement.

MR. CATANACH: Mr. Carr.

MR. CARR: I think it's important to understand that OXY is an offsetting operator that has property interest surrounding this particular disposal well, and we're here today with no objection to the mechanical method proposed by Wagner and Brown to deal with this particular casing leak.

We do, however, object to blanket authority to dispose into a vertical interval without -- in excess of one mile when Wagner and Brown's own witness admits that that's not what they're interested in and that is not what they need.

We have concern about setting a precedent where you simply grant this blanket authority.

We think that all that you need to do is approve what they have come forward with as a way of dealing with this particular problem and not create a situation which later, we believe, could impair correlative rights in the area.

We think it should be up to Wagner and Brown to deal with the problem and that the ball should not be passed to the offsetting operator to annually monitor their operation to see if in effect some unneeded authority has at a subsequent time become a threat to their property interest.

MR. KELLAHIN: Mr. Examiner,

Wagner - Brown and its engineering staff has been open and candid with all operators and interest owners that have inquired about this application. We certainly don't seek any more than we have told you here today.

The procedural solution for our problem is one that was suggested by the Division to us, by simply increasing the open hole interval and that would get us in compliance with the administrative rules.

If you see another procedure to grant us the relief we're seeking, we certainly don't have any trouble with that. We believe by injection on vacuum with the annual tracer survey we have protected everyone.

We ask that the application be granted.

MR. CATANACH: Case 9400 will be taken under advisement.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C. S. R. DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division (Commission) was reported by me; that the said transcript is a full, true and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 9408, heard by me on June 8 1988.

David R. Catanach, Examiner
Oil Conservation Division