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:

APPLICATION OF PERMIAN OILFIELD PARTNERS, LLC FOR APPROVAL OF A SALTWATER DISPOSAL WELL, LEA COUNTY, NEW MEXICO.

CASE NOs. 20571, 20572, 20573, 20574

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

June 14, 2019

Santa Fe, New Mexico

BEFORE: PHILLIP GOETZE, CHIEF EXAMINER
DAVID K. BROOKS, LEGAL EXAMINER

This matter came on for hearing before the New Mexico Oil Conservation Division, Phillip Goetze, Chief Examiner, and David K. Brooks, Legal Examiner, on Friday, June 14, 2019, at the New Mexico Energy, Minerals and Natural Resources Department, Wendell Chino Building, 1220 South St. Francis Drive, Porter Hall, Room 102, Santa Fe, New Mexico.

REPORTED BY: Mary C. Hankins, CCR, RPR
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APPEARANCES

FOR APPLICANT PERMIAN OILFIELD PARTNERS, LLC (POP, LLC):

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FOR INTERESTED PARTY NEW MEXICO STATE LAND OFFICE:

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FOR INTERESTED/PROTESTOR PARTY TROVE ENERGY, LLC (Case Number 20573):

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EXHIBITS OFFERED AND ADMITTED

(1:54 p.m.)

EXAMINER GOETZE: So the last item on the docket is Case Number 20571, application of Permian Oilfield Partners, LLC for approval of a saltwater disposal well in Lea County, New Mexico.

Now, let's go ahead -- we wish to consolidate this with Case Numbers 20572, 20573, 20574, and that's it.

MS. BENNETT: That's it. I would ask that those four cases be consolidated for hearing only.

EXAMINER GOETZE: Call for appearances other than her.

MS. ANTILLON: Andrea Antillon on behalf of the State Land Office.

And we would concur that we would like all the cases to be consolidated and heard together.

MS. BENNETT: I should mention my name is Deana Bennett, Modrall Sperling, on behalf of Permian Oilfield Partners, LLC.

EXAMINER GOETZE: We'll get it all in there.

So we did have an appearance entered by Trove. And I haven't been able to keep up with this series of cases. Did they get it in timely, or was it --

MS. BENNETT: Well, according to Mr. Bruce, it's timely. It's not timely enough to -- or to present technical evidence, but according to Mr. Bruce, he can enter his appearance even as of today if he'd like. And that's consistent with the rule.

EXAMINER GOETZE: I know.

MS. BENNETT: I don't want to disparage that.

EXAMINER GOETZE: Mr. Bruce is not here.

MS. BENNETT: No. So I'm taking some liberties.

EXAMINER GOETZE: Mr. Bruce takes some liberties, too.

With that in mind, let's go ahead and proceed with the cases.

MS. BENNETT: And the Case that Mr. Bruce has entered his appearance in is Case Number 20573, which is the third case.

EXAMINER GOETZE: The JDAM Federal --

MS. BENNETT: Yes. That's correct. So it could very well be that Mr. Bruce may return in time for that case.

EXAMINER GOETZE: Oh. Well, he just can't pop in and pop out. That's not how we work around here. You have to suffer through everything.

(Laughter.)

EXAMINER GOETZE: Realizing it's only one of the cases that he's interested in, we'll proceed.

MS. BENNETT: Thank you.

EXAMINER GOETZE: How many witnesses?

MS. BENNETT: I have two witnesses with me today.

EXAMINER GOETZE: Will the witnesses please stand, identify yourself and be sworn in?

MR. FISHER: Gary Fisher.

MR. PURYEAR: Sean Puryear.

(Mr. Puryear and Mr. Fisher sworn.)

MS. BENNETT: At this time I'd like to call my first witness, Mr. Gary Fisher -- I'm sorry -- Mr. Sean Puryear.

EXAMINER BROOKS: She only has two witnesses and --

MS. BENNETT: I know. I'm going to blame it on the carne adovada.

EXAMINER GOETZE: Of course, we don't know if Mr. Bruce will object to his qualifications. I'll let him answer that question.

MS. BENNETT: Yeah. Okay.

SEAN PURYEAR,

after having been first duly sworn under oath, was questioned and testified as follows:

DIRECT EXAMINATION

BY MS. BENNETT:

Q. Mr. Puryear, can you state your name for the record, please?

A. My name is Sean Puryear.

Q. And for whom do you work?

A. I work for Permian Oilfield Partners.

Q. And in what capacity?

A. I'm the chief executive officer.

Q. How long have you worked for Permian Oilfield Partners?

A. Since April of 2019.

Q. Now, you-all -- it's my understanding that you-all have met with -- have met with the Division; is that right?

A. We have.

Q. And you've introduced the company to the Division?

A. We have.

Q. And you were able to answer any questions and present some materials to the Division about Permian Oilfield Partners' plans of development and your

long-term goals for this area?

A. We have.

Q. What are your responsibilities at Permian Oilfield Partners?

A. I oversee the management of the drilling of saltwater disposal wells and the design and construction of produced water structures in southeastern New Mexico.

Q. Have you previously testified before the Oil Conservation Division?

A. I have not.

Q. This is your first time before the Division?

A. It is.

Q. Can you provide a summary of your educational background and professional qualifications?

A. Sure. I graduated from Texas Tech University with a Bachelor of Science in Petroleum Engineering, after which I've held several positions with a major area operator in southeastern New Mexico as a senior-level drilling engineer and operations supervisor, a senior production engineer and operations supervisor, a completions engineer, the senior water systems manager and engineer, along with several field engineering positions where I was directly involved in the drilling and completion of over 100 horizontal oil and gas wells in southeastern New Mexico, as well as

several saltwater disposal wells, deep Devonian disposal wells. I also contributed to the permitting -- the engineering for the permitting of several of these high-capacity Devonian disposal wells.

Q. When you say "several of these," do you mean Permian Oilfield Partners --

A. No.

Q. -- or prior applications?

A. Prior -- from the prior employment.

Q. So is it fair to say, then, that in your -- before coming to Permian Oilfield Partners, you had worked for other companies that did deep Devonian -- Siluro-Devonian SWDs, and you were involved in the design, operation -- well, from start to finish, permitting, design, operation?

A. That is correct.

Q. Are you familiar with the four applications that Permian Oilfield Partners filed in these matters?

A. I am.

Q. Are you familiar with the status of the lands that are the subject of these applications?

A. I am.

Q. Are you familiar with the saltwater disposal wells that are the subject of these applications?

A. I am.

MS. BENNETT: At this time I would like to tender Mr. Puryear as an expert in SWD operations and engineering matters.

EXAMINER GOETZE: Ms. Antillon?

MS. ANTILLON: No objection.

EXAMINER GOETZE: He is so qualified.

MS. BENNETT: Thank you.

What I'd like to do for the hearing today is start out with some general questions, and then we'll look at each application individually with Mr. Puryear, and then we'll turn to Mr. Fisher.

Q. (BY MS. BENNETT) So starting more generally, sort of big picture, how many applications are being heard today?

A. Four.

Q. And are they commercial applications --

A. They are.

Q. -- for commercial wells?

A. They are.

Q. Are these all new proposals, or are these extensions or existing wells?

A. These are all new proposals.

Q. Now, Permian Oilfield Partners originally filed these as administrative applications; is that right?

A. That is correct.

Q. And did you supply all of the information required by the C-108 when you submitted these administratively?

A. We did.

Q. Did you get any information or comments from OCD saying that your applications were incomplete?

A. We did not.

Q. What happened after you filed your administrative applications?

A. We received notice that the State Land Office was in protest of those applications.

Q. And what did you do after that?

A. We contacted the State Land Office.

Q. And what did they say, essentially?

A. They were concerned with the proximity to State Trust Land.

Q. And so you agreed to file these for examiner hearing?

A. We did.

Q. To your knowledge, were there any other protests?

A. Not to my knowledge at that time.

Q. Okay. Let's start with Tab 1 then of the materials. If you look behind Tab 1 at the very first exhibit, is that Exhibit A?

A. It is.

Q. And can you briefly tell the examiners what Permian Oilfield Partners is seeking today?

A. Permian Oilfield Partners seeks the authority to inject produced water into the Devonian-Silurian Formation at depths of 17,453 feet to 18,880 feet.

Q. And what pressure do you seek -- the maximum pressure?

A. We seek 3,491 pounds or psi, which is the .2 gradient times the deepest casing string.

Q. And so the .2 gradient is following the Division's requirements?

A. That is correct.

Q. How about the volume? How much does Permian seek to inject per day?

A. We seek to inject the maximum of 50,000 barrels a day.

Q. Thank you.

Now, behind Exhibit A is the C-108 that starts with page 4. Do you see that --

A. Yes, ma'am.

Q. -- page 4?

And is this the C-108 that was prepared when you submitted the application administratively?

A. It is.

Q. And so I used the C-108 that you've prepared as the C-108 for the hearing examiner hearing; is that right?

A. It is, yes.

Q. Okay. Let's turn then to pages 8 and 9 of the C-108. And I think I might have your packet here in front of me.

EXAMINER GOETZE: Does his have the cheat sheet?

THE WITNESS: That's okay.

Q. (BY MS. BENNETT) Okay. Turning now to pages 8 and 9, are those -- is that the well construction data -- I'm sorry. This is the Bullseye application; is that right?

A. This is the Bullseye application. Yes, ma'am.

Q. And what type of land is the -- what's the surface ownership for Bullseye?

A. It is BLM-owned surface.

Q. And so the well construction data that's on pages 8 and 9, that's the well instruction date and wellbore diagram for the Bullseye; is that right?

A. That is correct.

Q. Now, can you just take us through the casing design and what you anticipate each depth will do?

A. Sure. This is a four-string casing job with

the surface intermediate one and intermediate two strings being brought all the way to surface and cemented to surface. The surface string should isolate any known freshwater zones. The first intermediate string will isolate the salt section, and the second intermediate string will isolate the lower-pressure reservoir rock above the Wolfcamp. The liner -- the fourth string, which is a liner, will be set to the top of the Devonian and tied back into the 9-5/8 200 feet, and this string will isolate the shales above the Devonian and below the 3rd Bone Spring.

Q. In your view, are these casings designed to be protective of underground sources of drinking water, as well as protective of -- or eliminating or preventing communication with hydrocarbons?

A. Yes, they are.

Q. Now, you mentioned that these -- the casings will be circulated to the surface. Is that right for all of them?

A. For the first three, yes.

Q. For the first three.

And is Permian Oilfield Partners seeking to use a larger tubing size here?

A. We are.

Q. And what size is that?

A. That will be a 7-inch-by-5-1/2 tapered string.

Q. And in your opinion, is this -- the casing that you propose here -- that Permian Oilfield Partners is proposing here, is that consistent with what you understood -- or what you did at your prior jobs where you were in charge of SWD permitting?

A. It is.

Q. Is it consistent with what you understand other operators to be submitting in their applications right now --

A. It is.

Q. -- for these types of deep Siluro-Devonian SWDs?

A. It is.

Q. In your opinion, is the tubing that you're using -- well, what type of tubing is that?

A. This is a 7-inch ultra-flush joint tubing with an insert fiberglass liner. It crosses over to a 5-1/2-inch ultra-flush joint tubing as well with the same type of fiberglass insert liner.

Q. In your opinion, is that tubing considered industry standard?

A. In my opinion, this tubing exceeds industry standard.

Q. Now, what sort of tests will you do -- or what

sort of assurances will you do to test the cement's integrity?

A. We will -- are you talking about on the casing strings?

Q. Yes.

A. On the casing strings, after running, we plan to circulate cement all the way to surface. In the event that we do not circulate to surface, we plan to run a temperature survey, verify the top and do remedial work in that regard if it's needed. And this would be for the -- for the surface intermediate one and intermediate two.

On the 7-5/8 liner, we intend to circulate cement off of the liner top and run a cement bond log to verify bond.

Q. Thank you.

What will you do in terms of monitoring after the well is operational?

A. We intend to employ a SCADA system that will constantly monitor the tubing pressure and the annular pressure outside of the tubing to ensure continuous mechanical integrity.

Q. Thank you for that.

Is there anything else you'd like to say about the wellbore design before we move to the next

series of questions I have for you?

A. No, ma'am.

Q. Thank you.

Let's turn to page 10 then behind the same tab.

A. Maybe I do.

Q. Okay.

A. Let me back up a little bit.

We will also --

(Laughter.)

Q. I think you should go to law school. It's been confirmed.

A. We will also employ an inconel permanent-set packer that will help ensure the isolation of hydrocarbons and fresh water.

Q. Thank you.

Now, let's turn to page 10.

A. Okay.

Q. At the top of page 10, you discuss whether there are any wells within the proposed well area of review that penetrate the Devonian Formation. Are there any?

A. There are none.

Q. Okay. Let's turn to page 12. On page 12, you discuss whether there are any freshwater wells located

within the one-mile area of review. Are there any?

A. According to the New Mexico Office of the State Engineer, there is one freshwater well within the well's one-mile area of review. We made efforts to sample this well, and upon visiting that location, we determined that that well is capped, and there was no sample to be obtained.

Q. Thank you.

And the map showing the one-mile area of review for that water well, is that on page 17?

A. It is. Yes, ma'am.

Q. And does that show that it's capped off?

A. It does.

Q. And then you've included some information on pages 18, 19, 20 and 21 from the OSE's, Office of State Engineer, website. What is that information included in your C-108 for?

A. That is information regarding the average depth of water for the surrounding townships. We included this information to ensure that the Division understood that our surface setting depth was deeper than any known sources of fresh water.

Q. Thank you.

Let's turn to page 32. On page 32, at the bottom of the page, does your application, your C-108,

identify the closest permitted Devonian disposal well to your proposed well?

A. Yes, ma'am, it does.

Q. And how far away is it?

A. It is just over four miles.

Q. Thank you.

When you filed this application administratively, this Bullseye application, did you send notice letters to the affected parties?

A. We did.

Q. And are the addresses of those affected parties on page 33, the names and addresses?

A. Yes, they are.

Q. Did you publish notice of your administrative application?

A. Yes, we did.

Q. Is that on page 34?

A. It is.

Q. How did you determine to whom to send notice?

A. We followed the New Mexico Administrative Code for the definition of an affected party, which is any designated operator within that one-mile radius. In the event that there is not a designated operator, any leaseholder in that one-mile radius, and in the event that there is not a leaseholder, any mineral owner in

that one-mile radius. We also notified the surface landowner.

Q. And in this case, that was the BLM?

A. That was the BLM.

Q. And you also identified -- did you identify -- yes. You did give notice to the State Land Office as well?

A. We did. Yes, ma'am.

Q. Let's turn back a few pages, and I apologize I skipped over this. I meant to ask you about the AORs. Are those on page 15?

A. Yes, they are.

Q. And there are two circles on page 15. Could you describe what the outside circle is and what the inside circle is?

A. Sure. The inside circle is a one-mile radius area of review in which we notified all the affected persons and also identified the freshwater wells present. And the outside circle is a two-mile radius to indicate the two-mile map that's requested on the administrative application checklist.

Q. And so you used the one-mile AOR here instead of the half-mile AOR that's in the C-108 based on the instruction from the Division for high-volume, deep Devonian wells?

A. That is correct.

Q. Can you turn to Exhibit B behind Tab 1? Is Exhibit B an affidavit that I prepared discussing that notice was sent to the affected parties?

A. It is.

Q. And this is notice of today's hearing that I sent to affected parties. If you turn to page 2 of my affidavit, is that a list of the parties to whom notice -- does that reflect, as far as you can recall, the same names that you provided notice to?

A. It does.

Q. And it also includes the BLM and State Land Office?

A. It does.

Q. And then is the next page a copy of the status of those mailings showing that most of them were delivered?

A. It is, yes.

Q. And then is the final page, page 4, behind my affidavit an Affidavit of Publication from the "Hobbs News-Sun" showing that notice of this hearing was published on May 31st, 2019?

A. It is, yes.

MS. BENNETT: My next plan of attack would then be to turn with Mr. Puryear to the exhibits we have

for the next case and then run through -- so run through all of the land exhibits with Mr. Puryear and then run through all the geology and seismology with Mr. Fisher.

EXAMINER GOETZE: That would be good.

MS. BENNETT: I have no further questions for Mr. Puryear on Case Number 20571.

EXAMINER GOETZE: Thank you.

Ms. Antillon?

MS. ANTILLON: No questions.

EXAMINER BROOKS: No questions?

I have no questions for him in regards to the 20571.

MS. BENNETT: Thank you.

Q. (BY MS. BENNETT) Let's turn then to Tab 2, please. Can you describe for the examiners what Exhibit A behind Tab 2 is?

A. This is the application for Permian Oilfield Partners to seek the authority to inject produced water into the Devonian-Silurian Formation for the Carpet Bomb Federal SWD Well No. 1 at a depth of approximately 17,615 to 19,006 feet.

Q. And for this well, what is your proposed maximum psi?

A. The proposed max for this well is 3,525 psi. And, again, that is calculated using the .2 gradient.

Q. And how about your average -- or your maximum injection well? What does Permian Oilfield Partners seek?

A. We seek a 50,000-barrels-a-day maximum injection well.

Q. And in this application, you also -- well, you intend to use the larger -- I say larger, but it's sort of the industry-standard tubing size now, right?

A. That is correct.

Q. Let's then turn to pages 8 and 9 behind Tab A, Exhibit A. Is this well construction data and the wellbore schematic for the Carpet Bomb Federal SWD No. 1?

A. It is.

Q. Is it the same, essentially, as the wellbore and well construction data for the Bullseye?

A. Mechanically, it is the same. The only difference would be the depth and the volume of cement.

Q. And so you have made changes to the depth and to the volume of cement based on the change in location?

A. Yes, ma'am.

Q. In your opinion, do you feel that the casing that you're proposing for this well, the Carpet Bomb Federal SWD No. 1, is consistent with industry standards?

A. It is, yes, ma'am.

Q. Is it consistent with what you did at your prior employment?

A. It is.

Q. Is it consistent with what you understand operators to be proposing for similar Siluro-Devonian high-volume SWDs?

A. It is.

Q. In your opinion, is this casing designed -- is this casing designed to protect freshwater resources?

A. It is.

Q. Does this have the fiberglass-lined tubing that we discussed earlier?

A. Yes, ma'am, it does.

Q. Is this tubing -- or do you consider it to exceed industry standards?

A. I do.

Q. Let's turn to page 10.

Oh, I'm sorry. These will all be circulated to the top, too, right?

A. It will all be circulated to the top, and the tubing will utilize an inconel permanent-set packer.

Q. And then will you also have a SCADA system for this well?

A. We will. We will have constant monitoring of

the tubing and annulus pressure giving us a continuous indication of mechanical integrity.

Q. And how about a cement bond log?

A. We will run a cement bond log after we cement the liner in place.

Q. Thank you.

Turning to page 10 at the top, Roman numeral VI is where you discuss whether there are any wells within the proposed area of review that penetrate the Siluro-Devonian Formation. Are there any?

A. There are not.

Q. Let's look at page 12. On paragraph two, that's where the C-108 discusses freshwater wells within the one-mile area of review. Are there any?

A. According to the State Engineer, there is one freshwater well within the one-mile area of review. Attempts were made to sample this well. It is located inside a secured crude oil tank battery. Access was requested and denied.

Q. Thank you.

Is the location of that well identified on page 17?

A. It is.

Q. And you noted on that page that there was no access?

A. That is correct.

Q. And what is page 18?

A. Page 18 is a query from the New Mexico State Engineer's website identifying the average water table -- or the water table depth for the well -- the freshwater wells located in Township 25, Range 33 East.

Q. What is the depth, just out of curiosity?

A. 625 feet is the deepest well depth there.

Q. Let's turn now to the one-mile and two-mile AOR maps that you prepared. Those are on page 15. Did you prepare -- or use the one-mile AOR rather than the one half-mile AOR because it's a high-volume deep injection well?

A. We did.

Q. Are the parties that you identified within the one-mile area of review listed on page 16?

A. They are.

Q. Let's turn to page 20. At the bottom of page 20, you discuss the closest active or permitted Devonian disposal well. Do you see that?

A. I do.

Q. Where is the closest active or permitted Devonian disposal well?

A. It's approximately 3.3 miles away.

Q. Thank you.

When you filed this application administratively, did you send notice letters to the affected parties?

A. We did.

Q. And briefly, again, how did you determine to whom to send notice?

A. We followed the New Mexico Administrative Code definition of an affected party. Do we need the definition?

Q. No. Thanks.

Let's turn to page 30. Is this the letter that you sent providing notice of the administrative application?

A. It is.

Q. And then on page 33, is that the Affidavit of Publication where Permian Oilfield Partners gave notice of its administrative application?

A. It is.

Q. Let's turn to Exhibit B. Is Exhibit B an affidavit prepared by me?

A. It is.

Q. Is page 2 of Exhibit B a list of parties to whom I sent notice?

A. Yes, ma'am, it is.

Q. And Exhibit 3, is that the summary of the

status of those mailings?

A. Yes, it is.

Q. And they all show delivery?

A. They do.

Q. And is Exhibit 4 an Affidavit of Publication showing notice of this hearing was published in the "Hobbs News-Sun"?

A. It is.

Q. One thing I meant to ask you about this, which I think is self-evident from the name, but what is the status of the lands at issue in this application?

A. This is on BLM surface.

Q. Thank you.

MS. BENNETT: With that, I don't have any more questions for Mr. Puryear on Case 20572, and I pass the witness for questions others may have.

EXAMINER GOETZE: Thank you.

Any questions?

MS. ANTILLON: The State Land Office doesn't have any questions.

EXAMINER BROOKS: No questions.

CROSS-EXAMINATION

BY EXAMINER GOETZE:

Q. So the well you couldn't get into, the water well, that was EOG?

A. What's the question?

Q. The pod, the water, C2373, that well of which the water sample was denied access, that's EOG?

A. Inside of the battery?

Q. Yeah.

A. To my knowledge, yes, sir.

Q. Okay. I just wanted to see what other people are doing in the neighborhood, especially the State Engineer.

EXAMINER GOETZE: No other questions for this witness. Thank you.

MS. BENNETT: Thank you.

CONTINUED DIRECT EXAMINATION

BY MS. BENNETT:

Q. In that case let's turn to Tab 3 and to Exhibit A behind Tab 3. Mr. Puryear, can you please describe to the examiners what Permian Oilfield Partners seeks in Case Number 20573, which is the JDAM Federal well application?

A. Permian Oilfield Partners seeks the approval -- correction -- seeks the authority to inject produced water into the Silurian-Devonian Formation at a depth of approximately 15,573 feet to 19,043 feet.

Q. And what's the maximum pressure psi that Permian Oilfield Partners requests?

A. We request 3,515 psi, following the 0.2-psi-per-foot gradient.

Q. Thank you.

And how about the maximum injection rate?

A. 50,000 barrels per day.

Q. And you're also seeking to use the larger tubing size?

A. We are.

Q. Is this federal surface, federal land as well?

A. It is.

Q. Let's turn to pages 8 and 9, please. Are pages 8 and 9 the well construction data form and the wellbore schematic that you prepared for the JDAM Federal SWD No. 1?

A. It is.

Q. Is this similar to the well construction data and wellbore schematic that you discussed in the Bullseye application?

A. That is correct.

Q. It is?

A. (Indicating.)

Q. Does it have different depths than the Bullseye?

A. The depths are different, but the general casing design is the same, as well as the tubing design,

packer design and SCADA monitoring.

Q. So with this well, you intend to circulate the cement to the top and run the test again?

A. We do. We intend to circulate cement to surface on the first three strings. We intend to circulate cement off of the liner top and also run a cement bond log.

Q. And in your opinion, is the casing that Permian Oilfield Partners is proposing in this application for each depth, is that consistent with industry standards?

A. It is.

Q. Is it consistent with what you did in your prior work experience?

A. It is.

Q. Is it consistent with what you understand other operators to be proposing for other high-volume SWDs?

A. It is.

Q. In your opinion, is the casing designed to protect freshwater resources?

A. It is, yes, ma'am.

Q. And are you using the fiberglass-lined tubing here as well?

A. We are.

Q. And it's your opinion that that exceeds industry standards?

A. That is my opinion.

Q. Let's turn to page 10. Are there any wells within the proposed area of review for this well to inject into the Devonian Formation?

A. There are none.

Q. Or penetrate, I should say, the Devonian Formation?

A. There are none.

Q. How about freshwater wells? Let's look at page number 12.

A. There are no freshwater wells within the one-mile area of review according to the State Engineer's website.

Q. Thank you.

Let's turn then to page 15. Is page 15 the diagram or the map showing the one-mile and two-mile areas of review?

A. It is.

Q. And did you use the one-mile area of review here rather than the one-half mile given that this is a high-volume injector into the Devonian?

A. It is -- or we did.

Q. Are the wells that are identified within the one-mile radius listed on page 16?

A. Yes, ma'am, they are.

Q. Let's turn to page 29. At the bottom of page 29, did you identify where the closest active or permitted Devonian disposal well is to your proposed well?

A. At the time we did, and that was two miles away.

Q. And it's your understanding, right, that Trove has asked their lawyer to enter its appearance in this case?

A. That is my understanding. Yes.

Q. And did you know of Trove's proposal when you submitted your application?

A. We did not.

Q. When did you first find out about the Trove location?

A. Tuesday of this week.

Q. And that was after I told you that Trove had entered its appearance; is that right?

A. That is correct.

Correction. That was Wednesday.

Q. Wednesday. That's what I thought.

You were here a moment ago when the State Land Office -- and you've actually spoken with the State Land Office about their concerns with your wells being proximate to state lands and state minerals; is that

correct?

A. That is correct.

Q. Do you know whether the Trove well that's being proposed is close to state lands?

A. The Trove well is 750 feet away from this well, approximately.

Q. So it's fair to say that it's probably close to State Trust Lands or state minerals?

A. Yes, ma'am, I believe so.

Q. Do you know that the State has protested that application?

A. To my knowledge, the State has not.

Q. When you filed the application administratively, did you send notice to the affected parties?

A. We did.

Q. And obviously you didn't send Trove a letter. But would Trove have been entitled to a letter as an offset SWD applicant?

A. According to the New Mexico Administrative Code, no, they would not.

Q. So in your opinion, did you make a good-faith effort here to identify and give notice to all affected parties of your proposed application?

A. We did.

Q. And did you -- again, you followed the New Mexico Administrative Code's definition of affected party and the regulations when you determined to whom to send notice?

A. We did.

Q. Are those parties listed on page 30?

A. They are.

Q. And did you also publish notice of the administrative application?

A. We did.

Q. And that's on page 31?

A. It is.

Q. Let's turn to Exhibit B, please. Is Exhibit B an affidavit prepared by me discussing notice that was provided for this hearing?

A. It is.

Q. If you look at page 2 of Exhibit B, does that show the names and addresses of the parties to whom I sent notice?

A. It does.

Q. And looking at page 3, does that show the status of the mailing to those same parties?

A. It does.

Q. And does it show that they were all delivered?

A. It does.

Q. And if you look at Exhibit 4, is Exhibit 4 an Affidavit of Publication stating that notice of this hearing was published in the "Hobbs News-Sun" on May 31st, 2019?

A. It does. It is.

Q. Thank you.

MS. BENNETT: At this time I have no further questions for Mr. Puryear on Case Number 20573 -- oh, actually I do have one question. I'm sorry.

Q. (BY MS. BENNETT) A moment ago when we talked about the Trove application and its proximity to your application, do you intend to withdraw your application at this time, the JDAM application?

A. We do not.

Q. And do you just intend to let the process play out, and if the Trove application is approved, then you'll consider your alternatives at that time?

A. That's correct.

Q. And why wouldn't you withdraw your application at this time?

A. In the event that the Trove application is not granted, we would -- we would ask to have our application remain.

Q. And you don't want to lose your spot in the

queue, essentially?

A. That is correct.

Q. Okay.

MS. BENNETT: With that, I have no more questions for Mr. Puryear on this case, 20573.

EXAMINER GOETZE: Ms. Antillon?

MS. ANTILLON: No questions.

EXAMINER BROOKS: No questions.

EXAMINER GOETZE: And I have no questions on this case either, so the next one.

MS. BENNETT: Thank you.

Q. (BY MS. BENNETT) Let's turn then to Tab 4 and in Exhibit A. Mr. Puryear, is this the application that was filed on Permian Oilfield Partners' behalf in Case Number 20574 for the Vortex Federal SWD No. 1?

A. It is.

Q. And could you briefly describe to the examiners what Permian Oilfield Partners seeks in this application?

A. Permian Oilfield Partners seeks the authority to inject produced water into the Silurian-Devonian Formation at a depth of 16,619 feet to 18,427 feet. We seek to utilize a 7-inch-by-5-1/2 injection tubing string at a maximum daily injection rate of 50,000 barrels per day and a maximum pressure of 3,324 psi

corresponding with the 0.2-psi-per-foot gradient.

Q. Thank you.

Let's turn then to Tab -- I'm sorry -- pages 8 and 9. Are pages 8 and 9 the well construction data and the wellbore schematic that you prepared for the Vortex Federal SWD No. 1?

A. Yes, they are.

Q. Are these similar in terms of design and protectiveness as to the Bullseye, JDAM and Carpet Bomb --

A. Yes.

Q. -- diagrams that we previously looked at?

A. Yes, they are. The difference being depths and cement volumes.

Q. And so you calculated the amount of cement needed based on a change in depth?

A. That is correct.

Q. So your calculations are -- respond to changes in depth as between each well?

A. That is correct.

Q. In your opinion, is the casing that Permian Oilfield Partners is proposing to use for this well, the Vortex Federal SWD No. 1, consistent with industry standards at each depth?

A. It is, yes.

Q. It is consistent with what you have done in your prior experience?

A. It is.

Q. Is it consistent with what you understand other operators are using or proposing for similar high-volume SWDs in the Devonian with this similar tubing size?

A. It is.

Q. In your opinion, is this casing designed to protect freshwater resources?

A. Yes, it is.

Q. What type of tubing are you using here?

A. We're using a 7-inch HCP 110 ultra-flush joint casing -- correction -- ultra-flush joint tubing by 5-1/2-inch 17-pound HCLE ultra-flush joint tubing. This tubing will have a fiberglass insert liner. It will employ a permanent-set inconel packer. We will -- we will continuously monitor the tubing pressure and the backside pressure -- or correction -- the annular pressure with a SCADA system to ensure continuous mechanical integrity.

Q. And will you be using a cement bond log in this well as well?

A. We will.

Q. Let's turn to page 10 for something new and unusual. On page 10, you discuss whether there are any

wells within the one-mile area of review that penetrate the Devonian Formation. Is there one?

A. There is one.

Q. And what well is that?

A. That is the Brinninstool Deep Unit No. 1.

Q. And what is the status of that well?

A. That well is plugged and abandoned.

Q. And do you have information -- or did you include information with your C-108 about the status of that well?

A. We did.

Q. Is that at pages 30 to 32?

A. Yes.

Q. And could you briefly just walk through pages 30, 31 and 32 for the examiner?

A. Sure. Page 30 is the wellbore schematic that I prepared using the well file that was loaned to us from Bettis, Boyle & Stovall. This shows the original plugging of this well when it was -- when it belonged to Pure and then the subsequent plugging when it belonged to Bettis, Boyle & Stovall.

Page 31 identifies the plugging operation -- the last plugging operation when the well belonged to Bettis, Boyle & Stovall. This was accepted by the OCD.

And page 32 outlines the plugging procedure when the well was owned by Pure.

Q. So in your opinion, then, this well has been -- it has been plugged and abandoned. I guess that's not your opinion. That's a fact (laughter).

A. This well has been plugged and abandoned. And it is my opinion that it was plugged and abandoned correctly so as not to provide a conduit for any type of produced water to risk any surface-water incursion or any mineral damage.

Q. Thank you.

Now, with respect to this application, the Vortex application, let's turn back to page 10. Let's start at page 10.

EXAMINER GOETZE: Well, look who showed up.

(Mr. Bruce enters the room, 2:37 p.m.)

EXAMINER GOETZE: One moment.

MS. BENNETT: Sorry.

EXAMINER GOETZE: Let's go ahead, for the benefit of Mr. Bruce, and describe where we are in your review process for -- this will be the JDAM?

MS. BENNETT: Actually, this is the Vortex. We went through the JDAM land.

EXAMINER GOETZE: I know. They're so confusing.

So we will revisit it.

MS. BENNETT: Yes, we will.

EXAMINER GOETZE: Okay. Thank you.

MR. BRUCE: And, Mr. Examiner, I'm here on behalf of Trove Energy & Water.

EXAMINER GOETZE: Thank you.

MS. BENNETT: Right. And just to recap, we have -- or I asked to present these cases consolidated, and you indicated to me you had no problem with that.

MR. BRUCE: I have no problem with that. Yeah.

MS. BENNETT: And I have tendered Mr. Puryear as an exhibit --

MR. BRUCE: I have no objection.

MS. BENNETT: -- I mean as an expert. Okay? And I have gone through the JDAM, which is the case that you're interested in.

MR. BRUCE: Okay.

MS. BENNETT: I've gone through the JDAM initial discussion of wellbore design and proximity to other wells in the area.

MR. BRUCE: Sounds good.

MS. BENNETT: And I did raise with our witness affirmatively the fact that the JDAM well is proposed fairly close to the Trove well.

MR. BRUCE: Fine. Let's proceed.

Q. (BY MS. BENNETT) So looking at page 12 --

MS. BENNETT: And right now we're behind Tab 4 of Exhibit A.

Q. (BY MS. BENNETT) Looking at page 12, paragraph two, does this discuss whether there are any freshwater wells within your proposed well's one-mile area of review?

A. According to the New Mexico Office of the State Engineer, there are no freshwater wells within the proposed well's one-mile area of review.

Q. Let's turn now to page 15. Is page 15 the one- and two-mile areas of review that you prepared for the Vortex Federal well?

A. It is.

Q. And does the one-mile area of review identify all of the wells within that one mile?

A. It does.

Q. And did you use a one-mile area of review rather than the one-half-mile area of review based on your understanding that that's what the Division has been requesting for high-volume Siluro-Devonian SWDs?

A. Yes, we did.

Q. Are the wells within the one-mile area of review listed on page 16?

A. They are.

Q. Let's turn to page 29. Does the bottom paragraph of page 29 identify where the closest active or permitted Devonian disposal well is to your proposed well?

A. It does. It's 2.3 miles away.

Q. Thank you.

When you filed this application administratively, did you send notice letters to the affected parties?

A. We did.

Q. How did you determine to whom to send notice?

A. We followed the New Mexico Administrative Code's definition of an affected party.

Q. And you also sent notice to the surface owners; is that right?

A. We did indeed.

Q. Or surface owner. Is it the BLM?

A. Yes. This is BLM surface.

Q. Let's look at page 33. Is page 33 a copy of the notice letter that you sent out about your administrative application?

A. It is.

Q. Did you publish notice of having filed an administrative application?

A. We did.

Q. Is that on page 34?

A. It is.

Q. Could you please turn to Exhibit B? Is Exhibit B an affidavit prepared by me outlining the notice that I gave for this hearing?

A. It is.

Q. Is page 2 of Exhibit B a list of the names and addresses of parties to whom I sent notice for this hearing?

A. It is.

Q. Is Exhibit -- I mean is page 3, then, a list of the status of those mailings?

A. It is.

Q. And does it show that almost all of them were delivered except for one?

A. Almost all of them except for one.

Q. And is page 4 an Affidavit of Publication from the "Hobbs News-Sun" stating or confirming that publication notice of this hearing was published on May 31st, 2019?

A. It is.

Q. Thank you.

MS. BENNETT: At this time I don't have any further questions for Mr. Puryear on this application,

which is application 20574, the Vortex application.

EXAMINER GOETZE: Ms. Antillon?

MS. ANTILLON: No questions.

CROSS-EXAMINATION

BY MR. BRUCE:

Q. I don't care whether I ask it now or later, but I'm here for the JDAM well only, sir.

A. Okay.

Q. And I apologize for being late. I work by myself and I had to deal with a few crazies.

Approximately how far away -- you're aware that Trove has a pending application --

A. I am.

Q. -- for a WLC MID Fed SWD No. 2?

A. I am.

Q. And approximately how far apart is the JDAM from the WLC well?

A. Approximately 750 feet.

Q. Okay. And when was the JDAM well application filed?

MS. BENNETT: That's Tab 3, Exhibit A.

THE WITNESS: Looks like April 25th, 2019.

MR. BRUCE: April 25th? Thanks.

Really that's all the questions I have.

MS. BENNETT: Okay.

EXAMINER GOETZE: Mr. Brooks?

EXAMINER BROOKS: No questions.

EXAMINER GOETZE: And I don't have any questions for this witness as far as the 20574 case.

MS. BENNETT: Thank you.

I just had a few other questions that are general questions. They're more general questions just about -- these apply to all of the wells rather than the specific applications.

REDIRECT EXAMINATION

BY MS. BENNETT:

Q. Did you consider the ability or your ability to conduct fishing operations if necessary in these wells?

A. We did.

Q. And what did you determine?

A. We determined that the casing and tubing design is consistent with standard fishing operations and standard fishing equipment that can be sourced locally in Hobbs. This is off-the-shelf fishing tools. We can utilize any of the rigs that we intend to drill these wells with to fish these strings. We considered overshot operations, spear operations, inside cutters, outside cutters. We also considered, in the event that we needed to abandon a well, a plugging procedure. All of this was reviewed by Steve Nave of Nave Oil & Gas and

confirmed that this was, in fact, an appropriate procedure.

Q. Thank you.

We've talked a lot about the locations for these SWDs. And let's set aside JDAM for the moment because this is a relatively new development, from your perspective anyway, because you only recently found out about the JDAM-proposed location. But in general and specifically for the three other wells, the Vortex, Carpet Bomb and Bullseye, how did you choose the location for those three wells?

A. We identified locations that were well outside the one-and-a-half mile well-to-well spacing or the three-quarter-mile area of review that the OCD has requested and put those locations -- or put those wells in a favorable location to satisfy that.

Q. So your goal was to avoid encountering wells within a 1.5-mile area of review?

A. That is correct.

Q. Do you intend to drill these wells if approved?

A. We do.

Q. And are you waiting for any other permits?

A. As soon as the drilling permits are approved and these permits are approved, we intend to drill all three of these -- or all four of these wells.

Q. Given your experience that you've had with other operators and especially your experience that you had with the SWD side of operations, are you familiar with the regulatory requirements for operating and maintaining a well?

A. I am.

Q. And in your opinion, does Permian Oilfield Partners have the technical, operational and other experience and qualifications to comply with these requirements?

A. We do.

Q. And do you intend to?

A. We do.

MS. BENNETT: Those are all the questions I have at this time.

EXAMINER GOETZE: You're back.

MR. BRUCE: I'm back. We both are.

Could I ask one more question?

EXAMINER GOETZE: You may ask your question.

RECROSS EXAMINATION

BY MR. BRUCE:

Q. Are both the JDAM wells -- well -- excuse me -- and Trove's WLC well both applications to inject into the Devonian-Silurian?

A. They are.

Q. Thank you, sir.

EXAMINER GOETZE: And since you both have had -- we'll offer the State Land Office an opportunity.

MS. ANTILLON: No questions.

EXAMINER GOETZE: Okay. Thank you.

So we are done with this witness?

MS. BENNETT: We are. Yes. And I apologize for any confusion about the way I did the questioning.

EXAMINER GOETZE: No. It keeps us on our toes.

MS. BENNETT: Okay. Good. Good for a Friday afternoon, right?

EXAMINER GOETZE: Yes.

(Laughter.)

MR. BRUCE: I don't know if that's good or not. That's just me. Okay?

MS. BENNETT: Silver lining.

At this time I'd like to call my next witness, Gary Fisher.

GARY FISHER,

after having been previously sworn under oath, was questioned and testified as follows:

DIRECT EXAMINATION

BY MS. BENNETT:

Q. Good afternoon, Mr. Fisher.

A. Good afternoon.

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

A. Gary Fisher.

Q. And for whom do you work?

A. Permian Oilfield Partners.

Q. How long have you worked for Permian Oilfield Partners?

A. November of 2018.

Q. And what are your responsibilities at Permian Oilfield Partners?

A. I'm officially the president, dealing with -- well, anything that needs to happen, operations, permitting, geology, organizing vendors, procurement, invoicing, all of the above.

Q. Do your responsibilities then include management and oversight of drilling saltwater disposal wells?

A. Yes, ma'am.

Q. This is the first time you've ever testified before the Division; is that right?

A. That's correct.

Q. But were you here when Permian Oilfield

Partners met with the Division?

A. Yes, I was.

Q. Could you briefly provide a summary of your educational background and professional qualifications?

A. Sure. I've got 28 years in oil and gas. I went to school at the University of Southern California, got a degree in mechanical engineering.

When I got out of school, I went to work for Schlumberger where I did open-hole logging, log analysis, extensive geology, you know, log interpretation geology for customers basically.

After that, I was at Newmar Corporation, basically Halliburton, once again doing logging and log analysis, geology, geologic interpretations for customers.

After that, I was at Core Labs where I was more involved in fracture diagnostics, especially as related to hydraulic fracturing and correlation with microseismic.

And then previous to Permian Oilfield Partners, Pioneer Energy Services where I did open-hole log analysis, geology, instruction, basically instructing -- internal instruction for the employees and also to other customers on log interpretation, geology, doing completion designs for customers, quite a

few, in fact, regarding saltwater disposal.

While there, I also had some special projects. One included an induced seismicity study in Oklahoma regarding all the Arbuckle injection problems that they've had up there. The end result of a lot of that study is I ended up writing the saltwater disposal logging and the MIT, or mechanical integrity test, procedures. They actually ended up incorporated in the Oklahoma Corporation Commission guidelines.

I've also done just a small amount of -- small amount of research into the solution mining realm, mainly in regards to diagnostics of caverns and fluid levels and things like that and then mechanical integrity testing, especially as related to groundwater protection.

Q. When you did the -- oh, sorry.

A. Also -- sorry (laughter).

Q. Do tell (laughter).

A. Also I've been a member of the SPWLA, the Society of Petrophysicists and Well Log Analysts, the Society of Petroleum Engineers for 21, been a contributing editor to the AESC green book. It's a service-oriented deal. And also I've been a member presenter with the SPWLA Nuclear Special Interest Group.

Q. Great.

One thing I recall you telling me about of your experience was fracturing propagation.

A. Uh-huh.

Q. Was that only for hydraulic fracturing, or did you study and have experience with fracturing applications for other things?

A. At the time of that, it was all related to hydraulic fracturing initiation and propagation. Later on down the road, when we started doing the induced seismicity studies regarding Oklahoma, that was more of a structural seismicity topic.

Q. And would that have related to saltwater disposal wells?

A. Yes. That's what it was related to.

Q. So that's what it was related to?

A. Yes.

Q. So you've studied hydraul- -- I'm sorry -- fracturing with respect to saltwater disposal wells?

A. That's correct:

EXAMINER GOETZE: And please speak up for her (indicating).

Q. (BY MS. BENNETT) Does your area of responsibility at Permian Oilfield Partners include the area of southeastern New Mexico?

A. Yes, it does.

Q. Are you familiar with the applications that we're discussing here today, the four applications?

A. Yes, ma'am.

Q. Are you familiar with the saltwater disposal wells that Permian Oilfield Partners is proposing in these four applications?

A. Yes, I am.

MS. BENNETT: I would now like to tender Mr. Gary Fisher as an expert in geology log analysis and fault slip analysis by virtue of his experience with fracture propagation.

MR. BRUCE: No objection.

EXAMINER GOETZE: No objection, Mr. Bruce.

MS. ANTILLON: No objection.

EXAMINER GOETZE: He is so qualified.

MS. BENNETT: Thank you.

Q. (BY MS. BENNETT) Today -- or this afternoon you'll be testifying about the same four applications that Mr. Puryear testified about earlier?

A. Yes, ma'am.

Q. And did you review and provide input on these four applications?

A. I did.

Q. I'd like to start with some overall information -- some overall questions about all four

applications.

Did you review the geology of this area?

A. Yes, I did.

Q. What is the proposed injection interval for all of these wells?

A. The Devonian-Silurian.

Q. What is your conclusion about this injection zone?

A. That it would be an excellent saltwater disposal zone.

Q. And what is your conclusion based on?

A. Well, number one, you can look at regional success in the area. Number two, it's got a very strong upper bound in the Woodford Shale. And number two [sic], it's got very good lower bounds. We're not proposing to go into the Montoya, which is very, very tight lined. We'll stay above that. Below that, you have the Simpson, which is mostly shale, as an additional barrier to keep from getting down into the Cambrian or Bliss or Precambrian rocks.

Q. And the target injection zone, is it relatively thick?

A. Yes, it is.

Q. So you'll have a lot of area to work with as well?

A. Yes. In these wells, it ranges from 1,400 to 1,800 feet.

Q. In your opinion, do you think that this injection zone is well suited even at the volume and the rate that you're requesting for these four applications?

A. Yes, ma'am.

Q. So a moment ago, you talked about the Woodford being a permeability barrier, then the Montoya, and below the Montoya, the Simpson. And you consider those to be solid or good permeability barriers above and below?

A. Sorry. I forgot to mention the Ellenburger, which is not a barrier.

Q. And so those are, in your opinion, permeability barriers above and below?

A. Yes, ma'am.

Q. And those will confine the fluids that you propose to inject in the injection zone?

A. Yes, ma'am.

Q. Now, another general question before we dive into the applications. Did you prepare a fault slip analysis for all of the applications?

A. Yes, I did.

Q. And we'll talk about each fault slip analysis separately, but before we do, can you explain to the

examiners what background or experience you have that's relevant to your statement regarding seismicity?

A. Well, it would -- it goes back to my investigations on fracture propagation. While I'm a mechanical engineer, really fracture mechanics on a geologic scale is just a large mechanical engineering problem, so my educational training kind of sent me that direction. And then also when you start looking at fracture propagation, you know, a lot of the stresses have similar effects. It may be a larger scale versus a smaller scale, but a lot of the causes and effects and directions and all that have definite crossover.

Q. Thank you.

Did you use a publicly available version of the Stanford University fault slip probability analysis tool?

A. Yes, I did.

Q. And what sort of inputs did you put into that, just generally speaking?

A. Generally speaking, there's -- specifically speaking --

Q. Yes (laughter).

A. -- there is thickness of the zone. There's input injection rate. There's porosity permeability, friction coefficients, fluid densities, viscosities.

And a big one is the actual location of the fault versus location of the injection and the angle of the -- of the -- of the horizontal stress in the area.

Q. Uh-huh. The orientation of the fault is important?

A. Yes. Yes.

Q. And so for each application, you identified the closest faults?

A. That's correct.

Q. And you looked at their orientation -- their stress orientation?

A. That's correct.

Q. Did you review historic seismic activity in this area?

A. Yes, I did.

Q. When you were using the Stanford University FSP and otherwise to do your seismic study, did you use publicly available data?

A. Yes, I did.

Q. And publicly available software?

A. Yes.

Q. Okay. With that background, then, let's turn to the individual applications, if that's okay with the folks in the room.

EXAMINER GOETZE: Well, yeah. Case by

case, and they'll have the opportunity to question.

Q. (BY MS. BENNETT) So let's turn to Exhibit A behind Tab 1. Exhibit A is the application for the Bullseye Federal SWD No. 1, Case Number 20571, right?

A. Yes.

Q. Let's turn to page 13. Is page 13 the affirmative statement that's required by the C-108?

A. Yes, it is.

Q. Did you prepare this affirmative statement?

A. Yes, I did.

Q. Could you read the affirmative statement that you prepared?

A. Yeah. "Permian Oilfield Partners, LLC has examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water."

Q. And is that still your understanding and your conclusion as of today?

A. Yes. There's 16,000 feet, give or take, between our injection zone and any -- any sources of fresh water.

Q. Let's turn to pages -- back to pages 11 and 12. Are pages 11 and 12 your geologic study or prognosis for the Bullseye well?

A. Yes, ma'am.

Q. And what did you determine -- if we're looking at page 12 specifically, the geology prognosis --

A. Yes.

Q. -- what did you determine is the thickness of the injection zone in this area for this well?

A. The Devonian and the Silurian combined, the Devonian and Fusselman combined is 1,487 feet thick.

Q. How thick is the Woodford in this area?

A. Approximately 210 feet.

Q. How about the Montoya?

A. 649.

Q. And the Simpson?

A. 572.

Q. What formation is the fresh water in?

A. It's up in the -- in the quaternary fill. It's much shallower up above the Rustler, about 500 to 600 feet.

Q. And so a moment ago --

A. I'm sorry. This one, 750 feet in this area.

Q. Okay. But it's still quite a ways away from the injection zone?

A. Yes. Absolutely.

Q. In your opinion and based on your review of the materials that you prepared, do you think that there is

a risk to freshwater resources or underground sources of drinking water in any of these wells -- or if this well is drilled?

A. No.

Q. Why not?

A. Number one, there is a very large vertical separation. There are many zones, not just the Woodford -- there are numerous zones up above at 16,000 feet, and also the well design has multiple strings of casing with cement circulated to surface through all of them to provide a good hydraulic seal.

Q. Thanks.

And one of the things we did talk about with Mr. Puryear is that the surface casing is designed to be -- intentionally to be thicker, is that right, to add more protection --

A. Yes, it is.

Q. -- for surface waste -- or sorry -- freshwater resources?

A. Yes.

Q. Are you aware of any productive shales in this injection interval?

A. No.

Q. In your opinion, is there a risk to hydrocarbons above the injection interval like in the

Bone Spring or Wolfcamp?

A. No.

Q. And why not?

A. Well, one, we have an upper seal in the -- even in the form of the Woodford acting as an upper hydraulic seal to the injection, and also the casing design takes that into account, and the cement job will seal that off.

Q. Thank you.

So in your opinion, would the drilling of this well impact the correlative rights of mineral owners?

A. No.

Q. Let's turn now to your statement regarding seismicity, and that's found on page 31 to 32. Now, did you prepare this statement regarding seismicity?

A. I did.

Q. And what documents -- what desk review did you do for this?

A. Well, I looked at the various USGS fault data and then correlated it with Ron Broadhead's book, which we have all heard about, and then also the Snee and Zoback paperwork obviously where this fault slip analysis is regarding.

Q. Did you determine where the closest fault is

that's available in publicly available information?

A. Yes, it is. It's approximately four miles to the east.

Q. And when we talked about your study generally, we discuss the fact that you looked for historic seismic activity?

A. Yes, I did.

Q. Was there any historic seismic activity in this area?

A. On page 31, I found -- in less than 30 miles, I found three seismic events, one of them a 2.9, seven-and-three-quarters miles away off to the north, and then you can see the other two, which were considerably farther away, over towards Jal.

Q. So your area of review that you used for this is 30 miles?

A. 30 miles.

Q. And that's not 30 square miles. It's 30 miles --

A. Yeah, a 30-mile radius.

Q. And in paragraph 4A, B, C, does that identify the factors for the parameters that you used for modeling?

A. Yes. Yes. All the databases that I looked in for faults did not show any faults in the Devonian. So

I wanted to use a worst-case scenario, so I purposely set some of the specifications to show the maximum pressure, say, if we dumped all of the fluid straight down through the Montoya, through the Simpson, through the Ellenburger, all the way down into the basement, what the potential fault slip would be in the basement faults.

Q. So you essentially modeled a catastrophic failure?

A. That's correct.

Q. And it looks like you modeled using a full proposed capacity of 50,000 barrels per day?

A. That's correct, for 30 years.

Q. How about the millidarcies and frac gradient?

A. Yes. I used a 12-1/2 millidarcy. I know granite -- granular granite is less than that, but I assumed there would be some sort of permeability due to fractures in the granite, and 3 percent porosity is typical for a lot of granites. And then the other -- the other features, such as the direction and your A-T factors, I pulled straight from the -- the Snee and Zoback maps.

Q. Thank you.

What was your conclusion of the likelihood of an induced seismic event?

A. Very low.

Q. And, again, that is based on the analysis run and the publicly available --

A. That's correct.

Q. -- and the fault slip probability analysis tool?

A. That's correct.

Q. The color insets here on page 32, is that sort of a screenshot of the modeling through year 2049?

A. Yes, it is.

Q. And I see over on this side that there are ten faults and they all show --

A. They all show green, meaning no probability of slip.

Q. And that's modeled out all the way to 2049?

A. That's correct.

Q. Okay. Thank you.

MS. BENNETT: Those are the only questions I have for Mr. Fisher for Case Number 20571, and I tender the witness for questions on Case Number 20571.

EXAMINER GOETZE: 571 or 572?

MS. BENNETT: 571.

EXAMINER GOETZE: A binder (laughter).

MS. BENNETT: Sorry. We were told not to use binders anymore --

EXAMINER GOETZE: I know. I know.

MS. BENNETT: -- but I will bring a binder for you, Phil -- I mean, Mr. Goetze.

EXAMINER GOETZE: Just staple it to my forehead.

(Laughter.)

MS. BENNETT: I'll bring a special.

EXAMINER GOETZE: A very pink one.

At this time, questions?

MR. BRUCE: I don't have any questions with respect to this one.

MS. ANTILLON: No questions.

EXAMINER BROOKS: No questions.

CROSS-EXAMINATION

BY EXAMINER GOETZE:

Q. I don't have any questions, but do you have an expanded version of the Stanford model? You went through a ten, 20, 30 years --

A. Yes.

Q. -- and then 40?

A. Yes.

Q. Could you submit those and make them available as part of the --

A. Absolutely.

Q. And seeing that this pattern is carried through

in each of them, I would also request that you provide those.

A. We'll do it for all of them.

Q. Okay. Thank you.

MS. BENNETT: At ten-year intervals is what you're requesting?

EXAMINER GOETZE: Whatever he chose. It's not ours. Ten years tends to be a good indicator, whether it's acid gas or disposal, but let's see the sequence in how you got there.

MS. BENNETT: Thank you.

MR. BRUCE: And I would like copies.

EXAMINER GOETZE: You'll get copies, and I'll give you a notebook, too.

MR. BRUCE: Do I want it?

EXAMINER GOETZE: I don't know (laughter). I don't care.

So in Case 20571, we have completed that one.

MS. BENNETT: Yes. And I would -- I'd like to ask for all the cases to be taken under advisement at the end, if that's okay, and admit all the exhibits at the end, if that's okay.

EXAMINER GOETZE: Yes.

MS. BENNETT: Okay. Thank you.

CONTINUED DIRECT EXAMINATION

BY MS. BENNETT:

Q. So let's move on to Case Number 20572, the Carpet Bomb case, and the materials for that are behind Tab 2. And in the interest of efficiency, we'll be a little faster going through the subsequent --

EXAMINER GOETZE: It is a similar process --

MS. BENNETT: Very similar.

EXAMINER GOETZE: -- and we're going to have the same parameters, and we understand that. So reiterate what is different about this operation or anything that's unique to it.

MS. BENNETT: We will, definitely. Thank you.

Q. (BY MS. BENNETT) So the application behind Tab 2, Exhibit A is the application for the Carpet Bomb Federal SWD No. 1 well; is that right?

A. Yes.

Q. Did you prepare the affirmative statement on page 13?

A. Yes.

Q. Would you read the affirmative statement for the examiners?

A. "Permian Oilfield Partners, LLC has examined

the available geological and engineering data and find no evidence of open faults or other hydrologic connection between the disposal zone and any underground sources of drinking water."

Q. Thank you.

And is that still your opinion today?

A. Yes.

Q. Let's turn to -- turn back to pages 11 and 12. Is this your geologic study for the Carpet Bomb well?

A. Yes, it is.

Q. Looking at page 12 specifically, does that have your geology prognosis?

A. Yes.

Q. In this area for this well, what is the thickness approximately of the Devonian-Silurian injection area?

A. Okay. Approximately 1,400 feet and change.

Q. How about the Woodford?

A. Just shy of 200.

Q. The Montoya?

A. 478.

Q. And the Simpson?

A. 694.

Q. Where would the fresh water be in relation to -- or where is the freshwater formation in relation

to these?

A. In the shallower, less than 625 feet.

Q. So there is quite a vertical offset between where you're proposing to inject --

A. Yes. There is approximately 16,700 feet.

Q. Okay. Based on your review of the geologic materials, do you think that there is a risk to freshwater resources or underground resources if this well is drilled?

A. No, ma'am.

Q. And why not?

A. Number one is the vertical separation and the various shales in between acting as hydraulic barriers, and then the well design takes that into -- takes that into account with the positioning of -- of the casing strings and cementing to the surface.

Q. Are you aware of any productive shales in the injection interval here?

A. No.

Q. Is there any risk, in your opinion, to hydrocarbons above the injection interval?

A. No.

Q. And why is that?

A. Number one is vertical separation, and then also there are hydraulic barriers between the injection

zone and sources of oil and gas in the area.

Q. In your opinion, then, will the drilling of this well impact the correlative rights of any mineral interest owners?

A. No.

Q. Let's discuss your seismicity at this point. Can you turn to page 19? Did you prepare this statement regarding seismicity?

A. I did.

Q. And did you look for seismic -- historic seismic activity in the area?

A. I did.

Q. And did you identify any?

A. Yes, I did.

Q. And is that noted under --

A. Yeah. It's noted in the first paragraph.

Q. And, again, your area of review here is 30 miles, and the nearest is 8.27?

A. That's correct.

Q. How about the nearest fault?

A. The nearest fault is 2 kilometers away.

Q. For this fault slip probability analysis, did you use the same parameters that we discussed for Case Number 20571?

A. Yes, I did.

Q. And for this fault slip probability analysis, did you use publicly available data?

A. Yes, I did.

Q. What is your conclusion based on the fault slip probability analysis that you ran?

A. That there is very little risk of fault slip.

Q. And, again, does the color slide in the inset represent a screenshot of your study?

A. Yes, it does.

Q. And it shows zero fault slip probability for all the faults?

A. That's correct.

Q. Thank you.

MS. BENNETT: I have no further questions for Mr. Fisher on this application.

EXAMINER GOETZE: Ms. Antillon?

MS. ANTILLON: No questions.

EXAMINER GOETZE: I'm not going to ask Mr. Bruce.

Mr. Brooks?

EXAMINER BROOKS: No.

EXAMINER GOETZE: And I don't have any questions regarding this, so that takes care of Case 20572.

Q. (BY MS. BENNETT) Then turning to Case 20573,

which is the JDAM application, that's behind Tab 3. Exhibit A is the application; is that right?

A. That's correct.

Q. Did you prepare an affirmative statement for this application as well?

A. Yes, I did.

Q. Is that affirmative statement on page number 13 behind Tab 3?

A. Yes, it is.

Q. Would you mind reading that affirmative statement for the examiners, please?

A. "Permian Oilfield Partners, LLC has examined available geological and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water."

Q. Thank you.

Is that still your opinion today?

A. Yes, it is.

Q. Will you turn back to pages 11 and 12? Do pages 11 and 12 contain your study about the injection zone geology?

A. Yes, it does.

Q. And looking specifically at the geology prognosis on page 12, does that include the depths for

the Devonian-Fusselman-Silurian injection zone?

A. Yes, it does.

Q. And about how thick is that in this area?

A. The Devonian and Fusselman, approximately 1,500 feet.

Q. And then we've been talking about the Woodford being an upper permeability barrier. About how thick is that here?

A. 200 feet.

Q. And then the Montoya, how thick is that here?

A. A little over 700 feet.

Q. And the Simpson?

A. 557.

Q. So it's about 1,300 feet below --

A. Yes. Correct.

Q. -- the targeted injection zone?

A. That's correct.

Q. Where would the freshwater resources be in relation to the injection zone?

A. Much shallower, up above 625 feet.

Q. And so, again, there is approximately more than how many thousands of feet?

A. 17,000 feet, roughly.

Q. So based on your review of the geologic materials, do you think that there is a risk to fresh

water or underground sources of drinking water if this well is drilled?

A. No.

Q. And why not?

A. Number one, the vertical separation, and then the multiple shale barriers in between acting as hydraulic seals. And then the actual wellbore or the casing design, multiple strings circulating cement to surface takes care of that.

Q. Thank you.

Are you aware of any productive shales in this injection interval?

A. No.

Q. In your opinion, is there any risk to hydrocarbons above the injection interval?

A. No.

Q. And why not?

A. Once again, because of the shale seals up above and the design of the well. The well is designed to prevent that.

Q. In your opinion, will the drilling of this well impact the correlative rights of mineral interest owners?

A. No.

Q. Let's turn to your statement regarding

seismicity, which is on page 28 to 29. Did you prepare this statement regarding seismicity?

A. I did.

Q. Did you look at USGS and TexNet seismic activity databases to determine whether there has been historic seismicity in this area?

A. I did.

Q. And, again, you're looking at a 30-mile area?

A. That is correct.

Q. And you found some historic seismicity in the area?

A. Yes. The closest was a little under 11 miles away.

Q. Okay. So the closest was just under 11 miles away?

A. Yes.

Q. Now, did you prepare a fault slip probability analysis for this well as well?

A. I did.

Q. And did you use the same monitoring or the same parameters for the modeling that we've discuss --

A. I did.

Q. -- in the earlier applications?

Does the color insert on page 29 represent the conclusions that you reach, or is that a screenshot

of your conclusions?

A. Yes, it is.

Q. And what did you conclude from your modeling?

A. That there is very low probability of fault slip.

Q. And, again, this one was run through 2049, right?

A. That's correct.

Q. And this one also has the green [sic] information about all faults in the right -- or left-hand side of the screen?

A. Yes.

Q. Is that zero for all of them?

A. That is zero for all of them.

Q. Through 2049?

A. Yes.

MS. BENNETT: That's all the questions I have for Mr. Fisher on Case Number 20753.

EXAMINER GOETZE: Very good.

Mr. Bruce.

CROSS-EXAMINATION

BY MR. BRUCE:

Q. So looking at this -- it's Mr. Fisher; is that right?

A. That's correct.

Q. Sorry. I'm bad on names.

This well is in Section -- the JDAM well is in Section 23 of 25-32, correct?

A. 23 of 25-33, I believe.

Q. 33. Excuse me. Excuse me.

And you believe that a well in that area is a good candidate for Siluro-Devonian injection?

A. Yes.

Q. And when you are looking at all of the injection zones, you're looking at somewhere close to 3,000-feet thickness, right?

A. For the Silurian-Devonian, it's on the order of 1,500 feet.

Q. Well, I think you said the Devonian and Fusselman is 1,500 feet?

A. Yes.

Q. And then there are additional depths of about 1,400, 1,500 feet in the Woodford, Montoya and Simpson combined?

A. Yeah. We wouldn't inject into the Woodford or the Montoya or the Simpson.

Q. Okay. Thank you.

Now, in looking at all four of your proposed wells, all four of them combined are miles away -- quite a number of miles away from any other

wells?

A. Yes.

Q. Why would you place yours right next to Trove's proposed WLC well?

A. We didn't know that Trove had a WLC well at that that location until Tuesday.

MS. BENNETT: Wednesday.

THE WITNESS: Wednesday.

Q. (BY MR. BRUCE) Do you think there should be two wells in that particular proximity?

A. No, sir.

Q. And on your JDAM well, you are proposing a maximum injection rate of 50,000 barrels a day, correct?

A. That's correct.

Q. Do you know what the proposed injection rate is on the Trove well?

A. No, I do not.

Q. And I know you mentioned this before, but what is the frac gradient?

A. .75.

Q. Okay. Thank you very much, Mr. Fisher.

A. You're welcome.

EXAMINER GOETZE: Ms. Antillon?

MS. ANTILLON: No questions.

EXAMINER GOETZE: Mr. Brooks?

EXAMINER BROOKS: No questions.

EXAMINER GOETZE: I do not have any questions with regards to Case 20573.

MS. BENNETT: May I ask a follow-up question or two?

EXAMINER GOETZE: I'm sure you can.

REDIRECT EXAMINATION

BY MS. BENNETT:

Q. When Mr. Bruce was just asking you just now about when you learned about this -- about the Trove application, that was after I informed you that Trove had entered their appearance, right?

A. That's correct.

Q. And that was the first time you knew about Trove's application?

A. That's correct.

Q. You didn't get a copy of that application in the mail --

A. No.

Q. -- or any other information?

A. No.

Q. And you know that that application was filed before yours, right?

A. Yes.

Q. And when you mentioned the frac gradient of

.75, that's different than the .2 psi, right?

A. That's correct.

Q. Okay. Thanks.

MS. BENNETT: I have no further questions on this case.

EXAMINER GOETZE: Are you going to shoot back, or are you --

MR. BRUCE: (Indicating.)

EXAMINER GOETZE: Okay. Thank you.

In that case, please proceed.

MS. BENNETT: Thank you.

Q. (BY MS. BENNETT) Let's turn now to Tab 4, please.

EXAMINER BROOKS: If you're not going to take a break at this point --

EXAMINER GOETZE: Well, let's take a break. I feel that my lawyer's going to abandon me and tell me that I have no manners. So let's take a 15-minute break.

(Laughter.)

(Recess, 3:22 p.m. to 3:43 p.m.)

EXAMINER GOETZE: Let's go back on the record.

MS. BENNETT: Thank you.

Q. (BY MS. BENNETT) At this time we're turning to

Case Number 20574, which is behind Tab Number 4. Let's look at Exhibit A, please. Is Exhibit A the application that POP filed for the Vortex SWD No. 1?

A. Yes, it is.

Q. And did you prepare a statement -- an affirmative statement on this case -- for this application?

A. Yes, I did.

Q. Turn to page 13, please. Is page 13 your affirmative statement that you prepared?

A. Yes, it is.

Q. Would you mind reading that for the examiners?

A. "Permian Oilfield Partners, LLC has examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water."

Q. Thank you.

And is that still your opinion today?

A. Yes, it is.

Q. Let's turn back to pages 11 and 12, please. Are pages 11 and 12 your injection zone geology study?

A. Yes.

Q. Let's look at page 12 specifically. And the injection zone here is the Devonian-Fusselman/Silurian;

is that right?

A. That's correct.

Q. Can you describe how thick that is in this area?

A. A little over 1,800 feet.

Q. And how about the Woodford?

A. 714 feet.

Q. How about the Montoya?

A. 466.

Q. And the Simpson?

A. 850.

Q. What's the depth where the freshwater resources will be?

A. Up shallower than 600 feet.

Q. So what's the vertical offset approximately between the freshwater resources and the injection zone?

A. Approximately 16,000 feet.

Q. Based on your review of the geologic materials, do you think that there is a risk to freshwater resources or underground sources of drinking water if this well is drilled?

A. No.

Q. And why is that?

A. Number one is the vertical separation and the various zones in between the various shale breaks, which

will create hydraulic seal against upward migration of water, and then the well design with the multiple strings of casing and the cement circulated to surface coming up the back side of the wellbore.

Q. Great.

So the casing design, the permeability barriers and the vertical offset?

A. That's correct.

Q. Are you aware of any productive shales in the injection interval?

A. No.

Q. In your opinion, is there a risk to hydrocarbons above the injection interval?

A. No, there is not.

Q. Why is that?

A. Because we have the permeability barriers right above up the injection zone, and also the wellbore design cases off and cements any oil and gas-producing --

Q. And is there a vertical offset?

A. Yes. There is vertical offset as well.

Q. In your opinion, then, will the drilling of this well impact the correlative rights of mineral interest owners?

A. No.

Q. Let's turn to your statement regarding seismicity. Is that found on page 28 to 29? Well, it is found on pages 28 and 29. Let's turn to pages 28 to 29, shall we? Is this your statement regarding seismicity?

A. Yes.

Q. And you prepared this statement?

A. Yes.

Q. And did you consider the location of the closest fault?

A. Yes.

Q. And what is the location of the closest fault?

A. Approximately -- approximately five miles. I do see I made a typographical error in the text where I said 1 kilometer, but the math is correct, which shows about five miles.

Q. About five miles?

A. Yes.

Q. And for study, did you also do desktop survey -- or review of USGS and TexNet seismic databases to determine if there is historic seismic activity in the area?

A. Yes, I did.

Q. Is there minimal historic seismic activity in the area?

A. Minimal.

Q. And was the closest seismic activity more than 13 miles away from your proposed wells?

A. Yes, it is.

Q. Did you use the same parameters for this fault slip probability analysis that you used in the prior applications that we discussed today?

A. Yes, I did.

Q. Did you also use the Stanford University fault slip probability analysis tool?

A. Yes.

Q. What did your analysis -- or what conclusions do you draw from your analysis?

A. That there is very low probability of fault slip.

Q. And is the colored slide in the middle -- or the colored material in the middle of this page a screenshot, essentially, of your analysis run out through the year 2049?

A. Yes, it is.

Q. And does it show zero percent for fault slip probability for all fault slip models?

A. Yes. Correct.

Q. And that's through year 2049?

A. Yes.

Q. Were the exhibits that we've looked through today -- the exhibits behind Tab 1 for the Bullseye well, the exhibits behind Tab 2 for the Carpet Bomb well, the exhibits behind Tab 3 for the JDAM well and the exhibits behind Tab 4 for the Vortex well -- prepared by you, under your supervision or compiled from company business records?

A. Yes.

MS. BENNETT: At this time I'd like to move the admission of Exhibits 1 through 4, Tabs 1 through 4, and the exhibits behind that in their respective cases.

EXAMINER GOETZE: Okay. And before we get carried away with that, do you have any questions with regard to the Vortex wells?

MS. ANTILLON: No questions.

EXAMINER GOETZE: Thank you.

Now, let's go to the exhibits.

Mr. Bruce, any objections?

MR. BRUCE: Absolutely not.

EXAMINER GOETZE: Ms. Antillon?

MS. ANTILLON: No objections.

EXAMINER GOETZE: And Exhibits Tab 1 through Tab 4 for Cases 20571, 20572, 20573 and 20574 are entered into the record.

(Permian Oilfield Partners, LLC Tab

Numbers 1 through 4, with Exhibits A and B in each, for each case are offered and admitted into evidence.)

EXAMINER GOETZE: Now, at this time you have nothing to present, Mr. Bruce?

MR. BRUCE: I have nothing to present, just a very brief statement.

EXAMINER GOETZE: Okay.

MS. BENNETT: I'd ask these cases be taken under advisement, Case Numbers 20571, 20572, 20573 and 20574.

EXAMINER GOETZE: Okay. Mr. Bruce, you have the floor.

MR. BRUCE: Mr. Examiner, simply, I'd ask the Division to take administrative notice that the application for Trove's WLC MID Fed SWD No. 2 well was filed in late March. I know it's simplistic, but they were the first to file, and the witness said there shouldn't be two wells in that close proximity. And I'd ask that the application in Case 20573 be denied and that Trove's application move forward.

That's it.

EXAMINER GOETZE: Thank you.

Ms. Antillon.

MS. ANTILLON: With regard to Case Numbers

20571, 20572, 20573 and 20574, the State Land Office is reviewing all those applications and has concerns with the saltwater disposal well spacing of those wells and their close proximity to State Trust Land.

EXAMINER GOETZE: Okay. With all that on the record, the Division will take Cases 20571, 20572, 20573 and 20574 under advisement.

And that is the end of the docket. Thank you very much.

MS. BENNETT: Thank you.

(Case Numbers 20571, 20572, 20573 and 20574 conclude, 3:53 p.m.)

STATE OF NEW MEXICO

COUNTY OF BERNALILLO

CERTIFICATE OF COURT REPORTER

I, MARY C. HANKINS, Certified Court Reporter, New Mexico Certified Court Reporter No. 20, and Registered Professional Reporter, do hereby certify that I reported the foregoing proceedings in stenographic shorthand and that the foregoing pages are a true and correct transcript of those proceedings that were reduced to printed form by me to the best of my ability.

I FURTHER CERTIFY that the Reporter's Record of the proceedings truly and accurately reflects the exhibits, if any, offered by the respective parties.

I FURTHER CERTIFY that I am neither employed by nor related to any of the parties or attorneys in this case and that I have no interest in the final disposition of this case.

DATED THIS 28th day of June 2019.

MARY C. HANKINS, CCR, RPR
Certified Court Reporter
New Mexico CCR No. 20
Date of CCR Expiration: 12/31/2019
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