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 CHEVRON U.S.A., INC. CASE NO. 15972
FOR APPROVAL OF A SALTWATER DISPOSAL
WELL, LEA COUNTY, NEW MEXICO.

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

February 8, 2018

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 Thursday, February 8, 2018, 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.

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APPEARANCES

FOR APPLICANT CHEVRON U.S.A., INC.:

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EXHIBITS OFFERED AND ADMITTED

(10:10 a.m.)

EXAMINER GOETZE: Let's move on to Case Number 15972, application of Chevron U.S.A. for approval of a saltwater disposal well, Lea County, New Mexico.

Call for appearances.

MS. KESSLER: Mr. Examiner, Jordan Kessler, from the Santa Fe office of Holland & Hart, on behalf of the Applicant. I will be joined shortly by my colleague, Adam Rankin.

EXAMINER GOETZE: Where are you hiding him?

MS. KESSLER: He's on his way from the airport.

EXAMINER GOETZE: We'd rather talk to you than Adam anyway.

MS. KESSLER: I appreciate that, Mr. Examiner.

I have four witnesses.

EXAMINER GOETZE: Very good.

Would the four witnesses please stand, identify yourself to the court reporter and be sworn in, please?

MS. ROUSE: Leonor Rouse.

MR. HEASTER: Sean Heaster.

MR. WILLIAMS: Clay Williams.

MR. HODGES: Kenneth Hodges.

(Ms. Rouse, Mr. Heaster, Mr. Williams and Mr. Hodges sworn.)

MS. KESSLER: I'll call my first witness.

EXAMINER BROOKS: Before we get started with the four witnesses, let's take a five-minute break.

EXAMINER GOETZE: That'll give time for Mr. Adam [sic] to show up. So let's go ahead and take a break.

(Recess, 10:12 a.m. to 10:24 a.m.)

MS. KESSLER: I'll call my first witness, please.

EXAMINER GOETZE: For clarity sake, we've already had a discussion with the Applicant, as the Engineering Bureau. So many of these items have been disgusted -- disgusted (laughter) -- discussed outside this formal presentation, the concept being to make this part of the record and to move forward with the Division and provide guidance in the growth of SWDs in the southeast.

Please proceed.

MS. KESSLER: Thank you, Mr. Examiner.

LEONOR ROUSE,

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

DIRECT EXAMINATION

BY MS. KESSLER:

Q. Please state your name for the record and tell the Examiners by whom you're employed and in what capacity.

A. Yes. I'm Leonor Rouse. I'm employed with Chevron U.S.A., Inc. and handle regulatory water disposal matters.

Q. Have you previously testified before the Division?

A. No.

Q. Can you please outline your educational background?

A. I have a Bachelor's of Science degree in chemical engineering from Texas A & M University. I received that in 1997. I have a master's in business administration with a specialization in energy finance, received in 2007.

Q. And what has your work history been?

A. So I've worked with Chevron and Chevron subsidiaries for ten years. I have experience with technical and engineering matters in refining, in chemicals and upstream and steam flood [sic] and shelf operations. The last six years, I've been working with the Permian Basin operations, leading, planning and

supporting gas takeaway, water supply and water disposal matters.

Q. Are you familiar with the application filed in this case?

A. Yes.

Q. And are you familiar with the status of the lands that are the subject of this application?

A. Yes.

MS. KESSLER: Mr. Examiner, I tender Ms. Rouse as an expert in regulatory water disposal matters.

EXAMINER GOETZE: Very good. So qualified.

Q. (BY MS. KESSLER) Ms. Rouse, let's turn to Exhibit 1. Is this the C-108 for the Maelstrom SWD #1 well --

A. Yes.

Q. -- submitted by Chevron?

A. Yes.

Q. Can you please summarize what Chevron seeks?

A. We seek the authorization to inject for Dakota [sic] purposes for the Maelstrom SWD #1 well, located at 2050 FSL and 1793 FEL, Section 15, T26 South, R32 East in Lea County.

Q. An API has not yet been approved?

A. No.

Q. Do you seek to inject 50,000 barrels of water per day?

A. Yes.

Q. And what is the maximum pressure?

A. The maximum pressure will be 3,480 psi.

Q. What is your injection interval?

A. We're injecting into the Silurian Limestone at the depth between 17,400 feet and 19,100 feet.

Q. What is the source of the injected water?

A. The sources will be produced water and formation water from wells within a four-mile radius of the SWD.

Q. Will those all be from Chevron wells?

A. Yes. They will be all from 100 percent Chevron wells.

Q. What is the status of the lands of the proposed injection where injection is proposed [sic]?

A. On Section 15, the minerals and the surface are BLM federal lands. Chevron has 100 percent working interest in the --

Q. Is this a surface lessee?

A. No.

Q. Can you please turn to what I've marked as Tab A of Exhibit 1 and identify this exhibit for the Hearing Examiners?

A. This is the C-102, the well location and acreage dedication plot that indicates the location, surface location and the bottom-hole location of the well.

Q. And this also shows the pool and pool code for the proposed injection zone, correct?

A. Yes. The pool code is 98249.

Q. What is Tab B of Exhibit 1?

A. Tab B is a map outlining in orange the two-mile radius of the wells within the two-mile area, and it also indicates in blue the half-mile review radius.

Q. Okay. Following a meeting with the Division, did Chevron agree to review the wells within a one-mile area of review?

A. Yes, we did.

Q. And did additional parties receive notice as a result of extending that area of review to one mile?

A. Yes.

Q. To whom has notice of this application been provided?

A. So we sent notice to three leasehold operators, as well as the surface owner on the BLM.

Q. And that would be leasehold operators within a one-mile area of review?

A. Yes.

Q. And also the surface owner --

A. Yes.

Q. -- which is the BLM?

A. Yes.

Q. Okay. Is Exhibit 2 an affidavit prepared by my office confirming that notice has been provided in accordance with Division rules?

A. Yes, it is.

Q. And is Exhibit 3 an Affidavit of Publication of the hearing in the "Hobbs News-Sun"?

A. Yes.

Q. Was Exhibit 1 prepared by you or compiled under your direction and supervision?

A. Yes, it was.

MS. KESSLER: Mr. Examiner, I'd move admission of Exhibits 1 through 3, which include my two notice affidavits.

EXAMINER GOETZE: Exhibits 1 through 3 are so entered.

(Chevron U.S.A., Inc. Exhibit Numbers 1 through 3 are offered and admitted into evidence.)

CROSS-EXAMINATION

BY EXAMINER GOETZE:

Q. Well, we do have a problem, though. If you

look at our notification, 26(C)(1)(A), it's pretty specific in what is to be included. I don't see any formations in there and rates and pressures, and I would ask that you --

EXAMINER GOETZE: What?

MS. KESSLER: What are you looking at?

EXAMINER GOETZE: I am looking at 19.15.26(C), administrative approval.

EXAMINER BROOKS: 26.8(C).

EXAMINER GOETZE: 8(C). Excuse me.

MS. KESSLER: Are you referring to our Exhibit 3?

EXAMINER GOETZE: Well, okay. Let me check.

MS. KESSLER: That does have the rates and pressures and --

EXAMINER GOETZE: Does it?

THE WITNESS: Yes, it does.

EXAMINER GOETZE: Then I do apologize. Don't put that one in there.

So we do -- very good. Then no problems with that.

Q. (BY EXAMINER GOETZE) But I will at this point -- also, we talked about earlier or the question came up from the districts. Since this is your first

witness, you may have someone else. The districts have felt that with the large-scale volumes of these wells, if this well were to have an issue that required it to be shut in, what would be Chevron's response to that in regards to do you have a place to take the injection? Do you account for or have additional volume so that if the well were to be shut in, we would not hear a protest that it should be continued to operation even though it were not safe and in compliance with an MIT or had casing issues?

A. So we do have a plan and already contracts in place with third-party disposal companies. So we have additional volumes both in New Mexico and Texas that we would be able to send 50,000 barrels of water.

Q. Okay. Thank you.

EXAMINER BROOKS: Well, this is your area of expertise, Mr. Goetze.

EXAMINER GOETZE: However, I've already made the mistake of notice.

CROSS-EXAMINATION

BY EXAMINER BROOKS:

Q. Well, how did you determine who you were going to send notice to for the mineral interest owners?

A. So our Chevron Land Department did research on title and put that together for us.

Q. Okay. Did they include all 40-acre tracts in the vicinity? Is that the way they went about it?

A. Yes, the 40-acre tract. Uh-huh.

Q. That border on the tract where the --

A. That the BD [sic] is located?

Q. Bordering on the quarter-quarter section where this disposal is located -- to be located?

A. Yes.

MS. KESSLER: And, Mr. Examiner, it was actually done for a surrounding mile, according to the Division's request.

EXAMINER BROOKS: Okay.

THE WITNESS: We extended it to a mile.

EXAMINER BROOKS: The rule is a little bit unclear, but I think that would cover it.

You may go ahead, Mr. Goetze. I'm through.

EXAMINER GOETZE: At this point we have no more questions for this witness. Thank you very much.

MS. KESSLER: Thank you. I'll call my next witness.

And, Mr. Examiners, at this point I would like to tender Exhibit 4, which is a self-affirmed declaration of Ms. Jessica Avila. Ms. Avila is a rock mechanics specialist and was present at the hearing -- I'm sorry -- the meeting with the Division on December

20th of 2017. Her affidavit outlines the purpose of that meeting, which was to provide the Division with proprietary information related to inputs for the Stanford analysis. And I would tender her Exhibit 4 for admission into the record.

EXAMINER GOETZE: Very good. Exhibit 4 represents a summation of the model that was presented that includes proprietary information, and at the request of the Division, that the results be submitted in an affidavit and don't necessarily have to present the actual model and proprietary information. Exhibit 4 is so entered.

(Chevron U.S.A., Inc. Exhibit Number 4 is offered and admitted into evidence.)

MS. KESSLER: Thank you.

EXAMINER BROOKS: Ms. Kessler, is there a statute of some kind that allows -- I've seen a lot of these self-affirmed declarations. Is there a statute that makes them equivalent to an affidavit?

MS. KESSLER: There is a statute. I can provide you that specific statute if you like.

EXAMINER BROOKS: Yeah, just for general information, I would like to have that because we didn't use to allow people to self-affirm.

MS. KESSLER: I'll provide that by email

today.

EXAMINER BROOKS: Okay.

EXAMINER GOETZE: What did you do?

EXAMINER BROOKS: They had to come in and swear that they were a notary and hold up their hand and say, This is the truth and the whole truth.

EXAMINER GOETZE: Are you a notary?

EXAMINER BROOKS: No. I used to be, but I'm not now.

EXAMINER GOETZE: Very good. Continue with your case.

CLAYTON R. WILLIAMS,

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

DIRECT EXAMINATION

BY MS. KESSLER:

Q. Can you please state your name for the record and tell the Examiners by whom you're employed and in what capacity?

A. My name is Clayton Williams. I work for Chevron U.S.A., Inc., and I'm currently the Earth Science Team Lead for our Permian Basin Tight Rock asset.

Q. Have you previously testified before the Division?

A. No, I have not.

Q. Please outline your educational background?

A. I graduated from Curtin University in Western Australia in 2006 with a Bachelor of Science, major in geology, a minor in geophysics. I have since pursued a master's in petroleum engineering from the University of New South Wales.

Q. What has your work history been?

A. So I've spent 11 years employed by Chevron internationally. My previous background has been in asset development, in new well operations and well timing, well execution, with a focus on rock mechanics, pore pressure and fracture gradient modeling. I've since been a reservoir management advisor. I've been an earth science advisor for our international portfolio, and in the past four years, I've been accountable for subsurface characterization and subsurface development and planning.

Q. Has your experience and general responsibilities included geology in the Permian Basin?

A. That's correct.

Q. Are you a member of any professional associations?

A. I'm a financial member of AAPG and SPE.

Q. Are you familiar with the application that's

been filed in this case?

A. Yes, I am.

Q. And have you reviewed and directed a geological study of the lands that are the subject of this application?

A. Yes, I have.

MS. KESSLER: Mr. Examiners, I'd tender Mr. Williams as an expert in petroleum geology.

EXAMINER GOETZE: He is so qualified.

Q. (BY MS. KESSLER) Mr. Williams, under your direction or supervision, was the Form C-108 prepared and submitted?

A. That is correct.

Q. And that's been marked as Exhibit 1, correct?

A. That's right.

Q. Does this contain all of the information required by Division regulation for a Form C-108?

A. I believe that is correct.

Q. And is this an expansion on the existing project?

A. No, it's not.

Q. Has appropriate geologic data been attached per the requirements in the Form C-108?

A. Yes.

Q. Let's turn to Tab D of Exhibit 1. Can you

please review this exhibit for the Examiners?

A. The exhibit demonstrates the formation tops and the estimated depths of water, oil and gas and other mineral-bearing formations within the tight hole location.

Q. So an estimated depth to water, oil and gas?

A. That's right.

Q. Let's turn to Exhibit 5. Please identify this exhibit.

A. Okay. Exhibit 5 demonstrates the stratigraphic overview of the proposed location for the Maelstrom saltwater disposal well. On the left-hand side of the exhibit is a geologic time scale with a highlight to the areas blown up by the type log on the right-hand side of the exhibit. The type log on the right-hand side is the Red Hills Unit 1 well, which is offset to the proposed location by 4-1/2 miles to the northeast. And we believe it demonstrates the most appropriate analog for our injection to the proposed Maelstrom location.

Q. Will you please walk us through the logs?

A. So on the right-hand side on the type log section, we go through the stratigraphic section, with particular attention highlighted by the orange box of the injection -- of the Silurian. It is made up of two formations, the Wristen Group and the Fusselman,

overlain by the Woodford Shale, and below that, the Montoya and Simpson Group.

In the logs themselves, we've got a number of logs tracks, but the one I'll highlight for the Examiner is the lithology log on the right, which highlights the dolomitized limestone of the injection target interval. And it's highlighted in purple on this and on future exhibits.

Q. Are there any faults in the area?

A. So we've done an integrated study of offset well analysis, including 3D seismic interpretation, and the nearest offset faults to this location is at a 70 degree azimuth two-and-a-half miles from this location in a northeast direction.

Q. Okay. Can you please review the sealing -- for the Wristen and Fusselman Groups?

A. So the Wristen and Fusselman Groups are under a hydrostatic pore pressure regime, a structurally benign setting. Overlaying that is 160-odd feet of Woodford Shale, and above that, Mississippian Lime measuring not greater than 500 feet of sealing lithology, no structure compromise at the location. Below the Silurian section, we have greater than 400 feet of Montoya, and the Simpson Group makes the bottom seal of the reservoir.

Q. Based on this analysis, in your opinion, will

the injected fluid remain within the injection interval?

A. That is my understanding.

Q. Did you participate in a meeting with the Division where we reviewed the stratigraphy and faults in the area?

A. We reviewed proprietary confidential information at a previous meeting in December of 2017.

Q. In your opinion, is there capacity for injection into this interval at the proposed rates for the life of the well?

A. That is correct.

Q. Let's turn to Exhibit 6. Can you please identify this exhibit for the Examiners?

(Mr. Rankin enters the room, 10:42 a.m.)

A. Exhibit 6 is a north-to-south cross section through the area of interest demonstrating the depositional environment of the type of injection interval from the platform to the basin or the proximal to distal depositional setting.

The orange box at the top highlights the relative location of the Maelstrom saltwater disposal in between the two offsets wells, the Rattlesnake and the --

Q. What is the -- so the injection interval has a lot of purpose. Can you please explain that?

A. I can. As per the previous exhibit, we've highlighted the lithology log by purple, which demonstrates dolomitized limestone. The dolomite in these wells have the appropriate reservoir characteristics to support injection safely at the proposed pressures. And you can see, across the depositional environment, that there is a lot of purple in the log of the proposed location. Part of the sensitivity of this is demonstrating that if we were further to the south, we would not have perfect reservoir characteristics. But in this location, it is a good location to put a disposal well.

Q. What is Exhibit 7?

A. Exhibit 7 is a summary of information previously reviewed with the Commission and is the result of injection modeling as at the proposed Maelstrom locations.

Q. Would you please review the fracture gradient?

A. The fracture gradient of the injection interval we have currently modeled at .75 psi per foot.

Q. And can you please review the distance to the nearest fault?

A. As indicated on the exhibit itself, the nearest location of a reverse fault is at 70 degrees azimuth at this location, at a radius of two-and-a-half miles, and

that has been mapped to the Woodford Shale.

Q. What are your conclusions based on this exhibit?

A. So the original pressure of the formation as per the model was 8,700 psi. What the model demonstrates on the chart on the top right, which is an output of the Stanford skits [sic; phonetic] modeling, is the radial pressure at the lock [sic] of the well was 30 years at 50,000 barrels a day, with the sensitivity model that was proposed as per the C-108. What it demonstrates is at a radius of two-and-a-half miles, indicated by the line of Fault 1, which is the closest major structure, we would expect to see a 300 psi increase at that radius at that structure.

Q. And after 30 years, have you estimated a percent likelihood of the potential breach?

A. We have. So at that radius of two-and-a-half miles, we would expect it to be 9,000 psi after 30 years at 50,000 barrels per day, and we would expect to see less than 3 percent of that increase as required for critical stress at that Fault Number 1. Thus, the model would suggest there is negligible risk for any issue of --

Q. Let's turn back to the C-108. Is there any production from the target interval?

A. There is no production from the target interval.

Q. Within the area of review?

A. Within this area. Good qualification.

Q. And are there freshwater zones in the area?

A. So the freshwater zone in this area is contained to the 400 feet from the surface. That is the Dakum and Rustler Aquifers. There are no vertical faults or geologic conduits between the Silurian injection interval and the freshwater zones. And in review of the data from the Office of the State Engineer, there is no freshwater wells within a mile of this location.

Q. And it's approximately 17,000 feet between the water-bearing formations and the target formation; is that correct?

A. That is correct.

Q. And there is no proposed injection into the water-bearing formations?

A. No proposed injection.

Q. No known vertical fractures or geologic conduits?

A. There are faults in the area, as previously indicated, but none of those reach the aquifers in this area.

Q. In your opinion, will the proposed injection pose a threat to any drinking water?

A. No.

Q. And you mentioned that according to the Office of the State Engineer, there are no freshwater wells within a mile?

A. That is correct.

Q. Were Exhibits 5 through 7 created under your -- prepared and created under your direction and supervision?

A. As per our previous engagement, we have engaged various technical experts within Chevron to prepare -- to prepare the material, and that has been under my work direction, my technical review and my approval.

Q. Thank you.

MS. KESSLER: Mr. Examiners, I would move admission of Exhibits 5 through 7.

EXAMINER GOETZE: Exhibits 5 through 7 are so entered.

(Chevron U.S.A., Inc. Exhibit Numbers 5 through 7 are offered and admitted into evidence.)

EXAMINER GOETZE: Mr. Brooks?

EXAMINER BROOKS: No questions.

EXAMINER GOETZE: Again, Mr. Williams,

we've been over this road quite a bit, so I see everything that you presented was what was presented to us in our private meeting. And, therefore, now as part of the record, I have no additional questions for you, and I thank you very much for your presentation.

THE WITNESS: Thank you.

MS. KESSLER: I'll call my next witness.

SEAN HEASTER,

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

DIRECT EXAMINATION

BY MS. KESSLER:

Q. Please state your name for the record and tell the Examiners by whom you're employed and in what capacity?

A. My name is Sean Heaster. I'm employed by Chevron, and I am the Delaware Basin water strategy engineer.

Q. Have you previously testified before the Division?

A. I have not.

Q. Please tell us your education.

A. I graduated with a Bachelor of Science degree in petroleum engineering from Pennsylvania State University in 2012.

Q. What has been your work experience?

A. I started at Chevron in 2012 as a production engineer for a waterflood asset, and I've since proceeded to become a reservoir engineer for Delaware Basin in conventional completions. And I am currently the water strategy engineer for the Delaware Basin asset.

Q. So your experience and responsibilities currently includes the Permian Basin, correct?

A. Yes, correct.

Q. Are you a member of any professional associations?

A. I am not.

Q. Are you familiar with the application that's been filed in this case?

A. I am.

Q. And do your responsibilities include production issues associated with disposal?

A. Yes, they do.

Q. Are you familiar with the specific injection well at issue in this case?

A. Yes, I am.

Q. And have you conducted a study of the area of review within the injection wells area [sic] (laughter)?

A. Yes, I have.

MS. KESSLER: Mr. Examiners, I'd tender Mr. Heaster as an expert in petroleum engineering.

EXAMINER GOETZE: He is so qualified.

MS. KESSLER: Thank you.

Q. (BY MS. KESSLER) Can you please summarize the request for a tapered design?

A. Yes. So we are requesting a 7-inch by 4-1/2-inch tapered design. It will be internally plastic-coated. And the reasoning for that is that we would wish to optimize our injection into the target disposal zones, and this will ultimately allow for fewer disposal wells to be drilled in the future.

Q. Let's turn to Exhibit 1, Tab B. What is this exhibit?

A. So this exhibit is a map of the proposed Maelstrom SWD location with rings outlining the one-half-mile radius and the two-mile radius, and then the existing wells, oil and gas wells, within that radius.

Q. And if I turn to Tab F of the next page, does this include all of the wells within the area of review?

A. Yes, this does. This is a list of the offset wells within that radius.

Q. Does the Form C-108 contain all the information required by the Division for each of the wells in the

area of review which penetrate the injection interval?

A. Yes, it does.

Q. And I understand that there is only one well penetrating the injection interval; is that correct?

A. That is correct.

Q. Is information on that well included as the third page of Tab F?

A. Yes, it is.

Q. Can you please review this wellbore diagram for the Examiners?

A. Absolutely. This wellbore diagram was a previous SWD that was owned by Chevron, which I believe the operatorship has been handed over to a third party. The well was temporarily abandoned in February of 2017 and passed its mechanical integrity test. Cement has been circulated to surface on both the surface casing and the intermediate casing.

Q. Have you reviewed the data available on this well and satisfied yourself that there is no remedial work required on it?

A. Yes, I have.

Q. And you discussed the cement coverage. Do you believe that this well has adequate cement coverage through the injection interval?

A. Yes, I do. And we would not have probably been

granted TA status had it not satisfied the OCD's requirements.

Q. And in your opinion, will -- no injected fluid should escape from the proposed zone of injection; is that correct?

A. That is correct.

Q. What is the source of injection water?

A. So the source of the injection water is from our produced water stream, mostly consistent of Upper Avalon wells. The development will carry on, and we will be drilling Wolfcamp wells, which will be commingled with that at the surface for the produced water string.

Q. Does Tab E include an analysis of the injection water?

A. Yes, it does. And this sample comes from the downstream outlet of our central tank batteries that go to the SWD station or to a third-party outlet.

Q. Do you believe there will be any comparability issues?

A. No. I have specifically talked to our water analysis advisor, and he has seen no issues with putting this produced water into an injection disposal well.

Q. What injection pressure is Chevron proposing?

A. 3,480 psi.

Q. And will this follow the surface injection pressure guidelines of the 0.2 pounds per foot at the top of the injection interval?

A. Yes. That's the exact calculation.

Q. If a higher pressure is needed, will Chevron justify the higher pressure with other -- step-rate test?

A. Yes, we will.

Q. How will Chevron monitor the pore pressure to ensure the --

A. So we will have gauges installed on the back side annular space of the tubulars during injection, and we will follow up with any mechanical integrity testing and Bradenhead testing as required by the OCD.

Q. How soon do you anticipate commencing disposal into this well?

A. We will commence disposal as soon as we get all the approved permits and the well is drilled and completed.

Q. It was previously mentioned that an APD has not been approved.

A. Correct.

Q. Have you conducted a nodal analysis of this area?

A. Yes, I have.

Q. And that gives you the bottom-hole pressure; is that correct?

A. Correct.

Q. Does your nodal analysis show that the proposed injection pressure, Chevron will not exceed the frac gradient in the zone of injection -- formations?

A. That's correct. We will not.

Q. What are your conclusions about the potential impact on the injection -- injection formation by using a tapered design?

A. I'm sorry. Could you maybe clarify?

Q. In your opinion, will there be a relatively insignificant impact as a result of the higher injection?

A. Yes.

Q. And in your opinion, do you believe that there is a capacity for injection within the Silurian for the life of the well?

A. Yes, I do.

Q. Would approval of this application be in the best interest of conservation?

A. Yes, it would.

Q. And would approval also protect against waste?

A. Yes.

MS. KESSLER: Mr. Examiners, Exhibit 1 has

already been admitted into evidence, so there are no additional exhibits for this witness, and that concludes my questioning of this witness.

EXAMINER GOETZE: Very good.

Mr. Brooks?

EXAMINER BROOKS: No questions.

EXAMINER GOETZE: I don't really have any questions.

I will make a comment, though. With the Salado SWD 13 1 out there, I think it would behoove Chevron to keep an eye on with whom you sold it to --

THE WITNESS: Yes, sir.

EXAMINER GOETZE: -- with regards to future use because you may end up with some competition that you don't want.

THE WITNESS: Yes, sir. We have a very good working relationship with the company that is now the operator.

EXAMINER GOETZE: Those change overnight, so --

No further questions for this witness. Thank you.

MS. KESSLER: Thank you. I'll call my next witness.

KENNETH HODGES,

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

DIRECT EXAMINATION

BY MS. KESSLER:

Q. Will you please state your name for the record and tell the Examiners by whom you're employed and in what capacity?

A. Kenneth Hodges. I'm employed by Chevron as a drilling and completions engineer.

Q. Have you previously testified before the Division?

A. No, I have not.

Q. What is your educational background?

A. I have a Bachelor's of Science from Mississippi State University, December of '05.

Q. And what has been your work history?

A. I have 12 years in the oil and gas industry, six and a half of which with Chevron.

Q. And does your experience and general responsibilities currently include the Permian Basin?

A. They do.

Q. Are you a member of any professional associations?

A. ASME and AAPD.

Q. Are you familiar with the application filed in this case?

A. I am.

Q. And do your responsibilities include saltwater disposal wells?

A. They do.

Q. What is your fishing experience?

A. Prior to Chevron, I worked three years with Baker Oil Tools and Well Intervention, and my first positions with Chevron were in our major-minor well works group.

Q. So you've been involved in --

A. I have been involved in --

Q. -- fishing?

A. -- in fishing (laughter).

Q. Are you familiar with the injection well at issue?

A. I am.

Q. Have you conducted a study of the proposed well design and prepared exhibits reflecting your analysis and opinions?

A. I have.

MS. KESSLER: Mr. Examiners, I would tender the witness as an expert in petroleum engineering.

EXAMINER GOETZE: Just petroleum

engineering?

MS. KESSLER: And fishing (laughter).

EXAMINER GOETZE: Thank you. He is so qualified.

Q. (BY MS. KESSLER) Have you studied the proposed wells' casing and tubing design?

A. I have.

Q. Let's turn to Exhibit 8. Does this show the proposed configuration of the wellbore as it will be used for injection?

A. It does.

Q. Is this an open-hole disposal system?

A. It is.

Q. And can you please review the tapered design?

A. So in conjunction with our casing design, we chose to go with the 7-by-4-1/2. The 4-1/2 would give us greater fishability inside the 7-inch liner, and the 7-inch is still within the specifications to be fished -- fished out inside the 9-5/8.

Q. What are your cement plans for this well?

A. Okay. We -- the plans are to use standard slurries that we currently use in our development wells that have been pumped.

Q. Will you circulate to surface?

A. And bring cement to surface on all strings

except the 7-inch liner.

Q. And will you perform a --

A. A CDL will be performed or ran across the 7-inch liner.

Q. Why has Chevron elected for 4-1/2 instead of the 5-1/2-inch tubing?

A. In conjunction with the 7-inch, again, it gives you a little bit greater fishability for the 4-1/2 inside the 7-inch, and in conjunction with the 7-inch, it still reduces our friction loss.

Q. What is the plan for stimulating?

A. It will be stimulated 15 to 20 percent ACL at 50 to 100 gallons per foot.

Q. Have you analyzed whether there is sufficient clearance between the casing and the proposed tubing?

A. I have.

Q. And is there sufficient clearance between the proposed casing and tubing to perform fishing operations with standard tools?

A. There is.

Q. And these standard tools are readily available?

A. They are.

Q. Can you please turn to Exhibit 9 and review this for the Examiners?

A. So this is Fishing Option 1, which is the table

for a 7-inch and to cover the 4-1/2 of overshots, which in the industry has a higher success rate as your first go-to for fishing operations. And these are off-the-shelf items.

Q. What is Exhibit 10?

A. Exhibit 10 is for an internal spear, which is sometimes ran in such cases that overshot has issues or if they've had an unsuccessful fishing.

Q. In your opinion, is there an unreasonably enhanced risk to the wellbore as a result of this tubing design?

A. No.

Q. And in your opinion, would a prudent operator use this tubing design for its injection operations?

A. Yes.

Q. Were Exhibits 8 through 10 prepared by you or compiled under your direction and supervision?

A. They were.

MS. KESSLER: Mr. Examiner, I move admission of Exhibits 8 through 10.

EXAMINER GOETZE: Exhibits 8 through 10 are so entered.

(Chevron U.S.A., Inc. Exhibit Numbers 8 through 10 are offered and admitted into evidence.)

MS. KESSLER: Thank you.

EXAMINER GOETZE: Mr. Brooks?

EXAMINER BROOKS: No questions.

CROSS-EXAMINATION

BY EXAMINER GOETZE:

Q. Welcome to New Mexico.

A. Thank you.

Q. And I ask that you do bring someone about fishing as part of the discussion.

Given the design, would there be any issues if we had failure at couplings, say threaded ends or things like that? Would there be a higher probability that you couldn't overshoot any portion of the tubing that would stay lost in the well?

A. So if that was the case, then you could go in with an internal -- if you did have the couplings -- you know, for some reason backed out or pulled out, then you would go with the internal.

Q. And conceptwise, this is a lot of -- this is really casing, not tubing, the 7-inch. What type of requirement -- if you were to have to stand down and pull tubing, what would be the availability or what type of rig would be available in the southeast as far as recovery and workovers?

A. Any one of our current development rigs

inartfully [sic] could move on to this well and pull the injection string.

Q. So you would have something locally available?

A. Yes, sir.

Q. Have you lost anything in the size of 7-inch down a hole before?

A. Not to my knowledge.

Q. Okay. There is always a first.

I have no further questions for this witness.

MS. KESSLER: Thank you. That concludes our presentation.

EXAMINER GOETZE: Mr. Adam's not going to make any comments or anything? Mr. Rankin?

MR. RANKIN: (Indicating.)

EXAMINER GOETZE: Okay. Based upon what I've seen of your presentation, it follows very much what you gave in our meeting in December. I thank you for the additional input. With that and going through the C-108 of having had the publication notice clarified, we'll take this under advisement if you wish.

MS. KESSLER: Thank you.

EXAMINER GOETZE: Okay. Case Number 15972 is taken under advisement.

(Case Number 15972 concludes, 11:03 a.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 1st day of March 2018.

MARY C. HANKINS, CCR, RPR
Certified Court Reporter
New Mexico CCR No. 20
Date of CCR Expiration: 12/31/2018
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