STATE OF NEW MEXICO

ENERGY, MINERALS, AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:

CASE NOS: 22183

APPLICATION OF OXY USA INC. FOR APPROVAL OF THE JUNO BONE SPRING UPPER WOLFCAMP CC 23-24 UNIT, TO MODIFY THE INJECTION AUTHORITY APPROVED UNDER ORDER R-21356 AND EXPAND THAT AUTHORITY TO INCLUDE ELEVEN ADDITIONAL WELLS IN THE UNITIZED AREA, AND TO CONTRACT EXISTING BONE SPRING AND WOLFCAMP POOLS IN FAVOR OR A NEW OIL POOL COMPRISED OF THE BONE SPRING fORMATION AND THE UPPER WOLFCAMP "XY" AND "A" INTERVALS OF THE WOLFCAMP FORMATION, EDDY COUNTY, NEW MEXICO.

REPORTER'S TRANSCRIPT OF VIRTUAL PROCEEDINGS
EXAMINER HEARING
OCTOBER 22, 2021
SANTA FE, NEW MEXICO

This matter came on for virtual hearing before the New Mexico Oil Conservation Division, HEARING OFFICER WILLIAM BRANCARD and TECHNICAL EXAMINER DEAN McCLURE on Friday, October 22, 2021, through the Webex Platform.

Reported by: PAUL BACA
PAUL BACA PROFESSIONAL COURT REPORTERS
500 Fourth Street, NW, Suite 105
Albuquerque, NM 87102
505-843-9241

A P P E A R A N C E S

For the Applicant:

MICHAEL FELDEWERT
HOLLAND & HART
110 North Guadalupe, Suite 1
Santa Fe, NM 87501
505-954-7286

For XTO:

DREW CLOUTIER
HINKLE SHANOR LLP
P.O. Box 0268
Santa Fe, NM 87504
505-982-4554

I N D E X

E X H I B I T I N D E X

HEARING EXAMINER BRANCARD: Good morning. Let's get ready to go here.

Good morning, everyone. This is October 22, 2021. This is a special hearing docket of the New Mexico Oil Conservation Division. With us today is the one and only Paul Baca as court reporter. We have Dean McClure as technical hearing examiner. And are all the parties ready to go? Mr. Feldewert?

MR. FELDEWERT: Yes, sir, Mr. Examiner.

HEARING EXAMINER BRANCARD: All right. So let's speak clearly for the benefit of the court reporter, and hopefully we can get through this today, maybe even this morning.

And so I'm a calling Case 22183 and I believe this is Oxy USA. Appearing for Oxy?

MR. FELDEWERT: Yes, Mr. Examiner, Michael Feldewert with the Santa Fe office of Holland & Hart and we will presenting four witnesses today.

HEARING EXAMINER BRANCARD: Thank you. Entry of appearance for XTO?

MR. CLOUTIER: Yes. Good morning, Mr. Examiner. This is Andrew Cloutier of Hinkle Shanor for XTO Energy.

HEARING EXAMINER BRANCARD: Thank you, Mr. Cloutier. Do you have any witnesses or presentations today?

MR. CLOUTIER: No, we do not.

HEARING EXAMINER BRANCARD: Do you have questions to ask the witnesses.

MR. CLOUTIER: I may, but I think Mr. Feldewert and I have gotten everything resolved, and XTO is just asking me to monitor the hearing.

HEARING EXAMINER BRANCARD: Thank you. Are there any other interested parties appearances in Case 22183?

(No audible response.)

HEARING EXAMINER BRANCARD: Hearing none, I guess, Mr. Feldewert, if you could just start by summarizing where we are going this morning on this case and why we are here.

MR. FELDEWERT: Sure. We, you know we filed an amended prehearing statement which seeks to outline what Oxy seeks in this application. Essentially they seek an expansion of some injection authority that was approved by the Division, and we seek that expansion in the form of -- units, voluntary for this what they call Huff-n-Puff injection project which will involve the entirety of the Bone Spring and then the Upper Wolfcamp intervals which most companies describe as the XY, and then the Wolfcamp A intervals.

We -- you will see in the filing of our amended prehearing statement, we no longer seek to consolidate this entire zone into a single -- we determined that that is not necessary for the -- for Oxy to proceed with this particular project. Therefore, we only seek to consolidate the three Bone Spring pools that currently govern the acreage into one Bone Spring pool, one existing Bone Spring pool, and then the Purple Sage Pool will remain and govern the production of the Upper Wolfcamp formation.

So we will be presenting four witnesses today. Our first witness is going to kind of review the changes that we made to the existing order, identify those, and then explain this Huff-n-Puff injection project.

The second witness will address the land issues associated with this.

We will then call the geologist to discuss the geology in the area and the barriers that exist to prevent the fluids from migrating out of the approved injection intervals.

And then finally we will call our last witness who will do a review of the C-108 and discuss in more detail the reason for some of the changes to the existing order.

Couple of things, Mr. Examiner, number one, I just heard the land -- the landscaping crew appear outside my window, so we may hear some noise in the background for that.

Number two, I have had periodic issues with my connectivity even though I'm in the office. It doesn't last very long. It tends to be ten seconds or less, but nonetheless it occurs. We have been trying to figure it out. We have swapped out some cables, I'm hoping that will work, but if you see me frozen for about 10 or 20 seconds, that's the reason, and I should be back.

HEARING EXAMINER BRANCARD: Thank you. So is Oxy proposing to amend an existing order, or do you want a new order?

MR. FELDEWERT: I think, Mr. Examiner, the cleanest way to proceed would be to have a new order that would follow, to some extent, the prior order issued by the Division with some -- with some modifications to paragraphs that I'm going to point out during the presentation.

You will see that that existing order is Oxy Exhibit Number 1.

HEARING EXAMINER BRANCARD: Yes, thank you. I just wanted to try and figure that out. What you are referring to as a unit, Mr. Feldewert, is that what Rule 26F refers to as a project area?

MR. FELDEWERT: The -- we are -- I guess there is a couple things going on on the technical. We need approval of the June Unit because there is a fee tract that's involved. The rest of it's federal acreage. So we do need approval of the Juno Unit.

We need approval of the unitized intervals. In the parlance of the language of the regulation, the project area would be the approved Juno Unit.

HEARING EXAMINER BRANCARD: Okay. We can discuss unitization later. All right. With that, I will let you move forward and wave to the landscaper behind you.

MR. FELDEWERT: In that case, we will call our first witness. Mr. Joseph Kaminski. Mr. Kaminski are you with us?

HEARING EXAMINER BRANCARD: You appear to be muted. I see lips moving, but no sound.

MR. FELDEWERT: I'm assuming Mr. Kaminski was made a panelist so that he can unmute himself.

THE WITNESS: Can you hear me now?

HEARING EXAMINER BRANCARD: Yes.

MR. FELDEWERT: You want to speak a little louder?

THE WITNESS: Sure thing. How's that.

MR. FELDEWERT: Does that work for you, Mr. Baca?

REPORTER: Yes, yes.

HEARING EXAMINER BRANCARD: Mr. Feldewert, can we have all of your witnesses be sworn in right now?

MR. FELDEWERT: We can certainly do that. That would be Joseph Kaminski, Peter Van Liew, Tommy Troutman and Stephen Janacek.

HEARING EXAMINER BRANCARD: All right. Are they all on this, on this right now?

MR. FELDEWERT: Looks like they are all here.

HEARING EXAMINER BRANCARD: So witnesses, do you solemnly swear the testimony you are about to give is the truth and nothing but the truth?

WITNESS: (Collectively.) Yes.

HEARING EXAMINER BRANCARD: All right. I think I heard three. Mr. Troutman?

MR. TROUTMAN: Yes.

HEARING EXAMINER BRANCARD: Thank you. Excellent. Please proceed, Mr. Feldewert.

JOSEPH KAMINSKI

(Sworn, testified as follows:)

DIRECT EXAMINATION

BY MR. FELDEWERT:

Q. Mr. Kaminski, would you give us your full name, identify by whom you are employed, and in what capacity?

REPORTER: And spell your full name for the record, please.

A. Sure. J-o-s-e-p-h, Kaminski, K-a-m-i-n-s-k-i. I am employed by Occident Petroleum. I'm the lead petroleum engineer for our unconventional enhanced oil recovery team.

Q. And how long have you been the lead engineer for your enhanced oil recovery team?

A. About two and a half years.

Q. And have your responsibilities included the Permian Basin of New Mexico?

A. Yes.

Q. Mr. Kaminski, have you previously testified before the Oil Conservation Division?

A. No, I have not.

Q. Would you please outline your educational background?

A. Sure thing. I have a bachelor's of science in chemical engineering from Penn State University. I graduated there in 2007.

Q. And upon graduation, can you outline briefly your work history?

A. Sure. Upon graduation, I worked in the refining industry for four years for a company Sunoco. After that, around 2012, I got a position at Oxy. At Oxy I have held various roles as a production engineer, completions engineer, reservoir engineer, and then now in my current role.

Q. Are you a member of any professional associations or organizations?

A. Yes. I'm member of the Society of Petroleum Engineers since 2013.

Q. Since 2013, okay. Are you familiar with the application that's been filed in this case?

A. Yes.

Q. And are you familiar with the project that has been -- that Oxy proposes to engage in for this unitized area?

A. Yes.

MR. FELDEWERT: I would tender Mr. Kaminski as an expert witness in petroleum engineering.

MR. CLOUTIER: No objection from XTO.

HEARING EXAMINER BRANCARD: So accepted.

BY MR. FELDEWERT:

Q. Mr. Kaminski, would you just first briefly outline what the company seeks under this particular application?

A. So we seek approval of the proposed Juno Unit, 960 acres on Section 23 in the W/2 of Section 24 in Eddy County. Oxy owns all the working interest in this acreage. We seek to, to unitize the Bone Spring, Upper Wolfcamp formations and for a Huff-n-Puff gas injection project which we will go into some details in slides.

Q. Now, has part of this published unit area already been approved for a Huff-n-Puff injection project?

A. Yes. Under the injection authority, R-21356 one of of the wells has been approved.

Q. And has that particular Division order, has that been marked as Oxy Exhibit Number 1?

A. Yes.

MR. FELDEWERT: Mr. Examiner, I didn't -- I just noticed I don't have the ability to share. Can I get that ability so I can bring some exhibits up on the screen?

HEARING EXAMINER BRANCARD: Marlene, are you there?

MS. SALVIDREZ: I am always here. I am changing it right now.

HEARING EXAMINER BRANCARD: Thank you.

BY MR. FELDEWERT:

Q. Mr. Kaminski, can you see the -- what's been documented that's marked Juno Unit, it's got the Oxy logo on the front?

A. Yes, I can.

Q. And if I scroll down to what's been marked as Oxy Exhibit Number 1, is that the order that you just referenced?

A. Yes.

Q. Okay. There are a few provisions that we seek to amend in this order; is that correct?

A. That's correct.

Q. First off, you mentioned that this approves a, what you call a Huff-n-Puff injection project. Can you identify the well that is approved for that particular project?

A. Yes, that's the Cedar Canyon 23 Fed 4H well.

Q. And that's identified in the third paragraph of this order; correct? Oops. That's the Cedar Canyon 23 4H?

A. Yes, it is.

Q. How has this been referenced by the Division in Oxy in terms of an area? How do they describe this project?

A. It's been labeled as a Cedar Canyon pressure maintenance pilot project.

Q. And in addition to this approval for this particular well, how much additional wells does Oxy seek to approve for injection as part of this project in this unitized area?

A. So 11 additional wells.

Q. And in addition, this, this order approved the injection in the Bone -- in the Bone Spring formation; correct?

A. Yes.

Q. And you seek to expand the injection interval?

A. Yes, we seek to expand it to the Upper Wolfcamp, to the XY and A intervals.

Q. Now, I want to talk then about some specific provisions, or identify some specific provisions within this order that you seek to amend for purposes of this project, and I'm going to the first one is in Paragraph 7 of the ordering portion of this order which is on Page 4 of the

order.

I think I brought that up now, Mr. Kaminski. Do you see that?

A. Yes.

Q. Okay. This references the source of the produced water being utilized?

A. Yes.

Q. What does Oxy seek to change with respect to the source of the produced water?

A. It seeks to expand the limits of the source of injection water.

Q. And what -- to what, what do you, what sources do you seek for approval?

A. Four additional CTVs or central tank batteries.

Q. And has Oxy provided water analysis and compatibility analysis to support this request?

A. Yes.

Q. And do you have another witness that will be reviewing those in conjunction with a review of the form C-108?

A. Yes. Mr. Janacek will be reviewing these.

Q. Okay. If I then continue on in this order, I go down to Paragraph 9, it references the maximum surface injection pressures. Do you see that?

A. Yes.

Q. What does Oxy request with respect to maximum surface injection pressures for this proposed project in the Juno Unit?

A. So what we seek is a range of injection pressures based on both the injectant and the depth of the targeted interval.

Q. Now, this particular well was approved for injection into which interval of the Bone Spring formation?

A. The Second Bone Spring.

Q. Okay. Does the methodology that Oxy employed to arrive at the injection pressures for the other intervals involved with this application similar to what Oxy did and what the Division approved in this order?

A. Yes.

Q. And do you have another witness that will be describing that range of injection pressures and how they were developed?

A. Yes. Mr. Janacek will describe more detail.

Q. Okay. And if I go to Paragraph 10 of this order, it mentions that the first clause of the casing tubing anulus shall be filled with an inert fluid. Do you see that?

A. Yes.

Q. What does Oxy request in terms of flexibility when it comes to the casing tubing anulus?

A. So Oxy is asking to allow dehydrated produced gas as an option for that inert fluid.

Q. And why are you seeking that authorization?

A. So it provides some operational benefits, which we will go into detail in further slides, without jeopardizing integrity or leak detection which is what that inert fluid is designed to be there for.

Q. Okay. And do you agree that using dehy -- (audio lost) -- and to Paragraph 17.

REPORTER: Michael, you have to start all over again because you froze up. "And do you agree that using de."

MR. FELDEWERT: Thank you.

BY MR. FELDEWERT:

Q. Do you agree that using dehydrated produced gas in the casing tubing anulus will provide appropriate leak detection for this project?

A. Yes.

Q. And at the same time, provide the operational flexibility that the company needs to, to enclose the project?

A. Yes.

Q. And then if I turn to Paragraph 17, it provides that the injection authority granted herein shall terminate two years after the effective date of the order if the

operator has not yet commenced injection operations.

Does Oxy seek that type of relief for this -- from whatever approval of this injection project?

A. Yes, we do.

Q. Can you explain why that's appropriate and necessary?

A. So due to the facility design, cost and timing associated with implementing the project, we need that much time to ensure that we can get everything in place to start the injection.

Q. Is there substantial facility costs involved here?

A. Yes, there is.

Q. How long is it going to take for you to put together the facilities necessary to commence these -- this injection operation?

A. Greater than a year.

Q. Okay. And finally, does Oxy request authority to add additional injection wells within the unit area administratively subject, of course, to the applicable notice requirements?

A. Yes, we do.

Q. If I then turn to what's been marked as Oxy Exhibit 2, does Oxy Exhibit Number 2 contain a series of slides?

A. Yes.

Q. And how many slides are there?

A. 30 slides.

Q. And are they, each of these slides paginated in the bottom, right-hand corner?

A. Yes, they are.

Q. And how will they be used in this hearing?

A. They will be used to address the, the overview of the project, the technical details of the project.

Q. And will all four witnesses, including yourself, be referring to these slides throughout the hearing?

A. Yes, we will.

Q. Mr. Kaminski, what are you going to be addressing?

A. So I will be giving an overview of, of the project, and then some discussion into the Huff-n-Puff injection process itself.

Q. Okay. Now then, let's go to what's been marked as Slide Number 2 in Exhibit 2. Does this -- can you review this for us, please?

A. Yes.

Q. Starting with the map at the left it shows the location of Cedar Canyon in New Mexico as highlighted with the red star. Moving to the right we have a, a blown-up image of the Cedar Canyon area along with the red box that,

that demarcates where the Juno unit would be located within Cedar Canyon.

So overall, we are proposing to inject produced field gas into 12 wells in Sections 23 in the W/2 of Section 24 for enhanced oil recovery. And as we discussed, this project will include the unitization of the project area for EOR.

The method will be -- of the EOR will be Huff-n-Puff using hydrocarbon gas, and that consists of a period of injection followed by period of production for each well which we will go into details on a further slide.

In terms of the facilities that we are installing, we are installing centralized compression facilities and high pressure pipeline to deliver that high pressure gas to the wells.

As mentioned earlier, of the 12 injection wells that, that were applied for in Section 23 and 24, one of those wells has an existing injection order and this includes injection into both the Bone Spring and Upper Wolfcamp reservoirs.

Q. This project does?

A. Yes, sir.

Q. Okay. Now, you mentioned hydrocarbon produced gas, or field gas, I think, is what you referenced. Is that going to be the primary injectant for this project?

A. Yes. That will be the primary injectant.

Q. I note that you seek approval to utilize water and CO2. First off, do you envision at some point using carbon dioxide gas?

A. Yes. The long-term plan for Oxy would be CO2, but at this point we don't have available it in the fields to start off with hydrocarbon gas.

Q. Under what circumstances in your operation will you be injecting water?

A. Water would mainly be used for conformance of very short durations, maybe one to two to three days of water injection to help direct gas within the lateral closer to the toe instead of the heel as necessary.

Q. You mentioned conformance, is what you mean by conformance?

A. Yes, sir, to direct the gas to make sure we are -- we are using it the most efficiently as we possibly can.

Q. So does that differ from injection, that water injection that's used for example as a line drive sweeping process?

A. Correct. That would be using water for long periods of time to, to actually move the hydrocarbons towards the producer well.

Q. And that's not part of this Huff-n-Puff project?

A. No, it's not.

Q. Okay. All right. Let's turn then to what's been marked as Slide Number 3. This is somewhat of a busy slide. Would you please explain to us first what you are showing here maybe by reference to the colors and proceed from there?

A. Sure thing. The colors are going to represent the benches that we have here that exist in the Juno Unit. I'm going to start off at the top left and kind of move around and then go into a little bit of detail with each.

But the top left has a gun barrel view of the unit. So what this is meant to show is give you a vertical and aerial perspective of how the wells are landed within the Juno Unit within the different zones.

So just a note, the bench thicknesses are not to scale, so this is just more for illustrative purposes than an actual scale model of it.

Moving to the right we have a bird's eye view of the unit so this way we can see how the wells are spaced within the surface sections of the unit itself.

Moving to the bottom left we have a table there that, that shows the ID that each of the wells are identified in both the gun barrel view and the bird's eye view maps.

We want to note there that the star indicates the

4H well which is the well that we already discussed that they approved an injection order for.

Moving to bottom right, we have the legend for the bird's eye view of the unit. We have the surface location which is marked with a circle. We have the concluded wellbore within the section, within the Juno Unit. You can see by the bolded lines the section number, and then as mentioned first, the benches which are consistent, consistent color in both the gun barrel view and bird's eye view.

If we look into more detail into how this particular unit was developed, we have five wells, the majority of the wells are in the Second Bone, so five wells there, followed by the Third Bone with three wells, and moving to the bottom we have one well in the Wolfcamp, and then two wells in the First Bone and one well in the Half Bone.

Q. So to be clear, first off, the unit is going to be comprised of Section 23 in the W/2 of 24. Correct?

A. Yes.

Q. But we show a section in the E/2 of the E/2 of 22 on here because there is a few surface locations there for these wells?

A. Correct.

Q. Okay. And for the record, these are all existing

producing wells; is that correct, Mr. Kaminski?
A. Yes. That's correct.
Q. That you seek now to convert each of those wells to periodic injection?
A. That's correct.
Q. All right. Anything else about this slide?
A. No.
Q. All right. With your understanding of what's out there, let's move to Slide 4. And can you give us a -- walk us through why this Huff-n-Puff injection project works.
A. Sure thing. So this slide describes, is an illustrative way to describe the Huff-n-Puff method in three steps. I will first start off by describing what you are seeing in the illustration and then we can move through the steps.
So the oval that you see there is the SRV, or we consider the stimulated rock or reservoir volume. So that's the area that's been influenced by our fracture completion process.
What you see in the middle of that oval is the actual well lateral itself in the reservoir. And then perpendicular to that lateral, those lines represent the fracturing stages that connect the lateral to the reservoir.
Within the lateral itself and into the fractures you will see red arrows, these represent the injected gas

that we would be injecting into the lateral, subsequently into that SRV. And then finally you will see circles outlined in green. These represent the kind of oil that we are going after with this process.

So to go through step one, the step one is injecting gas into the lateral and subsequently into the reservoir.

Step two, that is you are creating a higher pressure in your SRV, which is creating miscibility of that gas into the oil and swells that oil.

So then in step three, that oil is now mobilized, and you can swap your well from injection well to production well as indicated by the green arrow in the lateral, and allow that oil to enter the pressure, lower pressure lateral and be delivered to surface.

So the main message here as well is swapping from injection mode to production made as efficiently and quickly as possible allows you to be sure that you are capturing the most possible oil as you are allowing that pressure to instead of dissipating into the reservoir, be directed back into the lateral as quickly as possible.

Q. So this, am I correct that, Mr. Kaminski, that this differs substantially from, for example, a line drive injection process?

A. Correct.

Q. And the area of influence is smaller?

A. Correct. Limited more to around the wellbore, and instead of moving oil from one area to another, you are capturing oil around that wellbore.

Q. And -- and you mentioned in your last -- did you create this slide?

A. Yes.

Q. Okay. That last oval down there you label it as incremental oil. Do you see that?

A. Yes.

Q. In your opinion, will this process recover oil that will not otherwise be recovered with a standard primary production process?

A. Yes.

Q. And have you had success in producing incremental oil with this process in other areas?

A. Yes, we have.

Q. In similar geologic settings?

A. Yes, within the Permian and Midland Basin.

Q. Is this your first project or unitized project like this for New Mexico?

A. Yes, it is.

Q. Anything else about this slide?

A. No.

Q. If I now turn to what's been marked as Slide 5 on

Exhibit Number 2, you seem to have some additional explanation of this Huff-n-Puff cycling plan. Can you walk us through this?

A. Sure. Let me start off with the plot on the left here. So what you are seeing here represents a single well Huff-n-Puff oil incremental rate, gas injection rate and gas production.

So start off going across the top of that, we will see orange and blue boxes. That corresponds to the, the X axis in this plot. So the orange box represents injection period, and then the blue box represents a production area flow-back period.

And you will see each one of these orange blue boxes has a number label and that corresponds to a cycle. A cycle consists of an injection period and a production period. So as we have highlighted on here, it's six different cycles just in this particular illustration.

Moving on to the actual data that this plot shows, I will start off with the orange lines. So the orange lines represent injected gas periods. So what this shows is six cycles of consistent time period of injection and rate of injection.

The next one is -- but I will point to you -- is the red one, so the red is one we swapped from the orange period to the blue period to the production period. It's start flowing back gas, and that's kind of how gas falls off during the production period.

Finally, you will see green, which is the oil. Key note to point out about the oil is you can see that the peaks fall with each successive cycle. So essentially you get to diminishing returns with each Huff-n-Puff cycle, so that's why we have six illustrated here, six cycles is our initial plan for these wells, but based on our results we may be able to get more cycles as we see how much exactly those peaks will fall.

Moving to the right side, this one is -- the wording we have on this particular slide, the injection period, we envision it could last anywhere from a few weeks to multiple months with the flow production or flow back period.

Mentioned the six cycles already. We plan to have simultaneous well injection so we will be able to inject in multiple wells within the Juno Unit at the same time. We talked about the water injection options for conformance and we also mentioned CO2 as well for longer term potential.

Q. You mentioned briefly earlier the cycle being able to have short period of time between or turn around time, I guess, between your, when you are injecting and flipping over to a flowback to the well. Do you remember

that?

A. Yes.

Q. Can you explain the importance of that in more detail?

A. Yeah. The importance of that is when you have your reservoir pressured up, you kind of have two places for that pressure to go and it could kind of start to dissipate out into the reservoir or it could go back into the wellbores.

So switching back from injection to production as quickly as possible ensures that you are capturing all of that pressure back to the wellbore and so that can maximize the recovery of the, of the oil and gas that you are trying to get back.

Q. Is that -- is that what you observed in projects in other areas?

A. Yes, that was a major learning from those projects.

Q. Okay. Anything else about this slide?

A. No.

Q. If I then turn to what's been marked as Slide 6 -- oops -- there's -- hold on a sec. Does this slide identify the incremental production expected from this project?

A. Yes, it does.

Q. Okay. Would you walk us through this?

A. Sure. Starting at the left with the first bullet there, primary production in unconventional results in a recovery factor of 2 to 10 percent of that original oil placed. So the EOR process, Huff-n-Puff process can improve that amount of the estimated ultimate recovery that you would have from a well by 10 to 30 plus percent using the miscible hydrocarbon gas of the Huff-n-Puff process.

As mentioned, we demonstrated this increased production in the unconventional wells in the Midland Basin at the upper end of that range, the 30 percent range that we show. And based on the simulation we have, we show that miscible hydrocarbon gas is expected to have that same kind of potential in all the target benches we are going after for this particular project.

Moving to the right, that plot at the top shows just a generic well of primary production indicated in a shaded blue area, so you can see your cumulative production over time, and then you can see it kind of carried out with Huff-n-Puff there to the end, to the right on that plot.

What we have, what we're highlighting there is that during the Huff-n-Puff period, you can see how that cumulative oil produced would increase and then how it would impact your final EUR well, you can see all the way to the right there, plus 10 percent, plus 30 percent.

So with the, depending on the cycle time or the amount of cycles, the gas Huff-n-Puff is estimated to last three to five years of the life of a well, and it's driven by the cycles, the more cycles, the more time during that Huff-n-Puff period.

But importantly, post Huff-n-Puff the well would go back to just regular production, and it's not expected to impact the well's remaining producing life.

Q. That would be assuming diminishing returns that you show in the prior slide, one of the prior slides where you --

A. Yes. That's going to govern the amount of cycles and thus the amount of Huff-n-Puff total time.

Q. Okay. In your last bullet point, this will not impact -- impact wells producing life; is that right, Mr. Kaminski?

A. Correct.

Q. If I then turn to what's been marked as Slide 7, does this provide an overview of capital that's been funded in the time line supporting your request for two years to commencing injection in this project?

A. Yes, it does.

Q. References it's going to cost Oxy how much to put this in?

A. Greater than $10 million to put this phase of the project in.

Q. And what are you showing here with -- we have a unit area boxed in red. Could you please explain the compressor and where it's going to be located?

A. Sure. We show the compressor located to the northwest of the, of the Juno Unit area represented by that blue box. We also show the high pressure lines that will bring that gas to the wellbores, and the reason we showed that location is that's where supply gas is located.

Q. Okay, understand. Does -- now, when I look at the location of your compressor and the high pressure lines that you're envisioning here for this Juno Unit, does Oxy see potential for this kind of approach elsewhere in the Cedar Canyon area?

A. Yes. We do see the potential there, and that's why we are treating this particular project as kind of a proof of concept to serve as a precursor to future projects in Cedar Canyon.

Q. And is that why this is limited to, for example, 960 acres?

A. Correct.

Q. In this particular area, does Oxy own all of the working interest?

A. In the Juno Unit, yes, we do.

Q. And is the acreage involved here primarily

federal?

A. Yes, it is.

Q. And do you know the breakdown of the 960 acres?

A. I know Oxy's working interest combined with the BLM is just over 92 percent. Mr. Van Liew may have more details on the exact BLM ownership.

Q. Okay. But between Oxy and BLM, you guys have the vast majority of the ownership and therefore the net revenue interest; correct?

A. Correct.

Q. As we saw, did Oxy meet with BLM to determine the appropriate manner to allocate production from this unit area, under this project, to the non-cost-bearing owners?

A. Yes, multiple meetings with the BLM.

Q. And what production allocation did Oxy and the BLM determine to be appropriate for this unique injection project?

A. So the conclusion that we came to with the BLM is that the EUR allocation, estimated ultimate recovery method would be the best way to allocate for this project.

Q. And when you say estimated ultimate recovery, is that on a well basis?

A. Yes.

Q. And if I turn to what's been marked as Oxy Slide 8, does this explain in more detail how this EUR allocation

method was developed with the BLM?

A. Yes. Yes, it does.

Q. Would you please explain that?

A. Sure. The EUR method is based on the findings that Oxy has had that EOR, EOR or enhanced oil recovery, Huff-n-Puff uplift is portional to the primary well total production.

So in summary, it's more primary production equals more EOR production, so that's the basis of the EUR method. And just as a summary of what EUR consists of, it consists of historical data along with forecasted data.

So it's cumulative oil produced, plus the remaining oil reserves for the primary EUR. So also want to note that all the unit wells have been on line for an average of four and a half years, so there is enough historical data that the decline curve analysis can be established with confidence in the reserves we forecasted for the forecasted portion of the EUR.

Q. And is this methodology -- you mentioned collaboration with BLM, you said had a series of meetings?

A. Yes.

Q. Is this what the BLM wants.

A. Yes.

Q. Okay. All right. Is the -- is the allocation methodology developed by Oxy and the BLM fair and reasonable

given the unique circumstances associated with this project?

A. Yes. And in your opinion, is the approval of this application in the best interest of conservation, the prevention of waste and protection of correlative rights?

A. Yes.

Q. Were Oxy Slides 2 through 8 in Exhibit 2 prepared by you and compiled under your direction and supervision?

A. Yes, they were.

MR. FELDEWERT: Mr. Examiner, I move the admission of Oxy Exhibit 1, which is the Division order, and then Slides 2 through 8 of Oxy Exhibit 2.

MR. CLOUTIER: No objection from XTO.

HEARING EXAMINER BRANCARD: Thank you. So admitted.

(Exhibit 1 admitted.)

(Exhibit 2, Slides 2 through 8 admitted.)

MR. FELDEWERT: And that concludes my examination of this witness.

HEARING EXAMINER BRANCARD: Mr. Cloutier, any questions?

MR. CLOUTIER: XTO does not have any questions of this witness. Thank you, Mr. Examiner.

HEARING EXAMINER BRANCARD: Mr. McClure?

TECHNICAL EXAMINER McCLURE: Yes, sir, I do have a few questions. So you are currently running your

Huff-n-Puff for the 4H well; correct?

THE WITNESS: We are not currently running the Huff-n-Puff on that well.

TECHNICAL EXAMINER McCLURE: So then the original Huff-n-Puff injection project that was authorized in the referenced order then has not been initiated then yet?

THE WITNESS: No, it has not.

TECHNICAL EXAMINER McCLURE: Okay. So then the two-year time period would be starting from the date of the new or of the -- of the potential new order from this case then. Is that correct?

THE WITNESS: That's what we are hoping, yes.

TECHNICAL EXAMINER McCLURE: So assuming the thought process that -- in the facilities that may have been -- or were there any facilities installed for that original order then, or was the plan to maybe try to expand it here and then do your, I'm assuming, larger facility for the additional wells?

THE WITNESS: So, yes. So the plan changed to include a larger project area, so outside of just that well.

TECHNICAL EXAMINER McCLURE: So type of hypo -- hyper -- just supposing if something were to happen if we were to not approve this, would the plan then to still utilize that initial order and then only inject into that single well?

THE WITNESS: It would be difficult to justify the economics for the amount of facilities that we are proposing for one well.

TECHNICAL EXAMINER McCLURE: Okay.

THE WITNESS: So likely not.

TECHNICAL EXAMINER McCLURE: Okay, I gotcha. In regards to -- and if any questions might be better answered by a later witness, let me know. But back to my question, has any communication been done with one of our district geologists in regards to the pools and changing their boundaries prior to now?

THE WITNESS: There has been some communication with Mr. Janacek and Mr. Troutman, and I -- I will let them probably go into the detail of that.

TECHNICAL EXAMINER McCLURE: Okay, sounds good, I will ask them again, or I will ask it when they're up there.

Now, you mentioned that under your injection conditions, the produced gas is going to be miscible with the oil. Is the thought process, is that occurring at first contact, I'm assuming, for Huff-n-Puff situation like that, or do we need a multiple contact situation for it to be miscible, or what's the thought there?

THE WITNESS: We believe that the our work has shown that the injection pressures that we have, we achieve miscibility pressures pretty much once we start injecting, so it's around 4000 pounds, and that's where we expect to be downhole once we start injecting.

TECHNICAL EXAMINER McCLURE: What I'm getting at, I know in some oil projects, when you first start injecting, it isn't actually miscible until it changes the composition of either your injection gas or the composition of the reservoir fluid. But I'm assuming at 4000 pounds that is not the case here, correct, that it's just immediately miscible at that pressure then, correct, and temperature.

THE WITNESS: Yes.

TECHNICAL EXAMINER McCLURE: Is that also correct with CO_2 for this reservoir fluid?

THE WITNESS: I have -- I believe the miscibility pressure is less, but I would have to get back to you on that to confirm.

TECHNICAL EXAMINER McCLURE: But the intent would be -- the assumption is that your currently requested injection pressures would be sufficient to make it so. Is that the thought process here?

THE WITNESS: Correct. Yes.

TECHNICAL EXAMINER McCLURE: Okay. And then is there much difference, I guess, between the different formations here? I'm assuming there is some temperature difference, but I guess I don't know if the production -- if the composition of the different reservoir fluids is much different there either, I guess.

THE WITNESS: We don't believe they are different enough that we would expect drastically different recoveries in each different zone.

TECHNICAL EXAMINER McCLURE: Okay, sounds good. And then, okay, I think you mentioned Stephen was going to talk towards the calculation for your injection pressures; correct?

THE WITNESS: Yes, he will be.

TECHNICAL EXAMINER McCLURE: Okay. Maybe you mentioned, they may talk about it later, too, but in regards to using the production gas as your packer fluid, what sort of couplers are being used in your production tubing strings? Do you know?

THE WITNESS: I will let Mr. Janacek take that one.

TECHNICAL EXAMINER McCLURE: Okay, sounds good. In regards to talking additionally about it, are you wanting me to talk to Stephen about that as well, or how do you want to handle that?

THE WITNESS: I think he has some details, more detailed slides on it, so if you ask Stephen some of your questions may be answered.

TECHNICAL EXAMINER McCLURE: I will put off then to ask him, asking along that topic for a later witness.

I'm sorry, my notes are not very well organized by topics, so I'm kind of jumping around a little bit.

THE WITNESS: That's fine.

TECHNICAL EXAMINER McCLURE: You had mentioned that the ultimate oil recovery estimate is about 10 to 30 percent over the initial production. Are those numbers for unconventional projects or are we using numbers from a conventional EUR project, a conventional reservoir -- a conventional reservoir, to correct?

THE WITNESS: Those are from our previous pilot in unconventional projects.

TECHNICAL EXAMINER McCLURE: Okay. I guess, can you kind of give me a rough estimate as far as how many projects, I guess, was used to make that determination or how wide spread it was, I guess, if that makes more sense?

THE WITNESS: Yeah, sure. That was in, so the Midland Basin, that was in a project that ran for roughly two years. That project involved, two -- four different zones, Wolfcamp, their -- the equivalent of the Bone Spring there, it's slipping my mind right now -- Spring Berry, sorry. And that was, I said I think 11 wells, and we saw that same type of recovery throughout all those wells in that area.

TECHNICAL EXAMINER McCLURE: Very good. Now, you mentioned once the Huff-n-Puff has finished draining your re -- mostly most returns have diminished from the Huff-n-Puff and you go back to original production, does the production then go back to what the original decline curve was? Is that essentially what's going on with these wells?

THE WITNESS: That's what we have seen in the previous project, yes.

TECHNICAL EXAMINER McCLURE: Do you know how many years has it been producing since the Huff-n-Puff concluded?

THE WITNESS: Roughly -- let's see, about a year and a half since, since we stopped injecting out there.

TECHNICAL EXAMINER McCLURE: But over that time period, the wells more or less went back to the original decline curve from prior to the Huff-n-Puff or it continued on, if that makes sense I guess.

THE WITNESS: That's, that's correct, yes.

TECHNICAL EXAMINER McCLURE: Okay, thank you. And during the Huff-n-Puff situations, are you actually injecting long enough to increase the pressure of the entirety of the fractured network to municipal levels, or what's the thought process there, or it is it only near the lateral, I guess?

THE WITNESS: I think that we are trying to influence as much of that fractured network as we can. I don't think we have good data to show how far we have actually gotten, but I think that is something that is part of what we are piloting here which is why we show during the injection period, you know, from a few weeks to multiple months is something that we'll certainly try to optimize throughout this project.

TECHNICAL EXAMINER McCLURE: And there's a thought process that your durations of injection then will be modified based upon the results, and you are just going to try to trigger into durations for a well? Is that the thought process?

THE WITNESS: That's correct, yes.

TECHNICAL EXAMINER McCLURE: Okay. I guess maybe if that's too much I should have used target in on specific wells, I guess, but -- I guess you mention that you need to have a quick turn-around between injection and production. Is the thought process then that maybe the pressure, the oil that is swollen, is the thought process that it's losing pressure and the gas is coming back out of the oil and that's the reason you need to get it back into production right away, or all of that has already occurred and you are losing your produced gas into the fractured network that's not being pressured then? Would that be --

THE WITNESS: Yeah, that's it. And then you also lose the energy of that gas that maybe hasn't gotten into the oil that can help sweet that.

TECHNICAL EXAMINER McCLURE: Sweet your gas.

THE WITNESS: Yeah, you would rather push it back into the lateral than dissipate out into the --

TECHNICAL EXAMINER McCLURE: Now as far as your -- are you using artificial lift when you put it back into production, or how are you getting it back into the ground?

THE WITNESS: So, yes, initially with all of that pressure it will flow back and then will be transitioned to gas lift.

TECHNICAL EXAMINER McCLURE: Prior to your next injection duration?

THE WITNESS: Correct. Yes.

TECHNICAL EXAMINER McCLURE: And what sort of gas lift are you planning -- or, excuse me -- what sort of artificial lift are you planning to use?

THE WITNESS: So we are going to use gas lift, and then Mr. Janacek has some details on what that transition process will be.

TECHNICAL EXAMINER McCLURE: Okay, sounds very good. Sounds very good. I'm almost wondering if there is a connection between an artificial lift and the reason you are asking for gas as your packer fluid then.

THE WITNESS: Yes, you hit the nail.

TECHNICAL EXAMINER McCLURE: I got -- if I did a better job of reviewing your exhibits, I probably would have had all the answers to all of that, I guess. Anyway, let me look through my notes.

In your prior pilot projects you reference duration for this one anywhere from a few weeks to a few months for your injection period. In your previous projects, is it -- is it kind of typical then like to say half a month to maybe one or two months for that? Or just trying to get a little bit better idea of exactly what we are looking at, I guess.

THE WITNESS: Yes. So in the previous projects we started out with a longer duration, probably one and a half to two months, and then by the end I think we dialed in closer to about a month.

TECHNICAL EXAMINER McCLURE: I gotcha. And then your production period, is that typically a little bit longer than the injection period; correct?

THE WITNESS: Correct. Yeah, it's typically I think for this one, at least for a preliminary plan, would be like two to three times as long.

And then it's also kind of governed by how many injection wells you have, so as you have more injection wells that you are cycling through, it would take longer to get back to that first well, so it's kind of a balance between the two.

TECHNICAL EXAMINER McCLURE: I gotcha. You're kind of using some of your -- your facility capacities to -- your operational conditions where that would dictate how long your production period would be then is essentially what you are saying; correct?

THE WITNESS: Exactly. Yes.

TECHNICAL EXAMINER McCLURE: Yeah. Now how long did -- I'm sorry, did somebody say something? I guess not.

How long do you think it would be before Oxy may have CO2 towards this project, if that in fact occurs, I guess?

THE WITNESS: We are evaluating different options now from direct air capture to pipelines. I think the time frame on direct air capture is probably greater than four years, probably the same duration with, with the pipeline. But that something that's ongoing in the background as well.

TECHNICAL EXAMINER McCLURE: It may change, obviously, depending upon what goes on. I guess, do you foresee very many changes that needs to be done to your facilities or to your wells for maintenance of CO2 injection versus just using produced gas?

THE WITNESS: Yeah. It will -- the biggest change there will be, we will need some type of CO2 processing facilities to separate the CO2 and the gas for sales once we get there.

TECHNICAL EXAMINER McCLURE: So the recovery, but as far as on the injection side and the well strings, stuff like that, you are not foreseeing much change as far as on that, or the well, the well design or anything like that?

THE WITNESS: No. But I will let Mr. Janacek talk about that.

TECHNICAL EXAMINER McCLURE: And I used an incorrect word, I shouldn't say well designs because obviously you are not changing the well design, per se, but I was thinking more the other changes that were done. But anyway, I will ask again at a later point.

Now, as far as -- I was going to say, I'm sure, I'm not sure if this might be a better question for your landman or not, were you involved -- do you know, I guess, if what the communication was from -- because I'm assuming from the SW of the SW of Section 23, the fee ownership, I guess I'm not sure if it had -- or on allocation, a proposed allocation for this unit or not.

I will let Mr. Van Liew take that one.

TECHNICAL EXAMINER McCLURE: Okay. Sounds very good. I guess, to your understanding, I do see that the BLM does have a pending exploratory unit for this area, the NM143646X, and it's pending. Do you know what the status is on that? Are they waiting for something from the Division, or how are they proceeding there, the BLM?

THE WITNESS: I believe it becomes official when

NMOCD approves, but I think Mr. Van Liew might be more familiar with the process.

TECHNICAL EXAMINER McCLURE: Okay, sounds very good, sounds very good. I'm thinking that that may be all I have on my notes here. Thank you, sir, for your time.

THE WITNESS: No problem. Thank you.

HEARING EXAMINER BRANCARD: Thank you. I'm going to reserve my questions for the end, so Mr. Feldewert, go ahead with your witnesses.

TECHNICAL EXAMINER COSS: If I may, Mr. Brancard, I might have a few questions of the witness.

HEARING EXAMINER BRANCARD: Mr. Rose Coss --

TECHNICAL EXAMINER COSS: Team -- I'm on the scene here. Thank you, Mr. Kaminski, for your time and presentation. As initially the project was being presented I had more questions, but then the presentation actually answered many of them as we went long, so I thank you for that.

A few things maybe I would like you to go into a little more depth for my understanding on what's being proposed or what's going to happen.

So the age of these wells, you had mentioned they may be about four years old. Is there a particular age or point in the decline curve that these wells become optimal for this activity, and are there some wells that are more susceptible or you think will respond better to this, to this Huff-n-Puff process?

THE WITNESS: Yes. I think, in general, we have seen the earlier you can do it, the better when there is higher pressure that exists. But then you are always facing the problem of that's when the well has maximum production, so it's hard to take it down during that time.

So kind of when the wells fall into this less than a hundred barrel a day range, it becomes more palatable to take them down. And I think we have still seen, similar to as I addressed before, the previous project, the wells that we did work out the same age as these wells, so we expect to see the same type of, of uplift for the Juno Unit wells in this.

TECHNICAL EXAMINER COSS: Okay, perfect. And I guess that sort of leads me into my next question. I suppose that the hope here is to increase the reservoir pressure, and you are sort of attempting to -- I'm thinking of it like squeezing a sponge, trying to squeeze more fluid out of the sponge. It's not really, the way I am thinking about it, that you are injecting the gas, and the gas is going to be pumped into the formation, and that gas is going to like drive or flood additional oil out of the reservoir rock.

Is it -- am I correct in thinking that you are trying to pump gas into the fracture network and just sort of stimulate the reservoir again?

THE WITNESS: That's correct. Yes.

TECHNICAL EXAMINER COSS: But you did also mention that sometimes the gas, if you don't move quickly the gas could end up in that formation in that case?

THE WITNESS: Right. If it's shut in for extended periods of time, even we have seen in the, in the Midland Basin project, as soon as you stop injecting the gas pressure, the bottom hole pressure on the well does start falling, so we know the gas is moving into the matrix or lower pressure areas, so that's why we want to get that well back on line as soon as possible and capture high pressure back into the well.

TECHNICAL EXAMINER COSS: Sure. And if we go to the figure with the oval and the kind of hypothetical kind of wellbore view there --

THE WITNESS: Yes.

TECHNICAL EXAMINER COSS: And so this one like in the middle oval that's step two, I see that the red lines, you show some like hypothetical communication from one kind of frac job or stage to another. And this maybe touches on Dean's question from earlier as well, does Oxy believe that a fracture network extends from one stage to the other? Is that the idea here, this might be a basic frac job knowledge, but for my education.

THE WITNESS: Yeah. I think that goes into the whole stimulated rock volume, like there probably is communication between different stages for sure, so there is potential that you can have it between the adjacent between the two stages, yes.

TECHNICAL EXAMINER COSS: Sure. And again, I don't see the water injection being mentioned here, or maybe I'm just not catching it. And can you go into a little more detail about why that's necessary or what you think goes on there? Does it have anything to did with the miscibility of the rock and the fluids?

THE WITNESS: Sure thing. I guess so you can see is, if we look like at the left side of the lateral, right, consider that the heel and then the right side would be the toe, right, we want to make sure we are getting gas all the way down to the toe and then because the more reservoir you can touch, the better. Right?

So in order to keep that gas moving towards the toe, there may be times where if there is one of these stages that's just taking a lot of gas for some reason, we can pump water and the thought there would be to kind of -- and even in the Midland project we also pumped a foam, just basically a conformance to block off maybe a path that's taking too much to take inject that gas to places that it

maybe wasn't reaching before.
TECHNICAL EXAMINER COSS: Okay. So that's the water kind of you are hoping will drive the gas into additional spaces?
THE WITNESS: Yeah, into different parts of the lateral, correct.
TECHNICAL EXAMINER COSS: And that's the -- well I suppose it would be if the reservoir keeps taking the gas, taking the gas and you need to drive it with water, maybe the reservoir is accepting -- like the reservoir has a fracture network that is accepting the gas, or there is just enough fractures at this stage and it continues to accept the gas when it the --
THE WITNESS: Yeah, I guess it's more towards driving away from the one particular fracture that's taking more gas than you would like, so you can direct it to an area that's not getting as much gas so you can drive up the efficiency of your gas use.
TECHNICAL EXAMINER COSS: I see, I see, okay. Where does the CO2 come in? Is that just kind of like another drive, they are not going to tend to be mixing as well in the reservoir, is that the idea, so you can drive it, have a driver?
THE WITNESS: Yes, it would be the injectant, so it can be either-or with the hydrocarbon gas or CO2. Like

once we move to CO2, we will no longer be using hydrocarbon gas because they achieve the same thing.

TECHNICAL EXAMINER COSS: And so on to my next question about this, and I'm wondering if it's going to be more appropriate for Mr. Janacek because he has a more detailed view of your facilities, and where will the source gas be derived at, how are -- where will all the gas for the injection be coming from and -- YEAH

THE WITNESS: From our central gas facilities, I guess, at Cedar Canyon.

TECHNICAL EXAMINER COSS: So it's not like a tank battery, there is a central gas facility, and so assuming you will have ample gas?

THE WITNESS: Exactly. Yes. Yes. Ample gas not within the unit but within all Cedar Canyon, I guess.

TECHNICAL EXAMINER COSS: Could this, hypothetically, if it's going to be injected for months be large volumes of gas, like how different is it than normal gas lift operations is the proposed operations here?

THE WITNESS: Sure. If gas lift injects roughly half to a million MCF a day, this would be on the order of five, five to ten times that amount of gas, the compression, high pressure compression, things like that.

TECHNICAL EXAMINER COSS: I see. And is there -- I'm trying to think about the gas capture pilot to this well. Where is the gas in the custody chain, is this gas that's been -- has it been sold yet, or is this y'all's gas before custody, it just hasn't been -- all the shareholders have been accounted for, and then this isn't like you are intending to recover all of this gas as well. Is that a proper understanding?

THE WITNESS: Correct. Yes. This is before its been sold, Oxy will have to purchase this gas, you know, that it redirects from the sales point, and then recover what we can that comes back on the flowback and use that to recycle, and then make up what we don't get back.

TECHNICAL EXAMINER COSS: So it's not going to be 100 percent recovery if injected, but you have that accounted for?

THE WITNESS: Right.

TECHNICAL EXAMINER COSS: Will Mr. Janacek or anyone else be showing us that accounting?

THE WITNESS: I don't believe we have that in this presentation.

TECHNICAL EXAMINER COSS: That's fine. I will make a note of that. I do believe I have exhausted my questions, and thank you for your time.

THE WITNESS: Thank you.

TECHNICAL EXAMINER McCLURE: Mr. Brancard, may I ask a few additional questions based off the responses from

Dylan's questions?

HEARING EXAMINER BRANCARD: Okay. You think this witness is the appropriate one.

TECHNICAL EXAMINER McCLURE: Maybe he -- maybe he can tell me, I guess, if he is not.

You had mentioned that you are bringing it from the Cedar Canyon area, I guess you are probably not familiar with a -- order that it is by number, I believe it's -- it's like POC750, is what I'm assuming, are you -- do you know if that's the case?

THE WITNESS: I do not know.

TECHNICAL EXAMINER McCLURE: Okay. As far as the source wells, are we looking about 250 wells, around about that, or do you know?

THE WITNESS: For all of Cedar Canyon?

TECHNICAL EXAMINER McCLURE: Those that go into Oxy's gas gathering system there.

THE WITNESS: Yeah, it's correct, it's all the wells in Cedar Canyon. But I can get you exact numbers -- Stephen might be the better one to answer this question, actually.

TECHNICAL EXAMINER McCLURE: Okay. Yeah, I mean, because I -- I guess where something like that is coming from is your reference that maybe the gas is already sold and you're buying it back, and I guess I'm confused about your system there now then.

THE WITNESS: Okay. That was my mistake then. This is before the sales point it would be intercepting this gas and putting it into the Juno Unit.

TECHNICAL EXAMINER McCLURE: I apologize, maybe I misheard you or misunderstood you. Okay, I'm sorry, that was all. That was my questions. Thank you, sir.

MR. FELDEWERT: Mr. McClure, part of it may have been my fault in that I didn't clarify that the source of the produced gas is going to be the same source that was already approved by the Division for the 4H. It's the same Cedar Canyon central delivery point.

TECHNICAL EXAMINER McCLURE: Did we get into much detail in that case, do you remember, or do you recall?

MR. FELDEWERT: Given that that case was a little while back, I don't recall.

TECHNICAL EXAMINER McCLURE: Yeah, it was about two years ago. I can't recall something like that. Thank you, sir.

MR. FELDEWERT: Uh-huh.

HEARING EXAMINER BRANCARD: Thank you. Mr. Rose Coss, we're done?

TECHNICAL EXAMINER COSS: You know, the other thing, now that we mentioned the pools, I think it might be the right time to just -- could you -- could you clarify for me again what's being asked with the probe and what the purpose for the request is? Is it kind of an accounting proposition, or what is the rub in that request?

MR. FELDEWERT: Mr. Coss, if you look at -- Mr. Rose Coss -- if you look at -- I put up Slide 15, which Mr. Van Liew is going to cover here shortly, you'll see what's interesting about this area is that, for whatever reason, two of the 11 Bone Spring wells that are producing from the unit are assigned to pools that differ from the other Bone Spring wells.

You will see a majority of the wells are assigned to Pierce Crossing Bone Spring East Pool. But we have two wells here at the top that are assigned, one with the Pierce Crossing Bone Spring Pool, and then second to the Corral Draw Bone Spring Pool.

I'm assuming that may be an artifact of the time frame in which these pools were developed, but the thought process being nothing more than, rather than having three different Bone Spring pools, can't we just assign them all to the Bone Spring East Pool.

TECHNICAL EXAMINER COSS: I see. Thanks for that. That's it for me now, Mr. Brancard.

HEARING EXAMINER BRANCARD: Thank you. Mr. Feldewert, do you want to ask more questions of this witness, or would you like to move to your next witness?

MR. FELDEWERT: No, we can move to our next witness.

HEARING EXAMINER BRANCARD: Please proceed.

MR. FELDEWERT: We call Mr. Peter Van Liew.

THE WITNESS: Yes, sir.

PETER VAN LIEW

(Sworn, testified as follows:)

DIRECT EXAMINATION

By MR. FELDEWERT:

Q. Would you please state your full name for the record, and then identify by whom you are employed and in what capacity?

REPORTER: Spell it for the record, please. Spell it for the record.

A. Okay. Peter Van Liew, P-e-t-e-r, last name is V-a-n space L-i-e-w, and that's pronounced Van Liew. I'm employed by Oxy Petroleum an a senior land negotiator for the last three and a half years.

Q. And Mr. Van Liew, you have previously testified before this Division as an expert in petroleum land matters?

A. That's correct.

Q. And your credentials were accepted and made a matter of public record?

A. Yes, they were.

Q. Are you familiar with the application involved in

this case?

A. Yes, I am.

Q. And are you familiar with the status of the lands at issue?

A. Yes, I am.

MR. FELDEWERT: We tender Mr. Van Liew as an expert witness in petroleum land matters.

HEARING EXAMINER BRANCARD: Mr. Cloutier?

MR. CLOUTIER: No objection.

HEARING EXAMINER BRANCARD: Thank you. So accepted. Hang on a second. Mr. Baca are you doing okay?

REPORTER: Yes, sir.

HEARING EXAMINER BRANCARD: All right. Please proceed.

BY MR. FELDEWERT:

Q. Mr. Van Liew, the previous witness, Mr. Kaminski, noted that most of the acreage involved in the Juno Unit is federal. Does Slide 8 in Oxy Exhibit 2 provide a breakdown of the nature of the acreage in the Juno Unit area?

A. Yes, it does. This image shows the red outline that, that represents the -- the proposed Juno Unit in Section 23 and W/2 of 24. Within that boundary there are a couple of shaded colors.

The purple-pink color, the orange and the lime green all represent separate federal leases that exist within the outlined unit proposed area. And then the olive drab green in the bottom, left-hand corner represents the only fee tract that we encounter in this area.

Q. And does Oxy own all of the working interest for these various leases?

A. Yes. As Mr. Kaminski previously testified, we own all the working interest.

Q. Okay. Is the, is most of the acreage surrounding the Juno Unit federal?

A. Yes, it is, as shown on Slide 10.

Q. Okay. Let's go to Slide 10. How is it depicted?

A. So the map, anything in crosshatched purple will be representative as BLM acreage, crosshatched blue is New Mexico state lands, and then anything white is going to be a fee ownership. So again, the fee -- it's almost entirely fed lands, some state acreage at the very bottom, right-hand corner of the map. There is some fee also within the unit, they're also a little bit to the west of the unit and outlined, mixed with fed and again a little bit of state in the top left corner.

Q. In the course of preparing for this hearing, did you identify the affected parties within one mile of the unit boundary for purposes of providing notice of this application?

A. Yes, we did.

Q. If I turn to what's been marked as Slide 12, first off, this map, is this the area of review map that we see in the Form C-108 application?

A. Yes, sir, it is -- I'm sorry, the C-108 may contain a half mile radius. The mile radius is for notification purposes.

Q. Thank you. So just for clarity, you took that map and then identified on here in blue a one mile area around the unit boundary; is that right?

A. That's correct. It's consistent of what you would see in the C-108.

Q. Okay. And if I move on Slide 12, does this identify the nature of the affected parties to whom notice was provided?

A. Yes, it does.

Q. And this indicates that both BLM and Oxy are the surface owners; correct?

A. That's correct.

Q. And that includes for example the surface for wells that exist in the unit area that the surface location is outside the unit area?

A. Yes, just to the west, in the eastern part of Section 22 as well.

Q. Okay. So then if I turn to what's been marked -- and I'm going to skip here and go down so close your eyes so

you don't get blurred. If I go down here to what's been marked as Oxy Exhibit Number 3, is this an affidavit prepared by my office with the letter providing notice of this application and hearing to those, to those affected parties?

A. Yes, it is.

Q. And it provides then a list of those affected parties; correct?

A. That's correct.

Q. Okay. And if I turn to what's been marked as Oxy Number 4, is this an affidavit of publication in the Carlsbad Current Argus of this application and hearing?

A. Yes, that's the public notice that was issued.

Q. And this is the newspaper of circulation within Eddy County?

A. That's correct.

Q. Okay. Now, I want to talk next about the unit agreement itself, okay, because we are seeking authority to create an exploratory unit. If I turn to what's been marked as Oxy Exhibit Number 5, is this a copy of the unit agreement that was developed in conjunction with the Bureau of Land Management?

A. Yes, it is.

Q. Okay. And this is one of those forms of unit agreements where the whereas clauses reference, does it not,

on Page 5 the Oil Conservation Division?

A. It does.

Q. Okay. If I then proceed on down to Oxy Exhibit Number 6, is this a copy of the BLM's limited what I would call preliminary approval letter for this unit agreement?

A. Yes. That was issued after our discussions and agreement with the BLM.

Q. Okay. And for purposes of this hearing, the Exhibits A, B and C to the unit agreement are actually attached to this and referenced in this letter; correct?

A. Correct, that's right.

Q. Okay. All right. With that I want to go back to Oxy Exhibit Number 2, and I would like to go to Slide 13. Okay?

A. Okay.

Q. So if I go back to Oxy Exhibit Number 2 and move down in here to Slide 13, is this a slide you created, Mr. Van Liew?

A. Yes, it is.

Q. And does this highlight for the Division some of the unique provisions of this unit agreement that was developed with the BLM?

A. Yes, it does.

Q. I want to focus on a couple of things. First off, the unitized interval concludes all of the Bone Spring

formation and then what we referred to as the Upper Wolfcamp; is that right?

A. That's correct.

Q. Okay. Why was the Upper Wolfcamp interval included in, in the unitized area?

A. We included the Upper Wolfcamp because we had the unit wells that we want to perform this process on that lie within the unit boundaries and then fall within the Wolfcamp formations or zones, I guess you'd call them.

Q. Is it the Upper Wolfcamp?

A. That's correct, yes, sir.

Q. What some companies call the XY or Wolfcamp A?

A. That's correct.

Q. Okay. The other unique aspect about this unit agreement would be production allocation; is that right?

A. Yes.

Q. And then Mr. Coss touched on this briefly, but you have what you referred to here, I think, as a gas bank methodology required by the BLM. Do you see that?

A. That's correct.

Q. How long has Oxy been working with the BLM to develop this unit agreement and these provisions?

A. We worked with the BLM for around six or seven months negotiating the fine points of the unit agreement to make sure that both Oxy and the BLM could get the contents within.

Q. And when it came to developing the allocation methodology, in what you did with the BLM, how did you approach that with respect to the existing communitization agreements for the producing wells in the unit?

A. Yeah. So the way we kind of allocated production and created tracts within our unit was based on kind of like what you referenced as the existing comm agreements that were in place. So those federal comm agreements are essentially federal pooling, they want to make sure that any tracts that we built were structured around those and made the basis of the geographical outlines for our tracts.

There are four existing CAs on the lands encompassed by the unit outline that make the basis of those, and then there is really the entire N/2 has no comm agreement, and it's one individual tract because it consists of one continuous federal lease.

Q. And we have already talked about how this was developed in conjunction with the Bureau of Land Management; right?

A. That's correct.

Q. Now, in addition to determining the allocation methodology, how to apply that to the existing communitization agreements out there, was there substantial discussion with the BLM about how to deal with the injected

gas?

A. There was.

Q. Okay. And that is because it raises royalty issues with the Bureau of Land Management. Correct, Mr. Van Liew?

A. That's correct.

Q. Okay. And did the methodology developed with the BLM, is that accounting for the injected gas, is that right?

A. That's right.

Q. And avoids a royalty payment on what would be non -- gas?

A. That's correct.

Q. Now, when I look at Slide 14, does this confirm that Oxy and the Bureau of Land Management account for over 92 percent of the net revenue interest?

A. Yes, it does.

Q. And we have not only this ownership and that revenue interest factor, but this is somewhat of a novel project for New Mexico; right?

A. I would say so.

Q. Okay. Does Oxy believe that the participation formula in the gas bank methodology provide the most appropriate method to allocate production and account for the injected gas for this unique Huff-n-Puff project?

A. Yes, we believe the EUR basis is the most efficient and fair formula to use in this circumstance.

Q. Okay. And were you involved in the discussions with the BLM about the unit agreement in these provisions?

A. Yes, I was.

Q. Weren't you the lead person for Oxy in those discussions with the BLM over the last nine months?

A. Yes, sir.

Q. Does the BLM likewise agree that these provisions are appropriate for the non-cost bearing interests?

A. Yes, they do.

Q. All right. Then let's go to a matter that Mr. Kaminski testified are the pools in the unit area. Okay?

Does Oxy's Slide 15 identify the existing -- identify the pools that have been applied by the Division's district office to the existing wells in the Juno Unit area?

A. Yes.

Q. Does Oxy seek authority now to assign all of the Bone Spring pools -- I'm sorry -- all the Bone Spring wells within the unit area to the Pierce Crossing Bone Spring East Pool?

A. Yes. We asked that they all be combined into that pool.

Q. Now, is that the pool currently assigned to the approved injection well, the 4H?

A. Yes, that's shown on the slide.

Q. And if that is accomplished, all assigned the Pierce Crossing Bone Spring Pool, that will allow for the reporting of the Bone Spring production to a single Bone Spring pool?

A. That's correct.

Q. Were you able to have any discussions with the district office about these pools and how you should deal with it in this unit area?

A. I believe Oxy personnel did. I specifically did not, but I think Mr. Janacek can speak to that.

Q. Okay. Now, we see that whatever wells here, the 33H on this, the bottom of this exhibit is in that Upper Wolfcamp interval; correct?

A. That's correct.

Q. And that is assigned to the Purple Sage Wolfcamp Pool; correct?

A. Yes, sir.

Q. Okay. Did Oxy determine that there is no longer -- that there is no need to combine the Wolfcamp Pool with the Bone Spring Pools?

A. Yes. Yes. There is no longer a need for that.

Q. Okay. And will the company be able to pursue the -- something near and dear to Mr. McClure's heart -- the necessary commingling authority for purposes of reporting to

the production to the Bone Spring Pool or the Purple Sage Wolfcamp Gas Pool depending upon the producing well?

A. Yes, we can satisfy all the commingle requirements.

Q. Okay. And the reporting requirements?

A. And the reporting requirements, yes.

Q. Were Oxy Slides 9 through 15 of Exhibit Number 2 prepared by you or compiled under your direction and supervision?

A. Yes, they were.

MR. FELDEWERT: Okay. So, Mr. Examiner, I move the admission into evidence first of Oxy Exhibits 3 and 4 which are the notice materials, then Oxy Exhibit 5 and 6 which would be the unit agreement and the preliminary approval letter, and then Oxy Slides 9 through 15 of Exhibit Number 2.

MR. CLOUTIER: No objection from XTO.

HEARING EXAMINER BRANCARD: Thank you, Mr. Cloutier. So admitted

(Exhibit 3, 4, 5 and 6 admitted.)

(Exhibit 2, Slides 9 - 15 admitted.)

MR. FELDEWERT: That concludes my examination of this witness.

HEARING EXAMINER BRANCARD: Thank you. Mr. Cloutier, any questions?

MR. CLOUTIER: No questions, Mr. Brancard. Thank you.

HEARING EXAMINER BRANCARD: Mr. McClure, shall we start with you?

TECHNICAL EXAMINER McCLURE: Yeah, that's fine, unless Dylan wants to go first, I guess. But hearing not, I will go first.

TECHNICAL EXAMINER COSS: You can go before me.

TECHNICAL EXAMINER McCLURE: I guess the questions I have, in your discussions with the BLM, I mean, it may have been misrepresented as an exploratory unit. Is the BLM not really considering it an exploratory unit then; is that correct?

THE WITNESS: Not in the terms of -- no, not a primary exploratory unit.

TECHNICAL EXAMINER McCLURE: So then -- I'm sorry, go ahead.

THE WITNESS: Yeah, I think it would be considered under secondary recovery.

TECHNICAL EXAMINER McCLURE: Oh, yeah, probably so. So then by that definition then, they do not intend to have participating areas or anything like that that we typically see in exploratory units; correct?

THE WITNESS: That's correct. That multi-phased approach or participating areas.

TECHNICAL EXAMINER McCLURE: And did the BLM have any concerns with including the Wolfcamp with the Bone Spring formations?

THE WITNESS: No, there was no concerns on their part.

TECHNICAL EXAMINER McCLURE: Okay. Once the Huff-n-Puff project is over with, is the thought process that this unit would then be dissolved and you would go back to reporting on your comm agreement? Is that the thought process here?

THE WITNESS: No. No. Once the unit, if the unit receives the necessary approvals and it comes into existence, the comm agreements cease to exist. They would terminate the comm agreements, and then the ownership would exist from that point forward.

TECHNICAL EXAMINER McCLURE: They would -- okay, so then the comm agreements will be terminated and this unit, this unit would be the -- from this point forward -- okay, I gotcha.

So I guess with the change in allocation of this unit versus those comm agreements, if the wells are going to go back to their original decline curve, does that allocation still make sense?

THE WITNESS: I think it does. I think that if, again, this is a voluntary unitization. So if we, you know, if -- understanding on the basis that we get voluntary approval from all parties, I think that we're really free to contract as the parties would wish, I would think.

And it also, I think, is going to be less restrictive, they are not keen on revising tract factors or reformatting ownership once we have the unit in place for a certain period of time.

TECHNICAL EXAMINER McCLURE: Yeah, probably so, I guess. And so just thinking about it, theoretically speaking, this was based off of your current production, therefore assuming that you go back to your current production, then -- then I guess in theory there would be an agreement with how it should be. But having said that, if additional infill wells were to be drilled, could they not be included in this unit, or what's the thought process there?

THE WITNESS: Our expectation if we drill additional infill wells within the unit boundaries and within the zones that are covered by, by our agreement, that they would then become part of the unit and receive the uniform tract factor -- or, sorry -- uniform ownership, and it will be consistent with the rest of the wells that have already been drilled.

But if we drill in the zone not included either in, in the depths that are covered or by the Juno outline, that that won't be a unit well, that will be a leased well with its own independent ownership.

TECHNICAL EXAMINER McCLURE: Just to make sure I'm understanding. So hypothetically speaking, if some additional Bone Spring formation wells to be drilled in the S/2 of the S/2, which includes that fee lease, then that puts in that allocation toward that regardless of how many wells were drilled there which would still only be that one point something percent. Is that correct then?

THE WITNESS: I'm not sure about the percentage being the one percent, but it would receive -- once we have the unit agreement in existence, all the wells have uniform ownership. So if we drill infill, that gets the same ownership. We are not going to reset tract factors.

TECHNICAL EXAMINER McCLURE: Okay.

THE WITNESS: We realize that the complexity of having to reset tract factors in a voluntary solution, it -- for us, the expectation was that the ownership that we established is sufficient and fair and equitable whether we drilled in both parts.

TECHNICAL EXAMINER McCLURE: Moving on to a different topic. I think in one of the slides it represents, maybe it was already stated in testimony here, but does Oxy own 100 percent of working interest in the entirety of the proposed unit agreement? Mr. Feldewert brought it back to you where I was looking at.

THE WITNESS: Yeah, we do. From a gross working interest perspective, you know, a cost perspective, we own 100 percent. Obviously we don't own 100 percent given that there is royalty owners and operator owners that offset the balance of Oxy's 80.7 percent.

TECHNICAL EXAMINER McCLURE: Yes, of course. Of course. So I guess, so would my understanding be correct that the only parties that were involved in discussing the proposed allocation for this unit then was just the BLM and Oxy, correct? And the royalty interest owners just were unaware, I guess? Is that the --

THE WITNESS: We have spoken, we have spoken to royalty owners currently about this anticipated EUR formula, and I know we -- honestly, we need to get, from any, from any owners we don't already have approval from, we would need to get approval to use that EUR formula. Again, a total voluntary unitization scenario here.

TECHNICAL EXAMINER McCLURE: So that will include all the royalty owners then; is that correct?

THE WITNESS: It will, yes.

TECHNICAL EXAMINER McCLURE: Okay. Okay. I'm sorry, are you going to state something else?

THE WITNESS: No, I'm sorry.

TECHNICAL EXAMINER McCLURE: Okay. Okay. You know, I think -- I think that's actually the entirety of my questions. Thank you, sir.

THE WITNESS: Yes, sir.

HEARING EXAMINER BRANCARD: Okay. Mr. Rose Coss?

TECHNICAL EXAMINER COSS: Well, thank you, Mr. Van Liew. So I think I have two fairly simple questions, the one -- and you might have done an adequate job to pick up on it. Could you explain in a little more detail the gas banking method that you all have -- the agreement you have struck up with the BLM?

THE WITNESS: Sure. Sure. So gas bank that we have established anticipates, as Mr. Kaminski said, a large amount of gas coming from off unit premises from our central gathering system. We measure the gas as it comes onto the unit to establish volumes brought in that are in excess of what exists already. And then we meter the gas as it comes out, and then we compare figures only once, once gas is sold off the unit, that, that counts towards the bank that we have established.

So we'll be bringing in large amounts of off-unit gas. Once the sold volumes equals the amount injected or brought in for injection, from outside the unit, we then begin paying royalty to the BLM and parties.

So essentially we want -- we need to recapture all the excess gas that was in Oxy custody, and once we do that, then we revert back to paying 100 percent royalty on all gas produced from the unit.

EXAMINER COSS: Okay. I think I'm following that. Thanks for describing that again. And I suppose my next question is, this is sort of a hypothetical, how -- and so how much more complicated would this be and would it be feasible for Oxy to not be -- own so much of the shares in this particular section, like where there would be expanded out into areas where you are paying 100 percent of the infrastructure cost, is there a lot of difference? Interest owners, would this be practical still, or can you just speak a little bit about that?

THE WITNESS: Yeah. I think a larger area, especially, you know, the greater Cedar Canyon we are working with here is predominantly Oxy working interest. There are some partners. So I think it's feasible in long term solution, maybe the teacher for us. We want to focus on a proved concept here in just this 960 acres. We want -- we are doing pilot projects and those have been successful, but this will prove to us the feasibility, now we need to show the unitization.

And then in terms of future ability, yeah, I think having, having more, more parties in the mix, I think, would add a little bit of complexity, but I think it's just more a time component. I think mostly if we can prove with this project the feasibility, we can share that, those results and equally convince anyone else who may be involved in future projects this is a worthwhile endeavor.

TECHNICAL EXAMINER COSS: Okay. I guess I'm trying to envision if there is any complications with an initial compulsory pooling application that this is like one thing up front and then something that could happen different later to the well. I might be putting the cart in front of the horse here.

So those were some of my thoughts having moved through your presentations, and having said all of that, I don't have any additional questions. Thanks.

THE WITNESS: Okay. The compulsory pool, we haven't really encountered that scenario, obviously, with this section and my knowledge of the land in the general vicinity there, there is only one instance of a compulsory pool, and that's quite far away from where we are working currently.

And I think if we were to come to that, that situation in the future, we would definitely work with our legal counsel and fashion the appropriate responses, and, I guess, pursue the correct avenues to make sure we satisfy all the requirements. But it's an interesting kind of concept and thought process there, yeah.

TECHNICAL EXAMINER COSS: Thanks for that clarification.

HEARING EXAMINER BRANCARD: Mr. McClure, are you done?

TECHNICAL EXAMINER McCLURE: Yeah, yeah. I was going to say, I'm -- I am going to leave the questions in regards to outside the unitization towards yourself, Mr. Brancard, so I don't have any other questions.

HEARING EXAMINER BRANCARD: You are assuming I understand this stuff.

TECHNICAL EXAMINER McCLURE: I think I assume correctly.

HEARING EXAMINER BRANCARD: Mr. Cloutier, did I ask you if you have any questions? Sorry.

MR. CLOUTIER: You did, Mr. Brancard, and I did not.

HEARING EXAMINER BRANCARD: Okay. So let me see if I can get a question in here while they are drilling in the building. So these are existing wells, Mr. Van Liew, which I assume were to have proper submittals to the state in order for the wells to all have spacing units.

THE WITNESS: That's correct.

HEARING EXAMINER BRANCARD: Okay. Thank you. So the BLM agreement, I'm looking at it here, uses this term outside gas.

THE WITNESS: Yeah.

HEARING EXAMINER BRANCARD: To refer to the gas that's coming from off this unit and then being used to do the enhanced recovery we are talking about here. And the BLM, it seems, is willing to say, we don't take -- outside gas; is that correct?

THE WITNESS: That's correct.

HEARING EXAMINER BRANCARD: Will all of the outside gas come from BLM rural properties?

THE WITNESS: The outside, well, so I will clarify. So the outside gas will have royalty severance paid on it, and depending on -- we then paid for the gas through our central gathering system, and then in terms of injecting it through the unitization process, the BLM gas has basically said that, as soon as you can measure and offset any injectant against sold, and only once we balance out do we then start taking royalty.

They mention that it's, you know, being able to decide -- once you commingle, but the metering may sound like it was a good solution to that problem in kind of a novel way, and while we pursued unitization process as well.

HEARING EXAMINER BRANCARD: Okay. So help me. So the outside gas has already been -- the royalties have already been paid for, severance tax has already been paid for regardless of where it came from.

THE WITNESS: That's correct, yes.

HEARING EXAMINER BRANCARD: Okay, thank you. So I guess the issue with the unit agreement is, the unit agreement, as you said, is a secondary recovery unit agreement, that that unit agreement will continue once you stop doing the Huff-n-Puff and it goes back to being just normal, declining horizontal wells?

THE WITNESS: That's correct. And also the possibility of again turning from a -- component we are not sure, but it would also form the basis -- it would be easier to do the same ownership in that process as well.

You are correct, once we go back to primary production or primary method after the Huff-n-Puff process is completed, ownership will not -- will refer back to pre Huff-n-Puff.

HEARING EXAMINER BRANCARD: Right. In the order you are seeking I assume, you don't want to have a termination date on this order?

THE WITNESS: I think that would be better handled by our counsel.

HEARING EXAMINER BRANCARD: Thank you. That's it for me, thanks.

MR. FELDEWERT: Mr. Brancard, you know --

TECHNICAL EXAMINER McCLURE: Mr. Brancard, may I ask a follow-up question to that?

HEARING EXAMINER BRANCARD: Sure.

TECHNICAL EXAMINER McCLURE: I guess, the question I had is, you're saying that all royalties have been paid on this gas prior to this injection for -- regardless of the source; is that correct?

THE WITNESS: That's correct.

TECHNICAL EXAMINER McCLURE: So that also includes the fee leases or the state leases, not just the federal leases; is that also correct?

THE WITNESS: Yeah, that is, yes, sir.

TECHNICAL EXAMINER McCLURE: So you were basing your royalty determination for those state and fee leases on BLM approved field measurement funds then? Would that be correct?

THE WITNESS: I don't follow. I think -- your -- the gas that it is used -- the gas that is gathered through our central gathering system, whether be fee, state or fed, is going to have the appropriate -- it already has -- we are not changing anything with the gathering system, we are just changing whether it goes to a sales pump or gets redirected to the unit. So in terms of whatever -- in terms of pay, that's already established. Anything beyond that, I think, we are talking better directed to regulatory in terms of how they measure, how they meter and how they pay.

TECHNICAL EXAMINER McCLURE: I'm sorry. I mean -- okay, I was just, I was just trying to make sure that I still have an accurate understanding of the system because my understanding would have been that the BLM royalties were determined prior to this point, but that your state and fee royalties are likely determined based upon the actual sales meter which is after this point. And I don't know if that's an accurate understanding of it, but you are seeming to maybe imply that's not accurate then. But you are pointing towards your regulatory department for more information?

THE WITNESS: Yeah, I think in terms -- to be honest, I don't have a firm handle on measurement points for different ownership. Stephen Janacek who works with our regulatory should be able to handle that, that question.

TECHNICAL EXAMINER McCLURE: Okay. Thank you. Thank you. I was just wanting to confirm as to my own understanding. I have no other questions.

HEARING EXAMINER BRANCARD: Thank you. Mr. Feldewert, your witness.

REDIRECT EXAMINATION

BY MR. FELDEWERT:

Q. Mr. Van Liew, when I look at, first off, this, this is not an application for forced unitization; correct?

A. That's correct.

Q. This is a voluntary unit?

A. That's correct.

Q. Secondly, when you look at the unit agreement itself it seems to be somewhat of a hybrid. This is a unit agreement in forming the unitization for the development and operation of this unit area?

A. That's correct.

Q. So it's kind of a hybrid between an exploratory unit and purely secondary recovery?

A. Yeah. It's definitely, like you said, it's, it's applying two concepts to the new Huff-n-Puff kind of reality.

Q. And for anyone to be subject to this, they would have to sign off on the unit agreement or you have the authority under the leases to bring them into the unit agreement?

A. Yes, that's correct.

Q. It's a contractual matter between the parties?

A. That's correct.

Q. And in terms of royalty payments and how royalty is paid in this type of project, again, that is a contractual matter between the parties?

A. That's correct, purely contractual.

Q. Okay. And with respect to the BLM, if anybody is interested, they can go read Pages 12 through 14 about how the BLM contractually said they want the royalty to be paid?

A. That's correct, yes.

Q. And for parties who sign up to the unit agreement, their choice, that is how they contractually agreed it is to be done?

A. Yes, that's correct.

Q. Okay. That's all the questions that I have.

MR. FELDEWERT: So I think the way to go on this -- so I think we are ready to call our next witness, Mr. Brancard, but do you want to take a break first, please?

HEARING EXAMINER BRANCARD: Let's check with Mr. Baca.

REPORTER: I'm doing great, but whatever you guys want.

MR. FELDEWERT: Can I ask for a break just so I can go down the hall?

HEARING EXAMINER BRANCARD: Sure, let's take a ten-minute break. How is that?

MR. FELDEWERT: Yes, sir.

HEARING EXAMINER BRANCARD: Thank you.

(Recess taken.)

REPORTER: We are ready to go.

HEARING EXAMINER BRANCARD: Excellent. So Mr. Feldewert, I believe you have two more witnesses. What are you thinking about timing here?

MR. FELDEWERT: I'm optimistic we can finish in the next two hours.

HEARING EXAMINER BRANCARD: All right.

MR. FELDEWERT: All depends on how many questions you guys ask.

HEARING EXAMINER BRANCARD: I don't have many questions. All right. Please proceed with Witness Number 3.

MR. FELDEWERT: Thank you, Mr. Examiner. We'll call Tony Troutman.

TONY TROUTMAN

(Sworn, testified as follows:)

DIRECT EXAMINATION

BY MR. FELDEWERT:

Q. Mr. Troutman, I ask that you please state your and spell your name, and then I would -- for the record -- and then identify by whom you are employed and in what capacity.

A. My name is Tony Troutman. First name is T-o-n-y. Last name is T-r-o-u-t-m-a-n. I'm employed by Oxy USA which is a subsidiary of Occidental Petroleum and I'm a geologist.

Q. And how long have you been a geologist with Oxy?

A. About seven years.

Q. And have your responsibilities included the Permian Basin?

A. That's been my primary area of responsibility for the entire seven years.

Q. Okay. And Mr. Troutman, you have previously testified before this Division; is that correct?

A. I have.

Q. And your credentials have been accepted and made a matter of public record?

A. Yes, they were.

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

A. I am.

Q. And have you conducted a geologic study of the proposed injection zone underlying the acreage to be unitized?

A. Yes, I have.

MR. FELDEWERT: I would retender Mr. Troutman as an expert witness in petroleum geology.

MR. CLOUTIER: No objection from XTO.

HEARING EXAMINER BRANCARD: Thank you. So admitted.

BY MR. FELDEWERT:

Q. Mr. Troutman, I have up on the screen what has been marked as Oxy Exhibit Number 7, and more particular, I've turned to Page 71 of that exhibit. And first off, Mr. Troutman, that Exhibit 7 is the form C-108 that's filed with Oxy's application; correct?

A. Correct.

Q. Okay. And when I go to Page 71, and look at Pages 71 through 82, I see in the bottom left-hand corner, is that your signature?

A. Yes, it is.

Q. And in these Pages 71 through 82, did they contain the geologic statements that you prepared and certified for each of the proposed injection wells?

A. Yes.

Q. And these statements accurately reflect your testimony and opinions for purposes of this hearing?

A. Yes, they do.

Q. Is it correct in here that Oxy seeks to unitize for purposes of this injection project and for the development the Bone Spring formation in the Upper Wolfcamp units?

A. Yes, that's correct.

Q. And with respect to the Upper Wolfcamp intervals, are they -- how do you refer to them?

A. The Upper Wolfcamp, I believe, called the XY and the A, and we are including both of those because we consider them, both the XY and A, to be part of the same reservoir.

Q. And is there then below the A, is there a Wolfcamp B interval as in boy?

A. There is. And the Wolfcamp B is an impermeable layer.

Q. Is it productive currently?

A. No, it is not productive.

Q. Does the Wolfcamp B, as in boy, does that serve as a good lower confinement barrier for this injection project?

A. Yes, it does.

Q. Looking at the unitized area in the unitized intervals, do these intervals extend across the acreage that Oxy seeks to improve within the unit?

A. Yes, they do.

Q. And in your opinion, is the proposed injection zone sufficiently confined to prevent the migration of injected gas or fluids?

A. Yes, it is.

Q. And have you created exhibits to support these conclusions?

A. I have.

Q. If I go back to Oxy Exhibit Number 2, and go to Slide 16, is this a cross-section map that you created?

A. It is.

Q. What are you showing here?

A. The red box is the proposed boundaries of the unit. The pink line from A to A prime is the outline of my cross-section that you will see on the next slides. The pink star is the type log that we have used to represent this section on this unit.

Q. So you have analyzed the logs from four wells; is that right?

A. Yes.

Q. One of the wells that's utilized is actually in the unit area?

A. Yes.

Q. And is that the same type log that is used to define the proposed interval -- I'm sorry, the proposed unitized interval in the unit agreement?

A. Yes, it is.

Q. In your opinion, are these logs representative of the geology in the area?

A. Yes, they are.

Q. If I turn to what's been marked as Slide 17, is that the cross-section A to A prime?

A. That is the cross section A to A prime.

Q. And blow this up a little bit. What are you showing on here, Mr. Troutman?

A. The brown bar on the far left shows the completed interval of our proposed unit. Moving to the right, I have identified the benches of the existing wells that we will be injecting into. So we have lower Avalon, First Bone Spring

Sand, Second Bone Spring Sand, and Third Bone Spring Sand and Wolfcamp XY.

And then the second well to the right in the cross section is the type log.

Q. In your opinion, does this confirm that the unitized interval extends across the -- area?

A. Yes, it does.

Q. Now, in studying this zone, this injection zone, is there a confinement barrier -- I think you mentioned at the bottom -- is there also a confinement barrier at the top of this proposed injection zone to prevent the migration of injected gas or fluids?

A. There is. The upper part of the Bone Spring above the Lower Avalon is composed of impermeable carbonates and shales.

Q. If I go to what's been marked as Slide 18, does this identify those confining barriers into more detail?

A. It does.

Q. And how are they identified?

A. The gray bars on the left-hand side of the well logs show the, both the upper and lower barriers and internal barriers within the Bone Spring.

Q. And just to reorient us, this particular log that you show on here, is that the well log from the well within the unitized area?

A. It is.

Q. One that has a star on it previously?

A. Yes.

Q. And this is a blow-up of that log moving from top to bottom, left to right?

A. Exactly.

Q. Okay. And you continue to show here with the red dots the location of the existing producing wells which be converted to periodic injection wells?

A. Right.

Q. Looking at this in the confined barriers, do you have any concern about Oxy's ability to keep the injected gas or fluids in the approved or in the proposed injection zone?

A. No.

Q. If I then turn to what's been marked as Oxy Exhibit 19, what, what does it contain?

A. This is a structure map of the 25 foot contour intervals of the top of the Bone Spring, which is also the top of the Avalon.

Q. And is there any, to the best of your -- preparing a similar structure map for the bottom of the zones as reflected in Slide --

A. Yes, this is base of the Wolfcamp A or the top of the Wolfcamp B with the same 25 foot contour intervals.

Q. In looking at the structure maps on Slides 19 and 20, do you observe any faults or any pinchouts or any other geologic impediments that would prevent this acreage from being efficiently developed in a unit fashion?

A. No, I do not.

Q. And do you see any faulting or other geologic concerns with the, the injection operations under the proposed unit area?

A. No, I, I don't.

Q. And you have, Mr. Troutman, as reflected in your statements, you've done analysis on the fresh water zones in the area?

A. I have.

Q. And in your opinion, are there sufficient geologic barriers to prevent the migration of gas or fluids from reaching these fresh water zones?

A. Yes, I believe there are.

Q. And if I turn to what's been marked as Slide 21, does this reflect your analysis of the top of the proposed injection zone and the lowest fresh water source?

A. Yes, it does.

Q. How much vertical separation is there between the top of the injection zone and the deepest fresh water acquifer?

A. At least 6000 feet.

Q. And what do you observe about the geology between the top of the proposed injection zone and the deepest fresh water aquifer?

A. Well, as I mentioned, the top of the Bone Spring contains permeability barriers within it. Then as you move upward from that, you encounter the Castille formation, which is an anhydrite, and the Salado formation which is a salt. And both the Salado and Castille together are probably 2500 feet thick. And the shallowest fresh water is above the Salado, so the shallowest fresh water is well protected.

Q. In your opinion, will the proposed injection project pose any threat to underground water sources?

A. No.

Q. In your opinion will the proposed injection process have any negative impact on the correlative rights of mineral owners to any shallower or deeper production zone?

A. No.

Q. In your opinion, is the granting of this application in the best interest of conservation and prevention of waste and protection of correlative rights?

A. Yes.

Q. Mr. Troutman, were Oxy Slides 6 through -- 16 through 21 prepared by you?

A. Yes, they were.

MR. FELDEWERT: Mr. Examiner, I would move the admission into evidence of Oxy Slides 16 through 21.

MR. CLOUTIER: No objection from XTO.

HEARING EXAMINER BRANCARD: Thank you. The exhibits are admitted.

(Exhibit 2, Slides 16 through 21 admitted.)

MR. FELDEWERT: That concludes my examination of this witness.

HEARING EXAMINER BRANCARD: Thank you. Mr. Cloutier, any questions?

MR. CLOUTIER: No questions, Mr. Examiner.

HEARING EXAMINER BRANCARD: First I will start with Mr. Rose Coss.

TECHNICAL EXAMINER COSS: I do not have any questions for this witness.

HEARING EXAMINER BRANCARD: Okay. Mr. McClure?

TECHNICAL EXAMINER McCLURE: Yes, I, I have limited questions, don't get me wrong. I guess my primary question then, do we believe there to be any communication between the five different formations as being in the unit in this, in this proposed project?

THE WITNESS: Within the Bone Spring itself there probably is no communication. And I'm referring to the Avalon, First Bone Spring, Second Bone Spring, Third Bone

Spring. I think those are well isolated. The Wolfcamp XY and the Third Bone Spring may have some communication.

TECHNICAL EXAMINER McCLURE: I was kind of speculating that probably, but I just wanted to confirm. I guess, so with that off-processing line, do you see any geological reason that an injection just say the Second Bone Spring would benefit a well as drilled into the Third Bone Spring?

THE WITNESS: It probably won't.

TECHNICAL EXAMINER McCLURE: Okay. Actually, I don't have any -- I think that's all my questions. Thank you, sir.

HEARING EXAMINER BRANCARD: Okay, well let me ask a dumb question. So going back to Slide 4 from the first witness who referred to something called the stimulated rock volume, which presumably the idea here is that the injection fluids will stay within this zone that was prior fractured during the initial completion operation of these wells. Am I getting this correct, Mr. Troutman?

THE WITNESS: Yes.

HEARING EXAMINER BRANCARD: Does Oxy have any data to show what the extent of this stimulated rock volume actually is underground?

THE WITNESS: We do. I don't believe we have incorporated any of it within this application. We have calculations from when we initially fracked the well to determine what volume we think we've fracked, and I think that's mostly what we go on.

HEARING EXAMINER BRANCARD: Okay. And do you have any idea of what frac lengths there are in this area?

THE WITNESS: You are really getting into an engineering question that I should probably defer from.

HEARING EXAMINER BRANCARD: All right. Fine, thank you. I can defer that. Anyway, any other questions, Mr. Rose Coss or Mr. McClure?

TECHNICAL EXAMINER McCLURE: None from me, thank you.

TECHNICAL EXAMINER COSS: None from me.

HEARING EXAMINER BRANCARD: Thank you. Mr. Feldewert, your witness.

MR. FELDEWERT: I have no further questions, so I will call our next witness.

HEARING EXAMINER BRANCARD: All right. While we are looking for, Mr. Janacek?

MR. FELDEWERT: Mr. Janacek, there we are.

STEPHEN JANACEK
(Sworn, testified as follows:)
EXAMINATION
BY MR. FELDEWERT:
Q. Would you please state your name and spell it for the court reporter, and identify by whom you are employed and in what capacity.
A. Sure. Can everybody hear me all right, first?
Q. Yes.
A. Okay, great. My name is Stephen Janacek, and that is spelled S-t-e-p-h-e-n J-a-n-a-c-e-k, and I'm employed Oxy USA, Inc.
Q. In what capacity are you employed by Oxy USA?
A. As a petroleum engineer.
Q. How long have you been a petroleum engineer with Oxy?
A. Roughly seven years.
Q. And have your responsibilities included the Permian Basin of New Mexico?
A. Yes, they have.
Q. And Mr. Janacek, you have previously testified before this Division as an expert in petroleum engineering; correct?
A. Yes, I have.
Q. And your credentials were accepted and made a

matter of public record?

A. Yes, they were.

Q. Are you familiar with the application filed by Oxy in this matter including the Form C-108 for this proposed injection project?

A. Yes.

Q. And in fact, did you oversee the assembly of this Form C-108 submitted with Oxy's application for hearing?

A. I did.

Q. And if I look as what's been marked as Oxy Exhibit Number 7, is that a copy of that Form C-108 that was filed for the application for hearing?

A. Yes, that's a copy.

Q. And is that your signature in the become of the first page of Oxy Exhibit Number 7?

A. Yes.

Q. Mr. Janacek, I observe two things about this Exhibit 7. First, it's paginated in the bottom, right-hand corner. Do you see that?

A. Yes.

Q. In the upper right-hand corner it looks like it has an OCD page number, in this case, the page number is listed as Page 5 of 87, do you see that?

A. Yes.

Q. I think that's an artifact of it being filed with

the application. When we refer to page numbers of this C-108, will we be referring to the actual page number of the form itself in the bottom right-hand corner?

A. Yes, it will be the bottom right number.

Q. Okay. Then let's turn to -- let's go to the injection well pages which begin I believe on Page 5 of this form C-108. Am I correct that for each of the 12 injection wells there are two associated pages?

A. There are.

Q. And if I look at Pages 11 and 12 of the form C-108, they relate to the Cedar Canyon 23 Federal 4H?

A. Yes.

Q. And that is the injection well that has already been approved by the Division; is that correct?

A. That's correct.

Q. Okay. Are there -- have there been or is there any changes to the diagram for this well that was approved by the Division under Order 21356?

A. There was a minor change where the packer in this application is set deeper. The original application had a packer, a proposed packer setting depth of 8100 measured depth feet. This one has it set deeper, if you go to the next page, I believe it's at 87 -- yes, 8727.

Q. And does that accurately reflect the packer setting for this existing well?

A. It does.

Q. Okay. Are these 12 wells sufficiently cased and cemented to prevent the migration of fluids out of the injection zone?

A. Yes, they are.

Q. When I look at these well diagrams, do they reflect that Oxy does not intend to use the -- lining in the tubes; is that correct?

A. That's correct.

Q. Would you please explain why?

A. Sure. So since the primary nature of this project is gas injection, we believe we don't need the lined tubing for gas injection. There -- we might have some water injection, but it's for conformance purposes only, and it's going to be short periods and small volumes of water.

If we were to install lined tubing for water injection and the conformance purposes for a short period of time, we need to pull the injection equipment, install our lined tubing and then inject water.

After that we would have to pull equipment again, because with lined tubing, you have and ID restriction and we wouldn't be able to get our gas lift valves installed and ran on wire line. So again we would need to pull the tubing and switch out our gas lift valves before we moved on to the production phase.

And these operational changes would need to be made before and during each injection cycle.

Q. In your opinion, is there any need to create those operational issues for this particular injection project?

A. No. I don't believe it's necessary.

Q. In your opinion, do you have -- are there any corrosion concerns arising out of the use of unlined tubing for this particular injection project?

A. No. We will be injecting the dehydrated produced gas, and so we don't see that as an issue or necessary for the tubing to be lined.

Q. And are you -- do you have any concerns about corrosion arising out of the limited use of produced water for these short periods of time?

A. No, we don't. If we suspect we might have an issue, we could add and manage corrosion with chemicals if necessary.

Q. So in your opinion, would the use of unlined tubing for this injection project threaten the well integrity?

A. No, it will not.

Q. Then I will turn to the area of review. You conducted that analysis; correct?

A. That's correct.

Q. And I believe it starts on Page 29 of the -- of Form C-108 filed with the Division?

A. Yes. Page 29 is the two-mile radius map.

Q. Okay. In addition to showing the two-mile radius map, does it also identify the half-mile area of review?

A. Yes, it does.

Q. And how did you develop this two-mile and half-mile -- let me step back. How did you develop this two-mile radius and then the half-mile area of review for this project?

A. Sure. We developed the radii based off of the 12 proposed injection wells and their wellbore trajectories from surface hole location to bottom hole location. We first drew a half mile along each well's well trajectory and then compiled those to create the light blue outline, and once this arrived at the half mile area of review. And then we extrapolated out the radius to two miles to get our two mile radius around the area of review.

Q. Mr. Janacek, you are familiar with the fact that the Division previously approved the injection for the Cedar Canyon 4H under R 21356?

A. Yes, I'm aware.

Q. And given the location of that particular well, was much of this area examined prior to the approval of that injection well?

A. Yes, it was.

Q. Okay. And did Oxy nonetheless go through a reexamination of that area for purposes of this hearing?

A. Yes, we did.

Q. And if I go to what's been marked as Oxy -- I'm sorry -- Slide 30 -- I'm sorry, no, Page 30, of the Form C-108, does this complete the map of the examination?

A. It does.

Q. Now, would you please explain what is reflected by the lines and the various circles that we see on here?

A. Sure. So walking through the multiple components of this map, we will first start off with the injection wells themselves. So the proposed injectors are Huff-n-Puff wells are noted here with their surface hole locations with a red circle with a number in the middle. So those are the wells numbered 1 through 12.

Then we have the well trajectories with a thick red line. And the thick red line is the approximate wellbore trajectory from surface hole location to bottom hole location.

We also see that there are some other circles on here, yellow circles which are the surface hole locations of wells identified as having a portion of their completed interval within the half mile AOR. And that half mile AOR outline is seen here in the bright blue shading.

One more note that I would like to make is you can see around the border of the map there is a gray border with some yellow circles there. That's indicative of some wells with surface hole locations off of this map area, but they have a portion of their completed interval or bottom hole location within the blue AOR area.

Q. And those were included in your analysis?

A. Yes, they were.

Q. Okay. When we take that into account, how many wells have been analyzed by Oxy in connection with this project?

A. In this project it was 79 wells.

Q. And if I then turn to Page 31 of, of the Form C-108, is this the beginning of the tabulation of well data for all of these wells penetrating the Bone Spring and the Wolfcamp formation within the area of review?

A. Yes, that's correct.

Q. I see that the Cedar Canyon 4H is listed on here as an active injection well. That's the one that was approved by the previous order; correct?

A. Yes, that's correct.

Q. The other thing I note is if you go down to Well Number 47, it reflects that this is an SWD -- oops, sorry about that.

A. Yes, Well IV 47 is an SWD that is currently permanently abandoned.

Q. It is, okay. All right. Do you know what zone it was previously disposed into?

A. Yes, the previous disposal zone was the Delaware Mountain Group.

Q. And that is shallower than the Bone Spring formation?

A. That's correct.

Q. Okay. Do any of these 79 wells that you list on here pose any concerns with the proposed injection operations?

A. No, none of them do.

Q. In your opinion, are the active wells shown on here sufficiently cased in cement to prevent fluid migration out of the proposed injection zone?

A. Yes, I believe they are.

Q. Within this area of review, how many plugged and abandoned wells did you find?

A. I believe it was 11 permanently abandoned wells.

Q. And if I go down starting at Page 34 of the form C-108, does this -- these -- and continuing on to Pages, to Page 45, do they provided well diagrams for each of these 11 plugged and abandoned wells?

A. Yes. Pages 35 through 45 show those diagrams.

Q. And was the company able, in your analysis, to

determine the top of the cement for each of these well diagrams?

A. Yes.

Q. And how was that determined for these wells?

A. It was determined with multiple methods depending upon the well file. Some of the tops of cements are calculated, some are tagged, some are circulated, and some are determined from cement bond logs.

Q. And in your opinion, are these wells sufficiently plugged and cemented to prevent fluid migration out of the proposed injections?

A. Yes, they are.

Q. I want to next turn to the topic of surface injection pressures. Okay?

A. Okay.

Q. If I go to Page 46 of the Form C-108, that page begins the discussion of the, not only the surface injection pressures, but the average daily injection rate and maximum injection rate, et cetera; correct?

A. Correct.

Q. In each case do you know if the system will be a closed system?

A. Yes, it will be.

Q. And when I move towards the -- when I look at each of these rates, look at water, look at gas, look at

CO2, the -- you seem to be proposing a range of maximum surface injection pressure for each of those injectants?

A. Yes. That's correct.

Q. Okay. To make it easy, if I go back to Oxy Exhibit 2 and I go to Slide 22, does that summarize for the examiners in one page the proposed maximum surface injection pressures for each injectant for these various zones?

A. Yes, that's what summarized on Slide 23 of Exhibit 2.

Q. Okay. Let me see, did I miss something? Oh, okay, if I go to Slide 22, does this identify how you arrived at each of those surface injection pressures?

A. Yes, it does.

Q. Would you walk us through that briefly?

A. Sure. So we went through the calculation for each fluid type for each well in this project. And we first started with the maximum allowable surface pressure for water as a basis for the other calculations.

So to calculate the maximum surface pressure for water, we multiplied .2 psi per foot times the TVD of the first perf for each well, and that was how we determined the maximum allowable surface pressure for water.

Next we moved on to the produced gas calculation, which was similar but a little bit different. We utilized information from the water calculation and we included the

.2 psi per foot gradient, and then we also included the .433 gradient, fresh water gradient to determine the maximum, maximum bottom hole gas pressure.

So once we determined the maximum bottom hole gas pressure for each well, we utilized a PROSPER model to then calculate the surface pressure and PROSPER is an oil and gas program that we use for all types of calculations, and in this case we utilized it for determining a complex scenario where we had varying gas gradient at a specific injection rate, specific injection equipment in the hole and the specific gas composition of the produced gas.

So after we ran the PROSPER model for each of the wells, we were then able to back calculate the maximum surface gas pressure from the maximum bottom hole gas pressure.

And finally we made our CO_2 calculations, and the CO_2 calculations utilize the same methodology as the gas calculation, but we made a substitute in the model, and the substitute we made was utilizing the CO_2 composition which is going to be a heavier gas than the produced gas composition.

So after all of the individual calculations were done for each of the wells, we came up with one given value for each zone and for each injected fluid. And we'll see that there is a slight variation when compared to the 4H, but we will talk to that in the next slide.

Q. This methodology that you described, is this the same methodology that Oxy utilized to arrive at the surface injection pressures approved for the existing 4H well?

A. Yes, it was the same methodology.

Q. And if I go to Slide 23, this shows the results of that methodology?

A. It does, yes.

Q. And why was there -- I noticed that you highlighted the 4H with a star and drew a box around it, why is there a difference in the CO2 injection pressure of the 4H and Second Bone Spring compared to the other wells in the Second Bone Spring?

A. Good question. So the 4H here is one of the deeper Second Bone Spring wells in this area. And as you can see, according to the third column, there's, I want to say, maybe five or six other Second Bone Spring wells in this project. So since we went with a more conservative max pressure value for each zone, we rounded down some of those values and are proposing a smaller max CO2 injection pressure for the Second Bone Spring as well as a smaller water injection pressure for the Second Bone Spring wells.

Q. So rather than 1770 as we saw if 4H, which was approved previously, to 1700.

A. That's correct.

Q. And does, does Oxy anticipate that the Division will issue an order that would contain the more conservative values of 2200 in the Second Bone for CO_2 and 1700 for water in the Second Bone Spring Sand?

A. Yes.

Q. Okay. And does Oxy have any trouble applying those more conservative surface injection pressures to the 4H?

A. No, we do not.

Q. Okay. And will that make it a little easier if all the wells in each of these zones are subject to the same conservative injection pressures?

A. Yes, that would be one less thing to keep track of.

Q. Okay. And does Oxy intend to install pressure reduction valves on the injection wells to remain within these pressures.

A. Yes, we do.

Q. Okay. Then I want to talk about the source for each of these injectants, okay?

A. Okay.

Q. If I turn to Slide 24, does this, first off, the left-hand side, does this identify the source of each of the proposed injectants.

A. Yes, it does.

Q. With the exception, of course, if there is a -- source for CO2; right?

A. That's correct.

Q. Hoping you'll have that at some point, but don't have it yet?

A. Correct.

Q. When we look at gas, what's going to be the source of the produced gas that is the primary injectant for this project?

A. It will be from some point from the Cedar Canyon Central Delivery System.

Q. Is that a system that's operated by Oxy.

A. It is, yes.

Q. And is that the same system that was approved as a source of the produced gas for the existing 4H well?

A. Yes, it is.

Q. When I look at this map to the right-hand side, how do you identify that source in the system?

A. That source is on the northern portion of this map, and it's notated with an arrow -- I'm sorry, are you talking about the gas source?

Q. Yeah, gas source.

A. Yes. The gas source is near the red star.

Q. Okay. I see a bunch of red lines. What do those reflect?

A. The red lines reflect the high pressure gas lines that will be installed as part of this project.

Q. And has Oxy provided any gas analysis in the form C-108 to support the utilization of this as the source of the produced gas?

A. Yes, we have.

Q. Okay. And in that, do you observe any issues associated with the use of that source as the injectant?

A. No, we don't.

Q. And we turn to -- if you recall -- were you here for Mr. Kaminski's testimony?

A. Yes, I was.

Q. And you're aware that the current order limits the source of the produced water to the Cedar Canyon Treating Facility?

A. Yes, that's correct.

Q. Where is that identified on this map?

A. On this map it's identified as the green rectangle at the upper part of the map.

Q. Now, this change that Oxy seeks in terms of the source of the produced water, can you use this map and identify the sources for which you seek approval?

A. Yes, I can. The additional sources of water that we are seeking approval are from four central tank battery locations, and they are marked here on the map as blue stars.

We have the Whomping Willow CTB, the Cedar Canyon 15 CTB, the Cedar Canyon Water Polishing Facility and the Cedar Canyon 22 CTB.

Q. What type of produced water is contained within the central tank batteries?

A. This is produced water from the Delaware Bone Spring or Wolfcamp formations.

Q. Would you explain the reason why Oxy seeks a change from what has been previously approved as to the source of the produced water?

A. Sure. The water from the Cedar Canyon Treatment Facility is best utilized for our frac operations. We are able to significantly reduce our fresh water consumption by utilizing produced water for the frac operations from this facility.

And with this project, since we see our primary injectant being gas and produced water possibly not being utilized or utilized infrequently, we are looking at temporary water injection. So with the temporary water injection, what that would entail would be temporary water injection lines ran from the nearest central tank battery to the well pad, and we would inject water for a couple of days and then we would breakdown all of the water injection lines from that point forward.

And also, we don't see a need to move water from the central tank battery at Cedar Canyon 22 all the way up north to a treatment facility and then move it back down for injection.

Q. If I turn to what's been marked as Slide 25 in Oxy Exhibit Number 2, did you conduct a water compatibility analysis for that Cedar Canyon 15 central tank battery, which is one of the proposed sources of the produced water?

A. Yes, we did.

Q. And is that provided in the form C-108?

A. Yes, it is.

Q. And when you examine the nature of the water and compatibility analysis, can you see any compatibility issues with utilizing that as the source of produced water for the limited injection that you intend for this project?

A. No, we don't.

Q. In conjunction with preparing for this hearing, did you then supplement the water analysis that is provided to the Division with an examination of the water not only from the Cedar Canyon 15 central tank battery but -- or the other three central tank batteries that you seek to use as a source?

A. Yes, as exhibits in this case, we have included the complete water analysis for those additional water sources.

Q. Okay. And if I turn to what's been marked as Oxy Exhibit Number 8, which I have up on the screen now, does that contain the water analysis for the Cedar Canyon WPF?

A. That's the Cedar Canyon Water Polishing Facility.

Q. And then we see another water analysis for the Whomping Willow Cedar Canyon central tank battery?

A. That's correct.

Q. And then finally a third analysis for the Cedar Canyon 22 central tank battery?

A. That's correct.

Q. And that's the one further south on the map?

A. Correct.

Q. Okay. What do these additional studies that you provided in this Exhibit Number 8 demonstrate?

A. These exhibits demonstrate that the complete water analysis of these three additional sources is very similar to that of the Cedar Canyon 15 CTB water analysis. And the Cedar Canyon 15 CTB complete water analysis was utilized as the injected fluid in our compatibility analysis test, and as a conclusion of that compatibility analysis indicating there are no scaling tendency issues.

We can also arrive at the premise that are no scaling tendencies or compatibility issues with these other water sources.

Q. So if I go back to Slide 25 -- 24, I'm sorry --

do you have any concerns with the compatibility associated with the source of the produced water from any of these four tank batteries?

A. No. No concerns.

Q. Okay. Fine. Now I want to turn to the request by Oxy to utilize dehydrated produced gas in the anular studies as opposed to just in their -- okay?

A. Okay.

Q. What does -- if I turn to Slide 26, does this identify what Oxy proposes being in the order with respect to the casing and tubing anulus?

A. Yes. The third bullet point on this slide indicates what we are proposing.

Q. That it shall be filled with an inert fluid, which is currently what's required in most of the orders, or dehydrated produced gas; correct?

A. Correct.

Q. Okay. Would you explain the benefit of allowing the use of dehydrated produced gas to monitor leak detections in the casing tubing anulus.

A. Sure. So as Mr. Kaminski stated earlier, we reduce the turn-around time between injection and production cycles, we are able to improve or maximize the benefits of this project. So if you turn to Slide 5 we can take a look at that and talk through it.

Q. Sure. There you go.

A. Thank you. So when we look at the cycling plan, and the figure on the left-hand side, we are looking at reducing our turn-around time before and after every time we switch from injection to production.

If we are able to utilize dehydrated produced gas as anular fluid, we won't have to include additional operations that would be required if we had a packer fluid requirement as fluid on the back side. So if we go to Slide 28, I can talk about the comparison.

Q. Okay. Go to Slide 28 of Oxy Exhibit 2?

A. Yes. So if you recall the Huff-n-Puff cycle, it's a period of injection first, then followed by a period of production second. And the production period has two periods.

There's a period where the well will produce under flowing conditions due to a larger bottom hole flowing pressure, and then there is a second period where we have artificial lift once the bottom hole pressure falls to a certain point. The artificial lift method here we are going to plan on utilizing is gas lift.

So after we see decline in the production after gas lift, we will then repeat the process and go back to the injection phase. So before I talk about the benefits and comparing the reduction in turn-around time with the different anular fluids, I will talk about an injection wellbore here on the right-hand side.

So here is one of the proposed injection wellbores for this project. We have the three casing strings here, the surface casing string, shallow string, intermediate string being the second shallower string, and then we have the production casing that is from surface down to TD of the wellbore or total depth of the well before.

Near the bottom of the diagram we see the perforations of this well, which are the current producing perfs and will be the injection perforations as well in this project. Then we'll focus on the tubing string inside the production casing.

And if we start at the bottom, the two black rectangles indicate the injection packer providing isolation. Then we have above that the first gas lift mandrel, and then we have multiple gas lift mandrels going up the hole that are spaced out in between our tubing.

And here I believe there was a question regarding the coupling connections from Examiner McClure, and we are going to be utilizing gas tight couplings in these tubing strings. So if we keep the gas lift set up, and we are going to be utilizing these wells as gas lift, I'm talking about how gas lift production normally occurs.

So if we are looking at this wellbore diagram during additional gas lift operations, we have gas lift injection down the casing tubing anulus, and then that injection goes through one of the gas lift valves which reside in each of the gas lift mandrels which are one-way -- one-way valves that, once in the tubing, combine the injected fluids with the produced fluids which are then held -- the produced fluids are lifted by injected fluids.

So that is how normal gas lift operations occur. So in this project, if we were required to place inert packing fluid on the back side in the casing tubing anulus during the injection phase, it would require multiple downhill equipment changes for each cycle for each well.

What we would need to do before injection begins would be to pull the equipment and place valves inside the gas lift mandrels before injection. This would ensure that none of the inert packer fluid on the back side transfers into the tubing string.

Then once the injection cycle would end, we would have a period of flowback where we wouldn't have to make any changes, but once we move on to the artificial lift phase of production, we would then again need to pull the equipment and place gas lift valves back in the mandrels before we initiated gas lift production.

So these are the additional operations that we need to take place if we were to maintain inert packer fluid in the casing tubing anulus during the injection part of this project.

So what we are proposing here to reduce turn-around time to reduce our operations, and to have -- and to maximize the benefit of the Huff-n-Puff process, so we are proposing to place gas in the anulus, and with the produced gas in the anulus, this will allow us not to make any operational changes or equipment changes downhole all because they will remain effectively the same.

Q. Mr. Janacek, so if I'm down here -- Slide 28 and you have, you have the ability to use dehydrated produced gas in your casing tubing anulus, that means you don't have to make trips to the wellbore when you are converting to water injection; right?

A. That's correct.

Q. Okay. Which reduces the, like you said, the turn-around time.

A. Yes.

Q. The other aspect of this, every time you make a trip to the wellbore, aren't you risking operational issues, problems?

A. Yes, there are, there are operational issues that we can encounter each time.

Q. No matter how careful you are, things happen when you get into wellbore and you are swapping things out?

A. That's correct.

Q. So we have the benefit of the turn-around and reduced operational concerns. But here's the next question, okay? Will the use of dehydrated produced gas in this, in the casing tubing anulus impede Oxy's ability to monitor and detect potential leaks?

A. No, it will not.

Q. Will Oxy be able to detect any potential leaks if you use dehydrated produced gas?

A. Yes, we will.

Q. In addition to that, what is -- if I go back to Slide 26 -- is Oxy, has Oxy looked at this and come up with some proposed restrictions on its ability to use dehydrated produced gas as an option to inert fluid?

A. Yes, we have some proposed restrictions for this type of operation.

Q. And would you please explain those and what they do?

A. Yes. The first proposed restriction is we will inject with a stabilized casing tubing anulus pressure of no more than 2500 psi.

Q. And how did you arrive at that number, 2500 psi?

A. So if you go to the next slide.

Q. Slide 27?

A. Yes, Slide 27, it's a breakdown of how we came to that maximum stabilized pressure of 2500 psi. So when we started looking at this use of gas as a fluid on the back side, we wanted to compare it to the normal requirements of packer fluid on the back side.

So even if you have zero surface pressure, with packer fluid on the back side in a wellbore, there is a hydrostatic gradient that exerts pressure as you go down into the wellbore.

So what we identified was, okay, if we assume all else is equal, and we have one column of gas, and we have one column of packer fluid, packer fluid being heavier, if we want to get to the same downhole pressure, we can apply a certain amount of surface pressure to have those sides of the equation be equal.

So what we did here is we looked at our shallowest well -- excuse me -- our shallowest well has a TVD packer depth of 7670 feet. And we assumed a .433 psi per foot pressure gradient which is equal to that packer fluid, and then we looked at the produced gas composition, and we were able to make some calculations with PROSPER.

So once we did that to calculation component to calculate the 2500, we, we referred again to PROSPER to model and calculate the gas gradient since it varies with depth.

And so on the left-hand side of the equation we have an unknown surface pressure that we are solving for, and then we have that produced goes hydrostatic pressure. So on the right hand side we have a calculation for the hydrostatic pressure with the column of packer fluid.

And the gas hydrostatic pressure is roughly 800 psi and the hydrostatic pressure of packer fluid is roughly 3300 psi, and solving for the unknown, that's how we came up with the 2500 maximum stabilized pressure and psi.

Q. So am I correct then that that 2500 stabilized pressure for dehydrated produced gas is the same as the pressure you would have on the packer if you utilized inert fluid?

A. That's correct.

Q. Okay. Now, in addition to providing that stabilizing pressure, does the company also come up with some notification requirements when they are using dehydrated produced gas instead of inert fluid?

A. Yes. We have some notifications requirements included as well.

Q. And those are noted in Slide 26?

A. Yes, they are.

Q. The last two bullet points?

A. Yes.

Q. Okay. Now, where did you come up with these notification requirements?

A. The notification requirements were taken from previously issued injection orders from the OCD that were in regards to gas storage projects.

Q. If I go to what's been marked as Oxy Exhibit Number 9, which I believe is our last exhibit, is this the order you are referencing?

A. Yes, that is the order.

Q. Order R 21747?

A. Yes, that's correct.

Q. Okay. And specifically there if I go to Page 5 of this order, and I go to Paragraph 13, is that where you came up with the notification requirements in resulting pressure changes?

A. Yes.

Q. Okay. Now, if I go back to Slide 26 of Exhibit Number 2, we have these stabilizing pressures for dehydrated produced gas with the notification requirements, is Oxy going to continuously monitor bradenhead pressure and the casing tubing pressure?

A. Yes, we will.

Q. And is that -- would you consider that to be enhanced leak detection efforts by the company?

A. Yes, the bradenhead pressure continuous monitoring is enhanced.

Q. Okay. If I go to Oxy Slides 29 and 30, do they

identify and explain how Oxy is going to monitor these injection wells to ensure the integrity of the wellbores during the injection process?

A. Yes, they do.

Q. Okay. If I go to Slide 29, what does this show us?

A. This slide here shows us what the proposed injection wellhead diagram will be for each of the proposed injectors. We have multiple components here listed that show how they are connected to the SCADA system that allow us to remotely monitor and control injection and other components of the well for, for safe operation.

There are multiple flow meters, flow control valves, and pressure indicating transmitters also known as PITs in this diagram, that are connected to our SCADA system that we can remotely monitor and control.

Q. When I look at this diagram, which of these safety monitoring and control devices would relate specifically to the use of dehydrated produced gas in the casing tubing anular space?

A. That would be, if you look at the diagram, the bottom right of the diagram shows two items that are tied into the casing head of the wellhead diagram. These are the PI and PIT components.

The PI component, also known as the pressure indicator, will give a readout of pressure on site there at the wellhead. And then the PIT component is a pressure indicating transmitter which will collect data and send data to the SCADA system. And these are the two ways we are able to get readouts on the casing tubing anulus pressure.

Q. Anything else about this diagram?

A. Just a note for the examiners who are in the gas storage projects previously, this is the same wellhead diagram with the blue components added for the Huff-n-Puff injection equipment. Those are the only changes here.

Q. If I then go to Slide 30, does this provide a summary of your operational plans that Oxy has put together for this injection project?

A. Yes, it does.

Q. Is there anything on here that you haven't covered yet?

A. The only thing I haven't covered is a breakdown of some of the safety devices, the last bullet point of how we are able to remotely control and monitor and operate this well remotely while maintaining safe and effective operations.

Q. Mr. Janacek, in your opinion, will the use of the dehydrated produced gas as an alternative to inert fluid in the casing tubing anulus compromise at all Oxy's ability to detect any leaking or leakage in those, in the casing tubing

or the packer?

A. No. I don't believe so.

Q. In your opinion are the injection wells on these operational systems Oxy's put together designed to safely and efficiently inject produced water or produced gas into these formations under the Juno Unit?

A. Yes.

Q. And does this injection project propose any -- pose any threat to the public or the environment?

A. No, It does not.

Q. And will the approval of this injection project promote the efficient recovery of oil underlying the Juno Unit and thereby prevent waste?

A. Yes, it will.

Q. Were the Oxy Slides 22 through 30 in Exhibit 2 prepared by you or compiled under your direction and supervision?

A. They were, yes.

Q. And Oxy's Exhibits 7, 8 and 9, you also assisted in putting them together; correct?

A. Correct.

MR. FELDEWERT: Mr. Examiner, I would move the admission of Oxy Slides 22 through 30 in Exhibit 2, and then Oxy Exhibits 7, 8 and 9.

MR. CLOUTIER: No objection from XTO.

HEARING EXAMINER BRANCARD: Thank you, Mr. Cloutier. The exhibits will be admitted.

(Exhibit 2, Slides 22-30 admitted.)

(Exhibits 7, 8 and 9 admitted.)

MR. FELDEWERT: That concludes my examination of this witness.

HEARING EXAMINER BRANCARD: Thank you. Mr. Cloutier, any questions?

MR. CLOUTIER: No, Mr. Examiner, thank you.

HEARING EXAMINER BRANCARD: Mr. McClure, any questions?

TECHNICAL EXAMINER McCLURE: I do, but I wonder if maybe you'd want to take a lunch break prior because I don't know if we can get through everything in ten minutes. I don't know what your thoughts are I guess. It doesn't matter to me.

HEARING EXAMINER BRANCARD: What is your -- Mr. Feldewert, are your witnesses okay?

MR. FELDEWERT: Well, I got a thumbs up from Mr. Janacek. He is -- Mr. Examiner.

HEARING EXAMINER BRANCARD: Is thumbs up, Mr. Janacek, up you want to keep going, or thumbs up you want lunch?

THE WITNESS: That's a good clarification question. Thumbs up I'm willing to keep going.

HEARING EXAMINER BRANCARD: So let me check with the most important person here. Mr. Baca, how are you doing?

REPORTER: Let's keep going and get out of here.

HEARING EXAMINER BRANCARD: All right. Mr. McClure, go for it.

TECHNICAL EXAMINER McCLURE: Sounds good. If you want to break at any point, just let me know.

Now, you mentioned that you are using gas tight couplers in your tubing strings. Is your definition of that based upon the number of seal points in the threads?

THE WITNESS: No. It's based off of what the production engineers told me we were going to be using. I don't know if it's based off of the type of plugs that you are referring to.

TECHNICAL EXAMINER McCLURE: Okay. Well, essentially a standard high drill thread has three different seal points to stop the migration of fluid. Anyway, that's neither here nor there. I just wasn't familiar with BTF 6 for sure, I didn't know for sure if that was an off brand of a high drill because I know each tubing company has their own -- anyway, that's neither here nor there. You don't know the answer to that question then; correct?

THE WITNESS: No. I don't know how those are determined to be a gas type, but our plan is, since a lot of these wells are, you know, ESP and B producers, before we start the first phase of the injection, we'll change out to make sure all of the couplings and connections are gas type.

TECHNICAL EXAMINER McCLURE: Very good. Very good. A question I have for you, we are talking about thread couplers, but when we start looking at gas lift valves, I guess how much confidence do you have in their ability to only act as a check valve instead of two ways I guess?

THE WITNESS: We've got very high confidence in that. We are able to utilize actually 10 K check valves now after talking with some of our suppliers of gas lift equipment that they say we won't have any issues with high pressures in that check valve holding.

TECHNICAL EXAMINER McCLURE: Okay. I guess a question I have then, so the primary limitation as far as time to switch between injection and production, that's pretty much you're talking about this running a slick line and changing out the OR valves; correct?

THE WITNESS: It depends upon what valves we end up going with, but yes, we would -- we would probably end up using slick line as the operational method.

TECHNICAL EXAMINER McCLURE: So how much -- how much -- I don't how much you use for your rig time, but how much -- how much time do you think it takes to do those operations in terms of just rounded out, like a day of down time? A half a day of down time? Two days of down time? That sort of thought process.

THE WITNESS: Sure. So the answer is it depends. Optimally if operations go smooth on these wells, operations usually take two to three days if everything is smooth, but that's usually not the case. We end up having a little bit of issues on some of these valves, and so on average we'll see operations take about a week. And then, you know, sometimes there's occasions where we can't get a specific valve, so we end up defaulting to rig operations to pull all the equipment out.

TECHNICAL EXAMINER McCLURE: Okay. I guess as far as the -- you stated that you would still be able to have adequate leak detection from your tubing, or I guess your reservoir, whatever at the anulus, I guess, would you agree that a substantially higher volume would have to be leaked into the casing before you would detect it if it was gas rather than some sort of liquid?

THE WITNESS: Yes. You would have a different type of response because we are comparing incompressible fluid to a compressible fluid.

TECHNICAL EXAMINER McCLURE: Yeah. I gotcha. Now, as far as your swing in pressures, I guess -- let me back up. Would you foresee that you will have a change in pressure with the day and night cycle as the temperature of your injection gas fluctuates?

THE WITNESS: What are you referring to there, Mr. Examiner?

TECHNICAL EXAMINER McCLURE: During the day in the middle of summertime when your injection gas is say ten to 20 degrees warmer than it is after in the night and into the early morning.

THE WITNESS: I don't know.

TECHNICAL EXAMINER McCLURE: Don't you think so?

THE WITNESS: That's a good question I don't know the answer to.

TECHNICAL EXAMINER McCLURE: Okay. The primary reason I was wondering is because in those prior gas capture projects we noticed a fluctuation between day and night cycles, and the presumption is that the temperature was giving us 2- to 300 pounds difference in our anulus based upon injection temperatures.

Having said that, I'm not sure that that would be different whether you have a fluid or whether you have a gas or a liquid in your anulus, having said that.

I guess, under the current order, how was your operational plan to proceed there since there is a requirement of packer as -- I mean liquids. Was it just to go with the operation of having to switch out valves; is that correct?

THE WITNESS: That is correct.

TECHNICAL EXAMINER McCLURE: I gotcha. So then your new proposal isn't necessarily so much the previous proposal won't work, it's just that this new proposal would be more efficient; is that correct?

THE WITNESS: It's more efficient. There is less operational risk with less trips in the hole, and there is also what we've seen based off of previous projects a better response with that quicker turn-around time.

TECHNICAL EXAMINER McCLURE: I hear you. I guess the thought process is, even if the leak is small enough that you wouldn't necessarily need too much of a pressure change, would that not allow for the gas to no longer be dehydrated and allow some sort of liquid into the back side if it were to be full of gas?

THE WITNESS: Yeah. If there was any type of leak, that's correct, it would no longer just be the dehydrated gas on the back side.

TECHNICAL EXAMINER McCLURE: And do you think you could accurately detect a small -- I mean a minute enough leak to rehydrate that gas?

THE WITNESS: We believe so, yes.

TECHNICAL EXAMINER McCLURE: Without even taking into account if there were to be a pressure change due to temperature of the injection gas?

THE WITNESS: No. We hadn't considered that prior, but that's something we can work through the operations team with and talk about how that would impact our analysis and observations.

TECHNICAL EXAMINER McCLURE: Yeah, because I mean, like what we were looking at on the gas capture -- have a continuous leak in the stream of injection gas in the anulus, so it's not like you are going to get it rehydrated by minute leaks in that instance which is what you are citing for your proposal of limitation or proposal of requirement. I don't recall how we worded that.

But regardless, at that point you would contact us in terms of your pressure monitoring if you follow what I was referring to there.

THE WITNESS: Yeah, was that a question there, Mr. Examiner?

TECHNICAL EXAMINER McCLURE: I -- good point. It was more of a statement, I guess, just, yeah, filling you in on what our thoughts would be and why this wouldn't necessarily be -- these heat limitations wouldn't be directly applicable to this operation I guess. So it really wasn't a question, I apologize, it was more of a statement, I guess.

THE WITNESS: Yeah. I would like to clarify --

you've got a good train of thought there thinking about what could leak. And if we are in the injection phase of this project, and we are injecting the dehydrated produced gas, and we have dehydrated produced gas on the back side, if there was to be a leak, I would expect it would be dehydrated gas moving into the casing tubing anulus.

TECHNICAL EXAMINER McCLURE: You make a very good point. My own only concern there which is the -- when you put down your block or what I will refer to as water injection, and I don't know how long of a duration or the volume of water that we would have which is actually one of my other questions and we can lead into that, but when we do put water into these wells in order to block off -- maybe that's the wrong terminology to use -- but when we do put water into these wells, what sort of volumes are we expecting for that?

THE WITNESS: The volumes are fairly small. I don't know them off the top of my head, but I would estimate it's only a couple of hundred barrels of water injected.

TECHNICAL EXAMINER McCLURE: So then the duration would be very small in terms of less than an hour or what are we thinking for that injection?

THE WITNESS: Yes, possibly less than an hour. And it, it could be with that, that temporary injection line, it could even be with a series of pump trucks that have taken water from those production facilities over to the wellhead location.

TECHNICAL EXAMINER McCLURE: Yeah, because that would be the -- yeah, I'm with you.

I guess another question I have which is more just a statement, I guess, rather than a question for you, would be, I'm not quite sure what our limitations are on these because on the gas capture, that doesn't fall under an EUR or injection project per se.

So the rules within 426, we are not necessarily looking at each and every one of them, any part of 426 does require inert fluids. And in addition to that, I'm not sure if that's directly based on a primary agreement, so I don't know if we can even do so, allow this, but that's something we will have to look in on our end.

And there is no question there for you, I was just putting out what my own thoughts are and what we are looking at here.

THE WITNESS: Another thing, Mr. Examiner, if we think about the inert fluid and that being incompressible fluid in a liquid state, that seems more so targeted towards injection of water. In the instance here where we are injecting the gas, and if we were to have a column of water in the back side, we will -- we could have potential for a gas bubble to migrate if there was a leak, and that gas bubble would migrate up through the packer fluid on the back side and get to expand and that creates another potential operational issue as well once that gas bubble hits the surface.

TECHNICAL EXAMINER McCLURE: Oh, absolutely, especially if you are not closely, closely monitoring it, then you are exactly right, that could be an issue for sure but seeing whatnot, that could potentially happen.

But having said that, I mean, those inert liquid fluid thought process, I mean, it has ramifications for the ensuring the mechanical integrity. I think there is some safety factors involved as well in having a fluid sitting on your back side in that if you were to reach your packer, you would already have a better kill fluid, better than gas, at the very least.

Although having said that, in this particular instances, we are looking at gas capture -- or, excuse me -- gas lift where you have a method to circulate your kill fluid wherein with a normal tubing packer you wouldn't necessarily have that. But anyway, that's not really a discussion, I guess, to be sitting here having in the middle of a hearing.

Let me see, I'm trying to think of what topic I want to move into. I guess trying to stay more in line with like the tubing and packer, I think in this initial order there is approval to set the packer greater than the 100 foot above the perfs, 100 foot measured depth above the perfs. My presumption is that you are also requesting the same for these 11, I think, additional wells it was?

THE WITNESS: Yes.

TECHNICAL EXAMINER McCLURE: Correct? Okay. And was your thought process in your request to be above the -- defining zone for each formation? Or are you requesting it be above the upper-most defining zone?

THE WITNESS: In here I will need to look at it and see, but I believe the request was within a hundred feet of the kickoff point. I don't know if Mr. Feldewert could check on that for us.

TECHNICAL EXAMINER McCLURE: If it's A kickoff point then it would be individual to each well, okay, I do see that. I apologize, that is in the previous order right there and I'm with you.

If this were to be changed into a CO2 injection would you foresee a -- or tubing packer to protect more of your casing, or what's your thought there?

THE WITNESS: Our thought there is, since the CO2 will be dehydrated, we're not as concerned. So we don't see a need to lower the packer setting depth unless during the case project we see issues start to arise.

TECHNICAL EXAMINER McCLURE: Well, below the deck would be your tubing packer. I guess how can you -- how can you -- I guess why, why would you think it would be dehydrated below the deck of the packer?

THE WITNESS: Because if we have a constant stream of CO2 injected, we will have CO2 below that packer.

TECHNICAL EXAMINER McCLURE: Correct, but when you go to start producing the well with that same casing and not be exposed to both the CO2 and your reservoir fluid?

THE WITNESS: Yes, it would be then.

TECHNICAL EXAMINER McCLURE: Okay. Yeah. And which is a two to three times greater duration than your injection duration, so that --

THE WITNESS: Yes. So in that instance we could consider adding some type of corrosion inhibitor to our injected fluids there to help mitigate any, any concerns.

TECHNICAL EXAMINER McCLURE: You think that you could -- you think inject could enough corrosion inhibitor to stop a CO2 well from eating out the casing; is that correct?

THE WITNESS: I would have to deal with my team on that and see what possibilities were. But if we, if I jump back to before the chemical discussion, I would like to say that we, we are going to try and set our packers as deep as possible in these wellbores. That kickoff point is just kind of a cutoff point for where they are going to be placed, but our intent here is to set them as deep as possible and as close to the perforations to protect as much of the production casing as we can.

TECHNICAL EXAMINER McCLURE: Well, I guess if we were to lose the casings, these the tubing packers as having collapsed, whatever, you can't get back into it, what do you foresee as a plan for plug and abandonment at that point then? What are you going to do with the well?

THE WITNESS: To remedy the well we'd have to get with our operations team and see what they recommend for a fix, but we haven't thought through the extent of CO2 operations to that extent because the potential for a CO2 force -- CO2 source is further on down the line.

TECHNICAL EXAMINER McCLURE: But having said that though, we are talking about in this current order that is issued has the ability for you to go straight into that, I guess, and I'm just not sure there should be additional limitations placed in this order with the thought process that CO2 would be a part of it or whether we need to revisit it at the point that CO2 is initiated.

THE WITNESS: Yes. We've got a lot of CO2 operations in the basin, so that is something that we could look into further with our team internally and discuss things continuously.

TECHNICAL EXAMINER McCLURE: Yeah. Yeah. I am aware on that side of things. I was unsure if we brought that discussion into this project as of yet.

I guess, continuing on the topic of the CO2 injection, considering that there is a duration that you perceive this project lasting until your returns are diminished to the point that it's not longer economical to continue with the Huff-n-Puff, is the thought process that at some later point you would then re-initiate it using C02 rather than produced gas?

THE WITNESS: That's a good question. I don't know if the, if the team would like to do so or not.

TECHNICAL EXAMINER McCLURE: I just wasn't sure because I don't know if there is any actual like termination date for this or if we are -- or if there is any indication as to when we would consider the project to be over with. It seemed like I -- I'm not sure if there's -- built in there and there is not one that's like proposed.

I guess based upon the projects in Texas, as far as a duration for the produced gas, are we looking at a time frame of two to three years? Is that kind of correct? That's what it seems like I was understanding, but maybe I'm incorrect.

THE WITNESS: Yeah, I believe so. For the individual wells it's probably a two-to-three-year cycle.

TECHNICAL EXAMINER McCLURE: And then was there a request to add additional wells to this project? I thought somebody said something, but I didn't hear it in this hearing.

THE WITNESS: Yes, that was one of the requests.

TECHNICAL EXAMINER McCLURE: And would the proposal be to add wells within this current defined project area within these formations?

THE WITNESS: Potentially, yes.

TECHNICAL EXAMINER McCLURE: Okay. Are you also requesting for areas outside of this project area?

THE WITNESS: I would have to review our application and see what the initial language stated.

MR. FELDEWERT: This is Michael Feldewert. No, it would be -- which would be the project area. (Garbled audio) certainly to allow authorization of additional wells administratively which is allowed by the rules assuming that you give the proper notice.

TECHNICAL EXAMINER McCLURE: Yeah, so you are just looking at the additional wells getting added in the project essentially which would be in the same project area then?

MR. FELDEWERT: Yes.

TECHNICAL EXAMINER McCLURE: Very good. I was just thinking along the lines of the fact that we are talking about a unitized area of the BLM and how we would add additional wells, but very good, very good, that answers my question there.

(Inaudible) model, but there was something else I wanted to talk about first, if we get into that because I'm starting to draw to a close here. In your pressure model that you used, essentially it's just novel analysis program; correct?

THE WITNESS: I believe so, yes.

TECHNICAL EXAMINER McCLURE: Okay. And then was dynamic pressure loss computed in there for your maximum allowable surface pressure?

THE WITNESS: I don't know the answer to that one. I would have to refer to the modeler for that answer.

TECHNICAL EXAMINER McCLURE: Okay. I was going to say I'm, based off of how you had stated earlier, I'm assuming that it was because you mentioned that injection rate was considered; correct?

THE WITNESS: Yes. We looked at different injection rates and how it impacted the surface pressure calculations.

TECHNICAL EXAMINER McCLURE: Okay. Okay, yeah, yeah, then they would -- then that means that they would have had to used dynamic pressure otherwise there would be no difference in rate considering your friction essentially.

THE WITNESS: Oh, yes, you are referring to friction, yes.

TECHNICAL EXAMINER McCLURE: Oh, yes, I apologize, yeah, okay, I think I called it dynamic pressure. I meant frictional pressure loss due to the restrictions in the tubing.

Now, were those calculations -- do you know if those calculations were run with bare steel version plastic coated?

THE WITNESS: Yes, they were bare steel.

TECHNICAL EXAMINER McCLURE: Okay. And I don't recall -- this is a pretty technical question, I don't know if you know the answer to this off the top of your head, either, but you don't happen to know if the friction in plastic coated is greater or less than bare steel? I don't remember that.

THE WITNESS: I don't recall.

TECHNICAL EXAMINER McCLURE: Yeah, okay, we can -- that's what Google is for I guess.

THE WITNESS: I do know that we -- we looked at the calculated surface pressure and multiple injection rates, you know, with the highest rate being 15 million gas injected per day. And we also looked at the case of something as low as 2 million gas being injected per day.

And since we went with the final outputs of an injection rate of 2 million per day, the frictional pressure -- the frictional pressure losses for were very, very small, and I don't think that the roughness had much of an impact there.

TECHNICAL EXAMINER McCLURE: Yeah. And then gas I wouldn't think it would -- I think water would have greater, but maybe I'm thinking of the equations incorrectly there.

THE WITNESS: Yes, we didn't use -- we didn't use the PROSPER model to calculate any type of water injection pressure.

TECHNICAL EXAMINER McCLURE: That's right, okay. Just for future consideration, you actually did run your numbers more specifically than you would have needed to, our actual presumed fracture pressure gradient is 0.65, you would have used 0.633, I think, right?

THE WITNESS: Uh-huh.

TECHNICAL EXAMINER McCLURE: Yeah. So you could have ran those at 0.65, but just for future, but that's typically on the conservative side of things. In regards to -- would my assumption also be correct that in that, that analysis, that you did use your maximum allowable surface pressure or your proposed maximum allowable surface pressure as the surface pressure for running that model; correct?

THE WITNESS: Could you repeat that again?

TECHNICAL EXAMINER McCLURE: Okay. Well, your density of your fluid column is obviously going to change based upon what your surface pressure is when you are running the hole. Was your proposed maximum allowable surface pressure being put there for surface pressure in this instance?

THE WITNESS: Yes, it was. So that would have been put, and then we looked to see how that changed our, our calculated bottom hole pressure and then adjusted that surface pressure so we got to that bottom hole pressure.

TECHNICAL EXAMINER McCLURE: Okay. Was any consideration made for those pressures going to be required for your miscibility or did you just -- or were you essentially targeting the fracture gradient of 0.65 there?

THE WITNESS: We were essentially targeting the gradient that we used of the .2 plus the .433.

TECHNICAL EXAMINER McCLURE: But is the presumption correct that with that as a maximum the miscibility level is going to be below that, though. Is that correct?

THE WITNESS: Yes. I believe the miscibility point is below that.

TECHNICAL EXAMINER McCLURE: And then the selection of these wells to be added here, it's essentially -- I mean, they were based essentially on the area of wells within the unitized area rather than the wells that would benefit each other; correct?

THE WITNESS: Could you repeat that again, I'm sorry?

TECHNICAL EXAMINER McCLURE: Yeah, I apologize. When I put out my questions, they make sense in my own head but may not make sense once I state them.

THE WITNESS: That's okay.

TECHNICAL EXAMINER McCLURE: In the selection of the wells that you included within this project, would it be correct to state that they don't necessarily benefit each other and that they are actually injecting into entirely different formations that doesn't have any communication between them?

THE WITNESS: Yes. This Huff-n-Puff process is more so the -- is a benefit to the individual wells. It's not like a line drive project where we are looking at sweeping and moving oil between offset wells.

TECHNICAL EXAMINER McCLURE: Okay. So then the, so then the wells to be included, they were included because they fell within the this tract of land then. Is that essentially the reasoning for the wells you selected?

THE WITNESS: They are included -- yes, they are in the tract of land and we are also planning on Huff-n-Puff operations on each of these wells.

TECHNICAL EXAMINER McCLURE: Due to their production value getting below potentially 100 barrels a day or whatnot as I stated earlier?

THE WITNESS: Yes, yes. One of the --

TECHNICAL EXAMINER McCLURE: Criteria?

THE WITNESS: Criteria. There was a lot of different criteria we had to look at.

TECHNICAL EXAMINER McCLURE: Of course, of course, yeah. The project is many engineering hours spent on it, I'm sure.

Let's see, I'm -- I actually think that that may be the end of my questioning. Thanks a lot for your time.

THE WITNESS: Thank you, Mr. Examiner.

HEARING EXAMINER BRANCARD: Thank you, Mr. McClure. Mr. Rose Coss, any questions?

TECHNICAL EXAMINER COSS: Yeah, and I'll be brief. Thanks, Mr. Janacek. It's nice to see you again.

So if I am -- Oxy doesn't foresee any potential mechanical integrity issues arising from this operation with the wells. Is it at all worried about the injection pressures and harm to these wells or --

THE WITNESS: No, we don't. In the gas storage projects we pressure test these wells at fairly high values before they are produced, and we also pressure test them if their injectors -- so we don't see that as an issue.

TECHNICAL EXAMINER COSS: So just to check that box and moving on, and so the last bit of my question really has to do with comparing and contrasting this with the capture pilot project.

So could you, could you compare and contrast them for me? I know in the gas capture pilot projects you say that there will be no -- there will be no impact on reservoir, on ultimate recovery, but in this case there will be. So could you dive into some of those reasons and maybe some of the compare and contrast the gas accounting between the two types of projects and regarding any, any effects with flaring and kind of does this reduce that in any way. I don't imagine it will, but if you could just give me an opinion.

THE WITNESS: Sure. I can, I can definitely speak to that. So when we look at a gas storage project, we're looking at lower injection rates and lower injection pressures. Whereas, with the Huff-n-Puff project here, we are looking at a really high injection rate for a longer period of time and a really high injection pressure.

And what we are trying to -- the pressure we are trying to overcome or surpass is that of the miscibility pressure which is where the reservoir engineer, Mr. Kaminski showed you that magical stuff down the hole.

I'm not the reservoir engineer, but that's the point at which we start to see the benefits of injection with, with Huff-n-Puff. And that is a comparison to that of an ungassed source then.

So, yes, the gas storage is a lot shorter in time line, smaller injection rates and smaller injection pressures.

TECHNICAL EXAMINER COSS: Sure, okay. And I guess that was my understanding, but just for the record. And then is there any differences in how this gas is accounted? It's almost -- it's a different system; right?

THE WITNESS: Yes, so this is a different gas accounting methodology that we agreed upon with the BLM regarding this project and that's because of the nature of the different types of injection.

TECHNICAL EXAMINER COSS: Sure. And in terms of the venting and flaring, I guess it probably doesn't interact in that arena at all?

THE WITNESS: No, it does not.

TECHNICAL EXAMINER COSS: Okay. So I just wanted to, to check all those and voice them. And other than that, Dean has kind of answered all the questions I might have had -- or asked. So with that I yield.

THE WITNESS: Thank you. Good seeing, Mr. Examiner Rose Coss again.

TECHNICAL EXAMINER McCLURE: There was a topic I forgot to bring up, if I may.

HEARING EXAMINER BRANCARD: Mr. McClure, go ahead.

TECHNICAL EXAMINER McCLURE: I forgot to re-ask, did you have communication in regards to changing -- in regard to the pool boundaries with one of our district geologist in with regard to this project?

THE WITNESS: Yes. Whenever we were initially planning the project, we had some discussions.

TECHNICAL EXAMINER McCLURE: Do you recall what came out of those discussions?

THE WITNESS: We had some questions regarding the required filings that we asked the geologist, but we didn't get any responses back.

TECHNICAL EXAMINER McCLURE: And was your questions related to the changing of the pool boundaries?

THE WITNESS: Yes. We were -- it was unclear to us as to whether or not we needed a new pool to be submitted or created for this application but after further discussions with our regulatory counsel and other Oxy regulatory individuals, we determined it wasn't necessary or a critical path of this project.

TECHNICAL EXAMINER McCLURE: One more thing on our end as well, but in your review it seemed like your suggested pool to change the wells into has required vertical limits on it for all of those wells to fall within that pool.

THE WITNESS: Yeah, it would be the vertical limits, potentially corresponding with the unitized interval.

TECHNICAL EXAMINER McCLURE: Yes, but when I -- with your unitized are also includes the Wolfcamp which is not within the Bone Spring Pool. I guess what my question is -- thank you, Mr. Feldewert -- of these three different pools here, is it your understanding that there wasn't a vertical limitation other than being within the Bone Spring as in was it your understanding that one or more of these pools wasn't, per se, the Upper Bone Spring or the Avalon or something like that?

THE WITNESS: Our -- could you repeat that question? Sorry.

MR. FELDEWERT: I might be able to --

TECHNICAL EXAMINER McCLURE: Okay. Go ahead.

MR. FELDEWERT: I can tell you with a fair degree of confidence that the Pierce Crossing Bone Spring Pool, Code 50371, encompasses the entire Bone Spring Formation. Same is true for the Corral Draw Bone Spring Pool and the Pierce Crossing Bone Spring East Pool, it's more of a surface geographic segregation, not a vertical segregation.

TECHNICAL EXAMINER McCLURE: Okay. And that there essentially answers my question for sure as to the deviation in the three pools -- I was going to look into it on my side too, clearly. But I guess, what my question then becomes, is it your understanding then that the Pierce Crossing Bone Spring East has a horizontal bound within the entire project area then, and that these other pools are overlapping pools, essentially?

THE WITNESS: Yes.

TECHNICAL EXAMINER McCLURE: That's why I almost wondering may be the case what happened here.

MR. FELDEWERT: As you know, Mr. McClure, we don't have access to the super secret pool event, so I'm not exactly sure how that all laid out, but it looks like they, you know, kind of come together, so to speak, on the surface within the Juno Unit.

TECHNICAL EXAMINER McCLURE: Oh, yes, yes, exactly. I know that you would have access to, which would be the dedicated acreage in each spacing unit, and if it is -- well has overlapping spacing units or the same spacing unit, but it's in two different pools, then they are dedicated and overlapping pools at that point.

MR. FELDEWERT: Right. All I know is that the Division signed the 2H -- the 1H initially to the Corral Draw Bone Spring and the 2H to Pierce Crossing Bone Spring, and the remaining wells to the Pierce Crossing Bone Spring East. Why? I'm not 100 percent sure.

TECHNICAL EXAMINER McCLURE: I was going to say that. That essentially answers my question there in that -- yeah, that answers my question then. Thank you. I think that concludes my questioning.

THE WITNESS: Thank you.

HEARING EXAMINER BRANCARD: So let me just ask a dumb question, Mr. Feldewert. I assume that with all of these pools there are pool orders?

MR. FELDEWERT: Not to my knowledge, Mr. Examiner. I guess, for example I could go to -- and find a -- they are not special pool rules, let me put it that way.

HEARING EXAMINER BRANCARD: Right. That's what I'm thinking of yes.

UNIDENTIFIED SPEAKER: For the Bone Spring we don't need special pool rules, but for the Purple Sage, yes.

HEARING EXAMINER BRANCARD: Good clarification. Okay. And do you have redirect or -- I have general questions of yourself, Mr. Feldewert, and any of your witnesses that want to jump in, but do you have redirect for this witness?

MR. FELDEWERT: I think just one, Mr. Examiner.

REDIRECT EXAMINATION

BY MR. FELDEWERT:

Q. If I may go to Slide 26. Mr. Janacek, I know

we're asking for something knew from the Division here in connection with the, you know, the standard language that has been there for some time about the use of inert fluid, and we have kind of a unique project here.

But the one thing I want to point out to make sure I understand, Mr. Janacek, is that it's not like we are asking this -- that the company has, you know, examined this and come up with some proposed restrictions on their use of dehydrated produced gas that the company has come up with, one of which you point out is that the company will, as a condition of using dehydrated produced gas, continuously monitor the bradenhead pressure and the casing tubing anulus pressure; correct?

A. That's correct.

Q. And in your opinion, will you be able to determine whether there is a leak that is impacting the integrity of the wellbore if you use dehydrated produced gas under these restrictions?

A. We believe so, yes.

Q. Okay. And you have even put in restrictions where not only will you take a look at it, but you will notify the Division if you see any pressure changes, as well as, for example, the bradenhead of a hundred psi?

A. That's correct.

MR. FELDEWERT: That's all the questions I have.

HEARING EXAMINER BRANCARD: Thank you. I guess I would throw also at the technical examiners for you to think right now or in the next few minutes whether there was anything specific in terms of information, documents, et cetera, that you have requested today from the applicant that you would like to see post hearing.

I did not hear any, but again, I have to admit I wasn't always listening carefully.

TECHNICAL EXAMINER McCLURE: Mr. Brancard, I don't -- I don't know of anything that I need in addition here.

TECHNICAL EXAMINER COSS: And I didn't ask for anything.

HEARING EXAMINER BRANCARD: Well, that's pretty impressive. We usually have a whole list of things from one applicant when we have one of these hearings.

Okay. Let me try to ask my questions here quickly since I have already run out of coffee and snacks here.

So, Mr. Feldewert, it seems that you're applying for two things here as I read through your application, and let me just tell you what I think they are, and then you can clarify because you are the applicant.

First is the one which is a request for injection authority under Part 26 as whatever you'd like to call this project, but it's obviously a mechanical under 8F, Pressure Maintenance, Secondary Recovery, Enhanced Oil Recovery Injection Projects. Correct? You have 11, a total of 12 producing wells that you want to get injection authority for. Is that correct?

MR. FELDEWERT: Yes, Mr. Examiner, in a fashion that's similar to what was approved under the Division Order 21356, one of them was within the wells in this area, that being 4H.

HEARING EXAMINER BRANCARD: And for the purpose of this request under Part 26, your project area is this 960-acre area which, based on a question I asked one of your witnesses -- was stated in Rule 26 where a project area shall comprise the spacing units that will operate wells and operate where the injection wells are located.

MR. FELDEWERT: So you look at the map, the project area location here, Mr. Examiner, you will see that makes sense here. Right?

HEARING EXAMINER BRANCARD: Right.

MR. FELDEWERT: You look at the wells in the location, it will be the unitized.

HEARING EXAMINER BRANCARD: So those, those -- all of those wells in the area are existing producing wells that have spacing units, and you want to combine them into a project area under Part 26?

MR. FELDEWERT: As part of the injection authorization as necessary, yes, because I'm guessing that's what happened under the original proceeding in that fashion.

HEARING EXAMINER BRANCARD: Right. And now this is double the size.

MR. FELDEWERT: And more -- yes, that's right. That's right. Yeah.

HEARING EXAMINER BRANCARD: And I'm going to --

MR. FELDEWERT: I will assume -- it's consistent, in my recollection, when we bring these cases to the Division. They keep asking, okay, are you going to eventually unitize.

And this is the first step in that process to -- so that we can get the capital, the company can get the capital, and to get the -- it makes sense for the company, so this is an initial step in that direction.

HEARING EXAMINER BRANCARD: So one of your requests is for the ability to add additional wells, and so I guess my question is a factual one, within this 960 acre area, does Oxy have other producing wells that are not part of the current application.

MR. FELDEWERT: They do not, and you know, I -- without referencing -- as you know Subpart F6, which authorizes the director to administratively -- additional wells if you meet the notice requirements. And now if we have to specifically ask for that, I don't know, but I just think it's a good idea so that parties who are receiving notice are on notice that, you know, there may be additional rules added over time so to this particular project.

HEARING EXAMINER BRANCARD: So they will be outside the project area so you would have to expand the project area.

MR. FELDEWERT: They would be within this unitized area?

HEARING EXAMINER BRANCARD: Meaning drill new wells?

MR. FELDEWERT: Within the unit area, potentially, yes.

HEARING EXAMINER BRANCARD: Okay. So there would be a period of time -- and then go into this enhanced recovery phase?

MR. FELDEWERT: I think -- I think the way -- and I'm thinking out loud here -- my assumption would be, your unitized area, which is for production and, you know, this Huff-n-Puff project, whether they would drill additional injection wells, or whether they would drill additional producing wells, or whether they would be a well that would kind of be a hybrid, I don't know, but to me if they need to seek injection authority, they would have -- they could come administratively under F6.

HEARING EXAMINER BRANCARD: Okay. Thank you. That clarifies it.

So we'll get to the second part of what I think you are asking for in a second, but just to be clear that for injection authority, you come up against the abandonment provision because what your intent today is that this project, as I read in one of your slides, will last three to five years, that could be after your one year of getting the whole thing going. But at some point the decline curve on the Huff-n-Puff process is such that it's no longer worthwhile to continue to do the injection.

And so under, you know, 12C -- non-injection means that your injection authority terminates automatically.

MR. FELDEWERT: That would be for one year of non-injection for the project. So in terms of you would have 12 months, so long as they injected into one of those wells within that period of time, my understanding is that we preserved the injection authority as needed.

HEARING EXAMINER BRANCARD: Right, that's correct, yes.

So the second part where I think you are asking for, and I'm reading in that unit agreement that you provided, is that you're asking for a creation of a statutory unit under the Statutory Unitization Act?

MR. FELDEWERT: No.

HEARING EXAMINER BRANCARD: That is specifically -- in your unit agreement with the BLM, so I'm not sure why you are not doing that here.

MR. FELDEWERT: We, we are not seeking statutory unitization because this is a voluntary.

HEARING EXAMINER BRANCARD: Okay.

MR. FELDEWERT: We are seeking approval first of the Juno Bone Spring Unit, which is really kind of a hybrid between an exploratory and an enhanced recovery unit, kind of falls in between, but we are not -- this is not forced unitization, this is a voluntary unit.

HEARING EXAMINER BRANCARD: Okay. And so you would like the OCD to approve then this BLM unit agreement?

MR. FELDEWERT: We are before the Division on a request to approve the unit agreement because there is a 40-acre tract, and it's my understanding that traditionally the Division has issued an order approving the unit agreement, unit operations where there is fee or state land involved.

HEARING EXAMINER BRANCARD: Does BLM require the state to approve this unit agreement?

MR. FELDEWERT: Good question. I am -- I don't see that, for example, in the BLM approval letter. If you look at Exhibit 6, it doesn't say that this is subject to approval by the Oil Conservation Division.

But we do recognize that in the unit agreement that was utilized -- that was developed by the BLM in the -- in Oxy, there is a whereas clause that we had seen in exploratory units that references the Division's -- take a look at it here. Whereas it says the Division -- is authorized to approve this agreement in the Conservation Divisions hereof. Looking at the whereas -- first whereas clause on Page 3 of Exhibit 5.

Now, I think that as you and I both know there has been somewhat of an evolution as to when this applies and when this does not apply.

HEARING EXAMINER BRANCARD: That whereas clause is missing a parenthesis, so it took me a while to figure out what it means.

MR. FELDEWERT: Now, does that mean the BLM -- I don't know, I don't know. But out of an abundance of caution, we are here with an application before the Division to approve this June Unit. And that's why we presented the geologic testimony showing that these targeted intervals extend across the proposed unitized area and there were no faulting, pinchouts, et cetera.

HEARING EXAMINER BRANCARD: So the last paragraph in Section 5 of this unit agreement, Page 9, does refer to the Statutory Unitization Act. But I guess you could read that if the Statutory Unitization Act was applied, then you, the applicant, would have the ability to use this agreement as the unit agreement under the Statutory Unitization Act.

MR. FELDEWERT: I'm sorry, Mr. Examiner, which page are you on?

HEARING EXAMINER BRANCARD: Page 9 of the BLM agreement, last paragraph under Section 5.

MR. FELDEWERT: Page 9?

HEARING EXAMINER BRANCARD: Yeah, BLM agreement. Weird pagination, sorry.

MR. FELDEWERT: Yeah, did you print it out in letter format?

HEARING EXAMINER BRANCARD: No, I just have the version that's on line.

MR. FELDEWERT: Okay. Let me go to the exhibit here.

HEARING EXAMINER BRANCARD: So in Section 5, right above Section 6, so you go to the end of Section 5 --

MR. FELDEWERT: All right. So here we are (inaudible)

REPORTER: Mike, you are going to have to speak up, please.

MR. FELDEWERT: Sorry. Am I at the right page, Mr. Examiner?

HEARING EXAMINER BRANCARD: Yes, that's the paragraph.

MR. FELDEWERT: Notwithstanding anything in this section to the contrary?

HEARING EXAMINER BRANCARD: Yes.

MR. FELDEWERT: I don't disagree with your reading. I can just tell you that Oxy, because it's 100 percent working interest, and because this is going to be a purely voluntary agreement, that we did not need to go through the process that is required for forced unitization.

HEARING EXAMINER BRANCARD: Okay. Well, that's good to know because that's quite a process.

MR. FELDEWERT: It is quite a process, that's right.

HEARING EXAMINER BRANCARD: We have lots of finding in our order to get you this.

MR. FELDEWERT: I'm making life easier on you.

MR. VAN LIEW: I can provide a little bit of color since I drafted the agreement as well.

HEARING EXAMINER BRANCARD: Mr. Van Liew?

MR. VAN LIEW: Yes, sir. I'm sorry, I should have introduced myself. This was -- the form we used is a pretty standard form with the BLM. They prefer to change as little as possible.

We incorporated, yes, we incorporated that in the event we have to resort to that, but, again, like Mr. Feldewert said, we don't plan on resorting to any kind of compulsory pooling because that would be a much longer, lengthy process and would require a separate hearing distinct from what we are doing today.

MR. FELDEWERT: You meant forced unitization.

MR. VAN LIEW: Yes, forced unitization.

HEARING EXAMINER BRANCARD: Okay. Thank you. So again, I guess the reason I brought up the question about the abandonment issue is the unitization concept appears to be something that's going to go on forever regardless of whether you are producing from enhanced recovery or from normal recovery, right, because you explained this unit is a combination exploratory and enhanced recovery, whereas, the injection authority is something that will land at some point where the injection is after the injection begins.

MR. FELDEWERT: Right.

HEARING EXAMINER BRANCARD: So I mean, as long as you understand that, that what's going on here in terms of authority that are two are not necessarily coterminous.

MR. FELDEWERT: You are absolutely correct, Mr. Examiner, and I appreciate the clarification. And Oxy will need to keep that in mind as they proceed with this project.

HEARING EXAMINER BRANCARD: Okay. All right. Great, and so I think that was the questions I had. Where do we want to go from here? I'm throwing this open to you, Mr. Feldewert, and to our examiners here.

MR. FELDEWERT: Well, I think the nice thing is you had somewhat of a blueprint in the prior order which is why I included it as our Exhibit Number 1. Obviously, we had requested some modifications to that language, to the language in the order and I hope we did a decent job of trying to identify where I saw the changes would be needed.

So that would seem to be a good starting point for seeing what we hope will be approval of this application.

HEARING EXAMINER BRANCARD: Well, I think you're right, I think not having to go through the Statutory Unitization Act makes drafting much easier.

So, Mr. McClure, Mr. Rose Coss, are you willing to take this case under advisement with the proviso that if questions come up, we may address them to Oxy?

TECHNICAL EXAMINER McCLURE: I would.

TECHNICAL EXAMINER COSS: I'm on board as well.

HEARING EXAMINER BRANCARD: All right. So any problems with that, Mr. Feldewert? Are you okay with that?

MR. FELDEWERT: I'm fine with that, yes, sir.

HEARING EXAMINER BRANCARD: All right. Mr. Cloutier, any questions, concerns at this point?

MR. CLOUTIER: No, Mr. Hearing Examiner, our principle concerns, we appreciate the willingness of the Oxy team and Mr. Feldewert to meet with us, discuss our concerns and resolve them in advance of this hearing. So I appreciate their cooperation, and otherwise we are supportive of this application.

HEARING EXAMINER BRANCARD: Great, thank you, Mr. Cloutier. And then clean up your desk, it looks really bad on Zoom calls.

MR. CLOUTIER: I will get on that for you, Mr. Brancard.

MR. FELDEWERT: How can Mr. Brancard have such a clean desk behind him? That's my question.

HEARING EXAMINER BRANCARD: Because I don't have a real desk -- left the office to Zoom. Mr. Feldewert doesn't have a camera angled at --

REPORTER: Are we off the record, Mr. Chairman?

HEARING EXAMINER BRANCARD: We are all done, Mr. Baca, I appreciate your willingness to stick with us through this whole process. With that, Case 22183 will be taken under advisement subject to any questions that the examiners may have of the applicant going forward.

MR. FELDEWERT: Thank you very much for your time.

HEARING EXAMINER BRANCARD: Thank you all for hanging with us here today.

(Hearing concluded.)

STATE OF NEW MEXICO
COUNTY OF BERNALILLO

REPORTER'S CERTIFICATE

I, PAUL BACA, New Mexico Certified Court Reporter, do hereby certify that I reported the foregoing virtual proceedings in stenographic shorthand and that the foregoing pages are a true and correct transcript of those proceedings to the best of my ability.

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.

I FURTHER CERTIFY that the Virtual Proceeding was of poor to good quality.

Dated this 21 day of October 2021.

/s/ Paul Baca
____
PAUL BACA
License Expires: 12-31-21