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: 21046

APPLICATION OF CML EXPLORATION LLC
FOR APPROVAL OF A WATERFLOOD PROJECT,
LEA COUNTY, NEW MEXICO.

# REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

FEBRUARY 6, 2020

SANTA FE, NEW MEXICO

This matter came on for hearing before the New Mexico Oil Conservation Division, EXAMINERS FELICIA ORTH, KATHLEEN MURPHY and PHILLIP GOETZE, on Thursday, February 6, 2020, at the New Mexico Energy, Minerals, and Natural Resources Department, Wendell Chino Building, 1220 South St. Francis Drive, Porter Hall, Room 102, Santa Fe, New Mexico.

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A P P E A R A N C E S

For the Applicant:

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I N D E X



W I T N E S S E S



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

HEARING EXAMINER ORTH: Let's take a break and then call 21046.

(Recess taken.)

HEARING EXAMINER ORTH: Let's come back from the break, please. We are back after a short break, and the next matter I will call is 21046. Ms. Hardy?

MS. HARDY: Good morning, Dana Hardy and Andy Blanco on behalf of the applicant CML Exploration. We have three witnesses. Our first witness is Kyle Kana.

HEARING EXAMINER ORTH: Are these all your three witnesses? If each of you would raise your right hand.

Do you and each of you swear or affirm that the testimony you are about to give will be the truth, the whole truth and nothing but the truth.

WITNESSES: (Collectively) Yes, I do.

HEARING EXAMINER ORTH: Thank you.

KYLE DAVID KANA

(Sworn, testified as follows:)

DIRECT EXAMINATION

BY MS. HARDY:

**Q. Could you please state your name.**

A. Kyle David Kana.

**Q. Where do you reside?**

A. Austin, Texas.

**Q. What is your position with CML Exploration?**

A. Land manager of West Texas and New Mexico.

**Q. Are you familiar with the land matters for CML's application for approval of the Maljamar Cisco waterflood project?**

A. Yes.

**Q. Have you previously testified at a Division hearing.**

A. No.

**Q. Given that, can you please summarize your educational background and experience in the oil and gas industry?**

A. I have a bachelor of arts in economics from University of Texas at Austin. I have been employed as a landman since 2005. Employed as an in-house landman with Patterson Petroleum since 2006 and CML Exploration since it was formed in 2007. I have a -- I'm a certified petroleum landman with the American Association of Professional Landmen.

MS. HARDY: Madam Examiner, I tender Mr. Kana as an expert in petroleum land matters.

HEARING EXAMINER ORTH: Any questions about his qualifications?

EXAMINER GOETZE: No questions.

HEARING EXAMINER ORTH: So recognized. Thank you.

BY MS. HARDY:

**Q. Mr. Kana, what approval is CML seeking in this case?**

A. We would like to implement a waterflood project and inject to the Beams 15 State Number 3 well. We would also like the ability to administratively approve any subsequent injectors in the waterflood project.

**Q. Can you please identify the document in front of you that's marked as Exhibit 1?**

A. That is a plat of the project area and the ten wells within it.

**Q. What is the total acreage of the project area?**

A. 640 acres.

**Q. Was this map prepared under your supervision?**

A. Yes.

**Q. How many leases are included within the project area?**

A. Just one. It's State of New Mexico B2229-1.

**Q. And does that lease consist of 100 percent of the mineral interest within the waterflood project area?**

A. Yes.

**Q. And I think you said that CML currently operates ten wells in the project area?**

A. Yes.

**Q. And which well is the initial injector?**

A. The Beams 15 State Number 3.

**Q. Will additional injection wells be added at a subsequent time?**

A. Yes.

**Q. Has CML communicated with the New Mexico State Land Office regarding the project?**

A. We did. We inquired as to whether or not it was necessary to seek State Land Office approval for the project area. However, we were told it was not since there was only one lease, there is nothing to communitize.

**Q. In that regard, can you please identify the document marked as Exhibit 2?**

A. Yes. This is the e-mail from Scott Dawson at the State Land Office confirming we do not need a unitization agreement.

**Q. Thank you. Let's talk about the unit operating agreement.**

A. Okay.

**Q. Is that the document that's been marked as Exhibit 3?**

A. It is.

**Q. Is this a true and correct copy of the unit operating agreement?**

A. Yes.

**Q. Does the agreement set out the standard**

**provisions for management of the unit?**

A. Yes.

**Q. Does it identify the rates and fees for the working interest owners?**

A. Yes.

**Q. And does it provide a methodology for making elections and voting?**

A. It does.

**Q. Does it also set out the applicable accounting procedures?**

A. It does.

**Q. Does Exhibit A to the agreement identify the acreage and working interest owners?**

A. Yes.

**Q. And are all of those owners committed to participating in the project?**

A. Yes, 100 percent.

**Q. And what is the unitized interval?**

A. It is the Cisco Formation, as well as defined in Exhibit A as subsurface interval commencing at the stratigraphic equivalent of 10 8 60 and ending at 11 4 98 as shown on the log of the Abenaki 10 State Number 1.

**Q. Can you slow down just a little bit so the court reporter can get it?**

A. Sure.

**Q. I know it's hard to remember. Okay. Can you identify the document in front of you that's marked as Exhibit 4?**

A. That is a spreadsheet I prepared calculating the unitized working interest of the working interest owners. It is prepared using a formula that was proposed to us by Stephens Engineering who is an independent consultant that created the report that will be introduced later.

**Q. Does Exhibit 4 establish the shared expenses that will be allocated to the working interest owners?**

A. Yes.

**Q. And I think you said earlier you have 100 percent commitment from each owner?**

A. We do.

**Q. In your opinion, is the application of the revenue interests and the share of the working interest fair and reasonable and protective of correlative rights?**

A. It is. It is calculated based on 5 percent credit for a number of usable wells within the area, 25 percent credit for floodable reservoir volume, and 70 percent credit for future primary reserves.

**Q. Mr. Kana, can you please identify the document in front of you that's been marked as Exhibit 5?**

A. That is the C-108 for the Beams 15 State Number 3.

**Q. And is this a true and correct copy of the C-108?**

A. Yes, it is.

**Q. Will other witnesses from CML testify about the substance of the C-108?**

A. They will.

**Q. Did CML publish notice of the C-108?**

A. Yes, we did. It is Page 22.

**Q. And that includes the affidavit of publication for the administrative application?**

A. Correct.

**Q. And did CML also provide a C-108 to the affected parties within one-half mile of the boundary?**

A. We did. We provided it to the State of New Mexico, to Angell Number 2 Family Limited Partnership and ConocoPhillips.

**Q. Are those notices included in the C-108 application?**

A. Yes.

**Q. And are they -- where are they located?**

A. They are beginning at Page 24.

**Q. Did CML receive notice of any objections to this application?**

A. No, we did not.

**Q. Can you please identify the document before you that's marked as Exhibit 6?**

A. This is notice of the hearing that was provided to the same affected owners.

**Q. That notice was provided by my office; correct?**

A. Correct.

**Q. And it was provided under your direction?**

A. Correct.

**Q. And is Exhibit 6 a true and correct copy of the hearing notice letter?**

A. It is.

**Q. And the return receipts were provided for each --**

A. Yes.

**Q. -- party; correct?**

A. Correct.

**Q. Okay. So all the letters were received?**

A. They were.

**Q. Did CML also provide notice to the surface owners?**

A. Yes. The surface owner of the Beam Well is the State of New Mexico, however there is a surface owner within the 640-acre project area being Angell Number 2 Family Limited Partnership that was provided notice.

**Q. Okay. So all the affected parties received notice?**

A. Yes.

**Q. And in addition to that fact, was notice of**

**today's hearing also published?**

A. It was. That is Exhibit 7.

**Q. Okay. And that's the affidavit of publication?**

A. Correct.

**Q. For this hearing? Is this a true and correct copy of the affidavit of publication?**

A. Yes.

**Q. So based on this information, is it your determination that all the affected parties received notice?**

A. It is, yes.

**Q. Mr. Kana, in your opinion will the proposed project serve the interests of conservation, the prevention of waste, and protection of correlative rights?**

A. Yes.

MS. HARDY: Madam Examiner, I move the admission of Exhibits 1 through 7.

HEARING EXAMINER ORTH: Exhibits 1 through 7 are admitted.

(Exhibits 1 through 7 admitted.)

MS. HARDY: That's all I have for this witness in questions.

HEARING EXAMINER ORTH: Ms. Murphy, do you have questions?

EXAMINER MURPHY: I don't have questions, but thank for attending.

THE WITNESS: Thank you.

HEARING EXAMINER ORTH: Mr. Goetze?

EXAMINER GOETZE: Most of my questions were answered, so I have nothing further.

HEARING EXAMINER ORTH: Thank you. Thank you, Mr. Kana.

MS. HARDY: Our next witness is Darla Spiers.

DARLA RENEE ROSS SPIERS

(Sworn, testified as follows:)

DIRECT EXAMINATION

BY MS. HARDY:

**Q. Can you please state your full name for the record?**

A. Darla Renee Ross Spiers.

**Q. Where do you reside?**

A. Austin, Texas.

**Q. What is your position with CML Exploration?**

A. Geologist.

**Q. Are you familiar with the geology matters that pertain to CML's application?**

A. Yes.

**Q. Have you previously testified at a Division hearing?**

A. No.

**Q. Given that, would you please summarize your**

**educational background and professional experience in the oil and gas industry?**

A. I have a bachelor's degree in geology from Hardin-Simmons University in Abilene. I worked 14 years at Omni Petroleum where I started while I was in college as a geotech and transitioned to a geologist and I have been with CML for 20 years as a geologist.

MS. HARDY: Madam Examiner, I tender Ms. Spiers as an expert in petroleum geology.

HEARING EXAMINER ORTH: Questions on the qualifications?

EXAMINER GOETZE: No questions from me.

EXAMINER MURPHY: None from me.

HEARING EXAMINER ORTH: Thank you. She is so recognized.

MS. HARDY: Thank you.

BY MS. HARDY:

**Q. Ms. Spiers, you performed a geology study of the land that's the subject of the CML's application; is that correct?**

A. Yes.

**Q. And can you please identify the document before you that's marked as Exhibit 8?**

A. It's a preliminary waterflood study done by Stephens Engineering.

**Q. Was a survey prepared by Stephens for CML?**

A. Yes.

**Q. And are you familiar with its content?**

A. Yes.

**Q. Is Exhibit 8 a true and correct copy of the study?**

A. Yes, it is.

**Q. Have you relied in part on the information that's provided in this study?**

A. Yes.

**Q. And will the study also be addressed by our next witness, Mr. Von Roeder?**

A. Yes.

**Q. What formation is targeted for unitization?**

A. The Cisco.

**Q. Can you provide a general overview of the geology?**

A. Yes. The proposed unit is located north of the Delaware Basin.

HEARING EXAMINER ORTH: Ma'am, if you would speak up.

BY MS. HARDY:

**Q. You have a soft voice.**

A. Sorry. The proposed is unit is located north of the Delaware Basin in the northwestern shelf in an area

where carbonate buildup and porosity and permeability can be sufficient to be protective.

**Q. Are there confining layers above and below the injection interval?**

A. Yes.

**Q. Can you generally describe their components?**

A. They have tight limestones above and then shale and tight limestone below.

**Q. Are the underlying and overlying formations impermeable to contain the injection within the target interval?**

A. Yes.

**Q. Can you please identify the document before you that's marked as Exhibit 9?**

A. This is a structure map of the project area.

**Q. And what does that map depict? What does it show?**

A. This is showing a structurally high nosing that's developed in the area of regional southeast dip, a closure map along the southeast margin of the proposed interval.

**Q. And can you identify the document that's marked as Exhibit 10?**

A. This is an isopach map of the project area.

**Q. And what does that map show?**

A. This is an isopach of the gross injection

interval, showing a thickening of gross interval, but does not reflect where the porosity has developed.

**Q. And can you identify the document that's marked as Exhibit 11?**

A. This is a cross section through the proposed interval, proposed unit.

**Q. Were each of these exhibits prepared under your direction and supervision?**

A. Yes.

**Q. Can you explain what the cross section shows?**

A. This is a west-east stratigraphic section of porosity logs through the proposed unit. It's hung on the base of the Cisco proposed injection interval, which is shown as the green line. And the isopach map we just looked at is from this marker up to the top of the Cisco 1 proposed interval which is the blue line that you see.

The active production perfs are shown in red. And the section shows the continuity of porosity intervals across the proposed units. And between these two markers you will see the top Cisco lower which is shown as a purple line.

And I would like to refer back to the Stephens survey for Exhibit 8, Pages 15 and 16. And those will be -- column maps, and these are based on log calculations that Stephens Engineering did that delineate the upper and lower

porosity intervals and these maps better show how the porosity is contained within our proposed unit, and it also helped to better define the appropriate optimum injection well.

EXAMINER MURPHY: Where is that? I'm sorry.

THE WITNESS: Page 15 and 16.

MS. HARDY: Exhibit 8.

EXAMINER MURPHY: Thank you.

BY MS. HARDY:

**Q. Ms. Spiers, based on this information, is it your assessment that the target interval is continuous and persistent throughout the project area?**

A. Yes.

**Q. And based on your analysis, is it your opinion that the waterflood operation will be contained within the unit?**

A. Yes.

**Q. In your opinion, is this area a good candidate for waterflood?**

A. Yes.

**Q. Can you summarize the reasons why?**

A. Yes. The porosity intervals are laterally developed across the proposed unit and are vertically contained above and below for the proposed injection interval.

**Q. Are there any faults or geologic impediments that would impede an efficient waterflood project in this area?**

A. No.

**Q. Let's talk a little bit about the protection of fresh water. Are there any fresh water zones within the project area?**

A. Yes. Above 300 feet.

**Q. Are there any fresh water zones below the injection interval?**

A. No.

**Q. Did you research the USGS National Water Information System regarding wells located within a half mile of the project area?**

A. Yes, and all were above 300 feet.

**Q. Are there any fresh water wells shown within one mile of the proposed injection well?**

A. Yes. We have two wells that were shown on the map that was submitted with the C-108.

**Q. And that has been submitted as Exhibit 5; correct, the C-108?**

A. I believe so. Yes.

**Q. And if I can get a page number of the map.**

MR. VON ROEDER: Page 6.

**Q. Is that a map you just referenced on Page 6 of the C-108?**

A. Yes.

**Q. And have you provided water samples from those two wells?**

A. Yes.

**Q. And are those water samples included at Pages 20 and 21 of the C-108?**

A. Yes, they are.

**Q. In your opinion, will the proposed injection threaten any source of fresh water in the area?**

A. No.

**Q. Can you please identify the document before you that's marked as Exhibit 12?**

A. This is a certification that I have examined the geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the injection zone and any underground sources of drinking water.

**Q. Ms. Spiers, in your opinion, is the granting of CML's application in the interest of conservation, the protection of correlative rights, and the prevention of waste?**

A. Yes.

MS. HARDY: I would move the admission of Exhibits 8 through 12.

HEARING EXAMINER ORTH: Okay. Exhibits 8 through

12 are admitted.

(Exhibits 8 through 12 admitted.)

MS. HARDY: I have no further questions for this witness.

HEARING EXAMINER ORTH: All right. Thank you. Are there questions for Ms. Spiers?

EXAMINER MURPHY: I do have a couple of questions. On Page 15, the isopach map, it shows features and one of the features is right there at the Beams injection well. Are there any sort of algal mounds or something. They appear to be -- I mean, it's not a flat surface. There appears to be some topography in those.

THE WITNESS: Yes, these are algal mounds, stratigraphic --

EXAMINER MURPHY: There is a fill in the algal mounds.

THE WITNESS: Yes, ma'am.

EXAMINER MURPHY: So the Beams 15 will be the first injector?

THE WITNESS: The Beams 15-3.

EXAMINER MURPHY: So what are the receptors going to be? Are you -- I mean, I know you have several wells in that area, but are you going to target a couple of specific injectors?

THE WITNESS: That will better be addressed with

the engineering part of this, but this well was picked because it should be able to target five different wells around it. You can see on the cross section the different porosity intervals, and Beams 3 is the third one on that, and you can see how the porosity intervals on that will connect in with the other wells in the area.

EXAMINER MURPHY: And where was the porosity -- I kind of heard you guys talking about that, but I was --

THE WITNESS: That was the cross section.

MS. HARDY: Exhibit 11, I believe, is the cross section.

EXAMINER MURPHY: So you're not concerned that above and below this formation that, that there's a sufficient density -- there's a sufficient stratigraphic part that will contain the water.

THE WITNESS: For the injection?

EXAMINER MURPHY: Yes.

THE WITNESS: It will be contained vertically?

EXAMINER MURPHY: Yes, because on Page 6 of the -- I think it was the application, one of the oil and gas zones was the Wolfcamp that's 10,100 to 10,900 feet, which is only a couple of hundred feet above this injection interval.

THE WITNESS: Uh-huh.

EXAMINER MURPHY: So you're not concerned that

the water won't migrate vertically into oil and gas zones?

THE WITNESS: I don't believe that it will.

EXAMINER MURPHY: I don't have any more questions.

HEARING EXAMINER ORTH: Mr. Goetze?

EXAMINER GOETZE: One follow-up question. As far as porosity cutoff, what did you use for your isopachs?

THE WITNESS: Five percent.

EXAMINER GOETZE: Five percent. Okay, no other questions. Thank you.

HEARING EXAMINER ORTH: All right. Thank you. Anything further, Ms. Hardy?

DEAN DEAN: No, Madam Hearing Examiner.

HEARING EXAMINER ORTH: All right. Thank you, Ms. Spiers.

THE WITNESS: Thank you.

MS. HARDY: The next witness is Mr. Nolan Von Roeder.

HEARING EXAMINER ORTH: Would you have him spell the last name please?

NOLAN VON ROEDER

(Sworn, testified as follows:)

DIRECT EXAMINATION

BY MS. HARDY:

**Q. Sure. Can you please state your full name?**

A. Nolan Max Von Roeder.

**Q. Can you please spell your last name?**

A. V-o-n and then a space R-o-e-d-e-r.

HEARING EXAMINER ORTH: Thank you.

**Q. Mr. Von Roeder, where do you reside?**

A. I reside in Snyder, Texas.

**Q. What is your position with CML Exploration?**

A. I am the area petroleum engineer.

**Q. Are you familiar with the engineering matters that pertain to CML's application?**

A. Yes, I am.

**Q. Have you previously testified in a Division hearing?**

A. No, I have not.

**Q. Given that, would you please summarize your educational background and professional experience in the oil and gas industry?**

A. I have a bachelor of science degree from Texas Tech Engineering, a petroleum engineering, Texas Tech University. I began my career as an engineer for Patterson Petroleum in 1988, and I was employed there for 19 years.

CML Exploration was founded in 2007 and was basically just a spin-off from Patterson UTI. So we retained the same wells and all the same fields. I have been working there for 12 years. I basically plan and

manage all drilling completion and production operations for all of CML's wells in southeast New Mexico and the Permian Basin.

MS. HARDY: Madam Examiner, I tender Mr. Von Roeder as an expert in petroleum engineering.

HEARING EXAMINER ORTH: Questions about his qualifications?

EXAMINER GOETZE: No questions.

EXAMINER MURPHY: No.

HEARING EXAMINER ORTH: Thank you. He is so recognized.

BY MS. HARDY:

**Q. Mr. Von Roeder, did you prepare the C-108 which has been marked as Exhibit 5?**

A. Yes, I did.

**Q. What is the injection interval for the Beams 15 State Well?**

A. It's the Cisco Formation from 11,029 feet to 11,127.

**Q. And what is the proposed rate of injection?**

A. We are proposing an average rate of 600 barrels a day, with a maximum of 1000 barrels a day.

**Q. And what is the proposed injection pressure?**

A. We would like to have an average 1200 psi, with maximum of 3000 psi.

**Q. And do you plan to stimulate the wells?**

A. Yes, we plan to pump 6000 gallons of 15 percent hydrochloric acid just to clean out any scale or debris that may be around the perforations.

**Q. And have you provided wellbore schematics for the Beams 15 State Well?**

A. Yes, I have. On Page 5 of the C-108.

**Q. And that's Exhibit 5?**

A. Yes. Exhibit 5, Page 5.

**Q. Can you generally describe the main points regarding conversion of the well to injection --**

A. Basically we plan to convert a rod pump producing well to injection by removing all the pumping equipment. We will set two cast iron bridge plugs with 35 feet of cement on top of each below the perfs to further isolate the bottom portion of the hole.

Next we'll, acidize as previously mentioned. Then we will run an injection packer on fiberglass lined 2 7/8 inch tubing. This will be a closed system. No fresh water will be added at any time to make up volume.

**Q. And what do you -- will you run an MIT test prior to commencing injection?**

A. Yes, we will.

**Q. During injection will you monitor pressure?**

A. Yes.

**Q. In your opinion, is the well adequately equipped for injection?**

A. Yes, I believe it is.

**Q. In your opinion, is the construction of the well adequate to protect fresh water and other hydrocarbon bearing zones during waterflood operations?**

A. Yes. If you will note the wellbore diagram that we were talking about on Page 5, Exhibit 5, the 13 3/8 casing is set at a depth of 1557 feet and cement surface with 1250 sacks of cement. The 9 5/8 casing is set to 4615 and again is cemented to surface with 1500 sacks of cement. To go further, the 5 1/2 production casing is set at 13,110 cement first stage with first with 1160 sacks. We sat a DV tool at 7519, cemented that with another 750 sacks of cement.

So the top of the cement behind the 5 1/2 is 3170 feet from surface as confirmed by cement bond log. And that's 1445 feet overlap in the 9 5/8. So I think this well is constructed very adequately to contain injection in the Cisco.

**Q. Mr. Von Roeder, let's talk about other wells in the area of review. Can you turn to Page 12 of the C-108, please. Does that map depict all wells within one-half mile of the proposed injection well?**

A. Yes, it does.

**Q. Have you provided information regarding the well system within the one-half mile of the area that penetrates the injection zone?**

A. Yes. You can see those on Page 7 through 9 of the C-108.

**Q. Are there any active wells in the area of review other than CML's wells?**

A. No, there are not.

**Q. And you provided the wellbore schematic for the inactive wells?**

A. Yes, I have. On Pages 10 through 11 of the same exhibit.

**Q. Have you identified any remedial work that will be required in advance of waterflood operations to protect any other zones?**

A. No, I have not.

**Q. And I think the other witnesses have mentioned CML may plan to add additional wells in the future for injection?**

A. Yes, that is a possibility.

**Q. Have you identified which wells to be converted at some point in the future?**

A. Several wells could be candidates. Stephens Engineering Study, Exhibit 8, has suggestions on Page 47. The main point they suggest is to wait and watch for

response from the initial injector and convert a few other wells as needed as their primary production declines.

**Q. Mr. Von Roeder, let's talk about water compatibility. What formation will be the source of the injection fluid?**

A. The Yeso and Abo produced water will be utilized from other wells that we operate in the immediate area. These Cisco wells make very little water at this time. It's mostly just a solution gas drive.

**Q. Do you have a chemistry sample of the source water?**

A. Yes. That is on Page 14 through 16 of the C-108, Exhibit 5. These samples were taken about three and a half years ago when we first started looking at possible injection, and we did not have a sample of the Cisco water mixed in with these analysis.

**Q. And did you subsequently obtain an analysis of the -- a more recent analysis of the water?**

A. Yes, that would be Exhibit 13. This is a more recent water analysis.

**Q. Is that a true and correct copy of the report that --**

A. Also -- excuse me.

**Q. Sorry.**

A. A compatibility, compatibility analysis as well

as the mixed water and Cisco produced water analysis.

**Q. Is that a true and correct copy of the report that you obtained?**

A. Yes.

**Q. In general what does the report show?**

A. The report shows a chemical analysis of multiple combinations of the source waters being combined with the Cisco formation water from 100 percent to zero percentage and vice versa.

**Q. Based on this information, do you expect to have any issues with compatibility?**

A. No, we do not.

**Q. Let's talk about the waterflood response analysis. Can CML obtain an analysis and calculation to support your conclusion regarding the potential for waterflood in this unit?**

A. Yes. We contracted Stephens Engineering to do the waterflood study for us.

**Q. And that's been provided as Exhibit 8?**

A. Yes.

**Q. Do you agree with the calculations and results in the study?**

A. Yes, I do.

**Q. And it's your opinion that the proposed waterflood unit is a good candidate?**

A. Yes, I believe so.

**Q. Referring back to the map that was marked earlier as Exhibit 1, can you describe the current status of the wells within the project area?**

A. All the wells are currently producing.

**Q. And has CML provided a summary history for these wells?**

A. Yes. You see that in the Stephens Engineering Study, Exhibit 8, they have production history on Pages 17 through 25.

**Q. Can you please summarize the production history?**

A. The production decline curves are shown for each well in the project area from the initial completion until January 1, 2018.

Also, they have projected future primary decline to the economic limit for each well except the Beams 15 State Number 4. That well was left off because it is producing from the Wolfcamp Formation. The Cisco perfs are open as well, but initial tests showed it to be uneconomical in that well. It was low perm and just wouldn't give up the oil that we needed.

**Q. So based on this information, is it correct all these wells are in a decline at this point?**

A. Yes, that is correct.

**Q. Does Exhibit 8 provide information regarding**

**expected waterflood response?**

A. Yes. That is shown Pages 35 to 42 regarding the estimated recovery.

**Q. Can you summarize the study conclusion on estimated recovery?**

A. This waterflood study is estimated the primary ultimate -- ultimate primary recovery for all the wells to be 1.6 million barrels as shown on Page 37. The study further estimated the ultimate reserves with water injection to be 2.2 million as shown on Page 42.

They go on to estimate the secondary to primary ratio to be .36 barrels secondary oil to one barrel of primary oil.

**Q. And have you prepared updated projections of the expected waterflood response?**

A. Yes. I have done that on Exhibit 14.

**Q. And what do those projections show?**

A. Since the Stephens study was completed two years ago, I decided I wanted to update these numbers and use their final cumulative numbers to see how much oil we still have to gain by the waterflood.

Over the last two years, we have produced approximately 167,000 barrels. That makes our cumulative production go up to just over 1 million barrels, what you see in column one there.

If we continue forward with primary depletion, the wells are estimated to produce another 592,000 barrels, and that's the number you will see down here at the bottom in the middle. According to the numbers, if we implement the waterflood, we estimate to produce another 1.2 million barrels.

**Q. Can you generally explain how CML intends to create a waterflood project in this area?**

A. Since this is a relatively small field, we would use a random line drive pattern. We would like to see some injection response, as I mentioned before, before we decide to convert additional wells.

**Q. Based on Ms. Spiers' testimony, are there lateral constraints that would keep the waterflood in place?**

A. Yes, I believe so.

**Q. And that would increase the efficiency of the operation; is that correct?**

A. Yes, that is correct.

**Q. Is it your opinion that converting the secondary recovery waterflood operations at this time is not premature?**

A. Yes, I agree with that.

**Q. And that's based on the fact that these wells are currently marginal producers?**

A. Yes. They continue in their primary depletion.

**Q. So on the economic analysis, has CML obtained an economic analysis of the proposed waterflood project?**

A. Yes. Again, the Stephens Engineering study, Exhibit 8, contains an economic analysis on Pages 56 through 58.

**Q. And does the analysis consider the cost associated with operating the project?**

A. Yes, it did.

**Q. And what does the analysis show?**

A. The proposed project is profitable.

**Q. Can you please identify the document that's marked as Exhibit 15?**

A. I got my stack all out of order. Oh, yeah, there it is. There it is.

Okay. Again, what I wanted to see here for myself is the economics with the updated production numbers that I mentioned earlier, and based on an average price of 55 barrels per day -- I mean $55 per barrel for the life of the project, CML is expecting an estimated profit of approximately $35 million.

I also wanted to see the estimated income for the State of New Mexico just, just for my curiosity, and this shows a royalty income of $8.1 million, and an oil severance tax income approximately 4.7 million, which would be a total of about 12.9 million to the State of New Mexico.

**Q. And based on your analysis, the estimate of cost and the value of additional reserves, is it your opinion this project will be economic?**

A. Yes, it is.

**Q. In your opinion will the value of the oil and gas recovered through waterflood operations exceed the unit cost plus a reasonable profit?**

A. Yes, I believe so.

**Q. Is it your opinion that at the time conversion to waterflood operation is reasonable and necessary to substantially increase the ultimate recovery of reserves within the area?**

A. Yes, I think so.

**Q. And it's your opinion that the project is technically feasible?**

A. Yes.

**Q. In your opinion, is the granting of CML's application in the interest of conservation, the prevention of waste, and the protection of correlative rights?**

A. Yes, I believe so.

MS. HARDY: Madam Examiner, I move the admission of Exhibits 13 through 15.

HEARING EXAMINER ORTH: Exhibits 13 through 15 are admitted.

(Exhibits 13 through 15 admitted.)

MS. HARDY: I have no further questions of this witness.

HEARING EXAMINER ORTH: Ms. Murphy, do you have questions?

EXAMINER MURPHY: I do have a couple of questions. On Page 43 of the Stephens Engineering study, there's a floodable limit. I might have asked Ms. Spiers had I seen the map at that time, but what makes you believe that this is the floodable limit? Is there some lateral constraints on that?

THE WITNESS: Based on the net pay numbers -- let me find what page that is. I've seen them in here. There we go. On Page 13 and 14 of the same study, they have the net pay numbers.

EXAMINER MURPHY: From those wells?

THE WITNESS: From all of these wells.

EXAMINER MURPHY: And that's where they delineated that floodability --

THE WITNESS: Yes. When the numbers get small, like four feet of net pay, we found that, just like I mentioned about the Beams 15 State 4 earlier, we just weren't able to produce that well out of the Cisco Formation because it's just too impermeable.

EXAMINER MURPHY: Okay. Thank you.

Another question I had was the water, you will

truck that in, or will you have pipes go to that injector?

THE WITNESS: It will be piped, all piped in.

EXAMINER MURPHY: And it's from an adjacent well?

THE WITNESS: We have some Yeso and Abo wells in the vicinity.

EXAMINER MURPHY: It's not that far that it's coming in?

THE WITNESS: No. It's less than two miles, I think.

EXAMINER MURPHY: Okay.

THE WITNESS: There are actually some Yeso wells that are not shown in these maps in Section 15 and maybe 16.

EXAMINER MURPHY: Okay. And how -- how long do you expect before you will see a change in the recovery?

THE WITNESS: Response?

EXAMINER MURPHY: Yeah.

THE WITNESS: That's, that's a good question. I would hope to see something within a year or so.

EXAMINER MURPHY: And there are certain wells that you will expect to see the response first?

THE WITNESS: Yes.

EXAMINER MURPHY: Would that be the ones to the northeast and the northwest or --

THE WITNESS: I would expect the first response to be in the well Beams 15 State Number 1.

EXAMINER MURPHY: The one to the southwest?
THE WITNESS: To the southwest, and I'm saying that because it has the highest log porosity and highest permeability.
EXAMINER MURPHY: That one had a --
THE WITNESS: And highest net pay.
EXAMINER MURPHY: Right. When it was spud in 2011 it had a great return.
THE WITNESS: Yes, it made over -- it's made over 300,000 barrels of oil.
EXAMINER MURPHY: So you don't have any -- you will wait and see for the next proposed injectors?
THE WITNESS: Yes. Stephens has initially proposed the Beams 15 State 2.
EXAMINER MURPHY: Due west of that?
THE WITNESS: That's due west. It's not necessarily where we will go, but it could be a candidate.
EXAMINER MURPHY: All righty. Okay, thank you.
THE WITNESS: Uh-huh.
HEARING EXAMINER ORTH: Mr. Goetze?
EXAMINER GOETZE: Thank you. First of all, we will note that administratively we have a .2 psi per foot gradient that we administratively approve.
THE WITNESS: Okay.
EXAMINER GOETZE: So noting that we have a near

top perforation 11,029, you are going to end up with an initial pressure that you can operate at at surface of 2200 pounds. And is that something that you can live with psi for now?

THE WITNESS: I think initially --

EXAMINER GOETZE: Yeah.

THE WITNESS: -- the well is going to take the water on the back end for --

EXAMINER GOETZE: For some time.

THE WITNESS: For several months, maybe even a year. Who knows.

EXAMINER GOETZE: Okay.

THE WITNESS: Would it be possible to come back later if that pressure gets --

EXAMINER GOETZE: What would happen is that above that administrative level we would ask a step rate test be done.

THE WITNESS: Yes.

EXAMINER GOETZE: And with that we would approve something that would fall below the formation parting pressure.

THE WITNESS: I hope to never see 3000 psi because of the mechanics that it takes to put in at that pressure, but I guess you have to put something in as a max.

EXAMINER GOETZE: Well, we understand the long

term, but you will be moving it around.

THE WITNESS: Sure.

EXAMINER GOETZE: So this is something that administratively can be addressed, but heads up in the future when you make your estimates of what your surface pressure, rerun it at the .2 as opposed to the .5. With regards to the makeup water, your analysis of your formation shows a lack of h2s. Are you going to hopefully pursue making sure we don't contribute and put in water that has a low hydrogen sulfide content in and maintain that level of --

THE WITNESS: That's a good point, and yes, we will take that into consideration. We may have to add some h2s inhibitors to the water. We have done that in the past. That's, that's a good point.

EXAMINER GOETZE: And then with regards to your delivering gas from these wells as is, your economic evaluation is based upon oil?

THE WITNESS: Yes.

EXAMINER GOETZE: What about the market for the gas?

THE WITNESS: We do sell gas in this area. I didn't do any updates on the production because --

EXAMINER GOETZE: We know it's on the side --

THE WITNESS: It is.

EXAMINER GOETZE: What we are interested in is making sure you still have a market for it in the conservation of resources --

THE WITNESS: Yes.

EXAMINER GOETZE: -- it can still go off-site for use in a gas processing pipeline somewhere in the market.

THE WITNESS: Yes. All of these wells are connected with Targa. We will continue to sell gas, sure.

EXAMINER GOETZE: Just following up.

THE WITNESS: I don't like the price that we're getting right now.

EXAMINER GOETZE: You may talk to Chevron later.

THE WITNESS: Yeah, yeah.

EXAMINER GOETZE: Okay.

THE WITNESS: Yes, sir.

EXAMINER GOETZE: And that's all the questions I have. Thank you.

HEARING EXAMINER ORTH: Thank you. Ms. Hardy, anything further?

MS. HARDY: No, Madam Hearing Examiner.

HEARING EXAMINER ORTH: Thank you very much, Mr. Von Roeder.

MS. HARDY: We ask the case be taken under advisement.

HEARING EXAMINER ORTH: It will be so taken under

advisement, Case Number 21046.

I believe, anyone correct me if I'm wrong, I believe that leaves us only with Case 21020.

(Case taken under advisement.)

STATE OF NEW MEXICO )
)SS
COUNTY OF SANTA FE )

I, IRENE DELGADO, certify that I reported the proceedings in the above-transcribed pages, that pages numbered 1 through 41 are a true and correct transcript of my stenographic notes and were reduced to typewritten transcript through Computer-Aided Transcription, and that on the date I reported these proceedings I was a New Mexico Certified Court Reporter.

Dated at Santa Fe, New Mexico, this 6th day of February 2020.

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Irene Delgado, NMCCR 253
Expires: 12-31-20