STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:	)	
APPLICATION OF CELERO ENERGY II, LP, FOR EXPANSION OF A WATERFLOOD PROJECT, CHAVES COUNTY, NEW MEXICO	)	CASE NO. 14,047

ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: RICHARD EZEANYIM, Hearing Examiner
DAVID K. BROOKS, Jr., Legal Examiner

December 13th, 2007

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, RICHARD EZEANYIM, Technical Examiner, DAVID K. BROOKS, Jr., Legal Examiner, on Thursday, December 13th, 2007, at the New Mexico Energy, Minerals and Natural Resources Department, 1220 South Saint Francis Drive, Room 102, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

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I N D E X

December 13th, 2007
Examiner Hearing
CASE NO. 14,047

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E X H I B I T S

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Exhibit 1	7	10
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A P P E A R A N C E S

FOR THE DIVISION:

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* * *

WHEREUPON, the following proceedings were had at 9:30 a.m.:

EXAMINER EZEANYIM: Let's go onto the record again, and at this point I call Case Number 14,047, Application of Celero Energy II, LP, for expansion of a waterflood project, Chaves County, New Mexico.

Call for appearances.

MR. BRUCE: Mr. Examiner, Jim Bruce of Santa Fe, representing the Applicant. I have three witnesses.

EXAMINER EZEANYIM: Any other appearances?

Okay, may the witnesses stand up to be sworn, please?

(Thereupon, the witnesses were sworn.)

JOHN LODGE,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. BRUCE:

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

A. My name is John Lodge.

Q. And where do you reside?

A. I reside in Midland, Texas.

Q. Who do you work for and in what capacity?

A. I work for Celero Energy in the capacity of vice president of land.

Q. Have you previously testified before the Division as a petroleum landman?

A. I have.

Q. And were your credentials as an expert accepted as a matter of record?

A. Yes.

Q. And are you familiar with the land matters involved in this Application?

A. Yes, I am.

MR. BRUCE: Mr. Examiner, I'd tender Mr. Lodge as an expert petroleum landman.

EXAMINER EZEANYIM: How do you spell your last name?

THE WITNESS: L-o-d-g-e.

EXAMINER EZEANYIM: Are you a certified petroleum landman?

THE WITNESS: Yes, I am.

EXAMINER EZEANYIM: Mr. Lodge is so qualified.

Q. (By Mr. Bruce) Mr. Lodge, very briefly, what does Celero seek in this case?

A. Celero seeks to expand a waterflood project for

the Trigg Federal lease.

Q. Okay. When was the original waterflood project approved? And I refer you to Exhibits 1 and 2.

A. It was approved in 1959. It's Order Number R-1456. That --

Q. Okay -- Go ahead.

A. That order originally approved four injection wells.

In 1963 an expansion of that project was approved by Order Number R-2470 that's marked as Exhibit 2.

Q. Okay. And when did -- approximately when did Celero purchase this particular lease?

A. We purchased these interests in June. I think we had an effective date of February of this year.

Q. 2007?

A. Yes, that's correct.

Q. Would you identify Exhibit 3 and describe the wells involved in this Application?

A. Exhibit 3 is a land map of the general area of the lands that are located in -- and subject to this Application. In general, it's 14 South, 31 East, of Chaves County, New Mexico. The lands that are identified by the red color involving acreage in Sections 4, 5 and 9 are the lands that are the subject of this Application.

Q. In yellow?

A. Oh, what did I say?

Q. In red.

A. Red -- I guess I -- It's yellow, sorry.

Q. And what is the legal description of the land?

A. Okay, the legal description of the lands are Township 14 South, Range 31 East, NMPM; Section 4, it's lots 1 through 4, south half, north half, and the south half, which is all of that section; Section 5, lot 1, the southeast northeast and northeast southeast; then Section 9, all of it.

Q. Okay. Now the original order approving this project did not include the southeast quarter, southeast quarter of Section 5, so is Celero requesting an expansion of the project's horizontal limits?

A. Yes, we are, include that additional 40 acres.

Q. Okay, so in essence the east half, east half of 5, Section 5, will be included in the project?

A. That's correct.

EXAMINER EZEANYIM: Is that included in the yellow?

THE WITNESS: Yes, sir, it is.

EXAMINER EZEANYIM: Okay.

Q. (By Mr. Bruce) And what is the approximate number of injection wells that Celero envisions at this time in the project?

A. On the acreage that's colored yellow on the plat, there's approximately 20 injection wells.

Q. Okay. And will -- Do you have an engineer who can discuss the proposal in a little more detail?

A. Yes, we do.

Q. Now, what else is reflected on Exhibit 3?

A. If you look at Exhibit 3 a little bit further, you'll see that the map reflects the offset owners that are referenced on the left of the map tract by tract; it's articulated with property description. And on the map itself we've got tracts 1 through 6 that are identified and the respective parties who own the interests that are associated with those properties.

Again, the yellow acreage is the acreage subject to the Application, and Celero is the 100-percent working interest owner in the yellow acreage.

Q. Okay, so in -- on the Trigg federal lease, the project we're here for today, there is no other working interest owner?

A. That is correct.

Q. Okay, and --

EXAMINER EZEANYIM: Is that a single lease?

THE WITNESS: Yes.

MR. BRUCE: Yes, it is a single federal lease.

Q. (By Mr. Bruce) And were all of the -- or were

the offsets, other than Celero, identified on Exhibit 3 notified of this hearing?

A. Yes, they were.

Q. And is that reflected on Exhibit 4?

A. Yes, it is.

Q. Were Exhibits 1 through 4 prepared by you or under your direction or compiled from company business records?

A. Yes, that's correct.

Q. And in your opinion, is the granting of this Application in the interests of conservation and the prevention of waste?

A. Yes.

MR. BRUCE: Mr. Examiner, I'd move the admission of Exhibits 1 through 4.

EXAMINER EZEANYIM: Exhibits 1 through 4 will be admitted.

MR. BRUCE: And I have no further questions of the witness.

EXAMINER EZEANYIM: Mr. Brooks?

EXAMINER BROOKS: I don't think I do. I'm checking my notes here.

EXAMINATION

BY EXAMINER BROOKS:

Q. What did you say about Celero?

A. Celero is the Applicant in this Application.

Q. Oh, okay. Okay, sorry.

A. That's all right.

Q. And so the only parties -- the only other parties are Featherstone and Blanco?

A. For the federal unleased tract that's located -- I guess that's Section 8.

Q. That's the blue tract here?

A. Yes, sir, that's correct, it's represented on Exhibit 3, tract 5.

EXAMINER BROOKS: Okay, I don't have anything further.

EXAMINATION

BY EXAMINER EZEANYIM:

Q. Most of the questions I have, geologic and engineering. But I will talk about the notice requirements.

Were all the offset operators notified of this Application?

A. Yes, sir.

Q. And let's see. Let me defer some of my questions until further witnesses --

A. Okay.

Q. -- concerns you -- who can answer them.

A. All right.

JOHN BAKER,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. BRUCE:

Q. Would you please state your name and city of residence for the record?

A. My name is John Baker, and I reside in Fort Worth, Texas.

Q. Who do you work for and in what capacity?

A. I work for Celero Energy in the capacity of a senior geologist.

Q. Have you previously testified before the Division?

A. I have not.

Q. Would you summarize for the Examiner your educational and employment background?

A. I have a master of -- or, I'm sorry, a bachelor of science in geological engineering, and a master of science in geology and have worked continuously in the oil and gas industry for the past 10 years as a petroleum geologist.

Q. As a geologist.

How long have you been employed by Celero?

A. I've been employed by Celero for about a year.

Q. And are you familiar with the geologic matters involved in this case?

A. Yes, I am.

Q. And does your area of responsibility at Celero include this part of southeast New Mexico?

A. Yes, it does.

MR. BRUCE: Mr. Examiner, I'd tender Mr. Baker as an expert petroleum geologist.

EXAMINER EZEANYIM: Mr. Baker, you are a certified geologist?

THE WITNESS: A research geologist?

EXAMINER BROOKS: No, certified.

THE WITNESS: Oh, certified.

EXAMINER EZEANYIM: Certified.

THE WITNESS: I am not.

EXAMINER EZEANYIM: However, Mr. Baker is so qualified.

Q. (By Mr. Bruce) Mr. Baker, could you identify Exhibit 5 for the Examiner and seek -- discuss the zones Celero seeks to flood in this case?

A. I'll give you a moment to open up the map. What we have here is a montage detailing the Queen reservoir section that we're interested in flooding. There's a couple different things on this montage.

First, you can see where we're at on the top,

next to the heading where you can see the -- on the locator map, the location of the Trigg Federal lease in New Mexico with respect to the two states.

Just below that you can see another location map that gives the location with respect to the different basin features within the Permian Basin.

Directly next to that is the stratigraphic column for the area, outlined in red. And if you look carefully, you can see the Queen reservoir -- or the Queen formation there, which is overlain by the Seven Rivers and overlies the Grayburg formation.

The Queen reservoir is actually a part of the Artesia group within the Permian section. The reservoir -- or the formation is a clastic formation, with alternating sequence of shale, silt and sandstone, and it is deposited as a fluvial and in a deltaic setting.

I have three different logs on here for you to look at. The one farthest to the right is an example of the entire section from basically the surface past the Queen reservoir and on into the San Andres. The log directly next to that shows in more detail, you can see the Yates formation at the top, then the Seven Rivers, which continues all the way down to what I'm calling the Queen marker. The Queen marker is the marker of the actual Queen sand that we are proposing to flood.

Now I've blown that up in the colored section on the left to show you the relationship of the Seven Rivers, the Queen formation and the Grayburg formation. In blue you can see the Seven Rivers formation, and then the Queen is all of the sections marked in yellow. Basically it's the sand- -- sandstone and silt portions of the formation. Then below is the Grayburg. And you can see the thickest sand in the reservoir is the main Queen sand, which I've labeled there, and is our target for flooding.

EXAMINER EZEANYIM: Do you know the thickness of that Queen?

THE WITNESS: The Queen thickness is -- it ranges from about 10 to 20 feet.

EXAMINER EZEANYIM: Okay.

Q. (By Mr. Bruce) Let's move on to your Exhibit 6, and further discuss the geology of the Queen reservoir in this area of Chaves and Lea Counties.

A. Once again, I'll give you a second to...

Exhibit 6 is a structure map that is contoured on the Queen marker that I showed you in the last exhibit. Let me draw your attention to the red outline and the label, the Trigg federal lease. That's where the Trigg federal lease is. This is actually one of two structure maps I'd like to show you today. I show you this structure map in a kind of expanded portion to show you how it fits

within the entire Caprock field.

And what we can derive from -- what we've done here is, we've taken every penetration into the Queen reservoir that had a log, we've -- that were available, via the Commission files through a vender called A2D. We've correlated those logs to make this structure map, and as you can see, it's -- the structure is pretty quiet. There's not a lot -- you can't see any obvious faulting. The dip is mainly from the northwest to the southeast, and the strike is perpendicular to that, basically northeast to southwest.

The contour interval is 20 feet, and you can see this in this exhibit as well as the next one, that there's about 20 to 40 feet of vertical relief in a dip direction across a mile, a linear mile. So there's not a lot of relief to the structure.

I'd also point out -- you'll see this in the next map as well, but the two cross-section lines that I'll show you in just a minute, cross-section A-A' and B-B' are also shown on this, which is basically a strike and a dip cross-section.

Q. Okay, let's move on to your Exhibit 7.

A. Once again, this is another cross-section -- I'm sorry, this is another structure map that just shows the Trigg federal lease individually and how the structural

contours are with respect to the lease area.

And again, 20-foot contours. These are subsea values that are contoured off of the Queen marker.

Q. And again, you see no faulting on this exhibit?

A. Yeah, you see no faulting.

Q. Okay. Well, let's move on to your cross-sections, and I won't interrupt you, just -- Why don't we spread them out at one time, Exhibits 8 and 9, and go through those a little bit?

A. For these cross-sections we should note that the historical -- what's been done historically out here to log these wells is, they would drill down to the top of the Queen formation and not go completely through the formation but just hit the top of it and then stop. They pull out of the hole, log the open-hole section, and then analyze the logs and then finish the well for production purposes. So these logs that you see here are actually hand-picked as the ones that best show the Queen marker and the Queen reservoir.

There's a paucity of logs that actually cover the entire Queen section. But there is plenty of information to see that the Queen marker, as shown in this cross-section and the next cross-section -- that it's continuous and that you don't see any obvious breaks that would indicate some sort of faulting.

The actual stratigraphy as you follow it from well to well -- and once again, it's the Exhibit A-A', the one you're looking at now, basically north to south, is a strike cross-section, and it shows the continuity of the reservoir. And the continuity is -- the picks on the log, or the formation that we picked here is pretty consistent. The character on the logs is consistent, so we feel comfortable and confident that, you know, the continuity of the reservoir is there.

Q. And so Exhibit 8 is the strike cross-section?

A. Exhibit 8 is the strike cross-section, which is A-A', or north to south.

And then Exhibit 9 would be the dip cross-section, a little bit shorter, spanning about two miles basically west to east and shows, like we pointed out before, minor relief, minor structural relief --

Q. Okay, and so Exhibit 9 shows basically the same as Exhibit 8?

A. Yeah.

Q. From a geologic standpoint, has this reservoir been reasonably defined by development?

A. Yes.

Q. And is the Queen reservoir continuous across the lands that you seek the project approval for?

A. It is.

Q. Geologically, is this a good candidate to expand the existing injection project?

A. Yes, it is.

Q. Is there a freshwater zone in this area?

A. We have found local information indicating the Ogallala formation, which is an aquifer in the area that occurs from -- at around 100 to 200 feet.

Q. Where is the Ogallala located from this lease?

A. About a half a mile to the east.

Q. Okay. And that kind of coincides with the Caprock?

A. It does.

Q. Now on this lease -- on the lease in particular, is there any known water-bearing strata?

A. No, there is not.

Q. Okay. And again, there are no faults that you can see in this area which would connect any freshwater zone with the injection zone?

A. There is not.

Q. Were Exhibits 5 through 9 prepared you or under your supervision?

A. Yes, they were.

Q. And in your opinion is the granting of this Application in the interests of conservation and the prevention of waste?

A. Yes.

MR. BRUCE: Mr. Examiner, I'd move the admission of Exhibits 5 through 9.

EXAMINER EZEANYIM: Exhibits 5 through 9 will be admitted.

Anything?

EXAMINER BROOKS: No questions.

EXAMINATION

BY EXAMINER EZEANYIM:

Q. Mr. Baker -- is that your name?

A. Yes.

Q. Okay, you made a study of this reservoir. The first question I'm going to ask you -- I mean, we know that this is previously approved waterflood, and I don't know, what is the status of it now? Is it active or inactive?

A. Inactive.

Q. Inactive.

A. But that may be a better question for the engineer.

Q. Okay, yeah, I guess I will add that question there.

So from your geologic study of this reservoir, have you -- who is supposed -- maybe this is for the engineer. Who is supposed to do a cost-benefit analysis to see why you want to reactivate this old reservoir, you

know? I know you've done your geologic studies and -- you know. Do you think it would be profitable to do that?

A. From what I know, I do believe it will be profitable. And I would say that that question is better answered by the engineer, but -- yeah, I think it's better answered by him.

Q. Okay.

A. He's the one that's done the analysis.

Q. Okay, that's why I think -- most of my questions may be engineering, so you are still here, if there is anything geological, I will ask you about that.

A. Okay.

EXAMINER EZEANYIM: Okay, you may be excused at this time.

THE WITNESS: Thank you.

EXAMINER EZEANYIM: Okay, you may continue.

JOHN ANDERSON,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. BRUCE:

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

A. John Anderson.

Q. And where do you reside?

A. Midland, Texas.

Q. What is your occupation?

A. Petroleum engineer with Celero Energy.

Q. Have you previously testified before the Division?

A. No, sir.

Q. Would you please summarize your educational and employment background?

A. I have a bachelor of science in civil engineering from San Diego State University, and I've spent 25 years in the petroleum industry, 17 years with Exxon. After leaving Exxon, I was with a variety of companies including Unocal, Pure Resources, Whiting Oil and Gas, and with Celero Energy twice.

Q. Okay. And at Celero and at the other companies, did your area of responsibility include this part of southeast New Mexico?

A. Since I've been with Celero Energy, yes.

Q. Okay, and are you familiar with the engineering matters related to this Application?

A. Yes, sir.

Q. And the Hearing Examiner will probably ask you, are you a registered professional engineer?

A. Yes, sir, in the State of Texas.

MR. BRUCE: Mr. Examiner, I'd tender Mr. Anderson as an expert petroleum engineer.

EXAMINER EZEANYIM: Mr. Anderson is so qualified.

Q. (By Mr. Bruce) Mr. Anderson, what materials -- Well, I'm going to take a step back. As the landman testified, and if you can confirm, Celero owns not only this lease, but it owns other projects in the immediate area, does it not?

A. Yes, sir, there's three other units that we have purchased, along with the Trigg federal lease.

Q. Okay. And in connection with the purchase and the proposed development of these, what types of materials did you examine in your study of the reservoir?

A. Well, we received whatever information we have from the prior operator, who was Palisades Operating. But that was pretty sketchy, and apparently a lot of the records didn't get passed on. But most of our information has been from the OCD website, pulling information and making copies of the historical records from there.

There was a group of engineering studies that was done by a consultant for the operator in the mid-'90s, that we have access to that information, and we're using a lot of that information as the preliminary engineering study for this property.

Q. And so with respect to your study, you weren't just looking at the Trigg federal lease, you were looking at several other properties?

A. Yes, sir.

Q. Encompassing much larger areas than just this lease?

A. Yes, there's the Rock-Queen Unit, the Drickey-Queen Sand Unit, and the Westcap Sand Unit that basically surround Drickey-Queen to the north, east and south.

Q. Would you please identify Exhibit 10 and describe the history of this pool?

A. Exhibit 10 was -- I submitted with the Application, because it kind of provided supplemental information for the interested parties as to the specific background information on this lease and why Celero Energy was interested in acquiring and redeveloping this lease.

And I'll begin with -- we talked about the -- just go through the history a little bit on this. Mr. Lodge had covered some of this information, but basically 38 wells were drilled on this lease in -- on 40-acre spacing in the mid- to late '50s.

The Trigg federal waterflood was developed in the early '60s as an 80-acre, fivespot-pattern waterflood. Peak oil response was about 900 barrels of oil per day in 1962, and peak water production was in 1965 at about 3300 barrels of water per day. The waterflood response was pretty much over by the early '70s, and the field pretty -- or the lease pretty much limped along over the past 35

years.

And it was actually -- I mean, it's been producing continuously, but the injection part was -- ceased in about 2001. So that's part of the reason why we're here, is because of the cessation of waterflood operations, occurred in about 2001.

And another side note, we've got 18 wells, which is about half the field, were plugged in that 1999-to-2001 time period, and most of those wells are in the southern half of the lease.

Q. And what has been the reservoir performance to date?

A. Based on work that was done by Harper and Associates of Fort Worth in the mid-1990s for Queen Resources, who was the operator at that point, the oil in place for the Trigg federal lease is about 12 million barrels. Estimated oil production to date is 2.4 million barrels, which gives you a primary plus secondary recovery of about 20 percent. And I'm estimating the primary recovery is 8 percent, which yielded a waterflood-to-primary ratio of about 1.6.

Now based on my experience in working waterfloods throughout the Permian Basin, Oklahoma and the Rockies, 20 percent estimated oil recovery through waterflood is probably pretty low for a typical waterflood performance of

a reservoir of this type.

And there's probably several factors that contributed to this poor performance, including the large spacing -- 80-acre waterflood is very large for this type of a waterflood -- inefficiencies in the water injection balancing and the reservoir surveillance, inability to adequately pump the wells off or optimize the production, influence of the nearby gas cap to the west and northwest of the lease, failure to penetrate the entire productive Queen sand interval, as well as a few others.

And so that's what we believe is the reason why the reservoir didn't perform as well as it could have.

EXAMINER EZEANYIM: What happened with the -- what -- the well being pumped off actively?

THE WITNESS: Well, it's really hard to say, but I mean, they typically had very small pumping units out there. I don't -- I mean, this was a small operator, he wasn't a major oil -- I don't think he -- they were really very efficient at flooding the reservoir, looking into the injection-withdrawal ratios and that type of thing.

So it looked like they just never -- I mean, I don't want to say this critically, but it's kind of a poor-boy operation type thing. I mean, there wasn't a lot of -- I mean, they tried to get what production they could, as easy as they could, off this lease. And then once they got

the initial response, they just kind of let it go, just kind of let it produce.

EXAMINER EZEANYIM: Okay, since we're here now, one of the questions, are you going to continue with the 80-acre fivespot, or are you going to go down 40-acre fivespot?

THE WITNESS: Well, Right now our plan is -- and what we have in the Application is, basically our plan is to reactivate the existing wellbores. And 2007 to 2007, we plan to reactivate the TA'd wells, which is about half the wells, and bring those back on line, and that's about 18 wells.

In 2009 to 2010, we plan to re-enter or re-drill the wells that have been plugged and abandoned. So we're basically on a -- getting ourselves back to the current plan.

And while we're doing that, we're going to try and re-log the wells -- and then I'll explain that further -- and try to acquire the information we really need to compile a current study on this. But our plans may include -- I mean, I don't think 80 acres is a very efficient development plan for a waterflood of this type.

So we'll probably look at increased density drilling, we'll look at line drive pat- -- we'll look at the pattern configurations, we'll try and look at the

preferential permeability in the reservoirs, trying to determine -- I mean, this was just a cookie-cutter type operation that they drilled. They discovered the reservoir, just basically drilled them on 40 acres, and I don't think there's a lot of science and engineering. We're going to try to apply the science and engineering to really understand this reservoir.

And it's not only this lease, it's the three other units surrounding it that we're working on, to optimize the recovery. And we think the potential is there with only a 20-percent recovery.

EXAMINER EZEANYIM: Yeah, it appears to me that -- I know the project is twofold. At the time they started this project, they started with 80-acre fivespot, you know -- start that right now, and that's why I ask you the question, you still -- you don't -- you don't really know what you are going to do until you conduct all the studies?

THE WITNESS: Right. But in the interim, we feel like we can be successful at getting the current waterflood back in operation, getting water in the ground. I mean, this well -- I mean, they kept producing it and they kept shutting off injection. The pressure is down.

EXAMINER EZEANYIM: Uh-huh.

THE WITNESS: I mean, it will take us probably a couple years just to reinject and get the reservoir

pressure back up to a reasonable pressure so that we can flood the reservoir.

EXAMINER EZEANYIM: Yeah. Okay, yeah, I'm sorry, I have to stop you here, because this is one of the critical questions I wanted to ask, so I'm sorry to --

MR. BRUCE: Oh, that's okay, Mr. Examiner.

THE WITNESS: Oh, that's fine. I was going to cover that at some point, so...

Q. (By Mr. Bruce) But if you'll continue, Mr. Anderson -- but just briefly, and I think this was your next item, what -- just by re-instituting -- reinstating the project, what do you hope to recover?

A. Well, okay, I'm assuming -- We feel like there's a potential target of 10 to 15 percent of additional oil recovery of the additional oil in place, and that translates to about 1.2 to 1.8 million barrels.

Now can we achieve that just by reactivating these wells? Probably not. But as we study the reservoir, as we look at things, as we go to increased density, as we make some adjustments to it, yes, I feel very comfortable we can achieve that. But it may not be just from these wellbores, we may require some increased density drilling and that type of thing.

And as we better understand the reservoir, some parts of the field may not be reactivated, some of the

wells may -- I mean, if we find that that reservoir isn't there, we're going to concentrate on the areas where there is the reservoir.

Q. And is this -- the work on the Trigg federal lease, will this kind of be done in concert with your other waterflood projects?

A. Yes, sir. I mean, our primary projects are the offsetting -- This is a fairly small lease, relative to the other units, and our focus to start has been the Rock-Queen Unit and the Drickey-Queen. But these we're going to work in parallel with it, because it's a federal lease and we have obligations to work on this also.

EXAMINER EZEANYIM: Are those projects ongoing now, the projects he's talking about?

MR. BRUCE: Those are producing --

EXAMINER EZEANYIM: Oh.

MR. BRUCE: -- projects. They are -- I believe Mr. Anderson can answer this, but they are -- will be seeking approval for increased injection wells on those projects.

THE WITNESS: Yes, but at the current time we ware in -- proactively -- I mean, those -- working under the original orders, because they never ceased production, so we're in the process of reactivating injectors, producers, installing new facilities. I mean, we faced all

the same 50-year-old facilities out there. We're completely re-doing the surface facilities, injection lines, flow lines and reactivating the current leases, gathering our information as we do our -- an updated reservoir study, with the idea of getting the things -- the units back on line so that we can, you know, achieve optimal production.

Q. (By Mr. Bruce) And that's why you're talking about a three- or four-year time frame in getting all this done?

A. That's correct, that's correct. This is -- Yeah, that -- I mean, this is just one of the three other -- I mean -- three other units that we're working on in parallel.

Q. And this -- Maybe this question would be a good one to bring up. I think you've already kind of alluded to this, but as you develop this Trigg federal lease a little further and the same thing with the offsetting units, even though in the C-108 you requested permission for injection into about 20 wells, might things be discovered or learned that may change your plans and how you plan to develop the unit?

A. Yes, that is true. And that's what we're -- I mean, our plan right now is just to reactivate the current configuration. But as we gather more information, complete

our studies, we will do -- look at increased density drilling, pattern configurations, other different methods of optimization to --

Q. And along with that, would Celero like administrative approval for further expansion of this project and for furtherance -- to obtain administrative approval for additional injection wells or different injection wells?

A. Yes, we would.

Q. And I think you also mentioned that as you develop -- your geologist testified that the logs in this area really leave somewhat to be desired. Will you be taking additional logging -- doing additional logging as you re-enter these wells?

A. Yes, sir, we plan to re-log, not only re-log from a reservoir development perspective, but re-run bond logs so we understand where the top of cement is, I mean verifying cas- -- I mean, doing casing inspection logs, verify- -- I mean, casing integrity tests, to make sure we have good integrity in our wellbores and understand what our wellbores look like.

Q. Okay, and what is the estimated project cost?

A. For re-activating the wells, the 18 wells over the 2007 to 2009 time frame, we're estimating about $1.4 million to reactivate those 18 wells.

For the remainder, re-entering the nine -- Well, there's 18 wells that are plugged and abandoned, and I just went ahead and assumed half of them we would re-enter and half of them we'd re-drill because of mechanical problems. That's about $5 million.

So it's about $6.4 million of well work. And then we're going to have new facilities, tank batteries, flow lines, injection lines, and I don't have those costs quantified, but that will be probably another couple million dollars.

Q. But if you do recover your estimated 10- to 15-percent oil -- original oil in place, will this project be profitable?

A. Yes, sir, based on sustained higher oil prices. If it drops to $20 a barrel, no.

Q. Do you have an estimated life of the expanded project?

A. It will probably be 15 to 20 years, is our estimate.

Q. And so in essence, the waterflood expansion project is proposed as a method of extending the life of this portion of the reservoir?

A. Yes, sir.

Q. Is it fair to say that -- and this is a term that isn't always used much anymore -- the producing wells on

this lease are stripper wells?

A. Yes, sir.

Q. And I think you've already answered this question, but is this portion of this Queen reservoir suitable for waterflooding from an engineering standpoint?

A. Yes, sir.

Q. Do you have anything else on Exhibit 10 you'd like to discuss at this point, Mr. Anderson?

A. No, sir.

Q. Now let's move on to the operations themselves. Could you identify Exhibit 11 for the Examiner?

A. Exhibit 11 is, I guess, most of the Application for authorization to inject, paperwork that we provided the Commission. And it includes information on each wellbore, the injection well data sheet that the OCD requests, along with wellbore sketches. It includes all the wells in the Trigg federal lease, and then the plugged and abandoned wells outside of --

Q. Or within the area of review?

A. Within the area of review.

Q. Well, let's just first -- start first with the injection wells. Maybe you -- if you could briefly go over one of the injection well data sheets and just describe what you plan to do when you re-enter these wells.

A. If you move about -- about five pages, down,

that's probably as good a place to start. It's an injection wellbore sketch -- I mean, it's a wellbore sketch of the Trigg Federal Number 16 well, and this is fairly typical.

A typical wellbore configuration out here is, we basically have surface casing at around 100 feet, plus or minus. Our production casing goes down either to the top of the Queen interval where we're proposing to produce or through the interval, and so we have a mixture of cased hole and open hole completions out here. Casing size ranges from 4-1/2-inch to 5-1/2-inch to 7-inch as our production casing.

The injection tubing strings have historically been 2-3/8-inch IPC injection tubing with a packer set, you know, within the regulations above the productive interval. And that's basically how it's typically been produced, or injected into.

All these wellbore sketches are based on the information we pulled off the OCD website. So I don't know how complete it is, but it's our picture of what information we have. But on each wellbore we plan on reactivating, we're going to go into each wellbore, pull the tubing string out of the wellbore, clean it out to TD, run a casing inspection log, run a cement bond log, check to see where the top of cement is, and run a new neutron

log so that we can kind of understand the reservoir.

And then we're going to go ahead and put the well -- oh, we also verify -- pressure-test the casing and have a good feel that we've got a good wellbore.

Now in the situation where we don't think we have good casing integrity, on the larger wellbores like the 5-1/2-inch or the 7-inch, we'll run in a new string of casing, 4-inch liner or a 5-1/2-inch liner depending on the size of the casing, run that from TD all the way to surface, cement it in, reperforate, and make sure we have good wellbore integrity to continue operations out here. So we're going to make sure we've got good wellbores beforehand.

And as far as the stimulation -- I mean, we'll stimulate them as we feel like we need to on these wellbores.

Q. There may be some wells in this area that you find will be unusable, don't you think?

A. Yes, and we haven't actually done a lot of work in Trigg federal but in the offsetting leases, I mean, probably 20 percent of the wells we condemn and we're going to have to plug and abandon and redrill, because the wellbore condition doesn't warrant fixing.

EXAMINER EZEANYIM: And this is one of -- an injection well you are going to use, right?

THE WITNESS: Yes.

EXAMINER EZEANYIM: This well, okay.

THE WITNESS: Yes.

EXAMINER EZEANYIM: And this is what you found in the OCD website?

THE WITNESS: Yes, yes.

EXAMINER EZEANYIM: Okay. And most of these 20 wells you are going to have as injectors, it's my understanding that some of them you are going to condemn outright and drill new ones if you think they're not --

THE WITNESS: Yeah, I mean, if they're -- yeah, I mean, if it's an active -- I mean, if it's not a plugged and abandoned well, we're going to rig up on them and check them out.

EXAMINER EZEANYIM: All right.

THE WITNESS: If it's a 4-1/2-inch-casing well and it doesn't look very good and the wellbore is not in very good condition -- it's pretty tough to run a liner in those because the wellbore is so small -- we'll redrill.

EXAMINER EZEANYIM: You redrill it at the same location, or you plug and abandon and redrill somewhere else? What --

THE WITNESS: Plug and abandon --

EXAMINER EZEANYIM: -- and redrill?

THE WITNESS: -- and redrill. If it's a larger

casing size, we'll either run a 5-1/2-inch liner or a 4-inch liner in that wellbore, cement it in place, and put it back on injection.

Or, depending -- I mean, if there's junk in the hole down there, we could potentially sidetrack the well and run casing. Or, depending on the condition, redrill it. So there's a lot of different scenarios, but our objective is, is to make sure we have compliant, good integrity wellbores to progress this waterflood.

EXAMINER EZEANYIM: All right, that is all that we're asking, you know, if you could have all those injectors comply with the rules, when you enter them make sure that, you know, you have all the cement where it's supposed to be, make sure you have the casing integrity --

THE WITNESS: Right.

EXAMINER EZEANYIM: -- once you have that, that's really, you know, what we're asking as for the injectors --

THE WITNESS: Right.

EXAMINER EZEANYIM: -- the injectors. Then we are going to go to area of review -- but I'm making that comment because I'm trying to -- one of the questions I wanted to ask about the 20 wells.

So it's my understanding the 20 wells, you are going to be able to have from the already drilled wells, if you think you can use them, but if you think you can't use

them because of the smaller casing you can do a redrill --

THE WITNESS: Right.

EXAMINER EZEANYIM: -- to replace them?

THE WITNESS: Yes, sir.

EXAMINER EZEANYIM: Okay.

Q. (By Mr. Bruce) And you would like to receive approval for that administratively, rather than coming back to hearing; is that correct?

A. Yes, we would.

EXAMINER EZEANYIM: Yeah.

THE WITNESS: Right.

MR. BRUCE: Okay.

THE WITNESS: And the other thing I provided was -- I mean, there is a spreadsheet in here that summarizes all the information requested on each wellbore in the area of review that has all that -- when the wells were completed, casing sizes, well-history type information, in a tabular form also.

EXAMINER EZEANYIM: I think we are coming to that later. I think we are coming to that in the area of review, right? Coming to that, but we are talking about injectors right now.

THE WITNESS: Right.

EXAMINER EZEANYIM: We are going to go to area of review wells.

THE WITNESS: Okay.

Q. (By Mr. Bruce) And are you done talking about your proposed injection well renovations --

A. Yes.

Q. -- Mr. Anderson? And the land plat submitted by Mr. Lodge does identify the wells within the one-half-mile area of review, does it not?

A. Yes, sir.

Q. And how many wells are there?

A. Eighty-three.

Q. And are these wells identified on the spreadsheet submitted as part of the C-108?

A. Yes, sir.

Q. And are any of those wells plugged and abandoned?

A. Yes, there are 18 Trigg federal wells and 12 wells outside the Trigg federal lease.

Q. And is information on the plugging of those wells contained in the C-108?

A. Yes, sir.

Q. And that data was acquired from Oil Conservation Division files, was it not?

A. Yes, sir.

Q. And did you review that data, and were they plugged in accordance with the Division regulations then in effect?

A. Yes, sir.

Q. Would you summarize the proposed injection operations?

A. We anticipate an average injection rate of about 500 barrels of water per day, with a maximum of 1500 barrels of water per day.

And the reason for that maximum is, as I mentioned before, the reservoir is fairly depleted. It produced for a long time without any injection support, and so I'm -- our feeling is, and the reservoir has demonstrated that it's underpressured. So we just want to get the reservoir filled up to start with. And so we're going to let it take whatever it will until we can get it filled up. And then once it starts pressuring up, then we can start managing the waterflood.

Q. And what injection pressures do you envision?

A. Our target injection rate we're looking at is about 1000 p.s.i., and we'd like to have a maximum injection pressure of 2000 p.s.i. But as I mentioned, I mean, at the start many of these wells will probably be taking water on vacuum because of the low reservoir pressure.

EXAMINER EZEANYIM: What depth are we talking about here?

THE WITNESS: Oh --

EXAMINER EZEANYIM: Depth of the wells, what --

THE WITNESS: -- top of the perforations is about 2800 feet.

MR. BRUCE: Now --

EXAMINER EZEANYIM: That would be -- that is more than the -- much more than what we allow, .2 p.s.i. per foot.

THE WITNESS: Well, and --

MR. BRUCE: Go ahead, Mr. Anderson.

THE WITNESS: Yes. But in the data that I've seen, which is kind of sketchy, injection pressures during the life of the waterfloods in this and other units was -- well, a lot of them were taking while it was still on vacuum at that point in time, but there were some as high as 1200 pounds injection pressure.

And then there were four -- five wells drilled, horizontal wells drilled, in an offset unit, the Drickey-Queen Sand Unit, in 1999 to 2000 time period. And they had done step rate tests and that type of information, provided information, and had actually gotten approval from the OCD to raise the injection pressures up to 1800 p.s.i.

EXAMINER EZEANYIM: In the same formation?

THE WITNESS: In the same formation, yes.

EXAMINER EZEANYIM: To you or to some other operators?

THE WITNESS: A prior operator.

EXAMINER EZEANYIM: Oh, the one you acquired before --

THE WITNESS: Well, it might have been -- This property has changed hands several times, so it's at least two or three prior operators --

EXAMINER EZEANYIM: Yeah.

THE WITNESS: -- because it was American Resources at that point in time.

EXAMINER EZEANYIM: Yeah, do you have that information as part of the exhibits today, or --

THE WITNESS: No, sir, I do not.

EXAMINER EZEANYIM: Because we -- you know, I know your attorney knows that .2 p.s.i. is what we normally authorize. But if you want to, you know, go more than that, you have to provide your step rate tests --

THE WITNESS: Okay.

EXAMINER EZEANYIM: -- or some information to make sure we're not going to break down the formation.

THE WITNESS: Okay. Well, in any of the orders for this unit or any of the prior units that were approved for waterflood, there was no injection pressure limits. And not having worked New Mexico before, I wasn't aware of that specific regulation of the .2 p.s.i., so I was a little bit ignorant of that --

EXAMINER EZEANYIM: And that is the point. This project is too old. There's a lot of things that currently they -- you know, they didn't even consider.

THE WITNESS: Right.

EXAMINER EZEANYIM: At that point they didn't consider the area of review wells, they didn't consider some of -- you know, the -- what we consider now. Maybe at that point they don't have the rule that you have to have .2 p.s.i. --

THE WITNESS: Right.

EXAMINER EZEANYIM: -- you know, maybe at that point. But now we do, we have to revisit and make sure we comply with it and, you know --

THE WITNESS: And I have no problem with that. Now that I understand it, if that's what --

EXAMINER EZEANYIM: Yeah.

THE WITNESS: -- they want me -- and then we can work on making the amendments, doing the --

EXAMINER EZEANYIM: Yeah.

THE WITNESS: -- demonstrating to the Commission that --

EXAMINER EZEANYIM: Yeah.

THE WITNESS: -- the need for higher injection pressures.

EXAMINER EZEANYIM: Yes, and if you need to go

more than that .2, you have to demonstrate that you're not going to -- you know. We have normally granted the API [*sic*], you know, granted a request for increased injection pressure, as long as we --

THE WITNESS: That's fine. I'm getting educated here too.

EXAMINER EZEANYIM: Well, it's just the rules and regulations, you know.

Q. (By Mr. Bruce) And you mentioned the offset units. Those are also Queen waterflood projects?

A. Yes, sir, it's that same reservoir that Mr. Baker had shown on the structure map.

Q. Now, is -- I think you mentioned this, but is there a proposed stimulation program for the injection well?

A. Well, at the present time, and looking at the history, a lot of these wells were completed naturally --

EXAMINER EZEANYIM: Uh-huh.

THE WITNESS: -- and if we can complete them naturally, we're going to complete them naturally.

But if you have 50 years of injection going into these wells and not a lot of cleanouts and that type of thing, we've typically, on recent workovers in offset units, just done mild, you know, half-strength HCl acid-type treatments, just to clean up any wellbore damage or

scale. And if it's necessary in tighter parts of the reservoir, we might actually go to a fracture -- a small fracture stimulation, probably more on the producers, not so much on the injectors, because I'm really reluctant to inject -- or frac injectors unless I absolutely have to.

So yes, I mean, we'd like the natural completion, but our tendency will be for just a mild, low-strength acid kind of cleanup treatment.

EXAMINER EZEANYIM: About how many producers are you going to have here?

THE WITNESS: Pardon?

EXAMINER EZEANYIM: How many producers are you going to have here?

THE WITNESS: In the Trigg federal lease there will be 15 producers.

EXAMINER EZEANYIM: And 20 injectors?

THE WITNESS: And 20 injectors. And the reason for the disparity there is, on the west side we've got the gas cap, and we're going to make sure we have a water blanket to keep all our fluids on the lease.

Q. (By Mr. Bruce) Are there any freshwater wells within a mile of the Trigg federal lease?

A. No.

Q. But you did attach the C-108, a freshwater sample from a well located in this area, did you not?

A. Well, that's correct. On the Trigg federal lease, we're off the Caprock or Mescalero Ridge, and there's no groundwater in that area. But just to the east of us, within a half mile, you move up onto the Caprock and you're at the western edge of the Ogallala formation, which is a water-bearing reservoir, aquifer.

And two or three miles to the east of that we have rights to surface wells that produce out of the Ogallala, and that's what we've used, and that's what they've used historically as makeup water for these waterfloods.

Q. What is -- what will be the source of the injection water?

A. Well, it will be produced water, will be the source of the injection water. And if necessary, we're going to use the makeup water from those local freshwater wells which are about three or four miles to the east in the Ogallala formation.

EXAMINER EZEANYIM: What will be the system? Is that going to be a closed system?

THE WITNESS: Yes, it will be a closed system.

Q. (By Mr. Bruce) And are analyses of the injection water included in the C-108?

A. Yes, sir. And then they show that there's no compatibility problems between the injection water and the

formation water.

Q. In your opinion, is the granting of this Application in the interests of conservation and the prevention of waste?

A. Yes.

Q. And were Exhibits 10 and 11 prepared by you or under your direction?

A. Yes, sir.

MR. BRUCE: Mr. Examiner, I'd move the admission of Exhibits 10 and 11.

EXAMINER EZEANYIM: Exhibits 10 and 11 will be admitted.

Go on.

MR. BRUCE: I have no further questions, Mr. Examiner.

EXAMINER BROOKS: Nothing, thank you.

EXAMINER EZEANYIM: Okay, I guess the ball is in my court now.

Like I said before, you know, the two orders that were issued, really, they're just laughable right now, you know, because we can't rely on these for anything, even though one of them gave you administrative approval without going to hearing, and I think that's one of the reasons this one went to hearing, because the order was issued a long time ago, and we have changed our ways of doing

things, and we wanted to have this one go to hearing to be able to explore certain issues again and make sure I do this right. We couldn't have a granted administrative approval for expansion without going to hearing. I think that's why we are here today. Is that -- am I right?

MR. BRUCE: That's the way I understood it from talking with -- reviewing the rules and talking to the Division personnel, Mr. Examiner.

EXAMINATION

BY EXAMINER EZEANYIM:

Q. Okay. Well, there will be 20 injection wells which will be from the existing wells, redrills, if need be, right?

A. Yes, sir.

Q. And do we have a schematic for those injection wells currently, the ones you are considering? Do we have it here, all of them?

A. They're all contained in the C-108, yes, sir.

Q. Okay. Is it possible for you to do a tabulation of that -- all of the injection wells, you know, whether they are plugged and abandoned, cement tops, what you have and, you know, all kinds of those information? Is it possible? Because I see -- you have all of them in tabular, but I think it includes all the injection wells and the area of review wells.

A. Yes, sir.

Q. I would prefer to have that injection wells separate, with their titles and everything. Is it possible for you to give me a tabular -- tabulation on those?

A. If we have the logs, yes.

Now one of the cautions is that -- and I don't know specifically with regard to the Trigg federal lease, but I've found that there are many wells they didn't even log at all when they drilled the wells.

And secondly, sometimes in an open-hole completion they would have gone down to the top of formation, set pipe and then just drilled out two or three feet. So they didn't actually penetrate -- I mean, I would have a log, but it would start above the Queen. It doesn't actually penetrate the Queen formation.

Q. Yeah, well --

A. So -- so I can -- Yeah, we can generate what we have --

Q. Yeah, that --

A. -- but I won't necessarily guarantee it's complete.

Q. Oh, yeah, that's what I mean, you know.

MR. BRUCE: We'll provide that after the hearing, Mr. Examiner.

EXAMINER EZEANYIM: What did you say?

MR. BRUCE: We can provide that --

Q. (By Examiner Ezeanyim) Oh, yeah, that's what I'm saying, you don't have to be complete, just as much as you could --

A. Yes, sir.

Q. -- from the data, compile it. I want to see those injection wells, you know. You say you have all the schematics here.

A. Yes, sir.

Q. I know some of them may change, but I want to see tabular from all information you have on them, because that's really what we're looking at.

A. Yes, sir.

Q. Okay, good. If you can provide that information and put in as much information as you could, as much as possible --

A. Yes, sir.

Q. -- that will be helpful.

A. Right. And we'll include -- we've worked on a couple of producers, and we've got new logs on a couple of wells --

Q. Okay, yeah, any information that we could get on this whole project will help us determine what is going to happen with it.

A. Yes, sir.

Q. Now we go to area of review. As I heard you mention, you have 83 of them.

A. Yes, sir.

Q. Okay. And I would like to have information on those too, as much as you could, and not -- you know, perfect, you now, information, anything you could find on them, in those tabular form as to -- so that we could, you know, look at -- I think when I -- I didn't look at it, but the tabulation includes all the injectors and all the area of review. I want it separate, separated.

A. Okay, in a cross-section or just as data?

Q. No, as tabular form, like you did the injectors.

A. Okay, so a type log cross-section?

Q. No, no, not a type log, like -- you see this tabulation you have here?

A. Yes, sir.

Q. If you -- Okay, you could give me a separate tabulation for injectors, the 20 of them, and a separate tabulation for the area of review wells, you know, indicating they are cement or whatever you can find, the way they are --

A. That's fine.

Q. You know, and this is going to be around a half-mile area of review --

A. Right.

Q. -- you know, in that federal -- Trigg federal. So if I can have those three pieces of information, that would be helpful.

A. Okay, yes.

Q. We are trying to reactivate this old project --

A. Uh-huh.

Q. -- and which, you know, was done wrong according to the current rules now.

A. Yes, sir.

Q. Okay.

A. But do you want a tabulation --

Q. Yeah, tab- --

A. -- and the wellbore sketches?

Q. Yeah, I think -- yeah, and wellbore sketch. That would be very good, you know, for those --

A. Okay.

Q. -- the first one, the first one will be your injector, the second will be your area of review. That's really how we do it now, so we take a look and see what -- all the remedial work you are going to do. You are going to do your area of review, and then your remedial work, whenever you enter the well and you think it's not adequate enough, you fix it, you already admitted you're going to do that --

A. Right.

Q. -- on this project.

A. Right.

Q. So that's why I want you to give me those tabular forms, so I can look at it. It will help a lot for both area of review and your injectors.

A. Okay, so it's the area of review -- I mean, it's the injectors for the Trigg federal lease --

Q. Yes.

A. -- and then for the area of review it's producers and injectors?

Q. No, no, the area of review, all the affected wells within the half-mile radius of that --

A. All the affected wells.

Q. -- of the injection wells --

A. Okay.

Q. -- you know. You draw a circle of half a mile within any affected injector, and then have your area of review. And I know you have done it because your attorney has done that, and you told me you have about 83 of them, right?

A. Right, right.

Q. Okay. So if you can give me a tabulation of those 83 separately, plus area of review, and the 20 injectors separately in tabular form, that would be good.

A. Okay. Well, the 83 wells --

Q. Yeah.
A. -- includes the Trigg --
Q. Okay, the 83, does that include the injectors?
A. Well, it included the Trigg federal wells.
Q. Oh, okay, yeah.
A. That's the total well count.
Q. Okay, yeah, anything that is affected.
A. Okay.
Q. Plus other wells that are not owned by -- or is not in the Trigg federal, anything --
A. Okay.
Q. -- we are looking at wells within the half mile area of review --
A. Okay.
MR. BRUCE: Yeah. And Mr. Examiner, what he's saying is, it won't be 83 plus 20 --
EXAMINER EZEANYIM: Okay.
MR. BRUCE: -- it will be 63 plus 20. The 83 includes the 20 injectors.
Q. (By Examiner Ezeanyim) Is that right?
A. Yes, sir.
Q. Okay.
A. And it includes the 15 producers on the Trigg federal lease.
Q. Okay. Okay, but you understand what I'm asking,

I'm asking that you give me those 20 injectors and then whatever the area of review, how many of them left as area of review.

A. Okay.

Q. And it's good -- it's better you told me, because I was looking at -- seeing 83 of them.

A. Okay.

Q. Whatever it is. And you have Form C-108 for each of the wells here?

A. Yes, sir.

Q. For the injectors? Because that's what we'll have --

A. Right.

Q. -- for all the 20?

A. Yes, sir.

Q. The question has been that the project is right now inactive, nothing is happening there.

A. As a waterflood it is inactive. We still have producing wells out there.

Q. Okay. And then let's go back to this -- I know you are going to do this as you learn -- get more information, what type of pattern you are going to use, whether 80 fivespot or 40 fivespot, you don't know which one you are going to use. You are going to continue with the 80 and then decide whether you want to go back to

increased density, to 40.

A. Well, on an offsetting unit, the Rock-Queen Unit --

Q. Yeah.

A. -- we are going to try an east-west line drive, north-south line drive, to see if there's some permeability influence to the waterflood.

Q. Yeah.

A. We've got a pilot 20-acre development program where we're going to try 20-acre spacing --

Q. Uh-huh.

A. -- on the wells. We're going to be redrilling or drilling some new wells, so we're going to be taking cores and doing core analysis and trying to determine direction of permeability, the quality of the reservoir rock, whatever information we can get from the cores.

So it won't be on the Trigg federal lease necessarily, but on other leases or units we're going to be doing some more in-depth studies to determine what makes sense for this Queen reservoir which extends across this whole area.

Q. So -- if the project is reactivated, do you want to reactivate an 80-acre fivespot?

A. That's all I have right now. I mean, yes. Yes, sir.

Q. Okay. Okay, surface injection water is produced water from your -- is that from the same lease or offset lease, and then makeup water is from Ogallala, you know --

A. Yes, sir.

Q. Okay. And the system is closed?

A. Yes, sir.

Q. Did you mention the depth of the fresh water? Is this about --

A. 100 to 200 feet.

Q. 100 -- Okay.

MR. BRUCE: The geologist, Mr. Baker, testified about that, Mr. Examiner.

EXAMINER EZEANYIM: Yeah. Yeah, I think I heard that.

So the whole thing here is that you want to reactivate because you think you are going to, you know, make more money, make something out of this project?

A. Yes, sir.

Q. That's why you want to do that, both geology and the engineering study indicate that?

A. Yes, sir.

Q. Now I know I was asking about cost-benefit analysis of this reactivated project. I wrote down here that you have about $6.4-million-plus, you know, extra, that it might cause you to do that. Do you have an idea

how much, you know, net profit here?

A. No.

Q. Did you do that at all? You know, I mean, using the current oil price --

A. Right.

Q. -- we could roughly say that you are going to recover about 1.2, and using the current oil price you can estimate --

A. Right.

Q. -- how much you think you can get then, compared with the costs you are going to incur, and wee whether the project is going to be profitable, right?

A. Right. Well, we actually use areas -- I mean, we do production profiles, models and that type of thing, and we've built some models and that type of thing, and recoveries. I just don't -- I haven't reviewed that.

Q. You didn't do that, okay.

A. Yeah.

Q. Okay. Now, let's come to injection water. 500 barrels is what you will be asking, but you -- it might go 1500? I mean, the amount of water you want to inject into the project?

A. Yes, well, historically 400 to 500 barrels was what they injected.

Q. 400 to 500? Okay.

A. Right, is what they injected back in the '60s and early '70s.

Q. Uh-huh.

A. I'm assuming that's where we'll end up stabilizing at, at this point in time. But I'd like to have the opportunity, if the wells will take more fluid, while we're trying to fill up the reservoir and getting a pressure, that we're not limited --

Q. Yeah, okay.

A. -- and that's where I established the 1500 barrels of water a day.

Q. So you are looking at 500 to 1500?

A. Correct.

Q. Okay. And then the injection pressure, we talked about that. The -- is about 2800, and you're asking for 1000 p.s.i., up to 15- -- 2000 p.s.i.?

A. Yes, sir. But that -- I mean, as we've talked about, I mean, if we are limited to the 560 p.s.i. per the regulations, we'll have to -- we'll prepare --

Q. -- demonstrate that you want the higher pressure --

A. Yes.

Q. -- if you do that? You have to demonstrate with the step rate test?

A. Yeah. Yes, sir.

EXAMINER EZEANYIM: Okay, that's all I have.

MR. BRUCE: That's all I have in this matter, Mr. Examiner.

EXAMINER EZEANYIM: Then at this point Case Number 14,047 will be taken under advisement.

(Thereupon, these proceedings were concluded at 10:40 a.m.)

* * *

ORDER MAILED

DATE

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing heard by me on

Oil Conservation Division

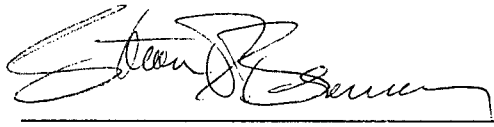
CERTIFICATE OF REPORTER

STATE OF NEW MEXICO)
) ss.
COUNTY OF SANTA FE)

I, Steven T. Brenner, Certified Court Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that I transcribed my notes; and that the foregoing is a true and accurate record of the proceedings.

I FURTHER CERTIFY that I am not a relative or employee of any of the parties or attorneys involved in this matter and that I have no personal interest in the final disposition of this matter.

WITNESS MY HAND AND SEAL December 15th, 2007.



STEVEN T. BRENNER
CCR No. 7

My commission expires: October 16th, 2010