

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

6 APPLICATION OF OWL OIL AND GAS,  
7 LLC FOR APPROVAL OF A SALTWATER  
8 DISPOSAL WELL, EDDY COUNTY,  
9 NEW MEXICO.

CASE NO. 15060

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

May 20, 2014

Santa Fe, New Mexico

RECEIVED OCD  
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ORIGINAL

14 BEFORE: RICHARD EZEANYIM, CHIEF EXAMINER  
15 GABRIEL WADE, LEGAL EXAMINER  
16  
17

18 This matter came on for hearing before the  
19 New Mexico Oil Conservation Division, Richard Ezeanyim,  
20 Chief Examiner, and Gabriel Wade, Legal Examiner, on  
21 Tuesday, May 20, 2014, at the New Mexico Energy,  
22 Minerals and Natural Resources Department, Wendell Chino  
23 Building, 1220 South St. Francis Drive, Porter Hall,  
24 Room 102, Santa Fe, New Mexico.

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1 (9:08 a.m.)

2 EXAMINER EZEANYIM: This hearing will come  
3 to order.

4 Good morning, everybody. Today is  
5 Tuesday -- as you all know, the hearing date is an  
6 off-docket day, Tuesday, May 20th, for the record. So  
7 today we're going to consider off-Docket Number 14-14.  
8 That is what I was told, 14-14.

9 For those of you who don't know me, my name  
10 is Richard Ezeanyim. I'm going to be the examiner  
11 today. And with me is Gabriel Wade, who is going to be  
12 the legal examiner, since this is a hotly contested  
13 case.

14 Being this is an off docket, we have only  
15 one case. It's kind of like, you know, a Commission  
16 hearing where they have -- but the docket we have today  
17 is one case, and I'm going to read out for the record  
18 the case number. I know we heard this case sometime in  
19 January, January 23rd, and because of a technicality,  
20 this was continued to today, several continuations.

21 So Case Number 15060 has been amended and  
22 re-advertised. This is the application of Owl Oil and  
23 Gas, LLC for approval of a saltwater disposal, Eddy  
24 County, New Mexico.

25 At this point, I call for appearances.

1 MR. BRUCE: Mr. Examiner, Jim Bruce, of  
2 Santa Fe, representing the Applicant. I have two  
3 potential witnesses.

4 EXAMINER EZEANYIM: Any other appearances?

5 MR. DANGLER: Hugh Dangler for the State  
6 Land Office, and I have one witness.

7 EXAMINER EZEANYIM: Any other appearances?

8 MR. FELDEWERT: May it please the Examiner,  
9 Michael Feldewert, with the Santa Fe office of Holland &  
10 Hart, appearing on behalf of Yates Petroleum, Abo  
11 Petroleum and Myco Industries. And I have one witness  
12 here today.

13 EXAMINER EZEANYIM: Any other appearances?

14 MR. PADILLA: Mr. Examiner, Ernest L.  
15 Padilla for Endurance Resources, Inc., and I don't have  
16 any witnesses.

17 EXAMINER EZEANYIM: Any other appearances?

18 Let's continue it (laughter).

19 That being said, if there are no more  
20 appearances, I think the way we are going to do it today  
21 is have all the witnesses stand up, state their names  
22 and be sworn altogether, so we can move on.

23 So anybody who is going to testify, would  
24 you please stand up, state your name and be sworn?  
25 State your name first.

1 MR. HUBER: My name is John Huber for Owl  
2 Oil.

3 DR. HAVENOR: Kay Havenor for Owl Oil.

4 MR. HOLM: Anchor Holm for State Land  
5 Office.

6 DR. BONEAU: David Boneau, Yates Petroleum.

7 MR. HARRIS: Randell Harris, Endurance  
8 Resources.

9 EXAMINER EZEANYIM: Go ahead, swear them.

10 (Mr. Huber, Dr. Havenor, Mr. Holm,  
11 Dr. Boneau and Mr. Harris sworn.)

12 EXAMINER EZEANYIM: Okay. Do you have  
13 opening statements, or could we just proceed?

14 Now, before I go further, I know -- I know  
15 counsel was joking. We're not going to be here until  
16 11:30 tomorrow, right?

17 MR. BRUCE: I think we'll get done today.

18 EXAMINER EZEANYIM: Okay. Good. So I want  
19 everybody to be mindful of time. We need to get this  
20 thing done.

21 And I have information that somebody needs  
22 some help, and we need to make sure that we get that  
23 help, you know. Anytime, call on me so we can do  
24 whatever we need to do to help somebody who needs that  
25 help.

1                   So that being said, what I think we are  
2 going to do today -- I want everybody to be brief,  
3 because I've heard this case. I haven't got to decide  
4 it, but I think we continued this case because the C-108  
5 wasn't well done. And that was one of the reasons why  
6 this case was continued. If we have a very good Form  
7 C-108, I think we might proceed. I know there are a lot  
8 of protestants from all parts, but we can take care of  
9 those. So when you go, I want you to be brief in our  
10 cross-examination and direct examination so we can try  
11 to finish today.

12                   MR. BRUCE: And, Mr. Examiner, I don't  
13 really have an opening statement. I don't know if  
14 anybody else wants to do one. Maybe what I would  
15 suggest is that maybe at the end, if you'd like either  
16 some closing remarks or written closing afterwards, that  
17 would save time.

18                   EXAMINER EZEANYIM: Yeah. I wanted to say  
19 that to give everybody due process, because if I give  
20 you an opportunity to have an opening statement and you  
21 have brief -- you know, Mr. Bruce, I have my brief is  
22 like this (indicating). I don't know why it's called  
23 "brief," but I'm not an attorney. But it's called  
24 "brief." So I'll give you the opportunity to make  
25 opening statements, but I don't think it's necessary.

1 Let's go right into it then, and you'll have an  
2 opportunity to have a written closing statement or a  
3 closing statement if time permits.

4 So with that said, would the Applicant  
5 proceed?

6 MR. BRUCE: Mr. Examiner, my first witness  
7 is Dr. Kay Havenor, who did testify in the first case  
8 and was qualified as an expert, of course. Mr. Dangler  
9 wasn't here, so if he wants me to requalify the witness,  
10 I will do so.

11 MR. DANGLER: All I care to know is what  
12 you want to qualify him as an expert in.

13 MR. BRUCE: Mr. Havenor is a  
14 geoscientist -- a geologist geoscientist.

15 MR. PADILLA: No objection.

16 EXAMINER EZEANYIM: Mr. Havenor, has been  
17 previously qualified, so you are continuing.

18 MR. BRUCE: Yes, sir.

19 KAY HAVENOR, Ph.D.,  
20 after having been previously sworn under oath, was  
21 questioned and testified as follows:

22 DIRECT EXAMINATION

23 BY MR. BRUCE:

24 Q. Dr. Havenor, could you identify Exhibit A for  
25 the parties?



1       A.   Exhibit A is a C-108 that was completed by me  
2   to replace the initial one that was provided.

3       Q.   Well, let's run through this and, again,  
4   mindful of the Examiner to not waste time. We're here  
5   today -- is the well we're here for today described on  
6   page 3 of the C-108?

7               MR. BRUCE: And I have numbered the pages,  
8   Mr. Examiner.

9       A.   Yes.

10       Q.   (BY MR. BRUCE) And in Unit K of Section 9, 21  
11   South, 21 East, correct?

12       A.   Correct.

13       Q.   And you prepared this. Does it contain, to the  
14   best of your knowledge, all data that is required of the  
15   Division in preparing a C-108?

16       A.   Yes, sir.

17       Q.   Let's move on to page 4. Could you describe  
18   the approximate packer setting depth and just the basic  
19   zone that is going to be injected into?

20       A.   The packer depth will be approximately 602  
21   feet, and the disposal zone will be the Lower Yates and  
22   the Upper Seven Rivers.

23       Q.   And to the best of your knowledge, what type --  
24   what will be the disposed water, coming from what other  
25   zones?

1           A.    Well, it's my understanding it will be a  
2   commercial disposal, but I would presume that a high  
3   percentage of it would be Bone Spring water.

4           Q.    Okay. And then if you'd move to pages 5 and 6,  
5   what do they show?

6           A.    Page 5 is the two-mile area of review, and page  
7   6 is an exploded [sic] view of the half mile.

8           Q.    Now, does the C-108 contain the required data  
9   on all wells within the one-and-a-half mile area of  
10   review?

11          A.    It's my belief they do.

12          Q.    And do pages 7 through 9 contain data on the  
13   wells in the area of review?

14          A.    7 through 9, that is correct.

15                   EXAMINER EZEANYIM: Counselor, excuse me.  
16   I need to interject.

17                   MR. BRUCE: Sure.

18                   EXAMINER EZEANYIM: Because this is a  
19   contested case, I want to make sure we get this right.  
20   When you are -- when any witness comes up here to answer  
21   questions, you answer either yes or no. If you say you  
22   believe, is that yes or no? I don't know. So because  
23   these things are put into the record, when I read the  
24   transcript, I want to get a concrete answer, yes or no,  
25   to a question. If you say "I believe" or "I think so,"

1 then you are giving me wonder to determine what you  
2 mean. Because when I read the transcript and I see "I  
3 think so," hmm, I don't know what to do at that point.  
4 Is that a yes or no? So please, anybody coming up here,  
5 if you want to ask an answer in the affirmative or  
6 negative, yes or no. And then it will captured by the,  
7 you know, court reporter, and we can use it to make a  
8 decision.

9 Q. (BY MR. BRUCE) Along those lines, Mr. Havenor,  
10 how long have you been preparing C-108s and testifying  
11 at the Division in support of the saltwater disposal  
12 applications?

13 A. That's about all of the work that -- geological  
14 work that I've done in the last five or six years.

15 Q. And do pages 7 through 9 contain the data on  
16 the wells within the one-half mile area of review  
17 required by the Division?

18 A. Yes, it does.

19 Q. And we'll get into -- several of these wells  
20 are plugged and abandoned; are they not?

21 A. Yes, that is correct.

22 Q. And does the C-108 contain wellbore sketches on  
23 the plugged and abandoned wells?

24 A. Yes, it does.

25 Q. And are those wells plugged so as to prevent

1 the movement of fluid between zones?

2 A. Yes, that is correct. A qualification to that.

3 Q. Go ahead.

4 A. It's correct as to the proposed disposal well.

5 Q. Now, looking at page 10, what will be the  
6 average and maximum disposal volumes?

7 A. It was proposed that the maximum would be 8,500  
8 barrels per day, with an average anticipated at 4,200  
9 barrels per day.

10 Q. And will the maximum injection pressure be the  
11 .2 psi per foot of depth required by the Division rules?

12 A. Yes.

13 Q. Of course, there was extensive talk at the  
14 prior hearing. There is a nearby SWD well injecting  
15 into the same zone -- the same correlative zone. Is  
16 that injecting at pressure?

17 A. No. It's on vacuum.

18 Q. And then you have water samples. Could you  
19 discuss the water samples and the chloride levels, et  
20 cetera?

21 A. The water samples were taken from the Mesquite  
22 production wells that are located just about a mile or  
23 so to the southeast. And it shows the -- they have  
24 producing wells in addition to their disposal well, and  
25 this is the analyses of the producing -- the shallow

1 Magruder field producing wells.

2 Q. Magruder-Yates pool?

3 A. Yes.

4 Q. And do all of the wells have water in excess of  
5 the 10,000 milligram per liter minimum set by the EPA?

6 A. 10,000?

7 Q. Is it 10,000 to 1? Do they have in excess of  
8 that amount?

9 A. Yes.

10 Q. Or do the water samples show that the water --  
11 all of the water in that area, in the Yates, is in  
12 excess of 10,000 to 1 of chlorides?

13 A. Yes. In total dissolved solids, yes.

14 Q. Total dissolved solids. Okay.

15 And as a result, are these waters  
16 protectable under either EPA or OCD regulations?

17 A. No, they are not.

18 Q. Could you move on to page 11 and discuss a  
19 little bit about the geology of the Yates-Seven Rivers  
20 Formation?

21 A. The Yates Formation and the Seven Rivers are  
22 back-reef deposits that extend from the Capitan Reef  
23 area to the north, northeast, northwest.

24 Q. And, again, you went into detail on this in the  
25 other -- the initial hearing. Is this the Capitan Reef?

1 A. No.

2 Q. How do you refer to it as?

3 A. Back reef.

4 Q. Now, the Capitan Reef itself is fresher,  
5 protectable water; is that correct?

6 A. It contains areas of protectable water, yes.  
7 That is correct.

8 Q. And the injection zone -- proposed injection --  
9 is the proposed injection zone in this well connected to  
10 those freshwater zones?

11 A. No.

12 Q. Is there any geologic evidence of open faults  
13 or other hydrologic connections between the disposal  
14 zone and any underground sources of protectable water?

15 A. No.

16 Q. Could you move on to pages 15 and 16 of the  
17 C-108, Dr. Havenor, and discuss the current status of  
18 the Myrtle Myra #3, the proposed injection well, and  
19 then on the next page, how the well will be completed?

20 A. Page 15 is a diagram that represents the  
21 activities that took place during pour [sic] production,  
22 and the consequences shown here are on plugged and  
23 abandoned.

24 Q. And does page 16 show the well as it will be  
25 recompleted and put on injection?

1 A. Yes, it does.

2 Q. And in your opinion, will the completion be  
3 proper under Division rules, the proposed completion?

4 A. Yes. That's my opinion.

5 Q. What does page 17 show, Dr. Havenor?

6 A. Page 17 is simply a topographic representation  
7 of the greater area around the proposed SWD on the  
8 right-hand side, and the left-hand side is a land site  
9 image of that area. Both are somewhat dated.

10 Q. And does page 19 reflect the surface owners and  
11 all of the offset interest owners to the proposed  
12 injection well within the one-half mile area of review?

13 A. Yes, sir.

14 Q. Now, let's move on to your Exhibit B. Did you  
15 prepare that?

16 A. Yes, sir.

17 Q. Why did you prepare this?

18 A. In the last hearing, I was asked, as I best  
19 recall, what the primary disposal water would be into  
20 this. And my thoughts immediately went to current  
21 activities, and Bone Spring came out of my mouth. And  
22 that may or may not be the case, but there's certainly a  
23 lot of Bone Spring activity in the general region.

24 Q. And do you anticipate -- I mean, you stated  
25 that it is anticipated that perhaps Delaware, perhaps

1 Bone Spring water will be injected into this well. Do  
2 you foresee any compatibility problems between the  
3 injected water and the formation water?

4 A. No. And that opinion is based on a number of  
5 years of observation of what has happened in a similar  
6 disposal well to the southeast, a mile, mile and a half.

7 EXAMINER EZEANYIM: Counselor, let me cut  
8 in here because I don't want to forget it.

9 This is supposed to be a commercial  
10 saltwater disposal, right?

11 MR. BRUCE: That is correct.

12 EXAMINER EZEANYIM: How can we, from  
13 experience, know what type of water will come from  
14 New York or from Australia or from Thailand? I don't  
15 know, because commercial can come from anywhere to this  
16 shallow zone disposal.

17 So normally what I ask is to get samples of  
18 where you're going to get the water and compare it with  
19 the native water and see whether they are compatible.  
20 Is it summarily -- can we say summarily that the water  
21 from New Zealand is going to be compatible? I don't  
22 know. This is a commercial saltwater disposal -- I'm  
23 just exaggerating so that you-all know what I'm saying.

24 So what I'm trying to say is if it's going  
25 to be in this waterflood -- we know where the water is



1 coming. That's simple. But when the water can come  
2 from anywhere, it is my job to find out what type of  
3 water is that.

4 MR. BRUCE: Okay.

5 EXAMINER EZEANYIM: Did we do that work, to  
6 find samples, because, you know, your client is  
7 anticipating to dispose some of this water from  
8 somewhere? Get samples of those and then compare with  
9 where you're going to inject the water.

10 MR. BRUCE: Okay.

11 EXAMINER EZEANYIM: You see what I mean?

12 You know, I don't think it's really nice --  
13 I mean, with all due respect, I know you have a very  
14 long experience here -- congratulations to that -- but  
15 my problem is if I don't know where the water is coming,  
16 how can I make a judgment of what type of water it is.  
17 That's my problem.

18 MR. BRUCE: Okay.

19 Q. (BY MR. BRUCE) And, Mr. Havenor, what is  
20 Exhibit C?

21 A. In my earlier response to the Bone Springs  
22 water question, I had a search done to find any Bone  
23 Springs water in the general vicinity. That was  
24 complicated because of shutdown problems that New Mexico  
25 Tech had with their databases, but they did accommodate

1 me by giving me all the water samples within -- that we  
2 know came from within a five-mile radius, and,  
3 unfortunately, none of those were Bone Springs.

4 Q. But does this contain the various wells and  
5 water samples that you were able to locate?

6 A. Yes. This contains all of the samples that  
7 were available in that five-mile area. In my opinion,  
8 this would be helpful because water is generally  
9 trucked, and they don't like to truck it any further  
10 than they absolutely have to.

11 Q. The cost is too much?

12 A. Yes. I think New Zealand would be rather high  
13 (laughter).

14 EXAMINER EZEANYIM: I want to be sarcastic.

15 Q. (BY MR. BRUCE) And the well that has been  
16 discussed as the Exxon State #8 well, that's a  
17 commercial saltwater disposal well; is it not?

18 A. Yes.

19 Q. It was originally permitted by Mesquite --

20 A. Yes, by Mesquite.

21 Q. By Mesquite SWD, Inc.?

22 A. Well, not first, but the major one.

23 Q. The major permitting, five, six years ago, I  
24 believe?

25 A. Yes.

1 Q. And that is a commercial SWD well?

2 A. Yes, it is.

3 Q. And you have worked for Mesquite SWD, Inc. for  
4 a number of years; have you not?

5 A. On numerous occasions, yes.

6 Q. And are you aware of any water-compatibility  
7 issues, injection water and formation water, in that  
8 Exxon State Well #8?

9 A. None have ever been indicated to me.

10 Q. And just one final thing, Dr. Havenor. The  
11 Exxon State Well #8, that is injecting on a vacuum,  
12 correct?

13 A. Yes. It has been since it originally was  
14 developed many, many years ago.

15 Q. Even before Mesquite took over operations of  
16 the well?

17 A. Yes.

18 Q. I believe that well -- I think it might have  
19 first -- you say many years. When was the -- to the  
20 best of your knowledge, when was injection first done  
21 into that well?

22 A. I believe it was in the 1970s.

23 Q. And it's always been on vacuum?

24 A. Yes.

25 Q. Does that indicate to you that the reservoir

1 available for injection is quite large?

2 A. Yes.

3 Q. It can absorb a huge amount of volume of water?

4 A. It has.

5 Q. And would that indicate to you that whether for  
6 existing wells or any newly drilled wells, there will be  
7 no effect on those wells in the drilling or production  
8 phase?

9 A. I don't understand your question.

10 Q. Since the volume is so large, do you anticipate  
11 very little area will be filled up by the injected  
12 water? A limited area, let's say.

13 A. That's very complicated, because if it was  
14 filled up, that would mean that there wasn't extensive  
15 distribution of the porosity. There has been no  
16 indication that there has been any filling.

17 Q. Okay. I think you've answered what I wanted.

18 And, again, did you prepare Exhibits A, B  
19 and C, Dr. Havenor?

20 A. Yes.

21 Q. In your opinion, is the granting of this  
22 application in the interest of conservation and the  
23 prevention of waste?

24 A. Yes, it is.

25 MR. BRUCE: Mr. Examiner, if I may, I'm

1 just handing you Exhibit D, which is simply my Affidavit  
2 of Notice. And all offsets and the surface owner did  
3 receive actual notice of the application, Mr. Examiner.

4 And with that, I'd move the admission of  
5 Owl's Exhibits A through D.

6 EXAMINER EZEANYIM: Any objection?

7 MR. FELDEWERT: No objection.

8 MR. DANGLER: None.

9 EXAMINER EZEANYIM: Exhibits A through D  
10 will be admitted.

11 (Owl Oil and Gas, LLC Exhibit Letters A  
12 through D were offered and admitted into  
13 evidence.)

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

16 EXAMINER EZEANYIM: Thank you.

17 What's your name?

18 MR. DANGLER: My name is Hugh Dangler.

19 EXAMINER EZEANYIM: Hugh Dangler. I  
20 haven't met you before.

21 MR. DANGLER: No, we haven't, and pleased  
22 to meet you. And anything close Dangler will do.

23 EXAMINER EZEANYIM: Okay. Go ahead. Any  
24 cross-examination?

25 MR. DANGLER: Thank you, Mr. Examiner.

1 CROSS-EXAMINATION

2 BY MR. DANGLER:

3 Q. Is it Dr. Havenor? I want to get it right. Is  
4 it Dr. Havenor?

5 A. Yes, sir.

6 Q. Do you have experience in groundwater studies?  
7 Have you done any groundwater studies?

8 A. Yes, sir.

9 Q. Where was that, and what kind of experience do  
10 you have in that?

11 A. Well, my doctoral dissertation covered quite a  
12 large area in southeastern New Mexico and some of West  
13 Texas, and I have been extensively involved in Pecos  
14 River groundwater -- groundwater studies since  
15 approximately 1998.

16 Q. And what's your involvement with the Pecos  
17 River since 1998? Anything? Can you say?

18 A. I did a major groundwater study for Chaves  
19 County that covered southern Chaves County in the Pecos  
20 River area down to the north edge of Artesia.

21 Q. You're aware of a study the State Engineer did  
22 of this area, kind of a big study of the Carlsbad area  
23 of water and supply, and it included the Pecos River?  
24 Are you aware of the study I'm talking about?

25 A. Yes. They've done several.

1 Q. The one that I think was published in -- I  
2 think it was 1994. Are you aware of that study?

3 A. Yes.

4 Q. Now, I understood your testimony -- I just want  
5 to make sure that I understand it, that you had done  
6 some water sampling on some Mesquite production wells,  
7 and I believe you said they were a mile or so to the  
8 southeast. Is that a mile or so southeast of the  
9 proposed site of the injection?

10 A. That's what the reference was to, yes. To  
11 clarify that, I did not do the sampling of the water.

12 Q. Okay. But the wells that you looked at the  
13 water samples from were --

14 A. Correct.

15 Q. -- within a mile-plus or within a mile exactly  
16 southeast?

17 A. Let me refer to my regional map and give you a  
18 closer approximation of the distance.

19 Q. That will be great.

20 A. It's closer to one-and-three-quarters miles,  
21 give or take.

22 Q. Okay. One-and-three-quarters miles.

23 And that would put those wells in the  
24 vicinity of the other disposal well on that we've been  
25 talking about. Is that fair to say?

1 A. The new one?

2 Q. The one that's Exxon 8 that we've been talking  
3 about, not the new one but the old one.

4 A. I'm confused by your question.

5 Q. So my understanding from your testimony is that  
6 the disposal well that's already in place, the one that  
7 you're familiar with, I heard you say, was 1.5 miles to  
8 the southeast of the new disposal site; is that correct?

9 A. Yes. That was an approximation of distance.

10 Q. As is the one-and-three-quarters miles an  
11 approximation of the distance?

12 A. Yes.

13 Q. And comparing those two approximations of  
14 distance, it would appear that the water samples that  
15 you have used have come out of water very close in  
16 geographical distance to where that other disposal well  
17 is. Is that fair to say?

18 A. Yes, sir. And they came from the same  
19 formation.

20 Q. Okay. Given that, do you have any other water  
21 samples to offer besides those water samples?

22 A. Not readily available.

23 Q. So you didn't review other water samples  
24 besides those water samples in order to come to the  
25 opinions you've come to?



1           A.    I don't believe I'm following exactly where  
2   you're going.

3           Q.    I'm just asking the basis of your opinion, and  
4   you have several very strong opinions. And I want to  
5   know if I'm missing something that you analyzed that  
6   contributes to your opinion.

7                   The only water samples I heard counsel  
8   discussing on direct were the water samples that are now  
9   positive one-and-three-quarters miles to the southeast,  
10   and I'm not wanting to be in error if there are other  
11   water samples that you reviewed.

12          A.    Water samples from?

13          Q.    Other wells at depths that might give us an  
14   idea of what kind of TDS is in the water near where you  
15   want to inject -- where your client wants to inject.

16          A.    No. I don't have any additional information  
17   readily available.

18          Q.    Turning your attention to Exhibit B, I saw on  
19   Exhibit B -- and I don't think this was gone over on  
20   direct, but it is in the exhibit -- that the TDS of the  
21   Bone Spring and surrounding area would be in the range  
22   but not exceed 150,000 parts per milligram TDS?

23          A.    No. I did not say it would not exceed.

24          Q.    Okay. Well -- I'm sorry. It says in the  
25   statement "might be in the range of or exceed." Excuse

1 me. I did misread that completely. So we have 150,000  
2 parts per milligram? Is that what --

3 A. I was trying to make an estimate on the low  
4 side.

5 Q. Okay. So it might be higher than that, than  
6 the 150,000?

7 A. Easily.

8 Q. There was some very interesting language, and  
9 I'm not familiar with -- and I admit I'm not familiar  
10 enough with the standards to know exactly what the  
11 language means, but I heard several questions about  
12 water-compatibility issues. And I wanted to establish  
13 some baseline about this concept of water compatibility.  
14 And I think the indication of a baseline is that if the  
15 water is less than 10,000 TDS parts per milligrams, if  
16 I'm saying that right, we are in protectable waters; is  
17 that correct?

18 A. That's based upon EPA numbers.

19 Q. That's an EPA standard which the states are  
20 required to enforce, correct? We have primacy on that?

21 A. At least in the Capitan Reef area, I'm  
22 confident of that, but whether it extends beyond that, I  
23 don't know. But it's a standard that I have generally  
24 followed throughout southeastern New Mexico.

25 Q. Terrific. And this is exactly what I wanted to

1 establish in a baseline.

2           So if the waters in which you are injecting  
3 showed or indicated that they were below 10,000 TDS  
4 parts per milligram, that would not be a place you would  
5 want to inject?

6           A. No. I think you've -- would you restate that  
7 because I heard it differently than --

8           Q. Okay. And I've already made one mistake, so  
9 please, I'm very happy to repeat things.

10           My understanding is that it's a baseline  
11 that we want to not -- that protectable waters are less  
12 than 10,000 TDS parts per milligram?

13           A. Correct.

14           Q. And because they're protectable waters by EPA  
15 standards, we don't want to foul those waters. Is that  
16 fair to say?

17           A. That's the objective.

18           Q. Okay. So if, where you are injecting, the  
19 waters were indicated to be less than 10,000 TDS parts  
20 per milligram, that would be a problem to inject into  
21 that water; would it not?

22           A. It wouldn't be allowed.

23           Q. It wouldn't be.

24           Now, if the waters were close to that and  
25 higher, would there be a concern about putting in

1 150,000-plus TDS into waters that, say, were 15,000,  
2 fairly close to the 10,000 mark but not at the 10,000  
3 mark? Would that be a concern, ten times as much salts  
4 into those waters?

5 A. It would be a concern to me.

6 Q. So there is an idea you don't want to degrade  
7 the waters. It's not just protectable waters. We don't  
8 want to degrade waters. Is that fair to say?

9 A. That's the reason that we pick horizons that  
10 already have higher than 10,000 milligrams per liter for  
11 disposal.

12 Q. Right. And I think you answered my question,  
13 but I'm going to ask it one more time. We don't want to  
14 degrade waters that are perhaps not protectable but are  
15 close to being protectable. Is that fair to say?

16 A. You're asking for my personal opinion?

17 Q. I am.

18 A. Yes. I would not want to degrade any waters  
19 and make an effort to avoid coming quite close.

20 EXAMINER EZEANYIM: Counsel, let me make  
21 something clear there on your line of questioning.

22 MR. DANGLER: Yes.

23 EXAMINER EZEANYIM: That's what the rules  
24 say, unless we waive the rule. It doesn't have to be  
25 only protectable water. Like the example you give,

1 15,000, that's against the rule -- the OCD rule, that  
2 you don't foul those waters. So let's not dwell on it.  
3 It's an established fact. He answered correctly. He  
4 wouldn't like to do that. So let's just go at it --  
5 because the rule says even if -- even if the native  
6 water is 40,000 and you are going to put 200,000, you  
7 may not be allowed to do that, because in the future,  
8 that 40,000 may be used. That's the anticipation. It  
9 might be used for something. So let's not go back  
10 there. We have established that if the water is higher  
11 than the native water, you may not be allowed to do  
12 that. So I wanted to clarify that so we can move on.

13 MR. DANGLER: No. Thank you, Mr. Examiner,  
14 and that did clarify it for me. And I appreciate that  
15 the rules support that.

16 And I have no further questions, so I pass  
17 the witness.

18 CROSS-EXAMINATION

19 BY MR. FELDEWERT:

20 Q. Mr. Havenor, on the area of review, did you  
21 compile the list of the area-of-review wells?

22 A. Yes.

23 Q. And did you compile the list of the  
24 area-of-review wells for the initial application that  
25 was filed by the company?

1 A. The initial list for Owl Oil?

2 Q. Yes.

3 A. No.

4 MR. FELDEWERT: May I approach?

5 EXAMINER EZEANYIM: Sure.

6 Q. (BY MR. FELDEWERT) Did you examine the initial  
7 list that was compiled by Owl in the first application,  
8 Dr. Havenor?

9 A. Prior to submittal?

10 Q. Yes.

11 A. No.

12 Q. Did you examine it after submittal?

13 A. Yes.

14 Q. Did you make any changes, or did you intend to  
15 make any changes?

16 A. Not to this initial application, no.

17 Q. You did not?

18 A. No.

19 Q. So you didn't intend to make any changes to  
20 what's been marked as Exhibit Number 7 -- or what was  
21 initially marked as Exhibit Number 7 with respect to the  
22 area-of-review wells?

23 A. I had nothing to do with this.

24 Q. My question was: Did you examine the initial  
25 list of area-of-review wells in Owl Exhibit Number 7?

1 A. I don't recall.

2 Q. Would you turn to page 7 -- I'm sorry -- page 8  
3 of that exhibit?

4 A. Page 8?

5 Q. Then on your Exhibit A that you introduced here  
6 today, would you turn to page 7?

7 A. Yes.

8 Q. Now, as I was going through this on the initial  
9 application, which was the table of wells in the area of  
10 review -- and the area of review has not changed,  
11 correct, Dr. Havenor?

12 A. The area of review has not changed, correct.

13 Q. I see, for example, on page 8 of Exhibit Number  
14 7, that there is a Myra #6 well identified about halfway  
15 down. Do you see that?

16 A. Yes.

17 Q. As within the area of review, correct?

18 A. It's on that table, yes.

19 Q. Then if I go to your page 7 of your new C-108,  
20 I don't see any listing or analysis of the Myra #6.

21 A. Myra #6. It's outside of the area of review.

22 Q. Now, how did you come to that conclusion?

23 A. It's outside of the half-mile area of review.

24 Q. Well, somebody looked at the initial -- in the  
25 initial application of the area of review and concluded

1 it was within the area of review.

2 A. I had no involvement with this first  
3 application.

4 Q. Then if I look at the list that was compiled  
5 initially and marked as Exhibit Number 7 by Owl, there  
6 is the Myra #10. Do you see that on the list second  
7 from the last?

8 A. Yes.

9 Q. And I don't see that on your list of wells on  
10 Exhibit A, page 7. There is no analysis of that well,  
11 correct?

12 A. It's outside of the area of review.

13 Q. And both of these wells are in Section 9?

14 A. Yes.

15 Q. Did you conduct an examination for the  
16 freshwater wells in the area?

17 A. No, I did not.

18 Q. Who did that?

19 A. That is in this application (indicating)?

20 Q. No. In your current application, did you  
21 conduct a review for any freshwater wells?

22 A. Yes, I did.

23 Q. And did you locate any freshwater wells?

24 A. Well data from the Office of the State Engineer  
25 indicates that there are no wells within that radius.



1 Q. Did you look anywhere else besides the Office  
2 of the State Engineer?

3 A. No.

4 Q. You didn't look at Division records?

5 A. OCD records?

6 Q. Yeah.

7 A. Well, there are other wells, but I didn't  
8 search them for water analysis.

9 MR. FELDEWERT: May I approach,  
10 Mr. Examiner?

11 EXAMINER EZEANYIM: Sure.

12 Q. (BY MR. FELDEWERT) Mr. Havenor, I've handed you  
13 a package of exhibits, and I want you to turn to what's  
14 been marked as Yates Exhibit Number 10.

15 A. (Witness complies.)

16 Q. It should be under tab ten.

17 A. There is nothing in there. Oh, excuse me. My  
18 thumb missed a page.

19 Q. That's all right.

20 I'm going to represent to you, Mr. Havenor,  
21 that this was marked as an exhibit at the last hearing.  
22 Do you recall that?

23 A. No, I do not recall that.

24 Q. You'll see about halfway down -- and this is  
25 from the Division's files -- it was actually introduced

1 in Case 14178, by a client you said that you did a lot  
2 work for, Mesquite SWD. It indicates halfway down that  
3 there is one inactive freshwater well located in Unit M,  
4 Section 9, 21 South, 27 East. Do you see that?

5 A. Yes.

6 Q. That's the same section in which your  
7 proposed -- Owl's proposed disposal well is located,  
8 right?

9 A. Yes.

10 Q. When this was introduced at the last hearing,  
11 where you were present, did you conduct any kind of  
12 examination to determine the condition or location of  
13 this, what it indicates here on here as a freshwater  
14 well?

15 A. In my search on February the 9th, I found no  
16 indications of recorded or known wells within that area.

17 Q. So your search was limited to the OSE records,  
18 correct?

19 A. Correct.

20 Q. You didn't pay any attention to this  
21 particular --

22 A. No.

23 Q. -- indication of a freshwater well even though  
24 it was introduced at the last hearing?

25 A. It says that there was one inactive freshwater

1 well located there, and I don't recall it.

2 Q. Now, when I looked at your application that you  
3 filed on behalf of Owl, I notice that you changed your  
4 proposed injection depth from what had previously been  
5 proposed by the company. Do you recall that?

6 A. 652 to 720?

7 Q. That's what you are currently proposing, right?

8 A. Yes. That was what was requested by Owl.

9 Q. Under your application?

10 A. Yes.

11 Q. Now I want you to look at Exhibit Number 7, the  
12 previous application. So Owl Exhibit Number 7. Not the  
13 tabbed one there, Dr. Havenor, but the sheet that I  
14 handed to you, Owl's previous application.

15 A. Oh, okay. What page would that be on?

16 Q. It would be on page 4.

17 Do you see where previously Owl was  
18 requesting an injection depth of 670 feet to 785?

19 A. Yes, sir.

20 Q. And that you've now changed that to 652 feet to  
21 720 feet, so you're going shallower, correct?

22 A. Yes, sir.

23 Q. Do you know why that change was made?

24 A. Well, I really don't, other than it would have  
25 been in consultation with Owl.

1 Q. So did you have any consultation with Owl as to  
2 why you changed the depth that you are proposing to  
3 inject to a shallower depth?

4 A. I don't recall.

5 Q. Now, after you put together your application,  
6 you then sent it out to the various parties that you  
7 could locate, correct?

8 A. Yes, sir.

9 Q. And you did so with a cover letter?

10 A. Yes, sir.

11 MR. FELDEWERT: May I approach?

12 EXAMINER EZEANYIM: Sure.

13 Q. (BY MR. FELDEWERT) Dr. Havenor, I've handed you  
14 what's been marked as Yates Exhibit Number 13.

15 MR. FELDEWERT: And, Mr. Examiner, it's  
16 marked Exhibit Number 13 because our marked exhibits in  
17 the notebook go up to 12, so this is a continuance of  
18 the exhibits.

19 EXAMINER EZEANYIM: Okay. This is for  
20 Yates?

21 MR. FELDEWERT: This is for Yates, Exhibit  
22 Number 13.

23 Q. (BY MR. FELDEWERT) Now, Dr. Havenor, is this  
24 the cover letter that you sent out to the parties of  
25 record when you completed your revised C-108?

1 A. Yes, sir.

2 Q. And did you send it to all the parties that are  
3 identified in your Exhibit A, on page 19, the notice  
4 list that we saw?

5 A. Yes, I did. And I see that there was a  
6 difference between the depths in the letter and on the  
7 C-108.

8 Q. But you didn't notice that when you sent it  
9 out?

10 A. No, sir, I sure did not.

11 Q. So you didn't -- at least your cover letter  
12 does not inform them of the actual depth that you seek  
13 to inject?

14 A. Within a few feet.

15 Q. Now, before I go on, is there any difference  
16 between the Basal-Yates and the Lower Yates Formation?

17 A. Terminology.

18 Q. Is it the same area?

19 A. Yes.

20 Q. Now, if I go to your Exhibit A that you brought  
21 here today, which is a copy of your revised C-108 --  
22 okay?

23 A. Yes, sir.

24 Q. -- if I go to page 18, this is the legal  
25 advertisement for the application that is before the

1 Division here today?

2 A. Yes, sir.

3 Q. Did you prepare that, Dr. Havenor?

4 A. Yes, I did.

5 Q. And, again, Mr. Havenor, doesn't it identify  
6 the long injection interval in the legal advertisement  
7 for the case here today?

8 A. It indicates the 680 to 785 feet.

9 Q. That's not the injection interval for which you  
10 seek approval from the Division today?

11 A. That is correct.

12 Q. So the public did not get proper notice of the  
13 injection interval --

14 MR. BRUCE: I would object to that  
15 question, Mr. Examiner. That calls for a legal  
16 conclusion. And in support of that, I'd say if you read  
17 the C-108, a published notice is only required when  
18 administrative approval is sought, and administrative  
19 approval is not being sought.

20 MR. FELDEWERT: I'll rephrase the question.

21 EXAMINER EZEANYIM: Objection sustained.

22 Q. (BY MR. FELDEWERT) Dr. Havenor -- Mr. Havenor,  
23 the legal advertisement that you put together and  
24 published in the newspaper for notice here today does  
25 not correctly identify the injection interval for which

1 you are seeking approval, correct?

2 A. They are different, yes.

3 Q. And if I also look on here -- and I think you  
4 testified earlier you're seeking approval to dispose at  
5 a maximum rate of 8,500 barrels of water per day?

6 A. That is what is on the C-108, yes.

7 Q. If I look at the legal advertisement, what have  
8 you advertised as the maximum barrels of water per day  
9 for which you seek approval?

10 A. 8,000.

11 Q. So, again, it incorrectly states the rate of  
12 disposal for which you are seeking approval here today?

13 A. They are different, yes.

14 Q. Now, if I understand your application, you seek  
15 to inject -- authority to inject from this Division as  
16 to what is described as, first, the Lower Yates  
17 Formation and, secondly, the Seven Rivers Formation; is  
18 that correct?

19 A. Yes, that's the statement.

20 Q. And you'll agree with me that the Yates  
21 Formation is a separate geological formation from the  
22 Seven Rivers Formation?

23 A. That is correct.

24 Q. In fact, the Yates Formation sits above the  
25 Seven Rivers Formation?

1 A. Sits on the Seven Rivers.

2 Q. And this Yates Formation is where you've had  
3 production of oil and gas?

4 A. Not in this interval.

5 Q. But in the Magruder portion of the Yates  
6 Formation, there has been production of oil and gas?

7 A. Yes, above this disposal zone.

8 Q. Well, that Magruder zone is what, about  
9 two-thirds or three-fourths down the Yates Formation,  
10 roughly?

11 A. It extends about two-thirds of the way --  
12 approximately two-thirds of the way from the top towards  
13 the bottom.

14 Q. And you're seeking, first, authority to inject  
15 into the lower portion of that same Yates Formation?

16 A. Correct.

17 Q. And in the second part of your application, you  
18 seek authority to inject into the next formation below  
19 it, the Seven Rivers Formation?

20 A. Yes.

21 Q. Now, you reference the fact that the Division  
22 has authorized injection into a disposal well in Section  
23 15. I think you called it the Exxon 8.

24 A. Yes.

25 Q. And are you familiar with the order that was



1 issued by the Division authorizing approval of injection  
2 into the Exxon 8 down in Section 15?

3 A. It was just Lower Yates, as I recall.

4 Q. Okay. Maybe I don't have -- so you're familiar  
5 with the order?

6 A. Yes.

7 Q. It was Order Number R-13043. In fact, to make  
8 things easier --

9 MR. FELDEWERT: May I approach?

10 EXAMINER EZEANYIM: Sure.

11 Q. (BY MR. FELDEWERT) Now, Dr. Havenor, didn't you  
12 testify for the Applicant in the case that resulted in  
13 Division Order R-13043?

14 A. Yes, sir.

15 Q. And it was entered by the Division in 2008?

16 A. Yes, sir.

17 Q. And at that time, if I understand it correctly,  
18 your client and indeed yourself sought authority to  
19 inject only into the Yates Formation --

20 A. Yes.

21 Q. -- not the Seven Rivers?

22 A. The original well did not penetrate the Seven  
23 Rivers.

24 Q. But your injection authority that you sought  
25 was limited to the Yates Formation?

1 A. Correct.

2 Q. And I believe you testified at that hearing  
3 that your proposed injection zone, based on your  
4 analysis, was at least 50 feet above the base of the  
5 Yates Formation; is that correct? Do you recall that  
6 testimony?

7 A. No, I don't recall it.

8 MR. FELDEWERT: May I approach,  
9 Mr. Examiner?

10 EXAMINER EZEANYIM: You may.

11 Counsel, before you proceed, would you like  
12 this to be marked as evidence or not, because I don't  
13 see any -- what do you want us to do with it?

14 MR. FELDEWERT: My thought, Mr. Examiner,  
15 is since this is -- first off, it's a Division order. I  
16 didn't see the need to mark it as an exhibit so long as  
17 it's identified on the record. Secondly, with respect  
18 to the transcript, I will identify the transcript on the  
19 record, so I don't think we need to mark it as an  
20 exhibit.

21 EXAMINER EZEANYIM: Okay. Thank you.

22 Q. (BY MR. FELDEWERT) Dr. Havenor, I have handed  
23 you a copy of the transcript from the Division hearing  
24 in Case Number 14178, dated October 15th, 2008, and it  
25 came from the Division's Web site. And I'd ask you to

1 turn to page 60 of that particular transcript. And  
2 actually, the document that's in front of you is pages  
3 from that. But if you'll turn to page 60, Dr. Havenor,  
4 at the top of the page, you state, beginning at line 3:  
5 "But there's no question in my mind that the Exxon State  
6 No. 8 is, as I indicated in this report, at least 50  
7 feet above the base of the Yates formation. It's TD'd."  
8 Do you see that?

9 A. Yes.

10 Q. So you made clear to the Division, in seeking  
11 approval of that, your injection was at least 50 feet  
12 above the base of the Yates Formation?

13 A. Yes.

14 Q. And that later on, do you recall testifying,  
15 Dr. Havenor, that you pointed out once again that it's  
16 at least 50 feet down to the top -- and I quote now --  
17 "of the Seven-Rivers or Capitan formation, whichever you  
18 prefer to call it." Do you see that? Do you recall  
19 that?

20 A. I don't, but I don't object to your statement.

21 Q. You recall that you had testified that it was  
22 "at least 50 feet down to the top of the Seven-Rivers or  
23 Capitan formation, whichever you prefer to call it"? Do  
24 you remember that testimony?

25 A. No, I don't.

1 Q. Why don't you turn to page 88 of the same  
2 transcript? If I go on page 88 down to line 17, do you  
3 see, beginning on line 18, that you state that it's "at  
4 least 50 feet down to the top of the Seven-Rivers or  
5 Capitan formation, whichever you prefer to call it"?

6 A. Yes, sir.

7 Q. Now, in light of your testimony, the Division  
8 then approved injection in the Exxon #8, first off, for  
9 injection only into the Yates Formation, correct,  
10 Mr. Havenor?

11 A. Yes.

12 Q. And, secondly, at a vacuum?

13 A. Yes.

14 Q. It doesn't authorize injection into the Yates  
15 Formation at any pressure, solely on a vacuum?

16 A. I don't recall that the SWD permit stated that.

17 Q. Let's go to what I handed you, Division Order  
18 R-13043. And I'm on page 5 of the order, and I'm on  
19 ordering paragraph three. Do you see where the  
20 provision states that "injection of produced water into  
21 the Exxon State Well #8 shall be under vacuum"?

22 A. Yes, sir, it does.

23 Q. And it further states: "Shall be accomplished  
24 through two-and-seven-eighths-inch plastic-coated  
25 tubing, setting the packer at 550 feet." To your

1 knowledge, is the Exxon #8 still injecting only on a  
2 vacuum as authorized by the Division?

3 A. Yes, sir.

4 Q. Then if I go to your C-108, you're not only  
5 seeking authority to inject into the Yates Formation but  
6 also the Seven Rivers Formation, correct?

7 A. Yes.

8 Q. And you're seeking authority to inject into the  
9 Seven Rivers Formation under pressure, 131 psi, not on a  
10 vacuum?

11 A. I did not stipulate that it would be on a  
12 vacuum. I expect that it will be that, but that can't  
13 be determined until actual disposal --

14 Q. Are you asking the Division for authority to  
15 inject into the Seven Rivers Formation under pressure?

16 A. If necessary.

17 Q. And also, then, if I look at your C-108 on page  
18 16 -- if I'm understanding what you're representing on  
19 page 16 in your C-108, this will be your proposed -- the  
20 diagram for your proposed injection well?

21 A. Yes, sir.

22 Q. And if I go on the left-hand side, almost down  
23 to the bottom, it appears to me that you're asking for  
24 authority from the Division to inject not only into the  
25 Yates-Seven Rivers under pressure, but also through --

1 is it three-and-a-half-inch tubing? Am I reading that  
2 correctly?

3 EXAMINER EZEANYIM: What page is that?

4 MR. FELDEWERT: Page 16 of Exhibit A.

5 A. That would be a maximum, three-and-a-half-inch  
6 tubing.

7 Q. (BY MR. FELDEWERT) That's what you're seeking  
8 here?

9 A. That's what I described, yes.

10 Q. Now, this new zone that you are asking for  
11 authority to inject into you have previously described,  
12 Mr. Havenor, as containing or comprised of vuggular  
13 dolomite?

14 A. Yes, sir.

15 Q. And you have previously described that porosity  
16 in this new zone as 25 to 30 percent, correct?

17 A. Yes sir.

18 Q. A permeability that you testified as being  
19 very, very high and out of the decimal range?

20 A. And what?

21 Q. Out of the decimal range.

22 A. Out of the decimal range.

23 Q. Do you recall that testimony?

24 A. No, I don't recall that.

25 Q. You don't recall testifying to that at the last

1 hearing that we had before the Division?

2 A. I don't recall what the context was.

3 MR. FELDEWERT: May I approach,  
4 Mr. Examiner?

5 EXAMINER EZEANYIM: Sure.

6 Q. (BY MR. FELDEWERT) Dr. Havenor, I've provided  
7 you the transcript from the hearing before this Examiner  
8 back in January for this case, 15060, and I'd ask you to  
9 turn to page 35 of that transcript for me, please. And  
10 I'd like you to go down to line 23. And, Mr. Havenor,  
11 the question posed to you was: "You describe that  
12 permeability as very, very high and out of the decimal  
13 range." And your answer at that time was what,  
14 Mr. Havenor?

15 A. It was yes.

16 Q. Has that testimony changed?

17 A. Well, at this moment, I would question what the  
18 decimal range means. I did not at that time.

19 Q. But that's what you testified?

20 A. Yes, I did.

21 Q. Now, the Examiner at the last hearing, when we  
22 adjourned, I thought made it very clear to you and your  
23 client that in filing your C-108 the second time, that  
24 you would need to do two things, which is a requirement  
25 in the C-108. First off, provide analysis of the

1 injection fluid that you seek to inject into your  
2 proposed disposal well. Do you recall that?

3 A. Not immediately, no.

4 Q. But you have, Dr. Havenor, filled out, as you  
5 say, a number of C-108s?

6 A. Yes.

7 Q. And you are aware, are you not, that that is a  
8 requirement of the C-108 under Section 7, paragraph  
9 four?

10 A. Yes, sir.

11 Q. And you seek authority, according to your  
12 application, for a commercial disposal well; is that  
13 correct?

14 A. It's my understanding that's what they want.

15 Q. That's your understanding?

16 A. Yes, that's correct.

17 Q. And you -- in response to Section 7, paragraph  
18 four, you state in your application, at page 10, that  
19 "the sources anticipated to be produced water from the  
20 San Andres, the Delaware and the Bone Springs," correct?

21 A. Where do you have that?

22 Q. I'm sorry. I'm looking at your application.

23 A. Okay. What page is that on?

24 Q. Page 10.

25 This is the application you filled out,



1 correct?

2 A. Yes.

3 Q. Did you type in Section 7, paragraph four?

4 A. Yes.

5 Q. Now, have you provided the Examiner or any of  
6 the parties today any analysis of the water from the  
7 San Andres?

8 A. No, I have not.

9 Q. Have you provided to the Examiner or any of the  
10 parties here today any of the water from the Delaware?

11 A. No, I have not.

12 Q. And finally, have you provided the Examiner or  
13 any of the parties here today with analysis of the water  
14 from the Bone Springs?

15 A. An estimate, as I recall.

16 Q. But no analysis?

17 A. No analysis available.

18 Q. The next requirement on the C-108 says that "if  
19 the injection is for disposal purposes" -- and that's  
20 what we're here for today, correct, disposal?

21 A. Correct.

22 Q. -- "you should attach a chemical analysis of a  
23 disposal zone formation water." Are you aware of that  
24 requirement?

25 A. Yes, I am.

1 Q. If I go to paragraph five of Section 7, on page  
2 10 of your application --

3 A. Yes, sir.

4 Q. -- as I understand it, Mr. Havenor, you have  
5 not provided the Division with analysis of the  
6 disposal-zone water for the area that's at issue here?

7 A. That is correct.

8 Q. Would you agree with me, Dr. Havenor, that at  
9 times it is difficult to determine the difference  
10 between the Capitan Reef Formation and the Seven Rivers  
11 Formation?

12 A. No.

13 Q. Didn't some of your documents, Dr. Havenor,  
14 that you have actually labeled put a label "Seven  
15 Rivers/Capitan"?

16 A. Possibly, but my experience has expanded since  
17 that time.

18 Q. But some of your own documents would make no  
19 distinction between the Seven Rivers and the Capitan?  
20 It would say "Seven Rivers/Capitan," correct?

21 A. That would have to be viewed in the context of  
22 which it was made, and the probability is very high that  
23 it was in reference to another operator's call.

24 Q. So some people have a difficult time  
25 distinguishing between the Seven Rivers and the Capitan?

1 A. Particularly in the late 1900s.

2 Q. Would you agree with me that the Seven Rivers  
3 Formation is a transition zone to the Capitan Formation?

4 A. Okay. Repeat that again.

5 Q. Would you agree with me -- hold on a second.

6 Would you agree with me that the Seven  
7 Rivers Formation would be a transition zone to the  
8 Capitan?

9 A. I would agree that the Seven Rivers, in its  
10 physical position, transits geologically into what is  
11 part of the Capitan Reef, but --

12 Q. Let me be a little more pointed. Didn't you  
13 testify in 2008, Mr. Havenor, that the Capitan -- or  
14 that the Yates-Seven Rivers is a transition zone to the  
15 Capitan?

16 A. I may have used that language, and obviously  
17 you have it there.

18 Q. Would it surprise you that you have used that  
19 language?

20 A. Yes, it does.

21 Q. Would you take a look at what I've handed you,  
22 the copy of the transcript from the 2008 hearing?

23 A. And where again were you referring to?

24 Q. On page 172.

25 A. Page 172.

1 Q. So I'm at the transcript from the 2008 hearing.

2 A. That's this one here (indicating)?

3 Q. What does it say on the front?

4 A. It's the transcript of the hearing, yes.

5 Q. Go to page 172.

6 A. Pages 65 and 66 is as high as it goes.

7 Q. I think you may have the wrong one.

8 MR. FELDEWERT: May I approach,  
9 Mr. Examiner?

10 EXAMINER EZEANYIM: Yeah, sure.

11 A. Are you looking at this one here (indicating)?

12 Q. (BY MR. FELDEWERT) There you go. That's it.

13 A. 172.

14 Q. Now, if I go down to line 14, Mr. Havenor,  
15 there is a question that was posed to you by the  
16 Division's attorney at that time, Mr. Swazi, and in that  
17 question, you'll see he's talking about some of these  
18 formations and the Capitan Reef.

19 A. Yes.

20 Q. And in response, you agree with me. On line  
21 21, you say: "Yes, that's a transition zone." Correct?  
22 Those are your words?

23 A. Yes.

24 Q. Now, do you have any -- have you presented any  
25 evidence here today, Mr. Havenor, of any kind of a

1 geologic barrier between the Seven Rivers Formation and  
2 the Capitan Reef?

3 A. Have I presented any barrier?

4 Q. Yeah.

5 A. No.

6 Q. Are you aware that there is a requirement in  
7 the Division's rules -- and it's injection Rule  
8 26.10.D [sic] -- that the operator of any disposal well  
9 is required to ensure that the fluids will remain within  
10 the injection interval? Are you aware of that?

11 A. Yes.

12 Q. So translated to this case, the operator has  
13 the burden of demonstrating to the Division that the  
14 fluids that you intend to inject are going to remain  
15 within the Seven Rivers Formation, because that's where  
16 you seek to inject, correct?

17 A. It's part of the interval, yes.

18 Q. And you don't have any evidence to present here  
19 today that the fluids that you seek to inject into the  
20 Seven Rivers Formation are going to remain within this  
21 transition zone?

22 A. I have to say that I have no evidence that it  
23 will, but there is no indication that it would not.

24 MR. FELDEWERT: That's all the questions I  
25 have.

1 EXAMINER EZEANYIM: Thank you very much.  
2 Mr. Padilla?

3 MR. PADILLA: I just have a couple of  
4 questions.

5 CROSS-EXAMINATION

6 BY MR. PADILLA:

7 Q. Dr. Havenor, Mr. Feldewert asked you some  
8 questions concerning page 10 of the C-108.

9 A. Yes, sir.

10 Q. He asked you whether or not you had obtained  
11 any samples from the San Andres, Delaware and the Bone  
12 Spring, and your testimony was that you had not?

13 A. That's correct.

14 Q. And my question to you is: Could you have  
15 obtained samples from wells in the vicinity that are  
16 producing salt water?

17 A. I submitted on this addendum the list of --

18 Q. The one from New Mexico Tech? Is that your  
19 Exhibit C?

20 A. Pardon?

21 Q. The list on Exhibit C, which is the list from  
22 New Mexico Tech?

23 A. Yes. Correct.

24 Q. But having found no samples on that list, did  
25 you make any effort to obtain samples from wells in the

1 vicinity from which water would be injected?

2 A. Not specifically for that, but I did  
3 investigate many of the wells in the greater area  
4 looking for water samples.

5 Q. And there is quite a bit of Bone Spring  
6 production going on immediately to the south of this  
7 proposed injection well; is that right?

8 A. That's my understanding, yes.

9 Q. And you still didn't go and try and get some  
10 samples from those wells, correct?

11 A. I did not.

12 Q. Now, on Exhibit B that was submitted, at the  
13 top of that exhibit, it states: "Havenor stated that  
14 Bone Springs-produced water might be one of the sources  
15 of disposal water." And in your testimony, there was  
16 discussion that water could come, basically, from  
17 anywhere because this was a commercial well; is that  
18 right?

19 A. Yes, that is true, but that statement is in  
20 response to my search for Bone Springs water samples.

21 Q. But would the water samples from water that  
22 would be found in the vicinity that may be injected  
23 contain information concerning acidity of the water?

24 A. The acidity of the water?

25 Q. Yes; that would, potentially, show a corrosive

1 effect on existing producing wells.

2 A. I think I've lost the question.

3 Q. Well, what I'm searching for is whether, in an  
4 analysis of total dissolved solids, you would have some  
5 information of potential water samples that would show  
6 acidity of that water.

7 A. In some cases, an analyses might show that,  
8 yes.

9 Q. And it's your testimony, as I understand it,  
10 that you could have any kind of water coming in there  
11 that maybe -- or could include -- have an acidity factor  
12 that would be important to someone like Endurance  
13 Resources that produces water in the area -- or oil in  
14 the area?

15 A. Well, I would -- I would first respond that the  
16 produced waters that we have are normally not acidic and  
17 that if there was acidic water being transported into  
18 any disposal facility, it would probably be illegal on  
19 the part of the party that was delivering it.

20 Q. But as I understand your testimony, this is a  
21 commercial well, and you could have water from any  
22 source, including water that has an acidic factor in it,  
23 correct?

24 A. I don't know that I can really answer that  
25 question because I think there are some other



1    ramifications on transport of these waters from the  
2    sources that often the disposal facility does not have  
3    any control or observation of.

4        Q.    Well, essentially, the Applicant in this case  
5    doesn't have any control over what kind of water comes  
6    in, right?

7        A.    Just by regulation of what can be picked up and  
8    transported.

9        Q.    But in the normal course of things on disposed  
10   water, you don't check for the acidity of that water  
11   before it's disposed at a commercial site?

12       A.    I don't know of any disposal facilities that do  
13   that.

14       Q.    So, again, going back from -- you have no  
15   control of what kind of water in total dissolved solids  
16   come from anywhere that could be potentially -- or that  
17   could go potentially into this disposal well?

18       A.    That is certainly a possibility.

19       Q.    In terms of water compatibility, the only  
20   cutoff, as I understand the questions from Mr. Feldewert  
21   and counsel for the State, is that as long as total  
22   dissolved solids is above 10,000 parts per million, you  
23   don't care what else -- what goes in there; is that  
24   fair?

25       A.    I assume that's a default answer, yeah.

1 Q. So have you done any analysis of a sample of  
2 potential commercial water that would come in there to  
3 show whether or not there's going to be some kind of  
4 mixture of waters and cause acidity, for example?

5 A. Well, that would be -- that would be up to the  
6 disposal company's responsibility, if that were  
7 necessary or required.

8 Q. But you don't have any information here as to  
9 that aspect of compatibility between the waters that are  
10 being injected and the waters that are native to the  
11 formation now, the Yates and the Seven Rivers; is that  
12 correct?

13 A. Can you rephrase your question, please?

14 Q. Well, what I'm asking is: Do you have an  
15 analysis of the compatibility of the water -- salt water  
16 that exists in the formation now and the Yates and Seven  
17 Rivers and water, say, from nearby Bone Springs, what  
18 happens when you mix those waters together?

19 A. No, I do not.

20 MR. PADILLA: One moment.

21 Q. (BY MR. PADILLA) Let me ask this: Would  
22 analysis of water that exists in the formation for  
23 disposal from the Yates and the Seven Rivers compare to  
24 potential water -- when you mix those, could you come up  
25 with an analysis of whether or not -- or a conclusion as

1 to whether or not you would have a corrosive effect, if  
2 the mixture would be corrosive in nature?

3 A. Let me see if I understand your question. If I  
4 take two different samples of disposing -- water to be  
5 disposed of and I mix them together, could I come up  
6 with a conclusion as to the compatibility with the  
7 formation or --

8 Q. Could you create a chemical combination that  
9 would be corrosive in nature for existing wells?

10 A. Not based upon the chemistry of waters that  
11 I've looked at over several years.

12 Q. But you haven't made any kind of analysis as to  
13 that in this case?

14 A. No, I have not.

15 Q. Have you done one for the disposal case that  
16 you testified on in 2008; do you recall?

17 A. No. I have not made any comparisons of  
18 mixed-water chemistry.

19 Q. And you would agree with me that you can create  
20 a corrosive effect when you mix water from any source  
21 with water in the formation?

22 A. No, I wouldn't agree with that. It would have  
23 to be very specific chemically object -- chemically not  
24 desired, coming from an undesired source. It would have  
25 to have acidity factors and other chemical compounds

1 that would essentially require analysis of any load of  
2 water that was brought in to any disposal.

3 Q. But that's not ever done, is it?

4 A. Not to my knowledge.

5 Q. So you don't know whether that could happen?

6 A. That's what I'm trying to say, I guess.

7 Q. Do you know, Dr. Havenor, whether or not the  
8 State requires plastic-coated and nickel-plated  
9 equipment in order to prevent corrosion on saltwater  
10 disposal wells?

11 A. Yes.

12 Q. And what is the reason that's required?

13 A. To prevent corrosion of the tools and the  
14 casing, to protect from outflow of the waters that are  
15 in the annulus.

16 MR. PADILLA: That's all I have.

17 EXAMINER EZEANYIM: Thank you very much.

18 Any redirect?

19 MR. BRUCE: Just a few things,

20 Mr. Examiner.

21 REDIRECT EXAMINATION

22 BY MR. BRUCE:

23 Q. Mr. Havenor, looking at your Exhibits B and C,  
24 you do give data from a Delaware Formation as to total  
25 dissolved solids, and that was from an actual test of

1 that well, correct?

2 A. Yes. Well, from one of these wells  
3 (indicating), yes.

4 Q. And Exhibit C, I think you said you looked,  
5 basically, at -- you say wells in the area. It looks  
6 like you're going out four to five miles, on Exhibit C?

7 A. It was a five-mile circle, yes.

8 Q. And these are all the water samples you found?

9 A. Yes.

10 Q. And this is what was reported to the State?

11 A. Yes.

12 Q. And this has TDS chlorides, et cetera; does it  
13 not?

14 A. Yes, it does.

15 Q. And so this has data not only on the Yates but  
16 on the Delaware and other wells within the area --  
17 within that five-mile area?

18 A. Correct.

19 Q. And this is no different -- even though it's in  
20 table form, it summarizes the data that would be on a  
21 water test from one of these wells?

22 A. That's correct.

23 Q. And Mr. Feldewert questioned you on the 130 psi  
24 you're requesting. You do not know at this point if  
25 that would be necessary?

1       A.   Well, that's the purpose of having it in, is  
2   that while you may anticipate that the zone will be on  
3   vacuum -- and I'm fairly confident of it -- there is  
4   always the possibility that it might not, or it might  
5   need a little help.

6       Q.   And that 130 psi fully complies with the  
7   Division's maximum .2 psi per foot of depth, correct?

8       A.   That is essentially why that's in there.

9       Q.   And you're not asking to exceed to that .2 psi  
10   per foot depth?

11      A.   Not asking to use any of it.

12      Q.   And you would hope that this well would be on  
13   vacuum?

14      A.   It's my guess that it would be.

15      Q.   And the Exxon State #8 well has been on vacuum  
16   injection for what, 30 years or so?

17      A.   From the time it was drilled.

18      Q.   And when you testified for the Exxon State #8  
19   well, which was a Mesquite well at the time, you could  
20   find no freshwater sources around that well either,  
21   could you?

22      A.   No.

23      Q.   And likewise, here you found no reported  
24   freshwater sources within two miles, based on the State  
25   Engineer's records?

1 A. Yes, two miles.

2 Q. And Mr. Padilla questioned you about  
3 compatibility. Again, you continue to -- with respect  
4 to the Exxon State #8 well, do you know of any  
5 water-compatibility issues in that well between the  
6 formation water and the injected water?

7 A. I've not heard any reports of any problems.

8 Q. And is that a commercial saltwater disposal  
9 well?

10 A. Yes, it is.

11 Q. And the volumes being injected into that well  
12 are quite substantial; are they not?

13 A. Very substantial.

14 MR. BRUCE: I think that's all I have,  
15 Mr. Examiner.

16 EXAMINER EZEANYIM: Thank you very much.  
17 Anybody have anything else?

18 MR. DANGLER: I have something, if I might.  
19 Thank you, Mr. Examiner.

20 RE CROSS EXAMINATION

21 BY MR. DANGLER:

22 Q. You just, on redirect, talked about your  
23 Exhibit C, again, as data. Could we have a look at  
24 that, since it's being offered as data?

25 A. You mean this one (indicating)?

1 MR. BRUCE: Yeah.

2 Q. (BY MR. DANGLER) Exhibit C, yes.

3 My understanding is that there were some  
4 questions about the acidic nature of what might come  
5 into the well.

6 A. Yes.

7 Q. The pH of 7 and higher is not acidic, correct?

8 A. Correct.

9 Q. And below 7 is acidic; is that correct?

10 A. In varying degrees.

11 Q. But it is correct to say that below 7 is  
12 generally considered acidic?

13 A. No. It is on the acidic side, but anything  
14 below 7 is on the acidic side, and everything above is  
15 not.

16 Q. And at a certain point, a number would be  
17 considered acidic. Where would you -- besides being on  
18 the acidic side, where would you have concerns about  
19 acidity?

20 A. Acidity as to the disposal equipment or --

21 Q. Just in general, like where you would --  
22 because you said it's just on the acidic side, but you  
23 wouldn't consider that acidic. Where would you start  
24 having a concern?

25 A. Probably seven three, seven four, and I'd look



1 at it a little more carefully.

2 Q. That would be nonacidic. So I'm saying the  
3 other way. If acidic is below 7, where would you  
4 suspect to get -- name a range.

5 A. That would probably be equal -- an equal range  
6 down.

7 Q. Okay. So we'll say 5.7, that area or less,  
8 you'd start to have a concern?

9 A. Well, that's pretty acidic.

10 Q. Okay. So if you look at your own data here,  
11 just -- because it didn't appear that you had acidity  
12 concerns. If you go up from the base about 10, 12  
13 wells, there appears to be a whole series there, 5.7,  
14 5.4, 5.1. Do you see what I'm looking at?

15 A. On this page here (indicating).

16 Q. Yeah, on your data.

17 A. This is not my data.

18 Q. Okay. I'm sorry.

19 But you presented it now as data --

20 A. Yes. Yes.

21 Q. -- which the Hearing Examiner can consider,  
22 since you don't have a different --

23 A. Correct.

24 Q. -- form of data. So I'm just asking you about  
25 the data you've presented. It appears that there is a

1 5.7, 5.4 and 5.1. I can barely read it, but it appears  
2 that way; is that correct?

3 A. Yes, it does.

4 MR. DANGLER: No further questions.

5 EXAMINER EZEANYIM: Thank you very much. I  
6 think it's time now -- we need to take a break, but I  
7 want to finish with this witness. So let me -- I think  
8 we have done good. In the interest of time, let me ask  
9 a couple of questions and then say something here.

10 CROSS-EXAMINATION

11 BY EXAMINER EZEANYIM:

12 Q. First of all, we don't have an injection well.  
13 Where is the injection well? I don't have an injection  
14 well for this. Where is it?

15 A. As to where the well --

16 Q. Yeah. I don't see any injection well. Where  
17 is the injection well? It's supposed to be a saltwater  
18 disposal for commercial salt water, but I don't see any  
19 injection well. I see only plugged and abandoned wells  
20 in the area of review. Do you have any injection well?

21 A. I'm sorry. I'm not understanding what --

22 Q. Do you have an injection well construction  
23 diagram?

24 A. A completed diagram?

25 Q. Yes, a construction diagram of the injection

1 well.

2 A. Yes. That's on -- that's on page 16.

3 Q. What is that?

4 A. That's a diagram of the reentry completion of  
5 the existing well.

6 Q. Dr. Havenor, I wanted to see a real elongated  
7 construction diagram of your injection well, so I can  
8 begin to know where your perforation and our packer are  
9 going. I don't understand this at all. And I'm going  
10 to -- why I want to finish this before we take a break  
11 is that there are three things I have here. It has been  
12 revealed that you wanted an injection interval from 652  
13 to 720, another one was an interval of 270 [sic] to 75  
14 [sic], another one of 680 to 785. Before we begin to  
15 even go --

16 A. I'll discuss that.

17 Q. You don't discuss it. We are going to take a  
18 break. You -- you and your client discuss what interval  
19 you want to inject, because I have three sets of  
20 intervals. When we get intervals, we begin to consider  
21 those intervals, because I can't consider three of them  
22 at the same time. Most of them have been used in  
23 publications.

24 So what I want to do, I'm going to finish  
25 dealing with you asking questions, but when we take a

1 break and we start again, I would like to know which  
2 interval your client wants to inject this well, so  
3 everybody will know, okay, this is the interval. Is it  
4 652 to 720, 270 [sic] to 75 [sic] or 680 to 785? These  
5 things are very important in consideration, knowing what  
6 interval we are going to inject. Then we start from  
7 there as a basis. So that will be done during the  
8 break. You don't have to do it now. But let me finish  
9 my questions.

10 Let's look at that construction diagram. I  
11 wanted an elongated diagram saying this is the original  
12 producing well, and this is the converted well. That's  
13 how we do it. But I think you are converting, you know,  
14 a plugged and abandoned well. I don't know what it is.  
15 I don't know the status, but you are going to convert  
16 it. I wanted to know the original status of that well,  
17 and I wanted to see the construction diagram of the  
18 injection, you know, showing everywhere -- the cement  
19 logs and everything. I would like to see that.

20 And by now you've appeared here several  
21 times, Dr. Havenor, that you should understand exactly  
22 what we need. It was very difficult for me to find out  
23 what this injection -- injection -- construction diagram  
24 for the injection well, because that's what I look at  
25 first. Then from there, tell me where is the injection

1 interval, and then from there, we go forward. Now, I  
2 have three injection intervals. I don't know what it  
3 is. At the break, I want somebody to tell me what the  
4 injection interval is.

5 But before we go on break, let me take one  
6 more moment and finish with some of my questions.

7 The Exxon State Well #8 is a commercial  
8 disposal, right?

9 A. Yes.

10 Q. Is it injecting on a vacuum, and how much water  
11 does it inject there on a vacuum?

12 A. How much are they now?

13 Q. Yeah.

14 A. I don't have those numbers. It's regular and  
15 substantial. That's all I know.

16 Q. Okay.

17 MR. BRUCE: Mr. Examiner, if I could, Yates  
18 Exhibit 5 gives the injection rates for that Exxon State  
19 #8.

20 EXAMINER EZEANYIM: What is it?

21 MR. BRUCE: You know, through 2013, it was  
22 about 8,000 barrels a day, and through the month of  
23 January -- just for the month of January 2014, it was  
24 over 10,000 barrels a day.

25 EXAMINER EZEANYIM: On a vacuum?

1 MR. BRUCE: Yes.

2 EXAMINER EZEANYIM: I'll look at it. What  
3 exhibit?

4 MR. BRUCE: Yates Exhibit 5.

5 EXAMINER EZEANYIM: Okay. I'll look at  
6 that.

7 Q. (BY EXAMINER EZEANYIM) Okay. Now, we are  
8 looking at the -- you know, this Yates and Seven Rivers.  
9 One of the things we look at is is there any production  
10 in that vicinity. So during the testimony, I haven't  
11 heard anything about if there is any production within  
12 two miles of that injection zone. And then is the  
13 injection of this commercial saltwater disposal going to  
14 draw on some of the production nearby? This is a very  
15 shallow well.

16 And I was wondering. I know it's for  
17 economic reasons that you want to inject. There might  
18 be other more stable formations to put this salt water  
19 than putting it shallow, especially if you have  
20 production. I don't know what I'm going to hear today,  
21 whether there is production very close to that injection  
22 zone or if there is any issue of correlative rights. I  
23 don't know until we go further, but those are going to  
24 be, you know, examined today, and that's what I'm  
25 looking for.

1                   And do we put water into a zone that will  
2 draw on production nearby? Of course, nobody will allow  
3 that to happen. If it's not going to draw any  
4 production and if it shows [sic], we can put away the  
5 well water as long as we have the confining structures.  
6 So that's one question. Will a commercial saltwater  
7 disposal impair correlative rights?

8                   And the area-of-review inconsistencies -- I  
9 was asking about the area of review. I think you have  
10 six, right? It is three plugged and abandoned. 2236  
11 [sic]? Is that what you have, if you go to your Number  
12 10? Go to page 10.

13           A.     Page 10.

14           Q.     I'm very particular about area of review. Make  
15 sure we get this right.

16                   MR. BRUCE: Page 7.

17                   EXAMINER EZEANYIM: I don't know where it  
18 is. I'm looking for it.

19                   MR. BRUCE: Page 7, Mr. Examiner.

20                   EXAMINER EZEANYIM: 7. Okay.

21           Q.     (BY EXAMINER EZEANYIM) That's your compilation.  
22 Let me see. Six of them. There are three plugged and  
23 abandoned, right?

24           A.     Yes.

25           Q.     And then there are how many -- two active

1 wells?

2 A. There are three active wells.

3 Q. Three abandoned and three active, right?

4 There is no injection well around?

5 A. No, not in the area of review.

6 Q. Exxon State #8, how many miles is it from this  
7 well?

8 A. How many miles is this from --

9 Q. Yeah, from the Exxon State #8.

10 A. From the other injection area?

11 Q. No, this injection well that you are proposing.

12 A. It's approximately one-and-a-half to  
13 one-and-three-quarters miles, so northwest of the Exxon  
14 #8.

15 Q. And when you say -- your area-of-review wells  
16 are deeper than the well you want to inject anyway,  
17 right?

18 A. These wells are in the half mile.

19 Q. Yeah, they're in the half mile, but they are  
20 not TD'd at the injection interval. They're not TD'd at  
21 the injection interval, right? I can see that the TVD  
22 is 5,000.

23 A. Well, we have the total depths of the various  
24 wells but go only into a detailed description of the  
25 abandoned wells.



1 Q. We have an issue of compatibility of water, I  
2 can see. I'm trying to ask -- I have a bunch of  
3 questions. I want to point those out to you, because as  
4 a commercial water disposal, we need to get some samples  
5 to make sure we determine the compatibility.

6 And I mentioned during the  
7 cross-examination that when you say -- because you  
8 mentioned that the water is not protectable, and I think  
9 what you mean is under EPA standards, 10,000 or below,  
10 you think it's not protectable. I don't think that's  
11 what the regulations contemplate. You know, that's  
12 true; you don't want to contaminate 10,000 TDS or below.  
13 Assuming that the water is 20,000, I don't think our  
14 rule will allow you to inject 100,000 in there even  
15 though you think it's not protectable.

16 A. If you are injecting into an interval with that  
17 low of --

18 Q. Yeah.

19 A. That's not the case.

20 Q. Okay. So it's not the case, but we need to get  
21 the water to make sure we understand what we are going  
22 to inject. Because like I said in my exaggerated  
23 comments, you can get water from anywhere. So we still  
24 have that water-compatibility issue. We need to get  
25 some -- and we talked about water samples from the

1 wells.

2 Now, you talked about the back reef. You  
3 know, I've been hearing about this back reef and front  
4 reef. A reef is a reef. If it's very close to a reef,  
5 I don't care whether it's a back reef or something. I  
6 mean, I don't want anybody going to do a study and tell  
7 me the back reef is too salty and the front reef is  
8 fresh. A reef is a reef, right? What do you mean by a  
9 back reef?

10 A. It means the sedimentary rocks that are behind  
11 the reef --

12 Q. Do you mean the water to the back reef cannot  
13 be protected or what? I mean, I want to understand.

14 A. Talking about the formation, sir.

15 Q. Yes. That's what I'm talking about. When we  
16 are talking about water injection is very close to the  
17 reef, the Capitan Reef, do you say, No, it's closer to  
18 the back reef? That's what you told me. That was your  
19 testimony, right, that it's not close to the reef but to  
20 the back reef?

21 A. There is -- there is a very narrow zone along  
22 the -- everything in front of the reef is the Delaware  
23 Basin.

24 Q. Okay.

25 A. The reef itself is physically a narrow zone,

1 probably a maximum of a mile, in average, wide. And as  
2 that reef was growing up, sediments were still  
3 continuing to be deposited behind it in different  
4 environments and different chemistries and different  
5 materials. And so those sediments behind the true reef  
6 itself are referred to as back reefs. They were behind  
7 the reef. Entirely different.

8 Now, there is a transition zone in the  
9 carbonates from the very porous reef itself that we  
10 think of, back for a couple of miles, that they are just  
11 dense dolomites, almost as close to being impermeable as  
12 a rock can be.

13 Q. Okay. I understand.

14 You testified that there are no geology  
15 forces. Granted that that's the case, do we have any  
16 barrier underlying and overlying this injection  
17 interval?

18 A. Yes.

19 Q. And we have it in our Form C-108 -- described  
20 in the C-108?

21 A. No. The barrier is the dolomites in the lower  
22 part of the Delaware that are nonproductive of oil and  
23 don't transmit any water, and the water zones are  
24 underneath it.

25 Q. Is it in the Form C-108, because I need to see

1     them?

2           A.    No.  I did not put that in specifically.  I  
3     could diagram something like that for you.

4           Q.    How do I know that if it's not there?  I would  
5     be looking at something to make a determination whether  
6     there is -- I know the lines for the -- underlines  
7     further down by -- for that injected water into the  
8     formations, but we are talking about two formations  
9     here.

10                  Okay.  That said, did you check about  
11    production within the area where you are going to inject  
12    this area?  Did you check whether there is any oil  
13    production within at least two miles of this injection  
14    zone?

15           A.    Not in the same zones.

16           Q.    Not in the same zones.  You checked?  Within  
17    two miles, there is no production?

18           A.    No production in the same --

19           Q.    Zones, yes.

20           A.    -- disposal intervals.  There is production  
21    above and production below.

22           Q.    Okay.  That was one of the questions.  
23    Production above and production below.  And you are  
24    going to give me those confining strata that you said is  
25    not in the Form C-108, because I want to see a

1 description of those confining strata so I know where  
2 this water is going to be confined.

3 A. Okay.

4 Q. You see? That's what I'm asking here. As you  
5 have said, there is no production within two miles.

6 Well, I take it your work --

7 A. You also mean laterally?

8 Q. Yes, on the injection interval.

9 A. I'll keep that in mind.

10 Q. Yes.

11 You talked about how many water wells? You  
12 talked about water wells. How many water wells do we  
13 have in this area?

14 A. None.

15 Q. None. Okay. That's for the record.

16 So this well, I want you to --

17 We are going to go to break. I have a ton  
18 of questions, but you have one other witness, and in the  
19 interest of time, I don't want to continue.

20 When we come back from break, I want your  
21 client to tell me which -- among those three zones,  
22 which one is it, so everybody will know what you need,  
23 because I don't know how I got three zones. I mean, I  
24 got three intervals. We need to, because we approve  
25 intervals. We don't approve -- unless you're asking for

1 three of them. Then that's a different question. So I  
2 want you to do that, and then I want you to see whether  
3 you still want to inject in both the Yates and Seven  
4 Rivers so we know where we're at as we continue.

5 A. Yes, sir.

6 Q. I have other questions. I think you have  
7 another person coming up here. If you need to be  
8 recalled, we need to recall you, because -- before I  
9 press it, we need to go to break, you know.

10 But at least let's start anew. What is the  
11 injection interval? Where is going to be your confining  
12 strata? And then we use that; everybody here will use  
13 that, then, to go forward, so we are not beating about  
14 the bush. So we know what the injection interval is,  
15 what the formation is and what we're going through. I  
16 think we can streamline the process, and we can finish  
17 today. You can tell me that once we start. Then  
18 everybody will take that. See what I mean?

19 A. Yes, sir.

20 Q. Thank you very much.

21 EXAMINER EZEANYIM: At this point, we're  
22 going to take a break. And it's going to be only a  
23 ten-minute break, and then we'll come back and continue.

24 (Break taken, 11:09 a.m. to 11:36 a.m.)

25 EXAMINER EZEANYIM: Please, let's go back

1 on the record now. I'm sorry. I had to take care of  
2 something in the office.

3 I requested from the Applicant to tell me  
4 what the injection interval is and if that is two  
5 formations or one formation, and then we can proceed  
6 from there.

7 MR. BRUCE: Mr. Examiner, I'll answer the  
8 first part. Exhibit A, which was attached to the  
9 amended application, on page 3, it states that the  
10 injection interval is 652 to 720 feet. That's what is  
11 being requested. And, furthermore, the wellbore diagram  
12 for the injection well, if injection is permitted, also  
13 states, in the upper, right-hand side, that the  
14 injection interval will be 652 to 720 feet.

15 EXAMINER EZEANYIM: Okay. Now, on page 3  
16 on Exhibit A -- is that page 3 or page 4?

17 MR. BRUCE: Page 3, at the bottom. Right  
18 at the very bottom of page 3.

19 EXAMINER EZEANYIM: Oh. I have something  
20 else. This is not the exhibit. Sorry.

21 Okay. Page 3.

22 MR. BRUCE: Page 3, right at the very  
23 bottom.

24 EXAMINER EZEANYIM: Okay. It says that  
25 your injection interval is 652, 720. Okay. So the rest

1 of them that appear in any other --

2 MR. BRUCE: And if you go to page 17 --  
3 16 -- excuse me.

4 EXAMINER EZEANYIM: What did you say?

5 MR. BRUCE: If you go to page 16, in the  
6 upper right, it says "the perforated interval, 652 to  
7 720." Okay? And if you would -- now, this would be in  
8 your file. If you go to the amended application that I  
9 filed on behalf of Owl, in paragraph two, it says "at  
10 depths of 652 to 720 feet."

11 EXAMINER EZEANYIM: Okay. We have gotten  
12 the information. Now, most of the publications say  
13 something else.

14 MR. BRUCE: But the one that counts, which  
15 is the Division's ad on the case, says "652." And if I  
16 may, Mr. Examiner, there is another one out on the door.

17 EXAMINER EZEANYIM: Okay. The docket. But  
18 the publication says "680 to 785."

19 MR. BRUCE: That was what was originally  
20 requested, but that has been changed.

21 EXAMINER EZEANYIM: Okay.

22 MR. BRUCE: And Dr. Havenor could tell you  
23 yeah, he made a mistake in the ad that he published, but  
24 as I said, that ad is only if you're getting  
25 administrative approval, and we're obviously not getting



1 administrative approval here.

2 EXAMINER EZEANYIM: Okay. Now, I would  
3 like some information. In the docket, it states "652 to  
4 720." And in the newly revised Form C-108, does it say  
5 the same thing? But the publications that went out said  
6 something different.

7 And I'm going to put this out to the  
8 contestants. Do you have any objection that that  
9 injection interval is 652 to 720, instead of 670 to 785  
10 or 680 to 785? Remember, I'm not attorney. I don't  
11 know what are the implications. So you guys have to  
12 tell me what you think --

13 He (indicating) has told me that it might  
14 be immaterial, but I want you guys to -- is that part of  
15 your testimony or --

16 EXAMINER WADE: Do you see due process  
17 issues in this?

18 EXAMINER EZEANYIM: Yes.. That's exactly  
19 right.

20 MR. DANGLER: I believe that Mr. Feldewert  
21 is going to make a motion, and we are going to join in  
22 that motion.

23 EXAMINER EZEANYIM: Okay. Good. If you  
24 want to make a motion on what I just said, because I  
25 want to -- I want to take it from the Applicant that

1 they want an interval of 652 to 720, and I wanted to ask  
2 the protestant what do you think about that?

3 MR. FELDEWERT: We are going -- well, we're  
4 going to move to dismiss -- I don't think it's any big  
5 surprise -- at the end of the case. That is one of the  
6 issues. I mean, they put out a C-108, advertised to the  
7 general public, that their injection interval is  
8 different from what they're seeking here today, number  
9 one. And number two, they told the general public in  
10 the advertisement that the volume they seek is different  
11 from what they seek here today. So to me, that raises  
12 some issues, but I think there are more fundamental  
13 issues than just the notice.

14 So, Mr. Examiner, just as a preview, I will  
15 let them present their case, and then we intend to move  
16 to dismiss on various grounds.

17 (Consultation off the record between  
18 Examiner Wade and Examiner Ezeanyim, 11:42  
19 a.m. to 11:43 a.m.)

20 EXAMINER EZEANYIM: Okay. We've got  
21 something we need to do now. What we would like to do  
22 is call the attorneys up here with my advisor, and the  
23 rest of the people can just step out of the room. I  
24 need to talk to them and see how they want to move, and  
25 I will call you back. Just stay out there. We're going

1 to take about five minutes, and then we'll continue.

2 And we are going to go off the record.

3 (All individuals exit the hearing other  
4 than the attorneys, the examiners  
5 and the court reporter; discussion off the  
6 record, 11:43 a.m. to 11:58 a.m.)

7 EXAMINER EZEANYIM: Let's go back on the  
8 record.

9 And as I told you guys, I have to cancel  
10 and deliberate on what to do with this case. The way it  
11 is going -- let me say, first of all, as you all know, I  
12 have to determine whether the application being sought  
13 is of a substantive nature. Let's say that in the next  
14 six months, there are extenuating circumstances that  
15 this well is not built. Does it cost waste, which you  
16 know we are here to present waste of all kinds, not just  
17 waste of hydrocarbons, waste that you guys might cure --  
18 I have determined that this is not the case here. So  
19 the way it is going, it might appear that we might waste  
20 today and tomorrow hearing this case and then go back to  
21 square one.

22 So after consultations, I've decided to do  
23 something and I'm going to tell you. First, I know from  
24 the Applicant that there are no extenuating  
25 circumstances. This is a commercial saltwater disposal,

1 and we want them to have it, if it's done right. Don't  
2 get us wrong. We want you to do this because you are  
3 enhancing production. To do the water disposing in the  
4 proper place, I mean, production will go on. So we are  
5 not against commercial saltwater disposals. We are for  
6 it because it's for production purposes. So please  
7 nobody leave here saying that oh, they don't approve  
8 commercial saltwater disposals. And because it's  
9 commercial saltwater, there is nothing very imminent.

10 And one of the things -- I'm going to make  
11 this statement -- is that I'm not yet very satisfied  
12 with this Form C-108, which is a very important, very  
13 technical application that we have. We would have  
14 preferred that it is, you know, better than what I have.  
15 So based on those facts and the fact that we just  
16 established the injection zone to be very shallow -- I  
17 wrote 652 to 720, which is very close to Yates  
18 production, you know, and to several other productions.  
19 So I don't know. I am not going to make a  
20 determination. They know what to do to -- if they want  
21 to go a deeper zone, they have the choice. If they want  
22 to stay there, they have the choice.

23 But at the present time, the best thing to  
24 do -- with the Examiner not being satisfied with that  
25 Form C-108, I don't think we can go further. So at this

1 point, this case is going to be dismissed, and then the  
2 Applicant will have to re-apply either in the same zone  
3 or a different zone, depending, you know, on the nature  
4 of the environment. For that zone, there are a bunch of  
5 contestants. A different zone, they might drop  
6 everybody. I don't know. I'm not making that  
7 suggestion, but I'm just saying.

8           So we are going to dismiss the case, and  
9 once it is re-applied, I hope that the Form C-108 will  
10 be done right. I hope the injection interval will be  
11 right. I hope everything we need in that form will be  
12 filled out so that if we have people contesting the  
13 case, then they have to tell me now why we shouldn't  
14 approve that application. But right now I don't have  
15 all the information to be able to do that. Because of  
16 that, this case will be dismissed, and the Applicant  
17 will have to re-apply. I'm going to write an order  
18 saying that the case was dismissed. And, you know,  
19 well, maybe Applicant will dismiss it or I will dismiss  
20 it on my own volition, and the Applicant will have to  
21 re-apply, please, with a different application done,  
22 because this one will be dismissed.

23           MR. BRUCE: It will be dismissed without  
24 prejudice?

25           EXAMINER EZEANYIM: Without prejudice.

1 That's what I mean. Without prejudice, right?

2 MR. BRUCE: (Indicating.)

3 EXAMINER EZEANYIM: I'm glad you brought  
4 that up, for us to put in there that the case is  
5 dismissed without prejudice, and the Applicant can  
6 re-apply. And then when the Applicant wants to  
7 re-apply, be careful. From the learning curve today,  
8 you know what the Examiner wants, what the OCD wants,  
9 what we need to do to get that commercial saltwater  
10 disposal approved. So we want you to have that, but we  
11 can't continue on this and then waste today and then  
12 finally dismiss it. So it's better to dismiss and go  
13 back and get it right. That's really what I'm saying.

14 Unless you have any other comments, this  
15 case will be dismissed, and I'm going read it into the  
16 record. Before I read it into the record, does anybody  
17 have any comment?

18 MR. DANGLER: No, Mr. Examiner.

19 MR. FELDEWERT: No, sir.

20 EXAMINER EZEANYIM: If that is the case,  
21 then Case Number 15060 will be dismissed without  
22 prejudice. The case will be dismissed without  
23 prejudice, whatever that means. Thank you very much.  
24 This is over. Thank you.

25 (Case 15060 concludes 12:03 p.m.)

**ORDER MAILED**  
**DATE**

1 STATE OF NEW MEXICO  
2 COUNTY OF BERNALILLO  
3

4 CERTIFICATE OF COURT REPORTER

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

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

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

19 *Mary C. Hankins*  
20

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I do hereby certify that the foregoing is  
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