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STATE OF NEW MEXICO  
ENERGY, MINERALS, AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION COMMISSION  
  
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IN THE MATTER OF THE HEARING  
CALLED BY THE OIL CONSERVATION  
COMMISSION FOR THE PURPOSE OF  
CONSIDERING:  
Case Nos. 23614, 23615, 23616,  
23617, 23775, 24018, 24019,  
24020, 24025, 24123  
  
-----

EVIDENTIARY HEARING  
DATE: Tuesday, May 20, 2025  
TIME: 9:03 a.m. MDT/10:03 a.m. CDT  
BEFORE: Hearing Officer Rip Harwood  
LOCATION: Remote Proceeding  
1220 South Saint Francis Drive,  
1st Floor  
Santa Fe, NM 87505  
REPORTED BY: John Shavers  
JOB NO.: 7225938

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A P P E A R A N C E S

ON BEHALF OF GOODNIGHT PERMIAN MIDSTREAM, LLC:

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1                   A P P E A R A N C E S (Cont'd)  
2       ON BEHALF OF RICE OPERATING COMPANY AND PERMIAN LINE  
3       SERVICE, LLC:

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10  
11       ON BEHALF OF PILOT WATER SOLUTIONS SWD, LLC:

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18  
19       ALSO PRESENT:

20           Gerasimos Razatos, Commission Chair  
21           William Ampomah, Commissioner  
22           Baylen Lamkin, Commissioner  
23           Sheila Apodaca, EMNRD Law Clerk  
24           Madal Corral  
25           Stephen Nicastro

1 A P P E A R A N C E S (Cont'd)

2 ALSO PRESENT (Cont'd):

3 Leandro Vargas

4 Leroy King

5 Tom Tomastik

6 Toby Holland

7 Carl Chavez

8 Amanda Rabon

9 Bill Knights

10 Nathan Sandel

11 Ryan Bailey

12 Michael Buchanan

13 Jose Amaya

14 Rachel Chaput

15 Chris Moander

16 Scott Birkhead

17 James Monkin

18 Jim Davidson

19 Faith Malton

20 Anibal Araya

21 Ashley Maxwell

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I N D E X

WITNESS(ES):	DX	CX	RDX	RCX
PRESTON MCGUIRE				
By Mr. Wehmeyer		12		
By Mr. Rankin			199	

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P R O C E E D I N G S

MR. RAZATOS: Okay. So we started with Mr. Wehmeyer representing Empire. Can you just start again, Mr. Wehmeyer, please.

MR. WEHMEYER: Yes, sir. Corey Wehmeyer for Empire, and we are ready.

MR. RAZATOS: Excellent. Thank you. Goodnight?

MR. RANKIN: Good morning, Mr. Chair. Adam Rankin with Holland & Hart, with my colleague Nathan Jurgensen, appearing on behalf of Goodnight Midstream; and we're prepared to go forward today.

MR. RAZATOS: Excellent. Thank you. Rice?

MR. BECK: Morning. Matt Beck on behalf of Rice Operating Company and Permian Line Service, LLC.

MR. RAZATOS: Excellent. Thank you. And Pilot?

MR. SUAZO: Good morning. Miguel Suazo with the law firm Beatty & Wozniak, appearing on behalf of Pilot Water.

MR. RAZATOS: Thank you, Mr. Suazo. I will do also the roll call for us. As I stated, I'm Gerasimos Razatos. I am the acting Division Director

1 for the Oil Conservation Division. I'm also the  
2 acting Chair for the Oil Conservation Commission. At  
3 this time, I will start off with Mr. Lamkin, if you  
4 wouldn't mind, for roll call, please.

5 MR. LAMKIN: Yeah. My name is Baylen  
6 Lamkin. I'm the designee of the Commissioner of  
7 Public Lands.

8 MR. RAZATOS: Excellent.

9 And, Dr. Ampomah?

10 DR. AMPOMAH: I am Dr. William Ampomah,  
11 professor of petroleum engineering from New Mexico  
12 Tech and also the designee of the Energy Secretary.  
13 Thank you.

14 MR. RAZATOS: Excellent --

15 THE REPORTER: Excuse me for the  
16 interrupting you again, sir. Sorry about that. But  
17 it says that the chat is turned off of this meeting,  
18 so I am not able to put anything in the chat.

19 MR. RAZATOS: Okay.

20 THE HEARING OFFICER: Why don't we get  
21 it to him on the first mid-morning break?

22 MR. RAZATOS: Yeah. It's a deal.  
23 Thank you, Rip.

24 MS. APODACA: Okay.

25 MR. RAZATOS: I appreciate it.



1                   So, Mr. Shavers, if you would just hang  
2                   on when we go to break at around 10:00, 10:30 and just  
3                   coordinate with Sheila. Get her -- she'll get from  
4                   you your email address, and she can send you all this  
5                   information; okay?

6                   THE REPORTER: Okay, sir. Thank you.

7                   MR. RAZATOS: Thank you. Appreciate  
8                   it.

9                   Okay. So we are here, as I stated, for  
10                  our continuing consolidated cases by Goodnight  
11                  Midstream and Empire New Mexico. The case numbers are  
12                  Case Numbers 24123 and then 23614 through -17. Then  
13                  we have Case Number 23775 and then Case Numbers 24018  
14                  through 24020 and 24025.

15                  Mr. Hearing Officer, we transfer our  
16                  hearing back over to you.

17                  THE HEARING OFFICER: Thank you,  
18                  Chairman Razatos. Did you have -- I think you  
19                  mentioned that you had a lunch constraint today that  
20                  needed to be met?

21                  MR. RAZATOS: I do. Thank you for  
22                  reminding me.

23                  I do have a lunch constraint today,  
24                  everybody. I apologize. I need to finish at 11:30,  
25                  and I need two hours. We'll be back at 1:30. So

1 lunch will be from 11:30 to 1:30 today.

2 Thank you, Mr. Hearing Officer.

3 THE HEARING OFFICER: Sure. All right.  
4 So given that, let's plan on breaking at 10:15 for our  
5 morning break. We'll come back at 10:30 and go for  
6 another hour.

7 With that said, Mr. Wehmeyer, I'm not  
8 inviting any more of a prolonged remainder of your  
9 cross-examination than you no doubt came up with  
10 overnight. If at all possible, it would be nice if  
11 you could, you know, conclude your cross-examination  
12 this morning so we could start with commission  
13 questions this afternoon.

14 The thinking being that we will finish  
15 with Preston McGuire today, whenever that happens.  
16 The plan would be to adjourn for the day and give you  
17 all what remains, if anything, of the afternoon to,  
18 you know, put the finishing touches on your respective  
19 closing arguments, which we could start tomorrow  
20 morning.

21 Anyway, that's the aspirational game  
22 plan for the day. And, Mr. Wehmeyer, what do you  
23 think? Is that unrealistic from your perspective?

24 MR. WEHMEYER: It's certainly something  
25 to shoot at.

1 THE HEARING OFFICER: Well, I guess  
2 that's the best I can expect from you. All right.  
3 Fair enough. Do we have Mr. McGuire on deck?

4 MR. RANKIN: I believe we do.

5 THE HEARING OFFICER: I guess when he  
6 starts talking, he'll show up on my screen.

7 MR. MCGUIRE: Hello. I'm here.

8 THE HEARING OFFICER: There he is. All  
9 right. You're way back on page number 3.

10 Mr. Shavers, just for your edification,  
11 we are into the cross-examination of a witness named  
12 Preston, P-R-E-S-T-O-N, last name McGuire. He should  
13 show up on your screen.

14 THE REPORTER: Thank you, sir.

15 THE HEARING OFFICER: Okay. And the  
16 lawyer who's questioning him is Corey Wehmeyer,  
17 W-E-H-M-E-Y-E-R.

18 THE REPORTER: Thank you.

19 THE HEARING OFFICER: Mr. Wehmeyer,  
20 take it away.

21 MR. WEHMEYER: Thank you.

22 THE HEARING OFFICER: I'll just remind  
23 you, Mr. McGuire, you're still under oath.

24 //

25 //

1 WHEREUPON,

2 PRESTON MCGUIRE,

3 called as a witness and having been previously sworn  
4 to tell the truth, the whole truth, and nothing but  
5 the truth, was examined and testified as follows:

6 CROSS-EXAMINATION

7 BY MR. WEHMEYER:

8 MR. WEHMEYER: Mr. McGuire --

9 I think I'm getting a little bit  
10 of -- I thought I had feedback. Now I don't.

11 Okay. Mr. McGuire, why don't we start,  
12 as a reservoir engineer, can you explain this equation  
13 and how you used it in your work as part of this case?

14 THE WITNESS: No. Not at this time.  
15 I'd have to remind myself of what all of these  
16 variables are.

17 MR. WEHMEYER: The most basic of  
18 material balance equations that would be taught and  
19 known off of top of mind by any reservoir engineer,  
20 you can't help us at all with?

21 THE WITNESS: Not at this current  
22 moment.

23 MR. WEHMEYER: Let's talk about just  
24 some graphs. You're familiar with a best-fit curve,  
25 an R-squared analysis?

1 THE WITNESS: Yes, sir.

2 MR. WEHMEYER: As we -- okay. As we  
3 look at these data points, these data points line up  
4 pretty close if you were going to draw a line through  
5 them as part of an R-squared best-fit, don't they?

6 THE WITNESS: They appear to, but  
7 there's no scales on this. I have no idea what I'm  
8 looking at.

9 MR. WEHMEYER: You can assume a  
10 one-to-one. Now, if you just put the R-squared  
11 through it of 0.9227, does that look pretty close?

12 THE WITNESS: What -- what data is  
13 this?

14 MR. WEHMEYER: Well, we're just talking  
15 in the abstract. If you're at a mathematics class or  
16 an engineering class, if you draw the line through  
17 this, does that R-squared of 0.9227 look like what any  
18 autogenerated best-fit line should look like there,  
19 0.922? Just eyeballing it, you can see that's a  
20 pretty darn good fit?

21 THE WITNESS: Yeah. It -- it appears  
22 to be a decent fit, but I have no idea what this data  
23 is.

24 MR. WEHMEYER: With respect to  
25 R-squared ranges, would you agree that generally

1 something between 0.7 and 1.0 would be considered a  
2 good fit? If you're in a physical science where  
3 systems are more predictable, something over 0.9 is  
4 often expected?

5 THE WITNESS: Not always, no. It's not  
6 always expected, no.

7 MR. WEHMEYER: If you'd like to  
8 disagree -- again, over 0.9 is not a good fit as far  
9 as you're concerned on a best-fit curve?

10 THE WITNESS: That -- that wasn't your  
11 question. I agree that a 0.9 would be considered a  
12 good fit.

13 MR. WEHMEYER: Do you see this star  
14 that I've placed here on the best-fit line?

15 THE WITNESS: I do.

16 MR. WEHMEYER: Again, just eyeballing  
17 this, that star would be a pretty good fit, wouldn't  
18 it? Nearly dead on?

19 THE WITNESS: Yeah. That's close to  
20 the -- to the fit curve -- to the fit line.

21 MR. WEHMEYER: The two red dots would  
22 not be good fits, would they? Just eyeballing this  
23 thing as an engineer, you could say something's not  
24 fitting the trend?

25 THE WITNESS: Yes. But I would need

1 more context as to why those two dots fall off of the  
2 trend.

3 MR. WEHMEYER: You would want to do a  
4 scientific analysis as to why they're not on trend?

5 THE WITNESS: Sure.

6 MR. WEHMEYER: And I assume as a  
7 scientist if it was something material, you would've  
8 performed that analysis; right?

9 THE WITNESS: Yeah. I mean, that would  
10 be something that I would want to look at for sure.

11 MR. WEHMEYER: Now, Steve Brewington,  
12 he's an educated, licensed engineer. He's actually  
13 out of San Antonio. Do you know Steve?

14 THE WITNESS: Yes. We've worked  
15 together.

16 MR. WEHMEYER: Have you met Steve  
17 before?

18 THE WITNESS: Not in person, but I've  
19 been on multiple Teams calls with Steve.

20 MR. WEHMEYER: Mr. Brewington is a very  
21 good engineer, isn't he?

22 THE WITNESS: Yeah. I have no reason  
23 to think that he's not.

24 MR. WEHMEYER: So here we're working on  
25 the Rhino well. To put everybody into context on the

1     timeframe, do you see this as taken as of October 19,  
2     2024?

3                   THE WITNESS:   That's what the date says  
4     on this workover report, yes, sir.

5                   MR. WEHMEYER:   Mr. Brewington's rep has  
6     arrived at location, and he used the encore tool to  
7     separate and remove the tree from tubing hanger. So  
8     here as we just take us back in time to October 19,  
9     '24, we know there's no injection occurring in the  
10    rhino and that the tree's been at -- the wellheads  
11    literally been removed; right?

12                  THE WITNESS:   That's what it's -- yeah.  
13    That would -- yes.

14                  MR. WEHMEYER:   So I would hope we can  
15    agree there's no injection happening on that day?

16                  THE WITNESS:   Yes, sir.

17                  MR. WEHMEYER:   Now --

18                  THE WITNESS:   Well, I don't know if  
19    there was an injection right before they took  
20    the -- the -- I -- so I can't speak for the whole day,  
21    no.

22                  MR. WEHMEYER:   Now, so the Commission  
23    knows how old this well is, when was the Rhino well  
24    drilled and completed?

25                  THE WITNESS:   It was originally drilled



1 to the Devonian in 2018.

2 MR. WEHMEYER: When in 2018? Early or  
3 late?

4 THE WITNESS: Late, I believe.

5 MR. WEHMEYER: Okay.

6 THE WITNESS: Mid -- mid to late, if  
7 I'm remembering right.

8 MR. WEHMEYER: So to just put this into  
9 perspective, this wellhead, that Christmas tree, is  
10 less than six years old at that point in time; yes?

11 THE WITNESS: That would be correct,  
12 yes.

13 MR. WEHMEYER: Have you ever had to re  
14 replace an entire Christmas tree on a well so young?

15 THE WITNESS: Other than this one,  
16 maybe. None of -- none come to mind, but I wouldn't  
17 be surprised if we had to.

18 MR. WEHMEYER: In your experience, this  
19 would be unusual?

20 THE WITNESS: Not necessarily.

21 MR. WEHMEYER: Additionally, you've  
22 already got tubing -- yellow band tubing on site. So  
23 do you see at the bottom that they've unloaded 119  
24 joints of lined yellow band tubing?

25 THE WITNESS: Yes, sir, I see that.

1 MR. WEHMEYER: And tubing is not  
2 inexpensive. You're not going to purchase and have  
3 that tubing already arranged on site unless you know  
4 you have a tubing leak and need to replace the string  
5 of tubing?

6 THE WITNESS: That's not true.

7 MR. WEHMEYER: You would replace less  
8 than six-year-old tubing as part of ordinary course?

9 THE WITNESS: Yeah. That's pretty  
10 standard that you want to keep your equipment new and  
11 fresh.

12 MR. WEHMEYER: There's also  
13 identification here of "Several damaged pins with  
14 threads starting to break and separate, liner damage  
15 on several joints as well as corrosion. Did not see  
16 any holes." And on the Christmas tree, it's described  
17 as having "Lots of scale and rust on top tubing and  
18 flange. Sent trees for repair and cleanup."

19 Why would there be so much scale and  
20 rust on a less-than-six-year-old Christmas tree? And  
21 why would there already be liner damage on joints,  
22 corrosion, and damaged pins and threads?

23 THE WITNESS: Corrosion is a very  
24 common issue in all oil and gas wells. It's not  
25 uncommon at all.

1 MR. WEHMEYER: How frequently is Empire  
2 having to replace its wellheads and its tubing  
3 strings?

4 THE WITNESS: They have a -- they have  
5 a lot of issues with their wells for sure.

6 MR. WEHMEYER: Now, let's move to the  
7 next date. Do you see in the daily workover report:  
8 "We know there's been no injection happening since at  
9 least October 19, 2024. We're nearly an entire month  
10 later"? Can you explain how a wireline fluid  
11 measurement -- that's going to be dead on, isn't it?

12 THE WITNESS: It should be, yes.

13 MR. WEHMEYER: The tool has gone down  
14 the hole, and when you contact that fluid, you know  
15 it's exactly at 750 feet subsurface, don't you?

16 THE WITNESS: That would probably be  
17 true, yeah -- yeah. I have no reason to think that  
18 they miss -- they missed the fluid level.

19 MR. WEHMEYER: And at that point in  
20 time, the well has been shut in an entire 25 days,  
21 hasn't it, at least?

22 THE WITNESS: I haven't done -- I  
23 haven't done the math, but I'll take your word for it.

24 MR. WEHMEYER: You'll agree with me  
25 that a wireline fluid level reading is going to be

1 much more accurate than a fluid gun, isn't it?

2 THE WITNESS: Not necessarily.

3 MR. WEHMEYER: So we were talking on  
4 the Rhino. Let's first just zoom in here. And,  
5 again, you didn't produce this document to us, did  
6 you? The fluid level reading of 750 feet in the  
7 Rhino? Goodnight did not produce this document to  
8 Empire in the case, did it?

9 THE WITNESS: I -- I think we did  
10 provide to some of the workover reports to Empire for  
11 that.

12 MR. WEHMEYER: In fact, the workover  
13 report -- the only ones y'all would give over are the  
14 two I'm publishing now. Empire made demand for the  
15 remainder of the workover report, and y'all refuse to  
16 give over the remainder of the workover report.

17 Why would you not just produce the  
18 entire workover report on the Rhino well, which is in  
19 the EMSU, when it was expressly requested? You gave  
20 us two pages. We want the rest.

21 MR. RANKIN: Mr. Hearing Officer, I'm  
22 going to object to the line of question. This was  
23 addressed between counsel. The discovery request was  
24 for documents reflecting corrosion. We provided the  
25 documents that reflected corrosion.

1           And if counsel had issues with it, they  
2   could have and should have gone to the hearing  
3   officer, but they didn't. This is not a question for  
4   Mr. McGuire.

5           THE HEARING OFFICER: We're not going  
6   to revisit discovery issues, Mr. Wehmeyer. So the  
7   objection is sustained.

8           MR. WEHMEYER: As we look at the fluid  
9   level from surface graph that we've seen before, you  
10  actually used this graph in your sworn testimony to  
11  begin the examination, didn't you?

12          THE WITNESS: I did.

13          MR. WEHMEYER: And so do you see over  
14  on the left, the fluid level from surface 750 feet?

15          THE WITNESS: I see that, yes, sir.

16          MR. WEHMEYER: And we see that what  
17  we've highlighted is the Rhino well. And, again, this  
18  is off of your exhibit, isn't it?

19          THE WITNESS: Well, it's Empire's  
20  exhibit. But yes. I republished it.

21          MR. WEHMEYER: And you're the one that  
22  swore to it as part of the opening testimony with  
23  Mr. Rankin?

24          THE WITNESS: I did.

25          MR. WEHMEYER: If we -- and if we look

1 at the Rhino well specifically, so these -- do you see  
2 this data point and this data point, the two I'm  
3 indicating at way down here?

4 THE WITNESS: I do

5 MR. WEHMEYER: What you told the  
6 Commission was that in the Rhino well, on April 7,  
7 2025, it was at 858 subsurface, and on July 20, 2024,  
8 it was at 868 subsurface, didn't you?

9 THE WITNESS: Yes, sir. Those were the  
10 measurements that were taken.

11 MR. WEHMEYER: With what?

12 THE WITNESS: A sonic fluid level tool.

13 MR. WEHMEYER: How was it calibrated?

14 THE WITNESS: You'd have to ask  
15 the -- the company that owns and operates the tool.

16 MR. WEHMEYER: Have I accurately  
17 plotted the location -- as we complete the graph that  
18 you started in your direct testimony, have I  
19 accurately plotted the data point for the wireline  
20 measurement by Mr. Brewington on November 13, 2024, at  
21 750 subsurface after the well had been shut in for 25  
22 entire days at least?

23 THE WITNESS: I guess I -- I'd have to  
24 review the workover report to make sure that they  
25 didn't put it back together and we injected.

1                   But, I mean, this -- this data is  
2       clearly anomalous given the other data that we have,  
3       so I'd want to investigate that for sure and  
4       understand if the -- if the -- that could have been a  
5       typo. It could have been 850. That would be right on  
6       the line. So I -- I would want to investigate that  
7       and talk to Steve about that.

8                   MR. WEHMEYER: In fact, that data is  
9       not in any shape, form, or fashion anomalous. It's  
10      precisely on the R-squared best-fit line, and the two  
11      data points that are anomalous are the two red ones  
12      from the earlier slide.

13                  The two data points, as we talk about  
14      anomalies, using your word, can you agree as a  
15      scientist that the anomalous points is not the star  
16      that's precisely on the best-fit line, but the  
17      anomalous points would be the two red ones?

18                  THE WITNESS: Yeah. Can we go back to  
19      the -- the data that shows the shut-in times?

20                  MR. WEHMEYER: I'm sorry. I'm not  
21      understanding what you're -- which data you want.

22                  THE WITNESS: The -- the figure that  
23      shows the -- the Empire figure that I used.

24                  MR. WEHMEYER: You're talking about  
25      this?

1 THE WITNESS: Yes, sir.

2 MR. WEHMEYER: Sure.

3 THE WITNESS: So I can see that for the  
4 Rhino, the -- all of the fluid-level measurements  
5 before that, the well was shut in for approximately 20  
6 minutes, and then after that it was shut in for  
7 longer. So you would expect that the reservoir would  
8 have more time to -- to bleed out into the -- to  
9 equilibrate with the lower -- the overall larger  
10 aquifer.

11 I wish those wells would've been shut  
12 in longer before we took those fluid measurements, but  
13 I was not overseeing that at the time and didn't make  
14 that recommendation. So -- but that -- that data  
15 feels like -- the 750 feels like a typo to me, and it  
16 should probably be 850 and be much more aligned with  
17 the two data points.

18 MR. WEHMEYER: So Mr. Brewington has  
19 this one wrong, even though it fits precisely onto the  
20 best-fit curve?

21 THE WITNESS: He might, but I don't  
22 think that the earliest data points are really good  
23 representations. It's -- it's the data that we had,  
24 and I can only -- I can only speak to the data that we  
25 have.



1 MR. WEHMEYER: As we just talk about  
2 credibility, do you see where the wells begin coming  
3 off of a best-fit line? Kind of right around here at  
4 November of 2023 is where the wells go off of best-fit  
5 line?

6 THE WITNESS: And that's when we --

7 MR. WEHMEYER: Is that true?

8 THE WITNESS: That's true. And that's  
9 at the point when we decided to shut in the wells  
10 longer before taking the fluid measurements.

11 MR. WEHMEYER: And that's just  
12 coincidental that it happened at the November 2023  
13 timeframe when the revocation was filed in the OCD?

14 THE WITNESS: No. That's also the time  
15 that I took over the project and made that  
16 recommendation to shut in the fluid level -- or to  
17 shut in the wells for longer before taking the fluid  
18 measurement.

19 MR. WEHMEYER: And using a fluid gun,  
20 do you understand the importance of counting  
21 the -- you understand that fluid gun is keying off of  
22 the -- basically the casing threads?

23 THE WITNESS: I'm not an expert  
24 in -- in how the fluid gun works. I rely on the  
25 experts for that, that they would return an accurate

1 measurement.

2 MR. WEHMEYER: Do you understand the  
3 importance of actually counting the pup joints? If  
4 you're going to use that fluid gun and you're going to  
5 count off the threads, that you have to have an  
6 accurate count of the pup joints and their precise  
7 lengths?

8 THE WITNESS: Sure. And all of that  
9 data was provided to the -- to the consultant that ran  
10 this.

11 MR. WEHMEYER: Now, with respect to the  
12 string, you would come out -- the 108 joints of  
13 tubing, those are 39.55 in length. Do you see that?

14 THE WITNESS: I see what's been typed  
15 in the -- in the Excel sheet here. Can you show me  
16 where that number comes from?

17 MR. WEHMEYER: Straight off of the  
18 drilling report on the left where the tubing  
19 composition was counted.

20 THE WITNESS: Where does it say -- oh,  
21 you -- so you guys did the math for the average  
22 length?

23 MR. WEHMEYER: We did.

24 THE WITNESS: Okay.

25 MR. WEHMEYER: And if instead of -- no.

1 It's not the -- well, the average -- each one of the  
2 108 joints of tubing is 39.55?

3 THE WITNESS: That sounds about  
4 right --

5 MR. WEHMEYER: You understand that?

6 THE WITNESS: That sounds about right.

7 MR. WEHMEYER: Do you know that  
8 counting the actual threads or collars on the way  
9 down, it comes out to 22 and that if somebody just  
10 took 39.55 as the average tubing length and you  
11 recreate the math, it would put you off by 102  
12 feet -- well, it would put you off at 870 feet, which  
13 is 2 feet off of the fluid gun measurement that you  
14 came up with in this chart on the right that we looked  
15 at over here? Do you see the 868?

16 THE WITNESS: Yes, sir, I see that.

17 MR. WEHMEYER: If you just did 39.55  
18 against 22 count of collars, you come to 878 -- 870,  
19 which is 2 feet off of what you had reported in the  
20 Rhino; right?

21 THE WITNESS: Yeah. That would be  
22 that -- that's a difference of 2, yes.

23 MR. WEHMEYER: If you actually  
24 calibrated the fluid gun to account for those shorter  
25 pup joints, you would've come up with a fluid reading

1 level of 752.03, which is off of Mr. Brewington's  
2 wireline measurement by a mere 2 feet.

3 Do you think this is just some great  
4 mathematical coincidence? Or do you think that your  
5 fluid gun readings have not been properly calibrated  
6 and that the fluid level is much higher in the well?

7 THE WITNESS: I -- I don't -- I think  
8 the fluid measurements are accurate. I trust that  
9 the -- I was ensured that the data was calibrated  
10 correctly before each one of those fluid levels was  
11 taken. They asked for the -- the wellbore  
12 information, and we provided it to them. So I have no  
13 reason to think that it's not accurate.

14 MR. WEHMEYER: If the Commission wanted  
15 to know how y'all are calibrating your fluid guns, you  
16 have no idea, do you?

17 THE WITNESS: Yeah. I would have to  
18 refer to the expert on that.

19 MR. WEHMEYER: But you would agree that  
20 the 750 wireline measurement from  
21 Mr. Brewington -- this will be the last question I  
22 have for you on it. Mr. Brewington's wire line  
23 measurement after the well's been shut in for nearly a  
24 month was just about dead on to the best-fit curve,  
25 isn't it?

1 THE WITNESS: I think it's anomalous  
2 given the other data points, and I would want to  
3 understand the -- the reason. I talked to Steve about  
4 that. Again, I think it -- it feels like a typo to  
5 me.

6 MR. WEHMEYER: You report reported here  
7 to the OCD that the tubing was only potentially  
8 leaking. You knew that tubing was leaking because you  
9 already had 108 joints of replacement tubing on site  
10 before the workover ever started, didn't you?

11 THE WITNESS: No. We -- we keep extra  
12 tubing at our yard. We can -- we can -- if we buy it  
13 in bulk, we get a better deal on it, so we keep extra  
14 tubing at the -- at the yard. We -- I think we have  
15 tubing right now and we don't have any workovers in  
16 the foreseeable future.

17 MR. WEHMEYER: This was one of the  
18 slides you talked on. I just want to make sure that  
19 the commissioners understand your methodology here in  
20 terms of calculating these gradients.

21 THE WITNESS: Uh-huh.

22 MR. WEHMEYER: Is it true that -- I  
23 mean these perms, they can be a thousand feet apart  
24 from the top perm to the bottom perm. Those can be a  
25 thousand feet away from one another, can't they?

1 THE WITNESS: Yes they can, yep.

2 MR. WEHMEYER: You are not  
3 selecting -- in terms of calculating a gradient, you  
4 are not selecting a particular data point within the  
5 reservoir knowing where you are and calculating from  
6 there. What you're taking is just -- you're just  
7 taking a mid perf, aren't you?

8 THE WITNESS: Yes, sir, that's what I  
9 did.

10 MR. WEHMEYER: That is also not sound  
11 engineering practice where you've got a thousand feet  
12 of perms to calculate gradients off of a randomly  
13 selected mid perf, is it?

14 THE WITNESS: Well, the -- the  
15 calculation would be the -- the same. Whether you use  
16 the top, mid, or base, it would still come out to the  
17 same gradient.

18 MR. WEHMEYER: You're using the same  
19 gradient across all of these different wells, aren't  
20 you?

21 THE WITNESS: Yes. 'Cause the  
22 hydrostatic is -- is equal the -- the entire time.

23 MR. WEHMEYER: These wells even have  
24 perms nearly a thousand feet. As you calculate  
25 midpoint perf, some of these wells or your midpoints

1     that you're using the same gradient on are nearly a  
2     thousand feet apart, aren't they?

3                 THE WITNESS: Well, I calculated the  
4     gradient off of that midpoint, yes.

5                 MR. WEHMEYER: Okay. But, again, to  
6     just illustrate, the midpoint perf that you're using  
7     here on the Piper 2 is 4,368. The midpoint perf  
8     you're using here for the TED is 5,432. Those are  
9     over 1,000 feet apart, but you're using the same  
10    gradient?

11                THE WITNESS: I calculated the -- I'm  
12    not -- well, they -- they obviously didn't calculate  
13    to the same number.

14                MR. WEHMEYER: What pressure gradient  
15    are you coming up for here for the San Andres?

16                THE WITNESS: It's on the page.

17                MR. WEHMEYER: Can you just -- we need  
18    it into the record. What is it?

19                THE WITNESS: Well, at that point -- at  
20    that point -- well, which well? Do you want me to be  
21    specific, or do you want me to take the average?

22                MR. WEHMEYER: Let's just take the  
23    average is fine for this exercise.

24                THE WITNESS: It says 0.381 on  
25    the -- on the figure.

1 MR. WEHMEYER: Okay. So 0.381 is what  
2 you say the San Andres pressure gradient is?

3 THE WITNESS: In July of 2024 on  
4 average, yes, sir.

5 MR. WEHMEYER: This is October of 2024.  
6 Do you see the timing?

7 THE WITNESS: Yes, sir.

8 MR. WEHMEYER: Do you understand that  
9 this is being taken off of a pressure bomb used by  
10 Empire?

11 THE WITNESS: Yes, sir.

12 MR. WEHMEYER: What was the pressure  
13 here on October 8th of 2024 in the Grayburg that was  
14 actually measured?

15 THE WITNESS: At what depth?

16 MR. WEHMEYER: Forty fifty.

17 THE WITNESS: 950.860.

18 MR. WEHMEYER: Which would be a 0.235  
19 gradient; yes?

20 THE WITNESS: I could double check the  
21 math, but that sounds that sounds about right, yeah.

22 MR. WEHMEYER: Which would be a  
23 significantly lower pressure than the  
24 overlying -- than the underlying San Andres that you  
25 just calculated; isn't that right?



1 THE WITNESS: That's right. At this  
2 particular location, this is -- this is one well out  
3 of -- I guess there's 400 wells in the -- in the  
4 field.

5 MR. WEHMEYER: This is part of your  
6 sworn statement. You say the high pressure zone is in  
7 the Grayburg, so flow would be into the low pressure  
8 San Andres if the formation were in communication.  
9 You swore -- you literally swore to this OCC that the  
10 pressure was exactly upside down, that the Grayburg  
11 had higher pressure than the San Andres, didn't you?

12 THE WITNESS: Yeah. I would point to  
13 all of the shut-in pressures that Empire provided to  
14 us. All of those wells that we had shut in with  
15 pressure at the surface. That's -- that's completely  
16 different than all of our SWDs in the San Andres.

17 MR. WEHMEYER: You know that that is  
18 100 percent totally -- when you offered that testimony  
19 to the Commission just now, you knew that that  
20 statement was 100 percent false, didn't you? And you  
21 said it anyway?

22 THE WITNESS: No. That's not true.

23 MR. WEHMEYER: It has been explained to  
24 you in the sworn testimony from Mr. West, and you had  
25 that before coming. You read Mr. West's sworn -- all

1 of his sworn testimony, didn't you?

2 THE WITNESS: I did.

3 MR. WEHMEYER: And there was an  
4 algorithm in the system on what you want to use as  
5 Grayburg pressures. And any time that it was showing  
6 over 1,500 barrels injected --

7 MR. RANKIN: Mr. Hearing Officer,  
8 Mr. Wehmeyer is testifying. Objection to the form of  
9 the question.

10 THE HEARING OFFICER: Mr. Wehmeyer,  
11 rephrase. Please try and simplify it.

12 MR. WEHMEYER: Mr. McGuire, you read  
13 Mr. West's detailed identification of precisely why  
14 there were erroneous pressure readings being reported,  
15 didn't you?

16 THE WITNESS: Well, that's -- that's  
17 very convenient that Empire doesn't want to rely on  
18 this data. We asked specifically in discovery, "What  
19 are the shut in pressures of your injection wells in  
20 the Grayburg?"

21 They gave us this document. It says  
22 "Min shut-in pressure reviewed," so I took it at face  
23 value. I think that I have no reason to believe that  
24 this is inaccurate.

25 MR. WEHMEYER: What question do you

1 think I --

2 THE WITNESS: If they -- for the -- for  
3 the -- if -- they didn't tell us that they don't have  
4 shut in pressures. They provided this document to us  
5 for that discovery request.

6 MR. WEHMEYER: Mr. McGuire, what  
7 question do you think I just asked you?

8 THE WITNESS: Go ahead and restate it.

9 MR. WEHMEYER: It is incredibly  
10 important that you answer the questions presented. If  
11 there is a problem with the question, your lawyer  
12 objects, and Mr. Harwood will make a call on that.  
13 But this is not a game. You are to answer the  
14 question asked unless Mr. Harwood excuses you from it.  
15 Do you understand that?

16 THE WITNESS: Sure. Go ahead and  
17 re-ask the question.

18 MR. WEHMEYER: The question was, did  
19 you read Mr. West's detailed and sworn statement about  
20 how there is zero pressure on those wells?

21 THE WITNESS: On all of them?

22 MR. WEHMEYER: Yes. Upon shut in.

23 THE WITNESS: I don't know if he said  
24 that specifically.

25 MR. WEHMEYER: What was the explanation

1     that Mr. West gave in his sworn statements to this OCC  
2     about the data that you now want to swear about that  
3     makes zero scientific sense whatsoever?

4                   THE WITNESS:   I -- I guess his  
5     testimony speaks for itself.  We could look at it.

6                   MR. WEHMEYER:   Do you not recall?  You  
7     literally came in here and swore about data that you  
8     had a sworn explanation on from Empire, and you don't  
9     know what the explanation is?

10                  THE WITNESS:   I'm not going to try to  
11     quote Mr. West.  I might get that wrong, and I don't  
12     feel comfortable quoting it here under oath.

13                  MR. WEHMEYER:   You can't even summarize  
14     your general understanding of how Mr. West explained  
15     it?

16                  THE WITNESS:   I think he said -- yeah.  
17     I -- I'd rather just let the testimony speak for  
18     itself.

19                  MR. WEHMEYER:   Okay.  In terms of any  
20     scientific basis to disagree with what Mr. West  
21     explained in his sworn statement in terms of the  
22     algorithms in the system and how the algorithms  
23     created the incorrect reading, could you offer the  
24     Commission any explanation about how that sworn  
25     statement from Mr. West is wrong?

1 THE WITNESS: Well, they didn't say  
2 that this data was wrong when they provided it to us.

3 MR. WEHMEYER: Mr. McGuire, I'm talking  
4 about the sworn statement from Mr. West, and you have  
5 opinions on Mr. West and his work. Can you explain to  
6 the Commission how his statement about the algorithm  
7 and the erroneous readings that were created by the  
8 computer printout are wrong?

9 THE WITNESS: I -- I don't remember  
10 what he said about an algorithm, no.

11 MR. WEHMEYER: Are you honestly still  
12 here after seeing all of this data going to swear to  
13 this commission that the pressure in the Grayburg is  
14 higher than the pressure in the San Andres yes or no?

15 THE WITNESS: For the -- for the data  
16 that was provided to us, yes. I believe that the  
17 Grayburg is a higher pressure. It's been under  
18 waterflood. They've been doing pressure maintenance  
19 there.

20 MR. WEHMEYER: The Verlander well, do  
21 you remember in your earlier testimony yesterday, I  
22 said, "Where does the acid go?" And you go: "To the  
23 high permeability spots. That's where the acid's  
24 going to go." You remember you opined on that?

25 THE WITNESS: Yes, I remember that

1 testimony.

2 MR. WEHMEYER: As we talk about the  
3 Verlander, for example, how much -- we're turning down  
4 to talk about your mud theory. What is the psi per  
5 foot of mud, the mud you used in the Verlander?

6 THE WITNESS: Well, the -- the density  
7 is 10.2, so I could calculate it. 0.53.

8 MR. WEHMEYER: That would be higher  
9 than the Grayburg as measured with a literal pressure  
10 bomb and higher than the San Andres that you  
11 calculated, isn't it?

12 THE WITNESS: That's true, yes. But we  
13 didn't lose circulation in the -- in the Grayburg.

14 MR. WEHMEYER: Okay. My question is  
15 just, you say the mud is important to something. That  
16 would be higher than Grayburg and higher than  
17 San Andres; true?

18 THE WITNESS: Yes. The -- it looks  
19 like we were drilling overbalanced based on that data,  
20 yes.

21 MR. WEHMEYER: And this was the slide  
22 you were illustrating about the alleged total loss of  
23 circulation; right?

24 THE WITNESS: Yes, sir.

25 MR. WEHMEYER: Can you help the

1 Commission, the idea that mud losses would be used to  
2 pick tops or to opine on effective barrier seals,  
3 where in literature would we read that? Where would  
4 we find it?

5 THE WITNESS: The -- I was using that  
6 information to -- to delineate the two different  
7 reservoir systems.

8 MR. WEHMEYER: My question is, the idea  
9 that that is any kind of scientific methodology for  
10 what's before the OCC here, where would we find that  
11 in a treatise, a textbook, SPE paper, PhD,  
12 dissertation, anywhere?

13 THE WITNESS: I think it's pretty  
14 standard in picking reservoirs that if there are two  
15 different pressures, they're two different reservoirs,  
16 and we were trying to pick the two different  
17 reservoirs that have totally different pressures  
18 associated with them.

19 MR. WEHMEYER: This is just an excerpt  
20 out of Applied Drilling Engineering:

21 "Lost Circulation Additives. 'Loss  
22 Circulation' is defined as the loss of drilling fluid  
23 or cement from the well to subsurface formations.  
24 This condition is detected at the surface when the  
25 flow rate out of the annulus is less than the pump

1 rate into the well.

2 "Lost circulation occurs when: one,  
3 extremely high permeability formations are  
4 encountered, such as a gravel bed, oyster bed or  
5 vugular limestone; or, two, a fractured formation is  
6 encountered or created because of excessive wellbore  
7 pressure."

8 In terms of vugular limestone, that's  
9 actually described in the San Andres. In the core  
10 report, isn't "vugular limestone" described?

11 THE WITNESS: Not limestone, but  
12 "vugular dolomite" is.

13 MR. WEHMEYER: Well, didn't you draw  
14 in -- somebody -- we learned yesterday for the first  
15 time that the gray is supposed to represent limestone.  
16 Is there also limestone in there?

17 THE WITNESS: There's -- there's a few,  
18 yeah. But it's predominantly dolomite.

19 MR. WEHMEYER: Isn't that inconsistent  
20 with the rock facies that -- Dr. Davidson was  
21 insistent this was limestone or worse. Now you're  
22 saying that there's not much limestone in the  
23 San Andres?

24 THE WITNESS: I don't think that's  
25 accurately characterizing Dr. Davidson's testimony.



1 MR. WEHMEYER: In terms of comparisons  
2 of permeability in the Grayburg versus the San Andres,  
3 have you done that?

4 THE WITNESS: I've looked at the core  
5 report for the -- for the Grayburg, and so I -- I  
6 guess the question is -- is, have I compared the  
7 permeabilities in the Grayburg versus the San Andres?

8 MR. WEHMEYER: That's exactly the  
9 question.

10 THE WITNESS: I haven't quantified it.

11 MR. WEHMEYER: Yeah. And so, again,  
12 you want to tell a pressure story. I've shown you an  
13 engineering publication that identifies fluid loss as  
14 being associated with extremely high permeability  
15 formations.

16 And, in fact, throughout your sworn  
17 testimony, you talk about high permeability in the  
18 San Andres. As the commissioners read this over and  
19 over, you talk about high permeability streaks in the  
20 San Andres, don't you?

21 THE WITNESS: That's correct, yep.

22 MR. WEHMEYER: Why on earth are mud  
23 losses not explained by high permeability streaks,  
24 which you've opined on are throughout the San Andres?

25 THE WITNESS: You can have a high

1 permeability streak and it not lose circulation if the  
2 pressure in the reservoir is higher than the  
3 hydrostatic of the drilling mud.

4 MR. WEHMEYER: Where's the publication  
5 that says that if they don't want to take your word  
6 for it here and want to see some scientific discussion  
7 of it?

8 THE WITNESS: That's physics.

9 MR. WEHMEYER: I'm going to -- I was  
10 going to ask you a bunch of water chemistry questions.  
11 But since -- and I know you swore to them. But since  
12 we have you agreeing yesterday you're not a water  
13 chemistry expert, I'm going to just skip this. But I  
14 do want to focus on a couple things that you said  
15 yesterday very briefly.

16 You said you're treating the water  
17 before you inject it. What specific chemicals are you  
18 treating this water for or with?

19 THE WITNESS: Yeah. So they're  
20 chemicals that come from the chemical provider, and I  
21 don't -- they don't say exactly what's in it. I think  
22 that's under -- they don't want to give away  
23 their -- their trade secrets there. We've provided  
24 those chemicals in discovery to Empire.

25 MR. WEHMEYER: What's the name of the

1 chemical that you're putting down?

2 THE WITNESS: I can't remember off the  
3 top of my head. I think -- I might have this wrong,  
4 but I think Halliburton makes it. I don't know.  
5 You -- we've -- we've provided that. I -- I can't  
6 think of it off -- off the top of my head right now.

7 MR. WEHMEYER: So you're the  
8 all-vertical-pipe guy, you're the all-downhole guy for  
9 Goodnight, and you don't have any clue what chemicals  
10 you're sticking into Empire's San Andres?

11 THE WITNESS: That's --

12 MR. RANKIN: Objection, asked and  
13 answered.

14 THE HEARING OFFICER: Overruled.

15 THE WITNESS: No. That's all done at  
16 the surface by the surface operations team.

17 MR. WEHMEYER: Okay. Chemicals is not  
18 a downhole aspect of SWD injection?

19 THE WITNESS: The chemicals are -- are  
20 put into the flow stream at the surface, you know.

21 MR. WEHMEYER: So we can't have a  
22 discussion of what chemicals are going down. What are  
23 you treating for with the mystery chemicals?

24 THE WITNESS: Well, one of the primary  
25 ones is a scale inhibitor.

1 MR. WEHMEYER: You're treating for  
2 scale inhibitor?

3 THE WITNESS: No. We're treating with  
4 a scale inhibitor

5 MR. WEHMEYER: Now, what are you  
6 treating for? By putting the chemicals in, what good  
7 things are going to happen beneath the surface of the  
8 earth in your wells?

9 THE WITNESS: Well, we -- we try to  
10 prevent scaling downhole. It's from plugging off our  
11 perf or plugging off our disposal zone.

12 MR. WEHMEYER: Yesterday I heard you  
13 tell Mr. Rankin in your opening testimony that you're  
14 treating to lower the TDSs. Do you remember that  
15 testimony?

16 THE WITNESS: Yes.

17 MR. WEHMEYER: How on earth do you  
18 treat to lower TDSs?

19 THE WITNESS: You'd have to ask the  
20 folks that run the chemical treatment program. I've  
21 just looked at the data before it goes through  
22 treatment, the testing of the water before it goes  
23 through treatment, and the testing of the water after  
24 it comes out of that treatment facility. And it  
25 lowers the TDS.

1 MR. WEHMEYER: Do you remember I asked  
2 yesterday, "What does acid do to anhydrite?" And you  
3 didn't know.

4 THE WITNESS: Yeah. I don't think it  
5 breaks down anhydrite.

6 MR. WEHMEYER: But yesterday you didn't  
7 know. Isn't that geology 101: acid doesn't break  
8 down anhydrite, but saltwater will?

9 THE WITNESS: Not salt water.

10 MR. WEHMEYER: What about prolonged  
11 flushing of salt water?

12 THE WITNESS: Not -- not with salt  
13 water, so. The salt water's super saturated, so it's  
14 not going -- it doesn't want to react with anything  
15 else after that point.

16 MR. WEHMEYER: I'm going to keep  
17 working through as we -- and you're saying the  
18 TDSs -- did I hear that right yesterday? They start  
19 at a quarter million TDS?

20 THE WITNESS: That's the -- that's the  
21 data that I've seen coming -- coming from the -- from  
22 the field, yes. And that's very, very high.

23 MR. WEHMEYER: And then, what you're  
24 sticking into Empire's San Andres is about 120-,  
25 130,000 TDS?

1 THE WITNESS: That would be -- that  
2 would be accurate, yes, sir.

3 MR. WEHMEYER: Still very, very high,  
4 isn't it?

5 THE WITNESS: That depends on your  
6 definition of "very high," but yeah. It's -- that's  
7 salty water.

8 MR. WEHMEYER: How about if we compare  
9 it to the TDSs in the San Andres before you start  
10 sticking TDSs down there? In comparison to the native  
11 San Andres water, what you're sticking down at 120,000  
12 and higher TDSs is very, very high, isn't it?

13 THE WITNESS: What do you think that  
14 the native San Andres water is?

15 MR. WEHMEYER: You're the one who  
16 offered the chemistry opinions. What do you think it  
17 is?

18 THE WITNESS: I've seen it be highly  
19 variable.

20 MR. WEHMEYER: What's the mean?

21 THE WITNESS: I think I have it in my  
22 testimony. Maybe 30- to 40,000 TDS with a large  
23 overall average, if I'm remembering that correctly.

24 MR. WEHMEYER: So you can tell the  
25 Commission that into Empire's San Andres you were

1 sticking in TDSs that are multiples of three or more  
2 times the native water?

3 THE WITNESS: Yes. Yeah. Just as  
4 every other saltwater disposal well is.

5 MR. WEHMEYER: Now, yesterday you  
6 didn't know that you had to replace an entire  
7 Christmas tree in the Rhino well. You asked, "Can you  
8 show it to me?" And I said, "Yeah, I will." This is  
9 another document. You can tell the Commission you  
10 didn't produce this document either, did you?

11 THE WITNESS: I -- I don't know, but  
12 I'll take your word for it.

13 MR. WEHMEYER: Do you see the entry on  
14 October 22, 2024, out of the daily drilling report?

15 THE WITNESS: What you have  
16 highlighted, yes, sir.

17 MR. WEHMEYER: "Due to severe pitting,  
18 entire injection tree was replaced with 5,000 psi EE  
19 0.5 main valves with Xylan coating by Encore." So you  
20 can tell the Commission, now that I've shown it to  
21 you, on your Rhino well -- and this was just seven,  
22 eight months ago; right? Did you have responsibility  
23 for Goodnight for this particular well at this  
24 particular time?

25 THE WITNESS: I do. But I'm not

1 responsible for the surface mechanical configurations  
2 or mechanical work.

3 MR. WEHMEYER: And if they wanted to  
4 know where else had you ever had to junk a tree within  
5 six years of it being put into operation? You can't  
6 recall any other location, can you?

7 THE WITNESS: I'm sure it happened, but  
8 I can't recall a specific at this very moment.

9 MR. WEHMEYER: How do you explain, as a  
10 matter of chemistry, how an entire joint, an entire  
11 string of tubing, and an entire Christmas tree had to  
12 be replaced so quickly because of pitting, coating,  
13 scaling, corrosion?

14 THE WITNESS: It doesn't necessarily  
15 have to be chemistry-based. It could be  
16 mechanical-based. The velocity of this water is very  
17 high as it goes down because of the injection  
18 capabilities of these wells.

19 MR. WEHMEYER: Speed of water creates  
20 corrosion?

21 THE WITNESS: Not corrosion. It could  
22 cause pitting.

23 MR. WEHMEYER: I'm going to keep moving  
24 through. I could spend hours on this stuff, but I'm  
25 not. I'm going to keep moving. But here also it's in



1 your casing. This is another document you didn't  
2 produce: "Casing from 100 feet to surface appears to  
3 either be scaled up or corroded and not allowing test  
4 packer to properly seal."

5 How common is it that in a well so  
6 young, your casing is so affected by scale and  
7 corrosion that you can't even set a packer?

8 THE WITNESS: It's -- it's very common  
9 in oil and gas wells or saltwater disposal wells.

10 MR. WEHMEYER: Is that a chemical  
11 reaction?

12 THE WITNESS: Scaling is a chemical  
13 reaction, yes.

14 MR. WEHMEYER: Can you explain to the  
15 Commission why that chemical reaction is happening  
16 here?

17 THE WITNESS: There's -- there's a lot  
18 of different reasons. I haven't looked into it in  
19 detail for this particular one.

20 MR. WEHMEYER: So then, how can you  
21 honestly, in your papers that you filed with the  
22 Commission, tell them that Empire's -- all of their  
23 existing wells are safe, the wells that they have  
24 drilled in the Grayburg and the wells that they have  
25 drilled in the San Andres?

1           If you don't even understand -- and,  
2       again, this is stuff you've sworn to. And you can't  
3       even explain why this is happening in your own?

4           THE WITNESS: Well, these wells are not  
5       in communication with the Grayburg wells above them.  
6       There's no evidence of that.

7           MR. WEHMEYER: This workover -- one  
8       workover costs \$623,000 on a well that was six years  
9       old?

10          THE WITNESS: That's what the document  
11       says.

12          MR. WEHMEYER: And all of these  
13       problems in this less-than-six-year-old well, all of  
14       those -- to get to a \$623,000 AFE in one well less  
15       than six years old was all because of scaling  
16       corrosion, pitting caused by chemical reactions; isn't  
17       that right?

18          THE WITNESS: I wouldn't agree that  
19       it's all due to chemical reactions.

20          MR. WEHMEYER: Moving over to your  
21       Scully State well, this is a well you're familiar  
22       with. This is your well. Can you tell the  
23       commissioners where is it?

24          THE WITNESS: It's a few miles south of  
25       the EMSU.

1                   MR. WEHMEYER: Do you see that on our  
2 graph we have plotted the barrels of water per day  
3 injected in blue?

4                   THE WITNESS: Uh-huh.

5                   MR. WEHMEYER: And wellhead injection  
6 pressures in yellow dots?

7                   THE WITNESS: Uh-huh.

8                   MR. WEHMEYER: You can tell the  
9 Commission this would be an example in your own well  
10 where your daily injection volumes are going down, but  
11 wellhead pressures are going up?

12                  THE WITNESS: That's what this graph  
13 depicts, yes, sir. But that's not necessarily due to  
14 scale or chemicals.

15                  MR. WEHMEYER: As we come back to  
16 sulfates, you know that the San Andres is  
17 sulfate-rich; right?

18                  THE WITNESS: Well, it depends on how  
19 you define "rich."

20                  MR. WEHMEYER: As you go through the  
21 San Andres, it's also not uniform. The highest  
22 sulfates are up towards the upper San Andres, aren't  
23 they?

24                  THE WITNESS: I haven't seen any data  
25 that shows that.

1 MR. WEHMEYER: Well, here we have  
2 injection formation water analysis. I think this is  
3 your data. And do you see that you've measured this  
4 in the Ernie Banks, the Sosa, the Nolan Ryan, the  
5 Yaz [ph], and you've got these about 2000 and higher  
6 sulfates?

7 THE WITNESS: Yeah. So are  
8 these -- are these from the swab data? Yeah. Okay.  
9 I see that we have swab data. OCD well file. Yeah.  
10 Okay. Yes.

11 MR. WEHMEYER: And, again, what you  
12 testified to yesterday was that the injection in the  
13 well that we looked at it, it wasn't even going into  
14 the bottom perms, was it? We saw the spinner reading.  
15 The bottom half was getting, none of the injection,  
16 was it?

17 THE WITNESS: Didn't look like it,  
18 yeah.

19 MR. WEHMEYER: It was all happening up  
20 at the upper part where you actually measured in the  
21 formation water analysis having the highest sulfates;  
22 yes?

23 THE WITNESS: I guess so. When we took  
24 a swab sample, you perforate the entire well, and then  
25 you drop your swab cup in, and you get a fluid sample.

1 So it's a mixing of all of those open perms.

2 MR. WEHMEYER: High-TDS  
3 environments -- let me just see if you'll agree with  
4 me on this. High-TDS environments, particularly those  
5 rich in chlorides, exacerbate H<sub>2</sub>S corrosion by  
6 promoting pitting and stress corrosion cracking.  
7 Chlorides can penetrate protective films, creating  
8 localized anodic sites vulnerable to H<sub>2</sub>S attack.

9 Do you think that's a fair statement  
10 about the effect of high-TDS on mixing with chlorides  
11 and high sulfates?

12 THE WITNESS: Maybe. I -- I mean, I  
13 agree that's what this document says. Where is this  
14 document from?

15 MR. WEHMEYER: I don't -- you're -- I  
16 don't know. But just given that you've sworn on water  
17 chemistry, I don't think this is a controversial  
18 issue. Do this seem controversial to you?

19 THE WITNESS: Not necessarily, I guess.  
20 But maybe.

21 MR. WEHMEYER: Now, you know that the  
22 San Andres water is being used today as makeup water  
23 as part of the properly permitted waterflood that  
24 Empire owns and is operating in the Grayburg right  
25 now; right?

1 THE WITNESS: I don't think that  
2 they're really using it very much, though my last  
3 review of the data, it hadn't been used for a few  
4 months. So to say that it is -- they're actively  
5 using it today, I -- I cannot confirm.

6 MR. WEHMEYER: You were not aware  
7 before offering this OCC sworn testimony that  
8 literally today they are still using San Andres makeup  
9 water; that is where the water is coming from for  
10 their existing waterflood that they're carrying out  
11 today?

12 THE WITNESS: Well, I guess the Empire  
13 has said that they're really not using it very much  
14 anymore.

15 MR. WEHMEYER: Where do you think the  
16 makeup water is coming from, then? If they're not  
17 taking it out of the San Andres, where do you think  
18 Empire is getting the water for its waterflood?

19 THE WITNESS: I don't -- I don't know  
20 if they're using makeup water. They might just be  
21 recycling all the water.

22 MR. WEHMEYER: Some water is certainly  
23 recycled, but you can't recycle all of it, and  
24 San Andres makeup water is being used. Additionally,  
25 with respect to a tertiary program in the

1 Grayburg -- which you've heard all of your experts  
2 testify there's an ROZ in the Grayburg; right?

3 THE WITNESS: There's a potential ROZ  
4 in the Grayburg.

5 MR. WEHMEYER: You need water to  
6 conduct those tertiary operations, don't you?

7 THE WITNESS: Depends how you're going  
8 to implement it. But generally, yes.

9 MR. WEHMEYER: And those minerals up  
10 there are 58 percent owned by the state of New Mexico  
11 and about 20 percent owned by the BLM, aren't they?

12 THE WITNESS: I -- I don't know who  
13 owns the -- the minerals.

14 MR. WEHMEYER: Where do you think  
15 Empire's going to get the water for the tertiary  
16 recovery in the Grayburg?

17 THE WITNESS: Well, they have that one  
18 water supply well, so they -- they could definitely  
19 use -- use that one. But they can't get any more  
20 permits for additional water.

21 MR. WEHMEYER: On the water supply  
22 well, where does that water suck out of it?

23 THE WITNESS: It -- it's completed in  
24 the -- in the water management interval.

25 MR. WEHMEYER: The San Andres; right?

1 THE WITNESS: Yes, sir.

2 MR. WEHMEYER: Where you're sticking  
3 the high-TDS and high-chloride water?

4 THE WITNESS: That's true. But the one  
5 water supply well that's left is the most distal well  
6 from -- from our injection, and there's no indication  
7 that we've had any impact on that water up there.

8 MR. WEHMEYER: As we look at the manner  
9 in which the existing Grayburg waterflood is being  
10 conducted, do you see that if you put in one drop of  
11 water the way the system is set up, it spreads through  
12 the entire EMSU?

13 THE WITNESS: Yeah. I -- go ahead.

14 MR. WEHMEYER: Literally one barrel of  
15 water comes up out of the San Andres after you've  
16 injected your TDSs and chlorides into it, and the way  
17 the system is configured, it will literally make its  
18 way through the entire EMSU, touching every single  
19 Grayburg producing well and injector well. Do you  
20 understand that?

21 THE WITNESS: I'll -- I'll take your  
22 word for it.

23 MR. WEHMEYER: Doesn't that seem like  
24 that should be a cause of concern to the OCC and to  
25 Empire?



1 THE WITNESS: Not if the water  
2 chemistry of that well is not -- is -- is remaining  
3 constant.

4 MR. WEHMEYER: But you're not you're  
5 not the water chemistry expert? You're not the right  
6 guy to talk about to on that?

7 THE WITNESS: Well, Empire hasn't  
8 provided any data that it is changing.

9 MR. WEHMEYER: This actually came out  
10 of Mr. Knights's. I thought this was interesting.  
11 "The subsequent unitization and operation of the EMSU  
12 involved the combined geologic engineering and  
13 operational expertise of world-class major oil  
14 companies, such as Conoco" -- I think he meant to say  
15 "Chevron" -- "Exxon, and Gulf."

16 Do you agree that Chevron, Exxon, and  
17 Gulf at their respective times of operatorship of the  
18 EMSU would've been geologic, engineering, and  
19 operational experts?

20 THE WITNESS: Sure. I could agree with  
21 that.

22 MR. WEHMEYER: Do you agree that XTO  
23 Exxon had calculated -- we're moving now to talk about  
24 ROZ -- had calculated 912 million barrels of oil in  
25 place in a ROZ in the San Andres?

1 THE WITNESS: Yeah. That's what  
2 the -- the document says, and they -- they walked away  
3 from it. That's -- that's just marketing material.

4 MR. WEHMEYER: Help me. How did they  
5 walk away from it if they sold it for tens of millions  
6 of dollars in positive revenue plus the avoidance of  
7 tens of millions of dollars of P&A liability? How is  
8 that walking? They plugged all the wells and released  
9 the leases?

10 THE WITNESS: No. They sold it so they  
11 didn't have to.

12 MR. WEHMEYER: They sold it for  
13 positive value to Empire, didn't they?

14 THE WITNESS: Yeah. They probably made  
15 some money on it, if that's your question. But they  
16 didn't -- they didn't sell it primarily for the ROZ.  
17 That was upside potential. Again, that's just  
18 marketing material. It's not proven.

19 They -- they walked away from it, and  
20 they said in the -- Empire agreed in the purchase and  
21 sale agreement that they could not rely on those  
22 statements.

23 MR. WEHMEYER: You said it was sold  
24 primarily for the existing Grayburg PDP?

25 THE WITNESS: Yes.

1 MR. WEHMEYER: I want to talk about the  
2 remainder, then. What allocation of value is on the  
3 San Andres ROZ?

4 THE WITNESS: I don't know what  
5 allocation of value the -- Empire put on that.

6 MR. WEHMEYER: But apparently two  
7 parties arm length assigned value to the San Andres  
8 ROZ before leases exchanged hands; yes?

9 THE WITNESS: I bet -- I bet XTO was  
10 very happy about that. Their marketing material  
11 worked.

12 MR. WEHMEYER: Is it your testimony for  
13 Goodnight that Exxon was lying to Empire about the ROZ  
14 in the San Andres?

15 THE WITNESS: Didn't say they were  
16 lying, but it's -- it was sold as upside potential in  
17 marketing material and is unproven. I mean, yeah.  
18 It's just marketing material.

19 MR. WEHMEYER: When you say "unproven,"  
20 are you now moving over to SEC concepts? Because I'm  
21 probably going to have some more questions for you on  
22 "unproven."

23 THE WITNESS: I'm not, no.  
24 It's -- there's -- the ROZ has not been proven to  
25 be -- there's -- it's not proven.

1 MR. WEHMEYER: I spent so much time  
2 with Dr. Davidson trying to figure out in terms of  
3 rock facies selection -- and did you hear  
4 Mr. Birkhead's testimony and Mr. Bailey's testimony  
5 about this being a shallow-water environment?

6 THE WITNESS: Yeah. There's been a lot  
7 of testimony. I can't remember everything, but I'll  
8 take your word for it.

9 MR. WEHMEYER: And I just want the  
10 Commission to see that we can take Goodnight -- and  
11 you were the corporate representative when  
12 it -- you've been the corporate representative of  
13 Goodnight from the jump, haven't you?

14 THE WITNESS: From the jump of what?

15 MR. WEHMEYER: Of this entire case.

16 MR. RANKIN: Mr. Hearing officer, I  
17 don't know if Mr. Wehmeyer is asking Mr. McGuire if  
18 he's testifying as a 30(b)(6) witness or if he's  
19 testifying in his individual capacity, so I just want  
20 to make that clear for the record.

21 THE HEARING OFFICER: Mr. Wehmeyer, can  
22 you rephrase.

23 MR. WEHMEYER: Mr. McGuire, you're the  
24 only Goodnight human that's going to testify in this  
25 case; right?

1 THE WITNESS: That's accurate.

2 MR. WEHMEYER: Did Goodnight choose you  
3 for this role?

4 THE WITNESS: To -- to be testifying  
5 here?

6 MR. WEHMEYER: Yes.

7 THE WITNESS: Came with the job  
8 responsibilities that I took.

9 MR. WEHMEYER: You swore here -- and  
10 you are an educated geologist -- "Additionally, given  
11 the nature of the San Andres being deposited on a  
12 shelf slope with a rapidly increasing water depth to  
13 the west, the San Andres porosity diminishes very  
14 quickly just west of EMSU." So there you're talking  
15 about to the west of EMSU; right?

16 THE WITNESS: Yes.

17 MR. WEHMEYER: "This is due to a finer  
18 grain material, mud-dominated, being deposited into  
19 the deeper water, which has little to no porosity as  
20 opposed to the shallower water environment at EMSU,  
21 which allowed for porosity development. As" --

22 THE WITNESS: Yeah.  
23 Shallower -- sorry. I don't mean to step over you.  
24 Go ahead.

25 MR. WEHMEYER: "As discussed above,

1 this is due to a loss of porosity and permeability in  
2 the San Andres as you move west due to a lithology  
3 change because of deeper water deposition." You know  
4 that you've sworn several places that the EMSU is a  
5 shallow-water depositional environment at San Andres,  
6 haven't you?

7 THE WITNESS: Well, in this particular  
8 instance, I said it was shallower than the mud  
9 dominated stuff off -- off the structure. That  
10 doesn't mean it's a shallow-water environment with,  
11 you know, grainstones or -- and -- and things of that  
12 nature.

13 MR. WEHMEYER: Do you see the formula  
14 in the bottom left? We're working off of  
15 Mr. Birkhead's slide here. Do you see that formula?

16 THE WITNESS: I do. And I don't think  
17 this is Mr. Birkhead's slide. I believe this is a  
18 Dr. Davidson's slide.

19 MR. WEHMEYER: Well, I think -- yeah.  
20 You may be right on that. I thought we added  
21 something to this one. But the formula in the bottom  
22 left, can you explain to the Commissioners how that  
23 formula works and how you used it here in your  
24 methods?

25 THE WITNESS: I -- I didn't use that.

1 That's Dr. Davidson's SW model.

2 MR. WEHMEYER: Can you explain how that  
3 formula works?

4 THE WITNESS: I would rely on the  
5 expert in petrophysics. I think he talked extensively  
6 about that.

7 MR. WEHMEYER: So as we -- if the  
8 commissioners go back and read your witness statements  
9 and they see pages and pages and pages about ROZ, you  
10 can't even explain how the formulas would work in  
11 terms of calculating water and oil saturations, can  
12 you?

13 THE WITNESS: I -- I didn't calculate  
14 any of those, and all of my ROZ discussion was based  
15 on the core measurements. I didn't calculate -- I  
16 didn't --

17 MR. WEHMEYER: With respect to core  
18 measurements, can you help the commissioners and  
19 explain what core adjustment factors you made for oil  
20 expulsion during depressurization as the core was  
21 removed?

22 MR. RANKIN: Mr. Hearing Officer,  
23 objection, outside the scope of Mr. McGuire's direct  
24 testimony.

25 THE HEARING OFFICER: Well, I'm going

1 to overrule that. Overruled.

2 THE WITNESS: Can you repeat the  
3 question, please, Mr. Wehmeyer.

4 MR. WEHMEYER: Yeah. You just said you  
5 made your ROZ opinions based on the core data. That  
6 literally is what just came out of your sworn mouth;  
7 yes?

8 THE WITNESS: Yes, sir.

9 MR. WEHMEYER: Will you explain to the  
10 commissioners the formula or methodology that you  
11 employed to calculate corrected oil saturation due to  
12 the expulsion of oil and water during depressurization  
13 as the core was removed?

14 THE WITNESS: I did some different  
15 sensitivity analysis by adjusting the core data by  
16 different percentages that would be based on losses.  
17 But I didn't think that the -- that you needed to  
18 adjust the ones in the water management that much  
19 because it's claimed to be an ROZ and the -- how do I  
20 want to say this?

21 I didn't think you really needed that  
22 much adjustment to the core data. If you -- the proof  
23 of needing a high adjustment to the core data would be  
24 if the water supply wells produced oil, and they  
25 didn't.



1                   They effectively dropped the pressure  
2     near wellbore. And if there was producible oil there,  
3     they would've produced it, given that depressurization  
4     of the near-wellbore.

5                   MR. WEHMEYER: Okay. And, again,  
6     qualifications, you've never had any ROZ experience  
7     before this case; right?

8                   THE WITNESS: Well, yeah. Neither has  
9     Empires testifying -- or employees that are testifying  
10    here.

11                  MR. WEHMEYER: Mr. McGuire, what  
12    question do you think I just asked you?

13                  THE WITNESS: I gave you the answer.

14                  MR. WEHMEYER: My question is for  
15    Mr. McGuire. You had no ROZ experience whatsoever  
16    before this case. Do I have that right?

17                  THE WITNESS: That would be accurate.

18                  MR. WEHMEYER: And then you  
19    volunteered, which wasn't what I asked, about Empire's  
20    witnesses. I really hope you're not telling this  
21    commission that Mr. Meltzer doesn't have ROZ  
22    experience and that Dr. Trentham doesn't have  
23    ROZ -- do you want to adjust the sworn testimony you  
24    just gave a minute ago in response to a question I  
25    didn't ask?

1 THE WITNESS: I was specific to  
2 Empire's employees that are testifying.

3 MR. WEHMEYER: Oh, do you understand  
4 Empire has a whole pile of employees that have worked  
5 on ROZs for many, many years? Do you understand that  
6 employed by Empire right now -- we could go to  
7 The Woodlands, Texas, and you could shake hands with  
8 numerous folks who have decades of experience on ROZ.  
9 Do you know that?

10 THE WITNESS: They -- they didn't  
11 testify.

12 MR. WEHMEYER: They chose witnesses who  
13 do have ROZ experience. If the idea is that Empire  
14 hasn't brought witnesses with ROZ experience, you can  
15 tell the Commission they certainly did, didn't they?

16 THE WITNESS: I guess that would be  
17 accurate with Mr. Meltzer.

18 MR. WEHMEYER: And so just to -- so we  
19 talked qualifications. Now we move to data review.  
20 You said core -- you looked at core. Then I asked  
21 methodology, and I said obviously you have to make a  
22 core oil adjustment. You agree that if you want to  
23 get to oil saturation, you have to make a core  
24 adjustment, don't you?

25 THE WITNESS: Yes. Generally, some

1 core adjustment is -- is warranted.

2 MR. WEHMEYER: And I asked, "What's  
3 your methodology here as the reservoir engineer in  
4 making core adjustment factors?" Have you now had an  
5 opportunity to fairly and fully answer that question  
6 and tell the Commission what your methodology was?

7 THE WITNESS: Yeah. I -- I used a  
8 different -- a range of values, talked with  
9 Dr. Davidson about that. I agreed with -- with his  
10 methodology.

11 MR. WEHMEYER: No. I want to ask -- my  
12 question is what Preston McGuire did. In terms of  
13 your particular methodology on making a core  
14 adjustment, I want it in one place on this transcript.  
15 Tell the commissioners what your method for making  
16 core adjustment was.

17 THE WITNESS: I did a -- I did a range  
18 when I was originally looking at the core and then  
19 talked to Dr. Davidson and felt that his -- his  
20 adjustments were reasonable.

21 MR. WEHMEYER: You've had an  
22 opportunity --

23 THE WITNESS: It was a team effort.

24 MR. WEHMEYER: You've had an  
25 opportunity to fully and accurately answer my question

1 on methodology?

2 THE WITNESS: I told you what I did.

3 MR. WEHMEYER: Do you see here on the  
4 Rhino well on the left?

5 THE WITNESS: I do.

6 MR. WEHMEYER: Actually, let's start  
7 here. This was your slide. Is this the slide you  
8 actually testified to with Mr. Rankin yesterday?

9 THE WITNESS: It is.

10 MR. WEHMEYER: And you could have  
11 configured this slide any way you want. In terms of  
12 things Preston McGuire created, you didn't create that  
13 many organic papers here. This is one of the ones you  
14 made.

15 THE WITNESS: I didn't hear a question.  
16 Yes. I -- I created this figure.

17 MR. WEHMEYER: In what you've termed  
18 "water management zone," first, have you ever seen the  
19 OCD in its permitting speak to water management zones?  
20 Or do they speak in terms of formations?

21 THE WITNESS: Generally, they speak in  
22 formations. But we had discussions with the OCD about  
23 our methodology, and they agreed with us.

24 MR. WEHMEYER: I'm just trying -- I  
25 just didn't on all of the C-103s, 105, 113, I didn't

1 see anything that asked about a quote water management  
2 zone. The OCD permitting doesn't make any question or  
3 consideration on water management zone. What they  
4 speak of is formations; isn't that right?

5 THE WITNESS: That would be accurate.

6 THE HEARING OFFICER: Mr. Wehmeyer, are  
7 you at a point where we could take our morning break?

8 MR. WEHMEYER: Absolutely. Now's a  
9 logical spot.

10 THE HEARING OFFICER: All right. Let's  
11 take our morning break and let's be back at 10:30 for  
12 continuation.

13 (Off the record.)

14 THE REPORTER: We are ready.

15 MR. WEHMEYER: Mr. McGuire, do you  
16 remember earlier your counsel objected and said the  
17 only documents y'all were required to produce were  
18 those that were associated with corrosion scaling?

19 THE WITNESS: I -- I heard Mr. Rankin  
20 say that.

21 MR. WEHMEYER: "Due to severe pitting,  
22 entire injection tree was replaced." You would agree  
23 that that would be evidence of corrosion chemical  
24 reactions. Yes?

25 THE WITNESS: Not --

1 MR. RANKIN: Objection, asked and  
2 answered previously. Mr. McGuire testified --

3 THE HEARING OFFICER: Yeah. I've seen  
4 this before, Mr. Wehmeyer. Why are we going over the  
5 same territory?

6 MR. WEHMEYER: Because counsel just  
7 conceded that he didn't produce responsive documents.  
8 This document was never produced that deals with the  
9 corrosion issues. This document, "Casing is scaled up  
10 or corroded and not allowing to test," counsel has  
11 stated on the record he was required to produce this  
12 document, and he did not.

13 THE HEARING OFFICER: Well, we're not  
14 here to fight discovery battles. I mean, you can make  
15 the point for the record that it was within the scope  
16 of your production and wasn't produced. But it's  
17 neither here nor there for this witness or this  
18 proceeding.

19 MR. WEHMEYER: Well, I guess my  
20 question, then, Mr. McGuire is -- just one question on  
21 this. We agree that the slide I'm publishing here  
22 about the casing from 100 foot to surface is scaled up  
23 or corroded, that would certainly be a document  
24 evidencing in corrosion or scaling in a well in the  
25 EMSU, isn't it?

1 THE WITNESS: The word "corroded" is on  
2 this document.

3 MR. WEHMEYER: Do you know if this was  
4 given to Empire?

5 THE WITNESS: I do not.

6 MR. WEHMEYER: Now, earlier you talked  
7 about there was no evidence of production of oil out  
8 of the water supply wells. Do you remember that  
9 testimony?

10 THE WITNESS: I do.

11 MR. WEHMEYER: You're not seriously  
12 urging that there was not production of oil out of the  
13 water supply wells historically, are you?

14 THE WITNESS: There's no evidence.  
15 There's no reported oil associated with those wells.

16 MR. WEHMEYER: Okay. Well, now your  
17 answer's different. Did you just say "reported oil"?

18 THE WITNESS: I did say -- yeah.  
19 There's -- there's no evidence that oil came out of  
20 those wells.

21 MR. WEHMEYER: Have you been onto the  
22 EMSU before?

23 THE WITNESS: A long time ago.

24 MR. WEHMEYER: So you have been  
25 physically on the EMSU?

1 THE WITNESS: I've been to our  
2 facility.

3 MR. WEHMEYER: On the EMSU?

4 THE WITNESS: Yes. Our -- our facility  
5 is in the EMSU.

6 MR. WEHMEYER: Did you bother to go  
7 look at the tank configuration for the water supply  
8 wells and the Grayburg producers?

9 THE WITNESS: I did not, no.

10 MR. WEHMEYER: Let me just -- since  
11 you've been out there, let me ask. Did you see two  
12 10,000 barrel tanks that collect both the water supply  
13 water and the produced water from the Grayburg oil  
14 producers?

15 THE WITNESS: I don't know. Maybe.

16 MR. WEHMEYER: And are you aware that  
17 there is skim oil collected off of those tanks and  
18 then reported and sold?

19 MR. RANKIN: Mr. Hearing Officer,  
20 objection to this line of questioning. Mr. Wehmeyer  
21 is testifying, number one; number two, Goodnight asked  
22 repeatedly for any documentation that there was any  
23 skim oil produced from the water supply wells, and in  
24 Mr. West's deposition, he confirmed that there was no  
25 documentation of any production or skim oil from the



1 water supply wells.

2 THE HEARING OFFICER: Okay. So all  
3 right. Well, Mr. Wehmeyer, it's a fair objection. I  
4 mean, you're going to have to lay more foundation.  
5 You can't just be stating facts. You got to show the  
6 witness evidence and then question him about it. So  
7 the objection is sustained.

8 MR. WEHMEYER: Mr. McGuire, what I'm  
9 doing here is digging into your testimony, which is  
10 completely unfounded as an operational surface  
11 facility configuration matter, that you gave the  
12 Commission that there was no oil produced out of water  
13 supply wells. You offered that testimony to this  
14 Commission, haven't you?

15 THE WITNESS: No evidence that it was.

16 MR. WEHMEYER: To be able to have an  
17 opinion of that, you would have to know what the tank  
18 battery configuration is in terms of how the water  
19 from the water supply wells is gathered in relation to  
20 the water coming off of the Grayburg producers. And  
21 you have done no investigation as an expert in this  
22 case into the tank configuration, have you?

23 MR. RANKIN: Objection,  
24 Mr. Hearing Officer. Mr. McGuire was reasonably  
25 relying on Mr. West's own testimony in his deposition.

1 MR. WEHMEYER: May I respond?

2 THE HEARING OFFICER: No, no. I'm  
3 going to overrule that objection.

4 Go ahead and answer, Mr. McGuire.

5 THE WITNESS: Can you restate the  
6 question, please.

7 MR. WEHMEYER: To have opinions about  
8 oil produced or not coming off of a water supply  
9 well -- 101, an engineer like Mr. Macbeth [ph]  
10 would've done this work -- you would need to know what  
11 the tank battery configuration is, where is the water  
12 gathered, is it commingled with other water, where,  
13 wouldn't you?

14 THE WITNESS: Well, if it's commingled  
15 with other water, then you can't -- you can't say that  
16 that oil -- that skim oil came from the -- the water  
17 supply wells. If it's commingled, you don't -- if  
18 there's skim in that tank and it's co-mingled with a  
19 bunch of different wells, you don't know where that  
20 oil came from.

21 MR. WEHMEYER: You also couldn't --

22 THE WITNESS: Chevron  
23 metered -- Chevron metered that, and they reported no  
24 oil from the water supply wells.

25 MR. WEHMEYER: You also could not

1     testify that there's not oil out of the water supply  
2     wells, is the point.

3                   THE WITNESS:   There's no evidence that  
4     there was.

5                   MR. WEHMEYER:   Do you understand that  
6     when you say "metered," this is, like, literally a  
7     water bottle sample once a month is what you take off  
8     of a water supply well in terms of reporting to the  
9     OCD?   Do you understand what the water reporting  
10    composition protocol is?

11                  THE WITNESS:   Yeah.   They have to  
12    report the water, the volume of water, volume of oil,  
13    and volume of gas.   And the oil and gas was zero for  
14    the life of those wells.

15                  MR. WEHMEYER:   Do you understand the  
16    sample size is literally the size of a water bottle,  
17    and it's about once a month?

18                  THE WITNESS:   There's -- sorry.   Is  
19    there some --

20                  MR. RANKIN:   No.

21                  THE WITNESS:   Yeah.   There -- there's  
22    documents out there where you're -- you have to report  
23    how much water came out, how much oil came out, how  
24    much gas came out.   It's zero for the life of those  
25    wells.

1 MR. WEHMEYER: I'm only -- because  
2 you've put your hand up and claimed to be a  
3 engineering expert in this case, this is why you're  
4 getting the questions. As you talk about water  
5 composition, do you understand that is a water bottle  
6 taken once a month? Literally one water-bottle size?  
7 If you're talking about water composition, that's the  
8 size of it.

9 THE WITNESS: We're -- I -- I feel like  
10 we're talking about two different things here.

11 MR. WEHMEYER: In terms of volumes  
12 being commingled or not, you also have no clue about  
13 what's commingled or where between Grayburg producers  
14 and water supply wells, do you?

15 THE WITNESS: Yeah. Well, you're --  
16 you're telling -- you're representing to me that it's  
17 all commingled with the water from the Grayburg, so  
18 you don't know if the oil that's in that skim tank  
19 came from the water supply wells. It probably came  
20 from the -- from the Grayburg wells.

21 MR. WEHMEYER: What would be the other  
22 explanation?

23 THE WITNESS: I don't think there is  
24 one.

25 MR. WEHMEYER: You said "probably."

1 Well, where else could the oil have come from?

2 THE WITNESS: All right. I change my  
3 answer. It definitely came from the Grayburg wells.

4 MR. WEHMEYER: Okay. This is where we  
5 left off a while ago. This is your slide. And we  
6 visited earlier about water management zone; that is  
7 not any nomenclature you're familiar with the OCD ever  
8 using. And, again, this was your slide you created?

9 THE WITNESS: It was a modified slide,  
10 yes.

11 MR. WEHMEYER: In your water management  
12 zone, you can tell the Commission this is where y'all  
13 are injecting water right now?

14 THE WITNESS: Yes. We inject into the  
15 water management zone, but we do not inject near  
16 these -- these wells in this -- in this figure here.

17 MR. WEHMEYER: What's all this green  
18 where you're injecting salt water, since this is your  
19 slide?

20 THE WITNESS: That's where OPS has  
21 calculated what I feel to be unreasonable oil  
22 saturations.

23 MR. WEHMEYER: Oh, so you can tell the  
24 Commission that from your slide, the green is  
25 Mr. Birkhead's oil saturation calculations?

1 THE WITNESS: Yes, those are them, yes.

2 MR. WEHMEYER: If the Commission finds  
3 Mr. Birkhead's testimony credible, you can also tell  
4 the Commission that you would be watering those out,  
5 wouldn't you?

6 THE WITNESS: Not necessarily. I mean,  
7 if -- if it's truly ROZ, then it's not going to move,  
8 and it's not being watered out.

9 MR. WEHMEYER: Wouldn't that also  
10 explain why there's not oil out of the water supply  
11 wells according to you?

12 THE WITNESS: Well, no. Because the  
13 water supply wells used a test method that the ROZ  
14 experts have -- have discussed in their literature,  
15 and they -- they effectively tested the ROZ zone, and  
16 it was negative.

17 MR. WEHMEYER: We're moving over to  
18 the -- I want to focus on this slide. Do you see the  
19 Rhino wells reflected here on the left? And we talked  
20 yesterday that you have perms all the way in the upper  
21 San Andres, even by your agreement, on San Andres;  
22 right?

23 THE WITNESS: In the water in that  
24 Rhino well, yes. I guess we -- yeah. Sure.

25 MR. WEHMEYER: Can you agree with me as

1 a geologist and engineer that water -- and you see  
2 Lovington San is beneath where you're injecting?

3 THE WITNESS: Uh-huh.

4 MR. WEHMEYER: Water's going to move  
5 updip, upstructure, isn't it?

6 THE WITNESS: Not necessarily. And,  
7 number two, those perms, as we discussed yesterday,  
8 aren't taking any water.

9 MR. WEHMEYER: Have you shown the  
10 Commission any evidence of that whatsoever? What --

11 THE WITNESS: We went through that  
12 yesterday with the -- with the spinner survey.  
13 You -- you presented the spinner survey to me. We  
14 went through it.

15 MR. WEHMEYER: Yeah. I fear you do not  
16 know how to read the spinner survey. When have you  
17 had to read a spinner survey in your career?

18 THE WITNESS: All the time when we run  
19 them here.

20 MR. WEHMEYER: Okay. I'm just going to  
21 leave that one to Mr. Lamkin and Dr. Ampomah.

22 With respect to the -- I think I've  
23 made the point on this one. Well, I've got this one  
24 on the Rhino. You just said -- explain -- I want the  
25 commissioners to have this as they take it away and

1 analyze the credibility of your testimony. What off  
2 of this spinner data makes you think that there is no  
3 water going into the upper perfs?

4 THE WITNESS: Okay. So if we look at  
5 the spinner survey, the gray curve there, we can see  
6 that the rate decreases at the two at the -- at the  
7 packer. So you go from an -- or a more -- a smaller  
8 diameter pipe to a larger diameter pipe in the casing,  
9 so that's what that first big jump is.

10 And then we can see it's a constant  
11 rate for a number of feet there, indicating that no  
12 water is being -- is leaving the -- or is leaving the  
13 well until you get down to the next set of perfs.  
14 There's a little bit that happens there.

15 And then once you get down to, you  
16 know, approximately forty-eight forty-five, that's  
17 where the -- the spinner stops, indicating that all  
18 the water is leaving the -- or leaving the well -- or  
19 the remaining water is leaving the well at that depth.

20 MR. WEHMEYER: Hold on. "The remaining  
21 water." You are seriously suggesting that water isn't  
22 entering all the perfs above the last one? Let me  
23 re-ask --

24 THE WITNESS: Be specific. We -- we  
25 can talk about the perfs. If you point to one, I



1       can -- I can tell you.

2                       MR. WEHMEYER:   This perf, how on earth  
3       can you say that there is no water going into that  
4       perf?

5                       THE WITNESS:   Because the spinner  
6       survey is constant at that depth, indicating no water  
7       is leaving the -- or leaving the well.

8                       MR. WEHMEYER:   You've had an  
9       opportunity to fully explain your answer on that, on  
10      your method?

11                      THE WITNESS:   Yeah.   Just -- just  
12      did --

13                      MR. WEHMEYER:   So looking at this  
14      survey, which of these perfs is getting all of the  
15      water?

16                      THE WITNESS:   Well, according to this,  
17      the vast majority of the water is going out right  
18      around forty-eight forty-five, so that's going to  
19      be -- do we have maybe a little shallower than that?  
20      So I -- I would say it's those two perfs right where  
21      you're cursor is.

22                      MR. WEHMEYER:   Forty-eight forty-five  
23      right here?

24                      THE WITNESS:   Well, yeah.   I -- I would  
25      say --

1 MR. WEHMEYER: There's no perfs at  
2 forty-eight forty-five. How on earth could you tell  
3 this commission that water's going out at forty-eight  
4 forty-five when there's no perfs there?

5 THE WITNESS: Because there's  
6 no -- there's no flow below forty-eight forty-five, so  
7 there's no more water passing that -- passing that  
8 propeller.

9 MR. WEHMEYER: So where, looking at the  
10 survey, according to you, is all of the water going?

11 THE WITNESS: The vast majority of it  
12 looks to be going into those two perfs that are right  
13 above your cursor.

14 MR. WEHMEYER: Just these two? This is  
15 your testimony? Out of this entire well, those are  
16 the two perfs that's taking all of the water?

17 THE WITNESS: Not all of it.

18 MR. WEHMEYER: Where's the rest?

19 THE WITNESS: There's a few that are  
20 going in maybe the next two perfs up, but there's  
21 no -- there's no flow going into 43 or that top perf.

22 MR. WEHMEYER: If the Commission were  
23 to believe you that only these two perfs are getting  
24 the water, what would that -- if we look at this like  
25 a bubble map, what would that do to the geographic

1 area of influence? How fast -- if they accepted that  
2 as correct, how fast is that water passing the five  
3 acres, moving hundreds and thousands of feet away?

4 MR. RANKIN: Objection,  
5 mischaracterizes Mr. McGuire's in testimony he just  
6 gave; and it's getting back into the questions about  
7 trespass, which the hearing officer already ruled on.  
8 So, number one, mischaracterizes Mr. McGuire's  
9 testimony he just gave; and then also, it's addressing  
10 an issue that the hearing officer already ruled on  
11 about trespass.

12 MR. WEHMEYER: This is not a matter of  
13 trespass. This is a matter of the plume expanding  
14 very rapidly on a different net pay than what  
15 Goodnight has provided this commission.

16 THE HEARING OFFICER: All right. I  
17 didn't hear the word "trespass," but rephrase the  
18 question.

19 MR. WEHMEYER: Mr. McGuire, what I  
20 understand you wanting to tell this commission now is  
21 that somehow off of this particular survey reading,  
22 it's your opinion that the vast majority of the water  
23 is going into these two little perfs here that would  
24 be maybe 60 feet -- am I -- 60 feet of pay?

25 THE WITNESS: Probably -- well, the

1 perfs are 20-foot shots, I believe, so the perfs are  
2 40 feet. But yes. There's porosity across that  
3 entire interval, so we -- I'll go with you with your  
4 60 feet.

5 MR. WEHMEYER: This would be behaving  
6 very differently than a vast ocean of San Andres that  
7 goes into Texas, isn't it?

8 THE WITNESS: What do you mean?

9 MR. WEHMEYER: You are saying the  
10 only -- after you've selected the perf locations, the  
11 only perfs that are actually taking water are just  
12 these two in this little 40, 50, 60 feet of what you  
13 would call disposal pay?

14 THE WITNESS: That's what the -- that's  
15 what the data suggests.

16 MR. WEHMEYER: So what does that mean  
17 about how quickly that's going to move laterally? If  
18 only those two perfs, according to you, are taking the  
19 water, is the water going to move much quicker  
20 laterally or slower laterally than if all of the perfs  
21 were contributing to the disposal?

22 THE WITNESS: It would be quicker.

23 MR. WEHMEYER: I do want to talk about  
24 the Ted Williams. The Ted Williams well, where is  
25 that well in relation to EMSU?

1 THE WITNESS: It's outside the EMSU.

2 MR. WEHMEYER: How close?

3 THE WITNESS: I don't know. Maybe a  
4 mile or so.

5 MR. WEHMEYER: Within 2 miles of the  
6 existing EMSU oil unit?

7 THE WITNESS: Yeah. It's -- I -- I  
8 believe it's within 2 miles of the boundary.

9 MR. WEHMEYER: If the Commission is  
10 left with some idea on San Andres being this vast  
11 ocean, there were originally perfs put in the bottom  
12 in lower San Andres by Goodnight; right?

13 THE WITNESS: Yes, sir.

14 MR. WEHMEYER: Why did you abandon  
15 those perfs?

16 THE WITNESS: We did not abandon them.

17 MR. WEHMEYER: Why did you have to add  
18 new perfs?

19 THE WITNESS: Because we reached an  
20 agreement with a protester. We had an agreement with  
21 a company called Penroc, and they didn't want us to  
22 perforate above a certain depth. We came to an  
23 agreement after showing them data, got them  
24 comfortable that we could perf higher in the zone, and  
25 they agreed. And so we added the perfs.

1                   MR. WEHMEYER:   Didn't Penroc sell out?  
2   I thought they sold their position.

3                   THE WITNESS:   I'm talking about at the  
4   time that this work was done.

5                   MR. WEHMEYER:   Did Penroc sell their  
6   position?

7                   THE WITNESS:   I think so.   That sounds  
8   right.

9                   MR. WEHMEYER:   Did you reach a new  
10   settlement agreement with Penroc, or did they just  
11   sell?

12                  THE WITNESS:   No.   We -- we had  
13   conversations with the principals of Penroc.

14                  MR. WEHMEYER:   Why was Penroc concerned  
15   about injection into the upper San Andres?

16                  THE WITNESS:   They thought it might  
17   reach their gas zone.   And then we showed them the  
18   data on the pressure differentials, and they agreed  
19   with us and said we could go ahead and perforate that  
20   zone.

21                  MR. WEHMEYER:   When was Penroc  
22   concerned about injection in the San Andres?

23                  THE WITNESS:   When we originally filed  
24   the permit to inject.

25                  MR. WEHMEYER:   When was that?

1 THE WITNESS: 2017/2018 timeframe, if  
2 I'm remembering right.

3 MR. WEHMEYER: So if the Commission  
4 happened to have heard or seen written testimony about  
5 Empire being the first oil company concerned about  
6 injection into the San Andres, that would not be true?  
7 In fact, Penroc had concern and objected over  
8 injection into the San Andres, didn't they?

9 THE WITNESS: And then they got  
10 comfortable with it and allowed us to proceed.

11 MR. WEHMEYER: Did that timing coincide  
12 with when they sold their position?

13 THE WITNESS: No.

14 MR. WEHMEYER: Now let's just continue  
15 looking at this. If I understand your methodology now  
16 about where water is actually injecting, so you  
17 started with the red perms, then you went back and  
18 perf'd into the upper San Andres; right?

19 THE WITNESS: That would be -- well, it  
20 depends on what you're calling "upper." But according  
21 to this figure here, yeah, it looks like there's two  
22 perforations in what somebody is calling the "upper."

23 MR. WEHMEYER: Isn't this yours?

24 THE WITNESS: No.

25 MR. WEHMEYER: And so that the

1 Commission understands, according to your methodology,  
2 all of the injection would be going into the upper  
3 100ish feet?

4 THE WITNESS: No. I don't believe so.  
5 I'd have to -- let's see. What are these depths?

6 MR. WEHMEYER: Let's get this right in  
7 the record. Here's 4,600. Here's 4,800. So aren't  
8 we just measuring here to here under your methodology?

9 THE WITNESS: Yeah. So it says spinner  
10 went to zero at 4,800. Yeah. It looked -- that looks  
11 to be roughly accurate based on that spinner survey.  
12 So yeah. we had our -- that shows we had mud losses  
13 there. So that's what appears to be a very under  
14 pressured part of the reservoir, so it makes sense to  
15 me that a lot of the water is going into to  
16 that -- that zone.

17 Looks like the spinner was fairly  
18 constant from when it came out of the tubing until it  
19 got down to about that 48-. So yeah. I guess I have  
20 no reason to disagree that a lot of the -- the water's  
21 going out roughly about where you have it plotted  
22 there at 4,800.

23 MR. WEHMEYER: So you think it's just  
24 this perf?

25 THE WITNESS: No. I think it's



1     probably some of those other ones, but it looks like  
2     it's constant for at least those top few. Kind of  
3     hard to tell at the scale.

4                 MR. WEHMEYER:    So which of  
5     these -- based on your methodology off of the spinner  
6     survey, which of these perms would you say is  
7     receiving the water?

8                 THE WITNESS:    It's probably that one  
9     right where your cursor is. We got higher porosity  
10    right there, so that's probably taking a lot of the  
11    water.

12                MR. WEHMEYER:    So this  
13    would explain -- and you're using "porosity" as a  
14    stand in for "permeability," aren't you?

15                THE WITNESS:    Sure.

16                MR. WEHMEYER:    So what you've picked to  
17    say this is where the water's -- is based on a  
18    high-permeability streak; true?

19                THE WITNESS:    It's higher -- higher  
20    porosity, and I'm mostly basing it off of the spinner  
21    survey that you have in front of me here.

22                MR. WEHMEYER:    So this would be a  
23    permeability story, not a pressure story, wouldn't it?

24                THE WITNESS:    Well, there's obviously a  
25    low pressure there, so I think it's probably both.

1 MR. WEHMEYER: So, again, I just want  
2 the Commission to understand your methodology. I've  
3 given you the spinner survey off to the left. We did  
4 it with the -- you wanted -- because it's in the upper  
5 San Andres above the Lovington San, you wanted to  
6 insist no water's going into that perf in the Rhino.

7 Walk me through the same methodology  
8 you would use here and tell the commissioners which of  
9 these five perms is getting the water.

10 THE WITNESS: I think --

11 MR. RANKIN: Objection, asked and  
12 answered.

13 THE HEARING OFFICER: Yeah.  
14 Mr. Wehmeyer, he has answered that question. I could  
15 even answer it, and I don't know anything about this  
16 stuff.

17 MR. WEHMEYER: I truly don't know. If  
18 it's these two, I have another question. If he's  
19 saying it's all five, I don't know how he correlates  
20 that to --

21 THE HEARING OFFICER: Well, that's not  
22 what he said. He said it's to one where the  
23 cursor -- where you had the cursor. So objection  
24 sustained.

25 MR. WEHMEYER: So am I talking about

1 the right perf that's getting all of the water in the  
2 Ted Williams well, according to you?

3 THE WITNESS: Not all of it, but a lot  
4 of it.

5 MR. WEHMEYER: Which other ones are  
6 getting it, then?

7 THE WITNESS: It looks -- well, I'd  
8 have to -- the -- the depth lines on the spinner  
9 survey are -- are -- I can't see them.

10 So what I would do if I had more time  
11 to actually thoroughly evaluate this, I would get a  
12 high-quality image, zoom in, plot the perfs, and do a  
13 further evaluation. I'm just giving you my -- my  
14 answer as I see it sitting right here today.

15 MR. WEHMEYER: How many feet,  
16 then -- when you say the vast majority of the water's  
17 going into this one, if they want to know, how many  
18 feet are accepting the water? How many feet is that?

19 A It looks like about -- well, that -- these  
20 perfs are -- they're -- used 20-foot guns, so that's a  
21 20-foot section. So a lot of the water's going in  
22 that 20 feet. There's probably some going into the  
23 next one up.

24 MR. WEHMEYER: Okay. So, again --

25 THE WITNESS: And maybe the next

1 one -- sorry. Go ahead.

2 MR. WEHMEYER: So as we talk about  
3 pluming, if they believed you that it's only going  
4 into this approximately 20 feet, what does that mean  
5 about how fast horizontally that's going to plume  
6 laterally?

7 THE WITNESS: Radial -- in a radial  
8 flow model, it would -- it would increase it. But it  
9 could create -- it could connect to some other  
10 vertical -- just outside the wellbores some vertical  
11 pathways in this reservoir below the  
12 confining -- below the confining there. And, I mean,  
13 we haven't done plume analysis; so --

14 MR. WEHMEYER: And this is calculated  
15 as of June of 2025. It would be your testimony to the  
16 commissioners that on net to gross, it is not -- these  
17 wells are not behaving where it's getting 50 percent  
18 net to gross in terms of injection interval and what's  
19 accepting water; true?

20 THE WITNESS: Not at the time that that  
21 spinner survey was -- was taken.

22 MR. WEHMEYER: And this model's  
23 10 percent net to gross, which that would even be way  
24 too big of a percentage if we believed your  
25 methodology on the Rhino and the Ted Williams; isn't

1     that right?

2                   THE WITNESS:    Sure.

3                   MR. WEHMEYER:   You're talking, like, 40  
4     feet out of 1000; right?

5                   THE WITNESS:    What it looked like.

6                   MR. WEHMEYER:   And so just to  
7     illustrate here -- I know you haven't done any plume  
8     modeling -- but the plume would look a lot more like  
9     this over on the right in the green that I'm  
10    indicating around the Rhino, the Banks, the Sosa, the  
11    Yaz [ph]; isn't that right?

12                  THE WITNESS:    If the well is flowing  
13    radially.

14                  MR. WEHMEYER:   Which would -- as we  
15    talk about a 2-mile halo, that would mean the Yaz [ph]  
16    is already injecting within the EMSU? That water's  
17    already reached there as of June of '25 on an  
18    assumption of 10 percent net to gross, which based on  
19    the two wells you looked at and the spinner survey,  
20    would be two too high, should be even lower; true?

21                  THE WITNESS:    That's what this figure  
22    is -- is depicting.

23                  MR. WEHMEYER:   And even using what  
24    you're saying now is too conservative, if we carry it  
25    out to June of 2029, the graphic on the right would

1 demonstrate the pluming there as well, wouldn't it?  
2 Yes?

3 THE WITNESS: I'm sorry. Can  
4 you -- can you rephrase that or re-ask it? Sorry.

5 MR. WEHMEYER: If we carry out your  
6 volumes to June of 2029 -- we're just going five years  
7 out from 2024 -- at 10 percent net to gross, the model  
8 on the right would show pluming that'd basically  
9 enclose the entire EMSU, wouldn't it?

10 THE WITNESS: What -- what volumes are  
11 you using for this projection?

12 MR. WEHMEYER: Goodnight's historical  
13 volumes up through 2024 to calculate going forward.

14 THE WITNESS: What is it?

15 MR. WEHMEYER: I don't have it  
16 fingertips. I mean, why have y'all not modeled the  
17 pluming? Since you're the one sticking it in, why has  
18 Goodnight not modeled the pluming? Why are we having  
19 to do this for you?

20 THE WITNESS: It's just something that  
21 we -- we have not done at this time.

22 MR. WEHMEYER: And so, again, we're  
23 using June of 2024, your actual volumes through June  
24 of 2024, to model additional production on the same  
25 volumes that you'd been doing up to that point. And

1 through June of 2029, five out years, at 10 percent,  
2 you've already got the entire EMSU covered.

3 MR. RANKIN: Mr. Hearing Officer, I'm  
4 not sure if that was a question or if that was  
5 Mr. Wehmeyer testifying, so objection.

6 THE HEARING OFFICER: Rephrase,  
7 Mr. Wehmeyer. It's ambiguous.

8 MR. WEHMEYER: In terms of a plume  
9 modeling, has Empire modeled this correctly? Use your  
10 historical volumes, calculate what you claim your net  
11 to gross percentage of injection pay would be, and  
12 then calculate laterally how far that moves out over  
13 time? Is that a fair methodology?

14 THE WITNESS: Well, I don't -- did  
15 he -- did he use our -- our average injection over the  
16 past however many years we've been injecting? Or did  
17 he assume that we're injecting 24/7/365, at -- at some  
18 rate?

19 MR. WEHMEYER: My understanding is this  
20 is off of actuals.

21 THE WITNESS: Well, this is June of  
22 2029, so it can't be actuals. I'm just trying to  
23 understand what -- what he used -- what he used for  
24 his assumption of the injection volumes to -- from  
25 today to June of 2029.

1                   MR. WEHMEYER: I actually just had a  
2 question come in. They think they saw it on the  
3 video. Are you reading off of your cell phone right  
4 now?

5                   THE WITNESS: Nope. Playing with a  
6 piece of paper.

7                   MR. WEHMEYER: Coming back to the  
8 modeling, again, through 20, 30, 40 out years, I guess  
9 you can't comment on the plume model because you've  
10 just done no plume model whatsoever, have you?

11                  THE WITNESS: Haven't done the  
12 analysis. I have an idea of where the water's going,  
13 but I -- I don't think it looks like that.

14                  MR. WEHMEYER: You would agree, though,  
15 that based on your interpretations of the spinner  
16 surveys, 10 percent net to gross, that that would be  
17 too conservative?

18                  MR. RANKIN: Objection, vague question.

19                  THE HEARING OFFICER: I've got a  
20 problem with this whole line of questions because it  
21 feels to me like there's not enough foundation laid  
22 for the witness to be able to, you know, have  
23 meaningful answers here.

24                  Mr. Wehmeyer, I think you need to lay  
25 more foundation if you want to go here; otherwise,



1 we're just -- it's basically you testifying about the  
2 information that went into why we're seeing these  
3 green circles. So --

4 MR. WEHMEYER: Thank you,  
5 Mr. Harwood -- go ahead.

6 THE HEARING OFFICER: I'll sustain that  
7 objection.

8 MR. WEHMEYER: If the commissioners  
9 understand this, Mr. McGuire, I just want to talk  
10 about the 10 percent net to gross.

11 Based on your methodology in  
12 interpreting the spinner surveys on what net pay is  
13 actually accepting injection volumes, you can tell the  
14 commissioners with positivity that 10 percent net to  
15 gross, based on your actual observed experience in the  
16 Ted Williams and the Rhino, would be too conservative?  
17 It should be a lower number that would have the effect  
18 of expanding the circle out faster and larger; true.

19 THE WITNESS: Not necessarily. Some of  
20 those other -- if that one perf were to build  
21 pressure, then it would push back, and it would force  
22 water in more perforations.

23 MR. WEHMEYER: We're going to talk  
24 permits very briefly, and we're done. We covered some  
25 of this with Mr. Alleman. I'm not going to belabor

1     it. But the first -- when you were going to the  
2     Devonian, you have actual knowledge within Goodnight  
3     that certified mail return receipt requested was sent  
4     to XTO at this Englewood, Colorado, address; right?

5                   THE WITNESS: Yes, sir --

6                   MR. WEHMEYER: As well as its  
7     Fort Worth corporate headquarters?

8                   THE WITNESS: Yes.

9                   MR. WEHMEYER: And you have enough  
10    knowledge from the industry that you know XTO's  
11    corporate headquarters were in Fort Worth, don't you?

12                  THE WITNESS: Yeah. At that time.

13                  MR. WEHMEYER: Now where are they?

14                  THE WITNESS: Houston -- well, I  
15    guess --

16                  MR. WEHMEYER: Spring, Texas --

17                  THE WITNESS: They -- they've been  
18    purchased -- they've been purchased by ExxonMobil, so  
19    I would -- the -- the ExxonMobil's corporate  
20    headquarters are actually in Dallas, but the main  
21    campus is in Houston.

22                  MR. WEHMEYER: It's Spring, Texas. And  
23    the one you're referring to in Dallas is actually  
24    Las Colinas. They're near the Pioneer campus. But  
25    the point being, you sent the XTO notice to XTO

1 corporate headquarters return receipt requested when  
2 you were going to the Devonian. True or false?

3 MR. RANKIN: Mr. Hearing Officer,  
4 objection to this line of questioning. Mr. Alleman's  
5 company did this notice. Mr. Alleman was examined on  
6 this issue by Empire's counsel. This is not within  
7 the direct scope of Mr. McGuire's testimony.

8 THE HEARING OFFICER: All right. Well,  
9 I've been pretty liberal in not holding Mr. Wehmeyer  
10 to the precise scope of your questioning, and I will  
11 extend you the same courtesy on redirect. So  
12 overruled.

13 THE WITNESS: One more time for me,  
14 Mr. Wehmeyer?

15 MR. WEHMEYER: When Goodnight was  
16 permitting to the Devonian, they sent the notice of  
17 the application return receipt requested to XTO's  
18 corporate headquarters; yes?

19 THE WITNESS: That's what this appears,  
20 yes.

21 MR. WEHMEYER: But then you changed the  
22 name and decided you were going to come up shallower,  
23 isn't that right?

24 THE WITNESS: That is correct.

25 MR. WEHMEYER: I want to nail down the

1 depths. The permitted depths were 4,320 feet to 5,625  
2 feet; yes?

3 THE WITNESS: Yeah. We're -- we're  
4 still talking about Rhino here?

5 MR. WEHMEYER: Yep.

6 THE WITNESS: That sounds right.

7 MR. WEHMEYER: I'm going to calculate  
8 that, and you disagree with me if I've got it off.  
9 That's an interval of 1,305 feet; right?

10 THE WITNESS: 1,305.

11 MR. WEHMEYER: All right. We'll hold  
12 that number, and we're -- I'm going to write it down  
13 here. So 4,320 to 5,625. Do you know, is public  
14 notice required to also be running the newspaper?

15 THE WITNESS: It is.

16 MR. WEHMEYER: Is it important so that  
17 the public has an opportunity to object?

18 THE WITNESS: Yeah. That -- that's my  
19 understanding. That's why you do that.

20 MR. WEHMEYER: You would agree it's  
21 important?

22 THE WITNESS: That -- that's why you do  
23 this, yes.

24 MR. WEHMEYER: Here's the publication.  
25 What depths did Goodnight report in in the publication

1     it ran?

2                   THE WITNESS:   It says San Andres 4,500  
3     to 5,350.

4                   MR. WEHMEYER:   That's wrong, isn't it?

5                   THE WITNESS:   Those numbers are  
6     different than what we just looked at.   That is  
7     correct.

8                   MR. WEHMEYER:   If we do that math, that  
9     would be an interval of 850 feet, wouldn't it?

10                  THE WITNESS:   Once again, I agree with  
11     you.

12                  MR. WEHMEYER:   And that would actually  
13     be 180 feet deeper than what Goodnight actually  
14     permitted and has placed perforations into, isn't it?

15                  THE WITNESS:   That's different than  
16     what was permitted.   I'd have to remind myself of the  
17     perforations.

18                  MR. WEHMEYER:   And that would only be  
19     850 feet, which would mean that the notice was  
20     different than the permit by 455 feet.   That's not  
21     immaterial, is it?

22                  THE WITNESS:   They're different.

23                  MR. WEHMEYER:   The question was, that's  
24     not an immaterial difference, is it?

25                  THE WITNESS:   Yeah.   They're -- they're

1 different. Not one foot, but could be considered  
2 material.

3 MR. WEHMEYER: When publication was  
4 run, why did Goodnight not accurately identify so that  
5 the public could protest or not the depths that were  
6 intended to be perforated?

7 THE WITNESS: Goodnight --

8 MR. RANKIN: Objection, Mr. Hearing  
9 Officer. Mr. Wehmeyer knows that Mr. McGuire was not  
10 responsible for this area at this time. This was in  
11 2019.

12 THE HEARING OFFICER: Overruled.

13 MR. WEHMEYER: Why did Goodnight not  
14 accurately tell the public the depth -- in the legally  
15 required publication the actual depths it was going to  
16 put perfs into?

17 THE WITNESS: That was not the  
18 responsibility of Goodnight. That was the  
19 responsibility of the permitting consultant that did  
20 the work.

21 MR. WEHMEYER: Who was that -- well,  
22 so, like, the 2.5 million pounds of hazardous waste  
23 that ended up in Oregon, that's not Goodnight's fault?  
24 Somebody else's fault?

25 MR. RANKIN: Objection, argumentative.

1 THE HEARING OFFICER: It is sustained.

2 MR. WEHMEYER: Dasco Cattle Company,  
3 they're also suing Goodnight right now in the EMSU,  
4 aren't they?

5 MR. RANKIN: Objection, relevance.

6 THE HEARING OFFICER: Mr. Wehmeyer,  
7 where are we going with this? Is this character  
8 evidence?

9 MR. WEHMEYER: Yeah. We could  
10 put -- but it is right in the EMSU. Maybe the  
11 commissioners would like to know what else the  
12 wonderful operator Goodnight is being sued for in the  
13 EMSU.

14 THE HEARING OFFICER: All right.  
15 Sustained.

16 MR. WEHMEYER: Now, when you came up  
17 from the Devonian into the San Andres, why did you not  
18 send this to the same XTO address that was used not  
19 long before and instead sent it to Midland?

20 MR. RANKIN: Mr. Hearing Officer,  
21 objection. These exact lines of questions were  
22 addressed to the person that was responsible for this  
23 portion of the testimony, Mr. Nathan Alleman, and he  
24 addressed this question on the record.

25 THE HEARING OFFICER: All right. Well,

1 maybe we'll hear a different answer. Overruled.

2 THE WITNESS: Yeah. My understanding  
3 is -- is that they used the -- the addresses that are  
4 associated with the OGRID number for XTO and that  
5 address was changed on the OCD website.

6 MR. WEHMEYER: Now, within the  
7 EMSU -- I mean, we can look through the permit -- but  
8 you know nowhere on the permit applications for any of  
9 the SWDs in the EMSU was the EMSU oil unit identified;  
10 isn't that true?

11 THE WITNESS: I'd have -- I'd have to  
12 go look at the -- the permit applications, but I guess  
13 I'll take your word for it.

14 MR. WEHMEYER: Now, I asked yesterday,  
15 and you said, "Can you show it to me?" Do you  
16 remember when I said, "But on other wells that were  
17 outside of the EMSU, you did show the EMSU  
18 boundaries"? Do you remember when you said, "Can you  
19 show it to me?"

20 THE WITNESS: Yeah.

21 MR. WEHMEYER: And I told you I would.  
22 Do you remember that?

23 THE WITNESS: I think so.

24 MR. WEHMEYER: This is your TED SWD AKA  
25 Schneider 28 application. You see this is 2018. Just



1 to help orient the commissioners, am I identifying the  
2 right location of the TED?

3 THE WITNESS: Yes, sir.

4 MR. WEHMEYER: It's within 2 miles of  
5 the EMSU?

6 THE WITNESS: It is.

7 MR. WEHMEYER: And here, as part of the  
8 permit applications, do you see the EMSU identified  
9 with the red boundaries in connection with that SWD  
10 application?

11 THE WITNESS: Which red boundary are  
12 you referring to?

13 MR. WEHMEYER: Eunice Monument South  
14 Unit. I'm over it with my cursor, and it's  
15 got -- there's a legend over here where you can  
16 actually trace EMSU boundary.

17 THE WITNESS: I guess I don't see  
18 the -- I see the words "EMSU," but I -- I'm not seeing  
19 the -- the boundary being posted.

20 MR. WEHMEYER: Why did you identify the  
21 Eunice Monument South Unit on your TED application,  
22 but didn't do it for the wells inside the EMSU?

23 THE WITNESS: I didn't do this work.

24 MR. WEHMEYER: Was it somebody working  
25 for Goodnight?

1 THE WITNESS: Yeah. It was probably  
2 the permitting consultants. Sure.

3 MR. WEHMEYER: Here on the TED permit,  
4 Goodnight identified it as being both open and closed.  
5 This is outside of EMSU. Do you remember  
6 Dr. Ampomah's questions about closed system, open  
7 system?

8 THE WITNESS: I think so, yes.

9 MR. WEHMEYER: Can you explain -- and  
10 we know that on the ones inside the EMSU, it was  
11 identified as closed. Can you identify the wellbore  
12 configuration on the TED that would be different than  
13 the one, for example, Rhino that we looked at in  
14 detail with Mr. Alleman?

15 THE WITNESS: I don't think that  
16 there's any difference. The -- this is referring to,  
17 I -- I believe -- my understanding is -- is that this  
18 is talking about the gathering system, and it is a  
19 closed system, because it's all on pipe. So I would  
20 disagree that this is an open system at -- at the  
21 surface.

22 MR. WEHMEYER: This is your permit. I  
23 didn't make this. You made this.

24 THE WITNESS: I did not make this.

25 MR. WEHMEYER: My question -- I'm going

1 to get an answer to my question. If the commissioners  
2 would like to go back and understand the wellbore or  
3 gathering configuration for the Rhino, in which you  
4 told the OCD it was a closed system, versus the  
5 configuration for gathering and wellbore of the TED,  
6 what is the difference in terms of the facilities or  
7 drilling configuration between those wells, if there  
8 is one?

9 THE WITNESS: No difference to my  
10 knowledge.

11 MR. WEHMEYER: This is just an example.  
12 Do you see that this report reporting the spudding of  
13 the well was only filed on April 4, 2024?

14 THE WITNESS: I -- yes. I do see that.  
15 Which well is this specific to?

16 MR. WEHMEYER: There's many instances  
17 where it's years after the fact before required papers  
18 are filed with the OCD. Why does Goodnight wait years  
19 to file papers that are required back in a matter of  
20 20 to 60 days?

21 THE WITNESS: Sorry. I thought I heard  
22 something.

23 MR. WEHMEYER: I'll show you more  
24 examples. Here's another example. Injection commence  
25 2018, but you're only filing it with the OCD in April

1 of 2024. Why? Why as a matter of habit do y'all wait  
2 years before you file some of these basic required  
3 papers?

4 THE WITNESS: So at the time, for a lot  
5 of this stuff, it was our understanding that it was  
6 the responsibility of the drilling consultant for a  
7 lot of these regulatory filings.

8 We did a self-audit and realized that  
9 we were -- that those filings did not get submitted,  
10 self-identified. Worked with the OCD to get all of  
11 the necessary filings into the -- sent to the  
12 regulator.

13 MR. WEHMEYER: Pass the witness.

14 THE HEARING OFFICER: All right. Thank  
15 you, Mr. Wehmeyer.

16 All right. Rice, any questions for  
17 Mr. McGuire?

18 MR. BECK: No questions for this  
19 witness.

20 THE HEARING OFFICER: Pilot, any  
21 questions for Mr. McGuire?

22 MR. SUAZO: No questions, Mr. Hearing  
23 Examiner.

24 THE HEARING OFFICER: All right. That  
25 brings us to the Commission, but I see that the time

1 is 11:17 a.m., and we have to break at 11:30, so I  
2 don't want anybody to feel like they need to be  
3 pressured into getting all their questions answered  
4 before we go to the lunch break.

5 So let me ask you, Chairman Razatos.  
6 What are your thoughts on that subject? You know, and  
7 maybe the commissioners have a preference whether they  
8 prefer not to break up their examination of this  
9 witness or proceed at this time, realizing we only  
10 have 15 minutes to get going on this.

11 MR. RAZATOS: So that is a good  
12 question, Mr. Hearing Officer.

13 Commissioner Ampomah,  
14 Commissioner Lamkin, did you want to just start after  
15 lunch, or did you want to start a few questions now,  
16 realizing that we only have a few minutes?

17 DR. AMPOMAH: I definitely do have a  
18 lot, so probably after lunch would be good for me.

19 MR. RAZATOS: Okay.

20 Commissioner Lamkin?

21 MR. LAMKIN: Either way is fine with  
22 me. I -- I only have a handful of questions.

23 MR. RAZATOS: Okay.

24 Mr. Hearing Officer, being that we only  
25 have 12 minutes before we would have to break, let's

1 just extend the lunch hour. We'll come back at 1:30,  
2 and then the commissioners can have the afternoon to  
3 be able to ask their questions.

4 THE HEARING OFFICER: Okay. That  
5 sounds great. All right. Thank you, Mr. Chairman.  
6 With that said, then, we'll give our court reporter's  
7 fingers a rest, and we'll all be back here at 1:30.  
8 Have a great lunch.

9 MR. RAZATOS: Thank you.

10 (Off the record.)

11 THE REPORTER: Good afternoon. My name  
12 is John Shavers; I'm a reporter assigned by Veritext  
13 to take the record of this proceeding.

14 I am a reporter authorized to  
15 take -- take acknowledgements and to administer oaths  
16 in Texas.

17 Additionally, absent an objection on  
18 the record before the witness is sworn, all parties  
19 and the witness understand and agree that any  
20 certified transcript produced from the recording of  
21 this proceeding:

22 - is intended for all uses permitted  
23 under applicable procedural and  
24 evidentiary rules and laws in the  
25 same manner as a deposition recorded

1                   by stenographic means; and  
2                   - shall constitute written stipulation  
3                   of such.

4                   That's it, Mr. Harwood.

5                   THE HEARING OFFICER: All right. Thank  
6                   you, Mr. Shavers.

7                   Are we ready in the room, Ms. Apodaca?

8                   MS. APODACA: Yes, we're ready.

9                   THE HEARING OFFICER: All right.

10                  Dr. Ampomah, I guess we'll start with  
11                  you on the theory that you have probably more  
12                  questions, and maybe some of the answers will also  
13                  answer questions that Mr. Lamkin has, not to short him  
14                  in any way, shape, or form. But if you don't mind, if  
15                  you'd take the lead.

16                  DR. AMPOMAH: Thank you, sir.

17                  Mr. McGuire, thanks so much for your  
18                  testimony today. So I do have some few questions for  
19                  you.

20                  And I'll ask if Goodnight's Number 3  
21                  Testimony, Mr. McGuire, and 4, 5, Goodnight's rebuttal  
22                  statement, all will be more or less open up so I can  
23                  go through that.

24                  MR. RANKIN: Dr. Ampomah --  
25                  Commissioner Ampomah, just so I'm clear, which

1 documents? You want the rebuttal statement?

2 DR. AMPOMAH: Yeah. So I want the  
3 Goodnight Number 3 testimony.

4 MR. RANKIN: The supplemental  
5 testimony?

6 DR. AMPOMAH: No. This will be the  
7 original testimony, Goodnight Number 3 testimony and  
8 Exhibits B-1 to B-26, Preston McGuire.

9 MR. RANKIN: Okay.

10 DR. AMPOMAH: And then 27 to 35,  
11 Preston Number 4 -- that would be Number 4.

12 MR. RANKIN: When you say "Number 4" or  
13 "Number 3," what are you referring to?

14 DR. AMPOMAH: Okay. So I want -- I'll  
15 be going through the Number 3, Number 4, and Number 5  
16 all interchangeably.

17 MR. RANKIN: Paragraphs Number 3,  
18 Number 4? No. I'm sorry. I'm just --

19 DR. AMPOMAH: The exhibit.

20 MR. RANKIN: Oh, exhibits.

21 DR. AMPOMAH: Yeah.

22 MR. RANKIN: From the slide  
23 presentation?

24 DR. AMPOMAH: No --

25 MR. RANKIN: No. From the direct



1 testimony. Okay.

2 DR. AMPOMAH: Yeah --

3 MR. RANKIN: I apologize.

4 DR. AMPOMAH: From the direct  
5 testimony.

6 MR. RANKIN: Okay. I apologize. Let  
7 me -- I'll get there, and I'll get everything up. The  
8 files are big, so I'm going to try to open them only  
9 one at a time as we need them, because Adobe doesn't  
10 like very big files, so I'm going to just -- I'll do  
11 that slowly over time.

12 DR. AMPOMAH: Okay.

13 MR. RANKIN: So I'll start with the --

14 DR. AMPOMAH: The Number 3.

15 MR. RANKIN: Exhibit 3, yeah, yeah.

16 Okay. Dr. Ampomah, is this the Exhibit 3 that you're  
17 asking about?

18 DR. AMPOMAH: No. This is different  
19 from what I have. So the direct testimony in Exhibits  
20 B-1 to B-26.

21 MR. RANKIN: B-1 is his resume; B-2 is  
22 this overview. Oh, okay. I see. Okay. So this  
23 slide?

24 UNIDENTIFIED SPEAKER: That entire  
25 portion --

1 MR. RANKIN: I'm sorry. What?

2 UNIDENTIFIED SPEAKER: The testimony  
3 and exhibits. So when they were sent to us, it was  
4 Goodnight 3, 4, and 5, Exhibits 1 through 26,  
5 Exhibits 27 through 35, and then 36 through whatever.  
6 And so those are Goodnight 3, 4, and 6.

7 MR. RANKIN: So I apologize. Is it  
8 possible for me to see just so I'm clear about what it  
9 is? I want to make sure we know. Do you mind if I  
10 approach so I can see? So yeah. If you can tell me  
11 what exhibit number it is, if it's B-1, B-2, B-3, so  
12 there's exhibits attached. So, you know, yeah, if you  
13 just tell me the paragraphs, I'll go to that.

14 Okay. I apologize. Yeah.

15 DR. AMPOMAH: Okay. Mr. McGuire, sorry  
16 for the delay. Let's go to Paragraph Number 6, which  
17 will be the summary. Thank you. So on the Bullet  
18 Point Number 1 -- and we'll go through this quickly,  
19 because definitely you do have a lot of information to  
20 substantiate this. Now for the first bullet point, I  
21 hope you can see the screen.

22 THE WITNESS: I can, yes, sir.

23 DR. AMPOMAH: Okay. So the first  
24 Bullet Point Number 1, my question for you is, can you  
25 explain just briefly, based on material balance -- or

1 let's say, did you utilize material balance in coming  
2 up with this conclusion?

3 THE WITNESS: No, we did not.  
4 This -- this conclusion is based -- is based on  
5 our -- how our wells are performing.

6 DR. AMPOMAH: So when you say it's  
7 based on how your wells were performing, in terms of  
8 petroleum engineering, I mean, what analysis is that?

9 THE WITNESS: So it's just an  
10 observation of how the wells are performing. They can  
11 inject at very, very high rates at -- at very, very  
12 low operating pressures.

13 DR. AMPOMAH: Are you familiar with the  
14 "material balance" term?

15 THE WITNESS: Yes, I am. Yep.

16 DR. AMPOMAH: And did you use material  
17 balance in any of your analysis?

18 THE WITNESS: No, we have not.  
19 Not -- not in detail.

20 DR. AMPOMAH: Now, on Number 2, you  
21 describe how -- you talk about the extensive pressure  
22 differential between the Grayburg and San Andres  
23 aquifers. One, you're saying that the presence of an  
24 effective geologic barrier between the two formations.  
25 I want to ask you, did you use RFT to also help you in

1 coming up with this conclusion?

2 THE WITNESS: No, we did not use RFTs.  
3 It was based on the differences in pressures that we  
4 observed from multiple different data sets.  
5 The -- the shut-in pressures from the Grayburg wells,  
6 the drilling experience where we were able to hold a  
7 column of drilling fluid while drilling through the  
8 Grayburg.

9 And then once we passed below what is  
10 the confining layer that separates these two  
11 reservoirs, we see a completely different reservoir  
12 system down below that confining layer. So that  
13 pressure differential that we see across the field  
14 could not be sustained for -- for very long periods of  
15 time if those formations were in communication.

16 So we feel pretty strong that these two  
17 separate reservoirs are -- are isolated from one  
18 another.

19 DR. AMPOMAH: So based on all the  
20 testimonies that we've listened for couple  
21 of -- multiple weeks, Empire and then Goodnight's  
22 experts utilized the RFT to describe the pressure  
23 profile within the Grayburg. Do you agree with that?

24 THE WITNESS: Yes. I agree that there  
25 was some RFTs that were taken in the Grayburg.

1 None -- there was no RFTs taken below the confining  
2 layer that separates these two reservoirs.

3 But even in the RFTs that we have seen,  
4 John Macbeth [ph] talked about that, that there's big  
5 pressure differentials between very small vertical  
6 distances that also show that there's isolation in  
7 different zones within the Grayburg itself.

8 And -- and a lot of that has been  
9 discussed through all the different conformance  
10 issues. The -- the Grayburg is a very highly  
11 compartmentalized reservoir in of itself, but all  
12 those compartments in the -- in the Grayburg reservoir  
13 are totally separated from the disposal reservoir.

14 DR. AMPOMAH: You know, the reason why  
15 I brought that up, as you said, the Grayburg do have a  
16 lot of compartments, and even it can be shown right on  
17 the pressure based on what you just said.

18 Now, you picked a lot of barriers  
19 within the San Andres. Did you do any analysis using  
20 pressure data to confirm these barriers that you  
21 picked in the San Andres formation?

22 THE WITNESS: Well, the only one that I  
23 can speak to confidently is the one that's separating  
24 these two reservoirs. We did not do any analysis  
25 within the disposal reservoir to see isolation within

1 the disposal reservoir. But we do see that there's a  
2 change in reservoir characteristics once we passed  
3 from the Grayburg into the disposal reservoir.

4 DR. AMPOMAH: So is it your testimony  
5 that you did not include any engineering data in  
6 supporting those barriers that you picked in the  
7 San Andres?

8 THE WITNESS: No. I -- I think we did.  
9 I talked about that in my -- in my direct testimony as  
10 well as my presentation. I -- I pointed to wells that  
11 are very close to each other, one being in the  
12 disposal reservoir, one being in the Grayburg, and  
13 those pressures are very, very different.

14 DR. AMPOMAH: Mr. Rankin, can we go to  
15 Number 12?

16 So Number 12, I'm going to read from  
17 line 3 from the bottom. So you said "Goodnight gave  
18 extensive testimony that it's San Andres disposal zone  
19 at the EMSU has been tested and confirmed to be a  
20 non-hydrocarbon-bearing aquifer and not a candidate  
21 for ROZ." Did I read that correctly?

22 THE WITNESS: Yes, sir, you did.

23 DR. AMPOMAH: Is this statement  
24 supported by the two other witnesses that were  
25 presented by Goodnight, specifically Dr. Davidson and

1       then also Mr. Knights?

2                   THE WITNESS:   Yes.   I -- I believe so.  
3       I -- I guess, given that I would slightly modify that,  
4       they did put some very, very minor oil saturations in  
5       the disposal zone, but they're intermittent and spread  
6       out and at very, very low saturation.

7                   So to be technically correct,  
8       non-hydrocarbon, we do see some minor -- minor  
9       indications, but they are not at the levels that would  
10      meet ROZ definitions.   And as those experts explained,  
11      they do not feel that they are producible.

12                  And Dr. Davidson also said that they  
13      were abandoned migration pathways and -- and not a  
14      really a high -- a producible -- producible  
15      hydrocarbons.

16                  DR. AMPOMAH:   So is it your testimony  
17      to the Commission that if we go back and look at all  
18      the transcripts, that based on the discussions that I  
19      had, even Empire's counsels had with Dr. Davidson and  
20      Mr. Knight, there is nowhere where they consider that  
21      there is ROZ, in fact, in the upper San Andres?

22                  THE WITNESS:   Well, I think that they  
23      were pretty clear that there's no ROZ in the disposal  
24      zone.   Now, we've -- you guys have heard a lot of  
25      testimony about where the chronostratigraphic pick for

1 the top of the San Andres is and how difficult that is  
2 to pick.

3 Empire claims they have it right.  
4 I -- I disagree. I -- I don't -- I don't think that  
5 they necessarily have it exactly correct for the  
6 chronostratigraphic pick. But that would be the  
7 interval that Dr. Davidson and Mr. Knights was  
8 referring to was the interval that is above the  
9 confining layer that separates the two reservoirs that  
10 we're talking about here.

11 DR. AMPOMAH: Sir, based on the  
12 cross-examination, you know, there were cross sections  
13 shown to the Commission where your perfs are all over  
14 the San Andres. Do you dispute that?

15 THE WITNESS: They are all over what we  
16 would define as San Andres. They are not in intervals  
17 that Empire would define as the San Andres.

18 DR. AMPOMAH: Thank you for that.  
19 Can we go to -- can you bring up the  
20 bottom part up where it starts with the observation?  
21 Yeah.

22 MR. RANKIN: Which ones?

23 DR. AMPOMAH: Yeah. Just scroll up a  
24 little bit. Yeah. Right there. Thank you. Oh, go  
25 down. Still Number 12, but -- yeah. Right there.



1 Thank you.

2 So we'll go to what has been termed as  
3 a cartoon where you do have all the barriers that are  
4 in there. But I want to ask you if you utilized any  
5 geological information, you know, from the core  
6 specifically to support the barriers that you picked  
7 in the San Andres?

8 THE WITNESS: Yes. The 679 core has a  
9 confining layer that's shown by the vertical  
10 permeability that was measured in that core. That  
11 equates to the zone that we've correlated across the  
12 field and isolates these two reservoirs from one  
13 another.

14 DR. AMPOMAH: Can we go to page 105  
15 where we do have the cartoon, as it's been called.  
16 Okay. Thank you. So it seems like I'm looking at a  
17 different one.

18 MR. RANKIN: Dr. Ampomah, which exhibit  
19 at the bottom is it?

20 DR. AMPOMAH: Okay. Let me try to find  
21 that.

22 It's B-9.

23 MR. RANKIN: Okay. One moment.

24 Okay. This is good. Thank you.

25 DR. AMPOMAH: So, sir, I just want to

1 confirm that the methodology that you used in picking  
2 these barriers is 7 percent porosity; is that correct?

3 THE WITNESS: Yes. That was generally  
4 the methodology we used, and that was supported by the  
5 core data that we had at the time.

6 We got the additional core data from  
7 Empire from the 679, and it confirmed that we probably  
8 could have drawn some of these barriers a little bit  
9 thicker given the -- the core data. That confining  
10 interval that I was showing had intervals of porosity  
11 that were as high as 15, 16, 17 percent and had zero  
12 vertical perm.

13 DR. AMPOMAH: Now, have you done any  
14 geological analysis on each of these barriers that  
15 you've picked?

16 THE WITNESS: I guess, what  
17 specifically are you looking for? I'm going to need a  
18 little bit more specific there.

19 DR. AMPOMAH: Okay. Yeah. Let me give  
20 you more. So can you point to the Commission  
21 where -- let's say we were seeing some anhydrites in  
22 the core. And even Dr. Davidson talked about  
23 anhydrite being a potential ceiling for barriers that  
24 he talked about. Can you show right here on this  
25 cross section where we have anhydrites that has been

1 mapped?

2 THE WITNESS: Sure. So there's  
3 intervals that have elevated anhydrite material, and  
4 it's found at the top of this area that we're showing  
5 here. I -- I have an open hole log with the Rhino.  
6 That was the primary well that I used in building this  
7 cross section. It was the most recent up-to-date  
8 data.

9 We can see intervals at the top of  
10 there where it's very, very low porosity, calculating  
11 to negative porosity on a dolomite matrix. The PE was  
12 getting closer to 5, indicating that there was  
13 anhydrite material in there.

14 Now, I'm not -- I'm not willing to say  
15 that it's 100 percent anhydrite, but there are  
16 definitely intervals at the top that are more  
17 than -- well, I didn't do an exact percentage analysis  
18 on there. But there's intervals in that zone that  
19 have significant anhydrite content in there as well as  
20 very, very tight dolomite with no porosity.

21 DR. AMPOMAH: So, sir, you are  
22 referring to the Rhino well. Has there --

23 THE WITNESS: That's -- oh, sorry. Go  
24 ahead. Didn't mean to cut you off.

25 DR. AMPOMAH: So is there any core? Is

1     there any spectral gamma ray logs? Is there any  
2     detailed logs that have been evaluated to confirm that  
3     there is anhydrite, even the cuttings, to confirm  
4     that, indeed, there is resistance of anhydrite?

5                 THE WITNESS: Yeah. So the -- the  
6     anhydrite material in the cuttings, it's -- it's  
7     basically powderized with -- with the drill bit.  
8     There was not any described in the mud log. We did  
9     see some anhydrite described in the 679 core.

10                But using the triple combo information  
11     that we have here with the Rhino, Dr. Davidson was  
12     able to calculate these intervals of elevated  
13     anhydrite as I was describing.

14                DR. AMPOMAH: So, sir, if I recall  
15     correctly, Dr. Davidson said he used a different well  
16     outside the EMSU to check the signature. So he did  
17     not actually, based on his testimony, testify that he  
18     had any anhydrite within the EMSU. You can tell me if  
19     I'm wrong or not. The transcripts are there.

20                THE WITNESS: No, yeah. He -- he  
21     definitely did do a mineralogical analysis using the  
22     Rhino well, and that's included in his testimony.

23                DR. AMPOMAH: Okay. We will check into  
24     that. So, you know, I do know, at least based on my  
25     experience, that carbonates do have really low

1     porosities. You know, I've even seen -- you know, you  
2     are familiar with the Devonian where porosity goes to,  
3     like, 4 percent, and we say that it is an injection  
4     zone.

5                     Can you provide a reference to the  
6     Commission where 7 percent has been used as a cutoff  
7     to say that it is a barrier in the petroleum  
8     engineering industry?

9                     THE WITNESS: Yeah. So the -- the  
10    7 percent comes from porosity and perm cross plots  
11    that we had for the San Andres. And that 7 percent  
12    equated to a 0.5 millidarcy permeability, which is, in  
13    my opinion, a effective seal for -- for flow.

14                    DR. AMPOMAH: So, sir, your response is  
15    your personnel opinion, not necessarily published in  
16    any literature?

17                    THE WITNESS: It was -- I mean, I've  
18    seen 0.5 used as a -- as a permeability cutoff  
19    in -- in different areas. That's just the -- the one  
20    that I -- I can't point to a specific citation right  
21    now at this point. But I -- I do know that in other  
22    fields, a 7 percent cutoff has been -- or a 0.5  
23    millidarcy cutoff has been used to define barriers.

24                    DR. AMPOMAH: So, sir, based on the  
25    cross, I had about 7 percent porosity that you used as

1 your methodology. So are you changing your testimony  
2 now?

3 THE WITNESS: I don't -- I don't  
4 believe I changed my testimony. I -- I explained it a  
5 little bit better as to what that 7 percent equated to  
6 in a permeability standpoint. But no, I'm not -- I'm  
7 not changing that testimony.

8 DR. AMPOMAH: So the barrier analysis  
9 that you did, you know, I do see there is one that you  
10 plotted the vertical permeability for the log -- for  
11 the Well 6, 7, 9. Did you correlate this particular,  
12 let's say, barrier that you're showing here -- we're  
13 showing on the screen to core?

14 THE WITNESS: Yeah. So I'll point you  
15 on the very left-hand side of this -- of this figure  
16 here is the EMSU 460.

17 That well is 300 feet from the  
18 cored -- from the cored well, and that low vertical  
19 permeability that I -- that I described in that -- in  
20 that core plot equates to that interval that's showing  
21 as blue at the top of the San Andres on the left-hand  
22 side of this. And that's what I correlated across  
23 this particular cross section.

24 DR. AMPOMAH: So did your  
25 analysis -- well, was your analysis corroborated by

1 any of them Goodnight's experts?

2 THE WITNESS: Yes. We had discussions,  
3 and they -- they agreed that with that methodology  
4 and -- yeah. They -- they agreed.

5 DR. AMPOMAH: Now, my question was did  
6 they corroborate your assessment as an evidence  
7 to -- or, let's say, through a testimony to the  
8 Commission?

9 THE WITNESS: I guess I'm a little lost  
10 on the question. Yes. They agreed with it, and I  
11 think they used that knowledge in a lot of their  
12 testimony and corroborated that statement throughout  
13 all of their testimonies.

14 DR. AMPOMAH: Mr. Rankin, can we go  
15 back to Number 13?

16 MR. RANKIN: Paragraph 13.

17 DR. AMPOMAH: Paragraph 13. Sorry.  
18 Thank you.

19 So I'm going to read the bold -- where  
20 it's been bolded, the bottom of that. So you said  
21 that "Empire was unable to show through evidence that,  
22 one, the San Andres disposal zone had ever produced  
23 any oil; the San Andres contains recoverable  
24 hydrocarbons; and if the hydrocarbons exist, can be  
25 produced in paying quantities." Do you still stand by

1 this?

2 THE WITNESS: Well, yes. I do stand by  
3 this, because this particular paragraph was discussing  
4 the hearing that was had on the Piazza [ph] case. And  
5 in that case, Empire really provided no technical  
6 evidence. There was -- a geologist didn't testify on  
7 behalf of Empire. I don't believe an engineer  
8 testified on behalf of Empire.

9 There was a Mr. Eugene Sweeney. I  
10 think he was a higher-up corporate representative,  
11 maybe the VP of operations or the chief operating  
12 officer. But he did not provide -- he did not discuss  
13 any technical evidence in his testimony. So I do  
14 stand by this as it relates to the Piazza [ph] case  
15 that was had in Case Number 22626.

16 DR. AMPOMAH: So I'm bringing it back  
17 to this particular case.

18 THE WITNESS: Okay.

19 DR. AMPOMAH: So for this particular  
20 case, do you believe that this statement is still  
21 true?

22 THE WITNESS: Yes.

23 DR. AMPOMAH: Explain to the Commission  
24 how ROZ will be produced.

25 THE WITNESS: Well, there's a few



1 different -- a few different methods. One of them is  
2 obviously what we've been discussing here, is the CO2  
3 flood. But the other one is the depressing method  
4 that I discussed in my testimony, and -- and that test  
5 was effectively enacted by the water supply wells,  
6 and -- and that test was negative.

7 DR. AMPOMAH: So when you made that  
8 conclusion, did you crosscheck the evidence or the  
9 testimony that Mr. West provided to the Commission  
10 where he used 18 percent as a recovery factor?

11 THE WITNESS: I remember him stating  
12 that. I guess, again, I'm -- I'm a little lost on the  
13 question. My apologies.

14 DR. AMPOMAH: So my question to you,  
15 you said you still stand by that statement where there  
16 is no ROZ -- there is no recoverable ROZ. So I'm  
17 asking you, based on that testimony that we listened  
18 for multiple weeks that was given by Mr. West, is it  
19 your testimony that what he presented is not  
20 necessarily true?

21 THE WITNESS: I think that that 18  
22 percent recovery factor is -- is a guess at best and  
23 not substantiated. I think that Mr. John Macbeth [ph]  
24 discussed that in detail in his testimony.

25 DR. AMPOMAH: What could have been the

1 recovery factor?

2 THE WITNESS: Well, there's no -- no  
3 recovery factor has been established to date. There's  
4 no -- there's no production in what we call  
5 San Andres; there's no production in what Empire calls  
6 San Andres. Empire has admitted that there has been  
7 zero production to date in the San Andres.

8 DR. AMPOMAH: And you believe that the  
9 oil that we saw, at least from the core, cannot be  
10 produced through CO2 injection?

11 THE WITNESS: There might be some oil  
12 in that core that could be produced by CO2 injection,  
13 but it's above what we call the San Andres and above  
14 our confining layer. I don't think that there's any  
15 evidence that is establishing that there is  
16 recoverable hydrocarbon in the disposal zone.

17 But yeah. Like I said, in the -- in  
18 the core, there is some hydrocarbon content that's  
19 below the oil-water contact in the Grayburg that goes  
20 down in the transition zone or the ROZ just below the  
21 oil-water contact.

22 I think that if Empire wants to go try  
23 to get that oil, they -- they can definitely go try to  
24 do that. And our operations will have no effect on  
25 that because all of that hydrocarbon is above the

1     confining layer that separates our reservoir from that  
2     reservoir.

3                     And I don't think that there would be  
4     any interference if Empire wanted to try to go chase  
5     that oil if they so chose.

6                     DR. AMPOMAH:   So your description,  
7     you're talking about the formation that Empire is  
8     saying is an ROZ -- or is San Andres; is that correct?

9                     THE WITNESS:   They call it San Andres.  
10    We did not call it San Andres.   But yes.   I'm talking  
11    about that interval that's above our confining layer  
12    that separates these two reservoirs.

13                    DR. AMPOMAH:   Do you remember that one  
14    of your witnesses talked about how Goodnight did not  
15    spend extensive amount of effort in characterizing the  
16    San Andres?   Even Mr. Knight talked about the  
17    San Andres is not even widely described or known.   So  
18    why should the Commission more or less agree to your  
19    description of the San Andres?

20                    THE WITNESS:   Well, like I said,  
21    the -- the chronostratigraphic pick for the San Andres  
22    is -- is very difficult to -- to pick in well logs.  
23    That was described by -- by Dr. Lindsay [ph]; that was  
24    described by the unit documents that -- that unitized  
25    the formation.   So for the exact chronostratigraphic

1 pick for the San Andres, it's difficult.

2 What we described as the San Andres, as  
3 I described in my testimony, I called it the -- the  
4 functional top of the San Andres. The San Andres and  
5 the -- and the EMSU has always been the water  
6 management interval for disposal and water supply.  
7 And so when we define the San Andres, we defined that  
8 water management interval as it's been used for -- for  
9 decades in the EMSU.

10 That interval is completely different  
11 from everything above it. I -- I -- to me, it does  
12 not matter what you call the -- that interval above  
13 it. I -- I think that we need to be talking about the  
14 different reservoirs here.

15 It'd be a interesting geological  
16 academic exercise to find that chronostratigraphic  
17 pick and correlate that around the field. But for  
18 this case, I don't really think that that should have  
19 much weight in this -- in this hearing.

20 DR. AMPOMAH: So you talked about  
21 weight. Now, you also talked about confirming that  
22 there is some ROZ somewhere that if Empire wants, they  
23 can proceed and then go for it. And they want to go  
24 for it, but they believe that your operation is  
25 impacting them.

1                   And let me also say that, you know, you  
2       picked -- you have different picks. Let me put it  
3       this way. Did any of Goodnight's experts corroborated  
4       your picked independently of what you did?

5                   THE WITNESS: Yes. I -- well, they  
6       corroborated that the -- the -- where I have  
7       delineated the -- that difference in those reservoirs,  
8       they did agree with that delineation. Now, going back  
9       to the chronostratigraphic pick of the San Andres, no,  
10      nobody did that work.

11                  DR. AMPOMAH: So you listened to  
12      Empire's experts -- multiple experts doing their own  
13      independent analysis on the topics. And even there  
14      was a discussion where even at some point, you need to  
15      come to a compromise.

16                  Goodnight's experts more or less relied  
17      only on the top that you provided to them. So why  
18      should the Commission more or less agree with your  
19      pick compared to multiple experts doing independent  
20      work and more or less coming to the same conclusion?

21                  THE WITNESS: I disagree that they came  
22      to the same conclusion. They had different picks.  
23      Their picks disagreed with one -- with one another.  
24      I -- I described some of that in my -- in my  
25      testimony. And that just goes to how difficult

1 picking that chronostratigraphic top of the San Andres  
2 in the EMSU really is.

3           They -- it's been done differently  
4 throughout the history of the EMSU. So I think that  
5 our pick of what we're calling the San Andres, or as  
6 I've defined it, the water management zone, is  
7 the -- the -- is the best -- it's the most reasonable  
8 place to put that separation of these two different  
9 reservoirs which act completely different from one  
10 another.

11           I think the reservoirs -- we can talk  
12 about the -- the geology and -- and the timelines that  
13 are found within the -- the interval here, but what  
14 really matters here is -- is the -- the different  
15 reservoirs.

16           DR. AMPOMAH: Mr. Rankin, do you have a  
17 copy of the utilization document? So that will be  
18 Empire's Exhibit Number 1.

19           MR. RANKIN: I can pull it up if you  
20 give me a moment.

21           DR. AMPOMAH: Sure.

22           MR. RANKIN: I may need to close some  
23 windows.

24           DR. AMPOMAH: I hope you did not close  
25 the Number 3.

1 MR. RANKIN: No.

2 DR. AMPOMAH: Okay.

3 MR. RANKIN: I don't know. Maybe I  
4 did, but I'll go back to it.

5 DR. AMPOMAH: Okay. So I'm interested  
6 in Section 10.

7 MR. RANKIN: Okay. Yeah. Oh, you know  
8 what? I think it's up to the top. One moment. This  
9 is --

10 DR. AMPOMAH: Yeah, page 35 of --

11 MR. RANKIN: That's the purchase.  
12 Yeah. What page do you think it was?

13 DR. AMPOMAH: Yeah, 35.

14 MR. RANKIN: Yeah, yeah.

15 DR. AMPOMAH: Of the PDF

16 MR. RANKIN: I'm getting there.

17 DR. AMPOMAH: Yeah. Okay. Thank you.

18 So, Mr. McGuire, I asked previous  
19 Goodnight's experts, and they thought that you'd be  
20 the one to really respond to this question.

21 THE WITNESS: Okay.

22 DR. AMPOMAH: So Section 10 talks about  
23 the rights and obligation of the unit operator. So I  
24 don't want to read all of it, but I just want you to  
25 read and then tell the Commission your understanding

1 on this section.

2 THE WITNESS: Okay. My -- you're  
3 asking for what? My understanding of this?

4 DR. AMPOMAH: Yes.

5 THE WITNESS: Well, one, I'm not a  
6 lawyer, so I might not be the perfect person to answer  
7 this. But I guess my overall thoughts about this is  
8 that it says "unitized substances." I take that to be  
9 oil. There's no oil.

10 Other experts have -- have described  
11 that there's -- they feel that there's no producible  
12 oil in this and that the San Andres is -- is largely  
13 an aquifer, and the OCD has no right to unitize an  
14 aquifer. I -- I feel like the San Andres was unitized  
15 erroneously. It never had primary production.

16 And my understanding is that to be  
17 unitized, it has to -- it has to be reasonably defined  
18 by a primary production. Empire agrees that the San  
19 Andres has never produced a barrel of oil and -- and  
20 for sure has not been reasonably defined. So  
21 therefore, I think that most of this document should  
22 not apply to the San Andres itself.

23 DR. AMPOMAH: Okay. So I will take  
24 them one after the other. And we are lay people, so  
25 we'll try to probably see if we can understand it, and



1 hopefully the lawyers will discuss that in their  
2 closings as well.

3 So they talk about "Except as otherwise  
4 specifically provided herein, the exclusive right,  
5 privilege, and duty of exercising any and all rights  
6 of the parties hereto, including surface rights" -- so  
7 I'll probably skip to -- "producing, storing."

8 So I'm more interested in the producing  
9 and then also the storing. So based on this  
10 unitization document today -- you know, until, let's  
11 say, this one is amended or more or less reevaluated  
12 or whatever is done, this is the working documentation  
13 that Empire do have.

14 Don't you believe that they do have the  
15 exclusive right to produce the ROZ that they've  
16 identified -- potential ROZ that they've shown to the  
17 Commission in the San Andres?

18 THE WITNESS: Yeah. They -- they  
19 operate the unit, which means that they hold those  
20 leases. And so to the extent that there is any  
21 minerals in the -- in the leases, they have the right  
22 to produce those. But this does not say that they  
23 actually own the pore space. They own the minerals in  
24 the pore space if there's any there to be had.

25 DR. AMPOMAH: Well, I'm a lay person.

1 But the way I read this, my understanding is that they  
2 do have the authority vested, you know, in this  
3 document that they have the right to produce. Even  
4 when it comes to storing, it sounds like they do have  
5 the right to do that. Do you agree with me on that?

6 THE WITNESS: I would -- I would  
7 disagree with that, given my understanding of how the  
8 unitization works.

9 DR. AMPOMAH: So have you seen -- and  
10 this question has been asked, but just for  
11 completeness, have you seen any operator or any  
12 company being allowed to inject into someone's  
13 unitized zone? Have you ever seen that?

14 THE WITNESS: Yes.

15 DR. AMPOMAH: Where?

16 THE WITNESS: EMSU, North Monument,  
17 AGU.

18 DR. AMPOMAH: So that is going to be  
19 the first, first one; is that correct?

20 THE WITNESS: Well, those -- those  
21 three, I -- I'm aware of -- of those three. Now, I  
22 haven't gone and -- and looked for this specific case  
23 all over the Permian Basin, but those are the three  
24 that I'm aware of.

25 DR. AMPOMAH: Mr. Rankin, if we can go

1 back to a previous document, I'm interested in  
2 Number 18 -- Paragraph 18, sorry.

3 MR. RANKIN: Dr. Ampomah, just so I  
4 know, will you want to go back to the unit agreement  
5 at some point, or can I close that document?

6 DR. AMPOMAH: No. You can close that  
7 one. Thank you.

8 MR. RANKIN: Okay. It'll make my Adobe  
9 function --

10 DR. AMPOMAH: Yeah. You can close  
11 that.

12 Okay. So on the 18, so as you  
13 described, these are all issues that were discussed  
14 during the Piazza [ph] hearing, and I believe that it  
15 applies to this case as well. So we're going to go  
16 through -- and it's part of your testimony, so we're  
17 just going to go through that, at least for my  
18 understanding.

19 Now, Mr. Rankin, if you can scroll up a  
20 little bit to page 9. Yeah. Okay. Thank you.

21 So in there, you're saying that "First,  
22 the Division expressed concerns that the proposed  
23 injection could cause Class 2 disposal fluids to  
24 encroach towards the northeast and interior of the  
25 EMSU where the San Andres was being used as a source

1 of water for Grayburg waterflood injection wells, and  
2 may not be compatible with the San Andres."

3 Now, to the San Andres formation  
4 fluids. So let's just talk about that portion. Do  
5 you agree with that statement?

6 THE WITNESS: No. Absolutely not.  
7 None of that evidence was -- was presented in that  
8 hearing, and so we were quite -- quite surprised at  
9 that -- at that ruling because no evidence was -- to  
10 that nature was -- was discussed in that -- in that  
11 hearing.

12 There was -- like I said earlier,  
13 really no technical evidence was -- was presented by  
14 Empire in that case. So I've -- I -- it's my opinion  
15 that that ruling was -- was unjust and -- because  
16 the -- the -- there was no evidence presented to  
17 support at that conclusion when that issue -- when  
18 that order was issued.

19 DR. AMPOMAH: Yeah. So when I ask  
20 questions about this, I really want to discuss that in  
21 the context of this hearing, not necessarily the  
22 Piazza [ph] hearing.

23 So here, don't you believe that there  
24 has been an evidence that has been more or less  
25 presented to the Commission with regards to the water

1 chemistry changes from -- even though Goodnight treats  
2 their water before injection. But don't you believe  
3 that they presented evidence here?

4 THE WITNESS: Yes. In this particular  
5 case there, lots of evidence has been discussed. I  
6 would not disagree that our water chemistry is -- is  
7 different than what's in the San Andres. But I would  
8 also note that incompatible water has been injected  
9 into the San Andres -- confirmed incompatible water  
10 has been injected into the San Andres since the 1950s  
11 from the Grayburg.

12 It's documented that those two  
13 formation fluids are incompatible. I have not seen  
14 analysis stating that our fluid is incompatible.  
15 That -- that analysis has not been done, so there's no  
16 evidence out there. Yes, they're different. But are  
17 they incompatible? I don't know.

18 Furthermore, there's -- there's  
19 additionally no evidence that the water chemistry of  
20 the waters of the -- the one remaining water supply  
21 well in the EMSU has changed or that our water  
22 has -- has made it up there or if it will ever make it  
23 up there.

24 So I -- I don't think that the water  
25 chemistry issues have -- have been

1 necessarily -- what's the word I'm looking for here?  
2 I went blank. Yeah. There's just no -- there's no  
3 evidence that the water supply well has -- has had a  
4 change in chemistry as a result of our injections.

5 So therefore, I don't think -- we can't  
6 think about what may happen or may not happen in the  
7 future. I think if we're going to have a big change  
8 in the regulatory environment here, that needs to be  
9 based on evidence -- overwhelming evidence.

10 DR. AMPOMAH: You know, I was going to  
11 go there when you talked about now. But what about  
12 the future?

13 THE WITNESS: I don't -- I think -- I'm  
14 not convinced that our water will -- will make it to  
15 the water supply well that's the one left. It's the  
16 most distal from our -- from our well, and I'm not  
17 convinced that our -- that our water is -- is even  
18 migrating that direction.

19 So no. I -- and I don't want to  
20 speak -- I don't want to pontificate or anything like  
21 that, and I don't think that the Commission should  
22 pontificate. I think that they need to see the  
23 evidence that's been presented to date and rule on the  
24 evidence that's presented to date.

25 And if that evidence changes in the

1 future, Empire can come back to this commission  
2 and -- and renew their applications with -- with new  
3 evidence.

4 DR. AMPOMAH: So you don't  
5 believe -- okay. Let me ask you this way. So you  
6 said that you did not believe that there could even be  
7 any communication. Did you do any material balance  
8 analysis or did you do any modeling to substantiate  
9 your claim?

10 THE WITNESS: No. We have not done any  
11 modeling. I just have -- I have thoughts  
12 about -- about how the -- the water moves within the  
13 reservoir.

14 DR. AMPOMAH: And then, most of these  
15 water supply wells are all open-hole completions?

16 THE WITNESS: No. Two of them were  
17 cased and perf'd, while the others were open-hole.  
18 The first two, the 457 and the 458, are -- were cased  
19 and perf'd; the remaining four were open-hole.

20 DR. AMPOMAH: So going back to the  
21 second part that -- you said this one's from OCD. So  
22 they're saying "Second, the Division determined Empire  
23 had provided sufficient evidence for continued  
24 assessment of the unitized interval for potential  
25 recovery of any additional hydrocarbon resources." Do

1     you believe the statement?

2                   THE WITNESS:   Well, no.   Well, I'm  
3     going to go back to the context of the Piazza [ph]  
4     hearing, and I totally disagree with that.   I don't  
5     think that Empire at the time did not -- they -- they  
6     did not talk about ROZ hardly at all in that.

7                   I -- I think -- I don't even know if  
8     the term "ROZ" was discussed in that particular -- in  
9     that particular case.   So I -- I disagree with the  
10    statement of the -- of the OCD.

11                  DR. AMPOMAH:   So I'm mostly  
12    interested -- you know, I'm looking at what was  
13    discussed there, and I'm comparing to this hearing to  
14    see if there has been any changes in your thoughts.

15                  So then let's bring it back to this  
16    particular hearing.   Do you believe that this  
17    statement applies or is true for the case that we are  
18    hearing now?

19                  THE WITNESS:   No.   I think that Empire  
20    has done more work than they did at the -- at the time  
21    of the Piazza [ph] hearing, but I -- I don't think  
22    that they've met their burden of proof.   And  
23    they -- they certainly haven't shown any intent of  
24    actually developing the ROZ to date.

25                  They've had four years to -- since



1 they've purchased this field, to go gather all, you  
2 know, new data that they are claiming that they need  
3 to have a more concrete answer about that, and they've  
4 chose not to do so.

5 So I think that they're -- that  
6 they're -- well, I find it very interesting that they  
7 haven't done that. If they really believed in this  
8 project, why -- why haven't they gone and -- and done  
9 that to date? That's -- that's quite interesting to  
10 me, and I think it shows an ulterior motive here.

11 But I think that they've had  
12 their -- their chance, and we're -- we're at hearing  
13 today to discuss all of this, and they're still saying  
14 they need more time. And justice delayed is justice  
15 denied from our perspective.

16 DR. AMPOMAH: So, sir, are you saying  
17 that Empire has not presented enough evidence to  
18 establish that there is a potential ROZ in the  
19 San Andres?

20 THE WITNESS: Well, I -- I think that  
21 for this hearing, for you -- for the Commission to  
22 revoke permits, I think that there needs to be  
23 overwhelming evidence to have this massive change in  
24 the -- in the regulatory environment. And no. I  
25 don't think that they've met that burden of proof at

1     this hearing today.

2                   DR. AMPOMAH:   Well, your experts,  
3     Dr. Davidson, Mr. Knights all agree that they've been  
4     able to prove that there is existence of ROZ.   So do  
5     you disagree with them?

6                   THE WITNESS:   Well, they definitely  
7     have -- I -- I did not get the impression whatsoever  
8     that they said that there is an ROZ in the disposal  
9     zone.   For sure they did not say that.   So I -- I  
10    think their testimony speaks for themselves,  
11    and -- and I agree with their -- with their testimony.

12                  DR. AMPOMAH:   So you said that there  
13    was a higher burden on the Commission to make a  
14    determination when it comes to revocation of permits.  
15    Would you agree that if the Commission finds that  
16    there is existence of potential ROZ in the San Andres,  
17    there's a justification to revoke the permits?

18                  THE WITNESS:   Well, it depends on what  
19    we're talking about the San Andres here.

20                  I would -- I would say that if  
21    you -- if you think that there is a -- if you find  
22    that there's a potential ROZ in what Empire has  
23    defined as the San Andres above our confining layer  
24    that separates these two reservoirs, I think that  
25    would be unjust because there's no communication

1 between our disposal zone and what Empire has called  
2 the ROZ or the -- the San Andres.

3 We call that Grayburg, to be frank.  
4 I -- I don't care what you call it. It's a different  
5 reservoir than what is in the -- the disposal zone.

6 DR. AMPOMAH: So, sir, if there is this  
7 exists ROZ in the upper San Andres, definitely I do  
8 know that Dr. Davidson and Mr. Knights, you know, they  
9 went through that extensively and also even shown  
10 where Goodnight is injecting into.

11 Now, my question to you is, can you  
12 name the formation, the barrier -- the name of the  
13 barrier, the name of the formation that separates even  
14 the upper San Andres from the lower San Andres?

15 THE WITNESS: Name the formation?  
16 Well, it's -- it's all within the San Andres. But  
17 I -- I -- like I've said, I've -- I've stayed -- I've  
18 tried to stay away from that timing nomenclature and  
19 talk about the different reservoirs. So I think  
20 that -- I think that's the more important thing here  
21 as opposed to what name you give a particular interval  
22 of rock.

23 DR. AMPOMAH: So if we go back and  
24 check the transcripts, Goodnight experts did not  
25 dissociate or do not delineate the upper San Andres

1 from the lower San Andres?

2 THE WITNESS: No. Again, I think that  
3 they were just talking about -- it gets confusing  
4 'cause we're -- we're using this timeline nomenclature  
5 to try to define these -- these rocks, and -- and I  
6 don't think that that's necessarily the  
7 most -- the -- the best way to be talking about these  
8 two different reservoirs.

9 I did hear Dr. Davidson say that there  
10 might be a potential ROZ in what Empire calls the  
11 upper San Andres, but he -- he definitely does not  
12 agree with Empire that there is an ROZ in the disposal  
13 zone of the San Andres.

14 DR. AMPOMAH: Which will be probably  
15 the lower San Andres?

16 THE WITNESS: Not necessarily. I -- I  
17 don't know how Dr. Lindsay [ph] is defining the lower  
18 San Andres. I'm assuming it's another timeline.  
19 Again, I don't think that timeline separates -- I  
20 don't think any given timeline necessarily separates  
21 two reservoirs.

22 DR. AMPOMAH: So based on the cross,  
23 you talked about, you know, discussion with the NMOCD,  
24 and NMOCD agreed with your assessment. Is that still  
25 the case? Is that true?

1 THE WITNESS: Yeah. That's true  
2 to -- to my knowledge. I know that our company  
3 discussed with the OCD prior to filing the  
4 applications. We saw just before we approached the  
5 OCD that they had approved two commercial SWDs inside  
6 the unit. That would be the P-15 and the N-11.

7 Subsequent to that, we -- we wanted  
8 to -- at that time, wanted to recomplete the -- the  
9 Rhino well from the Devonian into the San Andres, and  
10 so we -- we met with the OCD and discussed our -- our  
11 thoughts and our applications. There was discussions  
12 about the nomenclature of the tops and how the -- the  
13 top of the San Andres was inconsistently picked across  
14 the unit.

15 They encouraged us to use a deeper top  
16 for the San Andres to give a larger standoff from the  
17 producing zone in the Grayburg. We then filed the  
18 applications, and they were -- they were subsequently  
19 approved by the OCD.

20 DR. AMPOMAH: Why is OCD not here to  
21 confirm the statement, sir?

22 THE WITNESS: Because we reached  
23 a -- they -- they were -- in this case because they  
24 had concerns about the -- the Capitan Reef and its  
25 alleged communication with the San Andres disposal

1 zone. They wanted a monitoring program in the Capitan  
2 Reef to help them in case they got questions from the  
3 EPA about -- about the Capitan Reef.

4 We came to an agreement that we would  
5 do a monitoring program in the -- in the Capitan Reef,  
6 and that satisfied the reason that they were in this  
7 case and withdrew from it.

8 DR. AMPOMAH: So you don't believe that  
9 if Phil was on the stand, this question was not going  
10 to be asked?

11 THE WITNESS: I didn't say that.  
12 I'm -- definitely asked Phil that question. Phil was  
13 in those meetings, to my knowledge.

14 DR. AMPOMAH: You know, and you also  
15 talked about a discussion of the unitization  
16 documentation. It came up at some point during the  
17 application process. Can you comment on some of the  
18 discussions that were held between OCD and Goodnight?

19 THE WITNESS: Yeah. OCD was aware that  
20 this was inside the EMSU, and like I said, we weren't  
21 the first to do this. We had previously just seen the  
22 OCD approve these two other permits inside the unit  
23 and had discussions with them. And yeah. They  
24 were -- they were well aware that this was inside the  
25 unit.

1 DR. AMPOMAH: So then why is OCD saying  
2 that you do not have the authority to inject into the  
3 San Andres and thereby denied the Piazza [ph]  
4 application?

5 THE WITNESS: That -- that's a question  
6 for Phil. But to be clear, we do have the authority  
7 to inject into the San Andres currently. We  
8 have -- we have four valid permits that were issued by  
9 the UIC department of the NMOCD, and with -- with  
10 those permits, they give us the right to inject into  
11 our permitted interval.

12 DR. AMPOMAH: Don't you believe that  
13 OCD tried to use that to correct the wrongs or, let's  
14 say, the missteps for approving those earlier permits?

15 THE WITNESS: That's -- that's not what  
16 the order said.

17 DR. AMPOMAH: I'm just saying that. So  
18 I'm just saying that. And so then why is Phil not  
19 here to confirm, or at least, you know, to discuss why  
20 he believed that you do not have authority to inject  
21 into the San Andres?

22 THE WITNESS: I would love for Phil to  
23 answer those questions. I -- to be quite frank, I  
24 wish he -- he was still -- still in the case to  
25 testify about all this stuff. I -- I totally agree

1 with you that I have a lot of questions for Phil.

2 DR. AMPOMAH: You gave him a buyout?

3 THE WITNESS: No. I mean, yeah, no,  
4 I -- that they were pretty clear that they didn't  
5 want -- they didn't want to testify and -- but no. I  
6 agree with you. I -- I wanted to see Phil answer some  
7 questions as well.

8 DR. AMPOMAH: Yeah. But Phil is not  
9 here. Now you've put all the burden on the Commission  
10 to make this tough decision. Whereas OCD, they made  
11 all these decisions by approving these permits, and  
12 because of the settlement, OCD is not here to answer  
13 any of these questions.

14 THE WITNESS: I can -- I can see your  
15 frustration, and I'm -- I'm somewhat frustrated with  
16 that, with that as well. I mean, I -- I guess the  
17 only thing I can say is talk to Phil. I -- I wish I  
18 could listen in on that conversation. But yeah.  
19 Unfortunately he's -- he's no longer testifying in  
20 this case. And yes. I agree. I would love to ask  
21 Phil some questions.

22 DR. AMPOMAH: Yeah. So OCD is not  
23 testifying in this case. But they do have statements  
24 that has been reported here as part of the evidence to  
25 the Commission. So unless he's on the -- on the stand



1 to dispute those -- I mean, these are documents, so  
2 how do you dispute that?

3 THE WITNESS: Yeah -- yeah. I agree  
4 with you, and Brandon Powell said that there needs to  
5 be overwhelming evidence to overturn prior -- prior  
6 decisions made by the OCD. And I don't think that  
7 there has been overwhelming evidence to change the  
8 status quo in this case.

9 DR. AMPOMAH: So where is Brandon to  
10 more or less speak to that?

11 THE WITNESS: Same answer as -- as the  
12 answer for Phil.

13 DR. AMPOMAH: In the same way it's all  
14 now up to the Commission to make this tough decision  
15 after the settlement between Goodnight and OCD.

16 Mr. Rankin, can we go to paragraph 26?  
17 Yeah.

18 So in paragraph 26, you talked about  
19 the water management zone and the formation of the  
20 EMSU. Now, on paragraph 26, you said "Rice  
21 Engineering drilled the SWD in April 1960," and you  
22 continue on with that.

23 So during the unitization hearing, why  
24 did Rice or, let's say, any other operator injecting  
25 into the San Andres oppose the inclusion of the

1 San Andres as part of the unitization interval?

2 THE WITNESS: Well, I can't speak for  
3 anybody. But if I were to guess, it would be because  
4 these two -- these two operations could coexist in the  
5 same space without affecting one another.

6 That's what the data supports even to  
7 this day. There has been no confirmed communication  
8 between these two zones. There's been no effect on  
9 the oil production in the Grayburg, even though that  
10 there's been these massive amounts of water put into  
11 the -- into the disposal zone.

12 I mean, the -- the EME-33 [ph] has put  
13 more than 60 million barrels in the ground.  
14 It's -- it's on top of the structure. And we  
15 have -- I mean, there's -- there's no evidence that  
16 that affected any, any production.

17 If these two -- if these two operations  
18 couldn't coexist, that would've been found out many,  
19 many years ago, and we wouldn't be here because that  
20 disposal would've been shut in decades ago.

21 DR. AMPOMAH: Mr. Rankin, let's go to  
22 number -- paragraph 32.

23 Now, in paragraph 32, you  
24 highlighted -- you bolded "The San Andres was included  
25 in the unitized interval, not because it is

1 hydrocarbon productive, but because it was to be used  
2 as a source of water supply for planned waterflood."  
3 Did I read that correctly?

4 THE WITNESS: Yes, sir.

5 DR. AMPOMAH: Is that not supporting  
6 the Section 10 of the unitization documentation that  
7 we went through?

8 THE WITNESS: No. I don't believe so.  
9 Just because it was unitized, it -- it didn't mean  
10 that they had the rights to the water. They still had  
11 to go get state engineer's permits to get those waters  
12 to -- to get that water. So it really didn't  
13 provide -- the unit didn't really provide the unit  
14 operator really any advantage to having it in there.

15 I'm just stating that because that's  
16 what was stated in the unitization at the unitization  
17 hearing. I -- I guess really the only thing that it  
18 maybe helped them with is that they could put their  
19 well wherever they wanted on the surface as opposed to  
20 having to get a separate surface use agreement  
21 to -- to do that.

22 But it really didn't -- other than  
23 that, it did not provide them any advantage to having  
24 the -- the San Andres in the unit, because, again,  
25 they had to -- they still had to go through the state

1 engineer's office to get those permits to withdraw all  
2 that water.

3 DR. AMPOMAH: Yeah. I get that they  
4 have to get all the permits. But are you saying that  
5 they do not have the first right to storing, producing  
6 from this unitized interval?

7 THE WITNESS: No. Because there's  
8 a -- it's -- because it hasn't been defined by primary  
9 production, it shouldn't be unitized. So that -- that  
10 document, I think what erroneously included the  
11 San Andres, and the Commission had no -- no authority  
12 to unitize the San Andres at that time because it had  
13 not been defined by production.

14 And there has -- to date has never been  
15 any production, so that still stands true today.

16 DR. AMPOMAH: So why is that document  
17 not challenged anywhere?

18 THE WITNESS: We -- we have definitely  
19 challenged it. We have -- we tried to -- to move the  
20 Commission to rule on that before this hearing. But  
21 they said that they wanted -- that they wanted to hear  
22 all of this evidence before they made a determination  
23 on that. But it has definitely been challenged.

24 DR. AMPOMAH: If that documentation is  
25 challenged now, especially now that the unit operator

1 has seen or more or less discovered that there could  
2 be a potential ROZ, how is that going to be challenged  
3 other than giving them the opportunity to proceed with  
4 the assessment to fully understand if this ROZ can in  
5 fact be recovered?

6 THE WITNESS: Well, for -- my  
7 understanding is -- is for the -- the Commission to  
8 unitize the interval, it has to be reasonably defined  
9 by production. So to do that, Empire would have to go  
10 reasonably define the production, come back to the  
11 Commission and say, "This is why it should be  
12 unitized." That hasn't been done to date. So  
13 therefore, it should not be in the unit right now.

14 DR. AMPOMAH: I mean, you and I  
15 probably were not there at 1984, so definitely there  
16 should have been a reason for the Commission at that  
17 time to make that determination. And even now that  
18 Emperor has shown the Commission through their experts  
19 that there could be a potential ROZ, why should the  
20 Commission more or less side with you on this issue?

21 THE WITNESS: I'm not a lawyer. I have  
22 my opinions on that. But at the -- the evidence that  
23 was presented at the unitization hearing does not  
24 support inclusion of the San Andres in the unit, and  
25 therefore, it would -- it -- it should have never been

1 included in the unit.

2 To date that -- the -- it -- it still  
3 hasn't been -- it still hasn't met the defining  
4 factors for meeting unitization. And so even today,  
5 it shouldn't be in the unit. Like I said, Empire  
6 would need to go and reasonably define the San Andres  
7 production, show where that is, and unitize it.

8 But that hasn't been done to date, so  
9 it has no business being in the unit right now.

10 DR. AMPOMAH: Well, so until that  
11 documentation is revoked, they do have the first say  
12 in the unitized interval; is that correct?

13 THE WITNESS: Okay. What do you mean  
14 by "first say"? I -- I think I disagree with you, but  
15 I want to make sure I -- I understand what you mean.

16 DR. AMPOMAH: Okay. So the Commission  
17 gave them the authority based on that unitization  
18 document that they have the right to stall to produce.  
19 So until that documentation is revoked by the  
20 Commission, they still do have those rights. Is that  
21 a fair assessment?

22 THE WITNESS: They have rights to the  
23 minerals inside of that unit. That doesn't  
24 necessarily give them rights to the pore space itself.

25 DR. AMPOMAH: But the mineral is in the

1 pore space.

2 THE WITNESS: Agreed. And they -- and  
3 they own that -- they own that product, but not the  
4 pore space itself.

5 DR. AMPOMAH: Yeah. But they own the  
6 product, so they have the first right to make a  
7 determination on it?

8 THE WITNESS: If there's product in the  
9 pore space.

10 DR. AMPOMAH: And it's been established  
11 here to the Commission that there is a potential ROZ,  
12 which has been confirmed by even your own experts.

13 THE WITNESS: Not -- not in the  
14 San Andres. It's definitely not in the disposal zone,  
15 so there should be a lower limit of that that we're  
16 talking about here. And no. I -- I don't -- I do not  
17 think that that has been clearly established by  
18 Empire.

19 DR. AMPOMAH: So is there anywhere in  
20 that utilization document that really establishes the  
21 differences between the upper San Andres and then the  
22 lower San Andres?

23 THE WITNESS: There is not. And I  
24 don't think we -- that we should really even be  
25 contemplating that, because even Empire agrees that

1     there hasn't been primary production from the  
2     San Andres, so therefore, it should never have been  
3     unionized.

4                     I think that this is a pretty simple  
5     answer that the Commission could fix pretty quickly  
6     and just say that they didn't meet their -- their  
7     burden of proof to unitize this back in 1984; and if  
8     Empire wants to try it again, they're more than  
9     welcome to after they've reasonably define the  
10    production.

11                    DR. AMPOMAH: But what the Commission  
12    knows is that the unitized interval goes all the way  
13    up to the base of the San Andres, which clearly we all  
14    know where the base of the San Andres is. Is that a  
15    fair statement?

16                    THE WITNESS: Yeah. I think the base  
17    can be reasonably defined, yeah. It -- it's -- that  
18    one's a pretty clear chronostratigraphic pick.

19                    DR. AMPOMAH: Now, let's go to  
20    39 -- oh, yeah, 40. Paragraph 40.

21                    So paragraph 40, 41, 42, 43 all shows  
22    all the wells that are in contention right now in  
23    front of the Commission. So I want to ask you where  
24    you define the San Andres. Is that where the wells  
25    have been perforated?



1 THE WITNESS: Yeah. So, again, as I've  
2 discussed, the -- the San Andres that we're -- what  
3 we're calling San Andres here is the point that  
4 separates these two reservoir systems, and -- and  
5 that's -- that's what I've put -- labeled as San  
6 Andres in these -- in these particular tables here.

7 DR. AMPOMAH: And that is the same  
8 San Andres that has -- that more or less is in the  
9 unitization document; is that correct?

10 THE WITNESS: Yes.

11 DR. AMPOMAH: So if the Commission  
12 finds that there is injection into an ROZ, these  
13 permits could be revoked; is that correct?

14 THE WITNESS: I guess when you say -- I  
15 think that there -- it needs to be established that it  
16 is, one, producible and, two, economic because if it's  
17 not producible and it's not economic, it's not waste.

18 DR. AMPOMAH: So that would be for the  
19 lawyers to tell us whether it's a potential or it  
20 needs to be shown that it's recoverable.

21 Let's go to paragraph 53. Yeah.

22 So you've highlighted -- and I think we  
23 probably touched on this a little bit, but I'm mostly  
24 interested in the engineering analysis that was done  
25 to really come up with this conclusion.

1                   So you said that "With the depletion of  
2     the San Andres aquifer from NMSU-labeled water supply  
3     wells, along with the other four historical water  
4     supply wells in the EMSU, Goodnight Midstream's active  
5     and proposed disposal wells near the former  
6     water-supply wells have very low operating pressures,  
7     creating an ideal situation for disposal injection  
8     operations."

9                   And my question is, how long would that  
10    continue? How long?

11                  THE WITNESS: Good question. We've  
12    tried to predict it, but every time we try to predict  
13    it and we get a new data point on what the reservoir  
14    pressure is, it's not increasing, even given our mass  
15    amounts of water going into -- going into the system.

16                  I could point you to the -- the bottom  
17    hole pressure information that we've provided here.  
18    And yeah. It's -- it's amazing how much water  
19    is -- has come out of this and -- and is -- is  
20    currently going in, and we're seeing a de minimis  
21    change in that reservoir pressure.

22                  So to answer your question directly,  
23    I -- I don't know exactly, but it -- it appears right  
24    now, given the data that we have, it'll -- it will be  
25    quite some time before it were to reach back to what

1 we would consider to be a normal pressure gradient.  
2 It'd be a very long time, is what it looks like.

3 But, again, I'm just speculating, but  
4 the data that I have says that it's -- it's well into  
5 the future.

6 DR. AMPOMAH: So let's discuss that for  
7 a moment.

8 THE WITNESS: Okay.

9 DR. AMPOMAH: You know, as you go to  
10 the west, you talked about there's tight, you know,  
11 porosity or something like that to the west; is that  
12 correct?

13 THE WITNESS: Yes -- yes, sir.

14 DR. AMPOMAH: And then does it pinch  
15 out in the east?

16 THE WITNESS: The formation doesn't  
17 pinch out. But yes. Farther to the east, you do  
18 get -- we do see a big reduction in the porosity, yes,  
19 to the east.

20 DR. AMPOMAH: So why is Goodnight  
21 continuously saying that "We are injecting into a  
22 vacuum"? Is there not -- with all these boundaries  
23 that we've just gone through, is there not some kind  
24 of a boundary to the San Andres?

25 THE WITNESS: So I -- I think the

1 question you're asking is, is this an open or closed  
2 system?

3 DR. AMPOMAH: In a different way.

4 THE WITNESS: Yes. Yeah. Of course.  
5 So we have a boundary to the east where the porosity  
6 diminishes. We have a boundary to the west where the  
7 b where the porosity diminishes. We are confined on  
8 top, and we are confined on bottom.

9 But I -- I feel like this reservoir is  
10 so large that it is effectively acting like an open  
11 system given how we -- given how the pressures  
12 are -- are not really changing with the -- with the  
13 water that's going in and.

14 And that -- that aligns well with the  
15 ROZ experts of the -- these meteoric fairways.  
16 They've shown these fairways where this water has  
17 moved through the San Andres for -- from hundreds of  
18 miles from central New Mexico all the way down to the  
19 southern end of the Central Basin Platform.

20 Now, whether that -- that system is  
21 closed on each one of those ends today, I -- I haven't  
22 looked at it. But because that -- that area is so  
23 large, when we zoom in just to the EMSU, it  
24 effectively is acting like an open reservoir in the  
25 north and south directions.

1 But, again, it's closed on the east  
2 side, it's closed on the west side, and it's closed on  
3 top, and it's closed on bottom.

4 DR. AMPOMAH: So, sir, based on your  
5 description, does this support material balance  
6 analysis?

7 THE WITNESS: Well, I -- I think the  
8 material balance analysis would show that -- exactly  
9 what I just described is that this is a massive  
10 reservoir.

11 And that was part of  
12 Dr. Buchwalter's issue that he had in his model is  
13 that he couldn't make the model big enough to  
14 accurately represent how -- how the pressures aren't  
15 changing, given how much water is -- is -- has gone  
16 and continues to go into these reservoirs.

17 I think I -- I still think that his  
18 model wasn't large enough to accurately model this  
19 reservoir. But, I mean, that's -- that's another data  
20 point that kind of supports what I'm saying here was  
21 the -- the difficulties that Dr. Buchwalter had  
22 in -- in building his model.

23 DR. AMPOMAH: So Mr. West and then  
24 Dr. Buchwalter, they presented a scenario. They  
25 accounted for the water supply wells. They also

1 accounted for all the injection.

2                   They accounted for -- let's say, at the  
3 end of the historical data, they did a scenario where  
4 there's a point where the water injection more or less  
5 fills it up to the initial San Andres water less the  
6 distribution and even continued with the model to show  
7 the injection and its impact, you know, on the  
8 pressures within the San Andres.

9                   Is it your testimony that all of that  
10 is not a good scenario or a good model?

11                   THE WITNESS: Yeah, no. I -- I cannot  
12 say that I think that Dr. Buchwalter's model is -- is  
13 a good model and accurately representing this  
14 reservoir. I think he was on -- on the way to  
15 the -- to the -- to the right answer, but I don't  
16 think he -- he got there. And I definitely don't  
17 agree with the scenario that he is allowing for  
18 communication between the two zones.

19                   I would also disagree that he used all  
20 of the injection data and all of the water supply well  
21 data. He was -- he excluded many, many, many  
22 waters -- water-supply wells as well as injection  
23 wells. And Mr. Wehmeyer tried to put a figure up  
24 there saying that "Well, all this water in and all  
25 this water out that he was missing, it kind of equals

1 out."

2 Well, if you're trying to get a history  
3 match, you have to understand when that water went in  
4 and when that water went out. That's the -- the goal  
5 is to match the history, not just to say that we  
6 balanced this correctly.

7 So no. I -- I don't think that  
8 Dr. Buchwalter's model accurately represents this  
9 reservoir as he has it built today and what he  
10 presented to the -- to the Commission.

11 DR. AMPOMAH: What is your alternative?

12 THE WITNESS: We did not present a  
13 model. You're -- you're correct. And I -- we  
14 discussed this, that we -- we contemplated it, talked  
15 with doctor -- or, excuse me, John Macbeth [ph] about  
16 that, and we came to the conclusion that we don't have  
17 enough of the early history data to build a model that  
18 we felt would accurately represent the history.

19 And we didn't want to present the data  
20 that we didn't -- that we didn't think that we could  
21 stand behind, given its input values, so we decided  
22 not to.

23 DR. AMPOMAH: So let's go to 54. Yeah.

24 And I'm interested in -- so I'll read  
25 where you bolded it. I'll just read the last part. I

1 know we've talked about the earlier part, so let me  
2 just focus on the last part: "Within the target  
3 injection zone, there are several intervals of porous  
4 and permeable carbonate rock with evidence of karsting  
5 capable of accepting large volumes of produced water."

6 Did you analyze the presence of the  
7 cast within the San Andres and its impact on the upper  
8 formation? When you talk about there are boundaries  
9 to the east to the west and confined, did you analyze  
10 the presence of the karst to fully ascertain the  
11 effectiveness of your boundaries?

12 THE WITNESS: Yes. I think we did.  
13 I -- I think that the -- we know that there's  
14 karsting. We have 3D seismic over this -- this area  
15 that -- that we can see that -- that karsting in it.  
16 We can see that that karsting does not affect the  
17 upper seal of the San Andres.

18 I think that the -- the major  
19 difference that we know -- the main reason that we  
20 know that this boundary is -- is effective across the  
21 entire areas is because of these major pressure  
22 differentials indicating that there's two reservoir  
23 systems that are not in communication with one  
24 another. And I think that's -- that's really the  
25 ultimate test.



1                   Additionally, Dr. Lindsay [ph] wrote in  
2                   his PhD thesis that the ultimate test that these two  
3                   formations are not in communication is the pressure  
4                   differences that are observed between these two  
5                   formations.

6                   DR. AMPOMAH:   Okay.   Now, I thought you  
7                   said that -- yeah.   So you said that -- or did I have  
8                   you correctly saying that you had seismic data to  
9                   really ascertain this?

10                  THE WITNESS:   Yeah.   We do have 3D  
11                  seismic data over part of the field.   That's correct.

12                  DR. AMPOMAH:   Was this presented to the  
13                  Commission?

14                  THE WITNESS:   Unfortunately, it was  
15                  not.   There was issues with the, I guess, contract of  
16                  that licensed data that we -- that we could not show  
17                  it in a public form nor any derivatives of that data.

18                  DR. AMPOMAH:   So during the  
19                  cross-examination, I thought I heard you say that your  
20                  boundaries were based on just porosity.   So I'm  
21                  curious if you have 3D seismic data.   And as you and  
22                  I -- we all agree that we used 3D seismic to map up  
23                  surfaces.   Why was it not utilized to solidify your  
24                  case?

25                  THE WITNESS:   I -- I just described why

1 we couldn't use it. We don't have it over the entire  
2 EMSU over the entire field, so I'm sure we would've  
3 been attacked that "You don't have it over the entire  
4 EMSU."

5 But we do see that there is an interval  
6 that equates to our map and tried to stay away from  
7 that. But because you asked me about what other data  
8 that we have on karsting, that would be it.

9 DR. AMPOMAH: But I --

10 THE HEARING OFFICER: Dr. Ampomah, I  
11 just note that it's almost three o'clock. I'm  
12 wondering -- I'm thinking people might need a  
13 ten-minute break. If you're in the middle of  
14 something, continue and just let us know when it's a  
15 good point for you.

16 DR. AMPOMAH: Yeah. Let me ask one  
17 last one before I forget.

18 THE HEARING OFFICER: Sure.

19 DR. AMPOMAH: So Dr. Davidson used  
20 analogous wells to establish the existence of  
21 anhydride, you know, and tried to look at the same  
22 signature and tried to use it in the EMSU. So when  
23 you talk about you don't have the 3D seismic covering  
24 the entire EMSU, probably we are not going to more or  
25 less agree to that.

1                   You don't -- the seismic data  
2                   interpretation is just the structure, not showing us  
3                   the entire 3D seismic in terms of, let's say, you are  
4                   concerned about confidentiality. Is that a fair  
5                   statement?

6                   THE WITNESS: Yeah. We -- we could not  
7                   show it in the -- in this public form.

8                   DR. AMPOMAH: But you could show if you  
9                   pick up surfaces from it, you could show that?

10                  THE WITNESS: No. We can't -- we can't  
11                  show any derivatives of the seismic data.  
12                  That's -- that's what it says in the contract.

13                  DR. AMPOMAH: Well, sir, you know, we  
14                  are all in the industry; okay? We're all in the  
15                  industry.

16                  So let me pause here and then let's go  
17                  for a break, and we'll probably be back. Thank you.

18                  THE WITNESS: Okay.

19                  THE HEARING OFFICER: All right. Let's  
20                  be back at 3:15.

21                  (Off the record.)

22                  THE HEARING OFFICER: We're back on the  
23                  record?

24                  THE REPORTER: We are.

25                  THE HEARING OFFICER: All right.

1 Dr. Ampomah, sorry to interrupt.  
2 Please continue.

3 DR. AMPOMAH: Thank you, sir.

4 Mr. Rankin, can you share back the  
5 screen? Okay. Thank you. And I want to go to  
6 paragraph 64, if you can scroll down to the bottom a  
7 little bit. Yeah. Okay.

8 So, Mr. McGuire, thank you for still  
9 sticking around. So I'm going to read the last three  
10 lines on the page 24 saying that the oil-water contact  
11 for the units and EMSU oil pool is shown." And you've  
12 shows that on the cross section, yeah. And you said  
13 that the horizontal line at minus 325 feet below sea  
14 level.

15 So my question to you is, did Goodnight  
16 confirm this oil-water contact from the petrophysical  
17 analysis, or it was based on literature?

18 THE WITNESS: That is based on -- on  
19 literature that's from the unitization document  
20 itself.

21 DR. AMPOMAH: So you did not do any  
22 additional work to confirm or to disprove that  
23 oil-water contact?

24 THE WITNESS: No, we did -- we did not.  
25 In -- in this case it was -- we had no reason to -- to

1 disagree with the unit documents and -- and -- yeah.  
2 We -- we did not, no.

3 DR. AMPOMAH: Let's go to paragraph 72.  
4 Now, in paragraph 72, you are  
5 describing -- you're saying that the upper  
6 San Andres -- and here you use the upper San Andres;  
7 right? So you're saying the upper Andres is capped by  
8 tight dolomite and anhydrite, which serves as the  
9 upper geologic seal to prevent migration to the  
10 formation above, including the Grayburg and then on  
11 and on.

12 Now, my question to you is, if there is  
13 a clear marker -- because what you are describing here  
14 seems like a clear marker -- why is it not widely  
15 established? The --

16 THE WITNESS: Yes -- go ahead.

17 DR. AMPOMAH: Well, if you know the  
18 question then you can go ahead, yeah. Why is it not  
19 established?

20 THE WITNESS: Well, I think that's the  
21 difference between the -- again, the  
22 chronostratigraphic pick of the San Andres and then  
23 what we've defined as the -- as the top of the San  
24 Andres being the barrier that separates these two  
25 reservoirs.

1           I think the barrier that separates  
2   these two reservoirs, you can correlate across the  
3   field. That's what I've done, and my predecessor -- I  
4   guess primarily my predecessor did before I stepped  
5   into my role.

6           But yeah. I think that marker, you  
7   can -- you can find across the -- across the field.  
8   And it -- and it's an aggregate of barriers that  
9   are -- that you can correlate across the field.

10          DR. AMPOMAH: Okay. Thank you.  
11   Checking to see. Okay. I'm going to switch to your  
12   presentation and go through some few questions.

13          Mr. Rankin, if you can bring up the  
14   presentation that was presented to the Commission,  
15   that'll be helpful. Okay. Now, let's start with  
16   Number 2, and I'll be quick. I promise. Can you move  
17   to Number 3? Let me see. Okay.

18          You know, I do appreciate this slide a  
19   lot, even though I'm still -- went really hard on you  
20   on this one. Yeah. Thank you for that.

21          Now, one thing that you did not talk  
22   about is the impact on the state of New Mexico. You  
23   know, Empire has presented that, I mean, if they are  
24   not allowed to produce this oil, the state is going to  
25   lose a significant amount of revenue; right?

1                   So in your estimation, if, let's say,  
2       these four wells are more or less shut in, how much  
3       impact is there going to be on the state of  
4       New Mexico?

5                   THE WITNESS: Well, I think it depends  
6       on how many of them are shut in. I did -- when I was  
7       describing, I think, this slide or maybe the slide  
8       before, we -- on -- on average, the four  
9       wells -- long-term average, the four wells inside the  
10      unit, do -- they inject about 60,000 barrels of water  
11      per day.

12                  If we use the overall water-to-oil  
13      ratio, that would equate to that we're supporting with  
14      that 60,000 barrels of water produced water disposal  
15      that we're supporting about 19,000 barrels of oil per  
16      day.

17                  And I said in my opening statements  
18      there that if -- if that 60,000 barrels of water per  
19      day of disposal is revoked, that would have an  
20      immediate impact on approximately 19,000 barrels of  
21      oil per day that would need to be shut in until it  
22      could find a new home for disposal if it could find a  
23      new home for disposal.

24                  And then I guess to -- to further  
25      your -- answer your question, the next slide kind of

1 went into the oil production that we have supported,  
2 oil sales in the state of New Mexico that we have  
3 supported in -- in the past and -- and looking  
4 forward. That's the next slide, I believe.

5 DR. AMPOMAH: Yeah. And Mr. Wehmeyer  
6 also showed you various drilling info as you all  
7 attributed to that saying that the cumulative liquid  
8 production in the state has really gone down. So he  
9 was also --

10 THE WITNESS: Yeah.

11 DR. AMPOMAH: Yeah. He was arguing  
12 that there's still probably a home for the water that  
13 would probably more or less be coming into your  
14 injection site. How would you respond to that?

15 THE WITNESS: Yeah. That -- that one  
16 threw me. Oil production and water production in the  
17 state of New Mexico is definitely not decreasing. It  
18 is -- is increasing almost every day as new wells are  
19 being drilled. That one threw me. I got a little  
20 confused there on what I was looking at.

21 But -- I can't think of any document  
22 that -- or any data set that shows that oil production  
23 is declining. We went back and looked at the numbers,  
24 and they're definitely not declining since 2023.  
25 They've only gone up and continue to go up, both oil



1 and water production.

2 DR. AMPOMAH: Can we go to Slide  
3 Number 18? Yeah.

4 Well, this is something that we talked  
5 about. So, you know, I just want to dive a little  
6 bit. So if you're saying that there is no clear  
7 marker for the top of the San Andres which can be  
8 traced across the field, don't you believe that there  
9 is a lot of uncertainty associated with the  
10 characterization of the entire San Andres in its  
11 totality?

12 THE WITNESS: Yeah. I -- again, I  
13 think the chronostratigraphic top of the San Andres is  
14 very difficult to pick inside the EMSU. But I think  
15 that there's a clear confining layer that separates  
16 two reservoirs: the water management below, which  
17 acts as one reservoir; and everything above it, which  
18 is the producing zone, which acts and behaves as a  
19 different reservoir.

20 And that is what I have defined  
21 as -- as the functional top of the San Andres here at  
22 the EMSU. I can't say that it's the exact  
23 chronostratigraphic pick, but I do think that that is  
24 the point that separates these two reservoir systems.

25 DR. AMPOMAH: So on Slide 21 -- yeah.

1 Go back. Yeah. Right now here.

2 So how was the above management zone  
3 identified? Or how was it established?

4 THE WITNESS: The interval that's  
5 colored in yellow in this figure?

6 DR. AMPOMAH: Yes.

7 THE WITNESS: Yeah. So  
8 that's -- that's the interval that's the difference  
9 between what we have defined as -- as the San Andres  
10 and what Empire has defined in the San Andres in this  
11 cross section. So Empire's top of San Andres is the  
12 red; the -- the top of -- our functional top of the  
13 San Andres is the blue.

14 And like I said, that -- that -- where  
15 we have picked it is the point that separates these  
16 two reservoirs. So that yellow interval is -- is what  
17 Empire calls San Andres; we called it at Grayburg.  
18 I -- I don't care what you call it. It's a separate  
19 reservoir from everything that's below in blue.

20 DR. AMPOMAH: So you're saying  
21 that -- okay. But that above management barrier that  
22 was picked by Goodnight, that was more or less  
23 established by Goodnight?

24 THE WITNESS: No. The -- the red  
25 barrier is Empire's top of San Andres. We're just

1 highlighting the interval that -- that's in between  
2 that we call different things.

3 But like I said, that interval that's  
4 highlighted as yellow does not -- it acts as a  
5 different reservoir from the -- from the blue interval  
6 below, which -- which is how we know that these two  
7 intervals are -- are not in communication with one  
8 another.

9 DR. AMPOMAH: It sounds to me that the  
10 EMSU 628 well is much easier to pick these tops.  
11 Would you agree?

12 THE WITNESS: Well, I think that  
13 there's a definite gamma ray marker right there about  
14 where we have picked the -- the top of that water  
15 management interval, but that gamma ray marker  
16 is -- it's -- it's not that clear when you -- when you  
17 start going across the entire field.

18 I know that I -- so for this  
19 conversation, I -- I covered that in the 658, but that  
20 gamma ray marker, it -- it can come and go throughout  
21 the field. So it's not necessarily a very clean and  
22 correlatable marker across the field.

23 But what is -- what we can correlate  
24 across the field is the low-porosity, low-perm  
25 interval that separates these two reservoirs.

1 DR. AMPOMAH: My last question to  
2 you -- probably before the last one. So there were a  
3 lot of discussion about corrosion, you know, well  
4 integrity issues. I mean, is there a concern, you  
5 know, with regards to well integrity in this area, at  
6 least for Goodnight wells?

7 THE WITNESS: No. I think that all of  
8 our wells are -- have integrity. We have to make sure  
9 that they have mechanical integrity on a -- on a  
10 consistent basis as per the permit, and we ensure that  
11 they -- that they are mechanically integrable. So  
12 specific to our wells, I don't think that there's any  
13 issue with the mechanical integrity of any of our  
14 wells.

15 DR. AMPOMAH: Okay. Thank you.

16 Ms. Rankin, can we go back to the  
17 previous document, paragraph 74?

18 So that will be my last question to  
19 you, sir. Now, we've done a lot of back and forth on  
20 all the claims. You know, you made a lot of claims in  
21 the rebuttal. You know, I think I've covered most of  
22 it here, so I will not really bother you with that.

23 But on your paragraph 74, do you still  
24 stand by this statement without any reservations based  
25 on the extensive discussion on the methodology that

1 you use in picking these barriers? And from my  
2 opinion, I'm saying that these were not corroborated  
3 by any other Goodnight witnesses. So can you respond  
4 to that?

5 THE WITNESS: Yeah. So just to be,  
6 just to be clear, you're talking about the bold  
7 statement in paragraph 74 here?

8 DR. AMPOMAH: Yeah. So it's more or  
9 less summarizing everything that you more or less  
10 talked about --

11 THE WITNESS: Yeah.

12 DR. AMPOMAH: -- in terms of the seal  
13 and all of that. So I'm just asking, do you still  
14 stand by this statement knowing that, you know,  
15 clearly other Goodnight witnesses did not actually  
16 collaborate extensively?

17 THE WITNESS: Well, no. I would -- I  
18 would disagree with that second statement that you  
19 have there. I think that all of or the majority of  
20 our -- of our other experts said something to the same  
21 effect.

22 We had many, many discussions  
23 throughout the this process and collaborated  
24 extensively on this entire project with all of our  
25 consulting experts. We had many round tables where we

1 discussed the data and -- and talked about the data as  
2 a whole.

3 And in the end, all of those experts  
4 came to this same conclusion that I stated here  
5 in -- in paragraph 74.

6 DR. AMPOMAH: You know, I just spot  
7 something here in your rebuttal. Mr. Rankin was  
8 asking you about if Empire has reached out to  
9 Goodnight, you know, to get a settlement or at least  
10 some discussion, and I think you said no; is that  
11 correct?

12 THE WITNESS: Yeah, that's correct.  
13 We've -- we've reached out to -- to Empire multiple  
14 times over the past few years to see if we could come  
15 to some sort of agreement, and they -- they have  
16 refused to -- to talk to us about any compromise that  
17 could be found in this -- in this situation here.

18 And it wasn't for a lack of effort of  
19 trying on Goodnight's part. They just said that they  
20 didn't want to talk to us about it; so --

21 DR. AMPOMAH: Even after Mr. Wheeler's  
22 testimony?

23 THE WITNESS: I don't -- I -- I don't  
24 think that we reached out after Mr. Wheeler's  
25 testimony, but they -- they definitely didn't reach

1 out to us after -- after Mr. Wheeler's testimony.

2 DR. AMPOMAH: Thank you, sir, for your  
3 time. I do appreciate that. Yeah. It's been a tough  
4 one. Okay. Thank you.

5 THE WITNESS: Of course. Yeah.  
6 Thanks. Appreciate the questions.

7 THE HEARING OFFICER: Thank you,  
8 Dr. Ampomah.

9 So that brings us to you, Mr. Lamkin.  
10 Questions for Mr. McGuire?

11 MR. LAMKIN: Yeah. I still have a  
12 couple. Thankfully Dr. Ampomah covered several of  
13 mine.

14 Good afternoon, Mr. McGuire. Thank you  
15 for your time and testimony over the past couple days.

16 Would you agree that it's difficult to  
17 draw conclusions for a development region the size of  
18 the EMSU using minimal data from a scant few wells and  
19 interpolate that across the development region in a  
20 shoreline environment such as this?

21 THE WITNESS: I might have to have you  
22 repeat that question. I want to make sure that I -- I  
23 get it correct. Sorry. Would you mind repeating your  
24 question? I apologize.

25 MR. LAMKIN: Yeah. No problem. For a

1 development region the size of the EMSU, is it  
2 difficult to draw broader conclusions for the entire  
3 region based on data from a handful of wells in a  
4 transgressing/regressing shoreline environment such as  
5 this?

6 THE WITNESS: I guess it depends on  
7 what data we're talking about here. Could you be a  
8 little bit more specific about what data you're  
9 referencing?

10 MR. LAMKIN: Well, there's been a bunch  
11 of testimony presented that would indicate that the  
12 reservoir is highly compartmentalized, you know, based  
13 on the cartoons and pressure readings and, you know,  
14 lack of fluid transmissivity between wells and such  
15 like that. So I guess that's the underlying theme of  
16 the question.

17 Can you say definitively that  
18 characteristics that you see in one well in one  
19 location in the EMSU are going to be representative of  
20 characteristics of the geology that you see in another  
21 well 2 miles away?

22 THE WITNESS: No. Probably not.  
23 I -- I think that the -- the Grayburg has -- is --  
24 Grayburg has more wells, and even in those tightly  
25 spaced wells, there's major differences between



1 the -- the geology that you see from well to well.

2 And we know that the Grayburg is highly  
3 compartmentalized as shown by Dr. Lindsay's [ph] study  
4 as well as the conformance issues they've had on the  
5 field. We have less data on the full San Andres  
6 section, and it does appear to be a very complicated  
7 system.

8 So, again, I guess it depends on what  
9 specific data you're asking for, but I would -- I  
10 would tend to agree with you.

11 MR. LAMKIN: Okay. What would cause  
12 two wells that are injecting into the same  
13 reservoir -- this is with regards to the fluid level  
14 testing that we've seen testimony on -- that were shut  
15 in for similar amounts of time show drastically  
16 different fluid levels aside from compartmentalization  
17 of the San Andres?

18 THE WITNESS: Well, I -- I guess I -- I  
19 don't think that necessarily the fluid levels are that  
20 different with the exception of the -- with the  
21 Piper well. The Piper well was shut in for longer, so  
22 it had more time to equilibrate with the overall  
23 reservoir.

24 And I think that if we were to shut in  
25 those other wells that they would probably all

1     equilibrate to close to the same fluid level as -- as  
2     they totally equilibrated with the -- with the overall  
3     reservoir and -- and the -- and the pressures in the  
4     greater reservoir area.

5                   MR. LAMKIN:   Was the Piper well the  
6     well that Empire had a discrepancy with the fluid  
7     level reading?   Because I think that I was more so  
8     comparing the piper to that well.

9                   THE WITNESS:   Got you.   So we're going  
10    back to the -- the well -- the Rhino well where  
11    Mr. Wehmeyer brought up and showed that it was -- that  
12    it was at 750 feet.   Yeah.   So I went back and -- and  
13    talked to some of our experts on that as to why that  
14    fluid level was -- was so high.

15                   And there was actually a plug in the  
16    well, and it was not open to the reservoir.   We were  
17    doing an active workover.   There was a plug in the  
18    well, and it was not open to the reservoir.   They were  
19    looking for a potential casing leak and were  
20    continuously adding fluid on top of that plug.   And so  
21    that's why that particular one was -- was anomalous.

22                   MR. LAMKIN:   Okay.   Thank you.   Can you  
23    remind me which well the spinner log was run?

24                   THE WITNESS:   It was -- it was run in  
25    the Rhino.   There was another spinner log that we

1 looked at that's in the -- in the Ted well, which is  
2 outside the EMSU. But the main one that I referenced  
3 was, yeah, the Rhino.

4 MR. LAMKIN: Could you, Mr. Rankin,  
5 bring up -- let's see -- that Exhibit B-5, I believe  
6 it is, again, the cartoon? B-9. Sorry. B-9.

7 So it looked like on that spinner log  
8 you guys ran that you testified that the majority of  
9 the fluid was going into a perf at forty-eight  
10 thirty-five. Isn't that smack dab in the middle of  
11 one of your barriers on this cartoon?

12 THE WITNESS: No. If we zoom into the  
13 Rhino well on the -- on that -- yeah. So the spinner  
14 survey stopped at about forty-eight thirty-five, but  
15 all of the, that indicates that all of the fluid was  
16 going into those perfs above that.

17 So I -- I think that all -- the -- the  
18 majority of that fluid was going into those two set of  
19 perfs right there at forty-eight. Yeah.  
20 Just -- yeah. forty-seven fifty to forty-eight.  
21 The -- those two sets of perfs, that's where I think  
22 the -- that water was -- was going.

23 There's no perforations in that -- in  
24 that barrier there, so it clearly wasn't leaving  
25 the -- the well at -- at exactly forty-eight

1 thirty-five. Or I can't remember exactly what  
2 Mr. Wehmeyer had on the -- on the screen there.

3 MR. LAMKIN: Okay. For your Llano  
4 Disposal Network, what proportion of the contracted  
5 fluid is being disposed of in the four wells within  
6 the boundary of the unit?

7 THE WITNESS: Well, it depends day to  
8 day. The way that these -- these contracts work is  
9 that the -- they send us -- well, they're  
10 all -- they're all a little different. But for the  
11 relative proportion, I guess I couldn't speak -- speak  
12 to that right now.

13 But, you know, we have -- we have 11  
14 active wells right now, and -- and these four wells  
15 that are right here are four of the best, although  
16 Dawson and -- and Banks are -- are rate-limited,  
17 whereas the other ones are -- are not rate-limited.

18 Well, I guess Sosa is limited at  
19 42,000. So these -- these four wells are taking a  
20 large -- a large proportion of that contracted volume.

21 MR. LAMKIN: Was the 60,000 barrels of  
22 water per day you mentioned total network disposal, or  
23 was that the wells within the EMSU boundary?

24 THE WITNESS: No. That was specific to  
25 those four wells. They -- long-term average, they do

1 about 15,000 barrels of water per day, so that's how I  
2 got to my 60,000 barrels for -- for those four wells.

3 MR. LAMKIN: Okay. Thank you. Can you  
4 remind me what the historic incompatibility -- the  
5 reasoning for the historic incompatibility between  
6 Grayburg and San Andres formation water was?

7 THE WITNESS: I don't know exactly what  
8 constituents caused the incompatibility. All I can  
9 point to is the Chevron papers that -- where they  
10 state that it was known to be incompatible.  
11 They -- they did not go into detail as to what  
12 constituents created that incompatibility.

13 MR. LAMKIN: Okay. What is your  
14 understanding of --

15 THE WITNESS: Well, I guess  
16 I -- I -- well, I guess I'd better not get out on that  
17 limb. I -- I guess I can't really confirm that.

18 But they did say that they -- well,  
19 they said they had issues with barium and sulfate, and  
20 then they decided to put that San Andres water into  
21 the -- into the Grayburg. And so there was some  
22 scaling that was associated with barium and  
23 sulfate.

24 MR. LAMKIN: That was -- that was my  
25 recollection as well.

1                   Is the Delaware Basin production water  
2 going to exacerbate those differences in formation  
3 waters?

4                   THE WITNESS: By injecting it into  
5 the -- the San Andres disposal zone?

6                   MR. LAMKIN: Uh-huh.

7                   THE WITNESS: I don't know. I would  
8 have to -- the sulfate content of our injection water  
9 is roughly equivalent to the sulfate content of  
10 the -- the water that's in the -- in the San Andres.

11                   But, again, they've been putting  
12 Grayburg water into the San Andres for more than 50  
13 years. So what is it today? It's definitely not  
14 Greenfield anymore. So that's -- it's a complicated  
15 story.

16                   MR. LAMKIN: Did -- no. Wait. Let  
17 back up a little bit.

18                   What is your understanding of OCD's  
19 level of involvement or tracking of unit progress post  
20 unitization?

21                   THE WITNESS: I -- I guess I don't  
22 know. Yeah. I don't -- I don't know.

23                   MR. LAMKIN: Would it surprise you to  
24 hear that they don't have much, if any, involvement?

25                   THE WITNESS: I -- I guess it would not

1 surprise me, no.

2 MR. LAMKIN: Did Goodnight have any  
3 discussions with the acting unit manager at the land  
4 office prior to applying for injection within the EMSU  
5 boundaries?

6 THE WITNESS: You're talking about at  
7 the state land office?

8 MR. LAMKIN: At the land office, yeah.

9 THE WITNESS: I know that my  
10 predecessor had some conversations with the state land  
11 office. They did protest some of our SWDs. My  
12 predecessor met with the state land office, and they  
13 ended up withdrawing their protest.

14 MR. LAMKIN: Yeah. I believe those  
15 protests were mainly surrounding pore space issues and  
16 not injection into the unitized interval.

17 Do you think that it would've behooved  
18 Goodnight to meet with the person managing units at  
19 the land office prior to applying for these wells?

20 THE WITNESS: Yeah. I'm -- I'm going  
21 back through my head, 'cause I know I've had  
22 conversations with Mr. Drake about conversations he  
23 had with different folks at the -- at the state land  
24 office.

25 Now, whether he talked to the person

1 you're describing that's -- that was overseeing the  
2 units, I'm -- I'm not sure. But yeah. I'm not sure  
3 if those -- if the -- those conversations occurred.

4 MR. LAMKIN: Do you believe that the  
5 upper and lower San Andres should be separated under  
6 different pools by the OCD?

7 THE WITNESS: Well, I guess that's a  
8 complicated question, because how are you going to  
9 define what is upper San Andres versus lower  
10 San Andres? I guess maybe. But I -- I don't -- I  
11 don't feel comfortable speaking too much on that right  
12 now until I have more information.

13 MR. LAMKIN: Okay. Do you know if  
14 there's production in the San Andres to the north or  
15 south of the EMSU historically?

16 THE WITNESS: How far?

17 MR. LAMKIN: You know, I would just say  
18 on trend. I don't think distance necessarily matters.

19 THE WITNESS: I -- I guess I haven't  
20 looked too far, but on trend north and south, I don't  
21 believe that there is any San Andres production. I  
22 think it's all Grayburg and the Artesia Group.

23 MR. LAMKIN: Is that something that the  
24 OCC should be concerned with, considering you've  
25 testified that water is migrating primarily to the



1 north and south?

2 THE WITNESS: Well, I guess I didn't  
3 necessarily say that. I said that's the direction  
4 that it's open. My opinion is -- is that it's  
5 probably migrating south downdip, given the -- the  
6 differences in the salinity. The water that we inject  
7 is denser than the -- the native water.

8 So just my opinion -- I haven't done a  
9 study on it -- but I would anticipate that the water  
10 would migrate south downdip. And I know there's no  
11 production to the south in the San Andres for a very,  
12 very long distance.

13 MR. LAMKIN: Can you remind me under  
14 what circumstances the, quote/unquote, world class  
15 disposal reservoir was discovered by Goodnight?

16 THE WITNESS: Yeah. So when we -- when  
17 we started looking around for where to -- to develop a  
18 project for this, we started looking at where has the  
19 most water been moved in any reservoir, and we looked  
20 around the whole Permian Basin. And we feed off of  
21 the water supply wells that were in this area.

22 Originally, we saw how much water had  
23 come out of the reservoir and at -- at the rates that  
24 it came out of the reservoir. That's how we  
25 identified this specific area. We then started

1 looking at -- we noticed that there was other SWDs  
2 that were already operating in this area.

3 We -- we did an analysis of those SWDs  
4 and noticed that they had put ginormous volumes in the  
5 ground. They could achieve pretty high rates at -- at  
6 zero surface tubing pressure, so we knew that -- that  
7 the transmissivity of this reservoir was very, very  
8 high, which is ideal for disposal operations 'cause,  
9 you know, injecting at low pressures is -- is a good  
10 thing.

11 And we also noticed that  
12 there's -- again, there's all these large injection  
13 volumes that had -- and there had never been any  
14 claims of communication or -- or interference from  
15 that large injection volume, so that's how  
16 we -- that's how we settled on -- on this particular  
17 area.

18 MR. LAMKIN: Has Goodnight performed  
19 any studies to ascertain the size of the reservoir?

20 THE WITNESS: No, we have not. But  
21 like I said with Dr. Ampomah, just given the way that  
22 all of these wells, the water supply wells and the  
23 water disposal wells have behaved over the last, you  
24 know, 50-plus years, it has to be very, very large  
25 because we're not seeing any -- any pressure increases

1 for -- given that that large volume of water that's  
2 gone in the ground.

3 So no. I have not quantified how large  
4 it is, but I can say that it is quite large.

5 MR. LAMKIN: Thank you for your time.  
6 That's all my questions.

7 THE HEARING OFFICER: Thank you,  
8 Mr. Lamkin.

9 We come full circle back to you,  
10 Mr. Rankin, for redirect of Mr. McGuire.

11 MR. RANKIN: Chair Razatos may have a  
12 question or two.

13 MR. RAZATOS: I actually do.

14 THE HEARING OFFICER: Oh, I'm sorry,  
15 Mr. Razatos. Excuse me. It's getting late --

16 MR. RAZATOS: No worries. I  
17 understand. Mine will be quick. I have two  
18 questions.

19 Mr. Rankin, if you could just stop  
20 sharing your screen so I can see Mr. McGuire.  
21 Awesome. Thank you. I appreciate it.

22 Mr. McGuire, thank you for your time.  
23 We appreciate you taking the time to be with us, so  
24 thank you so much for that.

25 Two questions from me. A lot of talk

1 has been -- a lot of discussion has been around how  
2 fluids are migrating in this area. In the permits,  
3 what is the standard area of review when permitting  
4 these type of permits? Do you know what the standard  
5 area of review is?

6 THE WITNESS: Yeah. I might -- I -- I  
7 permit wells in three different states that have  
8 different AORs. I -- I think it's a mile or two. I  
9 can't remember specifically off the top of my head,  
10 but it's -- it's one of those two. It's either a mile  
11 or 2 miles.

12 MR. RAZATOS: Okay. So whether it's a  
13 mile or 2 miles, my follow-up question to that is, in  
14 your opinion, are the fluids contained within that  
15 mile or 2 miles or within that area laterally?

16 THE WITNESS: I have -- there's been a  
17 lot of discussion about that. I have not studied that  
18 in detail, so I would be uncomfortable to give you a  
19 direct answer right now.

20 MR. RAZATOS: Okay. Great. Thank you.  
21 I appreciate that.

22 Also, there's a lot of discussion -- my  
23 next question -- there's a lot of discussion regarding  
24 the units themselves on how the unit is formed and  
25 unit this and unit that. Do the units regulate

1 mineral rights?

2 THE WITNESS: They do.

3 MR. RAZATOS: Okay. Do they affect  
4 water rights?

5 THE WITNESS: No. That's under the  
6 purview of the state engineer's office, I believe.

7 MR. RAZATOS: Okay. So what kind of  
8 rights are the SWDs running under?

9 THE WITNESS: I guess that's a legal  
10 question that I'm, again, uncomfortable giving you an  
11 answer right now. Sorry.

12 MR. RAZATOS: Okay. No worries. So  
13 then my follow-up with that is -- and you may know  
14 this; you may not know this -- but did Goodnight  
15 evaluate to see if the agreement -- the unit agreement  
16 is based on mineral rights and if it affects the water  
17 rights or the surface rights in the area?

18 THE WITNESS: I'm sure that somebody  
19 has done that associated with Goodnight through --  
20 through counsel or -- or somebody else. But yeah. I  
21 guess I can't -- well, can you ask it one more time  
22 just to make sure I'm not missing something here? I'm  
23 sorry.

24 MR. RAZATOS: Sure. Has Goodnight  
25 evaluated to see if the unit agreement that is in

1 place is based -- that the unit agreement that is  
2 based on mineral rights, has it affected water rights  
3 or surface rights?

4 THE WITNESS: No. I think the unit  
5 agreement has everything to do with the minerals that  
6 are in that pore space, not necessarily the pore space  
7 itself --

8 MR. RAZATOS: Okay -- sorry. Go ahead.  
9 I didn't mean to interrupt you. My apologies.

10 THE WITNESS: No. That's -- that --  
11 I'll -- I'll stick with that answer.

12 MR. RAZATOS: Okay. And that was your  
13 opinion. But the question was, has Goodnight  
14 evaluated to the actual unit agreement?

15 THE WITNESS: I -- yes. I think  
16 through counsel that we've looked at the unit -- the  
17 unit agreement in detail.

18 MR. RAZATOS: Okay. Excellent.  
19 Those were my questions, Mr. Hearing  
20 Officer.

21 I appreciate it, Mr. McGuire. Thank  
22 you for your time. Appreciate it.

23 THE HEARING OFFICER: Thank you,  
24 Chairman Razatos.

25 I guess before I return it to you,

1 Mr. Rankin, let me double check with Mr. Shandler.

2 Mr. Shandler, second chance. Do you  
3 have any questions for Mr. McGuire?

4 MR. SHANDLER: I do not.

5 THE HEARING OFFICER: All right, then.  
6 At this point I believe it actually is back to you,  
7 Mr. Rankin, for redirect.

8 MR. RANKIN: Thank you, Mr. Hearing  
9 Officer. Appreciate it.

10 REDIRECT EXAMINATION

11 BY MR. RANKIN:

12 MR. RANKIN: Mr. McGuire, do you recall  
13 during your testimony in cross-examination with  
14 Mr. Wehmeyer where he asked you about a notice of  
15 violation that was issued in Oregon for some waste?

16 THE WITNESS: Yes, I do.

17 MR. RANKIN: And he referenced that  
18 violation. Is this a copy of the violation that was  
19 issued by Oregon to the entity that was responsible  
20 for that issue?

21 THE WITNESS: Yes.

22 MR. RANKIN: Okay. And it was not  
23 issued -- state of Oregon did not identify Goodnight  
24 Midstream as responsible for that issue. Is that your  
25 understanding?

1 THE WITNESS: Yes, it is.

2 MR. RANKIN: Okay. Do you recall,  
3 Mr. McGuire, during the course of your  
4 cross-examination with Empire counsel, his question  
5 for you about what he called the Marsden lawsuit in  
6 Texas?

7 THE WITNESS: I do.

8 MR. RANKIN: Do you recall that in your  
9 discussion with Mr. Wehmeyer, you and he confirmed  
10 that Goodnight Midstream had won that lawsuit on the  
11 basis of summary judgment? Do you recall that?

12 THE WITNESS: I do.

13 MR. RANKIN: And do you recall that  
14 Mr. Wehmeyer told you in his questioning that that  
15 lawsuit was now on appeal or was at the time on appeal  
16 at the 8th District of Texas?

17 THE WITNESS: I do.

18 MR. RANKIN: On the screen here, am I  
19 showing you the front page of -- is this the case  
20 caption reflecting that appeal in the 8th District of  
21 Texas?

22 THE WITNESS: It is.

23 MR. RANKIN: And Marsden's identified  
24 and Blackbeard and Goodnight Midstream are identified;  
25 correct?



1 THE WITNESS: They are.

2 MR. RANKIN: And if I scroll to the  
3 bottom of this memorandum opinion -- and, again, this  
4 is from the 8th District Court of Appeals in Texas;  
5 correct?

6 THE WITNESS: It is, yeah.

7 MR. RANKIN: Okay. If I scroll to the  
8 bottom of this memorandum opinion, it's dated  
9 December 12, 2024; correct?

10 THE WITNESS: It is,

11 MR. RANKIN: And it's -- I've  
12 highlighted here at the end of the conclusion, it  
13 states that: "The Marsdens failed to meet their  
14 burden in responding to Blackbeard and Goodnight's  
15 no-evidence motion for summary judgment. The judgment  
16 below is affirmed." Did I read that correctly?

17 THE WITNESS: You did.

18 MR. RANKIN: Okay. Is it your  
19 understanding that this appeal is final and that  
20 there's been no appeals from this decision?

21 THE WITNESS: That's my understanding.

22 MR. RANKIN: Okay. Thank you. There's  
23 some discussion about the -- with Dr. Ampomah about  
24 the questions you received from Mr. Wehmeyer about  
25 recent production of oil and produced water in

1 New Mexico. Do you recall that testimony between  
2 yourself and Mr. Wehmeyer?

3 THE WITNESS: I do.

4 MR. RANKIN: And you told Dr. Ampomah  
5 that you were, I guess, confused or taken aback or  
6 surprised by the presentation of the data that  
7 Mr. Wehmeyer showed you? Do you recall that?

8 THE WITNESS: I do, yes.

9 MR. RANKIN: So I'm going to share my  
10 screen here. I'm going to show you -- I went to the  
11 OCD last night, and I pulled down a report, and this  
12 is the report. The only change I made to it was I  
13 highlighted a couple columns.

14 But it's the New Mexico OCD Division,  
15 Natural Gas and Oil Production Report, dated Friday,  
16 May 16, 2025. I think that's the most recent update  
17 for the data. And I've highlighted the column here  
18 that says "Oil, southeast oil wells" and the column  
19 that says "Production water in southeast oil wells."

20 I'll scroll down to -- and if I just  
21 slowly scroll, you'll see the annual volumes for each  
22 year. And when I get up to around '2021 and 2022,  
23 you'll see -- are you seeing any decline in the oil  
24 production or in the water production from  
25 southeastern New Mexico?

1 THE WITNESS: No, I am not.

2 MR. RANKIN: Is it -- is it, in fact,  
3 going up?

4 THE WITNESS: It is continuously going  
5 up.

6 MR. RANKIN: And is it going up between  
7 2023 and 2024?

8 THE WITNESS: It is.

9 MR. RANKIN: So I'm going to share with  
10 you another document that I prepared. It's a graph  
11 using that same data showing the OCD data on a per day  
12 basis for oil production and water production. Water  
13 production is in blue, and the oil production is in  
14 green.

15 Does this curve -- do these two curves  
16 look more like what you understand current water  
17 production and oil production in southeastern New  
18 Mexico to look like?

19 THE WITNESS: They do.

20 MR. RANKIN: Do you recall  
21 Mr. Wehmeyer's questions of you about the 1998 Love  
22 paper that is Goodnight Cross Exhibit Number 1?

23 THE WITNESS: I do.

24 MR. RANKIN: Do you recall him asking  
25 you questions about a reference to bottom water in the

1 paper suggesting that the paper was referring to  
2 bottom water coming up from the San Andres? Do you  
3 recall that?

4 THE WITNESS: I do.

5 MR. RANKIN: And you disagreed with him  
6 at the time. When he asked you, you disagreed that  
7 the reference was to San Andres bottom water; is that  
8 right?

9 THE WITNESS: That's correct.

10 MR. RANKIN: Why did you disagree with  
11 him on that basis?

12 THE WITNESS: Because Tracy [ph] Love  
13 in a 2000 division hearing testified that the only  
14 unaccounted for water in the unit was Edgewater.

15 MR. RANKIN: And that testimony that  
16 you're referring to was including your testimony as an  
17 exhibit; is that correct?

18 THE WITNESS: That's correct.

19 MR. RANKIN: Just so we can confirm, I  
20 think it was actually a rebuttal. One moment. Yeah.  
21 Here it is. Okay. Is this your Exhibit B-50? And  
22 does this reflect the testimony that you're referring  
23 to just now that was provided by Mr. Love in the year  
24 2000?

25 THE WITNESS: I'm sure it is, if you

1 share your screen.

2 MR. RANKIN: Oh, there you go. I think  
3 after five weeks of this, I would figure that out.  
4 Let me go back to the top so you can see the beginning  
5 of that exhibit. Is this your Exhibit B-50 showing  
6 the testimony from Mr. Love in that 2000 hearing?

7 THE WITNESS: It is.

8 MR. RANKIN: Okay. And this testimony  
9 was provided within two years of that paper being  
10 published; is that correct?

11 THE WITNESS: Yeah. It was two years  
12 after that paper was published. That's correct.

13 MR. RANKIN: Okay. Do you recall  
14 Mr. Wehmeyer's questions to you yesterday about the  
15 EMSU 679 core and Dr. Lindsay's [ph] core analysis?

16 THE WITNESS: I do.

17 MR. RANKIN: If there were extensive  
18 fracturing in Goodnight's confining layer allowing  
19 communication with the overlying Grayburg, can you  
20 explain how the pressure differences that you  
21 discussed yesterday would be possible between what  
22 you've identified as Goodnight's disposal zone and the  
23 overlying reservoir?

24 THE WITNESS: Yeah. That pressure  
25 differential would not be possible. Those -- those

1        formations will -- would equilibrate with each other  
2        if there was communication between these two different  
3        reservoirs.

4                        MR. RANKIN:    Okay.    Do you recall  
5        Mr. Wehmeyer's examination of you on the Piazza [ph]  
6        order yesterday?

7                        THE WITNESS:    I do, yes.

8                        MR. RANKIN:    I think he was asking  
9        about one particular paragraph, paragraph 11 of the  
10       order where it states -- and I'm not going to read the  
11       whole thing -- but that "Empire has provided  
12       sufficient evidence for continued assessment of the  
13       unitized interval for potential recovery of any  
14       additional hydrocarbon resources remaining in place."

15                        Do you recall the discussion yesterday  
16       with Mr. Wehmeyer on that point?

17                        THE WITNESS:    I do.

18                        MR. RANKIN:    Now, when I scroll down,  
19       this order was issued at the end of November of 2023;  
20       correct?

21                        THE WITNESS:    That's correct.

22                        MR. RANKIN:    That's what?    How many  
23       months ago was that approximately?

24                        THE WITNESS:    Seventeen, eighteen  
25       months maybe.    Something like that.

1 MR. RANKIN: Okay. And in the same  
2 order, in paragraph 2, the Division orders that  
3 "Empires is to provide monthly" -- "it is to  
4 reinstitute its obligation to provide monthly reports  
5 to both the OCD and the State Land Office." Do you  
6 see that in the paragraph there?

7 THE WITNESS: Yes, I do. Yep.

8 MR. RANKIN: To your knowledge, in  
9 those 17 months since this order has been issued, has  
10 Empire provided any plans or stated any plans or  
11 explained what it's doing to undertake or evaluate as  
12 part of its continued assessment the potential for  
13 additional hydrocarbon recovery in the EMSU in its  
14 monthly reports?

15 THE WITNESS: Not to my knowledge.

16 MR. RANKIN: Do you recall the  
17 testimony and examination that Mr. Wehmeyer conducted  
18 against you on the Verlander well?

19 THE WITNESS: I do, yes.

20 MR. RANKIN: Do you recall when he was  
21 asking you about the fact that Goodnight had decided  
22 to drill its validly permitted Verlander well, even  
23 though Empire had filed an application to revoke its  
24 injection authority?

25 THE WITNESS: I do.

1 MR. RANKIN: Do you recall when he  
2 asked you why Goodnight did not just ask the Division  
3 for an extension that, in his words, are easily  
4 granted by the Division?

5 THE WITNESS: I do.

6 MR. RANKIN: Can you explain whether  
7 Goodnight recently filed an application for an  
8 extension of time to drill another SWD outside the  
9 EMSU?

10 THE WITNESS: Yeah. We tried to get an  
11 extension on the Rocket.

12 MR. RANKIN: And approximately,  
13 relative to the EMSU, where is that located?

14 THE WITNESS: About a mile outside the  
15 unit.

16 MR. RANKIN: In which direction?

17 THE WITNESS: South.

18 MR. RANKIN: Okay. What happened when  
19 you filed for an application -- an extension of time  
20 on that well?

21 THE WITNESS: It was protested and got  
22 hung up. We weren't able to get the extension.

23 MR. RANKIN: Who protested it?

24 THE WITNESS: Empire.

25 MR. RANKIN: Okay. And the Division



1 did not approve that extension request because it's  
2 pending protest by the by Empire; correct?

3 THE WITNESS: That's correct.

4 MR. RANKIN: Okay. And that  
5 application to extend the Rocket was filed before  
6 Goodnight decided to drill the validly permitted  
7 Verlander; correct?

8 THE WITNESS: That's correct.

9 MR. RANKIN: Okay. And that case, the  
10 protest under the Rocket, is currently pending before  
11 the Commission in the cases that are not right now  
12 before the Commission?

13 THE WITNESS: That's correct.

14 MR. RANKIN: Okay. And Empire decided  
15 to drill the Verlander at its own risk; correct?

16 THE WITNESS: Goodnight did, yes.

17 MR. RANKIN: I'm sorry. Goodnight did.  
18 Goodnight decided to drill the Verlander at its own  
19 risk; correct?

20 THE WITNESS: That's correct.

21 MR. RANKIN: Okay. Earlier today do  
22 you recall questions from counsel for Empire  
23 addressing a single Grayburg waterflood injection well  
24 that, in the exhibit he showed you, had a lower  
25 pressure than what is reflected in your documents in

1 the San Andres?

2 THE WITNESS: I do.

3 MR. RANKIN: Can you tell me whether  
4 you believe that that pressure reading in the Grayburg  
5 is representative of the Grayburg?

6 THE WITNESS: I do not think that it's  
7 representative of the Grayburg as a whole, no.

8 MR. RANKIN: What's your basis for  
9 that?

10 THE WITNESS: Well, we -- as we've  
11 discussed a lot in this case, it's a highly  
12 compartmentalized reservoir. Just because this one  
13 well was at a lower pressure does not mean that the  
14 entire Grayburg is lower pressure.

15 Furthermore, that's -- we drilled our  
16 wells very near this data point and were able to hold  
17 a column of drilling fluid while drilling through that  
18 zone. And then when we passed through the confining  
19 layer that separates the disposal zone, we had a  
20 complete loss of circulation.

21 So that indicates to me that those two  
22 reservoirs are -- are completely different and, in  
23 fact, that the Grayburg would be higher pressure than  
24 the -- than the San Andres. So while that  
25 one -- you'd have to look at where that well is

1     perf'd, is it in direct communication with an offset  
2     producer.

3                     That would explain why that one  
4     particular zone may have been under pressure, but it's  
5     definitely not representative of the entire Grayburg  
6     Reservoir.

7                     MR. RANKIN: Do you recall  
8     Mr. Wehmeyer's question of you asking you whether you  
9     agree that Empire brought witnesses to this hearing  
10    who have actual expertise in ROZ and referred to  
11    Mr. Meltzer and Dr. Trentham?

12                    THE WITNESS: I do.

13                    MR. RANKIN: Is it your  
14    understanding -- did Empire provide Mr. Meltzer or  
15    Dr. Trentham or allow them to review any actual data  
16    on the EMSU or the San Andres or the purported ROZ in  
17    the EMSU other than the core data?

18                    THE WITNESS: No. They did not. They  
19    were totally unaware of a lot of the details  
20    associated with the -- with the San Andres. They had  
21    no idea that these water supply wells were  
22    there -- were here, how much volume they took out of  
23    the ground.

24                    They didn't know really anything about  
25    those wells or -- or a lot of the -- the San Andres

1 reservoir as a -- as a whole in this particular area.

2 MR. RANKIN: In your experience,  
3 Mr. McGuire, is it reasonable, if you're going to put  
4 up an expert in an area, to not give them the data to  
5 review relating to the underlying issues that any  
6 reasonable ROZ expert would want to review?

7 MR. WEHMEYER: I have an objection.  
8 The idea of what experts do or don't do, it's very  
9 clear that this witness knows nothing about being an  
10 expert or how experts work.

11 THE HEARING OFFICER: Sustained.

12 MR. RANKIN: Okay. I'll move on.

13 Mr. McGuire, do you recall the  
14 examination by Mr. Wehmeyer about the radial plume  
15 demonstratives that he was showing you?

16 THE WITNESS: I do, yes.

17 MR. RANKIN: In your opinion, do you  
18 believe that radial plume modeling is appropriate in  
19 this context?

20 THE WITNESS: No. Not for this  
21 particular reservoir, given its heterogeneity. Radial  
22 flow does not typically occur in a carbonate  
23 reservoir.

24 MR. RANKIN: Okay. Do you recall  
25 questions from counsel about whether Goodnight is

1 injecting? I think the way it was phrased was  
2 injecting into Empire's San Andres. Do you recall  
3 questions around that line of questioning?

4 THE WITNESS: I do.

5 MR. RANKIN: Did you understand that to  
6 mean the San Andres as a formation as opposed to  
7 ownership rights or rights that were exclusive just to  
8 Empire?

9 THE WITNESS: Yeah. I was -- I was  
10 talking about the formation. I -- I was not speaking  
11 to ownership or anything like that.

12 MR. RANKIN: Mr. Hearing Officer, I  
13 believe I'm done. I just want to make sure that I  
14 have the opportunity to confer with my colleague real  
15 quick. But I think that's the only questions I have  
16 on redirect for Mr. McGuire. Let me just confer with  
17 my colleague. One moment.

18 Yeah. Sorry. Thank you, Mr. Hearing  
19 Officer. I just wanted to confer with my colleague.  
20 Yeah. No further questions on redirect for  
21 Mr. McGuire.

22 THE HEARING OFFICER: Okay. Thank you  
23 Mr. Rankin. So it's about 4:15 p.m.

24 Chairman Razatos, what are your  
25 thoughts?

1 I guess, let me make sure at this point  
2 that Goodnight, I take it, then, at this point you  
3 rest your case?

4 MR. RANKIN: I believe, Mr. Hearing  
5 Officer, we have completed the presentation of all of  
6 our witnesses. So yes.

7 THE HEARING OFFICER: All right. And  
8 may the long-suffering Preston McGuire be excused?

9 MR. RANKIN: Yes.

10 MR. WEHMEYER: For Empire, in light of  
11 the testimony that just came out on redirect, we are  
12 going to move to admit Empire Cross Exhibit 12, which  
13 is the entire workover report reflecting no plug in  
14 the wellbore.

15 Other than ensuring as a procedural  
16 matter we can admit Empire Cross Exhibit 12, which is  
17 the entire workover report in light of the redirect  
18 testimony, we don't have any objection to him being  
19 excused.

20 THE HEARING OFFICER: Thank you,  
21 Mr. Wehmeyer. Any objection, Mr. Rankin, to that  
22 exhibit being admitted and made a part of the record?

23 MR. RANKIN: Mr. Hearing Officer, I  
24 guess I'd like to just -- before we agree to what's  
25 being admitted, I'd like to make sure that it is the

1 complete workover report. But other than that, I have  
2 no other concerns about it.

3 But I myself haven't seen it in its  
4 entirety, so I would like to see what Mr. Wehmeyer is  
5 planning or proposing to admit. So short of that, no  
6 other considerations on my part.

7 THE HEARING OFFICER: Okay. I guess my  
8 thought on that is why don't the two of you confer  
9 after we go off the record for the day today, and we  
10 can take that up as a preliminary matter tomorrow  
11 morning. Does that sound reasonable to you folks?

12 MR. WEHMEYER: That's perfect. As a  
13 procedural matter, I just -- as we've closed testimony  
14 and before the last witness was excused, I wanted to  
15 make sure we'd made the offer.

16 THE HEARING OFFICER: All right.

17 And just to round out the field, Rice,  
18 assuming Mr. Rankin and Mr. Wehmeyer agree on what the  
19 exhibit actually is, do you object to it?

20 MR. BECK: No.

21 THE HEARING OFFICER: All right.

22 Pilot, same question.

23 MR. SUAZO: Pilot would like to review  
24 this evening, but I don't expect that we would have  
25 any objections either.

1 THE HEARING OFFICER: All right. So  
2 we'll do that. We'll take that up as a preliminary  
3 matter tomorrow morning, and I'm assuming, then, that  
4 tomorrow morning we'll move directly into your  
5 respective closing arguments. Is that what you  
6 anticipate? Mr. Wehmeyer, you first.

7 MR. WEHMEYER: Yes. That's the  
8 intention of Empire.

9 THE HEARING OFFICER: Mr. Rankin,  
10 that's not a surprise to you, I imagine?

11 MR. RANKIN: No, it's not. We had a  
12 chance to discuss briefly yesterday, and given the  
13 uncertainty of how today would turn out, it's  
14 reasonable to pick all this up on the morning.

15 THE HEARING OFFICER: Do you guys each  
16 have an estimate of about how long you think your  
17 closings might take?

18 MR. WEHMEYER: I thought we'd agreed to  
19 one hour at some point, which is still good with  
20 Empire. But you got us onto schedule, and this might  
21 be the first time we have a little bit of time to  
22 spare.

23 THE HEARING OFFICER: Mr. Rankin --

24 MR. RANKIN: Agree. I'm planning to  
25 keep it to an hour. I think -- my understanding is



1     that's what we agreed to, so I'm happy to keep it to  
2     that timeframe.

3                   THE HEARING OFFICER:   Okay.  It's been  
4     too far in the past for me to remember if there was an  
5     actual agreement or not.  But how about we hold you  
6     both to that in spirit?  And we'll give Rice and Pilot  
7     a few minutes if they want to add something in  
8     closing.  Does that sound reasonable?

9                   MR. RANKIN:  I think Rice can probably  
10    get it done in an hour.

11                  THE HEARING OFFICER:  Oh, you want an  
12    hour as well?  Are you --

13                  MR. BECK:  No.

14                  THE HEARING OFFICER:  Am I seeing a  
15    smile on your face there?

16                  MR. BECK:  You are, yes.  Yeah.  I  
17    don't expect we'll be long.

18                  MR. WEHMEYER:  And, Mr. Harwood, as a  
19    procedural matter, with us making the first opening  
20    statement and having the case in chief presented  
21    first, we would hold back 15 of our hour in rebuttal.

22                  THE HEARING OFFICER:  Okay.  Perfect.  
23    That works.  It's fair.

24                  All right.  You guys talk over that  
25    exhibit, and we'll take that up first thing in the

1 morning.

2 Sorry, Mr. Razatos. Now back to you.

3 MR. RAZATOS: I just wanted to make  
4 sure. Did we actually release Mr. McGuire? Is he  
5 officially excused?

6 THE HEARING OFFICER: I think he is.  
7 He persists in hearing. I guess it's a habit by now.

8 MR. RAZATOS: I just wanted to make  
9 sure, because I wasn't sure I heard it, so that's  
10 fine.

11 THE WITNESS: Yeah. I didn't hear the  
12 excusal, so just wanted to make sure.

13 THE HEARING OFFICER: All right.

14 MR. RAZATOS: I think you're excused,  
15 Mr. McGuire. Thank you.

16 THE WITNESS: Thank you, everybody.

17 THE HEARING OFFICER: Okay. So we'll  
18 adjourn till tomorrow morning and be back here at  
19 nine o'clock for what I hope is a brief discussion of  
20 this exhibit and then everyone's closing arguments.

21 MR. RAZATOS: Excellent. Thank you,  
22 everybody. Have a good night.

23 MR. WEHMEYER: Thank you.

24 THE HEARING OFFICER: Thanks, all. Bye  
25 for now.

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(Whereupon, at 4:21 p.m. MDT/  
5:21 p.m. CDT, the proceeding was  
concluded.)

CERTIFICATE

I, JOHN SHAVERS, the officer before whom the foregoing proceedings were taken, do hereby certify that any witness(es) in the foregoing proceedings, prior to testifying, were duly sworn; that the proceedings were recorded by me and thereafter reduced to typewriting by a qualified transcriptionist; that said digital audio recording of said proceedings are a true and accurate record to the best of my knowledge, skills, and ability; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this was taken; and, further, that I am not a relative or employee of any counsel or attorney employed by the parties hereto, nor financially or otherwise interested in the outcome of this action.



JOHN SHAVERS

Notary Public in and for the  
State of Texas

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CERTIFICATE OF TRANSCRIBER

I, JACOB MYERS, do hereby certify that this transcript was prepared from the digital audio recording of the foregoing proceeding, that said transcript is a true and accurate record of the proceedings to the best of my knowledge, skills, and ability; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this was taken; and, further, that I am not a relative or employee of any counsel or attorney employed by the parties hereto, nor financially or otherwise interested in the outcome of this action.

*Jacob Myers*

JACOB MYERS

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**[ampomah - anhydride]**

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[ascertain - barrier]

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[bottom - cartoons]

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[case - circumstances]

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[excerpt - fair]

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[hole - industry]

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[llp - make]

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[stick - surfaces]

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