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STATE OF NEW MEXICO
ENERGY, MINERAL, AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:
Case No. 24912

HEARING

DATE: Thursday, January 16, 2025
TIME: 9 a.m.
BEFORE: Gerasimos Razatos, Chair, State of New
Mexico Oil Conservation Commission
LOCATION: Pecos Hall, Wendell Chino Building
1220 South Saint Francis Drive, First
Floor
Santa Fe, NM 87505
REPORTED BY: James Cogswell
JOB NO.: 7106486

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1 P R O C E E D I N G S

2 MR. RAZATOS: Good morning to
3 everybody. Happy January the 16th. Happy New Year to
4 everyone. Good to see everyone. We're starting our
5 Oil Conservation Commission meeting for the month of
6 January. I am Gerasimos Razatos. I go by Jerry. I
7 am the acting director of the OCD and also commission
8 chair.

9 So we can start our meeting, we'll
10 start off with a roll call. As I stated, I'm
11 Gerasimos Razatos. I am the chair for the OCC right
12 at the moment, and we'll go with the commissioners.

13 DR. AMPOMAH: I'm Dr. William Ampomah,
14 designee of the energy secretary. Thank you.

15 MR. BLOOM: Hi. Good morning,
16 everyone. Greg Bloom. I'm the commissioner here for
17 the New Mexico State Land Office, and apologies; I'm
18 at home today. I'm a little under the weather.

19 MR. RAZATOS: Hope you get to feeling
20 better, Commissioner Bloom, but welcome. Good to have
21 you with us.

22 Excellent. The first thing that we
23 need to do is approve our agenda for the January 16,
24 2025, meeting. May I get a motion for approval of the
25 agenda?

1 MR. BLOOM: I so move.

2 DR. AMPOMAH: I second.

3 MR. RAZATOS: Excellent. All in favor,
4 please say aye.

5 DR. AMPOMAH: Aye.

6 MR. BLOOM: Aye.

7 MR. RAZATOS: I say aye as well. No
8 nays, so we'll say that the agenda is approved. Next
9 we need to do the approval of the December 12, 2024,
10 meeting minutes. May I get a motion to approve?

11 MR. BLOOM: I so move.

12 DR. AMPOMAH: I second.

13 MR. RAZATOS: Excellent. And all in
14 favor?

15 DR. AMPOMAH: Aye.

16 MR. BLOOM: Aye.

17 MR. RAZATOS: Aye. Excellent. So our
18 agenda is -- I mean the meeting minutes are approved.
19 Moving on to our fourth point here is our pending
20 cases. We have the consolidated cases by Goodnight
21 Midstream and Empire New Mexico.

22 I do know that Mr. Rubin wanted to
23 start off this particular -- well, actually, let me
24 just call them out. Case numbers 24123, 23614 through
25 17, and also case numbers 23775 and 24018 through

1 24027. This is going to be pre-hearing issues that we
2 have. And I know, Mr. Rubin, you wanted to start the
3 conversation.

4 MR. RUBIN: Thank you, Mr. Chair and
5 Members of the Commission. So what has arisen
6 recently in anticipation of the adjudicatory hearing
7 in February, the context of the issue of whether the
8 Commission would personally hear this or let the
9 hearing officer that was appointed hear it directly.

10 Several of the parties raised the issue
11 of the authority of the Commission to appoint a
12 hearing examiner or to having a hearing examiner hear
13 this case in some respects. And so in an effort to
14 avoid, obviously, any issues of impropriety on that
15 point, you did receive an email from me on this, and
16 the question is what, if anything, can a hearing
17 examiner do in these adjudicatory matters?

18 There is nothing in statute on this.
19 But rather than try to resolve the authority issue of
20 whether there's inherent authority, whether a rule
21 would suffice, what the rules mean, I would like to
22 hear -- I understand from the parties that they would
23 like to speak briefly on this as well, and we will
24 try.

25 What I'm hoping is that we can quickly

1 achieve some sort of consensus on what would be an
2 appropriate role for the hearing examiner as I --
3 there's nothing that would, I think, preclude by
4 stipulation us proceeding on such a matter as it's not
5 a -- well, other than matters of fair trial in a
6 criminal case or perhaps subject matter jurisdiction,
7 these are things that we could perhaps stipulate to
8 with the parties.

9 So I believe I heard Ms. Shaheen and
10 Ms. Hardy and Mr. Rankin and Mr. Padilla are all here.
11 And representing the Division -- will that be you, Mr.
12 Moander, or is just Mr. Tremaine representing you on
13 this?

14 MR. MOANDER: I'll be representing the
15 Division.

16 MR. RUBIN: Okay. So --

17 MR. MOANDER: Thank you.

18 MR. RUBIN: So I do apologize; I need
19 to step out by 10 minutes to 10, so if we could be
20 succinct on this, I'd appreciate it. So I believe Mr.
21 Rankin wanted to speak.

22 MR. RAZATOS: Excellent. I just want
23 to make sure everybody's here for these particular
24 cases, so let's just do a roll call. I'll start here
25 on my right and we'll go down the table.

1 MR. RANKIN: Yeah. Adam Rankin
2 appearing on behalf of Goodnight Midstream in these
3 cases with the Holland & Hart law firm.

4 MR. RAZATOS: Excellent.

5 MR. MOANDER: Chris Moander appearing
6 on behalf of the New Mexico Oil Conservation Division.

7 MR. RAZATOS: Excellent.

8 Mr. Padilla, can I get you to get in to
9 a microphone, please? Thanks.

10 MR. PADILLA: Ernest Padilla appearing
11 for Empire New Mexico.

12 MR. RAZATOS: Excellent. Thank you,
13 Mr. Padilla.

14 MS. SHAHEEN: Sharon Shaheen also
15 appearing on behalf of Empire New Mexico.

16 MR. RAZATOS: Ms. Shaheen.

17 MS. HARDY: Dana Hardy with Hinkle
18 Shanor on behalf of Empire as well.

19 MR. RAZATOS: Excellent. Thank you.
20 So I know as Mr. -- Adam, I forgot your last name, but
21 I apologize. I know you wanted to say -- everybody
22 has something to say, so let's start with you, Mr.
23 Rankin.

24 MR. RANKIN: So thank you, Chair
25 Razatos. Good morning.

1 May it please the Commission, I raised
2 this issue based on an email from Mr. Harwood that led
3 me to believe the intent was for Mr. Harwood to hear
4 the whole merits of the case. I conferred with --
5 that was in early December. I conferred with counsel
6 at the beginning of this year about it, and we had a
7 meeting last week and discussed it.

8 We reached out to Mr. Rubin to
9 determine what the intent was. All to say that on
10 review of the statutes and the regulations, my belief
11 and my preference is that the statute requires the
12 Commission to hear the merits; that there's no
13 provision on the statutes for the Commission to
14 delegate or appoint a hearing examiner for a hearing
15 on the merits for Commission matters, including,
16 especially, de novo cases that the Commission must
17 hear.

18 That said, the statute is silent on
19 whether a pre-hearing or procedural matters can be
20 assigned to a hearing examiner. And the regulations,
21 in my opinion, do address that expressly and do
22 provide that the director may appoint a hearing
23 examiner for purposes of making rulings on pre-hearing
24 motions.

25 So I don't believe that there's any

1 issue with that or with the appointment of Mr. Harwood
2 to hear pre-hearing matters. So with that, we did
3 confer; I did send an email to all counsel and Mr.
4 Rubin kind of laying out my interpretation of the
5 statute and regulations.

6 And it may have been a tempest in a
7 teapot, but I want to make sure that -- at least for
8 my purposes and to ensure that there's no appellate
9 issue going forward -- that we have a clear
10 understanding that the commission's authority is and
11 jurisdiction requires it to be present for the merits.

12 MR. RUBIN: And is that what the other
13 folks here would agree to?

14 MR. MOANDER: Speaking, Mr. Rubin, for
15 OCD, I think that's right because I had not actually
16 looked at this narrow of an issue before in front of
17 the Commission; I was actually a little surprised at
18 what the rules reflected.

19 But I think that's correct, and OCD's
20 overarching concern here is the procedural appellate
21 issue because, frankly, OCD anticipates no matter what
22 happens in this case, this matter will be elevated to
23 the appellate level. And so the fewer issues that
24 could be dealt with in that appeal, the better.

25 MR. RUBIN: Thank you. Ms. Hardy?

1 MS. HARDY: Thank you. On behalf of
2 Empire, we have concerns as well regarding the
3 appellate issue. We don't necessarily agree with all
4 of the analysis provided by Mr. Rankin, but it does
5 create an issue for appeal, and none of us want to be
6 back here doing this over again, so we agree that the
7 Commission should be present for a hearing.

8 And I think that was what was
9 contemplated when the matter was scheduled based on
10 the April hearing transcript. There was discussion of
11 the hearing dates based on the commissioners'
12 availability, and so it was our understanding that the
13 commissioners would be present for the hearing.

14 And with respect to pretrial motions
15 and procedural matters, I agree with Mr. Rankin.

16 MR. RUBIN: Thank you.

17 So, Mr. Chair, Members of the
18 Commission, it is my advice, and I think it's the
19 parties' wishes, that the Commission sit and hear this
20 matter. I know it's going to be at least four days,
21 and by the Commission we would need a quorum to ensure
22 that the Commission hears this case as opposed to
23 having a hearing officer hear the case.

24 And I don't think we need to -- based
25 upon the stipulations of the parties that there was

1 no -- I think the five pre-hearing orders signed by
2 Mr. Harwood as hearing officer are perfectly in order
3 and are appropriate. I don't -- we don't need to
4 ratify that at this point, based on the positions of
5 the parties.

6 What remains to be hashed out, I
7 believe, is the role of the hearing officer at -- with
8 respect to post-hearing. Do the parties think that a
9 recommendation from the hearing officer is something
10 they are copacetic with provided that the hearing
11 officer report was made available to the parties?
12 What is the position on that?

13 MR. MOANDER: Mr. Rubin, in terms of
14 OCD, if the Commission is going to be present --
15 intends to be present and preside over the hearing, I
16 don't see much value in a hearing officer report since
17 all of the direct evidence will have been taken by the
18 Commission. It seems redundant and I don't see the
19 practical use of it in proceedings.

20 MR. RUBIN: Okay. Any other input?

21 MR. RANKIN: Mr. Rubin, I appreciate
22 the question, and I likewise have concerns about the
23 timing. As the Commission may be aware, Empire has
24 moved the District Court -- there's a parallel
25 litigation in District Court.

1 Empire has moved the District Court
2 through an emergency motion to lift the stay that had
3 been in place so as to enable the Court to proceed
4 without litigation based on representations by Empire
5 counsel. Their intent is to push for a quick trial
6 date in that matter.

7 And the District Court has told us --
8 parties -- that any factual determinations made by the
9 Commission will be given strong consideration if not
10 preclusive effect at the District Court.

11 For that reason, I think we are very --
12 I think both parties are very interested in having a
13 quick order that lays out the findings of the
14 Commission. And my concern about a recommendation
15 from a hearing officer is that it would delay a
16 potential final order from the Commission.

17 MR. RUBIN: Thank you.

18 MR. RANKIN: Given the sensitivities
19 around timing and so forth -- also with the active
20 engagement of the Commission members asking questions
21 or probing witnesses on cross-examination -- I
22 think -- I don't know that a non-technical examiner
23 would have much to contribute in terms of
24 recommendations for this matter that is highly
25 technical.

1 So my thought is that it would not
2 serve much of a purpose, I think, to have a hearing
3 examiner make a formal recommendation to the
4 Commission.

5 MR. RUBIN: Okay. Thank you. Any
6 other parties on that?

7 MS. HARDY: I tend to agree and I would
8 say that if there was going to be a recommendation by
9 the hearing officer, that I think the parties would
10 need opportunities to respond.

11 MR. RUBIN: Okay.

12 MS. HARDY: Which would take additional
13 time, of course.

14 MR. RUBIN: Okay. Thank you.

15 So Mr. Chair, Members of the
16 Commission, I think in an abundance of caution, other
17 than having Mr. Harwood run the hearing with the
18 presence of at least a quorum of the Commission to at
19 least tacitly approve any rulings he makes as we go,
20 it seems that, based on the wishes of the parties, but
21 also because I have a concern that if a hearing
22 officer makes a recommendation it would exceed the
23 statutory authority of this commission to rely upon
24 that recommendation, there is a concern.

25 And rather than resolve that legal

1 issue, my recommendation is that at the conclusion of
2 the evidentiary portion -- of course, the
3 Commission -- and whether the Commission asks
4 questions -- the Commission will then deliberate.

5 If the Commission requires some
6 recommendations and some advice from counsel -- me --
7 before deliberating, that's something I'm prepared to
8 handle. And I would -- of course, anything I provide
9 to the Commission in the terms of advice on the law,
10 assessing the facts, at least summarizing the facts,
11 that would be privileged.

12 And so I would be able to provide not a
13 hearing officer's report, but I would be able to
14 provide to you my advice in a privileged manner that
15 would sort of take the place of something from Mr.
16 Harwood. I would like to have -- so with that, any
17 questions from the Commission on that?

18 MR. RAZATOS: I -- I know I have
19 questions, but Commissioner Bloom, we'll start with
20 you if you have any questions.

21 MR. BLOOM: Thank you, Mr. Chair.

22 No questions regarding these sort of
23 procedural matters. I -- I do have a question about
24 the case in general, though, which I will wait and ask
25 later. Thank you.

1 MR. RAZATOS: Okay. Thank you.

2 Commissioner Ampomah?

3 DR. AMPOMAH: Yeah, so quick question.
4 So the pre-hearing statements will be on February
5 20th; right?

6 MR. RUBIN: I believe that's correct.
7 I don't have the order in front of me, but there is
8 a -- the first day is the opening statements -- pre-
9 hearing statements. Is that correct, Ms. Hardy?

10 MS. HARDY: That's correct. Opening
11 statements and pending motions, I believe, would be
12 addressed.

13 MR. RUBIN: Okay.

14 MR. RAZATOS: So -- and just to
15 clarify, that is our set date for the hearing. I
16 mean, that's a normal commission meeting -- hearing
17 that particular day, and then we're picking it up
18 again the following week; correct? Is that how I've
19 understood it?

20 MS. HARDY: Correct. For the
21 presentation of evidence.

22 DR. AMPOMAH: Okay, so do we anticipate
23 it getting into Friday because I need to make
24 arrangements for travel, so --

25 MR. RAZATOS: The heads are nodding

1 yes, so make arrangements.

2 MR. RUBIN: Yes. Commissioner Ampomah,
3 yes. I think the constraint here is the Open Meetings
4 Act, which requires you to be here in person unless
5 it's difficult or impossible to attend. I think we
6 would need -- for the Commission to safely be saying
7 that they're hearing this, we would need a quorum at
8 any given moment. So if we -- two out of three?

9 Yes, sir.

10 MR. MOANDER: Mr. Rubin, as a point of
11 order, the pre-hearing statements are due on February
12 6th.

13 DR. AMPOMAH: Sixth, yeah.

14 MR. RUBIN: Okay. And of course, Mr.
15 Harwood has done an excellent job up now handling pre-
16 hearing matters and procedural matters. We'll make
17 recommendations as to pre-hearing motions on that
18 date, but we will need to be here at that point.

19 DR. AMPOMAH: So looking at the
20 technical nature of the case, when are we going to
21 receive the documentation for us to review before the
22 pre-hearing and then even the -- the case itself?

23 MR. RUBIN: Commissioner Ampomah, the
24 way it will work is the parties will present exhibits,
25 and the technical evidence in those exhibits will be

1 submitted for admission. We cannot consider anything
2 until the hearing starts, and so I'm hoping that, like
3 with any case, the parties will stipulate at least to
4 the admissibility of everything as opposed to fighting
5 over what comes in and what doesn't.

6 But what comes in is part of what they
7 will, hopefully, resolve right up front for the
8 Commission's benefit. Fair to say? Okay.

9 MS. HARDY: Yes. I will say that we
10 have filed direct testimony already --

11 MR. RUBIN: Oh, yes.

12 MS. HARDY: -- and exhibits under the
13 procedural order, and that we will file rebuttal
14 testimony and exhibits on February 6th.

15 MR. RUBIN: Okay. Thank you.

16 MR. RANKIN: May I make a point, Mr.
17 Rubin? And I have not raised this with any of the
18 other counsel, but just for the awareness of the
19 Commission; as it stands today, we have a total of 21
20 witnesses who are filing all pre-written, pre-filed
21 testimony.

22 Empire has nine that they have already
23 filed; we have seven that have already been filed; and
24 OCD has two. Empire has two additional rebuttal
25 witnesses, and Goodnight Midstream has one additional

1 rebutment -- rebuttal witness. So there're going to
2 be a total of 21 witnesses filing both direct and
3 rebuttal testimony. As Ms. Hardy mentioned, that's
4 already of record.

5 I understand that perhaps the
6 Commission members may be precluded from reviewing
7 this testimony at this point; I don't know. But my
8 thought -- and I don't know how counsel for Empire
9 feels or the Division feels -- but my thought would be
10 I don't see why they couldn't start reviewing it
11 because it's a lot of material.

12 And that way, at the time of the
13 hearing, they will have -- it's a lot of material to
14 absorb and understand and reflect on. And if they
15 were able to start reviewing that testimony in
16 advance, I think it would be helpful for everybody and
17 may make the hearing go more smoothly if that material
18 had been reviewed, and well in advance of the start of
19 the evidentiary hearing on the 24th.

20 MR. RUBIN: Mr. Rankin, have the
21 parties stipulated to the pre-filing of everything
22 or -- I was under a vague impression that there was
23 some motions to exclude some of what's been pre-filed.

24 MR. RANKIN: Not yet. There is a
25 deadline for motions in limine. I have not conferred

1 with counsel about that. We can talk about it. That
2 being said, I don't know that it would necessarily
3 impinge on the ability to review what's been filed.

4 And maybe after this meeting, Mr.
5 Examiner, counsel can confer and maybe stipulate that
6 we would agree that it would be appropriate for the
7 Commission members to begin reviewing the testimony
8 because I do think it would be beneficial to
9 everybody.

10 MR. RUBIN: Okay. Okay. So,
11 Commissioners, I do believe that it would be an
12 abundance of caution not to review what has been pre-
13 filed until we have resolved any objections, and that
14 will be prior to the hearing.

15 I'm looking at the pre-hearing
16 scheduling order, and discovery motions shall be filed
17 by January 9th, responses due January 20th, replies
18 due 27th, and then ruling shall be made thereafter.
19 Are there any objections to the parties -- to Mr.
20 Harwood ruling on those motions? If not, we need to
21 wait for the hearing.

22 MR. MOANDER: Mr. Rubin, do you mean
23 ruling without oral argument?

24 MR. RUBIN: Right. It seems to me that
25 we should allow -- well, that we should -- certainly,

1 whatever has not been objected to, the Commission can
2 then consider. But we will -- if anything that has
3 been objected to, they should hold off on considering
4 until those -- until whatever is being contested is
5 resolved as a motion in limine.

6 And in fact, it may be that Mr. Harwood
7 should not rule on those. That -- as it is
8 dispositive, in a sense, perhaps the best course is
9 anything that is not contested; the Commission can
10 then consider and get at -- a leg up on -- prior to
11 the hearing.

12 But if there are contested motions in
13 limine, then we will need to resolve those and should
14 hold off on considering anything that is subject to a
15 motion until it's been resolved.

16 MR. RAZATOS: So, Ms. Shaheen, you have
17 a concern?

18 MS. SHAHEEN: Thank you, Mr. Chair,
19 Commissioners. We do have a concern. We agree with
20 Mr. Rankin that there is a good -- a great amount of
21 technical information that both parties will be
22 presenting. We don't believe that there's an issue
23 with the commissioners reviewing that ahead of time.

24 If any information or evidence is
25 excluded, then that can be taken into consideration

1 during the deliberation. But what I suggest is that
2 the parties confer and perhaps present a stipulation
3 to you in this regard if that would be acceptable with
4 the other parties and the commission.

5 MR. RAZATOS: And I hate to interrupt.
6 That is -- was going to be my recommendation for this.

7 MR. RANKIN: Okay.

8 MR. RAZATOS: If we could just get the
9 parties to agree on what they want the Commission to
10 see and not see, but as soon as possible. I know some
11 of these things can get a little dragged out and back
12 and forth and back and forth, but we are on a time
13 crunch as well.

14 And so I share Commissioner Ampomah's
15 concern on having enough time to be able to review
16 some of this information, so could we possibly set a
17 date on when you could give us an answer on this? I
18 think if that's something that we can get so we can
19 solidify it, and then we can start on -- start on our
20 end.

21 MR. RANKIN: I hope that we can give
22 you an answer tomorrow if not today.

23 MS. SHAHEEN: We will do our best to
24 give you an answer by tomorrow.

25 MR. RAZATOS: Awesome. Okay, so

1 let's -- let's say if we could have an answer at least
2 by before close of business tomorrow, so then we can
3 have the ability to be able to start reviewing because
4 I know that is a concern for myself. That was one of
5 my questions that I had.

6 And Commissioner Ampomah has that; I'm
7 sure Commissioner Bloom has the same concern on that
8 end. So okay. So we'll wait for an answer from you
9 all by -- before close of business tomorrow.

10 MS. SHAHEEN: Thank you.

11 MR. RAZATOS: Thank you.

12 MR. RUBIN: So if I may, Mr. Chairman
13 and Members of the Commission; if I could have a
14 motion reflecting the stipulation of the parties as to
15 what we discussed today and the pre-hearing and post-
16 hearing procedures we agreed to? And I could
17 basically wrap this up in one big bow in a pre-hearing
18 order by the Commission if we could have a motion to
19 that effect.

20 MR. RAZATOS: And -- and here's just my
21 question. And before we go into a motion, this was my
22 second question. Just to get -- make sure from
23 everybody here; we are going to -- we're stipulating
24 on whatever Mr. Harwood has said thus far?

25 MR. RUBIN: Yes.

1 MR. RAZATOS: So all of his motions
2 we're stipulating to, and everybody's agreeing to
3 that, but then the rest of the hearing is going to be
4 in front of the Commission; is that how I've
5 understood it?

6 I'm going to start right down the line.
7 Mr. Rankin?

8 MR. RANKIN: That's my understanding,
9 Mr. Chair, is that the merits portion of the hearing
10 would be heard and decided on by the Commission
11 without recommendation from a hearing officer.

12 MR. RAZATOS: Okay.

13 Mr. Moander?

14 MR. MOANDER: And likewise from OCD,
15 Mr. Chair.

16 MR. RAZATOS: Okay.

17 Mr. Padilla? Can you turn on your
18 microphone, Mr. Padilla? It's okay.

19 MR. PADILLA: That's fine with me.

20 MR. RAZATOS: Okay.

21 Ms. Shaheen?

22 MS. SHAHEEN: I agree, and I would also
23 note that we believe any motions to exclude evidence
24 should also be decided by the Commission as well.

25 MR. RAZATOS: Fair enough. Yes.

1 MR. RUBIN: Okay.

2 MR. RAZATOS: And Ms. Hardy?

3 MS. HARDY: I agree. Thank you.

4 MR. RAZATOS: Okay. Excellent.

5 MR. RUBIN: I will reduce that to an
6 order shortly.

7 MR. RAZATOS: Okay.

8 MR. RUBIN: If I can have a "so moved"?

9 MR. RAZATOS: I -- I move for that.

10 DR. AMPOMAH: I second.

11 MR. RUBIN: And can I have a roll call,
12 please?

13 MR. BLOOM: I address Mr. Razatos.
14 Aye.

15 DR. AMPOMAH: Approve?

16 MR. RAZATOS: Approved.

17 MR. BLOOM: Okay.

18 MR. RUBIN: Okay. Thank you very much.
19 I appreciate the parties' concision on this issue. I
20 apologize that I do need to tend to another hearing at
21 ten. I will be back to assist and advise the
22 Commission on the Apache hearing that is scheduled
23 next, but I will be anticipate being back in about an
24 hour and a half, and I apologize for that.

25 MR. RAZATOS: Thanks. Okay.

1 MR. RUBIN: Thank you.

2 MR. RAZATOS: Thank you, Mr. Rubin.
3 Thank you; parties for this case, is there anything
4 else?

5 Mr. Rankin?

6 MR. RANKIN: There may be just a few
7 other sort of matters -- housekeeping matters.

8 And I know everyone's eager to get
9 started on a very, probably, long merits hearing, but
10 in terms of our proceeding in February, one item I
11 think that the hearing officer had asked for the
12 parties to confer on and that we have done so
13 partially is to determine what the order of sequence
14 or order of presentation should be for the evidentiary
15 portion of the hearing. Who should go first and in
16 what order?

17 I had proposed a sequence that I hadn't
18 gotten a full endorsement of from the other parties,
19 but essentially, my recommendation is that Empire
20 would go first, that the Division would go second, and
21 that Goodnight would go third. And that if Pilot or
22 Al or Rice or Permian Line Services had any testimony,
23 they could follow the Division; and then -- but
24 nevertheless, Goodnight would go third in the
25 sequence.

1 In my view, Empire is like a
2 complainant. They're bringing an action to revoke
3 injection authority that's preexisting that has been
4 in place since the '60s or '50s, and so they're acting
5 as, like, a plaintiff. And they should put on their
6 case first and sets the stage for what their
7 assertions are and contentions that we would need to
8 respond to.

9 The Division is a good middleman. It
10 sets the Division's testimony; sets the stage for the
11 importance of the reliability of the Commission's
12 regulations; the reliance of the parties on those
13 regulations and orders. And then one of their
14 witnesses also goes into the UIC's safe-drinking-water
15 issues, which sets the stage for Goodnight's
16 testimony.

17 So our view is just in terms of
18 narrative, in terms of logic and sequencing, it makes
19 sense to have Empire go first, the Division second,
20 and Goodnight third.

21 So with that, I -- you know, I'm open
22 to whatever else parties have to say, but my sense is
23 that would be helpful to have that laid out so we know
24 what the sequences are going to be.

25 MR. RAZATOS: Okay. We'll just go down

1 the line again.

2 Mr. Moander?

3 MR. MOANDER: OCD's position on Mr.
4 Rankin's proposal is that it works; it makes sense.
5 There's no concern about the order, frankly. It
6 should make this hearing go smoothly.

7 But one thing I would want to note is
8 that OCD is not anticipating that Rice or Pilot have
9 any witnesses for some procedural reasons. And so
10 this should really just be in OCD -- in my estimation,
11 an issue of Goodnight, then -- or Empire, OCD, and
12 then Goodnight. And that should be the sum total of
13 testimony.

14 MR. RAZATOS: Okay.

15 Mr. Padilla?

16 Oh. Go ahead, Ms. Hardy -- sorry -- if
17 you're responding for everybody.

18 MS. HARDY: Thank you. I can respond
19 for Empire. We disagree that Empire is like a
20 complainant because Goodnight has its own applications
21 for injection that are part of this hearing and also
22 has one application for a de novo appeal -- a de novo
23 hearing -- before the Commission, so I don't think
24 that characterization is accurate at all.

25 That being said, I think Empire is

1 willing to go first. I don't think it makes sense for
2 OCD to go in the middle. I think we should have
3 Empire, Goodnight, and then OCD. And I think that we
4 would, of course, reserve the opportunity for rebuttal
5 to bring back our witnesses after, particularly,
6 Goodnight presents its evidence if we need to rebut
7 items that are raised. So that's our position.

8 MR. RUBIN: And my understanding, then,
9 is that Empire goes first, presents its case; then
10 Goodnight goes second, presents its response as well
11 as its case where it is the petitioner; and then OCD
12 would then proceed third. and then Empire would then
13 have an opportunity to rebut whatever Goodnight
14 presents as petitioner; is that correct?

15 MR. RANKIN: Well, I guess -- I'm glad
16 we're having this discussion. I guess, given the fact
17 that everything is written -- rebuttal is being
18 written -- so we have the written direct testimony,
19 all the parties are now responding and preparing the
20 rebuttal testimony. So the question is how do we
21 present the rebuttal and the sequence?

22 What we've done sometimes at the
23 Division level is to have one party go forth, either
24 summarize their direct testimony and summarize their
25 rebuttal all at once, and then they're crossed on both

1 their direct and rebuttal. That way, it's very
2 efficient because you're crossing them on both their
3 direct and rebuttal at one time.

4 Then there's an opportunity for
5 redirect based on the cross, and then we move on to
6 the next witness down the line.

7 My preference still -- and I guess it's
8 up to the Division where they want to fall: before or
9 after Goodnight -- my sense is, just based on the
10 narrative and the issues, that it makes sense for OCD
11 to go second because they're going to be establishing
12 their concerns about the injection in San Andres, and
13 having that on the record before Goodnight gets into
14 their testimony makes a lot of sense, just narratively
15 and logically.

16 But I guess the question is going to be
17 whether we just present each witness's direct
18 testimony first and then come back later and do
19 rebuttal. That makes no sense to me where everybody
20 has already seen and reviewed and analyzed the direct
21 testimony and we already have the rebuttal on the
22 record.

23 So my sense is that we should probably
24 just go ahead and have each witness present and adopt
25 their written testimony, both direct and rebuttal;

1 make them available for cross by all counsel and the
2 Commission; and then be available for redirect. That
3 way, we get through each witness in the most efficient
4 manner and don't have to bring them back up.

5 Now, if a party feels that something
6 was stated in cross or on redirect that requires a
7 surrebuttal, then I think the parties can move the
8 Commission to allow them to present another witness or
9 additional testimony in surrebuttal. But I think that
10 would be on a motion at the leave of the Commission.

11 MR. RAZATOS: Before we continue, Mr.
12 McKee, on the platform you had your hand up. Were
13 your concerns satiated or do you need something more?

14 MR. MCKEE: I just -- yes. My name is
15 Ryan McKee. I am outside counsel for Pilot. I just
16 wanted to raise a concern with OCD's statement
17 regarding excluding Pilot from Mr. Rankin's proposed
18 agenda.

19 We would like to reserve the right --
20 we're not for sure yet, but we would like to reserve
21 the right to potentially prepare a witness and present
22 a witness should we feel that's necessary to protect
23 our rights.

24 MR. RUBIN: So, Mr. Chair and Members
25 of the Commission, I think if you -- after hearing

1 from our folks here, do you want this pre-hearing
2 order to reflect the order of presentation?

3 I think as to Mr. McKee's concerns,
4 that could be raised at the appropriate time, but does
5 the Commission -- I think it might be helpful to the
6 attorneys know who goes first, second, and third.
7 And, of course, if you learned anything from baseball,
8 everyone wants last licks, but I do hear that there's
9 some agreement that Empire, then the Division, and
10 then Goodnight, so --

11 MS. HARDY: Mr. Rubin, I apologize. We
12 do not agree to have Goodnight go last.

13 MR. RUBIN: Oh. I'm sorry. Yes.

14 MS. HARDY: Yeah. Yes. It's our
15 position that it should be --

16 MR. RUBIN: I'm sorry.

17 MS. HARDY: -- Goodnight and then OCD.

18 MR. RUBIN: You're right. I misspoke.

19 MS. HARDY: Sorry.

20 MR. RUBIN: Thank you, Ms. Hardy.

21 MS. HARDY: And then with respect to
22 Mr. McKee's concern, I would state that the pre-
23 hearing order already provided deadlines for the
24 filing of testimony and Pilot did not file any.

25 MR. RUBIN: Yes. That's why Mr. McKee

1 can raise those at the hearing.

2 MR. MOANDER: And just add OCD's two
3 cents on this; OCD has to -- I am corralling two cats
4 for this hearing, so this is something that OCD
5 doesn't have a strong position on. If the Commission
6 decides to set us in the middle, we will be prepared
7 and present accordingly; or the OCC puts us at the
8 end, very well.

9 So we don't -- but I think, ultimately,
10 from OCD's perspective, Empire probably should go
11 first, but that's the only strong position, if you
12 could call it that, that OCD has.

13 MR. RUBIN: Okay.

14 MR. RAZATOS: So, Mr. Rubin, I think
15 Commissioner Ampomah does have one question. I'd like
16 to make sure we hear it.

17 DR. AMPOMAH: Yeah, so OCD more or less
18 being in the middle, being the player having more like
19 a uniform position, going second probably is not a
20 good idea from my opinion. Maybe last or first
21 because if they want to set the stage of the
22 program -- let's say, how the UIC works -- to educate
23 the Commission, they're probably first.

24 But having them going second
25 probably -- from my opinion, it will be more like we

1 go on and more or less listen to the referee and
2 probably use that some way, somehow, so maybe last
3 would be my preference.

4 MR. RUBIN: There's going to be some
5 triangulation between the three parties; I think. So
6 if I could have a motion to amend the previous order
7 to also reflect the order of Empire, Goodnight, and
8 OCD in presentation?

9 MR. RAZATOS: Before I do that motion,
10 Commissioner Bloom, did you have any comments or
11 concerns?

12 MR. BLOOM: On this matter, no.

13 MR. RAZATOS: Okay. I actually also
14 believe that it probably should be Empire, Goodnight,
15 and then OCD, in that order. So I move to -- the
16 motion that you mentioned about the order.

17 MR. RUBIN: Thank you. A second?

18 DR. AMPOMAH: I second.

19 MR. RAZATOS: Okay, so I think you have
20 your motion there, Mr. Rubin. So it'll be going
21 Empire, Goodnight, and then the OCD.

22 MR. RUBIN: Can I have a vote?

23 MR. RAZATOS: Please?

24 MR. RUBIN: Can I have just a quick
25 roll-call vote on that?

1 MR. RAZATOS: Oh, I'm sorry. Aye.

2 DR. AMPOMAH: Approved.

3 MR. BLOOM: Approved.

4 MR. RUBIN: Thank you very much. So
5 that motion passes. I will amend the pre-hearing
6 order accordingly to reflect this agreement as well.

7 MR. RAZATOS: Excellent.

8 MR. RUBIN: So again, thank you very
9 much. I need to step out. I will see you all in
10 about an hour or so.

11 MR. RAZATOS: Yeah.

12 Was there something else, Ms. Hardy?

13 MS. HARDY: No. I was just going to
14 say thank you.

15 MR. RAZATOS: Okay. Thank you all.
16 We'll definitely see you next month. And we wait to
17 hear from --

18 MR. BLOOM: Mr. Chair?

19 MR. RAZATOS: Yes, Commissioner Bloom.

20 MR. BLOOM: If you might, I had a
21 question of the parties.

22 MR. RAZATOS: Okay.

23 MR. BLOOM: Some months back at a
24 hearing, there was a question I wished that I would
25 have asked. It didn't occur to me, however, until I

1 was driving away from Pecos Hall. And it was related
2 to discovery, and so I wanted to check in and see how
3 we're doing on that front.

4 But the question -- the matter that Mr.
5 Rankin mentioned was that -- I believe he said that
6 there in an OCD hearing, the then-president of Empire
7 said that there was proof of a company making a play
8 in the San Andres formation and -- but said that no
9 documents to that effect had been turned over to
10 Goodnight. And I believe Ms. Hardy said that those
11 documents must have gone out the door with the CEO.

12 And it struck me upon reflection that,
13 you know, in today's environment, any document going
14 through a company would typically leave a trail of
15 emails that could be had at; that other people from
16 the company would have seen such a thing. A
17 geologist -- there would have been recommendations --
18 engineers -- people of that sort.

19 So the fact that some document like
20 that that was, you know, a major discovery for the
21 company -- for Empire; that it just walked out the
22 door with the CEO and all trace of it was gone after
23 that just got me to thinking. So that's -- I'm
24 wondering what's happened since then, and, you know,
25 have these documents appeared?

1 MS. HARDY: I can respond if you would
2 like.

3 MR. BLOOM: Please, Ms. Hardy.

4 MR. RAZATOS: Please do.

5 MS. HARDY: Sure. And, Commissioner
6 Bloom, I believe what you were referencing is
7 Goodnight had -- the former officer of the company or
8 representative testified at hearing on the Piazza
9 matter, which is now up for de novo review, and
10 Goodnight had asked Empire to produce documents that
11 that individual was talking about. And what we had
12 actually said was "He's not here anymore."

13 We don't know exactly what documents he
14 was talking about, but we are producing all the
15 documents that we have, and we have done that and are
16 still working through that with Goodnight. And it's
17 been an exhaustive search and an exhaustive
18 production, honestly. We've produced thousands of
19 pages of documents.

20 And, of course, Empire acquired this
21 unit from another operator, and so we've had to go
22 back and try to find documents for many years prior,
23 which -- we have provided what we have found. So I
24 think -- I believe that's what you're asking about if
25 I'm correct. And I think we've produced everything

1 that we have and are still working with Mr. Rankin on
2 additional document requests.

3 MR. BLOOM: Okay. Thank you. That's
4 helpful.

5 MS. HARDY: Yes.

6 MR. BLOOM: Mr. Rankin? Anything?

7 MR. RANKIN: Yeah. I'm sorry,
8 Commissioner Bloom, I -- Ms. Hardy helped reframe the
9 question for me -- the issue. But yeah. You know, we
10 haven't seen very many emails from Empire. The
11 discovery has been mostly focused -- or what they
12 provided to us has been mostly some technical
13 memoranda and data.

14 We had asked for emails, but given the
15 venue here, it's been difficult to really get into,
16 you know, discovery-level -- disputes at that level.
17 But suffice it to say I think for technical issues, I
18 believe we have what we need. We're continuing, as
19 Ms. Hardy referenced, to work through discovery.

20 We did just get some additional
21 discovery this week, I think, on some of the
22 additional log analyses that we've been asking for.
23 So I will raise a loud voice before the Commission if
24 in the end I don't believe that I've gotten something
25 that we needed to get. So far we've been able to --

1 MR. BLOOM: Oh. I lost the sound there
2 from Pecos Hall.

3 MR. RANKIN: Sorry. Maybe I was
4 mumbling. Commissioner Bloom, I think that my point
5 is simply that to the extent I need to raise an issue
6 with the Commission on discovery, I'll do so, and that
7 point hasn't come yet.

8 MR. BLOOM: Okay. Thank you.

9 MR. RANKIN: Thanks.

10 MR. BLOOM: Anything else?

11 MR. RAZATOS: Commissioner Bloom, did
12 that answer your question?

13 MR. BLOOM: It did. Thank you.

14 MR. RAZATOS: Anything else?

15 MR. BLOOM: No, thank you.

16 MR. RAZATOS: Commissioner Ampomah?

17 DR. AMPOMAH: No.

18 MR. RAZATOS: Okay. Now we'll end this
19 one. Thank you all. Let's take a ten-minute break so
20 then the next case can have a chance to set up, and
21 then we'll begin again.

22 (Off the record.)

23 MR. RAZATOS: Excellent. We're back
24 from our break. We're going to be continuing.

25 We're going to be moving on to, now,

1 our second pending case. It's case number 24912.
2 It's the application of Apache Corporation for an
3 adjudicatory hearing to consent -- to contest the
4 Division's conditions of approval on Apache
5 Corporation's scope of work for additional
6 investigation in Lea County, New Mexico.

7 This is going to be an evidentiary
8 hearing. Are the parties involved present?

9 MR. MOELLENBERG: Yes. Mr. Chair and
10 Commissioners, may it please the Commission, my name
11 is Dalva L. Moellenberg. I'm with the law firm of
12 Gallagher & Kennedy appearing on behalf of Apache
13 Corporation, and I'll let my co-counsel introduce
14 herself as well.

15 MR. RAZATOS: Thank you, Mr.
16 Moellenberg.

17 MS. CATALANO: Good morning, Chair and
18 Commissioners. My name is Samantha Catalano, and I'm
19 also with Gallagher & Kennedy on behalf of Apache.
20 Thank you.

21 MR. RAZATOS: And just so I get it
22 right; Catalano?

23 MS. CATALANO: Yes, sir.

24 MR. RAZATOS: Did I say it right?

25 MS. CATALANO: Yes.

1 MR. RAZATOS: Okay. With a name like
2 Gerasimos Razatos, you -- you become cognizant of
3 other people's names, so just wanted to make sure.
4 Thank you, Ms. Catalano. I appreciate it.

5 Anybody else?

6 MR. TREMAINE: Mr. Chair, this is Jesse
7 Tremaine for the Oil Conservation Division.

8 I apologize; I very much prefer to
9 attend and participate in person, but like some others
10 today, I have been quite under the weather this week
11 and am trying to avoid contaminating your room. So I
12 will be attending remotely, and Mr. Powell and Ms.
13 Romero are present and can facilitate anything that
14 needs to happen live.

15 MR. RAZATOS: Excellent. Thank you,
16 Mr. Tremaine.

17 Anybody else or is that it? That's it?
18 Excellent. So I do know that we want to do some
19 opening statements before we start, so Mr.
20 Moellenberg, we'll start with you.

21 MR. MOELLENBERG: Thank you, Mr. Chair,
22 Commissioners. Once again, may it please the
23 Commission, let me just start by noting we do have one
24 pre-hearing issue that arose as a result of a filing
25 last night. Perhaps we should address that when Mr.

1 Rubin is present, but if you prefer we can discuss
2 that now.

3 MR. RAZATOS: Sure. We can wait until
4 Mr. Rubin is present and then we can go for that. If
5 that's okay with you, Mr. Rubin will be here in about
6 an hour, so we'll probably maybe do opening statements
7 and then take a break and see.

8 MR. MOELLENBERG: Yeah, or we may be
9 able to proceed depending on if Mr. Tremaine is
10 comfortable. It's an issue that would come up a
11 little later in the hearing, so we may be able to get
12 the evidence started and then come back to that. I
13 just wanted to flag it up front that we have that
14 issue.

15 MR. RAZATOS: Okay. Since you flagged
16 it, Mr. Tremaine, do you have any concerns if we
17 continue until Mr. Rubin comes or do we want to hold
18 out continuing until Mr. Rubin is here to hear this
19 request?

20 MR. TREMAINE: Mr. Chair, I don't
21 believe -- well, I'm going to reference this during
22 the opening, so as long as that's okay, I think it
23 won't become an issue unless and until I attempt to
24 enter OCD Exhibits 8 and 9. So I'm comfortable
25 tabling that issue for now.

1 I don't believe it will impact Apache's
2 case in chief or our cross on any of those witnesses.

3 MR. RAZATOS: Okay. Mr. Moellenberg,
4 if you're okay with it, then let's just hold out until
5 we come to that point. Is that --

6 MR. MOELLENBERG: I think that's fine.
7 I think we can -- actually, that probably makes sense.
8 We can address it at the point when the Division seeks
9 to introduce testimony on that or moves for admission;
10 whatever makes sense. Maybe we can consult with Mr.
11 Rubin at some point and see if we need to address it
12 earlier.

13 MR. RAZATOS: It's a deal. So when Mr.
14 Rubin comes, maybe we could take a break and then
15 consult and go from there.

16 MR. MOELLENBERG: Okay.

17 MR. RAZATOS: Great. Thank you.

18 MR. MOELLENBERG: Well, thank you. Let
19 me give a brief opening statement. Apache Corporation
20 has applied for this hearing to contest some specific
21 conditions that the Division attached to its approval
22 of a plan for further delineation of groundwater
23 contaminants at the location at issue.

24 And that plan was submitted in early
25 May of 2024, and the conditions, I believe, were

1 received in late July of 2024. And we'll go over
2 that, of course.

3 And the conditions at issue involve,
4 primarily, a number of additional monitoring wells
5 that the Division is requiring -- if the conditions
6 are approved -- Apache to install and subsequently
7 sample and monitor for groundwater conditions at the
8 site.

9 There's a fairly long history of
10 documentation back and forth on this site and a number
11 of exhibits that Apache has identified for the record,
12 most of which were actually in Division records and
13 the electronic system prior to the hearing, and we'll
14 go over those.

15 Apache intends to present three
16 witnesses. Our first witness will be Mr. Barrett
17 Bole, who is an environmental supervisor with Apache.
18 Mr. Bole is not able to be present in person today, so
19 he will be appearing remotely on the platform.

20 And our second witness is Mr. Larry --
21 the person for Apache responsible for management of
22 this particular project early in the stages following
23 the discovery and reporting of the particular release
24 that initiated this matter.

25 And then our final witness is Mr. John

1 Grams, and Mr. Grams is a consultant to Apache with
2 the firm, Terracon. And Mr. Grams will go over his
3 review of the technical information in this case and
4 then focus on a comparison of Apache's proposal as
5 subsequently modified after some meetings with the
6 Division versus the conditions of approval established
7 by the Division.

8 And that, from our perspective, is the
9 focus of this case is the need and reasonableness of
10 the additional monitoring well requirements,
11 particularly in the context of the release that is at
12 issue here. And that concludes my opening.

13 I do understand we have a court
14 reporter on remotely; is that correct?

15 MR. RAZATOS: Yes.

16 MR. MOELLENBERG: Okay. Thank you.

17 MR. RAZATOS: Sorry. It is. We do
18 have the court reporter remotely, and I'm not sure who
19 the court reporter is, but they are on there, so --

20 MR. MOELLENBERG: Thank you.

21 MR. RAZATOS: Yes. Thank you, Mr.
22 Moellenberg.

23 Mr. Tremaine?

24 MR. TREMAINE: Good morning, Mr. Chair,
25 Commissioners, and parties. Thank you. We are here

1 at this hearing today because after several years,
2 there remains a major oil-and-gas-related release or
3 releases that are impacting the environment and, quite
4 potentially, groundwater.

5 So to kind of lay the groundwork at a
6 summary level, initially, OCD approved Apache's
7 characterization and remediation plans from 2019. So
8 I want to clarify at the outset that OCD has not
9 penalized Apache for any actions taken under that
10 initial plan.

11 In fact, the Division, as you will hear
12 today, has provided Apache with extensive additional
13 time to develop a delineation and ultimately a
14 remediation plan for the site. What OCD is concerned
15 with and primarily what we will talk about today is
16 Apache's conduct since OCD reassessed the incident
17 beginning in 2022.

18 OCD was alerted to concerns with
19 Apache's closure report. Those concerns were raised
20 initially by the landowner. At that time in 2022, OCD
21 reviewed the sampling information -- the initial
22 sampling information and the latest sampling
23 information -- and determined that there may be
24 additional work necessary.

25 Since that time, there has been

1 extensive communication between the Oil Conservation
2 Division, the landowner, the operator, Apache, and
3 consultants and counsel for all parties. Since OCD's
4 first communication with Apache, in which we indicated
5 that further delineation -- or investigation or
6 remediation may be necessary, it has been over 31
7 months.

8 OCD's concern remains that since July
9 2022, Apache has repeatedly taken only the bare
10 minimum steps required by OCD to further the
11 referenced delineation.

12 Each step of the process has yielded
13 more questions and less answers, and in OCD's opinion,
14 it appears increasingly likely that the incident --
15 the problem at hand was larger than originally
16 contemplated and was continuing to or increasingly
17 impacting groundwater.

18 At this time, OCD cannot determine from
19 Apache's reports if there was one or more releases,
20 whether they are contained, or what the next necessary
21 steps for remediation are, so I want to clarify.

22 We'll get into this with Mr. Powell's
23 testimony, but the impacted area on the review is
24 massive, and groundwater samples are trending in the
25 wrong direction, so either the originally reported

1 release is substantially larger than was contemplated
2 or there are multiple releases or both.

3 In either case, it's the Division's
4 position that Apache has substantial ongoing
5 delineation and remediation requirements under Part 29
6 and then potentially under Part 30; we're not there
7 yet, but potentially under Part 30.

8 In May 2024 and September 2024
9 proposals from Apache, those were inadequate to
10 address and delineate at the time. They're now, given
11 the latest sampling information, wholly inadequate to
12 address issues present from the Q4 2024 sampling
13 report.

14 So at this time, OCD seeks to compel
15 the identification of all sources of oil and gas
16 contamination in the area of concern, which we'll
17 identify in more detail with Mr. Powell's testimony,
18 and to compel the quite prompt delineation of the
19 impacted areas.

20 So to be -- the conditions of approval
21 demanded by OCD are, in our opinion, the minimum
22 necessary to delineate. There will necessarily be
23 substantial work after that delineation for Apache to
24 complete -- possibly further soil delineation --
25 because you'll hear through the testimony today we're

1 talking about, largely, groundwater monitoring wells.

2 There's also an issue of soil sampling.
3 Some soil samples are gathered through the drilling of
4 those groundwater monitoring wells, et cetera, but
5 there could be further delineation through both
6 monitoring wells and soil sampling.

7 So whatever order is issued by the
8 Commission in this case will likely not be the end of
9 the matter. As such, we ask for an order clearly
10 establishing specific and enforceable guidelines
11 through the conditions of approval.

12 I was planning to briefly address the
13 rebuttal exhibit filed last night and OCD's additional
14 conditions of approval. I'm not going to go into
15 details; I understand we'll receive an objection to
16 those, but to lay the groundwork, Apache submitted the
17 fourth-quarter 2024 sampling data by email to the Oil
18 Conservation Division on January 8, 2025. That's the
19 day before our pre-hearing statements were due.

20 To my knowledge, it was not and has not
21 been submitted through OCD permitting as a C-141 or
22 groundwater abatement plan or any type of report
23 through OCD permitting. So that was not identified
24 and incorporated in OCD's pre-hearing statement, which
25 was submitted on January 9, 2025

1 So the content of that that we will
2 discuss has OCD increasingly concerned that levels of
3 contamination are trending in the wrong direction and
4 that it presents potential anomalies that need to be
5 addressed through delineation. Again, the content of
6 that renders OCD's original proposed conditions of
7 approval, in our opinion, inadequate, and more are
8 necessary.

9 We can address the procedural and
10 admission matters when we get to that point, but our
11 intention is to address the new sampling through OCD
12 Rebuttal Exhibit Number 8 with Rosa Romero first and
13 then OCD Exhibit 9, addressing the actual proposed
14 conditions, with Mr. Powell.

15 So there's kind of two different things
16 going on there; Exhibit 8 is responding to what, to
17 OCD, is the new information. Substantively, Exhibit
18 9, which I suspect is really more of the basis for an
19 objection, is discussing what OCD thinks should happen
20 as a result of that new information.

21 So I agree with Mr. Moellenberg that
22 there's a quite substantial history and record here.
23 What we've attempted to do is distill this to a
24 manageable exhibit list, in summary.

25 So we have two OCD witnesses today.

1 Rosa Romero is our environmental bureau chief, and she
2 will be going through the background and history of
3 the incident in the case from OCD's perspective,
4 relying on and summarizing key reports. Most of the
5 exhibits will be coming in addressed initially by Ms.
6 Romero.

7 And then we have Brandon Powell, who is
8 our deputy director, and he is going to go over OCD's
9 concerns and open questions based on the content of
10 the reports submitted by Apache, and then if admitted,
11 as I addressed in Exhibit 9, additional conditions.

12 So what we've done with that exhibit is
13 combined the original language of the conditions of
14 approval that are the subject matter of the
15 application for this hearing and then combined that
16 with the additional proposals by OCD.

17 So at the end of this hearing, we
18 believe that the record will show that Apache has,
19 since July of 2022, failed to develop an adequate
20 investigation and delineation plan and that OCD's
21 updated conditions of approval are necessary for
22 protection of the environment and correlative rights.
23 Thank you.

24 MR. RAZATOS: Thank you, Mr. Tremaine.
25 Appreciate it. So we've got these opening statements.

1 I think now, Mr. Moellenberg, we will turn over to
2 you.

3 MR. MOELLENBERG: Thank you Mr. Chair,
4 Commissioners. Apache calls as its first witness Mr.
5 Barrett Bole. And Mr. Bole is on the platform, I
6 believe.

7 MR. RAZATOS: Yes. I actually see his
8 picture, so let's give Sheila a moment to pin his
9 profile. Excellent.

10 Mr. Bole, can you hear us?

11 MR. BOLE: Yes. Can you hear me?

12 MR. RAZATOS: Yes, we can. Thank you.
13 We'll have our court reporter swear you in and then we
14 can start with the questioning.

15 THE REPORTER: Mr. Bole, please raise
16 your right hand.

17 WHEREUPON,

18 BARRETT BOLE,
19 called as a witness and having been first duly sworn
20 to tell the truth, the whole truth, and nothing but
21 the truth, was examined and testified as follows:

22 MR. RAZATOS: Excellent. Thank you.

23 Mr. Moellenberg?

24 MR. MOELLENBERG: Thank you, Mr. Chair.

25 //

1 DIRECT EXAMINATION

2 BY MR. MOELLENBERG:

3 Q Good morning, Mr. Bole. Thanks for joining
4 us this morning for this hearing. Would you please
5 begin by stating your name and business address for
6 the record?

7 A Yes. My name is Barrett Bole and my
8 business address is in Midland, Texas, at 33 --
9 sorry -- 303 Veterans Air Park Lane.

10 Q And on whose behalf are you providing
11 testimony this morning?

12 A For my employer, Apache Corporation.

13 Q And did you provide a copy of your written
14 resume that was submitted along with Apache's pre-
15 hearing statement in this matter?

16 A Yes. I believe that's Exhibit B.

17 Q Thank you. Would you please describe your
18 educational history?

19 A Yes. I obtained a Bachelor of Science and a
20 Master of Science in geology from Sul Ross State
21 University in Alpine, Texas, in 1993 and 1997,
22 respectively.

23 Q And can you provide a summary for the
24 commissioners regarding your past employment history?

25 A Sure. I originally started my career with

1 Diamond Shamrock, which is now Valero Corporation, in
2 1995 in Houston, Texas, as an environmental
3 coordinator. Subsequently, I worked in multiple
4 environmental consulting firms -- Inserv, TG
5 Resources, and ESA1 -- from 1998 until 2003, when I
6 joined Terracon as an environmental project manager.

7 I was transferred to Midland in '04 as an
8 operations manager and then ultimately office manager.
9 I joined Apache in 2012 as a senior environmental
10 technician in order to manage groundwater sites and
11 remediation projects.

12 Q Thank you, Mr. Bole. And what is your
13 current title with Apache?

14 A My current title is environmental supervisor
15 for U.S. onshore operations.

16 Q And what are your responsibilities as
17 environmental supervisor?

18 A Day to day is to respond to environmental
19 incidents that arise in the field. I also do annual
20 things like Tier II reporting, SPCC updates, and
21 generally a lot of different regulatory interface
22 projects.

23 Q Thank you. Do you have experience with
24 groundwater contaminant delineation projects, and if
25 so, can you summarize that experience?

1 A Sure. Yes.

2 When I started at Diamond Shamrock, it is --
3 it was during the leaking petroleum storage tank craze
4 of the 1990s. I investigated probably 70 to 90
5 different leaking petroleum storage tank sites in the
6 Gulf Coast, installing hundreds -- even maybe up to a
7 thousand -- monitoring wells from Beaumont to Wharton
8 up to Huntsville and Galveston -- everything in the
9 Gulf Coast area. That was my first job.

10 And -- and then as a consultant, I did a lot
11 of Phase I and Phase II investigations, which led me
12 to do drilling projects in Indiana, Colorado, New
13 Mexico, more of Texas, and as far away as Rhode
14 Island.

15 Q Are you aware of a release incident in the
16 vicinity of a well known as the East Blinebry Drinkard
17 Unit Number 37 well, and if so, can you describe how
18 you became aware of that issue?

19 A Yeah, so we did have a release of produced
20 water at that location near the current location of
21 TMW-7. That release migrated due to topographic
22 distances into the depression, which is adjacent to --
23 there on the site -- to a windmill.

24 Those soils were -- I don't know if -- I --
25 sorry. Those soils were -- there was a dig and haul

1 done -- an excavation. Of course, Mr. Baker in the
2 room was -- was really in charge of this project at
3 the time. So at -- at that time, we weren't aware
4 that there was going to be a groundwater impact, but
5 we did subsequently do some soil borings that
6 suggested there was migration to the aquifer.

7 Q So at some point in the investigation of
8 this release and the area, did you take on additional
9 roles regarding the project?

10 A Yes. In the fall of 2023, when it was very
11 apparent that this was a -- a larger project than we
12 originally anticipated through those results of the
13 later wells -- 5, 6, and 7. And we proposed to
14 install wells, I believe, up to 10, and then up to the
15 current number of 24.

16 I more or less transferred ownership of
17 this -- this spill and this remediation project from
18 Mr. Baker to myself since I had more groundwater
19 experience than Mr. Baker did.

20 Q During your career, have you worked on
21 releases similar to the release at issue here?

22 A Similar but different. The majority of my
23 expertise in groundwater contamination is from
24 petroleum storage tanks as mentioned previously, crude
25 oil releases, condensate releases, dry cleaner

1 releases such as perchloroethylene and vinyl chloride.

2 Of course, the primary concerns with those
3 projects as it relates to well installation is the
4 appearance of free liquids on the aquifer, which is
5 known as LNAPL. And so this is the first plume I've
6 worked on which -- it was strictly for inorganic
7 contaminants such as the chloride and TDS. First
8 significant plume.

9 Q And you mentioned TDS. I don't know if we
10 have described what that means. Can you explain to
11 the commissioners what TDS is?

12 A It's total dissolved solids in your -- your
13 groundwater.

14 Q Okay. Did any of the prior releases on
15 which you worked have similar geology and conditions
16 such as the site at issue here?

17 A Not -- not fully identical. A few of these
18 monitoring wells, but the majority of them are what
19 are called fully penetrating, so they've gone through
20 the entire aquifer into red beds. Generally, chasing
21 crude oil or gasoline plumes, you're not necessarily
22 going through the whole aquifer because you're dealing
23 with more floating contaminants.

24 So my past experience with LNAPL basically
25 means free gasoline on the aquifer, so we didn't

1 really need to know aquifer thicknesses to start the
2 remediation on the locations.

3 Q Are you familiar with the initial
4 groundwater monitoring efforts that Apache conducted
5 at the area around the release, and could you describe
6 your understanding of those?

7 A Yes. So, initially, when we had the soil
8 release and we had the depression nearby, there was a
9 thought that groundwater might be shallower. And
10 so -- and honestly with the windmill there, we -- we
11 identified that as a potential receptor. And I know
12 in the first rounds we had sampled the windmill, and
13 that's in our Exhibit A-2; I believe.

14 And then subsequently, to -- to make sure
15 that we didn't have anything moving towards the
16 windmill, we installed monitoring wells, one which is
17 between the windmill and the footprint of the spill;
18 and then we put an upgradient one north of that area,
19 which we call TMW-2.

20 Q And with regard to these wells, you
21 referenced Apache Exhibit A-2. It's your
22 understanding that that exhibit is the initial
23 remediation plan submitted by Apache?

24 A Yes.

25 Q And did that remediation plan contain the

1 initial results of groundwater sampling from the
2 windmill and the two wells?

3 A Yes, it did.

4 Q Okay. Do you recall what those initial
5 sample results were or what they indicated?

6 A I recall the chloride levels in the windmill
7 and TMW-1 did not exceed the state cleanup standards.
8 And while TMW-2 did contain chloride at 338, which
9 does slightly exceed the -- the 250 cleanup standard,
10 that also falls within what's potentially a naturally
11 occurring slightly elevated level for chlorides in
12 these -- the aquifers of the desert Southwest.

13 Q And you mentioned cleanup standards. Can
14 you identify your understanding of the source and
15 meaning of what you refer to as the cleanup standards?

16 A Yes. Well, at the federal and then at the
17 state levels, and everybody has a different set of
18 cleanup standards; New Mexico's are quite strict, and
19 they have set for chloride a cleanup standard of 250
20 milligrams per liter or also parts per million.

21 I am -- I don't recall the TDS off the top
22 of my head, but a -- a TDS exceedance can be naturally
23 occurring just from turbidity in the aquifer, so
24 it's -- it's less assigned to a petroleum release than
25 actual chlorides would be.

1 Q And you mentioned a 250-milligram-per-liter
2 level for chlorides. Do you know if that comes from
3 the New Mexico Water Quality Control Commission
4 Groundwater Standards?

5 A I -- I believe it does.

6 Q Okay, so we -- we talked a little bit about
7 the remediation plan, Exhibit A-2. Did that plan
8 provide anything with regard to groundwater monitoring
9 going forward?

10 A Yes. I believe it -- it included the plan
11 to move forward with quarterly groundwater monitoring.
12 And I'm not sure if that was the exhibit, but it was
13 also decided to advance two additional wells, more or
14 less to get a groundwater gradient.

15 For those who don't understand, you have to
16 have at least three survey points that are in some
17 triangular form or better in order to determine a
18 groundwater gradient. And the windmill and 1 and 2
19 pretty much lined up in a linear fashion, so 3 and 4
20 had to be installed to definitely give us an idea of
21 movement in the groundwater.

22 Q And is it your understanding that those
23 additional two wells -- the agreement to do those --
24 was discussed and conferred with OCD?

25 A Yes, and I believe that was in our Exhibit

1 A-3.

2 Q So A-3 is the documentation of the
3 communications regarding the additional two wells,
4 TMW-3 and TMW-4?

5 A Yes.

6 Q Okay, so you've mentioned that Apache did
7 quarterly monitoring of these wells. Was that -- were
8 the monitoring results reported to the Division, and
9 can you describe how those were reported?

10 A I believe those were reported in the
11 December 23, 2020, annual groundwater monitoring
12 report, which was approved by the OCD on July 16th of
13 2021. And they approved of our continued quarterly
14 monitoring of groundwater in the wells 1 through 4 as
15 well as the windmill.

16 Q Are you aware whether the Division approved
17 that initial annual groundwater monitoring report?

18 A Yes. I believe it was approved on July 16,
19 2021.

20 Q Around this same time, are you aware whether
21 Apache also submitted a closure report regarding this
22 incident?

23 A Yes. We did -- we did submit a closure
24 report -- it was dated December 31, 2020 -- which was
25 addressing the soil remediation, which was an

1 excavation and -- and disposal. That was approved by
2 the OCD without conditions on August 27, 2021.

3 Q With regard to that closure report, I mean,
4 first of all, can you identify -- is there an Apache
5 exhibit that is that soil closure report?

6 A Yes. That would be Exhibit A-5.

7 Q Okay. Let me back up a moment. I may have
8 missed one. We talked earlier about the annual
9 groundwater monitoring report. Is that in one of
10 Apache's exhibits as well?

11 A Yes, that's Exhibit C-1.

12 Q C-1. Thank you. So following the
13 Division's approval of Apache's closure report, was
14 there -- in addition to the ongoing monitoring, was
15 there any discussion of some additional monitoring
16 wells?

17 A The closure report contained an agreement
18 that Apache would continue the quarterly monitoring of
19 1 through 4 and the windmill. However, yes; in August
20 8th of 2022, the OCD requested two additional
21 monitoring wells, and those were in response to
22 slightly elevated chlorides in TMW-4.

23 I believe the initial results of that -- of
24 TMW-4 was -- let me see; I have it written down -- a
25 little over a thousand: 1,020 milligrams per liter.

1 So that was the first of the four monitoring wells,
2 which exhibited an elevated concentration suggestive
3 of the groundwater being impacted by this release.

4 Q So can you talk a little more specifically
5 about the discussions regarding two additional
6 monitoring wells and the exhibit that references those
7 discussions?

8 A Yes. That would be Exhibit B-1, a email
9 from Michael Bratcher to Larry Baker and myself that
10 was on October 3rd of 2022, which asked us to install
11 wells 5 -- or TMW-5 and TMW-6. And those were
12 installed on November 28th of 2022.

13 Q And up to this point, are you aware of any
14 refusal by Apache to install additional monitoring
15 wells when requested by the Division?

16 A No, no. We -- we installed the wells as
17 they were requested.

18 Q Okay, so at this point, I believe -- would
19 you agree with me; we're up to wells TMW-5 and TMW-6?
20 After those wells were installed, do you know what
21 information was derived from the sampling of those
22 wells and the next steps here?

23 A Yes. After those wells were installed, it
24 was obvious that the plume was increasing towards the
25 southeast, and so we were asked and agreed to install,

1 I believe, four additional monitoring wells -- TMW-7
2 through 10 -- and that was done between June 12th and
3 14th of 2023 under Exhibit B-2, our 2023 Q4
4 Groundwater Monitoring Report -- Report.

5 Q So Exhibit 2 is the groundwater monitoring
6 report that provides some of the results from these
7 additional four wells?

8 A I believe so.

9 Q Okay. So after -- well, what happened after
10 the wells TMW-7 through TMW-10 were installed and
11 initially monitored?

12 A So yes, the results of those wells indicated
13 more increasing chloride concentrations. And in
14 October of 2023, the OCD requested that we install as
15 many wells as necessary to delineate the extent of the
16 chloride plume.

17 Prior to the drilling campaign, Apache and
18 OCD had identified a minimum of five or six wells, but
19 during the drilling campaign, in an effort to expedite
20 delineation based on additional information from the
21 new wells, we attempted to use field screening
22 techniques in order to complete the delineation.

23 And based on the field data, we installed
24 monitoring wells 11 through 24. And this again was in
25 the fall -- November of 2023. So that was an

1 additional 14 monitoring wells, which was a pretty
2 extensive mobilization. In -- in my career, I've
3 never installed 14 monitoring wells in -- in one
4 initiation.

5 The results of that were -- were fairly
6 confident. Using the word, "delineation," is
7 something to find the extremities or the boundary. We
8 barely had -- pretty much had the plume delineated
9 except to the south of 23.

10 While we had some exceedances around the
11 perimeter of 250, they were not egregious. They were,
12 you know, less than 500 -- 500 to 600 -- but
13 definitely with the core of the chlorides confined to
14 a central or a targeted area in the middle.

15 Q So just to add a detail here, you mentioned
16 14 additional monitoring wells. What was the period
17 of the installation of those wells?

18 A It was November of 2023. I think it went
19 into December slightly, so it was -- it was four to
20 five weeks in the field; I believe.

21 Q Thank you. And, Mr. Bole, you mentioned
22 that some field data was collected during that
23 drilling campaign to try to complete the delineation.
24 Could you describe what that field data collection was
25 and any limitations that exist regarding the use of

1 field data?

2 A Yes, so the drilling was done with an air
3 rotary rig, and, you know, when they would encounter
4 the aquifer, there would be water that was blown back
5 up due to the airstream. And our consultants were
6 capturing that water, and I'm not sure if they were
7 filtering it or not; I -- I wasn't on site for
8 everything.

9 But they used field test strips and,
10 obviously, if the water was significantly saline,
11 those test strips were spiking and we knew we needed
12 to move out farther. And if they weren't spiking,
13 that's where we ceased moving outward. And by
14 "spiking," I mean we were trying to -- anything over
15 300, 350, we were jumping outward; anything inside of
16 that, we wanted to see what the actual conditions
17 were.

18 Q So just to recap a little bit, you started
19 this campaign with the idea that you'd probably need
20 at least five or six wells based on the field data.
21 You ended up installing 14 additional wells during
22 this campaign; is that right?

23 A Yes. That's correct.

24 Q And was stopping work at 14 -- was that
25 based on the best information you had from the

1 collection of field data?

2 A Yes, it was. And it was at that time we
3 felt, again, we had delineated the extent of the plume
4 from a north, south, east, west standpoint, and we
5 needed to develop the wells and collect samples.

6 It's pretty typical when a well goes in, you
7 know, you get four quarters before you decide on
8 marching out any further unless, of course, you have
9 free oil or gasoline on the groundwater.

10 So at that time we felt we had adequate --
11 adequately delineated the plume again from a north,
12 south, east, west standpoint to a -- not necessarily
13 to the OCD cleanup of 250, but to numbers that were
14 reasonable to presume potential background or were on
15 the perimeter of being less than 250.

16 Q Thank you, Mr. Bole. So I want to add a
17 little more detail about the next step. We talked a
18 little bit about the field data collection during the
19 drilling campaign itself, and I think you mentioned
20 well development following the initial well
21 installation.

22 Can you tell us a little more about the well
23 development and then subsequent sampling and analysis
24 of groundwater from those monitoring wells?

25 A Yes, I can. So after a monitoring well is

1 installed, the -- the bore is opened with the drill
2 bits. There is slotted PVC piping and then solid PVC
3 piping. You install the well with a sand filter pack
4 and then with a sealed grout to the surface.

5 But what has happened during installation is
6 you have introduced a lot of free sediment into the
7 well, and so the development is to get that free
8 sediment out of your sand pack and your well bore so
9 that you have the clearest water possible to sample
10 with the least amount of influence from suspended
11 solids.

12 And that's done by surging and pumping
13 different volumes of water until you -- you visually
14 get a -- a clear water stream.

15 Q Thank you, Mr. Bole. So you developed the
16 wells and then, as I understand it, you took new or
17 additional samples. Describe that and the lab
18 analysis and summarize for the commissioners what was
19 learned at this stage of the project.

20 A Yeah, so I wasn't present for the
21 groundwater sampling, but it's my understanding it was
22 done using a low-flow technique, which is a pump
23 slowly lifting the water. The water goes through a
24 multiphase meter, which measures temperature, pH, and
25 other parameters.

1 And when those all kind of get into a steady
2 state, then that's when it's considered true aquifer
3 and those samples are then collected by the consultant
4 and -- and run to the laboratory. And so the results
5 we have from March -- and I don't have March in front
6 of me, but we -- we did suggest, with the exception of
7 TMW-23, we had a pretty good delineation of the plume.

8 Again, the higher concentrations are
9 surrounded by intermediate concentrations and it gets
10 lower outward, looking like a perfect contaminant
11 plume of -- of any site I've seen that's been almost
12 fully delineated.

13 Q So after you got the initial lab results,
14 did Apache provide those to the Division?

15 A Yes, we did. That was in -- it was in March
16 or April of 2024. I don't have the exact date in
17 front of me, Dalva. I apologize.

18 Q Okay. Fair enough. No, that's good. I
19 just want to make sure the commissioners understand
20 the timeline of events here. So at any rate, once you
21 obtained those results, were there further discussions
22 between Apache and the Division?

23 A There were. We -- we had a telephone
24 call -- I believe it was in early April -- about
25 additional delineation in which Apache discussed

1 the -- the need to look at about five areas where we
2 needed another monitoring well moving outward to
3 delineate to the 250 mark. And the conversations were
4 generally positive, and I felt like we all had a good
5 path of agreement on where the next direction was
6 going to go.

7 Q As part of those discussions and the
8 subsequent documentation, did Apache believe it had
9 identified the likely source of the most elevated
10 levels of chlorides?

11 A We -- we had a suspected source of a
12 junction box near TMW-7, and that's where the larger
13 leak that came to the surface originated from. In the
14 oil industry, there are potentials out there for pipes
15 to leak at what's considered the six o'clock position
16 and slowly leak into the ground over years and -- and
17 not be identified.

18 And so being the location where that
19 ruptured and flowed to the surface, and no other lines
20 are in the area, we -- we identified that as -- as our
21 potential source, and it was proposed to install a
22 soil boring right near that to look for chlorides in
23 the upper soil zone.

24 Q Thank you. So did these discussions
25 culminate in a written proposal from Apache for

1 additional monitoring wells and delineation work?

2 A Yes. We -- we submitted a scope of work
3 dated May 8, 2024, which outlined the -- the
4 discussions that we had had with the OCD.

5 Q And did that present a specific proposal for
6 additional work from Apache?

7 A Yes, it did. And that's in Exhibit B-3.

8 Q Thank you. And at that time, did you
9 believe that the written scope of work dated May 8th
10 reflected the discussions and -- between Apache and
11 the Division and the Division's request for additional
12 delineation work?

13 A Yes, I did.

14 Q Did OCD approve the May 8, 2024, Apache
15 proposal?

16 A No. They -- they did not. We received a
17 response from the OCD on July 24th that -- that did
18 not approve the work plan.

19 Q Did that communication establish additional
20 conditions for the Division's approval of the May 8,
21 2024, plan?

22 A It did. The OCD was requesting an
23 additional 13 to 14 monitoring wells, many of which
24 were inside the plume, which, you know, had already
25 been delineated again to the exterior. These were

1 wells being put in the interior in an attempt, I
2 guess, just to gather a -- another data point, which
3 are generally extrapolated.

4 You know, if -- if you have two wells, and
5 one is 500 and one's a thousand, you extrapolate that
6 halfway in between is 750. So we were really
7 surprised by the amount of wells being asked to be
8 installed in, basically, the inner part of the plume.

9 Q And based on the conditions of approval,
10 what would that have meant in terms of the total
11 number of monitoring wells in response to this release
12 incident?

13 A It would have pushed it close to 40 total
14 monitoring wells.

15 Q Okay. So you expressed that you were
16 surprised by the conditions of approval. Did Apache
17 raise concerns with OCD once it had received and
18 reviewed the conditions of approval?

19 A Yes. We did, and we prepared -- and after a
20 telephone conversation we had with them, we prepared
21 an alternative work plan, which lifted the monitoring
22 wells from five to seven, gave the OCD the right to
23 select four locations for us to install soil borings,
24 and also included the work to do actual aquifer pump
25 tests so we can move this from an investigation to an

1 actual remediation project.

2 And so we -- again, we -- we gave in on two
3 additional wells, a couple of additional borings, and
4 the rest of which was in the original work plan.

5 Q And are you referring in this -- what you
6 just described -- to a revised work plan dated, I
7 believe, September 23rd of 2024?

8 A I think it's the twenty- -- September 24th.
9 Might be 23rd, 24th, but yes, and that's under Exhibit
10 B-4.

11 Q B-4. Okay. Thank you. And just to jump
12 back, you mentioned that Apache submitted this revised
13 work plan. Did Apache provide any detail in its
14 discussions with the Division on its reasons for
15 objecting to all of the additional monitoring wells
16 that the Division wanted?

17 A I -- I can't clearly answer that yes or no.
18 I believe that our -- our position was, as I
19 mentioned, that there were a lot of infield wells that
20 at the time would have only been to produce more data
21 and not actually advance this to a remediation
22 project.

23 Q Right. What was the Division's response to
24 the September 2024 modified work plan that Apache
25 submitted?

1 A I -- I believe an email was sent to our
2 counsel notifying us that the OCD intended to cancel
3 all further meetings and terminate discussions to
4 resolve Apache's concerns. Their counsel advised us
5 that if we weren't willing to fully comply with their
6 conditions of approval, we would need to apply for a
7 hearing.

8 Q Mr. Bole, in your experience and based on
9 your expertise in dealing with delineation of
10 groundwater contaminants, do you believe that Apache's
11 September 2024 work plan was a reasonable compromise
12 and good faith attempt on behalf of Apache to address
13 the Division's concerns?

14 A Yes. In -- in my 30 years' experience,
15 monitoring wells are put in, and unless you have free
16 phase product -- crude oil -- floating on the aquifer,
17 as I've mentioned before; gasoline, or DNAPL near a
18 dry cleaner, generally you collect, you know, at least
19 two, usually four, quarters of data. And then you
20 make your selections on where you're moving your
21 wells.

22 We were being asked to place wells based on
23 one sampling event, which is just not an industry
24 standard, again, unless you have 2 feet of crude oil
25 floating on the aquifer.

1 In this case, we have chlorides as the
2 primary contaminant of concern, and so it -- it didn't
3 seem -- it seemed like the response from the OCD was a
4 little excessive, considering, again, we were pretty
5 much delineated from a north, south, east, west; we
6 had identified the aquifer was thicker in the middle
7 and likely a sink for these contaminants; and that we
8 were prepared to do an aquifer pump test.

9 And why that, you know, was -- was not
10 acceptable is -- is -- I -- I don't know.

11 Q Would you agree with the characterization
12 that Apache's objective during this process was just
13 to do the bare minimum that might be required at any
14 point in time?

15 A No, not the bare minimum. Mobilizing and
16 installing 14 wells is way above and beyond bare
17 minimum.

18 Q Mr. Bole, does this conclude your direct
19 testimony?

20 A Yes.

21 Q And is it your intent to listen to the
22 Division's testimony and be available in case we'd
23 like to recall you to respond to that testimony?

24 A Yes. I will take myself off video, but I
25 will be here.

1 MR. MOELLENBERG: Okay. Thank you, Mr.
2 Bole.

3 We are finished with this witness.

4 MR. RAZATOS: Mr. Tremaine?

5 MR. TREMAINE: Thank you.

6 Good morning, Mr. Chair, Commissioners,
7 and Mr. Bole. Appreciate it. I do have a number of
8 questions for Mr. Bole.

9 CROSS-EXAMINATION

10 BY MR. TREMAINE:

11 Q First, Mr. Bole, you had -- I believe, in
12 your testimony a few moments ago, you had identified
13 chlorides as inorganic; is that correct?

14 A Yes, as opposed to benzenes, toluenes, ethyl
15 benzenes, which break down.

16 Q And did you indicate that this was your
17 first plume that you were dealing with inorganic
18 contaminants?

19 A As -- as chlorides of the primary concern,
20 yes.

21 Q Thank you. Do chlorides naturally break
22 down in the environment?

23 A To my knowledge, they do not. They -- they
24 dilute with time and movement and introduction of
25 water to the aquifer, but they do not break down.

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1 MR. TREMAINE: Okay. Thank you. I'm
2 going to refer you to page 2 of Exhibit B; it's page 2
3 of 733.

4 And if I could share my screen, Mr.
5 Chair?

6 MR. RAZATOS: Yes.

7 Sheila, can you give him the ability?

8 BY MR. TREMAINE:

9 Q Is this the email from Mr. Billings that you
10 had referred to in your testimony regarding one of
11 OCD's approval of the either characterization or
12 delineation?

13 A I believe so.

14 Q Okay. Is it true that this response from
15 OCD indicates that the approval does not relieve the
16 operator of liability should the operations fail to
17 adequately investigate and remediate contamination?

18 A Can you scroll down? I can't see the entire
19 document.

20 Q Sure. I can scroll down.

21 A Oh, there. That's good. That's good.
22 Thank you.

23 Q The section that I was referring to is this
24 information that I'm highlighting here.

25 A And can you repeat the question?

1 Q Do you acknowledge that OCD at the time of
2 the approval informed Apache that it was not relieved
3 of reliability should its operations fail to
4 adequately investigate or remediate contamination?

5 A Yes.

6 Q Okay. Thank you. I'm going to move on to
7 page 4 of -- did it work? Why did that not work? All
8 right.

9 And on page 4 of 733 of Apache's Exhibit B,
10 is it accurate to state that OCD required additional
11 wells in October of 2022?

12 A Yes.

13 Q Thank you. And bear, with me, Mr. Bole.
14 Some of this you've referenced; I'm trying to ask some
15 clarifying questions and kind of put some finer points
16 on the exhibits from where some of this is coming
17 from.

18 So I want to refer you to page 8 of the same
19 exhibit packet -- 8 of 733. Is this the March 27,
20 2024, report, which provided the analysis from the
21 sampling event?

22 A From the December 2023 sampling event?

23 Q I believe that is correct, yes.

24 A I believe -- yes, I believe so.

25 Q Okay. In this report, did Apache identify

1 additional contamination or specific samples which
2 were above the threshold you referenced in Part 29?

3 A Oh, we -- we certainly did. TMW-17 and 15,
4 14 -- those in the center of the monitoring well
5 field -- were significantly elevated.

6 Q As a result of that finding, did Apache
7 propose any additional monitoring wells or any other
8 form of delineation to assist in identifying the
9 source of the contamination?

10 A We did in our May submittal.

11 Q Sorry; I'm not sure if that cut out or if I
12 didn't hear you correctly. Did you say in the
13 subsequent May of 2024 report you did?

14 A That's correct. Where we offered to do soil
15 borings near TMW-7 -- I'm sorry -- the junction box
16 near TMW-7.

17 Q And pardon me; I misspoke when I said that.
18 I'm still dealing with a head cold. I should have
19 referred to it as that May scope of work for
20 additional investigation. I called it a report. Just
21 want to make sure we're talking about the same thing.

22 A Clear. Yes.

23 Q Thank you. So within the same report, on
24 page 15, there's a section under conclusions. And you
25 had just referred to this where it identifies several

1 contaminated wells; correct?

2 A Yeah. This was written by our consultant,
3 so yes.

4 Q Thank you for that clarification. So this
5 was prepared by Terracon?

6 A This was prepared by Larson & Associates.

7 Q Thank you.

8 A Subsequently, just after this -- just as
9 general information -- Mr. Larson announced to us that
10 he was closing his practice down immediately, and
11 we -- we shift to Terracon immediately because of
12 their expertise in groundwater. So there may be a
13 little hangover between consultant one and consultant
14 two.

15 Q Thank you for that clarification. And I
16 should clarify, by "you," I should have referred to
17 Apache. So this was adopted and submitted by Apache.
18 And so in this section -- is this the section that
19 refers to Apache's intent to continue quarterly
20 monitoring of the groundwater in wells TMW-1 through
21 10 and the windmill during 2024?

22 A Yeah, and so that would have been a typo on
23 TMW-10. It would have been 1 through 24.

24 Q Thank you; 1 through 24. Okay. But
25 overall, the intent as represented here would have

1 been that you would continue doing quarterly
2 monitoring through 2024 with laboratory analysis for
3 various compounds such as BTEX, chloride, and TDS;
4 correct?

5 A That's correct.

6 Q And did that proposal include any additional
7 wells? I had here from TMW-10, but other than the
8 wells that you referenced, did there -- was there any
9 proposal to sample or continue monitoring at any other
10 wells?

11 A Again, this would have been a typo, so it
12 would have been 1 through 24, no additional beyond
13 that. Plus -- plus the windmill; excuse me.

14 Q All right. The language that's
15 referenced -- one moment.

16 All right, so I'm going to direct you down
17 to this highlighted section, which is what we've been
18 talking about here. My questions are based on the
19 text that says "TMW-1 through TMW-10," and I
20 understand from your testimony you have identified
21 that as a typo that was intended to include through
22 TMW-24; correct?

23 A That's correct.

24 Q Okay. Do you understand and acknowledge
25 that at the time that this was submitted, OCD is

1 relying on the representation in the text here that
2 what was proposed at the time in writing was TMW-1
3 through TMW-10?

4 MR. MOELLENBERG: Objection to his --
5 relating to his knowledge of OCD's intent or
6 understanding.

7 MR. TREMAINE: That's fair. Withdrawn.

8 BY MR. TREMAINE:

9 Q Mr. Bole, would you acknowledge that it
10 would be reasonable for OCD to rely on the plain text
11 of the report?

12 A I would agree.

13 Q And so based on this submission, Apache
14 was -- the text of this submission is not purporting
15 for or intending for Apache to continue monitoring at
16 TMW-17; correct?

17 A That could be inferred.

18 Q Thank you. Move on to -- again, in Apache
19 Exhibit B, page 34 of 733, I draw your attention again
20 to this disclaimer language presented by OCD. Do you
21 understand that in Mr. Billings' responses it was
22 communicated to Apache that they were not relieved of
23 liability should their operations fail to adequately
24 investigate and remediate contamination?

25 A Yes.

1 Q And would it also be reasonable to state
2 that such a disclaimer would apply in the event that
3 either Apache or OCD became aware of new information?

4 A Yes.

5 Q Thank you. We'll move on to 168 -- pages
6 168 and 169. I'm going to try to fit this on the
7 share screen. And so what I have here on page 168,
8 Mr. Bole; is this the groundwater flow map submitted
9 in December of 2023 from Apache to OCD?

10 A It appears to be so, yes.

11 Q And from December -- and then let me scroll
12 to the next. Is this next page -- page 169 of
13 Apache's exhibit; is this the same flow map from March
14 of 2024?

15 A Yes.

16 Q Did the groundwater flow directions change
17 between the December flow map -- I've gone back to
18 page 168 -- and the March flow map on page 169?

19 A By "change," are they going in a perfect
20 zero to 360 degree? No; they're slightly different,
21 but generally, out there, we've seen a south-to-
22 southeast flow over all of the events that we've done.

23 Q Okay. Thank you for that, Mr. Bole. Let me
24 draw your attention specifically to TMW-4 on page 168,
25 the December flow map. Would you agree that that flow

1 is generally north-northeast to south-southwest
2 represented on this map?

3 A Generally, yes.

4 Q Okay.

5 A Based on the data points, yeah.

6 Q Thank you. And then in the March report --
7 I'm not sure how to characterize this, but the
8 December -- I'm sorry -- the March report at TMW-4
9 seems to indicate that the groundwater flow map is
10 actually moving from TMW-4 in a westerly, a easterly,
11 and a southerly direction; is that fair?

12 A That's what the map suggests, yes.

13 Q Okay. Can you identify any reason that
14 Apache knows that this flow direction changed between
15 December of 2023 and March of 2024?

16 A I -- I have a couple of theories, and one is
17 human error. I -- I had a consultant that was on the
18 verge of going out of business. They might have been
19 rushing their gauges. They may have written down
20 their field notes incorrectly.

21 I will agree this map looks awful. It
22 doesn't -- it doesn't look like any of the previous
23 maps. So this one may be just chalked up to bad data.

24 Or if they did measurements on two different
25 dates; if it was a -- a two-day mobilization, you

1 know, barometric pressure and things like that can
2 change the aquifer. Infiltration from rainfall --
3 there's a lot of different things that could cause
4 this air like this.

5 But yes, from -- from looking at it, it --
6 it looks a little chaotic.

7 Q Since that time in the March 2024 flow map,
8 has Apache done -- taken any further steps to
9 investigate the specific change I've pointed out
10 between December '23 and March 2024?

11 A Yeah. Since -- yes. We -- due to the
12 downtime, to the back and forth of the work plans, and
13 the events occurring over the summer, we -- we didn't
14 get out there. But we did finally get out, I believe,
15 in October, and we did another full round of sampling
16 and gauging. And I believe Mr. Grams will cover that
17 in his testimony later.

18 Q Okay. Thank you. Let's see here. I'm
19 going to draw your attention now to -- sorry; I'm
20 trying to address these topically, so I apologize for
21 kind of jumping around on the pages in the exhibit,
22 but I'm drawing your attention to page 145 of Apache's
23 Exhibit B packet -- 145 of 733 -- referring to
24 recovery test well at TMW-27. Do you understand what
25 I'm referring to?

1 A Yeah, that was a proposed, I believe, 6-inch
2 well to the north of 17 if memory serves.

3 Q Based on the area maps, is that proposed
4 well upgradient of TMW-17?

5 A It would have been up from 17 but
6 downgradient of our -- where we believe is our release
7 location, so it would have been in proximity; 17 would
8 have been one of the wells we would have been gauging
9 to see the radius of influence. So it -- it would
10 have been within, optimistically, a radius of
11 influence.

12 Q Okay. So TMW-27, then -- as I understand
13 what you're saying -- would have identified
14 contamination migrating from the original release
15 point; is that correct?

16 A That would have been the intention. That --
17 that location was chosen based on that potential.

18 Q But it would not have benefited in the form
19 of identifying contamination if it was migrating
20 downgradient from TMW-17; correct?

21 A I don't understand the question.

22 Q It would necessarily, because of its
23 location, not have identified if contamination was
24 migrating downgradient from TMW-17?

25 A If -- if the -- if the presumption is that

1 17 is the most elevated well, then the answer would be
2 yes.

3 Q Thank you. What is the distance between
4 TMW-27 and TMW-17?

5 A I do not have that map in front of me, but I
6 believe it was within 150 to 200 feet. But I -- I
7 don't have that map in front of me. Do you have a map
8 of the proposed wells?

9 Q Let me see if I can pull that up. I don't
10 think I have a reference here.

11 A Because if you do, then the -- the scale
12 will answer that question.

13 Q So according to OCD's referral to the map,
14 we came up with the distance between the wells of
15 approximately 300 feet. Would you have any reason to
16 disagree with that?

17 A No.

18 Q And would you agree that TMW-17 has the
19 highest contamination sample to date?

20 A That -- that's correct. Yes.

21 Q Okay, so if you're proposing to sample at
22 TMW-7 upgradient, and the highest contamination point
23 to date is at TMW-17, wouldn't you be attempting to
24 sample for contamination that was effectively flowing
25 upgradient?

1 A We've got to consider this in three
2 dimensions. We're identifying a source near TMW-7
3 that migrates straight down through the earth to the
4 aquifer and then drifts towards 17. So if we're
5 looking for surface contamination around 17, where
6 there are no flow lines and there are no produced
7 water lines, then we're going to find soils that are
8 clean.

9 If we want to find the source, then we need
10 to go where we think the source was and drill through
11 that soil column to see if, from the surface down, it
12 remains salty.

13 Q So your answer to this question assumes that
14 you are correct in that there is a single source of
15 contamination located in the vicinity of the original
16 reported release; correct?

17 A That's correct.

18 Q If you happen to be wrong about that, would
19 it be an appropriate practice to place the remediation
20 well that we've referenced, TMW-17, 300 feet
21 upgradient from the highest contamination?

22 A Again, I'm not -- I'm not following your
23 line of questioning.

24 Q Well, let's say you're investigating a new
25 release and you have identified the highest point of

1 contamination. Is it a common practice to place a
2 remediation well, such as TMW-27, 300 feet upgradient
3 from the highest contamination?

4 A Okay, so a remediation test well is for
5 aquifer testing; it has no relation to the
6 concentrations of the contaminants. It is there to
7 see what the porosity and the permeability of the
8 aquifer is so that a system can be developed and
9 planned around engineered subsurface conditions.

10 It is not necessarily going to be the
11 recovery well; it's going to be the aquifer test well,
12 but it's being placed where, based on where we believe
13 the release was and the groundwater flow, that we will
14 find elevated-enough chlorides that might be more
15 elevated than 17 or they might be slightly less.

16 Q Okay. In the same section, Mr. Bole, is it
17 true that Apache's plan proposed to provide updates to
18 OCD once per year for three to five years?

19 A If that is what is written, then yes; that's
20 what was promoted -- proposed.

21 Q Okay. I'll refer you to page 168 again of
22 the same. So based on this map, page 168, which is
23 the December 2023 flow map, what is the closest
24 existing or proposed well directly downgradient of
25 TMW-17?

1 A I -- I don't have the map of the proposed
2 wells in front of me.

3 Q I'm sharing -- pardon, Mr. Bole. I've been
4 sharing screens. So can you see the exhibit that I'm
5 sharing?

6 A Yes. I can see 17, and -- and 18 is below
7 it, yes.

8 Q Okay, and can you tell from the scale here
9 how far it is between 17 and 18?

10 A Based on the scale, it looks like it's
11 upwards of -- 17 to 18 -- approximately 550 feet
12 maybe.

13 Q Thank you. I'm going to move on to page 181
14 of your exhibit. Did Mr. Bratcher's November 14,
15 2023, email approval require an additional well?

16 A Yes, it did.

17 Q Would you agree that the well described in
18 Mr. Bratcher's condition is located between TMW-5
19 and -- sorry. Would you agree that the well described
20 in the condition between TMW-5 and TMW-15 ended up
21 being TMW-17?

22 A Yes. That's correct.

23 Q Okay. And -- okay. We've already
24 established that's the highest -- let's see. Would
25 you agree that if OCD had not requested the additional

1 well, Apache would not have identified the point of
2 highest chloride contamination to date?

3 A Yes. And to add to that, we still might not
4 have. It could be slightly to the south. But again,
5 the highest concentration does not necessarily speed
6 up the remedial process.

7 Q Okay. Did TMW-17 significantly change -- or
8 the findings from TMW-17 significantly change -- the
9 chloride contour maps?

10 A Yes.

11 Q Going to move on to page 153 of 733, again,
12 in the same exhibit packet. I am referring to Table 2
13 of the groundwater sample analytical data summary
14 submitted by Apache. Would you agree -- so I'm
15 identifying the first section here, and I'll try to
16 blow this up again. The first table in Table 2 -- or
17 sub-table -- is the windmill. Would you agree?

18 A Yes. I can see that.

19 Q And would you agree that since sampling
20 began in 2019 that we've seen a trend of higher
21 chloride samples at the windmill over time?

22 A I would say that the last five sampling
23 events have indicated an increase, but the previous
24 events went up and down in and out of the 250.

25 Q Thank you. I'm going to go back to, now,

1 page 170, which is a map of chloride concentrations in
2 groundwater from December of 2023. Mr. Bole, based on
3 the gradient maps, can you positively point to the
4 source of elevated chlorides that are shown in TMW-13
5 up here in the upper right of the page?

6 A Can -- can you expand that map slightly?
7 I'm sorry.

8 Q Sure. I'll attempt to here. So I'm zooming
9 in on the upper right hand of the map and directing
10 your attention to TMW-17 -- sorry -- TMW-13. So let
11 me ask a different foundational question, then. TMW-
12 13 on this map; would you agree that it is located to
13 the northeast of the originally identified source of
14 the release or contamination that was reported in
15 2019?

16 A Yes. Yes. North or east-northeast. Yeah.

17 Q And would you agree that, based on the
18 groundwater flow maps that we have previously
19 discussed, that TMW-13 is upgradient from the
20 previously reported source of chloride contamination?

21 A I would argue depending on the gauging
22 event, it could be considered cross-gradient as well,
23 but generally upgradient to cross-gradient.

24 Q Do you disagree with the groundwater flow
25 maps that were prepared by -- I believe it was Larson

1 & Associates?

2 A No. I do not disagree with them.

3 Q Okay. So --

4 A Well, other -- other than the March of 2024
5 that I mentioned might have been a field error.

6 Q And that's when we were referring to the
7 multidirectional flow indicated at TMW-4; is that what
8 you're referring to?

9 A Yes. Yes.

10 Q Okay, so would you agree that on this map --
11 what I'm sharing on screen -- that this red
12 highlighted area is what was identified in 2019 as the
13 original release and flow path of the produced water?

14 A Yes. The -- the red mark indicates where
15 soils were excavated.

16 Q Okay. Thank you. So the original release
17 was over here, and so I'm asking you about TMW-13.
18 Let me scroll out. Pardon. We have the scale here.
19 How far is it from TMW-17 -- sorry -- TMW-7 to TMW-13,
20 approximately?

21 A Looks like about 300 feet.

22 Q So when you look at this map, Mr. Bole, can
23 you plausibly tell us what the source of the elevated
24 TDS or chloride --

25 MR. RAZATOS: Mr. Tremaine, you were

1 covering your microphone. Can you please start your
2 question over?

3 MR. TREMAINE: My apologies.

4 BY MR. TREMAINE:

5 Q Mr. Bole, so based on this map, when you
6 look at this map, can you please -- can you tell us
7 whether or not you can plausibly identify the source
8 of the contamination that is represented in the
9 elevated TDS and/or chlorides that were sampled at
10 TMW-13?

11 A Again, we've identified the one area as the
12 one potential source for both of these releases at
13 that junction box. Any variances to groundwater flow
14 direction that have occurred prior to our
15 investigation might cause the plume to spread wide as
16 it moves laterally with the flow, so TMW-13 does not
17 cause me too much concern knowing that 22 and 12 above
18 it do not have significant chloride concentrations.

19 Although 12 is above the New Mexico level,
20 it's -- it's under 500. So I believe our proposal; we
21 were going to install a monitoring well between 12 and
22 22 to address that and see if that's just the
23 perimeter of the chloride contamination.

24 Q Okay, so as I understand your testimony, I
25 believe you are saying that you believe it is possible

1 that the 2009 release is responsible for this elevated
2 chloride level at TMW-13 as measured in December 2023;
3 is that correct?

4 A It's -- it's entirely probable, yes.

5 MR. MOELLENBERG: I --

6 MR. RAZATOS: Turn your microphone on.

7 MR. MOELLENBERG: Sorry. I was just
8 objecting there to the form.

9 I think you said 2009; perhaps you
10 meant 2019, Mr. Tremaine.

11 MR. TREMAINE: I did mean 2019. Again,
12 I apologize, I'm probably mumbling. Thank you for
13 bearing with me.

14 Yes, so the event occurred -- the
15 initial report of release occurred in 2019, so I'm
16 trying to clarify that it was Mr. Bole's testimony
17 that the elevated samples in 2023 at TMW-13 were
18 potentially, in his opinion, caused by the initial
19 reported release from 2019.

20 BY MR. TREMAINE:

21 Q With that clarification, does that change
22 your --

23 A No, no. That's -- that's --

24 Q Right.

25 A Sorry. That's -- that's not my response.

1 My response is the elevated chlorides in 13 are
2 potentially from a release never discovered from the
3 junction box where also the second release surfaced
4 from.

5 Q So is it your belief that there are more
6 than one releases represented on this map?

7 A At -- from this exact same location, yes.
8 From multiple locations, no.

9 Q So -- okay. So you believe --

10 A Let -- can I -- Let me --

11 Q Yeah. Go ahead. Yes. Please explain.

12 A So -- okay. If -- if produced water is
13 dripping from the bottom of a pipe and not surfacing
14 and it's going through the subsurface, you don't know
15 which layers are causing that to shift one way or
16 another or if it's porous all the way down. So you
17 could have a subsurface where it moves one way and it
18 falls to another and it falls.

19 And so unless you -- you know, you're
20 sampling at the source and you know, perhaps the --
21 the dip of one of the upper beds caused that release
22 to move towards 13, then, where it found passage down
23 to the aquifer.

24 That's an inferment. It -- we don't know
25 because we don't have any geologic data between the

1 two. But again, so not from the 2019 release. From
2 the suspected release that occurred long-term prior to
3 that.

4 Q Okay. And am I understanding you correctly
5 that you believe that to be from the same location as
6 the 2019 reported release?

7 A We do. We don't have any other sections of
8 pipe where we have had any suspected failures that
9 have surfaced, so that -- that seems to be the ideal
10 candidate.

11 Q And can you reasonably identify whether that
12 release may have occurred prior to or since the 2019
13 release?

14 A No, it would have been prior to 2019.

15 Q So we're talking about this. I believe -- I
16 don't want to paraphrase you here and get this wrong,
17 but I believe you had indicated it was hundreds of
18 feet away from TMW-7 to TMW-13.

19 So if we're looking at this elevated level
20 in December of 2023 at TMW-13, for example, that we've
21 already discussed; and again, with the additional
22 foundation that Apache believes that the source of the
23 contamination is from the same general area as the
24 2019 release; has Apache calculated how much produced
25 water it would have taken to impact the area that is

1 depicted as impacted at groundwater level on this map?

2 A No.

3 Q I'm nearing the end here, Mr. Bole. Bear
4 with me here.

5 A Yeah. No worries, no worries.

6 Q Yep. Very weedy and I'm moving slow. All
7 right. On page 168, 169 again; we've talked about the
8 '23 and the early -- the March '24 groundwater flow
9 maps. Actually, pardon me. Strike that. We've
10 already covered that. I had a repetitive question.
11 Thank you.

12 I want to direct you to page 4 of -- in the
13 statement of the case. All right. Bear with me. I'm
14 pulling up the wrong page here. But, Mr. Bole, would
15 you agree that Apache's submission in this case
16 indicates that, and I quote:

17 "The characterization requirements pursuant
18 to Section 19.15.29.12.A do not require operators to
19 investigate unrelated potential sources of
20 contamination. OCD's conditions of approval require
21 Apache to install wells for this purpose, which is
22 unrelated to the relief at issue here."

23 Do you agree that Apache has taken this
24 position?

25 A Can you either put that up on the screen so

1 I can see it or say that again, please?

2 Q I am trying to. For some reason I'm lost
3 within the document here. Pardon. I've got a page
4 number wrong here.

5 MR. RAZATOS: Mr. Tremaine, everybody
6 here is showing page 4.

7 DR. AMPOMAH: Page 4 of the pre-hearing
8 statement, too, has that statement.

9 MR. MOELLENBERG: Can I --

10 MR. TREMAINE: Thank you.

11 MR. RAZATOS: Your microphone, Mr.
12 Moellenberg.

13 MR. MOELLENBERG: I apologize. I would
14 interject an objection that to the extent this calls
15 for a legal conclusion that Apache would object.

16 MR. TREMAINE: Okay, well, I'll tell
17 you what. The quote -- I can move on, actually, even
18 without the quote.

19 BY MR. TREMAINE:

20 Q So, Mr. Bole, would you acknowledge that
21 Apache is required to remediate all releases under
22 Part 29 of the New Mexico Administrative Code
23 19.15.29?

24 MR. MOELLENBERG: Object to the extent
25 it calls for a legal conclusion.

1 MR. TREMAINE: I think that Mr. Bole
2 has testified to the extent that he's responsible for
3 and oversees remediation and understood it was a
4 requirement to remediate releases. I don't think that
5 that's a legal conclusion, but I can ask the question
6 more generally.

7 MR. MOELLENBERG: I would answer, "Ask
8 the question more generally," Mr. Tremaine.

9 BY MR. TREMAINE:

10 Q Mr. Bole, do you agree that Apache is
11 expected to and required to remediate all releases?

12 A Yes.

13 Q Okay, and if there are more than one
14 releases in a given area, is it your understanding
15 that Apache is required to notify OCD of each and
16 every qualifying release?

17 A If the release is known, yes.

18 Q Okay. Earlier in your testimony, you had
19 indicated that the contamination at TMW-13 may have
20 come from a different release in the same location; is
21 that correct?

22 A It's -- it's probable.

23 Q Okay. Did Apache file any reports notifying
24 OCD of a second release occurring in the area?

25 A As I stated before, we didn't know of any.

1 It's suspect; we wish to investigate it with soil
2 boring.

3 MR. TREMAINE: Thank you. And with
4 that, Mr. Bole, I really appreciate your time. I
5 don't believe I have any further questions for you.

6 THE WITNESS: Well, thank you, Mr.
7 Tremaine. Appreciate it.

8 MR. RAZATOS: Thank you, Mr. Tremaine.
9 Mr. Moellenberg, did you have any
10 redirect?

11 MR. MOELLENBERG: Yes. Thank you, Mr.
12 Chair. I do have a little bit of redirect here.

13 REDIRECT EXAMINATION

14 BY MR. MOELLENBERG:

15 Q Let me clarify -- I'm going to go kind of in
16 reverse order here -- one answer to a question Mr.
17 Tremaine asked, Mr. Bole.

18 Mr. Bole, I believe Mr. Tremaine asked you
19 if Apache was required to remediate all releases
20 without qualification, and I'm wondering if, on
21 reflection, you might have any qualifications to your
22 answer, particularly with regard to who is responsible
23 for a particular release?

24 A Oh. Right. So yeah, a release maybe
25 occurring on our lease by another operator would be

1 that other operator's responsibility.

2 Q Thank you. Let me also clarify some of the
3 discussion regarding -- I guess as I would
4 characterize it -- potential migration pathways from
5 the area around well TMW-7 to the area around well
6 TMW-13. Do you recall that discussion, Mr. Bole?

7 A Yes.

8 Q Could you summarize for us how there might
9 be potential migration pathways from a release in the
10 vicinity of well TMW-7 to the release -- or to the
11 location of well TMW-13, considering the groundwater
12 elevations and other information there?

13 A Yes. And again, as I mentioned, the
14 subsurface geology, including the permeability and the
15 porosity of each layer, can affect as the fluid flows
16 through the subsurface as it's trying to get to the
17 aquifer. It's not always just a straight down -- like
18 not necessarily always just like a column.

19 And we've seen this in dry cleaner releases
20 where the -- the heavier -- the DNAPLs will --
21 they'll -- I wish I had a chalkboard -- but they'll --
22 they'll hit a confining layer and they'll move
23 laterally until they find more porous, and they'll
24 move down. And, you know, where you have caliche
25 layers here, you have pretty tight permeability and

1 porosity.

2 So, you know, if -- if those fluids hit the
3 caliche, they envelop it and then they move; then they
4 find more porous soils; then -- you know, that is one
5 way for a spill that occurred over here at A to be in
6 the groundwater over at part -- or at location B.

7 That's hypothetical. It's a potential.
8 It's -- it's unknown, but the other thing we could
9 have, if this is a historical spill dating back, you
10 know, even maybe before Apache were the operators,
11 then there could have been varying groundwater flows
12 in the past.

13 You know, we've had massive cycles of
14 drought followed by intense rainfall, and -- and out
15 here, that really does affect aquifer flow on those
16 massive seasonal shifts. So the answer is I don't
17 know, but there -- there are explanations.

18 Q Is there any data available that you're
19 aware of that could be used to assess changes in
20 groundwater flow direction in this area prior to 2019?

21 A Possibly, but I -- I would need to lean
22 on -- I don't want to put Mr. Baker on the spot, but
23 he may have more knowledge about groundwater flow in
24 that area. He was a consultant in the Hobbs area for
25 several years prior to Apache, and he may have worked

1 on some of these projects or -- or know folks that
2 have that would have that knowledge.

3 Q Thank you. And just again to remind the
4 Commission, you are saying that there are some
5 information gaps in this area and that Apache has
6 proposed one or more soil borings to try to find some
7 answers to the remaining questions?

8 A That's correct.

9 Q The last thing; do you recall Mr. Tremaine's
10 questions to you regarding the March 27 groundwater
11 report -- I believe it's Exhibit B-2 -- regarding the
12 statement that Apache would monitor wells TMW-1
13 through 10 as opposed to TMW-1 through 24?

14 A I did and I reviewed that report, so that's
15 on me for missing that typo.

16 Q Do I recall correctly that in your testimony
17 you talked about a series of communications following
18 very quickly after that report, I believe in April of
19 2024?

20 A Yes. I -- I can't recall the exact time,
21 but I believe Bruce and I had a conference call with
22 NMOCD over the next proposal. We discussed where the
23 gaps were, and they were mostly on the perimeter.
24 And -- and we wrote that proposal up based on the
25 verbal conversation.

1 Q During those discussions, do you recall the
2 Division staff engaged in those discussions raising a
3 significant concern about the limitation of further
4 groundwater monitoring to only wells TMW-1 through 10?

5 A No.

6 MR. MOELLENBERG: Thank you. That's
7 all I have.

8 MR. RAZATOS: Thank you, Mr.
9 Moellenberg.

10 Commissioners, do you have any
11 questions?

12 Commissioner Ampomah?

13 DR. AMPOMAH: I do have couple. Thank
14 you for being here today. My first question to you is
15 what measures were taken to understand the extent of
16 the migration of the release prior to reporting to
17 OCD?

18 THE WITNESS: The -- the 2019 release?

19 DR. AMPOMAH: Yeah. The first release.
20 Yes.

21 THE WITNESS: Yeah. The -- the
22 Commission was notified. And again, this is probably
23 a question for Mr. Larry Baker. He was the project
24 manager overseeing the soil cleanup.

25 DR. AMPOMAH: Okay.

1 THE WITNESS: So he -- he would have
2 done the reporting, and -- and I know he did do the
3 reporting.

4 DR. AMPOMAH: Yeah. And when I ask the
5 question and someone else can answer, then just let me
6 know. So thank you for that.

7 THE WITNESS: Yeah, yeah. No worries.

8 DR. AMPOMAH: Okay, so then definitely
9 Mr. Baker can also respond to what information went
10 into the delineation or can you respond to that?

11 THE WITNESS: If you are referring to
12 soil or groundwater, those would be two different
13 things. Bruce did the soil delineation and we're
14 still currently finalizing the groundwater
15 delineation.

16 DR. AMPOMAH: Okay. So based on your
17 testimony and based on Mr. Tremaine going through some
18 of the other bits, which was really helpful, at least
19 to me, as of now, you do have monitoring wells --
20 about 24 monitoring wells. And each of these
21 monitoring wells -- looking at March 2024 report --
22 most of these wells do have elevated chlorides; is
23 that correct?

24 THE WITNESS: Most of these wells have
25 elevated chlorides. There are a handful that

1 slightly -- just slightly -- exceed the NMOCD cleanup
2 standard and, again, could be construed as more
3 elevated background.

4 But in general, we have a plume that
5 has a -- basically a hot center and a warm middle and
6 it cools off around the edges, which is indicative of
7 a -- of a pretty good delineation of a plume
8 considering the contaminant level that is in the
9 middle.

10 DR. AMPOMAH: So based on your
11 testimony, you are saying that if Apache is to more or
12 less follow the conditions that have been provided by
13 NMOCD, you will be required to drill about 40 total
14 monitoring wells; is that correct?

15 THE WITNESS: Yes. The first response;
16 there was a supplementary response that came in, I
17 think yesterday, which would push that number even
18 higher.

19 DR. AMPOMAH: Okay, so do you have a
20 map to show the Commission Apache's plan and then that
21 of NMOCD's plan? Do you have a map to show us?

22 THE WITNESS: I do not. I believe Mr.
23 Grams' testimony is going to cover that.

24 DR. AMPOMAH: Okay, so that will come
25 in later. Okay.

1 THE WITNESS: Yes, sir.

2 DR. AMPOMAH: Okay. Okay. Now, you
3 talked about there are some typos or misrepresentation
4 in the results on the March 2024 report. So if there
5 were such inconsistencies in that report, did Apache
6 repeat that results -- that sampling -- or let's say
7 that results and updated that to NMOCD?

8 THE WITNESS: No, we did not re-sample
9 the water. I felt the -- the samples were probably
10 representative, but I think the gauging data looked --
11 it looked off. And again, the typo in the bottom
12 we've already covered was to extend quarterly sampling
13 through all of the wells on location, including the
14 windmill.

15 DR. AMPOMAH: Now, so let's say -- let
16 me check here. There was a conclusion that even with
17 the March report -- the March 2024 report -- if you
18 look at the exterior wells. So looking at TMW-23,
19 TMW-24, and even the ones at the upper -- at the
20 northern sections where all more or less do have some
21 elevated chlorides in there.

22 So based on your March report -- and I
23 hope there is more or less an updated March report --
24 can Apache confidently say that they have delineated
25 fully the extent of the -- let's say the spill or the

1 migration of the spill?

2 THE WITNESS: I -- I would like to
3 reiterate what I previously stated. This is one
4 sample event for all of these exterior wells. We do
5 not make more drilling decisions off of one sampling
6 event. And so the 458 you're seeing in 12 might turn
7 out to be 240, might end up being 235. We -- again,
8 we have one snapshot here, which does not lead itself
9 to installing 14 more wells without multiple
10 groundwater events.

11 DR. AMPOMAH: Now --

12 THE WITNESS: Now, we did -- we -- we
13 did in our proposal agree to go south of TMW-23.
14 That's -- that's definitely an acceptable exceedance
15 there at 10-10. And I believe we were going to go
16 between 11 and 12 to the northwest. So -- so some of
17 these were already under consideration under the next
18 round of well installation.

19 DR. AMPOMAH: Yeah. I think definitely
20 to help the Commission, if clearly on the presentation
21 shown Apache's plan and then that of NMOCD plan, you
22 know; that will really help us to more or less dig
23 deeper into it. Now, there --

24 THE WITNESS: There -- there is a --
25 oh. Sorry; go ahead.

1 DR. AMPOMAH: Okay. Thank you. And
2 I'm looking forward to Mr. Baker's testimony. So
3 based on the cross, it sounds to me that Apache does
4 not know the volume of the contaminant. Neither do
5 they know the extent of the contaminant. Is that a
6 fair statement?

7 THE WITNESS: I think we've
8 demonstrated the extent here, again, with these
9 perimeter monitoring wells with the exception of going
10 south of 23. If -- if the spill we are chasing is a
11 historical event from the junction box that happened
12 either many years ago or many, many years ago, then
13 we're just not going to have that data.

14 There's going to be -- if --- if we
15 discover that -- that there was in fact a leak at the
16 junction box which never surfaced, we don't have any
17 record of changing out any pipe there. We don't know
18 if our predecessors did.

19 So this is a large area. This, to me,
20 suggests there is a source or there is a point, which
21 we think we've identified, where a spill happened a
22 long time ago to fill up this much space. And it went
23 on for probably a long time. If -- if we were
24 operators at the time, I don't know.

25 So yes; you're right. And then we

1 don't know the whole picture because the spill we had
2 doesn't appear to have made this big of a mess. But
3 again, we're looking at that junction box as the --
4 pretty much the only source we can see when we look
5 around that would be on us.

6 So that's -- anyway, that's why we're
7 wanting to do a soil boring there to see if we can
8 catch the -- that data and move forward.

9 DR. AMPOMAH: You made mention that you
10 are not in the business of drilling bore holes or,
11 let's say, monitoring wells just based on one sampling
12 data. Let me ask; are you familiar with groundwater
13 contamination flow modeling?

14 THE WITNESS: Yes.

15 DR. AMPOMAH: Was that applied here?

16 THE WITNESS: Just through our
17 groundwater gradient maps, yes. But again, doing an
18 aquifer pump test will give us that data that we need
19 to help really understand the subsurface and the
20 conditions of the aquifer characteristics.

21 DR. AMPOMAH: Did Apache try to do
22 that, especially when you went from 2 to, like, let's
23 say, 10 to 24? Did Apache even plan to more or less
24 perform any additional -- or more or less get some
25 data to fill in the gaps to perform the model to rebut

1 that OCD comes up with?

2 THE WITNESS: That was in our May
3 proposal to install that well and do that test.

4 DR. AMPOMAH: So are you saying that in
5 Apache's proposal, they proposed to perform
6 groundwater modeling?

7 THE WITNESS: Yes. Groundwater pump
8 testing, which would include some modeling.

9 DR. AMPOMAH: Definitely I want to see
10 that as part of the conditions because if you do that,
11 then probably it might reduce the number of wells that
12 you need to drill with some strong justification.

13 And I must say that OCD has to protect
14 the -- the health of the people. So if you have a
15 landowner, you know, putting pressure on the
16 government with elevated chloride in their water, that
17 is a big concern. So definitely I want to see some
18 modeling done to justify why Apache should not more or
19 less drill all these wells that OCD is proposing. And
20 that will help a lot.

21 I'm sure for those of us who have
22 knowledge in the groundwater modeling, even that can
23 tell you that probably there are multiple sources that
24 probably you did not really know based on your
25 testimony today.

1 MR. RAZATOS: Commissioner Ampomah, was
2 that a question or a statement?

3 DR. AMPOMAH: No, the last one was a
4 statement.

5 MR. RAZATOS: Okay.

6 DR. AMPOMAH: Yeah, just to support
7 that a groundwater modeling needed to have been
8 performed because I do see that this is just a trial-
9 and-error system that is being conducted here. But if
10 we do groundwater modeling, then definitely that could
11 have solved most of these concerns that OCD and even
12 the landowner do have.

13 And I don't see that here, so it's
14 really difficult. But definitely I'm waiting for the
15 testimony where you compare NMOCD's proposal and
16 Apache's proposal and we can more or less use science
17 to see which one is the best. Thank you.

18 MR. RAZATOS: Okay. Any more questions
19 for Mr. Bole from you?

20 DR. AMPOMAH: No, no.

21 MR. RAZATOS: Excellent.

22 DR. AMPOMAH: Commissioner Bloom?

23 MR. BLOOM: Thank you, Mr. Chair. Dr.
24 Ampomah asked all my questions and more. No further
25 questions. Thank you.

1 MR. RAZATOS: Excellent.

2 DR. AMPOMAH: Thank you.

3 MR. RAZATOS: Mr. Bole, I do have --
4 and thank you for being with us today and for your
5 testimony; we appreciate it. I do have just two real
6 questions. One, and forgive me; we keep mentioning
7 the windmill. What is this windmill being used for?

8 THE WITNESS: The windmill is being
9 used strictly for cattle consumption. There are
10 published limits on what cattle can consume.

11 MR. RAZATOS: Okay.

12 THE WITNESS: We can share those if you
13 like. The levels we've seen at the windmill are well
14 within published standards for healthy cows so far.

15 MR. RAZATOS: And do you have that
16 number? Just what do they say for cattle these days?

17 THE WITNESS: It's under a thousand
18 chlorides or maybe it's TDS. One to three thousand
19 can cause cattle to stop putting on weight. Anything
20 over 3,000, things need to happen. So currently the
21 water being sampled from the windmill has fallen
22 within the U.S. agricultural guidelines for -- it's
23 considered fresh enough for cattle to drink.

24 MR. RAZATOS: Okay. Thank you. I
25 appreciate that.

1 THE WITNESS: I don't have an exhibit
2 on that, but we can create one if we need to very
3 easily online.

4 MR. RAZATOS: I think it would be okay
5 unless someone has a question further on. For me,
6 it's okay for the time being. Thank you for that
7 information.

8 My second question is when Mr. Tremaine
9 was showing you -- it is on page 170 of the 733; it is
10 the relief map that we have there; he was asking you
11 about potential second releases, and your statement
12 was, "From the exact location, yes."

13 A second release or more; right? Your
14 statement was, "Yes for that exact location, but for
15 multiple locations, no."

16 Can you kind of elaborate on that? And
17 I apologize I don't have all the wording that was said
18 at that moment. I just was trying to write real
19 quickly.

20 THE WITNESS: And -- and this may be a
21 question Mr. Baker can answer as well, but as long as
22 we have been at Apache, we've responded, I believe, to
23 the one release that was -- affected all the soil
24 here. No others in the general field that I'm aware
25 of. Maybe there was a -- you know, a couple of small

1 wellhead leaks, but nothing that would suggest a plume
2 of this size.

3 And, you know, when you -- when you do
4 work in the oil field, again, you always see corrosion
5 at elbows -- always at elbows. You know, that's where
6 the turn is made and the corrosion and the erosion
7 happens. That's our nearest elbow to all of this.
8 And so, just logistically, if there are no other
9 smoking guns, that's the one area that likely needs to
10 be investigated. But again, a subsurface box full of
11 piping.

12 MR. RAZATOS: Okay.

13 THE WITNESS: And that's -- yeah.
14 That's what's there. Everything else is buried and
15 never surfaced.

16 MR. RAZATOS: Okay, and I appreciate
17 that. So you're saying the macro in all of the
18 surrounding region, it's a no; we don't know. And but
19 for that exact location, there could be a possibility
20 of multiple releases?

21 THE WITNESS: Yes.

22 MR. RAZATOS: Okay. Awesome. Thank
23 you. That was the only question that I had.

24 Any other questions for Mr. Bole?
25 Anybody? Okay.

1 Mr. Bole, thank you for your testimony.
2 THE WITNESS: Thank you.
3 MR. RAZATOS: I didn't realize Mr.
4 Moellenberg said you will stick around. Correct, Mr.
5 Moellenberg?
6 MR. MOELLENBERG: Yes.
7 THE WITNESS: Yes. I'll be here.
8 MR. RAZATOS: Okay. Excellent. Thank
9 you, so --
10 MR. MOELLENBERG: All righty. Yes, Mr.
11 Chair.
12 MR. RAZATOS: No problem.
13 We'll potentially see you later on. We
14 appreciate it.
15 This is a good stopping point for
16 possibly lunch. I think if everybody is okay with
17 that, we can come back at around one o'clock and pick
18 up again with your next witness.
19 Excellent. Thank you, everybody.
20 (Off the record.)
21 MR. RAZATOS: Number 24912. Again, the
22 application of Apache Corporation for the adjudicatory
23 hearing to contest the Division's conditions of
24 approval on Apache Corporation's scope of work for
25 additional investigation in Lea County, New Mexico.

1 This is an evidentiary hearing.

2 Last that we were at, we had just
3 finished with the first witness for Apache. Mr.
4 Moellenberg, we'll transfer back over to you. I
5 believe you can continue with your next witness.

6 MR. MOELLENBERG: Thank you, Mr.
7 Chairman. And just as a housekeeping matter, I should
8 move the admission of Apache Exhibits B-1, B-2, B-3,
9 and B-4 and B, which is Mr. Bole's resume.

10 (Exhibits B through B-4 were marked for
11 identification.)

12 MR. RAZATOS: Okay. Mr. Tremaine, do
13 you have any issues with that?

14 MR. TREMAINE: No objections.

15 MR. RAZATOS: Okay. It will be
16 entered.

17 (Exhibits B through B-4 were received
18 into evidence.)

19 Mr. Moellenberg, before we start, I
20 apologize now that I'm thinking about it. Mr. Rubin
21 is not going to be with us tomorrow, so maybe the
22 issue that you have we could start now before you
23 bring on your next witness so we could kind of get
24 that going.

25 MR. MOELLENBERG: Okay.

1 MR. RAZATOS: I don't want to get too
2 far in and then we don't have Mr. Rubin here with us.

3 MR. MOELLENBERG: Fair enough. I think
4 we can do it now. I was thinking of doing it at the
5 beginning of the Division's case, but now is fine.

6 So, Mr. Chair, Commissioners, Mr.
7 Rubin, this morning I indicated that I had a pre-
8 hearing issue that had arisen based on some
9 information received last night.

10 And it pertains to -- I'm just looking
11 for the number -- OCD Rebuttal Exhibit 9, which
12 consists of original conditions of approval, but also
13 some proposed supplemental conditions of approval that
14 I understand the Division would like the Commission to
15 consider.

16 And our view is this hearing, as stated
17 in our application, should be limited to the issue of
18 the Division's original conditions of approval of the
19 May 8, 2024, plan. And we have a number of concerns
20 about supplemental conditions.

21 First of all, as I just indicated, we
22 think they are outside the proper scope of this
23 hearing. There is a question whether they are proper
24 as rebuttal exhibits, although perhaps, you know, that
25 deserves some further explanation to ascertain what

1 they are rebutting.

2 And perhaps most importantly, we
3 received these late last evening. Apache has not had
4 a reasonable opportunity to review them, consider
5 them, prepare testimony on them, consult with people
6 in operations who may be affected by them to really
7 even develop a position on them for the Commission's
8 consideration.

9 So for that reason, we would object to
10 the Division's Rebuttal Exhibit 9 and the Commission's
11 -- particularly the Commission's consideration of the
12 supplemental conditions shown in that exhibit.

13 MR. RUBIN: Mr. Moellenberg, just a
14 point of clarification; you're not objecting to
15 Rebuttal Exhibit 8?

16 MR. MOELLENBERG: No. We do not object
17 to Rebuttal Exhibit 8.

18 MR. RUBIN: Okay. If we could hear
19 from Mr. Tremaine, Mr. Chair; that would probably be
20 appropriate.

21 MR. RAZATOS: Yeah.

22 Mr. Tremaine?

23 MR. TREMAINE: Thank you, Mr. Chair,
24 Commissioners, and Apache. So there's actually -- I
25 mean, let me start out by saying, you know, we've

1 heard -- okay. The conditions of approval that OCD
2 has submitted in Rebuttal Exhibit 9 are directly in
3 response to Apache's Exhibit C.

4 I'm going to start off by saying that
5 in terms of the timing, I am quite sympathetic to Mr.
6 Moellenberg and his concern there -- the concern on
7 the part of counsel that they certainly need time to
8 respond. But the timing of that exhibit as a rebuttal
9 exhibit and those proposals entirely hinges on the
10 timing of OCD's awareness of the content of Apache
11 Exhibit C.

12 And I want to clarify at the get-go
13 that we are not implying anything with the timing of
14 Exhibit C -- that fourth-quarter monitoring -- here.
15 It is part of our presentation today that Apache --
16 I've basically said -- we felt have drug their feet on
17 some of these steps.

18 But in terms of this particular report,
19 my understanding is that the 3103 constituents came
20 back in late December. So their Exhibit C; even
21 though it's my understanding that the chloride and the
22 TDS samples came back earlier, I think that we got it
23 from Apache within a couple weeks' turnaround; right?

24 So they got the samples back, submitted
25 the complete report with the 3103 constituents to OCD,

1 and then OCD -- that came in by email to OCD on the
2 8th, which is fine.

3 It has not been submitted, as far as
4 I'm aware, through OCD permitting, so it's not in the
5 well file; it was not processed as such. My
6 understanding is that the individual received it and
7 informed Apache to submit it through OCD permitting.
8 We're not taking issue with that.

9 I'm simply lining out that there is a
10 concern due to the timing. And so as the trailing
11 exhibit in what are Apache's 1,391 pages of
12 exhibits -- this is an expansive record -- OCD
13 required some time to respond to that.

14 And we've been processing through all
15 of the -- you know, all of that information,
16 particularly the new information, which is 143 pages
17 long, earlier this week. It came in on Thursday, and
18 so OCD needed time to respond.

19 The conditions that are proposed are
20 directly germane to the actual content of the samples
21 and information contained in Exhibit C, so I think if
22 I can analogize to a rulemaking, this is very much
23 a -- would fit under, like, a logical outgrowth
24 analysis. So it is -- they are not a part of the
25 original conditions, but they are directly in response

1 to an exhibit filed by the applicant.

2 And when we get into the content of
3 that exhibit, the samples show marked departures,
4 concerning departures, from the previous samples that
5 necessitates a different response.

6 So, you know, we've heard -- you heard
7 Mr. Bole testify earlier this morning that it was
8 inappropriate to require additional wells based on a
9 single sampling event, but what the record shows is
10 that we actually now have two sampling events since
11 around the time that we were discussing these
12 conditions of approval; the second one being this
13 fourth-quarter report that we're talking about. And
14 that's the one that's of the most concern to the OCD.

15 So while Mr. Moellenberg absolutely
16 needs adequate time to respond to those conditions of
17 approval, it would have been completely inappropriate
18 for OCD to fail to respond to the concerning content
19 of the fourth-quarter sampling event. And if there is
20 a necessary remedy here, it's to provide an
21 appropriate and reasonably short period of time for
22 Apache to respond specifically to those conditions.

23 It is not -- as these are directly
24 germane to the content of this hearing and
25 application -- appropriate for the Commission to

1 exclude consideration of those conditions entirely.

2 The effect, procedurally, of excluding
3 Exhibit 9 and not considering additional conditions
4 that are directly in response to the fourth-quarter
5 sampling event would be that OCD would have to then
6 issue new conditions of approval to which Apache,
7 presumably because they objected to the previous
8 conditions, would appeal, and we would be back here in
9 three to six months, past the three-year mark, talking
10 about the same thing based on samples that were taken
11 in October.

12 So on one hand, from the lawyer's
13 perspective, I understand Mr. Moellenberg's concern
14 and we need to make sure that they have an opportunity
15 to respond, but I absolutely feel that these
16 conditions are appropriate for consideration in the
17 record and they are directly in response to Apache's
18 own exhibit. Thank you.

19 MR. RUBIN: Mr. Chair, Members of the
20 Commission, this is a difficult -- like most
21 evidentiary issues, this could go either way, I feel.

22 On one hand, it is important to be
23 mindful of not giving -- I mean, the government is
24 always charged with presenting a moving target. In
25 other words, this licensee thought they were appealing

1 one proposed set of conditions and now they have a
2 different set. Would they have acted differently? Is
3 there a moving target? That is a consideration.

4 On the other hand, there is no pre-
5 filed testimony. There is nothing that would have
6 prevented any of the Division's witnesses from merely
7 testifying as to what additional conditions might be
8 appropriate based upon the disclosure in December from
9 Apache and what they could -- so we're just getting in
10 written form what they could have testified to based
11 upon what they've seen in December.

12 So for that practical matter, if there
13 was pre-filed testimony, I would not be saying that,
14 but there is not. And finally, I think what maybe
15 should perhaps tip the balance is if it is truly
16 rebuttal testimony in the form of an exhibit.

17 And Mr. Moellenberg, I know you
18 alluded; you were sort of equivocating. I'll give you
19 another chance. Do you believe that this at least is
20 of a rebuttal nature to what your client filed in
21 December?

22 MR. MOELLENBERG: No, I do not, and let
23 me explain. And this -- it was helpful to hear Mr.
24 Tremaine's explanation of that.

25 The exhibit provided some new

1 information, and obviously, the timing was
2 unfortunate, but we felt it fair to go ahead and
3 provide that information.

4 When you're looking at rebuttal,
5 though, it's rebuttal to testimony, and obviously you
6 have not yet heard what Apache's testimony is about
7 this exhibit. Frankly, it's largely to give the
8 commissioners an update with the latest available
9 data. So for that reason, I don't think it's proper
10 rebuttal testimony.

11 And if you look at the contents of the
12 conditions, there are conditions on operations here.
13 There are conditions that, at least based on the
14 glance we've had an opportunity to have at them, I
15 don't see how there's anything in the exhibit, which
16 is basically a monitoring report, that would relate to
17 those things or make those kinds of conditions proper
18 as rebuttal testimony.

19 And finally, I would just say -- and I
20 think Mr. Tremaine mentioned this in his opening -- a
21 Commission order on whether or not to uphold the
22 conditions of approval, which is the issue in this
23 hearing, isn't going to be the be-all, end-all, final
24 piece of this case.

25 As we've seen, it is kind of a moving

1 target because, as our folks have explained, you get
2 information, you assess it, and then you make reasoned
3 decisions about next steps. And unfortunately, when
4 you're dealing with groundwater, that takes a little
5 while. It's not an instant thing you can do.

6 So -- and I would just add finally, if
7 the Commission does choose to consider these things, I
8 think, first of all, it does raise an appeal issue.
9 And second of all, it would be only fair to continue
10 the hearing to allow Apache an opportunity to
11 reasonably consider these conditions and prepare
12 testimony to respond to them.

13 MR. RUBIN: Mr. Chair, Members of the
14 Commission, I think Mr. Moellenberg makes some good --
15 both sides make some good points here.

16 The point that Mr. Tremaine makes about
17 if we do not allow you to consider this now, it's
18 going to come back; they will impose them -- the
19 Division will then impose them at a later time and
20 we'll be back here again.

21 But it does seem like no matter what we
22 do here, there's going to be some additional data
23 that's going to come down and there's going to be a
24 subsequent appeal in all likelihood. I don't think
25 we're going to avoid having these parties in front of

1 us at a later date with more data regardless.

2 If Mr. Moellenberg's concern about
3 allowing more time for his witnesses to prepare a
4 rejoinder can be accommodated -- can be scheduled,
5 that would certainly warrant allowing the Commission
6 to hear Exhibit 9 at this time. It doesn't sound like
7 we're going to be completing this today anyway.

8 So those are my thoughts, Mr. Chair,
9 Members of the Commission. It's not a clear-cut
10 decision.

11 MR. RAZATOS: Excuse me. I'd like to
12 open it up and see if the other two commissioners have
13 any questions. I do have one question, but I'll start
14 off with my co-commissioners here.

15 DR. AMPOMAH: Yeah, so just one. So my
16 question to Apache is through the hearing, the
17 Commission can also impose additional conditions as
18 well as we see fit. I don't know if -- I think that
19 is a possibility too; right?

20 MR. RUBIN: Yes, Dr. Ampomah. It is
21 part of your statutory obligation if you feel like it
22 is protective.

23 DR. AMPOMAH: Exactly. So then I don't
24 see any problems with the -- let's say, the
25 supplementary one because it is more or less up for

1 discussion, too. But definitely you might also need
2 some time to respond to it as well. But I don't see
3 any problem with it.

4 MR. RAZATOS: Okay. Thank you.

5 Commissioner Bloom?

6 MR. BLOOM: Yes. Thank you, Mr. Chair.

7 I think my question to both parties
8 here would be -- it's two questions. What does more
9 time look like? Would tonight be enough or do we need
10 to, you know, move this to a future meeting? A future
11 time? And -- well, let me leave it there, and I'd
12 just like to hear what you think about that.

13 MR. RAZATOS: So I'm just going to
14 dovetail on Commissioner Bloom's. That's my question
15 as well. What does more time look like?

16 MR. MOELLENBERG: Mr. Chair and
17 Commissioners, I doubt if tonight is sufficient.
18 There's other -- I mean, given some of the scope of
19 these conditions and operational conditions, which
20 we've never seen before, my guess is that Apache would
21 need to consult with some other folks who are not
22 here.

23 I don't know who's available or
24 anything else, so I don't think I could say with any
25 comfort that we could be ready to put that case on

1 tomorrow. And I mean, again, as to the timing, I
2 think there's a supposition here about there will be
3 other appeals. I don't know that that's a -- you
4 know, something that should be assumed at this point.

5 MR. RAZATOS: Mr. Tremaine?

6 MR. TREMAINE: So we broke down Exhibit
7 D and drafted the conditions yesterday, which is why I
8 noticed them last night. So our staff who are here to
9 testify to this -- Brandon and -- Mr. Powell and Ms.
10 Romero -- did this yesterday.

11 I'm not going to speak to what Apache
12 would have to do differently on their side, but this
13 is something that, once we got to it; saw the -- I'll
14 let Ms. Romero testify to this later on, but the
15 samples that came back in quarter 4 are quite
16 concerning, so time is of the essence here, frankly.

17 And the -- so I think -- given our
18 turnaround, I think we're talking about a matter of a
19 week or a couple weeks, not months, because we do need
20 to get some kind of resolution. It is OCD's
21 increasing concern that there are additional
22 potentially ongoing sources.

23 We just -- we will talk about this more
24 later, but given the spacing in between all of these
25 sample points, we can't possibly tell from these

1 reports where, if there are any, ongoing releases are
2 occurring. And it's very important given how long
3 this case has gone on to get that shortly.

4 So I do think we should give Apache
5 some time to respond to that. That's simply
6 necessary, but I think a couple weeks; no longer than
7 30 days. I would hope that the conditions would be
8 able to be responded to within a week.

9 MR. RUBIN: Mr. Chair and Members of
10 the Commission, I do think there is a path forward
11 there if a week or two would be sufficient -- maybe
12 not ideal -- to come up with -- to allow Apache to
13 avoid unfair prejudice. That would avoid, certainly,
14 an appellate issue. And if there is -- certainly, you
15 know, the status quo; it needs to be resolved when
16 there is a pending issue.

17 If -- especially Mr. Moellenberg, is
18 there some -- would two weeks be sufficient to avoid
19 unfair prejudice?

20 MR. MOELLENBERG: Mr. Hearing Officer,
21 it probably depends on what happens in two weeks. I
22 think two weeks is enough time to assess and perhaps
23 discuss the conditions with the Division; see if we
24 can work things out. That may be an option.

25 I don't know if that's enough time if

1 we need additional witnesses given these conditions,
2 and I could see the potential need for an operational
3 witness given at least one of these conditions.

4 So if you're speaking in terms of two
5 weeks to return to the hearing with witnesses ready to
6 go, I don't know that I could commit to that. I think
7 two weeks is enough time to at least assess them and
8 figure out what the response would be.

9 MR. RUBIN: Well, Mr. Tremaine said up
10 to a month is what he was comfortable with. Is that
11 something -- I'm talking about, like, scheduling the
12 continuation of the hearing. Would 30 days be beyond
13 the pale for you?

14 MR. MOELLENBERG: Yeah, so I mean if
15 you set a continuation for, say, 30 days out, and then
16 depending on what the initial assessment is, we can
17 advise whether we need a hearing on that or not. If
18 that's kind of what you're thinking, that may make
19 sense.

20 MR. RUBIN: Well, I mean, this
21 commission is entrusted to protect and avoid the harm
22 that they've seen evidence of. I was thinking more of
23 30 days to have a hearing, not to assess.

24 MR. MOELLENBERG: Yeah, yeah. And
25 actually, just to clarify, my answer really is the

1 same. I think if you set a continuation of the
2 hearing 30 days out, that should be enough time to
3 identify and get witnesses present. We might just
4 have to have a little flexibility, you know, date-
5 wise, for scheduling purposes. But again, we can put
6 people on remotely, too, I suppose, so --

7 MR. RUBIN: Mr. Chair and Members of
8 the Commission, I would recommend based upon what
9 we've heard from Apache's counsel that it would be
10 probably in an abundance of caution to allow -- to
11 hear what we can hear today and then have a hearing no
12 later than at approximately 30 days out. That would
13 avoid the argument on appeal that they have been
14 unfairly prejudiced.

15 MR. BLOOM: Mr. Chair?

16 MR. RAZATOS: I see your hand,
17 Commissioner Bloom. I was going to turn to you.

18 MR. BLOOM: Yeah, I don't want us to
19 get too far down the road here. Is there a
20 possibility that Apache's response could result during
21 this time in the production of more material that
22 would require a response from OCD? And if so, how
23 would we account for that?

24 MR. RAZATOS: Forgive me, Commissioner
25 Bloom. I didn't quite get the question. Can you

1 repeat it?

2 MR. BLOOM: Sure. So what are we
3 expecting from Apache afterwards and could there be
4 production of material from Apache that would require
5 a response from OCD or that OCD would like to or feel
6 obliged to respond to?

7 MR. RUBIN: Commissioner Bloom, Members
8 of the Commission, I think what we've heard is that
9 there won't be any additional facts. We won't have
10 any more data in 30 days and it's just going to be
11 what the parties are arguing should be done with that
12 data. So I think that should alleviate the concern of
13 what OCD may need to respond to. I think once we --
14 now that all the data is in, I think there's a -- that
15 we can have a finite point.

16 MR. RAZATOS: Did that answer your
17 question, Commissioner Bloom?

18 MR. BLOOM: It did. Thank you.

19 MR. RAZATOS: Okay. So I believe, Mr.
20 Rubin, as you mentioned it, and I believe this is what
21 I'm hearing from the parties, that we hear the case as
22 far as we can while we're here now and then continue
23 the part that would include this Exhibit 9 until
24 Apache had time to be able to get a response and any
25 human resources that would need to be used for a

1 response. Is that what I'm understanding?

2 MR. RUBIN: Mr. Chair, yeah; that is my
3 understanding as well. And we would, hopefully, be
4 able to, while everyone's here, schedule that
5 additional day of hearing within, again, about 30 days
6 out so that the parties have that time. That would
7 certainly spur whatever negotiation they need to have
8 between them in the interim.

9 MR. MOELLENBERG: Okay. So just --
10 and, Mr. Rubin, this is more directed to you --
11 procedurally, we just take the case all the way up
12 until this exhibit or do we stop after Apache provides
13 all of their information and then pick up again with
14 the OCD at the later date?

15 MR. RUBIN: That is a very good
16 practical question, Mr. Chair. Certainly, Apache's
17 case is not -- was premised upon what they've already
18 had as proposed conditions by the Division. So if
19 they feel like they can put on their case now to the
20 extent they can, we should defer to them to the extent
21 they're comfortable with it.

22 And then as to the witnesses of the
23 Division, to the extent they can lay some testimony
24 down that is not contingent upon this new information
25 and upon the additional permits of the conditions

1 they're proposing, we should get that done as well.
2 And we'll take it as it comes, and I think the parties
3 could probably sort out what should happen now and
4 what should be left for the -- for the next day.

5 MR. RAZATOS: So then we'll switch it
6 over to you, Messrs. Moellenberg and Tremaine. Do you
7 think you can continue with the case up until now,
8 until we -- you know, we cover everything that we were
9 planning to outside of this Exhibit 9, and then pick
10 up with Exhibit 9? How do the parties feel?

11 MR. MOELLENBERG: Well, let me bring in
12 another consideration, and that is whether we should
13 plan on going through tomorrow. My expectation at
14 this point in time is that we can probably get through
15 our case pretty easily today, but it really depends,
16 probably, on the cross-examination and the Commission
17 questions.

18 If that happens, perhaps we're at a
19 logical starting point to pick up with the Division's
20 case in a second piece. I mean, that might be one
21 thing to consider.

22 The other thing I was thinking about
23 when Commissioner Bloom was raising his question is
24 just sort of some procedural options; you know, maybe
25 like a status report and a supplemental pre-hearing

1 statement a week before -- you know, due a week before
2 we start up again, which I think was consistent with
3 your rules and I think addresses the question about --
4 okay -- what new witnesses and evidence may come in
5 and the Division having some time to prepare for that.

6 MR. RAZATOS: Okay.

7 Mr. Tremaine?

8 MR. TREMAINE: I think that Mr.
9 Moellenberg does identify a logical breakpoint, and I
10 don't want to be overdramatic here, but I do need to
11 emphasize the urgency that is the basis for why OCD
12 responded with additional conditions.

13 If we became aware of samples taken in
14 October in another context that showed these chloride
15 levels and there was no complete delineation from an
16 operator in January, we would be probably talking
17 about issuing a notice of violation for various
18 different aspects of Part 29.

19 And I think that what we want to
20 present to the Commission if possible this week is our
21 concerns with that Exhibit C because it can be
22 interpreted to imply there are additional if not
23 ongoing releases. And there are immediate response
24 requirements that trigger once there is documentation
25 of such a release, and we're not aware of any

1 immediate containment actions taken by Apache here.

2 So I do understand we may have some
3 difference of opinion as to what some of that data
4 says, and I think it's the Division's preference, if
5 we could, to present the Division's testimony even if
6 we have to go into tomorrow so that we've set the
7 stage. And then I will happily agree to let Apache
8 come back and reopen their case in response to that
9 Exhibit 9.

10 MR. RUBIN: Mr. Chair, Members of the
11 Commission, I think you've heard it from both sides
12 that we'll sort of take what we can now, leaving open
13 this additional day for what needs to come after and
14 if there is some additional -- I'm sorry.

15 Mr. Tremaine?

16 MR. TREMAINE: Sorry. Another wrench
17 for the works. If we schedule this out 30 days, I
18 just want to remind the Commission and all parties
19 that we are stacking this right on top of Goodnight,
20 which is going to be quite a full week. I'm not in
21 that, but in terms of scheduling, the specter of
22 adding another day of hearing in February is daunting,
23 so please consider that.

24 MR. MOELLENBERG: And I would like to
25 just interrupt as well.

1 Commissioner Bloom, I know I see your
2 hand. Give me one second if you don't mind.

3 It's also smack-dab right in the middle
4 of session, and I do know Commissioner Bloom, myself,
5 probably also Dr. Ampomah -- no?

6 You don't have to deal with the
7 session? Oh, you're lucky.

8 We'll have that to balance as well in
9 there, so we want to be cognizant of that.

10 Commissioner Bloom, I'm sorry. Go
11 ahead.

12 MR. RAZATOS: Commissioner Bloom, we
13 can't hear you.

14 MR. BLOOM: Thank you. I was just
15 going to flag what Mr. Tremaine raised, which is five
16 weeks from now on the 20th, we're beginning the Empire
17 Goodnight midstream case.

18 I think the 13th -- Thursday the 13th
19 puts us four weeks from today, so as we're -- I don't
20 know if we want to talk dates now, but perhaps as
21 we're moving here, people can look at their calendars
22 and think about the 13th and 14th.

23 Yes, the legislative session is going
24 to be an obstacle. I mean, I'm running our signature
25 piece of legislation and I don't know if I'm going to

1 have to pop out at times or find somebody to cover or
2 how we're going to handle that, so there's kind of a
3 lot at play.

4 MR. RAZATOS: So -- and Commissioners,
5 please, by all means, step in as well -- I'm going to
6 make the suggestion that we keep going with this case
7 as far as we possibly can and making sure that Exhibit
8 Number 9 is definitely -- the rebuttal exhibit from
9 OCD is definitely kept on the side back burner and
10 maybe not commented upon until we have the ability for
11 Apache to make a response and to get the necessary
12 response for that.

13 So my suggestion is that we continue
14 with Apache's part today; if it spills into tomorrow,
15 go into tomorrow; pick up with the OCD -- the
16 Division; let them say what they need to say up until
17 the point where we come to this rebuttal.

18 And at that point, I think -- and we
19 may just have a natural break in witnesses at that
20 point as well, where we just then pick up at a later
21 date within a month, within those 30 days.

22 Counsels, how do you feel about that?

23 Or, Mr. Rubin, is that okay?

24 MR. RUBIN: Mr. Chair, the one question
25 I have; is there a way to change on the ground what

1 the status quo is right now so that the time is not of
2 the essence?

3 MR. RAZATOS: Mr. Moellenberg, your
4 microphone, please.

5 MR. MOELLENBERG: Sorry.

6 Mr. Hearing Officer, funny you should
7 say that because we were just consulting about that
8 idea. I would suggest -- I think we would be happy to
9 discuss that kind of approach with the Division given
10 some of the timing exigencies here. And there may be
11 some things that, as between the Division and Apache,
12 we could agree to go ahead with and, as you say,
13 change the status quo and move forward on some things.

14 And, I mean, Apache's not -- in fact, I
15 think there are some things Apache would rather get in
16 and do. You have the issue of one mobilization versus
17 two, perhaps, but anyway, I think that's something we
18 would be interested and willing to take up with the
19 Division and, you know, perhaps at a break or
20 something see if we can get anywhere with that.

21 MR. RUBIN: That would be wonderful to
22 have that in place or at least know what those
23 discussions amount to if they were fruitful before the
24 end of tomorrow because you can't put it back in the
25 pipe if it comes out, of course. We all know that.

1 Okay. Thank you.

2 MR. RAZATOS: So, Mr. Rubin, are you
3 suggesting that we take a break so that the two
4 parties -- I apologize. I didn't understand at all,
5 so --

6 MR. RUBIN: Well, if -- Mr. Tremaine
7 isn't here in person, but if Mr. Tremaine and Mr.
8 Moellenberg feel like they can talk for a few minutes
9 and -- I mean, that's kind of spur of the moment.

10 MR. MOELLENBERG: It is kind of spur of
11 the moment. My suggestion is why don't we get at
12 least the two Apache witnesses on?

13 And then perhaps that's a good time to
14 take a break, and Mr. Tremaine and I can consult about
15 perhaps the best way to proceed at this point given
16 both the time exigencies and, you know, not causing
17 too much confusion and difficulty during the hearing
18 because there could be delays as we sort of get to the
19 "Okay; what should we go ahead with and what should we
20 not?" You know, those kind of procedural things,
21 so --

22 MR. RAZATOS: Mr. Tremaine?

23 MR. TREMAINE: I concur. It's going to
24 be challenging to transition to that -- take a break.
25 I think we should get through what Apache can fit into

1 today, and then we'll plan to start tomorrow. But I'm
2 happy to fit in a conversation there, even if it
3 extends into figuring out responsive actions and
4 talking through some of that data in Exhibit C at the
5 beginning of next week.

6 I think that's still much more
7 preferable to kind of just, you know, punting a
8 prospective resolution into late February. So we're
9 more than happy to engage in that, and we may -- I
10 think from what I'm hearing today, we may be able to
11 find some alternative middle ground for response
12 actions.

13 So we'll try for that tomorrow or at
14 the earliest day possible and commit to getting an
15 update. If we can handle any outstanding immediate
16 response concerns under Part 29 in the next, you know,
17 week or two, then OCD may well be agreeable to
18 revising our position or scheduling the follow-up
19 hearing after the Goodnight Empire matter, which would
20 give everyone some breathing room.

21 MR. RUBIN: Okay. Commissioners, are
22 you okay with that?

23 Commissioner Ampomah?

24 DR. AMPOMAH: Yes.

25 MR. RUBIN: Commissioner Bloom?

1 MR. BLOOM: Yes.

2 MR. RAZATOS: Okay, so what do we need
3 to do procedurally? We could just continue from here?

4 MR. BLOOM: Yes. Mr. Chair and the
5 Commission, I think we should proceed forthwith.

6 MR. RAZATOS: Okay, so then, Mr.
7 Moellenberg and Mr. Tremaine, you guys will talk at a
8 later point.

9 So let's continue with the case. Mr.
10 Moellenberg, you can then call your next witness.

11 MR. MOELLENBERG: Thank you, Mr. Chair,
12 Commissioners. Apache calls Mr. Larry Baker, and I
13 don't know if we'll be using first names, but Mr.
14 Baker goes by Bruce, so --

15 MR. RAZATOS: Okay. Mr. Baker, if
16 you'll come right up here and sit down, and our court
17 reporter will swear you in. And please don't forget
18 to turn on the microphone.

19 Go ahead. We could swear him in. He's
20 ready to go.

21 I think our court reporter is having
22 some technical issues, so give us -- there you go.

23 Nope. You just muted yourself. Unmute
24 again. There you go.

25 //

1 WHEREUPON,

2 LARRY BRUCE BAKER,

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

6 MR. RAZATOS: Excellent, thank you.

7 The witness has been sworn in. Mr.
8 Moellenberg, please.

9 MR. MOELLENBERG: Thank you.

10 DIRECT EXAMINATION

11 BY MR. MOELLENBERG:

12 Q Mr. Baker, would you please state your name
13 and current address?

14 A Yes, my name is Larry Bruce Baker. I
15 currently reside in Midland, Texas.

16 Q And on whose behalf are you providing
17 testimony today?

18 A Apache Corporation.

19 Q Did you provide a written resume showing
20 your educational and employment history and experience
21 for purposes of this hearing?

22 A Yes.

23 Q And was a copy of your resume to your
24 knowledge per the Exhibit A for this hearing?

25 A Yes.

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1 Q Do you have any updates or corrections to
2 the written resume?

3 A Yes, I do. The only change is in my
4 employment history. I was let go by Apache at the end
5 of 2024, so I'm no longer employed with -- at Apache
6 Corporation.

7 Q Okay. Thank you. Mr. Baker, would you
8 please give us a brief description of your educational
9 history?

10 A Yes. I have a Bachelor of Science degree
11 from Eastern New Mexico University in wildlife fishery
12 science, and a Master of Jurisprudence from Texas A&M
13 in -- with an emphasis in energy and environmental
14 law.

15 Q Thank you. And can you briefly summarize
16 your employment history and work experience?

17 A Yes. I began working in southeastern New
18 Mexico in 2007 for Rice Operating Company as an
19 environmental technician. I later was -- went to work
20 with Rice Consulting & Safety as a project manager
21 for -- for consulting purposes and began my job at
22 Apache in July of 2013.

23 Q And your last position at Apache was -- what
24 was your title?

25 A I was a -- a senior environmental

1 specialist.

2 Q Okay. And do you recall about when you took
3 that position on?

4 A I want to say it was in 2024; I believe.
5 Maybe first quarter, but I'm not a hundred percent
6 sure.

7 Q Okay. Was -- well, let me ask you to
8 describe your responsibilities as a senior
9 environmentalist specialist, and maybe just so we
10 reach back and cover the time period that we're
11 interested here, tell us if your responsibilities were
12 different, let's say, from 2019 to 2024.

13 A I -- I would say no. I -- I've always been
14 tasked with handling soil remediation for Apache and
15 spills with the -- with the Division since -- since my
16 employment at Apache. So the specialist role may have
17 led to some other things that I got involved with, but
18 as for purpose of this hearing, I don't -- I don't
19 think -- my role didn't change with the title change.

20 Q Thank you. Can you give us a rough estimate
21 of the number of contaminant delineation projects
22 you've been involved in during your career?

23 A That one's a hard one. I -- I kind of -- I
24 kind of figured it up. I'm comfortable with saying
25 probably over 250, but that number could be larger

1 because, like I said, I've been doing this since 2007
2 in -- in southeastern New Mexico.

3 Q What is your knowledge of the East Blinebry
4 Drinkard Unit, or EBDU, Number 37 well?

5 A My knowledge is the well is located in -- in
6 the Eunice area in Section 13, Township 2137, and is
7 associated with an injection well.

8 Q And what kind of injection well? Can you
9 describe that a little further?

10 A I -- I --

11 Q Is it saltwater?

12 A I believe so. Yes, sir.

13 Q Okay. And is there also a pipeline
14 associated with the well?

15 A Yes, sir.

16 Q Okay. Are you familiar with a release that
17 occurred along a pipeline near the EBDU Number 37 well
18 in July of 2019?

19 A Yes.

20 Q And what was the approximate location of the
21 release?

22 A The -- the release happened at the junction
23 box approximately 700 feet east of -- of the well
24 site.

25 Q Okay. And what was your involvement

1 regarding the reporting of the release and the
2 immediate response?

3 A I -- I was notified by production and EHS
4 that a -- a release had occurred. I -- I believe I
5 notified the agency because of the -- the volume.
6 That would be typical. And then we followed up. I
7 believe at that time my direct report filed the C-141
8 and -- and then we went into the delineation phase.

9 Q And is the C-141 filed for this proceeding
10 as Apache Exhibit A-1?

11 A Yes, sir.

12 Q Does the C-141 identify the volume of
13 liquids released?

14 A No.

15 Q And can you explain a little further why
16 that is?

17 A When -- when the spill was reported to me,
18 there was a volume. Upon -- upon reviewing the site
19 and getting a better look at it, from my perspective,
20 it was obvious that that spill volume was not -- not
21 close or even correct at the time of reporting it.

22 It would have been hard without -- you know,
23 we had to go through some one-call notifications and
24 things of that nature to start gathering data, and so
25 I felt it would be better to call it unknown because

1 that would put us into a higher stringent level of
2 delineation, and I felt like that was appropriate.

3 Q So after or perhaps during the reporting of
4 the release, did Apache take some immediate actions in
5 response?

6 A Yes. I can -- I can speak to that. We did.
7 We were very concerned at that low-lying area. That
8 was -- that was priority, and I was concerned at that
9 time 'cause I did not know the depth to groundwater
10 and we knew the well was there.

11 And so we -- we took immediate action, I
12 believe in July of that year, to try to assess that
13 situation and see what we had. And -- and I believe
14 we started excavating in the playa relatively shortly
15 after the release occurred.

16 Q Okay, so after the reporting of the release
17 and maybe the initial actions, did Apache prepare a
18 remediation plan for submission to the Division?

19 A Yes.

20 Q And do you recall who actually prepared the
21 written plan?

22 A Larson & Associates prepared the plan. I
23 reviewed it and submitted it; I believe.

24 Q Okay. And is it your understanding that
25 that remediation plan was submitted as Apache Exhibit

1 A-2 with Apache's pre-hearing statement?

2 A Yes.

3 Q Can you briefly describe the contents of
4 that remediation plan?

5 A The remediation plan was to address -- was
6 basically a 4-foot dig in areas -- the upper portion
7 of it to install a 20 -- 20-mil reinforced liner. We
8 were going to gather sidewall samples every 200 square
9 feet, and we had a proposed clay liner originally for
10 the -- the low-lying area. That -- that's what Larson
11 & Associates proposed.

12 Q Okay. Do you recall if the remediation plan
13 itself contained any groundwater quality information?

14 A Yes, I believe -- I believe so.

15 Q Do you recall if it contained any
16 information on water quality samples taken from the
17 windmill?

18 A I -- I can't recollect at this time.

19 Q Okay, fair enough. So did the Division
20 review and approve the remediation plan?

21 A Yes.

22 Q And do you recall any consultation with the
23 Division about additions or changes to the remediation
24 plan?

25 A I -- I don't remember any changes, although

1 I do think there was some conditions of approval
2 and -- and if I'm -- if I'm correct, they -- they
3 asked for two more wells to be installed.

4 Q Okay. And do you recall an addendum to the
5 remediation plan that addressed those two additional
6 wells?

7 A I -- I can't recollect the addendum.

8 Q Okay. Do you recall us discussing an Apache
9 Exhibit A-3, which is an email from Mark Larson to
10 Bradford Billings dated December 23, 2019?

11 A I -- I'm sorry. I can't.

12 Q Okay. Okay. We'll come back to that at the
13 end and maybe I'll -- if you could be ready to pull
14 that up.

15 What was your involvement in the
16 implementation of the remediation plan?

17 A I -- I -- my involvement, typically, in --
18 in remediation is getting -- getting the contractors
19 established, consulting, reviewing. I basically
20 oversee it as a company representative -- the -- the
21 work -- and -- and make sure it's done in accordance
22 with the plan.

23 Q Okay. Did Apache complete the work required
24 by the approved remediation plan?

25 A Yes.

1 Q And do you recall around the timeframe of
2 when that work was done?

3 A I want to say it was around September 2020.

4 Q And do you recall a document where the
5 Division approved Apache's completion of the backfill
6 operation during that excavation process?

7 A Yes.

8 Q And do you recall, for example, that being
9 an email from Mr. Billings at the Division to Mr.
10 Larson around September of 2020?

11 A Yes.

12 Q And did we discuss that being Apache Exhibit
13 A-6?

14 A Yes.

15 Q Okay. After the plan was implemented, did
16 Apache prepare and submit a closure report to the
17 Division?

18 A Yes, for -- for the soil remediation.

19 Q Okay. And do you recall the date of the
20 closure report?

21 A I -- I think it was dated December 2020 and
22 was filed in February of 2021; I believe.

23 Q Okay. And to your knowledge, was that
24 closure report provided by Apache as Exhibit A-5 to
25 its pre-hearing statement?

1 A Yes.

2 Q Did the Division review and approve the
3 closure report?

4 A Yes.

5 Q Did the approval of the closure report
6 conclude all of the matters relating to the release?

7 A I would say no.

8 Q Okay. And, for example, did the closure
9 plan itself commit to additional quarterly groundwater
10 monitoring?

11 A Yes.

12 Q And do you recall how many monitoring wells
13 were in place or to be installed and monitored per the
14 closure-plan requirements?

15 A I believe originally there was two, and then
16 at some point we put in two more. That would have
17 probably been part of the closure plan.

18 Q Okay. Was Apache's response to the release,
19 including the preparation and implementation of the
20 remediation plan, consistent with your experience with
21 other projects performed in New Mexico under Division
22 supervision or oversight?

23 A I would say yes to that. I -- I use the
24 same tactic and approach that I have on almost every
25 project that -- that I've done since 2013. However,

1 there was a little bit of speed-up in that low-lying
2 area to -- to try to -- to gain a better understanding
3 early on.

4 Q Okay. Mr. Baker, does that conclude your
5 direct testimony or do you have any other things you'd
6 like to add?

7 A No. I think that concludes.

8 Q Okay. Would you be available in the event
9 that we need to have you comment on the Division's
10 witnesses' testimony?

11 A Yes, sir.

12 Q Okay. Mr. Baker, I moved on past an email
13 we mentioned, but it's -- we're going to pull that up
14 here; I believe. Yeah.

15 MR. MOELLENBERG: Is that okay if we
16 pull up the Exhibit A-3 here and allow Mr. Baker to
17 take a look at it?

18 MR. RAZATOS: Yes.

19 Sheila, can you give Ms. Catalano,
20 please, control?

21 BY MR. MOELLENBERG:

22 Q Okay, Mr. Baker, let's see if we can scroll
23 to the top here. Do you see an email on your screen
24 from Mr. Larson dated December 23rd of 2019, to Mr.
25 Billings?

1 A Yes, sir.

2 Q Okay. And does seeing this information
3 refresh your recollection of some of the discussions
4 between Apache and the Division regarding the
5 remediation plan and some additional work?

6 A Yes, yes. Okay. I -- I'm -- I'm getting my
7 dates confused. This -- this was an addendum to the
8 remediation plan prior to approval -- okay -- or maybe
9 after approval. So yes, I'm -- I'm familiar with
10 this.

11 Q Thank you. And to your knowledge, was this
12 included as Exhibit A-3 to Apache's pre-hearing
13 statement?

14 A Yes, sir.

15 MR. MOELLENBERG: Okay. Okay. So at
16 this time, I would move for admission of Apache
17 Exhibits A-1, A-2, A-3, A-5, and A-6.

18 (Exhibits A-1 through A-3, Exhibit A-5,
19 and Exhibit A-6 were marked for
20 identification.)

21 And we didn't cover A-4? Okay.

22 MR. TREMAINE: We will cover it later.

23 MR. MOELLENBERG: Okay.

24 MR. TREMAINE: And A.

25 MR. MOELLENBERG: I'm sorry. And A,

1 which is the resume.

2 (Exhibit A was marked for
3 identification.)

4 MR. RAZATOS: Okay. Mr. Tremaine, do
5 you have any objection to that?

6 MR. TREMAINE: No objections.

7 MR. RAZATOS: Okay. It'll be entered.
8 (Exhibits A through A-3, Exhibit A-5,
9 and Exhibit A-6 were received into
10 evidence.)

11 MR. MOELLENBERG: Okay. Mr. Chair,
12 this witness is available for cross-examination.

13 MR. RAZATOS: Okay. Excellent. Thank
14 you.

15 Mr. Tremaine?

16 MR. TREMAINE: Thank you, Mr. Chair,
17 Mr. Moellenberg. I have some questions for Mr. Baker.
18 I'll be much more brief than we were with Mr. Bole
19 this morning.

20 CROSS-EXAMINATION

21 BY MR. TREMAINE:

22 Q Good afternoon now, I guess, Mr. Baker. I
23 want to ask you; do you recall the testimony this
24 morning in which we were examining a map of chloride
25 contaminations in groundwater from December of 2023?

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1 A Yeah, there -- there was many maps, so yeah.
2 Maybe.

3 Q Sure. I'm going to just direct you in a
4 minute. I'd like to share my screen and refer to
5 Apache Exhibit B packet, page 170 of 733. This was
6 the map I was just referring to reflecting the area
7 for which we had groundwater monitoring wells in
8 December of 2023. Would you agree with that?

9 A Yes.

10 Q And you were with Apache at that time;
11 correct?

12 A Yes.

13 Q What was your last date with Apache?

14 A 12/31/2024.

15 Q Okay. Thank you. Are you generally
16 familiar with Apache's operations in the East Blinebry
17 Drinkard Unit as reflected on this map?

18 A Somewhat. I'm -- I'm familiar with the
19 area. My role is not -- is not really in production,
20 so I'm familiar with the landscape, but maybe not at a
21 technical level as -- as a production engineer or
22 something of that nature.

23 Q Okay. If I said that it was OCD's
24 understanding that all of the well pads or wells
25 represented on this map were all operated by Apache,

1 would you have any reason to disagree with that?

2 A No. I think -- I think that would be a fair
3 statement. I -- I wouldn't -- I don't know that I
4 could say all of them, but I -- I would agree that a
5 large portion of them would be.

6 Q As of the time that you departed from
7 Apache, are you aware of any of the wells or any
8 associated facility that would be present as depicted
9 on this map having been potentially transferred, sold,
10 or assigned to any other operator?

11 A Yes.

12 Q Is the East Blinebry Drinkard Unit Number
13 37 -- has that been sold to another operator?

14 A That would be my understanding.

15 Q Has Apache -- when would that assignment
16 have occurred?

17 A My understanding the closing of that would
18 have been at the 12/31/2024, my last day at Apache.

19 Q Okay. Are you able to tell us and the
20 Commission what operator is going to be taking over
21 operation of the EBDU Number 37?

22 A I'm not sure. I'd -- I'd like to -- I would
23 have to -- I'm -- I -- I don't know that I -- if I
24 have a legal obligation or not. I would have to -- I
25 would have to look into that.

1 Q That's fine, Mr. Baker. Thank you. Thank
2 you for that. I think we have what we need. Do you
3 agree with the earlier testimony that chlorides do not
4 naturally break down in the environment?

5 A Yes.

6 Q All right. I'm going to move back now to
7 your exhibits if I could direct you to page 16 of your
8 Exhibit Packet A -- 16 of 515. Would you agree with
9 me that -- well, do you recognize this document, Mr.
10 Baker?

11 A Yes, sir.

12 Q And this is the initial C-141 regarding the
13 release that you identified to and previously
14 testified about; correct?

15 A Correct.

16 Q Would you agree that on this document when
17 you filed it, you marked that at the time there were
18 not observed impacts to groundwater? Let me rephrase
19 that question. I apologize. There's double negative.
20 When you filed this document, did you or Apache
21 indicate that there were impacts to groundwater?

22 A I -- I would say that at that time, I
23 wasn't -- it wasn't definitively clear. I don't feel
24 that --that as the project -- I don't think I've -- at
25 any statement that I've made in -- in this process

1 that I was not concerned about the possibility of
2 groundwater being impacted, but I don't know that it
3 was definitive at the time of this paperwork being
4 filed.

5 Q Understood. So would you agree that the
6 data from subsequent groundwater monitoring has
7 necessarily changed that analysis that there may be
8 impacts to groundwater since the time this was filed?

9 A I would say that yes, the data -- the data
10 shows that.

11 Q And you may have heard earlier today some
12 testimony regarding the -- questions and testimony
13 regarding the approvals sent by Mr. Billings to -- to
14 Apache regarding the C-141s and remediation plan.

15 I don't want to belabor going through those
16 exhibits, but would you agree consistent with that
17 prior testimony and exhibits that each of those
18 approvals from OCD clearly indicated that Apache would
19 have ongoing liability for remediating the release if
20 their operations and plans fail to adequately
21 investigate and remediate contamination that may pose
22 a threat to groundwater?

23 MR. MOELLENBERG: Object to the extent
24 it calls for a legal conclusion.

25 MR. TREMAINE: I disagree. I'm simply

1 asking Mr. Baker if he agrees to the content of the
2 emails notifying -- like the actual language and email
3 notifying Apache of their ongoing liability.

4 MR. RAZATOS: Can you rephrase it for
5 him, Mr. Tremaine?

6 MR. TREMAINE: Sure.

7 BY MR. TREMAINE:

8 Q Well, maybe what I want to do is just go
9 back to the Exhibit 6. So we've discussed this in our
10 context earlier. Mr. Baker, I'm directing you to page
11 426 out of 515 of Apache's Exhibit Packet A. Are you
12 familiar with this email?

13 A Yes, sir.

14 Q And do you agree that the language I
15 previously quoted is present in this approval and
16 notifies OCD of its ongoing liability?

17 A In -- in my experience, that -- that -- what
18 you're referencing there would be in every approval
19 letter that I've -- that I've received. That's
20 pretty -- pretty -- a custom with -- with many
21 projects I've worked with. So it's -- it's kind of a
22 stamped thing, so yes.

23 Q So it's fair to say that OCD consistently
24 has notified you, in your experience, that if the
25 information changes that you as the operator may have

1 to go back and do additional work, additional
2 remediation, additional delineation; is that fair?

3 A Yeah. Yes. I -- I would say it's fair
4 if -- if more data comes along that we have an
5 obligation to -- to address the situation or, better
6 yet, investigate the situation.

7 MR. TREMAINE: Thank you, Mr. Baker.
8 Give me one second. I think I'm done. And I am done
9 with my cross-examination. Thank you, Mr. Baker, for
10 your time. We appreciate it.

11 MR. RAZATOS: Mr. Moellenberg, did you
12 have any redirect for --

13 MR. MOELLENBERG: No. No redirect.

14 MR. RAZATOS: Okay. Excellent.
15 Commissioners, we'll start with you, Commissioner
16 Bloom. Any questions?

17 MR. BLOOM: Mr. Chair, no questions.
18 Thank you.

19 MR. RAZATOS: Okay. Dr. Ampomah, any
20 questions?

21 DR. AMPOMAH: Yes, I do have some quick
22 ones.

23 Mr. Baker, so you said that at the time
24 of the first release you had a fair idea on the
25 volumes, but you decided to report "unknown." Can you

1 share with the Commission what was the volume if you
2 can?

3 THE WITNESS: Let me -- let me look.
4 I -- I don't know the exact number off the top of my
5 head, but it would have been -- it would have been
6 under a hundred barrels with some recovered. That was
7 the initial reported to me from -- from the production
8 team in the field. After further analyzing the -- the
9 situation, I realized that I really had no idea what
10 was lost.

11 DR. AMPOMAH: Okay.

12 THE WITNESS: And so I felt like it was
13 the appropriate stance to be put into that more
14 stringent criteria of delineation in regards to OCD
15 requirement. And that -- that's why I'd marked it as
16 unknown.

17 DR. AMPOMAH: Okay, so in your
18 remediation plan -- the delineation and remediation
19 plan -- Apache decided to drill two monitoring wells:
20 the one on top and then the one on the south?

21 THE WITNESS: Yes. We -- we were
22 concerned about the -- the windmill, and -- and
23 that -- I believe that happened pretty early on. And
24 so we did TM-1. We wanted to see if we had any
25 migration 'cause we wanted to do our best to protect

1 the landowner's windmill, you know, and that -- that
2 was the purpose of that.

3 And then we -- you know, we put an
4 upgradient well to try to see if -- see if we could
5 get an idea of if -- if there was some background,
6 which would be typical. But it -- it was a -- it was
7 a safety measure to see if we were starting to impede
8 on the -- on the landowner's well.

9 DR. AMPOMAH: So the first two wells --
10 the first two monitoring wells; that was more or less
11 initiated by Apache?

12 THE WITNESS: Yes. I believe so.

13 DR. AMPOMAH: So aside the two wells
14 that Apache initiated in the initial plans, I want to
15 know; was there anything else that was initiated by
16 Apache other than the Division more or less directing
17 Apache to drill more wells?

18 THE WITNESS: To -- to answer your
19 question, we did a lot of work in that time period.
20 That -- that was -- we did -- we -- I believe we -- we
21 did a pretty large excavation in the low-lying area,
22 the playa. I don't -- I'm not a hundred percent sure
23 if it's playa or not, but it's been referenced that
24 way.

25 And I believe we dug that to 10 -- to

1 10 foot. I wanted to get that out of there. We
2 hauled that off. That was -- that was initial.

3 The -- the landscape of that area;
4 there was a lot of mesquite, and it was hard to -- to
5 get into it and access the -- the entire spill area,
6 and it was in kind of a sandy condition. So we -- we
7 tried, I believe, multiple approaches.

8 We tried backhoe delineation to see the
9 depth. Eventually, we brought in some soil bores. We
10 had a soil-bore machine to try to determine
11 groundwater. We -- we did a lot of things where we
12 could get access to it.

13 And -- and when we implemented the
14 remediation plan, it was acknowledged that the
15 forefoot -- that -- that there was -- it was
16 significantly deeper contamination. And -- and the --
17 the attempt there was to -- to protect groundwater.
18 And if we can get to the forefoot, get the liner in --
19 that -- that I've done many times with -- with the
20 agency and -- and multiple spills before.

21 And so, answering your question, we --
22 we did do a lot of delineation and understanding.
23 Originally, we thought the depth to groundwater inside
24 the playa was a lot shallower than it -- it turned out
25 to be. And so initially, I -- I got some bad data.

1 One drilling company said, "We think it could be 15
2 feet," and that's why we started digging to 10. I
3 wanted it out of there.

4 Once -- once we got a better
5 understanding that it was deeper than that, we were
6 getting more in the 40s -- you know, we -- that was
7 already dug out, we started taking a more, you know,
8 logical approach and trying to understand it, you
9 know, if that -- if -- go ahead.

10 DR. AMPOMAH: Oh, well, so are you
11 saying that Apache is doing multiple wells in this
12 area -- let's say injection wells in the area; is that
13 correct?

14 THE WITNESS: I'm -- I'm not -- I'm --
15 I'm referring to the spill.

16 DR. AMPOMAH: No, I'm saying that I'm
17 asking if Apache owns some production or, let's say,
18 injection wells around that area.

19 THE WITNESS: Yes, that would be
20 correct. They -- they would be -- they would be --
21 how can I put it? They might be injection; they might
22 be producing.

23 DR. AMPOMAH: Exactly.

24 THE WITNESS: It -- it depends.

25 DR. AMPOMAH: So is it not surprising

1 when Apache says that we do not know the underground
2 source of drinking water? I mean, you have wells in
3 the area. So you don't know the depth of the
4 underground source of drinking water?

5 THE WITNESS: That -- that's a valid
6 question. I have never been able to look at a -- a
7 drilling log and determine that definitively. Now,
8 there might be a way to do that; I'm just not aware of
9 it.

10 DR. AMPOMAH: Okay, so I'm trying to
11 get to a point where I can fully understand. So based
12 on the cross on the first witness, so NMOCD
13 established that if it was not the intervention of
14 asking Apache to drill multiple monitoring wells, we
15 wouldn't know the extent of the contamination; is that
16 a fair statement?

17 THE WITNESS: I would say that's a fair
18 statement. I would also like to -- so the original
19 scope -- we got the remediation plan; we installed the
20 four wells. We submitted that data to -- we got the
21 plan approved; we submitted to OCD; they closed it; we
22 continued monitoring the four wells.

23 At a later date, the agency came back
24 to me and asked that -- to reevaluate the situation,
25 in which I accommodated them, and that's how we got to

1 the more wells. But at that time, I had no reason
2 other than them inquiring that we were still
3 monitoring and trying to see where it was going.

4 So -- so that would be a correct
5 statement, but I just want to be clear on that; the
6 dynamic that changed was -- was not internal from
7 Apache. That -- that was OCD asking us to -- to look
8 into it further, in which -- in which we accommodated
9 them and led to a -- realizing there's a larger
10 problem.

11 DR. AMPOMAH: Yeah, so before you left
12 Apache, do you believe that the extent of this
13 contamination -- the delineation -- is really, really
14 accurate now?

15 THE WITNESS: I -- I would say this
16 'cause I'm not a hundred -- when I look at it from my
17 perspective, from the soil-remediation standpoint, the
18 surface blueprint of this spill; we had a good
19 understanding of the lateral extent because of all of
20 our clean well data, which we collected a lot of
21 samples; I knew we had a problem with depth.

22 So the question you're asking me; it
23 depends on if I believe that the current situation is
24 absolutely 100 percent being contributed from this
25 spill. I cannot answer that. I can't say it isn't,

1 but I can't say it is because my data doesn't suggest
2 that.

3 DR. AMPOMAH: Well, so are you
4 suggesting that there could be something that might
5 have happened not necessarily from this hundred-barrel
6 spill that really more or less went on? It could be
7 something more deeper than that?

8 THE WITNESS: I -- I would have to --
9 I -- I don't know that. Part -- part of the reason
10 the team recommended the soil bore towards the -- the
11 junction is that was the one area I felt like I might
12 have a lack of delineation with depth. And that would
13 give me a lot of information to see if -- if the
14 current situation is more directed to this release or
15 another issue to -- to explore.

16 DR. AMPOMAH: So from all the
17 testimonies that we've heard today, I'm not sure if we
18 fully understand the extent. You know, if you look at
19 the well 23 -- the TMW-23, TMW-24 -- and leaving all
20 the -- some of the other wells, there is still some
21 contamination there. So I'm not sure if Apache can
22 really defend that the situation has been contained.

23 THE WITNESS: I -- I could see that
24 argument.

25 DR. AMPOMAH: So if you can see the

1 argument, then I want to know. So, then, based on the
2 earlier testimony, it sounds like NMOCD is asking for
3 about 40 wells total. So now you have about 23 or
4 so -- 24. They are asking more to about 40. And I
5 don't know if it is the next witness who will be
6 showing me the map. It is the next witness; right?

7 MR. MOELLENBERG: The next witness,
8 yeah.

9 DR. AMPOMAH: Okay. Let me pause here.
10 Thank you. Thank you.

11 But one more I just want to ask you.
12 So based on what we know now, do you believe that the
13 initial remediation plan was effective?

14 THE WITNESS: I do.

15 DR. AMPOMAH: And successful?

16 THE WITNESS: I -- yes, I do.

17 DR. AMPOMAH: Okay. Thank you.

18 MR. RAZATOS: I -- sorry. It keeps on
19 going; right? I just have one question to dovetail
20 off of Dr. Ampomah's. Do you think the remediation
21 plan is sufficient?

22 DR. AMPOMAH: Oh, yeah.

23 THE WITNESS: From my experience, it --
24 that's -- that's -- there -- there's definitely a
25 problem going on at the subsurface.

1 MR. RAZATOS: Okay.

2 THE WITNESS: We -- we have chlorides
3 there. Do I think from the spill and the footprint
4 that I saw and the liner that I installed should have
5 addressed any further contaminant getting to the
6 groundwater table? What happened at the time of the
7 event? That's speculation. I don't know how much
8 'cause I don't know how much was lost.

9 But with that being said, do I think
10 the liner in place is adequate? I would say yes. And
11 my -- my assumption is the -- the chlorides we're
12 seeing in the water table; if they're coming from that
13 release, they probably happened before the remediation
14 occurred.

15 MR. RAZATOS: Okay.

16 THE WITNESS: That would -- that would
17 be my guess.

18 MR. RAZATOS: Okay. Thank you.

19 I have no further questions. Anybody
20 have -- Mr. Moellenberg?

21 MR. MOELLENBERG: Nothing further.

22 MR. RAZATOS: Mr. Tremaine?

23 MR. TREMAINE: Nothing further.

24 MR. RAZATOS: Okay.

25 Mr. Baker, thank you so much. We

1 appreciate it. Thank you.

2 Before we call your next witness, do we
3 need a break? Yeah, I think we need a -- let's take a
4 ten-minute break. We can come back at around 2:30.

5 Excellent. Thank you.

6 (Off the record.)

7 MR. RAZATOS: Sorry for the delay.

8 We're back on the record.

9 Mr. Moellenberg, I think we're ready
10 for your next witness. Turn your microphone on.

11 Sorry.

12 MR. MOELLENBERG: Yeah. I'm -- hard to
13 create new habits.

14 Mr. Chair, Commissioners, Apache calls
15 its next witness, John Grams.

16 MR. RAZATOS: Mr. Grams, if you'll come
17 have a seat, please? If you'll turn on your
18 microphone, and then our court reporter will swear you
19 in.

20 MR. GRAMS: All right.

21 WHEREUPON,

22 JOHN GRAMS,

23 called as a witness and having been first duly sworn
24 to tell the truth, the whole truth, and nothing but
25 the truth, was examined and testified as follows:

1 MR. RAZATOS: Excellent. Mr. Grams has
2 been sworn in.

3 Mr. Moellenberg, please.

4 MR. MOELLENBERG: Thank you, Mr.
5 Chairman.

6 DIRECT EXAMINATION

7 BY MR. MOELLENBERG:

8 Q Mr. Grams, would you please state your name
9 and business address?

10 A Yeah, John Grams. I'm at 5847 50th Street
11 in Lubbock, Texas.

12 Q On whose behalf are you providing testimony?

13 A Apache Corporation.

14 Q And what relationship do you have with
15 Apache?

16 A My company, Terracon, has a consulting
17 agreement with Apache, so I'm a consultant to Apache.

18 Q Okay. I think we covered this, but would
19 you just briefly talk about the timing of and
20 circumstances under which you and your firm were
21 engaged to consult with Apache on this project?

22 A Yeah, so I began -- I became involved in
23 late July, August of 2024. I think earlier someone
24 had commented Larson & Associates went out of
25 business, and the project was handed to Terracon at

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1 that time.

2 Q Okay. Did you submit a written resume
3 describing your education, work history, and
4 experience for this proceeding?

5 A Yes. I did. I believe it is Exhibit C.

6 Q And to your knowledge, is that exhibit
7 current and true and accurate?

8 A Yes.

9 Q Would you briefly summarize for the
10 commissioners your educational history and technical
11 qualifications?

12 A Yeah. I have a bachelor's degree in geology
13 and a Master of Science in geology. I'm a registered
14 professional geologist in the states of Minnesota and
15 Texas.

16 Q Okay. To your knowledge, does New Mexico
17 have a registered geologist program?

18 A No. I don't believe it does.

19 Q Could you please summarize your past
20 employment history?

21 A Sure. I began consulting 1988 as a field
22 geologist doing groundwater and soil investigations,
23 sampling wells, sampling soil, drilling wells -- that
24 kind of thing. After four years, I went to Amoco Oil
25 Company and worked for Amoco BP for seven years,

1 mostly in compliance -- a few other roles.

2 Then I returned to consulting, and for the
3 past 25 years I've been doing various consulting
4 assignments: mostly site investigation, remediation,
5 soil, groundwater, emergency response kind of work.

6 Q Thank you. Could you please give us a
7 little additional description of your experience and
8 qualifications as it relates particularly to
9 groundwater contaminant delineation?

10 A Yeah. I've worked on literally hundreds of
11 projects over the years -- you know, the past 30-some
12 years -- in a capacity ranging from, as I say, a field
13 geologist executing the work in the field to project
14 manager directing the work, and more recently, more as
15 a project director providing senior oversight.

16 Q Okay, and could you describe in general the
17 purposes of groundwater contaminant delineation?

18 A Yeah. The broad goal is to try to evaluate
19 whether there are risks posed to human health in the
20 environment by -- I'm thinking in terms of industrial
21 releases. Is that the direction you're --

22 Q Yeah, yeah.

23 A So we're looking at trying to define the
24 extent and magnitude of any impacts to the
25 environment: soil, groundwater, surface waters if

1 it's applicable.

2 Q Okay. What kinds of technical and
3 scientific expertise are needed for groundwater
4 contaminant delineation?

5 A Geology is a important factor --
6 hydrogeology. Chemistry is important in understanding
7 the movement of contaminants in the subsurface. Some
8 biology.

9 Q You mentioned hydrogeology. Could you
10 expand just a little bit on your experience or
11 qualifications as it relates to hydrogeology?

12 A Yeah. I've worked on many projects where we
13 put in a wide range of wells, well networks, recovery
14 wells, design recovery systems. There's methods of
15 injecting air sparge, fluid extraction. And that's
16 the kind of work that I've done most of my career.

17 Q Okay. Is groundwater flow mapping -- could
18 you describe that, and is that an aspect of hydrology
19 and hydrogeology?

20 A Yep, absolutely. You have -- I think
21 Barrett mentioned in his testimony you need at least
22 three control points -- a survey in the elevation of
23 the water table. And it's really a matter of looking
24 at the surface of the water table -- you would say the
25 potentiometric surface of the water table -- to

1 determine which way groundwater is moving. And that's
2 a part of what we do on any project.

3 Q Have the methods of groundwater flow mapping
4 changed in recent years?

5 A Yeah. There's an increased use of
6 computers. So, you know, when I started, we would
7 hand-draw all of our contours -- triangulate and draw
8 your own contours. Now it's done largely through
9 software that does a kriging program that creates
10 contours. So yeah, it's changed.

11 MR. MOELLENBERG: All right. At this
12 point, I would tender this witness as an expert in
13 geology, hydrology, and groundwater contaminant
14 delineation.

15 MR. RAZATOS: Mr. Tremaine, any
16 objections?

17 MR. TREMAINE: None.

18 MR. RAZATOS: Okay. He shall be
19 entered.

20 MR. MOELLENBERG: Thank you.

21 BY MR. MOELLENBERG:

22 Q Are you involved in groundwater contaminant
23 delineation regarding a release relating to an area
24 around the EBDU Number 37 well?

25 A Yes, I am.

1 Q And you've answered part of this, but when
2 did you become involved and what is your role?

3 A We -- I became involved in -- I guess it
4 would be August. And my role is as senior geologist
5 on the project supporting our project team.

6 Q Okay. Obviously, you weren't there, but are
7 you familiar with Apache's preparation and
8 implementation of a remediation plan early on in
9 response to the release?

10 A I've reviewed the documents, yes.

11 Q And you're familiar with the remediation
12 plan that's been admitted as Apache Exhibit A-2?

13 A Yes, I am.

14 Q Do you have any particular comments on the
15 remediation plan and its implementation as it relates
16 to groundwater contaminant delineation in response to
17 the release?

18 A No. I think it was a standard approach for
19 this type of a release focused on soil, initially --
20 soil delineation, excavation, backfilling. There was
21 some -- with the windmill, there was some concerns
22 that two wells were put in, which isn't usually done,
23 but the plan is -- it was a standard approach.

24 Q Okay. You mentioned the windmill and a
25 couple of monitoring wells. Are you familiar, then,

1 with the initial groundwater monitoring requirements
2 or commitments related to the release?

3 A Well, I know that they sampled the well, and
4 the initial samples were for BTEX, benzene, toluene,
5 ethyl benzene, xylene, chloride, TDS. I believe that
6 TMW-2 had some chloride and TDS. One and the
7 windmill, I think, were okay.

8 Q Okay.

9 A Or below standards when I say that. Yeah.

10 Q Yeah.

11 A Sorry.

12 Q Let me just ask a question specific to the
13 windmill. Is there much information in the record
14 about the well associated with the windmill? Its
15 construction depths and the like?

16 A No. I have -- we have not been able to find
17 well records for that well, so I'm not sure how it was
18 constructed or how deep it is. There's well records
19 that have not been made available to me.

20 Q Okay. And is it your understanding that the
21 initial remediation plan considered the initial
22 groundwater monitoring results from the first two
23 wells?

24 A I believe it did, yeah.

25 Q Okay. And is it your understanding that the

1 Division approved Apache's remediation plan?

2 A I believe they approved it with conditions,
3 and the conditions involved installing two additional
4 monitoring wells.

5 Q Okay.

6 A If I recall correctly.

7 Q Yeah. Conditions I think we've discussed
8 with the earlier witnesses the circumstances about
9 those.

10 A Yeah.

11 Q But -- so there were commitments at that
12 point in time for four monitoring wells?

13 A Right, right.

14 Q Have you reviewed the initial annual
15 groundwater monitoring report, and if so, do you have
16 any comments on that regarding particular contaminants
17 of concern?

18 A No. Well, the initial report was based on
19 the four wells, and so they've identified chlorides
20 and TDS, or total dissolved solids, as the primary
21 chemicals of concern. They did sample for BTEX in all
22 of the wells.

23 There were -- there was one detection of
24 toluene or one date had toluene detected in, I think,
25 three wells at very low levels just marginally above

1 the laboratory detection limits. It's never been
2 repeated, but that did occur.

3 The four wells was enough to get a general
4 groundwater flow direction. They mapped it flowing
5 south to southwest. That's what the report showed.

6 Q Okay. And is it your understanding that
7 that annual groundwater monitoring report was provided
8 as Apache Exhibit C-1 with its pre-hearing statement?

9 A That's correct.

10 Q Okay. Are you familiar with the New Mexico
11 Water Quality Control Commission Groundwater Quality
12 Standards and particularly the classification of
13 standards for chloride and total dissolved solids?

14 A Yes. I believe they are in Chapter 20 of
15 New Mexico Administrative Code.

16 Q 20.6.2.3103; does that ring a bell?

17 A That sounds right.

18 Q Okay.

19 A Thank you.

20 Q And are there different groups of
21 contaminants or classifications of contaminants under
22 those standards?

23 A Yeah. The primary drinking water standards
24 are health-risk-based standards based on toxicology-
25 type information for chemicals such as benzene.

1 Chloride and TDS are not included in that group.
2 There are secondary standards for chloride, TDS --
3 regulated just a little bit differently.

4 Q Okay, and --

5 A And they're --

6 Q When you say "secondary standards," is it
7 your understanding that those are described in the
8 WQCC rules as standards for domestic water supplies?

9 A Yes. And -- and that's -- they're kind of
10 aesthetic parameters or water characteristics that get
11 to the suitability of drinking water. Nobody wants to
12 drink saltwater, but it's not necessarily toxic;
13 right?

14 Q Yeah. And you're thinking -- or you
15 mentioned secondary standards. Is this set of
16 standards similar to EPA's secondary drinking water
17 standards?

18 A That's where I -- that's where I pulled that
19 term. I'm not sure of the New Mexico term offhand,
20 yeah.

21 Q Okay. Yeah, yeah. Fair enough.

22 A Yeah.

23 Q So we were talking a little bit about the
24 initial annual groundwater monitoring report, and I
25 think this is toward the end of December of 2020. Do

1 you know if that report was approved?

2 A It's my understanding that it was approved
3 and -- yeah.

4 Q And is there a written record of that
5 approval in Apache Exhibit C-1?

6 A That's what I understand, yes.

7 Q Okay. Are you aware of some expansion of
8 groundwater monitoring beginning in 2022?

9 A Yeah, there was some -- there were two
10 additional wells put in: TMW-6 -- TMW-5 and TMW-6.
11 There were some communications between Apache and OCD
12 that led to those two wells; I believe. It's -- looks
13 like it's Exhibit B-1 is my understanding.

14 Q Okay. Thank you. And with that expanded
15 monitoring to those two additional wells, have you
16 reviewed results obtained from those wells, and are
17 there any particular conclusions you draw from those?

18 A Well, both TDS and chloride exceeded the
19 groundwater quality standards in both of those wells.

20 Q Okay. Is it your understanding that
21 groundwater monitoring was expanded once again in
22 early 2023?

23 A Yes.

24 Q And could you describe your understanding
25 and any results you're aware of of that phase of the

1 groundwater monitoring?

2 A Well, on the site, my understanding is that
3 there were initially four additional wells put in:
4 TMW-7, 8, 9, and 10. And based on the results of
5 those sampling wells, Apache and OCD discussed the
6 results is my understanding -- and agreed to go back
7 and put in additional wells. And that led to the 14
8 additional wells being installed in November,
9 December.

10 Q Okay. So let me, let me back up quickly to
11 the first four wells you mentioned in around April of
12 2023. Is there a scope of work for those additional
13 wells, particularly Apache Exhibit C-2 to the pre-
14 hearing statement?

15 A Yes. I believe that's correct, yes.

16 Q Okay. So you started to mention an
17 additional expansion of groundwater monitoring
18 subsequent to this. What was your understanding
19 regarding what precipitated that expansion and how it
20 came about?

21 A Well, they put in the four wells, and wells
22 number 7 and 8 exceeded groundwater quality standards.
23 I think 9 and 10 were below standards. My
24 understanding is that there was a discussion between
25 OCD and Apache to go out into the field with a drill

1 rig and do the best that you could to collect field
2 data while drilling to determine what -- where to
3 place the next wells.

4 So my understanding is that it was a little
5 bit of a free-flowing work plan. It wasn't a specific
6 "go and install 14 wells." It was "go in to find the
7 plume," and Apache used field titration to measure
8 chloride in the field, which is -- you know, it's a --
9 it's a step above qualitative. It's nothing like a
10 lab, but it gives you an idea of whether chlorides are
11 present or not.

12 And on that basis, they installed a series
13 of wells, and I -- you know, they would first put them
14 in inner -- it's like an inner-ring suburb; put in
15 some wells closest to your source and then step out,
16 trying to find the perimeter of the plume.

17 Q Okay.

18 A And that led to that additional 14 wells.

19 Q So thank you. So is it your understanding
20 that before that drilling campaign had started, Apache
21 and the Division had discussed something on the order
22 of five or six wells that would be needed as a
23 minimum?

24 A Yeah, and I -- I'm just not that familiar
25 with that particular work plan.

1 Q Okay.

2 A So yes.

3 Q And then, as you've described it, Apache
4 drilled some wells, collected some field data, and
5 then continued to drill the additional wells based on
6 the field data?

7 A Yeah. They spent, I think, nearly four
8 weeks in the field with their drill rig.

9 Q Okay, and I think you said that resulted in
10 a total of 13 additional wells; is that right?

11 A I thought it was 14, but you probably have
12 better numbers than I do.

13 Q Well, my math is always bad, so I think --
14 are we talking about the wells that have been
15 identified as wells TMW-11 through 24?

16 A Yeah, yeah.

17 Q Okay. And did -- after the field work with
18 these wells, did -- I think Mr. Bole has described the
19 well development and then some additional sampling and
20 analysis that took place regarding, I believe, all of
21 the wells at that time. Do you know if that's
22 correct?

23 A They did an initial round -- my
24 understanding is an initial round of groundwater
25 samples in December, and that would include

1 measurement of water levels and samples usually done.
2 You -- you measure water levels first, then you
3 collect your samples -- and then another round in
4 March. And those -- so those are the figures that
5 we've been looking at in some of the reports.

6 Q Yeah. And I think with those figures,
7 you're talking about the groundwater monitoring report
8 that I think is dated March 27th of 2024?

9 A Yes. I believe that's Apache Exhibit B-2.

10 Q Apache Exhibit B-2. And I think Mr.
11 Tremaine was asking some questions --

12 A Yes.

13 Q -- from that report. So at this point,
14 could you give us a little more description of your
15 impression of the results regarding the groundwater
16 monitoring as discussed in the March 2024 report?

17 A Yeah, so at this point, you know, we have a
18 network of 24 monitoring wells, and that does a pretty
19 good job of defining the flow in the aquifer. So it's
20 to the south-southwest; there's a few perturbations
21 that we've talked about -- we can look at a little bit
22 more -- but the flow is to generally south-southwest.

23 Chlorides -- the well Number 17 was
24 identified as clearly having the highest chloride of
25 any of the other wells. And then there are a number

1 of wells surrounding 17 that are also sort of high, so
2 there seems to be a groundwater high at that point on
3 the property.

4 Q And do you recall in this report what the
5 value was for chlorides in well TMW-17?

6 A I want to say it was 5,000-something
7 milligram per liter -- in that range.

8 Q Okay. Did that sampling and particularly
9 the water level measurements indicate anything that
10 was noted at that point regarding potential high
11 elevations of groundwater and lower elevations of
12 groundwater?

13 A I think it was the March sampling that
14 identified a groundwater high at TMW-4; I believe. I
15 don't think that that showed up in the December data,
16 but I'd have to look at the maps to be a hundred
17 percent certain.

18 Q Okay. And we perhaps can do that. I would
19 just ask if you noted any potential errors when you
20 took over the project and reviewed that mapping?

21 A Yeah, so one of the wells that showed a -- a
22 real low point from March -- I think it was around
23 TMW-19 -- if you look, they recorded the data as
24 three-thirty -- 3360.88. In the table it's recorded
25 as 3361. So the -- there -- there does appear to be a

1 low point there, but it's accentuated in appearance by
2 some incorrect data on the map.

3 Q Okay. So are you generally familiar with
4 Apache's and the Division's discussions following
5 receipt and analysis of the March 2024 groundwater
6 monitoring report?

7 A Yeah, I believe that a report was put
8 together with Larson & Associates that all that data
9 was presented in. It was presented as a work plan,
10 but it also presented the data; I believe.

11 Q And are you referring there to the May 8,
12 2024, work plan?

13 A Yes.

14 Q And is that included as Apache Exhibit C-3
15 with Apache's pre-hearing statement?

16 A I believe that's correct.

17 Q Okay. And do you have any other comments
18 that you'd like to make about the content of that plan
19 at this point?

20 A Not really.

21 Q Okay.

22 A No.

23 Q Are you aware of what happened following the
24 Division's review and action on the May 8, 2024, plan?

25 A Okay, so yeah. So their plan involved -- I

1 was getting a couple of things mixed up, I think.

2 Q Sure, sure.

3 A They had a Larson report and then they had a
4 proposed work plan. So there were two significant
5 documents that went in April and May, I believe.

6 Q Okay. I've probably confused you here. So
7 I think we got up to the May 8, 2024, scope of work.

8 A Okay.

9 Q And then I was starting to talk about OCD's
10 review --

11 A Yeah.

12 Q -- and action on that. And I think you
13 mentioned something about a scope of work, but were
14 you thinking of -- or perhaps you were at a different
15 timeframe -- thinking of the conditions of approval?

16 A Well, their initial scope of work
17 involved -- proposed installing five wells, TMW-25
18 through 29, if we're on the same page -- in their May
19 8, 2024, scope.

20 Q Okay.

21 A And one soil boring and a pump test.

22 Q And then is it your understanding that the
23 Division reviewed that report and after several weeks,
24 I suppose, toward the end of July, the Division
25 approved but subject to additional conditions?

1 A Right. So my understanding is that that
2 scope of work was what they had kind of discussed and
3 agreed on with meetings. This proposal or scope
4 document was prepared, and then the OCD approved it
5 conditionally, and the condition involved installing
6 an additional, I think, 14 wells.

7 Q Okay.

8 A In addition to the five that were proposed.

9 Q Okay. And is it your understanding that
10 after some back and forth between Apache and the
11 Division regarding the conditions of approval that
12 Apache subsequently proposed some but not all of the
13 additional monitoring requested in the -- or required
14 by the OCD's conditions of approval?

15 A Yeah. So then there was a follow-up
16 proposal that included the original five Apache
17 proposed wells plus two of the wells that OCD had
18 requested for a total of seven plus four soil borings
19 to be put in locations agreed -- mutually agreed with
20 OCD's input, and then a pumped -- aquifer
21 characterization pump test to better understand
22 conditions in the aquifer.

23 Q And is that proposal described in Apache
24 Exhibit B-4?

25 A Yes, I believe so.

1 Q So we're almost ready to get to the maps,
2 but before we do that, I want to cover one other
3 thing. So we're -- we've now gotten to September of
4 last year. Did Terracon on Apache's behalf conduct a
5 new round of groundwater sampling and analysis
6 following submission of the September 24, 2024,
7 proposal?

8 A Yeah. After the -- after the OCD decided
9 not to talk anymore, it was decided to conduct one
10 more round of groundwater samples to get a fourth
11 quarter, so we went out end of October, early
12 November; measured water levels; and collected
13 groundwater samples.

14 Q Okay, and did your firm, Terracon, prepare
15 and submit a written report of that round of
16 groundwater monitoring?

17 A Yes, we did. We called it a quarterly
18 groundwater monitoring report.

19 Q Okay. And is that report included with
20 Apache's pre-hearing statement as Apache Exhibit C-3?

21 A Yes, I believe so.

22 Q Okay. And in that report, did Terracon
23 provide some updated mapping based on the results of
24 this latest round of groundwater monitoring?

25 A We did. We included -- well, we included

1 depth to water -- tables that showed depth to water
2 chemistry and then we included a groundwater flow map,
3 a groundwater chemistry map for chloride, and a TDS
4 contour map.

5 Q Okay. And I think we've established this,
6 but Apache's report included an initial groundwater
7 flow map as well as some of the other maps you
8 mentioned; is that right?

9 A Yes.

10 Q Subsequent to the submission of that report,
11 did you review that map and identify some issues that
12 needed to be addressed in an update?

13 A Yeah. Yes, we did. So TMW-14 on the
14 contour map lists a groundwater elevation -- I guess I
15 don't have my note in front of me -- of, I believe,
16 3366.19. And in looking into the details of this, I
17 realized that one of the tables was incorrectly
18 created. The correct elevation is 3364.19.

19 The groundwater flow map was drawn with the
20 correct number, so the contours and the flow are
21 unchanged, but the label that shows up next to that
22 well is incorrect and so that needs to be fixed.

23 Q Okay. Was that corrected in another map
24 that you prepared and submitted here?

25 A Oh, I'm referring to the -- the monitoring

1 report.

2 Q Okay. So let me back up a little bit so we
3 make clear what we're trying to do. So there was a
4 map --

5 A Oh, I see. Yeah.

6 Q -- with the groundwater monitoring report
7 that was submitted, I think, in early January; right?

8 A Yep. Yep.

9 Q And that was included in the pre-hearing
10 statement?

11 A Yep.

12 Q And then subsequently, you identified some
13 issues and provided a new map, which I think we've
14 labeled as Apache Exhibit C-4.1?

15 A Okay, so there were two map corrections that
16 occurred.

17 Q Okay.

18 A The first was we exhibit -- we prepared
19 this -- I think it was Exhibit C point -- C-4 map.
20 And I realized the scale was wrong, so it did not
21 include, for example, TMW-25 or TMW-28; it was just
22 zoomed out too far. And it also had -- one of the
23 wells was wrong color; it was shown as blue instead of
24 green on my map. So I fixed that, and that's what we
25 submitted. That corrected map was C-4.1.

1 Q Oh, good. So okay. So what you're saying
2 is the difference between the first map that went in
3 with the pre-hearing statement and the corrected map
4 was basically just some labeling and --

5 A Yeah.

6 Q Is there any technical difference between
7 the two?

8 A No, no.

9 Q Okay. Did you receive and review some
10 information late yesterday from OCD with comments on
11 some of the groundwater levels as shown in the Exhibit
12 C-4.1 map?

13 A Yeah, and that's what I was referring to.

14 Q Okay.

15 A Yeah. With -- there were two errors. TMW-
16 14 was mislabeled with the wrong elevation. However,
17 the contours were drawn by the software with the
18 correct elevation, so there's no change in substance
19 to the map, but the label has to be changed from
20 3366.19 to 3364.19.

21 Q Okay. Okay. And I think we're probably,
22 then, ready to pull up the map --

23 A Yep.

24 Q -- and get to work on it.

25 A And there is one other correction that I had

1 to make.

2 Q Okay. Yes.

3 A TMW-13 -- it was pointed out that the
4 elevations were incorrectly calculated, and there was
5 a math error in our spreadsheet. And we took the top-
6 of-casing elevation for TMW-12 and it was copied into
7 the cells for 13, and that resulted in an error. And
8 so that also has to be corrected.

9 Again, it's not -- this will change the
10 contours a little bit on the map. It actually will
11 flatten them out a little bit and make it look a
12 little bit more normal. So it removes a little bit of
13 the hump that goes up to the north. We -- we have to
14 fix that, though. It's an error.

15 MR. MOELLENBERG: So, Mr. Chair, if
16 you'd allow us to share the map, I'll first ask Mr.
17 Grams to point out this couple of areas so we can
18 start with an understanding of that, and then we'll go
19 to the discussion that we've all been waiting for.

20 MR. RAZATOS: Sure.

21 Sheila, can you give him access,
22 please?

23 THE WITNESS: Okay. So we'll start
24 at -- first of all, this map doesn't show the error at
25 TMW-14. Well, let me just orient you a little bit to

1 this map.

2 Okay. There's -- there's a lot going
3 on here. I kind of apologize for making it so busy,
4 but we are trying to show a lot. First, the green
5 area is the area of impacted soil from the spill.

6 So the spill occurred; the release
7 point was at TMW-7, which is at the easternmost extent
8 of the top of the T; ran west and down south towards
9 the low point. So the green is the impacted soil that
10 was ultimately remediated -- dug up by Apache during
11 their early stage remedial activities.

12 The blue lines are the groundwater
13 contours. So each contour line shows a point of equal
14 elevation on the groundwater surface, and groundwater
15 flows from high to low, so the arrows are showing the
16 general flow direction.

17 The yellow -- the thin yellow lines are
18 chloride ISO concentration contours. So this is
19 showing the data from October, November 2024. This is
20 the most recent data. And you can see there's a high
21 point, TMW-17. There's a 10,000-milligram-per-
22 kilogram contour; there's a 5,000 milligram contour;
23 and so on.

24 The numbers -- the -- the red wells on
25 this are the existing monitoring wells. So all the --

1 every red circle is an existing monitoring well, and
2 the number you see is the chloride concentration at
3 that well. So this well -- this map doesn't even show
4 the issue with the groundwater mislabeling because
5 it's labeled for chlorides.

6 It does, however -- if you want to move
7 the map down just a little bit so I can see TMW-13?
8 Other way. Up, I guess. There.

9 So the -- yeah, so TMW-13; this map was
10 drawn with an incorrect contour. And the -- the
11 effect of fixing that is going to be -- you'll see the
12 3364.5 line. That and 3365 will drop down and just --
13 it'll appear more flat. So it doesn't change any
14 conclusions. So we'll fix that.

15 BY MR. MOELLENBERG:

16 Q Is there anything else you want to explain
17 to the Commission about the minor changes and the
18 error that might affect this?

19 A No, that's it.

20 Q Okay.

21 A Just two -- those two things. Yeah.

22 Q So just to summarize this, this map reflects
23 the most recently collected groundwater monitoring
24 data including groundwater levels and chloride values?

25 A Yes. And there is one other feature shown

1 on here if we want to get real technical on the
2 geology a little bit. And -- and you might want to
3 zoom out a little bit. The fat yellow lines; these
4 are lines that were created by Larson & Associates'
5 mapping that show the thickness of the aquifer.

6 So the thickness of the Ogallala Aquifer can
7 vary quite a bit. It's -- it's relatively flat on the
8 top, but the Ogallala sediments were deposited on an
9 erosional surface that has topography. Just like --
10 just like looking outside your window, there's hills
11 and valleys.

12 And the yellow lines show where the drill --
13 drill rig hit the bottom confining layer, and it
14 creates almost like a basin. So the topline 10
15 feet -- the Ogallala is only 10 feet thick -- then 15,
16 then 20, then deeper. And the image we're getting is
17 of a sort of basin that is -- we think is sort of
18 confining the chlorides and resulting in that shape
19 that we're seeing in the center of the plume.

20 Q Okay. In terms of the groundwater flow
21 mapping, Mr. Grams, is there anything in this map
22 based on the latest results that's materially
23 different from the maps with the previous March 2024
24 results?

25 A It also shows the groundwater high at TMW-4,

1 which also showed up on the March 4th map. That --
2 that feature didn't show up in December, so we're
3 trying to understand that. I -- I think that it may
4 reflect increased infiltration of -- from
5 precipitation in the area -- of the low-lying area --
6 and where it was excavated. That would result in a
7 groundwater high, but I -- I don't know for sure.

8 Q Okay. But just generally in terms of the
9 context or the contours and the values, do you recall
10 material differences between this latest map and the
11 previous map?

12 A No. It flows to the south-southwest, and
13 yeah, so it's not changed.

14 Q Okay.

15 A It's fairly consistent.

16 Q Some of the contaminant values have changed
17 though; right?

18 A Yeah. The -- the values have gone up in
19 some of the wells. I -- I did a little count just
20 recently, and I think there were about half the wells
21 that stayed about the same and about half the wells
22 it's increased.

23 Q Okay. Were there some difference in
24 sampling methods between the March sampling round and
25 the -- I guess it's the October sampling round?

1 A That's true. We used a passive sampling
2 technique in October, November. They're called
3 HydraSleeves. It's you -- I won't get into the
4 details of it compared to a low-flow sampling
5 technique. However, there were a handful of wells
6 that we did low flow during this event because there
7 wasn't sufficient water to get a HydraSleeve and we
8 didn't see any correlation of the sampling difference.

9 So I don't think that explains the
10 difference, but it -- it was something that was done
11 differently.

12 Q Okay.

13 A And we did talk to OCD about that before we
14 did it, so they were aware we were going to change our
15 method.

16 Q And that was just something that Terracon
17 recommended as a change from what --

18 A It may -- its -- yes. Its -- yeah.

19 Q Okay. So with all of that in mind, I'd now
20 like to review with you a comparison of Apache's
21 proposal to conduct additional groundwater contaminant
22 delineation with the OCD conditions of approval.

23 And I'm going to break this down into
24 certain areas on this map, and I'd like to start with
25 the southeast part of the area covered by the map or I

1 believe it would be the lower right-hand part of the
2 map. Do you see that?

3 A Yep.

4 Q Okay. With respect to groundwater flow, how
5 would you describe this particular area in relation to
6 the release point as well as the areas identified with
7 the highest chloride concentrations?

8 A This is downgradient and cross-gradient from
9 those, so down and a little bit over.

10 Q Okay. And what does that mean in terms of,
11 say, contaminant transport and such?

12 A Well, over time you would expect that these
13 would be the wells much -- far, far in the future that
14 would show impacts if contaminants keep moving.

15 Q Okay.

16 A They would be the last to show an impact.
17 It'll take a while for groundwater to get here. Water
18 moves very, very slowly. I --a -- a groundwater model
19 might tell you how quickly it would take to get there.
20 We haven't done that yet, but yeah.

21 Q Is there some more information you would
22 need to collect to do any quantitative groundwater
23 modeling?

24 A Yeah, so, you know, this is the Ogallala
25 Aquifer. It's fine-grain sediment; sand; both

1 alluvial -- or river deposits -- and eolian, which are
2 wind deposits. It can vary in the hydraulic
3 conductivity. The -- essentially the permeability
4 changes from one location to the next depending upon
5 what the sediments are like. So an aquifer pump test
6 will give us practical information that will help us
7 determine how to set up a proper model and understand
8 it.

9 Q Right. And that pump test is part of
10 Apache's proposal?

11 A That's why -- that's why we proposed that,
12 yes.

13 Q Okay. And as far as you know, the Division
14 hasn't objected to that?

15 A No, I think that must have been something
16 they've talked about on and off; I would assume.

17 Q Okay, so from Apache's perspective, speaking
18 again to the southeast part of the area at issue, what
19 is the purpose and need for additional groundwater
20 contaminant delineation in this area?

21 A Yeah, so this is -- and you know, one thing
22 this map shows; you'll see that the bottom yellow
23 chloride contour line is dashed in the southeast
24 there. That's means it's kind of inferred. We don't
25 have good enough data to draw that line, really.

1 And so the additional wells -- first, I'll
2 point out the blue wells are the wells that Apache has
3 proposed. The green wells are the wells that OCD has
4 requested -- okay? -- on this map. Green is OCD
5 requested; blue is Apache proposed.

6 So down in this area -- and there's a little
7 twist to it, but TMW-31, for example, is a well that's
8 far downgradient that we have proposed that was also
9 proposed by OCD as TMW-42. So that's a well we agree
10 on; okay?

11 Q Okay. So just to clarify if -- and I think
12 I understand this right, but maybe not -- OCD proposed
13 it in their conditions of approval as Well Number 42?

14 A Yes.

15 Q Okay, and then Apache picked up that
16 proposal and said, "Yeah, we agree, but Apache is
17 calling it in their plan TMW-31"?

18 A We agreed; we didn't have wells in between
19 and we wanted it to be in sequence, so it had a
20 different number on it.

21 Q Right. And one other thing; I don't know if
22 this will come up as we're going through, but I think
23 there's some duplication of numbering in the OCD
24 conditions of approval. I don't know if you picked
25 that up in your maps or not.

1 THE WITNESS: I think 41 might have
2 been listed twice or something, but -- and there is
3 one -- one thing.

4 Sam, there's an additional well -- a
5 blue well, 25 -- there you go -- that's a far
6 downgradient, so --

7 BY MR. MOELLENBERG:

8 Q And I think we'll probably talk about that
9 in the next --

10 A Okay.

11 Q -- just to avoid confusion.

12 A Yep.

13 Q So yeah. Thank you.

14 A Charging ahead.

15 Q So, to summarize, we've got two wells here
16 shown with two different numbers -- Apache TMW-31 with
17 the 42 by it and Apache TMW-30 with the 39 by it --
18 and Apache and the Division are in agreement on the
19 need for those wells and their locations; right?

20 A That's correct.

21 Q So talk me through what's going on with the
22 blue well labeled TMW-26 and the green well labeled
23 TMW-38.

24 A Yeah. OCD requested Number 38. We had
25 already proposed 26, and we feel that provides all of

1 the downgradient control and information we need
2 there. We just don't think 38 is necessary.

3 Q So you think TMW-26 is a preferable location
4 to serve that purpose?

5 A Yep. It provides downgradient outer
6 control, and I think that should be sufficient.

7 Q Okay. And would well -- in your view, well
8 TMW-38 provide any additional value?

9 A I don't believe it does. I think that we --
10 with the well network that we're looking at and
11 existing wells, we'll know all we need to know down in
12 that corner.

13 Q Okay, so just to -- is it fair, then, to
14 summarize that in this southeast area, there's
15 agreement on two well locations and there's some
16 disagreement on the location and perhaps an additional
17 well that the Division might want in this area? And
18 I'm talking about TMW-26 and 38.

19 A Yeah.

20 Q Okay.

21 A Yeah. That's fair.

22 Q Anything else that you would like to note
23 about this particular area of the map?

24 A No.

25 Q Okay, then let's move to the southwest part

1 of the impact area. So we've scrolled and now we're
2 showing -- we may want to go down just a little bit so
3 we pick up 25.

4 A Yeah, that's right there.

5 Q Yeah, probably right there.

6 A Yeah.

7 Q So we're talking about the lower left-hand
8 part of the map here; correct?

9 A Correct.

10 Q Okay, so moving to the southwest part; how
11 would you describe this area with regard to
12 groundwater flow and in relation to the release point
13 and also the areas identified with the highest
14 chloride concentrations?

15 A This is downgradient, some -- quite some
16 distance from the release point.

17 Q Okay. And from Apache's perspective, what
18 is the purpose and need for additional groundwater
19 contaminant delineation in this area?

20 A We just want to be entirely sure that we
21 have the furthest southern extent of the plume
22 defined. And you know, we feel like 24 and 23 do a
23 pretty good job of that; 23, at a thousand, you can
24 argue is probably -- you -- we need to step out, thus
25 further south.

1 I have to mention 31 because it's also
2 similar purpose, but the point is to make sure that we
3 go far enough that we have an absolute downgradient
4 well.

5 Q Okay, and in this area, is Apache proposing
6 any additional monitoring wells other than TMW-25?

7 A Well, I mean, I kind of put 31 almost in
8 that category, but it's -- it's -- 25 is the
9 downgradient well.

10 Q Okay. So in your opinion, is the additional
11 monitoring well proposed by Apache for this area
12 adequate to complete groundwater contaminant
13 delineation in this area?

14 A I believe it is, yes.

15 Q Okay. So let's turn to the -- the green
16 wells. What wells have OCD required under its
17 conditions of approval in this area, and what is your
18 understanding of why those are being required?

19 A Well, they requested TMW-41 as a
20 downgradient well to provide additional delineation
21 between 24 and 23, and, you know, we just feel that 25
22 provides the downgradient control and -- and there's
23 no real value in 41. Not needed.

24 Q Okay, so let's turn to well TMW-40, the
25 green well labeled there. So the same question.

1 What's your understanding of the OCD's reasons for
2 including that well per the conditions of approval,
3 and what are your comments on that?

4 Yeah, they would like -- they felt that we
5 should have a well in between 18 and 19. And when I
6 look at the existing well network with 24, 23, 19, 18,
7 and the proposed wells of 31, 30, and 26, I feel like
8 we have the area well-enough defined.

9 Okay. Are you aware of any other reason
10 that, at least from Apache's viewpoint, why you might
11 want to consider a well at TMW-40?

12 A Not really, no.

13 Q Okay, okay. So is it fair to say in your
14 view -- Apache's view -- that if you put a well at the
15 location of TMW-25, that's adequate to complete
16 groundwater delineation in this area?

17 A We sure hope so, yes.

18 Q And in in your view, wells TMW-40 and 41 in
19 this area aren't necessary?

20 A I don't believe they will provide any
21 additional information that directs what we do about
22 this issue.

23 MR. MOELLENBERG: Okay, so let's move
24 up in the map and talk about the middle.

25 Up a little more.

1 BY MR. MOELLENBERG:

2 Q Is that about right?

3 A Yep.

4 Q Okay, so how would you describe this
5 particular area, particularly in relation to
6 contaminant concentrations?

7 A Well, this is the area that shows the
8 highest concentrations in the whole area as evidenced
9 by 17, 14, 15, 18; even bounded by 5, 6, 20 -- you
10 know, has it kind of surrounded. So this is the area
11 of highest chloride concentrations.

12 Q And do you have any comments about this area
13 as it relates to the point of release?

14 A Well, this is kind of down and over just a
15 little bit from the point of release. The point of
16 release is -- I guess if we move the map a little bit,
17 we would see -- yeah -- TMW-7. So it's downgradient.

18 You know, we've speculated -- we're acting
19 on the assumption that the release at TMW-7 location
20 is what's caused this. And -- and that's why we are
21 proposing 27 to be in between the two to see if
22 there's a connection. We're expecting to see a high
23 chloride at TMW-27. Time will tell.

24 Q Mr. Grams, we have had a little testimony on
25 this earlier today and -- by Mr. Bole, I believe --

1 and I think you were present. Do contaminants always
2 follow a path from the release point right in line
3 with groundwater flow direction or are there other
4 geologic features that can affect how that operates?

5 A Yeah, as Barrett alluded, the
6 stratigraphy -- the geology -- of the site can have a
7 major influence on how contaminants migrate downward
8 through soil. So there's roughly a 40- or 50-foot
9 column of soil between the surface and the aquifer,
10 and differences in permeability of the materials can
11 direct how things flow.

12 Q So can that factor direct or affect whether
13 a particular location is directly downgradient from a
14 point of release when you're looking strictly at
15 groundwater flow?

16 A Yeah. I mean, it can be very complicated.

17 Q Does Apache propose any additional
18 monitoring wells for groundwater contaminant
19 delineation in this area?

20 A Well, so we proposed monitoring well 27, and
21 the proposal is to install that as a large-diameter
22 well to allow pumping. And depending upon what we
23 find there, that may or may not be an appropriate
24 place for recovery. It's put in as a monitoring well,
25 but a large-diameter well.

1 We're also proposing four soil borings to
2 look at soil from the ground surface down that should
3 give us an idea if there's another point of a surface
4 release; we should be able to find it that way.

5 Q So in your view, if well TMW-27 is installed
6 as Apache proposed, would that complete groundwater
7 contaminant delineation in this area?

8 A Well, yeah. This is all central interior to
9 the plume. We have wells with low concentrations on
10 all sides of this, so this is defined and constrained
11 by lower -- wells that show lower concentration. And
12 all the wells that are proposed are interior to the
13 plume and I don't think are going to change our view
14 of that plume much.

15 Q So when you say "all the wells that are
16 proposed," are you now talking about the wells that
17 are included in the Division's conditions of approval?

18 A Yeah. I'm looking at 34, 35, 36, and 37.

19 Q Okay, so those are all wells that would be
20 required if the Commission approves the Division's
21 conditions of approval?

22 A Yep.

23 Q Okay, and what are your comments on these
24 particular well locations and your -- in relation to
25 your understanding of why the Division has included

1 them in its conditions?

2 A Well, I think that my understanding is that
3 they're looking just for more definition in the area
4 of high chlorides, potentially looking for other
5 sources. And -- and when I look at the map, I see 14,
6 15, 17 -- the other surrounding wells, I feel it's --
7 it's already defined.

8 Q Are you aware of any information that
9 suggests that there may be additional sources of
10 chloride contamination in this area?

11 A I'm not. I'm acting under the assumption
12 that the release up at the junction box is the source
13 of this.

14 Q Okay. Can you rule out the possibility that
15 there are any other sources of this area?

16 A No, absolutely not. Cannot.

17 Q So just not aware of anything?

18 A Yep. Yeah.

19 Q You're just not aware of any information
20 that suggests that there would be a source?

21 A That's correct.

22 Q Okay, so I think you've indicated already
23 that in Apache's view, the addition of well TMW-27,
24 which, obviously, has another purpose, would be
25 sufficient to conclude groundwater contaminant

1 delineation in this area?

2 A Yes. Well, we hope so, but every well we
3 put in will inform future -- you know, just like your
4 caveat that's put in every email. I mean, we
5 recognize there may be additional steps required based
6 on what we find here.

7 Q Okay. And conversely, is it your view that
8 the four additional wells required by the Division's
9 conditions of approval are not necessary to complete
10 groundwater contaminant delineation in this area?

11 A That's correct. I think it is already
12 defined in that area.

13 Q Okay. So lastly, let's move to the northern
14 part of the area shown by this map.

15 A Okay. There we are.

16 Q Is that good?

17 A Yep.

18 Q I think we've covered everything there. So
19 to begin with, would you describe this area in
20 relation to groundwater flow, the location of the
21 release, and the location of the highest attacked
22 contaminant levels?

23 A Yeah, so these are all -- well, most of
24 these wells -- this is upgradient from the release
25 point, upgradient from the center of the plume. If

1 you look at well 28, we certainly expect that to be
2 clean. We -- we feel like MW-12 and 11 are probably
3 too far upgradient to show any impact from that
4 release. It's a little hard to say, but yeah. It's
5 upgradient.

6 Q Okay. You've listened to some testimony
7 there relating to well TMW-13; we may have covered
8 that a little bit with you. Do you have any
9 particular comments on that well as it relates to
10 being upgradient or otherwise in relation to the --
11 the point of release?

12 A Well, I mean I -- you know, on one level,
13 you look at it and you wouldn't think that would show
14 any impact from a release, but I was looking at the
15 boring log for MW-7 and it noted a large clay lens
16 right about halfway down.

17 And that can be the kind of thing that
18 deflects a release in one direction or another, so
19 it's not out of the question that 13 is showing the
20 results of the release from the junction box.

21 Q Okay, so what additional monitoring wells
22 has Apache proposed in this area, and what are the
23 reasons for Apache's proposal?

24 A So we proposed 28 and 29 and the -- as two
25 upgradient wells, and we proposed that the average

1 chloride concentration in those two wells would be
2 used to reflect background conditions.

3 Q Okay. Is there any purpose, from Apache's
4 perspective, to wells in this area other than to
5 establish background conditions?

6 A Well, the only other reason that I could
7 imagine would be to look for other sources of release.

8 Q Okay.

9 A We have no reason to believe anything is up
10 there, but yeah.

11 Q Okay. Yeah. You have no reason to believe
12 that there are any sources up here that would be
13 impacting the high-chloride areas to the south?

14 A No.

15 Q Okay, so let's talk about the additional
16 wells in this area contained in the Division's
17 conditions of approval and your thoughts on that.
18 Would you start by just identifying the additional
19 wells and the conditions of approval within this area?

20 A Yep. These are the green wells: TMW-30,
21 TMW-31, 32, 43, and 33.

22 Q Okay.

23 A Yeah.

24 Q So why don't you -- perhaps one by one or if
25 you want to group them, that's fine -- give us your

1 thoughts on whether or not these five additional wells
2 are needed to complete groundwater contaminant
3 delineation in this area?

4 A Well, the goal up here is to define the
5 uppermost limit and what are -- what kind of waters
6 are upgradient and coming onto the site. So if you
7 look at TMW-22, our proposed 29, and 28; that's a nice
8 line of wells at the far upgradient extent, and I
9 think that that provides the information we need to
10 know that.

11 So the additional wells -- 30, 31, 32; I
12 just don't think they provide any information that's
13 going to change what we do at the plume or how we
14 direct our remediation efforts.

15 Q Okay, so is it fair to say that in your
16 view, the five wells that are identified in the
17 Division's conditions of approval are not necessary to
18 complete groundwater contaminant delineation in this
19 northern area?

20 A Yeah. I do not believe they are.

21 Q Okay, so just a few questions here and we're
22 close to wrapping up. Given the size of this site and
23 its nature, how does the number of monitoring wells --
24 and I guess I should refer to the existing monitoring
25 wells -- and the scale of groundwater monitoring at

1 this site compare to other sites within your
2 experience?

3 A Yeah, this is a very extensive network of
4 monitoring wells. I -- I -- when I look at it, it has
5 provided a great deal of information in terms of
6 delineation around the edges. There's a couple of
7 gaps, which we're proposing to fill. The contaminant
8 concentrations are well mapped out.

9 I think that it has provided a good -- good
10 understanding of what we see out there. I think
11 the -- the gap now is, "How is the aquifer going to
12 behave and what do we do to address it?"

13 Q Okay. Obviously, as additional groundwater
14 monitoring has been done, there has been a
15 considerable addition of information gained regarding
16 the site. Is the timeframe for groundwater
17 delineation in this area unusual compared to other
18 sites in which you've been involved?

19 A No. I mean, I -- you know, the first year
20 or two after the release, I think they proceeded
21 cautiously. I think it was a joint decision. But if
22 you look at everything that's been done from the
23 beginning of 2023, they've done a lot, so it's moved
24 at a very fast pace.

25 I mean, the -- the wells that we -- the

1 network of wells still only has three groundwater
2 rounds of samples and -- yeah.

3 Q So in some -- in your opinion, is the
4 revised plan submitted by Apache in September of
5 2024 -- and to be specific, I think we're talking
6 about Apache Exhibit B-4 -- is that sufficient to
7 complete groundwater contamination delineation in this
8 area based on your current understanding of the
9 information?

10 A Well, I think it's a reasonable step to
11 hopefully complete the delineation. We -- we -- every
12 time we do more work, we learn something, but I think
13 it's a reasonable step that will either tell us that
14 we're done or guide future direct -- decisions.

15 Q Okay.

16 A Future investigation.

17 Q And given that answer, this is probably
18 obvious, but do you believe that the September 2024
19 proposal submitted by Apache is at least a good faith
20 response to OCD's conditions of approval?

21 A Well, I think it is. You know, it's -- if
22 you're putting in seven additional monitoring wells,
23 and these are -- this is a big effort and it's not a
24 zero-risk game to -- to go do this. There's a lot of
25 people involved, a lot of equipment, and you don't

1 want to do the work unnecessarily.

2 This will give us a lot of information, and
3 if additional work is needed, Apache has shown every
4 willingness to do it. So to me, it's a -- it's a
5 completely reasonable step to take.

6 Q Mr. Grams, I do have one exhibit I need to
7 follow up on, and I may need to pull it up here, but
8 do you recall Apache Exhibit C-5, which is -- it says
9 Existing and Proposed Monitoring Well Map 2024?

10 A Yeah. This had the same problems as our
11 original C-1. It's -- for example, you don't see the
12 farthest up -- do you? I guess -- oh, no. Okay. No,
13 this is showing it all. This is okay. Yeah.

14 Q So can you describe what this map is and who
15 prepared it?

16 A Yeah, no. We prepared this, again, to show
17 a comparison of what OCD has requested and what Apache
18 has proposed. And it's just -- it's a -- it's a
19 Google Earth image of the site. Doesn't have all the
20 lines and contours on it, so you can see a little bit
21 more of the existing oil-and-gas operations and what
22 the site looks like.

23 Q Okay. I don't know how familiar you are
24 with this, but is there any particular features shown
25 on the Google Earth image that you'd point out to the

1 commissioners?

2 A Well, so if you look at the T-shaped
3 spill -- you heard people talk about the low-lying
4 area, so the spill started at the junction box at
5 Number 7 and flowed west a certain distance and at the
6 midpoint flowed south.

7 And that area at the termination where TMW-1
8 is located is the low-lying area, which is -- you
9 know, this is a very arid -- arid, desert-like area,
10 and whenever it rains a lot, water flows down there
11 and accumulates there and evaporates and infiltrates.

12 Q Okay. Any other features here that you'd
13 like to point out?

14 A No. I see well pad there at MW -- is it 30;
15 36? Flow lines. I don't know. Yeah.

16 Q Okay.

17 A There's roads. I'm not sure.

18 Q Okay. Fair enough, but nothing of
19 particular note from your perspective?

20 A Yeah, no.

21 Q Okay.

22 A I might -- I -- you know, I think you'll see
23 a series of roads there. I think that those are all
24 created by going back and forth to the wells.

25 Q Okay.

1 A Yeah.

2 Q So, Mr. Grams, do you have anything else to
3 add or does that conclude your direct testimony?

4 A That concludes my direct testimony.

5 Q Okay.

6 A Thank you.

7 Q Will you be available to listen to the
8 Division's witnesses testify and provide any rebuttal
9 testimony of called again by Apache?

10 A Yes.

11 MR. MOELLENBERG: Okay. Thank you.
12 With that, I believe this witness is available for
13 cross-examination.

14 MR. RAZATOS: Okay. That's awesome.
15 I -- go, please.

16 MR. MOELLENBERG: If I might, before I
17 forget, I should move to admit Apache's Exhibits C, C-
18 1, C-2, C-3, C-4.1, and C-5 into evidence.

19 (Exhibits C through C-5 were marked for
20 identification.)

21 MR. RAZATOS: Mr. Tremaine, any issues
22 with that?

23 MR. TREMAINE: No objections.

24 MR. RAZATOS: Okay, so we'll enter
25 them.

1 (Exhibits C through C-5 were received
2 into evidence.)

3 Before we pass Mr. Grams over to Mr.
4 Tremaine for cross-examination, I need a little break,
5 so let's take a ten-minute break. We will come back
6 at 3:55.

7 THE WITNESS: Thank you.

8 MR. RAZATOS: Thank you.

9 (Off the record.)

10 MR. RAZATOS: Okay. Excellent. Thank
11 you. We're back on the record. Mr. Grams is our
12 witness right now.

13 Mr. Moellenberg, you are done with your
14 questioning; correct? Okay. Excellent. You've
15 admitted and you're done.

16 So Mr. Tremaine, we switch it over to
17 you.

18 MR. TREMAINE: Thank you, Mr. Chair,
19 Commissioners.

20 CROSS-EXAMINATION

21 BY MR. TREMAINE:

22 Q Good afternoon, Mr. Grams.

23 A Good afternoon.

24 Q I want to ask you a couple general
25 questions, and then bear with me because I need to

1 clarify a couple things that you addressed in your
2 direct.

3 So starting out, I want to refer you to
4 what's labeled in here as Apache Exhibit -- in this C
5 packet -- C-3 -- on page 23 of 143, so I'll share that
6 now. And I believe you had testified as to the
7 content of this and several other maps a few minutes
8 ago; correct? Do you recognize this?

9 A Yes.

10 Q Okay, so zooming out for a second; what is
11 the approximate land area -- or specifically, if you
12 know it -- that is depicted on this map?

13 A I think it's about 40 or 50 acres, but I'd
14 have to measure. But I -- that's what I recall.

15 Q Okay. And you've testified to identify what
16 we're calling -- I think you're referring to it as a
17 chloride plume centered around TMW-17; is that
18 accurate?

19 A Correct.

20 Q Okay. And that chloride plume extends to
21 the bulk of the area depicted here; is that accurate?

22 A Well, the -- most of the wells on the
23 outskirts we believe are showing background or near
24 background. So it -- it's not the whole map.

25 Q And that's a good point, Mr. Grams. What is

1 Apache considering background for --

2 A That has not been fully determined, but I
3 think that it's reasonable to assume something in the
4 two to three hundreds in this area would be
5 background. But that's -- one of the purposes of the
6 two upgradient wells is to get another set of input on
7 that.

8 Q Great. Thank you. So the various wells
9 that are reading above that -- above 250, 300-ish for
10 chlorides -- are likely to be considered a part of
11 this chloride plume; is that accurate?

12 A Well, they're likely to show the impacts of
13 oil and gas activity in the area. Whether it's all
14 from this plume or not, I can't exactly say.

15 Q Okay. I think I have to press you on that
16 one a little bit. I think you testified earlier that
17 you are assuming a single release. Is that -- in
18 preparing for this hearing, is it still accurate to
19 say that you and Apache are assuming that there is a
20 single release causing this --

21 A We are assuming. That -- that's fair. We
22 are assuming there's a single release, but -- but we
23 also are fully aware that in the oil patch there are
24 areas of high chloride; there's old reserve pits;
25 there's just a whole history of operations that you

1 can see if you look hard enough. And so, you know, it
2 would be not fair to not recognize that that exists.

3 Q Thank you. In your experience, is a
4 chloride plume of this size in groundwater a common
5 occurrence?

6 A Well, it's not a common occurrence except
7 maybe in the oil patch in the Permian Basin, where
8 there's a long history of chloride disposal in surface
9 pits. That -- that's very well documented in the
10 literature and changing regulations that regulate how
11 that material is handled.

12 Q Are you aware of any surface pit in the area
13 depicted in this map?

14 A I am not.

15 Q Okay. Are you aware of any investigation by
16 Terracon, Apache, or your predecessor consultant to
17 determine whether or not there might be chloride
18 contamination as a result of any pits?

19 A I'm not aware of that at this location, no.

20 Q Okay. Zooming out again; how many sites are
21 you currently managing that you would characterize as
22 comparable to the size of this area impacted on the
23 slide I have up?

24 A I have four projects where there's fairly
25 significant impacts from chlorides that I'm working on

1 and many more where it's just soil and much less.

2 Q Okay. I want to jump back to this
3 assumption of a single release. If we do -- let's say
4 we buy that assumption; everybody assumes it is a
5 single release.

6 Given the impacted area here and the samples
7 that you're seeing with the fourth quarterly report,
8 how much water -- produced water -- would have had to
9 have been released to cause the groundwater chloride
10 levels present in the latest sampling report?

11 A That's a really good question, and we
12 haven't done it. We can -- we can look at and
13 estimate the mass by using the contours that we have.
14 We have pretty good data. And I can look at the
15 concentrations and the contours and do an estimate for
16 that, but I -- but that -- that has not been done.
17 That calculation has not been done to my knowledge.

18 Q Do you even have a -- the original release
19 was -- I believe the testimony was it was initially
20 reported as, like, a hundred barrels, but that was
21 determined to be inaccurate, and it was then labeled
22 as unidentified. Safe to say this is much more than a
23 hundred barrels? Is that --

24 A I think I would not be going out on a limb
25 to say that if this is all from that junction box, it

1 was considerably more than a hundred barrels. I would
2 guess.

3 Q Okay. If you were to perform the same kind
4 of assessment, like estimating of volume, and you look
5 at the March sampling report versus the fourth-quarter
6 sampling report, would you agree that you would come
7 up with a different -- a much larger result for the
8 volume that must have been released if you're looking
9 at the fourth-quarter report?

10 A Yes, you would. The higher MW-14 has a much
11 higher concentration.

12 Q Okay. We heard some testimony earlier
13 today. Did you listen to the prior Apache testimony,
14 Mr. Grams?

15 A Yes.

16 Q Okay. I think we heard some testimony
17 regarding possible sources of a single assumed or
18 potentially multiple sources, and I believe those
19 referred to -- the primary culprit was referred to as
20 likely a junction box. Do you recall that?

21 A Yep.

22 Q I believe there was some discussion about a
23 possibility of leaking flow lines. Do you recall or
24 accept that?

25 A Yeah. The junction box is a part of a

1 network of pipelines that carry produced water, so I
2 assume that's what is being discussed.

3 Q Would you agree that a junction box or flow
4 lines that we're talking about are at or very near to
5 ground surface?

6 A My understanding is that they are within 3
7 feet of ground surface.

8 Q Okay. You had referenced earlier -- and I
9 actually have it right here -- this TMW-17 as the
10 original point of the release, and I kind of talked
11 about that a little bit. Do you know what the depth
12 to groundwater from ground surface is at that point or
13 near to it?

14 A At Number 7, I believe. I don't know
15 offhand. I don't know. I think it's -- it's in the
16 range of 40 to 60 feet. I'd have to look at the
17 tables.

18 Q Okay, so that would mean that between a
19 junction box and water, there would be something like
20 37 to 57 feet or more of soil; correct?

21 A Correct.

22 Q If there is a substantial release of
23 produced water -- well, I'll just -- I'll limit it to
24 chloride. If there's a chloride contamination as a
25 result of a leak at a box or line or whatever point at

1 or near the ground surface, would you agree that that
2 would mean that there would be chloride contamination
3 in the soil immediately adjacent to that source?

4 A Yes.

5 Q Okay. If there are chlorides in soil that
6 are, for whatever reason, migrating into and impacting
7 groundwater, would you agree that in order to
8 remediate the site you have to isolate or remove those
9 chlorides?

10 A Chlorides that are remaining in the soil
11 would continue to leach unless you put a cap on it and
12 prevented additional infiltration such as is done in
13 mining cases, but typically, you try to remove the
14 source. Is that what you're getting at?

15 Q I think we're saying the same thing here,
16 Mr. Grams. That would be the liner in the 2019 plan?

17 A Yeah.

18 Q Put a liner underneath the chlorides so that
19 when there's infiltration, the chlorides don't migrate
20 to groundwater. That's the same idea; right?

21 A Yeah, or above it, too. Yeah.

22 Q I see. Okay.

23 A Yep.

24 Q But that's where you're referring to? A cap
25 is something like a liner?

1 A Yeah, yeah, yeah.

2 Q Another viable option is to dig out the
3 chlorides or other contamination?

4 A Yes.

5 Q That's a pretty common practice; would you
6 agree?

7 A That it's done? Yep.

8 Q So if you have to isolate or remove
9 contamination that's leaching into groundwater, with
10 the distances between these wells, how can you know
11 where you have to put a liner or where you have to
12 dig?

13 A Well, if I were to plan an excavation here,
14 I would propose a number of soil borings first to
15 fully delineate the extent that needs to be removed.

16 Q And --

17 A We -- we typically do that. We'll use a
18 Geoprobe or other -- even hand augers sometimes -- to
19 define the area first so that you know what you're
20 getting into when you dig.

21 Q Thank you. And I didn't mean to cut you off
22 there. Thank you for that.

23 A Yeah, no; I'm sorry.

24 Q Quite all right. In Apache's latest
25 additional scope of work, how many soil borings did

1 they propose?

2 A There were four proposed.

3 Q All right. And I want to now draw your
4 attention to the -- see if I can pull this up. All
5 right. I'm going to ask you a question about page 23
6 and jump back to the infamous 169 and 170 I keep
7 referring to. So in your earlier testimony, I heard
8 some explanation about a high point, I believe you
9 called it, at TMW-4; is that correct?

10 A That's correct.

11 Q And do you recall earlier hearing testimony
12 from Mr. Bole to the effect of the previous
13 groundwater levels at that same point, TMW-4, may have
14 been noted in error?

15 A I do.

16 Q Okay. So on this page 23 of Terracon's
17 exhibit -- or Terracon's prepared exhibit for
18 Apache -- we have this area that represents on the map
19 at an elevated point in groundwater; correct?

20 A Correct.

21 Q Is that consistent with something called --
22 potentially consistent with something called
23 groundwater mounding?

24 A Yeah. That would be a term you could use
25 for that.

1 Q Okay, and I believe that you had represented
2 there the possibility of that mounding due to
3 infiltration from rainwater; is that correct?

4 A I speculated that that may be something that
5 we're seeing, but yeah.

6 Q Possible?

7 A It's possible.

8 Q So going back to -- I know we're -- this map
9 looks -- it's depicted -- oh, geez; one moment. I've
10 got to be careful with that cursor.

11 This map is depicted quite a bit
12 differently, but I'm on page 169 of 733. This is in
13 the packet of B exhibits presented by Apache and
14 admitted. This was taken in March of 2024; would you
15 agree?

16 A Yes.

17 Q And I had some questions I've already
18 referred to Mr. Bole earlier. Wouldn't you agree that
19 TMW-4 actually represents as potential groundwater
20 mounding in this previous map?

21 A Yeah. It seems to show the same feature
22 that we're showing in the October map.

23 Q Would you understand, then, kind of feedback
24 that rainwater infiltration may not represent a very
25 plausible justification for this mounding effect

1 that's seen in both March and December?

2 A You know, I'd really have to -- well, it
3 wasn't seen in December. It was seen in March and the
4 October, November. But I'd have to do a little bit
5 more work.

6 I did look at precipitation data for a
7 nearby gauging station. There was an inch and a half
8 of rain the month before our October groundwater
9 levels. That's kind of what got me thinking about
10 that. I don't know about March, so I'd have to do a
11 little bit more work to see if it's plausible.

12 Q Okay.

13 A Maybe there -- maybe there's a ton of rain.
14 I -- I don't know.

15 Q Okay. Thank you. I'm going to go back to
16 your exhibits now and refer you to page 16 of 143 in
17 the C exhibit packets from Apache. And so I have this
18 on the screen here. This is the summary of
19 groundwater analytical results prepared by Terracon.
20 These are the samples taken in October and provided to
21 OCD last week; is that correct?

22 A That's correct.

23 Q Okay, and the yellow depicted or highlighted
24 fields; these represent either chlorides or TDS that
25 are over the water limits; is that correct?

1 A Yes. Those are the values that exceed the
2 water-quality standards.

3 Q And there's two pages here, so I'll scroll
4 down just so you see the scope of what I'm referring
5 to. But, you know, OCD would highlight that most of
6 these wells are showing overages in the latest sample.
7 And they are -- if you look, they are actually showing
8 increases in both chlorides and TDS at the same
9 location over time with the additional sampling
10 events. Would you agree with that?

11 A Yeah. I -- I looked at this just before my
12 testimony, and there are ten wells that show an
13 increase, and 13 are about the same. Two actually
14 went down. So that's how the data is characterized.

15 Q Okay, and so there are now four wells with
16 chloride results in the latest sampling event which
17 are over 7,000 milligrams per liter; correct?

18 A I'll take your word for it.

19 Q Okay. The one that we talked about most is
20 the TMW-17, and that one is now at 14,900 milligrams
21 per liter; correct?

22 A Right.

23 Q Prior to that sampling event, were there any
24 wells that were over 6,000 milligrams per liter?

25 A I -- I'd honestly have to go back and check

1 to be sure. I -- I don't recall the highest number
2 before.

3 Q Given the substantial jump in the levels at
4 some of the wells, is it safe to conclude that the
5 wells are not from a current and active release?

6 A I don't know how to answer that. I'm not
7 clear. Could you restate that, please?

8 Q Okay. Can you -- when you look at this
9 sampling data and see the results, particularly at the
10 wells that have increased substantially, can you
11 definitively say that these chloride levels and TDS
12 levels are not the result of a current and active
13 release?

14 A Yeah, the only thing that could maybe
15 explain it, too, is -- is continued leaching out of a
16 source that raised the amounts. But, you know, I -- I
17 honestly don't know. I just don't know how to explain
18 it. Yeah.

19 Q Okay, and is it also safe to say that this
20 level of chloride plume was not previously detected in
21 the area from the -- or I guess -- let me rephrase.

22 Would you agree with the statement that this
23 level of chloride contamination in this plume was not
24 depicted or detected in the area from the prior
25 sampling events?

1 A No. It's -- it's -- the concentrations are
2 higher in the most recent sampling event.

3 Q Okay. So specifically looking at certain
4 results like TMW-6 here, for instance, that's on page
5 16; looking at this second field; this one definitely
6 caught our attention where the result went from 3,280
7 milligrams per liter TDS up to 11,700.

8 And to clarify the foundation of my
9 question, that's not chlorides; chlorides went down a
10 little bit. So concerning that TMW-6, does Terracon
11 or Apache have any idea what caused that large jump of
12 over 8,000 TDS?

13 A You know, I -- I really don't because
14 typically we see chloride and TDS moving in tandem.
15 They -- they usually -- higher TDS, higher chloride;
16 they go together. So this is very puzzling and I -- I
17 can't explain it.

18 Q Did Apache request the lab that provided
19 these samples to provide any -- or that tested the
20 samples -- provided the results to -- provide any
21 additional results to identify the TDS constituents,
22 which, based on this chart, we're assuming are not
23 chlorides?

24 A No, we did not ask that. No.

25 Q Okay, so I want to go to -- I think I'm done

1 there. I'm going to go to page 27 and just ask you
2 some general questions. Is this the analytical report
3 prepared by the lab that was incorporated into
4 Terracon's latest report for the fourth-quarter
5 monitoring?

6 A Yes.

7 Q Okay.

8 A There were -- there were three reports, I
9 believe, but yeah.

10 Q Okay.

11 A Yeah.

12 Q Is there anything you need to clarify there?
13 I mean, my question is directed at this is part of
14 that report that we got on the 8th.

15 A Correct.

16 Q Okay. Great. One second. When did the lab
17 provide the results from the chloride and TDS sampling
18 to Terracon or Apache?

19 A I'm not prepared to discuss the timing.
20 I -- I don't know. I'd have to look.

21 Q Okay. Is it your experience that chloride
22 and TDS sampling typically comes back faster than, for
23 instance, 3103 constituents?

24 A Yes.

25 Q Okay. And in your experience, what's a

1 typical turnaround time for those type of lab results?
2 For chloride and TDS?

3 A Standard turnaround time is two weeks for --
4 if we don't pay extra.

5 Q Okay. And to your knowledge, did Apache
6 take any immediate response actions after learning
7 about the increased levels of chlorides and/or TDS
8 that we've been discussing on that page 16 and 17?

9 A No. I don't believe so.

10 Q I think that's my only questions on that. I
11 want to go to page 3 of the amended Exhibit Apache C-
12 4.1.

13 A Okay.

14 Q All right. And I think you may have
15 answered some of this, so bear with me, but concerning
16 the groundwater elevation at TMW-14; that was
17 identified as an issue by OCD. Can you please explain
18 what happened there in the recording of that
19 groundwater elevation?

20 A Yeah, so I dug into that in a frenzy this
21 morning, and what I found is that the field -- the
22 notes from our field technician recorded a water level
23 of -- I believe it was 63-point or 65.91, and it was
24 transcribed as 63. So there was a mix-up of a foot --
25 of 2 feet. A 5 was transcribed as a 3. And that was

1 in one table. Another table was done correctly.

2 We had two different tables. One table we
3 try to make pretty for the reports so it's easy to
4 read; the other table is the analytical table that's
5 used for the groundwater flow mapping.

6 So the flow was based on the correct
7 elevation, but the value that you saw on the table and
8 that ended up getting written on the report was the
9 wrong value. But the flow map was used based on the
10 correct elevation number.

11 Q Okay, so we're dealing with a scribner's
12 error, in lawyer terms. It's like a copying error.
13 And with the corrected elevation, we're not looking at
14 groundwater mounding at that location?

15 A No. Correct.

16 Q But we are still looking at a bubble or
17 potential groundwater mounding at TMW-4?

18 A Yes. And I've had the team digging into
19 QA -- QC all day today, so yes.

20 Q All right. I think I've got to go back
21 to -- I want to go to page 65 of 143 in the Exhibit B
22 packet. And this one is, of course, sideways, so I
23 can try and get it. So I believe that this
24 represents -- if you can see it -- that the samples
25 were taken on October 28th of 2024; is that correct?

1 A For these samples, yes.

2 Q And these are -- I should have started here.
3 These are the 3103 constituents?

4 A Yes.

5 Q AT TMW-17?

6 A Yeah.

7 Q And were those analytical results included
8 in the December 2023 report?

9 A I think they were. They should have been.

10 Q Okay. Did -- go ahead.

11 A Well, I point out that TM -- there -- there
12 are different bottle orders and different parameters
13 requested for 17, windmill, and 24. Do you see the
14 numbers below the sample types?

15 Q Yes. Yeah. Sorry; I'm trying to rotate the
16 page so everyone can see it in a landscape orientation
17 and my PDF has locked up, so I think I'll come back to
18 this question if that's all right. I think I have
19 some clarifying questions that we can get to without
20 dealing with this.

21 But we've gotten that the 3103 constituents
22 at the TMW-17 were taken on October 28th, and did
23 Apache test for all 3103 constituents at that
24 monitoring well at that time?

25 A I would have to double-check results to see

1 if all were done.

2 Q Okay. I need my PDF to unlock. Let me --
3 oh. There we go. There it is. All right. Well, I
4 must have hit something in the right order there
5 because it rotated. All right, so in looking at
6 this -- and this has the windmill, TMW-17, and 24. I
7 believe that's the clarification you were making
8 earlier?

9 A Yes.

10 Q Is there any -- do you need to provide any
11 clarification or explanation as to the different --
12 following up in your previous answer? I didn't want
13 to cut you off.

14 A No. I would just point out that for TMW-17,
15 you'll see there was 60-mil VOAs; there was 40-mil
16 VOAs; there were bottles ordered for that well that
17 were not ordered for windmill and 24.

18 Q Okay.

19 A So you'll -- in the lab report, you'll see
20 different results.

21 Q Okay. And --

22 A Different report -- different parameters.
23 Yeah.

24 Q Okay, so for TMW-17, did Apache test for all
25 3103 constituents?

1 A I can't say that I know all constituents, so
2 I can't answer that in the affirmative.

3 Q Are you aware of any reasons for excluding
4 any particular 3103 constituents from that test?

5 A No. None were specifically excluded, so the
6 lab ran what they -- they ran, but I -- I don't know.

7 Q Okay. And sampling also occurred at the
8 windmill, you had indicated. Did that occur at the
9 same time as the TMW-17?

10 A Yes.

11 Q Were any 3103 constituents omitted from that
12 test?

13 A I don't think they ran the -- I think there
14 was an error and they did not run 3103 on that, I
15 don't think. They were supposed to, and we did not.

16 Q Okay, and the same question for TMW-24.
17 Were any 3103 constituents omitted from that test, and
18 if so, was there a reason for that?

19 A No. I just think they didn't run. That's
20 why you see -- they -- they -- I don't think -- I
21 think that there was an issue with the sample bottles
22 they had available and so they didn't get that done
23 for those locations, so that has to be done next time.

24 Q Okay. All right. Let's see. Trying to
25 find the sample result. Actually, let me move on. I

1 may come back to that.

2 Okay. A couple clarifying questions. I'm
3 back to page 23 to talk about your earlier responses
4 to spacing of the wells and your assessment of the
5 need for particular wells proposed by OCD versus
6 Apache. So TMW-40 --

7 A Would -- by my -- that would be between 19
8 and 23.

9 Q Okay. 19 and 23. Okay. I have the wrong
10 page, I think. Let's go over here, rather.

11 A There you -- there you go.

12 Q Page 3. This is a -- okay. Much better.
13 Thank you. So TMW-40; I think you've established that
14 as downgradient of TMW-17; correct?

15 A Correct.

16 Q How far away is TMW-40 from TMW-17?

17 A It looks like it's about a thousand feet.

18 Q Okay. And also TMW-36 was proposed by OCD;
19 that's a little closer downgradient to TMW-17?

20 A Correct.

21 Q And you had testified as to Apache's
22 willingness to put in some of these wells, but TMW-36
23 and TMW-40; to clarify, Apache did not agree to put in
24 those wells downgradient from TMW-17?

25 A That's correct.

1 Q Okay. And then I have the same question.
2 TMW-41; that's also further downgradient from TMW-17.
3 Apache did not agree to install TMW-41?

4 A That's correct. We thought 25 would serve
5 the purpose down there.

6 Q Okay. Do you know what the distance is
7 between TMW-23 and TMW-24?

8 A It looks like it's maybe about 600 feet, but
9 I don't know.

10 Q Understood. Okay. All right. I think I'm
11 wrapping up here, Mr. Grams; appreciate it. Jumping
12 back to TMW-17 real quick; regarding these chlorides
13 at 14,900, in your experience, would it be normal to
14 jump from 5,600 milligrams per liter to 14,900 due to
15 a rain influx?

16 A No. So, you know, there is one thing I
17 should point out if -- if I may. We saw the high
18 numbers at 17 from the March sampling, and so one
19 thing that the field guys did was they purged TMW-17
20 extensively before collecting the sample. So they
21 pumped maybe -- I don't remember the number -- 20 well
22 volumes of water out of it. So that could have
23 resulted in some different results.

24 Q Okay. Thank you for that. Did they also
25 purge the other wells in a similar manner?

1 A No, no.

2 Q Okay. So while the volumes -- so for
3 instance, let's be specific. TMW-18; if that one was
4 not purged in the same manner -- I think that one went
5 from 900 to 7,800, so purging wouldn't explain the
6 dramatic increase in the sample at TMW-18; would you
7 agree?

8 A I would agree with that.

9 Q Okay. Okay, so if I'm understanding your
10 testimony correctly, it sounds like you're working
11 under the assumption that currently that there's one
12 release, but you can't rule out multiple sources or
13 deposits of chlorides in soil that are continuing to
14 leach or migrate into groundwater; is that correct?

15 A That's correct.

16 Q And from the current map, it is not possible
17 to know precisely where you would have to install a
18 cap or a liner or dig out contaminated material; is
19 that correct?

20 A That's correct.

21 MR. TREMAINE: Okay. Let me check one
22 thing. Thank you for bearing with me, but I think I'm
23 done. Mr. Grams, I don't have any further questions
24 for you. Thank you very much for your time.

25 THE WITNESS: All right. Thank you.

1 MR. RAZATOS: Thank you. Let's turn to
2 our commissioners.

3 MR. MOELLENBERG: I do have a little
4 redirect, Mr. Chairman.

5 MR. RAZATOS: I'm sorry. I forgot to
6 ask you. Yes. Your redirect, please. My apologies.

7 REDIRECT EXAMINATION

8 BY MR. MOELLENBERG:

9 Q Just a couple things to clarify. Mr. Grams,
10 do you recall Mr. Tremaine's questions relating to, I
11 guess as he put it, Apache's view that we're thinking
12 about this being the result of a single release? Do
13 you recall this question?

14 A I remember that being discussed, yeah.

15 Q Yeah. Thinking about single release in
16 terms of what is known and unknown, time, location,
17 and such, would you have any reason to clarify your
18 answer in terms of a single release, let's say, or
19 maybe location of releases?

20 A Well, a single release could go on for a
21 period of time. If that junction box was a source, we
22 don't know how long that was potentially leaking.

23 The other thing would be, you know, if
24 that's a pipeline run and there's a leak, it can
25 run -- usually the pipeline backfill is a lower

1 permeability than the surrounding soil, so it can go a
2 distance along that run and drop out at a lower
3 permeability zone somewhere along that run. And so it
4 could show up in different places.

5 Q Fair enough. And in this discussion of
6 single release, are we distinguishing that from the
7 known release that triggered the initial actions by
8 Apache?

9 A I'm not sure I understand the question.

10 Q Well, is it your understanding that there
11 was a reported release that was known because it
12 showed up at the surface?

13 A Yes, yes.

14 Q Okay. Are you -- when you talk about a
15 single release, are you distinguishing that in any way
16 from known release that surfaced?

17 A I don't think so. I mean, a single release
18 point -- I mean, when I think of a single release --
19 you know, like, it -- that can mean a lot of different
20 things.

21 Q Okay.

22 A A tank or a pipe can have a release that
23 goes on for many years, and I guess that's a single
24 release or at least you have a release from a single
25 location. A single location, yeah.

1 Q Okay. There -- do you recall a question
2 from Mr. Tremaine about isolating or removing
3 chlorides to prevent groundwater contamination?

4 A Yes.

5 Q And is it your understanding that that would
6 likely be referring to chlorides in soils or perhaps
7 the vadose zone, as somebody might call it, versus --

8 A I think that's what he's referring to.
9 That -- that's what Apache did after this spill, yeah.

10 Q And that would be distinct from chlorides in
11 groundwater itself?

12 Those are two different things, yeah.
13 Two -- two different things.

14 And I think Mr. Tremaine may have asked you
15 a question about removal of chlorides and looking at
16 the distance between two wells. Thinking about the
17 difference between chlorides in soils or the vadose
18 zone versus chlorides in groundwater, would that cause
19 you to think any differently about your responses to
20 those questions?

21 A Well, the removal -- the approach to
22 removing chloride in groundwater is completely
23 different than the approach to removing chloride in
24 soil. So yeah; you need different information and it
25 would be -- those are two different stories.

1 Q And if you're talking about a particular
2 area, at least in a plane on the surface, and you're
3 thinking about two different wells, that could be
4 either groundwater chloride levels or chlorides in
5 soils or the vadose zone or perhaps both?

6 A Well, the wells are showing us chlorides in
7 groundwater; right?

8 Q Right, right.

9 A And if we were to need to remove chlorides
10 in soil, that's a different -- that's a different
11 proposition. That's a different --

12 MR. MOELLENBERG: Right. Yeah.

13 I think that's all I have. Thank you.

14 MR. RAZATOS: Thank you. Sorry; I
15 didn't mean to skip you over earlier.

16 MR. MOELLENBERG: No worries.

17 MR. RAZATOS: Now we'll turn it over to
18 the commissioners. I'll start with you, Commissioner
19 Bloom, if you have any questions.

20 MR. BLOOM: Maybe one question. Mr.
21 Grams, thank you for your testimony today. Mr.
22 Tremaine's last question to you was, "Would the
23 current map tell you where to dig your cap?"

24 I believe you said no; is that right?

25 THE WITNESS: That's -- I think that's

1 what he said, yeah.

2 MR. BLOOM: Okay. And would your
3 plan -- the Apache plan -- moving forward, would that
4 get you to that point or would Apache potentially have
5 to do more work to characterize the situation there?

6 THE WITNESS: No. Our intent is
7 that -- for that scope of work combined with the pump
8 well -- pump test as a part of it, and soil borings
9 would give us the information we need to fully
10 understand -- fully delineate the perimeter and have
11 enough information to -- to be able to put a well in
12 if we wanted to do some sort of recovery.

13 So that would be the intent. We never
14 know for sure what we're going to see, and so it's
15 possible there would be some additional questions to
16 be answered.

17 MR. BLOOM: Okay. No further
18 questions. Thank you for your time.

19 THE WITNESS: Yep.

20 MR. RAZATOS: Thank you, Commissioner
21 Bloom.

22 Commissioner Ampomah, do you have any
23 questions?

24 DR. AMPOMAH: Yes, I do.

25 Okay. Thank you, Mr. Grams, for your

1 testimony. I do have a couple of questions for you.
2 I need to go over my notes here. So with regards to
3 how you developed the ground flow -- the groundwater
4 flow -- is that more or less an analytical approach?

5 THE WITNESS: Pardon me?

6 DR. AMPOMAH: Is that an analytical
7 approach that you utilized?

8 THE WITNESS: A what approach?

9 DR. AMPOMAH: Analytical.

10 THE WITNESS: Analytical? Yeah, yeah.

11 DR. AMPOMAH: So do you believe that
12 if, more or less, you had used more modern tools like
13 a computer modeling, would that have improved your
14 results or understanding?

15 THE WITNESS: So a true groundwater
16 model requires knowledge of aquifer parameters that we
17 don't know today. And so you have to put in, for
18 example, hydraulic conductivity as a key variable, and
19 that we will determine with a pump test.

20 So an aquifer pump test, we put in a
21 pump; we run it; we measure the draw-down in the well
22 and in surrounding wells; then you turn the pump off
23 and you watch it all recover, and that tells you about
24 the hydraulic properties. And that provides the data
25 that you can put into a model and do a real

1 groundwater model. We don't have that data today.

2 DR. AMPOMAH: And you can do a little
3 bit of history merging to see or more or less to
4 compare the results that you are getting from the lab
5 and then what you are more or less getting down there,
6 too?

7 THE WITNESS: Yeah. Yep.

8 DR. AMPOMAH: So would you prioritize
9 doing that, you know, as one of the steps to avoid
10 more -- like now, more or less an additional 20 wells?

11 THE WITNESS: I would. I am not the
12 one who controls the scope, but yeah, I think that
13 would be a good idea.

14 DR. AMPOMAH: Okay. So, you know, that
15 is why I still go back to the modeling because if you
16 look at the footprint of the release, is it easy to
17 explain this scientifically, you know, with regards
18 to, like, the elevation of the chloride throughout
19 this whole area?

20 THE WITNESS: Well, so that's -- you
21 would -- you would have to almost assume that this has
22 been going on a little bit longer than since 2019 when
23 I look at it.

24 DR. AMPOMAH: Yeah. So the extent of
25 the problem is not really known at this point?

1 THE WITNESS: Well, but if you look --
2 look at the map, you -- we have wells that are low all
3 around it. So we know it's -- we have it defined
4 geographically. So we do have that part fairly well
5 delineated. There's some uncertainty with our dash
6 lines; we're going to fill that in with the additional
7 wells, but really, it's pretty well-defined.

8 DR. AMPOMAH: Okay.

9 THE WITNESS: It's not perfect, but
10 realize this is all occurring 60 feet down and you
11 can't see it, so we make inferences based on our --
12 our data.

13 DR. AMPOMAH: Okay, so if you look at
14 the results that have been coming in since 2019, don't
15 you believe that from NMOCD's point of view, they are
16 trying to do extensive due diligence? You know,
17 because if you see some of these chlorides in nearby
18 wells of residents in the area, that is a little bit
19 of a problem. So would you agree to that; that we are
20 trying to do due diligence here?

21 THE WITNESS: I think that it's been
22 mutual. I think Apache and OCD have been trying to do
23 due diligence.

24 DR. AMPOMAH: Then a question I have
25 for you is that do you believe Apache and NMOCD do

1 have the same objective with this --

2 THE WITNESS: I -- for the most part
3 they do. I'm speculating a little bit on their
4 objective, but yeah; I think they do. Over -- for the
5 most part, you know, if you really look at the
6 communication throughout this release, there's been a
7 lot of collaboration and agreement between Apache and
8 OCD.

9 It really wasn't until this last scope
10 of work in July or April, May, June, July that it
11 became a disagreement. Up to that point, they were
12 working collaboratively.

13 DR. AMPOMAH: Okay. Just to clarify
14 and solidify my point here --

15 THE WITNESS: I would say.

16 DR. AMPOMAH: -- does Apache's plan
17 include the pump test and then also the modeling --
18 subsequent modeling?

19 THE WITNESS: We didn't spell that out,
20 but yeah. We -- that's something that we can do.
21 The -- the type of modeling that is always done as a
22 part of a pump test gives to modeling the draw-down
23 and the aquifer response. A full contaminant
24 transport model is a different thing and that was not
25 part of our proposal, so that's something we would

1 have to discuss.

2 DR. AMPOMAH: Yeah.

3 THE WITNESS: There's two -- there's
4 different --

5 DR. AMPOMAH: That is the one that I'm
6 looking for, though.

7 THE WITNESS: That's the one you're
8 looking for?

9 DR. AMPOMAH: Yeah, exactly. You know,
10 so if you look at -- and I really do like the map that
11 is on 719 out of the 733 document, so thanks for
12 taking time to take us through that.

13 Do you believe that a stage-wise
14 approach, you know, is more warranted here than more
15 or less -- I don't know. In terms of the condition, I
16 don't know if, let's say, NMOCD is requesting that you
17 drill all these wells at once or we go step-wise. Can
18 you speak to that?

19 THE WITNESS: Well, you know, if you
20 put in 20 wells at once, you'll probably find that
21 some of them were not necessary. If you go in a step-
22 wise approach, you take the information from each
23 well, you reevaluate, and then you put your next
24 investigation location in depending upon what you
25 know, so it allows you to consider and plan a little

1 more deliberately.

2 And so now -- I mean, I'll just go out
3 on a limb and say if resources were unlimited, then we
4 could go in and put a hundred wells in and we would
5 know everything we need to know. But given that
6 resources are limited, then we take a step-wise
7 approach and we try to be reasonable in what we put in
8 and what we do.

9 DR. AMPOMAH: So Apache's and NMOCD's
10 plan; which one is step-wise approach?

11 THE WITNESS: Well, I think -- I mean,
12 for example, one of the things that OCD may -- went to
13 great pains to point out is that every communication
14 says, you know, "You can do this but you might have to
15 do more." Right? We -- we know that.

16 So to me, Apache's plan would be --
17 consider it phase 1; okay? And if it tells us
18 everything we need to know, hallelujah; we're done.
19 But if not, we go back and we would have to do more.
20 It would be a step-wise approach, and maybe phase 2
21 would be the rest of the OCD wells.

22 DR. AMPOMAH: Has NMOCD and Apache
23 actually discussed both locations? I'm referring to
24 the figure -- what is the figure number? -- but the
25 figure on 719 where you show all the wells blue and

1 then green.

2 THE WITNESS: Blue and green?

3 DR. AMPOMAH: So has NMOCD and Apache
4 actually discussed this?

5 THE WITNESS: No. That was the
6 frustrating point. The discussions were cut off at
7 that point, so it was not discussed.

8 DR. AMPOMAH: So do you believe that a
9 discussion between Apache and NMOCD to optimize these
10 locations is a must-happen kind of --

11 THE WITNESS: I think that would be a
12 good idea, yeah.

13 DR. AMPOMAH: Yeah. So who put this
14 one first? Is it NMOCD or Apache?

15 THE WITNESS: Well, so my
16 understanding -- I -- I wasn't involved at the time.
17 My understanding is that there was a discussion
18 between NMOCD and Apache. As a result, Apache
19 prepared a written proposal for 5 wells. OCD came
20 back and said, "Well, in addition to those 5, we want
21 14 more."

22 And Apache came and said, "Well, how
23 about if we do 7?"

24 And then the discussion -- OCD just
25 said, "We don't want to talk to you anymore."

1 DR. AMPOMAH: Okay. So then I don't
2 think, then, Apache can say that NMOCD is requesting
3 more -- like, these additional wells on top of what
4 you already more or less presented in this figure.

5 THE WITNESS: Well, no. There was a
6 written proposal for 5 wells, and then OCD responded
7 in writing with an additional 14 on top of those.

8 DR. AMPOMAH: Okay.

9 THE WITNESS: My understanding; someone
10 could --

11 DR. AMPOMAH: Now, let me ask; has
12 there been any baseline data collected in this area?
13 You know, from -- let's say, do we know the mineral
14 composition of the groundwater in this area? Not
15 necessarily with respect to the timeline, but has
16 there been any data collected that can be set as the
17 baseline data?

18 THE WITNESS: I'm not aware of it. You
19 know, we -- we have the existing wells 11 and 12,
20 which are fairly far upgradient, but no; I don't know
21 of -- of that. And there can be quite a range of
22 differences locally in the Ogallala in salinity.
23 So -- but no; I'm not -- I'm not aware of that. I'm
24 not aware of that.

25 DR. AMPOMAH: So --

1 THE WITNESS: It's certainly not
2 14,000, so -- yeah.

3 DR. AMPOMAH: So prior to, let's say,
4 the hearing, did Apache try to get NMOC to discuss
5 this particular chat? You know, this map where you
6 have multiple wells proposed over each other?

7 THE WITNESS: This map was prepared
8 after the discussions were cut off.

9 DR. AMPOMAH: After that. Okay, okay.
10 So, then, definitely there has not been any
11 reconciliation between NMOCD's proposed well locations
12 and then that of Apache, so that has been established.

13 Now, do you know the time range with
14 regards to when Apache first saw or recognized the
15 release and then the time there was a notified to --
16 no; let's say the time of the remediation action --
17 the first remediation action?

18 THE WITNESS: All I know is from
19 reading the documents that we've seen, but I believe
20 they began to do the -- this is Bruce's area. I
21 believe they began the excavation within days of
22 finding the release. So I think it was done right
23 away. Not all of it. Some of it continued into the
24 next summer, so it occurred over a period of time.

25 DR. AMPOMAH: And Apache's position is

1 this is a single release? I know there was a follow-
2 up question on that to clarify. Do you believe -- is
3 it Apache's testimony or your testimony that it's
4 still a single release?

5 THE WITNESS: I don't know enough that
6 I can say that for sure.

7 DR. AMPOMAH: Okay. Now, we've seen
8 changes in the concentration of the chloride, you
9 know, from -- let's say from '19 and even '23 to the
10 latest report that was provided to NMOCD.

11 Does Apache recognize the problem
12 that -- you know -- that is at stake here? In terms
13 of the increment in the chloride concentration over
14 time? Even though you've done some remediation
15 efforts, but there's still increment in that.

16 THE WITNESS: The -- the remediation
17 was all done on soil; right?

18 DR. AMPOMAH: On soil.

19 THE WITNESS: And right now, we're
20 looking at groundwater data.

21 DR. AMPOMAH: So nothing has been done
22 on the groundwater?

23 THE WITNESS: On the groundwater? No,
24 nothing has been done on the groundwater remediation.

25 DR. AMPOMAH: Okay, okay. And then you

1 were saying that when the latest report came through,
2 Apache has not done anything with regards to any
3 remediation at all with the --

4 THE WITNESS: No. Well, you know, the
5 first step is -- well, putting in a groundwater
6 remediation system is very complicated and requires a
7 lot of information and a lot of planning. And that's
8 not something that you just do short notice, so that's
9 something that has to be planned.

10 And the first step is the pump test.
11 We keep talking about the pump test, but that's
12 typically the first step. So that tells us what size
13 of a pump we need.

14 For example, how much water are you
15 going to be able to extract from a well? Is it 10
16 gallons per minute? Is it a hundred gallons per
17 minute? Five hundred? How much? And that determines
18 what size of a pump you need. That determines what
19 size of a well you might need. There's a lot of
20 information that you have to do to properly plan a
21 remediation system.

22 DR. AMPOMAH: You know, based on your
23 experience, if you look at going around digging holes
24 compared to more or less coming up with a
25 comprehensive plan to remediate what is going on in

1 the groundwater, you know, how would you rate that
2 compared to continuously punching the holes around?

3 THE WITNESS: Well, so, you know, one
4 thing that you look at is -- is what is at risk. You
5 know, if there were a residential community adjacent
6 to this well site pumping water for drinking water and
7 that's their sole source, that is a higher level of
8 risk than out in a oil field where there's -- so it
9 might determine a different type of action.

10 DR. AMPOMAH: So there's no community
11 in the area sourcing their water from, let's say,
12 nearby in this area?

13 THE WITNESS: Not -- not at this
14 location, no.

15 DR. AMPOMAH: Okay.

16 THE WITNESS: The -- the one -- the one
17 receptor is the windmill well. And that -- I don't
18 want to minimize that; that's significant, but that's
19 the receptor that's been identified.

20 DR. AMPOMAH: Okay. Thank you, sir.

21 THE WITNESS: Yeah.

22 MR. RAZATOS: I have a few questions as
23 well.

24 THE WITNESS: Okay.

25 MR. RAZATOS: And thank you for your

1 testimony today. We appreciate it.

2 THE WITNESS: Thank you.

3 MR. RAZATOS: You mentioned early on in
4 your testimony that there is a difference in the way
5 sampling was done between March and October. I
6 believe October's was passive sampling and March's was
7 low-flow sampling; did I get that correct?

8 THE WITNESS: That's correct.

9 MR. RAZATOS: Okay. Excellent. I
10 believe you mentioned that you do not feel that this
11 has caused a difference in the numbers, but why did
12 you feel that you had to mention that part? As far as
13 it -- what's so significant between the two sample
14 procedures that would -- for someone who is a
15 hydrologist?

16 I'm not a hydrologist; I'm not a
17 geologist; I'm not a hydrogeologist, so what does that
18 trigger in your head as a hydrologist geologist?

19 THE WITNESS: Well, it's just -- it's a
20 different method. So instead of using a pump that
21 pumps a low volume of water, we put in a -- it's
22 called a HydraSleeve. It goes into the well, it sits
23 for 24 hours, and then you remove it.

24 So it's a little bit like -- I don't
25 know -- I baked a cake with my regular oven and I used

1 a convection oven. Did it -- is it a little bit
2 different? I -- I don't know. It -- it's something
3 that triggered. When I saw the high numbers, I
4 thought, "Oh, man. Does this new sampling technique
5 cause the difference?"

6 All the reading I've done on the
7 technique says it does not. I did talk to Mike
8 Bratcher at OCD, and he is familiar with this and he
9 was -- said he likes this method, so I don't think
10 that was it, but I felt it was worth mentioning.

11 MR. RAZATOS: Okay. Okay. Thank you
12 for clarifying that. I'm going to be working off of
13 Apache Exhibit C-4.1, which was the more updated
14 version, I believe, of the contouring and everything.

15 You mentioned that a pump test will
16 give us better modeling; it will tell us the hydraulic
17 properties in the area. My question, then, to you is
18 where would you, in your professional opinion, put
19 this pump test?

20 Is that where you were talking about
21 TMW-27 being a bigger bore and -- because you had said
22 that the proposed TMW-27 is a larger-diameter well for
23 recovery, and then you stated that it may or may not
24 be useful in the long run, but is that where you would
25 propose putting this pump test?

1 THE WITNESS: The initial thinking was
2 that we wanted to have a well that was located in
3 between the identified high concentrations at 17 and
4 the suspected source area up by Number 7. It's a
5 puzzle, and we -- we would put in 27 with the
6 expectation that it hits high levels of chloride.

7 Now, we don't know that for sure 'cause
8 we haven't done it yet, but the thinking is that that
9 would be a good place to recover. But we might have
10 to go further downgradient looking at the well, and
11 that's been alluded to by other questioners. It may
12 be that something right next to 17 would be a better
13 place.

14 So we have to -- that's more that we
15 have to evaluate.

16 MR. RAZATOS: Okay, so then just help
17 me figure out where you mentioned about the aquifer
18 pump test giving us better modeling. Where would you
19 be doing this test?

20 THE WITNESS: Well, that would be at
21 27.

22 MR. RAZATOS: It would be at 27? Got
23 it. Okay.

24 THE WITNESS: We need a larger-diameter
25 well to get the pumps and pressure transducers and

1 things in the well.

2 MR. RAZATOS: And I may have not asked
3 the question appropriately, so I apologize. So that
4 was my point. Okay; 27 is where Apache proposes to do
5 this pump test?

6 THE WITNESS: Yeah, yeah.

7 MR. RAZATOS: Okay. On this particular
8 page, if I've understood correctly because you stated
9 that it was created after communication with the OCD
10 had stopped, the five wells that Apache is proposing
11 are the blue wells; correct?

12 THE WITNESS: Well, the original 5 were
13 MW-25 through MW-30 -- 29 -- 25 through 29. And then
14 OCD asked for 14 more.

15 MR. RAZATOS: Okay.

16 THE WITNESS: And Apache came back and
17 said, "Well, we agree with two of those," and so then
18 Apache had seven on their list.

19 MR. RAZATOS: Okay, so that includes --

20 THE WITNESS: So you could count 7 blue
21 dots, and there would be 14 green dots, but 2 of the
22 locations were agreed between, so they're showing up
23 as blue.

24 MR. RAZATOS: So the added two are TMW-
25 30 and TMW-31, which correlate with OCD 39 and OCD 42?

1 THE WITNESS: Correct.

2 MR. RAZATOS: Okay. Great. Thank you.
3 Now, as was mentioned, there's urgency in this because
4 this commission is set to make sure that we protect.
5 Protect the environment; protect our water; protect as
6 much as we can within our purview.

7 In looking at the last set of results
8 that Apache got from the testing of the water that
9 your company put together and showed on this
10 particular map; it is disconcerting that some of
11 these -- as you said, half of them went up; the other
12 half kind of stayed the same or dropped a little bit,
13 but the ones that went up went up quite significantly,
14 especially 14, 15, 17 and 18.

15 When we are looking at the windmill, 5
16 went up as well -- is going up; 5 is going up also;
17 the windmill is also going up. There is a gap between
18 that 17 and that windmill. Being that animals are
19 drinking -- cattle are drinking from this water that's
20 coming out of the windmill and we have such a high
21 concentration, would it not behoove to put a well
22 somewhere within that space?

23 That looks like it's more than 300
24 yards difference between the well and where TM -- I'm
25 sorry -- the windmill and where TMW-17 is at. In your

1 opinion, would it not behoove to put a well in there
2 to start monitoring what's progressively flowing
3 towards that windmill?

4 THE WITNESS: Yeah, you could make the
5 case to do that. That wasn't in either of our
6 proposals, but that's -- you could make the case that
7 that should be done.

8 MR. RAZATOS: Okay. And again, as I
9 mentioned -- thank you for answering that one. As I
10 mentioned, I'm not a hydrologist and I'm not a
11 geologist. So could you just explain to me -- and you
12 may not have the answer for this -- why are we seeing
13 such sharp increases? In 17 it's almost threefold,
14 and in 18 it's almost -- it's over eight times more.

15 I understand water moves; I
16 understand -- I have enough chemistry to understand
17 that chlorides will filter through with water. But in
18 your opinion, what do you think is causing this?

19 THE WITNESS: You know, I -- I honestly
20 really don't know.

21 MR. RAZATOS: Okay.

22 THE WITNESS: I -- I don't know.

23 MR. RAZATOS: Okay.

24 THE WITNESS: It's not easy to explain.

25 MR. RAZATOS: It's a conundrum for us

1 as well.

2 Okay. Excellent. Those are the last
3 questions that I have myself. Anybody else have any
4 other questions for Mr. Grams? Okay. No more
5 questions.

6 Well, make sure you turn on your
7 microphone, Mr. Moellenberg.

8 MR. MOELLENBERG: I apologize again.

9 MR. RAZATOS: No problem.

10 MR. MOELLENBERG: Sorry about that.

11 MR. RAZATOS: Can we let Mr. Grams step
12 down for the evening?

13 MR. MOELLENBERG: Yes.

14 MR. RAZATOS: Okay. Excellent.

15 Mr. Grams, thank you so much. We
16 appreciate it.

17 I think this is a great natural
18 stopping point for all of us. It is past five
19 o'clock, so we can definitely pick up tomorrow at 9
20 a.m. unless there's any objections to that.
21 Excellent. Thank you, everybody. Have a good
22 evening. We'll see you -- oh.

23 Mr. Moellenberg?

24 MR. MOELLENBERG: Yeah. Just to
25 clarify, we don't have any more witnesses on direct,

1 so I believe we would be picking up tomorrow with the
2 Division's witnesses.

3 MR. RAZATOS: Correct.

4 MR. MOELLENBERG: Right.

5 MR. RAZATOS: Yes. Okay. Excellent.
6 Thank you, everyone. Have a good evening and we'll
7 see you tomorrow at 9 a.m.

8 (Whereupon, at 5:03 p.m., the
9 proceeding was concluded.)

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CERTIFICATE

I, JAMES COGSWELL, 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.



JAMES COGSWELL
Notary Public in and for the
State of New Mexico

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PAULA GEWERTZ

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