STATE OF LOUISIANA

DIVISION OF ADMINISTRATIVE LAW

****

DEPARTMENT OF NATURAL
RESOURCES

NO. 2022-6003-DNR-OOC

IN THE MATTER OF

HENNING MANAGEMENT, LLC
V. CHEVRON U.S.A., INC.

****

PUBLIC HEARING
BEFORE THE HONORABLE CHARLES PERRAULT

Taken on Monday, February 13, 2023
DAY 6
(pages 1386 through 1643)

Held at the DIVISION OF ADMINISTRATIVE LAW
COURTROOM 1
1020 Florida Street
Baton Rouge, Louisiana

REPORTED BY: DIXIE B. VAUGHAN, CCR

****

JUST LEGAL

9618 Jefferson Highway, Suite D-386

Baton Rouge, Louisiana

NEW ORLEANS * BATON ROUGE * LAFAYETTE
LAKE CHARLES * HOUSTON

(225) 291-6595 (855) 900-5878
www.just-legal.net setdepo@just-legal.net

I N D E X

* * *

EXHIBITS OFFERED, FILED AND INTRODUCED:

PLAINTIFFS' EXHIBITS:

DEFENSE EXHIBITS:

EXHIBITS (Continued):

EXHIBITS (Continued):

* * *

APPEARANCES:

REPRESENTING HENNING MANAGEMENT, LLC:

TODD WIMBERLEY, ESQUIRE
JOHN CARMOUCHE, ESQUIRE (VIA ZOOM)
Email: Twimberley@tcmlawfirm.com
JCarmouche@tcmlawfirm.com
Phone: (225)400-9991
TALBOT, CARMOUCHE & MARCELLO
17405 Perkins Road
Baton Rouge, Louisiana 70810

- AND -

MATT KEATING, ESQUIRE
Email: Mkeating@mbklaw.net
Phone: (337) 562-2327
MUDD BRUCHHAUS & KEATING, LLC
422 E. College Street, Suite B
Lake Charles, Louisiana 70605

REPRESENTING CHEVRON U.S.A. INC., ET AL.:

L. VICTOR GREGOIRE, ESQUIRE
Email: victor.gregoire@keanmiller.com
Phone: (225)387-0999
KEAN MILLER, LLP
400 Convention Street, Suite 700
Baton Rouge, Louisiana 70802

- AND -

LOUIS M. GROSSMAN, ESQUIRE
Email: louis.grossman@keanmiller.com
Phone: (504)585-3050
KEAN MILLER, LLP
First Bank and Trust Tower
909 Poydras Street, Suite 3600
New Orleans, Louisiana 70112

APPEARANCES (Continued):

REPRESENTING CHEVRON U.S.A. INC., ET AL.:

JOHNNY CARTER, ESQUIRE
Phone: (713) 651-9366
SUSMAN GODFREY
1000 Louisiana
Suite 5100
Houston, TX 77002-5096

- AND -

TRACIE RENFROE, ESQUIRE
MITCHELL BRYANT, ESQUIRE
Email: trenfroe@kslaw.com
mbryant@kslaw.com
Phone: (225) 389-3770
KING & SPALDING LLP
1100 Louisiana, Suite 4100
Houston, TX 77002

PANELISTS:

STEPHEN OLIVIER

JESSICA LITTLETON

GAVIN BROUSSARD

CHRISTOPHER DELMAR

(PROCEEDINGS COMMENCING AT 9:10 A.M.)

JUDGE PERRAULT: We're on the record. Today's date is February 13, 2023. It's now 9 o'clock.

I'm Charles Perrault, administrative law judge. I'm conducting a hearing for a case for the Department of Natural Resources, Office of Conservation. We're at the office of the Division of Administrative Law in Baton Rouge.

The case before me is Docket Number 2022-6003, in the matter of Henning Management LLC versus Chevron USA Incorporated.

I believe this is our sixth day of the hearing. I'd like the parties present to make their appearance on the record. We'll start with Chevron.

MR. GROSSMAN: Good morning, Your Honor, panel members. Louis Grossman for Chevron.

MS. RENFROE: Good morning, Your Honor. Panel members, good morning. Tracie Renfroe for Chevron as well.

MR. GREGOIRE: Good morning, all. Victor Gregoire for Chevron USA.

MR. CARTER: Johnny Carter for Chevron.
JUDGE PERRAULT: All right. And for Henning.
MR. WIMBERLEY: Good morning. Todd Wimberley for the plaintiffs.
MR. KEATING: Good morning, everybody. Matt Keating for Henning Management.
MR. CARMOUCHE: Good morning. John Carmouche for Henning.
JUDGE PERRAULT: All right. And I'd like the panel members to make their appearance on the record.
PANELIST LITTLETON: Jessica Littleton, Department of Natural Resources, Office of Conservation.
PANELIST DELMAR: Christopher Delmar, Department of Natural Resources, Office of Conservation.
PANELIST OLIVIER: Stephen Olivier, Department of Natural Resources, Office of Conservation.
PANELIST BROUSSARD: Gavin Broussard, Department of Natural Resources, Office of Conservation.
JUDGE PERRAULT: We're ready for Chevron to present its rebuttal, and I'll ask counsel to

begin.
MR. GROSSMAN: Yes, Your Honor. We're going to start with the Zoom testimony from Dr. Kind.
Before we do, as I mentioned, we have some, we'll call it housekeeping. We have some exhibits that we'd like to offer, file, and introduce that were from the presentations last week.
JUDGE PERRAULT: All right.
MR. GROSSMAN: So beginning with Exhibit 162.1, this is the presentation deck for Mike Purdom.
JUDGE PERRAULT: What's the number, again?
MR. GROSSMAN: 162.1.
JUDGE PERRAULT: Okay. That's Dr. Purdom's -- what would we call this?
MR. GROSSMAN: We call it his trial presentation.
JUDGE PERRAULT: Presentation. All right.
And all of the exhibits in it have already been admitted into evidence?
MR. GROSSMAN: That's correct, Your Honor.
JUDGE PERRAULT: All right. Any objection?
MR. WIMBERLEY: No, Your Honor, not as long

as Mr. Grossman will represent to the Court that all of the slides contained in the slide decks were shown in the courtroom and no slides that are contained in the decks were not shown.

MR. GROSSMAN: That's correct, Your Honor.

JUDGE PERRAULT: All right. Everything was used before?

MR. GROSSMAN: Yes.

MR. WIMBERLEY: No objection, Your Honor.

JUDGE PERRAULT: Because rebuttal is limited under the regulation -- let me put the -- just for the record. Let's see.

Louisiana Administrative Code Title 43, Section 635 F limits -- states the limits on the rebuttal. And we've all been through that.

MR. GROSSMAN: Yes. And, Your Honor, just so we're clear, these are from the case in chief.

The next one is 162.2. And that is the direct examination of Patrick Ritchie from Chevron's case in chief.

JUDGE PERRAULT: All right. Any objections to that?

MR. WIMBERLEY: No, Your Honor.
MR. GROSSMAN: Following that, we have Exhibit 162.3. And that is the presentation used with the direct testimony of Dr. John Frazier in connection with Chevron's case in chief.
JUDGE PERRAULT: Any objection?
MR. WIMBERLEY: No, Your Honor, as long as the same representations apply.
MR. GROSSMAN: Next one, we have 162.4, which is the presentation used with the direct examination of Dr. John Kind in Chevron's case in chief.
JUDGE PERRAULT: Any objection?
MR. WIMBERLEY: No objection. Same conditions.
JUDGE PERRAULT: Okay.
MR. GROSSMAN: Next, we have Exhibit 162.5, which is the presentation slides used in connection with the direct-examination of Dr. Helen Connelly as part of Chevron's case in chief.
JUDGE PERRAULT: Any objection?
MR. WIMBERLEY: No objection. Same conditions.

MR. GROSSMAN: Then we have Exhibit Number 162.6. This is the presentation slides used in connection with the direct examination of Angela Levert in Chevron's case in chief.
JUDGE PERRAULT: Any objection?
MR. WIMBERLEY: No objection. Same conditions.
MR. GROSSMAN: And finally, we have 162.7, which is the presentation slides used in connection with the direct examination of David Angle in Chevron's case in chief.
JUDGE PERRAULT: Any objection?
MR. WIMBERLEY: No objection under the same conditions.
JUDGE PERRAULT: All those were admitted into evidence.
MR. GROSSMAN: Your Honor, I'll approach with the copies.
JUDGE PERRAULT: Please. Thank you very much.
Please proceed.
MR. GROSSMAN: Yes. And we will start with the presentation of Dr. John Kind in rebuttal. And as we've done in the past, we

have slide presentations that I can share with you and the panel.

JUDGE PERRAULT: Okay. Yes.

MR. GROSSMAN: And opposing counsel already has a copy.

JUDGE PERRAULT: Are these new exhibits?

MR. GROSSMAN: Yeah, these are. We will mark these as Exhibit 163.1.

JUDGE PERRAULT: Dr. Kind is participating by Zoom. He has been sworn.

I guess I'll swear you in again.

DR. JOHN KIND,

having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. GROSSMAN:

Q. Good morning, Dr. Kind. How are you today?

A. Good. Good morning.

MR. GROSSMAN: As a reminder to Your Honor and the panel, Dr. Kind has already been accepted as an expert in human health risk assessment and toxicology.

BY MR. GROSSMAN:

Q. Dr. Kind, did you have the opportunity

last week to listen to the testimony from Dr. Schuhmann?

A. Yes, I did.

Q. And you heard Dr. Schuhmann's testimony that -- I believe he said he was surprised by your statement that pica was a rare and uncommon occurrence? Do you remember hearing that?

A. I do, yes.

Q. Did you have a chance to look at some of the literature that he relies upon for his opinions about pica?

A. Yes, I did.

MR. GROSSMAN: Jonah, could you pull up the slide show?

BY MR. GROSSMAN:

Q. Dr. Kind, can you see this first slide?

A. Yes.

Q. So this is one of the articles that Dr. Schuhmann cited in his direct testimony; correct?

A. That's correct, yes.

Q. And what can you tell us about this particular citation?

A. Well, this is one of the citations that Dr. Schuhmann used to portray pica as a common

event. And when you look at the title, that's what you do conclude; however, this article and a number of the others really look at all pica more as a psychological disorder and did not focus specifically on soil pica, which is the -- obviously the event that we're interested in here.

Q. So let's break that down a little bit.

Pica is a broader category than soil pica; correct?

A. That's correct. It's generally considered the ingestion of nonnutritious items.

Q. And so when we talk about pica in its broadest sense, it could include, as this table notes, ashes, balloons, chalk, crayons, other items like that; correct?

A. Yes. This is Table 1 from the Rose article, and it lists a number of different items in -- you know, in addition to clay and dirt, but there are many, many other items that are involved in pica behavior.

Q. Right. And a lot of them are non-dirt items; correct?

A. The majority of them are, yes.

Q. Yeah. This is another article that -- this is Slide 2, Dr. Kind, if you can't see it.

This is another article that Dr. Schuhmann relies upon, isn't it?

A. Yes, this is another article that he presents supporting his statements that pica is a common occurrence.

Q. And I believe, if I'm not mistaken, that this particular article was cited for the proposition that there's a prevalence or occurrence as high as 50 percent for pica.

Do you remember that?

A. I do remember him stating that, yes.

Q. And what can you tell us about this article?

A. Well, similar to the last article we looked at, this looks at pica from the psychological perspective, again this looks at all forms of pica, it's not limited, again, to soil pica.

So here's Table 1 from this study and as you can see again, the majority of the items here have nothing to do with soil pica.

Q. And it looks to me like a lot of these items -- chalk, paper, toothpaste -- those are all pretty commonly found?

A. They are, yes.

Q. So here's another one. This is the 1966 article that I know Dr. Schuhmann relied upon. And the copy we had was poor, so we typed up the table.

Can you verify for the panel and for the judge if this is the same table that's in the article?

A. Yes. This would be Table 4 from the Barltrop article.

Q. And again, this is just a general study of global pica behavior, not specifically related to soil pica?

A. That's correct. This was an interview-type study that looked at general mouthing and pica-type behaviors.

Q. And if you look, the third row down, it says "dirt." It includes under that: Yard dirt, house dust, plant pot soil, pebbles, ashes, cigarette ash, glass fragments, lint, and hair combings; is that right?

A. Yes. Yes. It would go well beyond what we would consider to be relevant to soil pica for human health risk assessment.

Q. So in your opinion, Dr. Kind, do the articles that Dr. Schuhmann relies upon support a

prevalence or an occurrence of pica as high as 25 to 50 percent?

A. No, not in relation to soil pica.

Q. And did anything in Dr. Schuhmann's direct testimony cause you to change your opinion that soil pica is a rare and uncommon event?

A. No. It's -- soil pica is still an uncommon event.

Q. Okay. So, Dr. Kind, as a toxicologist and human health risk assessor, do you mind telling the panel a little bit more about what you know about soil pica specifically?

A. Sure. Soil pica is really something that occurs primarily in very young children from ages of one to two, the incidents and rates drop off dramatically after that.

It's associated with ingestion of soil, typically the top 2 to 3 inches of soil, and it's been reported to occur in anywhere from 4 to 20 percent of preschool children, again, depending on the age and the study and the situation.

Typically it occurs on an infrequent basis. And that's why it's referred to more as an acute toxicity issue compared to a chronic toxicity issue. And the EPA assumes a soil pica

ingestion rate of 1,000 milligrams per day.

Q. Thank you, Dr. Kind.

So it's still your opinion that soil pica behavior is uncommon and rare. And it says right here that: "Soil pica ingestion rates are only used in site-specific exposure evaluations."

Can you give the panel an example of when you think it might be appropriate to use that?

A. Sure. So where we see pica really come into consideration from a human health risk assessment standpoint is -- a typical situation would be when dealing with lead paint issues. There's been a lot of study, public housing, older neighborhoods where children have -- had elevated blood lead levels, and there's been a lot of study there related to ingestion of either soils or paint chips or things along those natures.

You know, and especially with lead, being that lead is a developmental toxin and, obviously, that ages 1 to 6 are kind of a key developmental stage, that's where I've seen pica be of concern, is in those lead exposure types of issues.

Q. Nothing at the Henning site would cause

you to believe that soil pica is an appropriate parameter to consider?

A. That's correct.

Q. And it says the EPA assumes a soil pica ingestion rate of 1,000 milligrams a day; correct?

A. That is correct, yes.

Q. And that -- how does that compare to the state default child soil ingestion rates?

A. Yes. So I could not find any states that use pica ingestion rates as part of their default nonindustrial residential exposure assessments. I've listed a few in the table here.

Louisiana, as we discussed, is 200 milligrams per day. Importantly, California is 200 milligrams per day. And as everybody knows, California tends to be very progressive on their health protection, so they tend to be more conservative than other states, more health protective.

Texas is 200 milligrams per day. US EPA is 200 milligrams per day as well.

Q. So, Dr. Kind, you've been a toxicologist for 22 years?

A. Yes.

Q. You've been conducting human health risk

assessments throughout the country for 22 years?
A. Yes.
Q. In connection with your work as a human health risk assessor and a toxicologist, you routinely submit work plans to state and federal agencies to address chemical releases and spills; correct?
A. That's correct.
Q. Have you ever included a work plan that was based upon soil pica ingestion rates instead of the default ingestion rate?
A. I have not.
Q. So it's fair to say you've never had one of your work plans rejected because it failed to include a soil pica ingestion rate as opposed to the default ingestion rate?
A. That's correct. I've never had any comments related to adding a soil pica type of exposure.
Q. And just so the panel is clear, I want to talk about -- the state default ingestion rates, those apply to any property regardless of how big that property is; correct?
A. That's correct, yes.
Q. So whether it's big enough for one house

or big enough for 20 houses, you still use the default ingestion rate?

A. Yes. Again, those are considered the nonindustrial or residential exposure scenario ingestion rates.

Q. So this is clearly an area where you and Dr. Schuhmann disagree?

A. Yes.

Q. So let's broaden the scope of this event. How many toxicologists and human health risk assessors work with CTEH?

A. You know, over the years that I've been here, it would be 20-plus.

Q. Are you aware -- do you have any knowledge of any risk assessor or toxicologist at CTEH being told to use a soil pica ingestion rate instead of the default ingestion rates?

A. I'm not aware of that, no.

Q. And now, Dr. Kind, this is important. In your opinion, if the soil pica incidence were as high as Dr. Schuhmann claims, would you expect the state to adopt the 1,000 milligrams a day as a default ingestion rate?

A. Yes. Well, yeah, I would expect some type of an assessment related to pica as part of

the default scenario.

Q. All right. For all the reasons that you've talked about?

A. Yes.

Q. Now, when you testified earlier in these proceedings, you talked about the conservatism built into your toxicological risk evaluation and dose calculations.

Can you elaborate a little bit more for us about how this relates to the default child soil ingestion rates?

A. Sure. So, you know, as part of EPA and RECAP risk assessment methodology, you work under what's called a reasonable maximum exposure. And it extends, really, through a lot of the different assumptions involved in the risk assessment.

So, for example, the nonindustrial scenario assumes that a child is on the property for 350 days of a year. It assumes that they're there for 24 hours a day. And when you look at soil exposure rates, this 200 milligrams of soil per day really represents the upper bound of -- upper 95th percentile of ingestion rates. This, again, is what we call a reasonable maximum exposure.

And, you know, this is built in to include sometimes when children consume more soil, sometimes when they consume less soil. So if you look at the EPA exposure factors handbook -- and this is the handbook that you go to to look at default and ranges for different types of activity patterns, ingestion rates, breathing rates, things like that -- all that information's in there for risk assessors to use.

For children that do not exhibit soil pica behavior, the recommended daily soil average and dust ingestion rate is 80 milligrams per day, of which only half of that, or 40 milligrams of soil per day, is considered in that total of 80.

So when we're assuming that a child's consuming 200 milligrams per day on a daily basis, that's really in excess of 120 milligrams per day of what they are likely to actually consume, which is 80 all the way down to 40 milligrams of soil per day.

So essentially, you're being conservative, you're overestimating that daily exposure, and that would account for an occasional pica exposure throughout the year -- throughout that one to six years of childhood.

So you're still not underestimating their total exposure because you're using a rate that is higher than the daily average rate that a child would consume.

Q. So if I understand your testimony correctly, the default soil ingestion rates applied to children throughout the country, including here in Louisiana, those are health-protective even if one considers the infrequent occurrence of soil pica behavior. Did I say that right?

A. That's correct, yes.

Q. Great. So, Dr. Kind, I think you and I agree that using a soil pica ingestion rate to evaluate the Henning property is absurd. But even though we agree on that, you've done those dose calculations, haven't you?

A. I did do those dose calculations, yes.

Q. And so run through those calculations with the panel so that they can understand.

A. Sure. So this table is similar to the tables that I showed last week when I testified. And what we did here is we said, all right, let's say a child is ingesting 1,000 milligrams of soil per day. Let's compare the dose that they would

get, compare that to the soil-barium LOAEL -- again, that's the lowest observed adverse effect level -- or let's compare that to the dose that a child would receive during -- of barium sulfate during a radio-graphical procedure where they do, again, a contrast X-ray of the GI tract. So that's what this table represents, is the output of that analysis.

If you look at the first column on the left side, again, we look at both wet weight and dry weight. Obviously, the next column, the anolytes, barium. The third column is all the different ways we looked at barium concentrations. Again, we looked at the maximum site concentration, the maximum location from any -- the maximum location average from any split samples at a location. And we looked at the 95 percent upper confidence limit of the mean from Area 6. So again, that's kind of the maximum likely exposure over that area. Area 6 was the highest UCL area of the property.

And then we looked at the 95 percent UCL at the site, which would be reflective of potential exposure roaming over all of the investigation areas on the site.

So if you look at the next column, that's the exposure point concentration in the soil in milligrams per kilogram, so that's the actual barium concentration in the soil.

So inside the yellow box, the first column is the child dose at the LOAEL, so that's how many milligrams of barium per day a child would receive at the LOAEL dose.

Q. And that's assuming the toxic forms of barium, which we don't have here; correct?

A. That's correct, that's assuming a soluble form of barium. And this is also a value for chronic daily exposure, so this is, again, likely to overestimate the risk for a short-term acute exposure, so another level of conservatism in there.

The next column is how many times below that barium dose in 1,000 milligram soil of pica ingestion rate would be compared to the LOAEL. So you can see the highest concentration would be the dry weight barium site max -- so right below the bold line there across the table -- is still 128 times below what that barium dose would be at the LOAEL.

So, again, we have a large margin of

safety there. If we really look at the 95 percent UCL across the site -- which, again, is going to be more reflective than a child spending their entire six years in one location -- you're 700 times below that LOAEL dose again.

So we've got -- you know, here, we're looking at, you know, soluble barium, which we don't have necessarily on-site, and we have this LOAEL which is designed for chronic exposure. So a couple of extra layers of conservatism built in there and we still have a wide margin of safety on that dose.

Q. So based on these calculations, there's no threat to human health even if one considers a soil pica ingestion rate?

A. And considers that it's soluble barium.

Now, the next two columns, we've said: All right, we've got barium sulfate out here. What are we going to compare a barium sulfate dose to? Because you can't find -- in the toxicological literature, you can't find a dose of barium sulfate that represents an adverse effect.

So we made, here, the comparison was, again, to how much barium a child would consume on a radiological procedure where they used barium as

a contrast media for GI X-rays.

That turns out to be about 1700 milligrams of barium per procedure or per dose. And again, when you compare that dose to what you would get from soil at 1,000 milligrams of soil per day, you can see it ranges from -- anywhere from 233 times below that dose to almost 1300 times below that dose. Again, looking -- considering that this is barium sulfide on the property.

Q. Thank you, Dr. Kind.

And so based upon this, is there any risk to human health posed by the Henning site from a toxicological standpoint?

A. No. No.

Q. All right. And finally, we've heard a lot of discussion from plaintiffs' counsel about crawfish and bass ponds. Have you done the analysis to show that it's safe from a human health perspective to eat crawfish or bass at this site?

A. Yes, we did that analysis as well.

Q. And tell the panel what you found.

A. Well, in the short answer, what we found is that you would not reach harmful levels of

barium in either fish or crawfish tissue.

And the way we did that was we looked at barium in the soil. Here, we just looked at the site max barium concentration. We took bioconcentration factors, which are empirical values that tell you how much of a constituent that's in a certain media -- in this case, sediment -- would be taken up into the edible tissues of a fish or a crawfish.

So we applied those. And first of all, we noticed that those values are about 50 percent or half of the tissue screening values that were established by the State of Louisiana from the East White Lake matter.

And then we said, all right, well, how much either fish filets or how many pounds of crawfish would you have to eat in a day to either get to that LOAEL dose of barium or to get to that radiological dose of barium that we talked about?

And that's what you see in the last two bullets. You know, somebody would have to eat about 50 pounds of fish fillets in a day to reach that LOAEL dose of barium or about 430 pounds of crawfish in a day to reach that LOAEL dose for barium. And then when you switch over and look

at -- considering this is barium sulfate, you look at, well, how many pounds of fish filets would you have to eat to reach that X-ray dose -- X-ray suspension dose, and that's about 3400 pounds of fish filets or 27,000 pounds of crawfish per day. So you really just can't get there based upon site concentrations.

Q. So from a toxicology and human health risk assessment point of view, is there any reason that you see why Mr. Henning can't use his property for a bass pond or to grow and harvest crawfish?

A. No, there's no reason from a toxicological standpoint.

Q. And, Dr. Kind, after listening to the testimony from all of plaintiffs' lawyers and experts, have you changed your opinions in this case?

A. No, I have not.

Q. It's still your opinion that this site poses no risk to human health; correct?

A. Not from a toxicology standpoint, that's correct.

MR. GROSSMAN: No further questions.

JUDGE PERRAULT: They've offered

Exhibit 163.1. Any objection to that being admitted into evidence?

MR. WIMBERLEY: I do object, Your Honor.

The exhibits contain information that was not presented till today. It contains an analysis that Mr. Kind didn't do till this week. It hadn't been given to the plaintiffs. We hadn't been able to consult our experts. We weren't allowed to depose Mr. Kind on this.

JUDGE PERRAULT: Specifically what part of the exhibit are you talking about?

MR. WIMBERLEY: Slide 7 and 8.

JUDGE PERRAULT: 7 and 8.

MR. GROSSMAN: Your Honor, it's rebuttal testimony. It's rebuttal evidence.

JUDGE PERRAULT: Slide 7 and 8 is Toxicological evaluation of pica dose and analysis of barium related to fish/crawfish.

That's the extent?

MR. WIMBERLEY: Yes, sir.

JUDGE PERRAULT: All right. Counsel, please proceed. Your argument.

MR. GROSSMAN: Your Honor, this is -- it's rebuttal evidence. It's rebuttal

calculations. Dr. Kind heard testimony from Dr. Schuhmann and others about the potential uses of this property. He did his own calculations, his own analysis in response to that. I think that's very clearly admissible under the rebuttal standards, particularly under Chapter 6.

JUDGE PERRAULT: I agree. The objection's overruled.

MR. GREGOIRE: Thank you, Your Honor.

JUDGE PERRAULT: Now, remember, we have a backstop date, so if there's been a problem with discovery that has lent either side a problem, you know, you can have a chance, if you ask for it, to review the information that wasn't given over in discovery. And I'm giving that to both sides.

MR. WIMBERLEY: I'm not going to waste this panel's testimony, Your Honor. I'll proceed.

JUDGE PERRAULT: All right. So the objection's overruled. The Exhibit 163.1 is admitted.

Please proceed.

(Discussion off record.)

MR. WIMBERLEY: Does Scott have the slide

show of Dr. Kind?

CROSS-EXAMINATION

BY MR. WIMBERLEY:

Q. Dr. Kind, good morning.

A. Good morning.

Q. Did you mention pica in your expert report that was submitted to this panel?

A. I did not.

Q. And when I asked you in court last week if you had done a pica analysis, you said you hadn't; right?

A. I said I considered that and did not include that in my analysis.

Q. You had done no quantitative pica analysis of the soil on this property; right?

MR. GROSSMAN: Your Honor --

A. Not before --

MR. GROSSMAN: -- I just want to make a point. We talked about this last week, that there were some issues on cross-examination that overlap with rebuttal. And it was pretty clear that -- from Your Honor's ruling that we were going to save our rights to present that through rebuttal testimony.

So to the extent that Dr. Kind looked at

some numbers, did some rough calculations, things of that nature before, I would just ask that that be considered as this is his rebuttal case.

MR. WIMBERLEY: May I proceed?

MR. GROSSMAN: Yes.

JUDGE PERRAULT: Okay. I want -- are you objecting?

MR. GROSSMAN: It's not an objection; that's just making sure that the record's clear that this is rebuttal testimony.

MR. KEATING: It's not your turn, Lou.

JUDGE PERRAULT: Let's don't go back and forth.

Okay. Please proceed.

MR. WIMBERLEY: Thank you, Your Honor.

BY MR. WIMBERLEY:

Q. So again, Mr. Kind, when I asked you last week if you had done a quantitative pica analysis of the soil properties on this site, on Mr. Henning's property, you said no; correct?

A. I had not done a quantitative analysis at that point, that's correct.

Q. That's something you decided was important enough to do on Super Bowl weekend?

A. Again, I did that in rebuttal to Mr. Schuhmann's opinions.
Q. And you did that in the last couple days; right?
A. The last -- within the last, well, week or a little bit less than a week.
Q. And you haven't submitted the documentation on your pica analysis to this panel, have you?
A. Well, to the extent that it's in the slides. But beyond that, I have not submitted anything else.
Q. You haven't submitted any backup at all?
A. Not to the slides.
Q. Did you submit any backup to me or Mr. Henning?
A. Again, no, I did not submit anything besides the slides.
Q. Did you hear Mr. Henning tell this panel on Friday that this property may become a subdivision in the future with lots of kids living there?
A. I missed Mr. Henning's testimony on Friday. I was driving.
Q. Are you aware that he said that?

A. I am not, no.
Q. I want to take a look --
MR. WIMBERLEY: Scott, if you would, go to Slide 2 of Mr. Kind's slide show.
BY MR. WIMBERLEY:
Q. This paper, the update on pica prevalence and contributing causes, that's the paper that Dr. Schuhmann said was of suspect peer-review; correct?
A. I don't recall that specifically. Again, I can't see the slide that you've got up either. I don't know if you can --
Q. It's Slide 2 of your slide show, the Blinder and Salama paper.
Do you recall Dr. Schuhmann saying that even though it reflected maybe a 50 percent prevalence of pica, he was suspect of the peer-review analysis that went to the paper and he didn't consider that 50 percent in his evaluation?
A. I do remember him say he did not consider it, 50 percent. My point here, again, was that this includes all forms of pica and is not specific to soil pica.
Q. Okay.
MR. WIMBERLEY: Would you turn over to

Slide 4, Scott?
BY MR. WIMBERLEY:
Q. Do you recall Dr. Schuhmann testified that when he looked at the literature, he found a prevalence rate of somewhere around 10 percent, or 1 in 10 children, to have pica behavior, soil pica behavior?
A. I do recall that, yes.
Q. Okay. And your slide here, I'm going to read it: "Soil pica is the ingestion of unusually high amounts of soil and is limited to consumption of surface soils, i.e., the top 2 or 3 inches. Generally occurs in 4 to 20 percent of preschool children." Is that your words?
A. I believe that's a statement from the ATSDR.
Q. And 4 percent would be 1 in 25; right?
A. Yes.
Q. And 20 percent would be 1 in 5?
A. Yes.
Q. So you're saying that this occurs in 1 in 25 to 1 in 5 children?
A. Well, I'm saying that's what the range that's been listed. Again, I think it would typically be in that 10 percent or less range.

But that's the range that's been considered in the literature.

Q. And is it still your opinion that Mr. Schuhmann's opinion that if prevalences are generally around 10 percent, or 1 in 10, it's an overestimation?

A. Again, I think it depends upon the study. I think most studies -- the better studies show that it would be 10 percent or less in that population.

Q. But 10 percent falls squarely within the range that you found; right?

A. It does.

MR. WIMBERLEY: Scott, would you go to Slide 7, please?

BY MR. WIMBERLEY:

Q. Dr. Kind, this is your brand-new soil pica dose quantitative analysis; is it not?

A. This is the pica dose evaluation, that's correct.

Q. Was it done in accordance with RECAP?

A. Well, this is not necessarily a RECAP-type calculation. Again, it uses the same methodology and defaults, but this is more of, again, a toxicological dose-type calculation.

Q. Yes or no, and then you can explain. Was it done in compliance with RECAP?

A. Again, this is not a RECAP compliance-type of calculation, so no, this is not a RECAP compliance calculation. This is a toxicology dose calculation. It does incorporate some of the defaults and methods in RECAP, but this really is a toxicology dose calculation.

Q. The fourth column here, EPC in soil, what does that "EPC" stand for?

A. That stands for exposure point concentration.

Q. And how did you determine what the exposure point concentration was in this table?

A. Well, again, that's listed in the column to the left of that, "analyte parameters." So it could be the site maximum concentration, it could be the maximum average location concentration, or the 95 UCL from Area 6 or from the site.

Q. So that 6,111, is that in dry weight or wet weight?

A. Well, that one's in wet weight. If you look down below, you'll see 7410 is that corresponding location in dry weight.

Q. I see. Okay.

The 95 UCL for Area 6, was that calculated in conformance with RECAP's rules?

A. Yes. I mean, that would be using ProUCL to calculate what RECAP considers surface soil for that area.

Q. What data points went into that analysis?

A. Well, that would be all of the barium data points from 15 feet or less.

Q. Did you draw an AOI in conformance with RECAP?

A. I would have used the values that were considerable in Area 6 which was established by ERM.

Q. So you would consider the low data points outside what RECAP would consider the AOI; right?

A. Again, I did not draw an AOI. I'm using what the data points were that were considered to fall within Area 6.

Q. That's what I thought.

Where is the -- let's talk a little bit about what the LOAEL is. That's the lowest observed adverse effects level; correct?

A. That's correct.

Q. And that's the level where you start observing sickness; right?

A. That's the lowest level of adverse effects. Again, this value here is derived with the statistical technique called benchmark dose modeling, so it actually represents the lower 95 percent bound of that LOAEL value, so it's actually -- statistically it's the lower bound of where that could possibly be, so it falls a little lower than the value that was actually measured in the study.

Q. So statistically, this is meant to show you the level at which you start seeing people get sick; right? Or animals.

A. Well, again, this is a two-year chronic drinking water study in laboratory animals.

Q. This is not a safe level to ingest; right?

A. Well, again, this is the lowest level where we've seen adverse health effects, so we kind of look at what's the margin of safety below that. This is not the no observed adverse effect level; you're correct.

Q. It's not safe to ingest soil at a rate -- with an LOAEL? That's where you get sick?

A. Well, again, that's where laboratory animals might see effects. Again, that was drinking water study, which involves a much more direct mechanism, absorption. So, you know, I don't know that you could say that that level would cause sickness in people, but again, we're using that as the lowest value in scientific literature that's shown to cause health effects.

Q. And the no adverse effects level -- no observed adverse effect levels, the NOAEL, that's not on this table; right?

A. That's right. I don't believe that, due to the dosing -- the range of doses they tested, they identified a NOAEL in this study.

Q. And the reference dose, which is what the EPA says is a safe level to ingest, it's not on this table; correct?

A. That's correct.

Q. You did no comparison in your quantitative analysis to the reference dose?

A. Again, I did the comparison to the LOAEL because that's where we've, again, seen actual adverse health effects. The reference dose is a -- again, a conservative health-based value that considers a lot of levels of uncertainty factors

in there.

So it doesn't necessarily tell us at what dose you might actually start to see risks. And that was what I was trying to do in this table, is look at a dose where you might actually start to see risks.

Q. In any regulatory health risk assessment, the reference dose is the gold standard the EPA says is safe; right?

A. I wouldn't necessarily say that, no.

Q. Dr. Schuhmann went through this analysis and showed that if you plugged 1,000 milligrams per kilogram of ingestion rate -- I'm sorry. 1,000 milligrams per day ingestion into her tables, it showed that the reference dose was busted; isn't that true?

A. I don't believe so. I think --

Q. Did you see --

A. I think what Mr. -- or Dr. Schuhmann did was calculate a RECAP standard based upon that 1,000 milligrams per day. I don't think he did anything with the reference dose.

Q. Okay. But nonetheless, the reference dose is not compared in your table; correct?

A. Again, no, it's not because I was

looking at levels where actual effects have been seen, not the reference dose. Because, again, that contains multiple levels of uncertainty factors in there.

Q. And again, you did this analysis this weekend -- or this past week?

A. This past week, yes.

Q. Because you thought it was important?

A. Well, it had been brought up in the case. No, I did not think that pica was an important consideration here, and this helps to demonstrate that.

Q. And you didn't submit this to the panel and you didn't submit it to me?

A. Just in the form of the slide show.

Q. Don't you think it would be important for this panel to have a fully-reviewed health risk assessment that includes a pica analysis?

A. Again, I mean, pica is just not really a valid consideration for this type of a scenario.

Q. Because no kids are going to live here?

A. No. Because, again, we're talking about a residential scenario. We don't have anything, again, outstanding and special related to something like lead paint or, you know, a very

bio-accumulative toxin, something that would be acting on developmental nervous systems.

I mean, we're looking at a very general residential exposure scenario here, and that is -- you know, about 200 milligrams per day, again, is protective of children under those scenarios.

Q. If you don't look at pica on a property that can be a neighborhood for children playing in the dirt, many children, when do you ever look at pica, in your opinion?

A. Again, you would look at pica under very specific situations. And I talked about that earlier in relation to lead contamination, for example.

MR. WIMBERLEY: That's all the questions I have, Your Honor.

JUDGE PERRAULT: Okay. Does the panel have any questions?

PANELIST OLIVIER: I have one question. Stephen Olivier.

Dr. Kind -- and this is just for clarification, just to make sure that I understand this correctly.

I think, in your original testimony, you had stated that you didn't deem it, I guess,

necessary to consider a pica evaluation in your initial one. And is -- was that strictly because it was thought that we were dealing with barium sulfate, which is, you know, considered to be nontoxic in the surface or maybe the upper couple feet of the soil?

THE WITNESS: Not necessarily, but that is a good point to raise. But we did do our screening, you know, not really -- well, not assuming at all that barium was in the form of barium sulfate. So really, it has to go, again, with what's that situation. And here, we're looking at a general residential situation. There's nothing remarkable about the constituents that are on the site. So really based upon those reasons, I didn't do any type of quantitative pica analysis.

PANELIST OLIVIER: Okay. Thank you.

JUDGE PERRAULT: Anybody else?

Your Exhibits 162.1 through 162.7, those were presentations, but I'm looking through my list, and they were never offered into evidence as such, as your presentations. So do you want to offer them now? It's 162.1,

162.2, 162.3, 162.4, 0.5, 0.6, 0.7.
MR. GROSSMAN: Yes, Your Honor. That was the point of bringing it up this morning. We didn't offer, file, and introduce them after we had our experts testify, and so this morning we wanted to make it clear that we are offering those as exhibits.
JUDGE PERRAULT: Okay. Any objection to Exhibit 162.1 through 162.7?
MR. WIMBERLEY: No, Your Honor. With the same conditions that we discussed this morning.
JUDGE PERRAULT: Okay. So they all are admitted, as is 161.1, which were already agreed to.
All right. Well, I must have misunderstood. I thought you had told me they had already been admitted.
MR. GROSSMAN: I apologize, Your Honor, for the miscommunication.
JUDGE PERRAULT: Okay.
MR. GROSSMAN: Thank you, Dr. Kind.
JUDGE PERRAULT: Thank you very much.
THE WITNESS: Thank you. Y'all have a good week.

JUDGE PERRAULT: All right. Call your next witness.

MS. RENFROE: Thank you, Your Honor. We call Angela Levert.

ANGELA LEVERT,

having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MS. RENFROE:

Q. Good morning, Ms. Levert.

A. Good morning.

MS. RENFROE: We have a presentation that Ms. Levert has prepared that we would like to offer now as Chevron Exhibit 163.2. And a copy has been provided to Counsel already.

JUDGE PERRAULT: All right.

MS. RENFROE: May I approach the Court?

JUDGE PERRAULT: Yes, you may.

MS. RENFROE: Thank you, Your Honor.

BY MS. RENFROE:

Q. Mrs. Levert, you just were sworn in again. And for the record, you were qualified and admitted last week as an expert in the disciplines of environmental chemistry, data evaluation, human health risk assessment, and RECAP; correct?

A. Yes.
Q. So with that clarification, let's begin. And you're here to address some of the issues that were raised both by Dr. Schuhmann as well as by various witnesses from ICON; correct?
A. That's correct.
Q. Before we get into Dr. Schuhmann's comments or critiques of your RECAP evaluation, let's talk about some of his conclusions to narrow the issues.
So with respect to groundwater, is it your understanding from Dr. Schuhmann's presentation and his testimony that -- and his report, that his RECAP evaluation shows that even if the shallow groundwater is Class 2, that the groundwater, nevertheless, meets his calculated MO-2 groundwater standard?
A. Correct.
Q. So you both agree that there is not an exceedance of an applicable RECAP standard for groundwater; correct?
A. Correct.
Q. So I'm going to note that, on groundwater, you and Dr. Schuhmann are in agreement.

A. Okay.
Q. Moving now to the -- to his RECAP calculated -- his RECAP evaluation as to soil for protection of groundwater.
Is it your understanding that his analysis showed -- again, even if the shallow groundwater is Class 2, that the soil meets his calculated MO-2 soil for groundwater protection standards?
A. That's correct. In his report, yes.
Q. So again, you both agree that there is no exceedance of an applicable RECAP standard of soils for protection of groundwater?
A. That's my understanding of his report.
Q. Now, let's turn to soil direct contact analysis that he did and you did.
You saw and you heard his testimony that the only RECAP exceedances that Dr. Schuhmann identified were based on a soil direct contact standard using a pica ingestion rate; correct?
A. Yes.
Q. And we heard much about -- from Dr. Schuhmann, about his use of this pica ingestion rate, including his comment about it being derelict not to consider a pica ingestion

rate. And so this is a point where the two of you disagree; true?

A. Yes.

Q. Now, we just heard Dr. Kind explain why he did not deem it appropriate to use a pica ingestion rate in his human health risk assessment based on a dose evaluation.

So now, what I'd like you to do is tell this panel, how did you account for potential future uses of this property as a residential property or even a residential development with children living on it if you didn't use a pica analysis?

A. The evaluation I performed using the residential scenario of RECAP does assume that children will be present on the property, that they will come in contact with the soil 350 days a year and, as part of that contact, will have ingestion, dermal, and inhalation exposure to constituents in the soil.

It assumes a default ingestion rate, as Dr. Kind talked about, that is the upper percentile on the average ingestion rate, and that's how I accounted for the presence of children in my evaluation in accordance with RECAP

guidance.

Q. Dr. Schuhmann pointed to, I believe it was Section 2.14.4 of RECAP to justify his use of a pica ingestion rate. Did you hear that testimony?

A. Yes, I did.

Q. And what is your opinion about whether Section 2.14.4 of RECAP requires a pica analysis at this property just because it may be a large piece of property -- a large piece of real estate?

A. That section does not require or compel a pica analysis simply because there's a large property or because the property may be developed in the future for residential use.

It provides for that analysis when a specific concern is identified, and that would be a very localized concern in general that would require examination of site-specific factors.

It does not, in fact, require that we broadly assume that because a property has potential for development, that we must perform a pica evaluation.

The reason that we don't need to do that is because the default ingestion rate does include some safety margin with regard to higher than

average ingestion rate.

Q. In your experience, Ms. Levert, has either DNR or DEQ ever identified a pica ingestion rate to be applicable to a property in Louisiana and, therefore, the basis for a remediation or corrective action?

A. I've not had that experience in my career working under RECAP. Again, the provision allows for that in a very specific scenario if that were identified to be a specific concern and especially with childhood development toxicants. Dr. Kind mentioned lead.

There are specific situations that could raise that concern, but it's not intended to be broadly applied and hasn't, in my experience anyway, been broadly applied as a standard for potential residential development or even site closures where residential development or residential land use is recognized. It hasn't been applied that way.

Q. All right. Now, have you gone back and recalculated the RECAP standards that Dr. Schuhmann would have reached using his method if he had not used the pica ingestion rate but instead used RECAP's default ingestion rates for a

residential scenario with children?

A. I have. I've done that calculation, yes.

Q. So let's walk through that work that you did and explain your analysis to the panel. Starting with barium. So what are you showing on the slide that Dr. Schuhmann calculated as a standard for barium -- again, we're talking about soils direct contact --

A. Right.

Q. -- using the pica ingestion rate.

A. About 3200 milligrams per kilogram. And this is actually a pretty straightforward comparison because Dr. Schuhmann and I both used the same RECAP algorithms. In fact, we used the same updated toxicity factor which, again, assumes the more mobile form of barium. And his calculation simply included the pica ingestion rate.

When I instead plug in the default RECAP ingestion rate, we actually get the same answer. His result would then be 15,600 with regard to RECAP's expression of standards, we round to two significant figures to express the standards in RECAP. We would have arrived at the same

conclusion, and that is 1600 milligrams per kilogram.

Q. Now, does any -- or do any of the ICON and ERM samples at the site exceed the 16,000 milligram per kilogram standard?

A. No. There were no concentrations above the 16,000 milligram per kilogram MO-2 standard.

Q. For barium?

A. For barium.

Q. Now, of course, this analysis, as you said, this assumes that the barium at the site is barium -- is some form of toxic or mobile barium, when, in fact, we know that, based on the barium speciation data contained in Appendix H to Chevron's most feasible plan, that the barium at the site is in fact barium sulfate?

A. That's correct. And we elected to use that tox factor and develop this MO-2 standard to provide a conservative evaluation and to use that information as the basis for the plan that we've provided to you.

Q. And is it your understanding that the Henning most feasible plan does not contain any plan to treat barium at the soil -- in the soils?

A. That's correct. My understanding is

their remedia- -- ICON's remediation does not focus on or include remediation specifically to address barium in the upper 2 feet.

I understand that soil may be moved aside and replaced but not -- there is not a remediation for barium in the zero to 2-foot interval, which is where the barium is identified as being above screening.

Q. So Henning doesn't propose to treat the barium in the upper 2 feet of soil?

A. That's correct.

Q. All right. Let's go through the same exercise briefly with arsenic. I know that the panel heard Dr. Schuhmann take arsenic off the table, if you will. But for the completeness of the record we're making here, I'd like you to address arsenic.

What standard did Dr. Schuhmann calculate for arsenic using a pica ingestion rate?

A. In his report, he calculated and provided a standard of about 4.7 milligrams per kilogram. Now, when we plug in the ingestion rate, the standard ingestion rate, the result that he would have identified using that ingestion rate would actually be 23 milligrams per kilogram.

That would not, in fact, be the final RECAP standard because that considers only the noncarcinogenic tox factors for arsenic. He was looking at an acute evaluation in a noncarcinogenic exposure.

For RECAP, we also look at the chronic carcinogenic tox factors, and we would calculate a standard for arsenic that is very, very low, in the single digits.

It's recognized that the natural levels of arsenic in Louisiana, and actually across the whole country, are higher than the level of arsenic that we would calculate using that default EPA and Louisiana tox factor.

Well, it is for that reason that DEQ identified what background is in Louisiana and identified that that falls within the target range for arsenic and adopted that background level as the protective standard for residential land use in Louisiana at the screening option.

Q. And what is that level?

A. It's 12. 12 milligrams per kilogram.

Q. Again, were there any soil samples generated either by ICON or by ERM that exceeded that standard of 12 milligrams per kilogram?

A. There's just one sample on the property, a result reported by ICON out of the -- oh, there's approximately -- a little over 100 results available for arsenic. And in dry weight, there is one result, 12.2, that was above that screening standard, the split result of 4 does not identify an exceedance of the standard.

The way that we look at arsenic when comparing to a screening standard as well as higher management options in RECAP, is to compare the background value -- I'm sorry. An average value. That's how RECAP would have us compare to a background standard.

The average of that split, the average of a potential AOI is less than 12 and, therefore, below the RECAP screening standard.

Q. So fair to say that in RECAP language, arsenic is not a constituent of concern at this site?

A. That's correct. Would not be identified as a site-related COC warranting further evaluation beyond screening.

Q. Before we leave arsenic, one last question about it. Is there any evidence at this site that the arsenic that's present in the soils

is connected to oil and gas operations?

A. Well, we don't see that in the data distribution. And when you look at an average concentration with individual data points, when you look at an average concentration across the potential AOIs, that's below state-specific background. I just -- we don't see the evidence that there's a connection to the oil and gas activity.

Q. Let's now turn to another issue that was discussed and raised by Dr. Schuhmann and, in fact, by Mr. Miller at some point last week, and that's the issue of the SPLP data for groundwater protection.

So you heard Dr. Schuhmann's criticism of your work. One of his comments was that you used SPLP data and a default DF Summers attenuation factor to determine a groundwater protection standard for barium.

Do you recall that?

A. I do.

Q. So I want you to address that now.

And I've got -- you've got on your Slide 4 a portion of RECAP. And here's my question: Does RECAP actually recommend the

collection of SPLP data?

A. It does. It recommends SPLP as the leaching methodology to be used. And DEQ, in implementing RECAP, has recommended the use of SPLP as the way to evaluate in a site-specific way the soil to groundwater protection pathway, especially for metals.

And this is a piece of RECAP that gets exactly to that. This is in the MO-2 section. And what you see there is discussing, when you move into site-specific evaluation, it is strongly recommended that SPLP data be collected. And that's consistent with my experience in implementing projects with DEQ under RECAP for -- well, for 20 years, is, particularly for metals, that is recommended.

And I know that it's something that we have worked with DNR on as well, specifically for various metals that are relevant to E&P sites.

Q. Let's move now to your use of the Summers dilution factor of 20. Was your use of a default Summers dilution factor of 20 allowed by RECAP as part of your screening option analysis?

A. It is allowed by RECAP as part of the screening. Now, that doesn't mean that the

default of 20 will be applicable in all situations, but it is allowed, it's provided for under the screening option of RECAP.

And this is a section out of Appendix H, which is where you can find the extreme detail associated with stepping through the RECAP process, Screening Option, MO-1, MO-2. So it is provided for.

Q. And specifically, again, for the record, you're pointing to RECAP Appendix H 1.1.1 at page 9, in particular, Subsection C; correct?

A. Yes.

Q. How about your MO-2 analysis? Was the use of a default Summers dilution factor allowed by RECAP as part of your MO-2 analysis?

A. Again, it is provided for under MO-2. This is RECAP Appendix H. And if you read the header on that section, it is: "Evaluation of soil using a leach test and MO-2 RECAP standards."

And if you read through that section, what you see there is you can calculate a site-specific DF Summers using equation 61 provided in RECAP. It also includes a provision that says the default value of 20 may be used for the DF Summers.

Now, it is incumbent on us as risk assessors, incumbent on me to confirm that 20 is in fact appropriate and representative for this site. There are circumstances when that may not be the case. And so that's an analysis that I have to perform to confirm that this provision that does allow for the use of that default factor is in fact representative for our site.

Q. While we're on this point about the use of SPLP data, are there other RECAP documents that you're familiar with that speak to the use of SPLP data and a DF Summers factor?

A. Sure. Yes. As you can imagine, this is a routine part of implementation of RECAP; that is, the use of SPLP and how specifically to apply it. This is a comment, a question and response out of the FAQs. And the question is: What is SPLP and how does it compare to RECAP standards?

And what you see outlined in this discussion here is for screening option, which is the first paragraph, and then for the additional management options, including MO-1, 2, and 3, there is a question of how do you apply and compare SPLP to the standards.

And it's noted under both the screening

option and the section on the management options that DF Summers of 20 is provided for. Again, you have to make sure that it's appropriate for a particular site, but it is provided for, yes.

Q. And you're now referring to Exhibit 75 that is already in evidence, specifically pages 49 and 50?

A. That sounds right.

Q. All right. Now, does the size of the AOI, which we heard some discussion from Dr. Schuhmann about last week -- does the size of the AOI factor in to your use of a default DF Summers factor?

A. Well, again, I talked about the way that the concept of AOI applies to our RECAP evaluation. The first one being in that global sense, a final AOI, but I also mentioned the use of the preliminary AOIs.

Well, one way to identify a preliminary AOI for the soil to groundwater pathway, which is what we're talking about here, is to compare the data to the default soil to groundwater protection screening standard. And for barium, that value is 2,000.

But because we've collected SPLP data

here to perform a site-specific evaluation of that pathway, that's not what we apply. We're moving beyond that, that preliminary AOI definition, and, instead, to determine whether or not the use of the default factor of 20 is applicable and representative for this site, we have to look at other information, including source size and other indicators of whether or not that attenuation factor is appropriate.

Now, one of the ways that we look at source size on projects like this is to look at, for example, the historic E&P features, the pit sizes, and tank battery sizes, because those are identified as the sources of the constituents that are present. So that's one way to look at it.

Another way that we look at it specifically for the soil to groundwater pathway here is to actually look at the SPLP data. And we can identify locations and areas, if applicable, where there is an exceedance of a screening standard in the leachate, that is that the leachate represents a source of constituents to groundwater, a source of impact.

And when we look at those kinds of informations for this site, I don't see that the

source areas, contiguous source areas for barium to groundwater, are greater than a half acre. And then there are the additional lines of evidence that we look at as well.

Q. So, you know, you mentioned a minute ago, you have to -- as a risk assessor, you have to then evaluate whether it's appropriate to use a DF Summers factor of 20 or some other value in addition to considering the fact that it's allowed.

Did you evaluate the appropriateness of it and have you somewhat explained that?

A. Well, I did. But there's more to it in that -- okay. We're looking at the potential source sizes, but also looking at the other lines of evidence regarding do we see attenuation that is consistent with this factor? Do we see attenuation happening, period?

Well, when we look at the barium data in the vertical profile, the soil profile, and see those declining concentrations, once you get below the zero to 2-foot interval and well above the water table, the answer is yes, we definitely see the attenuation happening.

In addition, when we look at the

groundwater data set and identify across the property, with the exception of the one location next to the blowout, that concentrations are below the screening standard, again, that confirms the attenuation and representativeness of a DF Summers that we've selected here.

Q. Thank you.

MS. RENFROE: Your Honor, I misspoke a moment ago. I thought Exhibit 75 was already in evidence, but it's not and I will offer and introduce it now. And it is the RECAP frequently asked questions document that Ms. Levert was just testifying about.

MR. CARMOUCHE: No objection.

JUDGE PERRAULT: No objection, so ordered, it shall be admitted.

And Exhibit 163.2, are you still going over that?

MS. RENFROE: I am.

JUDGE PERRAULT: I'll let you finish.

MS. RENFROE: Thank you. But just so it's clear, I am offering that as well.

JUDGE PERRAULT: Yes.

BY MS. RENFROE:

Q. So let's move on.

We've addressed your assessment of soil for groundwater protection for barium. Let's now turn back to Dr. Schuhmann and this issue of SPLP.

Did Dr. Schuhmann use SPLP data in determining his groundwater protection standard for barium?

A. No, he did not use SPLP data.

Q. Instead, he calculated his own standard for groundwater protection using only the ICON data; is that correct?

A. That's correct.

Q. So I'd like you to explain to the panel exactly how he did that.

A. Sure.

THE WITNESS: Do you mind if I stand?

JUDGE PERRAULT: No. Please go ahead.

A. So he used the soil data paired with the groundwater data in Location H-12 to develop a partitioning factor, what we call K subD, and it really is basically the ratio of soil concentration to groundwater concentration. That is the empirical -- if you will, the empirical partitioning factor.

He then used that partitioning factor and a target concentration in groundwater of

2 milligrams per liter -- that would be the Class 2 standard because he was looking at a Class 2 evaluation -- and developed the soil to groundwater protection standard for that Class 2 evaluation of 289 milligrams per kilogram.

So using the data in H-12 partitioning factor, protecting Class 2 groundwater, this was his soil to groundwater protection standard --

BY MS. RENFROE:

Q. For barium?

A. -- that he identified.

For barium specifically, yes.

Q. Now that you've explained how he did it, do you agree with how Dr. Schuhmann calculated his KD -- K subD factors and his soil groundwater protection standard?

A. Well, I don't find that to be representative across the site. In this particular location, look at this soil concentration at 305. In fact, that concentration is what we have identified as site-specific background for barium.

So the soil column in this location, in fact, is not affected with barium. This groundwater concentration is the single location

at H-12 where barium was elevated. And we identified that to be a result of the residual fluids associated with the historic blowout.

And so, in my opinion, this is not representative of the soil to groundwater migration pathway for barium and not representative, then, of what would be an appropriate partitioning factor to be applied across the site, which is what he did.

Now, there are 15 additional locations where that kind of data is available.

Q. Excuse me. When you say "that kind of data," you're talking about paired data where you've got soil samples at the surface and groundwater samples in the same column?

A. Correct. Meaning a soil boring was installed and then a decision was made to install the monitoring well in that location, and so we have barium concentrations in the soil column and measured barium concentrations in the groundwater.

And you can see that there are locations, other locations where we do see elevated concentrations of barium relative to the screening standard and relative to background at the surface, and that is MW-2 and 3 and 16 and 22,

18. You can see that those are concentrations of barium above screening.

And when you look across the groundwater concentrations, as we've been talking about, there are very, very low concentrations of barium across the site. When we performed the same partitioning calculation that is essentially just a ratio of soil concentration to groundwater concentration, you can see that, in every other location across the site, the empirical partitioning factor is much, much higher and, in many cases, orders of magnitude higher.

And that simply means that barium wants to be in the soil. It wants to stay in the soil. It doesn't have significant partitioning into the groundwater. And that's consistent with the barium profile, vertical profile concentrations that we saw in the soil column, which essentially return to background within the upper 10 feet at most.

Q. So I thought Dr. Schuhmann told us last week that there was only one location where he found paired data of barium in soil at the surface and a groundwater sample in that same column?

A. That's not the case. We do have these

15 additional locations where we have borings and monitoring wells completed and soil and groundwater data. So we do have a body of data that extends across the remainder of the site and not just at the location H-12.

Q. So if Dr. Schuhmann had taken all of this other site data into account, tell the panel what soil for protection of groundwater standards he would have calculated for barium.

A. Yes. And to make it clear, I performed this exercise to really examine his process and the results that we would get. So this is using the ICON data set in dry weight and the ICON groundwater data to identify these empirical K subDs.

And then, using those partition factors, simply performing the exercise that he did to identify the soil to groundwater protection standard for Class 2 groundwater. So for an MCL, barium standard of 2 in groundwater, these are the soil to groundwater standards, protection standards, that he would have calculated for these other locations.

Q. And, Ms. Levert, specifically, again for the record we're making, you're pointing to the

last row on Slide 9 of your presentation that's entitled "Soil to Groundwater Protection Standards"?

A. That's correct.

Q. And can you just give us an example, identify one site, one location, where you compare -- and please compare the standard that he should have calculated compared to the one standard that he did calculate?

A. Sure. So I'll simply select MW-2, given that there's a concentration above the screening standard here for barium, a very low groundwater concentration for barium, which results in a groundwater protection standard that's about 230 milligrams per kilogram. And that's quite different from his 290 that was calculated for the H-12 location.

Q. Sorry. Is that 230,172 --

A. Correct, 230,000, uh-huh.

Q. -- compared to his 289.6?

A. Correct. Correct. Milligrams per kilogram.

Q. Now, did you do -- did you basically track through his analysis using all of the paired data at the site with or without applying a

dilution factor?

A. So this is the exercise that -- this is the concentration that you would arrive at prior to applying any dilution attenuation factors, whether we're talking in the lateral or a DF Summers factor. So this is prior to the application of a DF Summers.

Q. And, of course, as you and the panel will recall, he criticized your application of a DF Summers of 20. But did he calculate a DF Summers dilution factor of his own?

A. He did. He performed a site-specific calculation using equation 61 of -- we have Appendix H. And he identified a DF Summers of 1. And so his groundwater protection standard was equal to that 289 based on his empirical K subD multiplied by the DF Summers of 1, resulting in the groundwater protection standard of 289 milligrams per kilogram.

Q. And just to go back and compare, so using a DF Summers of 1, he gets 289 for the H-12 location for barium?

A. That's correct.

Q. Now, is it -- in your opinion and based on your experience with RECAP, is a Summers

dilution factor of 1 appropriate to assess the actual attenuation of barium in soils from the surface down to shallow groundwater?

A. Well, in my opinion, it's not representative at this site. And that's the component or the evaluation that I had to perform to determine that is it appropriate for me to utilize that default DF Summers that is offered under screening, offered under the management options.

And you -- based upon looking at the soil data itself, the vertical profile and the groundwater data, my conclusion is no, a DF Summers of 1 is not representative.

Another way to look at it is to look specifically at the results for barium in the leachate samples, the SPLP samples, and compare that to the groundwater result. Because really, that's what the DF Summers is getting at -- right? -- what is the attenuation that happens between what is released into leachate and arrives at groundwater? What is that difference?

And when I look simply at that simple ratio and, independently, I identify that a DF Summers of 1 is not representative, that

groundwater concentrations are less than the leachate concentrations, a DF Summers of 1 is not representative of what we actually see happening at the site.

Q. Thank you for that.

So after all of this debate and comments and criticisms that Dr. Schuhmann made of your RECAP evaluation, did he actually recommend corrective action for barium in soils, or even any other constituent, to protect groundwater at the site?

A. Well, as I understand his testimony, he's not recommending remediation associated with those calculations, as I understand his testimony.

Q. In fact, did you hear him say that he did not intend for his scoping analysis, which is what he called his exercise, to be used for remediation at all; correct?

A. That's what I understand.

Q. All right. Let's move to the next topic.

MS. RENFROE: Jonah, if you can take this down for a moment, please.

BY MS. RENFROE:

Q. The next topic I want to talk about --

we're moving from SPLP and the use of a Summers dilution factor in barium, we're moving from that now to SPLP and chlorides. Fair?

A. Yes.

Q. All right. So you heard Mr. Miller talk for quite a while about SPLP versus 29-B leachate as the appropriate test for determining the leachability of soils; right?

A. Yes.

Q. So that's the debate that I want to go to now.

Now, did you also hear Mr. Miller testify that SPLP chlorides is an acceptable procedure?

A. Yes. I don't think there's a disagreement about the test itself being an appropriate leaching test. I don't think there's a disagreement about that.

Q. Okay. Good.

So did you also follow Mr. Miller's testimony that a problem with SPLP chlorides was the use of a default Summers dilution factor of 20?

A. Yes.

Q. So that's where the issue is, that's

where the disagreement is?

A. Well, as I understand it, that is his primary concern, applying a default DF of 20, recognizing the soil to water ratio that is used in the SPLP test, yes.

Q. So my question to you now is when you were doing your work, your RECAP evaluation looking at chlorides, did you use a Summers dilution factor at all in your SPLP chlorides analysis?

A. I did not in evaluating the concentrations of chloride SPLP. My evaluation of the chloride SPLP data looked at Class 3 groundwater, recognized the lateral attenuation that would happen between the site and some hypothetical receptor, and incorporated only a lateral attenuation factor, which I found to be appropriate, given our delineation of chlorides at the site. And that was a hypothetical MO-1 evaluation of potential discharge to surface water.

I did not include a DF of 20. I did didn't include a DF Summers at all and, through that hypothetical evaluation, actually identified that both SPLP chloride and the leachate chloride,

the 29-B result, were less than that hypothetical Class 3 leachate standard. And that's what I would call it, it's a Class 3 leachate standard.

Q. So let's now take your standard and apply it to the site data. How many places at the property, the Henning property, were -- did you find where SPLP chloride data exceeded the MCL screening benchmark of 250 milligrams per liter?

A. So I think what you're describing now is putting aside the Class 3 leachate standard, now let's look specifically at where do we find SPLP chlorates to be elevated period, above a screening benchmark like the MCL. There's one location on the site. That's location H-12 where SPLP data was collected from 48 to 50 feet. So right at the water table. And, in fact, that interval is at least partially saturated. I think both investigators have acknowledged now that that interval is at least partially saturated. So H-12 is the location.

Q. And are there any 29-B leachate locations that exceed Mr. Miller's recommended standard of 500 milligrams per liter?

A. Yes. So he's looking at two benchmarks here, one being the 500. I know that's one that

he's talked about quite a bit. There are three locations. H-12, the same as the SPLP. And in addition to that, H-9, which is adjacent to H-12, again, at 48 to 50 feet. And then one more. That's in Area 4. H-16. I know there's been a lot of discussion about H-16. And that was at 34 to 36 feet. I think I'm getting that right.

Interestingly, for each of those, those intervals were right at the water table and recognized to be at least partially saturated.

Q. Has Mr. Miller recommended a remedy for those locations for groundwater protection purposes?

A. Well, as I understand his report, H-16 is the location that he identified in terms of a soil to groundwater protection pathway remedy. That is the single location.

Q. But didn't you hear Mr. Sills tell the panel on Friday that, as you said, H-16 was partially saturated?

A. Correct. Correct. And David Angle's going to talk a bit about -- in fact, show some schematics that indicate exactly where those samples were taken, where the water table is, and understand the partial saturation. But yes, I did

hear Mr. Sills talk about that.

Q. To continue to understand where this issue is taking us, is it your understanding that Mr. Miller is recommending at H-16 some corrective action for about 0.17 of an acre of soil?

A. That's my understanding, yes.

Q. But under your RECAP evaluation, even that corrective action of 0.17 acres of soil would not be needed; correct?

A. That's correct. Based on my RECAP analysis, that is correct.

Q. So while we spent quite a bit of time last week on this SPLP data versus 29-B leachate issue -- and one might view it as kind of an interesting scientific debate --

A. It is.

Q. -- it's really not much of an issue at this site, is it?

A. No. No. It is small in scale in terms of its implications for this site.

Q. Next issue, barium sampling and the comments that Mr. Carmouche confronted you with regarding an ITRC paper. I believe a topic of disagreement that you and Mr. Carmouche discussed last week was -- let me rephrase that.

A topic of disagreement between you and ICON that Mr. Carmouche discussed with you last week was whether barium samples should be dried and ground prior to analysis.

Do you recall that discussion?

A. I do.

Q. And you recall presenting to the panel some slides that demonstrated that the ICON barium data was from the same split -- from splits from the same sample locations was higher than the ERM data; correct?

A. Correct. Right. We looked at the graphs together.

Q. Now, did you hear Mr. Miller agree with you that grinding will actually result in higher constituent detections?

A. Yes. So I do believe we're in agreement about that.

Q. And explain to the panel why that is an issue here.

A. Well, from a RECAP and risk assessment perspective, what I'm interested in is what is environmentally available or, said differently, what is available for biological uptake in the ambient environment upon contact with the soil.

So from my perspective, biologically available is what I'm after.

Q. Do you remember this document that Mr. Carmouche asked you about while cross-examining you last week? And I'm going to put it on the Elmo. And it's a slide that he showed you.

Do you recognize this from your testimony last week under cross-examination from Mr. Carmouche?

A. Yes, I do.

Q. And this document on the left, it's entitled "ITRC." And then there's a table that Mr. Carmouche included in his discussion with you; correct?

A. Yes.

Q. All right. Now, you recall that he showed you some snippets from this ITRC document?

A. Yes.

Q. And asked you questions about them as it relates to the sample preparation method concern that you raised?

A. Yes.

Q. Now, did Mr. Carmouche give you a chance to review the full document?

A. We did not look at the full document together.

Q. And he didn't show you the full document, did he?

A. No.

Q. I want to show you some additional passages from this ITRC document. And let's -- I want to know if he presented these to you when he was cross-examining you about your concern about these elevated barium concentrations in the ICON data that you attributed to their preparation of drying and grinding.

So I want to just put the title of the document, the full document, here and it's the ITRC soil background and risk assessment document December 2021.

And I want to turn now to the same page that Mr. Carmouche asked you some questions about, which is page 143 and 144.

MS. RENFROE: We can take this down now, Jonah.

BY MS. RENFROE:

Q. Did Mr. Carmouche show you the page that said, at page 143: "Typically, the largest variability in the reported results is due to the

sample preparation methods used for the soil sample." Did he show you that?

A. No.

Q. Did he show you the same passage in the same page that said: "Different sample preparation methods can produce very different results for the same sample, so results may not be comparable if different sample preparation methods are used"?

A. No. But that's exactly what we looked at graphically.

Q. All right. Moving now to page 144. Let me --

MS. RENFROE: Jonah, if I may have the Elmo again.

BY MS. RENFROE:

Q. Even though Mr. Carmouche showed you some of the passages from 144, did he show you the provision that said: "For metals, soil sample preparation differs, depending on whether the goal is to determine the total metals concentration in the sample or just the environmentally available concentration of these metals."

He didn't show you that passage, did he?

A. No.

Q. And, of course, that's very relevant to your point that what you're focused on is understanding the concentration that would be environmentally available; correct?

A. Right. That's what we're examining here.

Q. Another example of something that just wasn't presented to you last week but that is important on this point, also on page 144, it says -- let me see if I can find it. It says: "For risk assessment purposes" -- let's see. Here it is.

"For risk assessment purposes, it is the environmentally available concentration of metals that should be quantified, not the total concentration"; right?

A. Correct. And that's --

Q. And that's your point, isn't it?

A. That's what I was referring to as available for biological uptake in the ambient environment.

Q. And this page goes on to point out that sample preprocessing can affect the reported concentrations of environmentally available metals; right?

A. Right.
Q. Again, that's your point.
"Sample preprocessing methods should be tailored to fit the intended use of the analytical data." Do you agree with that?
A. I do.
Q. And, in fact, that's what this document that Mr. Carmouche confronted with you says, doesn't it?
A. Yes.
Q. And, in fact, it says: "Pulverizing soil" -- "pulverizing of soil is generally not appropriate when the dermal exposure pathway is being evaluated."
A. Correct.
Q. And so are these the reasons why you raised your concern about the use -- the sample preparation method that ICON used in drying and grinding the metals in the soil samples?
A. It is. To recognize that that contributes an estimate, a biased high estimate of what's biologically available for uptake.
MS. RENFROE: Your Honor, at this time, we will offer, as Chevron Exhibit 158.7, the entire ITRC soil background and risk

assessment document.
MR. CARMOUCHE: No objection.
JUDGE PERRAULT: No objection, so ordered, it shall be admitted.
MS. RENFROE: Thank you.
And I'll hand a copy to the Court.
Here, Your Honor.
BY MS. RENFROE:
Q. Now, even though you had these concerns about the ICON barium -- ICON's soil barium results, did you nevertheless include that data in your RECAP evaluation?
A. I did. We included it for a comprehensive evaluation to provide a conservative analysis and because, in past dealings with DNR, they have required use of all the data, but it was important to me to convey any limitations that we identified or, in this case, any bias that we identified in the data set.
Q. So again, while you raised these concerns about the usability of some of the ICON data, specifically the sample preparation method -- and it was discussed last week -- it really does not change your analysis or the conclusions you've reached?

A. It does not change my conclusions.
Q. Next issue. Wet weight versus dry weight. We heard a bit about that last week. Does the Chevron most feasible plan submitted to this panel and in evidence as Exhibit 1, does it provide its analysis in both wet weight and dry weight?
A. Yes, it does.
Q. Next issue: Use of the property. There's been a lot of discussion as you've heard, Ms. Levert, about potential future uses of the Henning property. Did you track that testimony over the last week?
A. I did. I have listened to all of the testimony, actually, yes.
Q. And in particular, there's been a lot of discussion about potential future use of the property for a bass pond. Did you follow that testimony?
A. I did, yes.
Q. All right. In your opinion, based on your RECAP evaluation, would a bass pond or any other type of water feature that might intersect the shallow groundwater be protective of human health nevertheless?

A. Based on what I see in the data, in my opinion, it would not be a human health concern. Now, David Angle will talk about given the depth to groundwater on this property, it's unlikely that a bass pond even to a depth of 25 feet would actually encounter the groundwater.

But for purposes of providing full information about the groundwater in that kind of scenario, there are only two constituents that would raise a potential concern from the human health perspective, and that is benzene and barium at the locations H-12 and H-9.

For benzene specifically, the half-life for benzene in surface water is five hours. It's just so volatile that it won't hang around in surface water, period.

With regard to barium, the concentrations are just above the MCL prior to any kind of dilution. So once we take into account any sort of dilution, I mean, less than a factor of 2, concentrations are below drinking water standards.

And so for that reason, examining those kinds of facts, I don't believe that the benzene and barium concentrations would pose a risk for a

recreational use for a pond, a fishing pond.

Q. And finally, we've heard a lot of testimony, even this morning -- questions this morning about the potential future use of the property for residential purposes; right?

A. Yes.

Q. I want this record to be absolutely crystal clear on what your testimony is. Did you analyze the potential future use of this property for residential purposes?

A. Yes, I did.

Q. And tell the panel what your analysis showed.

A. It shows that the concentrations are below residential standards. And by use of a residential evaluation and the conservative assumptions associated with that relative to, say, industrial or recreational, it demonstrates that the concentrations on the property are safe for other property uses as well.

Q. You heard Mr. Miller testify that a nonindustrial RECAP assessment indeed takes into account all potential future uses of the property; right?

A. Right. And I believe that's why he

referenced it that way.

Q. And you agree with that?

A. I agree with that.

Q. So from a RECAP perspective, Ms. Levert, do the oil field constituents at the Henning property in soils or groundwater limit the current or potential future use of the property?

A. No. From a RECAP perspective, applying RECAP as an applicable regulatory standard here, no, I don't see a limitation with regard to human health.

Q. So the conclusions that you presented to the panel last week that are on Slide 11 of your presentation, despite the interesting scientific debates that were had last week, do you nevertheless still stand by these conclusions?

A. Yes, I do.

Q. So despite the comments and criticisms that were made of your work raised by Dr. Schuhmann and Mr. Miller, your RECAP evaluation supports the conclusion that there's no corrective action needed for either soils or groundwater at the property; is that right?

A. That's correct.

MS. RENFROE: Thank you very much. No

further questions.
THE WITNESS: Thank you.
JUDGE PERRAULT: Chevron's offered Exhibit 163.2 into evidence. Any objection?
MR. CARMOUCHE: No objection.
JUDGE PERRAULT: No objection, so ordered, it shall be admitted.
All right, Counsel.

CROSS-EXAMINATION

BY MR. CARMOUCHE:
Q. Good morning.
A. Good morning, Mr. Carmouche.
Q. I won't be very long.
You would agree that in Louisiana, we have environmental rules that have to be followed?
A. Yes.
Q. And that following rules is what this panel has to do as well; correct?
MS. RENFROE: Objection, Your Honor, to the extent that calls for a legal conclusion from a nonlegal witness.
MR. CARMOUCHE: I'll show her Chapter 6, Judge, and see if we can all agree that these are the rules that we're playing under.
BY MR. CARMOUCHE:

Q. You're familiar with Chapter 6; correct?
A. In general, Mr. Carmouche. However, my expertise is not in 29-B regulations.
Q. Well, this is the regulation that says specific requirements for the plans that you have to submit to the -- to this panel. Do you understand that?
A. I do understand that.
Q. Okay. And I want to direct to 611. It says: "The Commissioner of Conservation shall consider only those plans filed in a timely manner in accordance with these rules and orders of the court."
Did I read that correctly?
A. Yes.
Q. And so you would agree that this is a rule that we have to follow when submitting plans to this panel?
MS. RENFROE: Again, Your Honor, I'll renew my objection. It's calling for a legal conclusion.
MR. CARMOUCHE: This is the statute that she has to rely upon to --
JUDGE PERRAULT: Well, you can tell her what the statute says, but you're asking her for a

legal conclusion.
BY MR. CARMOUCHE:
Q. Did you follow this rule?
A. To the best of my ability, yes.
Q. You're aware you were shown a judge's order in this case; correct?
MS. RENFROE: Your Honor, this goes beyond the scope of my direct examination. And the rule in Section 635 says that the scope of rebuttal -- of his cross-examination in rebuttal should be limited to the scope of my direct.
MR. CARMOUCHE: Her direct had to do with was -- is the property contaminated. I'm going to show her -- I'm going to rebut her testimony that she just gave.
JUDGE PERRAULT: What are you doing with that regulation?
MR. CARMOUCHE: That's the definition of contamination. She has to follow the rules. This is what she just went through. She just went through and told this panel that she followed the rules. And under the rules that she followed, nothing's wrong. That's her direct.

JUDGE PERRAULT: Wouldn't that be an argument you would give to the panel rather than to her?
MR. CARMOUCHE: She has to follow the rules. I want to show she didn't follow the rules. How is that not relevant?
JUDGE PERRAULT: Well, you're asking her to admit her behavior based on the legal rules. The panel's going to decide what the rules are.
MR. CARMOUCHE: That's not the case. The rules she has to follow and ERM has to follow says they have to -- has to be in accordance with the rules and orders of the court.
JUDGE PERRAULT: If you have evidence of that, just present the evidence.
MR. CARMOUCHE: I'm trying.
JUDGE PERRAULT: Well, do you have a --
MR. CARMOUCHE: I have a court order. It's already in evidence. The court order is in evidence.
JUDGE PERRAULT: So if everything's date-stamped and she didn't follow something according to the rules of the court, asking her her opinion on the rules isn't going to

help you any.
MR. CARMOUCHE: I'm not going to ask her opinion on the rules. I'm going to ask her if she considered that this property was contaminated, which was ruled by the court.
JUDGE PERRAULT: Keep your questions to the contamination rather than asking her opinion on the rules. Okay?
MR. CARMOUCHE: Well, first, Your Honor, this 611 -- so you know and the panel knows -- she, as a scientist, has to follow this rule.
JUDGE PERRAULT: Okay. And the rule can -- you can put the rule into evidence, but ask her what she did. But don't ask her her opinion on the law.
MR. CARMOUCHE: I don't think I did.
JUDGE PERRAULT: Or whether she complied with the law. Just ask her what she did.
MR. CARMOUCHE: That's what I'm doing.
JUDGE PERRAULT: Okay. Just don't ask her any more legal opinions.
MR. CARMOUCHE: All right.
BY MS. RENFROE:
Q. You would agree, Ms. Levert, that you do not think the groundwater is usable?

A. I do not think the groundwater is usable?

Q. Correct.

A. By the definitions and the objective criteria identified in RECAP, it's not identified as a useable aquifer; that is, a zone that has potential beneficial use.

As a Class 3 aquifer, as we've identified it, it would not be a zone with potential beneficial use and not, therefore, meeting the definition of a useable aquifer.

Q. You agree that you do not think that the soil and groundwater is unsuitable for its intended purposes?

A. From my RECAP perspective, I do not believe that the soil and groundwater are unsuitable for their intended purposes. From a human health perspective and RECAP perspective.

Q. And do you know if your testimony was given to the court, Judge Cain?

A. I don't know.

MR. CARMOUCHE: That's all the questions I have.

MS. RENFROE: Just one follow-up, Your Honor, if I may.

JUDGE PERRAULT: All right.

REDIRECT EXAMINATION

BY MS. RENFROE:

Q. When you just said, Ms. Levert, that the shallow groundwater was not usable, was that because of oil field constituents in it or for other reasons?

A. No. Based upon the objective criteria identified in RECAP for classification, which is the framework for determining a useable groundwater zone.

Q. So it's not because of the potential presence of oil field constituents that renders that zone unusable?

A. No.

Q. Is that correct?

A. That's correct.

MS. RENFROE: Thank you. No further questions.

JUDGE PERRAULT: Does the panel have any questions?

PANELIST OLIVIER: Yeah. This is Stephen Olivier.

This is mostly for clarification. I did hear you say regarding SPLP chlorides that

you didn't use the Summers dilution factor and you concluded that the limitation based on your calculation was 250?

THE WITNESS: No.

PANELIST OLIVIER: It's not?

THE WITNESS: So let me clarify that. I was using that as a benchmark to say where is SPLP chloride -- where is SPLP chloride above a screening standard at all.

The limit that we calculated, that I calculated for the Class 3 groundwater is shown in our -- actually, it's identified in the narrative, in the text of my RECAP evaluation.

It's the GW-3 standard times the dilution attenuation factor for lateral transport. And that value is 90 times 440.

So it's a relatively large value, given the distance to a receiving water body. I was simply using that 250 as a benchmark to say is there anywhere on this property where SPLP chloride was above a screening value, if you will. And there was only one, and that was H-12.

PANELIST OLIVIER: Okay. And then so -- but

on that conclusion, it doesn't -- it wasn't concluded that H-12 exceeded any leachate criteria where it was shown to be not protective from soil to groundwater?

THE WITNESS: Correct. Given my analysis of a Class 3 groundwater, that is correct.

PANELIST OLIVIER: Okay. Thank you. That answered my question.

THE WITNESS: Okay.

JUDGE PERRAULT: Any other questions from the panel?

All right. Thank you very much.

Call your next witness.

Panel wants a 5-minute bathroom break. Let's do 10 so we don't have stragglers.

So we're off the record.

(Recess taken at 10:54 a.m. Back on record at 11:08 a.m.)

JUDGE PERRAULT: We're back on the record. It's now 11:08, February 13, 2023, and we're still doing Chevron's rebuttal.

And please call your next witness.

MR. BRYANT: Good morning, Your Honor. Mitchell Bryant for Chevron. I missed appearances this morning. Chevron calls

Dr. Helen Connelly.
JUDGE PERRAULT: All right, Dr. Connelly.
Please state your name for the record.
THE WITNESS: Helen Connelly.
JUDGE PERRAULT: And please spell your last name.
THE WITNESS: C-O-N-N-E-L-L-Y.

HELEN CONNELLY,

having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. BRYANT:

Q. Good morning, Dr. Connelly.
A. Good morning.
Q. Thank you for joining us again. And for the record, you were qualified last week as an expert witness in ecotoxicology, ecological risk assessment, and wetland sciences; correct?
A. Yes.
Q. Did you listen to plaintiffs' experts and Mr. Henning himself testify last week?
A. Yes.
Q. Is it fair to say, Dr. Connelly, that you're the only expert ecotoxicologist, the only expert ecological risk assessor, and the only

expert in wetland sciences that the panel has had the benefit of hearing from?

A. Yes. In this case.

Q. And, Dr. Connelly, did you hear plaintiffs' lawyers and experts bring up issues like bass ponds and crawfishing and protection of mallards on the property?

A. Yes.

Q. Let me ask you first: Does the testimony that you heard last week during plaintiffs' case, during Henning Management's case, change any of the conclusions that you testified to this panel about last week?

A. No.

Q. Now, have you analyzed the issues that were raised in plaintiffs' case last week?

A. Yes.

Q. Let's talk through some of those. And let's pick up, I think, where we left off, which is with barium.

Dr. Connelly, did you hear Mr. Sills sit in that seat on Friday and say that ICON is not recommending any remediation for barium?

A. Yes.

Q. I think he said that further evaluation

for barium may be needed; is that right?
A. Yes.
Q. But Chevron's already done that evaluation, haven't they, Dr. Connelly?
A. Yes.
Q. Let's be clear and make sure the record is very clear. Which party is the only party to have gone out and sampled to determine what type of barium exists on the Henning Management property?
A. ERM did that on behalf of Chevron.
Q. And what were the results of that testing, Dr. Connelly?
A. The results were that the form of barium present on the property is barium sulfate.
Q. For the record, just so the panel knows where to find this, is this speciation data in Chevron's most feasible plan, Appendix H?
A. Yes.
Q. And I believe the Bates number is CLDNRHM Exhibit 1, page 3402; is that right?
A. Yes.
Q. Keeping in mind that the barium in site soils is barium sulfate, does the barium on the property pose any risk to the vegetation or

wildlife on the property?
A. No, it does not.
Q. Dr. Connelly, this isn't just you that has analyzed this, the federal -- federal agencies have analyzed this issue too; correct?
A. Right.
Q. What do they say about barium sulfate and its effects on wildlife and vegetation?
A. Okay. So there's two important citations that document that barium sulfate is not an ecotoxin or a human health toxin. One is from EPA, and it's from the Community Right-to-Know in the federal register, and it says that barium sulfate is not an ecological text to toxin, including in a situation where a barium ICON may be emancipated, it is not a significant risk to ecological species. So that's one.
Q. Let's talk through those one at a time.
A. Sure.
MR. BRYANT: I apologize. I've got Dr. Connelly's slides here. These are going to be offered as Chevron Exhibit 163.3. They've been provided to Counsel.
Can I distribute them to you and the panel?

JUDGE PERRAULT: Yes, please.
MR. BRYANT: Thank you.
BY MR. BRYANT:
Q. My apologies for interrupting you, Dr. Connelly. Let's talk about the first of those federal studies that you were discussing, the EPA.
A. Yes. So the EPA describes that barium sulfate is nontoxic to humans and the environment. And specifically they describe that even in a situation where barium ions may be released, it's not sufficient to warrant reporting.
Q. How does that inform your opinion about the barium on the Henning Management property?
A. Well, the barium on the Henning Management property is barium sulfate. I recognize that it's not toxic to the environment, and this is good US EPA support for that.
Q. Dr. Connelly --
MR. BRYANT: May I approach the witness, Your Honor?
JUDGE PERRAULT: Yes, please.
BY MR. BRYANT:
Q. Dr. Connelly, I've handed you a copy of Exhibit 73. Can you explain for the panel what this document is?

A. Yes. This is the federal register that has the citation that you see up there and in -- specifically the EPA was talking about the Community Right-to-Know, like reporting on substances.

MR. BRYANT: Your Honor, Chevron will offer, file, and introduce Exhibit 73.

JUDGE PERRAULT: That's the federal register?

MR. BRYANT: Yes.

THE WITNESS: Yes.

JUDGE PERRAULT: All right. Any objection to Exhibit 73?

MR. KEATING: No objection, Your Honor.

JUDGE PERRAULT: So ordered. Shall be admitted.

BY MR. BRYANT:

Q. Dr. Connelly, there's another federal publication that you mentioned a minute ago. Can you explain to the panel what this publication is and what it concludes?

A. This is from the US Geologic Survey, and what's described here is that barium -- and it's not even quantified as barium sulfate. But barium does not have toxicological effects on plants or wildlife anywhere around barite mines or anywhere

else. So a barite mine is barium sulfate being mined, and this is what the USGS says about barium.

Q. Dr. Connelly, I'm going to hand you a copy of Exhibit 59.

A. Thank you.

Q. It's an incomplete copy. I apologize. The full document's about 800 pages.

MR. BRYANT: And we'll bring that for Your Honor when we do exhibits.

BY MR. BRYANT:

Q. But, Dr. Connelly, is that a copy of the USGS publication that has helped inform your opinion about the barium on the Henning Management property?

A. Yes, it is.

MR. BRYANT: Your Honor, Chevron will offer, file, and introduce Exhibit 59.

JUDGE PERRAULT: And what's the label for 59?

MR. BRYANT: It is the USGS -- it is a -- I'm sorry. It's the USGS professional paper on barium sulfate.

JUDGE PERRAULT: All right. Any objection?

MR. KEATING: No objection, Your Honor.

JUDGE PERRAULT: Exhibit 59, no objection, it

will be admitted.
BY MR. BRYANT:
Q. Dr. Connelly, speaking of barium, you heard Mr. Sills testify, as we discussed a moment ago, that further evaluation of the barium in soils might be needed based on PCLs from West Texas A&M University. Do you remember that testimony?
A. Yes.
Q. What are PCLs, Dr. Connelly?
A. PCLs are screening values. And the particular PCLs that he showed were from the West Texas University website. It has a calculator on it.
Q. And Mr. Sills testified that he didn't know the assumptions underlying those PCLs. Do you recall that testimony?
A. No.
Q. Dr. Connelly, do you know the assumptions underlying those PCLs?
A. Yes.
Q. Let's share those with the panel. What does Mr. Sills' PCL assume about the percentage of the mallards habitat that is affected by barium?
A. The PCL calculator on that website

assumes an input that 100 percent -- please repeat the question. Which input is it?

Q. The percentage of the mallards' habitat that's affected.

A. So it assumes that 100 percent of the mallards habitat is affected by barium.

Q. And what does the PCL assume about the amount of time the mallard spends in the affected portion of its habitat?

A. So this screening value assumes that the mallard spends 100 percent of its time in the area impacted by barium.

Q. And what form of barium does Mr. Sills' PCL assume the mallard's being exposed to?

A. The input into this website -- or into this calculator is that the form of barium is a soluble form of barium, or something that has some bioavailability.

Q. Now, I don't think Mr. Sills was suggesting remediation based on that number, but let's be very clear. Is a PCL an appropriate standard on which to base a remedial decision?

A. No.

Q. Now, you heard Mr. Sills testify that he was provided his PCL during a phone conversation

with Dr. Jim Rodgers; right?
A. Correct.
Q. Are you familiar with Dr. Rodgers?
A. Yes.
Q. And Dr. Rodgers has calculated in your -- well, let me ask it this way. In your experience, has Dr. Rodgers calculated higher PCLs in the past in other instances?
A. Yes. He's presented higher screening values or cleanup values for barium in soil or sediment specifically related to the mallard in other projects.
Q. Tell the panel about the PCL that Dr. Rodgers calculated in the Jeanerette Lumber litigation.
A. In the JLS Jeanerette Lumber case, Dr. Rodgers presented a screening value for mallards and barium of 15,000 milligrams per kilogram in soil. So that was the protective value, was 15,000 as compared to this protective value, which is about 800.
Q. Now, was that ever presented to this agency?
A. No. That JLS Jeanerette Lumber value was in litigation.

Q. So Dr. Rodgers' JLS PCL for mallards, 15,000. Dr. Rodgers' PCL that he submitted to this agency through Mr. Sills, 832?

A. Correct.

Q. Based on the PCL that Dr. Rodgers chose to propose in this case, Mr. Sills testified that further evaluation may be needed on the Henning Management property; correct?

A. Yes.

Q. Okay. But moving back to your analysis, your original screen -- ecological risk assessment that you presented to the panel last week, did that already include an evaluation of mallards?

A. Yes. Because in my original risk assessment, I included an assessment of birds that have an invertebrate and plant diet, such as, for example, the red-wing blackbird is in my assessment and the mallard has a diet of 50 percent invertebrates and 50 percent plants, so it represents a population of birds.

Q. So mallards was a possibility that you considered before we ever talked about barium and mallards with Mr. Sills; correct?

A. Correct.

Q. And your original analysis showed that

the property is safe for mallards?
A. Yes, that's correct.
Q. But based on Mr. Sills' testimony and plaintiffs' assertions, did you also do a site-specific ecological risk assessment for mallards?
A. Yes.
Q. Dr. Connelly, what did that assessment show?
A. It showed that, using the highest 95 percent UCL, which is like a high average, which is in Area 8, that the mallard is protected from barium exposure, barium in the diet, and that the hazard quotient is 0.0000162. So it's significantly below a benchmark of 1 to 5, which is a benchmark for ecological species, so no risk is predicted.
Q. In fact, it's four orders of magnitude below a hazard quotient that would indicate that further evaluation would be needed?
A. Correct.
Q. And so the record is clear and so the panel's aware, Area 8 is the area with the highest UCL on the property; right?
A. For barium, yes.

Q. So this calculation for Area 8 is inclusive of and protective of all other areas on the property?

A. Yes. It would be considered a worst-case scenario.

Q. Dr. Connelly, is any further evaluation or remediation needed as it relates to the protection of mallards on the Henning Management property?

A. No.

Q. I believe, as Mr. Carmouche mentioned last week, the potential to use a shallow groundwater on this property for cattle-watering.

Do you remember that testimony?

A. Yes.

Q. After hearing that, did you analyze the potential for the use of the shallow groundwater for cattle-watering?

A. Yes.

Q. What did you rely on to determine the standards for drinking water for cattle -- or the recommended values for drinking water for cattle?

A. The National Resource Council presents a list of recommended water quality values for livestock, including cattle, and I used that.

Q. Okay. I'm going to --
MR. BRYANT: May I approach, Your Honor?
JUDGE PERRAULT: Yes.
BY MR. BRYANT:
Q. Dr. Connelly, I've handed you a copy of Exhibit 158.6. Tell the panel what that document is.
A. It's a document about cattle. And within it is a small table that shows drinking water values for cattle, and that's what I looked at to think about the groundwater at the property.
Q. So this Exhibit 158.6 is where you got the benchmarks for cattle-watering that you compared this property to?
A. Yes.
MR. BRYANT: Your Honor, we'd offer, file, and introduce Exhibit 158.6.
JUDGE PERRAULT: Any objection?
MR. KEATING: No objection, Your Honor.
JUDGE PERRAULT: No objection. So ordered. It shall be admitted.
BY MR. BRYANT:
Q. Dr. Connelly, based on your evaluation and based on your comparison to these cattle-watering benchmarks, is the shallow

groundwater at the Henning Management property desirable for cattle-watering?

A. The shallow groundwater at the property unrelated to oil field constituents has naturally high levels of manganese and sulfates that exceed the cattle-watering recommended value, so it's not a desirable drinking water source for the cattle on the property.

Q. What about -- I don't see it up here, but what about iron?

A. Iron is also naturally elevated. The Natural Resource -- National Research Council does not have an iron value for cattle, but many states use the human health iron value, which is 0.3 milligrams per liter for cattle. And that number is significantly exceeded on the property in that shallow drinking water zone -- or shallow groundwater zone.

Q. So regardless of any effect from oil and gas exploration and production conducts, is the shallow groundwater a desirable source of water for cattle-watering?

A. No.

Q. Last week, we also discussed a little bit during's plaintiffs' case crawfish and whether

this property is safe for crawfish farming.

Did you evaluate that potential?

A. Yes.

Q. What does the literature say about the average depth and size of a crawfish pond in Louisiana?

A. This is per an LSU Ag Center reference. The average depth of a crawfish pond -- crawfish need a minimum of about 9 inches of water, and a crawfish pond generally is recommended to be 10 acres or larger.

Q. Dr. Connelly, I'm going to hand you a copy of Exhibit 62.

A. Thanks.

Q. If you could, Dr. Connelly, describe to the panel what that document is.

A. This is the LSU Ag Center document Louisiana Crawfish Production manual, and they update it every few years or so. So this is the most current version of it.

Q. So this isn't some out-of-state document or some northeast, you know, scientific document; this is a Louisiana State University document talking about the production of crawfish in this state?

A. Yes.
MR. BRYANT: And, Your Honor, before I get too far ahead of myself, we'll offer, file, and introduce Exhibit 62, the Louisiana Crawfish Production manual?
JUDGE PERRAULT: Any objection?
MR. KEATING: No objection.
JUDGE PERRAULT: No objection, so ordered. It shall be admitted.
BY MR. BRYANT:
Q. Using your education and experience and the information that you were able to gain from this crawfish production manual, did you evaluate the potential for a crawfish pond on Mr. Henning's property?
A. Yes.
Q. Let's first talk about groundwater. I think it was mentioned that perhaps Mr. Henning would want to fill up a crawfish pond with the shallow groundwater.
Based on your review of the literature, the pond size, and Mr. Angle's calculation of yield, does the shallow groundwater yield enough to fill a crawfish pond of a standard size and depth?

A. Okay. So the shallow groundwater on the property, in order to fill a 10-acre crawfish pond to the 9-inch depth, not considering evaporation, would take 15 years, so it's not an appropriate source for filling the pond.

Q. In fact, it's a pretty impossible source to fill a crawfish pond, isn't it?

A. Right.

Q. Now, Dr. Connelly, did you also evaluate whether site soils have any effect on using the property for a crawfish pond?

A. Yes.

Q. Tell the panel about that evaluation.

A. Yes. So the constituents of concern at the property are primarily barium, but I also talked about EC or salts because that's a conversation here.

In the shallow soils, the EC or salts are insignificant and not -- would not affect the crawfish growth. And then the barium concentrations also are not sufficient to affect the crawfish growth or to produce crawfish that are unsafe for human consumption.

So the crawfish that would be produced based on this barium concentration would be below

the Department of Health and Hospitals tissue screening level for consumption of shellfish.

And then the crawfish themselves would not be affected by the barium because it's not -- it's not an environmental toxin and not sufficient to cause that.

Q. Now, Dr. Connelly, you have experience assessing the effects of oil field constituents on shellfish and crustaceans in Louisiana; correct?

A. Right.

Q. Tell the panel a little bit about that experience, and particularly your experience at the East White Lake site.

A. Okay. So at East White Lake, there was barium in the sediments up to 15,000 milligrams per kilogram dry weight. And the crabs we collected at East White Lake, we collected over 300 crabs, they were of the expected size compared to crabs in the Gulf of Mexico and they were of the expected abundance.

And then the Louisiana Department of Health and Hospitals collected their own crabs and analyzed those for safety for human consumption and found the crabs to be safe for human consumption.

So I'm drawing a parallel to the crawfish because crawfish and crabs are both decapod crustaceans, so the same uptake factors would apply.

Q. To make sure that this testimony is crystal clear, you have previously analyzed crabs as it relates to barium and crabs and crawfish are comparable species?

A. Correct.

Q. And you have previously analyzed crabs at a location where the maximum concentration of barium is more than double the maximum concentration of barium on the Henning Management property?

A. That's right. The maximum concentration at East White Lake where we collected the crabs was 15,000. There was 15,000 and 13,000 milligrams per kilogram. And at Henning, the maximum concentration is 7,000, so I don't predict risk to the crawfish ponds.

Q. So you performed an ecological risk assessment. Did this agency and the LDEQ both accept your ecological risk assessment in the East White Lake matter?

A. Yes.

Q. Now, you also mentioned the Louisiana Department of Health and Hospitals. Tell the panel about the LDH study and what it found separately from the ERM study of crabs.

A. They performed their own study, they collected their own crabs, and they did an analysis and looked at the tissue and compared it to state-approved shellfish screening levels and found that the crab -- edible crab meat on the property exposed to barium was significantly lower than the tissue screening level, the safe level for humans, so they said safe for human consumption.

Q. Now, in that Louisiana Department of Health document -- well, let me back up.

Was Dr. Jim Rodgers also involved in this East White Lake crab study?

A. Yes.

Q. And Dr. Jim Rodgers is who proposed the barium PCL to Mr. Sills in this case; right?

A. For mallards, yes.

Q. What did the Louisiana Department of Health have to say about Dr. Rodgers and his methodologies?

A. The department -- the Louisiana

Department of Health was not able to use Jim Rodgers' data because of the -- perhaps the analytical methods and some of his other methodology.

MR. BRYANT: May I approach, Your Honor?

JUDGE PERRAULT: Yes.

BY MR. BRYANT:

Q. Dr. Connelly, I'm handing you a copy of what's been marked as Exhibit 158.8. Tell the panel what that document is, please.

A. This is the Louisiana Department of Health and Hospitals field seafood sampling for East White Lake oil and gas field in Vermilion Parish.

Q. And so that's the document that we just discussed where the Louisiana Department of Health evaluated Louisiana crabs and the effects of barium on those crabs?

A. Correct.

Q. So if the panel had any concern about whether or not the barium concentrations on this property were safe for humans, they could go look at that document?

A. Correct.

Q. So, Dr. Connelly, based on your

experience and your evaluation of this property, what did you determine about whether the Henning Management property is safe for crawfish?

A. It's safe for crawfish.

Q. Let's move on to another kind of pond.

JUDGE PERRAULT: Do you want to offer exhibit 158.8 into evidence?

MR. BRYANT: I do, Your Honor.

JUDGE PERRAULT: Any objection?

MR. KEATING: No objection, Your Honor.

JUDGE PERRAULT: No objection, so ordered, shall be admitted.

BY MR. BRYANT:

Q. You heard Mr. Henning testify on Friday that he may at some point in the future have an interest in building a bass pond on this property; right?

A. Yes.

Q. Now, we've heard -- I know the panel has had some concern about a potential 25-foot bass pond.

Did you hear Mr. Henning say anything about a 25-foot bass pond?

A. The 25-foot-deep bass pond?

Q. That's right.

A. I didn't hear Mr. Henning say that, no.
Q. What does the literature say about the average depth of recreation sport fishing ponds in Louisiana?
A. The average depth of the recreational sport fishing ponds in Louisiana is about 10 feet.
MR. BRYANT: And can I approach one last time, Your Honor?
JUDGE PERRAULT: Please.
A. Deep. 10 feet deep, yeah.
BY MR. BRYANT:
Q. Dr. Connelly, I've handed you a copy of Exhibit 60. Is this the document that you reviewed to determine the average depth of recreational sport fishing ponds in Louisiana?
A. Yes.
Q. Again, this isn't some out-of-state study; this is a study by the Louisiana State University Ag Center and the Louisiana Department of Wildlife & Fisheries?
A. Correct.
Q. And it says that the average depth is about 10 feet?
A. Yeah. Deeper than 10 feet would be considered a deep pond, yeah.

Q. And what does that document say, and based on your experience, what is the optimal depth of a pond for fish propagation?

A. This document recommends that you have to have at least 4 feet of water. That's the minimum. But anything greater than 6 feet, you don't increase the fish production, so up to 6 feet. And then deeper than 6 feet, no increase in any type of fish production.

MR. BRYANT: Your Honor, we'd offer, file, and introduce Exhibit 60, the management of recreational and farm ponds in Louisiana.

JUDGE PERRAULT: Any objection?

MR. KEATING: No objection.

JUDGE PERRAULT: No objection, so ordered, shall be admitted.

BY MR. BRYANT:

Q. Dr. Connelly, based on your experience and based on your review of this document, did you evaluate the potential for a bass pond on Mr. Henning's property?

A. Yes.

Q. Let's first, as we did with crawfish, talk about groundwater. Based on your review of that literature and Mr. Angle's yield calculation,

does the shallow groundwater yield enough water to fill a bass pond?

A. No. The shallow groundwater, the amount of time that it would take to fill to 4 feet in the 1-acre pond, which is the suggested smallest size, would take 9 years to fill, not considering the evaporation.

Q. So Mr. Henning, I think, mentioned a large bass pond. But even considering a 1-acre bass pond of the very minimum depth, it would take 9 years to fill that bass pond?

A. Right.

Q. Let's talk about soils.

Did you evaluate whether site soils would have any effect on using the property for a standard-size bass pond?

A. Yes.

Q. And what was your -- what conclusion did you reach?

A. I reached the conclusion that site soils are protective of fish as well as consumers of fish.

Q. And this isn't your first experience with evaluating fish in waters near barium-impacted soils, is it, Dr. Connelly?

A. That's correct.
Q. Tell the panel about your prior experience with, for instance, rapid bioassessments that the EPA prescribes in determining whether barium has an effect on fish.
A. I did an EPA rapid bioassessment in Terrebonne Parish in oil field canals and collected more than 1,000 fish on the property and then I collected fish in the nearby reference area, which was a wildlife reference area, and part of the protocol -- you know, I made the comparison and found that the barium in the oil field canals up to 12,000 parts per million barium did not affect the fish abundance as compared to the reference and it also did not affect the species that I collected. The trophic structure was the same.
Q. So following an EPA-prescribed protocol, you determined there was no adverse effect to fish in an area where the maximum barium concentrations well exceeded the maximum barium concentrations on this property?
A. Yes. It was 12,000 parts per million there, and the max here is 7,000 in dry weight.
Q. So just to wrap up our discussion of a

standard-sized bass pond, you know, 10 feet or so, what are your conclusions about whether that would be safe for recreational sport fishing on the property?

A. Yes, that would be safe.

Q. Now, based on the panel's question and I think plaintiffs' suggestions about a 25-foot-deep bass pond, did you also evaluate that potential?

A. Yes.

Q. Would site soils have any effect on using the property for a 25-foot bass pond?

A. No.

Q. How did you reach that conclusion?

A. So the 25-foot depth would not encounter groundwater in the limited admission area, so that is not an issue. And then there's no barium exceedances at depth, so that's not an issue.

So there are chloride exceedances at depth in some areas, but the chloride concentrations are not sufficient to impact the fish. And I've collected fish in the sinkhole in Assumption Parish, which is essentially a brine pond, which has higher chloride concentrations than what we would expect here. And in that sinkhole, we had abundant freshwater fish with the

chloride concentrations, you know, higher than you would expect.

So I don't predict that the chloride concentrations here on this property would affect the fish.

Q. So even if Mr. Henning did want to dig a 25-foot-deep bass pond --

A. That was only one acre. That would be the worst-case scenario.

Q. Right. A 1-acre, 25-foot-deep bass pond, it's your -- based on your assessment, that would be safe for the fish?

A. Correct. And to clarify, I limited what we just said to the 1 acre because that's literally the worst-case scenario. The bigger you get, the greater dilution, the less the issue.

Q. In fact, there's been surface water sampling on this property; correct?

A. Correct.

Q. Tell the panel about what ERM's surface water sampling at the blowout pond showed about.

A. The water quality in the blowout pond, which is 15 feet deep, is below -- we call it a surface water standard. That is, it's -- it's an LDEQ aquatic criteria, so it is -- it's

essentially the national ambient water quality criteria from EPA but DEQ adopts that. So anyway, the constituents are below screening values that are protective of aquatic species. So the water quality is good in the blowout pond and safe for fish and aquatic species.

Q. And in fact, did you take this picture, Dr. Connelly?

A. I did.

Q. And you saw various species in the vicinity of that area?

A. Yes. Alligators, the fish-eating birds, the wading birds, fish themselves.

Q. Thank you.

Now moving on to our last topic, you were here during Mr. Sills' and Mr. Miller's testimony or you were listening to it; correct?

A. Yes.

Q. And so you heard the remediation that ICON is proposing on this property?

A. Correct.

Q. We talked last week about Step 8 of the EPA 8-step process. Do you remember that?

A. Yes.

Q. Remind the panel what Step 8 of the EPA

process calls for.

A. It's the suggestion that I would make as the ecological risk assessor if remediation is needed for ecological reasons and then if a remediation is proposed for any reason, then I would evaluate the risk of that remedy to the environment, what destruction would be caused to the environment, what is the risk of the remedy.

Q. And have you evaluated the risk of remedy as it relates to ICON's proposed most feasible plan?

A. Yes.

Q. Tell the panel about the conclusions you reached about the risk of ICON's soil most feasible plan.

A. The soil most feasible plan for ICON would be, number one, performed in an area where I don't find ecological risk and there also is no demonstrated human health risk. So it would be a remediation that is not called for, and it would be destructive of grasslands specifically, also wetlands species and also some scrub-shrub and some forested area.

And those grasslands in particular are providing habitat for birds, coyotes, deer,

rabbits, and it would be unnecessarily destructive to perform excavation of any size where you have to have ingress and egress of trucks, burning of fuels. It's not conserving resources and not protective of species, not in the best -- being good stewards of the environment. I don't propose it.

Q. Let me ask you a few follow-up questions to that, Dr. Connelly. I think it was Mr. Keating last week that was talking to Mr. Sills, and he proposed that because of the aerial extent of the remediation is fairly limited in proportion to the site size, that the remediation was reasonable.

How do you respond to that?

A. I don't think that the size has anything to do with whether or not it's reasonable. I think it should be warranted by the conditions and if it's small, that doesn't change my opinion that it's reasonable.

Q. And you also heard the mention that, well, this is in a fallow field, so it doesn't matter, it's reasonable. How do you respond to that?

A. Right. So I would want the panel to think about the fact that this Henning property,

in particular, supports, I think it's 150 different grass species. And you know that this area is a former prairie in Louisiana, so it's the grasses that are north of the marsh and south of the forest. And there really are not many grasslands left, even in the country, especially Louisiana. And this property has exceptional diversity, especially in grasses.

And grasses are, as I described before, a habitat, especially for birds but also for insects and mammals that we've seen on this property.

So your question was, you said it's just a fallow field --

Q. Right.

A. -- and I would reply to that, I disagree. I think it's a vibrant and productive habitat. That's how I would describe it.

Q. And is the habitat also important on a -- it's important obviously on a site level. Is it also regionally important?

A. It is. So I think you may -- I think I said this when I talked to you previously. I can't remember what day that was now.

But the property is at the confluence of

two migratory bird pathways. The Central Flyway and the Mississippi Flyway go right through this property, so migratory birds count on it. And we saw ducks and geese on the property, and I know Mr. Henning plans to have, you know, sponsored or -- where you have a guide that takes you hunting.

So it's important for birds in these flyways. And then the property is also part of what's called -- it's a US EPA national ecological framework. It's part of the national ecological framework. And part of the property is within that framework.

And it provides corridors for wildlife to travel between the property and also like, for example, the Lacassine National Wildlife Refuge.

So it is identified as part of this framework that's to protect ecological species. And this is also considered an important bird area. That's a global designation.

Q. Let's move to groundwater, Dr. Connelly. Tell the panel what your opinion is about ICON's proposed most feasible plan for groundwater and the risk that that remedy proposes.

A. So this proposal that covers 85 acres

and has 471 recovery wells essentially would convert this property from its highest and best use, which is conservation of species and habitat, to sort of an industrial sort of pump and treat center with -- it would essentially eliminate the habitat. And the number one cause for extinction of species on this planet is destruction of habitat, and this would be destruction of habitat, so I'm not supportive of that.

Q. Let's talk about the destruction of habitat in a little more detail.

Tell the panel what this slide shows and what the effect of ICON's proposed most feasible remedy would be on the habitat in this area.

A. This is Area 2, and you can see the ICON wells called out next to the blowout pond. And this area has wetlands species and numerous birds. It's a very diverse area. And this would be destructive to the fish-eating birds that are documented here using the pond and as well as other wildlife that we saw evidence of here. So I am not supportive of this remediation.

Q. Same question here, Dr. Connelly. Tell the panel what we're looking at and what the effects of ICON's proposed most feasible plan

would be in this area.

A. This is Areas 4 and 5. These are mostly grasslands and emergent wetlands. And in this area, I think you may remember I told you the grasses are desirable to deer and rabbits that we saw there. And I have a picture down there of the white-tailed deer tracks.

We saw a lot of animal tracts on this property. I visited the property three times. And one of the times, it was really dry, and we were able to photograph lots of tracks, deer, and also something we thought was probably coyote, definitely raccoons. We saw feral hog tracks.

And then traveling over this area, we saw the greater white-fronted goose. And even though the geese likely land on the watery wetlands, which are the working wetlands, the rice fields, I think they also rely on this area as well, so I think it would be destructive to the migratory birds.

Q. And last question on this, Dr. Connelly. Same question, tell the panel what this is and what the effect of ICON's proposed most feasible plan would be in this area.

A. This is Area 6, and it is forested with

scrub-shrub, and you can see the black willow on the right, which is an obligate wetlands species; great egret, which hunts for fish.

And then we photographed these mammal tracks. We think they're raccoon, but they may also be river otter, we're not sure. We haven't quite identified that.

But destruction of Area 6 by these wells would be specifically destructive to the insectivorous song birds that we saw here.

Q. So, Dr. Connelly, just to sum it up, based on ICON's soil most feasible plan and their groundwater most feasible plan, is the risk of that remedy, does it outweigh the need for remediation in those areas?

A. No. And I think anytime you propose a remediation, you have to weigh out the risk: You know, will it be valuable enough to cause the kind of destruction that we're talking about. I think the answer is no.

Q. So -- and I understand from your testimony last week -- whether remediation may be needed for some other purpose, like to comply with Judge Cain's order, that's not your area; right?

A. Correct.

Q. But it doesn't need to be this remediation?

A. Correct.

Q. Dr. Connelly, to sum things up, we've heard about bass ponds, we've heard about crawfish ponds, we've heard about cattle-watering. We've heard about a bunch of different uses since you testified last week.

A. (Nods head.)

Q. Does any of that change your opinion about the ecological state of the Henning Management property?

A. No.

Q. And remind the panel what conclusions you reached based on your three days of site investigation, your quantitative ecological risk assessment, your quantitative habitat evaluation. Tell the panel what you concluded about this property?

A. The property is a mosaic of habitats, grasslands, emergent wetlands, scrub-shrub forests, and also croplands. And I observed diverse wildlife and vegetation that is as expected compared to references, including Wildlife & Fisheries, and per my qualitative risk

assessment calculated per EPA protocol, I did not find risk to wildlife or their habitats.

And for ecological reasons, I do not propose remediation is necessary. I do not propose that it is necessary. Just in case I wasn't clear.

Q. Thank you, Dr. Connelly.

MR. BRYANT: Your Honor, we'll offer at this time Chevron's Exhibit 163.3, which is Dr. Connelly's rebuttal presentation.

JUDGE PERRAULT: All right. Any objection to Exhibit 163.3?

MR. KEATING: No, Your Honor.

JUDGE PERRAULT: So ordered. It shall be admitted.

All right. Any surrebuttal?

MR. KEATING: Cross? May I proceed? Thank you.

CROSS-EXAMINATION

BY MR. KEATING:

Q. Hi, Dr. Connelly.

A. Hello.

Q. I'm going to be brief. I feel like I just heard your direct again, so I don't want to do a whole full cross again.

Prior to today, both in your questions to Mr. Olivier at the conclusion of your testimony a few days ago and in your deposition and frankly in your report on page 48, you acknowledged that you had not addressed the shallow groundwater at all in connection with your opinions; correct?

A. Correct.

Q. All right. So the first time any of us heard this or saw this stack of documents was today; fair?

A. Correct.

Q. All right. You did not address whether the shallow water-bearing zone had any potential effect on crops, crawfish, or livestock irrigation prior to today; fair?

A. There was a rebuttal report from ICON and some other witnesses, and I was told that we would make a rebuttal at this time. So I started thinking about it at that time.

Q. Today's the first time we've heard it?

A. Today's the first time you've heard it, that's correct.

Q. You understand, Dr. Connelly, that -- and we tried to make this as clear as possible. I'll try to clear it up one more time.

Henning Management and ICON are not recommending to this panel that any soil remediation be done on the property right now at this time for barium. You understand that; right?

A. I do. I do.

Q. Whether we're talking about barium sulfide, barium sulfate, or some form of barium that I can't even think of; right?

A. Yes, that's correct, ICON is not proposing soil remediation due to barium.

Q. And you understand that the only thing ICON is proposing relative to barium at this time is additional risk assessment; correct?

A. I do know they're proposing that, but I disagree that it's required.

Q. Understand.

A. Yeah.

Q. Whether you agree or disagree that it's needed or required or feasible or reasonable -- pick a word -- if it were to happen, this additional assessment for -- risk assessment for barium, the assessment alone would not have any adverse ecological effect on the property, would it?

A. Correct.

Q. So if this panel were to order that, you're not suggesting that additional assessment is going to have an adverse ecological effect on this property?

A. No. Certainly additional assessment does not have an adverse ecological effect, no.

Q. Okay. There were a lot of photos in your presentation and certainly attached to your report as well. And I noticed a lot of photos of the rice fields both in production and the fallow portion, I think, which is at H-8 -- or Area 8. Excuse me. Do you recall that?

A. Uh-huh, yes.

Q. You understand that ICON is not proposing any soil remediation anywhere near the rice fields; right?

A. I do.

Q. You understand what -- did you hear Jason Sills' testimony?

A. Yes.

Q. So you understand the only soil excavation and remediation either by hauling it off or amending it with gypsum that's being recommended is where we have EC above 4 and down to a max depth of 12 feet. Do you understand

that?
A. Yes.
Q. Okay.
A. I mean, let's put it this way. I understand that there's a small soil remediation. I know where it is. I couldn't have called out the depths for you, and I couldn't have called out the reasons, but I understand that the soil remediation is small and the groundwater remediation is large. I understand that.
Q. Fair enough.
MR. KEATING: Scott, can you pull up...
BY MR. KEATING:
Q. So do you understand generally that -- I'll come over here closer to you.
MR. KEATING: May I, Your Honor?
JUDGE PERRAULT: Yes, please.
BY MR. KEATING:
Q. -- that the only areas where ICON is recommending any soil remediation are here in Area 5 and here in Area 2 and -- and --
MR. KEATING: Actually, Scott, can you go to the other slide with the -- the 1.2 with exceptions? It looks the same, almost, but there's some boxes that drop off.

BY MR. KEATING:
Q. You know what? This is fine. It's just a little bit more, to be honest, so I think 0.07 acres more. But generally speaking, you understand that the only areas of the property where ICON's recommending any soil remediation are where we see these pink boxes in Areas 5 and 4? I say that because Area 2 drops off when you put the depth exceptions in the actual recommended plan. Understand?
THE WITNESS: Your Honor, can I approach the...
JUDGE PERRAULT: Yes, please.
A. So this area right here (indicating) is forested, so I have definitely an issue with that.
BY MR. KEATING:
Q. I haven't asked you a question about that yet.
A. No, I know you didn't. But you --
Q. You're not answering my question.
JUDGE PERRAULT: Let him ask you a question.
BY MR. KEATING:
Q. Yeah.
A. Go ahead.
Q. Yeah. I'm asking you if you understand

that's where they're recommending remediation?
A. I do understand that, yes.
Q. Okay. Thanks.
JUDGE PERRAULT: Do you have a follow-up on his...
MR. KEATING: I haven't asked another question. I asked if she understood that's the areas.
JUDGE PERRAULT: Okay. I wanted to know if she had any follow-up to your question.
MR. BRYANT: Your Honor, she's entitled to answer the full question. She said, yes, she understands, and she has more to that answer.
MR. KEATING: That's all I asked: Do you understand this is where?
MR. BRYANT: She's entitled to answer the question.
JUDGE PERRAULT: But if she has follow-up to that, I'll allow it. If you don't have any, you don't have to say anything.
MR. KEATING: There's not a question on the floor. I don't understand --
THE WITNESS: I mean, quite frankly, I can't remember the question. I know I was asked if I knew where the soil remediation was, and I

took issue with where the soil remediation is in general.
MR. KEATING: I didn't ask her if she took issue with it.
JUDGE PERRAULT: All right. You can go ahead and have a seat.
MR. KEATING: I know you take issue with it.
THE WITNESS: Yes.
MR. KEATING: I agree that you take issue with it.
JUDGE PERRAULT: Counsel, I wasn't going to ask -- I just wanted to know if she had a follow-up --
MR. KEATING: No. Certainly, Your Honor. I just didn't know where she was going. I didn't ask her that.
BY MR. KEATING:
Q. You understand, Dr. Connelly, that of this 1200-acre property, give or take, ICON is only recommending soil remediation in about 1.2 acres, or 0.1 percent of the total surface area?
A. Clear. Yes.
Q. You understand that the court has ruled -- the federal court judge has ruled that

Chevron admitted it contaminated the soil and groundwater on this property?

A. I think that falls in the basket of a legal interpretation of what Chevron did or didn't do or what they admitted. Because the limited admission is not something I can interpret.

Q. Were you provided a copy of the federal judge's order?

A. Yes.

Q. Were you instructed to follow it?

A. I was given a copy of it and told to read it, which I did do.

Q. Did you understand it?

A. Not really. I mean, no. I read through it.

Q. So sitting here today, you can't say whether your recommendations and testimony in this case does or does not comply with the court's order?

MR. BRYANT: Objection, Your Honor. He's calling for a legal conclusion. We went through this same thing with Mr. Carmouche.

JUDGE PERRAULT: Just stick to what she did or didn't do and not her opinion of what the judge's order is.

BY MR. KEATING:
Q. You understand that you're bound by orders of the court that are handed down in cases like this?
MR. BRYANT: Your Honor, he's asking her to testify about she is and isn't bound by. She's not a legal expert. She's an ecological risk assessor and she has opinions on the ecological state of the property.
JUDGE PERRAULT: I'm going sustain the argument. Just stick to what she did, what she measured and her conclusions on her measurements and her methodology.
MR. KEATING: I understand.
JUDGE PERRAULT: And her qualifications.
BY MR. KEATING:
Q. So that was outside your area?
A. If I remember the question --
JUDGE PERRAULT: Do you want him to repeat the question?
THE WITNESS: Yeah, repeat the question.
BY MR. KEATING:
Q. And I'm not asking you to interpret the judge's order.
MR. KEATING: And, Your Honor, I understand

your ruling. If I'm crossing it, I'm not trying to.

JUDGE PERRAULT: Do your best. Do your best. I'm not going to get mad at you.

BY MR. KEATING:

Q. Reading and making sure that you were following the federal court's order was not within the area that you're testifying here today; is that fair?

A. The most correct way to phrase what I was tasked with doing is to do an ecological risk assessment of the property. That's the most correct way to phrase my task, which I did do that.

Q. That's the complete answer to that question?

A. I think so.

Q. Okay. You mentioned being a good steward of the environment and not taking action that's going to cause unnecessary risk --

A. Correct.

Q. -- to the ecology of the property; right?

A. Correct.

Q. Do you think Chevron was a good steward

of the environment when they utilized unlined earthen pits on this property?

MR. BRYANT: Objection, Your Honor. He's asking for operational issues. She's not -- she has no knowledge of Chevron operations. She's an ecological risk assessor assessing the current state of the property.

JUDGE PERRAULT: I'll sustain that. Just ask what she found and what she studied, not what Chevron's operations were.

MR. KEATING: Well, Your Honor, she's saying that ICON is proposing to do things that are going to be not good stewardship of the environment. And the reason we're here entirely today is because Chevron wasn't a good steward of the environment, which they admitted.

JUDGE PERRAULT: And that's in evidence. But her opinion of what Chevron did on the site, I don't know that that helps your case.

MR. KEATING: I think what she's saying is -- and I'm not trying to put words in your mouth, tell me if I'm wrong. She doesn't think it would be good stewardship of the environment to do the remediation that ICON

is proposing.
JUDGE PERRAULT: Well, ask about the remediation, not what Chevron's processes were.
MR. KEATING: I'm comparing the stewardship analysis that she's applying to ICON to Chevron. It's a fair credibility cross-examination.
JUDGE PERRAULT: I get what you're doing. But the Chevron stuff, that's not -- she's measuring what's in the ground and what happened to the ground. And if you want to ask her what you're proposing to do, what she thinks of that, that will be great.
MR. BRYANT: Thank you, Your Honor.
MR. KEATING: If I'm limited in that fashion, I don't have any further questions.
JUDGE PERRAULT: Okay. But if you object to what I've done, we can note that on the record.
MR. KEATING: I don't want to get into an argument with Your Honor. That's not my intention.
JUDGE PERRAULT: No, no. I just want it clear. And if y'all have an objection, put

it in there.
MR. KEATING: I do disagree, but I respect the Court's ruling. And I'll rest with that.
JUDGE PERRAULT: All right. Do you have any follow-up?
MR. BRYANT: Very briefly, Your Honor.

REDIRECT EXAMINATION

BY MR. BRYANT:

Q. Dr. Connelly, plaintiffs have taken the position that further evaluation for barium is needed on this property. Is that your understanding?

A. Yes.

Q. Have you done that further evaluation?

A. Yes.

Q. What does your further evaluation show?

A. That barium is not an ecological toxin on this property or really anywhere in the United States right now.

Q. Is further evaluation of that needed?

A. No.

Q. Dr. Connelly, you were asked if you took issue with where the remediation -- or where the remediation is occurring, and you wanted to tell the panel why you took issue with that.

A. (Nods head.)

Q. I want to give you a chance to tell the panel why plaintiffs' remediation, be it limited in scope or not, aerially is unreasonable.

A. I was really just pointing out that, you know, one of the remediation boxes in particular is in a forested area. I can't imagine what the issue is there. And then the other remediation boxes are within those grasslands that I talked to you about.

And we already had the slide, so I showed the panel. But I just was calling out that although it's limited in size, if it's unneeded, it's still destructive.

Q. Dr. Connelly, you were asked about the Court's order, and I think you already gave this testimony, but just to make sure the record's perfectly clear, you were not asked -- whether remediation is needed for some other purpose, including compliance with the Court's order is not within your ambit; is that right?

A. That's right.

Q. What you're testifying is that even if remediation is needed for some reason, it doesn't need to be ICON's plan?

A. I agree with that, yes.
MR. BRYANT: No further questions. Thank you.
JUDGE PERRAULT: Does the panel have any questions?
PANELIST OLIVIER: No questions from the panel.
JUDGE PERRAULT: Thank you very much.
THE WITNESS: Thank you.
It's 12:02. Do y'all want to take a lunch break. We'll take an hour break, so let's say we'll come back at 1:03.
(Lunch recess taken at 12:03 p.m. Back on record at 1:07 p.m.)
JUDGE PERRAULT: We're back on the record after lunch. It's now 1:07. Today's date is February 13th. I'm Charles Perrault. We're doing the -- Chevron's rebuttal.
And please call your next witness.
MR. GREGOIRE: Chevron calls David Angle.
(Witness is sworn.)
MR. GREGOIRE: Judge, if I may approach, we have a slide presentation for Mr. Angle which was e-mailed to everyone but we're providing copies.

Ahead of time, I would like to file and offer as Exhibit 163.4 Mr. Angle's presentation.

DAVID ANGLE,

having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. GREGOIRE:

Q. Good afternoon, Mr. Angle.

A. Good afternoon. Good afternoon, everybody.

Q. You're aware of the fact that Judge Perrault qualified you last week as an expert in the areas of site assessment, remediation of environmental media, geology, hydrogeology, soil and groundwater fate and transport, and the application of regulatory standards and procedures?

A. That's correct.

Q. Okay. So you testified last week; is that right, Mr. Angle?

A. I did. For a long time.

Q. And you have heard the testimony not only of Chevron's expert witnesses but also the witnesses of Henning Management; is that right?

A. Yes. I listened to all of them.
Q. Have any of your opinions changed since you testified before this panel last week?
A. No.
Q. Okay. I want to address some of the key points which you -- which you arrived at in not only reviewing the respective most feasible plans; that is the Chevron plan and that is the plan of ICON, but also based upon your listening to all of the witness testimony. Okay?
And you have -- if you hadn't been here physically present, you have heard all of the witness testimony remotely as well; is that right?
A. Yes. That's correct.
Q. So tell the panel some of your key takeaways or key points that you've arrived at based upon your review of the plans and the testimony of the witnesses.
A. Okay. We'll start with groundwater here. Groundwater out here is Class 3 based on our analysis. It's naturally poor quality, you've probably heard, and it cannot be restored to a potable state. So that's my groundwater opinion relative to the classification.
Number two, shallow groundwater's not

connected to the Chicot. I know you've heard some back and forth on that. I'm going to show you a little bit more evidence for that.

Monitored natural attenuation for benzene. That's our plan to conduct that in the vicinity of the blowout pond. That's groundwater.

Q. And for soil, what are your two main points, takeaways?

A. No remediation for soil. There are no 29-B exceedances in the root zone zero to 1 foot. If you remember, I did point out three locations with ESP and SAR exceedances between the 1- and 3-foot column.

And I also want you to remember, on the soil side, there are no metals or hydrocarbon exceedances, oil and grease, to any depth for 29-B.

Q. But you do have an alternate remediation proposal that you testified about last week; is that right?

A. Correct.

Q. And you'll sum that up again later in your presentation; is that correct?

A. That's correct.

Q. So you testified last week about the

most feasible plan, which you defined as being the most reasonable; is that right?

A. Yeah, that's right.

Q. And it's the most reasonable to protect human health and the environment?

A. That's correct. Based on Ms. Levert's analysis and Dr. Connelly's analysis.

Q. So describe to this panel -- or tell this panel what your generalized opinion is about ICON's plan and then respectively the Chevron most feasible plan.

A. Yeah. The first item here that ICON -- and I think what I've heard through my listening to their testimony is their plan with exceptions does not -- you know, has not provided an alternate statute or regulation in support.

And then based on our analysis -- and then I'll go through some of it. It's not the most reasonable or the most feasible plan.

Q. And what is your opinion about the Chevron plan?

A. Well, the Chevron plan is based on Statewide Order 29-B, obviously it's based on RECAP, it's based on EPA. A couple of the other regulations that I talked about, Sanitary code,

radionuclides rule, so it's a regulatory-based program, which is relying on the regulations. In my experience based on previous LDNR hearings, the agency looks to whatever regulation may be applicable. That's what we did.

Q. And did the testimony of ICON, particularly Greg Miller and Jason Sills, confirm your understanding that ICON did not apply RECAP to any analysis and particularly its exception plan?

A. That's correct.

Q. You also testified quite a bit about Appendices B and F of RECAP; is that right?

A. I did.

Q. And we do not want to belabor that point, but if you can just summarize for the panel the relevance of Appendixes B and F to the determination of the classification of the groundwater?

A. Yeah. The relevance here -- and you've heard testimony not only from me but Mr. Miller and Dr. Schuhmann about aquifer testing and when you have multiple wells or slug tests you should consider those.

And so Appendix B and Appendix F give us

guidance and guidance that I followed in terms of classifying the groundwater. In particular on the bottom, Appendix F, when you have a number of hydraulic conductivity results, you calculate a geometric mean. We'll revisit that a little bit. But that's what we used to do our classification.

Q. And as a summation, what should the maximum sustainable yield of the groundwater be in order for it to be classified as a 2C aquifer?

A. It needs to be above 800 gallons per day.

Q. And you'll talk about this later, but you're confident that slug testing of the groundwater, particularly the shallow groundwater at this property, provide an accurate means to determine the maximum sustainable yield of that water at the Henning site?

A. Yes, I'm confident. And I heard that testimony from Mr. Miller as well. I think we're in agreement on a few things, and that's one of them, that we have adequate number of slug tests to make a classification determination.

Q. You saw, and you've seen it before, the EPA draft document from 1985 that Mr. Miller relied upon partly for his opinion about maximum

sustainable yield of an aquifer?
A. You mean that final draft from '85?
Q. Yes.
A. Yes, I've seen it.
Q. That publication, was it ever placed in final format by EPA?
A. Not that particular publication.
Q. Okay. And so as we all know, in Louisiana, RECAP provides us with guidance and rules regarding how to classify an aquifer in Louisiana; is that right?
A. Correct. And that was all determined by the development of RECAP by DEQ and promulgated by DEQ.
Q. Let's talk next about ERM's groundwater classification and so -- compared to ICON's. And that's what you're going to discuss, I think, in the next couple slides.
Both ERM and ICON slug tested 17 wells; is that right?
A. That's correct. ICON did 5, we did 12.
Q. So if you can explain to the panel what these series of charts and graphs reflect and its meaning to you.
A. Okay.

THE WITNESS: If you don't mind, I'll probably stand up for the next few slides.

A. There's a Table 1 in our remediation plan that lays all this -- these two pages out, but we wanted to bring your attention to a couple things.

Number one, we used 17 wells in our classification. The geometric mean, you probably heard me talk about previously, was a little bit under 400 gallons a day, so about half of the Class 3 standard. And we evaluated the geometric mean of that calculation.

Now, I heard some criticism that I did it wrong, I didn't follow RECAP. So I'm going to tell the panel what we did, and we did it, obviously, I think the way that I heard I should have done it. And I'm going to tell you that, too.

So our calculation said 398 gallons a day. And I think the questioning was you're supposed to use a geometric mean of the hydraulic conductivity, so we said, okay, we'll do that.

So we went back and calculated the geometric mean of the hydraulic conductivity, which is right here. Geometric mean of the HC and

B, we're about 5 GPD difference. So it's -- I probably said that at that time. There's really no material difference. That's, in my mind, the same number. So doing it both ways, it's clearly Class 3.

BY MR. GREGOIRE:

Q. And the maximum sustainable yield, as you determined it and as you determined it on countless occasions at other properties, was actually higher, albeit 5 gallons per day, but higher than the maximum sustainable yield in the manner that you applied it as suggested by ICON; is that right?

A. That's correct.

Q. So where was their agreement among the experts?

A. And I think this is important. That's why, you know, we put these bullets on the slide. You know, I listened to that testimony, and I didn't hear any disagreement on -- I think both sides agree there's one water-bearing zone. It's hydrogeologically connected.

Both sides, I believe, agree that there are sufficient slug tests to classify the aquifer. If you remember, they're fairly widely distributed

around the areas of investigation. And it's important to analyze multiple slug tests when you have multiple slug tests. Don't just look to one slug test.

And I think this -- we just put this up here. We do have agreement from Dr. Schuhmann that slug testing clearly demonstrates an inhomogenous groundwater unit. Well, what does that mean? It's not one continuous sand layer that underlies the whole property, as you probably saw, the variability in thickness and extent of the shallow water-bearing zone. Dr. Schuhmann agrees.

He also agreed that you can't evaluate sitewide groundwater based on a single point, especially a site of this magnitude. I mean, that's hugely important. A site this big, two square miles, one point doesn't do a lot for you with the variability in that shallow water-bearing zone.

Q. So let's move next to your analysis of the geometric mean that ICON used. And before we get into that analysis, I think it's important to note for background -- and I think your testimony is such that -- how many reports did ICON produce

in the actual litigation before it produced its most feasible plan?

A. Two.

Q. One report was produced in September of 2021; is that right?

A. That's correct.

Q. And Mr. Carmouche asked, I believe, Mr. Miller questions about that, and I think the question was, "Well, all sampling hadn't been conducted at the property at that time"; is that right?

A. That's correct.

Q. ICON had an opportunity to perform or at least draft and produce another report in April of 2022; is that right?

A. The rebuttal report, yes.

Q. And that report responded to ERM's report that it filed and produced in the litigation; is that right?

A. That's correct.

Q. And that rebuttal report occurred at a time -- or it was produced at a time when the sampling had ended, all the sampling had been conducted on the property; is that right?

A. Right. Both parties had gathered the

data that they needed to to do their evaluation.
Q. And ICON, in both of those reports, concluded that the shallow groundwater acts as one unit; is that right?
A. That's correct.
Q. And ICON also, when it performed slug testing, did not separate out the slug testing by an A and B bed; is that right?
A. Correct. You've heard some testimony from, I think, Mr. Miller on an A and a B bed. But back at that time, there was just one hydrostatic unit. There still is just one hydrostatic unit. That hadn't changed.
Q. So the first time that you heard about an A and B bed was in ICON's proposed feasible plan which was produced in this case last fall; is that right?
A. Yeah, that's correct.
Q. So describe to the panel what analysis you performed in these two charts and then where you arrived at your total gallon per day number.
A. Sure. I think the other day these two tables here were presented with some numbers underneath them, which was a geometric mean calculation yield of the A bed individually -- you

probably remember, the A bed, I think the calculation was a little over 100 gallons per day. And the B bed individually is -- I think it was 900 or whatever.

And so -- but keep in mind it's one hydrogeologic unit, so when you classify groundwater, if you've got one unit, you do one classification. When you do one classification, you use all of the data from the water-bearing zone.

So we simply, on this slide, took all of these results here in this column, same with this column over here, calculated a geometric mean. And again, this was Mr. Miller's table, I believe. And we get 330 gallons per day. It's very close to the number we had calculated ourselves. I just took Mr. Miller's breakdown of the A and B and combined them in one aquifer analysis just like they should be based on one water-bearing zone.

Q. So had Mr. Miller performed his analysis of the slug testing data as called for under Appendices B and F and as you provide it to this panel through the most feasible plan, this is what the gallon per day would be under his evaluation, or should be?

A. That's correct.
Q. Explain to the panel why this number, the 330 gallon per day maximum sustainable yield is so lower, it's much lower than the maximum sustainable yield that Mr. Miller arrived at and that he testified about last week.
A. Well, it's simply -- it's pretty basic, quite honestly. I just white out A and B bed and call this one aquifer, because that's how both parties have agreed on it.
So you don't separate it out for classification purposes. You analyze it together. And so it's really one water-bearing unit if you -- you know, you probably remember the testimony, between 20 and 50 feet is where that water-bearing zone occurs. And I think we have strong agreement on both parties on that.
Q. So last week, there were questions about the potential of pump testing the shallow aquifer. Do you remember that?
A. I do.
Q. And there was also some testimony about it as well, I believe particularly by Mr. Miller. Do you remember that?
A. I do.

Q. And so let me ask you this. Are you opposed to pump testing at the appropriate site setting?

A. No, not at all. I am not opposed to pump testing. Pump testing's a tool in our toolbox that we'll use when it's necessary. There's no question a pump test is a viable method to classify groundwater.

Q. So explain to this panel why pump testing is not appropriate and why it would not lead to a reliable result regarding the maximum sustainable yield of this shallow aquifer.

A. I think probably the most fundamental thing -- think of this. It's the scale of the property. If this was a corner gas station site and we wanted to evaluate the groundwater yield underneath that, one pump test would do it because you're fairly confident the geology doesn't vary that much over a small area.

But we're dealing with a site here that is 2 square miles. ICON's remediation area alone is 85 acres. And I think you probably heard testimony on the variability of the geology. So let's just say we chose a location out here for a pump test. The first line here, when you do a

pump test, you run it for 24 hours, typically up to 72 hours, depending on the aquifer. And you'll see influence in surrounding observation wells, you know, typically on a shallow zone like this not very far out.

And so you're effectively testing the hydraulic conductivity of that area. It's wider than a slug test, but it clearly doesn't test the 85 acres.

And so in this case, you know, we just showed -- this is still an active -- well, it's listed as shut-in future utility. This is a well out here, so if you could just draw a radius around there maybe 50 feet out, that's the area that you're evaluating the conductivity underneath the property.

And as you remember, there's variable geology underneath the property. Sometimes the bed -- the water-bearing zone is nonexistent. Other places, it's thin; some places, it's thick.

So the only way to evaluate that variability is to look more site-wide. And slug tests give you the ability to do that more site-wide easier than a pump test.

Q. And as we have here, you have depicted

graphically why pump testing at this site setting at the Henning property would not produce reliable and accurate results about aquifer classifications; is that right?

A. Yeah. And I think -- what -- what we tried to get across here is that if I just do one pump test -- let's say at this location we didn't find a water-bearing zone. Pump test will probably just fail, flat out won't be able to pump water. But if I do one here where we encounter a fairly thick portion, we're going to generate a lot of water, we'll probably get a yield arguably above 800 or whatever.

So one pump test, depending on the location you choose -- now, you know, there's -- I didn't put a horizontal scale out here, but you can imagine how large this property is. You can imagine what you might get. Well, what does a slug test enable you to do? It enables you to test a lot more of these so you catch that variability that you wouldn't if you just did one pump test.

Contrast with the bottom, if we had a continuous sand underneath that whole property, I'd say one pump test would solve our fight. We

have an agreement there's one water-bearing zone, we put in a pumping well, sand's fairly uniform underneath the whole property, we pump it, do our test, whatever the results are, that's it.

We don't have that. We have this (indicating). So one pump test will give us information locally, but we still have to rely on the information that we have wide-scale, the other slug tests, the wells that don't go -- that go dry, the differences in geology.

I think that's where what we did is probably better -- it's a better way to evaluate a large property like this, not just one pump test.

Q. Mr. Angle, how many slug tests have you performed in your career in Louisiana aquifers, whether shallow aquifers or Class 2 or Class 1 aquifers?

A. Dozens. I mean, we pretty much have this issue on every one of these sites where we do typically from a handful up to, in this case, almost 20 slug tests. And the reason why we do so many is to try to be as inclusive as possible of areas of the site where we need to evaluate, not just, you know, choose one location.

Q. So explain to this panel why slug tests

are appropriate for groundwater classification at the Henning site.

A. Sure. Go to the first bullet here. Okay.

It's obviously a RECAP-approved methodology. If you look at Appendix F, it's RECAP approved. I mean it's been standard practice for many decades. Slug tests are kind of the go-to tool. In particular, they're widely used on small sites. They're quick. And you can do multiple tests over broad areas.

They help us -- I think this fourth point -- or fifth point is really important. They help us understand that horizontal variability of water-bearing zones that one pump test in one location is not going to help you with. So that's why at this site you can see the red dots.

We did 17 tests and they cover quite a large area. And this scale down there at the bottom was 1,000 feet. The little yellow dot there, you might -- it's kind of hard to see. That's a 50-foot radius. So you can -- as you feel the scale here, one pump test with a 50-foot radius there surely doesn't characterize areas that are, you know, over 1,000 feet away with

different geology.

So that's kind of a limitation of the pump test. That's why, on a big site like this, you go more the slug test route to characterize that variability.

Q. So other than your application of Appendices B and F of RECAP to determine maximum sustainable yield, there are lines of evidence that you believe are significant in connection with the existing conditions at the site and slug tests that were performed there; is that right?

A. That's right. And I think one of the panel members asked me, you know, do you have any information on sustainability? Well, sustainable yield of a well, this is it. And if you can imagine at these locations where small-diameter monitoring wells would go dry, if we tried to do a pump test at those location, I can tell you it would fail.

And so the only way to take into that account is to test the, kind of, site-wide geology through multiple slug tests and then, kind of as an additional supporting line of evidence, look at things like this that tell you what variability you really see out there from a geology

standpoint. Some of these locations, as you probably remember, didn't even have a water-bearing zone where we'd expect it, so you can't even test it, either a slug test or a pump test.

Q. So you segue back to Mr. Schuhmann's opinion about the shallow zone as not being homogenous. What does that mean to you?

A. Well, it's the same thing you saw probably on the cross-section earlier is that it's variable. And with a large site like this, it's not unexpected. I would say of all the sites that I work in in the state, that's typical. This variability in these shallow water-bearing zones is great from grain size to thickness to vertical and laterally extent. It's really an inhomogenous zone underneath this property as well as a lot of properties with these shallow water-bearing zones.

I don't know if it's fortunate or unfortunate, we don't see those uniform sands like on that bottom cross-section I showed. We typically don't see that unless you go into the Chicot.

Q. You heard Mr. Miller testify last week that the constituents in the soil may not be

protective of the Chicot Aquifer. Do you remember that?

A. Yes.

Q. Do you agree with him?

A. No, I do not.

Q. And explain to the panel why you disagree.

A. Well, we have a whole series of lines of evidence, and we've got them listed on this slide. The first one is -- and I think the panel has seen it -- the electrical conductivity probes, the boring logs, and the lab data.

We have residual EC concentrations from the lab at depth that demonstrate we're within the range of 29-B.

The clay soils act like a sponge. I mean, this clay is very low permeability and so when salt gets in it, it tends to not want to move very much. The residual soil and groundwater conditions have been out here for 80 years.

I mean, when you think about it, when things happen in different parts of the site -- it's been a long time and typically what we see -- and I can tell you this because, you know, this isn't the first site like this, is that typically

we see localized impacts in these shallow water-bearing zones, and the same way with the soil. There's movement but there's not tremendous movement.

Dr. Schuhmann says stuff just doesn't move much out here, it's almost just moving by diffusion. And generally, that's what we're dealing with.

I think Ms. Levert talked about this a little bit, that the testing results just don't support these calculations that say things are, you know, moving down -- like barium's a great example. You know, barium's going down. It's just -- the data we have don't support that.

I think the panel has seen, and I encourage you to look at the boring logs in the cross-sections, that there is a thick confining layer over the Chicot, and it's protective of the Chicot, which is the only USDW underneath the property.

And then finally, we have laboratory vertical permeability data that we compared to the 29-B standard. I'm going to show you a couple horizontal cross-sections. I know you guys had asked some questions not only of me, some of the

other witnesses, and I think these will help show some of these in graphical form.

Q. Mr. Angle, you heard testimony last week about -- particularly from Mr. Miller about the SPLP versus the chloride leachate testing method?

A. I did.

Q. And in his opinion, SPLP does not accurately depict the extent of the soil leachability and soil to groundwater protection in connection with chlorides; is that right?

A. That's correct.

Q. And so this graph -- or series of graphs and testing or sampling values, what does this reflect in your opinion?

A. We -- and I think this is primarily to be responsive of some really good questions from the panel on SPLP and, you know, we've got multiple lines of data. And if you don't -- it's hard to look at something like this in a report, so we prepared this to kind of present it all together.

The EC probe log data -- and this is H-12, Area 2, if you remember. A strong signature here, indicative of we've got a salty zone. And so we plotted the lab EC so the panel can see.

Obviously at this zone, we have fairly EC, and we talked about that.

And then here's the graphic boring log with the screen interval. That's the railroad tracks here, the sand, and then where SPLP chloride and leachate chloride samples were collected.

And you can see they're right at the top of the shallow water-bearing zone. Ms. Levert talked about that literally, so right at the screen interval.

Finally, groundwater chloride at this one, this is our location with the highest chloride concentration, you know, 40 to -- basically 40-, 45,000.

One thing I didn't point out was the bottom here, which is where it's really important to me to look at always on these investigations, what do we have vertically? We have an EC right at 29-B standards. We have a vertical permeability. This is a laboratory test, we take soil core and send it to a geotech lab. Three times 10 to the minus 8 meets 29-B standard.

We have SPLP chloride down here at 76, 78, 42.6 feet. But what we also have is another

50 feet of clay assuming that the top of the Chicot at that location's only 120. That was, I think, the shallowest location that we found a well within a 1-mile radius. There's clearly places at the top of the Chicot is deeper than this one, but we used that kind of as an example.

Q. And you performed the same analysis at H-16 which is the area where ICON proposes to dig an 18-foot trench; is that right?

A. Correct. And same -- same thing, EC probe, not as strong signature and it's shallower. And you can, you know, just train your eyes on the -- some of the EC data.

I will point out just as an explanation of why we see some EC differences. We resampled this 14 to 16 interval here that had EC originally of 16 to 20. We went back and got 10 or less. And so what it tells you is that there's some variability in the subsurface relative to EC.

And then, of course, train your eyes down here to the bottom, which is always most important to us. EC now down below 29-B. The conductivity probe log comes back here (indicating), which means we're vertically delineated.

Well screen here, SPLP again and leachate chloride right at that screened interval, so it's kind of, you know, saturated. SPLP below 35.5. And then there's the groundwater chloride, about 13,000.

So I think these are good tools to look at to evaluate the lines of evidence that we are presenting to the panel to show that we think the Chicot is protective of the data that have been gathered in these two locations that are, quite honestly, the saltiest locations on the property.

Q. You recall Dr. Levert and her testimony earlier that saturation of water was observed at H-16? Do you remember that?

A. Yes.

Q. And what significance does that have to you, Mr. Angle?

A. Well, you want to do those tests not in the water-bearing zone. So all those tests that you just saw there, they're right at the top of the water-bearing zone, so the samples tend to be saturated when you look at them and you look at the boring logs.

Q. So let's talk next about the distribution of constituents in the groundwater.

Can you explain to the panel what that constituent distribution shows?

A. Yeah. I prepared this. I think I heard some testimony that -- somehow that this location was a continuing source after 80 years, and so I wanted to -- I wanted to have a blow-up of this area with a scale -- and I encourage everybody to look at the scale at the bottom.

So you can see the concentrations. We plotted chloride, barium, and benzene, which is three of the constituents we've been talking a lot about.

And when you look at that, we have two locations with benzene, but we have benzene completely delineated within 400 feet. And the chloride concentrations from 45,000 go down to less than 100 within 300 feet.

So that tells you if there was a big ongoing continuous source that was pushing out chloride or benzene or whatever, you'd be generating a plume. You know, it's like a bulls eye, it keeps moving away. We don't see that. It's a very localized phenomenon from the residual of whatever happened back, you know, 80 years ago.

Q. You also heard Mr. Miller characterize

the blowout as being a bottom-up event; is that right?

A. That's correct.

Q. Do you agree with him or disagree?

A. Well, we obviously -- we're of a disagreement here. We're relying on Mr. Richard Kennedy, and I won't, I think, read through each of these. I'd encourage you -- the panel to take a look at this.

But our main evidence, these conductivity probe logs vertical perm data that we have and the geology. And then, you know, I think there's agreement on where the well actually blew out at the wellhead connection between both parties.

So I'm not the petroleum engineer to say this, but based on the geology and the testing data, appears to us that it was more of a top-down phenomenon.

Q. But the panel has Richard Kennedy's report, which is attached as, I believe, Chevron Exhibit 30; is that right?

A. That's correct.

Q. And Mr. Kennedy is a petroleum engineer who was retained by Chevron in the litigation, and

he addressed the blowout, among other things; is that right?

A. That's correct.

Q. So what is the constituent of concern in the soil based on the testimony of ICON's witnesses, Mr. Miller and Mr. Sills?

A. I think we're pretty much down to salt. We have an agreement. I think there's an agreement that no remediation needs to be done for barium, so we're talking about salt, is really all we're talking about.

Q. Based upon your technical expertise, your application of 29-B and RECAP to the soil data set and on LDNR's prior approach on addressing salt-based constituents in the soil, is the Henning property, in your opinion, suitable for its reasonably intended use?

A. Yes, it is.

Q. However -- however you're aware of the judge's generalized ruling or its import to you in this case and so --

A. I am.

Q. You, that is ERM, produced its most feasible plan before the judge issued his ruling; is that right?

A. Both parties did.
Q. So if you -- if you have to compromise your technical expertise and your application of the applicable regulatory standards and arrive at some form of soil remediation that you could recommend to this panel, what would it be? And you testified about this as well last week.
A. Yeah. The three locations as I pointed out last week where we have the 3-foot data. And I think we have agreement, we're going to -- we have a proposal to amend those. And the testimony I've heard now to date from ICON is they're only amending the upper 4 feet. Again, somewhat of an agreement, a little bit different depth, but we're not far off there.
Q. So here we have a report of Mr. Luther Holloway in the Louisiana Wetlands case which was subject to -- is subject to litigation and a prior panel of LDNR addressed that property; is that right?
A. That's correct.
Q. And so why do you have this cover page of this particular report in this slide?
A. Well, I heard a lot about sugarcane, and there's been an extensive evaluation of this

property, which has been sugarcane production for decades, and it was determined that the root zone there was 10 1/2 inches. I actually read a farmer's deposition who farms there. His opinion was it was less than 2 feet. Dr. Holloway came to the conclusion that any remediation of this property would be 2 feet for sugarcane.

Q. And sugarcane is sugarcane from a rooting depth standpoint, at least from what you understand, although you're not an agronomist or soil scientist; right?

A. That's correct.

Q. And you don't purport to be?

A. I do not.

Q. You mentioned the farmer. You may not have mentioned a farmer. You also reviewed a farmer's deposition -- sugarcane farmer's deposition in that case; is that right?

A. Yes.

Q. And what -- did he have anything to say about the rooting depth of sugarcane?

A. Yeah. It's less than 2 feet, which is consistent with, you know, Dr. Holloway's position.

MR. GREGOIRE: At this point, I'm going to

offer Chevron 167, Mr. Holloway's report in the Louisiana Wetlands litigation. That's Exhibit 167.

JUDGE PERRAULT: All right.

Any objection to Exhibit 167?

MR. CARMOUCHE: No objection.

JUDGE PERRAULT: No objection? So ordered. Shall be admitted.

BY MR. GREGOIRE:

Q. So let's move to the next slide. Here, you have an aerial photograph with a blue-shaded area. Can you explain to the panel what this slide depicts?

A. Yeah. I heard a lot of testimony about ponds, bass ponds, different types of ponds, and so we started looking at the reasonableness of, you know, if you put a pond in, let's just assume you put it at the H-16 location, which we've talked a lot about. It's the location that has salt in soil.

You can see where the H-16 location is. It was selected to be right in the heart of a former tank battery that had been in operation for over 40 years. Keep that mind. This was first visible in a 1951 aerial. This is, I think, an

'81 aerial, but you can look back in time and see it there.

So what is also in this hypothetical pond is well locations that exist on the property, the three in red have been plugged and abandoned, and the one in yellow, which is right here, is a United World Energy well that's listed as future utility.

So what those tell me is, in a hypothetical scenario like this, number one, you've got an active well you're going to have to deal with. Number two, the wells have been plugged and abandoned and they have been cut off below the ground surface at 4 to 10 feet, so you've got those to deal with.

And then you've got some infrastructure there that was originally developed way back when when the property originally started oil field, and so you've got to keep all those things in mind on these hypothetical scenarios, I guess. Because obviously a well here that has future utility, you really don't want to build a pond there. It's probably not a good spot.

Q. So you testified earlier, Mr. Angle, that ICON's plan, including his groundwater plan,

is not the most feasible or most reasonable for protection of human health and the environment; is that right?

A. That's correct.

Q. And what are your reasons for that conclusion?

A. I think number one is -- I think the panel heard they didn't rely on all data, they didn't rely on ERM's data. Their engineers, I listened to their testimony, they've never designed or implemented a similar plan for salt. They hadn't even been to the property as part of their, you know, I guess foot -- or homework to come up with a design.

This pumping plan that's up to 12 years won't yield potable water when they're done -- or when they're done.

And then, finally, the risks of the remedy have not been evaluated. And as you probably heard me say earlier, these type of plans have been rejected in the past by the panel as being excessive or -- and/or unreasonable.

Q. Let's go back to the potability of the water, that analysis. So we have two different calculations for what constitutes background

chlorides; right?
A. Correct.
Q. 687 milligrams per liter --
A. Yes.
Q. -- for ERM? And I think ICON's number was 428 milligrams per liter; is that right?
A. That's correct.
Q. Regardless of the number that you used, and your number was -- you arrived at your number appropriately. I know both numbers are above the secondary maximum contaminant level for chlorides; is that right?
A. That's correct.
Q. And so let's talk about some of the things that ICON did not consider in its plan. Talk about those.
A. Yeah. Sure. I think there were some questions related about, you know, is this plan really feasible? I mean it's easy to put it together in a book, but you've got to ask yourself what it's going to do to be successful? Number one, is it going to draw an off-site groundwater?
Yes. And I'll show you in a minute.
It's going to pump a zone that can never

serve as a USDW, can't meet the requirements. I think we talked a little bit about subsidence, you saw a map of the wells. That's an issue probably ought to be looked at.

Induced infiltration. 471 wells is a lot of wells. You heard testimony, I think Mr. Miller said -- maybe it was Dr. Schuhmann. This property floods with Bayou Lacassine water at times. So as you're pumping these wells, you have to deal with flooding conditions. You turn them off, they draw surface water down into the shallow zone. It's an issue that hadn't really been looked at.

I didn't hear much experience on the RO treatment system. I think that's probably all I'll say there.

Effect of sulfate, iron, and manganese on RO membranes. If you haven't ever engineered one or run one of those, it's kind of hard to know what this particular water quality -- and I thought I heard testimony, is that that estimate from the RO vendor wasn't even for this property, it was another property, it was just applied to this property.

We talked about that, Bayou Lacassine.

And then finally, I think this came up too, this question about, you know, what do you do with all this water that comes from the RO system? Have you looked at, you know, permitting that?

These are questions that, from a feasibility standpoint, you'd probably want answered before you start off on, you know, putting in 471 wells.

Q. Did ICON even provide an analysis of its proposed saltwater disposal system that would inject water if the treatment and disposal were on-site as supposed to off-site?

A. No. And they actually proposed two SWDs at $3 million each, which is a large portion of their costs.

Q. So you have here an aerial photograph of the property, and I'll let you explain to the panel what you want to convey here.

A. Yeah. Just the scale of the -- of the ICON groundwater plan. So we superimposed a football field. Everybody knows a football field. But we also -- we needed something bigger, so we took the Superdome and we put it in there so you can kind of get a feel for the -- you know, you talk about 85 acres. What does it really look

like?

And two things to point out here. Number one, it's just the scale or the magnitude of each of the ICON remediation areas. I think Mr. Carter and Mr. Sills talked about Area I, it was 20-something acres.

I'll point you here to two things. You know, they might even draw water in from off the property in two locations. So that's just to kind of get your arms around the size of this groundwater remediation area.

Q. And here you have, of course, ICON's proposed 471 recovery wells, and so it looks like you analyzed the gallon per day pumping rate in two of the areas; is that right?

A. Yes. This is just to show how variable the shallow water-bearing zone is on behalf of ICON's analysis.

If you just look at Area I -- we'll focus on I and K again. You say they have 185 wells in the A bed. They're only going to pump 144 gallons per day each. Not very much water. That's a tenth of a gallon a minute. It would be a long time to fill up a 5-gallon bucket.

Area K, one recovery in the B bed, 403

gallons per day. If you add those together, you don't get 800, assuming that, you know, they're added -- you would add them together.

But just to give you an idea of the low yield in some of these areas relative to the number of wells that have to be pumping.

Q. So describe for the panel -- and they may already know -- what storativity is and how it relates to your analysis in ICON's proposed groundwater plan.

A. Yeah. That's a factor. I'll spend like 30 seconds here.

It's a factor, too, of -- you know, when you look at the combined aquifer, the ability of the aquifer -- the yield of the aquifer. And so this is -- these equations that ICON used in the back of their appendix, they use these all the time.

But in this one, they completely plugged in the wrong number for storativity. The RECAP range, there should be like three zeros in front of 0.15. That has an effect on these calculations, the number of wells, the yield and all of that. So I'd encourage you to look at that, but you have to look at the appendix to

evaluate those.

Q. And so here you have additional reasons why ICON's groundwater plan is neither the most feasible nor the most reasonable; right?

A. Yes. This is -- that's basically -- these have to do with the RO system.

Q. And so explain to us your analysis in this slide in connection with ICON's plan.

A. Yeah. Very quickly. They spec'd out two RO systems. However, when you really dig deep in the appendix of their plan, you find out that they're going to be generating 90,000 gallons per day. So they've got two units, but they've got a whole lot more water they're going to have to deal with, so that's the number one issue.

Number two issue, obviously they're going to be generating 31 millions of gallons of water from that system. That's got to go somewhere on the property. That's about 68 gallons a minute.

We talked about discharge permitting requirements. I didn't hear testimony on, you know, that was even looked into.

And then finally, you know, obviously a lot of truckloads if this water would be hauled

off.

Q. Did you see any analysis of where the water would be discharged on-site as ICON proposes?

A. Not any detail analysis. I think there was talk to discharge it to a surface water drainage.

Q. And we're talking specifically about the discharge of up to 31 millions gallons of water?

A. Yes.

Q. Did you see any environmental impact or other similar analysis from ICON to show the impact to the property, to Mr. Henning's property, as a result of its surface discharge of up to 31 million gallons of water?

A. No, I didn't see any analysis of that.

Q. Did you see any analysis by ICON of whether that discharge would impact any current or reasonably anticipated future uses of the property?

A. No.

Q. And just to sum up, again, for the panel, there are available water sources at this property?

A. Yeah. And I think the panel's seen this

before. And I think that's a very important piece to keep that in mind, we've got a Chicot water source. We've got a public tested water source, and then obviously the pump-on/pump-off system that's currently in use for the agriculture on the property.

Q. And so next, it's your opinion that the ICON plan doesn't meet the Act 312 plan requirements; is that right?

A. That's correct.

Q. And why?

A. Because their plan with exceptions, they don't provide identification of an applicable rule or regulation, let's say for like RECAP, that their plan with exception's going to look to. I think it's based on Mr. Miller's calculation of a relationship between EC and soluble chloride.

Q. And it also doesn't include work schedule; is that right?

A. Correct. I think the only way you can find how long this plan's going to take is to look at the Appendix -- and I forget the appendix numbers. And you can find the number of years they're going to pump the wells. And I think it was teased out that it was going to be three years

of drilling to put in all the wells, so...

But you've got to look in the appendix. There's no presentation of actually a work schedule.

Q. So here, you previously addressed what -- sorry about that.

What an evaluation or remediation plan entails under Chapter 6 of 29-B and what the feasible plan is as being the most reasonable; is that right?

A. Yeah. The key word there is reasonable. And, you know, since -- I've been doing these since the first one, Poppadoc. You've got to look at reasonableness. And that's -- that would be the most feasible plan is the most reasonable plan.

Q. And so let's sum up Chevron's plan, and first the plan for soil, which includes your alternate remediation or blending plan; is that right?

A. That's correct. And Chevron's soil remediation and debris removal plan is laid out on the slide to, you know, kind of summarized. The first thing we talked about is NORM removal.

Barium soil delineation, that's a

component. SPLP chloride. And then finally, the soil blending, those are the three locations shown on this slide, to a depth of 3 feet.

And again, this is all dependent upon this whole, I guess, legal fight over what the judge's ruling means. But that's our soil plan. 180 to 280, I think, was the number for the soil remediation plan.

Q. So summarize your groundwater plan.

A. Groundwater plan is basically our monitored natural attenuation for benzene as well as evaluating the stability of the groundwater within the Area 2.

One additional monitoring well in the shallow zone up to the north to make sure that we're delineated, about 176,000.

MR. GREGOIRE: Those are all the questions I have for you, Mr. Angle. Thank you.

THE WITNESS: Thank you.

JUDGE PERRAULT: You offered into evidence Exhibit 163.4. Any objection to 163.4?

MR. CARMOUCHE: No, Your Honor.

JUDGE PERRAULT: No objection? So ordered, it shall be admitted.

MR. GREGOIRE: Yes. 167 for the wetlands

lands vegetation report and 163.4 for the deck, yes.

JUDGE PERRAULT: Right.

MR. GREGOIRE: If I might make one correction, Judge. I didn't know that this vegetation report was previously marked. That, I did not realize.

JUDGE PERRAULT: Which one is that?

MR. GREGOIRE: So if we can just change that exhibit number from 167 to 158.4. And I'll --

JUDGE PERRAULT: 167 is now 158.4?

MR. GREGOIRE: Yes.

Do you want this copy with that number on it?

JUDGE PERRAULT: Yes. All right.

CROSS-EXAMINATION

BY MR. CARMOUCHE:

Q. Good afternoon, Mr. Angle.

A. Good afternoon, Mr. Carmouche.

Q. Mr. Angle, after all the sampling was performed that you talked about, you understand that Chevron had to decide if they were going to admit that the soil and groundwater were contaminated. Do you know that?

A. Yeah. I think Chevron -- that would have been a Chevron decision, not a Dave Angle decision.

Q. Correct. And it's your understanding that Chevron drew areas and admitted in the -- that area both soil and groundwater, didn't say zero to 2 feet, said all -- the soil in this area and the groundwater were contaminated?

A. I'm not sure that's exactly what the limited admission said. I think it's part of it, is they're going evaluate the -- there's a word "potential" in there that you don't want to lose sight of.

They have to do that to get into this process so we can present the panel with the data we used to determine what needs to be done from a remediation standpoint. So that's what I do from a scientist standpoint.

Q. You read their limited admission; correct?

A. I did.

Q. Okay. And the judge also read their limited admission; correct?

A. I assume so.

Q. Okay. And you know -- because you

talked about statutes, you know that you have to follow the rules of the statute that you talked about today?

A. I wouldn't disagree with you.

Q. I'm not going to show it again, but that rule says that you have to apply all the rules and court orders; correct?

MR. GREGOIRE: Look, Your Honor, we've been through this on numerous occasions.

Mr. Angle can testify about -- in answer to a question to the extent that it involves his technical expertise. But we don't want there to be any overlap of legal question versus technical expertise, which is where we're going once again.

JUDGE PERRAULT: Sustained. Just stick to the facts and you present your legal argument to the panel based on what they said.

MR. CARMOUCHE: I'm confused because the statute that requires the plan that he follows as a scientist --

JUDGE PERRAULT: All right. Well, ask him what he did. Ask him what he did or what he didn't do.

MR. CARMOUCHE: Okay. We'll go straight to

that.
JUDGE PERRAULT: We just don't want him giving legal opinions. Just have him stick to the facts of what he did, what he measured.
MR. CARMOUCHE: I think I get to question him about what he didn't do.
JUDGE PERRAULT: You can ask that.
BY MR. CARMOUCHE:
Q. Okay. So if we go to the court's order, "As a result of Chevron's limited admission, Henning's property contains contamination and is not suitable for its intended use."
Did I read that correctly?
A. That's what -- this is the judge's ruling, I think; right?
Q. Yes, sir.
A. Okay. Yeah, that's what it says.
Q. Do you know if your testimony -- I took your deposition; correct?
A. Yes.
Q. After your report was issued and after the feasible plan?
A. Yes. And I think it was before this judge's ruling --

Q. Correct. Correct.
A. -- I think.
Q. Do you know if your testimony was given to the court prior to this ruling right here?
A. That's a lawyer question. I don't know.
Q. If you know or --
A. Yeah, I do not know that.
Q. Okay. That's fair.
On the sugarcane depth, do you mind if this panel calls the LSU Ag department and find out the root zone of a sugarcane?
A. No, I don't mind at all. I just present my experience with a site. That's all. No.
Q. Do you mind if they call DEQ and ask them if they've ever dealt with an RO unit and if the water actually comes out as fresh drinkable water? Do you mind if they consult DEQ on that?
A. No, no objection.
Q. And you went through -- and I saw you had it was unreasonable because of the size of the plume. With that logic -- I mean, you would agree that if you took your logic, as long as a polluter pollutes enough groundwater in a state, then we don't have to clean it?
A. No. I totally disagree with you there.

I just wanted to get across to the panel the scale of the problem we're dealing with. And just looking at the well locations and all of the engineering, it had nothing to do with the size.

It's things that if I'm an engineer designing a plan like that, you've got to start looking at some of these things because it's not just prepare a report, turn it in, turn a crank, and it's going to happen over 85 acres.

I'm not aware of any site in the state of Louisiana where something like this has been attempted. So obviously, I would -- if it was me, I'd be doing some looking hard to try to understand is this really going to do what it says -- or what the plan says it's going to.

Q. And switching now to putting a well on the property. And you said it's too big to -- if you put one well or just looked at one well, to determine the classification. Do you remember that conversation?

A. Yes, I do.

Q. Do you know if RECAP assumes -- I know Mr. Miller went through a well, but do you know -- or you agree that if it is a Class 3 like you're suggesting, that if there's a domestic or

agricultural supply well put into that property anywhere, one well, that under RECAP, you have to classify it as a 2?

A. Well, that scenario doesn't exist because there's no wells in that zone.

Q. Okay. So if Mr. Henning goes next week and puts an agricultural supply well where it's producing 5,000 gallons per day, you're going to agree it's a Class 2?

A. Well, we'll have to see that play out. But agricultural supply well, in this zone, I think it would be a waste of money, quite honestly, the amount of water you're going to need to fill up one of those rice fields. That's just not going to cut it from a yield standpoint; right?

Q. It's his property; right?

A. Correct, it's his property.

Q. It's his money?

A. Correct.

Q. And if he gets a permit, then would you agree that it's a Class 2 aquifer?

A. You'd have to put that well in, you'd have to go through a whole lot of steps to make that determination. That hadn't been done.

Q. So actually one well on a piece of property can turn the aquifer into a Class 2?
A. Again, it's a hypothetical that may or may not happen, so...
Q. I'm just asking. Isn't that what the definition says?
A. If --
Q. Even within a mile from this property. So if one well is put in within a mile of this property to supply a domestic well agriculture, you shall consider the aquifer as a Class 2?
A. That's what it said. But as I went through with the panel, the variability in -- and the situation that you would get on a site like this if that actually occurred or if you put it in a spot where it didn't produce enough water. So we'd have a -- we'd have to resolve that. Let's put it that way.
MR. CARMOUCHE: That's all the questions I have.
MR. GREGOIRE: One follow-up.

REDIRECT EXAMINATION

BY MR. GREGOIRE:
Q. Mr. Angle, you're a geologist and a hydrogeologist; is that right?

A. Yes.
Q. So, you know, you've explained this to the panel, but I just want to make sure that it's crystallized. When you review a site to determine the condition of the soil and groundwater, what -- if you'd give a Reader's Digest version of what you do, tell us what you do in applying the science and regulations?
A. Yeah. We basically look at the data from a desktop standpoint, published data, to data that we gather to arrive at our opinion for the need for additional remediation -- or additional investigation or remediation. It's not based on one work. It's based on data. And in this case, we've got over 600 soil points and 60-plus groundwater samples plus all of the backup that's in that big thick document you guys will get a chance to look at.
Q. Have you applied those same principles in your evaluation of this property as you have provided on countless other oil field properties around the state Louisiana?
A. Yes. No different. This is no different.
MR. GREGOIRE: Thank you.

JUDGE PERRAULT: Does the panel have any questions?
PANELIST OLIVIER: Could we take a ten-minute break to discuss?
JUDGE PERRAULT: All right. We'll take a ten-minute break.
(Recess taken at 2:08 p.m. Back on record at 2:28 p.m.)
JUDGE PERRAULT: It's February 13, 2023. It's now 2:28. We're back on the record.
Does the panel have a question for this witness, Mr. Angle?
PANELIST OLIVIER: Yes, one question. This is Stephen Olivier.
We noticed that there was a cost included here for contingent debris removal, I think it's a NORM-contaminated pipe, and then I do remember reading the Chevron MFP where I think it might have stated something to the effect of, you know, Chevron may have recommended an RP be established and remove it, but I think Chevron was made willing to remove it if they were told they had to or if they were instructed to.
And I guess my question is, just seeing

a cost here -- and I think there might have been a cost provided before in the last presentation -- is Chevron voluntarily removing this debris or is Chevron of the option where they're providing a cost in case that an agency is requiring them to do it?

THE WITNESS: Yeah. I think that NORM pipe was not located -- or is not located in a Chevron operational area. Obviously Chevron was gone in '84, so subsequent opers.

I think the cost is presented if the panel felt that that's something that needed to be addressed. Then I think, you know, we put it in there as, I guess, Chevron's commitment to address it if it felt like it was attached to Chevron somehow.

PANELIST OLIVIER: So just to be clear, it's not -- Chevron's not voluntarily just going out and saying, hey, I'm going remove this NORM debris. It's there in the event that an agency would come back and require Chevron to do it?

THE WITNESS: Yeah. And I hate to answer for Chevron here, but we put it in there, I think there's a commitment to address it if it felt

like it needed to be addressed on behalf of Chevron.

PANELIST OLIVIER: And from what I do remember, I think y'all already did address that it is outside of any AOIs for Chevron in this limited admission?

THE WITNESS: That's correct.

PANELIST OLIVIER: Thank you. That's the only clarification questions that the panel has.

JUDGE PERRAULT: Thank you.

No one else has a question?

Mr. Gregoire?

MR. GREGOIRE: Thank you. Chevron has no further rebuttal witnesses, Judge.

JUDGE PERRAULT: All right. Now it's time for Henning's rebuttal; is that correct?

MR. CARMOUCHE: Yes. We're going to rely upon what our experts have already testified to in our cross-examinations.

JUDGE PERRAULT: That concludes y'all's rebuttal?

MR. CARMOUCHE: Yes, sir.

JUDGE PERRAULT: All right. Well, is that our case?

MR. GREGOIRE: Yes, Your Honor, I think that concludes the cases.
JUDGE PERRAULT: Would y'all like a closing?
MR. KEATING: Yes, sir.
JUDGE PERRAULT: Under the rules of the closing, Chevron as the last word, so we'll have Henning go first.
MR. KEATING: Your Honor, may I ask one point?
JUDGE PERRAULT: Yes.
MR. KEATING: We have a couple of housekeeping items --
JUDGE PERRAULT: Let's do that.
MR. KEATING: -- with respect to exhibits. I don't know if you want those in before closing or after.
JUDGE PERRAULT: Let's do that now.
Henning's exhibits.
MR. KEATING: We have the slide show from the direct examination of Greg Miller, which is identified -- or we'd ask to be identified as -- it's going to say four ZZZZs, the letter "Z," ZZZZ.
Offer, file, and introduce into record.
JUDGE PERRAULT: We'll go through all of

them, and then I'll ask the other side.
MR. KEATING: Okay. Next would be the slide show that was presented on the cross-examination of Angela Levert, which we have marked with five A's. AAAAA.
JUDGE PERRAULT: Five As.
Okay.
(Document marked as Exhibit BBBBB for identification.)
MR. KEATING: Next would be the cross of -- PowerPoint used in the cross-examination of David Angle, which would be five Bs.
JUDGE PERRAULT: Okay.
(Document marked as Exhibit CCCCC for identification.)
MR. KEATING: Next would be the documents used in the cross-examination of Patrick Ritchie, which we have marked with five Cs.
JUDGE PERRAULT: Okay.
(Document marked as Exhibit DDDDD for identification.)
MR. KEATING: Next would be the documents used in the cross-examination of John Frazier, which we have marked with five Ds, as in dog.

JUDGE PERRAULT: Five what?
MR. KEATING: Ds, as in dog. Five dogs.
JUDGE PERRAULT: Wait. What was the one just before this for Patrick Ritchie?
MR. KEATING: Oh, the marked for identification?
JUDGE PERRAULT: Yes.
MR. KEATING: Cs, as in cat. Five cats.
JUDGE PERRAULT: Okay. All right. Next after five Ds?
(Document marked as Exhibit EEEEE for identification.)
MR. KEATING: Documents used on the cross-examination of John Kind, marked with five Es.
JUDGE PERRAULT: Okay.
(Document marked as Exhibit FFFFF for identification.)
MR. KEATING: And lastly, Your Honor, documents used on the cross-examination of Helen Connelly during Chevron's case in chief marked with five Fs.
JUDGE PERRAULT: Is that it?
MR. KEATING: Yes, Your Honor.
JUDGE PERRAULT: Okay. Any objection to

Exhibit ZZZZ, the slide show for Greg Miller?
MR. GREGOIRE: Your Honor, I think we can probably streamline this. Chevron has no objection to the exhibits, but if Matt or someone would just follow up with showing us the actual documents so we make sure we're on the same page. And we'll reserve our rights subject to that.
JUDGE PERRAULT: All right. Chevron has no objection to ZZZZ or the Exhibits labeled A, B, C, D, E, F, all -- A five, B five, C five, D five.
MR. KEATING: And F.
JUDGE PERRAULT: And F.
I'm having trouble saying them.
MR. KEATING: It's a lot, I agree.
JUDGE PERRAULT: So seven exhibits offered by Henning have been admitted without objection.
MR. KEATING: Thank you, Your Honor.
JUDGE PERRAULT: Any other problems?
MR. KEATING: No, no other exhibits.
JUDGE PERRAULT: Does Chevron have any other housekeeping?
All right. Well, now it's time for closing. Henning will go first in the close.

MR. CARMOUCHE: Good afternoon.

I won't be long.

First, I want to thank you for having patience with us. I know you'd rather be somewhere else and not be with a bunch of lawyers. But unfortunately, we're forced to do this.

You know, I thought back and when they showed the five cases where there were limited admissions before. And I told you that I never had one. And it's my understanding that some people have lost confidence and so the landowners just chose not to participate. It's sad. It's sad.

And I said I'm going to refuse to believe that when someone makes an admission with a sworn statement from the company, that we can follow that. We didn't make them. You didn't make them. Apparently they didn't even rely upon their experts.

But they chose in a court of law to file a document with the Court admitting in all of those areas. They can pick and choose soil, they could say that little circle was contaminated. They didn't have to draw the

areas this big. They chose that. They chose to tell the Court "We contaminated those areas." Not just the soil. They could have just said "We contaminated the soil."

They chose to say "We contaminated the soil and the groundwater." Their choice.

So when they did that, and after taking their experts' depositions, I thought I would make your job easy because we can all read.

It's not -- it's not complicated. When you say something's contaminated and then you go to the statute -- and I ask that you do because it's not -- it's not difficult. They admitted contamination. All we've got to do is read the definition: "Useable groundwater aquifer on underground source of drinking water." There's nowhere in this definition that says "unusable water." It doesn't say that. They chose to admit it, that it was a usable aquifer.

They also chose to admit that the soil and groundwater are unsuitable for their intended purposes. That's the definition. So all we did is just, we went to the court and said, "Judge, they've admitted this.

We're asking you to declare and hold them to their admission." Rather than just come here and argue to you and say "They admitted this and read the definition," I went to the court because I saw Chapter 6.

And Chapter 6 says that when we, them, or you create a plan, we all have to follow the rules and court orders.

So our plan, their plan, and if you choose to do your own plan, you have to meet Chapter 6.

And the judge couldn't have been any clearer. He says, "The plan" -- "the property is contaminated and not suitable for its intended use, so you have to remediate it." All of those areas, including the groundwater, because that's what they admitted.

So we have a choice. Are we just going to ignore it and say do nothing? Are we going to ignore a drinking water -- a groundwater aquifer in our state that they themselves admitted is useable?

I hope not. I think I've done my job for my client. I take it very seriously.

And so I went to the Court. Now this is going to fall in your hands. And I'm sure someone's told you, if we or them don't agree that you chose the most feasible plan, then we get to go to the Court.

And I feel that, due to their admission under oath, signing it with the court, we're to hold them to that. Otherwise, what is it for? What's the whole purpose of the statute? If we're not going to follow the rules of Louisiana, then I don't know what else to do.

I mean we just want to have rules and have commitments as lawyers, as experts, and they're asking us to just throw it all way. I mean, that was created by the legislature for citizens of Louisiana to follow, for you to follow. We can't ignore the rules in this state anymore.

So I'm asking you, and I'm begging you, don't make me go back to the judge. Let's get it right here. This is where it should be. This is where the decision should be made, and the right decision.

Again, I want to thank you for your time

and your patience.
JUDGE PERRAULT: Chevron.
MS. RENFROE: Thank you, Your Honor.
Your Honor, I do have, I think, maybe the last deck of PowerPoint slides for my closing that I'd like to hand out.
And I'll mark it and offer it as Chevron Exhibit 163.5.
JUDGE PERRAULT: 163.5?
MR. CARMOUCHE: I'm going to object. Closing argument is not evidence. You can't put slides of a closing argument in evidence. She's got to get it through a witness.
JUDGE PERRAULT: What -- what --
MR. CARMOUCHE: I don't mind them seeing it.
JUDGE PERRAULT: Have you seen it?
MR. CARMOUCHE: No.
JUDGE PERRAULT: Look at it first.
Is this what's already been presented?
MS. RENFROE: No. This is what I'm about to present, but everything in here has already been presented.
JUDGE PERRAULT: That's what I'm asking. Everything's been presented?
MS. RENFROE: Yes, sir. With one exception.

JUDGE PERRAULT: What's that?
MS. RENFROE: The one slide that hasn't been presented before is the next-to-last slide, which is Slide 10.
JUDGE PERRAULT: Slide 10. Let's look at 10.
All right. All the other slides have already been presented by witnesses. I guess we're just renumbering them --
MS. RENFROE: That's correct.
JUDGE PERRAULT: -- in a new package?
MS. RENFROE: That's right. And, Your Honor, Slide 4. But what is on Slide 4 has been presented but not in the format of Slide 4.
JUDGE PERRAULT: All right.
MR. CARMOUCHE: So, Judge, I'm going to -- well, first of all, I'm going to object to any slides in a closing argument being introduced as evidence. That's my first objection.
If you're going to allow it for its testimony, that's not evidence in a hearing. If the panel wants to go back and read the definition -- I mean testimony, they can.
And 10 is, again, something created by a lawyer. That can't be introduced into

evidence without a witness.
JUDGE PERRAULT: Okay. Here's what we're going to do. We're not going to allow 10 since that's -- I would have to swear you in.
MS. RENFROE: Understood.
JUDGE PERRAULT: All right. I'll allow the rest because it's evidence that's already been admitted, you're just using it as your presentation.
She's going to have a slide show with her closing, which is nothing illegal about that. And so I'm going to allow all of it except page 10.
So we're going to label this 163.5?
MS. RENFROE: Yes, Your Honor.
JUDGE PERRAULT: Exhibit 163.5. And I'll allow it over the objection of counsel, since all of the documents have been admitted -- all of the information in here has been admitted into evidence. This is just a new format. And I'm sure the panel would love to read things over and over again.
MS. RENFROE: May I hand copies to the panel?
JUDGE PERRAULT: Yes.
MR. KEATING: Do those have Slide 10 still in

there?
MS. RENFROE: Yes. And he's not --
JUDGE PERRAULT: Oh, take Slide 10 out.
MS. RENFROE: My understanding is that you've ruled I can show Slide 10 but it's not going into evidence?
JUDGE PERRAULT: No, let's not show it because then it looks like evidence. And I'm going to have to swear you in if we're going to do Slide 10.
MS. RENFROE: Well, Your Honor, it's simply demonstrative.
JUDGE PERRAULT: Right. But let's not do that because it might -- we're demonstrating something that looks like evidence rather than just argument, and we're supposed to be doing argument right now.
But I get you, you're not up to no good.
But I don't want to confuse them.
MS. RENFROE: Understood. And I don't either. I don't either.
So may I take a minute and pull out Slide 10?
JUDGE PERRAULT: Yes. Yes, you may. Take all the time you need.

MR. GREGOIRE: We maintain our objection as to Slide 10. It's clearly -- it's merely a demonstrative which the panel should not be precluded from viewing or using as reliance --
JUDGE PERRAULT: You're objection's noted on the record. And once they're gone, if either side wants to proffer, we can do that.
MS. RENFROE: Thank you, Your Honor.
JUDGE PERRAULT: And I can sit in for the proffer because I'm not making any decisions.
MS. RENFROE: I've removed Slide 10.
May I hand these to the panel?
JUDGE PERRAULT: Yes.
MR. CARMOUCHE: The only question I have, Judge, regarding Slide 4, since you're letting it in, it has trial and depo testimony. And I don't --
JUDGE PERRAULT: Is this dep- --
MR. CARMOUCHE: Maybe the depo- --
JUDGE PERRAULT: Counsel said the deposition is in evidence.
MR. CARMOUCHE: The whole deposition's in evidence?
MS. RENFROE: I'm not sure. I'm not sure if

the whole deposition is in evidence.
JUDGE PERRAULT: So we don't know if this is in evidence?
MR. CARMOUCHE: I think the trial testimony --
JUDGE PERRAULT: Can y'all check and see if it's in evidence? Did he say this on the record or is it in the deposition?
MS. RENFROE: He said it in the deposition for sure, and I asked him about it in the hearing. I asked him about the topic in the hearing. And what I'm trying to do is show that he completely contradicted himself in his deposition:
MR. CARMOUCHE: She cross-examined him. I mean, the deposition's not in evidence and it's not even part of the hearing.
JUDGE PERRAULT: If the deposition's not in evidence, we're not going to allow 4 either.
MS. RENFROE: All right.
JUDGE PERRAULT: Page 4.
MR. KEATING: The panel still has 4, I believe.
MS. RENFROE: I'm going to talk about it, though, because this is an issue I covered --

JUDGE PERRAULT: Well, you can talk about what happened in the hearing.
MS. RENFROE: Okay. Thank you.
Let me take these back. Cleanse them of Slide 4.
JUDGE PERRAULT: We don't want to introduce new evidence at the closing.
MS. RENFROE: Well, respectfully, I don't think this is new evidence, but I'm prepared to move on. Let's just move on.
JUDGE PERRAULT: Okay.
Just so it's clear for the record, pages 4 and 10 have been excised from this exhibit, 163.5. And 163.5 will be admitted over the objection of Henning for the rest of it.
(Document marked as Exhibit 163.5 for identification.)
MS. RENFROE: Thank you. May I proceed?
JUDGE PERRAULT: Yes, you may.
MS. RENFROE: Thank you.
Good afternoon, members of the panel, Your Honor. On behalf of Chevron USA and our team, we want to thank you very much for your patience over the last six days and for

hearing Chevron's presentation of its most feasible plan.

As the Court stated, we're now closing, wrapping up our case. And typically, a closing is done in a jury trial to help educate or argue to the jury how they should evaluate the evidence and decide the case.

Obviously in a situation like this where a panel is comprised of technical experts, you don't need to hear lawyer argument about it. And, in fact, I suspect that you might wish that you were able to hear from the technical experts perhaps without the lawyers. But this is the procedure that we have to follow under Act 312; so you've had the benefit of hearing at least from us at times over the last six days. And I appreciate you hearing from me one last time on behalf of Chevron.

So why am I taking additional time of yours to present a closing? It's my hope that a closing here this afternoon will allow us to further clarify Chevron's technical position in light of what has been or what may have seemed like conflicting positions,

conflicting evidence presented by both parties, and it's my hope to help clarify why Chevron's technical position is actually very, very consistent with the -- with prior most feasible plans issued by the DNR.

You have heard about two most feasible plans, Chevron's and Henning's. You've heard multiple witnesses with various levels of qualification and experts. And certainly you've heard and been presented with a lot of evidence.

But the truth is, when you strip it down and filter it down to the data, there really is not that much conflict in the evidence. And I think it will allow you to come to a clear technical finding.

So with that preface, let me address a few of these points. As we've heard today and over the last week, this case is about salts. It's not about human health. It's not about ecological health. It's not about barium. It's not about benzene. It's not about arsenic. It's about salts.

And in most places at the site, at the property, those salts are present just in the

form of SAR and ESP. It's salts in shallow groundwater that has never been used in the past and, based on the evidence, is not currently being used and, in fact, is not ever going to be used in the future due to its low yield and naturally poor quality.

And it's about salts in soil at depths that have no effect on the current or future use of the property.

That's going to be the roadway map for my comments. So let me start with groundwater. Turning to that, groundwater on the property, as you heard from Mr. Angle both today and over the last week is, in fact, Class 3 due to its low yield. And active remediation of the groundwater, that shallow groundwater, simply is not needed.

In truth, Henning and Chevron actually agree on a number of things. So several things are not at issue. As you heard from Mr. Angle again today, the shallow groundwater is, in fact, a single aquifer.

There are sufficient slug tests with which to characterize that aquifer, and, as Mr. Angle explained, in characterizing the

aquifer, it is important to analyze multiple slug tests and all available data.

Chevron and even Dr. Schuhmann also agree that it's inappropriate to characterize the groundwater beneath the property based on just a single well. Mr. Angle identified that for you and why that's problematic. But unfortunately, that's what ICON has presented to you.

A next point that we think is very important is that you've heard a refrain, even today -- but last week in particular, you've heard a refrain from Henning's lawyers and Henning's witnesses that further evaluation of the site is needed and that various things need further analysis or further evaluation.

One example is -- that we heard is the Henning request for a pump test. But respectfully, members of the panel, that's not needed for the reasons that Mr. Angle explained to you today as well as last week. It's simply not an effective way to characterize the shallow groundwater at a site as large and diverse as this one.

And with 17 wells with slug tests, there is, in fact, sufficient data to calculate the groundwater yield of the shallow groundwater.

And again, invoking Mr. Angle's testimony to you, because of the variability in that shallow groundwater footprint, a pump test is just not going to give you the answer that Mr. Henning's team has suggested about what the characterization -- the proper characterization of the shallow groundwater should be.

Another suggestion that you heard from the Henning team or the Henning side is more study is needed for the protection of the Chicot Aquifer.

Well, members of the panel, Chevron has done that additional study over the course of its preparation -- investigation of the site and the data that it's included in its most feasible plan.

With respect to Dr. Schuhmann, in this hearing, he said on the one hand, he had no opinion about the Chicot but on the other hand, he suggested there was some connection between the Chicot Aquifer and the shallow

groundwater, and yet in the deposition that I took of him, I asked that very question. And in the deposition, under oath, he admitted he had no opinions about the Chicot Aquifer but said he thought it was divorced from the shallow groundwater.

So the truth is and the evidence that's been presented shows no connection between the shallow groundwater and the Chicot. And unfortunately, Mr. Miller presented a map to you, a diagram that purported to show some connection but which he couldn't support with any actual data to show any kind of connection between the shallow groundwater and the Chicot.

In contrast to what Mr. Miller couldn't demonstrate to you, Mr. Angle actually did present multiple lines of evidence that showed no connectivity between the shallow groundwater and the Chicot, citing the clay layer and the lack of data showing any impact to the Chicot.

And then you heard from Ms. Levert, based on her RECAP evaluation of groundwater protection, no risk of leaching to the Chicot

Aquifer. So no need to do any further analysis to check on the Chicot. It's not threatened by any of the constituents at the site.

So what does the evidence show, members of the panel?

Well...

I got ahead of myself.

So the groundwater beneath the property is Class 3, it just doesn't yield the 800-gallon-per-day threshold to characterize it as anything else.

And I just want to invoke for you again the analysis that Mr. Angle presented to you demonstrating how that yield -- how he analyzed the yield to demonstrate that it was less than 800 gallons per day.

There's not enough -- not enough yield from that shallow aquifer to classify it as a Class 2, which is why he's concluded it as a Class 3. And you heard from witnesses today, not enough yield from that shallow aquifer even to fill a bass pond or to fill a crawfish pond, as Dr. Connelly explained, or to really do much of anything else.

So the groundwater beneath the property is -- doesn't yield enough and significantly, it is of naturally poor quality. You heard the discussion about that from Ms. -- from Dr. Connelly as well as Mr. Angle.

So then the groundwater, from Chevron's perspective and based on the evidence that's been presented in its most feasible plan and in this hearing, doesn't need to be remediated for any human health reason or any ecological reason. That's the testimony of Ms. Levert, Dr. Kind, and Dr. Connelly.

And while we say that the groundwater doesn't need to be remediated, for those reasons, Ms. Levert has demonstrated through her quantitative risk evaluation under RECAP that the groundwater does not need to be remediated.

If, however, this panel concludes, given the agency's prior concerns with benzene in groundwater, that something should be done, Chevron, in its most feasible plan, has proposed monitored natural attenuation to address the benzene in groundwater using a proven technology that the agency has

accepted before at East White Lake, as an example. And Chevron stands ready to deploy an active remediation, such as in-situ treatment, if it is shown that the benzene does not attenuate through monitoring -- or through monitored natural attenuation.

Now moving to soil. As we have demonstrated over the last week and reinforced today in our rebuttal case, the soil does not require remediation either.

And there are some points that Henning and Chevron agree upon. Henning and Chevron agree that remediation of barium in soils is not needed. And there's no plan by Henning that's been presented to remediate barium in soils. Likewise, both Henning and Chevron agree there's no need to remediate arsenic in soils, and Henning has no plan to do so. Neither does Chevron.

Next, with respect to whether an exception to 29-B is appropriate, both Chevron and Henning agree that at this site, exceptions to 29-B are appropriate.

However, there are some differences in the two parties' positions. Mr. Sills, whom

you heard from on Friday, was very clear that ICON is not recommending in its 29 -- it's not recommending its 29-B plan, rather it's recommending its exceptions plan, its exceptions to 29-B.

Henning's plan and Chevron's plan both seek exceptions to 29-B, as I said, but the difference is Chevron is the only party that followed the rules to justify an exception to 29-B by applying a RECAP evaluation. Henning did not do that.

So while we've heard Mr. Carmouche over the last week implore this panel to follow the rules, we too agree and we hope the panel will follow the rules, in doing so, recognize, however, that Henning has not at all followed the rules for an exception to 29-B while Chevron has.

Now, in that respect, Chevron is the only party that provided a RECAP evaluation that would provide the justification for an exception to 29-B.

Again on soil, we heard from various witnesses presented -- or called by Henning and counsel for Henning Management that

further evaluation is needed. Respectfully not so. Here's why.

Well, we heard them say we need to further evaluate barium in soil for human health reasons even though they've not presented any plan to remediate barium.

And the reason further evaluation of barium in soil is not needed for human health reasons include, among other things, Dr. Kind's testimony. He's the only toxicologist who's testified in this hearing. And he testified about his human health risk assessment and dose analysis and dose calculation and explained to you today why a pica ingestion analysis was not warranted at this site.

You heard again from Ms. Levert today on her RECAP MO-2 evaluation of barium showing no human health risk with respect to current use or potential future use of the property even for residential purposes.

Further analysis of barium in soil, members of the panel, for protection of wildlife. There was a suggestion by the Henning folks that that should be done. But

in fact, that has already been done. That was done by Dr. Connelly.

We heard some suggestion from Mr. Sills on Friday, who was called by Henning, that he had obtained a protective concentration level for mallards from Texas -- from a gentleman in Texas.

But he didn't offer that as a remediation level; rather, I believe his testimony is we simply needed to look further to see whether barium in soil might be presenting any kind of future risk or current risk to mallards.

But again, Chevron has already done that work. It's done that analysis. And on this Slide 8, I remind you of something that Dr. Connelly showed you just this morning, which is an evaluation of whether the barium in the soils present any risk to the mallards. And she explained to you, with her quantitative ecological risk assessment, that there's no risk to wildlife, including mallards, from barium in the soil.

Then we heard about sugarcane. And we heard from the Henning witnesses that the

property should be further evaluated to see if it could support sugarcane and if any of the constituents in soils might interfere with that.

You heard today from Mr. Angle referring to the LA Wetlands sugarcane analysis that, in fact, that work has already been done and presented to DNR in another case.

So you have within your files and information we've presented today the analysis to demonstrate the effective root zone depths for sugarcane, and there's no evidence that's been presented that barium presents any risk or that chlorides present any risk to sugarcane.

So putting those suggestions for further analysis aside because they've all been answered, where does the evidence -- what does the evidence show and where does it leave us now?

Soils on the property are safe for human health, including any type of residential use. Even Henning does not propose soil remediation to protect human health. And soils on the property are safe for ecological

health, as Dr. Connelly demonstrated. So that brings us back to salts.

Salts in the property are not limiting the use of the property either today or in the future to grow crops. And that was the testimony of Mr. Ritchie last week.

So then despite the evidence, the technical evidence in the site data from multiple lines of evidence that show that salts in the property present no human health risk and no ecological risk and are not interfering with the ability to grow crops on the property, despite that overwhelming evidence, if remediation is required by the panel to comply with Judge Cain's ruling on Chevron's limited admission, then Chevron has identified amendments in three locations as what would be the most reasonable remedy, although it would not even be required by 29-B.

And on this Slide 9, I'm just showing you a summary of what Mr. Angle presented with respect to what those amendments would look like, what they would cost, and where they would be.

So in contrast to Henning's -- to what has been presented by Mr. Angle and Chevron as part of its most feasible plan, in contrast to this very targeted, very discrete amendments which are not required by the applicable rules but certainly could be required by this panel if it thought it was appropriate. In contrast to this, what we see from Henning's most -- proposed most feasible plan to address salts is rather infeasible, impractical, and not reasonable and certainly not necessary. Doesn't meet the test for a reasonable plan under 3029.

I move now to my last point. And that is that -- uses of the property. So while I'm not showing you something that I prepared that summarized the testimony, I want to just talk you to about it.

We've heard over the last week and even again today so many different hypothetical uses of this property. Might be used as a solar farm, might be used for agriculture. It's being used for agriculture today but might be used for sugarcane in the future or something else. Might be used for a bass

pond. Might be used for a hunting lodge. Might be used for crawfish farming or crawfish pond. Could be used for residential purposes, even a residential subdivision. Stormwater pond and so on.

Chevron is in no way trying to tell Mr. Henning what to do with this property. It's his property. He can do with it what he wants to do.

The point that we wish to make, however, through the evidence that we've presented is that none of the oil field constituents on this property are interfering with his current use of it in any way whatsoever and no evidence has been presented to you of that.

Likewise, the evidence that we have presented through our witnesses has demonstrated that, from a human health perspective and an ecological health perspective, the presence of oil field constituents in the form of barium and salts on this property are not going to threaten or limit in any way whatsoever the future uses of the property, including any of those that

I mentioned.

And that analysis is based on both the groundwater data, the soil data, human health risk evaluations performed under RECAP, ecological risk evaluation performed under RECAP and pursuant to US EPA guidance, and root zone analysis, as was presented to you.

So the potential future uses of the property varied, and hypothetical as they might be, they're not prohibited or prevented by the constituents in soils or groundwater at the property.

When Mr. Henning was in here last week talking to you about how he might use this property in the future. He was asked what his future plans were. You probably remember what he said. Might put a house on it, might want to put a hunting lodge on it, might do a bass pond, and so on.

But notably, he didn't mention anything about using the shallow groundwater, though if he wished to, there's no evidence in this record that it would present any human health risk or ecological risk.

Residential use. Chevron performed a

residential RECAP analysis, as you heard again today from Ms. Levert. It was a full -- also a full toxicological human health analysis. And you heard both Dr. Kind and Ms. Levert explain why a pica analysis was simply not warranted here. No limitations on the use of this property for residential purposes in the future.

Cattle-watering, another idea that we heard this week. Again, I want to remind you of the testimony you heard today from Dr. Connelly and Mr. Angle why cattle-watering from the shallow groundwater is not being prevented by the presence of oil field constituents.

Crawfish. Again, Chevron did that analysis. Shallow groundwater doesn't yield enough to support a crawfish pond. But even if it did, there's nothing in the soils that would prevent or threaten crawfish farming.

Same thing with a bass pond. We did that analysis. Shallow groundwater doesn't yield enough, and there's nothing at the site that would interfere with use of the property as a bass pond, should Mr. Henning choose to

pursue that.

With respect to the idea that somebody on the property might eat bass or crawfish that might be grown at some point in the future on the property, again, that was addressed by Dr. Connelly.

So the truth is, ladies and gentlemen, the biggest limitation on the idea of putting a bass pond or a crawfish pond on this property is not the soil or groundwater or the constituents in them. Rather, it's the numerous boreholes from the oil wells that were made throughout the property because of landowner's choices to use the property for oil and gas over the last 80 years.

But again, it is Mr. Henning's property. If he wants to construct a bass pond or a crawfish pond, he can do that. Oil field constituents are not preventing him from doing so.

So in conclusion, I offer this. Judge Cain has -- Judge Cain has required this panel to develop a most feasible plan. It calls for remediation. But he's left it in your hands, the hands of the DNR, to

determine what remediation is required, if any, and where.

Judge Cain simply requires a most feasible plan. Well, as I'm showing you on this slide, a most feasible plan must be reasonable. That's part of the definition of it. And it has to apply, quote, relevant and applicable standards. That means Act 312, RECAP, and 29-B.

Chevron's plan for the reasons that we have presented is the most reasonable because this case is about salts. That's the only thing the Henning plan proposes to address. It's undisputed that the salts on the property are not interfering with any current use and have not caused any ecological adverse effect.

And Dr. Connelly's testimony to that point is completely undisputed. No ecological- -- no ecotoxicologist was called by Henning to controvert Dr. Connelly's testimony that no oil field constituent on the property in soil or groundwater is causing any adverse ecological effect.

And Chevron's experts testified as well

about those potential future uses that we talked about. And again, none of those are being prevented or will be prevented.

So if the panel concludes that remediation is needed, as I have shown you, Chevron has offered a proposal for monitored natural attenuation on benzene in the ground water and amendments at three locations of the soil.

In contrast, Henning is proposing disturbing 35,000 tons of soil for salts -- to address salts.

So as I said earlier, Chevron is proposing monitored natural attenuation to address benzene in groundwater to the extent this panel concludes that is needed.

And I simply remind the panel respectfully about -- that the DNR has rejected in prior cases the pump-and-treat concept that Mr. Miller has proposed for this case in favor of monitored natural attenuation remedies. And I point you back to your decision in East White Lake.

So while Henning is proposing a multimillion-dollar pump-and-treatment

program -- 471 wells, 12 years, over 31 million gallons of water that would have to be discharged -- it's a plan and it's a remedy that the DNR has never accepted to our knowledge.

Chevron's plan, on the other hand, applies the relevant and applicable standards under RECAP and 29-B and to justify an exception to 29-B.

So every most feasible plan issued by DNR in the past that we are aware of has applied RECAP as the basis for an exception to 29-B.

RECAP is the only regulation in the state that enables the evaluation of human health risk and ecological risk. It's the tool that Chevron used but Henning did not.

So we say, for those reasons, Chevron's most feasible plan is the only one that actually complies with and applies the relevant and applicable standards and regulations. And for the reasons I've explained, it is the only one that is reasonable.

So because the Henning plan does not

include a RECAP evaluation or a justification for an exception for 29-B, it doesn't follow and is not based upon the applicable standards and regulations.

So respectfully, members of the panel, adopting Chevron's most feasible plan would both comply with Judge Cain's order requiring remediation -- or regarding remediation and the requirement of Act 312 that DNR employ its technical and scientific expertise.

And with that, we appreciate your patience.

JUDGE PERRAULT: Thank you.

Just for the record, I have 54 exhibits from Chevron and 28 exhibits from Henning.

And are the parties available for tomorrow for 10:30 in this room to make sure we get your exhibit packages correct for the panel and for the Court?

MR. GREGOIRE: Yes, Chevron is.

JUDGE PERRAULT: Chevron is?

Is Henning available at 10:30 tomorrow in this room to make sure we get your exhibit package together?

I just need, you know, one person and

I --
MR. WIMBERLEY: I can do it.
JUDGE PERRAULT: At 10:30 tomorrow?
All right. And, Mr. Rice, can you do it for DNR?
MR. RICE: Yes.
JUDGE PERRAULT: So we'll meet here at 10:30 tomorrow to make sure we get the packets right. And then Mr. Rice is going to give you y'all's exhibits when we get it straight. And y'all want the flash drives?
And we'll give you one copy, one paper copy. And then I'll need the flash drives and one paper copy for the report.
Is there anything else?
MR. KEATING: I do have one point, Your Honor. There's been a lot of talk, argument, questions about the order from Judge Cain that's at issue or has been at issue.
And we were limited -- I'm not rehashing the argument -- limited in it our questioning of their witnesses as it pertains to the order.
I just want to make sure that the panel has been made aware of the requirements of

Section 611 of Chapter 6.
MS. RENFROE: Your Honor, excuse me. Pardon me, Mr. Keating. But this is another -- this is another essentially argument to the panel that -- and they've closed, so I would object to any further commentary from Mr. Keating to the panel.
JUDGE PERRAULT: If you have something for me, I can do it. But if you're going to make more closing to the panel, we've already done that.
MR. KEATING: I'm not asking for that, Your Honor. I'm asking that you, as the judge presiding over this Act 312 hearing, --
MS. RENFROE: Well, then let me just -- pardon me. Again, pardon the interruption, but I would ask the panel to be -- step out.
JUDGE PERRAULT: All right. We'll do that.
MR. KEATING: I'm asking if you're going to make an instruction to the panel. That's all I'm asking. I'm not going to argue what I think it should be. That's --
JUDGE PERRAULT: The instruction is what the judge wrote. I'm not going to do any extra instruction. I'm here just to referee this.

I'm not in charge of them. The judge is in charge of them. And they're going to follow the law and whatever the judge wrote.

MR. KEATING: So it's left to them to interpret the order for themselves?

JUDGE PERRAULT: Yes. I'm not getting involved with them. I'm not giving them any information. They haven't asked for any, which is smart on their part. So I'm just doing this. And they're going to be on their own. I'm treating them like a jury, and I'm not giving them any information other than process and procedure. I'm staying out of their business. And that's good for everybody. Okay?

MR. KEATING: Fair enough. Just wanted to put it on the record. Thank you.

JUDGE PERRAULT: Okay. That's fine.

Any other housekeeping or questions or worries?

All right. Well, listen, I want to thank all of the attorneys. Thank you for your professionalism, your kindness, expertise, and your patience.

Ms. Vaughan, you're the best. Thank you

for your expertise and your patience.

And the panel, I thank y'all for your patience, and I hope we gave you everything you need to make an informed decision.

And with that, if there's nothing further, this hearing is adjourned.

(Hearing adjourned at 3:22 p.m.)

REPORTER'S PAGE

I, DIXIE VAUGHAN, Certified Court Reporter in and for the State of Louisiana, (CCR #28009), as defined in Rule 28 of the Federal Rules of Civil Procedure and/or Article 1434(B) of the Louisiana Code of Civil Procedure, do hereby state on the Record:

That due to the interaction in the spontaneous discourse of this proceeding, dashes (--) have been used to indicate pauses, changes in thought, and/or talkovers; that same is the proper method for a Court Reporter's transcription of proceeding, and that the dashes (--) do not indicate that words or phrases have been left out of this transcript;

That any spelling of words and/or names which could not be verified through reference material have been denoted with the phrase "(phonetic)";

That (sic) denotes when a witness stated word(s) that appears odd or erroneous to show that the word is quoted exactly as it stands.

DIXIE VAUGHAN, CCR

R E P O R T E R ' S C E R T I F I C A T E

I, Dixie Vaughan, Certified Court Reporter (Certificate #28009) in and for the State of Louisiana, as the officer before whom this testimony was taken, do hereby certify that on Monday, February 13, 2023, in the above-entitled and numbered cause, the PROCEEDINGS, after having been duly sworn by me upon authority of R.S. 37:2554, did testify as hereinbefore set forth in the foregoing 256 pages;

That this testimony was reported by me in stenographic shorthand, was prepared and transcribed by me or under my personal direction and supervision, and is a true and correct transcript to the best of my ability and understanding;

That the transcript has been prepared in compliance with transcript format guidelines required by statute or by rules of the board;

That I have acted in compliance with the prohibition on contractual relationships, as defined by Louisiana Code of Civil Procedure

Article 1434 and in rules and advisory opinions of the board;

That I am not of Counsel, nor related to any person participating in this cause, and am in no way interested in the outcome of this event.

SIGNED THIS THE 3RD DAY OF MARCH, 2023.

DIXIE VAUGHAN
Certified Court Reporter (LA)
Certified LiveNote Reporter