

DNR HEARING - HENNING MGMT. VS CHEVRON DAY 5

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1 STATE OF LOUISIANA
2 DIVISION OF ADMINISTRATIVE LAW
3 *****
4 DEPARTMENT OF NATURAL
5 RESOURCES
6 NO. 2022-6003-DNR-OOC
7 IN THE MATTER OF
8 HENNING MANAGEMENT, LLC
9 V. CHEVRON U.S.A., INC.
10 *****
11 PUBLIC HEARING
12 BEFORE THE HONORABLE CHARLES PERRAULT
13
14 Taken on Friday, February 10, 2023
15 DAY 5
16 (pages 1025 through 1385)
17 Held at the DIVISION OF ADMINISTRATIVE LAW
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| <p>1 APPEARANCES: 2 REPRESENTING HENNING MANAGEMENT, LLC: 3 TODD WIMBERLEY, ESQUIRE JOHN CARMOUCHE, ESQUIRE (VIA ZOOM) 4 Email: Twimberley@tcmlawfirm.com JCarmouche@tcmlawfirm.com 5 Phone: (225)400-9991 TALBOT, CARMOUCHE & MARCELLO 6 17405 Perkins Road Baton Rouge, Louisiana 70810 7 - AND - 8 MATT KEATING, ESQUIRE 9 Email: Mkeating@mbklaw.net Phone: (337) 562-2327 10 MUDD BRUCHHAUS & KEATING, LLC 422 E. College Street, Suite B 11 Lake Charles, Louisiana 70605 12 13 REPRESENTING CHEVRON U.S.A. INC., ET AL.: 14 L. VICTOR GREGOIRE, ESQUIRE Email: victor.gregoire@keanmiller.com 15 Phone: (225)387-0999 KEAN MILLER, LLP 16 400 Convention Street, Suite 700 Baton Rouge, Louisiana 70802 17 - AND - 18 LOUIS M. GROSSMAN, ESQUIRE 19 Email: louis.grossman@keanmiller.com Phone: (504)585-3050 20 KEAN MILLER, LLP First Bank and Trust Tower 21 909 Poydras Street, Suite 3600 New Orleans, Louisiana 70112 22 23 24 25</p> | <p>1 (PROCEEDINGS COMMENCING AT 9:10 A.M.) 2 JUDGE PERRAULT: We're back on the record. 3 This is our fifth day of the hearing. 4 Today's date is February 10th, 2023. It's 5 now 9:10. I'm Charles Perrault, 6 administrative law judge. I am conducting a 7 hearing for the Department of Natural 8 Resources in Baton Rouge, Louisiana. The 9 case before us is Docket No. 2022-6003 in the 10 matter of Henning Management, LLC, versus 11 Chevron USA, Incorporated. 12 All parties are present. I'd like them 13 to make their appearance on the record. 14 We'll start with Chevron. 15 MS. RENFROE: Good morning, Your Honor, and 16 members of the panel. Tracie Renfroe for 17 Chevron U.S.A., Inc. 18 MR. BRYANT: Good morning, everyone. 19 Mitchell Bryant for Chevron U.S.A. 20 MR. CARTER: Johnny Carter for Chevron U.S.A. 21 MR. GREGOIRE: Victor Gregoire for Chevron 22 U.S.A. Good morning. 23 JUDGE PERRAULT: All right. And for Henning? 24 MR. WIMBERLEY: Good morning, Your Honor. 25 Todd Wimberley, Henning.</p> |
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| <p>1 APPEARANCES (Continued): 2 REPRESENTING CHEVRON U.S.A. INC., ET AL.: 3 JOHNNY CARTER, ESQUIRE 4 Phone: (713) 651-9366 SUSMAN GODFREY 5 1000 Louisiana Suite 5100 6 Houston, TX 77002-5096 7 - AND - 8 TRACIE RENFROE, ESQUIRE MITCHELL BRYANT, ESQUIRE 9 Email: trenfroe@kslaw.com mbryant@kslaw.com 10 Phone: (225) 389-3770 KING & SPALDING LLP 11 1100 Louisiana, Suite 4100 Houston, TX 77002 12 13 PANELISTS: 14 STEPHEN OLIVIER 15 JESSICA LITTLETON 16 GAVIN BROUSSARD 17 CHRISTOPHER DELMAR 18 19 20 21 22 23 24 25</p> | <p>1 MR. CARMOUCHE: John Carmouche on behalf of 2 Henning. 3 JUDGE PERRAULT: And we'll have the panels 4 make their appearance on the record. 5 PANELIST LITTLETON: Jessica Littleton, 6 Department of Natural Resources, the Office 7 of Conservation. 8 PANELIST DELMAR: Christopher Delmar, 9 Department of Natural Resources, Office of 10 Conservation. 11 PANELIST OLIVIER: Stephen Olivier, 12 Department of Natural Resources, Office of 13 Conservation. 14 PANELIST BROUSSARD: Gavin Broussard, 15 Department of Natural Resources, Office of 16 Conservation. 17 JUDGE PERRAULT: Thank you. Henning is 18 presenting its plan for remediation, and call 19 your next witness. 20 MR. WIMBERLEY: Your Honor, we call Dr. Rick 21 Schuhmann. 22 JUDGE PERRAULT: All right. How are you 23 doing? Please state your name for the 24 record. 25 THE WITNESS: Richard John Schumann.</p> |

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| <p>1 JUDGE PERRAULT: Would you spell your last 2 name? 3 THE WITNESS: I sure will. 4 S-C-H-U-H-M-A-N-N. 5 JUDGE PERRAULT: M-A? 6 THE WITNESS: N-N. I know it's difficult. 7 JUDGE PERRAULT: M-N? 8 THE WITNESS: N-N. Two Ns, yeah. Yes. 9 JUDGE PERRAULT: Okay. 10 RICHARD JOHN SCHUHMANN, 11 having been first duly sworn, was examined and 12 testified as follows: 13 MR. WIMBERLEY: Your Honor, if I may, I have 14 copies of the presentation for the panel and 15 for yourself. 16 JUDGE PERRAULT: That will be great. Thank 17 you. 18 DIRECT EXAMINATION 19 BY MR. WIMBERLEY: 20 Q. Good morning, Dr. Schuhmann. 21 A. Good morning. 22 Q. How are you this morning? 23 A. I'm well, thanks. And yourself? 24 Q. I want to let the panel know a little 25 bit about your background and why you're here</p> | <p>1 at MIT, which is the department of civil and 2 environmental engineering, and I taught project 3 management there. I created a new project 4 management curriculum for the institute, and I 5 supervised graduate research in surface water 6 hydrology. So I had a research team, and we had a 7 project for the Red Cross in Uganda. So we spent 8 two years modeling the western flank of 9 Mount Elgon with HEC-HMS and HEC-RAS as part of a 10 flood warning system. 11 Q. And you've also been doing consulting 12 while you were teaching full-time for about 13 30 years? 14 A. Yes. 15 Q. Why have you done the consulting on the 16 side? 17 A. I started when I was a poor graduate 18 student at the University of Houston because I 19 needed a job, and I found I really enjoyed it. 20 You know, it was like solving a big engineering 21 problem, and so the opportunities kept arising. 22 And as I began teaching, I recalled when I was a 23 university student that I really appreciated it 24 when my professors would come into the classroom 25 with real world examples of problems and solutions</p> |
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| <p>1 today. 2 MR. WIMBERLEY: Go to the next slide, Scott. 3 BY MR. WIMBERLEY: 4 Q. You have a background in geology from 5 the University of New Hampshire; correct? 6 A. That's correct. 7 Q. And you got an environmental engineering 8 degree from the University of Houston? 9 A. Yes. 10 Q. And a Ph.D. from Penn State University? 11 A. Yes. In environmental engineering. 12 Q. What was your dissertation on? 13 A. I studied the mass transport of gases 14 through an unsaturated porous medium. So it 15 looked at the way gases move through dirt. 16 Q. And what did you learn from that? 17 A. I learned that everything leaks. Some 18 things just leak faster than others. That's sort 19 of the big picture. I learned more than that, but 20 that was sort of the big takeaway for me. 21 Q. You spent some time at MIT also; right? 22 A. I did. I spent time teaching at MIT -- 23 Q. What were you doing? 24 A. -- and supervising research. 25 I was housed in what they call Course 2</p> | <p>1 as opposed to just reciting from the textbook. 2 So for me consulting was an excellent 3 way to stay in touch with the real world, I guess, 4 while teaching within the halls of academia. 5 Q. And you've been in court many times 6 before. So you've been qualified as an expert in 7 risk assessment? 8 A. Yes. I wouldn't say many times, but 9 I've been qualified as an expert in risk 10 assessment here in the state of Louisiana and in 11 the federal court. 12 Q. And contaminant fate and transport? 13 A. Yes. Here in Louisiana and in Texas. 14 MR. WIMBERLEY: Your Honor, at this time I 15 would move to have Mr. Schuhmann qualified as 16 an expert in risk assessment, including the 17 RECAP methodologies and environmental fate 18 and transport. 19 JUDGE PERRAULT: Any cross? 20 MS. RENFROE: Yes, Your Honor. 21 JUDGE PERRAULT: Please proceed. 22 VOIR DIRE EXAMINATION 23 BY MS. RENFROE: 24 Q. Good morning, Dr. Schuhmann. 25 A. Good morning, Mrs. Renfroe.</p> |

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1 Q. Am I pronouncing your name correctly?
 2 A. Yes. It's the way it should be
 3 pronounced, but I'll take it any way I can get it,
 4 quite frankly.
 5 Q. I'm going to do my best to say --
 6 A. Schuhmann, Schuhmann (different
 7 pronunciation). It's okay with me.
 8 Q. I'm going to do my best to pronounce it
 9 correctly.
 10 So welcome to Louisiana from your home
 11 of Kennebunkport, Maine.
 12 A. Welcome back, yes.
 13 Q. Welcome back.
 14 A. This is my old hometown.
 15 Q. So a few questions about your
 16 qualifications. First, sir, you're not a
 17 toxicologist, are you?
 18 A. I am not a toxicologist.
 19 Q. You're not an ecotoxicologist, are you?
 20 A. No.
 21 Q. You're not a hydrogeologist, are you,
 22 sir?
 23 A. I certainly practice in that area of
 24 hydrogeology, and hydrogeology is the driving
 25 force for fate and transport. So -- but I would

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1 have to say that it's -- number one, you're asking
 2 me for a legal opinion whether I'm an expert or
 3 not, but I would say that I would be able to
 4 assist the trier of fact and the panel in areas of
 5 hydrogeology.
 6 Q. No court has recognized you as an expert
 7 in hydrogeology, have they, sir?
 8 A. Again, hydrogeology is a component of
 9 fate and transport, but if you're transporting
 10 something through saturated porous media, that's
 11 hydrogeology.
 12 Q. Which court, sir, has recognized you as
 13 an expert in hydrogeology?
 14 A. A court has recognized me as an expert
 15 in fate and transport of contaminants. So I'm
 16 just -- I don't know how else to say it. I'm not
 17 trying to be difficult.
 18 Q. Well, I'm sure you're not.
 19 A. Yeah.
 20 Q. Have you been certified or licensed by
 21 any state in the country as a hydrogeologist?
 22 A. No.
 23 Q. And you've not been certified as a human
 24 health risk assessor, have you, sir?
 25 A. No.

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1 Q. In this case you did not perform a
 2 traditional human health risk assessment; correct?
 3 A. I disagree with that. I did perform a
 4 traditional human health risk assessment.
 5 Q. Using RECAP?
 6 A. Using RECAP, yes.
 7 Q. So do you remember when I took your
 8 deposition in November, sir?
 9 A. Yes.
 10 Q. That's when we first met; right?
 11 A. Yes.
 12 Q. And I asked you a question. You did not
 13 perform --
 14 A. Oh. Sorry. Sorry to have the epiphany
 15 and say "oh."
 16 Yes.
 17 Q. So for the record --
 18 A. Please.
 19 Q. Sorry. Let's not step on each other.
 20 I asked you the question: You did not
 21 perform a traditional human health risk assessment
 22 of the property, and your answer was no.
 23 A. May I answer now?
 24 Q. Are you changing your testimony, sir?
 25 A. No. I'm still -- I'm sticking with my

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1 testimony from my deposition. Because it's the
 2 difference between the word "assessment" and
 3 "evaluation," and that's -- for me those are the
 4 two critical verbs.
 5 Q. What you did in this case was to perform
 6 an evaluation under RECAP --
 7 A. Yes.
 8 Q. -- right?
 9 A. That's correct.
 10 Q. Before this case you have never prepared
 11 a RECAP evaluation for submission to the Louisiana
 12 Department of Natural Resources; correct?
 13 A. That's correct.
 14 Q. In fact, you'd never prepared any type
 15 of human health risk assessment for submission to
 16 any Louisiana agency before this case?
 17 A. Not for submission to any agency, no.
 18 Q. Now, likewise, sir, you have never
 19 participated in an Act 312 hearing on a most
 20 feasible plan before today?
 21 A. I have not.
 22 Q. And you've never provided any testimony
 23 on any topic to any Louisiana agency, including
 24 the DNR, before today; correct?
 25 A. That's correct.

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| <p>1 Q. Including on the issues that</p> <p>2 Mr. Wimberley is now proffering you on; correct?</p> <p>3 A. That's correct.</p> <p>4 Q. You've never once reviewed any of the</p> <p>5 most feasible plans issued by DNR to understand</p> <p>6 how DNR applies RECAP, have you, sir?</p> <p>7 A. That wasn't my role here. So I didn't</p> <p>8 do that.</p> <p>9 Q. Well, you're being tendered now as an</p> <p>10 expert on RECAP as I understand from</p> <p>11 Mr. Wimberley, and I'm trying to understand what</p> <p>12 qualifications you have on that.</p> <p>13 You're not familiar with how DNR has</p> <p>14 interpreted RECAP based on the previous most</p> <p>15 feasible plans that it has issued, are you, sir?</p> <p>16 A. No, I'm not.</p> <p>17 Q. And you're not holding yourself out as</p> <p>18 an expert in 29-B, are you?</p> <p>19 A. No. I'm familiar with 29-B, but I'm not</p> <p>20 holding myself out as an expert in it.</p> <p>21 Q. You didn't perform an evaluation under</p> <p>22 29-B in this case, did you, sir?</p> <p>23 A. No.</p> <p>24 Q. And your report does not contain any</p> <p>25 opinions about ICON's most feasible plan, does it?</p> | <p>1 As to the health risk assessment, I'm</p> <p>2 going to allow him as an expert. For the</p> <p>3 contaminant fate and transport, do you have</p> <p>4 an explanation for that, or do you want to</p> <p>5 drop that?</p> <p>6 MR. WIMBERLEY: He's been consulting in that</p> <p>7 for 30 years, and I don't think she objected</p> <p>8 to that.</p> <p>9 JUDGE PERRAULT: She did. She did.</p> <p>10 MS. RENFROE: I did.</p> <p>11 MR. WIMBERLEY: You objected to contaminant</p> <p>12 fate and transport?</p> <p>13 MS. RENFROE: Yes, I did.</p> <p>14 DIRECT EXAMINATION</p> <p>15 BY MR. WIMBERLEY:</p> <p>16 Q. Dr. Schuhmann, how many times have you</p> <p>17 evaluated contaminant fate and transport all over</p> <p>18 the world?</p> <p>19 A. I testified in a trial here in the state</p> <p>20 of Louisiana.</p> <p>21 Q. And you've been qualified as an expert</p> <p>22 in contaminant fate and transport in a court in</p> <p>23 Louisiana?</p> <p>24 A. Yes.</p> <p>25 JUDGE PERRAULT: How many times?</p> |
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| <p>1 A. No, it does not.</p> <p>2 Q. All right, sir.</p> <p>3 MS. RENFROE: Your Honor, based on those</p> <p>4 grounds, I would object to Mr. --</p> <p>5 Dr. Schuhmann being tendered as an expert on</p> <p>6 RECAP.</p> <p>7 JUDGE PERRAULT: On RECAP?</p> <p>8 MS. RENFROE: And as well as on the issue of</p> <p>9 contaminant fate and transport.</p> <p>10 JUDGE PERRAULT: All right. What about risk</p> <p>11 assessment?</p> <p>12 MS. RENFROE: I don't object to that for the</p> <p>13 limited purpose of this hearing.</p> <p>14 JUDGE PERRAULT: Okay. All right.</p> <p>15 MR. WIMBERLEY: Your Honor, I offered him as</p> <p>16 an expert in risk assessment, including the</p> <p>17 methodologies -- the health risk assessment</p> <p>18 methodologies under RECAP. Mr. Schuhmann has</p> <p>19 done health risk assessments under all kind</p> <p>20 of regulatory frameworks all over the country</p> <p>21 and all over the world for 30 years.</p> <p>22 MS. RENFROE: But not in Louisiana, sir.</p> <p>23 MR. WIMBERLEY: There's a first time for</p> <p>24 everything.</p> <p>25 JUDGE PERRAULT: Yeah, there is a first time.</p> | <p>1 THE WITNESS: I testified in one trial.</p> <p>2 JUDGE PERRAULT: I'll allow him in based on</p> <p>3 his experience, and counsel has outlined --</p> <p>4 you know, I don't want to call it</p> <p>5 shortcomings but the limits of his experience</p> <p>6 in this field. So you'll take that under</p> <p>7 consideration when you consider his</p> <p>8 testimony. Okay? So we'll let him in as the</p> <p>9 health risk assessment expert and contaminant</p> <p>10 fate and transport.</p> <p>11 MS. RENFROE: Your Honor, one more</p> <p>12 clarification. I want to make sure that</p> <p>13 Mr. Wimberley is not offering him on any</p> <p>14 issues regarding engineering within the</p> <p>15 contaminant fate and transport scope.</p> <p>16 MR. WIMBERLEY: Engineering is a very broad</p> <p>17 term. What do you mean by that?</p> <p>18 MS. RENFROE: Well, are you offering him on</p> <p>19 any issue regarding engineering, and if you</p> <p>20 are, I'd like to take him -- again, I'd like</p> <p>21 to ask some questions.</p> <p>22 MR. WIMBERLEY: I mean, he's a Ph.D.</p> <p>23 engineer, and engineering is anything dealing</p> <p>24 with physics.</p> <p>25 MS. RENFROE: Let me address my --</p> |

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| <p style="text-align: right;">Page 1045</p> <p>1 MR. WIMBERLEY: Sorry, Your Honor. 2 MS. RENFROE: May I -- 3 JUDGE PERRAULT: That's okay. Yes. Please 4 go ahead. 5 VOIR DIRE EXAMINATION 6 BY MS. RENFROE: 7 Q. Again, Dr. Schuhmann, you are not a 8 licensed engineer in the state of Louisiana, are 9 you? 10 A. No, I'm not. 11 Q. Thank you. 12 MS. RENFROE: So on that basis, I will object 13 to any opinions being elicited from 14 Dr. Schuhmann on engineering. 15 JUDGE PERRAULT: Okay. 16 MR. WIMBERLEY: I don't think we have any, 17 Your Honor. 18 JUDGE PERRAULT: That's good, then. We're 19 not going to have a problem. 20 All right. Proceed. 21 DIRECT EXAMINATION 22 BY MR. WIMBERLEY: 23 Q. Dr. Schuhmann, you were asked in this 24 case to look at Ms. Levert's ERM RECAP risk 25 assessment and tell if there were any problems</p> | <p style="text-align: right;">Page 1047</p> <p>1 It's in the proximity to Hayes, Louisiana. It's 2 near the coast. It's the -- the owner has 3 expressed his feelings that it's a possibility 4 that this land might be used for a residential 5 subdivision. If it was, it could accommodate 6 quite a few homes, and there are approximately 1.6 7 children per family in the state of Louisiana. So 8 those homes would have a significant number of 9 children in them. So from my perspective because 10 of the potential for a large number of children to 11 be living on this site, I included a pica 12 analysis, and we'll get into that as well. 13 Q. And those are the two main things that 14 you're here to tell us about -- testify to today? 15 A. Yeah, that's it. I think in many ways 16 my scoping analysis paralleled Ms. Levert's. 17 RECAP is a fairly robust and structured framework. 18 It's got guardrails on it, but the assessor is 19 allowed to make some judgment calls. And then 20 again, we just -- Ms. Levert and I will have 21 professional differences on the Summers dilution 22 factor. 23 Q. And you heard Mr. Miller's testimony and 24 his criticisms of the way that ERM and Ms. Levert 25 and Mr. Angle classified groundwater, and you</p> |
| <p style="text-align: right;">Page 1046</p> <p>1 with it; right? 2 A. Basically, yes. 3 Q. And you referred to your type of 4 analysis that you did in this case as a health 5 risk scoping analysis? 6 A. Yes. A high-level look at a situation. 7 Q. You didn't attempt to do a full-blown 8 DEQ RECAP full analysis that you're going to 9 submit to DEQ with all the forms that go with it. 10 You were looking at it on a scoping basis to see 11 if Ms. Levert missed anything? 12 A. Yes, that's correct. 13 Q. And what did you find? 14 A. I found there were two fundamental 15 differences. 16 Q. Next slide? 17 A. Yeah. Two fundament differences between 18 our approaches. Number one had to do with the 19 Summers dilution factor, and it was in the way 20 that Ms. Levert conducted the screening option 21 SPLP analysis. So by using the default Summers 22 dilution factor of 20, and I just simply disagreed 23 with that. And we'll get into it a bit later. 24 The second is that because of the nature 25 of this site -- 1200 acre site -- it's upland.</p> | <p style="text-align: right;">Page 1048</p> <p>1 agreed with him on those? 2 A. I agree with Mr. Miller, yes. 3 Q. And you agree that -- you heard 4 Mr. Miller's testimony about the problems with 5 using SPLP analysis with chlorides because of its 6 solubility, and you agree with him on that? 7 A. I do. And Mr. Miller and I met and 8 spoke about that back in -- I think in August, and 9 with respect to chlorides, the SPLP is 10 problematic. With respect to barium and to other 11 compounds because of the KD values, the SPLP is 12 actually -- is of value. The KD values are off by 13 three orders of magnitude. So the SPLP is -- can 14 be quite representative of the leaching from the 15 soil for barium. 16 Q. Okay. 17 MR. WIMBERLEY: Next slide. 18 BY MR. WIMBERLEY: 19 Q. Let's talk about Ms. Levert's soil to 20 groundwater evaluation of barium. She used a 21 leachate analysis; right? SPLP? 22 A. That's correct. 23 Q. And that's okay under RECAP? 24 A. It is. You have the option of either 25 using Table 1, which is a look-up table, or</p> |

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1 collecting soil samples from some of the most
 2 contaminated areas within each AOI, running an
 3 SPLP, and comparing the leachate to the screening
 4 SSGW, the groundwater RECAP standard.
 5 Q. And unlike chlorides where there's a
 6 problem with SPLP, it works for barium by and
 7 large?
 8 A. Yes. Yes. And I've done some plots,
 9 and I've plotted the -- I've actually plotted
 10 the -- you know, the field method versus 29-B
 11 versus the RECAP to see the relative differences
 12 in the outcomes because each one of those is
 13 performed a bit differently, and you see -- you
 14 actually see differences between the three methods
 15 when you're down at the lower end of the KD value,
 16 down around .1 where chlorides are. But as you
 17 move up the KD value on the X axis, all of those
 18 graphs sort of converge and you lose that
 19 difference between the methods.
 20 Q. Okay. And so your main problem with her
 21 leachate analysis, I understand, is that she used
 22 a Summer dilution factor of 20, and you feel
 23 that's inappropriate?
 24 A. Yes.
 25 Q. That's inappropriate under RECAP?

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1 A. Yes.
 2 MR. WIMBERLEY: Next slide.
 3 BY MR. WIMBERLEY:
 4 Q. And so let's look at what RECAP has to
 5 say about leachate standard and how you calculate
 6 the dilution factor that you used.
 7 This was something that, when you first
 8 looked at RECAP, it didn't make sense to you;
 9 right?
 10 A. Correct. It just didn't -- it didn't
 11 make physical sense because it's pretty clear. It
 12 says use a Summers dilution factor of 20, and I
 13 couldn't understand why they were forcing the
 14 evaluator to do that, especially in any context,
 15 with any AOI size at all.
 16 Q. It makes sense for a small AOI?
 17 A. Yes, it would make sense for a small
 18 AOI.
 19 Q. And you learned that RECAP 101 -- after
 20 you dug a little further, it says exactly what you
 21 thought it should say?
 22 A. It does. So it was after my deposition,
 23 and I think I said something untoward towards
 24 RECAP. I said RECAP is not a contract with
 25 stupidity, that if there's something that appears

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1 physically wrong in RECAP, it doesn't mean that we
 2 should blindly go and just do it without
 3 questioning it. And so I think I owe RECAP an
 4 apology. This is hanging -- this slide here is
 5 hanging on a slide presentation that's on LDEQ's
 6 web page. If you go to LDEQ's web page for RECAP,
 7 there's a slide presentation called RECAP 101, and
 8 I see the date -- I looked at the date that the
 9 file was created, and it was created in -- at
 10 least the one hanging on the web, it was created
 11 in 2018. So that may be when they put it up
 12 there.
 13 But these things, I believe, are used to
 14 educate practitioners, and here -- what I read
 15 here in RECAP 101 makes sense to me, and that is
 16 if the aerial extent of the soil impact -- and
 17 this is part of identification of the AOI -- is
 18 greater than half an acre, then under the
 19 screening option, you must calculate site-specific
 20 screening standards.
 21 So that then, from my reading of that,
 22 means that instead of using the default dilution
 23 factor of 20, you would calculate a site-specific
 24 dilution factor.
 25 Q. And, in fact, your reading of that is

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1 consistent with the way they treat it in RECAP
 2 2016 and 2019 and the EPA, all agree that for an
 3 AOI above a half an acre, you should use a
 4 site-specific screening standard?
 5 A. That's correct. The subsequent RECAP
 6 versions -- they've clarified this, and the EPA is
 7 quite clear about it so that there's no ambiguity
 8 when it comes to soil screening in the EPA
 9 publications.
 10 Q. And you weren't surprised to find those
 11 corrections in RECAP 101 because it makes
 12 scientific sense; right?
 13 A. No. I was happy to see it. And you're
 14 right. It makes scientific sense from a first
 15 principle's perspective. When I saw that, I
 16 just -- I couldn't understand it.
 17 Q. Let's move on to what the EPA has to say
 18 about using a default dilution factor under -- on
 19 a site that's bigger than a half an acre -- on an
 20 impact area that's bigger than a half an acre AOI.
 21 A. All right.
 22 MR. WIMBERLEY: Move to the next slide,
 23 Scott.
 24 BY MR. WIMBERLEY:
 25 Q. You also looked at the EPA guidance --

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1 this is the soil screening guidance user guide,
 2 and actually you can see right here -- it's
 3 actually one of the references that's used in
 4 RECAP; correct?
 5 A. That's correct. In RECAP 2003.
 6 Q. And what does it have to say about using
 7 a Summers dilution factor on a site that's bigger
 8 than half an acre -- an AOI bigger than half an
 9 acre?
 10 A. Well, I think that this is where
 11 DEQ's -- the RECAP dilution factor comes from, is
 12 from this assessment. EPA says: "The default DAF
 13 of 20 has been selected as protective for
 14 contaminated soil sources up to .5 acres in size.
 15 The DAF of 20 may be protective of larger sources
 16 as well." That's true. It could be. "However,
 17 this hypothesis should be evaluated on a
 18 site-specific basis. Since migration to
 19 groundwater SSLs are most sensitive to the DAF,
 20 site-specific dilution factors should be
 21 calculated." And I totally agree with this.
 22 MR. WIMBERLEY: Would you move forward to the
 23 next slide, Scott?
 24 BY MR. WIMBERLEY:
 25 Q. And Ms. Levert and ERM did not use a

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1 site-specific dilution factor; right?
 2 A. That's correct.
 3 Q. You've heard Ms. Levert talk over and
 4 over about how site-specific data is better than
 5 default data?
 6 A. And she's correct in general unless
 7 you've got bad data, and then -- well -- but, yes,
 8 site-specific data -- it's better than some
 9 theoretical default.
 10 Q. The general principle on how risk
 11 assessment is site-specific data is better?
 12 A. That's correct.
 13 Q. So she didn't use site-specific. She
 14 used what?
 15 A. She used the default dilution factor of
 16 20, and it's a 20-fold dilution of the water
 17 percolating through the soil.
 18 Q. And how do you know that from looking at
 19 her table?
 20 A. If you look at the soil SSGW, that's the
 21 RECAP standard down at the bottom there, the 40.
 22 It's 40 milligrams per liter, and so that was
 23 derived by multiplying the GW-1, which is
 24 2 milligrams per liter, by the Summers dilution
 25 factor of 20, the 20-fold dilution, and you wind

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1 up with the RECAP standard, then, of 40 milligrams
 2 per liter.
 3 Q. And that's how Ms. Levert explained it
 4 in her testimony?
 5 A. I believe so.
 6 Q. And so if you use a screening standard
 7 of 40 based on this default DAF of 20, this factor
 8 of 20, what do you see -- do you see any
 9 exceedances in the -- her analysis?
 10 A. No. You don't see any exceedances of
 11 that 40 milligrams per liter in the SPLP result.
 12 Q. Explain to us a little bit about what a
 13 dilution factor is and kind of what we're trying
 14 to measure here. Why is this important?
 15 A. Okay. And the Summers equation appears
 16 up there on that slide.
 17 Q. And that equation is from RECAP; right?
 18 A. That equation is from RECAP, correct.
 19 And you'll see -- so let's start there. It's the
 20 ratio of the concentration of the -- let's call it
 21 barium for now -- of barium percolating down
 22 through the soil column. That's the CL -- the
 23 ratio of the CL to the CSI. And that's the water
 24 that, once it's been diluted, the percolating
 25 water, diluted with aquifer water, the water

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1 that's then going to form a plume down-gradient of
 2 this source.
 3 So we calculate this ratio -- and,
 4 again, for me, it's a simple mass balance. So
 5 it's basically what goes in must come out. So our
 6 inputs are infiltrating water percolating down
 7 through the plane of the AOI. So it's -- think
 8 about it as rainfall. So we've got a vector
 9 coming down. We've got a mass coming down, and
 10 then through the aquifer -- through the saturated
 11 porous media, we have uncontaminated water, and
 12 then think about sort of a mixing zone underneath
 13 that AOI where the uncontaminated aquifer water is
 14 then mixing with the infiltrating contaminated
 15 water. And then just down-gradient of the AOI --
 16 right at the edge of it where X equals zero --
 17 let's say we were going to measure a plume
 18 down-gradient of this AOI. At X equals zero,
 19 that's the concentration, the CSI.
 20 Yeah. The parameters in there -- "I" is
 21 the infiltration rate. "SW" is the width of the
 22 AOI perpendicular to flow through the groundwater.
 23 "L" is the length of the AOI. So if we had a
 24 square AOI, they -- those would be equal. SW
 25 would be equal to L. "DV" is the Darcy

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1 groundwater velocity. So that's the hydraulic
 2 conductivity multiplied by the hydraulic gradient,
 3 and that's often given in units of meters per year
 4 or meters per unit time. I find it's more
 5 informative to give all the full units of meters
 6 cubed per meters squared per year, let's say. You
 7 can cancel the exponents out there, right, and
 8 wind up with meters per year.
 9 But that explains a little bit better
 10 what's going on there. It's how many cubic meters
 11 of water are passing through a plane -- a meter
 12 squared plane per year. That's what the Darcy
 13 velocity is. It's not really a velocity. It's
 14 almost a flux of water through a plane. And then
 15 finally, the SD is the thickness of the
 16 groundwater plume. In this case, it's the
 17 thickness of the aquifer.
 18 Q. So the smaller -- if you have a given
 19 aquifer, the smaller the AOI, the more water there
 20 is around it to disperse it. All right. If you
 21 have a really big AOI, the water that's in the
 22 middle of the AOI is surrounded by water that's
 23 also being contaminated by the AOI?
 24 A. Yeah. The larger the AOI, the greater
 25 the flux of contaminants down into the

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1 groundwater.
 2 Q. And the thicker the aquifer, the higher
 3 the Darcy velocity?
 4 A. The greater the dilution.
 5 Q. Right. I'm sorry.
 6 A. Correct. Because it would be the
 7 thickness of the groundwater plume. This dilution
 8 factor is especially sensitive to the Darcy
 9 velocity. So if you have a site with a very low
 10 hydraulic gradient and a reasonably low hydraulic
 11 conductivity, then you're going to wind up with a
 12 low Darcy velocity and you're going to wind up
 13 with very, very low dilution.
 14 Q. So when you calculated the Darcy
 15 velocity and the dilution factor that was
 16 site-specific to this property, what parameters
 17 did you use?
 18 MR. WIMBERLEY: Next slide, Scott.
 19 THE WITNESS: It's -- no.
 20 MR. WIMBERLEY: No. Back up. Sorry.
 21 A. So now this is the -- what I've done is
 22 just taken values from -- number one, the
 23 infiltration rate is .1, and it's -- again, it's
 24 meters per year. It's sort of a bit deceiving.
 25 It's meters cubed per meters squared per year of

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1 infiltration. That comes from RECAP, and that
 2 is -- it tends to be a state-specific term. So if
 3 we would go to the state of New Jersey, then the
 4 state of New Jersey would provide us with -- the
 5 DEQ there would provide us with a different
 6 infiltration rate. And I'm not privy to the
 7 development of those, but infiltration rates tend
 8 to be based upon meteorological conditions as well
 9 as a curve number or the nature of the regional
 10 soils and how much runoff you get versus
 11 infiltration.
 12 The SW and the L again define the area
 13 of the AOI. So what I've just assumed for this
 14 example calculation is that we have an AOI not of
 15 10 acres or 100 acres. We'd just -- let's bump it
 16 up a little bit from half an acre. Let's take a
 17 look at what happens when you go up to an acre.
 18 So I've tried to be --
 19 BY MR. WIMBERLEY:
 20 Q. And you measured all the AOIs here, and
 21 they're all over half an acre, or they're all over
 22 an acre?
 23 A. Yeah. There's one that's 18 acres.
 24 Yeah. So this is just an acre. So it's 64 meters
 25 by 64 meters.

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1 Q. Which would be a conservative approach?
 2 A. I thought so. I -- it's just and I like
 3 working with 1s. It makes the math a little bit
 4 easier.
 5 Q. And how did you calculate the Darcy
 6 velocity?
 7 A. The Darcy velocity is a product of ERM's
 8 hydraulic conductivity, which they reported, and
 9 their hydraulic gradient data. They reported a
 10 range of values for the hydraulic gradient at the
 11 site from .0003 to .003. So I tried to just drop
 12 the number about halfway -- and that's
 13 foot-per-foot. So I tried to drop a number about
 14 halfway between triple zero three and double zero
 15 three, and so I chose double zero one. It seemed
 16 to make sense to me to split the difference. So
 17 when you multiply .001 feet per feet by the ERM
 18 hydraulic conductivity and you convert from
 19 centimeters to meters and you convert seconds to
 20 years, this Darcy velocity falls out of the
 21 equation, which is .1 meters cubed per meter
 22 squared per year.
 23 And then finally, the SD was the
 24 thickness of the groundwater plume, and I looked
 25 at the wells that ERM had used to define the

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| <p style="text-align: right;">Page 1061</p> <p>1 hydraulic conductivity in the thickest -- the 2 thickest strata I think I saw there for one of 3 their wells was about 10 feet and -- but most 4 of the wells were in thinner lenses than that. 5 10 feet was about the thickest, and, again, I 6 thought: To be conservative, let me make it the 7 biggest -- the thickest aquifer I can for the most 8 dilution. So I picked the greatest SD I could 9 find. And I chose 3 meters just because it's a 10 round number. 10 feet -- it's close to 10 feet. 11 It's not quite 10 feet, but it's certainly a lot 12 larger than the average. 13 Q. Okay. And so when you used -- 14 MR. WIMBERLEY: The next slide, Scott. 15 BY MR. WIMBERLEY: 16 Q. Yeah. In this slide you're showing us 17 what happens when you take Ms. Levert's analysis, 18 use her data, her data even for calculating the 19 Darcy velocity, her data for the calculating the 20 concentrations of the AOIs. What you do is you 21 plug in the site-specific dilution factor into her 22 equation. That's what this shows; right? 23 A. That's correct. It changes the soil 24 SSGW. So that RECAP standard goes from 25 40 milligrams per liter down to 2.1 milligrams per</p> | <p style="text-align: right;">Page 1063</p> <p>1 either remediate to that level or you can move on 2 to a higher-level evaluation. So you can move on 3 to a management option evaluation. 4 Q. And that further analysis wasn't done by 5 Ms. Levert? 6 A. No. 7 Q. It wasn't done by you? Nobody did this 8 analysis? 9 A. No. Ms. Levert didn't do the analysis 10 because she stopped because she had calculated a 11 RECAP standard of 40 and, when she compared the 40 12 to the SPLP results, it informed her that she 13 could stop there. 14 Q. Do you have a feeling either way in your 15 opinion about whether -- if the analysis is 16 complete, whether we might see an actual 17 remediation be required? 18 MS. RENFROE: Your Honor, I'll object to that 19 as calling for speculation. If he's asking 20 about what the DNR is going to require -- is 21 that the question? If it is, then I object 22 on the grounds of speculation and lack of 23 qualification. 24 JUDGE PERRAULT: You can't ask what the DNR 25 is going to require.</p> |
| <p style="text-align: right;">Page 1062</p> <p>1 liter, which is quite significant. 2 Q. So you're essentially dividing hers by 3 20 -- the 20 factor that she added in 4 inappropriately? 5 A. 1.05, yes. For me it's one. There's 6 really -- there's no dilution. The groundwater is 7 moving so slowly at that site, and I think we can 8 see -- well, if you look at the plumes, they look 9 like they're almost -- that there's diffusion 10 contributing to them. 11 Q. And by that you mean there's actually 12 some concentration that seems to be moving 13 upgradient? 14 A. Yeah. It's -- they're just 15 interesting-looking plumes. They certainly don't 16 look like plumes that are running through a Karst 17 topography or through an old paleo stream channel, 18 a gravel bed, or something like that. 19 Q. And so when you use the site-specific 20 dilution factor, we find that there are 21 exceedances in three of the AOIs? 22 A. Yes. 23 Q. And what happens under RECAP when there 24 are exceedances in this analysis? 25 A. Well, then you have a choice. You can</p> | <p style="text-align: right;">Page 1064</p> <p>1 MR. WIMBERLEY: That's fine, Your Honor. 2 JUDGE PERRAULT: But you ask him his opinion. 3 BY MR. WIMBERLEY: 4 Q. So our options now for this panel under 5 RECAP would be you either stop here and you have 6 to do a remediation RECAP or you take this 7 further. Somebody has got to do that analysis. 8 You've got to do further evaluation? 9 A. Correct. 10 Q. You can't rule out remediation at this 11 point? 12 A. No, I don't think so. I think -- and I 13 can't speak for DEQ, but I think that would be the 14 position. 15 Q. And you also found a problem -- 16 MR. WIMBERLEY: Next slide, Scott. 17 BY MR. WIMBERLEY: 18 Q. -- with the way Ms. Levert conducted her 19 soil to direct contact analysis; right? 20 A. Well, I wouldn't necessarily call it a 21 problem. I would call this last topic on the 22 dilution factor a problem. I would call this a 23 difference of opinion in forming the conceptual 24 model for the risk evaluation. The assessors look 25 at situations, and it's not uncommon for two</p> |

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1 assessors to look at the same situation and
 2 approach it from different angles.
 3 Q. Okay. But nonetheless, you found that
 4 pica behavior should have been considered in the
 5 risk analysis?
 6 A. That's my opinion.
 7 Q. And it wasn't by Ms. Levert?
 8 A. No, it wasn't.
 9 Q. Let's talk a little bit about pica, and
 10 I understand, just like everything, you know,
 11 there's a spectrum of behavior.
 12 Can you tell us a little bit about, you
 13 know, what is pica?
 14 A. Well, yeah. And I think the term you
 15 used is good: A "spectrum." In a large end
 16 world, things tend to be normally distributed. So
 17 we get a Gaussian distribution of things, and when
 18 it comes to soil ingestion -- you know, a couple
 19 of standard deviations from the mean. You capture
 20 the bulk of the population; however, there are
 21 tails. We recognize that. So there are some
 22 individuals that are consuming less soil and dust
 23 than the average, and there are some that are
 24 consuming more.
 25 And when we talk about this consumption,

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1 it's -- most of it -- when we talk about
 2 average -- the soil ingestion pathway, it's not
 3 people going outside and eating dirt from their
 4 garden or something. There's something called
 5 geophagy where people actually cook with clays and
 6 things like that and they eat quite a bit of
 7 mineral material. But I'm -- that's not part of
 8 my evaluation.
 9 But the majority of the soil, at least
 10 within RECAP, that's ingested is comprised of
 11 dust, and that's either household dust -- so it's
 12 a dirt that's been tracked indoors -- that's
 13 55 percent of that pathway -- or it's outdoor soil
 14 dust on the top of the soil column and then a
 15 component of actual soil from the top couple of
 16 inches. So when you think about this pathway,
 17 it's primarily a dust-like pathway.
 18 MR. WIMBERLEY: Okay. The next slide, Scott.
 19 BY MR. WIMBERLEY:
 20 Q. Let's talk about how common pica is.
 21 What's our incidence here?
 22 A. Well, yeah. It was interesting. I was
 23 in the hearing room the other day when Dr. Kind
 24 was here and -- listening to his testimony, and he
 25 said two things that sort of struck me. And he

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1 used this -- these words. He said pica is
 2 uncommon and it's rare. And I had -- already I
 3 had submitted these papers, and I had these in my
 4 library for quite some time. But these are
 5 peer-reviewed journal articles with titles that
 6 say pica is common but commonly missed.
 7 The other one is it said Soil Pica: Not
 8 a rare event. So, again, I think that some of
 9 this has to do with perceptions, and people that
 10 haven't seen pica and haven't been -- or done
 11 reading in it and aren't that aware of it might
 12 think that it's uncommon or rare, but it's not.
 13 MR. WIMBERLEY: The next slide, Scott.
 14 BY MR. WIMBERLEY:
 15 Q. What does the literature have to say
 16 about how common pica is?
 17 A. You know, to start off, this ATSDR quote
 18 is pretty good, that within any population of
 19 children, some could exhibit soil pica behavior,
 20 particularly preschool kids, and if you've been
 21 around young children and you see them picking up
 22 things and putting them in their mouths and
 23 licking the bottom of their shoes -- you know, my
 24 daughter goes out in the garden, and she pulls a
 25 radish out and bangs it a couple of times on her

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1 leg and eats it and probably consumes about half a
 2 pica dose with one radish, because it's not that
 3 large a quantity.
 4 But you can see -- I just pulled some of
 5 the literature. There's general agreement by the
 6 scientific community that we don't know -- nobody
 7 has done a metaanalysis and come up with a specific
 8 percentage -- that the global percentage of pica
 9 is this and done a country-by-country analysis or
 10 a state-by-state analysis. Those data just don't
 11 exist.
 12 But from my reading in the literature, I
 13 put these references up here. You can see that
 14 the literature -- I tried to bound it. The
 15 literature goes from about 9 percent to about
 16 50 percent. Most of the literature that I see
 17 drops down in kind of the 10 to 20 percent area.
 18 Q. And these are all peer-reviewed articles
 19 that you provided to the defendants in this case?
 20 A. That's correct. The one on the
 21 bottom-right -- I just want to give you a heads-up
 22 because a peer-review is something I respect. The
 23 bottom-right is from probably a -- the lowest
 24 level of peer-review of all of them, and it
 25 happens to have the highest incidence of pica

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1 reported. So I would put -- I would tend to put
 2 less weight on that 50 percent and more on others
 3 like Calabrese or Baltrap. You know,
 4 18.5 percent, 10.5 percent. Or Cooper. You know,
 5 that's a book that -- the 21.9 percent. That's
 6 actually a book that was written by Dr. Cooper in
 7 1957 and a very interesting book on pica. If you
 8 get interested in pica after this hearing, that
 9 would be a good book for you to pick up.
 10 Q. And so in the peer-reviewed
 11 literature -- in the well-peer-reviewed
 12 literature, we're seeing numbers like 21 percent?
 13 18 1/2 percent? 9.4 percent? 10.5 percent?
 14 A. Correct.
 15 Q. Kind of the bottom is about 10 percent?
 16 A. Yes.
 17 Q. One in ten?
 18 A. One in ten, yeah. To me that's
 19 significant.
 20 Q. This is a common thing. Everybody knows
 21 ten kids. You're going to know a pica kid?
 22 A. I would think so. I would think so.
 23 Q. And at what age do these children
 24 exhibit the most pica behavior?
 25 A. It's generally from the ages of -- well,

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1 the age range goes all the way up -- the EPA
 2 offers pica ingestion rates for all the way up to
 3 12 years of age. I would say probably zero is a
 4 bad place to start because infants are guarded
 5 from engaging in that type of behavior. So if I
 6 had to just make a general sort of categorization,
 7 I would say between the ages of one and seven.
 8 Q. Okay. And I'm going to show this next
 9 slide. This was a surprise to me.
 10 I thought, when we were talking about
 11 pica, we're talking about a kid that's, you know,
 12 gobbling up dirt and mouthfuls of dirt. We're
 13 talking about small quantities of dirt here?
 14 A. Yeah. The dose of the -- the dose I
 15 used was -- well, 1,000 milligrams per day or
 16 1 gram per day, and that's a -- one of these
 17 Splenda packages is a gram in here. So it's an
 18 eighth of a teaspoon. It's just not a whole lot.
 19 So it's not an outrageous thing, and I think once
 20 you see that small quantity -- I'm out with my
 21 chain saw sometimes working in the woods, and I
 22 bet I'm probably consuming 1,000 milligrams per
 23 day of dirt and dust and whatnot.
 24 Q. Now, when you have something that
 25 affects a group of people of one in ten, we've

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1 commonly in our laws addressed that and protected
 2 them; right?
 3 A. Yes, we have. We do that as a nation.
 4 26 percent of American adults live with a
 5 disability; and because of that, we've got the
 6 Americans with Disabilities Act, the ADA. And if
 7 you've ever had a family member or a friend or
 8 known somebody who was in a wheelchair, you know
 9 how important that is; and as a society, we make
 10 accommodations for people like that. And that
 11 makes us who we are.
 12 The same thing -- I live in
 13 Kennebunkport, Maine, and because of the pandemic
 14 I began volunteering -- substitute teaching at our
 15 local high school because people were getting
 16 sick. And so I would go over and teach physics
 17 and chemistry and biology and environmental
 18 science, and I saw -- I was astounded at the
 19 number of students at the high school who required
 20 accommodations because of some sort of learning
 21 disability. I never saw that at Penn State or
 22 MIT, and I looked it up and 15 percent of all
 23 public school students receive some sort of
 24 special educational services. We make
 25 accommodations when we have an incident rate of

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1 that type of magnitude.
 2 And so here we've got sort of this -- an
 3 incidence rate in the same ballpark, and so I just
 4 thought it was prudent at this site to incorporate
 5 this into the analysis.
 6 Q. And let's be clear. Pica by itself is
 7 not a problem. It's only a problem when a pica
 8 child is encountering contamination?
 9 A. That's correct. Some of the earliest
 10 literature on pica has to do with -- they saw kids
 11 with lead poisoning, and when they tried to figure
 12 out why these children had lead poisoning, they
 13 found they were exhibiting pica behavior. They
 14 were eating lead paint, caulking, and things like
 15 that in run -- in mostly run-down public housing
 16 in inner cities. So no. I mean, as I said, I
 17 think my daughter in the summer is eating
 18 1,000 milligrams per day, but we don't use
 19 pesticides. We don't use herbicides. You know,
 20 we do all organic on our -- my lawn shows it.
 21 I've got lots of weeds, but so -- but she doesn't
 22 get sick and she's very healthy and I don't worry
 23 about it.
 24 Q. So the point of this exercise is not to
 25 try to reduce pica but to make sure that pica

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|--|---|
| <p style="text-align: right;">Page 1073</p> <p>1 children don't encounter contamination? 2 A. Correct. 3 Q. You can either do that by fencing it 4 off -- 5 A. Yes. 6 Q. -- or cleaning it up? 7 A. Correct. 8 Q. Or keeping them away from it somehow? 9 A. Yeah. There's a hierarchy of risk 10 management approaches you can take, right. So the 11 risk assessors, you know, present risks, and then 12 risk managers take that information and make 13 decisions, right. And the hierarchy is usually 14 design the risk out of the system. So eliminate 15 it. So if it's a machine or a manufacturing 16 facility or something, you get that thing that's 17 posing the risk out. In our milieu here, it would 18 be clean up the site, remove the contaminants. 19 Well, the second thing would be -- the second 20 level is, if you can't design it out, you guard 21 against it. 22 So it's like a table saw. A table saw 23 is dangerous. People cut their fingers off all 24 the time and -- but if you put a guard over the 25 blade, then you can guard against -- you can</p> | <p style="text-align: right;">Page 1075</p> <p>1 such as these at the site. You should consider 2 that if a pica -- if a child that exhibits pica 3 behavior is there, that you may have to adjust the 4 screening standard or the RECAP standard downwards 5 to be protective of the health of that or those 6 children. 7 You'll see that they give a range of the 8 dose ranges, 25 to 60 grams per day. Remember, 9 this was 1 gram (indicating). So it would be 25 10 to 60 of these. I'm not so sure that's an 11 average dose. 1 gram a day would be an average 12 dose. This may be an event, and from my reading, 13 it is. So they recommend an acute ingestion rate 14 of 25- to 60,000 milligrams per day. 15 Q. That's probably why the EPA -- I'm 16 sorry. 17 The later versions of RECAP point you to 18 the EPA guidance for pica? 19 A. Yes. 20 Q. What is the ATSDR? 21 A. The ATSDR is the Agency for Toxic 22 Substance Disease Registry. It's a federal 23 agency. Ms. Renfro and I talked about it in my 24 deposition. It's interesting. I rely on ATSDR 25 all the time. The ATSDR comes in, it does</p> |
| <p style="text-align: right;">Page 1074</p> <p>1 reduce the risk by doing that. So that's the 2 second level, and the third level is to warn. So 3 if there's no way to remove the risk or to guard 4 against it, you put a big sign up: "Hearing 5 protection needed in this area" when you go into a 6 manufacturing facility that's maybe got some 7 diesels running or something like that, you know, 8 warning, hearing protection required in this area 9 because the decibel level is so high. 10 So, yeah, it's about managing the risk. 11 It's not about eliminating pica behavior. That's 12 impossible. 13 Q. And so what does RECAP have to say about 14 considering pica in a health risk assessment? 15 A. RECAP has a section on this, the 2144 on 16 acute health risks. And acute, according to the 17 EPA, is anything up to 14 days. And then from 18 15 days through seven years, you move into a 19 sub-chronic region, and then greater than seven 20 years is chronic. So acute, sub-chronic, and 21 chronic. 22 So in RECAP -- so this would be a one to 23 fourteen-day exposure. They -- RECAP says that if 24 you've got barium, cadmium, copper, cyanide, 25 fluoride, nickel, phenol, vanadium, lead, COCs</p> | <p style="text-align: right;">Page 1076</p> <p>1 studies, community studies of health effects. The 2 ATSDR -- you probably -- I don't -- I haven't had 3 cable TV for over 20 years. So I don't see 4 commercials and things like that, but my friends 5 all tell me about these Camp Lejeune commercials. 6 And the ATSDR has done all of the health studies 7 down at Camp Lejeune. It's a large federal agency 8 that deals with large-scale health risks. 9 And ATSDR -- they -- number one, they -- 10 this is from a document from 2018, Exposure Dose 11 Guidance for Soil and Sediment Ingestion. And 12 here they direct you to this Table 1. They say: 13 "Unless site-specific conditions warrant using 14 other rates, ATSDR recommends using the default 15 ingestion rates in Table 1 to estimate 16 site-specific doses." And you see in Table 1 -- 17 in special groups you'll see the central tendency 18 exposure, and that's -- sort of the average 19 exposure is -- for pica behavior is 20 5,000 milligrams per event. 5,000 -- again, 21 remember, that's per event. Remember, RECAP was 22 25- to 60,000 per event, which is pretty high. 23 Q. And so what does ATSDR say about a daily 24 ingestion rate? 25 A. So they go on in the same document to</p> |

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1 offer a sample calculation, and they say here's
 2 how you can approach this. They say ATSDR
 3 recommends using these soil ingestion rates for
 4 children with soil pica behavior. They recommend
 5 using between 1,000 and 5,000 milligrams per
 6 episode with three episodes per week. So the
 7 children -- again, this is not an average daily
 8 dose now.
 9 So three episodes per week, and that
 10 would be three out of seven days to represent a
 11 dose for acute exposures or a monthly dose for
 12 intermediate durations. And ATSDR has a different
 13 way of categorizing the time scales of exposure
 14 where we've just -- and Ms. Renfroe and I talked a
 15 lot about this classification scheme here. The --
 16 where the -- an intermediate duration would be
 17 something less than a year. So you're in the --
 18 sort of the sub-chronic region to try to match
 19 apples to apples.
 20 Anyway, if I take that as a range
 21 between 1,000 and 5,000 milligrams per episode and
 22 I take the average of that, it's 3,000 milligrams
 23 per episode, and I say there are three episodes
 24 per week. One week is seven days. I come up with
 25 an average daily dose of 1,286 milligrams per day.

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1 So that's pretty similar to the 1,000 milligrams
 2 per day that the EPA recommends.
 3 Q. And let's talk about what the EPA
 4 recommends.
 5 A. Yeah.
 6 Q. What's the daily ingestion rate
 7 recommended for analyzing soil pica behavior in
 8 children on a daily basis?
 9 A. The EPA offers a 1,000-milligram-per-day
 10 ingestion rate, and they recommend that for use in
 11 risk assessments for children between the ages of
 12 one and less than six years of age.
 13 Q. And what about this property makes it --
 14 make sense to use a pica analysis here? Is there
 15 anything special about the property?
 16 A. If this -- if we were talking -- if this
 17 was a half-acre gasoline station site or something
 18 like that, we wouldn't be having this conversation
 19 right now. If somebody is going to build another
 20 Quick Mart and put some gas pumps in there, it was
 21 going to be all paved over, pica would not have
 22 registered on my radar, and conversely, if this
 23 was -- perhaps if this even was a 1/4-acre site
 24 that would have been suitable for one residential
 25 dwelling, I would have thought a lot harder about

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1 applying pica to it. Because, again, we're
 2 talking about between 10 and 20 percent. So with
 3 one house where there's a possibility of a child
 4 being there. But we don't know that. So it's
 5 really the scale of the property. The fact that
 6 it's 1200 acres -- the nature of that property
 7 that -- it's not primarily wetlands. It's upland.
 8 It's an upland property, and the fact that the
 9 owner has -- although he hasn't been specific
 10 about it, is open to a lot of future possibilities
 11 for this property, including a residential
 12 subdivision.
 13 Where I live I'm watching farmland get
 14 turned into residential subdivisions all the time
 15 year after year after year. It seems like empty
 16 land -- that it's more likely that empty land will
 17 be developed than developed land will be emptied.
 18 It's just -- our population is growing. The
 19 coastline is receding. Demographics are changing.
 20 So that's what -- from my perspective when I
 21 looked at this property, I said I think this is an
 22 appropriate approach. Again, that's a judgment
 23 call.
 24 Q. And isn't it true that RECAP tells us in
 25 the nonindustrial scenario that we are to protect

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1 all potential future uses?
 2 A. Yes.
 3 Q. The EPA actually suggests that we might
 4 even have to look at pica behavior in children in
 5 the 6- to 12-year-old populations?
 6 A. They provide a -- yeah. They provide an
 7 ingestion rate for soil pica for that age range.
 8 From what -- my reading is that probably six years
 9 old, seven years old makes sense, but the thing --
 10 that type of behavior could generally begin to
 11 trail off after that, although you do -- we see it
 12 in adults as well.
 13 Q. And so you went back and looked at
 14 Ms. Levert's data and her formulas, and this is
 15 Table 02 from her report; right?
 16 A. That's correct.
 17 Q. And what ingestion rate did she use to
 18 arrive at a screening standard of
 19 16,000 milligrams per kilogram?
 20 A. Ms. Levert used the default ingestion
 21 rate of 200 milligrams per day.
 22 Q. Okay. You went in and did a test to
 23 see -- you wanted to plug the pica behavior
 24 considerations into her formula and her data and
 25 see what it spit out; right? So the first step

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| | |
|---|--|
| <p style="text-align: right;">Page 1081</p> <p>1 you did was what?</p> <p>2 A. Yes. Well, we had a little bit of a --</p> <p>3 and there was a difference in the conceptual model</p> <p>4 in two respects. Number one was the time frame.</p> <p>5 Ms. Levert did a 30-year exposure at the time,</p> <p>6 which is perfectly acceptable, and she used a</p> <p>7 200-milligram-per-day ingestion rate, which is</p> <p>8 perfectly acceptable for her conceptual model. My</p> <p>9 conceptual model was different. So instead of</p> <p>10 30 years, I used six years. I said, well, this</p> <p>11 child is going to be on this property and</p> <p>12 exhibiting this behavior for a six-year period of</p> <p>13 time, and instead of the 200-milligram-per-day</p> <p>14 ingestion rate, I gave it a</p> <p>15 1,000-milligram-per-day ingestion rate.</p> <p>16 So here you see with a 30-year exposure</p> <p>17 duration and the 30-year averaging time -- the</p> <p>18 exposure duration is the 30 in the denominator,</p> <p>19 and the averaging time is the 30 years up in the</p> <p>20 numerator there. You wind up with</p> <p>21 15,643 milligrams per kilogram rounded up to</p> <p>22 16,000 milligrams per kilogram, and that's where</p> <p>23 the -- Ms. Levert's RECAP standard comes from. So</p> <p>24 it's a valid calculation.</p> <p>25 Q. And so when you replace the 30 years</p> | <p style="text-align: right;">Page 1083</p> <p>1 Q. And at this point in the analysis, we</p> <p>2 see exceedances if we use this pica consideration</p> <p>3 RECAP standard?</p> <p>4 A. Yes. So if you consider pica and you</p> <p>5 want to manage the risk at this site, you would</p> <p>6 then have to look at Areas 4, 5, 6, and 8.</p> <p>7 Q. And so at this point in the analysis</p> <p>8 under RECAP, either you stop here and you clean up</p> <p>9 or you do a further analysis under a higher tier</p> <p>10 of RECAP?</p> <p>11 A. Correct. You would do -- and this is an</p> <p>12 MO-2. So you would do an MO-3.</p> <p>13 Q. And she didn't do that?</p> <p>14 A. No.</p> <p>15 Q. And you didn't do that?</p> <p>16 A. No.</p> <p>17 Q. Nobody did that?</p> <p>18 A. Nobody has --</p> <p>19 Q. So if we want to -- our decision right</p> <p>20 now under RECAP that this panel has is you clean</p> <p>21 up or you move forward and evaluate it further?</p> <p>22 A. That seems to be the option, yes.</p> <p>23 Q. Just to sum up what you talked about,</p> <p>24 pica is not a rare -- it's not uncommon. It</p> <p>25 should be considered where a large residential</p> |
| <p style="text-align: right;">Page 1082</p> <p>1 with the six-year-old pica consideration, does it</p> <p>2 change the analysis?</p> <p>3 A. No. So that's -- the first thing is</p> <p>4 that if you change the time domain, it does</p> <p>5 nothing to the result. So this is -- Ms. Levert's</p> <p>6 is still a 200-milligram-per-day ingestion rate,</p> <p>7 and I've changed the exposure duration to 6 years</p> <p>8 from 30 years. And it does absolutely nothing to</p> <p>9 the outcome of the equation, because you're</p> <p>10 dividing 6 years by 6 years. It's the same as</p> <p>11 dividing 30 years by 30 years or 8 years by 8</p> <p>12 years or 7 years by 7 years. It just doesn't</p> <p>13 matter.</p> <p>14 Q. There are some places where it does</p> <p>15 matter?</p> <p>16 A. It does when you get down less than a</p> <p>17 year.</p> <p>18 Q. Yeah. Okay. But when you use the</p> <p>19 1000-milligrams-per-day pica rate suggested by the</p> <p>20 EPA and DEQ and RECAP, what do you see?</p> <p>21 A. We see that it has an effect on the</p> <p>22 RECAP standard. So instead of 16,000 milligrams</p> <p>23 per kilogram that we would allow to be left in the</p> <p>24 soil, the value goes down to 3,129 milligrams per</p> <p>25 kilogram of barium.</p> | <p style="text-align: right;">Page 1084</p> <p>1 site may house a proportionally large number of</p> <p>2 children. When a pica ingestion rate is used</p> <p>3 instead of the default, the results indicate that</p> <p>4 there are barium soil exceedances at the site;</p> <p>5 correct?</p> <p>6 A. That's correct.</p> <p>7 Q. And then, on the dilution factor, your</p> <p>8 opinion is ERM should have calculated a</p> <p>9 site-specific dilution factor. In general,</p> <p>10 site-specific data simply offer a higher level of</p> <p>11 accuracy of defaults. When a site-specific</p> <p>12 dilution factor is used with ERM's SPLP data</p> <p>13 instead of this default, the results indicate that</p> <p>14 there are exceedances in some of the AOIs?</p> <p>15 A. That's correct.</p> <p>16 Q. And, again, the option when there are</p> <p>17 exceedances under these standards, under RECAP,</p> <p>18 you either stop there and clean up or you go</p> <p>19 further.</p> <p>20 A. Correct.</p> <p>21 Q. And nobody did any of those analysis?</p> <p>22 A. Not yet.</p> <p>23 MR. CARMOUCHE: Prior to passing the witness,</p> <p>24 can we take a five-minute restroom break?</p> <p>25 JUDGE PERRAULT: We'll take a five-minute</p> |

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1 break.
 2 (Recess taken at 10:13 a.m. Back on
 3 record at 10:23 a.m.)
 4 JUDGE PERRAULT: We're back on the record.
 5 Do you have anything further of this
 6 witness?
 7 MR. WIMBERLEY: No.
 8 Thank you, Mr. Schuhmann. I have no
 9 further questions.
 10 JUDGE PERRAULT: We're ready for cross?
 11 MS. RENFROE: Yes, Your Honor. If I may have
 12 a moment.
 13 JUDGE PERRAULT: You may have a moment.
 14 MS. RENFROE: Thank you.
 15 JUDGE PERRAULT: Take all the time you need.
 16 MS. RENFROE: Thank you.
 17 All right. I'm ready.
 18 JUDGE PERRAULT: All right. Please proceed.
 19 MS. RENFROE: Thank you.
 20 CROSS-EXAMINATION
 21 BY MS. RENFROE:
 22 Q. Good morning, members of the panel, Your
 23 Honor.
 24 And, Dr. Schuhmann, good morning again.
 25 A. Good morning again.

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1 Q. I want to cover just a few points of
 2 clarification about the scope of your testimony.
 3 So did you hear the testimony of
 4 Mr. Miller yesterday? Were you listening to that?
 5 A. I caught pieces of it but probably less
 6 than half. So...
 7 Q. Did you, by chance, hear Mr. Carmouche
 8 tell the judge and the panel that your role in
 9 this process was limited to the critique of ERM's
 10 RECAP evaluation and specifically Ms. Levert's
 11 work?
 12 A. I think it's in the second paragraph of
 13 the executive summary or the introduction to my
 14 report. I said I think it's to contrast and
 15 comment and, in order to contrast, I would have to
 16 sort of perform sort of a parallel evaluation.
 17 Q. Right. So you did not -- in your RECAP
 18 evaluation and the report you submitted to the
 19 DNR, you did not undertake to do any evaluation of
 20 ICON's proposed most feasible plan, did you, sir?
 21 A. I did not.
 22 Q. And you did not prepare a most feasible
 23 plan of your own, did you, sir?
 24 A. Absolutely not.
 25 Q. Okay. And you've not prepared a plan

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1 for remediation and submitted it to the DNR in
 2 this case, have you, sir?
 3 A. No.
 4 Q. And even though your report identifies
 5 areas -- in fact, some 37.7 acres of soil that you
 6 say needs to be remediated for the protection of
 7 human health, you have not undertaken to submit a
 8 plan for that remediation or develop cost
 9 estimates for that remediation, have you, sir?
 10 A. No. I haven't, and even we had
 11 discussions about those acres in my deposition,
 12 how -- I said this is what falls out of the RECAP
 13 calculations; however, much of that has to do with
 14 arsenic, which I said should -- it's my opinion it
 15 should not be cleaned up to what falls out of the
 16 RECAP standard but, in fact, to background.
 17 Q. We'll come to that in just a minute.
 18 A. Okay. Great.
 19 Q. I'm just trying to -- right now I'm just
 20 trying to help the panel understand the scope of
 21 what you're here for.
 22 A. Okay. I just want to be clear on that,
 23 then.
 24 Q. So, in fact --
 25 A. That's not what I was calling for.

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1 Q. In fact, what -- even though your report
 2 says 37.7 acres need remediation, you're not
 3 calling for that, and if -- I heard you this
 4 morning say instead what you have undertaken to do
 5 is to provide a, quote -- I think you said
 6 high-level overview of Ms. Levert's RECAP
 7 evaluation; correct?
 8 A. Yes. Called a scoping analysis.
 9 Q. And, in fact, I think you said you
 10 wanted to see if Ms. Levert missed anything.
 11 A. I'm not sure. Perhaps I said that,
 12 yeah, but I think the second paragraph of my
 13 report says it quite well. And that is to
 14 contrast and comment on the risk evaluation that
 15 was performed by ERM, but in order to do that --
 16 in order to contrast, I had to create a risk
 17 evaluation to use -- with which to perform that
 18 contrast.
 19 Q. And to be clear, the risk evaluation
 20 that you performed was one pursuant to RECAP --
 21 Louisiana's RECAP; correct?
 22 A. Pursuant to? I used --
 23 Q. You applied RECAP, did you not, sir?
 24 A. I applied RECAP --
 25 Q. Correct. Or at least that's what you

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1 undertook to do?

2 MR. CARMOUCHE: I just want to say can she

3 let him finish?

4 MS. RENFROE: I'll be glad to. I'll be glad

5 to.

6 JUDGE PERRAULT: Yeah. Don't go so fast with

7 him.

8 MS. RENFROE: Sure.

9 BY MS. RENFROE:

10 Q. Now, when preparing your RECAP

11 assessment for your -- for what you submitted to

12 the DNR in this case, you did not visit the

13 Henning Management property, did you, sir?

14 A. I did not have time to visit it, no.

15 Q. And, therefore, you didn't collect any

16 samples from the property of your own?

17 A. No. I think -- when we spoke in my

18 deposition, I said that I visited it many times

19 via Google Earth. So I've looked -- I've pored

20 over that property, but I've never physically been

21 there. So I couldn't physically collect any

22 samples.

23 Q. And not only did you not physically

24 collect any samples, but you didn't request any

25 other samples to be collected; correct?

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1 A. Oh, yeah. And in the time I had -- I

2 had about four weeks to perform my scoping

3 analysis. So some folks have been working on this

4 project for four years.

5 Q. Yeah.

6 A. So it takes a lot longer to mobilize

7 people to go out and get samples.

8 Q. Sure. And, in fact, I think you told me

9 that you prepared your report -- your RECAP

10 evaluation report and submitted it at the eleventh

11 hour because you were -- you had so little time to

12 work on it. Do you recall that?

13 A. Yeah. Well, I finished it, but I think

14 anytime I write anything, I always wish I had an

15 extra day or week to go back over it and proof it,

16 and in reading back over my report, I cringe at

17 some of the -- I cringe at some of the typos in

18 there. And Ms. Renfroe was kind enough to point

19 many of them out during my deposition.

20 Q. So another thing -- in preparing your

21 report before you submitted the RECAP evaluation

22 to the DNR or before it was submitted to the DNR,

23 you had not spoken to the landowner, Mr. Henning,

24 had you, sir?

25 A. No.

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1 Q. And so you were not aware of how

2 Mr. Henning uses -- actually uses the Henning

3 Management property when you were preparing your

4 RECAP evaluation?

5 A. "Uses," so it is currently using the

6 property.

7 Q. And you -- it --

8 A. Is that -- that's what you mean by

9 "uses." So --

10 Q. That's right. "Uses."

11 A. No. He did not represent how he is

12 using it. I visited via Google Earth. So I can

13 tell there's not storage of materials and this and

14 that. I looked. I saw there was still some --

15 what looked like oil field equipment on the site

16 and roads and things like that. So I have a bit

17 of knowledge from the satellite imagery of what

18 the property is being used for.

19 Q. Well, this morning you talked about a

20 future use of the property for a residential

21 subdivision or residential purposes; right?

22 A. Yes.

23 Q. And that was the premise -- that is the

24 premise that you've relied upon in justifying your

25 use of a pica ingestion rate; correct?

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1 A. That is correct.

2 Q. Now, before preparing your high-level

3 evaluation of Ms. Levert's RECAP report, you had

4 not read Mr. Henning's deposition, had you, sir?

5 A. No.

6 Q. And, therefore, you were not aware of

7 his sworn testimony about his plans for the future

8 of the property at the time you submitted your

9 report, were you?

10 A. I was informed via conversations about

11 what Mr. Henning's intentions were, and one of

12 those intentions was for residential purposes --

13 Q. Those were not --

14 A. In this -- excuse me.

15 Q. Excuse me, sir. Go ahead. Go ahead.

16 A. And Ms. Levert even assumed a

17 residential use for that property as well. So

18 both Ms. Levert and I both assumed that this

19 would -- that this property would or could be used

20 in the future for residential purposes. It's a

21 standard assumption in performing a risk

22 evaluation or a risk assessment.

23 Q. I'll be coming to that in just a minute,

24 but I want to take it one step at a time.

25 So I'd like to ask you if you -- and by

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1 the way, when you said you were informed by
 2 conversations, those weren't conversations with
 3 Mr. Henning, were they?
 4 A. No, they were not.
 5 Q. They were conversations with
 6 Mr. Carmouche, weren't they, about the future use
 7 of the property?
 8 A. With counsel. And I don't recall
 9 whether it was Mr. Carmouche or with Todd or with
 10 both of them. But yeah.
 11 Q. But not Mr. Henning?
 12 A. Not with Mr. Henning.
 13 Q. Did Mr. Carmouche or Mr. Wimberley or
 14 anybody -- any of the lawyers for Mr. Henning show
 15 you or tell you about the sworn testimony that
 16 Mr. --
 17 MS. RENFROE: Can we go to the Elmo, please?
 18 BY MS. RENFROE:
 19 Q. -- that Mr. Henning gave? And I want to
 20 show it to you and ask you, sir, if, in fact --
 21 MS. RENFROE: Okay. Thank you. Let's see if
 22 we can get it large enough.
 23 Can the panel see this?
 24 PANELIST OLIVIER: Yes. Yes, I can see it.
 25 BY MS. RENFROE:

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1 Q. This is the sworn testimony of
 2 Mr. Henning, and at page 75, he was asked --
 3 line 6: "You don't have any intention of turning
 4 it into a residential subdivision or anything like
 5 that, do you?"
 6 And he answered: "Not that -- not right
 7 now. I don't think it would sell very well."
 8 And so did any of the counsel for
 9 Mr. Henning tell you that he had sworn under oath
 10 to this testimony, sir, before you submitted your
 11 report?
 12 A. Well, first of all, I think maybe you
 13 and I are reading this a little bit differently.
 14 Q. My question is: Did any of the counsel
 15 tell you about that sworn testimony?
 16 MR. CARMOUCHE: Let him answer the question.
 17 JUDGE PERRAULT: Okay.
 18 BY MS. RENFROE:
 19 Q. That's my question. It's a yes or no.
 20 JUDGE PERRAULT: Ask your question, please.
 21 MS. RENFROE: Yes, sir.
 22 BY MS. RENFROE:
 23 Q. Did counsel for Mr. Henning advise you
 24 that that was his sworn testimony, sir, before you
 25 submitted your report?

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1 A. No. It would not have changed anything
 2 that I did. In fact, it would have just
 3 reinforced it. He just said he's not planning on
 4 building a residential subdivision right now.
 5 Q. Next topic -- the next question. And to
 6 be clear, before this case, you had never prepared
 7 a RECAP evaluation and submitted it to Louisiana's
 8 Department of Natural Resources; correct?
 9 A. No. So yes. Correct. I've never
 10 submitted a RECAP evaluation to you folks.
 11 Q. In fact, you've not submitted to DNR or
 12 DEQ any type of written human health risk
 13 assessment before this case; correct?
 14 A. That's correct.
 15 Q. And this is your first time to testify
 16 before DNR in an Act 312 hearing, isn't it?
 17 A. That's correct.
 18 Q. Your first time to testify in a hearing
 19 regarding a potential most feasible plan; correct?
 20 A. That's correct.
 21 Q. And as I asked you this morning -- and
 22 if I don't -- I want to make sure it's very clear
 23 on the record. You don't have -- based on your --
 24 strike that.
 25 You've not reviewed the various most

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1 feasible plans issued by DNR to understand how DNR
 2 applies RECAP, have you, sir?
 3 A. No. I understand that DNR is in charge
 4 of risk management decisions. I perform risk
 5 evaluations, risk assessments.
 6 Q. So now let's --
 7 A. I'm not the decision-maker.
 8 Q. Let's now turn -- by the way, before
 9 we -- before I turn next into the steps you took
 10 to actually perform your RECAP evaluation, are you
 11 familiar with the fact that Mr. Henning uses the
 12 property for hunting as well as agriculture and
 13 growing rice?
 14 A. I'm somewhat familiar with that.
 15 Q. And the fact that through hunting -- in
 16 hunting he's inviting hunters to come onto the
 17 property and hunt the property. You're aware of
 18 that, aren't you, sir?
 19 A. I'm not aware of that. I'm generally --
 20 I met Mr. Henning within the last couple of days.
 21 I didn't have direct conversations with him but
 22 overheard conversations, and I understand that he
 23 and -- and his son is a guide and things like
 24 that. So I have a very superficial anecdotal
 25 knowledge of Mr. Henning's intent. I know from

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1 what I heard this week that he said that he drives
 2 by a piece of land where there's a new residential
 3 subdivision between his property and Lake Charles
 4 and that it's in the middle of an old sugarcane
 5 field where he never thought a subdivision would
 6 go up, but somebody has taken an agricultural plot
 7 of land and turned it into a subdivision.
 8 And as I said earlier, I see that
 9 happening in Maine where I live where farm fields
 10 are being converted to subdivisions all the time.
 11 So it just wouldn't surprise me if in the future
 12 if Mr. Henning or his children or grandchildren,
 13 or if he conveys it, that somebody may choose that
 14 use for this property.
 15 Q. Now, in your encounters with
 16 Mr. Henning -- though you haven't had a direct
 17 conversation with him, have you advised him that
 18 he needs to put up warning signs to warn the
 19 hunters who are hunting on his property that they
 20 may be in danger because of your analysis?
 21 Because of your RECAP evaluation?
 22 A. I think if people are carrying guns and
 23 hunting on that property, they're probably older
 24 than 12 years old, and, remember, pica tails off
 25 around 12. So I just don't -- to me --

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1 Q. So you haven't --
 2 A. To me -- excuse me.
 3 Q. You haven't given him that advice?
 4 JUDGE PERRAULT: Excuse me. Let him finish
 5 his --
 6 A. To me, that would be -- it would be a
 7 ridiculous thing to do to warn adults about not
 8 eating the soil.
 9 BY MS. RENFROE:
 10 Q. So let's now take the next step and look
 11 at what you did with your RECAP evaluation at a
 12 high level, the one that you did to, if you will,
 13 check Ms. Levert's work.
 14 A. And, again, it's in the second paragraph
 15 of the introduction. So it's -- it was clear.
 16 Q. So you analyzed soils at the Henning
 17 Management property; correct?
 18 A. No.
 19 Q. You did not perform --
 20 A. I didn't perform any analyses, no.
 21 Q. Under the --
 22 A. The laboratory pays -- the laboratories
 23 performed the -- sorry to interrupt. I apologize.
 24 Q. So let me give you a better question.
 25 I'll try to be more precise with my questions.

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1 A. And I apologize for interrupting.
 2 Q. With respect to the RECAP evaluation
 3 that you did, you evaluated soils at the property;
 4 correct?
 5 A. I evaluated the analytical results from
 6 ICON's data.
 7 Q. Right.
 8 A. Yeah.
 9 Q. Likewise, you evaluated the groundwater
 10 analytical data for your RECAP evaluation; true?
 11 A. Correct.
 12 Q. Now, the groundwater opinions that you
 13 have formed are limited to what we've referred to
 14 and ICON has referred to as the shallow
 15 groundwater at the Henning Management property;
 16 true?
 17 A. Correct.
 18 Q. So you're not offering any opinions
 19 regarding the Chicot Aquifer, are you, sir?
 20 A. No.
 21 Q. Is that correct?
 22 A. Yes.
 23 Q. Thank you.
 24 A. That's correct, and we talked about this
 25 in my deposition. It appears that the Chicot and

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1 that shallow groundwater are connected to -- in
 2 some respect. It appears that way where the
 3 blowout -- the scar is. So it looks like there's
 4 some commingling of the two units there, but
 5 Mr. Miller is -- he is -- he's been working at
 6 this site for four years. He's a crackerjack
 7 hydrogeologist, and I would defer to him for --
 8 with regards to opinions on the hydrogeology at
 9 the site.
 10 Q. So then another aspect -- again, just to
 11 be clear on what you did and what you didn't do,
 12 you did not analyze chlorides on the property as
 13 part of your RECAP evaluation; correct?
 14 A. I didn't evaluate chloride analyses or
 15 data as part of my evaluation --
 16 Q. Right.
 17 A. -- correct.
 18 Q. So turning now to the data that you did
 19 evaluate, you did not consider in your RECAP
 20 evaluation the data developed by ERM; correct?
 21 A. I did consider it, but I did not
 22 incorporate it into my evaluation.
 23 Q. Into your RECAP evaluation?
 24 A. That's correct.
 25 Q. And that means that you didn't consider

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1 the hydrocarbon fractions data collected by ERM;
 2 correct?
 3 A. I did not consider that, and I didn't
 4 consider hydrocarbons in the risk evaluation.
 5 So...
 6 Q. And, likewise, you did not consider in
 7 your RECAP evaluation the indicator data that ERM
 8 developed; correct?
 9 A. What do you mean, "indicator data"?
 10 Q. PAHs?
 11 A. Oh, PAHs. No. I didn't, and I did not
 12 run a risk evaluation on that. And I don't think
 13 Ms. Levert at ERM did either. I don't think so.
 14 Q. I think their RECAP evaluation will
 15 speak for itself, but I'm talking about what you
 16 did in your work.
 17 A. Yeah.
 18 Q. In developing your barium management
 19 option to a remediation standard, you did not
 20 account for the ERM barium speciation data;
 21 correct?
 22 A. When you say "ERM barium speciation
 23 data," what do you mean?
 24 Q. The XRD EDX analysis.
 25 A. The XRD EDX analysis is -- it does not

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1 inform me.
 2 Q. So let's put it like this: In your
 3 barium RECAP evaluation, you assumed that the
 4 barium at the site was in a mobile toxic form;
 5 correct?
 6 A. I assumed the barium at the site was in
 7 the form that RECAP informs the evaluator to work
 8 with. So you have -- there are two different
 9 types of barium results that are reported for
 10 laboratory analyses. The true total barium, which
 11 is borne out of this program right here, DNR, and
 12 "barium" barium. And LDEQ and RECAP inform us
 13 that we take the "barium" barium results and run a
 14 risk evaluation with those concentrations. That's
 15 what Ms. Levert did, and that's what I did.
 16 Q. Now, talking about the ERM data -- to
 17 summarize for the panel, when you performed your
 18 RECAP evaluation, you incorporated in that
 19 quantitative analysis only the ICON data and not
 20 the ERM data; correct?
 21 A. Correct.
 22 Q. And so, in doing that, you chose to
 23 ignore over 1200 data points generated by ERM;
 24 correct?
 25 A. Yes. Yes. That's right.

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1 Q. And so you did not meet the DNR
 2 expectation that all data would be utilized and
 3 incorporated into your RECAP evaluation, did you,
 4 sir?
 5 A. Well, that's because ERM produced wet
 6 weight data. The requirements are clear that in
 7 order to run a risk evaluation like this, you need
 8 dry weight data. ERM's data is all in wet weight,
 9 and we had this conversation with Ms. Levert. So
 10 these are not -- so not only are the results as
 11 reported different, but the sample preparation and
 12 the preprocessing before digestion is quite
 13 different as well. So using -- so for a couple of
 14 reasons. Number one, I had not seen any QA/QC of
 15 ERM's data; but, number two, it was all wet weight
 16 data and it was an inappropriate form I use.
 17 Q. Now, with respect to the ICON data that
 18 you did choose to use, you did not undertake to
 19 independently do a QCQ- -- QA/QC analysis of the
 20 ICON data, did you, sir?
 21 A. No, I did not. I relied on Mr. Miller
 22 just like I'm relying on Mr. Miller for the
 23 hydrogeology of the site. He is -- that's his
 24 bailiwick. I've worked with him before, and I
 25 have a high degree of confidence in him.

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1 Q. With respect to the ERM data, you didn't
 2 ask anybody to provide you with a QA/QC package or
 3 analysis of that before rejecting it, did you,
 4 sir?
 5 A. I rejected it. It's a wet weight
 6 analysis, and so the QA/QC -- I actually looked
 7 through some of the QA/QC data, saw how some of --
 8 some samples were -- the spikes were over. Some
 9 were under, but by and large, it just -- the data
 10 were inappropriate -- the ERM data were
 11 appropriate for doing some sort of risk
 12 evaluation. So, for example, if I was going to do
 13 a risk evaluation of hunters or, let's say -- or
 14 somebody riding four wheelers through the Henning
 15 property after it had been raining a lot, then
 16 those wet weight data might have made sense for me
 17 to use.
 18 But the ingestion pathway -- the soil
 19 ingestion pathway, remember, is primarily dust.
 20 50 percent of the normal soil ingestion pathway --
 21 over 50 percent is dust. For pica it's -- we're
 22 talking about soil dust and the top couple of
 23 inches of soil. So we're not talking about wet
 24 granular material. We're talking about a fine
 25 material. Dust is -- you know, it's a micron

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| <p style="text-align: right;">Page 1105</p> <p>1 level. It's thousands of times smaller diameter 2 than the 10 -- the number 10 mesh that a dry 3 weight analysis has passed through. A wet weight 4 analysis doesn't pass through any mesh. It's just 5 digested. So it's apples and oranges. I think 6 the ERM data again could be useful in certain 7 venues, but for my purposes it just wasn't. It 8 just wasn't of use. 9 Q. Now, you accepted ICON's data, I think 10 you just told us, based on your prior experience 11 with Mr. Miller; right? 12 A. Yes. And the fact that I could rely on 13 him, and he could -- he -- I assumed that he 14 would -- that he would be testifying to the 15 voracity of the data as well because ICON is using 16 that data. 17 Q. So you didn't just -- 18 A. I'm just a small player in this -- in 19 this large piece of machinery. 20 Q. So you didn't do a -- you didn't 21 personally do any kind of peer-review analysis of 22 the ICON data before you incorporated it into your 23 RECAP assessment; correct? 24 A. It was dry weight data, and I had seen 25 those data before and worked with Mr. Miller</p> | <p style="text-align: right;">Page 1107</p> <p>1 formal RECAP evaluation to LDEQ. I didn't follow 2 any of those. So there are lots of things. This 3 was a scoping analysis that was performed within 4 the constraints of the framework of RECAP in order 5 to compare, contrast, and comment on ERM's RECAP 6 evaluation. I don't know how else to say it. 7 Q. While we're talking about the data, I 8 want to go -- and RECAP -- let's take a look at 9 what it says on the -- on this issue of wet weight 10 versus dry weight. 11 A. Yeah. 12 MS. RENFROE: Let's go to Exhibit 45, which 13 is already in evidence, please, Jonah. 14 BY MS. RENFROE: 15 Q. So on page -- I believe it's page 55. 16 A. 45. 17 Q. Well, it's our Exhibit No. 55. 18 A. Sorry. 19 Q. So page 55. But thank you for your 20 careful clarification. 21 So we have the dry weight versus wet 22 weight section on page 45 of the RECAP as you say, 23 but it is -- it's Bates page 55 for the Chevron 24 exhibit. And do you see there, sir, that -- or if 25 you look at it -- and I know you have looked at</p> |
| <p style="text-align: right;">Page 1106</p> <p>1 before. I knew Mr. Miller was going to testify to 2 defend the data that had been produced by Pace 3 Laboratories and provided to his company, ICON, 4 and I didn't feel the need -- didn't feel the need 5 to go through and go through those data, and so I 6 did not. 7 Q. Likewise, you didn't do a usability 8 analysis of the ICON data like Ms. Levert did, did 9 you, sir? 10 A. I just said that I didn't. 11 Q. All right. 12 A. Yeah. 13 Q. Now, did you hear the testimony that 14 Mr. Miller gave to this panel yesterday that he 15 did not perform data validation on the ICON data 16 set? 17 A. No, I did not hear that. 18 Q. So to sum this up, with respect to your 19 use of the data for the RECAP evaluation that you 20 did, you didn't follow the RECAP rules to validate 21 QA/QC and evaluate the usability of the data? You 22 didn't do that yourself, did you, sir? 23 A. I didn't follow a lot of RECAP rules. 24 There are so many forms and things you have to 25 fill out when you submit a RECAP evaluation -- a</p> | <p style="text-align: right;">Page 1108</p> <p>1 it. 2 A. Hundreds of times. 3 Q. Yes. You see that it says "analytical 4 data," and let's find that. It says: "Analytical 5 data for soil are routinely reported on a wet 6 weight basis." 7 You see that, sir. You know that's in 8 there. 9 A. I see what's written there. 10 Q. And it goes on to say: "In general, 11 most soils have a relatively low percent of 12 moisture, and the difference between the wet 13 weight concentration and the dry weight 14 concentration is not usually significant." Do you 15 see that, sir? 16 A. I see that. 17 Q. So -- 18 A. And I don't see it in RECAP 2016, and I 19 don't see it in RECAP 2019. So I think that 20 that's very significant that this one paragraph -- 21 and I -- excuse me, but I've -- you know, on other 22 projects I've worked on, I've seen this -- the 23 risk evaluators hang their entire evaluation on 24 this one paragraph that to me -- and I've read it 25 so many times, and I'm not the brightest bulb in</p> |

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| <p style="text-align: right;">Page 1109</p> <p>1 the bunch. But it's a very convoluted paragraph 2 that misrepresents what typically happens. The 3 entire scientific community and the EPA reports 4 exposure concentrations in dry weight. In fact, 5 the EPA requires dry weight. I was here for 6 Ms. Levert's testimony, and she said, yes, I know 7 this is wrong and -- but I do it anyway. And I 8 know that the rest of the world is -- the EPA is 9 right, and what I do is I offer -- and excuse me 10 for paraphrasing her. She says: I offer a dry 11 weight analysis as a sensitivity analysis sort of 12 as an appendix to the report. 13 And I just don't understand. I'm really 14 at a loss as to -- if you understand that 15 something is wrong, why do you use it and perform 16 the evaluation with the wet weight data and then 17 appendicize the correct analysis as a sensitivity 18 analysis? So I just -- this entire paragraph 19 makes no sense to me. It no longer appears in 20 RECAP, and it's totally incongruous with the 21 entire scientific and regulatory community outside 22 of this one paragraph. 23 Q. Do you understand, sir, that the 2019 24 version that you keep referring to has not ever 25 been in effect? It's never been adopted?</p> | <p style="text-align: right;">Page 1111</p> <p>1 DNR for oil field sites in the state of Louisiana? 2 A. I listened to her testimony. That's why 3 I say I'm baffled as to why she relies on wet 4 weight when she testified that she knows that she 5 shouldn't be using it. 6 Q. Are you familiar with her experience -- 7 A. I've listened to -- 8 Q. Let me finish my question, please. 9 Are you familiar with Ms. Levert's 10 experience, decades of experience, in working with 11 RECAP and with the DNR and DEQ in evaluating 12 potential human health risk using the tool -- the 13 RECAP tool? Are you familiar with that, sir? 14 A. If she's using this -- this is not a 15 tool to me. This is nonsense. I'm sorry to use 16 such a strong word, but this is just nonsense 17 and -- 18 Q. You're calling Ms. Levert and her work 19 nonsense? 20 A. No. 21 Q. Is that your testimony? 22 A. I'm saying this is nonsense, and I'm 23 pointing to this quote that's on the wall. And 24 Ms. Levert in her testimony -- I don't want to 25 testify for her, but you folks heard her. As I</p> |
| <p style="text-align: right;">Page 1110</p> <p>1 A. I understand it hasn't been promulgated. 2 So I understand you can't quote from it in a 3 regulatory framework. You can't do anything. I'm 4 just saying from a common sense perspective if 5 this is so important and it's -- I mean, here -- 6 this is what we're asked to believe, is that 7 there's this one convoluted sentence upon which 8 we'll hang our hat, that we need to use wet weight 9 concentrations to perform a risk evaluation and 10 that's it and then over here are thousands of 11 pages of EPA documents, scientific documents and 12 first principles that are to the contrary. And 13 then an ERM expert comes in here and says, yes, I 14 know this wrong but I still do it. I was -- I sat 15 in here for Ms. Levert's testimony, and I couldn't 16 understand that either. So there are just a lot 17 of things about this, and it's the use of this 18 paragraph that quite frankly I'm at a loss to 19 explain. 20 Q. So we'll let the record speak for 21 itself, and we'll let Ms. Levert speak for 22 herself. 23 A. Very good. 24 Q. Are you familiar with how many times 25 Ms. Levert has provided RECAP evaluations to the</p> | <p style="text-align: right;">Page 1112</p> <p>1 said, I feel very strongly about this. The entire 2 rest of the scientific world and now RECAP 2016 3 and 2019 all disagree with this paragraph that 4 we're seeing up here on the wall. So if somebody 5 decides to continue using this, I don't -- I 6 simply don't understand it. I don't know why they 7 would do it. I'm not in a position to say why. I 8 just am telling you that I don't understand it. 9 To me it's nonsensical. 10 Q. You understand that the effective -- the 11 only effective version of RECAP is the 2003 12 version? 13 A. For regulatory purposes, yes, but for 14 thoughtful human beings -- when you look and you 15 understand that RECAP is an evolving document -- 16 the fact that they excised this (indicating) exact 17 thing from the future iterations must inform 18 you -- if you've a thoughtful person, it must 19 inform you that maybe there was a problem with 20 this. 21 Q. So now you're suggesting that the 22 folks -- that the state of Louisiana is not 23 thoughtful or well-informed because of the version 24 of RECAP that is the law does -- that you disagree 25 with it?</p> |

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1 A. I just said -- I believe I said exactly
 2 the opposite. The folks at DEQ are thoughtful
 3 and, because they're thoughtful, they've gotten
 4 rid of this paragraph that you've got up on the
 5 wall. They got rid of it. It's gone. So
 6 hopefully we'll never have to talk about it again.
 7 I see it in report after report after report.
 8 Usually, they -- well, I won't go there.
 9 Q. Let's be clear.
 10 A. Yeah.
 11 Q. In the effective version, the only
 12 version of RECAP that is the law, it is included.
 13 Let me move on. You've never spoken to
 14 anyone at LDEQ about its views on whether RECAP
 15 requires wet weight, have you, sir?
 16 A. No.
 17 Q. And you've never spoken to anyone at the
 18 DNR about their views on the RECAP requirement for
 19 the use of wet weight data, have you, sir?
 20 A. No. But I'd like to.
 21 Q. And you don't know how many RECAP
 22 evaluations the DNR has accepted based on wet
 23 weight data, do you, sir?
 24 A. No.
 25 Q. Now, you know that Ms. Levert -- I think

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1 you just told us she did provide to the DNR dry
 2 weight data as well as wet weight. You're aware
 3 of that, aren't you, sir?
 4 A. Dry weight evaluation --
 5 Q. Yes.
 6 A. -- yes.
 7 Q. Let's move on to a different topic, and
 8 that is -- let's now take a look at the RECAP soil
 9 evaluation that you did. And I want to start with
 10 your discussion about pica and what you had to say
 11 about that in your presentation this morning.
 12 So if I understand correctly, you've --
 13 you -- it's your view and your testimony this
 14 morning that in the direct -- in the soil direct
 15 contact analysis that you did under RECAP, that
 16 you believe a pica ingestion rate of
 17 1,000 milligrams per day should be used, and
 18 that's what you used; right?
 19 A. Correct.
 20 Q. Instead of the 200 milligrams per day
 21 that Ms. Levert used based on the RECAP default
 22 standard; correct?
 23 A. That's correct.
 24 Q. So that's what the debate is about, your
 25 view that pica ingestion rate of 1,000 milligrams

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1 should be used versus the RECAP default of 200?
 2 A. If you'd like to call it a debate, then
 3 yes.
 4 Q. Now, you don't have any evidence that
 5 children currently reside at the Henning
 6 Management property; correct?
 7 A. No. I doubt that children are residing
 8 there.
 9 Q. And with respect to any children that
 10 may reside there in the future, you have no
 11 evidence that those children would engage in pica
 12 behavior, do you, sir?
 13 A. This is about possibilities and
 14 probabilities, and I think I presented the data
 15 that shows that if -- that we're talking about
 16 percentages that are similar to people with
 17 physical disabilities and kids with learning
 18 disabilities. And so, to me, that informs me that
 19 there is a reasonable probability that there will
 20 be a child or children on this site if there is a
 21 residential subdivision.
 22 Q. I think you just said you're talking
 23 about a hypothetical that might happen sometime in
 24 the future.
 25 A. Absolutely. This is all a

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1 prospective -- prospective assessment.
 2 Q. So it's your view that the soil pica
 3 ingestion rate should be used to evaluate a
 4 potential human health risk on any land that could
 5 be used for residential purposes?
 6 A. That's not what my testimony reflected
 7 earlier. I said there's -- because of the nature
 8 of this site -- the nature and size of this site,
 9 you -- it has the potential to have a lot of
 10 children on it. Remember, I said if we had a
 11 1/4-acre site that could have one residential home
 12 on it where there would be one family, we might
 13 expect 1.6 children to live on that property, then
 14 there's a low chance that those 1.6 children will
 15 exhibit pica behavior. But if we have a
 16 subdivision with 20 homes and 10 percent of
 17 children -- let's say -- let's just use 10 percent
 18 to make the math simple. Then I can -- then we
 19 can sort of go through a thought exercise that
 20 there might be two children in that subdivision
 21 with -- that exhibit pica behavior, and that, to
 22 me, makes it real. One home doesn't.
 23 Q. So you would say that any land that's
 24 going to be used for residential purposes -- any
 25 place where children would have access to the soil

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1 and where there are potential for significant
 2 numbers of children, that's when you say a pica
 3 ingestion rate should be used?
 4 A. I'd have to think about it before I give
 5 you a flip answer here. What I can tell you is
 6 that I evaluated the Henning property, and based
 7 upon the size of the Henning property, the nature
 8 of the Henning property, good upland -- the soil
 9 and land and because of its potential for future
 10 residential subdivision, it could be quite large.
 11 That's why in this case I opted to perform a pica
 12 assessment.
 13 Q. And, in fact, do you remember telling me
 14 in your deposition that failure to use a pica
 15 ingestion rate for property that could be used for
 16 future residential purposes would be derelict?
 17 A. Yeah, it would have been derelict for
 18 me. That's the way I feel about it. I said it
 19 would have been derelict for me to not consider
 20 pica in this -- for this property -- for the
 21 Henning property.
 22 Q. And so are you saying that it was
 23 derelict by -- on Ms. Levert's part not to have
 24 evaluated or incorporated a pica ingestion rate in
 25 her RECAP analysis?

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1 A. I would not impose my ethics and my code
 2 of ethics on somebody who's not -- I'm an
 3 engineer. So I have a professional code of
 4 ethics. Ms. Levert -- I don't know if she's a --
 5 I'm not quite sure of her background. I don't
 6 know what hers is, but I can tell you that for
 7 me -- my ethical code calls for me to protect
 8 human health and the environment, and when I
 9 looked at this case, this property, it called --
 10 from my perspective it called for me to consider
 11 pica behavior because of the potential. Again, if
 12 it was one house or if there was a gas station or
 13 if it was a retirement home, we wouldn't be having
 14 this conversation.
 15 Q. So I want to show you the testimony that
 16 you gave when I asked you this question because I
 17 think it really is important to help understand
 18 what your testimony really is.
 19 MS. RENFROE: So if I can have the Elmo,
 20 please, Jonah.
 21 BY MS. RENFROE:
 22 Q. So, Dr. Schuhmann, I asked you at,
 23 page 119, line 8: "I'm asking you what
 24 site-specific conditions warrant the use of a soil
 25 pica ingestion rate?"

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1 And your answer was: "I would say that
 2 any land that's going to be used for residential
 3 purposes or for a school or a community center --
 4 anyplace where children will have access to that
 5 soil and where there are the significant -- the
 6 potential for significant numbers of children to
 7 have access to that soil, then you're being
 8 derelict by not including pica in your
 9 assessment."
 10 A. Yeah. I think I said it better there
 11 than I did here today. But, yeah, community
 12 centers, schools. So I didn't mention that here
 13 this morning, but, right, these are all important
 14 site-specific considerations.
 15 Q. Now, let's --
 16 A. Gas stations and parking lots and
 17 apartment buildings and things. No, not so much.
 18 Q. So now let's get this -- let's
 19 have the -- let's get our understanding a little
 20 more precise so I can understand and the panel can
 21 understand a little more precisely the differences
 22 between you and Ms. Levert.
 23 As you said a moment ago, you know that
 24 Ms. Levert, in fact, incorporated a residential
 25 scenario in her RECAP assessment, didn't she?

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1 A. Yes.
 2 Q. And so her analysis assumed a future
 3 residential scenario with children, didn't it?
 4 A. Yes, it did.
 5 Q. And so the difference between her
 6 analysis and your view of what would or would not
 7 be derelict is that she used the ingestion rate
 8 prescribed by RECAP and you did not?
 9 A. That's correct. I used the EPA
 10 ingestion rate.
 11 Q. And so then what we -- what I want to
 12 talk to you about is something that you mentioned.
 13 MS. RENFROE: And if we can now go to my
 14 Slide 1, please, Jonah.
 15 BY MS. RENFROE:
 16 Q. Earlier in your testimony, you talked
 17 about the EPA, and I think that you and
 18 Mr. Wimberley showed the panel and included in
 19 your slides the EPA. But you would agree with me,
 20 sir, that the default residential soil ingestion
 21 rate in the EPA prescribed by the EPA is not a
 22 pica rate; correct?
 23 A. That's correct.
 24 Q. It's 200 milligrams per day; right?
 25 A. Correct.

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| <p style="text-align: right;">Page 1121</p> <p>1 Q. That's the same rate that Ms. Levert 2 used based on RECAP, isn't it? 3 A. Yes. 4 Q. So -- 5 A. This is the same table I showed to you. 6 Q. Right. 7 A. You can see the soil pica and geophagy 8 too. In fact, that's -- see, the 50,000 there 9 is -- we saw in RECAP. Remember, it was between 10 25- and 60,000. So that's why I thought that was 11 geophagy. 12 Q. So I want to be very clear, though, 13 because Mr. Wimberley asked you a question at the 14 end of your testimony about whether the EPA and 15 DNR and RECAP required the use of a pica ingestion 16 rate, and you said yes. But the default rate in 17 the EPA is not a pica rate, is it, sir? 18 A. No. It's sort of like the Summers 19 dilution factor. It's a default. 20 MS. RENFROE: And if we can go to the next 21 slide, please, Jonah. 22 BY MS. RENFROE: 23 Q. The DNR and the DEQ -- they -- even in 24 their residential scenario, including children, 25 that default standard is 200 milligrams per day,</p> | <p style="text-align: right;">Page 1123</p> <p>1 the record that I was not. I was -- what I 2 intended that meaning to be is that I would have 3 been derelict not to consider pica behavior at 4 that -- this site. 5 Q. And in addition to the fact that DNR and 6 DEQ don't require use of pica behavior -- you 7 know, Mr. -- there's been some testimony in the 8 case about Texas, and I'm just -- I happen to be 9 from Texas. I thought I would take a look. 10 And just around -- you know, just to 11 understand who requires pica -- and Texas, the 12 commissioner on environment quality, they don't 13 require a pica ingestion rate for their 14 residential scenarios, do they, sir? 15 A. No. And DEQ doesn't require it either. 16 They just have a section on it and said -- and DEQ 17 says you should be aware of this and as, an 18 evaluator, consider it. 19 By the way, I've been a Texas resident 20 twice, and I learned risk assessment at the 21 University of Houston when I came out of the oil 22 fields. And the first -- I took a course in 23 chemical engineering at U of H. It was a course 24 in environmental remediation 30-plus years ago, 25 and the first risk assessment I did was that of</p> |
| <p style="text-align: right;">Page 1122</p> <p>1 isn't it? 2 A. It is. 3 Q. That's why Ms. Levert used that 4 ingestion rate, isn't it? 5 A. Yes. It's not unusual. 6 Q. And so we don't want to suggest and we 7 don't want any confusion in the record that DNR or 8 DEQ requires a pica rate of 1,000? 9 A. No. 10 Q. If you said that, that was a mistake, 11 wasn't it? 12 A. If I said that DEQ requires a pica 13 ingestion rate of 1,000 milligrams per day, then I 14 misspoke. 15 Q. Okay. 16 A. The DEQ actually says between -- what is 17 it? 25 and -- 25,000 and 60,000 milligrams per 18 day, but I think that's per event. We talked 19 about that earlier. That was under the -- that 20 acute section. 21 Q. Now -- 22 A. And, again, it -- this is a difference 23 in two evaluators creating two conceptual models 24 for this site. And if somehow it appears that I 25 was impugning Ms. Levert, I want to have it be on</p> | <p style="text-align: right;">Page 1124</p> <p>1 pica. Back in those days from my recollection -- 2 I'm going back 30 years now -- pica was a fairly 3 standard default for Superfund risk assessments. 4 Q. Of course, we're not talking about a 5 Superfund risk assessment in this case, are we? 6 A. No. And we're 30 years divorced from 7 that day at the University of Houston. 8 Q. So checking around the country and 9 looking at few other states to see what they do -- 10 New Jersey as an example, they don't have a pica 11 as their default ingestion rate for residential 12 scenarios, do they? 13 A. No. And I could probably cut this 14 short. Nobody has a pica as a default for the 15 ingestion rate. 16 Q. Even in the state of Maine where you 17 live, they don't use a pica as a default ingestion 18 rate, do they? 19 A. Nobody does. 20 Q. 200. Right. So -- 21 A. There's a default pica rate embedded in 22 the ATSDR tables and the EPA tables, but the 23 evaluator has to make that decision. 24 Q. Now, I'm almost finished with this 25 topic, but I just wanted to understand -- and now</p> |

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1 I think we do.
 2 There's nobody around the country, at
 3 least the states that we've talked about so far --
 4 and as you've just admitted now, nobody calls for
 5 an ingestion rate of -- a pica ingestion rate of
 6 1,000 milligrams per day for residential scenario
 7 as a default, do they?
 8 A. No. Because you could have a single
 9 property that's got contamination on it, and it
 10 wouldn't make sense to set that as a default.
 11 That's --
 12 Q. And another --
 13 JUDGE PERRAULT: Let him finish, please.
 14 MS. RENFROE: Sorry.
 15 A. Again, it's contextual. So if we had
 16 one property where there was a spill of
 17 something -- and then you wouldn't -- it's a
 18 single property. Why would you apply a pica rate
 19 when there is maybe the probably of it's one in 20
 20 or one in ten that a child there is going to -- is
 21 going to exhibit pica behavior? I mean, you could
 22 go check the property and go observe, but I --
 23 it's not that I disagree with the 200-milligram
 24 default rate. I think it makes sense, but as risk
 25 evaluators, if you're looking at a scenario where

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1 you could potentially have a lot of children and
 2 there's broad contamination, then it's just quite
 3 simply my opinion it should be considered.
 4 BY MS. RENFROE:
 5 Q. You know, you were talking a moment ago
 6 about the 2016 and 2019 drafts of RECAP. Did you
 7 know that pica is not mentioned in either one of
 8 those drafts?
 9 A. Yes, that's right. RECAP is -- it
 10 pushes things to the EPA. It's -- the entire
 11 document is predicated upon the EPA. So, yeah,
 12 I've looked at those versions.
 13 Q. Let's now take the next step in
 14 evaluating what you did in your high-level
 15 evaluation of Ms. Levert's work. So I want to
 16 talk specifically now about your soil direct
 17 contact evaluation.
 18 A. Uh-huh.
 19 Q. Fair? You with me?
 20 A. I'm with you.
 21 Q. For your soil direct contact evaluation
 22 under RECAP, you only used a pica ingestion rate
 23 of 1,000 milligrams per day?
 24 A. Correct.
 25 Q. That's the only way that you performed

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1 this analysis; right?
 2 A. Correct.
 3 Q. Right.
 4 A. To compare and contrast and comment upon
 5 ERM's work.
 6 Q. So let's now talk specifically about
 7 what standard you calculated for arsenic in soil.
 8 A. If you'd like -- again, I really -- for
 9 the purposes of this hearing, my opinions on
 10 arsenic are -- I really don't have any. There's
 11 naturally occurring arsenic at the site. It's
 12 present there at over 6 milligrams per kilogram.
 13 When you run through the RECAP calculations, the
 14 soil ingestion calculations, you get a RECAP
 15 standard of, I think, four. So it just -- it
 16 doesn't make physical sense because it's the
 17 RECAP -- the RECAP standard is telling you to
 18 clean up to less than the background, and I --
 19 that doesn't make sense to me.
 20 Q. So using your application of the pica
 21 ingestion rate of 1,000 milligrams per day and
 22 then running -- performing your soil direct
 23 contact evaluation for arsenic, you derived a
 24 standard of 4.69 milligrams per kilogram; correct?
 25 A. It's possible.

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1 Q. Well, it's in your report.
 2 A. I just -- I'm sorry. I just don't have
 3 my report here, and you went out to two decimal
 4 places. But it's around -- it's 4-something,
 5 yeah.
 6 Q. I give you my word as an officer of the
 7 court.
 8 A. All right. I'll take it. I'll take it.
 9 Q. I'm just quoting you.
 10 And you accept, I think, as you just
 11 said, that that arsenic standard that you
 12 calculated -- again, using your pica ingestion
 13 rate -- is below the state background for arsenic
 14 of 12?
 15 A. Well, it's -- and I would prefer to talk
 16 about the site-specific background that was
 17 calculated for the Henning site of 6 point
 18 something.
 19 Q. Sure.
 20 A. You probably have it there.
 21 Q. I do, yeah.
 22 A. But yeah. I would prefer to talk about
 23 the site-specific because the -- I take a little
 24 bit of issue with using the statewide arsenic
 25 background level because it's quite variable.

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1 Higher in some places, and it's lower in others.
 2 Q. That's fine.
 3 A. So we have site-specific data. I think
 4 we should look at that.
 5 Q. Sure. I'm happy to.
 6 You calculated a site-specific
 7 background for arsenic -- either you or ICON
 8 did -- of 6.23 --
 9 A. Correct.
 10 Q. -- milligrams per kilogram; right?
 11 So, again, the point here is -- using
 12 your pica ingestion rate, your calculation comes
 13 up with an arsenic standard that is below even the
 14 site-specific background for arsenic for soil?
 15 A. Here in Louisiana, yes.
 16 Q. All right.
 17 A. If we were somewhere else that was
 18 devoid of arsenic. We just happen to have quite a
 19 bit of arsenic in the soils down here.
 20 Q. Moving to barium --
 21 A. But if we were in another state where
 22 there was -- where the background concentration of
 23 arsenic was .1 milligrams per kilogram, well then
 24 that might make some sense. It might imply that
 25 there was mud acid used, and then -- so what we're

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1 seeing if we see 4 milligrams per kilogram that --
 2 and the background is .1, maybe that has to do
 3 with something -- some anthropogenic activities
 4 and some pollution.
 5 Q. So essentially you're telling us that
 6 your soil direct contact standard that you
 7 calculated for arsenic using your ingestion rate
 8 of -- a pica ingestion rate really makes no sense
 9 given the site-specific background?
 10 A. Yes. I would never come in here and
 11 suggest that that RECAP standard of 4 milligrams
 12 per kilogram should drive a cleanup to below
 13 background. That's -- I just want to be very
 14 clear on that, and I thought I was in my
 15 deposition. So if that's sketchy to anybody, let
 16 me know, and I'll say it again.
 17 Q. I thought that your testimony about
 18 children and the potential use of this property
 19 for children rendered the property unsafe, and now
 20 you're telling us that we should ignore what you
 21 said in your report when you said on the
 22 conclusion -- your conclusions of your report on
 23 page 23, you included arsenic as -- within the
 24 areas that needed to be remediated. So let's be
 25 clear. What are you telling this panel,

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1 Dr. Schuhmann?
 2 A. I'm not going -- I think I was really
 3 clear what I was telling the panel, and I told you
 4 the same thing in my depositions about these
 5 conclusions -- is that if you crank the handle on
 6 RECAP, the RECAP standard that comes out of that
 7 machine is a RECAP standard of 4 point something
 8 milligrams per kilogram, and according to that
 9 RECAP standard, these would be the AOIs that would
 10 need to be remediated; however, I thought I was
 11 really clear in my deposition. I'll say it again.
 12 It's my opinion that -- and I talked about the
 13 fact that I felt I was compelled to put that in
 14 this report but because in order to -- in order
 15 for DEQ to allow you to clean up to a
 16 site-specific standard, you have to go apply for
 17 that.
 18 So there's a whole process. I didn't
 19 have the process. I just reported that -- what
 20 AOIs were in excess of the RECAP standard that I
 21 calculated, but in my deposition, as I'll do here
 22 again right now -- is that I would not expect a
 23 site to be cleaned up to some standard below
 24 background. Now, with respect to the health
 25 effects, the potential health effects for children

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1 at a site like this, well then, you know, we go
 2 through that hierarchy of risk management; right?
 3 If you can't design it out -- so if you
 4 can't remove it, what's the next thing to do?
 5 Guard against it. If you can't guard against it,
 6 then you warn. So -- and, again, I'm not here
 7 this morning in a risk management role really.
 8 But those would be the types of things that I
 9 might suggest for a site like this. But for many
 10 places in Louisiana -- there are probably places
 11 with higher arsenic concentrations than this.
 12 Q. So I just -- I have a very, very simple
 13 and direct question.
 14 A. Yes.
 15 Q. This is page 23 of your report --
 16 A. Uh-huh.
 17 Q. -- that you submitted to -- or that was
 18 submitted to DNR, and in your conclusion you say
 19 that there are -- all five soil areas of
 20 investigation created for arsenic exceed the soil
 21 and require remediation. Are you now changing
 22 this and so we should delete that sentence?
 23 A. I changed it back when we spoke in
 24 November. It exceeded the -- all five -- no. You
 25 shouldn't have crossed that out. You should have

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|--|--|
| <p style="text-align: right;">Page 1133</p> <p>1 crossed out everything except that. You should 2 have just crossed out "require remediation." 3 Q. All right. 4 A. All five of the soil AOIs created for 5 arsenic exceed the soil NI. 6 Q. Okay. But you're not -- 7 A. That's correct. 8 Q. But you're not saying they should be 9 remediated? 10 A. That's not my business. 11 Q. So let's move on. So for barium for 12 your Management Option 2 standard, you calculated 13 3,129 milligrams per kilogram -- 14 A. Correct. 15 Q. -- correct? 16 And you did that assuming that the 17 barium at the property was not barium sulfate; 18 correct? 19 A. I complied with RECAP. I drove down 20 between the guardrails of RECAP, and I performed 21 that soil NI assessment according to RECAP just 22 like I did for arsenic. 23 Q. If this panel concludes that the barium 24 at the Henning property is, in fact, barium 25 sulfate, then you would agree that your barium</p> | <p style="text-align: right;">Page 1135</p> <p>1 in there he discusses -- and I happen to -- I 2 worked with Lloyd Duell on a big oil tank. It was 3 a pit case down in Houston 20, 25 years ago or so, 4 but Dr. Duell wrote this paper. And he talked 5 extensively about the ability for barium sulfate, 6 barite, in wet soils to be a reservoir or a source 7 for solubilized barium, and he said that really 8 the only place that you don't have to worry about 9 leaving barite in the soil is in a dry, oxygenated 10 environment. It's a good paper. It's about 29-B. 11 Duell is his last name. D-E-U-L [sic]. 12 So what happens is when we take barite, 13 barium sulfate, and put it in an anaerobic 14 environment where we have sulphate-reducing 15 bacteria, the bacteria will eat maybe hydrocarbons 16 that are there in the soil. And they will breathe 17 the sulfur from the sulphate molecule that's 18 hooked up with the barium. So the sulphate will 19 go from a positively charged ion to a negatively 20 charged ICON and will become the terminal electron 21 acceptor for the microorganism. So the 22 microorganisms actually will transform barium 23 sulfate into barium sulfide, and the barium 24 sulfide can dissociate in the water when it 25 dissolves. And then you've got barium ions and</p> |
| <p style="text-align: right;">Page 1134</p> <p>1 direct contact standard for soil would be 2 inappropriate? 3 A. If somebody -- that's a big 4 hypothetical. So that would -- I've never heard 5 of that happening, but it could. I'm not saying 6 I've heard everything there is to hear about it, 7 but it would certainly deviate from a standard 8 RECAP evaluation. And it would deviate from a 9 standard EPA risk evaluation as well, but I'm not 10 saying that it couldn't happen. 11 Q. That's not what I asked you, sir, 12 respectfully. 13 A. So I apologize. 14 Q. So I asked you -- 15 A. I need you to ask it again. 16 Q. My question is very direct. If this 17 panel were to conclude that the barium at the 18 site -- excuse me. 19 If this panel were to conclude that the 20 barium at the site is barium sulfate, then the 21 barium soil direct contact standard that you 22 calculated would not be appropriate, would it? 23 A. That's a -- it's not a simple question 24 that you've asked. There's a great paper -- it's 25 a 1989 paper by Lloyd Duell. It's about 29-B, and</p> | <p style="text-align: right;">Page 1136</p> <p>1 sulfide ions. 2 So it's a bit of a complex issue. 3 Dr. Duell does a good job that, at the end of the 4 day, you can be -- you can feel confident and safe 5 about leaving barium out there in the environment 6 if you're in a dry, arid, oxygenated environment, 7 and I'm just not so sure the Henning site is a 8 dry, arid, oxygenated environment. 9 Q. So back to my question. Do you remember 10 telling me at your deposition under oath that if 11 you thought there was anything -- if you thought 12 the barium at the site was barium sulfate, then it 13 would not have been appropriate for you to have 14 used the barium toxicity factor that you did? 15 A. Right. If you could prove that all the 16 barium was barium sulfate -- there is no reference 17 dose for barium sulfate. There is -- a reference 18 is sort of like the minimum risk level. There 19 isn't. It's used in medical applications, right? 20 So doctors give it to patients to ingest, but 21 that's -- I just think it's a different topic. 22 Q. I'm going to move now to your soil -- 23 the soil for a groundwater protection standard 24 that you calculated in your RECAP evaluation. You 25 calculated a proposed Management Option 2 soil for</p> |

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| | |
|--|---|
| <p style="text-align: right;">Page 1137</p> <p>1 a groundwater protection standard; correct? 2 A. Yes. 3 Q. And for arsenic your calculated standard 4 was 1.7 milligrams per kilogram; right? 5 A. And, again, I'm going to have to agree 6 with you because I don't have a copy of my report 7 and you're going extensively into multi-decimal 8 numbers. So... 9 Q. I'm sorry. I thought you would have 10 brought it with you, but I've got a copy for you. 11 A. Thanks. 12 Q. I don't want you to have any doubt, sir. 13 I'm not trying at all to misquote you. 14 A. Yeah. And I think that was based upon 15 the KD, the distribution coefficient. 16 Q. So my question is -- let me be very 17 clear so you don't lose sight of it. The arsenic 18 standard that you calculated -- 19 A. Yes. 20 Q. -- MO-2, was 1.7 milligrams per 21 kilogram; correct? 22 A. Yes. Based upon the KD value. So I 23 took site-specific data from -- well, boring H-3 24 and looked at the soil concentrations and then 25 looked at the underlying concentration of arsenic</p> | <p style="text-align: right;">Page 1139</p> <p>1 coefficient, and this is what emerged. 2 Q. So it's your opinion, then, that 3 1.7 milligrams per kilogram of arsenic in soil is 4 not protective of underlying shallow groundwater? 5 A. No. That's what emerges from this 6 calculation based upon boring -- what did I say it 7 was? H-3? Yeah. And we don't have a whole lot 8 of site-specific data to work with. This is on 9 page 17 of my report if you have it there. I 10 don't know. 11 Q. So here's my next question. 12 A. Yeah. 13 Q. Would you agree that there is not a 14 single detection of arsenic above the RECAP 15 screening standard in any of Chevron's limited 16 admission areas? 17 A. You'll have to say that again. 18 MR. CARMOUCHE: Judge, I might be able to 19 speed things up. I'll stipulate for this 20 hearing's purposes that we're not saying nor 21 are we asking this panel to evaluate arsenic 22 as migrating to the groundwater, and I think 23 it's very clear in our most feasible plan and 24 our comments but -- so maybe we can stipulate 25 to that so we can get away from arsenic</p> |
| <p style="text-align: right;">Page 1138</p> <p>1 in the groundwater; and from that, you can 2 calculate a distribution coefficient, KD. And 3 this is all in RECAP, and from the distribution 4 coefficient, the RECAP provides another equation 5 where you can calculate a soil groundwater value. 6 So using site-specific data and using RECAP 7 equations, this was the number. This is -- we're 8 talking about 1.7 milligrams per kilogram? 9 Q. Right. 10 A. That's the concentration that emerges 11 if you use site-specific data and the equations 12 that are provided by RECAP. Again, just like the 13 4 point whatever milligrams per kilogram of 14 arsenic emerges if you use the soil NI. 15 Q. So you understand, sir, that that -- the 16 standard you calculated for soil is below the 17 statewide arsenic background? 18 A. Yes. Below the -- it's below the 19 site-specific arsenic background. 20 Q. Right. 21 A. Yeah. But it's calculated with 22 site-specific data. Why is that number lower than 23 the background? I can't tell you that; however, 24 what I did was I took site-specific data. I used 25 the RECAP equations, calculated a distribution</p> | <p style="text-align: right;">Page 1140</p> <p>1 because -- 2 JUDGE PERRAULT: Ms. Renfroe, does that 3 stipulation change your approach here? 4 MS. RENFROE: I will move on, but I'm trying 5 to understand and help -- let the panel 6 understand Dr. Schuhmann's work here, and so 7 I'll move on to barium. But I would like 8 to -- I think I have an answer to my 9 question. 10 BY MS. RENFROE: 11 Q. The standard you calculated for arsenic 12 is below the statewide and site-specific standard; 13 correct? 14 A. The concentration that emerges if you 15 use the site-specific data and we don't -- we have 16 very little of it where we have data where we have 17 arsenic in the soil and arsenic in the 18 groundwater. We just don't -- we don't have a 19 whole lot of data where in one boring you can have 20 a soil concentration as well as contaminants in 21 the groundwater. 22 Q. So let's move to barium. 23 A. That's a -- 24 JUDGE PERRAULT: Let him finish, please. 25 A. That's unusual. I've looked around a</p> |

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1 lot, and I found one. I would have done more
 2 analyses, and my mantra is a point is a point.
 3 Two points are a line, and three points are a
 4 thesis. Every -- all I had was one point. So
 5 Ms. Renfroe is making a good point here in that if
 6 I use that site-specific data -- if I calculate a
 7 KD and then I calculate a soil GW from that, you
 8 wind up with a very low concentration, but that's
 9 all the data we had at the site. I didn't really
 10 comment on this, though. I think I didn't make a
 11 bill deal out of it. Again, this is a scoping
 12 analysis.
 13 What I wanted to do was run through all
 14 of the RECAP calculations and see what emerged
 15 using site-specific data and then see if I could
 16 compare and contrast this with ERM's work, and ERM
 17 didn't do any of this. It didn't calculate any
 18 KDs. It didn't move on to this at all.
 19 Because from my perspective, they used the wrong
 20 DF Summers. If they hadn't used the wrong DF
 21 Summers, then they might have done these
 22 calculations. And they may have run up against
 23 the same problems I had, and that is I only had
 24 one data point.
 25 BY MS. RENFROE:

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1 Q. Moving to barium now, sir. You ready?
 2 A. Yes.
 3 Q. I'm trying to get us finished before
 4 lunch. It may not happen, but I'm doing my best.
 5 A. All right. I'll try to do my best too.
 6 Q. Thank you.
 7 A. You're welcome.
 8 Q. So for barium you calculated a soil to
 9 groundwater protection standard under Management
 10 Option 2 of 289 milligrams per kilogram?
 11 A. Yes.
 12 Q. And that standard is also below the
 13 background standard for barium at the site that
 14 you calculated, isn't it?
 15 A. That's correct. Again, that was from
 16 boring H-12. One point within the entire site --
 17 there was one point -- one data point I could find
 18 where I could -- in the same boring I had soil
 19 data and I had groundwater data because that's
 20 what I need to calculate the distribution
 21 coefficient, the KD. I could only find it in one
 22 boring.
 23 From that boring -- well, number one,
 24 the KD was 145. So what that tells me is that for
 25 every 145 milligrams per kilogram of barium that I

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1 have in the soil, I wind up with 1 milligram per
 2 liter of barium in the groundwater. That's what
 3 the distribution coefficient tells you.
 4 145 milligrams per kilogram will get you
 5 1 milligram per liter.
 6 Now, ERM --
 7 MS. RENFROE: Your Honor, may I ask -- the
 8 witness is going far afield from what I've
 9 asked about.
 10 JUDGE PERRAULT: Have you gone far afield
 11 from what she asked?
 12 THE WITNESS: I apologize, Your Honor. I
 13 think I have. I've been known to do that.
 14 JUDGE PERRAULT: That's all right. Let's not
 15 do that anymore.
 16 A. Thank you for your patience. I..
 17 BY MS. RENFROE:
 18 Q. Well, we need to thank the panel.
 19 A. Yeah.
 20 Q. But let's move on.
 21 A. That's all right.
 22 Q. So the point is this: You calculated
 23 that barium standard for protection of
 24 groundwater, you understand from the testimony
 25 that's already been offered that barium is in the

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1 upper 1 -- 0 to 2 feet of the soil fairly
 2 throughout the property. You understand that,
 3 sir, don't you?
 4 A. Yes. I'm just looking at the --
 5 Q. Sir, it's a direct question.
 6 A. -- the soil concentrations. But I'm
 7 sorry, but when I calculated the KD for barium, I
 8 used concentrations from 0 to 4, 4 to 6, and 8 to
 9 10. So I actually saw the highest concentration
 10 at H-12 between 4 and 6 feet, not 0 and 2 feet.
 11 Q. Right. All right.
 12 A. So I just want to be clear.
 13 Q. Here's the point.
 14 A. Yeah.
 15 Q. You calculated a soil for protection of
 16 groundwater standard for barium, and you
 17 understand barium is in various places throughout
 18 the property; correct?
 19 A. Correct.
 20 Q. All right. And you've talked about
 21 H-12. You've heard testimony, I take it -- at
 22 least the panel has -- that the barium is
 23 generally located in the upper 2 feet of soil at
 24 the property?
 25 A. I would agree to that. So generally,

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1 yes.

2 Q. And so would you agree with me, sir,

3 that if barium were leaching through the soil

4 column and reaching the shallow groundwater, then

5 it would have to do that by moving downward

6 through the soil column?

7 A. Yes.

8 Q. Right. And that's not something that

9 you evaluated before you submitted your RECAP

10 evaluation, was it, sir?

11 A. Nobody has evaluated that, and to me

12 it's a pretty big deal. Because, again -- and I

13 talked about this in my deposition. We discussed

14 this. I brought this up -- is that this entire

15 evaluation of the soil to groundwater pathway is

16 predicated on an unconfined aquifer. Well, in

17 this case when the slug tests were analyzed using

18 both the Hvorslev, which is for a confined aquifer

19 and by ICON also, using the Bouwer and Rice, which

20 is for a leaky aquifer. And I would consider this

21 aquifer to be -- and I think everyone has kind of

22 agreed on it, that the aquifer is confined and

23 leaky.

24 So -- and I said this in my deposition,

25 that this whole soil to groundwater pathway --

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1 that the RECAP machine you plop these numbers into

2 is -- probably requires an MO-3, a site-specific

3 fate and transport evaluation because the MO-2

4 level makes you assume that it's not confined, and

5 we know that it's probably primarily confined.

6 Maybe that's why we don't see as much groundwater

7 contamination, but certainly there are areas where

8 the groundwater is contaminated but --

9 Q. You're not saying that H-12 is the only

10 location of unconfined shallow groundwater, are

11 you?

12 A. No. In fact, I think I said -- I talked

13 about my dissertation earlier. I learned one

14 thing. Like, everything leaks. Even a confined

15 aquifer leaks. Everything leaks. Just some

16 things leak faster than others. So this is a big

17 site. It's heterogeneous. It's anisotropic. The

18 confining layer is probably discontinuous. It's a

19 complicated site. It is a -- there's a -- like, a

20 hydraulic hole up in the north there.

21 Q. Didn't you use the word nonhomogenous?

22 A. Inhomogeneous, yes. Right.

23 Q. So the shallow groundwater is

24 nonhomogenous, or inhomogeneous; right?

25 A. The aquifer material is, yeah.

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1 Absolutely. Most aquifers are inhomogeneous.

2 Q. Let's move on now to understand what is

3 the effect of your barium groundwater protection

4 calculation.

5 So let's look at H-2. You just

6 mentioned that, and I've got an image of it if I

7 can --

8 MS. RENFROE: Jonah, let's go to Slide 8.

9 A. H-2 or H-12?

10 BY MS. RENFROE:

11 Q. Here we go. I want to show you -- if we

12 can start here.

13 A. That's H-4.

14 Q. I'm sorry. Area 2.

15 A. Okay.

16 MS. RENFROE: Jonah, we need to back up one.

17 Slide 8. Slide 8. Thank you. My

18 fault.

19 BY MS. RENFROE:

20 Q. Okay. Here we are. Area 2 barium

21 profile at H-11. All right, sir? Are you with

22 me?

23 A. I'm with you.

24 Q. All right. Now we see that -- we've got

25 the ICON in the 0 to 2 feet. 2,740; right?

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1 A. Uh-huh.

2 Q. And then in the 4- to 6-foot zone, the

3 ERM data and the ICON data show that the barium

4 concentration has fallen below your calculated

5 background concentration; correct?

6 A. Correct.

7 Q. Now, at 8 to 10 ERM's data shows it to

8 be reduced even further. ICON shows it to be

9 above, but there's some issues that the panel has

10 already heard about regarding differences between

11 the ERM data and the ICON data. But my point is

12 if it -- what this is showing us is that the

13 barium is not leaching or migrating down to the

14 shallow groundwater as your barium soil to

15 protection standard would suggest, is it, sir?

16 A. There's a lot of -- I think I just said

17 there's a lot of factors affecting the barium's

18 ability to enter the groundwater.

19 Q. So let's look --

20 A. I think the primary factor is the fact

21 that this is a confined aquifer. How do you --

22 it's hard to --

23 Q. You said confined or unconfined?

24 A. Confined. Confined and leaky, yeah. So

25 it's hard to contaminate.

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| <p style="text-align: right;">Page 1149</p> <p>1 Q. Let's now look at -- and let's go to 2 Area 4. 3 MS. RENFROE: The next slide, please. 4 A. But, again, I just want to be clear. 5 You know, that's one point. Where I had a barium 6 concentration in the soil and in the groundwater 7 was at H-12. And there, the highest concentration 8 was in the 4- to 6-foot zone. So that's one 9 example, and here will be another one. But here's 10 another one. 11 Q. Right. My point is that here H-8 -- 12 Area 4 at H-8 -- again, you calculated -- you and 13 ICON calculated a background level of 331, and 14 that's achieved by the 6- to 8-foot zone, isn't 15 it? Isn't it, sir? 16 A. Achieved -- I don't know what achieved 17 means but -- 18 Q. Well, it falls below -- the ERM data 19 point falls -- shows that the barium is below the 20 ICON-calculated background level? 21 A. Well, certainly 268 is less than 331. 22 Q. And then by the time we get to the 10- 23 to 12-foot zone, both ICON and ERM show the barium 24 to be below the background level? 25 A. The math is clear.</p> | <p style="text-align: right;">Page 1151</p> <p>1 groundwater within plumes defining areas in which 2 the GW-2 is exceeded require remediation if the 3 land is to be for future residential use. 4 Somebody would be putting a well. If there's a 5 plume of water contaminated above the MCL and 6 somebody can drill a well into that contaminated 7 water, then that seems like a problem to me, and 8 it seems like it to RECAP as well. 9 However, if the land use is restricted 10 such that, for example, on-site groundwater is not 11 extracted and used for human consumption, then the 12 results from the Domenico model show that 13 Groundwater 2 will not be exceeded at the property 14 boundaries and remediation would not be required. 15 Q. So -- 16 A. So I'm just -- so I just want to be 17 clear that in my conclusions I'm not -- I've 18 stated anything except the fact that this soil to 19 groundwater pathway is somehow affecting the 20 entire site. 21 Q. It's not. That's what you're saying? 22 It's not, is it? 23 A. Not the entire site. This is a 24 1200-acre site. It is. 25 Q. Right.</p> |
| <p style="text-align: right;">Page 1150</p> <p>1 Q. Right. So what this is telling us -- 2 and we can look at every one of the areas, but 3 what it's telling us is the soil to groundwater 4 protection standard that you calculated for barium 5 to protect the groundwater, the site data shows 6 that there is no threat to groundwater from 7 barium? 8 A. Did I say there was a threat to 9 groundwater from barium in the -- in my 10 conclusions? 11 Q. So are you telling this panel now that 12 there is no threat to groundwater -- 13 A. Well, I just want to -- you're 14 representing that I've said something, and I 15 just -- 16 Q. Sir, I'm just -- 17 A. I'm not recalling it. 18 Q. Dr. Schuhmann, I'm going off of the 19 value that you calculated for your soil to 20 groundwater protection standard for barium. The 21 panel has it in your report, but the data -- the 22 site data shows there's no barium leaching to 23 shallow groundwater? 24 A. So the only place I talk about 25 groundwater in my conclusions is here. It says</p> | <p style="text-align: right;">Page 1152</p> <p>1 A. It's affecting certain places. We can 2 see where there's contamination in the soil, and 3 there's contamination in the groundwater. And it 4 doesn't take a rocket scientist to sort of put 5 those two together, however, over the entire site? 6 No. No. 7 Q. Right. In fact -- 8 A. There's some areas we see -- sorry. 9 There's some areas we see high concentrations of 10 barium in the soil and no barium in the 11 groundwater. 12 Q. In fact, the only place where we find 13 barium in the groundwater is at H-11, isn't it? 14 A. I don't know. I haven't studied it for 15 that but -- 16 Q. Let's move on. We need to wrap up. 17 A. Yeah. Yeah. 18 Q. I'm going to move now to -- 19 A. See, I think we agree on a lot of this. 20 Q. I think we're going to move on to your 21 groundwater classification evaluation. Okay? 22 A. Okay. 23 Q. And I'm shifting now -- 24 A. All right. 25 Q. -- in the --</p> |

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1 A. Shift away.
 2 Q. -- hope of getting finished.
 3 A. Yeah. This is what we do, I think.
 4 Q. So there's no evidence, sir, that the
 5 shallow groundwater beneath the Henning property
 6 has ever been used that you are aware of?
 7 A. Well, no. I have no knowledge and no
 8 opinion on that.
 9 Q. And you're not aware --
 10 A. That's outside my area --
 11 Q. Sorry.
 12 A. -- of understanding.
 13 Q. Pardon me.
 14 You're not aware of any drinking water
 15 wells in that shallow groundwater, are you, sir?
 16 A. In the shallow groundwater on the site?
 17 No. That's related to the other question. I have
 18 no knowledge.
 19 Q. There was a reference in your report to
 20 multiple drinking water wells in the shallow
 21 ground water. I think you corrected that at your
 22 deposition, but because the panel has your
 23 report --
 24 A. Yeah. Let's make sure it's clear.
 25 Q. -- let's be clear.

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1 A. Yeah.
 2 Q. There's no -- there are no drinking
 3 water wells in that shallow groundwater today?
 4 A. Not to my knowledge, and I think in my
 5 report it was unartfully -- the sentence was
 6 unartfully crafted. Ms. Renfro was kind enough
 7 to point it out to me, and I was talking about
 8 potential future wells associated with a
 9 residential -- potential future residential
 10 subdivision.
 11 Q. And you're not aware of any specific
 12 plans to install a drinking water well in that
 13 shallow groundwater aquifer, are you?
 14 A. That's outside my knowledge sphere.
 15 Q. And you know, though, that the Chicot is
 16 a potable aquifer and water source for the
 17 property, don't you?
 18 A. No, I don't know that. I mean, I know
 19 the Chicot exists, and it's exploited in Houston
 20 and the Evangeline underneath the Chicot. But --
 21 so the Chicot is there.
 22 Q. All right.
 23 A. Yeah.
 24 Q. Now, you classified the shallow
 25 groundwater at this site as Class 2; correct?

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1 A. That's correct.
 2 Q. And you did so by doing your own RECAP
 3 evaluation or your own classification analysis
 4 under RECAP?
 5 A. Well, I messed around -- and we talked
 6 about this in my deposition and I provided,
 7 pursuant to the subpoena request, my spreadsheet
 8 where I still had some of my work on a second
 9 sheet. There were two worksheets on there, and I
 10 was playing around with the data, looking at how
 11 ICON calculated the well yield and comparing it
 12 with ERM's method.
 13 And I was using the data I had and
 14 looking at both methods because they're two
 15 different methods, and I tried to see a method to
 16 get inside other people's shoes -- to see a method
 17 where that well yield would get below 800 gallons
 18 per day. And I just couldn't do it no matter if I
 19 took the geometric mean of this or the average of
 20 this or the geometric mean of the well yield
 21 versus the geometric mean of the hydraulic
 22 conductivity. I just quite simply couldn't get
 23 the well yield under -- below the point where this
 24 wouldn't be a GW-2.
 25 Q. So you used the geometric mean of the

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1 yield from four wells; correct?
 2 A. Just like ERM did.
 3 Q. So --
 4 A. Well, ERM used the geometric mean of the
 5 well yields, which is not the correct way to do
 6 it, but I did it like that because you get a lower
 7 number.
 8 Q. So just let's take it a step at a time.
 9 A. Sure.
 10 Q. If you could stay focused on my discrete
 11 question.
 12 A. All right. I'm going to try.
 13 Q. You used four wells and --
 14 A. I believe that's true, right.
 15 Q. And you say you just couldn't get the
 16 yield below 800 gallons but -- now, you did not
 17 include ICON's H-27 location in your analysis, did
 18 you, sir?
 19 A. No, of course not.
 20 Q. And --
 21 A. Why would I?
 22 Q. And you did not consider the slug
 23 testing data collected by ERM, did you, sir?
 24 A. No. I've subsequently looked at ERM's
 25 data, and it's still -- it still comes out above

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| <p style="text-align: right;">Page 1157</p> <p>1 800 gallons per day, but it was improper for me to 2 use H-27. That's why I excluded it. 3 Q. But ERM used slug test data for 17 wells 4 to characterize the yield. You used data for four 5 wells to characterize the yield; correct? 6 A. I used all of ICON's data, but then I've 7 gone back subsequently. And I've looked at all of 8 ERM's data, all of their wells, and I've 9 calculated the well yield actually doing the 10 geometric mean of the hydraulic conductivity, 11 which is what RECAP calls for and which makes 12 sense because we get -- geometric mean helps us 13 get better averaging over a spatial domain, and 14 with excluding single slug test wells -- because 15 the EPA forbids you from using a single slug test 16 with which to calculate a hydraulic conductivity. 17 So you have to kick out -- so I -- I couldn't use 18 H-27 because all I had was one slug test from 19 H-27. So that's what Ms. Renfroe is talking 20 about. But, also, in the ERM data, I think 21 there's only -- if my memory is right, there's 22 only one slug test for MW-5. So if I look at 23 ERM's data and I kick out MW-5 because there's 24 only one slug test -- and the EPA says if there's 25 only one slug test result, you cannot use it to</p> | <p style="text-align: right;">Page 1159</p> <p>1 panel from that. 2 A. It's a good one, I'll tell you that. 3 Q. Okay. 4 MR. CARMOUCHE: We might need it, Judge. 5 THE WITNESS: I think it's good. My 6 students -- 7 MS. RENFROE: Don't want to deprive them of a 8 corny joke but -- 9 THE WITNESS: The students appreciated it as 10 well. 11 BY MS. RENFROE: 12 Q. But can -- 13 A. Sorry. 14 Q. Can we agree -- or let me ask the 15 question this way: You did agree with me in your 16 deposition, did you not, that you cannot evaluate 17 groundwater at a property or a site as big as this 18 1200-acre property based on a single point? Do 19 you remember telling me that? 20 A. Well, you -- 21 Q. The question is: Do you remember 22 telling me that? 23 A. You can't characterize an entire site. 24 So -- based upon one well. I wouldn't want to do 25 that for a 1200-acre site. Put one well in -- I</p> |
| <p style="text-align: right;">Page 1158</p> <p>1 calculate a hydraulic conductivity. Then I still 2 get -- and then I do the calculation correctly. 3 Take the geometric mean of the hydraulic 4 conductivity, calculate the well yield. ERM's 5 slug tests show that the yield is above 6 800 gallons per day. 7 Q. I'm moving to another question now -- 8 A. Okay. 9 Q. -- for your benefit. 10 You and I talked at your deposition, and 11 you told me that you thought the groundwater -- 12 the shallow groundwater beneath the property was 13 inhomogenous. Do you recall that, sir? 14 A. Well, I would say the aquifer and 15 certainly the porous media is inhomogeneous, yes. 16 Q. Right. And meaning it's widely 17 different? 18 A. It just means it's not the same. 19 Q. Not the same. 20 A. It doesn't mean it's widely different. 21 Q. We can agree on that. Not the same? 22 A. Yeah. And I think I told you that corny 23 joke from when I was at the University of Houston 24 then. I don't need to tell you the joke? 25 Q. For the sake of time, you might save the</p> | <p style="text-align: right;">Page 1160</p> <p>1 mean, the EPA says you can't use a slug test from 2 one well to even determine the hydraulic 3 conductivity at that well, but if you determine 4 that one well -- that you've got a well yield 5 of -- I don't know -- 5,000 -- some of these wells 6 have yields of 5,000 gallons per day. My well at 7 my house in Maine -- I'm off town water and 8 sewage. I'm all alone out there, and I'm less 9 than 3,000 gallons per day. So there's -- there 10 are wells that are producing twice the water that 11 I live on at my house. So to me that aquifer 12 doesn't look like some poor little aquifer that 13 can't supply homes. There's more water available 14 in that aquifer than I have coming out of my well. 15 Q. At page 188 I asked you the question at 16 line 13: "You'd agree with me that because of the 17 disparity, you can't evaluate statewide 18 groundwater sitewide" -- excuse me -- "sitewide 19 groundwater based on a single point?" Your answer 20 was: "Can't. No. No. Especially a site of this 21 magnitude." 22 A. That's just what I just said today. 23 Q. That's your sworn testimony? 24 A. Good. 25 Q. Now, you're aware, sir, that Mr. Miller,</p> |

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| <p style="text-align: right;">Page 1161</p> <p>1 under oath, told this panel yesterday that you 2 could classify the shallow groundwater based on a 3 single well? 4 MR. CARMOUCHE: Just for the record, I object 5 to the form and mischaracterization. Subject 6 to that, I'm -- 7 JUDGE PERRAULT: Okay. 8 A. Yeah. I think there's something written 9 in RECAP that speaks to this. So I'm talking as a 10 form- -- a geologist and an environmental 11 engineer. I think there's a legal definition 12 that's embedded somewhere in RECAP that 13 Ms. Renfroe is getting to. So -- but I don't want 14 to put words in her mouth or tell you what she's 15 doing, but I think that's -- what you're getting 16 to is the definitions in RECAP, is that -- I think 17 that's what -- yeah. 18 BY MS. RENFROE: 19 Q. So Mr. Miller says one well is enough; 20 you say it's not enough. Which one of you is 21 right? 22 Which one of you is wrong actually, 23 Dr. Schuhmann? 24 A. Well, I would defer -- I would always 25 defer to Mr. Miller about site-specific issues,</p> | <p style="text-align: right;">Page 1163</p> <p>1 handle, this is at the level of the RECAP 2 evaluation that I performed. This is what 3 emerges. 4 It would cause you to ask questions 5 certainly about the arsenic, and I was proactive 6 in that in my deposition. I offered that. I said 7 this is -- this informs us about what emerges from 8 the RECAP evaluation but then you have to use your 9 brain and say what does this mean? What is this 10 telling me? And if it's telling us that we need 11 to remediate the soil to below background, then 12 this is no longer valid. And that's exactly what 13 it says; however, this is what emerges from a 14 RECAP evaluation. 15 Q. When you were pointing and saying this 16 is no longer valid, you were pointing to your 17 Section 4 conclusions in your RECAP evaluation 18 report? 19 A. No. I was pointing to the arsenic. 20 We're back on arsenic again, and I don't know how 21 else to say it, is that you can take the arsenic 22 off the table. There's a few points out there 23 that are in excess of the site -- the 24 site-specific background. I think there's four 25 specific borings where it was in excess but not</p> |
| <p style="text-align: right;">Page 1162</p> <p>1 but if you put a well in and you're able to 2 produce water at that well, then that's a useable 3 aquifer right there. But I don't know if it tells 4 you -- if somehow that tells you that, a mile away 5 or 5 miles away, that you'll be able to exploit 6 water there. I just -- I don't necessarily see 7 that. 8 Q. All right. Last question. Going back 9 to your conclusion in your RECAP evaluation -- I 10 really don't want to put any words in your mouth. 11 I just want to understand what you're telling this 12 panel. You said 37 -- taking into account 13 overlapping AOIs, 37.7 total acres of soil require 14 remediation for barium and/or arsenic in excess of 15 the MO-2 standard. Do you see that, sir? 16 A. Yes. 17 Q. Now, do you stand by that today in front 18 of this panel, or are you retreating from that 19 statement? 20 A. I never intended to direct remediation 21 with this scoping analysis. What this -- and 22 perhaps it's unartfully written or perhaps the 23 intent of this report was not as explicitly -- I 24 didn't make it as explicitly as I should, but 25 based upon the calculations -- if you crank the</p> | <p style="text-align: right;">Page 1164</p> <p>1 all that excessive. 2 Q. So -- 3 A. Okay. 4 Q. So we'll take that off the table, and 5 then to wrap up, you said 37.7 acres needed to be 6 remediated to protect human health. Did you know 7 that ICON proposes remediation of approximately 8 1 acre for 29-B agronomic standards and nothing 9 for human health? Were you aware of that, sir? 10 A. No. 11 Q. And did you know that ICON is not 12 proposing any soil remediation for human health 13 purposes? Were you aware of that? 14 A. No. 15 Q. In fact, did you know that ICON's only 16 remediation proposal for barium in the -- is to a 17 standard that will protect ducks, not people? 18 Were you aware of that? 19 A. No. 20 MS. RENFROE: Thank you, sir. I appreciate 21 your patience with me. Those are all the 22 questions I have. 23 THE WITNESS: Thank you. 24 MR. CARMOUCHE: If you don't mind, 15 25 minutes. If we don't finish...</p> |

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| <p style="text-align: right;">Page 1165</p> <p>1 JUDGE PERRAULT: Any objection from our 2 panel? 3 Please proceed with your redirect. 4 REDIRECT EXAMINATION 5 BY MR. CARMOUCHE: 6 Q. Let's go directly to that question. 7 Mr. Sills is going to testify. There's -- and you 8 know this, that there's a contingency plan that 9 ICON has because Mr. Sills and Mr. Miller have -- 10 Mr. Miller has testified that there was a concern 11 because there wasn't a 29-B barium parameter. So 12 they suggested a contingency plan and not 13 recommended it today -- 14 MS. RENFROE: Your Honor, I'm going to object 15 to Mr. Carmouche just testifying himself. 16 There's no question pending, and he's talking 17 about testimony that hasn't been offered yet. 18 JUDGE PERRAULT: All right. Restrict 19 yourself to questioning, please. 20 MR. CARMOUCHE: Is there a -- well, first, 21 this is an expert, and I can lead the expert. 22 JUDGE PERRAULT: Right. You can lead him, 23 but just -- 24 MS. RENFROE: But he can't testify. 25 BY MR. CARMOUCHE:</p> | <p style="text-align: right;">Page 1167</p> <p>1 dilution factor is not reflective of the reality 2 at this site. And, again -- I used it. So I 3 performed calculations here that I know are not 4 reflective of the site, but I did that in order to 5 contrast it with ERM's report and also to see what 6 emerges from a RECAP analysis, that sometimes what 7 comes out is not necessarily reflective of what's 8 happening at the site. 9 Q. Ms. Renfroe questioned you a lot, and a 10 lot of witnesses have been questioned about your 11 experience testifying in front of this panel 12 dealing with DEQ. 13 Did testifying in front of this panel 14 make you any smarter today? You still have the 15 same background; right? The same experience? 16 A. I don't know, Mr. Carmouche. I always 17 learn from Ms. Renfroe, and I appreciate her. 18 Q. This is your first time. 19 A. Yeah. 20 Q. And you haven't worked -- I mean, 21 Ms. Levert's worked -- she's testified. You 22 haven't worked for me for 20 years; right? 23 A. No. I haven't worked for anybody for 24 20 years. 25 Q. I mean, I called you because -- I asked</p> |
| <p style="text-align: right;">Page 1166</p> <p>1 Q. Are you aware of a contingency plan? 2 A. Yes. I am aware of a contingency plan 3 for barium. 4 Q. Are you aware that that's not being 5 proposed that it should be done right now? 6 A. Could you restate that question? 7 Q. Are you aware that that contingency plan 8 is not being proposed to be done right now? 9 A. Yes. Yes, I am. 10 Q. And Mr. Sills can testify to his 11 opinion, but as we sit here today, you have 12 concerns as a risk assessor as to the soil that 13 contains barium? 14 A. In some restricted places, yes. 15 Q. And what you're saying today, for the 16 protection of the future of this property, that a 17 future -- that an additional analysis should be 18 performed? 19 A. It would be prudent, and RECAP says 20 either you remediate or you move to the next 21 management option. And, again, because of the 22 nature of this site where it's a leaky aquifer, 23 especially for this soil to groundwater pathway, I 24 think an MO-3 is really appropriate because the 25 conceptual model that we're using with the Summers</p> | <p style="text-align: right;">Page 1168</p> <p>1 you because, hey, I was concerned because of ICON, 2 and I asked you to look at this to determine if 3 the proper risk assessment was done. Isn't that 4 what I called you for? 5 A. That's what you did. 6 Q. And going to the arsenic and barium. I 7 don't know if you heard Mr. Miller, or if you 8 didn't, tell me. But Mr. Miller is of the opinion 9 that we really have -- we don't know the extent 10 and more sampling should be done to determine 11 background. Did you hear that? 12 A. No. I didn't hear that, but I really 13 agree with it. And there's -- well, yeah. I'll 14 stop there. 15 Q. Regarding pica, it's upon experts like 16 yourself to determine what's the potential risk 17 and exposure of a specific site. That's your job? 18 A. Yes. 19 Q. And default and all the stuff she went 20 through in RECAP and EPA -- it's not -- it's my 21 appreciation you -- correct me if I'm wrong -- 22 that these regulatory agencies rely upon 23 companies, polluters, responsible parties to 24 voluntarily -- I mean, you, as an expert, can 25 voluntarily say that: "I see an issue or a</p> |

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1 potential issue, so I think we ought to do
 2 analysis." That's what you do for a living?
 3 A. That's correct.
 4 Q. That's what risk assessors do for a
 5 living?
 6 A. That's correct.
 7 Q. And so RECAP's default or not -- there's
 8 a -- pica exists in the world of science. I mean,
 9 there's regulations about it. RECAP has a
 10 section; correct?
 11 A. Correct.
 12 Q. EPA has a section; correct?
 13 A. Extensive sections on it, yeah.
 14 Q. And you, as a responsible scientist, are
 15 saying -- simply saying to this panel that more
 16 analysis and risk assessments need to be done to
 17 make sure that this population is protected?
 18 That's all you're saying; correct?
 19 A. Yeah. You can't go backwards. This is
 20 the time to really be prudent and to figure out
 21 what's going on out there because you can't go
 22 backwards.
 23 Q. And, lastly, I want to ask you about the
 24 data because I want to make it very clear.
 25 Regarding the -- I'll just show you. And a lot of

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1 words on it.
 2 But the only data that was involved in
 3 your site-specific dilution factor that you
 4 testified today was Ms. Levert's barium
 5 concentration at her AOIs?
 6 A. Those are the highest concentrations of
 7 barium within each of the ERM AOIs, yes.
 8 Q. That's ERM's data. All of this talk
 9 about you used ICON, you used this. This is ERM's
 10 data; correct?
 11 A. The SPLP data, it belongs to --
 12 Q. That you used; correct?
 13 A. -- ERM. Right. All the whole bottom
 14 line there that we're comparing, the SPLP
 15 barium -- all of that -- those tests were
 16 performed by ERM, yeah.
 17 Q. And you used ERM's hydrologic
 18 conductivity?
 19 A. I did. I checked their
 20 hydro-conductivity to calculate a well yield based
 21 upon their wells.
 22 Q. And hydrologic data regarding this?
 23 A. Oh, yeah. Yes. Of course.
 24 Q. Regarding this right here?
 25 A. Yes. That right there, yes.

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1 Q. Right there?
 2 A. Yes.
 3 Q. All of this is ERM's data?
 4 A. Correct.
 5 MR. CARMOUCHE: Thank you, sir. That's all
 6 the questions I have.
 7 MS. RENFROE: Your Honor, can I follow up
 8 with -- on one point that is now very
 9 confused?
 10 JUDGE PERRAULT: Okay. Go ahead.
 11 MS. RENFROE: Thank you.
 12 MR. CARMOUCHE: I would ask for the
 13 opportunity --
 14 JUDGE PERRAULT: Yeah. We're going for a
 15 full disclosure of the facts.
 16 MS. RENFROE: I understand.
 17 RECROSS-EXAMINATION
 18 BY MS. RENFROE:
 19 Q. To be clear though, the 1200 data
 20 points -- sampling data analyses that ERM
 21 collected, you told me at the beginning of this
 22 morning you did not incorporate that into your
 23 RECAP evaluation, did you, sir?
 24 A. But Mr. Carmouche just asked me about
 25 those specific data points that were SPLP data

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1 but -- so the -- you're -- I'm not sure where this
 2 is coming from if you thought that was --
 3 Q. I want to make sure --
 4 A. But I'll agree with you that, yes, I --
 5 while I used some ERM hydraulic data to look at
 6 well yield with respect to analytical data -- I'm
 7 just being careful now to make sure I didn't use
 8 any -- I can't recall using any of their
 9 analytical data except for the SPLP results --
 10 Q. Thank you.
 11 A. -- which are pretty important.
 12 MS. RENFROE: Thank you.
 13 JUDGE PERRAULT: You may follow up on the
 14 point she just raised.
 15 REDIRECT EXAMINATION
 16 BY MR. CARMOUCHE:
 17 Q. Your two opinions today had nothing to
 18 do with some RECAP MO-2 evaluation; correct?
 19 A. Correct.
 20 Q. What you told -- go ahead.
 21 A. I mean, the -- what emerges from a pica
 22 analysis -- that was an MO-2-level analysis, so
 23 when you feed a pica ingestion rate into an MO-2
 24 analysis, then an MO-2 RECAP standard emerges and
 25 the default -- the DF Summers is not an MO-2.

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| Page 1173 | <p>1 That's a screening option.</p> <p>2 Q. So the information you went today</p> <p>3 through in detail to say that Ms. Levert did it</p> <p>4 wrong, it's ERM's data? This chart right here is</p> <p>5 ERM's data?</p> <p>6 A. Yes. It's more the method by which you</p> <p>7 determine the RECAP standard with which to examine</p> <p>8 ERM's data.</p> <p>9 Q. Correct.</p> <p>10 A. Yes.</p> <p>11 Q. The ERM's data?</p> <p>12 A. Yes.</p> <p>13 MR. CARMOUCHE: Thank you, sir.</p> <p>14 MS. RENFROE: Your Honor, may I hand to</p> <p>15 the -- no. I don't have any more questions.</p> <p>16 I want to hand to the panel and to the Court</p> <p>17 the slides that I used.</p> <p>18 JUDGE PERRAULT: Right. Well, that's what I</p> <p>19 want to go through. No one offered any</p> <p>20 exhibits during his testimony. So I want to</p> <p>21 know if there are exhibits that should --</p> <p>22 that both sides are offering.</p> <p>23 We'll start with Henning.</p> <p>24 MR. WIMBERLEY: Yes, Your Honor. I have the</p> <p>25 exhibits here that I'd like to offer with</p> | Page 1175 | <p>1 Ingestion.</p> <p>2 MR. BRYANT: That's FFF?</p> <p>3 MS. RENFROE: Right. FFF.</p> <p>4 MR. WIMBERLEY: I'm sorry. What did I say?</p> <p>5 MS. RENFROE: FF. That's all right.</p> <p>6 JUDGE PERRAULT: Well, there's three Fs?</p> <p>7 MR. WIMBERLEY: Three Fs. Sorry about that.</p> <p>8 JUDGE PERRAULT: Thank y'all for catching</p> <p>9 that.</p> <p>10 And what is three Fs?</p> <p>11 MR. WIMBERLEY: The 2018 ATSDR Exposures Dose</p> <p>12 Guidance for Soil and Sediment Ingestion.</p> <p>13 Exhibit -- four Bs, BBBB. That's just</p> <p>14 RECAP 2003.</p> <p>15 JUDGE PERRAULT: 2003 RECAP.</p> <p>16 MR. WIMBERLEY: Yes, sir. And Exhibit EEEE.</p> <p>17 JUDGE PERRAULT: Whoa, whoa, whoa. E --</p> <p>18 MR. WIMBERLEY: Four Es.</p> <p>19 JUDGE PERRAULT: All right. Four Es.</p> <p>20 MR. WIMBERLEY: Pica, a Survey of Historical</p> <p>21 Literature as well as reports from the Field</p> <p>22 of Veterinary Medicine Anthropology, the</p> <p>23 Present Study of Pica in Young Children and a</p> <p>24 discussion of its pediatric and psychological</p> <p>25 implications.</p> |
| Page 1174 | <p>1 respect to Mr. Schuhmann's testimony. These</p> <p>2 are the studies he referenced in the slide</p> <p>3 show.</p> <p>4 JUDGE PERRAULT: What are the exhibit</p> <p>5 numbers?</p> <p>6 MS. RENFROE: May I look over your shoulder?</p> <p>7 Do you mind --</p> <p>8 MR. WIMBERLEY: Sure. No problem.</p> <p>9 Exhibit LL is the '96 Prevalence of Pica</p> <p>10 paper. Exhibit MM is the 1973 Prevention of</p> <p>11 Pica, the Major cause of Led Poisoning in</p> <p>12 Children paper. Exhibit PP is the 1993 Soil</p> <p>13 Pica, Not a Rare Event paper. Exhibit QQ is</p> <p>14 a 1996 EPA Soil Screening Guidance User</p> <p>15 Guide. Exhibit UU is a 2000 Pica Commonly</p> <p>16 Missed paper.</p> <p>17 JUDGE PERRAULT: What is UU?</p> <p>18 MR. WIMBERLEY: Pica: Common but Commonly</p> <p>19 Missed paper. It's a research paper.</p> <p>20 Exhibit XX, an update on pica prevalence</p> <p>21 contribution -- or contributing causes and</p> <p>22 treatment. Exhibit EEE, 2017 U.S. EPA update</p> <p>23 for Chapter 5 of the Exposure Factors</p> <p>24 Handbook. Exhibit FF, a 2018 ATSDR Exposure</p> <p>25 Dose Guidance for Soil and Sediment</p> | Page 1176 | <p>1 JUDGE PERRAULT: All right.</p> <p>2 MR. WIMBERLEY: A long title.</p> <p>3 THE WITNESS: That's the book.</p> <p>4 MS. RENFROE: No objections to those</p> <p>5 exhibits, Your Honor.</p> <p>6 JUDGE PERRAULT: No objections to</p> <p>7 Exhibits LL, MM, PP, QQ, UU, XX, EEE, FFF,</p> <p>8 BBBB, EEEE. So all exhibits are admitted</p> <p>9 without objection. Okay.</p> <p>10 And, now, does Chevron have exhibits?</p> <p>11 MS. RENFROE: Do you have anything else?</p> <p>12 MR. WIMBERLEY: No, ma'am.</p> <p>13 MS. RENFROE: Okay. I only want to offer the</p> <p>14 slides that I used on cross-examination.</p> <p>15 JUDGE PERRAULT: The slides? We've got to</p> <p>16 give them a number of some sort.</p> <p>17 MR. CARMOUCHE: Judge, I'm going to object.</p> <p>18 It's not on --</p> <p>19 JUDGE PERRAULT: Well, let me get this</p> <p>20 straight first.</p> <p>21 MS. RENFROE: 158.5, Chevron Exhibit 158.5.</p> <p>22 JUDGE PERRAULT: 158.5. And how many slides</p> <p>23 are we talking about?</p> <p>24 MS. RENFROE: Twelve.</p> <p>25 JUDGE PERRAULT: Twelve slides.</p> |

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| Page 1177 | <p>1 MS. RENFROE: May I hand those up to 2 Your Honor and the panel? 3 JUDGE PERRAULT: Yes, please. 4 Hold on. Now we have an objection. Go 5 ahead. 6 MR. CARMOUCHE: Judge, I want to object. 7 It's not on their exhibit list, and I thought 8 we had discussions. So if we're going -- if 9 she's going to be allowed to introduce slides 10 that are not on the exhibit list and the 11 panel gets to look at them, then I would 12 have -- I would like the opportunity to 13 introduce all my slides that are not on my 14 exhibit list. 15 MS. RENFROE: Your Honor, I'm -- I'll 16 withdraw. I just want to hand them out to 17 you and the panel. 18 JUDGE PERRAULT: We can't hand them out if 19 we're not going to use them as exhibits. 20 MS. RENFROE: Well, they've all -- 21 everybody's have been handed out. 22 MR. CARMOUCHE: This is what you -- your 23 slides -- you used in... 24 MS. RENFROE: On cross-examination. 25 MR. CARMOUCHE: No. With Levert. No. Have</p> | Page 1179 | <p>1 all got to be -- it's either in evidence or 2 it's not. 3 And I know, you know, we're using these 4 slides for the presentations. So I would 5 think we should put them in evidence since 6 they've been used, and it will help the panel 7 in making their decision when they're 8 considering the witnesses' testimony. 9 MS. RENFROE: Then that's fine with us, 10 Your Honor. 11 MR. CARMOUCHE: And that's fine with me as 12 long as I get to introduce my slides. 13 JUDGE PERRAULT: Whatever I do for one, we're 14 going to do for the other. We're going to 15 treat everyone fairly, and, look, we're 16 looking for a full disclosure of the facts 17 under the APA. That's what we're going for. 18 MR. CARMOUCHE: All for it. Is it okay, Your 19 Honor, if I -- 20 JUDGE PERRAULT: We have 12 slides from 21 Chevron listed as Exhibit 158.5. Is there an 22 objection? 23 MR. CARMOUCHE: There is an objection. 24 JUDGE PERRAULT: Subject to me allowing you 25 to do the same.</p> |
| Page 1178 | <p>1 these slides been shown? 2 MS. RENFROE: Yeah. They were just shown -- 3 MR. CARMOUCHE: By your other witnesses? 4 MS. RENFROE: I don't understand your 5 question. 6 MR. CARMOUCHE: Well, in your case in chief, 7 did -- were your witnesses shown these 8 documents? 9 MS. RENFROE: I don't know, and I don't know 10 that that matters. 11 MR. CARMOUCHE: Well, I'm objecting. 12 MR. WIMBERLEY: And I don't think you've used 13 all these slides today. 14 MR. GREGOIRE: If I might add, Judge, I think 15 these slides were beneficial to the panel in 16 arriving at their ultimate decision. There's 17 nothing that -- 18 JUDGE PERRAULT: Let me see -- 19 MR. GREGOIRE: Nothing against reviewing them 20 as any other slides -- 21 JUDGE PERRAULT: Well, I'm going to treat 22 everyone the same. So if they get slides, 23 you get slides, but I can't just hand them 24 stuff that's not in evidence because, you 25 know, what am going to send the court? It's</p> | Page 1180 | <p>1 MR. CARMOUCHE: Subject to me -- and not on 2 the time frame because I don't have it right 3 now. 4 JUDGE PERRAULT: But I will allow you to do 5 the same. If y'all are using slides with 6 your experts and no one objects to the 7 slides, you know, during the testimony, then 8 I'm going to let you put it in because it 9 makes no sense not to. So -- 10 MR. CARMOUCHE: Okay. 11 JUDGE PERRAULT: So that's what we're going 12 to do. So Exhibit 158.5 is admitted into 13 evidence, and I'm sure the panel is happy 14 about it because now they get to review these 15 things in making your decisions. 158.5 -- 16 MR. WIMBERLEY: And, Your Honor, I would 17 offer, file, and introduce the slides that we 18 used with Dr. Schuhmann. 19 JUDGE PERRAULT: All right. Let's see those. 20 Has the other side seen them? Because 21 there's some -- 22 MS. RENFROE: Yes, we have. 23 JUDGE PERRAULT: And what do you want to 24 label these? 25 MR. CARMOUCHE: Four Ws.</p> |

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| Page 1181 | <p>1 JUDGE PERRAULT: Henning four Ws. And how 2 many slides are these? 3 MR. WIMBERLEY: Twenty-five. 4 JUDGE PERRAULT: Twenty-five slides. All 5 right. WWWW in globo, 25 slides. Any 6 objection to WWWW? 7 MS. RENFROE: No, Your Honor. 8 JUDGE PERRAULT: No objection. So ordered. 9 It shall be admitted. 10 MR. BRYANT: Your Honor, if it's all right 11 with you, we'll bring copies of all of our 12 slides that we presented with our witnesses 13 in our case in chief on Monday morning. 14 We'll identify those and offer those into 15 evidence. 16 JUDGE PERRAULT: Good. That's what we'll do. 17 And, remember, at the end we're going to get 18 together, both sides, with our Clerk of 19 Court, and we're going to go over all this 20 stuff to make sure we have one copy of 21 everything that's been admitted into 22 evidence. And we're going to have four books 23 for them, one book for the District Court, 24 and then if y'all want to put all of your 25 evidence on a -- I forget. What do we call</p> | Page 1183 | <p>1 for us to take the boxes back. 2 MS. RENFROE: We didn't give them hard 3 copies. 4 MR. CARMOUCHÉ: If we did. I thought -- 5 yeah. Because I thought we were required to 6 give them photocopies. 7 (Discussion off record.) 8 PANELIST OLIVIER: We can give one hard copy 9 with whatever, yes. 10 JUDGE PERRAULT: So we'll have one hard copy 11 for the court, and one hard copy for them. 12 And then you would prefer four flash drives? 13 And I'll need one flash drive for the court. 14 MR. CARMOUCHÉ: And we'll need -- 15 JUDGE PERRAULT: You can take all your stuff 16 back. 17 MR. CARMOUCHÉ: -- that back because that has 18 all of it, and we can narrow it down. 19 JUDGE PERRAULT: Yeah. We just need two. 20 One for the court and one for them. Okay. 21 And then we'll give them four flash drives, 22 and we'll give the court one flash drive. 23 And we're going to get together -- whenever 24 we're done, we're going to get together and 25 make an appointment, and I'll have Mr. Rice</p> |
| Page 1182 | <p>1 these doohickeys? Flash drive. We'll give 2 them one flash drive, and we'll have one 3 flash drive for the court. So two flash 4 drives because I don't know what the court 5 would prefer, but I want to give them both. 6 MS. RENFROE: Good enough. 7 JUDGE PERRAULT: And I don't know what 8 they're going to prefer, but they might like 9 one flash drive that they can share or those 10 books. 11 PANELIST DELMAR: A flash drive. We much 12 prefer less paper in our office. 13 JUDGE PERRAULT: So y'all would prefer a 14 flash drive rather than the books? 15 PANELIST DELMAR: Yes. 16 JUDGE PERRAULT: Can we give them four flash 17 drives? 18 MS. RENFROE: We can. 19 JUDGE PERRAULT: We'll do that. We won't 20 tear up a bunch of trees. 21 MR. CARMOUCHÉ: Your Honor, since we're 22 talking about it -- and the books I think we 23 both gave probably contain a lot of paper 24 that's not going to be exhibits. So rather 25 than destroy more trees, I think it's prudent</p> | Page 1184 | <p>1 come for DNR, whoever y'all want to bring, 2 and we'll have our Clerk of Court. And we'll 3 get -- make sure we have it perfect so that 4 there are no problems. 5 MS. RENFROE: Thank you. 6 MR. WIMBERLEY: Thank you, Your Honor. 7 MR. CARMOUCHÉ: Thank you, Your Honor. 8 JUDGE PERRAULT: Okay. And state your name 9 for the record. 10 MR. RICE: Jonathan Rice, Office of 11 Conservation counsel. 12 Just to clear something up, I've heard 13 where there has been exhibits -- like, there 14 have been PowerPoint presentations, and then 15 there's been things put on the overhead. Are 16 all of those considered exhibits, and for, 17 you know, some of the people on Zoom -- I 18 mean, they're not getting the -- some of the 19 things that are on PowerPoint -- I mean, the 20 overhead. So I'm just -- 21 JUDGE PERRAULT: The overhead, I think 22 they're showing what are exhibits, and then 23 on the PowerPoint -- those are what they've 24 been using for their witness's display or -- 25 and now we're turning the PowerPoints into</p> |

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| Page 1185 | Page 1187 |
| <p>1 exhibits. And what I think they were using</p> <p>2 on the overhead were already exhibits.</p> <p>3 MR. RICE: Okay.</p> <p>4 MR. CARMOUCHE: If not, they were on the</p> <p>5 slides, which are now going to be exhibits.</p> <p>6 MR. RICE: Okay. Great.</p> <p>7 JUDGE PERRAULT: Well, all of that's going to</p> <p>8 go into the record for the panel and then for</p> <p>9 the court.</p> <p>10 Anyone have any complaints or problems</p> <p>11 right now?</p> <p>12 PANELIST OLIVIER: If could --</p> <p>13 JUDGE PERRAULT: Yes, sir.</p> <p>14 PANELIST OLIVIER: Could we take maybe just a</p> <p>15 five-minute break real quick and come back</p> <p>16 just to collaborate if we have any questions?</p> <p>17 JUDGE PERRAULT: All right.</p> <p>18 Y'all want to do it after lunch, or do</p> <p>19 you want to do it now?</p> <p>20 PANELIST OLIVIER: We can do it after lunch</p> <p>21 if you all are okay with --</p> <p>22 JUDGE PERRAULT: So do you want to do it now?</p> <p>23 MR. CARMOUCHE: I mean, he's -- yes.</p> <p>24 JUDGE PERRAULT: Let's take a five-minute</p> <p>25 break, and you -- I'm going to put you in</p> | <p>1 JUDGE PERRAULT: Would you state your name</p> <p>2 for the record?</p> <p>3 THE WITNESS: Jason Scott Sills.</p> <p>4 JUDGE PERRAULT: And spell your last name.</p> <p>5 THE WITNESS: S-I-L-L-S.</p> <p>6 JASON SILLS,</p> <p>7 having been first duly sworn, was examined and</p> <p>8 testified as follows:</p> <p>9 MR. KEATING: I've got Mr. Sills' slide show</p> <p>10 here. We previously provided copies to</p> <p>11 counsel for Chevron. They weren't in -- and</p> <p>12 provided copies to the panel and to the</p> <p>13 court.</p> <p>14 DIRECT EXAMINATION</p> <p>15 BY MR. KEATING:</p> <p>16 Q. Mr. Sills, can you please introduce</p> <p>17 yourself to the panel?</p> <p>18 A. My name is Jason Sills. I'm originally</p> <p>19 from Mississippi, hence the accent. It's gotten a</p> <p>20 little bit better since I've been down here. I</p> <p>21 graduated from LSU in 2000 with a degree in</p> <p>22 environmental engineering, at which time -- after</p> <p>23 I graduated, I went and worked for a company</p> <p>24 called Southern Environmental Management</p> <p>25 Specialties, or SEMS. Our primary work was site</p> |
| Page 1186 | Page 1188 |
| <p>1 your room, and then you can ask questions.</p> <p>2 (Recess taken at 12:18 p.m. Back on</p> <p>3 record at 12:26 p.m.)</p> <p>4 JUDGE PERRAULT: We're back on the record.</p> <p>5 Today's date is February 10th, 2023. It's</p> <p>6 now 12:26.</p> <p>7 The panel has no questions for this</p> <p>8 witness?</p> <p>9 PANELIST DELMAR: That's correct.</p> <p>10 PANELIST OLIVIER: Correct.</p> <p>11 JUDGE PERRAULT: We're ready for lunch.</p> <p>12 Let's come back -- so it's almost 12:30.</p> <p>13 We'll come back for 1:30.</p> <p>14 We're in recess.</p> <p>15 (Lunch recess taken at 12:26 p.m. Back on</p> <p>16 record at 1:32 p.m.)</p> <p>17 JUDGE PERRAULT: We're back on the record.</p> <p>18 It's February 10th, 2023. It's now 1:32.</p> <p>19 We're back on the record.</p> <p>20 And Henning can call its next witness.</p> <p>21 (Discussion off record.)</p> <p>22 JUDGE PERRAULT: We're back on the record.</p> <p>23 Counsel, call your next witness.</p> <p>24 MR. KEATING: Yes, Your Honor. I'm Matt</p> <p>25 Keating for Henning. We call Jason Sills.</p> | <p>1 investigation, remediation, risk assessment at</p> <p>2 underground storage tank sites, chemical</p> <p>3 facilities, refineries. I did Phase 1, Phase 2s</p> <p>4 for them. Some of the remediations that we did</p> <p>5 was in-situ chemical oxidation with treating of</p> <p>6 hydrocarbons. I also did pump and treat, both</p> <p>7 with pumps and dual-phase, soil excavation. I've</p> <p>8 worked in Texas, Louisiana, Arkansas, Tennessee,</p> <p>9 Mississippi, Alabama, a little bit in Georgia. So</p> <p>10 I've been all over the southeast in 23 years.</p> <p>11 I worked with them until 2009, at which</p> <p>12 time I started at ICON, which I'm currently</p> <p>13 employed at. I'm the vice president for ICON. In</p> <p>14 2009 I still did the UST work but got into legacy,</p> <p>15 where I started dealing with 29-B. While at ICON,</p> <p>16 we still perform soil excavation, groundwater</p> <p>17 remediation. So I've got a pretty vast experience</p> <p>18 dealing with RECAP since pretty much its</p> <p>19 inception. A few of the sites that I had at SEMS</p> <p>20 when I first started out was what they called old</p> <p>21 matrix standards. I still remember that, where it</p> <p>22 was five parts per million benzene. BTEX is what</p> <p>23 you had to clean up too. That was before RECAP.</p> <p>24 And then started working with RECAP in 2003, and</p> <p>25 I've been working with that ever since.</p> |

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| <p style="text-align: right;">Page 1189</p> <p>1 Q. Thank you for that.</p> <p>2 MR. KEATING: I told Mr. Sills to try to give</p> <p>3 you as much as possible without me feeding</p> <p>4 him all the little questions for that part so</p> <p>5 we could be a little more efficient.</p> <p>6 BY MR. KEATING:</p> <p>7 Q. Mr. Sills, just to kind of pluck a</p> <p>8 little bit out of that, when you worked at SEMS</p> <p>9 from 2000 to 2009, you were doing assessment and</p> <p>10 remediation at UST and chemical plant sites</p> <p>11 applying RECAP; right?</p> <p>12 A. That's correct.</p> <p>13 Q. Because that's the standard that applies</p> <p>14 to those sites; right?</p> <p>15 A. That's correct.</p> <p>16 Q. And then from 2009 to present working at</p> <p>17 ICON, you've been doing site assessment and</p> <p>18 remediation at UST and oil field sites like this</p> <p>19 one; right?</p> <p>20 A. That's correct.</p> <p>21 Q. And in doing that work at oil field</p> <p>22 sites since -- you've been at ICON for what?</p> <p>23 Fourteen, fifteen years? You've been -- you've</p> <p>24 interpreted and applied both 29-B and RECAP for</p> <p>25 those oil field sites; right?</p> | <p style="text-align: right;">Page 1191</p> <p>1 sites where you participated in designing a</p> <p>2 remediation plan for while you were at SEMS, how</p> <p>3 many of those involved actually going out and</p> <p>4 doing the remediation work that you designed?</p> <p>5 A. Pretty much all of them. That's what I</p> <p>6 did when I was with them. I traveled all over to</p> <p>7 different states, installing these systems and</p> <p>8 performing soil excavations.</p> <p>9 Q. The remediations that you designed and</p> <p>10 then later actually performed, they worked?</p> <p>11 A. Yes.</p> <p>12 Q. Okay. Did those SEMS sites that you</p> <p>13 worked on involve litigation?</p> <p>14 A. No.</p> <p>15 Q. So the assessment and remediation and</p> <p>16 actual remediation work that you were doing at</p> <p>17 SEMS had nothing to do with litigation?</p> <p>18 A. No, it did not.</p> <p>19 Q. Since you joined ICON in 2009, have you</p> <p>20 also done actual remediation work on the ground?</p> <p>21 A. Yes, I have.</p> <p>22 Q. About how many projects have you been</p> <p>23 involved with at ICON that included that actual</p> <p>24 remediation work? Soil and/or groundwater.</p> <p>25 A. Probably ten to 15.</p> |
| <p style="text-align: right;">Page 1190</p> <p>1 A. That's correct.</p> <p>2 Q. Okay. Over the course of your career</p> <p>3 since roughly 2000, about how many site</p> <p>4 assessments have you done?</p> <p>5 A. Several hundred. To be honest I lose</p> <p>6 count, but it's way up there.</p> <p>7 Q. Okay. And of that number -- of that</p> <p>8 several hundred site assessments that you've done,</p> <p>9 how many of those included both soil and</p> <p>10 groundwater?</p> <p>11 A. It's probably 80, 90 percent. It's very</p> <p>12 rare that we go to a site that we don't encounter</p> <p>13 both soil and groundwater.</p> <p>14 Q. And when you worked at SEMS from 2000 to</p> <p>15 2009, did you do actual remediation work on sites?</p> <p>16 A. Yes, we did.</p> <p>17 Q. Approximately how many sites did you</p> <p>18 actually design a remediation plan for while you</p> <p>19 were working at SEMS?</p> <p>20 A. I probably designed and implemented 40</p> <p>21 to 50, maybe north of 50. It was a lot that we</p> <p>22 had. We had pretty large UST clients at SEMS, and</p> <p>23 so they had sites all over the southeast. So we</p> <p>24 were pretty busy.</p> <p>25 Q. And those 40 to 50, maybe north of 50</p> | <p style="text-align: right;">Page 1192</p> <p>1 Q. Did those ten to 15 sites where you did</p> <p>2 actual remediation projects while working at ICON</p> <p>3 involve litigation?</p> <p>4 A. No, they did not.</p> <p>5 Q. So in your experience, Mr. Sills, at any</p> <p>6 of these sites, whether we're talking about UST or</p> <p>7 underground storage tanks sites, refinery, or</p> <p>8 chemical plants or oil field E&P sites like what</p> <p>9 we're here about today -- whether there's</p> <p>10 litigation involved or not, does your approach</p> <p>11 change in any way?</p> <p>12 A. No, it doesn't. Your objective is to</p> <p>13 determine if there's contamination on the property</p> <p>14 and design a remediation technology to remove that</p> <p>15 contamination to a certain standard.</p> <p>16 Q. And that's exactly what you did in this</p> <p>17 case in terms of your role in developing the MFP</p> <p>18 for this property; right?</p> <p>19 A. That is correct.</p> <p>20 Q. We'll talk more about that methodology a</p> <p>21 little later, but for the benefit of the panel,</p> <p>22 can you tell us if the techniques that you used to</p> <p>23 assess this site and determine the required</p> <p>24 remediation plan are recognized peer-reviewed</p> <p>25 methods?</p> |

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1 A. Yes. It's pretty standard methods that
 2 we used to generate this remediation plan.
 3 MR. KEATING: And for purposes of the record
 4 and for the panel's reference, Mr. Sills' CV
 5 is introduced into evidence already as part
 6 of Exhibit E. It's specifically Appendix H.
 7 BY MR. KEATING:
 8 Q. Mr. Sills have you been qualified and
 9 accepted as an expert in a court of law?
 10 A. Yes, I have.
 11 Q. Has your testimony ever been excluded or
 12 limited by any court or administrative agency?
 13 A. No, it has not.
 14 MR. KEATING: At this point, Your Honor and
 15 the panel, I'd like to tender Mr. Sills as an
 16 expert in site assessment and remediation,
 17 interpretation and application of 29-B and
 18 interpretation and application of RECAP.
 19 JUDGE PERRAULT: Any cross?
 20 MR. CARTER: No cross, Your Honor, but I just
 21 think interpretation of 29-B is not an
 22 appropriate expert subject.
 23 JUDGE PERRAULT: Say that louder.
 24 MR. CARTER: No cross, Your Honor, but I just
 25 think interpretation of 29-B and RECAP is not

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1 an appropriate subject of expert testimony
 2 from this witness based on his testimony so
 3 far. It hasn't been established.
 4 MR. KEATING: Are you traversing it?
 5 MR. CARTER: No. I'm objecting -- have you
 6 tendered the witness?
 7 MR. KEATING: I have.
 8 MR. CARTER: Yeah. So I'm objecting on
 9 those -- on that basis.
 10 JUDGE PERRAULT: I'm going to allow him. And
 11 say the areas of expertise.
 12 MR. KEATING: Site assessment and
 13 remediation, which he's been doing for
 14 23 years over several hundred sites;
 15 interpretation and application of 29-B, which
 16 he's been doing for about 14 years;
 17 interpretation of and application of RECAP,
 18 which he's been doing for 23 years.
 19 JUDGE PERRAULT: I'm going to allow it.
 20 So -- over your objection.
 21 MR. KEATING: Thank you, Your Honor.
 22 JUDGE PERRAULT: Please proceed. You've been
 23 accepted as an expert in those three fields.
 24 BY MR. KEATING:
 25 Q. Mr. Sills, did you participate in

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1 preparing the initial assessment and remediation
 2 report submitted by ICON in this case? Not to the
 3 panel but in the underlying case.
 4 A. Correct. I participated and assisted in
 5 all three of the reports that have been generated
 6 so far in this case, including the MFP submitted
 7 to the panel.
 8 Q. And this was discussed some in your
 9 deposition, but your signature is on the MFP
 10 that's presented to the panel, but it does not
 11 appear on the remediation report in the litigation
 12 or the rebuttal report that ICON submitted in the
 13 litigation. Why is that?
 14 A. Well, during the time that we were
 15 putting together the MFP, we had another case
 16 going on that Mr. Miller and Mr. Prejean were
 17 involved with and they needed my assistance a
 18 little bit more in this instance. So they
 19 figured, since I helped with the majority of the
 20 work, I should be -- I should have my signature on
 21 the report, and pretty much -- so I can, you know,
 22 kind of clarify it. Every legacy report that
 23 comes out of ICON is generated by three people.
 24 It's Mr. Miller, Mr. Prejean, and myself. Now, me
 25 and Mr. Prejean alternate on which reports we

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1 sign, but just because our signature isn't on a
 2 report doesn't mean that we didn't assist in the
 3 preparation of that report.
 4 Q. Gotcha. Tell the panel -- that
 5 three-man party you're talking about where you all
 6 get together and work on and prepare the reports
 7 in the litigation -- what was your role in
 8 preparing those reports? The remediation report
 9 and the rebuttal report.
 10 A. My role is pretty consistent throughout
 11 these reports. I mainly handle the soil
 12 delineation, any kind of contouring. Most of the
 13 time, I help with the calculation of the
 14 background soil standard. I'll help Mr. Miller
 15 put together some of his figures, and I'll assist
 16 with the actual text of the report along with
 17 assisting Mr. Prejean in calculating the costs.
 18 Q. Okay. And those things that you did
 19 that you just described to support the creation of
 20 the original assessment and remediation report and
 21 then the rebuttal report in the litigation, those
 22 things informed or helped you prepare or
 23 prepare -- assist and prepare in the MFP; correct?
 24 A. That's correct.
 25 Q. Now, this was covered in your deposition

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1 too. Just to try to save some time here, ICON did
 2 not include RECAP -- a RECAP evaluation or
 3 standards in its original assessment and
 4 remediation report; correct?
 5 A. No, we did not.
 6 Q. Okay. And why is that?
 7 A. Because the original report was to
 8 address lease obligations. So whether it was
 9 implied or expressed original condition language
 10 in the lease, that's -- what the original report
 11 was meant to satisfy was lease obligations, which
 12 is a different standard than 29-B.
 13 Q. And the 29-B and RECAP parameters that
 14 ICON included in its rebuttal report were directly
 15 in response to Chevron's report submitted in the
 16 case; right?
 17 A. That's correct.
 18 Q. We've talked about the various soil and
 19 groundwater samples taken by ICON in this case.
 20 Tell the panel what role you had in selecting
 21 sample locations.
 22 A. Usually, the first thing that we do on
 23 these sites is we try to gather as much well
 24 information and -- I mean, oil well historical
 25 information and also aeriels, and so me and

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1 Mr. Miller will get together and look at this
 2 information and try to determine where previous
 3 operations existed on the property, and that helps
 4 us locate potential borings for site investigation
 5 purposes.
 6 Q. Okay. And after that's done, ICON
 7 personnel physically go out to the field and take
 8 these samples, right?
 9 A. Correct. After we locate them on our
 10 AutoCAD and give them GPS coordinates, they'll go
 11 out and collect the data in the field.
 12 Q. In this case that was done for the soil
 13 using a geoprobe?
 14 A. That's correct.
 15 Q. And that's standard methodology, and, in
 16 fact, I think that's what ERM does as well; right?
 17 A. Correct. Most people, when they collect
 18 these soil samples, they'll use some kind of
 19 direct push technology.
 20 Q. Okay. And when this occurred on the
 21 Henning property -- for all of the data sets we're
 22 talking about, when ICON was doing the sampling
 23 where it wanted to, ERM got splits of those
 24 samples, and then on the other side, when ERM was
 25 doing samples where they wanted to, ICON got

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1 splits; right?
 2 A. Correct. That's typical once these
 3 suits are filed.
 4 Q. And then both ICON and ERM sent those
 5 off to a certified lab or certified labs, as the
 6 case may be, and for analysis and then got the
 7 results back; right?
 8 A. That's correct.
 9 Q. In this case the lab that ICON used for
 10 soil was Element; correct?
 11 A. That's correct. We used Element to run
 12 everything except for any radium samples. Radium
 13 is run through Pace.
 14 Q. Right. And there's been a lot of talk,
 15 especially this morning with Dr. Schuhmann, about
 16 quality control analysis and so on and so forth.
 17 Mr. Sills, you agree that both ICON and
 18 ERM routinely use Element lab, which is what ICON
 19 used in this case; right?
 20 A. Correct. And they've also been
 21 subpoenaed before in the past for their records on
 22 how they analyze different samples on other cases
 23 and passed with flying colors. So --
 24 Q. And they have their own built-in quality
 25 control processes, don't they?

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1 A. Yes, they do.
 2 Q. So the notion of quality control of the
 3 lab samples and all this is really a nonissue, is
 4 it not?
 5 A. To me, yes.
 6 Q. Okay. Did that initial set of soil
 7 samples that you got, when you're describing the
 8 process y'all went through, show exceedances on
 9 the property?
 10 A. Yes, it did.
 11 Q. Okay. So from that, ICON then went out
 12 and did additional sampling, soil sampling; right?
 13 A. That's correct. I think we went out
 14 there an additional two times.
 15 Q. Okay. So that would be three rounds of
 16 sampling. And at that point did ICON feel it had
 17 a sufficient data set for the contamination on the
 18 Henning property?
 19 A. We felt pretty confident that we could
 20 generate a process to clean up the site based on
 21 the sampling data that we had.
 22 Q. Did you have any role in determining
 23 where to screen groundwater monitoring wells?
 24 A. No, I don't. That's usually determined
 25 by Mr. Miller or the on-site field geologist who's

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1 actually looking at the cores.
 2 Q. Okay. So once the ICON sampling and
 3 then later the ERM sampling was all completed and
 4 everybody had splits of everybody's samples,
 5 that's the entirety of the data set that this
 6 panel and these experts are working with; right?
 7 A. Yes.
 8 Q. What role did you specifically have in
 9 preparing the MFP?
 10 A. Again, I contoured the soil data, helped
 11 put together the figures of the report, and then
 12 also assisted in the preparation of the text.
 13 Q. You didn't determine whether there was
 14 going to be groundwater remediation or not. That
 15 was Mr. Miller; correct?
 16 A. That's correct.
 17 Q. What regulations did you apply for your
 18 proposed soil remediations in the MFP?
 19 A. Only 29-B.
 20 Q. Do you believe you complied with all
 21 aspects of 29-B in preparing ICON's soil
 22 remediation in the MFP?
 23 A. Yes. We submitted a -- two plans. One
 24 plan is 29-B with no exceptions, and the other one
 25 is a 29-B plan with exceptions.

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1 Q. So the goals of ICON with this feasible
 2 plan that you're recommending to the panel are to
 3 address the soil and groundwater contamination to
 4 29-B standards; right?
 5 A. That's correct.
 6 Q. Okay. I want to take a look at this.
 7 MR. KEATING: And, Scott, if you can zoom in
 8 to the -- maybe like the top quarter of the
 9 page, please? Perfect.
 10 BY MR. KEATING:
 11 Q. Mr. Sills, having reviewed the soil
 12 data, it's your opinion that there are, in fact,
 13 29-B exceedances on the Henning property; right?
 14 A. That's correct.
 15 Q. And they're summarized in Table 1 found
 16 in ICON's MFP; right?
 17 A. Yes.
 18 Q. We're not going to go through all the
 19 table. The panel can do that as they see fit, but
 20 just to make it clear, what we've got here at the
 21 top in purple, you've got the 29-B upland pit
 22 closure standards, and then you've got the various
 23 constituents in those columns; right?
 24 A. That's correct.
 25 Q. And then under that, you've got the 29-B

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1 elevated freshwater standard where we have some
 2 wetland areas on the property; right?
 3 A. That is correct.
 4 Q. And then that's a very small portion.
 5 Most of it's upland; right?
 6 A. Yes.
 7 Q. So when the panel looks through and --
 8 MR. KEATING: Scott, can you pan over a
 9 little to the right? This may be obvious --
 10 but that's good. Just leave it like that.
 11 BY MR. KEATING:
 12 Q. Just to be clear, where we see a purple
 13 highlighted number on a given column for a given
 14 constituent, that's an upland closure standard
 15 exceedance?
 16 A. Correct. So the boring locations that
 17 aren't shaded are considered -- are what we would
 18 consider in an upland area. The boring locations
 19 that are kind of shaded in green are what we're
 20 considering in a wetland area. So those are going
 21 to be compared to those particular standards,
 22 depending on where the sample is located.
 23 Q. And Table 1, which, I think, spans about
 24 nine or ten pages, is the totality of all the
 25 samples taken in this case; correct?

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1 A. All the samples taken by ICON in this
 2 case.
 3 Q. Right. That includes some with and
 4 without the limited admission areas; right?
 5 A. That is correct.
 6 Q. So crunching it down, I believe -- and
 7 we'll talk about this in a little greater depth in
 8 a moment, but both ICON and ERM's soil sampling
 9 data showed 29-B exceedances at, I believe, 12
 10 different sample locations in the limited
 11 admission areas; is that right?
 12 A. I think that's correct. I know that
 13 they had some exceedances, but I don't recall the
 14 exact number of their exceedances.
 15 Q. And assuming that location number is
 16 correct, the exceedances that are documented in
 17 the limited admission areas and that you're
 18 addressing in your soil remediation report are EC,
 19 ESP, and SAR; correct?
 20 A. That's correct.
 21 Q. And in one instance, leachate chlorides?
 22 A. Well, what we did was we calculated --
 23 Q. Leachability?
 24 A. -- leachability and correlated that to
 25 an EC standard of 10.84. So that's what we were

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| | | | |
|-----------|---|-----------|---|
| Page 1205 | <p>1 trying to address in one area.</p> <p>2 Q. And on that topic, Mr. Olivier, I</p> <p>3 believe it was, asked about the leachate chloride</p> <p>4 analysis and whether it was saturated or</p> <p>5 unsaturated samples. Just for the benefit of the</p> <p>6 panel, can you answer that for us?</p> <p>7 A. Right. So those were taken right above</p> <p>8 the screened interval. So those are going to be</p> <p>9 addressed during our groundwater remediation</p> <p>10 procedures because as -- if I recall right, I</p> <p>11 think that was like 48 to 50. Those wells are</p> <p>12 screened right at 50 feet. So we anticipate that</p> <p>13 to be pretty much water, to where we can remediate</p> <p>14 it with a groundwater pump and treat.</p> <p>15 PANELIST OLIVIER: So this is Stephen</p> <p>16 Olivier. So for clarification, those</p> <p>17 samples, were they in the -- were the soils</p> <p>18 saturated where the leachate was taken or --</p> <p>19 THE WITNESS: To my knowledge those were</p> <p>20 right above the saturated zone. We typically</p> <p>21 don't like taking the leachate chloride from</p> <p>22 the saturated zone because we want to see</p> <p>23 what's actually leaching into the</p> <p>24 groundwater, but they're right above the</p> <p>25 groundwater water table.</p> | Page 1207 | <p>1 "moist" might be more of a -- and then we</p> <p>2 should say, in that case, "moist" may be more</p> <p>3 of a just generic sort of "well, this clay is</p> <p>4 not dry"?</p> <p>5 THE WITNESS: Damp. You know, there's some</p> <p>6 moisture in it. It's not dry.</p> <p>7 PANELIST DELMAR: And one other term you used</p> <p>8 in place of "wet," I think, was "saturated."</p> <p>9 Would that sort of be equivalent to "wet" in</p> <p>10 that particular case.</p> <p>11 THE WITNESS: Usually most of our guys, when</p> <p>12 they see -- when they say "saturated," when</p> <p>13 they cut the core open, the liner, there's</p> <p>14 actually standing water in the liner. So</p> <p>15 they -- right. So they'll say "saturated" in</p> <p>16 that instance to mean that there's actually</p> <p>17 water in the liner when they're cutting it</p> <p>18 open.</p> <p>19 "Wet" just -- that may mean that -- not</p> <p>20 quite saturated, but there's a lot of fluids</p> <p>21 in the material. But the problem is each</p> <p>22 geologist is going to describe it just a tad</p> <p>23 bit different than another one. So -- but --</p> <p>24 and we try to keep it pretty standard, and</p> <p>25 that's my understanding of their</p> |
| Page 1206 | <p>1 PANELIST OLIVIER: And generally in your</p> <p>2 boring logs that y'all had submitted, do you</p> <p>3 know the terminology y'all typically use for</p> <p>4 dictating what's saturated versus what's not</p> <p>5 saturated?</p> <p>6 THE WITNESS: Usually they'll be some kind of</p> <p>7 indicator, that they might say "wet,"</p> <p>8 "moist." And usually if it's not -- if it</p> <p>9 doesn't have any liquid in it, a lot of times</p> <p>10 they'll put "dry" next to it. But wherever</p> <p>11 they see a definite water zone, they usually</p> <p>12 indicate that with "wet."</p> <p>13 PANELIST OLIVIER: Okay.</p> <p>14 PANELIST DELMAR: Just to follow up with --</p> <p>15 on -- this is Chris Delmar. Just to follow</p> <p>16 with -- on Stephen's question about the</p> <p>17 terminology, I did review a couple of boring</p> <p>18 logs this morning, and you used four distinct</p> <p>19 terms. "Moist" popped up quite often in sort</p> <p>20 of like the very shallow subsurface where</p> <p>21 there was clays that were obviously -- you</p> <p>22 know, have water because clay never gets rid</p> <p>23 of water around here. And then as you go</p> <p>24 further down closer to the screened interval,</p> <p>25 we saw "wet" there, and so I guess their</p> | Page 1208 | <p>1 descriptions.</p> <p>2 PANELIST DELMAR: Okay. Thank you.</p> <p>3 BY MR. KEATING:</p> <p>4 Q. Let's talk about your proposed</p> <p>5 remediation plan. All right. You presented two</p> <p>6 options in ICON's MFP for the soil remediation;</p> <p>7 correct?</p> <p>8 A. That is correct.</p> <p>9 Q. Both of the options include the</p> <p>10 groundwater portion, but it's the same in both;</p> <p>11 right?</p> <p>12 A. That's correct. The groundwater is</p> <p>13 going to background in both options.</p> <p>14 Q. So Plan 1 is applying 29-B to the soils</p> <p>15 with no depth limitation or exceptions; right?</p> <p>16 A. Correct. So anywhere that we had a 29-B</p> <p>17 exceedance, we scoped it to come out all the way</p> <p>18 down to a depth of 32, which I think is at one</p> <p>19 location at H-16.</p> <p>20 Q. Okay. And that is where we're</p> <p>21 addressing leachate chlorides?</p> <p>22 A. No. That was just any exceedance. That</p> <p>23 was still an EC above 4.</p> <p>24 Q. Fair enough. So just to get this out of</p> <p>25 the way before Mr. Carter gets up here, ICON --</p> |

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|--|--|
| <p style="text-align: right;">Page 1209</p> <p>1 Jason Sills, ICON -- is not recommending to this 2 panel that we excavate down to 32 feet; correct? 3 A. No, I'm not. 4 Q. Now, this is included in ICON's 5 remediation plan as an option because to apply 6 soil remediation to all 29-B exceedances 7 regardless of depth in the soil -- because that's 8 what Chapter 6 requires; right? 9 A. That's correct. 10 Q. You have to include that as an option; 11 right? 12 A. That is correct. 13 Q. So I want to make this clear too. I 14 want to try and assure the panel that there is 15 nothing remotely unreasonable about what you are 16 proposing for the soil remediation in this case. 17 First, we have five distinct limited admission 18 areas: 2, 4, 5, 6, and 8; correct? 19 A. Yes. 20 Q. And are you proposing any soil 21 remediation at all in Area 6 or Area 8? 22 A. No, I'm not. 23 Q. Are you proposing any excavation in 24 Area 2 to the far west? 25 A. Other than amending.</p> | <p style="text-align: right;">Page 1211</p> <p>1 and an Option 2. 2 Tell the panel the two different 3 options -- the two different techniques for 4 remediating the soil and why you're employing the 5 two different techniques. 6 A. So the two different techniques that 7 we're employing is: Anything that exceeds an EC, 8 we're recommending hauling off and disposing at a 9 licensed landfill. If an EC or SAR exists and 10 there's no presence of EC exceedance, then we're 11 proposing to actually amend on-site with a gypsum 12 amendment. 13 And the reason why we're proposing that 14 is I haven't seen very good success with trying to 15 amend EC because gypsum is a calcium-rich 16 amendment and so what it does is it will replace 17 the sodium, and that's what lowers your ESP and 18 SAR is that, but EC actually measures your total 19 ions. So replacing a sodium ion with a calcium 20 ion instead of sodium chloride, you wound up with 21 calcium chloride, which is still a salt. 22 Q. So the amendment -- the areas where 23 you're recommending amendment with the use of 24 gypsum is to address SAR and ESP; correct? 25 A. Correct.</p> |
| <p style="text-align: right;">Page 1210</p> <p>1 Q. Only amending; right? 2 A. Right. And that's actually with the 3 29-B plan with no exceptions. 4 Q. And so what you're actually proposing in 5 terms of excavating and removing soil is limited 6 to these tiny pink boxes we see in Areas 4 and 5; 7 is that true? 8 A. That's correct. 9 Q. And the total surface area we're talking 10 about is just about 1.2 acres, is it not? 11 A. Correct. 12 Q. That's the plan with no exceptions. 13 That's not even the one you're recommending; 14 right? 15 A. That's correct. 16 Q. This property is roughly 1200 acres; 17 correct? 18 A. That is correct. 19 Q. So your outlandish, unreasonable, not 20 feasible soil remediation plan is for 0.1 percent 21 of the surface area of this property; true? 22 A. That's correct. 23 Q. Now, you mentioned that you're employing 24 two different techniques to remediate the soil in 25 both plans, an Option 1 with no depth limitations</p> | <p style="text-align: right;">Page 1212</p> <p>1 Q. And the use of gypsum for a soil 2 amendment to address SAR and ESP is a 3 scientifically proven and accepted method, is it 4 not? 5 A. It's very widely used, yes. 6 Q. And also practically used and proven to 7 work; correct? 8 A. Yes. 9 Q. All right. And excavation and removal 10 of soil contaminated with EC is also an accepted 11 and proven method, is it not? 12 A. Yes. 13 Q. It's also used in practice all the time, 14 is it not? 15 A. Yes. 16 Q. This type of soil remediation that 17 you're talking about, use of excavation and 18 removal and also amendment with gypsum, those are 19 techniques that ICON itself has actually done on 20 property in Louisiana; true? 21 A. We've done the excavation. We've done 22 some sort of amendment. We have not used a gypsum 23 amendment before. 24 Q. Soil amendment and excavation is 25 commonly used by ICON?</p> |

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1 A. Right. Right.
 2 Q. Just to head off another issue,
 3 Mr. Gregoire was questioning Mr. Miller yesterday
 4 about an issue that kind of dovetails between you,
 5 the soil guy, and Greg, the groundwater guy. But
 6 talking about leaving the hole open where you're
 7 excavating where there's a leaching risk for the
 8 chlorides. Do you remember that?
 9 A. Yes.
 10 Q. And he was asking about did you do any
 11 flushing modeling and all these other sorts of
 12 things for remedial purposes. Do you remember
 13 that line of questioning?
 14 A. Yes.
 15 Q. You heard Mr. Miller's testimony?
 16 A. That's correct.
 17 Q. Is that hole being left open to
 18 remediate the groundwater?
 19 A. No. It's only there to assist, and
 20 it's -- I mean, I know it was called a trench. I
 21 think of it more as a pond. You know, it's .17
 22 acres. We're planning on leaving it down to 18.
 23 The leachate chloride that's right below -- the
 24 sample that was collected that's right below the
 25 18 feet was 11. So that's pretty close to our

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1 standard that we were looking to remediate to. So
 2 we were just leaving this area open only to
 3 assist, not to say that it has to be left open or
 4 our plan couldn't be accomplished like it was. It
 5 was only to assist our program that we were trying
 6 to implement.
 7 Q. And by leaving that open and letting it
 8 fill with rainwater, the effects you're having is
 9 to have it assist in recharging the aquifer;
 10 right?
 11 A. Right. And also to -- while it was
 12 open, it's going to flush some of the salts that's
 13 below it into the groundwater that can be
 14 recovered and run through our treatment system. I
 15 mean, it would only help.
 16 Q. Okay. Mr. Sills, just for the benefit
 17 of the panel, you talked about ICON having done
 18 excavation in other properties in Louisiana. What
 19 is this here?
 20 A. That's at a tank site ICON did an
 21 excavation at, and that's just kind of showing you
 22 the process and proof that ICON has done soil
 23 excavation before.
 24 Q. And this was something that was
 25 regulated by LDEQ?

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1 A. That's correct.
 2 Q. Did LDEQ tell you this was unreasonable?
 3 A. No, they didn't.
 4 Q. And, in fact, you did it and it worked;
 5 right?
 6 A. Well, right. It removed the source
 7 material, which is what the objective was.
 8 Q. What are we looking at here, Mr. Sills?
 9 A. That's just another excavation project
 10 that we did. This wasn't -- this project wasn't
 11 designed for remediation. Basically what it was,
 12 is we were digging two test -- oh, I'm sorry -- a
 13 three-test pit in an unlicensed landfill that was
 14 left on somebody's property that we were trying to
 15 do waste characterization on.
 16 Q. But the bottom line, Mr. Sills, is ICON
 17 doesn't simply design conceptual remediation
 18 plans; you have significant experience, ICON has
 19 significant experience in actually carrying them
 20 out; right?
 21 A. Correct.
 22 Q. Let's talk about your Option 2, what
 23 you're actually recommending to this panel to be
 24 the most feasible plan to remediate the soil in
 25 this case.

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1 Explain the depth limitations that
 2 you're applying here.
 3 A. So we're proposing to dig down to
 4 12 feet for any 29-B exceedance of EC, amend any
 5 29-B exceedance of SAR and ESP to 12 feet, and
 6 then around H-16 we're digging down to 18 feet.
 7 That exceeds the 10.84 leaching EC standard that
 8 we -- or that Mr. Miller calculated.
 9 Q. Okay. And looking at this -- Mr. Sills,
 10 this is the -- a little bit of a more zoomed-in
 11 shot of the soil excavation areas and the plan
 12 that ICON is actually recommending this panel
 13 accept, and it's a little bit less than -- a
 14 surface acreage than the other plan; right?
 15 A. That's correct.
 16 Q. And it's a lot less volume because
 17 you're not going down as deep; correct?
 18 A. That's correct.
 19 Q. And it's about half the cost; right?
 20 A. It's about half the cost.
 21 Q. Now, much was made in this case
 22 throughout the testimony about root zones, about
 23 rice, about sugarcane, about trees, and I want to
 24 make one thing really clear so hopefully the panel
 25 doesn't waste a lot of time chasing that.

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1 The boxes we have here --

2 MR. KEATING: And for the benefit of the

3 panel, Scott, if you can zoom on

4 Areas 4 and 5.

5 Your Honor, may I step over?

6 JUDGE PERRAULT: Yes, please.

7 BY MR. KEATING:

8 Q. These are references to where -- the

9 sample locations we see in Table 1 of ICON's MFP;

10 right?

11 A. That's correct.

12 Q. H-1, 17, 18, 15, 16, and 21; right?

13 A. That's correct.

14 Q. And other than this one right here, we

15 see them all shaded in pink. What's the

16 significance of the one shaded in blue here?

17 A. That's the one that was calculated as a

18 leachable risk and that we were going -- that's

19 the only site that we're going deeper than

20 12 feet.

21 Q. And I think we heard consistent

22 testimony from Chevron's experts, Mr. Ritchie,

23 Mr. Angle -- and if I'm wrong, they can get back

24 up here on rebuttal and tell me I'm wrong -- that

25 ESP and SAR are not as big of an issue for crops

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1 and plants and trees. Do you recall hearing that?

2 A. Yes, I do.

3 Q. But that EC is; right?

4 A. EC above 4, yes.

5 Q. And 29-B says that EC -- 4 is the

6 threshold for EC; right?

7 A. That's correct.

8 Q. And there are publications, even, that

9 Mr. Ritchie acknowledged where an even lower EC

10 can affect certain crop growth?

11 A. Correct. I've seen publications, and I

12 think it's -- 1.7 is the -- kind of the EC

13 threshold for, like, sugarcane.

14 Q. Okay. These areas -- EC is above 4 in

15 all of these areas where you're recommending

16 excavation; right?

17 A. Where we're recommending excavation,

18 yes, but I can't remember if there's one or two

19 that's just amendment only.

20 Q. What you're doing here is removing EC

21 that's above 4 down to 12 feet?

22 A. That's correct.

23 Q. It's that simple, isn't it?

24 A. Yes.

25 MR. KEATING: You can pan back out, Scott,

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1 please.

2 BY MR. KEATING:

3 Q. Your soil remediation plan does not

4 address barium; correct?

5 A. No, it does not.

6 Q. And reason number one, barium is not a

7 29-B constituent, is it?

8 A. No, it's not.

9 Q. When you were generating your report,

10 you were concerned about barium. Tell the panel

11 about that and what you did.

12 A. Well, since it wasn't included in 29-B

13 and we had high concentrations of barium in a

14 large portion of the property, I reached out to

15 Dr. Jim Rodgers. He's an ecologist and works in

16 the state of Texas a lot, and he led me to a

17 website under TCEQ, Texas Commission on

18 Environmental Quality, and basically it's a site

19 that you can look up different constituents and,

20 depending on what species of animal's on a site,

21 it will tell you what limit that constituent could

22 be before it starts causing harms to that animal.

23 And so I knew that they duck hunted in the area.

24 So I looked at a mallard and it came up with

25 832 milligrams per kilogram was the standard

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1 according to that website.

2 And so I basically gave a contingency

3 plan that if that was the cleanup level -- if that

4 was correct, then it would cost \$5 million to

5 address that issue. I wasn't suggesting to

6 perform the remediation, just that there could be

7 an issue with barium, and it needed to be

8 evaluated.

9 Q. You didn't want to just completely

10 ignore barium; fair?

11 A. That's correct.

12 Q. And you're not professing to be an

13 ecologist or have expertise on that subject

14 matter; correct?

15 A. No. That's -- I'm not.

16 Q. That's exactly why you reached out to

17 Doc Rodgers, is it not?

18 A. That is correct.

19 Q. And you understand and you heard earlier

20 today that's why we, on behalf of Mr. Henning,

21 hired Dr. Schuhmann to talk about that and to

22 address it; right?

23 A. That's correct.

24 Q. And you're deferring to him on that;

25 fair?

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| <p>1 A. Yes, I am.</p> <p>2 Q. Okay. Let's talk about the groundwater</p> <p>3 remediation plan. Well, first let's get to this.</p> <p>4 I heard Dr. Connelly -- and you heard</p> <p>5 some of her testimony, did you not?</p> <p>6 A. A little bit.</p> <p>7 Q. Okay. You're familiar with her subject</p> <p>8 matter; right?</p> <p>9 A. Yes.</p> <p>10 Q. Talk about, oh, all these beautiful</p> <p>11 trees, all these things. The areas where ICON is</p> <p>12 proposing its soil excavation in this case, that's</p> <p>13 not where the rice is growing; right?</p> <p>14 A. No. The rice is growing on the other</p> <p>15 side of the property, from my understanding.</p> <p>16 Q. That's not where all the live oak trees</p> <p>17 are located; right?</p> <p>18 A. That's correct.</p> <p>19 Q. This is just fallow pasture; right?</p> <p>20 A. Correct.</p> <p>21 Q. So even though there's been -- and where</p> <p>22 is this project, Mr. Sills?</p> <p>23 A. That's in North Louisiana. That's -- we</p> <p>24 called it Lazarre.</p> <p>25 Q. Okay. In Lazarre they're excavating</p> | <p>1 fairly large surface area disturbed.</p> <p>2 Q. What are we looking at here?</p> <p>3 A. Looks like some solidification, and</p> <p>4 they're about to get an excavator stuck.</p> <p>5 Q. And the reason I'm showing these to the</p> <p>6 panel, Mr. Sills -- you've said it. I want them</p> <p>7 to see it. This is not unheard of. This is not</p> <p>8 unreasonable. This happens all the time, and</p> <p>9 frankly this property in this case we're talking</p> <p>10 about and the plan we're recommending is on a much</p> <p>11 smaller scale than all these?</p> <p>12 A. Correct. I mean, y'all see it all the</p> <p>13 time. I mean, typically a production pit is</p> <p>14 almost an acre. We've -- I've seen production pit</p> <p>15 facilities that are 4 or 5 acres. So, I mean,</p> <p>16 to -- for a surface area of 1.2 acres, that's</p> <p>17 very, very small.</p> <p>18 Q. This is another shot from VPSB?</p> <p>19 A. That's correct.</p> <p>20 Q. And you heard, I believe it was,</p> <p>21 Mr. Angle talking about, well, yeah, but in that</p> <p>22 case we were excavating a pit, or, yeah, but in</p> <p>23 that case it involved a pit.</p> <p>24 Do you remember hearing about that?</p> <p>25 A. Yes.</p> |
| Page 1222 | Page 1224 |
| <p>1 significant amounts of soil here in the middle of</p> <p>2 a pine forest, are they not?</p> <p>3 A. Yes.</p> <p>4 Q. And this is still Lazarre but just</p> <p>5 another shot, and what does this show?</p> <p>6 A. That just shows kind of the depth of the</p> <p>7 excavation and the size.</p> <p>8 Q. So neither the depth nor the surface</p> <p>9 area we're talking about here is unheard of or</p> <p>10 unreasonable in any way; right?</p> <p>11 A. No. Actually, 1.2 acres is a very small</p> <p>12 area when we're looking at these legacy sites.</p> <p>13 Usually it's much, much larger.</p> <p>14 Q. This is just another shot from Lazarre?</p> <p>15 A. That's correct.</p> <p>16 Q. What is this?</p> <p>17 A. That's a picture of an old VPSB case.</p> <p>18 Q. There was a lot of talk about East White</p> <p>19 Lake. This is not the East White Lake property?</p> <p>20 A. No, sir. This is not the East White</p> <p>21 Lake property.</p> <p>22 Q. But this is again showing a large-scale</p> <p>23 soil excavation being done at a site like this;</p> <p>24 right?</p> <p>25 A. Right. And you can see they've got a</p> | <p>1 Q. There were pits right in the AOIs that</p> <p>2 we're talking about in this case on this property,</p> <p>3 were there not?</p> <p>4 A. Yes, there was.</p> <p>5 Q. And this is a shot of what it looks like</p> <p>6 when they're finished with their excavation and</p> <p>7 backfilling; correct?</p> <p>8 A. That's correct.</p> <p>9 Q. Let's talk about ICON's groundwater</p> <p>10 remediation plan, and probably to everyone's</p> <p>11 relief, we're not going to talk about pica or</p> <p>12 leaching factors and anything like that. Okay?</p> <p>13 We're going to cut right to it.</p> <p>14 What role did you play, Mr. Sills, in</p> <p>15 formulating ICON's groundwater remediation plan?</p> <p>16 A. Basically, Mr. Miller gave me the</p> <p>17 areas -- the -- as you heard him describe</p> <p>18 yesterday, the zones, the thicknesses, the</p> <p>19 hydraulic conductivity based on those zones and,</p> <p>20 from that information, I calculated the pore</p> <p>21 volumes in each zone. And based on our starting</p> <p>22 concentration and our ending concentration, we</p> <p>23 were able to figure up the number of pore volume</p> <p>24 flushing; and then based off of that, we</p> <p>25 calculated from the Theis our radius of influence</p> |

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1 per zone, how many wells we were needing in that
 2 zone, the pumping rate for that zone; and then
 3 that, in turn, gave us how many years it would
 4 take to remediate that zone based on your pumping
 5 rate and your number of core volume flushes.
 6 Q. And to be fair, Mr. Sills, anyone -- the
 7 best scientist in the world -- these time
 8 estimates -- based on the pore volume flushing and
 9 the other factors you have to take into
 10 consideration, these are your best estimates;
 11 fair?
 12 A. Correct. These are perfect world
 13 scenarios. You know, the -- as many groundwater
 14 recovery systems as I've installed and operated,
 15 it's very, very rare that when you say, okay,
 16 something is going to last 1.5 years, it lasts
 17 1.5 years. Sometimes it's a little bit less;
 18 sometimes it's a little bit more. But this is the
 19 data and the equations that are available to us to
 20 give us our best estimate on our remediation
 21 times.
 22 Q. And the data and equations that you used
 23 to come up with that best estimate for the
 24 groundwater remediation times, those are the
 25 standards that everyone uses; true?

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1 A. I don't know if I'd say everyone uses,
 2 but they're well-published and peer-reviewed
 3 equations that are used between the Theis and the
 4 EPA remediation equations that we use.
 5 Q. And for somebody to get up here and poke
 6 holes in the precision of your time frames by a
 7 month or two here or a month there would be not
 8 only unfair but a waste of time, would it not?
 9 A. Well, like I said -- I mean, it's hard
 10 to calculate the exact time limit it would take to
 11 remediate the groundwater. It's just -- it's the
 12 best estimate that you can get.
 13 Q. Now, let's talk about Phase 1 and
 14 Phase 2. Explain to the panel how that's going to
 15 play out.
 16 A. Basically, with Phase 1 -- and a lot of
 17 these are going to be going on at the same time.
 18 It would be the installation of our groundwater
 19 recovery system -- I mean our groundwater recovery
 20 wells -- sorry, I misspoke -- and then sampling of
 21 those wells, and that's kind of going on in
 22 conjunction with each other. We wouldn't install
 23 400-and-something wells and then come back and
 24 sample all 400 wells. We'd be sampling as we were
 25 installing.

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1 Then you would compile all that data to
 2 make sure it doesn't differ from what you already
 3 have and to make sure that the systems that you
 4 put on the site are specifically compatible to
 5 handle the concentrations that you have in the
 6 groundwater. And then the last part of the
 7 Phase 1, the pilot testing, that's always
 8 fine-tuning the system. Whenever you start up a
 9 system, you might have to turn one well up to get
 10 more volume out of it, turn another well down.
 11 You know, in this instance -- and you heard
 12 Mr. Miller talking about it yesterday. We're
 13 going to want to pull from the south, which is
 14 pulling freshwater into the contamination, which
 15 will give you a flushing effect. So that's -- at
 16 this point that's when we'd be fine-tuning the
 17 recovery rates from the -- from each well.
 18 Q. And you mentioned the number of wells
 19 that are going to be included in this process,
 20 and, again, that's a best estimate, is it not?
 21 A. Yes. I feel fairly confident with
 22 that -- you know, with the number of wells as far
 23 as the radius of influence because most of the
 24 wells are going to be in the A bed.
 25 Q. Okay. And you heard Mr. Gregoire making

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1 much of the fact that there are 400 and how many
 2 wells?
 3 A. It's over 450. I don't remember the
 4 exact number, but it comes out to almost -- about
 5 six per acre.
 6 Q. And what drives the number of wells that
 7 you have in your plan?
 8 A. Well, it's a couple of things. I mean,
 9 it's the area that we're dealing with. It's over
 10 80 acres plus it's the yield of the zone that
 11 we're trying to remediate. If you have a higher
 12 yield aquifer, you're going to have less wells.
 13 Q. So to be clear to save Mr. Carter some
 14 time, hopefully, you didn't calculate the yield.
 15 Mr. Miller did that?
 16 A. That's correct.
 17 Q. You took his calculations, which he
 18 already talked about -- we went through at length,
 19 and you just did the math; fair?
 20 A. That's fair.
 21 Q. All right. The number of wells it takes
 22 is not a subjective thing. It's just what the
 23 math told you; right?
 24 A. Correct. And that's based on the yield
 25 per well and off the Theis equation.

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1 Q. Now, the actual treatment system that's
 2 going to be used is a pump-and-treat system with
 3 reverse osmosis; correct?
 4 A. That's correct.
 5 Q. Let's get this out. ICON has not
 6 previously done a groundwater remediation using
 7 pump and treat with RO; right?
 8 A. No. That's correct.
 9 Q. But it's an accepted methodology, is it
 10 not?
 11 A. Yes. So on the West Coast is what they
 12 primarily use to desalinate seawater, make it okay
 13 to drink. I think they use it on oil rigs for
 14 drinking water. They've used it in the Midwest to
 15 treat groundwater with contamination of chlorides,
 16 radium, and nitrates. So it's an accepted
 17 practice, and, I mean, it's been used before.
 18 It's just not been used by us, and I don't know of
 19 any Louisiana sites that it's been used at.
 20 Q. So the driving groundwater constituent
 21 is chlorides, is it not?
 22 A. Correct.
 23 Q. And that's what it's been used for in
 24 other applications that you've yourself looked at?
 25 A. Correct.

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1 Q. Explain to the panel how this system
 2 would work.
 3 A. So basically it's going to have a
 4 stripper on it before, and that's to remove any
 5 hydrocarbons. You've got some pre-filtrations to
 6 remove, iron and some other things that the system
 7 can't handle, but once the water gets into the RO
 8 unit, it will pass through a membrane. And then
 9 you'll have two streams that are coming out of
 10 that system. One is going to be a super
 11 concentrated retentate that's compatible for
 12 injection and then freshwater, and so the
 13 freshwater can be discharged: Ditch, you know,
 14 pond, wherever you want to use the water.
 15 Q. This graphic we're looking at is an
 16 example of what this system looks like and its
 17 component parts?
 18 A. Correct. So we have to use two systems
 19 at this property. One is a seawater system. One
 20 is a brackish system. The determining factor on
 21 that is your TDS. So the brackish system can only
 22 handle a TDS up to 5,000. So anything above 5,000
 23 TDS has to be run through the seawater.
 24 Q. And we have concentrations above that
 25 threshold in this groundwater?

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1 A. Yes, sir.
 2 Q. Okay. Now, I see at the bottom there
 3 "Pure Aqua, Inc." Is that where you got this
 4 figure?
 5 A. Yes. That's where we got our most
 6 recent quote from, is Pure Aqua.
 7 Q. So the quote included as a supporting
 8 documentation to ICON's MFP is something you
 9 obtained directly from the source? From Pure
 10 Aqua?
 11 A. That's correct.
 12 Q. Did you also speak with someone at Pure
 13 Aqua?
 14 A. So we spoke with them and told them
 15 exactly what we were planning on doing and also
 16 let them know the concentration of the
 17 constituents that we were dealing with, and they
 18 basically told us okay. And they quoted us
 19 systems based on what -- the information that we
 20 gave them.
 21 Q. So it's specific to this site and the
 22 constituents we're addressing?
 23 A. Well, it's specific to the methodology
 24 that we're using it for. I don't recall, as I'm
 25 sitting here today, if it was specific for this

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1 site, but the same parameters that were -- I mean,
 2 the same constituents that we're seeing at this
 3 site were very -- were the same constituents that
 4 the system was originally quoted for.
 5 Q. And that's what I meant. I asked it
 6 poorly. So I apologize.
 7 And when you spoke to Pure Aqua, they
 8 told you this application had been used for
 9 groundwater chlorides in other instances; right?
 10 A. Well, they told us that it was used
 11 for -- I mean, that's why they designed this RO
 12 system, was for removal of salt. So yes.
 13 Q. This is what it's made for?
 14 A. Correct.
 15 Q. And it works, to your knowledge?
 16 A. As far as I'm aware of. I mean, they've
 17 been in business for quite some time now. So, I
 18 mean, I wouldn't think they'd be pawning a
 19 technology that wasn't working and stay in
 20 business.
 21 Q. Now, again, we all understand and
 22 Mr. Gregoire loves to ask you that ICON hasn't
 23 used RO for its pump and treat in Louisiana. But
 24 ICON has done pump and treat in Louisiana. Just
 25 not with RO; correct?

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| <p style="text-align: right;">Page 1233</p> <p>1 A. Correct. And the technology and -- or 2 the methods that you're going for are the same. 3 So what -- you're trying to get water out of the 4 ground to a treatment train whether that's with 5 the liquid ring or submersible pumps, and once you 6 get it through the -- to the treatment train, you 7 buy that from a manufacturer designed specifically 8 to achieve certain remedial goals of what you're 9 looking to treat. So, I mean, whether you're 10 running it through an RO unit or as this shows -- 11 that's actually on one of our UST sites. You 12 know, it's got a oil-water separator and an air 13 stripper with an SVE blower. The concept is very 14 similar. 15 Q. So this is an example of an actual 16 groundwater remediation project that ICON, your 17 company, did in Louisiana? 18 A. Correct. That's actually in Kentwood. 19 That's one that we installed a couple of years 20 ago. That's a high-flow system. It's doing about 21 3 million gallons a year. 22 Q. So no RO, but it's the same treatment 23 train and the same concept; true? 24 A. Well, it's not the same treatment train, 25 but it's the same concept of trying to get water</p> | <p style="text-align: right;">Page 1235</p> <p>1 sampling on the constituents that you're 2 running through the system. So a lot -- if 3 you look through the DEQ, they've got 4 discharge requirements in certain streams. 5 They might have a chloride of like 60 or -- 6 we'd have to meet those standards before we 7 could discharge any water, but I haven't 8 contacted anybody specifically for this site. 9 PANELIST OLIVIER: Do you have any experience 10 in the past or know of any other cases where 11 DEQ has approved the discharge of treated 12 water that was impacted by exploration and 13 production operations? 14 THE WITNESS: With chloride specifically? 15 PANELIST OLIVIER: Yes. 16 THE WITNESS: As you heard Mr. Angle testify 17 to, there hasn't been many chloride 18 remediation projects in Louisiana. So I have 19 not heard of any DEQ approval of that. 20 PANELIST OLIVIER: Okay. Okay. And, also, 21 while we're at it too, one question. It was 22 going back to the -- I think I heard from 23 other testimony that it was 471 recovery 24 wells that was proposed that could be 25 installed, and I think that Mr. Delmar may</p> |
| <p style="text-align: right;">Page 1234</p> <p>1 to the treatment train for it to be treated and 2 then cleaned and discharged. 3 Q. Correct. 4 PANELIST OLIVIER: I do have one question. 5 THE WITNESS: Yes, sir. 6 PANELIST OLIVIER: This is Stephen Olivier. 7 As I was listening to you talking about how, 8 you know, this system would work for recovery 9 and treatment and then you were talking more 10 about discharge. And so to your knowledge, 11 has anybody from ICON consulted with DEQ, and 12 I asked -- I say DEQ because I think we know 13 DEQ has regulatory authority over any kind of 14 discharge operations in Louisiana. 15 So has anybody seeked with DEQ to see if 16 they would approve or how -- what their 17 decision would be for discharging treated 18 water that could be potentially impacted by 19 oil and gas operations? 20 THE WITNESS: So what they would do is they 21 would treat it just like our UST systems so 22 that -- they have specific discharge 23 requirements they make you sample. For us, 24 when we start our systems up, we're going to 25 have to sample every week, and they base your</p> | <p style="text-align: right;">Page 1236</p> <p>1 have kind of -- I think he touched on this 2 question with some other witnesses already, 3 but in your experience do you feel like there 4 would be any potential maybe subsidence or 5 any kind of issues on a property that you 6 could foresee with that many wells in a 7 recovery system? 8 THE WITNESS: That would have been a better 9 question for Mr. Miller, but we did have this 10 conversation a few days ago, and I'll try to 11 explain it kind of how he explained it to me. 12 He said that the upper zones are not under 13 that much pressure to where you have to worry 14 about subsidence, is the deeper areas to 15 where it's more -- the fluid is actually 16 pressurized. So when you're removing the 17 pressurized liquid, then the -- everything 18 actually compresses. So he thinks that the 19 top zone is not pressurized enough to worry 20 about subsidence in this case. 21 And like I said before, this system -- 22 we're looking to recover about 23 3 million gallons a year. The system that 24 we've got up on the screen, we've been 25 running it for two years, and we've recovered</p> |

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1 about 6 million gallons. And, I mean, it's
 2 in a much smaller area that -- this is spread
 3 out over 80 acres. This site is -- I think
 4 it's about an acre and a half, and we haven't
 5 noticed any concrete cracking or anything
 6 like that.
 7 PANELIST OLIVIER: So on this specific one on
 8 the Henning property, do y'all anticipate
 9 putting anything on the property to monitor
 10 for subsidence issues while y'all are in
 11 operation?
 12 THE WITNESS: I mean, we didn't have that in
 13 the plan to do so, but, I mean, that's
 14 something that could be easily added if
 15 needed.
 16 PANELIST OLIVIER: Okay. All right. Thank
 17 you. That was all the questions that I had.
 18 BY MR. KEATING:
 19 Q. Mr. Sills, you agree with me that if
 20 reverse osmosis is not used as part of your
 21 process, your costs are going to go up; right?
 22 A. Are you talking about, like, recovery
 23 and then just hauling off site?
 24 Q. You've got to haul the solids off;
 25 right?

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1 A. Well, you're going to have to haul all
 2 the volume off because, with a reverse osmosis,
 3 what you're doing is basically shrinking your
 4 volume. So you're actually winding up with a more
 5 super concentrated fluid. For instance, the
 6 brackish system is a 50-50 system. So for every 2
 7 gallons you send through it, you get a gallon
 8 clean, a gallon that's super concentrated. So
 9 it's a volume-reduction system.
 10 Q. You're reducing the volume of the water
 11 that's going to have to be taken off site; true?
 12 A. Taken off site or injected, yes.
 13 Q. Or injected. And by doing that, you're
 14 reducing the costs, are you not?
 15 A. Well, if you had to take everything off
 16 site, then you would have more volume to deal
 17 with. So, therefore, yes.
 18 Q. This is an example of the pump?
 19 A. Well, this is an example of the well
 20 box. So this is basically just to show everything
 21 that is completed underground. The little hose
 22 that you see that's kind of a white and gray is
 23 actually coming from the submersible pump that's
 24 removing the water to the system.
 25 Q. Okay. And this just shows what?

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1 A. This just shows there's a piping
 2 underground. So you'll have the recovery piping,
 3 and then the smaller one is actually going to be
 4 your electrical for your submersible pump.
 5 Q. Let's talk about this a little bit, and
 6 Mr. Miller testified about it already as well.
 7 But for your part, what was your
 8 contribution to the groundwater remediation area?
 9 Mr. Miller determined this plume shape; correct?
 10 A. Yes. He determined the plume shape. He
 11 divided all of the different sections within the
 12 plume. He came up with the thickness with the
 13 hydraulic conductivity of each. I think he called
 14 them zones.
 15 Q. So he determined the vertical and
 16 horizontal extent of the groundwater
 17 contamination; right?
 18 A. Correct.
 19 Q. And you then applied the Theis equation;
 20 correct?
 21 A. Correct.
 22 Q. And pore volume flushing; right?
 23 A. That's correct.
 24 Q. These are scientifically proven and
 25 accepted methods of doing that, are they not?

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1 A. Yes.
 2 Q. It's something you've done before;
 3 right?
 4 A. Correct.
 5 Q. This is something -- using your
 6 calculation methods, Theis and pore volume
 7 flushing are methods you've utilized on
 8 groundwater remediation plans where ICON actually
 9 went out and did the groundwater remediation;
 10 right?
 11 A. Yes.
 12 Q. And it worked?
 13 A. They were fairly close.
 14 Q. Okay. We're not in a perfect world;
 15 right?
 16 A. Right.
 17 Q. You successfully remediated the
 18 groundwater?
 19 A. Yes.
 20 Q. And so your methodology is not only
 21 scientifically proven, it's practically proven?
 22 A. Yes.
 23 Q. Let's talk about the cost estimates.
 24 MR. KEATING: Scott, can you zoom in on the
 25 chart?

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1 BY MR. KEATING:
2 Q. And this is a summary for the Chapter 6
3 required plan, the plan with no depth limitations
4 for the soil.
5 So we've got at the top -- we've got two
6 columns, one for off-site disposal of the
7 concentrated retentate you talked about and one
8 for on-site injection; right?
9 A. That's correct.
10 Q. But for soil it's the same, obviously;
11 correct?
12 A. Correct. For both.
13 Q. And what's your soil cost estimate for
14 Option 1 with no depth limitations?
15 A. It's basically \$2.3 million.
16 Q. And, again, you're not recommending to
17 the panel that that's what should be done. That's
18 required by Chapter 6, to include it in your plan?
19 A. Correct.
20 Q. With the groundwater -- well, let me
21 back up.
22 All the cost estimates for the soil and
23 groundwater -- excuse me.
24 All of the backup documentation for
25 these cost estimates is included as part of ICON's

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1 MFP; right?
2 A. That's correct.
3 Q. And that's Exhibit E in the record;
4 right?
5 A. Yes.
6 Q. I understand Mr. Wayne Prejean with ICON
7 did more of the legwork, if you will, to gather
8 and assimilate these costs; is that fair?
9 A. Yes.
10 Q. That's something you also sometimes do
11 with ICON; right?
12 A. Yes.
13 Q. Did you review and, for your purposes,
14 validate Mr. Prejean's estimates and calculations?
15 A. Yes. Everything looked correct to me.
16 Q. Okay. Are you familiar with what
17 Mr. Prejean did to assemble these costs?
18 A. Yes. We have Excel worksheets used
19 to -- I mean, pretty much we use those for every
20 case to generate these costs for our soil and
21 groundwater areas.
22 Q. And you're getting the backup
23 documentation from actual contractors and vendors
24 and so on?
25 A. It's a combination. Sometimes we use

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1 trust fund rates, which are state-approved rates.
2 We use the RSMMeans book, which I know the DNR
3 recommends for closing the E&P facilities. We use
4 Pure Aqua sometimes. Depending on what landfill
5 we go to, we'll have a quote from them. So it
6 just varies depending on what aspect of the
7 technology we're dealing with.
8 Q. Okay.
9 MR. KEATING: Scott, would you mind zooming
10 on this?
11 BY MR. KEATING:
12 Q. This is the cost summary plan for --
13 with the depth exceptions; right? That, for the
14 soil this, is what you're actually recommending
15 for the panel to accept; right?
16 A. That's correct.
17 Q. And the costs for the soil is just over
18 a million dollars in this option; true?
19 A. That is correct.
20 Q. You've seen soil remediations far
21 exceeding this in cases like this; true?
22 A. This is very small. Yes.
23 Q. So looking at the groundwater
24 remediation costs, which -- we, I think,
25 established this earlier, but if we didn't, it's

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1 the same from Option 1 to Option 2; fair?
2 A. Yes.
3 Q. Looking back to the groundwater
4 remediation areas, we see you have it separated by
5 A bed and B bed, and Mr. Miller talked about that
6 plenty yesterday. So we're not going to rehash
7 that, but you then have the A through K areas.
8 So when we go back to your cost
9 estimate --
10 MR. KEATING: Zoom in, Scott, please.
11 BY MR. KEATING:
12 Q. -- you have them separated to try to be
13 more accurate; right?
14 A. Yeah. So we have them separated out in
15 A bed and B bed and then also by zone. So you can
16 kind of see the cost for each zone and by the bed,
17 and then we have the capital costs for our RO unit
18 along with our capital cost and installation of
19 the SWD.
20 Q. In the RO unit, both the seawater and
21 brackish together is about \$750,000; right?
22 A. Yes.
23 Q. So it's less than 10 percent of your
24 groundwater remediation plan; right?
25 A. Yes.

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| <p>1 Q. This RO system that they're making a big 2 deal about?</p> <p>3 A. Correct.</p> <p>4 Q. And it's going to reduce the amount of 5 volume that has to be either injected on-site or 6 hauled off-site; right?</p> <p>7 A. That's correct. Because if you go to 8 just do a direct recovery and injection into an 9 SWD -- I mean, Mr. Miller talked about it 10 yesterday -- you're going to have to have some 11 blending. So you're actually going to increase 12 your volume and make it even more.</p> <p>13 PANELIST OLIVIER: I do have one more 14 question. It's Stephen Olivier. Earlier, we 15 were talking about potentially discharging 16 some of the treated water, and I just see 17 here because y'all have injection and so -- 18 and I heard him just say that you could 19 either inject it or haul it off-site. And so 20 is that -- the three options of this system 21 is to discharge it, inject it, or haul it 22 off, and you-all would maybe pick one of 23 those options, or would you -- would it 24 incorporate all three? How would that work? 25 THE WITNESS: Okay. It would be a</p> | <p>1 couldn't see a scenario where they would 2 decline it, but let's say, worst case 3 scenario, that they did. Then you would have 4 to haul off the entire volume.</p> <p>5 PANELIST OLIVIER: And do y'all have a cost 6 included that would incorporate hauling all 7 of it off versus the discharge?</p> <p>8 THE WITNESS: No, we do not.</p> <p>9 PANELIST OLIVIER: Okay.</p> <p>10 THE WITNESS: Because like I said, I mean, 11 it's freshwater, and a lot of these systems 12 are used to make drinking water. So they 13 have the LPDS, you know, guidelines about 14 what you're allowed to discharge, and we run 15 other systems at tank sites that they -- I 16 just -- I couldn't see them declining it, but 17 like I said, they could. And if they do, 18 worst case, we'd have to haul everything off.</p> <p>19 PANELIST OLIVIER: Okay. So do you have 20 anywhere where you estimated how much water 21 would be discharged? That way, in the event 22 that if you were to have to have that 23 alternative option, you would be able to 24 provide a cost based on the amount? So do 25 you have like a -- I guess some kind of</p> |
| Page 1246 | Page 1248 |
| <p>1 combination of two. So when -- how the 2 system works is, like I said, you'll get 3 freshwater out. So you've got to discharge 4 the freshwater somewhere, and usually it's 5 through an LPDS, and that will be, like you 6 were asking, through the DEQ.</p> <p>7 The other option is -- and why we 8 usually do it -- and this is a rare site -- 9 is it's usually cheaper to inject the super 10 retentate on-site instead of hauling it to a 11 disposal facility. This is one of the rare 12 cases that it's actually more expensive by 13 our estimate to inject it on-site than haul 14 it off. I just wanted to give different 15 options to show that we were looking at just 16 more than one scenario.</p> <p>17 PANELIST OLIVIER: Okay. And I guess -- and, 18 of course, I don't know the outcome, but if 19 ICON were to contact DEQ -- and let's just 20 say you weren't able to get permission or a 21 permit or whatever they would issue you to be 22 able to discharge this water. Would then 23 y'all just haul it out -- that freshwater off 24 at -- with everything else? 25 THE WITNESS: To be honest -- I mean, I</p> | <p>1 estimate on how much that would be fluid-wise 2 for discharge?</p> <p>3 THE WITNESS: Yeah. So what we estimated to 4 inject would be about 1100 barrels a day, and 5 I think the discharge of freshwater -- we 6 were estimating somewhere around 1200 barrels 7 a day.</p> <p>8 PANELIST OLIVIER: And that would be seven 9 days a week through the duration of your 10 estimated --</p> <p>11 THE WITNESS: Correct. 365. As long as the 12 system was up and running, that's what we 13 were calculating to produce. And so, I mean, 14 2300 barrels a day total.</p> <p>15 PANELIST OLIVIER: Okay. All right. Thank 16 you. That's all the questions I had.</p> <p>17 BY MR. KEATING:</p> <p>18 Q. Going back, Mr. Sills, to your 19 estimates, you've got a -- I want to talk to you 20 about a couple of things in particular.</p> <p>21 The saltwater disposal capital and O and 22 M costs for the on-site injection of the retentate 23 option, where did you get that figure, or where 24 did ICON get that figure? 25 A. That's from Mr. Charles Norman.</p> |

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|--|--|
| <p style="text-align: right;">Page 1249</p> <p>1 Q. Okay. And did you ask Mr. Norman about 2 this?</p> <p>3 A. I did. I asked him -- because, you 4 know, I know it's a little elevated, and he said 5 it was just on his design specification. He likes 6 to use certain metals in his system to provide, I 7 guess, less downtime in having to do O and M on 8 it. So he designs it the way he designs it.</p> <p>9 Q. So the last thing we want to have is an 10 inadequate SWD and just cause more problems when 11 we're trying to fix problems, and that's why 12 you're being overly cautious with Mr. Norman on 13 this?</p> <p>14 A. Correct. You don't want to inject your 15 fluid and then causing other problems because 16 you've got it breaching to the surface or 17 something in that aspect.</p> <p>18 Q. A few more questions, Mr. Sills, and 19 then I'll be finished.</p> <p>20 You believe the soil remediation cost 21 that ICON is proposing here to be reasonable?</p> <p>22 A. I believe them to be very conservative.</p> <p>23 Q. And have you compared ICON's soil 24 remediation costs and its -- the option it's 25 actually recommending, the million-dollar option</p> | <p style="text-align: right;">Page 1251</p> <p>1 A. Correct.</p> <p>2 Q. And, second, it's your opinion that for 3 the soil, it needs to be excavated in the areas 4 where we have EC above 4 down to about 12 feet; 5 right?</p> <p>6 A. That's correct.</p> <p>7 Q. And that's roughly 1.2 acres?</p> <p>8 A. That's correct.</p> <p>9 Q. Mr. Sills, you heard a lot about rooting 10 depth and different crops, different plans, 11 different trees. You're not a soil agronomist, 12 are you?</p> <p>13 A. No, I'm not.</p> <p>14 Q. However, that's something that you've 15 looked at, relied upon, you have in your knowledge 16 from your years of doing this; correct?</p> <p>17 A. Correct. We review a lot of 18 publications dealing with that.</p> <p>19 Q. In fact, I have a whole stack of them 20 over here that we went through; right?</p> <p>21 A. Yes.</p> <p>22 Q. And that's something that's just in your 23 knowledge; correct?</p> <p>24 A. Correct. And then Mr. Miller is pretty 25 heavily into it. So we talk about it all the</p> |
| <p style="text-align: right;">Page 1250</p> <p>1 for the 0.1 percent surface area of the property, 2 to what ERM has in its hypothetical plan?</p> <p>3 A. Well, what I did was I compared the one 4 without exceptions because our volumes were more 5 close to mirror each other, and their plan was 6 more expensive than ours.</p> <p>7 Q. So your plan -- your 29-B Chapter 6 plan 8 with no exceptions that was submitted is less than 9 ERM's hypothetical plan?</p> <p>10 A. That's correct.</p> <p>11 Q. And, Mr. Sills, you believe the 12 groundwater remediation costs, the calculations 13 that you ran that we talked about using Theis, 14 using pore volume flushing to calculate time, 15 calculate -- and the yield Mr. Miller provided and 16 your quotes on the RO system -- all of that is 17 accurate and reasonable?</p> <p>18 A. Yes.</p> <p>19 Q. And let's just summarize for the panel 20 here and get this knocked out.</p> <p>21 To summarize your opinions, Mr. Sills, 22 first, it's your opinion that both the soil and 23 the groundwater on the Henning property are 24 contaminated with E&P waste from -- above 25 thresholds in those regulations?</p> | <p style="text-align: right;">Page 1252</p> <p>1 time.</p> <p>2 Q. And you and Mr. Miller specifically 3 discussed fate and transport?</p> <p>4 A. Correct. The water that's drawn up from 5 deeper.</p> <p>6 Q. And I'm not asking to comment on fate 7 and transport. That's Mr. Miller's area. But you 8 understand that the rooting depth for sugarcane 9 has been found to be as deep as 8 feet in these 10 publications?</p> <p>11 MR. CARTER: Your Honor, this witness isn't 12 qualified as an expert on rooting depths.</p> <p>13 MR. KEATING: Your Honor, he's developed the 14 soil remediation plan in conjunction with a 15 hydrogeologist that is a supreme expert in 16 fate and transport, and he's relying on the 17 same published studies that Mr. Ritchie 18 talked about.</p> <p>19 JUDGE PERRAULT: Just explain the plan 20 without him going into any expertise in 21 rooting depth.</p> <p>22 MR. KEATING: Fair enough.</p> <p>23 BY MR. KEATING:</p> <p>24 Q. You're not qualified to talk about or 25 validate these, but you -- in your practice you're</p> |

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1 aware there are publications. You've seen them.
 2 You have them that show rooting depths far deeper
 3 than what Mr. Richie talked about?
 4 A. Right. In designing and coming up with
 5 this soil remediation plan, I didn't have
 6 anything -- any one thing specific in mind. I
 7 just wanted to make it to where whatever the
 8 future use or whatever the future owners wanted to
 9 use the property for, they could.
 10 Q. So if it's rice, if it's sugarcane, if
 11 it's soybeans, if it's oak trees, pine trees, you
 12 determined that 12 feet was a safe, conservative
 13 depth for whatever Mr. Henning, his kids, his
 14 grandkids, or some new owner down the road may
 15 want to do in the dirt?
 16 A. That's correct.
 17 Q. And that's why you went down to 12 feet?
 18 A. That's correct.
 19 Q. And I don't think there's any dispute
 20 that, when you get to above a 4 in EC, it can
 21 cause problems for these -- this vegetation, these
 22 trees, and so the only areas you're saying to
 23 excavate are where we have that EC above 4; right?
 24 A. Right.
 25 Q. Third, it's your opinion that based on

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1 all the information Mr. Miller provided, the
 2 groundwater needs to be remediated; right?
 3 A. That's correct.
 4 Q. And you believe that ICON's methodology
 5 that we just went through for both the soil and
 6 the groundwater is accepted and it's
 7 scientifically proven?
 8 A. Yes.
 9 Q. And it's been done in practice and
 10 worked; right?
 11 A. To my knowledge, yes.
 12 Q. And you think it's feasible to do it
 13 this way because you've actually done the work
 14 before; right?
 15 A. I've done pump and treats before, yes.
 16 Q. And you've done soil excavation. You've
 17 done soil amendments?
 18 A. Right.
 19 Q. And it worked?
 20 A. Right. In the aspect that I did it.
 21 Q. Ultimately, Mr. Sills, it is your strong
 22 opinion that ICON's proposed remediation plan that
 23 we just went through is the most feasible plan to
 24 address the contamination on the Henning property?
 25 A. Correct. If your plan is to meet, you

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1 know, background regulations for groundwater and
 2 any future use for the property for any planting
 3 purposes, yes.
 4 MR. KEATING: Pass the witness.
 5 JUDGE PERRAULT: Before you go, what exhibit
 6 did you offer for the risumi?
 7 MR. KEATING: It's part of Exhibit E, which
 8 is already in evidence. It's just an
 9 appendix. I just wanted the panel to know
 10 where it was if they wanted to look.
 11 JUDGE PERRAULT: It's all right. Okay. Do
 12 we have any cross?
 13 MR. CARTER: Yes, Your Honor.
 14 CROSS-EXAMINATION
 15 BY MR. CARTER:
 16 Q. Mr. Sills, good to see you again.
 17 Johnny Carter, counsel for Chevron.
 18 Mr. Sills, ICON started working on this
 19 Henning matter in October 2019; is that correct or
 20 thereabouts?
 21 A. That sounds about right.
 22 Q. In fact, ICON has logbooks attached with
 23 its Exhibit E, its most feasible plan, that show
 24 the record of what folks have done on-site at the
 25 Henning property; correct?

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1 A. That's correct.
 2 Q. And I went back and looked at it. It
 3 looked like the first time out there was
 4 October 28th, 2019. Does that sound about right
 5 to you?
 6 A. I remember it was 2019, but I'll take
 7 your word on October.
 8 Q. Now, you were not there at that time;
 9 correct? You didn't go out to that site; right?
 10 A. No. They don't let me out in the field
 11 too often.
 12 Q. Okay. You're part of the three-man team
 13 that kind of runs ICON's projects; right?
 14 A. Correct. I pretty much handle all of
 15 our scheduling and field work that has to do with
 16 legacy work.
 17 Q. And that was the case in October of
 18 2019; right?
 19 A. That's the case, yes.
 20 Q. And you did not go out there in October
 21 of 2019; right?
 22 A. No.
 23 Q. ICON submitted its most feasible plan to
 24 LDNR in October of 2022; right?
 25 A. That's correct.

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1 Q. So that's three years later; right?

2 A. Yes.

3 Q. By October of 2022, you still had never

4 been to the Henning property; is that correct?

5 A. No, I have not.

6 Q. Have you ever been to the Henning

7 property?

8 A. No.

9 Q. You work here in Baton Rouge; right?

10 A. In Port Allen, yes.

11 Q. I mean, to understand kind of the lay of

12 the land, you know where the Henning property is;

13 right? You've seen it on maps and Google images

14 and the like?

15 A. Correct.

16 Q. And you'd have to drive from Baton Rouge

17 west to Jennings and then through a bunch of rural

18 areas about 30 miles west of Jennings to even get

19 to this site; right?

20 A. Right. South of Hayes.

21 Q. South of Hayes. Hayes is a little town

22 of about 600 people; right? But you have to drive

23 through a lot of countryside to get to this

24 property; correct?

25 A. Yes.

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1 Q. Same if you were coming from the other

2 direction. You know, we've got some Houston folks

3 who are involved in this; right? If you come

4 to -- from Houston and you go through Lake

5 Charles, then you drive through a lot of

6 countryside, a lot of rural area, 30 miles of it,

7 before you would get to this property; correct?

8 A. Yes.

9 Q. Now, you've never testified in an LDNR

10 hearing before; correct?

11 A. No, I have not.

12 Q. You are not a licensed professional

13 engineer; correct?

14 A. No, I'm not.

15 Q. And you are not a toxicologist; correct?

16 A. No.

17 Q. Now, you've testified a little bit about

18 ICON's groundwater removal plan, and is it fair to

19 say that ICON has one groundwater removal plan

20 with two different disposal options?

21 A. I would say that's fair.

22 Q. Okay. One ICON plan has off-site

23 disposal of water, and then the other requires

24 installation of two saltwater disposal wells.

25 Those are the two options; right?

Page 1259

1 A. Yes.

2 Q. The cost for each saltwater disposal

3 well is a little more than \$3 million per

4 saltwater disposal well?

5 A. That's correct.

6 Q. Okay. One of the saltwater disposal

7 wells is a backup in case the other one goes down;

8 is that right?

9 A. That is correct.

10 Q. And you're not aware of whether anyone

11 has studied whether there is a reservoir capable

12 of receiving this quantity of water that would be

13 generated; correct?

14 A. Like I said, I had a brief discussion

15 with Mr. Norman. I don't know if he did a

16 specific analysis of that -- of the reservoir, but

17 I guess he seems to think it's possible. But, no,

18 I don't know of any specific analysis he's done on

19 the injection reservoir.

20 Q. If he did a specific analysis of the

21 injection reservoir, it's not in ICON's most

22 feasible plan; right?

23 A. That is correct.

24 Q. I mean, ICON's most feasible plan does

25 have all sorts of information about costs and how

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1 costs were compiled, but there's nothing in there

2 about these saltwater disposal well estimates;

3 correct?

4 A. That's correct.

5 Q. You've also not identified a location

6 for the saltwater disposal wells?

7 A. No, I have not.

8 Q. The only information you have about the

9 saltwater disposal well cost is just Charles

10 Norman told you something on the phone; correct?

11 A. Correct.

12 Q. ICON's groundwater remediation plan, I

13 think we've already talked about. It requires

14 installing 471 recovery wells; right?

15 A. That's correct.

16 Q. That's 471 wells over 85 acres; correct?

17 A. That's correct.

18 Q. I think you said already and testified

19 already that's about six wells per acre; right?

20 A. Yes.

21 Q. ICON's plan calls for separate recovery

22 wells for the A bed and the B bed; right?

23 A. That is correct.

24 Q. There are no recovery wells in ICON's

25 plan that are intended to recover water from both

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|---|--|
| Page 1261 | Page 1263 |
| <p>1 beds; right?</p> <p>2 A. No. Because when Mr. Miller ran the</p> <p>3 analysis, he was concerned about preferential</p> <p>4 flow, which means getting more flow from the B</p> <p>5 than the A bed, and basically you're going to be</p> <p>6 spinning your wheels at that point, recovering</p> <p>7 most of your water from the B bed and very little</p> <p>8 from the A bed.</p> <p>9 Q. The well count, the 471 wells, that</p> <p>10 number, is largely driven by the yield in the</p> <p>11 A bed because the B bed is going to have a lot</p> <p>12 fewer wells. The total count is driven by the</p> <p>13 yield in the A bed; right?</p> <p>14 A. That's correct. I would probably say 60</p> <p>15 to 70 percent, maybe slightly higher, are in the A</p> <p>16 bed.</p> <p>17 Q. Actually, isn't it 467 of the 471 wells</p> <p>18 are in the A bed?</p> <p>19 A. Then it's more.</p> <p>20 Q. I mean, it's more than 99 percent;</p> <p>21 right?</p> <p>22 A. Right. I figure that, you know, most of</p> <p>23 them were in the A bed, but as I sit here today,</p> <p>24 I'm sorry. I can't remember exactly the number in</p> <p>25 each.</p> | <p>1 number of wells in this plan for each of these</p> <p>2 different zones and beds for groundwater</p> <p>3 remediation; correct?</p> <p>4 A. I'm sorry. We determined the number of</p> <p>5 wells in the groundwater?</p> <p>6 Q. Yes.</p> <p>7 A. Yes.</p> <p>8 Q. Right. These cost estimates are based</p> <p>9 upon a calculation of a number of wells?</p> <p>10 A. That's correct.</p> <p>11 Q. And you prepared spreadsheets that</p> <p>12 calculated the predicted drawdown versus the</p> <p>13 distance from the pumping well, correct?</p> <p>14 A. That's correct.</p> <p>15 Q. All right. And those are known as the</p> <p>16 Theis sheets?</p> <p>17 A. That's correct.</p> <p>18 Q. All right. So let's look at an example</p> <p>19 of a Theis sheet, and that's at E 1400, and you</p> <p>20 see on this -- at the top it says the calculation</p> <p>21 of predicted drawdown versus distance from pumping</p> <p>22 well?</p> <p>23 A. Yes.</p> <p>24 Q. Okay. So this is one of the</p> <p>25 spreadsheets you testified a little bit in --</p> |
| Page 1262 | Page 1264 |
| <p>1 Q. ICON is proposing four wells for the</p> <p>2 B bed; right?</p> <p>3 A. Right. I think it's -- well, I thought</p> <p>4 it was five because I thought it was three in one</p> <p>5 area and two in the other.</p> <p>6 Q. Four or five, something like that, and</p> <p>7 the remainder are for the A bed; correct?</p> <p>8 A. Yeah. I think that's correct, but I'd</p> <p>9 have to go back and review to look at the exact</p> <p>10 number. But I know there was a lot more in the</p> <p>11 A bed than the B bed.</p> <p>12 Q. ICON's report includes cost estimate</p> <p>13 summaries, and you looked at some of those with</p> <p>14 Mr. Keating broken out by beds and zones; right?</p> <p>15 A. Yes.</p> <p>16 Q. So let's take a look at Exhibit E, which</p> <p>17 is the ICON most feasible plan. We'll put it up</p> <p>18 on the screen, and we'll look at those cost</p> <p>19 summaries, specifically page E 18.</p> <p>20 And you see those cost summaries on this</p> <p>21 page, that there is a number of different rows</p> <p>22 here for the groundwater remediation for different</p> <p>23 zones and beds; correct?</p> <p>24 A. Yes.</p> <p>25 Q. All right. And ICON determined the</p> | <p>1 about in response to Mr. Keating's questions;</p> <p>2 right?</p> <p>3 A. That's correct.</p> <p>4 Q. And the other one -- let's take a look</p> <p>5 at the other one real quick -- is the pore volume</p> <p>6 flushing analysis. You also did those; right?</p> <p>7 A. Yes.</p> <p>8 Q. There's one of those at E 1359. This is</p> <p>9 an example of a pore volume flushing analysis; is</p> <p>10 that right?</p> <p>11 A. That's correct.</p> <p>12 Q. So the two that I've shown you, the</p> <p>13 Theis sheet and the pore volume flushing analysis,</p> <p>14 have to do with Zone I, Bed A, and so just as --</p> <p>15 we're going to pick one of these as an example to</p> <p>16 kind of talk about the work that you did.</p> <p>17 So if we look back at the groundwater</p> <p>18 cost estimates, page 18, do you see Zone I, Bed A?</p> <p>19 It's kind of about halfway down.</p> <p>20 A. Yes.</p> <p>21 Q. Okay. And so that accounts for</p> <p>22 \$3,272,199 of the cost estimate for off-site</p> <p>23 disposal of retentate from reverse osmosis;</p> <p>24 correct?</p> <p>25 A. Yes.</p> |

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1 Q. And it accounts for 2,839,158 of the
 2 on-site injection of retentate from reverse
 3 osmosis; right?
 4 A. That's correct.
 5 Q. Now, do you agree with Mr. Miller's
 6 testimony yesterday that ICON was trying to be
 7 efficient in extraction of chlorides?
 8 A. Well, yes.
 9 Q. And you applied the same methodology in
 10 terms of calculating the number of wells for
 11 Zone I using those spreadsheets that you applied
 12 for the other zones. You didn't do anything
 13 different with Zone I than you did for any of the
 14 other zones; right?
 15 A. No. They should all be consistent.
 16 Q. Now, you looked with Mr. Keating at a
 17 map of the groundwater remediation area zones, and
 18 I'd like to look at that with you for a second as
 19 well.
 20 A. Okay.
 21 Q. And so if we go in Exhibit E to E 57 --
 22 and we look here at the figure -- you recognize
 23 Figure 25 of ICON's report; right?
 24 A. Yes, sir.
 25 Q. Do you see where Zone I is here? It's

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1 this shape that kind of comes up here but then it
 2 goes down here and then around there?
 3 A. Right.
 4 Q. So that's Zone I that we're -- well,
 5 we'll see if we can get the boundaries on it
 6 there. Something like that; right?
 7 A. Yes, sir.
 8 Q. So that is -- Zone I is east of Limited
 9 Admission Area 4; right?
 10 A. Yes.
 11 Q. And it is east of Limited Admission
 12 Area 5; right?
 13 A. Yes.
 14 Q. And it is largely west of Limited
 15 Admission Area 6. Do you see that?
 16 A. Yes. Some of the limited admission
 17 Area 6 looks to be included.
 18 Q. Right. There's a little bit of 6 and a
 19 little bit of -- just a little bit of 5 and maybe
 20 a little bit of 4 that are in Zone I, but the
 21 great majority of Zone I is not in a limited
 22 admission area?
 23 A. That's correct.
 24 Q. Now, in Zone I -- if we can kind of look
 25 over here to the right, you provide some

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1 additional information about Zone I here on
 2 figure 25; correct?
 3 A. Yes.
 4 Q. And in Zone I, there are -- the B bed
 5 wasn't -- the core sampling didn't even penetrate
 6 to the B bed in the north portion of Zone I;
 7 right?
 8 A. That's correct.
 9 Q. So there's no data about a B bed in at
 10 least half of Zone I; correct?
 11 A. That's what our additional assessment
 12 cost is going to include, is the additional
 13 assessment of Zone I.
 14 Q. Zone I is 21.34 acres; right?
 15 A. Yes.
 16 Q. So now that we've looked at where Zone I
 17 is, let's go to the calculation of the predicted
 18 drawdown spreadsheet versus the distance from the
 19 pumping well. For Zone I bed A -- so that's back
 20 at E 14, I believe.
 21 A. Okay.
 22 Q. So on this spreadsheet, you have a rate;
 23 right? An extraction rate or a pumping rate? The
 24 GPM.
 25 A. That's correct.

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1 Q. So for Zone I -- the wells in Zone I
 2 under ICON's plan will pump 0.1 gallons per
 3 minute; right?
 4 A. That's correct.
 5 Q. That is 6 gallons per hour; right?
 6 A. Yes.
 7 Q. And that's 144 gallons per day?
 8 A. That's correct. Right.
 9 Q. Each well in Zone I from the A bed will
 10 drain a radius of 30 feet; right?
 11 A. Yes.
 12 Q. Which I calculate as being approximately
 13 28 square -- 2800 square feet for each recovery
 14 well. Does that sound about right to you? Pi R
 15 squared?
 16 A. Yeah.
 17 Q. Now, let's go to the other spreadsheet,
 18 the pore volume flushing spreadsheet for Zone I,
 19 Bed A. Now, on this one, again we're going to see
 20 the 0.1 aquifer pumping rate for a single well.
 21 That's the 144 gallons per day; right?
 22 A. Yes.
 23 Q. And the number of recovery wells that
 24 you calculated for just this zone is 185 -- 185
 25 wells for Zone I; right?

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1 A. Yes.
 2 Q. ICON's remedial plan for groundwater
 3 proposes installation of 185 recovery wells on the
 4 21.3 acres of Zone I; right?
 5 A. Yes.
 6 Q. That is about nine wells per acre for
 7 this zone; right?
 8 A. Give or take, yes.
 9 Q. The time to reach the remedial target at
 10 the bottom is a half year for Zone I, right?
 11 A. That's correct.
 12 Q. Now, let's look at ICON's cost for
 13 groundwater recovery spreadsheet for Zone I, which
 14 is, I think, the next page, 1360.
 15 So ICON calculates that it will take 370
 16 days to install the 185 recovery wells in Zone I;
 17 correct?
 18 A. That's correct.
 19 Q. So it will take more than a year to
 20 install the entire recovery well system for just
 21 Zone I because we've just been looking at one zone
 22 here; right?
 23 A. That's correct.
 24 Q. Now, there's some times of the year when
 25 it will be difficult to install wells due to the

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1 conditions on the property; right?
 2 A. That's correct.
 3 Q. ICON had to use Marsh Masters out on
 4 this property on occasion; right?
 5 A. I think both us and ERM used Marsh
 6 Masters.
 7 Q. Right. And you agree with Mr. Miller's
 8 testimony yesterday that a Marsh Master has a
 9 limited depth capacity?
 10 A. Correct.
 11 Q. ICON does not have a drilling rig that
 12 could install recovery wells with the Marsh
 13 Master; right?
 14 A. I don't think anybody has a drilling rig
 15 that can recover -- I mean that can install wells
 16 with a Marsh Master, but they have tracked
 17 Rotosonic rigs --
 18 Q. Right.
 19 A. -- that we would subcontract out when
 20 we -- that's what we normally do when we have
 21 larger diameter wells that we're installing.
 22 Q. So if we look at this rate of two days
 23 for installation of a recovery well, that's not
 24 any different in Zone 9 than it is in any other
 25 zones; right?

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1 A. No. That sounds pretty accurate.
 2 Q. So if we look at the entire site with
 3 two days per well -- 471 wells -- that's 942 days
 4 of drilling recovery wells; right?
 5 A. Yes.
 6 Q. It's about two years and seven months
 7 just of drilling recovery wells; right?
 8 A. Correct. Because you're talking about
 9 80-something acres that you're having to
 10 remediate. I mean, if we were talking about half
 11 an acre that you had to remediate, then I could
 12 say 400 days is a long time, but this is way
 13 bigger than what a normal gasoline station would
 14 be.
 15 Q. Which is most of your actual remediation
 16 experience; right, sir?
 17 A. I mean, I've done remediation in
 18 different aspects other than gasoline stations,
 19 but, I mean, the technology to remediate
 20 groundwater is basically the same.
 21 Q. Most gas stations are accessible by
 22 trucks driving on concrete. They're not out there
 23 in the marsh; right, sir?
 24 A. Yes.
 25 Q. Okay. Now, if you take the 942 days,

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1 there are going to be some days where there's a
 2 downpour or there's a hurricane or the trucks have
 3 broken down. And there's also going to be
 4 holidays, and there's going to be Christmas.
 5 You're probably talking more than three years just
 6 installing recovery wells; right?
 7 A. That's correct.
 8 Q. Now, let's look at a slide from your
 9 PowerPoint that you went through with Mr. Keating,
 10 which is page 19 of that PowerPoint.
 11 So do you recall testifying about the
 12 groundwater remediation plan, page 19 in your
 13 PowerPoint?
 14 A. Yes, I do.
 15 Q. And you testified about how there would
 16 be installation and sampling, pilot testing, and
 17 fine-tuning as part of Phase 1?
 18 A. Yes.
 19 Q. Okay. And then you'd go into Phase 2?
 20 A. That's correct.
 21 Q. How long would that installation,
 22 sampling, pilot testing, fine-tuning -- how long
 23 is that going to take?
 24 A. I mean, as you pointed out, it's going
 25 to be a couple years just to get all the wells in.

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1 Q. So it's going to be two or more years in
 2 Phase 1, and then you would go to Phase 2; is that
 3 right?
 4 A. That's correct.
 5 Q. And then how do these numbers relate to
 6 each other in Phase 2? Is the Phase 2 going to
 7 take 12.1 years, or is it going to take some
 8 amount more or less than that? I don't know how
 9 to pool all those together.
 10 A. Most of that's going to be running
 11 concurrently, which means the -- both the A bed
 12 and B bed will be running at the same time. As I
 13 mentioned before, we would be pulling more from
 14 the southern areas to try to induce freshwater
 15 flushing into the zone. So those are, you know,
 16 the best estimates. As I explained it earlier,
 17 that's perfect world estimates.
 18 Q. Okay. Now, one of those estimates -- we
 19 already looked at this on one of your
 20 spreadsheets; right? It is the 0.5 years that it
 21 will take for Zone I; right?
 22 A. That's correct.
 23 Q. And so for Zone I, there's going to be
 24 this two- to three-year period of wells being
 25 installed, including more than a year just

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1 specifically for Zone I, and then the system will
 2 turn on. And then Zone I will be taken care of in
 3 six months; right?
 4 A. Yes.
 5 Q. Okay. I have some questions for you
 6 about ICON's soil remediation plans.
 7 Let's take a look at Plaintiff's
 8 Exhibit E, page E 60, which is the soil
 9 remediation areas with no exceptions. And let's
 10 kind of zoom in there. Now, first of all -- and I
 11 think that -- well, yeah. I think you covered
 12 this with Mr. Keating. You're not suggesting any
 13 remediation or amendment in Area 6 or Area 8;
 14 right?
 15 A. That's correct. For 29-B constituents.
 16 Q. Right. And for 29-B constituents, you
 17 have area -- so the little pink boxes in Areas 2,
 18 4, and 5; right?
 19 A. That's correct.
 20 Q. Okay. And so you have drawn boxes to
 21 show locations of excavation or amendment where
 22 you have found 29-B exceedances in the limited
 23 admission areas; right?
 24 A. That's correct.
 25 Q. So you've found 29-B exceedances in an

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1 area of little more than an acre; right?
 2 A. Correct. 1.2 acres.
 3 Q. Okay. In its without exceptions plan,
 4 ICON does not propose any excavation for removal
 5 from the site of soil in the first 4 feet at any
 6 place on the Henning property; correct?
 7 A. No. It looks like amendment is the only
 8 thing that's located in the top 4 feet.
 9 Q. Right. There's an amendment area over
 10 here kind of by H-12 where in the first zero to
 11 6 feet, the plan calls for amendment; right? And
 12 then in the other areas, we see some excavation,
 13 but none of it is in the first 4 feet below the
 14 surface?
 15 A. You actually missed a spot in --
 16 Q. I did? All right.
 17 A. In Area 4. If you look at the north
 18 one, I think that's H-21 that you see amend 2 to
 19 8.
 20 Q. Now, the amendment is going to be 2 to
 21 8. The excavation is going to be 8 to 10?
 22 A. Right. And that's -- what I stated
 23 earlier is that we had some amendment in the top
 24 4 feet but no excavation.
 25 Q. Right. So in the sites where ICON is

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1 proposing excavation, what ICON is suggesting is
 2 that the clean overburden of 4 feet or more will
 3 be removed, stockpiled to the side, and then there
 4 will be some excavation under that. And then the
 5 clean overburden could be put back in the hole or
 6 what have you; right?
 7 A. Right. So whatever the thickness of the
 8 clean overburden -- for instance, if we go to
 9 H-21, we would excavate down to 2 feet, remove the
 10 2 to 8, set it to the side for amendment, and then
 11 excavate the 8 to 10 and have that for off-site
 12 disposal.
 13 Q. Right. But that top 0 to 2 feet,
 14 perfectly fine, it can just go back in or be put
 15 back, it's good to go; right?
 16 A. Correct. We have no data in the top
 17 2 feet that indicated that there was a 29-B
 18 exceedance.
 19 Q. Right. So the without exceptions
 20 plan -- and you covered this a little bit with
 21 Mr. Keating -- calls for excavation from 4 feet to
 22 32 feet at H-16; right?
 23 A. That's correct.
 24 Q. All right. That is the location where
 25 you've actually proposed going down -- well, where

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1 the without exceptions plan says go down to
 2 32 feet. Although we'll get to the -- whether
 3 that's recommended or not; right?
 4 A. Yes.
 5 Q. Okay. So that's an area that is a sixth
 6 of an acre. It's 675 square meters; right?
 7 A. Yes.
 8 Q. So it's going to be a 32-foot depth --
 9 deep excavation in a relatively small area; right?
 10 A. That's correct.
 11 Q. And you've never been involved in a soil
 12 excavation down to 32 feet; right?
 13 A. No, not to 32 feet. The deepest I've
 14 went is a little over 20.
 15 Q. Per your testimony today, ICON is not
 16 recommending excavation to 32 feet; right?
 17 A. No, we're not.
 18 Q. Okay. Now, we talked about how you
 19 looked at the limited admission areas and you
 20 found the locations of 29-B exceedances. Just to
 21 be clear, those are salt-based parameters; right?
 22 A. Yes.
 23 Q. Now, let's look a little bit at the with
 24 exceptions plan and specifically go to page E 61.
 25 As with the no exceptions plan, the with

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1 exceptions plan includes remediation at 2, 4, and
 2 5 but not 6 and 8; right?
 3 A. No. It's only Areas 4 and 5.
 4 Q. Good point. All right.
 5 So ICON's with exceptions plan, the one
 6 that it is actually recommending, does not include
 7 any soil remediation for Areas 2, 6, and 8; right?
 8 A. That's correct.
 9 Q. Okay. It does include again some small
 10 areas where you found 29-B exceedances for
 11 salt-based parameters in Areas 4 and 5; right?
 12 A. That's correct.
 13 Q. So the area -- the total area that is in
 14 this with exceptions plan is even a little bit
 15 less. The total area recommended for remediation
 16 is even a little bit less than what is in the
 17 without exceptions plan; right?
 18 A. That's correct. Without exceptions was
 19 1.27 acres, and this is 1.2 acres.
 20 Q. Okay. So we talked a little bit
 21 about -- or Mr. Keating talked with you about
 22 H-16?
 23 A. Yes.
 24 Q. And that the excavated -- I think in the
 25 report it says that the excavated area around

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1 boring H-16 will not be backfilled to allow for
 2 ponding to flush the soils below the excavation.
 3 Do you recall that?
 4 A. Right. And like I said, to assist in
 5 the remediation of everything.
 6 Q. Okay. At H-16, ICON is proposing that
 7 there be a hole dug of 18 feet and that it be left
 8 open; right?
 9 A. And a pond created for temporary, to
 10 induce flushing to assist in the remediation of
 11 the site.
 12 Q. Did you hear Mr. Miller's testimony that
 13 there's not any kind of modeling of what that --
 14 how that flushing would work --
 15 A. No.
 16 Q. -- yesterday? Okay.
 17 There isn't any; right?
 18 A. No.
 19 Q. There's no -- right.
 20 You have no idea how long that flushing
 21 might take; right?
 22 A. Well, the flushing is not done to
 23 achieve any remedial goal. It's just to assist.
 24 As I stated previously, the leachate chloride
 25 right below the 18 feet was at 11. Our -- I'm

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1 sorry. I misspoke. The EC right below 18 feet --
 2 I mean is at 11, which is pretty close to our
 3 10.8. So we wouldn't really need any assistance
 4 in remediation. It's just there to assist in our
 5 groundwater recovery. It's not meant to achieve
 6 any remedial goal. So to model what flushing may
 7 or may not occur is just going to be a bonus for
 8 us.
 9 Q. But you don't dispute that ICON'S plan
 10 said that the purpose of leaving open that
 11 excavation was to flush the soils underneath;
 12 right?
 13 A. Right. It was to help flush the
 14 residuals, but it's not -- the goal we were trying
 15 to meet was to an EC of 10.8. I think it's 10.3,
 16 and it was already at 11.
 17 Q. And this flushing, by the way, is --
 18 this is also down into the so-called A bed; right?
 19 A. Yes.
 20 Q. This is the bed that would require the
 21 hundreds of wells to remediate; right?
 22 A. That's correct.
 23 Q. And the soil below 18 feet -- I'm sorry.
 24 The soil between 18 feet below the
 25 surface and the so-called A bed at this location,

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1 that's largely clay; right?

2 A. Yeah. But I wouldn't call it impervious

3 clay because if it was, then salts wouldn't have

4 wound up down there in the first place. They had

5 to leach from the surface at some point. So the

6 soils have exhibited leaching characteristics. So

7 the water should go through it.

8 Q. Is there a Louisiana rule, regulation,

9 or a statute that ICON is proposing to apply

10 instead of Rule 29-B in connection with its with

11 exceptions plan?

12 A. No, it's not.

13 Q. Okay. And you testified a little bit in

14 response to Mr. Keating's questions about the

15 reports and the litigation. You did not sign the

16 reports and the litigation; right?

17 A. The original two reports that were done

18 in the litigation --

19 Q. Right.

20 A. -- I did not sign.

21 Q. ICON in the rebuttal report in the

22 litigation had included a plan to remediate soil

23 and groundwater to 29-B and to MO-1 RECAP

24 standards. Do you recall that?

25 A. Yes.

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1 Q. Okay. What ICON submitted to LDNR does

2 not include RECAP remediation numbers; right?

3 A. That's correct; right.

4 Q. ICON's proposed most feasible plan

5 submitted to LDNR is not based on a RECAP

6 evaluation by ICON or anyone else; right?

7 A. It's not -- our plan is not based on a

8 RECAP at all.

9 Q. Right. You did not rely on

10 Dr. Schuhmann's opinions in defining the scope of

11 any of ICON's remediation plans right?

12 A. No. Not with what we're submitting

13 here.

14 Q. You have not presented a cost

15 calculation based on Dr. Schuhmann's analysis?

16 A. Our rebuttal report barium area overlays

17 the areas that he raised concerns about.

18 Q. Okay. And we'll get to that. We'll get

19 to the -- you're talking about the mallards, the

20 eight --

21 A. No. I'm talking about the rebuttal

22 report that you brought up that had 29-B and RECAP

23 MO-1. We all -- barium is included in the RECAP

24 MO-1 excavation.

25 Q. Right.

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1 A. And that area overlays the area that

2 Dr. Schuhmann voiced concerns about.

3 Q. And ICON chose not to submit that to the

4 LDNR as part of its most feasible plan; correct?

5 A. No. That's not part of my purview of

6 this.

7 Q. In fact, at the time that ICON submitted

8 its most feasible plan, you hadn't sat down and

9 read Dr. Schuhmann's report. You just skimmed it;

10 right?

11 A. Well, I think they were pretty much

12 submitted on the same day. I didn't have any time

13 to review his report. I think there were 60 days

14 after the submittal of the Chevron report for us

15 to respond to it.

16 Q. I want to ask you a couple of questions

17 about reverse osmosis. We've already established

18 that you all -- you haven't been involved in using

19 a reverse osmosis system for remediating

20 chlorides; right?

21 A. No, I have not.

22 Q. Have you investigated what effect

23 elevated sulfate concentrations will have on

24 reverse osmosis membranes?

25 A. Like I said, we sent them originally the

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1 list of constituents that were in the groundwater

2 and asked if their product would achieve our

3 remedial goals. They told us yes. There are

4 issues with iron and other elements. That's why

5 they have pretreatment before it ever gets into

6 their system. So they faced these issues before,

7 and this is going to be the same thing that we do

8 with all of our other remediation systems. You

9 purchase these systems from a particular vendor.

10 That vendor is not just going to sell you their

11 system and then just say I'm done with you.

12 They're actually going to provide customer support

13 to you. So if anything goes wrong with their

14 system, they're there to troubleshoot it. Anytime

15 we start up one of our groundwater systems with

16 the UST sites, I've got the manufacturer there

17 with me starting it up, fine-tuning everything,

18 any problems that we have with it. I've been

19 running these pump and treats for 20-something

20 years now, and there's still issues that you've

21 got to call the manufacturer to resolve. And this

22 would be the same instance as we do all the time

23 at the UST sites.

24 Q. The vendor in this case is what?

25 A. It's Pure Aqua.

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1 Q. It's Pure Aqua, and you talked to the --
 2 you talked to Pure Aqua about the Henning site
 3 specifically?
 4 A. Not about the Henning site but about
 5 similar characteristics that we find at the
 6 Henning site.
 7 Q. So you have not sent to Pure Aqua any of
 8 the data about -- the sampling data that would
 9 reflect what might be in the water for their
 10 product from the Henning site specifically?
 11 A. No. I've sent similar sites to them
 12 that contain similar concentrations to them.
 13 Q. Similar concentrations of what?
 14 A. Of everything, of metals, chlorides,
 15 TDS. That's when we found out about the --
 16 distinguished between the brackish and the
 17 seawater system and the 5,000 TDS and the other
 18 stuff about the iron. There's been communication
 19 with them but not about this site specific but
 20 about their technology and what it's designed for.
 21 Q. When have you talked to Pure Aqua about
 22 elevated sulfates of the levels that we're talking
 23 about at this site?
 24 A. I --
 25 Q. You haven't, have you?

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1 A. I can't tell you one way or the other if
 2 it's been discussed with them.
 3 Q. Right. How much electricity is the
 4 reverse osmosis system going to use?
 5 A. I don't know. It's in our cost estimate
 6 in our table.
 7 Q. You have that in your cost estimate?
 8 A. Yes. It's in the cost estimate in the
 9 tables.
 10 Q. As you sit here today, you can't
 11 identify the amount in dollars, you'd just refer
 12 us to the tables?
 13 A. Correct. It's going to be a lot.
 14 Q. You were one of the people at ICON who
 15 signed ICON'S comments to Chevron's most feasible
 16 plan, which is Exhibit G; right?
 17 A. That's correct. It was done around the
 18 same time with the same trial prep going on, and I
 19 assisted in compiling all the information. So I
 20 signed the report.
 21 Q. There's a paragraph 7 in those comments.
 22 So this is G, page 6. There's a paragraph 7 that
 23 is entitled "Remediation Within the Current
 24 Effective Root Zone." Do you see that?
 25 A. Yes.

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1 Q. Okay. You wrote that paragraph; right?
 2 A. I helped write this paragraph, yes, and
 3 I think Mr. Miller talked some of about this
 4 paragraph yesterday too.
 5 Q. Okay. You mentioned the possibility of
 6 growing other crops besides rice on this land in
 7 the future; right?
 8 A. That's correct.
 9 Q. Now, at the time in the most feasible
 10 plan, you had never talked to the landowner of the
 11 Henning property; right?
 12 A. No, I had not.
 13 Q. You have no knowledge or had no
 14 knowledge about plans for future use of the
 15 Henning property; right?
 16 A. No, I do not.
 17 Q. Okay. You never talked to any farmers
 18 about use of the Henning property; right?
 19 A. I haven't talked to anybody associated
 20 with the Henning property about any use for the
 21 property, current or future.
 22 Q. Remember, when I took your deposition, I
 23 asked you about what other crops are you talking
 24 about, and you mentioned sugarcane specifically;
 25 right?

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1 A. Correct. I know it's grown in this
 2 area.
 3 Q. And you mentioned sugarcane in response
 4 to Mr. Keating's questions here today?
 5 A. That's correct.
 6 Q. Have you reviewed the USDA soil types
 7 for this property?
 8 A. I know over the time that we've done
 9 work on the property, I have, but I can't tell you
 10 from this instance what they are. I do know in
 11 conversations after the most feasible plan that
 12 the area that we're looking to remediate at one
 13 time was growing sugarcane.
 14 Q. Is this soil suitable for growing cane
 15 in the locations we've been looking at?
 16 A. It did at one time. I mean, I'm not a
 17 farmer. I mean, I don't know, but I know at one
 18 time that area did grow sugarcane.
 19 Q. You're not a farmer. You're not an
 20 agronomist; right?
 21 A. No. I'm just telling you what I was
 22 told about what was grown in the area on the
 23 western side.
 24 Q. Okay. You're not a soil scientist;
 25 right?

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1 A. No.
 2 Q. You heard Mr. Ritchie testify the soil
 3 on his property is best suited to growing rice;
 4 right?
 5 A. I think I recall that. I didn't listen
 6 to everybody's testimony prior to mine.
 7 Q. Okay. You did not -- you don't have any
 8 basis to dispute that the soil is best suited to
 9 rice; correct?
 10 A. I didn't do that evaluation.
 11 Q. Okay. We could probably assume that
 12 Louisiana's farmers know what they're doing when
 13 they pick the crops to plant; right? They know
 14 what will grow and will make a profit in the
 15 particular area; right?
 16 A. Yeah. But that changes from time to
 17 time. I mean, at one time I think cotton was
 18 grown in this area. Cotton isn't grown in this
 19 area anymore. It's rice. There's sugarcane all
 20 over this area. I mean, the crops will evolve
 21 over time. It's not one specific crop that I know
 22 that's been grown on any property for the life of
 23 the property.
 24 Q. Right. So you say sugarcane is grown
 25 all over this area. Let's look at some

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1 information about that.
 2 A. Okay.
 3 Q. So what parish or parishes is this
 4 property in?
 5 A. It's in Jeff Davis and Calcasieu.
 6 Q. Right. The parish line goes right
 7 through the middle of the property; right?
 8 A. That's correct.
 9 Q. Have you ever looked at LSU Ag Center
 10 data on agricultural land use at Calcasieu Parish
 11 and Jefferson Davis Parish?
 12 A. No, I have not.
 13 Q. Let's look at that. We can put it on
 14 the screen, but I got paper copies too. This was
 15 Exhibit 158.3.
 16 Are you familiar with the LSU Ag Center?
 17 A. I've seen it before.
 18 Q. They are a good source of information
 19 about agriculture in Louisiana; right?
 20 A. Yes.
 21 Q. Okay. This document, Chevron
 22 Exhibit 158.3, is the Louisiana summary for
 23 agricultural and natural resources from 2019 from
 24 the LSU Ag Center. Do you see that?
 25 A. Yes.

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1 Q. And then if you go in here -- I mean, if
 2 we look at, for example, page 107 of this
 3 document -- now, it's a little confusing. You see
 4 the -- there's a Bates number down here of 108,
 5 but the page in the document itself is 107.
 6 A. (Reviews document.)
 7 Okay.
 8 Q. Do you see Jefferson Davis Parish here?
 9 A. Yes.
 10 Q. And you see that if we go up to the top
 11 area, the top section of this chart, that the rice
 12 grown in this Jefferson Davis Parish is 78,144
 13 planted acres. Do you see that?
 14 A. Yes.
 15 Q. Okay. The sugarcane is 714.8; right?
 16 A. Yes.
 17 Q. A hundred times the amount of acreage
 18 planted in rice versus in sugarcane in this
 19 parish; right?
 20 A. Yes.
 21 Q. Let's look at Calcasieu Parish. So
 22 that's on page 62, which is probably Bates
 23 numbered 63.
 24 See, in Calcasieu Parish down at the
 25 bottom of page 62, the amount of rice grown in

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1 Calcasieu Parish -- the acreage is 6,768 acres.
 2 Do you see that?
 3 A. Yes.
 4 Q. And the sugarcane is 99.7 acres. Do you
 5 see that?
 6 A. That's correct.
 7 Q. Okay. So once again, substantially more
 8 rice in this parish is grown than sugarcane;
 9 right?
 10 A. Yes.
 11 Q. What's the nearest sugar mill to the
 12 Henning property?
 13 A. I don't recall.
 14 Q. If Henning needed -- if he grew
 15 sugarcane on the property, he'd need to get it
 16 milled; right?
 17 A. Yes. I'm telling you, it once was grown
 18 on the property.
 19 Q. Right. You're not aware of sugarcane
 20 growing around this property now; right?
 21 A. No, not now. Currently, no.
 22 Q. Yeah. You're not aware of sugarcane
 23 growing in this area?
 24 A. No. All I'm saying is that they could
 25 potentially revert back to doing that if they

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1 wanted to.
 2 Q. Right.
 3 A. I mean, they shouldn't be forced to only
 4 grow a crop with a rooting depth of 10 inches.
 5 Q. The farmers in Jefferson Davis and
 6 Calcasieu Parish have not been forced to
 7 overwhelmingly choose to grow rice instead of
 8 sugarcane; right?
 9 A. No. They do it because they want to,
 10 and they should have the choice to change if they
 11 want to.
 12 Q. Right. They probably do it because
 13 that's the most profitable crop for the area;
 14 right?
 15 A. I don't know. I don't analyze their
 16 profits.
 17 Q. Have you ever looked at the website of
 18 the American Sugar Cane League?
 19 A. No, I have not.
 20 Q. Well, let's look at that. Did you know
 21 that the American Sugar Cane League has got a map
 22 on its website that shows that there are 11 raw
 23 sugar factories operated in Louisiana? Do you see
 24 that?
 25 A. Yeah.

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1 Q. And it's showing none of them west of
 2 Lafayette; right?
 3 A. Yeah. And some of the farmers on
 4 previous sites that we've worked on had to ship
 5 them out of state to get their product refined
 6 because the mills in Louisiana were booked and
 7 they have a finite window of when they have to
 8 produce it.
 9 Q. Right. Yeah.
 10 A. I mean -- so it's not uncommon for them
 11 to have to ship the sugarcane to get it milled.
 12 Q. Okay. Just to kind of wrap this up, you
 13 don't have any expertise whatsoever in root zones
 14 or rooting depths; right, sir?
 15 A. No. Other than what I read in
 16 publications.
 17 Q. Right. We could all read the same
 18 publications and would have the same amount of
 19 expertise on that; right?
 20 A. Yes.
 21 Q. You're not claiming any expertise beyond
 22 what anybody else in this room could do?
 23 A. That's correct.
 24 Q. Right. And interpret the documents?
 25 A. I did not claim otherwise.

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1 Q. You wrote a paragraph in ICON's report
 2 about additional evaluation of barium; right?
 3 A. Yes.
 4 Q. Okay. Now, you testified that there
 5 was -- well, let's take a look at that paragraph
 6 actually. It's in E .0017. This is ICON's most
 7 feasible plan?
 8 A. Yes.
 9 Q. You wrote this paragraph; right?
 10 A. Yes, I did.
 11 Q. You offered an opinion about remediating
 12 barium in soil to be protective of mallards;
 13 right?
 14 A. No. That's not what this paragraph was
 15 meant for. It's -- it -- as I explained earlier,
 16 29-B does not offer a standard for barium. So
 17 instead of just completely ignoring it, I used
 18 this resource after discussion with Dr. Jim
 19 Rodgers, and I stated that I knew ducks were in
 20 the area. So I just used this as an example and
 21 said if this was the case, this is about the
 22 estimate that it would cost to clean this area up.
 23 Q. You reference a TCEQ, Texas Commission
 24 on Environmental Quality, ecological protective
 25 concentration level database; right?

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1 A. Yes. And I attached in an Appendix J in
 2 my report.
 3 Q. Right. Remember, I showed you your
 4 report -- your printout from Appendix J, and you
 5 didn't know what most of that mumbo jumbo was;
 6 right? The numbers, the letters, what all that
 7 stuff meant; right?
 8 A. Correct. Because I didn't compile the
 9 database. Dr. Jim Rodgers worked on that. So he
 10 would be more familiar about what each number was
 11 for. He just told me that the PCL was the -- at
 12 that limit, you should start seeing adverse
 13 reactions to whatever animal, mammal, amphibian
 14 that you were comparing it to.
 15 Q. A week before this most feasible plan
 16 was due to be filed you called Jim Rodgers --
 17 Dr. Jim Rodgers, who's a scientist in Texas who
 18 ICON works with on a lot of different matters;
 19 right?
 20 A. That's correct.
 21 Q. And you asked him about ducks, and he
 22 said go use this database; right?
 23 A. No. I didn't ask him specifically about
 24 ducks. I asked him if he had a database available
 25 that -- it was more like a look-up chart that you

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1 could see on certain animals.
 2 Q. In any event Dr. Rodgers took your call,
 3 and he was happy to talk to you about how to
 4 determine an ecological protection level; right?
 5 A. Right. Based on this table.
 6 Q. But ICON did not provide any expert
 7 opinion from Dr. Rodgers at all in its most
 8 feasible plan; right?
 9 A. No. I just used this as -- like I said,
 10 as an example.
 11 Q. You say that: "Based on the TCEQ PCL
 12 table, if barium concentrations remediated to be
 13 protective of mallards (832 milligrams per
 14 kilogram)."
 15 Do you see that?
 16 A. Yep.
 17 Q. The number you came up with is
 18 832 milligrams per kilogram; right?
 19 A. Right. That's in the chart.
 20 Q. Right. That's in the chart that you
 21 pulled off of an online database where most of the
 22 information to you was mumbo jumbo; correct?
 23 A. Correct. Because I didn't assist in
 24 compiling all the data.
 25 Q. Right. You say that if the barium

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1 concentration were remediated to be protective of
 2 mallards, 832 milligrams per kilogram, the cost
 3 for the additional soil remediation would be
 4 approximately \$5 million. Do you see that?
 5 A. Yes.
 6 Q. This would increase the soil remediation
 7 cost in ICON's plan severalfold; correct?
 8 A. Correct. If you were asking for that
 9 number and remediating barium to that level.
 10 Q. In the figures to ICON's most feasible
 11 plan, there is a -- and we already looked at,
 12 several times, maps showing the proposed soil
 13 excavation locations without exceptions to 29-B
 14 and with exceptions to 29-B. The little pink
 15 spots; right?
 16 A. Right. And none of it includes barium.
 17 Q. Right.
 18 A. Because we're not asking for barium to
 19 be remediated.
 20 Q. Right. And you have not drawn any map
 21 for barium, right, that's in the most feasible
 22 plan; right?
 23 A. No. It was in the previous report.
 24 Q. And there's no calculations whatsoever
 25 that go into that number \$5 million; right?

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1 A. Yes, there is. It was based off the map
 2 that was previously provided in the rebuttal
 3 report as I explained earlier, and we're not
 4 asking for this amount or even to clean barium,
 5 just that it needs to be further evaluated, and
 6 it's my understanding that after that was conveyed
 7 to the people that we're working for, Carmouche
 8 and Mudd, that they then went and got Dr. Rick
 9 Schuhmann.
 10 Q. Well, Mr. Schuhmann testified about
 11 human health; right?
 12 A. Right. So they could evaluate barium.
 13 Q. This is ecological health; right?
 14 A. Correct. It's two different things.
 15 Q. And there's no calculation underlying
 16 that \$5 million that you have there.
 17 Approximately \$5 million that's been provided to
 18 the panel; right?
 19 A. No. Because we're not asking for that
 20 money.
 21 Q. Right. Instead, you're suggesting that
 22 there could be some sort of ecological evaluation
 23 that takes place for this site? Is that your
 24 testimony?
 25 A. Right. That that barium be evaluated.

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1 Q. Right. Why didn't ICON have Dr. Rodgers
 2 do that?
 3 A. Because we don't hire experts.
 4 Q. Do you know why Mr. Henning didn't have
 5 Dr. Rodgers do that?
 6 MR. KEATING: Your Honor, I'm going to
 7 object. He's asking about why counsel did or
 8 didn't hire someone, and it's not --
 9 JUDGE PERRAULT: Sustained.
 10 BY MR. CARTER:
 11 Q. You're not an ecologist; right, sir?
 12 A. No.
 13 Q. It didn't stop you from putting this --
 14 writing this paragraph in this report, but you're
 15 not an ecologist; correct?
 16 A. I didn't say I did an ecological
 17 evaluation on the property. I said I went to a
 18 chart that was generated by ecologists, got a
 19 look-up value based on that particular animal, and
 20 stated that if it was required to be remediated,
 21 this is about the money that you're going to have
 22 to spend to do it. Nowhere in that paragraph does
 23 it say that ICON sets itself as being an
 24 ecological risk assessment or that we're saying
 25 that it has to be done.

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1 Q. This was your first time using the TCEQ
 2 ecological PCL database; right?
 3 A. Right. I didn't even know it existed
 4 before now.
 5 Q. Right. It's the only time in your
 6 career you've ever looked at that website;
 7 correct?
 8 A. Yes.
 9 Q. You don't know whether the ecological
 10 PCL calculation from the TCEQ involves any input
 11 factor for the percentage of the mallards' habitat
 12 that's elevated in barium; right?
 13 A. No.
 14 Q. You don't know whether the calculation
 15 includes an input for the percentage of time that
 16 the mallard stays on the Henning property; right?
 17 A. No.
 18 Q. You do know mallards are migratory;
 19 right?
 20 A. Yes.
 21 Q. You don't know whether the calculation
 22 includes any input for the percentage of the
 23 property that has elevated barium; right?
 24 A. No.
 25 Q. Okay. You have never remediated a site

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1 in Louisiana based on a look-up table from Texas;
 2 correct?
 3 A. Not to my knowledge, no.
 4 Q. Okay.
 5 MR. CARTER: Thank you for your time today,
 6 sir.
 7 JUDGE PERRAULT: You offered --
 8 MR. CARTER: Yes. 158.3, Your Honor.
 9 JUDGE PERRAULT: 158.3. And what's the title
 10 of that exhibit?
 11 MR. CARTER: The title of it is "LSU Ag
 12 Center, Louisiana Summary: Agriculture and
 13 Natural Resources, 2019."
 14 JUDGE PERRAULT: Any objection to
 15 Exhibit 158.3?
 16 MR. KEATING: No, Your Honor.
 17 JUDGE PERRAULT: No object. So ordered. It
 18 shall be admitted.
 19 PANELIST OLIVIER: Your Honor, I do have a
 20 couple of questions for the witness. But
 21 before, can we take a ten-minute bathroom
 22 break?
 23 JUDGE PERRAULT: All right. Anybody object
 24 to a two-minute bathroom break?
 25 MR. KEATING: No objection, Your Honor. I do

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1 have a brief redirect, but it can be after
 2 the bathroom break.
 3 JUDGE PERRAULT: All right. We'll take a
 4 ten-minute break. We'll come back at 3:50.
 5 (Recess taken at 3:40 p.m. Back on record
 6 at 3:53 p.m.)
 7 JUDGE PERRAULT: We're back the record.
 8 Today's date is February 10th, 2023. It's
 9 now 3:53, and we're back on the record.
 10 And are we ready for redirect?
 11 MR. KEATING: Yes, Your Honor. Did the panel
 12 ask questions --
 13 JUDGE PERRAULT: They're going to wait until
 14 you're finished.
 15 MR. KEATING: Okay. Very good.
 16 Before I forget, Your Honor, I'd like to
 17 introduce Mr. Sills' slide show as Henning's
 18 Exhibit XXXX. That's four Xs.
 19 JUDGE PERRAULT: That's the slide show?
 20 MR. KEATING: Yes, sir.
 21 JUDGE PERRAULT: And how many pictures are in
 22 it?
 23 MR. KEATING: That's just what letter we
 24 landed on.
 25 MR. CARTER: No objection to Exhibit four Xs,

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1 Your Honor.
 2 JUDGE PERRAULT: How many pictures are in it?
 3 Twenty-seven? All right. There being no
 4 objection, it shall be admitted.
 5 REDIRECT EXAMINATION
 6 BY MR. KEATING:
 7 Q. Mr. Sills, I'm going to be very brief.
 8 Mr. Carter talked about where this property is and
 9 talked about you driving from Baton Rouge and
 10 getting off the interstate and all this other
 11 stuff.
 12 You understand, Mr. Sills, this property
 13 is located along a major state highway in the
 14 southwest? Louisiana Highway 14?
 15 A. Yes.
 16 Q. And, in fact, Highway 14 goes right
 17 through the property, does it not?
 18 A. That's correct.
 19 Q. And the town of Hayes, albeit a small
 20 town, is located very close to this property;
 21 right?
 22 A. That's correct.
 23 Q. And then just to the west, we've got
 24 Lacassine and Bell City. Growing communities;
 25 right?

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1 A. That's correct.

2 Q. Now, Mr. Carter asked you questions

3 about all these recovery wells and where you're

4 going to put them and what's going to happen here

5 and the saltwater disposal well. You didn't pick

6 where you're going to put them yet. That's

7 routinely determined in the field, is it not?

8 A. Correct.

9 Q. And you could give approximate locations

10 to the panel or Mr. Carter or whoever wanted to

11 know, but quite frankly, if it's going to be moved

12 10 feet this way or 20 feet that way, that doesn't

13 change the cost, does it?

14 A. Not really, no.

15 Q. That doesn't change what it's going to

16 do, does it?

17 A. No.

18 Q. Mr. Carter asked you about whether you

19 did a reservoir assessment for the saltwater

20 disposal well. Do you remember that?

21 A. Yes.

22 Q. You understand, Mr. Sills, that what ERM

23 is proposing is direct injection; right?

24 A. Correct.

25 Q. And frankly, if the reservoir for

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1 some -- whatever reason is not suitable for

2 injection, you have an option for hauling

3 off-site; right?

4 A. Yes.

5 Q. And that would work just fine too;

6 right?

7 A. Yes.

8 Q. That's why you have that as a

9 contingency in your plan?

10 A. Correct.

11 Q. Mr. Carter pulled up the groundwater

12 plume map and showed you.

13 MR. KEATING: And I was impressed, by the

14 way, Jonah, with how you were able to draw

15 around that I. I couldn't do that.

16 BY MR. KEATING:

17 Q. But Area I, hey, it's not in the

18 admission area and all that other stuff. Do you

19 remember that?

20 A. Yes.

21 Q. The plume is the plume, though; right?

22 A. That's correct.

23 Q. And Mr. Miller designed the plume, but

24 Groundwater 101, if a continuous plume is

25 contaminated, you've got to deal with it; right?

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1 A. Correct.

2 Q. I really can't believe we're still

3 talking about this, but the hole at H-16 that you

4 propose to leave to help with the groundwater

5 recovery, i.e., let the rain fill it and recharge

6 the aquifer to aid in the groundwater recovery --

7 do you remember that?

8 A. Yes.

9 Q. If it's such a big deal that that's just

10 using a resource you have out there to help with

11 the project, we could just fill that hole and not

12 use it; right?

13 A. I mean, technically, yes. It would only

14 do nothing but help you, with leaving it open.

15 Q. Okay. And to model flushing for that

16 thing, you'd have to be able to predict the

17 weather; right?

18 A. Well, I mean, you'd have to understand a

19 lot of things as far as rainfall, how much water

20 you're putting into it, the permeability of the

21 clays. It's not anything that we tested, but as I

22 stated before -- I mean, there's salt to depth.

23 So it's conducive to leach through. So it -- we

24 know it's going to happen. We just don't know

25 what rate.

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1 Q. Right. It would just help, but it's not

2 necessary?

3 A. Correct. It's not required. It would

4 only help lower the concentrations of salt in the

5 soils and assist in the groundwater recovery.

6 Q. It's really a nonissue; right?

7 A. Correct.

8 Q. Mr. Carter showed you one of very, very,

9 very, very many -- as I'm sure these folks know

10 better than us -- LSU Ag publications; right?

11 A. Yes.

12 Q. And he relied on that to show you some

13 things about the prevalence of various crops in

14 Jeff Davis Parish and so on and so forth. Do you

15 remember that?

16 A. That's correct.

17 Q. LSU Ag Center publications are the exact

18 things that you rely on as an example for your

19 knowledge of rooting depths; right?

20 A. That's correct.

21 Q. He talked to you about the mallard and,

22 you know, whether it was or was not an appropriate

23 concentration for mallards and whether you did an

24 ecology study and all these things. That was

25 provided just as an example; right?

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1 A. Exactly.
 2 Q. You're not professing to be an expert in
 3 ecology?
 4 A. No, I'm not.
 5 Q. You're not asking this panel today to
 6 remediate barium, are you?
 7 A. No, I'm not.
 8 Q. However, all ICON is saying -- all we're
 9 saying -- correct me if I'm wrong -- is that we
 10 think, based on what you've heard from Doc Rodgers
 11 and whatever everybody heard Dr. Schuhmann talk
 12 about today, additional assessment is warranted
 13 for the barium. That's all we're saying today;
 14 right?
 15 A. That's correct.
 16 Q. Lastly, Mr. Sills, Mr. Carter did some
 17 pretty impressive math on the fly, I might say,
 18 talking about how long it's going to take you to
 19 put in these recovery wells and then to do this
 20 and then your Phase 1 where you're testing the
 21 wells, and you're doing all these other things
 22 and, oh, gosh, look how long it's going to take
 23 you to clean this contamination. The fact of the
 24 matter, Mr. Sills, Chevron left their
 25 contamination here for about 80 years; right?

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1 A. Yes.
 2 Q. And now they're going to criticize how
 3 long it's going to take you to get it out, but
 4 you're confident your techniques are sound, right?
 5 A. Yes. And it's all an aspect of size.
 6 Q. Right. You're confident your math is
 7 right?
 8 A. Yes.
 9 Q. It's all an aspect of size. It is what
 10 it is?
 11 A. Correct. I mean, that, to me, is
 12 just -- as an operator it's don't contaminate a
 13 little to where you can clean it up, contaminate
 14 large amounts to where it takes a long time and
 15 then it becomes unreasonable.
 16 Q. It's a product of what's out there?
 17 A. Right.
 18 Q. And in order to remediate it in
 19 compliance with the regulations, you're proposing
 20 to do exactly what you talked about?
 21 A. That's correct.
 22 MR. KEATING: No further questions.
 23 JUDGE PERRAULT: Does the panel have any
 24 questions?
 25 PANELIST OLIVIER: Yes. This is Stephen

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1 Olivier.
 2 You did just clarify one or two things
 3 that I had. Well, the first one was
 4 basically if for some reason the geology
 5 wasn't favorable to have an injection well
 6 and inject over the course of 10, 12 years or
 7 however it needs to be, what would you do
 8 with the water? And like you just described,
 9 you would just haul it off. So they do have
 10 the option. You would haul it off off-site.
 11 But that leads to the next question. In
 12 that scenario have y'all contemplated what
 13 you would classify that fluid as to be hauled
 14 off, and have you looked to see where you
 15 would haul it off for disposal?
 16 THE WITNESS: Right. We got a quote from
 17 R360 based on that, and we're assuming that
 18 the solids are going to be to a level that
 19 they won't have to blend it. So we're
 20 assuming that it's going to be a super
 21 concentrate solution, and we get one price.
 22 Now, the problem is, you know, if it's not
 23 and it's a little bit more fresh, then they
 24 have to blend in the prices a little bit
 25 more. But we went conservative, thinking

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1 that they -- that the system would do what
 2 it's designed to do, and we'd have a solution
 3 capable of being injected without blending.
 4 PANELIST OLIVIER: Okay. And so solids and
 5 fluids, everything, you would send most
 6 likely, if able, to R360 is what -- just
 7 solids and liquids?
 8 THE WITNESS: Right. And when I say
 9 "solids," I mean TDS.
 10 PANELIST OLIVIER: Okay.
 11 THE WITNESS: So that's what I'm talking
 12 about as far as solids. It's not like a
 13 sludge or anything like that, and I'm just
 14 talking about the total dissolved solids in
 15 the fluid itself.
 16 PANELIST OLIVIER: And if you weren't able to
 17 for whatever reason -- if DEQ didn't approve
 18 discharge of the treated water after you
 19 treated it, have y'all contemplated what you
 20 would do with that material if you had to
 21 haul it off or what would you classify that
 22 material as?
 23 THE WITNESS: It would be more fresh. So if
 24 we had to inject that fluid, it would cost
 25 more to do so.

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| | |
|---|---|
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| <p>1 PANELIST OLIVIER: And so if you had to haul 2 it off, have y'all contemplated where you 3 would haul it to or what you would classify 4 it as? 5 THE WITNESS: It would probably go to the 6 same facility, just as convenience, and like 7 I said, we didn't spec that out because we 8 assumed, just like all of our other projects, 9 that we would be granted an LPDS based on 10 certain testing requirements to discharge the 11 clean water. Because like I said, it's used 12 also to make drinking water. So we assume 13 that it would be able to be discharged, but 14 if it's not, then it could go to R360. It 15 would just cost more to do so. 16 PANELIST OLIVIER: It's all the questions I 17 have. 18 JUDGE PERRAULT: Anyone else? 19 All right. Thank you very much. 20 Call your next witness. 21 MR. KEATING: Your Honor, I apologize. Could 22 I have one minute to go to my truck and get 23 my notepad that I have my questions on? 24 JUDGE PERRAULT: Yes. 25 MR. KEATING: I'd like to bring it in here.</p> | <p>1 other members or managers of Henning? 2 A. Never. 3 Q. And I'm just going to call it Henning 4 Management if that's okay. 5 A. Okay. 6 Q. When was Henning Management formed? 7 A. 2009. 8 Q. Why did you form Henning Management? 9 A. Because I was beginning -- I was buying 10 a farm. So -- and it was like a holding company. 11 So I bought a -- I formed it, and then I bought a 12 farm. 13 Q. Has the company been used as a land 14 holding company since that time? 15 A. Yes. I bought several more farms since 16 then. 17 Q. Does Henning Management own other 18 properties besides the one at issue in this case? 19 A. Yes. 20 Q. And how much property approximately does 21 Henning Management own? 22 A. In Louisiana? 23 Q. Just overall. 24 A. About 18,000 acres now. 25 Q. Where are these 18,000 acres located?</p> |
| Page 1314 | Page 1316 |
| <p>1 JUDGE PERRAULT: We're off the record. 2 (Recess taken at 4:04 p.m. Back on record 3 at 4:06 p.m.) 4 JUDGE PERRAULT: We're back on the record. 5 It's now 4:06 on February 10th, 2023. 6 We have a new witness. Please state 7 your name for the record, sir. 8 THE WITNESS: Thomas Guy Henning. 9 JUDGE PERRAULT: And please spell your last 10 name. 11 THE WITNESS: H-E-N-N-I-N-G. 12 THOMAS HENNING, 13 having been first duly sworn, was examined and 14 testified as follows: 15 JUDGE PERRAULT: Counsel, please proceed. 16 DIRECT EXAMINATION 17 BY MR. KEATING: 18 Q. Mr. Henning, good afternoon. 19 A. Hello. 20 Q. You're famous now. 21 A. Apparently. Not the way I want it. 22 Q. Can you explain to the panel how you're 23 affiliated with Henning Management, LLC? 24 A. I am the manager and sole owner. 25 Q. Okay. And have there ever been any</p> | <p>1 A. Most of them is Southwest Louisiana. I 2 don't know if south of Kaplan is called Southwest 3 Louisiana. I'm not sure, but I have a piece over 4 there. 5 Q. Probably depends on who you ask. 6 A. Yeah. 7 Q. How many acres is the subject property? 8 A. I think about 1200. 9 Q. Okay. When did you purchase this 10 property? 11 A. 2018. 12 Q. How did you come to find out this 13 property was available to purchase? 14 A. A guy I know, Mark. I can't remember 15 Mark's name, but he's the manager of a group 16 called Walker Properties. And Walker Properties 17 owns a bunch of land in the area, and they bought 18 their land, I think, in the '20s or something like 19 that. And he knew I had farms in the area. So he 20 called me and asked me was I interested in buying 21 that farm. And I said sure. I'm -- you know, I'm 22 always looking for land. So we started talking 23 about it. 24 Q. People often call you to see if you want 25 to buy land?</p> |

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1 A. Yeah. I get -- I've kind of been known
 2 now to buy a bunch of farms and -- but I've
 3 changed my theory. I've kind of bought some away,
 4 but, I mean, yeah, they do.
 5 Q. Why did you buy this particular piece?
 6 A. It's pretty much adjacent to another
 7 farm I have, and, also, my son, who is in the
 8 guide business -- and I'm trying to keep him
 9 going, you know, as a future. He's about 27, and
 10 we have the property. And he -- I made him,
 11 before he went into the guide business, go work
 12 for different -- for a guide service, somebody
 13 else so he --
 14 Q. You're talking about a hunting guide?
 15 A. Yeah, a hunting guide.
 16 -- so he'd learn how to do it. That
 17 particular guide had the lease on this property.
 18 So he had hunted it for two seasons, and he told
 19 me it was a good hunting area too. So I said
 20 okay. We'll go look at it. We'll go get it and
 21 see -- try to get it.
 22 Q. Okay. Did you have a Phase 1 done
 23 before you bought this property?
 24 A. Yes, I did.
 25 Q. Tell the panel why you had a Phase 1

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1 done before you bought this property.
 2 A. I guess, you know, I was buying land and
 3 the banks and stuff like that would start
 4 talking -- or people told me the banks were asking
 5 for Phase 1s to buy property. Didn't really know
 6 what the Phase 1 was doing, but it was a big piece
 7 of property. So I said, well, I'll get a Phase 1
 8 and see what it says.
 9 Q. Did you read the Phase 1 in detail
 10 before you bought the property?
 11 A. No. I pretty much went to the summary,
 12 telling me that it -- you know, it had oil and gas
 13 operations on it and maybe you'd need to look into
 14 it and then that's it.
 15 Q. Did you see anything in the Phase 1 that
 16 alarmed you or made you think you might not want
 17 to buy this property?
 18 A. I didn't see anything. I didn't really
 19 realize what, you know, all was in it, but I
 20 didn't see anything that just said don't buy the
 21 property.
 22 Q. But the Phase 1 that you got done for
 23 the property told you that there had been prior
 24 oil and gas activity on the property, including
 25 the use of pits; right?

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1 A. Yes.
 2 Q. In your experience buying however
 3 many -- how many tracts of land have you bought in
 4 Louisiana?
 5 A. I don't know.
 6 Q. Approximately?
 7 A. Eight, nine, ten.
 8 Q. And you grew up in Southwest Louisiana?
 9 A. (Nods head.)
 10 Q. Lived there your whole life?
 11 A. Yes.
 12 Q. How prevalent is it to find a farm of
 13 this size in Southwest Louisiana that hasn't had
 14 some oil and gas operations on it?
 15 A. Not very many. I mean, now most
 16 everybody has something on their property, they've
 17 have had some kind of oil and gas on their
 18 property. It's either by drilling, pipeline,
 19 something. You see it all the time. I grew up
 20 nearby Hackberry. I saw all that.
 21 Q. Did the Phase 1 also say that there
 22 might be environmental issues on the property from
 23 the oil and gas activity?
 24 A. It might be, yes.
 25 Q. But that the only way that could be

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1 determined was from sampling?
 2 A. Yes.
 3 Q. Have you seen that type of language in
 4 other Phase 1 reports you've had done?
 5 A. It was similar to the one I had about
 6 two years before I bought this property.
 7 Q. What changed, Mr. Henning? What gave
 8 you concern?
 9 A. Oh, to look at this property closer?
 10 Q. Yes.
 11 A. Well, after I bought it -- and I think
 12 we talked about Hayes -- the previous witness
 13 talked about Hayes, which -- it's a store 2 miles
 14 from my property, and it has a grocery store. And
 15 everybody kind of goes there and meets, and, I
 16 mean, you run -- once you get into the smaller
 17 communities, you run into people, and they know
 18 who you are. I don't know who they are, but they
 19 know who I am. And they would start talking and
 20 saying, hey, you bought the property down the
 21 road. You bought the property that had the oil
 22 well sink on it.
 23 And I was like: Oil well sink on it?
 24 And then I've been asked that a couple times.
 25 I was like: What are y'all -- you know,

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1 what are you talking about?
 2 And they said, well, there was an oil
 3 well. It basically got swallowed up and went
 4 down, the whole thing. They said the whole thing
 5 went down with it.
 6 And I was like: Okay. That doesn't
 7 sound too good, and I'm thinking maybe it's a salt
 8 dome or, you know, it just swallowed up -- because
 9 I've seen things like that.
 10 So then I started kind of getting
 11 worried about the whole oil rig and everything
 12 going down and just asked more people in the area.
 13 Because, I mean, I know the -- oh, yeah, that
 14 happened back in, you know, whatever, back in the
 15 day. And finally one time I ran into David at
 16 a -- I don't know if it's a party or something for
 17 the school or kids. And I asked him, I said, hey,
 18 they're telling me this land I bought had an oil
 19 well on it and it sunk and I'm wondering if I
 20 should be worried about it.
 21 Q. Who is David?
 22 A. David Brucchaus. David Brucchaus. He's
 23 one of your partners. He's been a friend for
 24 years and year and just -- you know, I see him
 25 frequently, you know, socially.

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1 So I said should I be -- he said, well,
 2 let me look into it. And I think he called me and
 3 said, yeah, I think we need to talk. So I called
 4 him back later.
 5 Q. Well, don't tell us what you talked
 6 about with David.
 7 You also have a relationship with my
 8 other partner, Mr. Mudd?
 9 A. He is the great-uncle of my grandson and
 10 my future-to-be-born grandson on Monday.
 11 Q. Congratulations on that, by the way.
 12 When you looked at the Phase 1 and then
 13 when Mr. Grossman went through it with you in
 14 painful detail in your deposition, do you remember
 15 seeing anything about a sunken well?
 16 A. I don't think so, no.
 17 Q. You mentioned this earlier, but have you
 18 had Phase 1 reports done on other property that
 19 you have bought?
 20 A. Yeah. I had one done on a piece I
 21 bought about two years prior to this.
 22 Q. And where is that property located?
 23 A. South of Sulfur, between Sulfur and
 24 Hackberry.
 25 Q. Is that the one you commonly call the

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1 Choupique?
 2 A. Choupique -- it's called the -- we call
 3 it the Choupique property.
 4 Q. So you had a Phase 1 done for the
 5 Choupique property. Who did that Phase 1?
 6 A. Same outfit that did the one on this
 7 one.
 8 Q. Was that Arabie?
 9 A. Yes.
 10 Q. Now called Southland?
 11 A. Yeah, I think so.
 12 Q. Now, did the Phase 1 that Arabie did for
 13 you for the Choupique property indicate whether or
 14 not oil and gas activity had occurred out there?
 15 A. They said there was a well drilled on it
 16 and that there was several wells drilled around it
 17 or next to it or something -- adjoining property,
 18 I think, is how they used it.
 19 Q. And did the Arabie report you got for
 20 Choupique give you that same standard cautionary
 21 language about further investigation and all this
 22 other stuff?
 23 A. Yeah. It was a different word, but it
 24 was the same one, the same "you need to look into
 25 it" or something.

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1 Q. Have you ever had any reason to further
 2 look into or have concerns about an issue on the
 3 Choupique property?
 4 A. No, I have not. I haven't done anything
 5 about it. I just -- I'm out there now.
 6 Q. You haven't heard about a sunken well,
 7 for example, on the Choupique property?
 8 A. No.
 9 Q. Have you ever filed a lawsuit for the
 10 Choupique property?
 11 A. No.
 12 Q. Do you have any intention of doing so?
 13 A. Not that I know. Not -- I don't have
 14 any information that would require me to do it.
 15 Q. Let's go back to the property at issue.
 16 Are you looking to buy any other property in the
 17 Hayes area?
 18 A. Well, I think I mentioned that there's
 19 some -- two other landowners that are owned by
 20 third generations that, you know, might come up
 21 and, you know, try and consolidate the property
 22 because the properties that I have are all -- and
 23 I think -- I'm sure they've seen have maps of it,
 24 kind of squiggly, so you try to fill in those
 25 gaps. So that would be advantageous to me.

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1 Q. Do you know if there have been
 2 historical oil and gas activities, like, on any of
 3 those other properties?
 4 A. I have no idea.
 5 Q. Does that have any bearing on whether or
 6 not you buy a property?
 7 A. That's not what I'm interested for.
 8 Q. What did you initially plan to use this
 9 property for when you bought it?
 10 A. When I bought it? Pretty much probably
 11 rice farming and hunting.
 12 Q. Okay. What's one of the first things
 13 you did after you bought this property?
 14 A. Well, I had to get it back into rice
 15 farming. I probably -- the -- it's on the
 16 Lacassine Bayou, and for the last couple of years,
 17 the farmer who had it under the previous owner was
 18 basically just collecting insurance money. He
 19 wasn't growing the rice because the Lacassine --
 20 we -- that was a couple of years probably before
 21 this. We were getting a lot of rain. So high
 22 water was coming over the little bitty levee that
 23 they had. So I went and built a protection levee
 24 so we could start growing rice in there.
 25 Q. Okay. Roughly how much did you spend to

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1 get that east side away from this area we're
 2 talking about back in good rice production?
 3 A. I think it came out at \$650,000.
 4 Q. And did that improve the rice farming?
 5 A. Oh, yeah. Now -- I mean, we didn't --
 6 we don't -- well, we hadn't had a big flood, but,
 7 yeah, we're farming that side, all the acreage
 8 over there that we can.
 9 Q. Do you own any other property that you
 10 use for farming and hunting?
 11 A. Yes. Most everything I have is either
 12 for farming or hunting.
 13 Q. Do you ever plan to use this property
 14 for anything besides hunting and farming?
 15 A. Well, I'm looking at something to do on
 16 the west side. Everybody is talking about the
 17 west side, and we mentioned -- or I got with my
 18 son about a pond, digging a pond over there for
 19 part of a lodge of the business that he's in.
 20 Because we get these clients that come in, and
 21 they spend two or three days. Well, the hunting
 22 is only in the morning. They got all afternoon.
 23 So another competitor has similar ponds like this
 24 and they all like that. And they go fishing at
 25 the pond, and so that was something -- because --

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1 and they've dug ponds similar to what we're
 2 thinking about. Might put -- but it was pretty
 3 costly to do that, but I hadn't put that away yet.
 4 And it wasn't sugarcane. So I don't
 5 know we'd do that again. I might try to put it in
 6 rice, but if I do, it had to -- the way -- when
 7 they came in, the land sloped a different way.
 8 They took it out of rice and put it in sugarcane
 9 and sloped the land a different way. If we went
 10 to go put it in rice, the farmers have to tell me
 11 that I'd have to re-slope the land and go the
 12 other way. So they got that.
 13 Q. I'm sorry. Go ahead.
 14 A. No. I mean, right now we've got -- I've
 15 got cattle on it on the north piece. I got a cell
 16 site. DU is coming in to try to -- they're going
 17 to tie -- we've just -- I think we signed the
 18 contract or at least I've gotten a contract --
 19 Q. That's Ducks Unlimited?
 20 A. Ducks Unlimited on redoing about -- I
 21 think it's like 75 acres north of the property.
 22 We're going to have to clear that out. They're
 23 going to build levees and put -- they're going
 24 to -- and it's something with the NRCS, National
 25 Resource Conservation Service, the federal side,

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1 and they're looking at trying to -- they're
 2 working on a project to where they want to see
 3 about filtering water. I'm not sure about exactly
 4 how the project is, but when we put the water in
 5 these ponds -- and they're going to try to filter
 6 it and then let it out. I guess it's something
 7 about farming, I think, to try to keep, you know,
 8 the things getting out that -- they're supposed to
 9 be bad or something. I don't know. But
 10 they're -- you know, they're going to put that
 11 project together, but we're going to have to clear
 12 land, dig canals, and stuff like that.
 13 Q. So you're making efforts to put the
 14 property to use?
 15 A. Yeah. I mean, that's what I want to do.
 16 Q. You heard Mr. Carter earlier asking
 17 questions of Jason Sills, who was up before you,
 18 and there were some questions about whether there
 19 are or are not sugarcane farms in the area around
 20 this property. Do you remember that?
 21 A. Yes.
 22 Q. Are you aware of sugarcane farms very
 23 close to here?
 24 A. Very much so. I mean, sugarcane farmers
 25 came in, in the last -- within the last 10 to 15

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1 years. Ran the price up along the land. It's --
 2 I'm trying to buy land. They're these guys --
 3 Colombia guys came in and bought acres and acres,
 4 sections of land.
 5 Q. You know Mauricio Santacoloma --
 6 A. Santacoloma is the ones that did it.
 7 Q. They've got thousands of acres in
 8 production?
 9 A. Yeah. So I'm not sure what that --
 10 where those numbers are coming from. But yeah.
 11 Q. So the notion that the sugarcane farming
 12 in this area is rare or not existent is not your
 13 appreciation?
 14 A. No. And then as duck hunters -- the
 15 people we -- you know, we don't like sugarcane
 16 because we like rice farmers for shooting them
 17 but -- and, you know, you've got to do what you've
 18 got to do for -- to make a living. I don't blame
 19 the guys that own the land because, I mean, I've
 20 got land -- you know, you're talking about uses of
 21 land. Our family has a farm north of Welsh. The
 22 middle of the farm, rice farming. We've been
 23 approached about doing a solar farm there. It's
 24 going to pay ten times as much as a rice farmer
 25 can do, I mean. So, you know, I talked to the

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1 farmers. I said, well, what am I supposed to do?
 2 I said, you know, I don't want to run you out of
 3 business but, I mean, ten times? So I don't blame
 4 anybody if they go to sugarcane or whatever.
 5 Q. So are you open to uses of your property
 6 besides rice farming and duck hunting? Examples
 7 like you just --
 8 A. Yeah. Yeah. We -- you know, we rice
 9 farm that piece up there. Well, the family does.
 10 It's not mine. That's a family-owned farm and --
 11 because our family, we go buy a lot of land. And
 12 yeah. I mean, sooner or later, you've got to go
 13 to with the economics because, I mean, it's just
 14 not feasible or smart to do that -- not to do it.
 15 Q. So you mentioned a possibility of doing
 16 a fishing pond to complement the hunting, right?
 17 A. Right.
 18 Q. I think they call that a blast and cast?
 19 A. Right. A blast and cast.
 20 Q. Do you have other property besides this
 21 where you have fishing ponds?
 22 A. Yes. Yeah, I do.
 23 Q. So it's not a far-fetched notion that
 24 you might put one on this property?
 25 A. No. In fact, it would be better because

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1 it's closer to where our lodge is unless then I
 2 build a lodge over there, you know, and then
 3 there, you know -- and then I've got my son, who's
 4 coming up. We'll, you know -- I mean, you never
 5 know what you're going to do with the property. I
 6 mean, he may build a house over there because
 7 there -- right across the street from this
 8 property, I think there's a little cutout. You
 9 don't have any maps here, but there's a cutout.
 10 There used to be a homestead right there. People
 11 do that all the time. They always do a little
 12 cutout for a house in the middle of the farmland.
 13 Q. Are you aware of any sugarcane farms in
 14 the area being converted to a residential
 15 subdivision?
 16 A. Oh, yeah. And, you know, we -- there's
 17 a piece between Iowa, which -- I don't know -- the
 18 people in Lake Charles -- that's been sugarcane
 19 farmed for years. If you ever told me that they
 20 were going to build a residential section in the
 21 middle of that sugarcane farm between Iowa and
 22 Lake Charles where there's nothing out there,
 23 probably 10 miles from Lake Charles, 7 miles from
 24 Lake Charles, I would have told you you're crazy.
 25 And I rode by just the other day, and they're

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1 building -- they got 20 homes out there in the
 2 middle of the sugarcane farm.
 3 Q. Are you aware if anybody has ever done
 4 crawfish farming on this property?
 5 A. Yes, they have.
 6 Q. Previously, that's happened?
 7 A. Oh, yeah. The former -- that was rice
 8 farming. It was also crawfish farming.
 9 Q. Is it fairly common for rice farmers to
 10 alternate between rice and crawfish?
 11 A. Oh, that's very common.
 12 Q. Is that something, to your knowledge,
 13 that Grant or Katie has considered -- I'm sorry --
 14 your children?
 15 A. Yeah. Now, we've talked about it, and
 16 we've done a little bit on some other farms. But
 17 we hadn't really got into it real heavy yet
 18 because I'm just -- I mean, I'm too bogged down
 19 with a new piece of property, trying to still get
 20 this hunting operation going, and we talked about
 21 moving from a "buy by the night" versus a club
 22 membership, just trying to figure out things. So
 23 we hadn't, you know -- but that's -- it used to be
 24 done -- it used to be done on the property. We
 25 could always go back and do it.

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1 Q. You mentioned you have a third
 2 grandchild coming on Monday morning; right?
 3 A. Uh-huh.
 4 Q. And what is your appreciation of the
 5 plans that your son has for the future of his
 6 business?
 7 A. Well, you know, he wants to grow it. He
 8 wants to hunt it. You know, he's not into the
 9 farming side so much, but we did take that
 10 in-house, meaning the family will -- because --
 11 meaning it's not a tenant farmer. It's a
 12 tenant -- a farmer who works for me, and he does
 13 it. So eventually the family -- my son or my
 14 daughter is going to have to manage that part of
 15 it and do whatever they want to do with it. I
 16 mean, I want to be able to let them use it
 17 whatever they want to do it.
 18 Q. And is it your plan to raise -- help
 19 raise your grandkids the same way? Grant and
 20 Katie were out in the marsh and the fields?
 21 A. I mean, that's just not only us but,
 22 like I said, Chad Mudd, which is your law partner.
 23 That's that side of the family. He's got the
 24 other side. They're all into -- you know, they're
 25 from Cameron Parish. They all enjoy the outdoors.

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1 We do the outdoors. Grant does the outdoors. My
 2 daughter -- my son-in-law hunts with us, you know,
 3 and they're going to be moving back in about two
 4 years. So, you know, we enjoy the outdoors.
 5 Q. Mr. Henning, do you think it's
 6 reasonable for Chevron to impose restrictions on
 7 how your kids or grandkids might use the property
 8 in the future?
 9 A. No. I think, you know -- I mean, no
 10 matter where you buy your land, you ought to be
 11 able to use it the way you want to use it and not
 12 say, well, you can use it all these ways but this
 13 way because we polluted your land.
 14 Q. You understand that ICON prepared a plan
 15 to clean up your property in this case?
 16 A. I understand they did. I mean, I
 17 don't -- I was sitting here listening to y'all do
 18 this. I don't understand what's -- the parts
 19 y'all are talking about, but, yeah, I understand
 20 there's a plan for cleanup.
 21 Q. Are you aware generally that it includes
 22 soil excavation --
 23 A. Soil and water. That's what I
 24 understand.
 25 Q. And although you don't know the

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1 details -- and I'll spare you those. We've talked
 2 about that enough this week, I think.
 3 Is it your desire for that plan to be
 4 carried out?
 5 A. Whatever plan that gets everything out
 6 in the best usable way. I mean, completely
 7 cleaned to where there's no restrictions of what I
 8 can do with my land in the future.
 9 Q. Do you understand, Mr. Henning, that
 10 whatever this panel decides today -- let's just
 11 say they implement ICON's feasible plan to the T.
 12 No money -- not one dime goes into Henning's
 13 pocket?
 14 A. That's my understanding. I'm not here
 15 asking for any money.
 16 Q. You understand that that's not the
 17 purpose of this?
 18 A. The purpose of -- my understanding to be
 19 here is to get Chevron, I guess, or whoever is
 20 responsible for it who -- I think Chevron, I
 21 guess, admitted to it -- to clean up the property.
 22 That's all that we're here for is to get it clean.
 23 Q. Mr. Henning, let me circle back to
 24 something. I know Mr. Grossman is going to talk
 25 to you about Phase I reports. So I'd just as soon

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1 talk about it real quick.
 2 You remember he showed you some e-mails
 3 where you had corresponded back and forth with
 4 Jared King, I believe it was, from Southland?
 5 A. Uh-huh.
 6 Q. And there was something about setting a
 7 meeting after you got the Phase 1?
 8 A. Uh-huh.
 9 Q. Did you ever meet with him?
 10 A. Yes. The answer to those questions were
 11 yes.
 12 No, I never did meet.
 13 Q. And you remember Mr. Grossman showed you
 14 dozen of pictures that Southland took at the
 15 property; right.
 16 A. Correct.
 17 Q. When was the first time you saw those
 18 pictures?
 19 A. At my deposition.
 20 Q. Did Southland send you those pictures?
 21 A. No, they did not.
 22 Q. In fact, do you remember, in the
 23 Phase 1 -- both Phase 1s for Choupique and for
 24 this property, it said, hey, we've got pictures.
 25 We've got aeriels. I don't remember what else it

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1 was. If you want any of that stuff, let us know?
 2 A. Right.
 3 Q. Did you ask them for anything?
 4 A. Yeah. I asked them for the aerial
 5 photographs.
 6 Q. What did you want those for?
 7 A. Well, for the farm. Frame them, put
 8 them up -- blow them up, put them from the farm so
 9 you can say these are the areas that I'm farming
 10 this year. Because you do a rotation crop, you
 11 know, farm one area one time and then you rest it
 12 and do another. And then also for -- to put your
 13 blinds and the hunting and stuff like that. So --
 14 Q. I've got one of those in my camp, but
 15 it's much smaller.
 16 A. Yeah. So that's what I was looking for
 17 there.
 18 Q. Okay. If this panel determines that
 19 remediation needs to occur on the property --
 20 whatever that looks like, whether it's what
 21 Chevron has proposed, whether it's what ICON has
 22 proposed, whether it's something that they, in
 23 their scientific wisdom, come up with on their
 24 own, are you going to make sure that happens on
 25 this property?

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1 A. Yes.
 2 Q. That's what you want today; right?
 3 A. I want it cleaned up.
 4 MR. KEATING: Pass the witness.
 5 CROSS-EXAMINATION
 6 BY MR. GROSSMAN:
 7 Q. Hey, Mr. Henning. It's good to see you
 8 again.
 9 A. Good to see you too.
 10 Q. Lou Grossman for Chevron. You want the
 11 property cleaned up?
 12 A. Correct.
 13 Q. That's what Mr. Keating said?
 14 A. Yes.
 15 Q. In truth, you want it cleaned up to a
 16 condition that is better than it was when you
 17 purchased it; isn't that right?
 18 A. Better than it was -- well, my
 19 understanding, that it's polluted now. So, yes,
 20 better than it was.
 21 Q. Better than it was at the time of
 22 purchase.
 23 And he talked to you about the Phase 1,
 24 but he didn't show the panel the Phase 1.
 25 A. Okay.

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1 MR. GROSSMAN: Jonah, could you pull up
 2 Exhibit 19, please?
 3 BY MR. GROSSMAN:
 4 Q. Mr. Henning, you own 18,000 acres of
 5 land in Louisiana?
 6 A. Yes.
 7 Q. When I deposed you in April, you had
 8 just acquired land at East White Lake?
 9 A. Yes.
 10 Q. That's also a piece of property that's
 11 in litigation, isn't it?
 12 A. Not with me.
 13 Q. No. But it is in litigation. You're
 14 aware of that, correct?
 15 A. Yeah. In fact, they -- I specifically
 16 was excluded from whatever piece of property
 17 that's included to some -- the legacy lawsuit. So
 18 I bought all the land that is not included in any
 19 legacy lawsuit.
 20 Q. Okay. Mr. Henning, as somebody who's
 21 got the reputation of buying property, who's
 22 bought, you said, 8 to 10 acres -- or tracts of
 23 land, 18,000 acres of land, you don't do a Phase 1
 24 on every one; correct?
 25 A. No.

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1 Q. You do it on some?
 2 A. I did it on two.
 3 Q. And you did it on this one particularly?
 4 A. Yes.
 5 Q. Let's go ahead -- and before we turn to
 6 the conclusions that you did read, Mr. Keating
 7 asked you if there was anything in this that
 8 referenced a sunken well.
 9 A. Right.
 10 MR. GROSSMAN: I want to look at the bottom
 11 of the page, Jonah.
 12 BY MR. GROSSMAN:
 13 Q. You see the second bullet point where it
 14 says: "Mr. Paul Roussel was interviewed as part
 15 of the ESE"?
 16 A. Uh-huh. Yes, sir.
 17 Q. And he acknowledges that there are two
 18 ponds on the tract. One was a borrow pit created
 19 during the construction of Highway 14, and the
 20 second pond was created by oil and gas operations.
 21 A. Okay.
 22 Q. The only pond on that property caused by
 23 oil and gas operations is where that blowout
 24 occurred; isn't that right?
 25 A. I now know that now, yes.

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1 Q. And you have no evidence that there is a
 2 well that sunk to the bottom of that?
 3 A. Oh, no. I don't have any -- I mean, I
 4 got that information from the store.
 5 Q. And you've since learned that there is
 6 no well that sunk to the bottom of that?
 7 A. I haven't learned that yet either.
 8 Q. You haven't learned that -- have you not
 9 been listening to the testimony in this case?
 10 A. Not the whole --
 11 Q. Okay.
 12 A. I mean, I only -- I came in two days
 13 ago, but I just started listening yesterday and
 14 today.
 15 Q. So we've all been here since Monday, and
 16 you just started listening the other day?
 17 A. No.
 18 Q. Well, earlier some of Chevron's experts
 19 got on. They testified that that pond is only
 20 15 feet deep.
 21 A. Well -- okay.
 22 Q. Can't be a well at the bottom of that,
 23 huh?
 24 A. No, I wouldn't think. But, you know, I
 25 was also told that you put a string down there,

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1 and you ran out of ball, it was so deep. So, I
 2 mean, I only know what I got from the store at
 3 Hayes.
 4 Q. You've got no reason to disagree with
 5 Chevron's experts that it's 15 feet deep?
 6 A. No. If you're telling me that's a fact
 7 and -- I have nothing to dispute you with.
 8 Q. Well, let's look at -- I think you and I
 9 talked about this in your deposition. You said
 10 you would have switched -- or turned right to the
 11 conclusions page in this Phase 1.
 12 A. Yes, I probably would have.
 13 MR. GROSSMAN: Let's pull that up. Sorry.
 14 Page 3.
 15 BY MR. GROSSMAN:
 16 Q. All right. And I'm going to read this.
 17 It says: "The history of oil and gas exploration
 18 and production activities on the investigated
 19 property constitutes an environmental issue. This
 20 is due to the presence of pits associated with
 21 those activities. Active oil and gas operations
 22 can still be seen on the tract. These operations
 23 include a tank battery, seven tanks, three
 24 wellheads, and pipelines. Several of the tanks
 25 were in disrepair with visible leaks on the tank

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1 connections and the piping. Potential
 2 contamination resulting from the discharges or
 3 releases from oil and gas exploration and
 4 production activities may include naturally
 5 occurring radioactive materials, hydrocarbons,
 6 heavy metals, and chlorides."
 7 Then it says: "Confirmation of the
 8 actual presence can only be determined" -- we have
 9 to go to the next page -- "by additional
 10 investigation. This investigation would include
 11 the collection and analyses of soil samples."
 12 A. Correct.
 13 Q. So in November of 2017, several months
 14 before you purchased this property --
 15 A. Correct.
 16 Q. -- you were aware that there were oil
 17 and gas exploration and production activities on
 18 your property in the past; correct?
 19 A. Correct.
 20 Q. And in the present; correct?
 21 A. Correct.
 22 Q. You were aware that there were at least
 23 four storage tanks that were leaking on the
 24 property; correct?
 25 A. Yes. It says it right there.

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1 Q. You were aware that there was an
 2 aboveground fuel tank that was also leaking and
 3 causing soil staining; correct?
 4 A. Correct.
 5 Q. You were aware that pits had been used
 6 in the oil and gas exploration production
 7 activities on the property too; correct?
 8 A. I don't know what pits are, but it says
 9 it right there, yes.
 10 Q. You were aware of that in November of
 11 2017; right?
 12 A. Correct.
 13 Q. Okay. And you were aware that the
 14 person that you hired as an environmental expert
 15 was calling this an environmental issue?
 16 A. Correct.
 17 Q. And that person said collection and
 18 analysis of soil samples is recommended; right?
 19 A. Did he say recommend? Or it just says
 20 the only way you're going to find it is by doing
 21 it.
 22 Q. The only way you're going to find it is
 23 by doing it?
 24 A. Yeah. If he said "recommend," it would
 25 have been something different. That's what I'm

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| | | | |
|-----------|---|-----------|--|
| Page 1345 | <p>1 saying. As I told you, what I'm looking for in</p> <p>2 Phase A says "this is contaminated. Don't do it."</p> <p>3 Q. And you said there's an environmental</p> <p>4 issue; right?</p> <p>5 A. Yeah. There's an issue, yeah.</p> <p>6 Q. And it says that you can confirm what</p> <p>7 that issue is if you do soil samples; right?</p> <p>8 A. Correct.</p> <p>9 Q. You didn't do the soil samples?</p> <p>10 A. No, I did not.</p> <p>11 Q. What you did was you gave this report to</p> <p>12 your lawyers?</p> <p>13 A. Eventually, yes.</p> <p>14 Q. Yeah. And at the time, November of</p> <p>15 2017 -- that's a significant time isn't it?</p> <p>16 MR. KEATING: Your Honor, I'm going to</p> <p>17 object. We need to approach and have a</p> <p>18 discussion outside the presence of the panel.</p> <p>19 MR. GROSSMAN: I'm not going where you think</p> <p>20 I'm going.</p> <p>21 MR. KEATING: Yeah, you are.</p> <p>22 MR. GROSSMAN: No, I'm not.</p> <p>23 JUDGE PERRAULT: All right. Well, would the</p> <p>24 panel go to their room?</p> <p>25 And come to the mic.</p> | Page 1347 | <p>1 going to go?</p> <p>2 MR. GROSSMAN: I'm only talking about the</p> <p>3 fact, at the time that he got this letter, he</p> <p>4 had another lawsuit pending against Chevron.</p> <p>5 MR. KEATING: No, no, no.</p> <p>6 JUDGE PERRAULT: Wait, wait, wait.</p> <p>7 MR. KEATING: That's not relevant, Judge.</p> <p>8 MR. GROSSMAN: That's absolutely --</p> <p>9 MR. KEATING: This is not a prescription</p> <p>10 trial.</p> <p>11 JUDGE PERRAULT: What do you want to talk</p> <p>12 about, now?</p> <p>13 MR. GROSSMAN: I think it's relevant for this</p> <p>14 panel to know that, at the time this person</p> <p>15 purchased the property, they had another</p> <p>16 legacy lawsuit against Chevron, that they</p> <p>17 settled that lawsuit two days before they</p> <p>18 brought this one.</p> <p>19 JUDGE PERRAULT: And how is that relevant to</p> <p>20 cleaning up this site?</p> <p>21 MR. GROSSMAN: It's relevant in terms of what</p> <p>22 was his intention of buying this property.</p> <p>23 JUDGE PERRAULT: We're not here for that.</p> <p>24 We're just here to determine whether the</p> <p>25 property should be cleaned or not and what is</p> |
| Page 1346 | <p>1 (Panel exits.)</p> <p>2 JUDGE PERRAULT: All right. We're back on</p> <p>3 the record.</p> <p>4 MR. KEATING: Your Honor, this issue was</p> <p>5 addressed already by objection for</p> <p>6 Mr. Carmouche. He is putting his toe across</p> <p>7 the line and talking about something that</p> <p>8 you've already ruled --</p> <p>9 MR. GROSSMAN: That is not true.</p> <p>10 MR. KEATING: It is absolutely true.</p> <p>11 JUDGE PERRAULT: I don't know what you're</p> <p>12 talking about.</p> <p>13 MR. KEATING: Mr. Henning had a prior lawsuit</p> <p>14 on another property and --</p> <p>15 JUDGE PERRAULT: Oh, that was the name on the</p> <p>16 property?</p> <p>17 MR. KEATING: Yes.</p> <p>18 JUDGE PERRAULT: Are you going to talk about</p> <p>19 the name on the --</p> <p>20 MR. GROSSMAN: I'm not going to talk about</p> <p>21 the remediation on the other property. I'm</p> <p>22 not going to talk about the site closure.</p> <p>23 I'm not going to talk about the no further</p> <p>24 action letter.</p> <p>25 JUDGE PERRAULT: All right. Where are you</p> | Page 1348 | <p>1 the --</p> <p>2 MR. GREGOIRE: It goes to proper use, Your</p> <p>3 Honor. It goes to use of the property.</p> <p>4 Reasonable anticipated use of the property.</p> <p>5 MR. KEATING: It does not go to the use of</p> <p>6 the property.</p> <p>7 JUDGE PERRAULT: No. I'm going to agree with</p> <p>8 the Henning group. It has nothing to do with</p> <p>9 what we're here for. What I'm supposed to be</p> <p>10 doing for the federal court is to determine</p> <p>11 what plan to clean up the property, not what</p> <p>12 happened before all that happened. We're</p> <p>13 just here to determine how the -- whether</p> <p>14 this -- what plan should be chosen to clean</p> <p>15 up this property. That's all we're here for.</p> <p>16 So all this other stuff is another issue that</p> <p>17 is outside of what we're here for. All</p> <p>18 right. That's on the record. So --</p> <p>19 MR. GROSSMAN: Yep. My objection is noted,</p> <p>20 Your Honor.</p> <p>21 JUDGE PERRAULT: Yes. Your objection is</p> <p>22 noted, and we're just here to determine what</p> <p>23 the plan for the remediation should be, and</p> <p>24 we're going to stick with that.</p> <p>25 And I'm going to go off the record while</p> |

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1 I go get the panel back.
 2 (Recess taken at 4:41 p.m. Back on record
 3 at 4:43 p.m.)
 4 JUDGE PERRAULT: We're back on the record.
 5 Today's date is February 10th, 2023. It's
 6 now 4:43, and we are back on the record.
 7 Counsel, please proceed with your cross.
 8 MR. GROSSMAN: Thank you, Your Honor.
 9 BY MR. GROSSMAN:
 10 Q. Mr. Henning, I think Mr. Keating already
 11 established that after you got this from Jared
 12 King, you didn't have any other discussion with
 13 Jared King; correct?
 14 A. I don't think so.
 15 Q. You didn't tell him, hey, I'm worried
 16 that some of these issues that you pointed out
 17 here are going to restrict my ability to use the
 18 property in the future. You didn't have that
 19 conversation with him?
 20 A. No.
 21 Q. And I think you already said that you
 22 didn't look at any of the photographs that were
 23 referenced in this letter?
 24 A. No.
 25 MR. GROSSMAN: And, Jonah, can you go up

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1 there and pull up the photographs?
 2 BY MR. GROSSMAN:
 3 Q. Do you remember this picture that I
 4 showed you in your deposition?
 5 A. Yes.
 6 Q. That's a series of storage tanks, isn't
 7 it?
 8 A. Yes.
 9 Q. They don't look very good, do they?
 10 A. No. I don't think so.
 11 Q. Any idea who put those there?
 12 A. No.
 13 Q. Mr. Arabia's group took these -- took
 14 this picture, best of your knowledge?
 15 A. Best of my knowledge, that's what -- you
 16 told me they came from their office -- their
 17 subpoena.
 18 Q. And before you bought this property, you
 19 didn't see this condition?
 20 A. I didn't see these.
 21 Q. You didn't go out on the property and
 22 look around?
 23 A. Yes, I did.
 24 Q. You didn't go on the west side and see
 25 the tank battery right there?

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1 A. We didn't go too far on the west. He
 2 didn't take me too far on the west side.
 3 Q. How far did you go on the west side?
 4 A. Not very -- right until -- probably
 5 where this -- there's a water -- there's an old
 6 water well.
 7 Q. Okay.
 8 A. And probably right there.
 9 Q. You didn't go where the parking pad is
 10 now?
 11 A. No.
 12 Q. That's where all this stuff was.
 13 MR. GROSSMAN: Go ahead and switch to the
 14 next picture.
 15 BY MR. GROSSMAN:
 16 Q. Here's another picture of the tank
 17 battery. You didn't see this before?
 18 A. No, sir.
 19 Q. You have no knowledge whether this
 20 condition -- this condition doesn't exist on your
 21 property now; right?
 22 A. To be honest with you, I do not know.
 23 Q. You don't know?
 24 A. No, sir.
 25 MR. GROSSMAN: Go ahead and switch to the

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1 next one.
 2 BY MR. GROSSMAN:
 3 Q. Now, this existed at the time that you
 4 bought the property; right? These conditions?
 5 Everything that I'm showing you existed at the
 6 time that you bought the property; right?
 7 A. As far as I've been told, yes.
 8 Q. But you never saw it?
 9 A. Correct.
 10 Q. Because you never went out and looked?
 11 A. Correct.
 12 MR. GROSSMAN: Turn to the next picture,
 13 please.
 14 A. Well, I went and looked. I didn't see
 15 this.
 16 BY MR. GROSSMAN:
 17 Q. Okay. You didn't see this?
 18 A. No, sir.
 19 Q. Do you have any idea what this is?
 20 A. No, sir.
 21 Q. Do you know if this is oil and
 22 gas-related?
 23 A. No.
 24 MR. GROSSMAN: Let's look at the next
 25 picture.

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1 BY MR. GROSSMAN:
2 Q. All right. Do you see that name "United
3 World Energy Corporation"?
4 A. Yes.
5 Q. Did you ever hear of that company?
6 A. No.
7 Q. So it's fair to say you've never had any
8 conversations with anybody at United World Energy
9 Company?
10 A. If they were, I didn't know they were.
11 Q. Do you know if you sued them in this
12 case or not?
13 A. I do not know.
14 Q. So you never discussed with anybody at
15 UWEC your concerns about environmental conditions
16 on this property; fair enough?
17 A. Correct.
18 Q. I could show you more of the pictures,
19 but they're all the same.
20 MR. GROSSMAN: Oh, let's go to 276, Jonah.
21 BY MR. GROSSMAN:
22 Q. Old abandoned truck?
23 A. Yes, sir.
24 Q. Do you know if that's still out there?
25 A. I do not know. That looks like it's

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1 next to the bayou.
2 Q. You haven't gone out to look, huh?
3 A. No, sir.
4 Q. Okay. Now, before you purchased this
5 property -- I know one of the other items of due
6 diligence you did was to go out and test the water
7 well on the property. Do you remember that?
8 A. Yes.
9 Q. That was a deep water well?
10 A. Yes.
11 Q. And do you remember getting the report
12 from Maxim's?
13 A. Yes.
14 Q. Do you remember what the gallons per
15 minute was that they found?
16 A. No, I do not.
17 MR. GROSSMAN: Jonah, could you pull up
18 Chevron 127?
19 BY MR. GROSSMAN:
20 Q. See about halfway down there where it
21 says: "Note: Well pumps 3500 gallons per minute
22 at 1800 rpm"?
23 A. Yes.
24 Q. Well is good. No sand?
25 A. Correct.

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1 Q. So you had a functioning deep water well
2 on the west side of your property; correct?
3 A. As -- from that report, yes.
4 Q. All right. But you saw this report
5 before you bought the property; right?
6 A. Yes. But there was some -- the farmer
7 said that it -- after it rained for a couple days,
8 it gets salty.
9 Q. It gets "soft"?
10 A. Salty.
11 Q. Salty. Okay.
12 A. I don't know.
13 Q. What farmer said that?
14 A. Shultz, the farmer that was before.
15 Q. All right. But you wanted this well
16 tested before you bought the property?
17 A. Yeah. Yeah. I mean, as far as what
18 they're saying, it works.
19 Q. And you wanted it tested specifically
20 for agricultural purposes; right?
21 A. Correct.
22 Q. I believe you already told the panel
23 that part of the reason that you bought this
24 property was as a legacy for your son's hunting
25 and fishing guide service; is that correct?

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1 A. Correct.
2 Q. And I think the intention, when you
3 bought this property, was that you were going to
4 farm it and you were going to hunt it?
5 A. Yes, sir.
6 Q. So we could agree that when you bought
7 this property, you weren't thinking about putting
8 a solar farm; correct?
9 A. No. Not at the time I bought it, no.
10 Q. You weren't thinking about turning this
11 into a residential subdivision, were you?
12 A. No. Not --
13 Q. You're not planning to do that right
14 now, are you?
15 MR. KEATING: Let him finish, Lou.
16 A. I'm not planning to do that right now
17 either.
18 MR. GROSSMAN: I'm sorry, Your Honor.
19 BY MR. GROSSMAN:
20 Q. I apologize, Mr. Henning. It's been a
21 long week.
22 A. Yes.
23 Q. And I'm trying to get through this.
24 Do you remember what you told me about
25 the possibility of a residential subdivision out

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1 there?
 2 A. I'm sorry. What's that?
 3 Q. Do you remember what you told me
 4 about --
 5 A. Yeah. I pretty much said that didn't
 6 look like it would probably be a good -- I mean,
 7 it wouldn't be feasible or whatever. But I think
 8 subsequently I've kind of looked at the -- the
 9 place that -- sugarcane something. I don't know
 10 what it's called. And I went: Huh, that's
 11 interesting that it's out there in the middle of
 12 nowhere.
 13 So I'm just saying that 20 years,
 14 30 years from now I don't know what's going to
 15 happen. But you're right. Today I'm not thinking
 16 about putting a residential subdivision in.
 17 Q. That's right. And the place that you're
 18 talking about, you said it was about 7 miles away
 19 from Lake Charles?
 20 A. Probably.
 21 Q. And how far away is your farm?
 22 A. Probably about 14, 15, 20 -- it probably
 23 takes 20 minutes, 20 miles.
 24 Q. 20 miles. Let me ask you this question:
 25 Has anybody told you that it's not safe to put a

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1 residential subdivision out there?
 2 A. I haven't asked, but nobody has told me.
 3 Q. None of your experts have told you that,
 4 right?
 5 A. They haven't told me.
 6 Q. Same question with a bass pond. Has
 7 anybody told you not to put a bass pond out there?
 8 A. No. Nobody has told me yet, but I'm
 9 sure if I actually start moving forward, I'm sure
 10 I'm going to get stopped by the government.
 11 Q. You know, I heard Mr. Keating ask this
 12 question. Is it reasonable for Chevron to impose
 13 restrictions on the way you're going to use your
 14 property in the future?
 15 A. (Nods head.)
 16 Q. Has anybody from Chevron told you that
 17 you can't use your property for whatever you want
 18 in the future?
 19 A. Nobody from Chevron has told me that.
 20 Q. I know you didn't hear the testimony of
 21 Chevron's experts, but have your lawyers or your
 22 experts told you that Chevron's experts say you
 23 can't do certain things on your property?
 24 A. No. Because I hadn't asked them either.
 25 Q. Okay. You have no reason to believe

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1 that Chevron is suggesting that you are restricted
 2 in your use of the property. Fair?
 3 A. I don't believe Chevron is telling me
 4 that. I think it's the presence of the chemicals
 5 or whatever is down there is what worries me.
 6 Q. It worries you, but has anybody told you
 7 that those constituents are going to impact your
 8 ability to use the property in the future?
 9 A. No. Again, I haven't asked.
 10 Q. And your experts haven't told you that?
 11 A. No, they haven't told me.
 12 Q. Right. Chevron's experts haven't told
 13 you that?
 14 A. Haven't told me.
 15 Q. You haven't heard from any of the
 16 lawyers in this case through argument or otherwise
 17 that those constituents are going to limit you in
 18 your use of the property?
 19 A. Well, I don't -- some -- I think
 20 something was going on up here about the depth of
 21 roots or something, and I don't know what that all
 22 means. But that's all I can say.
 23 Q. And you mentioned that the west side of
 24 the property had been in sugarcane at some point?
 25 A. Yes, sir.

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1 Q. Not at any point since you've owned it;
 2 right?
 3 A. No. Before I owned it.
 4 Q. That was years ago?
 5 A. I don't know how long ago.
 6 Q. You can't tell us how --
 7 A. I cannot tell you.
 8 Q. Fair to say you never saw it in
 9 sugarcane?
 10 A. I never saw it in sugarcane.
 11 Q. I think we talked about the fact that
 12 you've got a cell phone tower out there?
 13 A. Yes, sir.
 14 Q. Cattle?
 15 A. Yes, sir.
 16 Q. Farming?
 17 A. Yes, sir.
 18 Q. And that farming operation is your son
 19 and daughter?
 20 A. Yes.
 21 Q. They don't do crawfish?
 22 A. No. Not right -- no. I mean, not
 23 there, no.
 24 Q. Not there. I asked you this in your
 25 deposition. I said: Do you have any crawfish out

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1 there? You told me: No, we don't do that.
 2 A. Right.
 3 Q. Is that right?
 4 A. That's correct.
 5 Q. And you're not expecting to lease this
 6 property to somebody other than your family, are
 7 you?
 8 A. You never -- no. I can't say that. I
 9 mean, the way that the USDA programs work and all
 10 that kind of stuff -- you've got to be flexible
 11 about who's farming it, but as the format goes
 12 right now, no.
 13 Q. Okay.
 14 A. But a new one is coming.
 15 Q. Well, you bought these properties -- you
 16 buy all these properties as a legacy not just to
 17 your son and his fishing operations but to both
 18 your children?
 19 A. Yes. And my daughter is interested too.
 20 She wants to know -- because I tried to talk to
 21 her about, well, maybe my son gets the land. And
 22 she goes: Why does he get the land? And you and
 23 Poppa -- which is her grandfather -- said, you
 24 know, land and he always tries to buy land. And
 25 she says why I am getting cut out?

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1 And I said: Oh, okay. Now I've got to
 2 go back and figure out how to deal with my
 3 children and how it's going to be separated so --
 4 but, no, she wants a part of it too.
 5 Q. You mentioned the bass pond, and we
 6 talked about it a little bit in your deposition.
 7 And I think you said it again today. It's going
 8 to be a pretty costly endeavor; right?
 9 A. Yes.
 10 Q. Did it cost about a million bucks?
 11 A. That's the preliminary number that we're
 12 getting for it.
 13 Q. Where did that number come from?
 14 A. I talked to a guy -- some guy named
 15 Palamino. He's a dirt work guy. He's done a fish
 16 pond. This was -- oh, it had to be more than a
 17 year ago now.
 18 Q. Okay. When I took your deposition, you
 19 didn't mention anything about that conversation
 20 with Palomino?
 21 A. No. Because I didn't really remember it
 22 until I talked to my son.
 23 Q. Okay.
 24 A. I mean, it was nothing but a sit-down at
 25 lunch, and he'd say, hey, what do you think? This

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1 is what we're going to do. He went and looked at
 2 it. He came back. I don't have any papers or any
 3 estimates, no offers or whatever.
 4 MR. GROSSMAN: Jonah, could you pull up
 5 Exhibit 76, please? 7, page 6. Sorry.
 6 BY MR. GROSSMAN:
 7 Q. This is your property, Mr. Henning?
 8 A. Yes. Can I look here?
 9 Q. Yeah. You can look up there.
 10 A. Because I don't see too good. I guess I
 11 need to see where you're pointing at.
 12 Q. Well, we'll blow it up for you. This is
 13 Highway 14 that comes down right there?
 14 A. Yes.
 15 Q. Now, in your deposition I asked you
 16 where this pond would be. Do you remember what
 17 you told me?
 18 A. I can tell you what I was thinking, that
 19 it would be this area here (indicating).
 20 Q. You told me the whole western side?
 21 A. Okay. Probably not in -- maybe -- I
 22 don't know. Yeah. Okay.
 23 Q. So at least this big (indicating)?
 24 A. At least it would be -- I know this
 25 (indicating). The question is do you go and --

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1 because you've got this little cutout right here
 2 (indicating). So you go in here (indicating).
 3 I'm not sure how the bass boats would go in there,
 4 but, I mean -- but -- yeah. You know, you'd
 5 have -- I mean, I know that's something. So I'd
 6 have to go around that and -- but I don't have
 7 maps of all this. So I don't know what I'm going
 8 to do to --
 9 Q. Do you know what this is (indicating)?
 10 A. No. I mean, it's something about --
 11 it's probably that thing you showed me, the --
 12 whatever those things are, the tanks.
 13 Q. Well, those are gone.
 14 A. Oh, they're gone? Okay.
 15 Q. That's the parking pad. You didn't know
 16 that?
 17 A. No.
 18 Q. You don't have any depth parameters for
 19 this pond, do you?
 20 A. No. We didn't go there.
 21 Q. Do you know how deep a fishing pond is
 22 supposed to be?
 23 A. Not really.
 24 Q. Okay. And, again, you've not heard
 25 anybody tell you, you can't do a fishing pond out

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1 there; right?
 2 A. I haven't asked anybody. I hadn't gone
 3 probably to the permit stage yet.
 4 Q. Mr. Henning, do you have any warning
 5 signs on your property telling people not to come
 6 on because there's dangerous chemicals out there?
 7 A. No, I do not.
 8 Q. No one has told you to put those out
 9 there either, have they?
 10 A. No, they haven't.
 11 Q. Do you still allow hunters to come out
 12 on your property?
 13 A. Yeah. We don't go on this side, though
 14 (indicating). It's -- the hunting is all done
 15 here (indicating). Well, we don't own that, but
 16 we lease that. So the hunting is probably all
 17 here (indicating).
 18 Q. All in the --
 19 A. And up here now (indicating).
 20 Q. Only in the area that gets flooded for
 21 rice?
 22 A. Uh-huh. Yeah. This is all just kind of
 23 fallow and grass, and there's no levees to hold
 24 water for the ducks or anything. So don't hunt
 25 over here (indicating). We hunt over there

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1 (indicating).
 2 Q. Right. And you made a significant
 3 financial investment in this western side of the
 4 property --
 5 A. Yes, I did.
 6 Q. -- to keep it in rice production; right?
 7 A. Correct.
 8 Q. You're not telling hunters not to come
 9 out on your property, are you?
 10 A. No, sir. I'm taking them out there.
 11 Q. And you've not told your son and
 12 daughter that they shouldn't farm certain areas
 13 because it's dangerous to do so?
 14 A. Not in the areas that we're farming. I
 15 don't know of any. I mean, I know of no danger of
 16 the areas that we're farming.
 17 Q. Okay. Do you know of any dangers
 18 anywhere on your property?
 19 A. I don't know. I guess I'm suspecting
 20 because everybody is fighting about it. So I'm
 21 suspecting these areas are dangerous.
 22 Q. So let me ask you this question then:
 23 Are you aware that the -- okay. Let me back up.
 24 When we talked in April, you had never
 25 heard of Mr. Miller?

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1 A. Correct.
 2 Q. And do you know Mr. Miller now?
 3 A. I still don't know who Mr. Miller is.
 4 Q. What about Mr. Prejean?
 5 A. No, sir.
 6 Q. What about Richard Schuhmann?
 7 A. No, sir.
 8 Q. Never had any conversations with any of
 9 them?
 10 A. If I did, I didn't know who they were.
 11 Q. Okay. You never sat down with any of
 12 them and said, "Hey, here are all the things I
 13 want to do with my property. Is that okay?"
 14 A. No, I have not. I don't think I've ever
 15 done that with anybody unless they were
 16 overhearing me with a conversation with my
 17 lawyers.
 18 Q. So you're not aware that your -- the
 19 experts that your lawyers hired are not proposing
 20 a remediation to address human health risks.
 21 You're not aware of that?
 22 A. No, sir. I mean, I really don't know
 23 what they're proposing other than -- my
 24 understanding is that we're here to clean up the
 25 property. I don't know about risk and all that.

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1 Q. Okay. You're aware that we're here in
 2 front of the Louisiana Department of Natural
 3 Resources, Judge Perrault, and lots of experts,
 4 the lawyers to talk about two competing plans that
 5 are called the most feasible plan?
 6 A. Correct. And I understand that there's
 7 two plans to clean up the property.
 8 Q. And you understand that Chevron
 9 submitted a plan?
 10 A. Yes, sir.
 11 Q. You understand that you have submitted a
 12 plan through your experts?
 13 A. Through my experts, yes. I haven't done
 14 it. I promise you.
 15 Q. And you've never looked at any of the
 16 plans?
 17 A. No.
 18 Q. So you have no idea what anybody is
 19 proposing?
 20 A. I have no idea.
 21 Q. And I think Mr. Keating may have asked
 22 this, but with -- whatever this panel concludes to
 23 be the most reasonable plan to protect human
 24 health, plants, animals, and the environment,
 25 you're going to agree with that; right?

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| <p>1 A. Correct.</p> <p>2 MR. GROSSMAN: Thank you. No further</p> <p>3 questions.</p> <p>4 JUDGE PERRAULT: Any redirect?</p> <p>5 MR. KEATING: Brief, Your Honor. Everybody</p> <p>6 is ready to go.</p> <p>7 REDIRECT EXAMINATION</p> <p>8 BY MR. KEATING:</p> <p>9 Q. I'm going to try to clear up in a moment</p> <p>10 that this really doesn't matter, but since</p> <p>11 Mr. Grossman brought this up and showed you some</p> <p>12 of it, we might as well get it all out there.</p> <p>13 You see here this is the Phase 1 for the</p> <p>14 subject property. Do you remember talking about</p> <p>15 that?</p> <p>16 A. Correct.</p> <p>17 Q. What does this say right here that I'm</p> <p>18 pointing at if you can read it (indicating)?</p> <p>19 A. "Mr. Henning is not aware of any</p> <p>20 environmental liens, cleanups, or chemical spills</p> <p>21 associated with the tract."</p> <p>22 Q. So that's something you told Arabie?</p> <p>23 A. Yes. It must -- yes.</p> <p>24 Q. And he showed you here -- he read some</p> <p>25 of this to you in the second bullet and showed you</p> | <p>1 read to you?</p> <p>2 A. Close.</p> <p>3 Q. I mean, more or less?</p> <p>4 A. More or less. There's definitely words</p> <p>5 that are different, but it's more or less the</p> <p>6 same.</p> <p>7 Q. It tells you, you have potential</p> <p>8 contamination on the Choupique property?</p> <p>9 A. Correct.</p> <p>10 Q. Does it tell you that it could be from</p> <p>11 NORM, hydrocarbons, heavy metals, and chlorides?</p> <p>12 A. Correct.</p> <p>13 Q. Does it tell us that the presence of --</p> <p>14 the actual presence of contaminants and the extent</p> <p>15 of impacts can only be determined through the</p> <p>16 additional investigation beyond the scope of their</p> <p>17 evaluation?</p> <p>18 A. Correct.</p> <p>19 Q. Is that the same thing they told you</p> <p>20 more or less in -- for the subject property?</p> <p>21 A. Pretty much.</p> <p>22 Q. Mr. Grossman showed you a bunch of</p> <p>23 pictures and said: You've never looked at these</p> <p>24 before, you've never looked at these before.</p> <p>25 Were those photos sent to you before he</p> |
| Page 1370 | Page 1372 |
| <p>1 the second pond was created by oil and gas</p> <p>2 operations?</p> <p>3 A. Correct.</p> <p>4 Q. Do you see anything about a sunken well?</p> <p>5 A. No, sir.</p> <p>6 Q. Do you see anything about a blowout?</p> <p>7 A. No, sir.</p> <p>8 Q. What does it say about the prior</p> <p>9 landowner's knowledge? Can you read that?</p> <p>10 A. "Mr. Roussell, who was the land manager</p> <p>11 for the Walker property, said, according to his</p> <p>12 knowledge, there have not been any underground</p> <p>13 storage tanks or other environmental issues on the</p> <p>14 investigated property."</p> <p>15 Q. Mr. Grossman read through and showed you</p> <p>16 the last paragraph of the Phase 1 that Arabie did</p> <p>17 for you on the subject property. Do you remember</p> <p>18 that?</p> <p>19 A. Yes.</p> <p>20 Q. And we talked earlier about the Phase 1</p> <p>21 you had done for Choupique where there's no legacy</p> <p>22 lawsuit, there's no issues, there's nobody</p> <p>23 admitting they contaminated your property; right?</p> <p>24 A. Right.</p> <p>25 Q. Is that the exact same paragraph that he</p> | <p>1 took your deposition?</p> <p>2 A. No, sir.</p> <p>3 Q. Have you ever had a chance to see them</p> <p>4 before then?</p> <p>5 A. I've never looked at them.</p> <p>6 Q. They were never provided to you?</p> <p>7 A. No.</p> <p>8 Q. You did -- or did you go visit this site</p> <p>9 with the prior landowner before you bought the</p> <p>10 property?</p> <p>11 A. Yes.</p> <p>12 Q. Was there an issue out there that kept</p> <p>13 you from being able to get around everywhere?</p> <p>14 A. Yeah. It was flooded. I mean, that --</p> <p>15 I mean, when we went out there, we had to stop on</p> <p>16 a truck. He had to unload a four-wheeler. We</p> <p>17 went through the property, driving around, trying</p> <p>18 to -- we eventually got stuck and had to walk out.</p> <p>19 I kind of pretty much told him, I said -- I mean,</p> <p>20 that probably focused my idea of the protection</p> <p>21 levee because I said, you know, this is not very</p> <p>22 good for an initial viewing of the property, to</p> <p>23 stick me out here in the middle of nowhere and</p> <p>24 make me walk out, you know, in the water. Lucky I</p> <p>25 had boots on.</p> |

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|-----------|---|-----------|---|
| Page 1373 | <p>1 Q. So did the conditions prevent you from</p> <p>2 getting around on the whole property?</p> <p>3 A. Yeah, pretty much.</p> <p>4 Q. Another thing about the pictures --</p> <p>5 Mr. Henning, did you put the pollution on your</p> <p>6 property?</p> <p>7 A. No, I did not.</p> <p>8 Q. Is it your understanding that Chevron</p> <p>9 has admitted that they contaminated your property?</p> <p>10 A. That's what my lawyers have told me.</p> <p>11 Q. Is it your understanding that that's why</p> <p>12 we're here?</p> <p>13 A. Yes.</p> <p>14 Q. Is it your understanding that the judge</p> <p>15 has ruled that Chevron has admitted your property</p> <p>16 can't be used for its intended purposes?</p> <p>17 A. Correct.</p> <p>18 Q. Mr. Grossman asked you about warning</p> <p>19 signs: Did you put up any warning signs to warn</p> <p>20 people there might be a danger on your property?</p> <p>21 Do you remember that?</p> <p>22 A. Yes, sir.</p> <p>23 Q. Has Chevron put any warnings signs up on</p> <p>24 your property to warn anybody after they admitted</p> <p>25 they contaminated your property?</p> | Page 1375 | <p>1 JUDGE PERRAULT: It takes a while for that</p> <p>2 one to warm up.</p> <p>3 THE WITNESS: I've got to figure out where I</p> <p>4 am. It's going to be this piece right here.</p> <p>5 PANELIST DELMAR: In that area the NRCS is</p> <p>6 sort of completing a project or --</p> <p>7 THE WITNESS: Yeah. They -- along this canal</p> <p>8 here, we're going to put some kind of project</p> <p>9 of -- like I said, they're doing some kind of</p> <p>10 filtration deal and everything, but then</p> <p>11 here's the -- I get to hunt it. So -- and</p> <p>12 it -- because it's going to be three ponds,</p> <p>13 you know, a very short level. I can put</p> <p>14 grass and stuff in it. So they're going to</p> <p>15 work with me on that, and then we get to hunt</p> <p>16 it. And then I think it's a three-year</p> <p>17 project, and after that, then the levees and</p> <p>18 the water control structures, we might...</p> <p>19 PANELIST DELMAR: Okay. It's</p> <p>20 concurrently -- the project is currently in</p> <p>21 process. Like, it's under construction and</p> <p>22 everything.</p> <p>23 THE WITNESS: Yeah. I think -- I can't</p> <p>24 remember if we signed the contract or if</p> <p>25 he's -- we've had kind of the last meeting,</p> |
| Page 1374 | <p>1 A. No, they haven't.</p> <p>2 MR. KEATING: No further questions.</p> <p>3 JUDGE PERRAULT: Did the panel have any</p> <p>4 questions?</p> <p>5 PANELIST OLIVIER: This is Stephen Olivier.</p> <p>6 We did have some questions on clarification</p> <p>7 of current and future intended use of the</p> <p>8 property, but for me, based on listening to</p> <p>9 testimony and questioning, I think it's</p> <p>10 pretty clear for me that you answered all of</p> <p>11 my questions, at least for your current and</p> <p>12 future intended use of the property. So,</p> <p>13 therefore, I don't have any further</p> <p>14 questions.</p> <p>15 PANELIST DELMAR: I do have one question.</p> <p>16 This is Chris Delmar. You mentioned the NRCS</p> <p>17 and -- in completing a project. Was this on</p> <p>18 the property or was this on, like, an</p> <p>19 adjacent property?</p> <p>20 THE WITNESS: No. If you get the map on</p> <p>21 there again, I can show you. It's the</p> <p>22 north -- what we call the northeast.</p> <p>23 PANELIST DELMAR: Okay.</p> <p>24 THE WITNESS: It's across the road. There's</p> <p>25 a -- it's on my screen.</p> | Page 1376 | <p>1 we'll get you the contract with the NRCS</p> <p>2 people to do. Because, you know, they put</p> <p>3 restrictions about what we can -- you know,</p> <p>4 we've got to do whatever they tell us to do</p> <p>5 to the property.</p> <p>6 PANELIST DELMAR: Yeah.</p> <p>7 PANELIST OLIVIER: And so Stephen Olivier</p> <p>8 again. So for clarification, it looks like</p> <p>9 that project y'all discussed at NRCS, it</p> <p>10 doesn't appear to be located on any of the</p> <p>11 Chevron limited admission areas marked in</p> <p>12 color, the Area 2, 4, 5, 6, or 8?</p> <p>13 THE WITNESS: No, it does not.</p> <p>14 PANELIST OLIVIER: Okay. Thank you. That's</p> <p>15 all the questions I have.</p> <p>16 JUDGE PERRAULT: Any other panel questions?</p> <p>17 All right. Well, thank you very much.</p> <p>18 THE WITNESS: Thank you.</p> <p>19 MR. GROSSMAN: Your Honor.</p> <p>20 JUDGE PERRAULT: Yes, sir.</p> <p>21 MR. GROSSMAN: We just want to offer a file</p> <p>22 and introduce Chevron Exhibits 19, 127,</p> <p>23 and 7.</p> <p>24 JUDGE PERRAULT: Exhibit 19. What's the next</p> <p>25 one?</p> |

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1 MR. GROSSMAN: 127.
 2 JUDGE PERRAULT: 127.
 3 MR. GROSSMAN: It's a --
 4 JUDGE PERRAULT: And what is 19? What's the
 5 label of that?
 6 MR. GROSSMAN: 19 is the Phase 1
 7 environmental.
 8 JUDGE PERRAULT: What is 127?
 9 MR. GROSSMAN: That's the Maxim Well Services
 10 report.
 11 JUDGE PERRAULT: Say the first word.
 12 MR. GROSSMAN: Maxim, M-A-X-I-M.
 13 JUDGE PERRAULT: Maxim Well Services report.
 14 And what is Exhibit 7?
 15 MR. GROSSMAN: Exhibit 7 is Chevron's limited
 16 admission.
 17 JUDGE PERRAULT: Is there any objection to
 18 Exhibit 19?
 19 MR. KEATING: No, Your Honor.
 20 JUDGE PERRAULT: No object. So ordered. It
 21 shall be admitted.
 22 Any objection to Exhibit 127?
 23 MR. KEATING: No, Your Honor.
 24 JUDGE PERRAULT: No objection. It shall be
 25 admitted.

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1 Any objection to Exhibit 7?
 2 MR. KEATING: No, Your Honor.
 3 JUDGE PERRAULT: No objection and it is
 4 admitted.
 5 And does Henning have any exhibits?
 6 MR. KEATING: Your Honor, I do have one I'd
 7 like to offer, file, and introduce. YYYY,
 8 four Ys.
 9 JUDGE PERRAULT: Four Ys.
 10 MR. KEATING: This is the Phase 1 for what we
 11 were calling the Choupique property.
 12 JUDGE PERRAULT: Phase 1 Choupique property?
 13 MR. KEATING: Choupique.
 14 JUDGE PERRAULT: Like S-U --
 15 MR. KEATING: Sorry. It's C-H-O-U-P-I-Q-U-E.
 16 JUDGE PERRAULT: O-U-P-I-Q-U-E property.
 17 Any objection to Exhibit YYYY?
 18 MR. GROSSMAN: No, Your Honor.
 19 JUDGE PERRAULT: No objection. So ordered.
 20 It shall be admitted.
 21 Anything else?
 22 MR. GROSSMAN: One matter of housekeeping, I
 23 guess.
 24 JUDGE PERRAULT: Okay.
 25 MR. GROSSMAN: One the experts we intend to

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1 call in rebuttal has a trial starting Monday
 2 in Montana --
 3 JUDGE PERRAULT: Okay.
 4 MR. GROSSMAN: -- and has asked to
 5 participate via Zoom.
 6 JUDGE PERRAULT: Any objection?
 7 MR. GROSSMAN: It's Dr. Kind.
 8 MR. KEATING: That's fine, Your Honor.
 9 JUDGE PERRAULT: No objection. He shall be
 10 admitted to participate by Zoom.
 11 MR. GROSSMAN: We'll take care of the setup
 12 on our end, I guess, to allow him to --
 13 JUDGE PERRAULT: All right. If you have any
 14 questions, talk to Jared because I have
 15 absolutely no idea how any of this stuff
 16 works.
 17 MR. GROSSMAN: Okay. We'll get our people to
 18 talk to your people and figure it out.
 19 JUDGE PERRAULT: Okay. That's great.
 20 Any other housekeeping?
 21 MR. KEATING: Just a question on that. Will
 22 you tell us who you're going to call on
 23 Monday by sometime on Sunday?
 24 MR. GROSSMAN: Yes.
 25 MR. KEATING: And provide slides by whatever

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1 time --
 2 MR. GROSSMAN: Monday morning. A.m. Monday
 3 morning. Yeah. Absolutely.
 4 JUDGE PERRAULT: Does this complete your
 5 case?
 6 MR. KEATING: Yes, Your Honor. Henning
 7 rests.
 8 JUDGE PERRAULT: Henning rests on their plan.
 9 Now, earlier y'all had by agreement
 10 and -- you know, if y'all want to change that
 11 up, we can. It's up to y'all. Let's see.
 12 Chevron presented its plan, and then
 13 Henning presented its plan. And then Chevron
 14 is going to do -- present its rebuttal. Then
 15 Henning is going to present their rebuttal.
 16 That's what we've got.
 17 MR. CARMOUCHE: That's kind of, I guess, what
 18 we need to talk about, Judge. Do we have
 19 Monday and Tuesday or just --
 20 JUDGE PERRAULT: We have Monday and Tuesday
 21 scheduled.
 22 MR. CARMOUCHE: Okay.
 23 JUDGE PERRAULT: And then we have some
 24 back-stop days. We've got two back-stop
 25 days.

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1 MR. CARMOUCHE: I don't know how many
 2 witnesses they're planning on calling on
 3 rebuttal. I'm going to try not to. So I
 4 just -- what I'd like to do if we're going to
 5 do closing on Monday or no matter what or --
 6 MR. GREGOIRE: We do, John. And your
 7 cross-examination of rebuttal witnesses. We
 8 plan to complete our rebuttal case on Monday.
 9 MR. CARMOUCHE: Closing Monday.
 10 MR. GREGOIRE: Yes.
 11 MR. CARMOUCHE: If they finish and I don't
 12 call anybody, we plan on closing on Tuesday,
 13 so we'll finish.
 14 MS. RENFROE: I thought you said Monday.
 15 MR. CARMOUCHE: Monday. I'm sorry. Monday.
 16 MS. RENFROE: If time permits we'd like to
 17 close on Monday afternoon, but it's going to
 18 be subject to --
 19 JUDGE PERRAULT: And, listen, I'll go as late
 20 as the panel will go so we can get it all
 21 done Monday if that's y'all's wish.
 22 And then we could meet Tuesday morning
 23 to get all the evidence straight.
 24 (Discussion off record.)
 25 JUDGE PERRAULT: Do we have any other

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1 questions or concerns?
 2 MR. KEATING: I don't believe so, Your Honor.
 3 JUDGE PERRAULT: Well, does the panel have
 4 any questions or concerns? All right.
 5 Well, if there's nothing, we are in
 6 recess until Monday morning at 9:00 a.m.
 7 (Hearing adjourned at 5:12 p.m.)
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1 REPORTER'S PAGE
 2 I, DIXIE VAUGHAN, Certified Court
 3 Reporter in and for the State of Louisiana, (CCR
 4 #28009), as defined in Rule 28 of the Federal
 5 Rules of Civil Procedure and/or Article 1434(B) of
 6 the Louisiana Code of Civil Procedure, do hereby
 7 state on the Record:
 8 That due to the interaction in the
 9 spontaneous discourse of this proceeding, dashes
 10 (--) have been used to indicate pauses, changes in
 11 thought, and/or talkovers; that same is the proper
 12 method for a Court Reporter's transcription of
 13 proceeding, and that the dashes (--) do not
 14 indicate that words or phrases have been left out
 15 of this transcript;
 16 That any spelling of words and/or names
 17 which could not be verified through reference
 18 material have been denoted with the phrase
 19 "(phonetic)";
 20 That (sic) denotes when a witness stated
 21 word(s) that appears odd or erroneous to show that
 22 the word is quoted exactly as it stands.
 23
 24 DIXIE VAUGHAN, CCR
 25

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1 REPORTER'S CERTIFICATE
 2 I, Dixie Vaughan, Certified Court
 3 Reporter (Certificate #28009) in and for the State
 4 of Louisiana, as the officer before whom this
 5 testimony was taken, do hereby certify that on
 6 Friday, February 10, 2023, in the above-entitled
 7 and numbered cause, the PROCEEDINGS, after having
 8 been duly sworn by me upon authority of R.S.
 9 37:2554, did testify as hereinbefore set forth in
 10 the foregoing 359 pages;
 11
 12 That this testimony was reported by me
 13 in stenographic shorthand, was prepared and
 14 transcribed by me or under my personal direction
 15 and supervision, and is a true and correct
 16 transcript to the best of my ability and
 17 understanding;
 18
 19 That the transcript has been prepared in
 20 compliance with transcript format guidelines
 21 required by statute or by rules of the board;
 22
 23 That I have acted in compliance with the
 24 prohibition on contractual relationships, as
 25 defined by Louisiana Code of Civil Procedure

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1 Article 1434 and in rules and advisory opinions of
2 the board;

3

4 That I am not of Counsel, nor related to
5 any person participating in this cause, and am in
6 no way interested in the outcome of this event.

7

8 SIGNED THIS THE 2ND DAY OF MARCH, 2023.

9

10

11

12

DIXIE VAUGHAN
Certified Court Reporter (LA)
Certified LiveNote Reporter

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